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List of Strains, 8th Edition

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独立行政法人国立環境研究所微生物系統保存施設

<http://mcc.nies.go.jp/>

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NIES-Collection

List of Strains, 8th Edition

NIES コレクション 保存株リスト第8版



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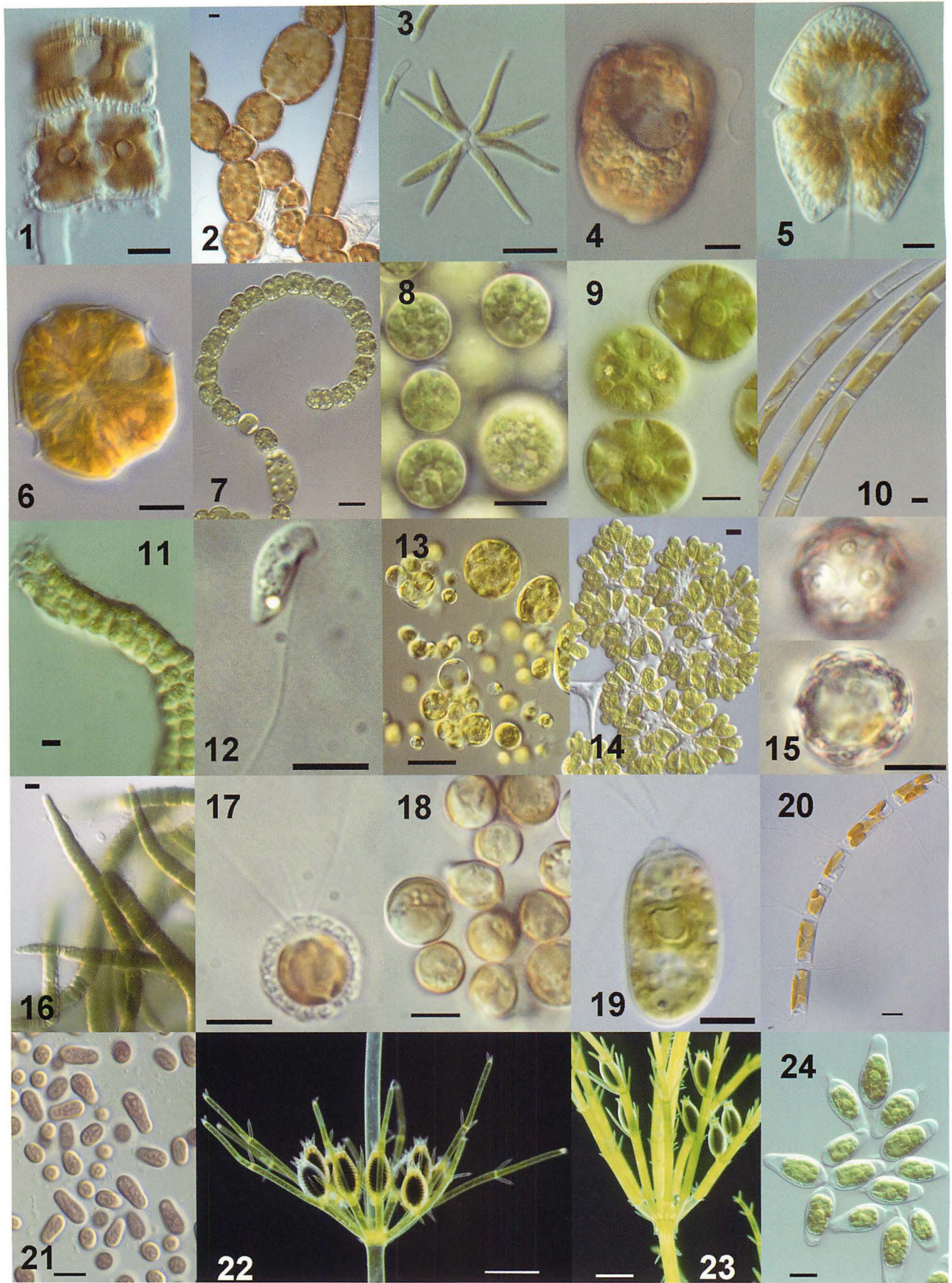


Plate 1. Micrographs of NIES strains (alphabetical order). 1. *Achnanthes* (NIES-330), 2. *Acinetospora* (NIES-548), 3. *Actinastrum* (NIES-415), 4. *Adenoides* (NIES-1402), 5. *Akashiwo* (NIES-1832), 6. *Alexandrium* (NIES-674), 7. *Anabaena* (NIES-75), 8. *Asterochloris* (NIES-1298), 9. *Asterococcus* (NIES-1331), 10. *Aulacoseira* (NIES-333), 11. *Blidingia* (NIES-1837), 12. *Bodo* (NIES-1439), 13. *Botrydium* (NIES-622), 14. *Botryococcus* (NIES-836), 15. *Calcidiscus* (NIES-1305), 16. *Calothrix* (NIES-334), 17. *Calyptrosphaera* (NIES-997), 18. *Calyptrosphaera* (NIES-1811), 19. *Carteria* (NIES-421), 20. *Chaetoceros* (NIES-377), 21. *Chamaesiphon* (NIES-433), 22. *Chara* (NIES-1589), 23. *Chara* (NIES-1601), 24. *Characiochloris* (NIES-638). Scale bars = 10 μ m, scale bars in Figs 22 and 23 = 1 mm.

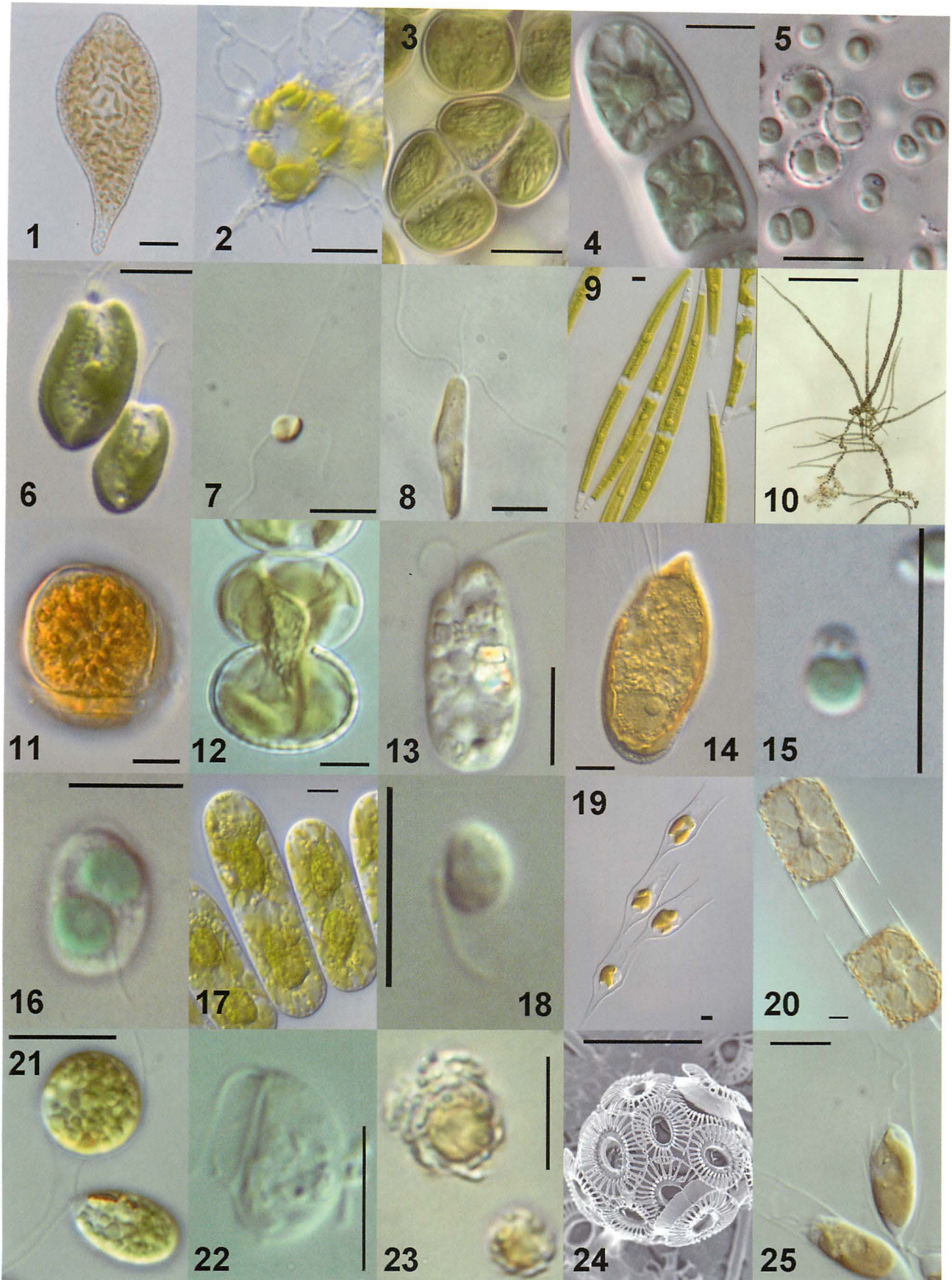


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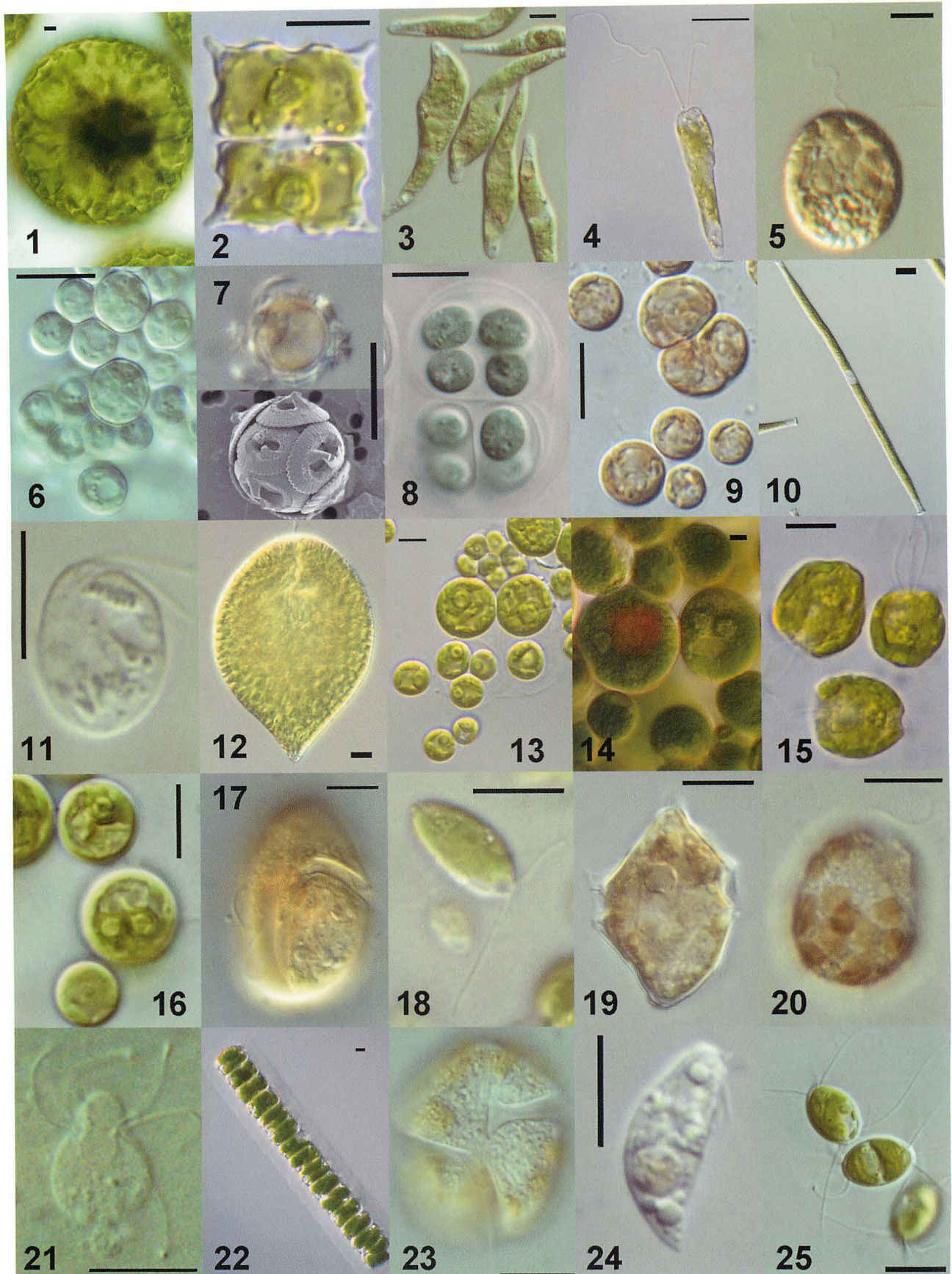


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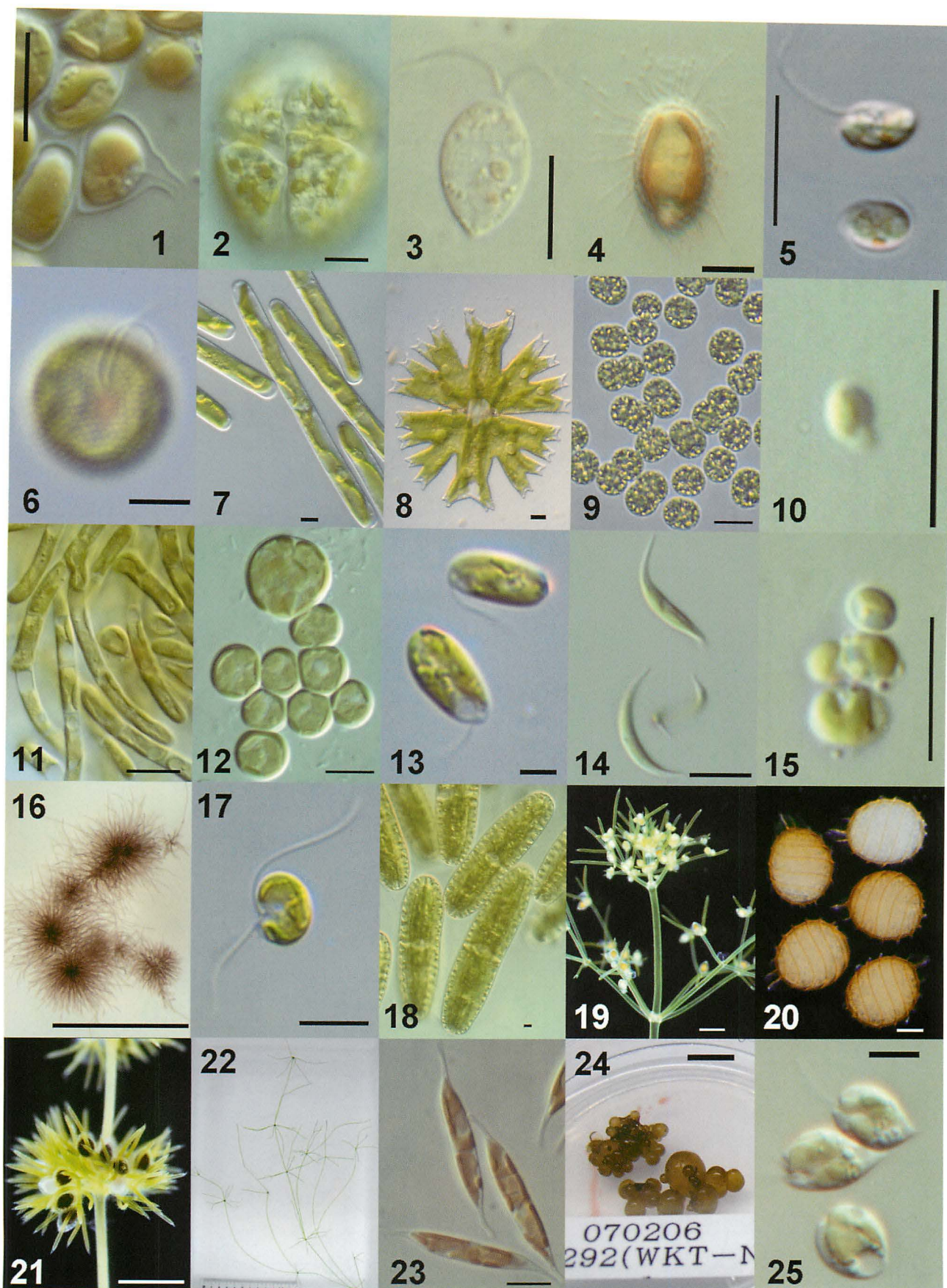


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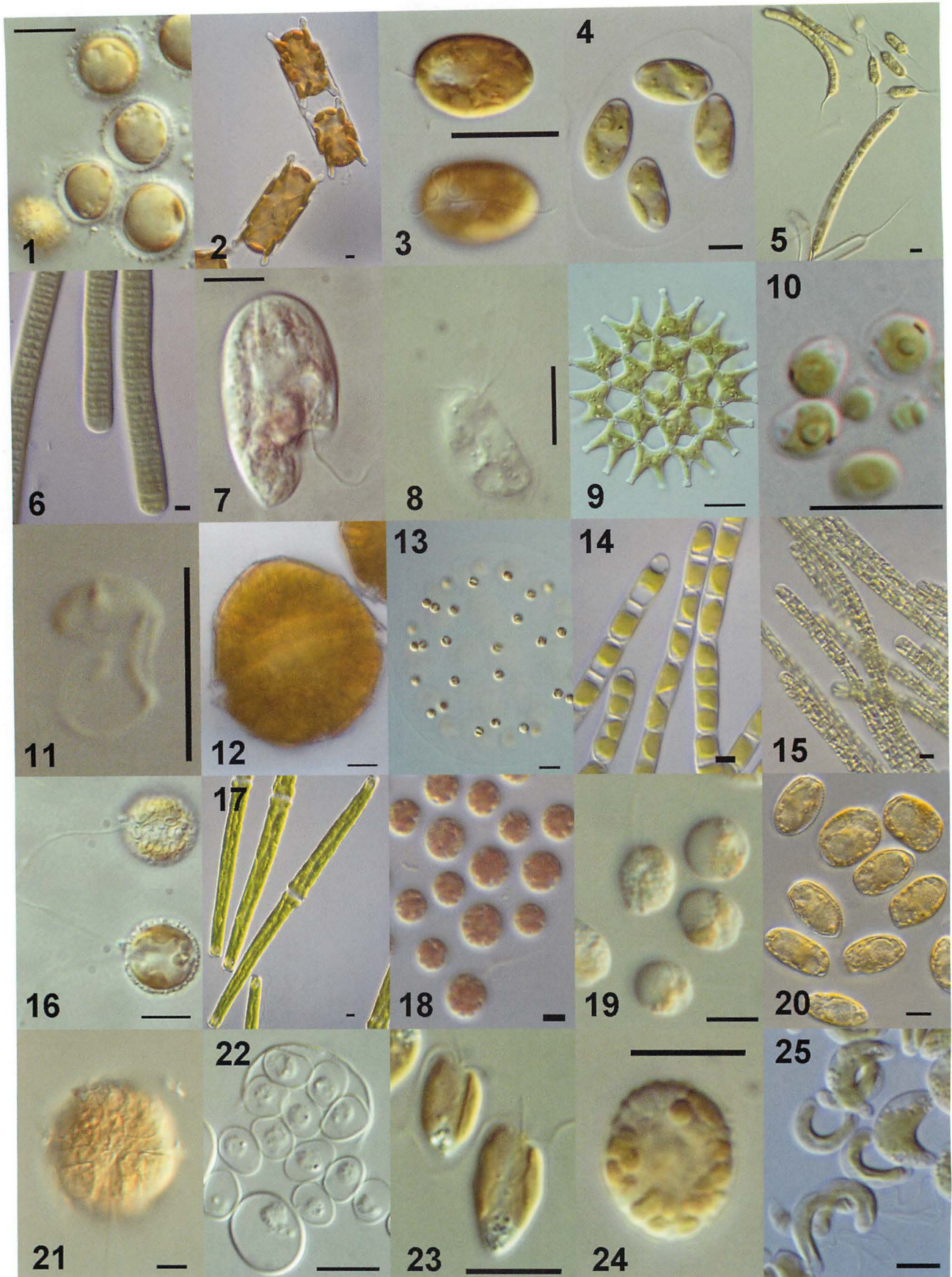


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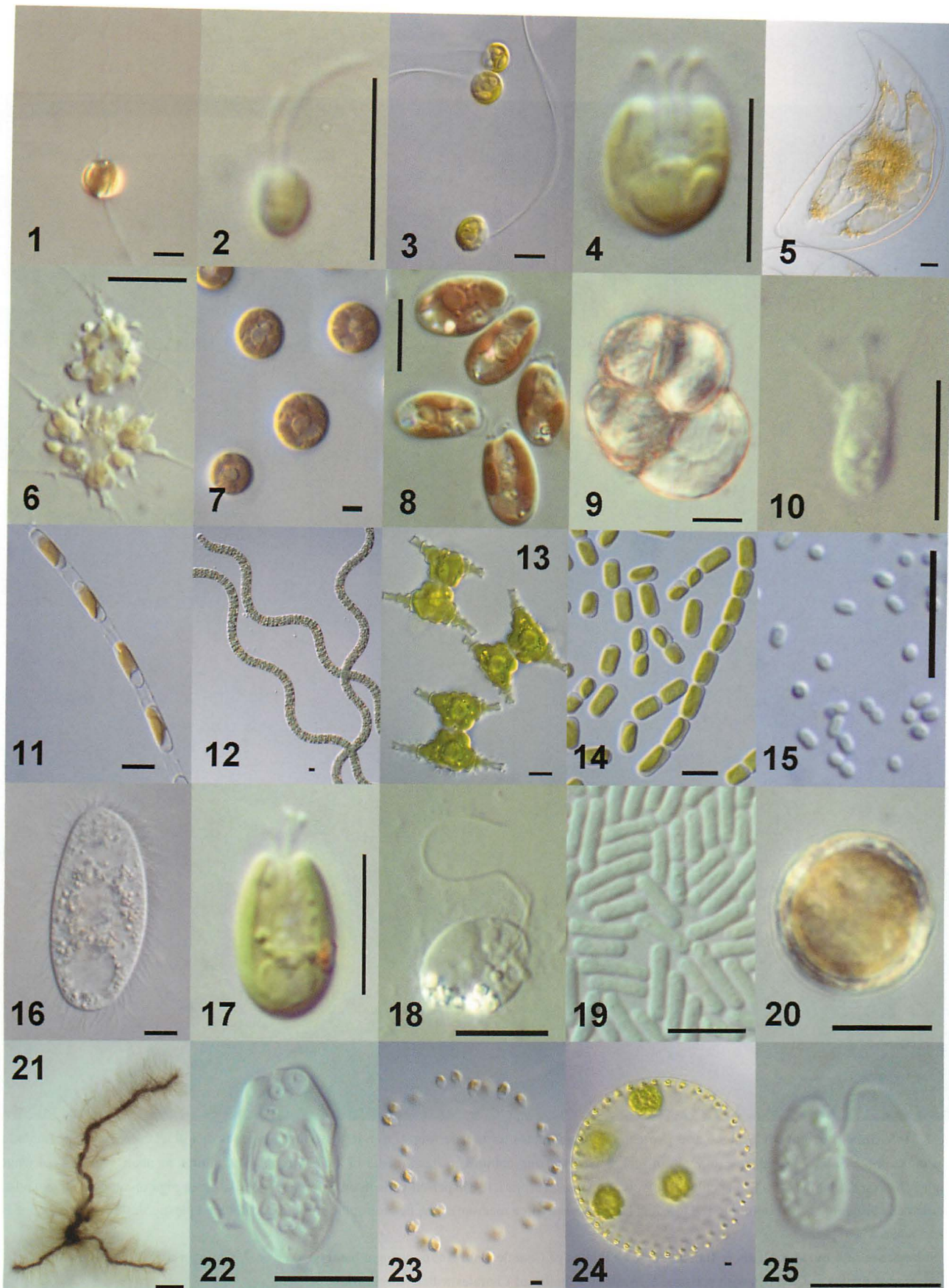


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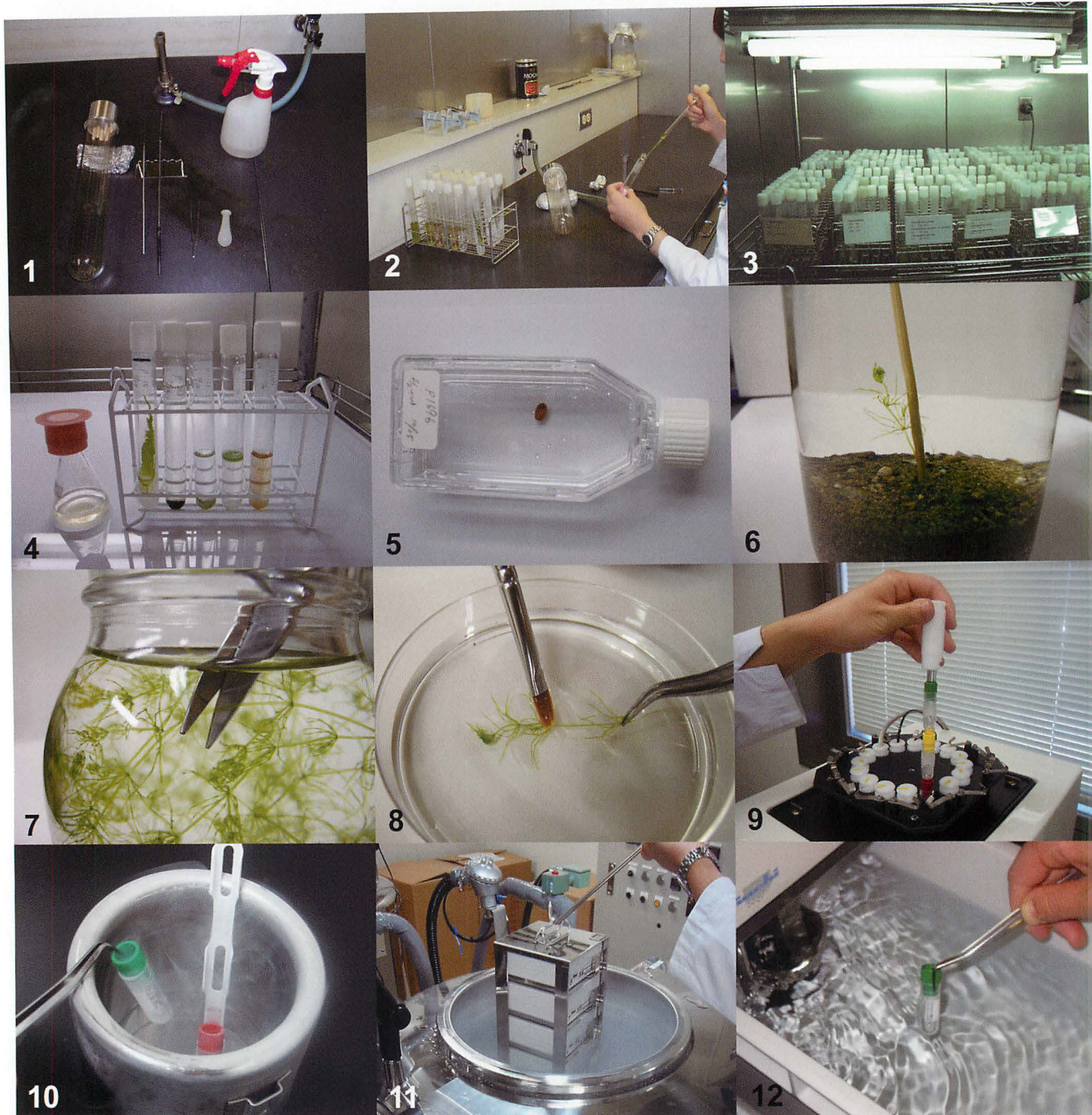


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I. はじめに

独立行政法人国立環境研究所微生物系統保存施設 (NIES コレクション) では、現在、シアノバクテリア、真核微細藻類、原生動物、および絶滅が危惧される淡水産大型藻類を含む 2500 株以上の株を系統保存している。保存株の多くは、分離・開発した研究者から直接寄託された株で、一部、他の保存施設に保存されていたものが機関間の交換や研究者を経て寄託された株も含まれている。これらの保存株のうち公開されている 2148 株を本リストに掲載した (Table 1)。これらは、分譲にあたっての同意事項に従い、研究、開発、教育のために分譲されている。

また、NIES コレクションは、環境問題解明やその他の基礎、応用研究にとって重要な培養株の寄託、およびシアノバクテリアのタイプ株や、真核藻類のタイプ標本としての凍結保存試料の寄託を受けつけている。

株の維持

保存株の四分の三に相当する約 2000 株は、培養温度 5 ~ 25°C (好熱性の株の場合は 37 または 45°C)、光量子密度 4 ~ 50 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ の 12 時間明暗周期といった最適培養条件あるいはそれに近い培養条件で、10 日 ~ 6 ヶ月の間隔で継代培養されている。これらの保存条件は株ごとに異なり、株リストのそれぞれの株データ中に示されている。また、NIES コレクションでは、継代培養株を失わないよう毎週 1 度、保存株の生育状態の確認を行っている。さらに、無菌検査培地を用いた無菌株の無菌検査を年 1 回行っている。

残りの約 600 株 (シアノバクテリアの多くや、緑藻や紅藻の一部の株) については、気相の液体窒素中で凍結保存のみで維持している。

学名と系統

学名は基本的には寄託者によってつけられた名前がそのまま使われているが、一方で、一部の株については、DNA 塩基配列 (主として 18S rRNA 遺伝子) の解析による再同定を行っている。誤同定等が判明した場合や、改訂などによって学名が変更された場合には、それぞれの株の保存株データに “Formerly identified as:” として前名を示し、種名を修正した。NIES コレクションによる DNA 解析で誤同定が判明した場合は、遺伝子情報とともに “Identified by:” の欄に “Re-identified at NIES by DNA sequencing” と示し、種名が正しいことが確認された場合は “Confirmed at NIES by DNA sequencing” と示した。今後も引き続き再同定を行っていく予定である。

シアノバクテリアのマイクロキスティス属については、日本で発生するアオコに 5 つの形態種 [*M. aeruginosa* (Kützing) Kützing, *M. ichthyoblabe* Kützing, *M. novacekii* (Komárek) Compère, *M. viridis* (A. Braun) Lemmermann emend.

Kondrateva, *M. wesenbergii* (Komárek) Komárek in Kondrateva] が報告されている。これらの 5 形態種の形態的可塑性と DNA/DNA 雑種形成の結果から、Otsuka *et al.* (2001) はこれらの 5 形態種を 1 つの細菌種に統合することを提案している。この改訂はまだ正式に認められていないが (Oren 2004)、NIES コレクションでは、この提案を受け入れ、これまで 5 つの形態種に分類されていたマイクロキスティスの種名を *M. aeruginosa* に統合した。それまで使用していた種名はシノニム、あるいは前名としてそれぞれの保存株データ中に示し、学名として仮に “*Microcystis aeruginosa* (Kützing) Lemmermann” を用いた。

歴史と株の特徴

NIES コレクションは 1983 年に、環境問題を指向したコレクションとして設立された。設立当時、日本では、湖沼の富栄養化や水質汚濁、環境汚染による人の健康被害は今よりもさらに深刻な問題となっていた。設立当時の公開株数は 250 株程度であり (Watanabe & Kasai 1985)、その後株数は増加し、現在は本リストに示すように 2000 株を越えた。これらの株は、赤潮やアオコの原因種や、有毒種として、また、独立栄養、従属栄養、さらに混合栄養生物といった食物網の主要な構成員として、環境研究にきわめて重要な株である。また、抗酸化物質やバイオ燃料といった有用物質を生産し、人の健康や地球温暖化防止に貢献する藻類も含まれている。NIES コレクションを特徴付けているのは、現在でも、設立当時から収集されている赤潮形成藻 *Chattonella antiqua* や *Heterosigma akashiwo*、アオコ形成藻 *Microcystis aeruginosa* であるが、近年、水界生態系での重要性が認識されたピコプランクトンや従属栄養性の原生動物の培養株も、その後多数追加されている。

1990 年代半ばになると、NIES コレクションでは絶滅危惧藻類の域外保全を開始した。環境省は「日本における絶滅の危機に瀕した野生生物のリスト (レッドリスト)」を 2007 年に改訂し、絶滅、野生絶滅、絶滅危惧 I 類、絶滅危惧 II 類を含めて 116 種の藻類を絶滅危惧藻類に選定した (環境省 2007)。これらの絶滅危惧藻類の多くはシャジクモ類と紅藻 (多くは淡水産) である。日本におけるこれらの藻類は、富栄養化、生息地破壊、ソウギョの導入といった人為的な環境の改変によって減少を続けてきた (Watanabe *et al.* 2005)。現在、NIES コレクションでは約 300 株のシャジクモ類と淡水産紅藻を保存している。この絶滅危惧藻類の保存の一部は、2002 年から環境省・環境試料タイムカプセル化事業の支援を受けて実施している。

2002 年に、NIES コレクションは文部科学省のナショナルバイオリソースプロジェクト (NBRP) における藻類リソースの中核機関に選定された。2002 ~ 2006 年の第 1 期には、日

本中の代表的な富栄養湖沼から採集された 200 株以上のミクロキスティスやアナベナ株、および進化系統的に重要な微細藻類や原生動物の培養株が、国立科学博物館と筑波大学からそれぞれ寄託された。さらに、東京大学分子細胞生物学研究所 IAM コレクションで保存されていた 300 株余りのシアノバクテリアおよび真核微細藻類が 2006 年度末までに NIES コレクションに移管された。これら NBRP の活動によって、最終的に、環境問題や進化上の重要種ばかりでなく、これまでにゲノム解析、分子生物学、遺伝学、生理学など多くの研究分野で利用されてきた *Cyanidioschyzon merolae* (10D 株), *Chlamydomonas reinhardtii* (C-9 株), *Chlorella vulgaris* (Tamiya strain), *Thermosynechococcus elongatus* (BP-1 株) といった培養株が NIES コレクションに収集された。NBRP 第 2 期 (2007 ~ 2011 年) では保存株データのさらなる収集や保存株の品質管理体制の整備を目指している。

2007 年には、真核藻類のタイプ標本としての凍結保存試料の寄託受付を開始した。研究者が凍結保存試料を作成するのは困難な場合が多いことから、NIES コレクションでは凍結保存試料の作成を支援するシステムを検討している。しかし、現在の技術では凍結保存が困難な種類が多いこと、また、基本的業務である培養株の維持に多大な手間と時間がかかることから、要望に応えられない場合もあるので、現在タイプ標本の寄託を検討されている方は、必ず、記載論文を投稿する 1 年前までには NIES コレクションに相談していただくようお願いしたい。

また、NIES コレクションは、2008 年 7 月にホームページを刷新し、オンラインによる分譲依頼の受付を開始した。この新システムによって NIES 株がより利用しやすくなることをスタッフ一同願っている。

NIES コレクションでは、設立当初から「国立環境研究所微生物系統保存株評価委員会」が、寄託条件に従った寄託株の受け入れ評価や保存株の評価を行っている。現在、委員会は 9 人の所内研究者からなる委員と 6 人の外部有識者 (顧問) で構成されている (IX 章参照)。また、ナショナルバイオリソースプロジェクト (NBRP) 開始後は、特に実験材料としての藻類株の収集について、NBRP 藻類運営委員会 (IX 章参照) に諮問している。

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I. INTRODUCTION

The Microbial Culture Collection at the National Institute for Environmental Studies (NIES-Collection) currently holds more than 2500 strains, which include cyanobacteria, eukaryotic microalgae, protozoa, and endangered macroalgae. Most of the NIES strains have been directly deposited by their isolators, whereas some strains have been deposited from other culture collections by exchange between collections and via researchers. Herein are listed 2148 of these strains (Table 1), they are available for education, research, and development in accordance with the “Agreement for distribution” on p. 235. The NIES-Collection accepts the deposition of strains that are environmentally important, as well as those for basic and applied studies. The collection also accepts the deposition of type strains of cyanobacteria and type specimens of eukaryotic microalgae as frozen samples.

MAINTENANCE OF STRAINS

About 3/4 of the NIES strains (about 2000 strains) are maintained by subculturing under optimal and/or sub-optimal conditions mostly ranging from 5°C to 25°C (37°C or 45°C for thermophilic strains) and 4 to 50 $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ photon flux density in a 12-h-light:12-h-dark photo-regime. The strains are serially transferred at 10-day to 6-month intervals. These maintenance conditions differ with the algal strain and are indicated in individual strain data (pp. 11-199). To prevent loss of the strains during maintenance by subculturing, we conduct weekly growth checks. Once a year, we also check axenic strains for the absence of bacteria by using several bacterial check media.

The remaining strains—about 600 strains including most of the cyanobacterial strains and some of the green and red algal strains—are cryopreserved only, in the vapor phase of liquid nitrogen.

SCIENTIFIC NAMES AND PHYLOGENY

The scientific names of the NIES strains are primarily given by the depositors. However, we have used DNA sequencing (mostly of the 18S rRNA gene) to re-evaluate those NIES strains for which DNA sequence data have not yet been reported. As a result, we have changed the scientific names of the misidentified strains, although we have left their former names as “Formerly identified as.” We have also added “Re-identified at NIES by DNA sequencing” in “Identified by” and if the original scientific names of these strains were appropriate, we have simply

indicated “Confirmed at NIES by DNA sequencing”, with gene names and accession numbers in “Gene data.” We are still re-evaluating the remainder.

For the cyanobacterial genus *Microcystis*, five morpho-species [*M. aeruginosa* (Kützing) Kützing, *M. ichthyoblabe* Kützing, *M. novacekii* (Komárek) Compère, *M. viridis* (A. Braun) Lemmermann emend. Kondrateva, and *M. wesenbergii* (Komárek) Komárek in Kondrateva] have been reported as water blooms in Japan. Recently, Otsuka *et al.* (2001) published a proposal that these five species should be unified into one bacterial species, *M. aeruginosa*, because of their morphological plasticity and similarity in terms of DNA/DNA hybridization. Although this emendation has not been validated yet (Oren 2004), we have accepted this proposal and have changed the species names of the strains formerly identified as the above-mentioned five morphospecies to *M. aeruginosa*. However, we are leaving the former names as “Formerly identified as:” in the individual strain data, and in this list we use “*Microcystis aeruginosa* (Kützing) Lemmermann” temporarily.

HISTORY AND CHARACTERISTICS OF STRAINS

The NIES-Collection was founded as an “environmental study-oriented” culture collection in 1983, when environmental problems such as eutrophication of lakes and rivers, air and water pollution, and human health problems caused by environmental pollution were much more severe than nowadays in Japan. The NIES-Collection started with ca. 250 strains (Watanabe & Kasai 1985), and the number of strains has since increased to more than 2000, as listed herein.

These strains are critically important in environmental studies, both as organisms that cause outbreaks such as red tides and water blooms—and sometimes produce toxins—and as autotrophic, heterotrophic, and mixotrophic components of the food web. In addition, some of the strains could contribute to human health and protection from global warming both directly and indirectly, by producing beneficial substances such as antioxidants and biofuels.

Recently, the NIES-Collection has added many picoplanktonic and heterotrophic strains, the importance of which in the aquatic ecosystem has recently been recognized, although red-tide-forming algae, such as *Chattonella antiqua* and *Heterosigma akashiwo* and water-bloom-forming cyanobacteria such as *Microcystis*

aeruginosa still characterize the NIES-Collection.

In the mid-1990s, the NIES-Collection started *ex situ* conservation of endangered algae in Japan. In the list of endangered Japanese wildlife (the red list) compiled by the Ministry of Environment (2007), 116 taxa (species and varieties) of algae are listed as extinct, extinct in the wild and endangered species in Japan. Most of them are Charales and red algae (mostly freshwater taxa). Local populations of these algae have decreased in Japan owing to anthropogenic stresses such as eutrophication, habitat loss, and the introduction of grass carp (Watanabe *et al.* 2005). At present, the NIES-Collection holds ca. 300 strains of these endangered algae, including Charales and freshwater red algae. The collection of endangered species is partly supported by the Time Capsule Project conducted by the Ministry of Environment of Japan from 2002.

In 2002 the NIES-Collection was selected as the core collection for algae in the National BioResource Project (NBRP) conducted by the Ministry of Education, Culture, Sports, Science and Technology of Japan. In the first phase of the NBRP (FY 2002–2006), more than 200 strains of *Microcystis* and *Anabaena*, collected from representative eutrophic lakes all over Japan were deposited by the National Science Museum, together with phylogenetically diverse strains of microalgae and protozoa deposited by the University of Tsukuba. In addition, more than 300 strains of cyanobacteria and eukaryotic microalgae maintained at the IAM Collection (University of Tokyo) had been transferred to the NIES-Collection up until the end of FY 2006, when the IAM Collection was closed. Finally, both environmentally and evolutionarily important species, as well as experimental materials that have been well-studied in genomic, genetic, molecular, and physiological terms — such as *Cyanidioschyzon merolae* (10D), *Chlamydomonas reinhardtii* (C-9), *Chlorella vulgaris* (Tamiya strain), and *Thermosynechococcus elongatus* (BP-1)—have been gathered into the core NIES-Collection. The second phase of the NBRP will continue until the end of FY 2011; during this phase we aim to accumulate strain data and institute quality control of the strains.

In 2007, the NIES-Collection started to accept the deposition of type specimens of eukaryotic microalgae as frozen materials. We are considering a supporting system to make frozen samples, since the preparation of frozen samples is usually impractical for individual researchers. However, we may not accept requests from researchers, because most of eukaryotic algae are difficult to make frozen samples by using ordinary cryopreservation techniques with high viability after thawing. In addition, we

have limited time to spend on such services. Therefore, we request researchers who are thinking about the deposition of type materials to contact us at least one year before submission of manuscripts.

In July 2008, the NIES-Collection renewed its website and started an online ordering service. We hope that the new system will enhance the availability of the NIES strains.

From the start of the collection, the Committee for Evaluating Microbial Culture Strains has evaluated the NIES strains upon deposition on the basis of conditions described below on p. 233. At present, the committee includes nine researchers at NIES and six supervisors outside NIES. In addition, since 2002 the NIES-Collection has been supervised by the Steering Committee of the NBRP Algae (see section IX).

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Table 1. Numbers of genera, species, and strains available from the NIES-Collection.

Upper Rank (Superkingdom /Kingdom)	Phylum	Class	Numbers of				
			Genera	Species	Strains		
Bacteria	Cyanophyta (Cyanobacteria)	Cyanophyceae	38	91	630		
Plantae	Glaucophyta	Glaucophyceae	2	3	7		
		Rhodophyta	Compsopogonophyceae	2	2	4	
		Cyanidiophyceae	2	2	5		
		Florideophyceae	3	8	254		
		Porphyridiophyceae	1	2	12		
		Rhodellophyceae	1	1	3		
		Stylonematophyceae	1	1	3		
	Chlorophyta	Chlorophyceae	67	190	437		
		Pedinophyceae	2	2	3		
		Prasinophyceae	9	21	55		
		Trebouxiophyceae	21	34	112		
		Ulvophyceae	6	9	12		
		Charophyceae	26	77	212		
	Streptophyta	Mesostigmatophyceae	1	1	5		
		Euglenozoa	Euglenophyceae	4	8	14	
Excavata	Metamonada	Kinetoplastea	1	1	1		
		Trepomonadea	2	2	2		
	Metamonada <i>incertae sedis</i>	3	3	3			
Rhizaria	Percolozoa	Percolomonadea	1	1	1		
	Cercozoa	Chlorarachniophyceae	1	1	2		
Alveolata	Foraminifera	Imbricatea	2	2	3		
		Foraminifera	1	1	1		
	Ciliophora	Oligohymenophorea	1	1	1		
	Dinophyta	Dinophyceae	24	43	97		
Stramenopila	Heterokontophyta	Oxyrrhea	1	1	1		
		Aurearenophyceae	1	1	3		
		Bacillariophyceae	22	29	51		
		Chrysomerophyceae	1	1	1		
		Chrysophyceae	11	14	18		
		Dictyochophyceae	5	5	8		
		Eustigmatophyceae	2	3	4		
		Pelagophyceae	2	2	5		
		Phaeophyceae	1	1	1		
		Pinguiphyceae	1	1	2		
		Raphidophyceae	7	12	50		
		Schizocladiphyceae	1	1	1		
		Xanthophyceae	4	5	6		
		Heterokontophyta <i>incertae sedis</i>	1	1	1		
		Cryptista	Cryptophyta	Stramenopila <i>incertae sedis</i>			
				Bicoecea	2	2	2
				Bigyromonadea	1	1	1
Placididea	2			2	3		
Cryptophyceae	3			20	45		
Goniomonadea	1			3	4		
Haptophyta	Kathablepharida	Kathablepharidea	2	2	3		
		Haptophyta	Pavlovophyceae	1	2	8	
Opisthokonta	Choanozoa	Prymnesiophyceae	15	20	50		
		Choanoflagellata	1	1	1		
TOTAL			310	637	2148		

II. LIST OF STRAINS (保存株リスト)

1. 保存株リストの利用方法

保存株は、学名のアルファベット順に掲載されています。学名が同じ場合は株番号順に掲載されています。各株には株番号が付されていますが、命名法などの改定や再同定の結果、株の学名が変更されることはあっても、この株番号が変更されることはありません。株番号を表示する際には、数字の前に“NIES-”を付けて使用してください（例：NIES-44）。

個々の項目に関する詳細な説明は下記を参照してください。

MICROCYSTIS¹⁾: Cyanophyceae²⁾

Microcystis aeruginosa (Kützing) Lemmermann³⁾

Syn.⁴⁾ *Microcystis aeruginosa* (Kützing) Kützing, *M. ichthyoblabe* Kützing, *M. novacekii* (Komárek) Compère, *M. viridis* (A. Braun) Lemmermann, *M. wesenbergii* (Komárek) Komárek in Kondratieva

44⁵⁾ **History**⁶⁾: <IAM Other collection strain no⁷⁾: IAM M-176 **Locality**⁸⁾: Lake Kasumigaura/ Ibaraki/ Japan(1974-08-**) **Isolator**⁹⁾: Watanabe, Makoto M. **Identified by**¹⁰⁾: Watanabe, Makoto M. **Formerly identified as**¹¹⁾: *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States**¹²⁾: Unialgal; Clonal; Axenic **Culture conditions**¹³⁾: CB; 25°C; 20-30 μmol/m²/s; 20 D **Habitat**¹⁴⁾: Freshwater (lake water) **Characteristics**¹⁵⁾: Cyanobacterial water bloom (aoko) **Gene data**¹⁶⁾: 16S rRNA (AB015361); 16S-23S ITS region (AB015361) **Other strain no.**¹⁷⁾: TAC 44 **References**¹⁸⁾: 1, 2 **Remarks**¹⁹⁾: Cryopreserved

- 1) 属名
- 2) 網名：網名が不明の場合は、門名とともに“*incertae sedis* (所属不明)”と表示した（例：Metamonada *incertae sedis*）。
- 3) 学名および著者名：属あるいは種における多系統性が指摘されているにもかかわらず、新属の設立等の分類学的措置が行われていない場合（例えばクロレラ属等）、本リスト中では属名または種名を引用符で囲んで示した（例：‘*Chlorella saccharophila*’や‘*Chlorella ellipsoidea*’）。シアノバクテリアのアナベナ属で、種名の後に*を付してある株は、アキネートの位置や形態の観察なしに同定された種名であることを示している。
- 4) シノニム
- 5) 株番号：NIES-44のように、NIES コレクションのアクロニムである NIES を必ずハイフンでつないで表示すること。
- 6) 株の履歴：NIES コレクションに寄託されるまでの経路。寄託年がわかる場合はカッコ内に示した。
- 7) 他の機関における株番号：株番号の前のアクロニムは以下の機関を示している。

ATCC : 米国タイプカルチャーコレクション
 CAUP : プラハ カレル大学藻類コレクション
 CCAP : 英国藻類原生動物カルチャーコレクション
 CCMP : 米国プロバゾーリ・ギラード国立海産プランクトン保存センター
 CGC (CC) : 米国クラミセンター
 IAM : 東京大学分子細胞生物学研究所 IAM コレクション
 (2007年3月に閉鎖され、ほとんどの藻類株は NIES コレクションに移管された)
 IFO : 財団法人発酵研究所
 IPPAS : ロシア科学アカデミー植物生理学研究所微細藻類カルチャーコレクション
 JCM : 理化学研究所バイオリソースセンター
 KAGAWA : 香川県赤潮研究所
 NIVA : ノルウェー水質研究所
 PCC : フランスパスツール研究所シアノバクテリアカルチャーコレクション

SAG	: ドイツゲッチンゲン大学藻類カルチャーコレクション
TAC	: 国立科学博物館植物研究部 (ほとんどの藻類株は NIES コレクションに移管された)
TISTR	: タイ国立科学技術研究所
TKB	: 筑波大学大学院生命環境科学研究科
UTEX	: 米国テキサス大学藻類カルチャーコレクション (前 BIU, インディアナ大学藻類カルチャーコレクション)

- 8) 採集地: 詳細な記録がある場合は, 採集地名 / 県名 / 国名の順に表示してある。カッコ内は採集年月日。
- 9) 分離者: 姓・名の順に示した。
- 10) 同定者: 姓・名の順に示した。再同定された場合は, 再同定者を示した。NIES コレクションにおける DNA 塩基配列解析によって再同定された場合は, “Re-identified at NIES by DNA sequencing” と表示し, 再同定によって種名が適切であると判断された場合は, “Confirmed at NIES by DNA sequencing” と表示した。
- 11) 前名: 再同定前に使用されていた学名で, DNA 解析や詳細な形態観察から誤同定であったことが確認された学名である場合が多い。*Microcystis aeruginosa* の場合は, 以前使用されていた 5 つの形態種名を示した。
- 12) 株の状態: 単藻, クローン, 無菌など, 培養株の状態を示した。
- 13) 培養条件: 培地 [寒天培地の場合は (agar), 軟寒天培地の場合は (semi-solid) と示し, 液体培地は無表示], 培養温度, 光量子密度, 植え継ぎ期間 (D は日, M は月を示す) を示した。前培養が必要な場合は, その条件 (培養温度と光量子密度) をカッコ内に示した。明暗周期は 12 時間毎である。
- 14) 生息場: 生息場が寄託者によって示されている場合は, 生息場およびカッコ内に分離源を示した。主要な生息場として, “Freshwater (淡水)”, “Brackish (汽水)”, “Marine (海)”, “Salt water (塩水)”, “Hot spring (温泉)”, “Terrestrial (土壌・地衣・樹皮など)” を用いた。
- 15) 特性: 環境, 生理, 分類, その他の特性を示した。新種記載の基礎となった株の場合で真核藻類と原生動物の場合は “Authentic strain”, シアノバクテリアの場合は “Type strain” と表示した。*Microcystis aeruginosa* 株については, 種内の遺伝的多様性を示すためにシークエンスタイプ(ST)を示した。絶滅危惧種については, 2007 年に改訂された環境省版レッドリスト(Ref. 474) に示されている, CR+EN (絶滅危惧 I 類), VU (絶滅危惧 II 類), NT (準絶滅危惧種) のカテゴリーを示した。
- 16) 遺伝子データ: 遺伝子名と遺伝子バンクにおけるアクセッション番号をカッコ内に示した。
- 17) 他の株番号: 分離者によって使用された株番号を示した。
- 18) 文献: 株が利用された文献の番号を示した。文献番号は, VIII 章 (p. 277 ~ 323) の文献番号に対応する。
- 19) 注意事項: 株を注文する際の注意点で, 以下の内容を示す。
 - Cryopreserved (凍結保存株): 融解後に培養してから送付するため, 送付までに時間がかかる場合がある。
 - Difficult to transport (輸送困難): 輸送中に死滅する可能性があり, 直接引き取りに来ていただいたり, 複数回の輸送が必要な場合がある。
 - Toxic (有毒): 毒素を産生するなどの報告があり, 株の取り扱いに注意を要する。
 - Unstable (不安定): 増殖が悪く分譲できない場合や, NIES コレクションで長期間維持できない可能性がある。

II. LIST OF STRAINS

1. How to use the list of strains

The strains are listed in alphabetical order of the scientific name. Strains with an identical scientific name are arranged according to their strain numbers. The strain number assigned to a given strain remains the same, regardless of any change in nomenclature or re-identification. We request that users hyphenated the strain number with the acronym “NIES”, e.g. “NIES-44”. A detailed example of a strain description is as follows:

MICROCYSTIS¹⁾ : Cyanophyceae²⁾

Microcystis aeruginosa (Kützing) Lemmermann³⁾

Syn.⁴⁾ *Microcystis aeruginosa* (Kützing) Kützing, *M. ichthyoblabe* Kützing, *M. novacekii* (Komárek) Compère, *M. viridis* (A. Braun) Lemmermann, *M. wesenbergii* (Komárek) Komárek in Kondratieva

44⁵⁾ History⁶⁾: <IAM Other collection strain no⁷⁾: IAM M-176 **Locality⁸⁾**: Lake Kasumigaura/Ibaraki/ Japan(1974-08-**) **Isolator⁹⁾**: Watanabe, Makoto M. **Identified by¹⁰⁾**: Watanabe, Makoto M. **Formerly identified as¹¹⁾**: *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States¹²⁾**: Unialgal; Clonal; Axenic **Culture conditions¹³⁾**: CB; 25°C; 20-30 µmol/m²/s; 20 D **Habitat¹⁴⁾**: Freshwater (lake water) **Characteristics¹⁵⁾**: Cyanobacterial water bloom (aoko) **Gene data¹⁶⁾**: 16S rRNA (AB015361); 16S-23S ITS region (AB015361) **Other strain no.**¹⁷⁾: TAC 44 **References¹⁸⁾**: 1, 2 **Remarks¹⁹⁾**: Cryopreserved

- 1) Genus name.
- 2) Class name: If the class name is uncertain, we use “*incertae sedis*” with the phylum name, e.g. *Metamonada incertae sedis*.
- 3) Scientific name with authority: We put the genus or species name in single quotation marks (such as ‘*Chlorella saccharophila*’ or ‘*Chlorella ellipsoidea*’), if the polyphyly of genera or species is clear from DNA sequencing. In the cyanobacterial genus *Anabaena*, scientific names followed by * indicate those identified without observation on akinete position and morphology.
- 4) Synonym(s).
- 5) Strain number: Please add a hyphen and the acronym NIES before the number, e.g. “NIES-44”.
- 6) History: How and by whom the strain was deposited in the NIES-Collection through other culture collections, researchers or an isolator. Deposit year is shown in parentheses if available.
- 7) Other collection strain no.: Strain designation in other culture collections or institutions. Acronyms placed before strain numbers refer to the following culture collections and institutions:

ATCC	: American Type Culture Collection, U.S.A.
CAUP	: Culture Collection of Algae of Charles University of Prague, Czech
CCAP	: Culture Collection of Algae and Protozoa, U.K.
CCMP	: The Provasoli-Guillard National Center for Culture of Marine Phytoplankton, U.S.A.
CGC (CC)	: Chlamydomonas Genetic Centre, U.S.A. (Chlamy Center, at present), U.S.A.
IAM	: Institute of Molecular and Cellular Biosciences, University of Tokyo, Japan (Almost all algal strains were moved to the NIES-Collection until the end of March 2007, when the IAM Collection was closed).
IFO	: Institute for Fermentation, Osaka, Japan
IPPAS	: Culture Collection of Microalgae, Institute of Plant Physiology, Russian Academy of Sciences, Russia

JCM : Japan Collection of Microorganisms, RIKEN, Japan
 KAGAWA : Akashiwo Research Institute of Kagawa Prefecture, Japan
 NIVA : Norwegian Institute for Water Research, Norway
 PCC : Pasteur Culture Collection of Cyanobacteria, Institut Pasteur, France
 SAG : Culture Collection of Algae at the University of Göttingen, Germany
 TAC : Tsukuba Botanical Garden, National Science Museum, Japan
 (almost all algal strains were deposited to the NIES-Collection)
 TISTR : Thailand Institute of Scientific and Technological Research, Thailand
 TKB : Graduate School of Life and Environmental Science, University of Tsukuba, Japan
 UTEX : The Culture Collection of Algae at the University of Texas at Austin, U.S.A. (Formerly BIU,
 The Culture Collection of Algae at the Indiana University, Bloomington)

- 8) Locality: The place where the strain was collected, in order of place/prefecture/country, if full data are available, with collection date in parentheses if available.
- 9) Isolator's name in order of family name, then first name.
- 10) Identified by: The person who gave the scientific name shown herein in order of family name, then first name. If the strain was re-identified, the re-identifying person(s) is also shown. If re-identification was conducted at the NIES-Collection by DNA sequencing, this is shown as "Re-identified at NIES by DNA sequencing". If scientific names were found to be proper by DNA sequencing, this is shown as "Confirmed at NIES by DNA sequencing".
- 11) Formerly identified as: The scientific name that was formerly used and mostly found to be misidentified after re-identification by DNA sequencing and/or detailed morphological studies. In the case of the cyanobacterium *Microcystis aeruginosa*, formerly used morphospecies names are indicated, if available.
- 12) States: The state of culture strains, indicating whether or not they are unialgal, clonal, and axenic.
- 13) Culture conditions: In order of medium [with (agar) or (semi-solid) if medium is a agar slant or a soft agar medium; unless otherwise noted the phase of medium is liquid], culture temperature, illumination as photon flux density, interval for subculture maintenance (Days or Months), with pre-culture conditions for active growth (culture temperature and photon flux density) in parentheses, if necessary. The light-dark photo-regime is 12 h light and 12 h dark.
- 14) Habitat: The habitats specified by the depositors, with the source of isolation in parentheses. We often use "Freshwater" "Brackish" "Marine" "Salt water" "Hot spring" or "Terrestrial" to indicate the habitat of the strain.
- 15) Characteristics: Environmental, physiological, taxonomic, and miscellaneous characteristics of the strains. We use "Authentic strain" for strains used as a basis for the description of new species of eukaryotic algae and protozoa, and "Type strain" for cyanobacterial type strains. For the cyanobacterium *Microcystis aeruginosa*, we also show the sequence type (ST) to clarify the genetic diversity within a same single species. For endangered species, we show the categories revised by the Ministry of Environment in 2007 (Ref. 474); i.e. CR+EN (critically endangered and endangered), VU (vulnerable), and NT (near threatened).
- 16) Gene data: Gene names, with accession numbers in parentheses.
- 17) Other strain no.: Strain designation given by isolators.
- 18) Reference number(s): Publications in which the strain was used. The number corresponds to publications listed below in section VIII. (pp. 277-323).
- 19) Remarks: Notes relevant to ordering, such as "Cryopreserved", "Difficult to transport", "Toxic", or "Unstable". We deliver "Cryopreserved" strains after thawing and recovery of normal culture state, so that a longer time is required when ordering "Cryopreserved" strains, though their viability is ensured. We may need several trials to deliver successfully "Difficult to transport" strains, or we may not be able to deliver them. For "Toxic" strains, caution in handling is required. "Unstable" strains are sometimes not available if their growth is poor at that time, and are usually difficult to maintain permanently at the NIES-Collection.

2. List of strains (保存株リスト)

ACARYOCHLORIS : Cyanophyceae

Acaryochloris marina Miyashita et Chihara

- 2412** **History:** < Miyashita, Hideaki **Locality:** Hokkaido University Marine Station/Hokkaido/Japan (2004-06-20) **Isolator:** Miyashita, Hideaki **Identified by:** Miyashita, Hideaki (2004-08-**) **States:** Unialgal **Culture conditions:** IMK; 20°C; 10 µmol/m²/s; 1 M **Habitat:** Marine (Seaweed) **Characteristics:** Contains chlorophyll *d* **Other strain no.:** Murooran strain

ACHNANTHES : Bacillariophyceae

Achnanthes kuwaitensis Hendey

- 1349** **History:** < Mayama, Shigeki **Locality:** Morito Beach/Kanagawa/Japan (2003-04-19) **Isolator:** Shono, Naoko **Identified by:** Mayama, Shigeki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Marine (A polyethylene bag on a beach)

Achnanthes subconstricta (Meister) Toyoda

- 330** **History:** < Sawaguchi, Tomohiro **Locality:** Imaiama/Shizuoka/Japan (1985-05-22) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Nagumo, Tamotsu **Formerly identified as:** *Achnanthes longipes* Agardh **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** IMHB-5 **References:** 122, 302

ACHNANTHIDIUM : Bacillariophyceae

Achnanthidium minutissimum (Kützing) Czarnecki

Syn. *Achnanthes minutissima* Kützing

- 71** **History:** < Yuri, Akira **Locality:** Kosaka River/Akita/Japan (1983-04-19) **Isolator:** Yuri, Akira **Identified by:** Mizuno, Makoto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSI; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (River water) **Other strain no.:** A15-6 **References:** 122, 564, 758, 916, 917
- 407** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-05-22) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 4st-0-8 **Reference:** 917
- 408** **History:** < Kasai, Fumie **Locality:** Watarase River System/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Idei, Masahiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** AT5-23 **Reference:** 917
- 409** **History:** < Kasai, Fumie **Locality:** Watarase River System/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Idei, Masahiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** Ast-3-3 **Reference:** 917
- 410** **History:** < Kasai, Fumie **Locality:** Watarase River System/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** AT4-18 **Reference:** 917
- 411** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-02-25) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 1st-3-17 **References:** 916, 917
- 412** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-02-25) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 1st-1-1 **References:** 916, 917
- 413** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-02-25) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 1st-2-8 **References:** 916, 917
- 414** **History:** < Kasai, Fumie **Locality:** Ooe River (Ozegahara)/Fukushima/Japan (1987-10-16) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 0-25 **Reference:** 917

- 1350** **History:** < Mayama, Shigeki **Locality:** Tama River/Tokyo/Japan (2002-11-26) **Isolator:** Shono, Naoko **Identified by:** Mayama, Shigeki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi/5; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (River stone) **Characteristics:** Benthic; Epilithic

Achnantheidium minutissimum (Kützing) Czarnecki var. *saprophilum* Kobayasi et Mayama
Syn. *Achnanthes minutissima* Kützing var. *saprophila* Kobayasi et Mayama

- 372** **History:** < Sawaguchi, Tomohiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1985-12-19) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CSi; M Chu No.10; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Plant) **Other strain no.:** KAAC-6

ACINETOSPORA : Phaeophyceae

Acinetospora crinita (Carmichael) Sauvageau

- 548** **History:** < Kuroiwa, Tsuneyoshi **Locality:** Tuscan/Italy (1991-**-**) **Isolator:** Hagiwara, Tomiji **Identified by:** Sartoni, G. **Formerly identified as:** *Tribonema marinum* J. Feldmann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 4-10 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Marine **Gene data:** 18S rRNA (AF038005); *coxI* (AF037996); *tufA* (AF038004) **References:** 64, 122, 224, 801

ACTINASTRUM : Trebouxiophyceae

Actinastrum hantzschii Lagerheim

- 415** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-07-22) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Gene data:** *coxI* (D63660) **Other strain no.:** F7-4 **References:** 171, 515, 1047 **Remarks:** Cryopreserved

ADENOIDES : Dinophyceae

Adenoides eludens (Herdman) Balech

- 1367** **History:** < Murray, Shauna **Locality:** Suzu/Ishikawa/Japan (2004-05-25) **Isolator:** Murray, Shauna **Identified by:** Murray, Shauna **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Benthic **Remarks:** Difficult to transport
- 1402** **History:** < TKB **Locality:** Wakayama/Japan (2003-04-19) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-063 (AK-05) **Remarks:** Difficult to transport

AKASHIWO : Dinophyceae

Akashiwo sanguinea (Hirasaka) Hansen et Moestrup

Syn. *Gymnodinium sanguineum* Hirasaka

- 1832** **History:** < TKB **Locality:** Mie/Japan (2005-04-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** TKB-263 **Remarks:** Difficult to transport
- 1987** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-08-01) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW10 **Remarks:** Difficult to transport

ALEXANDRIUM : Dinophyceae*Alexandrium catenella* (Whedon et Kofoid) BalechSyn. *Protogonyaulax catenella* (Whedon et Kofoid) Taylor

- 674 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Harima-nada/Japan (1980-06-17) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** MNK; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Mating type (+) **Other strain no.:** Ac 1 **Remarks:** Difficult to transport
- 675 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Harima-nada/Japan (1980-06-17) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Mating type (-) **Other strain no.:** Ac 5 **Remarks:** Difficult to transport
- 677 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Yamakawa Bay/Kagoshima/Japan (1988-03-28) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** Acy-6 **Remarks:** Difficult to transport

Alexandrium hiranoi Kita et Fukuyo

- 612 **History:** < Kita, Takumi **Locality:** Kawasaki/Kanagawa/Japan (1984-08-**) **Isolator:** Kita, Takumi **Identified by:** Kita, Takumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Toxic **References:** 360, 368, 369, 528 **Remarks:** Toxic; Difficult to transport

Alexandrium insuetum Balech

- 678 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Shodo Isl., Uchiumi Bay/Kagawa/Japan (1985-06-06) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport

Alexandrium sp.

- 1988 **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-08-01) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW6 **Remarks:** Difficult to transport
- 1989 **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-08-01) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW7 **Remarks:** Difficult to transport
- 1990 **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 15°C; 10-15 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Other strain no.:** MHW1 **Remarks:** Difficult to transport
- 1991 **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 15°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW2 **Remarks:** Difficult to transport
- 1993 **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 15°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW4 **Remarks:** Difficult to transport
- 1994 **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 15°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW5 **Remarks:** Difficult to transport
- 2328 **History:** < Sawaguchi, Tomohiro **Locality:** Noumea/New Caledonia (1987-03-06) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** NCD-4 **Remarks:** Difficult to transport

AMPHIDINIUM : Dinophyceae*Amphidinium carterae* Hulburt

- 331 **History:** < Sawaguchi, Tomohiro **Locality:** Iriomote Isl./Okinawa/Japan (1986-01-23) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** *psbA* (AB025586) **Other strain no.:** IIDA **References:** 128, 934 **Remarks:** Unstable; Difficult to transport

Amphidinium klebsii Coll

- 613 **History:** < Murata, Michio **Locality:** Aburatsubo Bay/Kanagawa/Japan (1993-04-21) **Isolator:** Murata, Michio **Identified by:** Fukuyo, Yasuo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** *GapC1* (AB106698); *GapC2* (AB106699) **Other strain no.:** AK-1 **References:** 203, 204, 205, 523, 524, 931 **Remarks:** Difficult to transport

Amphidinium operculatum Claparede et Lachmann

- 1368 **History:** < Murray, Shauna **Locality:** Suzu/Ishikawa/Japan (2004-05-25) **Isolator:** Murray, Shauna **Identified by:** Murray, Shauna **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Benthic **Remarks:** Difficult to transport

Amphidinium testudo Kofoid et Swezy

- 1268 **History:** < Moriya, Mayumi **Locality:** Saipan/U.S.A. (2002-04-**) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** M-44 **Remarks:** Difficult to transport

ANABAENA : Cyanophyceae*Anabaena affinis* Lemmermann

- 40 **History:** < IAM (1983) **Other collection strain no.:** IAM M-168 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **References:** 215, 435, 515, 605, 1047, 1107 **Remarks:** Unstable
- 1639 **History:** < TAC **Locality:** Lake Shirarutoro/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 439 **Reference:** 609
- 1640 **History:** < TAC **Locality:** Lake Shirarutoro/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 440 **Reference:** 609
- 1641 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 442 **Reference:** 609
- 1642 **History:** < TAC **Locality:** Lake Tsukui/Kanagawa/Japan **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 454

Anabaena akankoensis M. Watanabe

- 1875 **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (2002-09-10) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 13-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 505
- 1876 **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (2002-09-10) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 13-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 506
- 1906 **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (2002-09-10) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 13-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 571

1907 **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (2002-09-10) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 13-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 572

Anabaena aphanizomenoides Forti

1643 **History:** < TAC **Locality:** Tsukuba-shi, Chuo-koen/Ibaraki/Japan (1999-10-05) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 456

1644 **History:** < TAC **Locality:** Tsukuba-shi, Chuo-koen/Ibaraki/Japan (1999-10-12) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 457

Anabaena circinalis Rabenhorst ex Bornet et Flahault

41 **History:** < IAM (1983) **Other collection strain no.:** IAM M-169 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AB042859) **References:** 175, 202, 215, 515, 604, 605, 719, 859, 899, 900, 1047 **Remarks:** Unstable

1645 **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (2001-09-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 482 **Reference:** 1069

1646 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 496

1647 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 497 **Reference:** 1069

1648 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 498

1649 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 499

1650 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 501 **Reference:** 1069

1877 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 502

1878 **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 503

1879 **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (2002-09-23) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 508

1908 **History:** < TAC **Locality:** Hachirogata/Akita/Japan (2002-09-19) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 552

1909 **History:** < TAC **Locality:** Hachirogata/Akita/Japan (2002-09-19) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 553

1929 **History:** < TAC **Locality:** Rebun Isl., Lake Kushu/Hokkaido/Japan (2006-07-21) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko (2007-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 585

1930 **History:** < TAC **Locality:** Rebun Isl., Lake Kushu/Hokkaido/Japan (2006-07-21) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko (2007-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 586

*Anabaena circinalis** Rabenhorst ex Bornet et Flahault

1880 **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (2002-09-23) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 507

Anabaena compacta (Nygaard) Hickel

806 **History:** < Li, Renhui < CCAP **Other collection strain no.:** CCAP 1403/24 **Locality:** Rostherne Mere/Cheshire/U.K. **Isolator:** Jaworski, G. H. M. **Identified by:** Li, Renhui **Formerly identified as:** *Anabaena spiroides* Klebahn **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko)

835 **History:** < Li, Renhui < CCAP **Other collection strain no.:** CCAP 1403/29 **Locality:** Esthwaite Water/England, Cambria/U.K. **Isolator:** Butterwick **Identified by:** Li, Renhui **Formerly identified as:** *Anabaena spiroides* Klebahn **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Reference:** 186

Anabaena crassa (Lemmermann) Komárková-Legnerová et Cronberg

77 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Anabaena spiroides* Klebahn f. *spiroides* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 31 (K-TAN-31) **References:** 333, 515, 1047 **Remarks:** Unstable

78 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-07-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 30 (K-TAN-30) **References:** 202, 435, 515, 604, 605 **Remarks:** Unstable

1652 **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 436 **References:** 434, 609, 1029

1653 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-07-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 443 **References:** 434, 609

1654 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-07-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 444

1655 **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (1996-08-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 468 **Reference:** 609

1656 **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 473 **Reference:** 1069

1657 **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 474

- 1658 **History:** < TAC **Locality:** Lake Biwa, Akanoi/Shiga/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 485
- 1659 **History:** < TAC **Locality:** Lake Biwa, Akanoi/Shiga/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 486 **Reference:** 1069
- 1660 **History:** < TAC **Locality:** Lake Biwa, Hamaotsu/Shiga/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 487
- 1661 **History:** < TAC **Locality:** Lake Biwa, Hikone/Shiga/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 488
- 1662 **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 490 **Reference:** 1069
- 1663 **History:** < TAC **Locality:** Niigata/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 492 **Reference:** 1069
- 1664 **History:** < TAC **Locality:** Niigata/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 493
- 1665 **History:** < TAC **Locality:** Niigata/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 494
- 1666 **History:** < TAC **Locality:** Niigata/Japan (2001-10-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 495
- 1881 **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (2002-10-14) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 512
- 1882 **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 518
- 1883 **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 519
- 1884 **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 520
- 1885 **History:** < TAC **Locality:** Mannou/Kagawa/Japan (2002-10-02) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 522
- 1886 **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 524
- 1887 **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 525

- 1888** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 526
- 1889** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 527
- 1890** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 528
- 1891** **History:** < TAC **Locality:** Lake Biwa, Hamaotsu/Shiga/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 529
- 1892** **History:** < TAC **Locality:** Lake Biwa, Hamaotsu/Shiga/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 532
- 1910** **History:** < TAC **Locality:** Minakami-ike Pond/Nara/Japan (2003-05-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 562
- 1911** **History:** < TAC **Locality:** Minakami-ike Pond/Nara/Japan (2003-05-22) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 563
- 1912** **History:** < TAC **Locality:** Plöner See/Schleswich-Holstein/Germany **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 567
- 1913** **History:** < TAC **Locality:** Plöner See/Schleswich-Holstein/Germany **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 573
- 1914** **History:** < TAC **Locality:** Plöner See/Schleswich-Holstein/Germany **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 574
- 1915** **History:** < TAC **Locality:** Plöner See/Schleswich-Holstein/Germany **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 575
- 1916** **History:** < TAC **Locality:** Plöner See/Schleswich-Holstein/Germany **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 576
- 1917** **History:** < TAC **Locality:** Plöner See/Schleswich-Holstein/Germany **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 577
- 1918** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (2002-06-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 587
- 1919** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (2002-06-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 588

*Anabaena crassa** (Lemmermann) Komárková-Legnerová et Cronberg

- 1893** **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (2002-10-14) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 513
- 1894** **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (2002-09-23) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 514
- 1895** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 515
- 1896** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 516
- 1897** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 517
- 1898** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 521
- 1899** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (2002-10-13) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 523
- 1900** **History:** < TAC **Locality:** Lake Biwa, Hamaotsu/Shiga/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 530
- 1901** **History:** < TAC **Locality:** Lake Biwa, Hamaotsu/Shiga/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 531
- 1902** **History:** < TAC **Locality:** Lake Biwa, Hamaotsu/Shiga/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 533

Anabaena cylindrica Lemmermann

- 19** **History:** < IAM (1983) **Other collection strain no.:** IAM M-1 (= M-253) **States:** Unialgal; Non-clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Nitrogen fixation **Gene data:** 16S rRNA (AF247592); *gylB* (AB074770); *rpoC1* (AB074793); *rpoD1* (AB074820) **References:** 18, 19, 38, 89, 90, 93, 94, 95, 96, 97, 98, 99, 100, 101, 117, 126, 169, 187, 188, 215, 265, 386, 387, 427, 485, 515, 536, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 706, 707, 708, 709, 710, 711, 712, 764, 765, 766, 784, 848, 904, 906, 980, 1013, 1021, 1047, 1075, 1102, 1103, 1104, 1105, 1106, 1107

Anabaena danica (Nygaard) Komárková et Eloranta

- 1667** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 453 **Reference:** 434

Anabaena flos-aquae Brébisson ex Bornet et Flahault

Syn. *Anabaena flos-aquae* Brébisson ex Bornet et Flahault f. *flos-aquae*

- 73** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AB042858) **Other strain no.:** TAC 32 (K-TAN-32) **References:** 202, 333, 515, 605, 719, 760, 761, 762, 877, 1047, 1139 **Remarks:** Unstable

- 75 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-12-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 43 (K-TAN-43) **References:** 515, 560, 1047 **Remarks:** Unstable
- 1668 **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1984-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 99
- 1669 **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1984-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** TAC 100 **Remarks:** Toxic
- 1670 **History:** < TAC **Locality:** Hirosaki Castle/Aomori/Japan (1990-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Other strain no.:** TAC 430 **Reference:** 609
- 1671 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 445 **Reference:** 609
- 1672 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 446 **References:** 434, 609
- 1903 **History:** < TAC **Locality:** Hirosaki Castle/Aomori/Japan (1990-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Other strain no.:** TAC 429

*Anabaena heterospora** Nygaard

- 1697 **History:** < TAC **Locality:** Watarase-yuusuichi/Tochigi/Japan (1991-06-16) **Isolator:** Iikura **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Water*) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 447

Anabaena kisseleviana Elenkin

- 74 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Anabaena flos-aquae* Brébisson ex Bornet et Flahault f. *flos-aquae* **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 33 (K-TAN-33) **References:** 45, 297, 515, 533, 534, 535, 760, 761, 762, 1047 **Remarks:** Unstable
- 807 **History:** < Li, Renhui < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 34

Anabaena lemmermannii Richter

- 808 **History:** < Li, Renhui < TAC **Locality:** Lake Akan/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Li, Renhui; Watanabe, Masayuki (Reidentify) **Formerly identified as:** *Anabaena mendotae* Trelease **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 437 (A28)
- 833 **History:** < Li, Renhui < NIVA **Other collection strain no.:** NIVA CYA 82 **Locality:** Buskerud, Lake Steinsfjorden/Norway **Identified by:** Li, Renhui **Formerly identified as:** *Anabaena circinalis* Rabenhorst ex Bornet et Flahault **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Remarks:** Unstable
- 1673 **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 438 **References:** 434, 609

- 1674** **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 475
- 1675** **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 476
- 1676** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (2001-09-26) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 483
- 1920** **History:** < TAC **Locality:** Rebun Isl., Lake Kushu/Hokkaido/Japan (2006-07-21) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 583
- 1921** **History:** < TAC **Locality:** Rebun Isl., Lake Kushu/Hokkaido/Japan (2006-07-21) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 584

Anabaena minispora M. Watanabe

- 1922** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 554
- 1923** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 555
- 1924** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 556

Anabaena mucosa Komárkova-Legnerová et Eloranta

- 809** **History:** < Li, Renhui < TAC **Locality:** Lake Toro/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 426 (A10) **Remarks:** Unstable
- 1677** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 425 **References:** 434, 609, 1069

*Anabaena mucosa** Komárkova-Legnerová et Eloranta

- 1925** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (2002-10-01) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 534
- 1926** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (2002-10-01) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 535
- 1927** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (2002-10-01) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 536
- 1928** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (2002-10-01) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 537

Anabaena oumiana M. Watanabe

- 829** **History:** < Li, Renhui **Other collection strain no.:** TISTR 9193 **Locality:** Chon Buri/Thailand (1998-05-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Ana T1 **Remarks:** Distribution for academic purpose only
- 1678** **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (1996-08-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 464
- 1679** **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (1996-08-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 466 **Reference:** 1069
- 1904** **History:** < TAC **Locality:** Funada-ike Pond/Chiba/Japan (2002-08-28) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 509
- 1931** **History:** < TAC **Locality:** near Koyama-ike Pond/Tottori/Japan **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 568
- 1932** **History:** < TAC **Locality:** near Koyama-ike Pond/Tottori/Japan **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 569
- 1933** **History:** < TAC **Locality:** near Koyama-ike Pond/Tottori/Japan **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 570

Anabaena planctonica Brunnthaler

Syn. *Anabaena solitaria* Klebahn f. *planctonica* (Brunnthaler) Komárek

- 80** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-12-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Anabaena solitaria* Klebahn f. *solitaria* **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 70-90 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 42 (K-TAN-42) **References:** 202, 435, 515, 605, 1047 **Remarks:** Unstable
- 810** **History:** < Li, Renhui < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 421 (A3) **References:** 186, 435
- 811** **History:** < Li, Renhui < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 422 (A4)
- 812** **History:** < Li, Renhui < TAC **Locality:** Lake Toro/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 424 (A7)
- 813** **History:** < Li, Renhui < TAC **Locality:** Lake Tofutsu/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 434 (A25)
- 814** **History:** < Li, Renhui < TAC **Locality:** Lake Tofutsu/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 435 (A26)
- 815** **History:** < Li, Renhui < CCAP **Other collection strain no.:** CCAP 1403/19 **Locality:** Esthwaite Water/England, Cambria/U.K. **Isolator:** Jaworski, G. H. M. **Identified by:** Li, Renhui **Formerly identified as:** *Anabaena solitaria* Klebahn **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko)

- 816 **History:** < Li, Renhui < CCAP **Other collection strain no.:** CCAP 1403/27 **Locality:** Bletham Tarn/England, Cambria/U.K. **Isolator:** Jaworski, G. H. M. **Identified by:** Li, Renhui **Formerly identified as:** *Anabaena solitaria* Klebahn **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 12-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko)
- 817 **History:** < Li, Renhui **Locality:** Lake Inbanuma/Chiba/Japan (1995-05-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Offensive taste and odor **Other strain no.:** Inba 2
- 834 **History:** < Li, Renhui < NIVA **Other collection strain no.:** NIVA CYA 66 **Locality:** Aust-Agder, Lake Langsævatn/Norway (1979-**-**) **Identified by:** Li, Renhui **Formerly identified as:** *Anabaena solitaria* Klebahn f. *planktonica* (Brunnthaler) Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko)
- 1680 **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 423 **Reference:** 609
- 1681 **History:** < TAC **Locality:** Lake Inbanuma/Chiba/Japan (1996-08-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 465
- 1682 **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 471
- 1683 **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 472
- 1723 **History:** < Li, Renhui **Locality:** Lake Yamanaka/Yamanashi/Japan (1998-07-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui (1998-07-**) **States:** Unialgal **Culture conditions:** CT; 20°C; 12-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Offensive odor; Resting spore forming **Other strain no.:** yama-2
- 1934 **History:** < TAC **Locality:** Lake Shinotsu/Hokkaido/Japan (2003-07-29) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 561

Anabaena pseudocompacta M. Watanabe

- 79 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-07-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Anabaena spiroides* Klebahn f. *spiroides* **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 70-90 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 28 (K-TAN-28) **References:** 202, 435, 515 **Remarks:** Unstable
- 1684 **History:** < TAC **Locality:** Nigo-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 477 **Reference:** 1069
- 1935 **History:** < TAC **Locality:** Hachirogata/Akita/Japan (2002-07-30) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Ditch water) **Other strain no.:** TAC 539
- 1936 **History:** < TAC **Locality:** Hachirogata/Akita/Japan (2002-07-30) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Ditch water) **Other strain no.:** TAC 541
- 1937 **History:** < TAC **Locality:** Lake Shirarutoro/Hokkaido/Japan (2004-08-01) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 589
- 1938 **History:** < TAC **Locality:** Lake Shirarutoro/Hokkaido/Japan (2004-08-01) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 590

*Anabaena pseudocompacta** M. Watanabe

- 1939** **History:** < TAC **Locality:** Hachirogata/Akita/Japan (2002-07-30) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Ditch water)
Characteristics: *Akinete not observed **Other strain no.:** TAC 538
- 1940** **History:** < TAC **Locality:** Hachirogata/Akita/Japan (2002-07-30) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Ditch water)
Characteristics: *Akinete not observed **Other strain no.:** TAC 540

Anabaena reniformis Lemmermann emend. Aptekarji

- 1685** **History:** < TAC **Locality:** Tsukuba-shi, Chuo-koen/Ibaraki/Japan (1999-10-05) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water)
Other strain no.: TAC 458
- 1686** **History:** < TAC **Locality:** Tsukuba-shi, Chuo-koen/Ibaraki/Japan (1999-09-30) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water)
Other strain no.: TAC 459
- 1687** **History:** < TAC **Locality:** Shikata-futago-ike Pond/Hyogo/Japan (1990-09-17) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 460
- 1688** **History:** < TAC **Locality:** Koya-ike Pond/Hyogo/Japan (1996-07-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 461
- 1689** **History:** < TAC **Locality:** Koya-ike Pond/Hyogo/Japan (1996-07-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 462
- 1690** **History:** < TAC **Locality:** Shin-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 478 **Reference:** 1069
- 1691** **History:** < TAC **Locality:** Shin-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 479
- 1692** **History:** < TAC **Locality:** Shin-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 480
- 1693** **History:** < TAC **Locality:** Tatsugaya-ike Pond/Hyogo/Japan (2001-07-25) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko
States: Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 481 **Reference:** 1069
- 1694** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (2001-09-26) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic
Culture conditions: CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 484
- 1941** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic
Culture conditions: CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 542
- 1942** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic
Culture conditions: CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 543
- 1943** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic
Culture conditions: CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 544

- 1944** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 545
- 1945** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 546
- 1946** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 547
- 1947** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 548
- 1948** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 549
- 1949** **History:** < TAC **Locality:** Fujiidera/Osaka/Japan (2002-10-04) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 550

Anabaena smithii (Komárek) M. Watanabe

- 818** **History:** < Li, Renhui < TAC **Locality:** Lake Barato/Hokkaido/Japan (1989-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 116
- 819** **History:** < Li, Renhui < TAC **Locality:** Lake Barato/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 428 (A14) **Reference:** 186
- 820** **History:** < Li, Renhui < TAC **Locality:** Hirosaki/Aomori/Japan (1990-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 431 (A18)
- 821** **History:** < Li, Renhui < TAC **Locality:** Hirosaki/Aomori/Japan (1990-06-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 432 (A19) **Reference:** 435
- 822** **History:** < Li, Renhui < TAC **Locality:** Lake Akan/Hokkaido/Japan (1991-07-**) **Isolator:** Niiyama, Yuko **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 450 (A51)
- 823** **History:** < Li, Renhui < TAC **Locality:** Lake Okutama/Tokyo/Japan (1991-07-**) **Isolator:** Watanabe, Masayuki **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Offensive taste and odor **Other strain no.:** TAC 452 (210) **Remarks:** Unstable
- 824** **History:** < Li, Renhui **Locality:** Hasse River/Tokyo/Japan (1998-03-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Offensive taste and odor **Other strain no.:** Ana Ha 1
- 830** **History:** < Li, Renhui **Other collection strain no.:** TISTR 9194 **Locality:** Lam Takong/Thailand (1997-07-05) **Isolator:** Li, Renhui **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Ana130 **Remarks:** Distribution for academic purpose only
- 831** **History:** < Li, Renhui **Other collection strain no.:** TISTR 9195 **Locality:** Chon Buri/Thailand (1998-05-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Ana T3 **Remarks:** Distribution for academic purpose only

- 1695** **History:** < TAC **Locality:** Lake Akan/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 451 **References:** 434, 609, 1069
- 1724** **History:** < Li, Renhui **Locality:** Lake Yamanaka/Yamanashi/Japan (1998-07-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui (1998-07-**) **States:** Unialgal **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Nitrogen fixation; Resting spore forming **Other strain no.:** yama-1

Anabaena sp.

- 1651** **History:** < TAC **Locality:** Lake Shiroyama/Kanagawa/Japan (2001-10-31) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 500
- 1953** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 564
- 1954** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 565
- 1955** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 566
- 2348** **History:** < Li, Renhui **Other collection strain no.:** TISTR 9200 **Locality:** Chon Buri/Thailand (1998-05-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Ana T2 **Remarks:** Distribution for academic purpose only

Anabaena spiroides Klebahn

- 76** **History:** < Suda, Shoichiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-06-16) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AB047104) **Other strain no.:** K-A-12 **References:** 435, 515, 605, 719, 720, 1047 **Remarks:** Unstable
- 1905** **History:** < TAC **Locality:** Soe-ike Pond/Hyogo/Japan (2001-11-03) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 20-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 504
- 1950** **History:** < TAC **Locality:** Mishima-ike Pond/Shiga/Japan (2001-10-22) **Isolator:** Tsujimura, Shigeo **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TAC 551

Anabaena ucrainica (Schkorbatow) M. Watanabe

- 263** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-07-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Anabaena spiroides* Klebahn f. *spiroides* **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 25°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 27 (K-TAN-27) **References:** 515, 1047 **Remarks:** Unstable
- 825** **History:** < Li, Renhui < TAC **Locality:** Lake Sagami/Kanagawa/Japan (1991-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 448 (A48) **Reference:** 435
- 826** **History:** < Li, Renhui < TAC **Locality:** Lake Sagami/Kanagawa/Japan (1991-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 449 (A50) **References:** 186, 435

1696 **History:** < TAC **Locality:** Lake Tsukui/Kanagawa/Japan **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 455 **Reference:** 1069

Anabaena variabilis Kützing ex Bornet et Flahault

23 **History:** < IAM (1983) **Other collection strain no.:** IAM M-2 **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 $\mu\text{mol}/\text{m}^2/\text{s}$; 4 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **References:** 19, 63, 82, 83, 84, 98, 99, 100, 187, 215, 515, 546, 547, 548, 780, 904, 981, 1013

2093 **History:** < IAM (2007) < Meyers, Jack **Other collection strain no.:** IAM M-3 **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater **Characteristics:** Mostly fragmented **Gene data:** 16S rRNA (AB016520); *gyrB* (AB074772); *rpoC1* (AB074795); *rpoD1* (AB074822) **References:** 2, 3, 4, 5, 188, 261, 262, 334, 343, 418, 419, 473, 485, 503, 509, 511, 537, 538, 734, 810, 811, 812, 813, 814, 815, 816, 848, 906, 988, 991, 1006, 1083

2094 **History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-58 **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater **Other strain no.:** Ishikawa 99.J403w. **Reference:** 906

2095 **History:** < IAM (2007) < Fujiwara, Shoko (1990) **Other collection strain no.:** IAM M-204; ATCC 29413 **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater **Gene data:** 16S rRNA (AB074502); *gyrB* (AB074766); *rpoC1* (AB074789); *rpoD1* (AB074816) **References:** 848, 871

Anabaena viguieri Denis et Fremy

827 **History:** < Li, Renhui < TAC **Locality:** Shikata-futago-ike Pond/Hyogo/Japan (1990-09-**) **Isolator:** Niiyama, Yuko **Identified by:** Li, Renhui **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 12-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 433 (A23)

*Anabaena viguieri** Denis et Fremy

1951 **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 559

1952 **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (2003-05-15) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-6 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** *Akinete not observed **Other strain no.:** TAC 560

ANABAENOPSIS : Cyanophyceae

Anabaenopsis circularis (G. S. West) Woloszynska et Miller

21 **History:** < IAM (1983) **Other collection strain no.:** IAM M-4 **Isolator:** Watanabe, Atsushi **Identified by:** Hirano **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 $\mu\text{mol}/\text{m}^2/\text{s}$; 4 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Gene data:** 16S rRNA (AB043537); 16S rRNA (AF247595); *gyrB* (AB074773); *rpoC1* (AB074796); *rpoD1* (AB074823) **References:** 19, 215, 515, 536, 719, 848, 1013, 1015, 1020, 1047 **Remarks:** Cryopreserved

Anabaenopsis sp.

1698 **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1990-08-**) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 427

1725 **History:** < Li, Renhui **Locality:** Shinobazu-no-ike Pond, Ueno Park/Tokyo/Japan (1998-10-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui (1998-10-**) **States:** Unialgal **Culture conditions:** CT; 20°C; 12-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Resting spore forming **Other strain no.:** Anabaenopsis (Ueno)

ANACYSTIS : Cyanophyceae

Anacystis marina (Hansgirg) Drouet et Dailey

2096 **History:** < IAM (2007) < Safferman, R. S. **Other collection strain no.:** IAM M-122 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 13-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater **Other strain no.:** SEC 142

ANKISTRODESMUS : Chlorophyceae*Ankistrodesmus angustus* Bernard

- 2190** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-302; SAG 202-3; UTEX 188 **Isolator:** Rodhe, W. **Formerly identified as:** *Ankistrodesmus falcatus* (Corda) Ralfs **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Pro (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **References:** 35, 463
- 2191** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-303; UTEX 241; (BIU 241); CCAP 202/4A; SAG 202-4 **Locality:** Czechoslovakia **Isolator:** Czurda, V. **Formerly identified as:** *Ankistrodesmus falcatus* (Corda) Ralfs var. *mirabilis* W. et G. S. West **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater
- 2192** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-548 (= C-91); CCAP 202/2; UTEX 189; SAG 202-2; ATCC 30448 **Locality:** Switzerland **Isolator:** Vischer, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Vischer 9

Ankistrodesmus braunii (Nägeli) Brunnthaler

- 2193** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-90; UTEX 87; CCAP 202/9; SAG 202-9; ATCC 30447; (BIU 187) **Isolator:** George, E. A. **Formerly identified as:** *Ankistrodesmus falcatus* (Corda) Ralfs var. *duplex* (Kützing) G. S. West **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater
- 2194** **History:** < IAM (2007) < BIU (UTEX; 1961) **Other collection strain no.:** IAM C-96; CCAP 202/7B; UTEX 245; SAG-7b **Locality:** South Africa **Isolator:** George, E. A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **References:** 35, 463

Ankistrodesmus falcatus (Corda) Ralfs var. *acicularis* (A. Braun) G. S. West

- 2195** **History:** < IAM (2007) < BIU (UTEX; 1961) **Other collection strain no.:** IAM C-88; UTEX 101; CCAP 202/11D (?) **Locality:** Indiana/U.S.A. **Isolator:** Starr, R. C. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **Reference:** 463

Ankistrodesmus falcatus (Corda) Ralfs var. *stipitatus* (Chodat) Lemmermann

- 2196** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-304; CCAP 202/5A; UTEX 242; SAG 202-5; Prague 262 **Locality:** Czechoslovakia **Isolator:** Czurda, V. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater

Ankistrodesmus nannoselene Skuja

- 2197** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-305; CCAP 202/6A; SAG 202-6; UTEX 243 **Locality:** Siggeforsajon/Sweden **Isolator:** Rodhe, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Rodhe 1632

ANORTHONEIS : Bacillariophyceae*Anorthoneis* sp.

- 1962** **History:** < TKB **Locality:** Kagoshima Bay/Kagoshima/Japan (2006-03-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-335

APHANIZOMENON : Cyanophyceae*Aphanizomenon flos-aquae* (L.) Ralfs ex Bornet et Flahault

- 1258** **History:** < Sano, Tomoharu **Locality:** Lake Suigetsu/Fukui/Japan (2000-12-05) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 70-90 µmol/m²/s; 1 M **Habitat:** Brackish (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** SUI-CT-1
- 1726** **History:** < Li, Renhui **Locality:** U.K. (1997-08-**) **Identified by:** Li, Renhui (1997-08-**) **States:** Unialgal **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Nitrogen fixation; Motile; Resting spore forming **Other strain no.:** Aph E

- 1727** **History:** < Li, Renhui **Locality:** Germany (1997-07-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui (1997-07-**) **States:** Unialgal **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Aph Gmü
- 1728** **History:** < Li, Renhui **Locality:** Lake Inbanuma/Chiba/Japan (1997-05-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui (1997-05-**) **States:** Unialgal **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Nitrogen fixation; Resting spore forming **Gene data:** 16S rRNA (AB195320); 16S rRNA (AY196083) **Other strain no.:** Aph Inba

Aphanizomenon flos-aquae (L.) Ralfs ex Bornet et Flahault f. *gracile* (Lemmermann) Elenkin

- 81** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-01-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 70-90 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 1 (K-TAN-1) **References:** 175, 202, 435, 515, 532, 605, 877, 1047, 1097, 1139 **Remarks:** Unstable

APHANOCAPSA : Cyanophyceae

Aphanocapsa montana Cramer

- 416** **History:** < Watanabe, Makoto M. **Locality:** Toyamasawa/Tochigi/Japan (1987-04-30) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 4 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** NK-24 **References:** 124, 515, 917 **Remarks:** Cryopreserved

APIOCYSTIS : Chlorophyceae

Apiocystis brauniana Nägeli

- 1020** **History:** < Moriya, Mayumi **Locality:** Shishizuka-ohike Pond/Ibaraki/Japan (2002-02-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Epiphytic **Other strain no.:** #115

ASTERIONELLOPSIS : Bacillariophyceae

Asterionellopsis glacialis (Castracane) Round

Syn. *Asterionella glacialis* Castracane

- 265** **History:** < Sawaguchi, Tomohiro **Locality:** Matoya Bay/Mie/Japan (1984-09-01) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** MB-B-1
- 417** **History:** < Riquelme, Carlos E. **Locality:** Maizuru Bay/Kyoto/Japan (1985-10-12) **Isolator:** Riquelme, Carlos E. **Identified by:** Riquelme, Carlos E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Not growing under axenic condition

ASTEROCHLORIS : Trebouxiophyceae

Asterochloris cf. *glomerata* (Warén) Friedl

- 1298** **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Cladia aggregata* on humus) **Characteristics:** Symbiotic **Other strain no.:** AYO4871
- 1299** **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Cladonia macilenta* on wood) **Characteristics:** Symbiotic **Other strain no.:** AYO4872 **Remarks:** Cryopreserved

- 1300** **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Cladia aggregata* on a stone wall) **Characteristics:** Symbiotic **Other strain no.:** AYO4874 **Remarks:** Cryopreserved
- 1301** **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Cladia aggregata* on soil) **Characteristics:** Symbiotic **Other strain no.:** AYO4875 **Remarks:** Cryopreserved

ASTEROCOCCUS : Chlorophyceae

Asterococcus superbis (Cienkowski) Scherffel

- 1331** **History:** < Nakazawa, Atsushi **Locality:** Tamiyaji-ohike Pond/Mie/Japan (2000-09-**) **Isolator:** Nakazawa, Atsushi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** *rbcl* (AB175937); *rbcl* (AB175938); *rbcl* (AB175939) **Other strain no.:** Asteroco-4 **Reference:** 600
- 2198** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-299; CCAP 3/3A; UTEX 88 **Locality:** Amiens/France **Isolator:** George, E. A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater

ASTREPHOMENE : Chlorophyceae

Astrephomene gubernaculifera Pocock

- 418** **History:** < Nozaki, Hisayoshi **Locality:** Kanagawa/Japan (1981-04-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VTAC; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 20 D **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-419 **Gene data:** *atpB* (AB014022); *atpB* (AB014023); *psaA* (AB044233); *psaA* (AB044234); *psaB* (AB044458); *psbC* (AB044513); *psbC* (AB044514); *rbcl* (D63428); *rbcl*-462 intron (AB076095) **Other strain no.:** 1520-4 (-) **References:** 515, 623, 646, 663, 666, 668, 671
- 419** **History:** < Nozaki, Hisayoshi **Locality:** Kaisei, Yoshidajima/Kanagawa/Japan (1981-04-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VTAC; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-418 **Other strain no.:** 1520-1 (+) **References:** 515, 623
- 628** **History:** < Nozaki, Hisayoshi **Locality:** Hayama/Kanagawa/Japan (1980-12-04) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (-) **Other strain no.:** 1727-1 (-) **Reference:** 515
- 853** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1392 **Locality:** Emmet County/Michigan/U.S.A. (1961-07-**) **Isolator:** Brooks, A. E. **Identified by:** Brooks, A. E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB-V; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 20 D **Habitat:** (Soil) **Characteristics:** Mixotrophic; Heterothallic **Reference:** 36
- 854** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1394 **Locality:** Monroe County/Indiana/U.S.A. (1962-10-**) **Isolator:** Brooks, A. E. **Identified by:** Brooks, A. E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 20 D **Habitat:** (Soil) **Characteristics:** Mixotrophic; Heterothallic **Gene data:** *atpB* (AB044181); *psaA* (AB044235); *psaB* (AB044459); *psbC* (AB044515); *psbC* (AB044516); *psbC* (AB044517); *rbcl* (AB044169); *rbcl* (AB044170) **References:** 36, 663
- 855** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1398 **Locality:** Tulare County/California/U.S.A. (1953-08-**) **Isolator:** Nelson, R. W. **Identified by:** Brooks, A. E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 20 D **Habitat:** (Soil) **Characteristics:** Mixotrophic; Heterothallic **Reference:** 36

Astrephomene perforata Nozaki

- 564** **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2474 **Locality:** Hayama/Kanagawa/Japan (1980-12-04) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Heterothallic; Isogamy; Mating type (+); Crosses with NIES-565 **Gene data:** *atpB* (AB014024); *psaA* (AB044236); *psaA* (AB044237); *psaA* (AB044238); *psaB* (AB044460); *psbC* (AB044518); *psbC* (AB044519); *rbcl* (D63429) **Other strain no.:** 1620-3-2 **References:** 515, 623, 646, 663, 666, 668

- 565** **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2475 **Locality:** Hayama/Kanagawa/Japan (1980-12-04) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Heterothallic; Isogamy; Mating type (-); Crosses with NIES-564 **Other strain no.:** 1620-4-1 **References:** 515, 623, 645

AULACOSEIRA : Bacillariophyceae

Aulacoseira granulata (Ehrenberg) Simonsen

- 333** **History:** < Hiwatari, Takehiko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-05-09) **Isolator:** Hiwatari, Takehiko **Identified by:** Mizuno, Makoto; Kawachi, Masanobu (Reidentify) **Formerly identified as:** *Melosira granulata* (Ehrenberg) Ralfs var. *angustissima* O. Müller f. *spiralis* O. Müller **States:** Unialgal; Clonal; Axenic **Culture conditions:** CSI; 15°C; 10-18 µmol/m²/s; 1 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** K-Melo **References:** 122, 877 **Remarks:** Unstable

AULOSIRA : Cyanophyceae

Aulosira laxa Kirchner ex Bornet et Flauhault

- 50** **History:** < IAM (1983) **Other collection strain no.:** IAM M-128 **Locality:** Pusa/India **Isolator:** Venkataraman, G. S. **Formerly identified as:** *Aulosira fertilissima* Ghose (in IAM) **States:** Unialgal; Non-clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Nitrogen fixation **References:** 202, 215, 515, 1047 **Remarks:** Cryopreserved

AUREARENA : Aurearenophyceae

Aurearena cruciata Kai, Yoshii, Nakayama et Inouye

- 1863** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2003-05-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 25°C; 30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Characteristics:** Authentic strain **Other strain no.:** TKB-337 **Reference:** 305
- 1864** **History:** < TKB **Locality:** Noma Beach/Aichi/Japan (2004-06-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 25°C; 30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-338 **Reference:** 305
- 1865** **History:** < TKB **Locality:** Hashikui Beach/Wakayama/Japan (2005-07-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 25°C; 30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-339 **Reference:** 305

AUXENOCHLORELLA : Trebouxiophyceae

Auxenochlorella protothecoides (Krüger) Kalina et Puncocárová

Syn. *Chlorella protothecoides* Krüger

- 2163** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-150; SAG 211-11a; UTEX 29; ATCC 30581; ATCC 13482; CCAP 211/11a; (BIU 29) **Isolator:** Pringsheim, E. G. **Identified by:** Kessler, E. (1991) **Formerly identified as:** *Chlorella vulgaris* Beijerinck **States:** Unialgal; Clonal; Axenic **Culture conditions:** Pro (agar); 20°C; 8-15 µmol/m²/s; 3 M **References:** 173, 206, 351, 388, 389, 451, 452, 1094
- 2164** **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM C-624 (= C-202) **Identified by:** Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** Pro (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488569)
- 2165** **History:** < IAM (10th lab. < 7th lab.) (2007) < Krauss **Other collection strain no.:** IAM C-206 **Identified by:** Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella protothecoides* Krüger var. *mannophila* Shihira et Krauss **States:** Unialgal; Clonal; Axenic **Culture conditions:** Pro (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488570) **Reference:** 1093
- 2176** **History:** < IAM (2007) < BIU (UTEX; 1965) **Other collection strain no.:** IAM C-201; UTEX 838; CCAP 211/22 **Isolator:** Lewin, Ralph A. **Identified by:** Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella* sp. **States:** Unialgal; Clonal; Axenic **Culture conditions:** Pro (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488571) **Reference:** 351

BASICHLAMYS : Chlorophyceae**Basichlamys sacculifera** (Scherffel) SkujaSyn. *Gonium sacculiferum* Scherffel

- 566 History:** < Nozaki, Hisayoshi **Locality:** Fujisawa/Kanagawa/Japan (1983-08-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond sediment) **Gene data:** *atpB* (AB014015); *psaA* (AB044416); *psaB* (AB044467); *psaB* (AB044468); *psbC* (AB044526); *rbcL* (D63430) **Other strain no.:** 3907-1 **References:** 515, 628, 646, 649, 663, 666, 668

BATRACHOSPERMUM : Florideophyceae**Batrachospermum atrum** (Hudson) Harvey

- 1456 History:** < Higa, Atsushi **Locality:** Fukui/Japan (2003-05-25) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** BF1 **Reference:** 127

Batrachospermum helminthosum Bory

- 1457 History:** < Higa, Atsushi **Locality:** Fukui/Japan (2003-05-25) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; NT (Ref. 474) **Other strain no.:** BF3 **Reference:** 127

Batrachospermum sp.

- 1459 History:** < Kawachi, Masanobu **Locality:** Kuma River/Kumamoto/Japan (2001-11-26) **Isolator:** Iwaki, Hiroyuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic **Other strain no.:** KUM-2

- 1460 History:** < Higa, Atsushi **Locality:** Ohkubo-ga/Okinawa/Japan (2002-03-16) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic **Other strain no.:** BO2

Batrachospermum turfosum BorySyn. *Batrachospermum vagum* (Roth) Agardh

- 2136 History:** < IAM (2007) **Other collection strain no.:** IAM R-4 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; Bold 3N; 20°C; 3-12 µmol/m²/s; 3 M **Characteristics:** VU (Ref. 474)

Batrachospermum virgato-decaisneanum Sirodot

- 1458 History:** < Higa, Atsushi **Locality:** Fukui/Japan (2003-05-25) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** BF2

BICOSOECA : Bicoecea**Bicosoeca** sp.

- 1438 History:** < TKB **Locality:** Akashi/Hyogo/Japan (2004-12-10) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SUY1/10 + Wheat; 20°C; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Heterotrophic; Benthic **Other strain no.:** TKB-211 (NY0158)

BLIDINGIA : Ulvophyceae**Blidingia minima** (Nägeli) Kylin

- 1837 History:** < TKB **Locality:** Tokyo/Japan (2005-01-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** (Seawater) **Other strain no.:** TKB-271

BODO : Kinetoplastea*Bodo saltans* Ehrenberg

- 1439** **History:** < TKB **Locality:** Tsukuba/Ibaraki/Japan (2002-10-13) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** URO + Wheat; 15°C; 1 M **Habitat:** (Water) **Characteristics:** Heterotrophic **Other strain no.:** TKB-013 (NY0117)

BOTRYDIOPSIS : Xanthophyceae*Botrydiopsis arrhiza* Borzi

- 621** **History:** < CCAP **Other collection strain no.:** CCAP 222/1B **Locality:** England/U.K. **Isolator:** George **States:** Unialgal **Culture conditions:** AF-6; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Reference:** 122

BOTRYDIUM : Xanthophyceae*Botrydium granulatum* (L.) Greville

- 622** **History:** < CCAP **Other collection strain no.:** CCAP 805/3A **Isolator:** Vischer, W. **States:** Unialgal **Culture conditions:** AF-6; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Reference:** 122

BOTRYOCOCCUS : Trebouxiophyceae*Botryococcus braunii* Kützing

- 836** **History:** < Mori, Fumi **Locality:** Imuta-ike Pond/Kagoshima/Japan (1997-06-**) **Isolator:** Mori, Fumi **Identified by:** Mori, Fumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 4 M **Habitat:** Freshwater (Pond water) **Remarks:** Cryopreserved
- 2199** **History:** < IAM (2007) < Hara, Yoshiaki < UTEX (1986) **Other collection strain no.:** IAM C-529; CCAP 807/1; UTEX LB572; SAG B 807-1 **Isolator:** Droop, M. R. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M

BRACHIOMONAS : Chlorophyceae*Brachiomonas submarina* Bohlin

- 375** **History:** < Sawaguchi, Tomohiro **Locality:** Hachinohe Harbor/Aomori/Japan (1986-08-13) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 15°C; 20-30 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Brackish (Water) **Other strain no.:** 86-SuHH-2 **Reference:** 515

BRACTEACOCCUS : Chlorophyceae*Bracteacoccus giganteus* Bischoff et Bold

- 2200** **History:** < IAM (2007) **Other collection strain no.:** IAM C-388 **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M

CAFETERIA : Bicoecae*Cafeteria roenbergensis* Fenchel et Patterson

- 1012** **History:** < Moriya, Mayumi **Locality:** Nirigahama/Wakayama/Japan (2002-01-04) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SUY 1/10; 15°C; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Heterotrophic **Other strain no.:** #106

CALCIDISCUS : Prymnesiophyceae*Calcidiscus leptoporus* (Murray et Blackman) Lebllich Jr et Tappan

- 1304** **History:** < Kawachi, Masanobu **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2002-01-23) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 34
- 1305** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 68

CALOTHRIX : Cyanophyceae*Calothrix brevissima* G. S. West

- 22** **History:** < IAM (1983) **Other collection strain no.:** IAM M-7 (= M-249) **Locality:** Palau Isl./Palau (1941-09-**) **Isolator:** Watanabe, Atsushi **Identified by:** Negoro, Ken-ichiro **States:** Unialgal; Non-clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Soil) **Characteristics:** Nitrogen fixation; Chromatic adaptation **Gene data:** 16S rRNA (AB074504); *gyrB* (AB074768); *rpoC1* (AB074791); *rpoD1* (AB074818) **References:** 215, 515, 763, 848, 1011, 1013 **Remarks:** Cryopreserved
- 2097** **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM M-277 (= M-37) **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Maruyama, Ko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Chromatic adaptation **Other strain no.:** D59 · W

Calothrix crustacea Thuret ex Bornet et Flauhault

- 266** **History:** < IAM (1983) **Other collection strain no.:** IAM M-171 **Locality:** Oshoro Bay/Hokkaido/Japan (1972-09-**) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 4-10 µmol/m²/s; 6 M (20°C; 15-27 µmol/m²/s) **Habitat:** Marine (Seawater) **References:** 215, 515, 1035, 1051 **Remarks:** Cryopreserved

Calothrix elenkinii Kossinskaja

- 2098** **History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-61 **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Ishikawa 103X (1) W-N-F

Calothrix gracilis Fritsch

- 2099** **History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-55 **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Ishikawa 73. O161W
- 2100** **History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-56 **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Ishikawa 78. F243D

Calothrix parasitica Thuret ex Bornet et Flauhault

- 267** **History:** < IAM (1983) **Other collection strain no.:** IAM M-172 (= M-226) **Locality:** Oshoro Bay/Hokkaido/Japan (1972-07-**) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 4-10 µmol/m²/s; 6 M (20°C; 15-27 µmol/m²/s) **Habitat:** Marine (Seaweed) **Characteristics:** Endophyte in *Nemalion* (Florideophyceae) **References:** 124, 215, 515 **Remarks:** Cryopreserved
- 334** **History:** < IAM (1983) **Other collection strain no.:** IAM M-173 (= M-227) **Locality:** Oshoro Bay/Hokkaido/Japan (1973-02-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 4-10 µmol/m²/s; 6 M (20°C; 15-27 µmol/m²/s) **Habitat:** Marine (Seaweed) **Characteristics:** Endophyte in *Codium* (Ulvoephyceae) **References:** 215, 515 **Remarks:** Cryopreserved

Calothrix scopulorum Agardh ex Bornet et Flauhault

- 268 **History:** < IAM (1983) **Other collection strain no.:** IAM M-174 **Locality:** Oshoro Bay/Hokkaido/Japan (1972-09-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; MKM (agar); 20°C; 4-10 µmol/m²/s; 6 M (20°C; 15-27 µmol/m²/s) **Habitat:** Marine **References:** 124, 215, 515, 1035, 1051 **Remarks:** Cryopreserved

Calothrix sp.

- 2101 **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-290 **Locality:** Himeji/Hyogo/Japan (2002-**-**) **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** HK-05

CALYPTROSPHAERA : Prymnesiophyceae*Calyptrosphaera sphaeroidea* Schiller

- 997 **History:** < Kawachi, Masanobu **Locality:** Hikimoto Bay/Mie/Japan (2001-08-06) **Isolator:** Hata, Naotsugu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** 13K **Reference:** 617
- 1308 **History:** < Kawachi, Masanobu **Locality:** Miyake Isl., Chotaro-ike Pond/Tokyo/Japan (1999-11-23) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MK18
- 1309 **History:** < Kawachi, Masanobu **Locality:** Miyake Isl., Chotaro-ike Pond/Tokyo/Japan (1999-11-23) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MK21
- 1811 **History:** < TKB **Locality:** Nabeta Bay/Shizuoka/Japan (2005-05-11) **Isolator:** Chikuni, Tomoko **Identified by:** Yoshida, Masaki (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-252

CARTERIA : Chlorophyceae*Carteria cerasiformis* Nozaki, Aizawa et M. M. Watanabe

- 424 **History:** < Suda, Shoichiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **Formerly identified as:** *Carteria inversa* (Korshikov) Bourrelly **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *rbcL* (D89767) **Other strain no.:** Kas-10 **References:** 515, 641, 650
- 425 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1985-11-05) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **Formerly identified as:** *Carteria inversa* (Korshikov) Bourrelly **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Authentic strain **Gene data:** *atpB* (AB084321); *psaB* (AB084359); *rbcL* (D89768) **Other strain no.:** w-8-15 **References:** 515, 641, 650, 668

Carteria crucifera Korshikov ex Pascher

- 421 **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CYT; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Sediment) **Gene data:** *atpB* (AB084320); *psaB* (AB084358); *rbcL* (D63431) **Other strain no.:** SIST3-1 **References:** 515, 641, 646, 650, 668
- 630 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 432 **Locality:** New Haven/U.S.A. **Isolator:** Lewin, Ralph A. **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater **Gene data:** *rbcL* (D89758) **References:** 515, 641, 650

Carteria eugametos Mitra

- 631 **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki, Saiwai-ku/Kanagawa/Japan (1990-10-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic; Isogamy **Gene data:** *rbcL* (D89762) **Other strain no.:** 91-409-1 **References:** 515, 638, 650

- 632 **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki, Saiwai-ku/Kanagawa/Japan (1990-10-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Homothallic; Isogamy **Gene data:** *rbcL* (D89763) **Other strain no.:** 91-421-4 **References:** 515, 638, 641, 650
- 633 **History:** < Nozaki, Hisayoshi **Locality:** Shirako/Chiba/Japan (1991-03-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic; Isogamy **Gene data:** *rbcL* (D89764) **Other strain no.:** 91-504-1 **References:** 515, 638, 641, 650
- 634 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2161 **Isolator:** Vandover, B. **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater **Gene data:** *rbcL* (D89761) **References:** 515, 641, 650
- 635 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 233 **Locality:** Allahabad/India **Isolator:** Pringsheim, O. **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain **Gene data:** *rbcL* (D89759) **References:** 515, 641, 650
- 636 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1032 **Locality:** California/U.S.A. **Isolator:** Waters, A. **Identified by:** Nozaki, Hisayoshi **Formerly identified as:** *Carteria olivieri* G. S. West **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Soil) **Gene data:** *rbcL* (D89760) **References:** 515, 641, 650

Carteria inversa (Korshikov) Bourrelly

- 422 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1982-11-02) **Isolator:** Kasai, Fumie **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Pond water) **Gene data:** *rbcL* (D89765) **Other strain no.:** 134-4 **References:** 187, 515, 641, 650, 979
- 423 **History:** < Suda, Shoichiro **Locality:** Higashihiroshima/Hiroshima/Japan (1983-08-**) **Isolator:** Erata, Mayumi **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Pond water) **Gene data:** *rbcL* (D89766) **Other strain no.:** 106 **References:** 515, 641, 650

Carteria klebsii (Dangeard) Francé

- 426 **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond sediment) **Other strain no.:** SIST7-4 **Reference:** 515

Carteria multifilis (Fresenius) Dill

- 427 **History:** < Suda, Shoichiro **Locality:** Kashiwa/Chiba/Japan (1986-**-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Exudation from reclaimed land) **Other strain no.:** Ca1-2 **Reference:** 515

Carteria obtusa Dill

- 428 **History:** < Suda, Shoichiro **Locality:** Kashiwa/Chiba/Japan (1986-09-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Exudation from reclaimed land) **Gene data:** *atpB* (AB084323); *psaB* (AB084361); *psaB* (AB084362); *psaB* (AB084363); *rbcL* (D89769) **Other strain no.:** Ca-2-1 **References:** 515, 650, 668
- 429 **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Kasama, Mayumi **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond sediment) **Other strain no.:** SIS5-20 **Reference:** 515
- 430 **History:** < Suda, Shoichiro **Locality:** Kashiwa/Chiba/Japan (1986-09-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Exudation from reclaimed land) **Other strain no.:** Ca2-3 **Reference:** 515
- 431 **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond sediment) **Other strain no.:** SIST6-3 **Reference:** 515

Carteria palmata Suda, Nozaki et M. M. Watanabe

- 1336 **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1985-07-03) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Authentic strain; mating type (-) **Gene data:** *atpB* (AB204870); *psaB* (AB204871); *rbcL* (AB204869) **Other strain no.:** KY-1 **Reference:** 887
- 1337 **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1985-07-03) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Mating type (-) **Other strain no.:** KY-8 **Reference:** 887
- 1338 **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1985-07-03) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Mating type (+) **Other strain no.:** KY-24 **Reference:** 887

Carteria radiosa Korshikov ex Pascher

- 432 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1985-11-05) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *atpB* (AB084322); *psaB* (AB084360); *rbcL* (D89770) **Other strain no.:** w-5-2 **References:** 515, 650, 668

Carteria sp.

- 2311 **History:** < Suda, Shoichiro **Locality:** Shimokubo Dam/Gunma/Japan (1980-04-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** SM-6-3
- 2312 **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1986-04-12) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** 412KY-9
- 2313 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1985-11-05) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** w-39-4
- 2347 **History:** < Nozaki, Hisayoshi **Other collection strain no.:** TISTR 9192 **Locality:** Thailand **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Other strain no.:** T18-1-C-1 **Remarks:** Distribution for academic purpose only

CHAETOCEROS : Bacillariophyceae*Chaetoceros didymus* Ehrenberg

- 586 **History:** < Ono, Sachiko **Locality:** Hitachi/Ibaraki/Japan (1990-09-26) **Isolator:** Ono, Sachiko **Identified by:** Ono, Sachiko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** St-4

Chaetoceros sociale Lauder

- 377 **History:** < Sawaguchi, Tomohiro **Locality:** Shitaru Harbor/Shizuoka/Japan (1985-05-22) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** STHB-4
- 553 **History:** < Ono, Sachiko **Locality:** Tokyo Bay/Tokyo/Japan (1991-10-**) **Isolator:** Ono, Sachiko **Identified by:** Ono, Sachiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 5°C; 15-20 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** T-1

CHAMAESIPHON : Cyanophyceae*Chamaesiphon polymorphus* Geitler

- 433 **History:** < Kasai, Fumie **Locality:** Lake Mashu/Hokkaido/Japan (1987-09-02) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; 10°C; 6-12 µmol/m²/s; 2 M (10°C; 10-15 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** M-29 **References:** 124, 515, 917, 918

Chamaesiphon subglobosus Lemmermann

- 434 **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-03-25) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** 2st-2-1 **References:** 124, 515, 916, 917, 918 **Remarks:** Cryopreserved

CHARA : Charophyceae

Chara australis R. Brown

- 1585 **History:** < Shimmen, Teruo **Identified by:** Sakayama, Hidetoshi (2005-04-19) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 22°C; 16-20 µmol/m²/s; 3 M **Habitat:** Freshwater **Characteristics:** Dioecious; Female; Male **Other strain no.:** CH-25
- 2084 **History:** < Shimmen, Teruo **Isolator:** Ishimoto, Miwa (Re-isolation) **Identified by:** Sakayama, Hidetoshi (2005-04-19) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 22°C; 16-20 µmol/m²/s; 3 M **Habitat:** Freshwater **Characteristics:** Dioecious; Male **Other strain no.:** CH-25♂
- 2085 **History:** < Shimmen, Teruo **Isolator:** Ishimoto, Miwa (Re-isolation) **Identified by:** Sakayama, Hidetoshi (2005-04-19) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 22°C; 16-20 µmol/m²/s; 3 M **Habitat:** Freshwater **Characteristics:** Dioecious; Female **Other strain no.:** CH-25♀

Chara braunii Gmelin

- 1586 **History:** < Nozaki, Hisayoshi **Locality:** Lake Chuzenji/Tochigi/Japan (1994-09-07) **Identified by:** Nozaki, Hisayoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474) **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363923) **Other strain no.:** CH-6 **Reference:** 340
- 1587 **History:** < Sakayama, Hidetoshi **Locality:** Kasai/Hyogo/Japan (2004-06-18) **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi (2004-06-19) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474) **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363924) **Other strain no.:** CH-70 **Reference:** 340
- 1588 **History:** < Sakayama, Hidetoshi **Locality:** Hazama-ohike Pond/Kagawa/Japan (2004-06-17) **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi (2004-06-18) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474) **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363925) **Other strain no.:** CH-72 **Reference:** 340
- 1589 **History:** < Sakayama, Hidetoshi **Locality:** Narasu-ike Pond/Kagawa/Japan (2004-06-16) **Identified by:** Sakayama, Hidetoshi (2004-06-17) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474) **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363926) **Other strain no.:** CH-75 **Reference:** 340
- 1590 **History:** < Sakayama, Hidetoshi **Locality:** Tsuchiura, Ohiwata/Ibaraki/Japan (2004-07-11) **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi (2004-07-12) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474) **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363927) **Other strain no.:** CH-82 **Reference:** 340
- 1591 **History:** < Amano, Kunihiko **Locality:** Lake Kasumigaura/Ibaraki/Japan **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474); Germinated from a buried oospore **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363928) **Other strain no.:** CH-88 **Reference:** 340
- 1592 **History:** < Amano, Kunihiko **Locality:** Lake Kasumigaura/Ibaraki/Japan **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474); Germinated from a buried oospore **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363929) **Other strain no.:** CH-89 **Reference:** 340
- 1593 **History:** < Amano, Kunihiko **Locality:** Lake Kasumigaura/Ibaraki/Japan **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474); Germinated from a buried oospore **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363930) **Other strain no.:** CH-91 **Reference:** 340

- 1594** **History:** < Sakayama, Hidetoshi **Locality:** Tsuchiura, Ohiwata/Ibaraki/Japan (2004-07-11) **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi (2005-04-18) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; VU (Ref. 474) **Other strain no.:** CH-98
- 1604** **History:** < Watanabe, Makoto M. **Locality:** Hawaii/U.S.A. (1998-04-**) **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi; Kato, Sho (2005-08-26) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious **Gene data:** *atpB*, *atpB-rbcL* IGS, *rbcL* (AB363931) **Other strain no.:** CH-33 **Reference:** 340

Chara globularis Thuillier

- 1595** **History:** < Sakayama, Hidetoshi **Locality:** Lake Tanne-to/Hokkaido/Japan (1999-09-02) **Identified by:** Sakayama, Hidetoshi (2006-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; 17°C; 16-20 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-106; S001
- 1597** **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsuta-numa/Aomori/Japan (1998-08-05) **Identified by:** Nozaki, Hisayoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; 17°C; 16-20 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-55

Chara leptospora Sakayama

- 1599** **History:** < Sakayama, Hidetoshi **Locality:** Lake Ogawara/Aomori/Japan (1999-09-06) **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; 17°C; 16-20 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Monoecious **Other strain no.:** CH-109; S024

Chara sp.

- 1602** **History:** < Arai, Shogo **Locality:** Ogimi/Okinawa/Japan (1997-01-13) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 22°C; 16-20 µmol/m²/s; 2 M **Habitat:** Freshwater **Other strain no.:** CH-19
- 1603** **History:** < Arai, Shogo **Locality:** Ogimi/Okinawa/Japan (1997-01-13) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 22°C; 16-20 µmol/m²/s; 2 M **Habitat:** Freshwater **Other strain no.:** CH-20
- 1605** **History:** < Inouye, Isao **Locality:** Imperial Palace/Tokyo/Japan (1998-12-08) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 22°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Other strain no.:** CH-39

Chara zeylanica Klein ex Willdenow

- 1601** **History:** < Ueno, Ryuhei **Locality:** Minamidaitoh Isl./Okinawa/Japan (2000-02-11) **Identified by:** Sakayama, Hidetoshi (2005-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 25°C; 16-20 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-55

CHARACIOCHLORIS : Chlorophyceae*Characiochloris acuminata* Lee et Bold

- 637** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2095 **Locality:** El Tahin. Prov. Omo-Saber/Egypt **Isolator:** Hindak, F. **Identified by:** Lee, K. W.; Bold, H. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** (Soil) **Characteristics:** Authentic strain **Gene data:** *psaB* (AB451196) **References:** 515, 554, 637

Characiochloris sasae Nozaki

- 567** **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki/Kanagawa/Japan (1990-10-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Aplanospore forming **Gene data:** *atpB* (AB084331); *psaB* (AB084376); *rbcL* (AB084338) **Other strain no.:** 91-0106-1 **References:** 515, 637, 668
- 638** **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki, Saiwai-ku/Kanagawa/Japan (1990-10-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Aplanospore forming; Resting spore not forming; Endemic in Japan **Other strain no.:** 91-0106-6 **References:** 515, 637

CHARACIUM : Chlorophyceae*Characium angustum* A. Braun

- 639** **History:** < Kasai, Fumie **Locality:** Kinu River/Tochigi/Japan (1987-08-16) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal **Culture conditions:** C; 15°C; 8-15 µmol/m²/s; 4 M (15°C; 15-22 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** AK-5-2 **References:** 515, 917

Characium polymorphum Printz

- 436** **History:** < IAM **Other collection strain no.:** IAM C-340 **Locality:** Between Ghorepani and Billethadi/Nepal (1965-12-02) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Other strain no.:** N-76-0 **References:** 215, 515 **Remarks:** Cryopreserved

CHATTONELLA : Raphidophyceae*Chattonella antiqua* (Hada) Ono

- 1** **History:** < Watanabe, Makoto M. **Locality:** Harima-Nada/Japan (1978-09-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Gene data:** *coxI* (AF037990) **Other strain no.:** Ho-1 **References:** 65, 103, 181, 224, 226, 230, 231, 232, 233, 234, 235, 361, 393, 395, 439, 447, 539, 571, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 606, 920, 958, 1054, 1110, 1119 **Remarks:** Difficult to transport
- 2** **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1982-09-**) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** OCH-a **References:** 57, 181 **Remarks:** Difficult to transport
- 83** **History:** < KAGAWA **Locality:** off Hiketa/Kagawa/Japan (1977-08-**) **Isolator:** Ono, Chitaru **Identified by:** Ono, Chitaru **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-2 **References:** 181, 999 **Remarks:** Difficult to transport
- 84** **History:** < KAGAWA **Locality:** off Hiketa/Kagawa/Japan (1972-**-**) **Isolator:** Okaichi, Tomotoshi **Identified by:** Okaichi, Tomotoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-6 **Reference:** 181 **Remarks:** Difficult to transport
- 85** **History:** < KAGAWA **Locality:** Shodo Isl./Kagawa/Japan (1978-07-21) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-8-5 **References:** 181, 182 **Remarks:** Difficult to transport
- 86** **History:** < KAGAWA **Locality:** Uranouchi Bay/Kochi/Japan (1980-11-01) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-42-4 **References:** 122, 181, 182, 999 **Remarks:** Difficult to transport
- 113** **History:** < KAGAWA **Locality:** Naoshima/Kagawa/Japan (1982-07-30) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGW-59-2 **References:** 21, 181 **Remarks:** Difficult to transport
- 114** **History:** < KAGAWA **Locality:** Harima-Nada/Japan (1983-08-06) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGW-74-8 **References:** 181, 1095 **Remarks:** Difficult to transport
- 161** **History:** < Takayama, Haruyoshi **Locality:** Hiroshima Bay/Hiroshima/Japan **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** Hiroshima-70 **References:** 133, 134 **Remarks:** Difficult to transport
- 558** **History:** < Honjo, Tsuneo **Locality:** Mikawa Bay/Aichi/Japan **Isolator:** Toriumi, Saburo **Identified by:** Toriumi, Saburo **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport

Chattonella marina (Subrahmanyam) Hara et Chihara

- 3 **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1982-08-**) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** OCH-m **References:** 10, 957, 958, 999 **Remarks:** Difficult to transport
- 14 **History:** < Watanabe, Makoto M. **Locality:** Harima-Nada/Japan (1983-02-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Characteristics:** Red tide **Other strain no.:** H-53-11 **References:** 181, 1095 **Remarks:** Difficult to transport
- 115 **History:** < KAGAWA **Locality:** Kinko Bay/Kagoshima/Japan (1978-06-14) **Isolator:** Aramaki, Takayuki; Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGW-9-1 **Reference:** 181 **Remarks:** Difficult to transport
- 116 **History:** < KAGAWA **Locality:** Harima-Nada/Japan (1981-07-04) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGW-46-7 **Reference:** 181 **Remarks:** Difficult to transport
- 118 **History:** < KAGAWA **Locality:** Harima-Nada/Japan (1983-07-29) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGW-75-2 **References:** 122, 134, 181, 182, 444, 445, 446, 447, 448, 793, 999 **Remarks:** Difficult to transport
- 121 **History:** < Aramaki, Takayuki **Locality:** Kagoshima Bay/Kagoshima/Japan (1982-**-**) **Isolator:** Aramaki, Takayuki **Identified by:** Aramaki, Takayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGO-57-1 **References:** 181, 182, 309, 591, 999 **Remarks:** Difficult to transport
- 557 **History:** < Honjo, Tsuneo **Locality:** Hiroshima Bay/Hiroshima/Japan (1970-09-**) **Isolator:** Takayama, Haruyoshi **Identified by:** Kawachi, Masanobu (Reidentify) **Formerly identified as:** *Chattonella antiqua* (Hada) Ono **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport
- 559 **History:** < Honjo, Tsuneo **Locality:** Maizuru Bay/Kyoto/Japan (1975-10-04) **Isolator:** Takayama, Haruyoshi **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport

Chattonella minima Hara et Chihara

- 848 **History:** < Yoshida, Masao **Locality:** Tokushima/Japan (1983-09-**) **Isolator:** Yoshida, Masao **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Reference:** 134 **Remarks:** Difficult to transport

Chattonella ovata Hara et Chihara

- 603 **History:** < Sawaguchi, Tomohiro **Locality:** Harima-nada/Japan (1984-04-23) **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **References:** 122, 132, 134, 309 **Remarks:** Difficult to transport
- 671 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Harima-nada/Japan (1982-07-30) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport
- 849 **History:** < Hara, Yoshiaki **Locality:** Japan **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Reference:** 134 **Remarks:** Difficult to transport
- 1872 **History:** < Aramaki, Takayuki **Locality:** Kagoshima Bay/Kagoshima/Japan (1982-**-**) **Isolator:** Aramaki, Takayuki **Identified by:** Demura, Mikihide (2007-08-01) **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGO-57-2 **Remarks:** Difficult to transport
- 1873 **History:** < KAGAWA **Locality:** Naoshima Isls./Kagawa/Japan (1982-07-30) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Demura, Mikihide (2007-08-01) **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KGW-60-3 **Remarks:** Difficult to transport

CHLAMYDOMONAS : Chlorophyceae*Chlamydomonas actinochloris* Deason et Bold

- 2201** **History:** < IAM (2007) < BIU (UTEX; 1960) **Other collection strain no.:** IAM C-213; SAG 1.72; UTEX 965 **Locality:** Caldwell County/Texas/U.S.A. **Isolator:** Deason, T. R. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Hydrogen evolution **Other strain no.:** Deason C-2-14 **Reference:** 35

Chlamydomonas applanata Pringsheim

- 2202** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-214; SAG 2.72; UTEX 969 **Locality:** Williamson County/Texas/U.S.A. **Isolator:** Deason, T. R. **Formerly identified as:** *Chlamydomonas aggregata* Deason et Bold **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Deason T-1-12 **Reference:** 35
- 2203** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-216; SAG 3.72; UTEX 967 **Locality:** Caldwell County/Texas/U.S.A. **Isolator:** Deason, T. R. **Formerly identified as:** *Chlamydomonas akinetos* Deason et Bold **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil) **Other strain no.:** Deason C-1-11 **Reference:** 35
- 2204** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-218; CCAP 11/2; SAG 6.72; UTEX 230 **Locality:** Franzensbad/Czechoslovakia **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (Lake mud) **Reference:** 35
- 2205** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-229; UTEX 2399 (?); (BIU 342) **Isolator:** Lewin, Ralph A. **Formerly identified as:** *Chlamydomonas dysosmos* Moewus **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M
- 2206** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-237; ATCC 30455; CCAP 11/9; SAG 11-9; UTEX 225 **Locality:** Botanic Garden, Prague Univ./Czechoslovakia **Isolator:** Lucksch, I. **Formerly identified as:** *Chlamydomonas humicola* Lucksch **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Reference:** 438

Chlamydomonas asymmetrica Korshikov

- 2207** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-219; CCAP 11/41; SAG 11-41; UTEX 450 **Locality:** Yale/Connecticut/U.S.A. **Isolator:** Lewin, Ralph A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (Wet wall)
- 2208** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-234; ATCC 30586; CCAP 11/7; SAG 11-7; UTEX 227; Rodhe 1635 **Locality:** Siggeforasjon/Sweden **Isolator:** Rodhe, W. **Formerly identified as:** *Chlamydomonas gloeopara* Rodhe et Skuja **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Chlamydomonas augustae Skuja var. *ellipsoidea* S. Watanabe

- 158** **History:** < Watanabe, Shin **Locality:** Sumatra/Indonesia (1979-08-21) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain **Other strain no.:** ASE-242 **References:** 345, 515, 1073, 1074

Chlamydomonas coccoides Butcher

- 1021** **History:** < Moriya, Mayumi **Locality:** Osaka Bay/Hyogo/Japan (2000-11-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** #95

Chlamydomonas culleus Ettl

- 2209** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-552 (= C-231); SAG 18.72; UTEX 1057; CGC CC-1743 **Locality:** near Maxville/Florida/U.S.A. **Isolator:** Smith, G. M. **Formerly identified as:** *Chlamydomonas frankii* Pascher **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-2210 (IAM C-553) **Other strain no.:** *Chlamydomonas culleus*
- 2210** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-553 (= C-232); SAG 19.72; UTEX 1058; CGC CC-1744 **Locality:** near Maxville/Florida/U.S.A. **Isolator:** Smith, G. M. **Formerly identified as:** *Chlamydomonas frankii* Pascher **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-2209 (IAM C-552)

Chlamydomonas debaryana Goroschankin

- 2211 **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-215; CCAP 11/1; SAG 11-1; UTEX 231 **Locality:** near Grossteich, Hirschberg/Czechoslovakia **Isolator:** Mainx, F. **Formerly identified as:** *Chlamydomonas agloeiformis* Pascher **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (Pool water) **Reference:** 35
- 2212 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-549 (= C-1); Tsubo I16; UTEX 618; CCAP 11/59; SAG 4.72 **Isolator:** Tsubo, Yoshihiro **Formerly identified as:** *Chlamydomonas angulosa* Dill **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **References:** 565, 778, 779

Chlamydomonas debaryana Goroschankin var. *crystata* Ettl

- 884 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** CCAP 11/4; UTEX 1344 **Locality:** Nordmähren/Czech **Isolator:** Ettl, H. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** (Soil) **Characteristics:** Authentic strain **Gene data:** *atpB* (AB014034); *psaA* (AB044417); *psaA* (AB044418); *psaB* (AB044469); *psbC* (AB044527); *rbcL* (D86838) **References:** 647, 663, 666

Chlamydomonas dorsoventralis Pascher

- 2213 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-228; CCAP 11/4; UTEX 228; SAG 25.86 (?); ATCC 20594; CGC C-1812 **Locality:** Dorfteich, Hirschberg/Czechoslovakia **Isolator:** Mainx, F. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **References:** 35, 438

Chlamydomonas fasciata Ettl

- 437 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1984-05-08) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Other strain no.:** H-3-4-2 **References:** 187, 515, 979

Chlamydomonas fimbriata Ettl

- 2214 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-230; CCAP 11/69; SAG 17.72; UTEX 1349 **Isolator:** Ettl, H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Chlamydomonas gerloffii Ettl

- 2215 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-554 (= C-233); CCAP 11/72; SAG 20.72; UTEX 1348 **Locality:** Schonhengst/Czechoslovakia **Isolator:** Ettl, H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (Pond) **Other strain no.:** Ettl 136

Chlamydomonas inflexa Pringsheim

- 2216 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-253; SAG 24.72; UTEX 727 **Isolator:** Lewin, Ralph A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** R.A.Lewin DD1/72

Chlamydomonas kuwadae Gerloff

- 968 **History:** < Nozaki, Hisayoshi **Locality:** Lake Nojiri (depth 0-10m)/Nagano/Japan (1992-05-13) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 10°C; 15-20 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB451190); *atpB* (AB084318); *psaB* (AB084356); *rbcL* (AB084334) **Other strain no.:** 92-514-H-13 **References:** 554, 668

Chlamydomonas leiostraca Strehlow

- 2217 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-284; CCAP 11/49; SAG 11-49; UTEX 466 **Locality:** Cambridge/U.K. **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Chlamydomonas stercoraria* Pringsheim **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil)

Chlamydomonas mexicana Lewin

- 2218 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-555 (= C-257); UTEX 730; SAG 11-60b **Isolator:** Lewin, Ralph A. **Identified by:** Lewin, Ralph A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Chlamydomonas moewusii Gerloff

- 2219 **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-258; CCAP 11/16g; UTEX 96; SAG 11-16g; ATCC 30418; UTCC 83; CGC 56 **Isolator:** Provasoli, L. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **References:** 35, 115, 1047
- 2220 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-259; CCAP 11/16f; UTEX 97; SAG 11-16f; ATCC 3-588; CGC 57 **Isolator:** Provasoli, L. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M

Chlamydomonas moewusii Gerloff var. *rotunda* Tsubo

- 2221 **History:** < IAM (2007) < Tsubo, Yoshihiro **Other collection strain no.:** IAM C-15; CCAP 11/64B; UTEX 577; SAG 11-61b **Locality:** Sasayama/Hyogo/Japan **Isolator:** Tsubo, Yoshihiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** Tsubo 24 (-) **References:** 971, 1076
- 2222 **History:** < IAM (2007) < Tsubo, Yoshihiro **Other collection strain no.:** IAM C-19 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Other strain no.:** Tsubo 2475 **Reference:** 971
- 2223 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-556 (= C-16); CCAP 11/64A; UTEX 576; SAG 11-61a **Locality:** Sasayama/Hyogo/Japan **Isolator:** Tsubo, Yoshihiro **Identified by:** Tsubo, Yoshihiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mating type (+) **Other strain no.:** Tsubo 24 (+) **Reference:** 1076

Chlamydomonas monadina Stein var. *monadina*

- 438 **History:** < Suda, Shoichiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-07-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** Kas-7 **Reference:** 515

Chlamydomonas mutabilis Gerloff

- 2224 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-558 (= C-7); UTEX 578; SAG 34.72 **Isolator:** Tsubo, Yoshihiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Other strain no.:** Tsubo T-A

Chlamydomonas nasuta Korshikov

- 2225 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-550 (= C-225); UTEX 451 **Locality:** Edgewood Park/Connecticut/U.S.A. **Isolator:** Lewin, Ralph A. **Formerly identified as:** *Chlamydomonas conferta* Korshikov **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** (Soil)

Chlamydomonas nivalis Wille

- 2226 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-263 (BIU 464) **Isolator:** Lewin, Ralph A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** (Snow)

Chlamydomonas noctigama Korshikov

- 1048 **History:** < Nozaki, Hisayoshi **Locality:** Neuglobsow/Brandenburg/Germany (2001-08-14) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater **Gene data:** *atpB* (AB101502); *psaB* (AB101513); *rbcL* (AB101506); *rbcL* (AB101507) **Other strain no.:** 2001-814-C10
- 2227 **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-236; UTEX 1338; SAG 22.72 **Locality:** High Tatra Mts/Czechoslovakia **Isolator:** Ettl, H. **Formerly identified as:** *Chlamydomonas hindakii* Ettl **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** (Soil) **Other strain no.:** Ettl 103 **Reference:** 35
- 2228 **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-270; SAG 40.72; UTEX 1339 **Locality:** Czechoslovakia **Isolator:** Ettl, H. **Formerly identified as:** *Chlamydomonas pinicola* Ettl **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Soil **Other strain no.:** Ettl 108
- 2229 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-557 (= C-262); ATCC 30629; CCAP 11/17; SAG 33.72; UTEX 220 **Locality:** Czechoslovakia **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Chlamydomonas monoica* Strehlow **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **References:** 438, 1005

Chlamydomonas orbicularis Pringsheim

- 2230 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-559 (= C-266); SAG 11-19; UTEX 218; CGC CC-1739; CCAP 11/19 **Locality:** near Celakovice/Czechoslovakia **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (River sand)

Chlamydomonas parkeae Ettl

- 440 **History:** < Suda, Shoichiro **Locality:** Izumi Bay/Nagasaki/Japan (1986-03-12) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Marine (Seawater) **Gene data:** *rbcL* (AB127988) **Other strain no.:** I-29 **References:** 362, 515, 804, 827
- 1022 **History:** < Moriya, Mayumi **Locality:** Mitsu Bay/Hiroshima/Japan (2001-03-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** #97
- 1733 **History:** < Sato, Mayumi **Locality:** Miyako Isl./Okinawa/Japan (2002-07-**) **Isolator:** Sato, Mayumi **Identified by:** Sato, Mayumi (2005-08-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 18-23 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** M-77

Chlamydomonas perpusilla (Korshikov) Gerloff var. *perpusilla*

Syn. *Chlamydomonas minima* Korshikov

- 1848 **History:** < Nakada, Takashi **Locality:** Sakata-ga-ike Pond/Chiba/Japan (2003-07-23) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2006-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond sediment) **Other strain no.:** SkCl-3 **Reference:** 553
- 1849 **History:** < Nakada, Takashi **Locality:** Sakata-ga-ike Pond/Chiba/Japan (2003-07-23) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2006-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond sediment) **Gene data:** *psaB* (AB451199) **Other strain no.:** SkCr-10 **References:** 553, 554

Chlamydomonas proteus Pringsheim

- 2231 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-560 (= C-271); ATCC 30452; CCAP 11/21; SAG 41.72; UTEX 216 **Locality:** near Hirschberg/Czechoslovakia **Isolator:** Pringsheim, E. G. **Identified by:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater

Chlamydomonas pseudococcum Lucksch

- 2232 **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-273; ATCC 30451; CCAP 11/23; SAG 11-23; UTEX 214 **Locality:** Reichsstadt/Czechoslovakia **Isolator:** Lucksch, J. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M

Chlamydomonas pulsatilla Wollenweber

- 122 **History:** < IAM (1983) **Other collection strain no.:** IAM C-385 (= C-561) **Locality:** Muroran/Hokkaido/Japan (1966-05-12) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** P35; 20°C; 4-10 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Lake water) **Gene data:** *psaB* (AB451200) **Other strain no.:** MKF-50 **References:** 214, 215, 267, 515, 554, 1047, 1074

Chlamydomonas pulvinata Vischer

- 2233 **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-276; CCAP 11/25; SAG 45.72; UTEX 212 **Locality:** Basel/Switzerland **Isolator:** Vischer, W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater

Chlamydomonas pumilio Ettl var. *pumilio*

- 1850 **History:** < Nakada, Takashi **Locality:** Arisugawa-no-miya Memorial Park/Tokyo/Japan (2003-04-28) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2006-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater **Gene data:** *psaB* (AB451201) **Other strain no.:** ArCp-7 **References:** 553, 554

Chlamydomonas rapa Ettl

- 2234 **History:** < IAM (2007) **Other collection strain no.:** IAM C-279 **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M

Chlamydomonas reinhardtii Dangeard

- 2235** **History:** < IAM (2007) < Tsubo, Yoshihiro (1959) < Sager (1954) < Smith (1953) **Other collection strain no.:** IAM C-9 **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Mating type (-); Crosses with NIES-2239 (IAM C-562) **Gene data:** Amt protein mRNA (putative) (AF509497); CAH1 (D90206); CAH1 (5'-upstream region) (AB026126); CAH2 (X54488); CrDES (AB239769); GCS1 mRNA (AB206813); MMP1 (AB058411); MMP1 mRNA (AB058413); MMP2 (AB058412); MMP2 mRNA (AB058414); MMP3 mRNA (AB108850); mRNA for plastid DNA recombination (AB048829); NSG1 mRNA (AB167472); NSG6 mRNA (AB167474); NSG7 mRNA (AB167475); NSG11 mRNA (AB167476); NSG13 mRNA (AB167477); NSG17 mRNA (AB167478); SIG1 mRNA (AB049220); Total genome information (<http://chlamy.pmb.lif.kyoto-u.ac.jp/chlamybase>); EST information (<http://est.kazusa.or.jp/en/plant/chlamy/EST/index.html>) **Other strain no.:** Tsubo R (-) **References:** 1, 5, 22, 23, 24, 28, 37, 59, 60, 61, 66, 102, 109, 110, 306, 314, 334, 412, 413, 415, 416, 467, 468, 469, 470, 472, 476, 508, 742, 743, 744, 748, 913, 964, 965, 985, 988, 991, 992, 1047, 1079, 1082, 1108, 1113, 1133
- 2236** **History:** < IAM (2007) < Kuchitsu, Kazuyuki (1991) < Mihara, S. < Matsuda, Y. < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-239; CCAP 11/32A; SAG 11-32b; UTEX 90; NIBB 4014; CGC CC-1010; CGC CC-409 **Locality:** near Amherst/Massachusetts/U.S.A. **Isolator:** Smith, G. M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (Soil) **Characteristics:** Mating type (+) **Other strain no.:** 137c mt⁺ **References:** 455, 855, 973
- 2237** **History:** < IAM (2007) < Mihara, S. (1991) **Other collection strain no.:** IAM C-540 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** TAP (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Cell wall less mutant of NIES-2238 (IAM C-541) **Other strain no.:** cw-15 strain **Reference:** 363
- 2238** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-541 (= C-238); CCAP 11/32B; SAG 11-32a; UTEX 89; NIBB 4013; UTCC 84; CGC CC-1009 **Locality:** near Amherst/Massachusetts/U.S.A. **Isolator:** Smith, G. M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** TAP (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (Soil) **Characteristics:** Mating type (-) **Other strain no.:** 137c mt⁻ **References:** 363, 718, 778, 779, 808, 809, 878, 956
- 2239** **History:** < IAM (2007) < Tsubo, Yoshihiro (1996) < Sager (1954) < Smith (1953) **Other collection strain no.:** IAM C-562 (= C-8) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil) **Characteristics:** Mating type (+); Crosses with NIES-2235 (IAM C-9) **Other strain no.:** Tsubo R (+) **References:** 200, 1047

Chlamydomonas segnis Ettl

- 2240** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-254; ATCC 30631; CCAP 11/13; SAG 11-13; UTEX 222; CGC CC-1740 **Locality:** West Humble, Dorking/U.K. **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Chlamydomonas intermedia* Chodat **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (Pond water)

Chlamydomonas simplex Pascher

- 2241** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-281; CCAP 11/26; (BIU 211) **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater

Chlamydomonas sp.

- 2314** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1983-07-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** SIS-ch
- 2315** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1984-05-04) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Other strain no.:** H-3-1
- 2316** **History:** < Suda, Shoichiro **Locality:** Osaka Bay/Osaka/Japan (1982-08-03) **Isolator:** Watanabe, Makoto M. **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** OChla
- 2317** **History:** < Suda, Shoichiro **Locality:** Kazo/Saitama/Japan (1984-06-10) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mating type (-) **Other strain no.:** KZ-5-8
- 2318** **History:** < Suda, Shoichiro **Locality:** Kazo/Saitama/Japan (1984-06-10) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mating type (+) **Other strain no.:** KZ-5-17

- 2319** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1954-05-08) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Other strain no.:** H-3-6
- 2320** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1985-11-05) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** w-14-5
- 2321** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1985-11-05) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** w-30
- 2322** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1985-11-05) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** w-36
- 2323** **History:** < Suda, Shoichiro **Locality:** Shimoda/Shizuoka/Japan (1985-05-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** Sa-38
- 2324** **History:** < Sawaguchi, Tomohiro **Locality:** Iriomote Isl./Okinawa/Japan (1986-01-23) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** STP; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** IC-9

Chlamydomonas sphaeroides Gerloff

- 2242** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-255; CCAP 11/14; UTEX 221; SAG 25.72; CGC CC-1811 **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Chlamydomonas iyengari* Mitra **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Chlamydomonas subangulosa Fritsch et John

- 2243** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-563 (= C-285); CCAP 11/28; SAG 57.72; UTEX 209 **Locality:** England/U.K. **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil)

Chlamydomonas subtilis Pringsheim

- 2244** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-564 (= C-287); CCAP 11/30; UTEX 207 **Locality:** Botanic Garden, Prague/Czechoslovakia **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater

Chlamydomonas tetragama (Bohlin) Ettl

- 446** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1985-04-13) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro; Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium metamorphum* Skuja **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Authentic (Neotype) strain **Gene data:** *atpB* (AB084319); *psaB* (AB084357); *rbcL* (AJ001880) **Other strain no.:** 413D4-4 **References:** 515, 642, 665, 668, 1000

Chlamydomonas transitia Ettl

- 2245** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-289; UTEX 1345; SAG 60.72 **Isolator:** Ettl, H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Ettl 130

Chlamydomonas typica Deason et Bold

- 2246** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-565 (= C-290); SAG 61.72; UTEX 971; CGC CC-1807 **Locality:** Williamson County/Texas/U.S.A. **Isolator:** Deason, T. R. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil) **Other strain no.:** Deason T-21-11

Chlamydomonas ulvaensis Lewin

- 2247** **History:** < IAM < UTEX (1996) **Other collection strain no.:** IAM C-566 (= C-291); CCAP 11/58; Lewin DD1/27; SAG 62.72; UTEX 724 **Locality:** Isle of Ulva /Scotland/U.K. **Isolator:** Lewin, Ralph A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (Pasture plant)

Chlamydomonas zebra Korshikov ex Pascher

- 2248** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-221; SAG 8.72; UTEX 229; CCAP 11/3 **Isolator:** Brannon, M. A. **Formerly identified as:** *Chlamydomonas brannonii* Pringsheim **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Brannon5

CHLORARACHNION : Chlorarachniophyceae*Chlorarachnion reptans* Geitler

- 624** **History:** < CCAP **Other collection strain no.:** CCAP 815/1 **Locality:** Puerto Penasco/Mexico **Isolator:** Norris, Richard E. **States:** Unialgal **Culture conditions:** ESM2; 20°C; 32-40 µmol/m²/s; 2 M **Habitat:** Marine (Seawater)

Chlorarachnion sp.

- 1408** **History:** < TKB **Locality:** Amami Isl., Ayamaru/Kagoshima/Japan (2000-06-**) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 25-40 µmol/m²/s; 6 M **Habitat:** Marine (Sand) **Characteristics:** Mixotrophic; Benthic **Other strain no.:** TKB-002 (ym-02)

CHLORELLA : Trebouxiophyceae'*Chlorella ellipsoidea*' Gerneck

- 2150** **History:** < IAM (2007) < UTEX (1989) **Other collection strain no.:** IAM C-542 (= C-87); ATCC 30404; CCAP 211/1A; SAG 211-1a; UTEX 20 **Isolator:** Pringsheim, E. G. **Identified by:** Pringsheim, E. G.; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488583) **References:** 351, 401, 921

'*Chlorella*' *saccharophila* (Krüger) Migula

- 640** **History:** < Kasai, Fumie **Locality:** Otarunai River/Hokkaido/Japan (1987-07-02) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **Culture conditions:** C; 10°C; 6-12 µmol/m²/s; 6 M (10°C; 10-15 µmol/m²/s) **Habitat:** Freshwater (River water) **Gene data:** 18S rRNA (AB488790) **Other strain no.:** Tst-8-2 **References:** 515, 917 **Remarks:** Cryopreserved
- 2352** **History:** < IAM (2007) < Safferman, R. S. **Other collection strain no.:** IAM C-183; SEC 95 **Identified by:** Kessler, E.; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488791) **Reference:** 1094

Chlorella sorokiniana Shihira et Krauss

- 2167** **History:** < IAM (2007) < Yakult < IAM < Watanabe, Atsushi **Other collection strain no.:** IAM C-43 **Isolator:** Watanabe, Atsushi **Identified by:** Kessler, E. (1994); Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella vulgaris* Beijerinck (before 1994) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488789)
- 2168** **History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM C-133 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi; Kessler, E. (1993); Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella vulgaris* Beijerinck (before 1993) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488572) **Other strain no.:** Murano (407)U-145 **References:** 62, 717, 1094
- 2169** **History:** < IAM (2007) < Meyers, Jack **Other collection strain no.:** IAM C-212; ATCC 22521; CAUP H1957; CCAP 211/8k; SAG 211-8K; UTEX 1230 **Locality:** Texas/U.S.A. **Isolator:** Sorokin, C. **Identified by:** Kessler, E. (1993); Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella pyrenoidosa* Chick (before 1993) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB080307); 18S rRNA (AB488573); Actin (AB080311) **References:** 35, 351, 449, 718, 1101

Chlorella sp.

- 2171** **History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM C-135 **Locality:** Botanical garden, Sendai/Miyagi/Japan **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi; Kessler, E. (1993); Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella vulgaris* Beijerinck (before 1993) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488574) **Other strain no.:** Kiyohara U-140 **References:** 173, 1094
- 2330** **History:** < Watanabe, Yoshitomo **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-04-22) **Isolator:** Watanabe, Yoshitomo **Identified by:** Watanabe, Yoshitomo **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Other strain no.:** HA-1 **Remarks:** Cryopreserved

Chlorella vulgaris Beijerinck

- 1269** **History:** < Moriya, Mayumi **Locality:** Banzu Tidal Flat/Chiba/Japan (2002-05-14) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi; Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella* sp. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** (Tidal flat water) **Gene data:** 18S rRNA (AB488579) **Other strain no.:** M-56 **Remarks:** Cryopreserved
- 2170** **History:** < IAM (2007) < Tokugawa Institute for Biological Research **Other collection strain no.:** IAM C-27 **Locality:** Sendai/Miyagi/Japan **Identified by:** Takeda, H.; Kessler, E. (1991); Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella ellipsoidea* Gerneck (before 1991) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 16S rRNA (AF350259); 16S rRNA (AF350260); 16S rRNA (AJ242748); 16S rRNA (AJ242753); 18S rRNA (AB178085); 18S rRNA (AJ242757); 18S rRNA (AB488580); CvFAD2 mRNA (AB075526); CvFAD3 mRNA (AB075527); G6PDH mRNA (AB085846); HiC6 mRNA (U38231); HiC12 mRNA (AB035642); Plastid DNA (AB001684) **Other strain no.:** Tamiya strain **References:** 7, 12, 14, 15, 81, 108, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 155, 156, 158, 159, 160, 161, 162, 163, 164, 176, 177, 178, 183, 184, 185, 191, 238, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 303, 304, 315, 316, 317, 318, 319, 344, 373, 451, 452, 456, 466, 475, 478, 479, 480, 481, 482, 483, 484, 486, 488, 492, 493, 494, 495, 496, 498, 500, 501, 502, 505, 506, 510, 518, 519, 602, 607, 608, 616, 678, 679, 680, 681, 685, 686, 687, 711, 732, 774, 775, 776, 777, 802, 803, 820, 850, 854, 872, 885, 898, 903, 912, 915, 921, 922, 923, 924, 925, 926, 927, 928, 929, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 985, 992, 1003, 1089, 1093
- 2172** **History:** < IAM < CCAP (Butcher, R. W.) **Other collection strain no.:** IAM C-176; CCAP 211/21A or B (?) **Isolator:** George, E. A. **Identified by:** Kessler, E. (1993); Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella ovalis* Butcher (before 1993) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488581)
- 2173** **History:** < IAM (2007) < Tszuzuki, Mikio (1988) < Avramova, S. T. (1982) < probably Semenenko **Other collection strain no.:** IAM C-536; IPPAS C-3 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB080308); Actin-1 (AB080312); Actin-2 (AB080313) **References:** 5, 37, 498, 509, 510, 511, 988, 992, 1101

Chlorella vulgaris Beijerinck var. *vulgaris*

- 227** **History:** < IAM (1983) **Other collection strain no.:** IAM C-30 **Locality:** Japan **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Gene data:** 16S rRNA (AJ242754); 16S rRNA (AJ242771); 18S rRNA (AJ242756); 18S rRNA (AB488575); 18S rRNA, ITS1, 5.8S rRNA, ITS2 (AB162910); 28S rRNA (AB237642); *coxI* (D63763); *coxI* (AB011523); *psaA* (AB260919); *rbcL* (AB260909) **References:** 171, 215, 223, 239, 328, 348, 436, 451, 452, 515, 517, 652, 688, 733, 817, 873, 998, 1013, 1023, 1074, 1094, 1136 **Remarks:** Cryopreserved
- 641** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-02-25) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 6 M **Habitat:** Freshwater (River water) **Gene data:** 18S rRNA (AB488576) **Other strain no.:** 1st-3-26 **References:** 515, 916, 917 **Remarks:** Cryopreserved
- 642** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-02-25) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 6 M **Habitat:** Freshwater (River water) **Gene data:** 18S rRNA (AB488577) **Other strain no.:** 1st-2-17 **References:** 515, 916, 917 **Remarks:** Cryopreserved
- 686** **History:** < Katagiri, Masayuki < CCAP **Other collection strain no.:** CCAP 211/11b; IAM C-207; SAG 211-11b **Locality:** Delft/Netherlands **Isolator:** Beijerinck, M. W. **Identified by:** Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB488578) **Other strain no.:** C-207 **References:** 39, 351, 515, 652, 885, 1094 **Remarks:** Cryopreserved

CHLOROCOCCUM : Chlorophyceae*Chlorococcum echinozygotum* Starr

- 2249** **History:** < IAM (2007) < Inst. Algological Reseach, Fac. Sci., Hokkaido Univ. (1969) **Other collection strain no.:** IAM C-386 **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Chlorococcum elkhartiense Archibald et Bold

- 2250** **History:** < IAM (2007) < BIU (UTEX; 1967) **Other collection strain no.:** IAM C-567 (= C-283); SAG 56.72; UTEX 293; CCAP 11/57 **Locality:** Salen, Mull/Scotland/U.K. **Isolator:** Lewin, Ralph A. **Identified by:** Ettl, H.; Schlösser, U. G. **Formerly identified as:** *Chlamydomonas sphagnophila* Pascher **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Homothallic **Other strain no.:** Lewin DD1/174

Chlorococcum humicola (Nägeli) Rabenhorst

- 2251** **History:** < IAM (2007) < Holm-Hansen, O. **Other collection strain no.:** IAM C-173 **Locality:** Marble Point/Antarctica **Isolator:** Holm-Hansen, O. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **Other strain no.:** Holm-Hansen M-19-a

CHLOROGONIUM : Chlorophyceae*Chlorogonium capillatum* Nozaki, M. M. Watanabe et Aizawa

- 692** **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1992-04-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 10°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Bog soil) **Characteristics:** Authentic strain; Monoecious; Isogamy; Paedogamy; Type specimen (NIES-50001, Epitype) **Gene data:** *rbcL* (AB010230) **Other strain no.:** 92-517-6-2 **References:** 515, 552, 555, 665
- 742** **History:** < Nozaki, Hisayoshi < IAM **Other collection strain no.:** CCAP 12/4; IAM C-295; UTEX 201 **Locality:** Czechoslovakia **Isolator:** Meyer, H. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium tetragamum* Bohlin **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Gene data:** *rbcL* (AB010234) **Reference:** 665
- 743** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1643 **Locality:** Leveret/Massachusetts/U.S.A. **Isolator:** Kugrens, P. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium tetragamum* Bohlin **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Soil) **Gene data:** *rbcL* (AB010235) **Reference:** 665
- 744** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2160 **Locality:** Germany **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in UTEX) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Gene data:** *rbcL* (AB010236) **Reference:** 665
- 745** **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/2A **Locality:** Berlin/Germany **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium elongatum* (Dangeard) Dangeard (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *rbcL* (AB010231) **Reference:** 665
- 746** **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/2B **Locality:** Cape Flats/South Africa **Isolator:** George **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium elongatum* (Dangeard) Dangeard (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Soil) **Gene data:** *rbcL* (AB010232) **Reference:** 665
- 747** **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/5 **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Gene data:** *rbcL* (AB010233) **Reference:** 665
- 748** **History:** < Nozaki, Hisayoshi < SAG **Other collection strain no.:** SAG 12-2e **Locality:** near Prague/Czechoslovakia **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium elongatum* (Dangeard) Dangeard (in SAG) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Gene data:** *psaB* (AB451203); *rbcL* (AB010237) **References:** 554, 665

749 **History:** < Nozaki, Hisayoshi < SAG **Other collection strain no.:** SAG 47.84 **Isolator:** Provasoli, L. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium euchlorum* Ehrenberg (in SAG) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Gene data:** *rbcL* (AB010238) **Reference:** 665

750 **History:** < Nozaki, Hisayoshi < SAG **Other collection strain no.:** SAG 4.93 **Locality:** Leveret/Massachusetts/U.S.A. **Isolator:** Kugrens, P. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium tetragamum* Bohlin (in SAG) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Soil) **Gene data:** *rbcL* (AB010239) **Reference:** 665

Chlorogonium elongatum (Dangeard) Francé

751 **History:** < Nozaki, Hisayoshi < IAM **Other collection strain no.:** CCAP 12/1; IAM C-293 (= C-568); UTEX 204 **Locality:** Caldbeck/England/U.K. **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium acus* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Authentic strain; Type specimen (NIES-50002, Epitype) **Gene data:** *rbcL* (AJ001881) **References:** 555, 665

752 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2571 **Locality:** Austin/Texas/U.S.A. **Isolator:** Wood, M. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in UTEX) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *psaB* (AB451204); *rbcL* (AB010240) **References:** 554, 665

753 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2572 **Locality:** Austin/Texas/U.S.A. **Isolator:** Wood, M. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in UTEX) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *rbcL* (AB010241) **Reference:** 665

1357 **History:** < Nakada, Takashi **Locality:** Atsugi, Shimokawairi/Kanagawa/Japan (1998-03-07) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic **Gene data:** *rbcL* (AB206330) **Other strain no.:** Chlogo-1/1998-3-7 **References:** 551, 552, 555

1358 **History:** < Nakada, Takashi **Locality:** Narita, Ohtake/Chiba/Japan (2003-07-23) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic **Gene data:** *psaB* (AB451205); *rbcL* (AB206329) **Other strain no.:** SkCl-2 **References:** 551, 552, 554

Chlorogonium euchlorum (Ehrenberg) Ehrenberg

754 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1639 **Locality:** Schickley/Nebraska/U.S.A. **Isolator:** Kugrens, P. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium elongatum* (Dangeard) Dangeard (in UTEX) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Soil) **Gene data:** *rbcL* (AB010226) **Reference:** 665

755 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2010 **Locality:** Germany **Isolator:** Müller, Dieter G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in UTEX) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Characteristics:** Authentic strain; Type specimen (NIES-50003, Epitype) **Gene data:** *rbcL* (AB010227) **References:** 555, 665

756 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2011 **Locality:** Germany **Isolator:** Müller, Dieter G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in UTEX) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Gene data:** *rbcL* (AB010228) **Reference:** 665

757 **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/2C **Locality:** Amiens/France **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium elongatum* (Dangeard) Dangeard (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Gene data:** *rbcL* (AB010224) **Reference:** 665

758 **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/3 **Locality:** Berlin/Germany **Isolator:** Mainx **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium euchlorum* Ehrenberg (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Gene data:** *rbcL* (AJ001882) **Reference:** 665

- 759** **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/6 **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Gene data:** *rbcL* (AB010225) **Reference:** 665
- 760** **History:** < Nozaki, Hisayoshi < SAG **Other collection strain no.:** SAG 12-2d **Locality:** Cape Flats/South Africa **Isolator:** Pringsheim, E. G. **Identified by:** Nozaki, Hisayoshi (Reidentify) **Formerly identified as:** *Chlorogonium elongatum* (Dangeard) Dangeard (in SAG) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** (Soil) **Gene data:** *psaB* (AB451206); *rbcL* (AB010229) **References:** 554, 665

CHLOROKYBUS : Charophyceae*Chlorokybus* sp.

- 160** **History:** < Watanabe, Shin **Locality:** Tottori/Japan (1972-05-19) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **Formerly identified as:** *Chlorosarcinopsis caeca* S. Watanabe **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Soil) **Other strain no.:** TOT-24 **References:** 515, 1073

CHLOROMONAS : Chlorophyceae*Chloromonas insignis* (Anachin) Gerloff et Ettl

- 447** **History:** < Suda, Shoichiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *atpB* (AB084313); *psaB* (AB084348); *rbcL* (AB022226) **Other strain no.:** Kas-8 **References:** 515, 520, 668

CHLOROTETRAEDRON : Chlorophyceae*Chlorotetraedron incus* (Teiling) MacEntee *et al.*Syn. *Tetraedron incus* (Teiling) G. M. Smith

- 392** **History:** < Kasai, Fumie **Locality:** Tsukuba/Ibaraki/Japan (1984-05-07) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** F115 **Remarks:** Cryopreserved

CHORICYSTIS : Trebouxiophyceae*Choricystis minor* (Skuja) Fott

- 1436** **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2003-01-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-052 (nak-07)

Choricystis sp.

- 1840** **History:** < TKB **Locality:** Shishizuka-ohike Pond/Ibaraki/Japan (2004-06-24) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2004-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-198
- 2333** **History:** < Takamura, Noriko **Locality:** Lake Misuzu/Nagano/Japan (1991-05-17) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Re-identified at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488792); 18S rRNA (AB488793) **Other strain no.:** MSZ 3
- 2335** **History:** < Takamura, Noriko **Locality:** Lake Kuttara/Hokkaido/Japan (1991-07-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Re-identified at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488584) **Other strain no.:** KUTA 1
- 2337** **History:** < Takamura, Noriko **Locality:** Lake Shikotsu/Hokkaido/Japan (1991-05-27) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Re-identified at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488585) **Other strain no.:** SKT 1

2338 **History:** < Takamura, Noriko **Locality:** Lake Toya/Hokkaido/Japan (1991-05-30) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Re-identified at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488586) **Other strain no.:** TOYA 1

2342 **History:** < Takamura, Noriko **Locality:** Lake Otadomarinuma/Hokkaido/Japan (1991-05-29) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Re-identified at NIES by DNA sequencing **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488587) **Other strain no.:** OTD 1 **Remarks:** Cryopreserved

CHROMULINA : Chrysophyceae

Chromulina sp.

2304 **History:** < Suda, Shoichiro **Locality:** Harima-nada/Japan (1984-08-10) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 3 M **Habitat:** Marine (Seawater) **Other strain no.:** 810YB-10

CHROODACTYLON : Stylonematophyceae

Chroodactylon ornatum (C. Agardh) Basson

Syn. *Asterocystis smargadina* Reinsch; *Asterocystis ramosa* (Thwaites) Gobi; *Chroodactylon ramosum* (Thwaites) Hansgirg

1969 **History:** < Sato, Mayumi **Locality:** Miyako Isl./Okinawa/Japan (2002-07-**) **Isolator:** Sato, Mayumi **Identified by:** Yokoyama, Akiko (2007-02-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Epiphytic **Other strain no.:** M-76

1970 **History:** < Sato, Mayumi **Locality:** Ishigaki Isl., Urasoko Bay/Okinawa/Japan (2004-02-19) **Isolator:** Sato, Mayumi **Identified by:** Yokoyama, Akiko (2007-02-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Epiphytic **Other strain no.:** M-183

1971 **History:** < Sato, Mayumi **Locality:** Seragaki Beach/Okinawa/Japan (2004-02-20) **Isolator:** Sato, Mayumi **Identified by:** Yokoyama, Akiko (2007-02-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Epiphytic **Other strain no.:** M-184

CHROOGLOEOCYSTIS : Cyanophyceae

Chroogloeocystis siderophila I. I. Brown et Cooksey

1031 **History:** < Brown, Igor I. **Locality:** La Duke Hot Spring/Montana/U.S.A. (2001-7-**) **Isolator:** Brown, Igor I. **Identified by:** Brown, Igor; Mummey, Daniel **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** DH + Fe (agar); MDM (agar); 24°C; 20-30 µmol/m²/s; 4 M (37°C; 15-25 µmol/m²/s) **Habitat:** Hot spring (Bottom mud) **Characteristics:** Biofilm process; Thermophilic **Gene data:** 16S rRNA (AY380791) **Other strain no.:** 5.2 s.c.1

CHROOMONAS : Cryptophyceae

Chroomonas caudata Geitler

712 **History:** < Erata, Mayumi **Locality:** Funada-ike Pond/Chiba/Japan (1985-09-**) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** 18S rRNA (AB240963); Nuclear actin (AB126024) **Other strain no.:** #00171 **Reference:** 75

Chroomonas coerulea (Geitler) Skuja

Syn. *Cryptomonas coerulea* Geitler

713 **History:** < Erata, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1985-11-10) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** #00191 **References:** 73, 75

714 **History:** < Erata, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1985-11-10) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** #00217 **References:** 73, 75, 76

1004 **History:** < Moriya, Mayumi **Locality:** Bibi River/Hokkaido/Japan (1999-11-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** #74

Chroomonas collegionis Butcher

703 **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 978/11 **Locality:** River Thames/Essex/U.K. (1961-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Brackish **Characteristics:** Authentic strain **Other strain no.:** M08

Chroomonas dispersa Butcher

704 **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 978/10 **Locality:** Bristol Channel/U.K. (1960-08-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB240961) **Other strain no.:** M09

Chroomonas mesostigmatica Butcher

1370 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2004-02-09) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + NH₄Cl; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Sand and seawater) **Other strain no.:** TKB-112 (AK-13)

Chroomonas nordstedtii Hansgirg

706 **History:** < Erata, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1976-09-**) **Isolator:** Inouye, Isao **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** #00165 **References:** 73, 74, 75, 127

707 **History:** < Erata, Mayumi **Locality:** Funada-ike Pond/Chiba/Japan (1985-09-**) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00173 **References:** 75, 76

708 **History:** < Erata, Mayumi **Locality:** Hokkaido University/Hokkaido/Japan (1987-09-24) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** 18S rRNA (AB240962); Nuclear actin (AB126023) **Other strain no.:** #00324 **Reference:** 75

709 **History:** < Erata, Mayumi **Locality:** Hokkaido University/Hokkaido/Japan (1987-09-24) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00330 **Reference:** 75

710 **History:** < Erata, Mayumi **Locality:** Hokkaido University/Hokkaido/Japan (1987-09-24) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00331 **Reference:** 75

711 **History:** < Erata, Mayumi **Locality:** Mitsukaido/Ibaraki/Japan (1987-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Sediment) **Other strain no.:** #00354

Chroomonas placoidea Butcher

705 **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 978/8 **Locality:** Yorkshire/U.K. (1959-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Other strain no.:** M11 **Reference:** 74

Chroomonas sp.

2331 **History:** < Hatakeyama, Noriko **Locality:** Naka River/Ibaraki/Japan (1992-04-14) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; WESM; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Brackish (Sediment) **Other strain no.:** NAK-1

CHRYSOCHROMULINA : Prymnesiophyceae*Chrysochromulina hirta* Manton

- 741 **History:** < Kawachi, Masanobu **Locality:** Chiba Harbor/Chiba/Japan (1986-06-23) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 35-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Mixotrophic; Phagotrophic **Other strain no.:** CH1 **Reference:** 127

Chrysochromulina parva Lackey

- 562 **History:** < Hatakeyama, Noriko **Locality:** inside NIES/Ibaraki/Japan (1992-02-13) **Isolator:** Hatakeyama, Noriko **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 35-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water)

Chrysochromulina quadrikonta Kawachi et Inouye

- 998 **History:** < Kawachi, Masanobu **Locality:** off Uramura/Mie/Japan (2001-01-12) **Isolator:** Hata, Naotsugu **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** CQ13T

Chrysochromulina simplex Estep, Davis, Hargraves et Sieburth

- 1392 **History:** < TKB **Locality:** Chiba Harbor/Chiba/Japan (2004-07-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-129 (nak23)

Chrysochromulina sp.

- 1333 **History:** < TKB **Locality:** Tokyo Bay/Japan (2003-10-16) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Prey for *Kathablepharis japonica* (NIES-1334) and *Leucocryptos marina* (NIES-1335) **Gene data:** 18S rRNA (DQ980478); β-tubulin (AB194979) **Other strain no.:** TKB-079 (nrc063) **References:** 358, 722
- 1391 **History:** < TKB **Locality:** Tokyo Bay/Tokyo/Japan (2003-08-**) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s **Habitat:** Marine (Seawater) **Other strain no.:** TKB-210 (ym-12)

CHRYSOCULTER : Prymnesiophyceae*Chrysoculter rhomboideus* Nakayama, Yoshida, Noël, Kawachi et Inouye

- 1874 **History:** < Nakayama, Takeshi **Locality:** Okumatsushima/Miyagi/Japan (1998-10-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Authentic strain **Other strain no.:** TKB-54 **Reference:** 596

CHRYSOPHAEUM : Pelagophyceae*Chrysophaeum taylorii* Lewis et Bryan

- 1699 **History:** < Honda, Daisuke **Locality:** Iriomote Isl., Funaura/Okinawa/Japan (2000-08-04) **Isolator:** Fukaya, Sachiko **Identified by:** Fukaya, Sachiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** SEK-105
- 1700 **History:** < Honda, Daisuke **Locality:** Guam Isl., Agat Bay, Haps Reef/U.S.A. (2001-05-13) **Isolator:** Fukaya, Sachiko **Identified by:** Fukaya, Sachiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** SEK-109

CLOSTERIUM : Charophyceae*Closterium acerosum* Ehrenberg ex Ralfs

- 124 **History:** < Watanabe, Masayuki **Locality:** Daramshara/Nepal (1965-10-25) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Other strain no.:** N-20-1 **References:** 210, 515

- 125** **History:** < Watanabe, Masayuki **Locality:** Rukumkot/Nepal (1965-10-29) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond sediment) **Gene data:** 18S rRNA (AF352230) **Other strain no.:** N-25-22 **References:** 58, 210, 515
- 127** **History:** < IAM (1983) **Other collection strain no.:** IAM C-435 **Locality:** Sapporo/Hokkaido/Japan **Isolator:** Nishihama, Yuji **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Stream sediment) **Characteristics:** Homothallic **Other strain no.:** H-2-2 **References:** 210, 215, 515
- 448** **History:** < IAM (1983) **Other collection strain no.:** IAM C-314; UTEX 1075 **Locality:** Japan **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater **References:** 215, 515

Closterium aciculare T. West var. *subpronum* W. et G. S. West

- 258** **History:** < Watanabe, Makoto M. **Locality:** Lake Biwa/Shiga/Japan (1983-12-13) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Mating type (+); Crosses with NIES-259 and 260 **Other strain no.:** Bca-25 **Reference:** 49
- 259** **History:** < Watanabe, Makoto M. **Locality:** Lake Biwa/Shiga/Japan (1983-12-13) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Mating type (-); Crosses with NIES-258 **Other strain no.:** Bca-26 **Reference:** 515

Closterium calosporum Wittrock var. *calosporum*

- 271** **History:** < IAM (1983) **Other collection strain no.:** IAM C-318 **Locality:** Vermont/U.S.A. **Isolator:** Cook, P. W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pool soil) **Gene data:** 18S rRNA (AF352225) **References:** 58, 215, 221, 515, 1025, 1026

Closterium calosporum Wittrock var. *galiciense* Gutwinski

- 128** **History:** < Watanabe, Masayuki **Locality:** Ibaraki/Japan **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-162 **Other strain no.:** IB-21-20 **Reference:** 515
- 162** **History:** < Watanabe, Masayuki **Locality:** Ibaraki/Japan **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (25°C; 60-70 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-128, 163 and 168 **Other strain no.:** IB-21-21 **Reference:** 515
- 163** **History:** < IAM (1983) **Other collection strain no.:** IAM C-455 **Locality:** Ginama/Okinawa/Japan (1973-06-15) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-162, 164 and 165 **Other strain no.:** R-5-3 **References:** 221, 515, 1025, 1026
- 164** **History:** < IAM (1983) **Other collection strain no.:** IAM C-454 **Locality:** Ginama/Okinawa/Japan (1973-06-15) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-163 and 166 **Other strain no.:** R-5-2 **References:** 221, 515, 1025, 1026
- 165** **History:** < IAM (1983) **Other collection strain no.:** IAM C-457 **Locality:** Iriomote Isl./Okinawa/Japan (1973-03-25) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (25°C; 60-70 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-163, 166 and 168 **Gene data:** 18S rRNA (AF352239) **Other strain no.:** R-11-6 **References:** 58, 221, 515, 1025, 1026
- 166** **History:** < Watanabe, Masayuki **Locality:** Kagawa/Japan (1974-09-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-164, 165 and 167 **Other strain no.:** J5-56-11 **Reference:** 515
- 167** **History:** < Watanabe, Masayuki **Locality:** Kagawa/Japan (1974-09-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-166 **Other strain no.:** J5-56-12 **Reference:** 515

- 168** **History:** < Watanabe, Masayuki **Locality:** Iriomote Isl./Okinawa/Japan (1973-03-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic: Mating type (-); Crosses with NIES-165 **Other strain no.:** R-11-5 **References:** 221, 515, 1025, 1026

Closterium calosporum Wittrock var. *himalayense* M. Watanabe

- 169** **History:** < Watanabe, Masayuki **Locality:** Shewaden/Nepal (1972-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Stream sediment) **Characteristics:** Homothallic **Other strain no.:** N-134-5 **References:** 515, 1025, 1026
- 170** **History:** < Watanabe, Masayuki **Locality:** Suke/Nepal (1972-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352229) **Other strain no.:** N-143-19 **References:** 58, 515
- 171** **History:** < Watanabe, Masayuki **Locality:** Suke/Nepal (1972-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Other strain no.:** N-147-3 **References:** 330, 515, 1025
- 336** **History:** < Watanabe, Masayuki **Locality:** Suke/Nepal (1972-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 22°C; 60-70 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Other strain no.:** N-147-12 **References:** 515, 1025

Closterium ehrenbergii Meneghini ex Ralfs

- 228** **History:** < Ichimura, Terunobu **Locality:** Ebina/Kanagawa/Japan (1975-12-04) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Mating group B; Crosses with NIES-229 **Gene data:** 18S rRNA (partial) (AY148818); 5.8S (partial)-ITS2-28S rRNA (partial) (AY148895); scdip-1mRNA (AB066448) **Other strain no.:** KK-33-1 **References:** 48, 104, 105, 106, 107, 174, 212, 213, 216, 217, 219, 237, 330, 331, 362, 515, 682, 806, 828
- 229** **History:** < Ichimura, Terunobu **Locality:** Ebina/Kanagawa/Japan (1975-12-04) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Mating group B; Crosses with NIES-228 **Gene data:** 18S rRNA (partial) (AY148821); 5.8S (partial)-ITS2-28S rRNA (partial) (AY148898); scdip-1 mRNA (AB066448) **Other strain no.:** KK-33-6 **References:** 48, 104, 105, 106, 107, 174, 212, 213, 216, 217, 219, 330, 331, 515, 682, 683, 828

Closterium gracile Brébisson ex Ralfs

- 179** **History:** < IAM (1983) **Other collection strain no.:** IAM C-444 (= C-570) **Locality:** Kathmandu/Nepal (1968-05-18) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Heterothallic: Mating type (+); Crosses with NIES-180 **Other strain no.:** N-90-58 **References:** 209, 210, 215, 515
- 180** **History:** < IAM (1983) **Other collection strain no.:** IAM C-445 (= C-571) **Locality:** Kathmandu/Nepal (1968-05-18) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Heterothallic: Mating type (-); Crosses with NIES-179 **Gene data:** 18S rRNA (AF352237) **Other strain no.:** N-90-59 **References:** 58, 209, 210, 215, 515

Closterium incurvum Brébisson

- 181** **History:** < IAM (1983) **Other collection strain no.:** IAM C-438 (= C-572) **Locality:** Dhorpatan/Nepal (1965-11-09) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (*Sphagnum*) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352231) **Other strain no.:** N-34-2 **References:** 58, 209, 210, 215, 515
- 337** **History:** < Watanabe, Masayuki **Locality:** Nawakot/Nepal (1965-10-12) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** N-12-92 **References:** 210, 515

Closterium moniliferum Ehrenberg ex Ralfs var. *moniliferum*

- 172** **History:** < Watanabe, Masayuki **Locality:** Nepal **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Characteristics:** Homothallic **Gene data:** 18S rRNA (partial) (AY148874); 18S rRNA (partial) (AY148875); 5.8S (partial)-ITS2-28S rRNA (partial) (AY148948) **Other strain no.:** N-100-1 **Reference:** 515
- 173** **History:** < IAM (1983) **Other collection strain no.:** IAM C-432 (= C-573) **Locality:** Kitamoto/Saitama/Japan (1969-01-**) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Gene data:** 5.8S (partial)-ITS2-28S rRNA (partial) (AY148950) **Other strain no.:** S-1-22 **References:** 209, 215, 515
- 174** **History:** < Watanabe, Masayuki **Locality:** Ghorepani/Nepal (1965-12-02) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352233); 5.8S (partial)-ITS2-28S rRNA (partial) (AY148949) **Other strain no.:** N-76-30 **References:** 58, 210, 515

Closterium moniliferum Ehrenberg ex Ralfs var. *submoniliferum* (Woronichin) Krieger

- 182** **History:** < IAM (1983) **Other collection strain no.:** IAM C-433 **Locality:** Kitamoto/Saitama/Japan (1969-01-**) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Heterothallic: Mating type (+); Crosses with NIES-183 **Gene data:** 18S rRNA (partial) (AY148869); 18S rRNA (partial) (AY148870); 5.8S (partial)-ITS2-28S rRNA (partial) (AY148940) **Other strain no.:** S-1-13 **References:** 210, 215, 515, 849
- 183** **History:** < IAM (1983) **Other collection strain no.:** IAM C-434 (= C-574) **Locality:** Kitamoto/Saitama/Japan (1969-01-**) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Heterothallic: Mating type (-); Crosses with NIES-182 **Gene data:** 18S rRNA (partial) (AY148871); 18S rRNA (partial) (AY148872); 5.8S (partial)-ITS2-28S rRNA (partial) (AY148942) **Other strain no.:** S-1-24 **References:** 209, 210, 215, 515

Closterium navicula (Brébisson) Lütkenmüller

- 175** **History:** < IAM (1983) **Other collection strain no.:** IAM C-443 (= C-575) **Locality:** Chingkhola/Nepal (1965-11-18) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352232) **Other strain no.:** N-49-7 **References:** 58, 209, 210, 215, 515
- 176** **History:** < Watanabe, Masayuki **Locality:** Ghorepani/Nepal (1965-12-02) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** N-75-10 **References:** 210, 515
- 177** **History:** < Watanabe, Masayuki **Locality:** Billethadi/Nepal (1965-12-03) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Other strain no.:** N-79-26 **References:** 210, 515
- 178** **History:** < Watanabe, Masayuki **Locality:** Shewaden/Nepal (1972-06-**) **Isolator:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Stream sediment) **Other strain no.:** N-134-15 **Reference:** 515

Closterium peracerosum-strigosum-littorale complex

- 51** **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 15°C; 10-18 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II A **Other strain no.:** IB-4-2 **References:** 515, 1035, 1040, 1041, 1042
- 52** **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II A **Gene data:** 18S rRNA (AF352226) **Other strain no.:** IB-4-9 **References:** 58, 515, 849, 1035, 1040, 1041, 1042

- 53 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II A **Other strain no.:** IB-6-8 **References:** 515, 1035, 1040, 1041, 1042
- 54 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II A **Other strain no.:** IB-6-9 **References:** 515, 1035, 1040, 1041
- 55 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1975-05-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II C **Other strain no.:** IB-8-15 **References:** 515, 1035, 1040, 1041
- 56 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1975-05-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II A **Other strain no.:** IB-8-24 **References:** 515, 758, 1035, 1040, 1041
- 57 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1975-05-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II A **Other strain no.:** IB-8-25 **References:** 515, 758, 1035, 1040, 1041
- 58 **History:** < Watanabe, Makoto M. **Locality:** Mito/Ibaraki/Japan (1975-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II A **Other strain no.:** IB-10-1 **References:** 515, 1035, 1040, 1041
- 59 **History:** < Watanabe, Makoto M. **Locality:** Mito/Ibaraki/Japan (1975-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II A **Other strain no.:** IB-10-2 **References:** 515, 1035, 1040, 1041
- 60 **History:** < Watanabe, Makoto M. **Locality:** Mito/Ibaraki/Japan (1975-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II B **Other strain no.:** IB-12-1 **References:** 515, 1035, 1040, 1041
- 61 **History:** < Watanabe, Makoto M. **Locality:** Mito/Ibaraki/Japan (1975-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II B **Other strain no.:** IB-12-2 **References:** 515, 1035, 1040, 1041
- 62 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1975-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II A **Other strain no.:** IB-13-1 **References:** 515, 1035, 1040, 1041
- 63 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1975-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (-); Mating group II A **Other strain no.:** IB-13-2 **References:** 515, 1035, 1040, 1041
- 64 **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1974-11-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic: Mating type (-); Mating group II B **Other strain no.:** KAS-4-29 **References:** 335, 336, 337, 515, 594, 828, 833, 834, 842, 1035, 1040, 1041, 1042

- 65 **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1974-11-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic: Mating type (+); Mating group II B **Other strain no.:** KAS-4-30 **References:** 335, 336, 337, 515, 594, 828, 833, 834, 842, 1035, 1040, 1041, 1042
- 66 **History:** < Ichimura, Terunobu **Other collection strain no.:** IAM C-440 (= C-576) **Locality:** Piuthan/Nepal (1965-10-14) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic: Mating type (+); Mating group I A **Other strain no.:** N-13-1 **References:** 208, 209, 210, 515, 1035
- 67 **History:** < Ichimura, Terunobu **Locality:** Damchan/Nepal (1965-11-05) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pool soil) **Characteristics:** Heterothallic: Mating type (+); Mating group I B **Gene data:** CpMADS1 mRNA (AB091476); CpPI (AB012698); ESTs (cDNA) (AU294770-5959); PR-IP (two subunits) (AB000908-9) **Other strain no.:** N-31-19 **References:** 8, 72, 210, 515, 619, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 952, 975, 976, 1035
- 68 **History:** < Ichimura, Terunobu **Locality:** Damchan/Nepal (1965-11-05) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pool soil) **Characteristics:** Heterothallic: Mating type (-); Mating group I B **Gene data:** CpMADS1 mRNA (AB091476); CpPI (AB012698); ESTs (cDNA) (AU294770-5959); PR-IP (two subunits) (AB000908-9) **Other strain no.:** N-31-24 **References:** 8, 72, 210, 515, 619, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 841, 842, 843, 952, 975, 976, 1035
- 69 **History:** < Watanabe, Makoto M. **Locality:** Lake Teganuma/Chiba/Japan (1974-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater **Characteristics:** Heterothallic: Mating type (+); Mating group II B **Other strain no.:** TG-2-21 **References:** 515, 1035, 1040, 1041
- 70 **History:** < Watanabe, Makoto M. **Locality:** Lake Teganuma/Chiba/Japan (1974-06-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater **Characteristics:** Heterothallic: Mating type (-); Mating group II B **Other strain no.:** TG-2-22 **References:** 515, 1035, 1040, 1041
- 261 **History:** < Watanabe, Makoto M. **Locality:** Katsuta/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic: Mating type (+); Mating group II C **Other strain no.:** IB-8-14 **References:** 515, 1035, 1040, 1041
- 262 **History:** < Ichimura, Terunobu **Other collection strain no.:** IAM C-441(= C-577) **Locality:** Piuthan/Nepal (1965-10-14) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Reservoir sediment) **Characteristics:** Heterothallic; Mating type (-); Mating group IA **Other strain no.:** N-13-4 **References:** 208, 209, 210, 515, 1035

Closterium pleurodermatum W. et G. S. West

- 449 **History:** < IAM (1983) **Other collection strain no.:** IAM C-518 **Locality:** Iriomote Isl./Okinawa/Japan (1973-03-25) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (25°C; 60-70 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Gene data:** 18S rRNA (AF352238) **Other strain no.:** R-11-20 **References:** 58, 515

Closterium praelongum Brébisson var. *brevius* (Nordstedt) Krieger

- 450 **History:** < IAM (1983) **Other collection strain no.:** IAM C-447 (= C-578) **Locality:** Nawakot/Nepal (1965-10-12) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Other strain no.:** N-12-3 **References:** 209, 210, 215, 515
- 451 **History:** < Watanabe, Masayuki **Locality:** Billethadi/Nepal (1965-12-03) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Other strain no.:** N-78-8 **References:** 210, 515

Closterium pusillum Hantzsch var. *maius* Raciborski

- 185** **History:** < IAM (1983) **Other collection strain no.:** IAM C-449 **Locality:** Billethadi/Nepal (1965-12-03) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic **Gene data:** 18S rRNA (AF352235) **Other strain no.:** N-79-19 **References:** 58, 210, 215, 515

Closterium rostratum Ehrenberg ex Ralfs var. *subrostratum* (Krieger) KriegerSyn. *Closterium subrostratum* Krieger

- 338** **History:** < IAM (1983) **Other collection strain no.:** IAM C-446 (= C-579) **Locality:** Kathmandu/Nepal (1968-05-18) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Homothallic **Other strain no.:** N-90-55 **References:** 209, 210, 215, 515

Closterium selenastrum M. Watanabe

- 339** **History:** < Watanabe, Masayuki **Locality:** Mt. Yonhadake/Okinawa/Japan (1972-10-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Rush field soil) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352242) **Other strain no.:** R-9-40 **References:** 58, 221, 515, 1025, 1026
- 340** **History:** < Watanabe, Masayuki **Locality:** Mt. Yonhadake/Okinawa/Japan (1972-10-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Rush field soil) **Characteristics:** Homothallic **Other strain no.:** R-9-42 **References:** 221, 515, 1026

Closterium spinosporum Hodgetts var. *crassum* M. Watanabe

- 186** **History:** < Watanabe, Masayuki **Locality:** Lake Akan/Hokkaido/Japan (1973-09-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Authentic strain; Homothallic **Other strain no.:** AK-46 **References:** 221, 515, 1025, 1026
- 187** **History:** < IAM (1983) **Other collection strain no.:** IAM C-461 **Locality:** Mt. Yonhadake/Okinawa/Japan (1973-06-16) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Rush field soil) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352241) **Other strain no.:** R-9-13 **References:** 58, 221, 515, 1025, 1026
- 341** **History:** < Watanabe, Masayuki **Locality:** Mt. Yonhadake/Okinawa/Japan (1972-10-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Rush field soil) **Characteristics:** Homothallic **Other strain no.:** R-9-12 **References:** 221, 515, 1025, 1026

Closterium spinosporum Hodgetts var. *malaysiense* M. Watanabe

- 188** **History:** < Watanabe, Masayuki **Locality:** Penang/Malaysia (1974-01-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic: Mating type (+) **Gene data:** 18S rRNA (AF352227) **Other strain no.:** M-10-1 **References:** 58, 515, 1025, 1026
- 189** **History:** < Watanabe, Masayuki **Locality:** Penang/Malaysia (1974-01-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic: Mating type (-) **Other strain no.:** M-10-4 **References:** 515, 1025, 1026

Closterium spinosporum Hodgetts var. *ryukyense* M. Watanabe

- 191** **History:** < Watanabe, Masayuki **Locality:** Iriomote Isl./Okinawa/Japan (1973-06-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352240) **Other strain no.:** R-12-3 **References:** 58, 515, 1025, 1026
- 192** **History:** < Watanabe, Masayuki **Locality:** Iriomote Isl./Okinawa/Japan (1973-06-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** R-12-6 **References:** 515, 1025, 1026

- 193** **History:** < Watanabe, Masayuki **Locality:** Iriomote Isl./Okinawa/Japan (1973-06-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic; Giang cell **Other strain no.:** R-12-2G3 **References:** 515, 1025

Closterium spinosporum Hodgetts var. *spinosporum*

- 194** **History:** < Watanabe, Masayuki **Locality:** Tsukude/Aichi/Japan (1972-10-**) **Isolator:** Ichimura, Terunobu **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CAM; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352224) **Other strain no.:** A-2-22 **References:** 58, 221, 515, 1025, 1026
- 195** **History:** < Watanabe, Masayuki **Locality:** Tsukude/Aichi/Japan (1972-10-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CAM; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** A-7-3 **References:** 515, 1026
- 196** **History:** < Watanabe, Masayuki **Locality:** Tsukude/Aichi/Japan (1972-10-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CAM; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** A-7-6 **References:** 515, 1025
- 197** **History:** < Watanabe, Masayuki **Locality:** Tsukude/Aichi/Japan (1972-10-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** A-13-4 **References:** 515, 1025, 1026

Closterium tumidum Johnson

- 198** **History:** < IAM (1983) **Other collection strain no.:** IAM C-450 (= C-580) **Locality:** Billethadi/Nepal (1965-12-03) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352234) **Other strain no.:** N-79-11 **References:** 58, 209, 210, 215, 515

Closterium venus Kützing ex Ralfs

- 199** **History:** < Watanabe, Masayuki **Locality:** Kathmandu/Nepal (1968-**-**) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Gene data:** 18S rRNA (AF352236) **Other strain no.:** N-90-48 **References:** 58, 515

Closterium wallichii Turner

- 200** **History:** < IAM (1983) **Other collection strain no.:** IAM C-451 **Locality:** Kitamoto/Saitama/Japan (1969-01-**) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Characteristics:** Homothallic **Gene data:** 18S rRNA (AF352243) **Other strain no.:** S-1-0 **References:** 58, 215, 515
- 201** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-09-26) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Homothallic **Other strain no.:** F60-21 **Reference:** 515
- 202** **History:** < Watanabe, Masayuki **Locality:** Ghasa/Nepal (1965-11-23) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Homothallic **Other strain no.:** N-63-0 **References:** 210, 515

COCCOMYXA : Chlorophyceae

Coccomyxa dispar Schmidle

- 2252** **History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM C-137 **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488787); 18S rRNA (AB488788) **Other strain no.:** Ishikawa U-109
- 2353** **History:** < IAM (2007) < Holm-Hansen, O. **Other collection strain no.:** IAM C-168 **Locality:** Cape Royds/Antarctica **Isolator:** Holm-Hansen, O. **Identified by:** Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488794); 18S rRNA (AB488795) **Other strain no.:** Holm-Hansen R-1

COCHLODINIUM : Dinophyceae*Cochlodinium polykrikoides* Margalef

- 1995** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-08-01) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW9 **Remarks:** Difficult to transport
- 2409** **History:** < Iwataki, Mitsunori **Locality:** Tachibana Bay/Nagasaki/Japan **Isolator:** Iwataki, Mitsunori **Identified by:** Iwataki, Mitsunori **States:** Unialgal **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Gene data:** 28S rRNA (AB288384) **Remarks:** Difficult to transport

Cochlodinium sp.

- 2327** **History:** < Sawaguchi, Tomohiro **Locality:** Shimoda Harbor/Shizuoka/Japan (1985-05-23) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 15°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** SMHD-7 **Remarks:** Difficult to transport

COELASTRUM : Chlorophyceae*Coelastrum astroideum* De Notaris

- 129** **History:** < TAC **Locality:** Lake Shoji/Yamanashi/Japan (1981-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** TAC 56 (TAN-56-7) **Reference:** 515 **Remarks:** Cryopreserved
- 130** **History:** < TAC **Locality:** Lake Shoji/Yamanashi/Japan (1981-08-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** TAC 51-9A (TAN-51-9A) **Reference:** 515 **Remarks:** Cryopreserved
- 244** **History:** < Watanabe, Masayuki **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-23) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Reference:** 515 **Remarks:** Cryopreserved
- 342** **History:** < TAC **Locality:** Lake Kawaguchi/Yamanashi/Japan (1981-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater **Other strain no.:** TAC 54 (TAN-54-1) **Reference:** 515 **Remarks:** Cryopreserved

Coelastrum morus W. et G. S. West

- 231** **History:** < Kasai, Fumie **Locality:** Hachijo Isl./Tokyo/Japan (1984-04-18) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F78-4-2 **References:** 333, 515 **Remarks:** Cryopreserved

Coelastrum proboscideum Bohlin

- 131** **History:** < IAM (1983) **Other collection strain no.:** IAM C-344 **Locality:** Near Tukcha/Nepal (1965-11-23) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Dry river bed) **Other strain no.:** N-63-20 **References:** 215, 515, 1047 **Remarks:** Cryopreserved

Coelastrum reticulatum (Dangeard) Senn

- 132** **History:** < TAC **Locality:** Lake Yamanaka/Yamanashi/Japan (1981-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** TAC 53-5A (TAN-53-5A) **Reference:** 515 **Remarks:** Cryopreserved

Coelastrum reticulatum (Dangeard) Senn var. *reticulatum*

- 245** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-10-04) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F63-3 **Reference:** 515 **Remarks:** Cryopreserved

COMPSOPOGON : Compsopogonophyceae*Compsopogon coeruleus* (Balbis) Montagne

- 1461** **History:** < Higa, Atsushi **Locality:** Higashinire River/Ibaraki/Japan (2004-05-16) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; VU (Ref. 474) **Other strain no.:** HNC2
- 1462** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; VU (Ref. 474) **Other strain no.:** KWC12 **Reference:** 127
- 1734** **History:** < Higa, Atsushi **Locality:** Kin River/Kagoshima/Japan (2005-05-03) **Isolator:** Higa, Atsushi **Identified by:** Arai, Shogo (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; VU (Ref. 474) **Other strain no.:** AMN5

COMPSOPOGONOPSIS : Compsopogonophyceae*Compsopogonopsis japonica* Chihara

- 1463** **History:** < Kawachi, Masanobu **Locality:** Ishigaki Isl./Okinawa/Japan (2001-10-09) **Isolator:** Iwaki, Hiroyuki **Identified by:** Kumano, Shigeru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 20 D **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** ISI-1 **Reference:** 127

COOLIA : Dinophyceae*Coolia monotis* Meunier

- 343** **History:** < Suda, Shoichiro **Locality:** Hachijo Isl./Tokyo/Japan (1984-04-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 3 M **Habitat:** Marine (Seawater) **Other strain no.:** 8-1 **Remarks:** Unstable; Difficult to transport
- 615** **History:** < Murata, Michio **Locality:** Motobu/Okinawa/Japan (1993-06-06) **Isolator:** Kobayashi, Hidetaka **Identified by:** Fukuyo, Yasuo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Plant) **Characteristics:** Toxic **Other strain no.:** CM-01 **Remarks:** Toxic; Difficult to transport
- 1833** **History:** < TKB **Locality:** Naha/Okinawa/Japan (2005-01-22) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-260 **Remarks:** Difficult to transport

COSMARIUM : Charophyceae*Cosmarium askenasyi* Schmidle

- 768** **History:** < Kasai, Fumie **Locality:** near Cairns/Queensland/Australia (1988-09-01) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Crosses with NIES-769 **Other strain no.:** 88-8-37
- 769** **History:** < Kasai, Fumie **Locality:** near Cairns/Queensland/Australia (1988-09-01) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Crosses with NIES-768 **Other strain no.:** 88-8-38
- 770** **History:** < Kasai, Fumie **Locality:** near Cairns/Queensland/Australia (1988-09-01) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Crosses with NIES-771 **Other strain no.:** 88-8-39
- 771** **History:** < Kasai, Fumie **Locality:** near Cairns/Queensland/Australia (1988-09-01) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Crosses with NIES-770 **Other strain no.:** 88-8-40

Cosmarium contractum Kirchner

- 133 **History:** < TAC **Locality:** Lake Yamanaka/Yamanashi/Japan (1981-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** TAC 53-2 (TAN-53-2) **Reference:** 515

Cosmarium dilatatum Lütke Müller in Järnefeld et Grönblad

- 839 **History:** < Gontcharov, A. **Locality:** Ryoanji Temple/Kyoto/Japan (1998-06-30) **Isolator:** Gontcharov, A. **Identified by:** Gontcharov, A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** (Freshwater) **Reference:** 114

Cosmarium hians Borge

- 452 **History:** < Watanabe, Michiko H. **Locality:** Lake Yamanaka/Yamanashi/Japan (1981-06-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** YAMA-Cos-4 **Reference:** 515

COSMOCLADIUM : Charophyceae*Cosmocladium constrictum* (Archer) Archer

- 248 **History:** < Kasai, Fumie **Locality:** Lake Biwa/Shiga/Japan (1983-12-13) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F75-2 **Reference:** 515

CRYPTOGLAENA : Euglenophyceae*Cryptoglena pigra* Ehrenberg

- 1407 **History:** < TKB **Locality:** Tsukuba, Kuribara/Ibaraki/Japan (2004-09-08) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** URO; DY-V; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Freshwater **Other strain no.:** TKB-137 (NY0156)

Cryptoglena skujae Marin et Melkonian

Syn. *Phacus agilis* Skuja

- 387 **History:** < Watanabe, Makoto M. **Locality:** Kashiwa/Chiba/Japan (1986-09-16) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** MAF-6; AF-6; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** PhD-3 **Reference:** 128

CRYPTOMONAS : Cryptophyceae*Cryptomonas acuta* Butcher

- 697 **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 979/10 **Locality:** N.Wales/U.K. **Isolator:** Butcher, R. W. **Identified by:** Butcher, R. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB240956); Nuclear actin-1 (AB126018); Nuclear actin-2 (AB126019) **Other strain no.:** M01 **Reference:** 74

Cryptomonas irregularis Butcher

- 698 **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 979/7 **Locality:** Plymouth/Devon/U.K. (1960-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Other strain no.:** M04 **Reference:** 74

Cryptomonas ovata Ehrenberg

- 274 **History:** < Ishimitsu, Mayumi **Locality:** Tsuchiura/Ibaraki/Japan (1982-10-28) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** 18S rRNA (AB073109); 18S rRNA (AB240952); *coxI* (AB009419) **Other strain no.:** #00046 **References:** 127, 190, 224, 239, 259, 933

- 275 **History:** < Ishimitsu, Mayumi **Locality:** Tsuchiura/Ibaraki/Japan (1982-09-10) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00042 **References:** 259, 333

Cryptomonas paramaecium (Ehrenberg) Hoef-Emden et Melkonian
Syn. *Chilomonas paramecium* Ehrenberg

- 715 **History:** < Erata, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1985-11-10) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CYT; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Characteristics:** Heterotrophic **Gene data:** 18S rRNA (AB073108); 18S rRNA (AB240955) **Other strain no.:** #00210 **References:** 73, 127, 933
- 766 **History:** < Erata, Mayumi **Locality:** Lake Jusanko/Aomori/Japan (1987-07-**) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CYT; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Brackish (Water) **Characteristics:** Heterotrophic **Other strain no.:** #00318
- 767 **History:** < Erata, Mayumi **Locality:** Lake Jusanko/Aomori/Japan (1987-07-**) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CYT; 15°C; 8-15 µmol/m²/s; 2 M **Habitat:** Brackish (Water) **Characteristics:** Heterotrophic **Other strain no.:** #00319

Cryptomonas platyuris Skuja

- 276 **History:** < Ishimitsu, Mayumi **Locality:** Higashihiroshima/Hiroshima/Japan (1983-08-23) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00096 **References:** 127, 190, 259
- 344 **History:** < Ishimitsu, Mayumi **Locality:** Higashihiroshima/Hiroshima/Japan (1983-08-23) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00103 **Reference:** 259

Cryptomonas rostratiformis Skuja

- 277 **History:** < Ishimitsu, Mayumi **Locality:** Hongo/Hiroshima/Japan (1983-10-19) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** 18S rRNA (AB240953) **Other strain no.:** #00148 **References:** 127, 259
- 278 **History:** < Ishimitsu, Mayumi **Locality:** Hongo/Hiroshima/Japan (1983-10-19) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00154 **Reference:** 259
- 345 **History:** < Ishimitsu, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1982-07-31) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** #00006 **Reference:** 259
- 1327 **History:** < Erata, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1986-11-**) **Isolator:** Erata, Mayumi **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** #00266

Cryptomonas tetrapyrenoidosa Skuja

- 279 **History:** < Ishimitsu, Mayumi **Locality:** Higashihiroshima, Hachihonmatsu/Hiroshima/Japan (1983-08-23) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** 18S rRNA (AM051199); ITS-5.8S rRNA (AJ715455); *rbcL* (AM051220) **Other strain no.:** #00099 **References:** 190, 259
- 280 **History:** < Ishimitsu, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1982-07-31) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Gene data:** 18S rRNA (AB240954) **Other strain no.:** #00014 **References:** 259, 333
- 281 **History:** < Ishimitsu, Mayumi **Locality:** Minamiizu/Shizuoka/Japan (1983-05-13) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00073 **Reference:** 259

- 282** **History:** < Ishimitsu, Mayumi **Locality:** Shishizuka-ohike Pond/Ibaraki/Japan (1982-09-10) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00056 **References:** 28, 29, 30, 127, 259, 424, 440, 441
- 346** **History:** < Ishimitsu, Mayumi **Locality:** Sugadaira Moor/Nagano/Japan (1982-07-31) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** #00009 **Reference:** 259
- 347** **History:** < Ishimitsu, Mayumi **Locality:** Minamiizu/Shizuoka/Japan (1983-05-13) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00072 **Reference:** 259
- 348** **History:** < Ishimitsu, Mayumi **Locality:** Higashihiroshima/Hiroshima/Japan (1983-08-23) **Isolator:** Ishimitsu, Mayumi **Identified by:** Ishimitsu, Mayumi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #00109 **Reference:** 259

CYANIDIOSCHYZON : Cyanidiophyceae

Cyanidioschyzon merolae De Luca, Taddei et Varano

- 1332** **History:** < Kuroiwa, Tsuneyoshi **Locality:** Sardinia Isl./Italy **Isolator:** Toda, Kyoko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** M-Allen; 37°C; 15-25 µmol/m²/s; 2 M **Habitat:** Hot spring (Water) **Characteristics:** Acidophilic; Thermophilic **Gene data:** Mitochondrial DNA (D89861); Nuclear DNA (chromosome 1-20) (AP006483-502); Plastid DNA (AB002583); *aladh* (AB159599); *atpC* (AB159600); *gnd* (AB159595); *gnd* (AB159596); Hsp70 (AB095185); actin (AB095179); Hsp90 (AB095186); *pgk* (AB159598); *psbO* (AB159597); α-tubulin (AB095180); RPB1 (AB095187); β-tubulin (AB095181); RpS8b (AB095188); EF-1α (AB095182); TPI (AB095189); EF-2 (AB095183); VatA (AB095190); GAPDH (AB095184); VatB (AB095191) **Other strain no.:** 10D **References:** 127, 460, 660, 661, 662, 714, 716
- 1804** **History:** < Tanaka, Kan **Locality:** Sardinia Isl./Italy **Isolator:** Toda, Kyoko **States:** Unialgal; Clonal; Axenic **Culture conditions:** M-Allen; 37°C; 15-25 µmol/m²/s; 2 M **Habitat:** Hot spring **Characteristics:** Acidophilic; Pigmentation paler than wild type **Gene data:** Mitochondrial DNA (D89861); Nuclear DNA (chromosome 1-20) (AP006483-502); Plastid DNA (AB002583); Chromosome unassigned contigs (AP006600-614) **Other strain no.:** MO
- 1805** **History:** < Tanaka, Kan **Locality:** Sardinia Isl./Italy **Isolator:** Toda, Kyoko **States:** Unialgal; Clonal; Axenic **Culture conditions:** M-Allen (+ U); 37°C; 15-25 µmol/m²/s; 2 M **Habitat:** Hot spring **Characteristics:** Acidophilic; Mutant (Uracil-required; 5-FOA tolerant) **Gene data:** Mitochondrial DNA (D89861); Nuclear DNA (chromosome 1-20) (AP006483-502); Plastid DNA (AB002583); Chromosome unassigned contigs (AP006600-614) **Other strain no.:** M4
- 1806** **History:** < Tanaka, Kan **Locality:** Sardinia Isl./Italy **Isolator:** Toda, Kyoko **States:** Unialgal; Clonal; Axenic **Culture conditions:** M-Allen (+ U); 37°C; 15-25 µmol/m²/s; 2 M **Habitat:** Hot spring **Characteristics:** Acidophilic; Mutant (Uracil-required; 5-FOA tolerant) **Gene data:** Mitochondrial DNA (D89861); Nuclear DNA (chromosome 1-20) (AP006483-502); Plastid DNA (AB002583); Chromosome unassigned contigs (AP006600-614) **Other strain no.:** HUT1-1

CYANIDIUM : Cyanidiophyceae

Cyanidium caldarium (Tilden) Geitler

- 2137** **History:** < IAM (2007) < Nagashima, Hideyuki (1991) **Other collection strain no.:** IAM R-11 **Locality:** Nikko-Yumoto Hot spring/Tochigi/Japan **Isolator:** Fukuda, I. **Identified by:** Fukushima, Hiroshi; Nagashima, Hideyuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** M-Allen; 37°C; 13-18 µmol/m²/s; 3 M **Habitat:** Hot spring **Other strain no.:** RK-1 **References:** 125, 549, 715

CYANOPHORA : Glaucophyceae

Cyanophora paradoxa Korshikov

- 547** **History:** < Kikuchi, Tadatoshi < UTEX **Other collection strain no.:** UTEX 555 **Locality:** U.K. **Isolator:** Pringsheim, E. G. **Identified by:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Alkaline water **Gene data:** FtsZ (AB183875); *psaD* (AJ132477) **References:** 225, 399, 644, 807, 851

- 763** **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1987-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CSi; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Soil) **Other strain no.:** S117 **Reference:** 127

Cyanophora tetracyanea Korshikov

- 764** **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1987-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CSi; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Soil) **Other strain no.:** S118 **Reference:** 127

CYCLOTELLA : Bacillariophyceae

Cyclotella meneghiniana Kützting

- 803** **History:** < Kasai, Fumie **Locality:** Mitsukaido/Ibaraki/Japan (1993-05-03) **Isolator:** Kasai, Fumie **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (River water) **Other strain no.:** 506-26 **Reference:** 329
- 804** **History:** < Kasai, Fumie **Locality:** Mitsukaido/Ibaraki/Japan (1993-05-18) **Isolator:** Kasai, Fumie **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (River water) **Other strain no.:** 518-39 **Reference:** 329
- 805** **History:** < Kasai, Fumie **Locality:** Mitsukaido/Ibaraki/Japan (1993-06-13) **Isolator:** Kasai, Fumie **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (River water) **Other strain no.:** 613-2 **Reference:** 329

CYLINDROCYSTIS : Charophyceae

Cylindrocystis brebissonii (Ralfs) De Bary var. *brebissonii*

- 349** **History:** < IAM **Other collection strain no.:** IAM C-354 **Locality:** Lake Ohnuma/Hokkaido/Japan (1967-06-15) **Isolator:** Haga, Masaru **Identified by:** Haga, Masaru **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Homothallic **Other strain no.:** 6801-68 **Reference:** 515

Cylindrocystis crassa De Bary

- 2283** **History:** < IAM (2007) **Other collection strain no.:** IAM C-334 **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Cylindrocystis sp.

- 2284** **History:** < IAM (2007) **Other collection strain no.:** IAM C-630 (= C-382) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M
- 2301** **History:** < IAM (1983) **Other collection strain no.:** IAM C-353 **Locality:** Ebetsu/Hokkaido/Japan (1967-05-24) **Isolator:** Haga, Masaru **Identified by:** Haga, Masaru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (High moor pool soil) **Characteristics:** Homothallic **Other strain no.:** 6801-15
- 2302** **History:** < IAM (1983) **Other collection strain no.:** IAM C-351 **Locality:** Ebetsu/Hokkaido/Japan (1967-05-24) **Isolator:** Haga, Masaru **Identified by:** Haga, Masaru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (High moor pool soil) **Characteristics:** Homothallic **Other strain no.:** 6801-01
- 2303** **History:** < IAM (1983) **Other collection strain no.:** IAM C-350 **Locality:** Lake Akan/Hokkaido/Japan (1967-03-14) **Isolator:** Haga, Masaru **Identified by:** Haga, Masaru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Homothallic **Other strain no.:** 6707-01

CYLINDROSPERMOPSIS : Cyanophyceae

Cylindrospermopsis raciborskii (Woloszynska) Seenayya et S. Raju

- 930** **History:** < Otsuka, Shigeto **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan (2000-07-04) **Isolator:** Otsuka, Shigeto **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** CYL1

- 991 **History:** < Yongmanitchai, W. **Locality:** Gonoike Pond/Ibaraki/Japan (2001-07-**) **Isolator:** Chonudomkul, D. **Identified by:** Yongmanitchai, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 23°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** 16S rRNA (AB115487) **Other strain no.:** KJA1 **Reference:** 46
- 992 **History:** < Yongmanitchai, W. **Locality:** Gonoike Pond/Ibaraki/Japan (2001-07-**) **Isolator:** Chonudomkul, D. **Identified by:** Yongmanitchai, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 23°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** 16S rRNA (AB115488) **Other strain no.:** KJA2 **Reference:** 46
- 993 **History:** < Yongmanitchai, W. **Locality:** Gonoike Pond/Ibaraki/Japan (2001-07-**) **Isolator:** Chonudomkul, D. **Identified by:** Yongmanitchai, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 23°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** 16S rRNA (AB115489) **Other strain no.:** KJA3 **Reference:** 46
- 994 **History:** < CCMP **Other collection strain no.:** CCMP 1973 **Locality:** Florida/U.S.A. (1999-10-03) **Isolator:** Andersen, Robert A. **Identified by:** Andersen, Robert A. **Culture conditions:** CT; 23°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater
- 1040 **History:** < Yongmanitchai, W. **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan **Isolator:** Chonudomkul, D. **Identified by:** Yongmanitchai, W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 23°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** 16S rRNA (AB115485) **Other strain no.:** CRJ1 **Reference:** 46
- 1041 **History:** < Yongmanitchai, W. **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan **Isolator:** Chonudomkul, D. **Identified by:** Yongmanitchai, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 23°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** 16S rRNA (AB115486) **Other strain no.:** CRJ2 **Reference:** 46
- 1259 **History:** < Sano, Tomoharu **Locality:** Gonoike Pond/Ibaraki/Japan (2002-08-30) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** GOU-CR-1
- 1260 **History:** < Sano, Tomoharu **Locality:** Gonoike Pond/Ibaraki/Japan (2002-08-30) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** GOU-CR-2
- 1261 **History:** < Sano, Tomoharu **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** SHI-CR-3
- 1262 **History:** < Sano, Tomoharu **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 45-55 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** SHI-CR-5

CYLINDROSPERMUM : Cyanophyceae

Cylindrospermum muscicola Kützing

- 2102 **History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-32 **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Maruyama, Ko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Ishikawa X2W-N-F

CYLINDROTHECA : Bacillariophyceae

Cylindrotheca closterium (Ehrenberg) Reimann et Lewin

- 1045 **History:** < Mayama, Shigeki **Locality:** Tskuba University, Shimoda Marine Research Center/Shizuoka/Japan (2001-05-10) **Isolator:** Takahashi, Yuko **Identified by:** Mayama, Shigeki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Epilithic

Cylindrotheca fusiformis Reimann et Lewin

- 1046 **History:** < Mayama, Shigeki < CCMP **Other collection strain no.:** CCMP 343 **States:** Unialgal **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Benthic

Cylindrotheca sp.

- 1047 History:** < Mayama, Shigeki **Locality:** Futtsu/Chiba/Japan (2001-05-28) **Isolator:** Takahashi, Yuko **Identified by:** Mayama, Shigeki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 2 M **Habitat:** Marine (Plant) **Characteristics:** Epiphytic

DESMODESMUS : Chlorophyceae*Desmodesmus abundans* (Kirchner) Hegewald

Syn. *Scenedesmus abundans* (Kirchner) Chodat

- 685 History:** < Katagiri, Masayuki < IAM **Other collection strain no.:** IAM C-101 **Locality:** Japan **Isolator:** Lewin, Ralph A. **Identified by:** Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella fusca* Shihira et Krauss var. *fusca* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Authentic strain **References:** 388, 389, 400, 451, 452, 515, 1093

Desmodesmus serratus (Corda) Friedl et Hegewald

Syn. *Scenedesmus serratus* (Corda) Bohlin

- 97 History:** < TAC **Locality:** Lake Shoji/Yamanashi/Japan (1981-08-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** TAC 51-3C (TAN-51-3C) **Reference:** 515 **Remarks:** Cryopreserved

Desmodesmus sp.

- 96 History:** < TAC **Locality:** Lake Shoji/Yamanashi/Japan (1981-08-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki; Re-identified at NIES by DNA sequencing **Formerly identified as:** *Scenedesmus quadricauda* (Turpin) Brébisson sensu Chodat **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Gene data:** *atpB* (AB084305); *coxI* (D63658); *coxI* (AB011524); *psaB* (AB084339); *rbcL* (AB084332) **Other strain no.:** TAC 51-3B (TAN-51-3B) **References:** 171, 515, 564, 668, 1023, 1112 **Remarks:** Cryopreserved
- 2277 History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-70 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi; Re-identified at NIES by DNA sequencing **Formerly identified as:** *Scenedesmus nanus* Chodat **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M
- 2278 History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-71 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi; Re-identified at NIES by DNA sequencing **Formerly identified as:** *Scenedesmus nanus* Chodat **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Desmodesmus subspicatus (Chodat) Hegewald et Schmidt

Syn. *Scenedesmus gutwinskii* Chodat var. *heterospina* Bodrogközy

- 797 History:** < Kasai, Fumie **Locality:** inside NIES/Ibaraki/Japan (1992-06-17) **Isolator:** Kasai, Fumie **Identified by:** Nakano, Taketo; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Herbicide (simetryn) susceptible **Other strain no.:** B8-7 **Reference:** 327
- 798 History:** < Kasai, Fumie **Locality:** inside NIES/Ibaraki/Japan (1992-06-17) **Isolator:** Kasai, Fumie **Identified by:** Nakano, Taketo; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Herbicide (simetryn) susceptible **Other strain no.:** B8-16 **Reference:** 327
- 799 History:** < Kasai, Fumie **Locality:** inside NIES/Ibaraki/Japan (1992-06-17) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Herbicide (simetryn) susceptible **Other strain no.:** B8-23 **Reference:** 327
- 800 History:** < Kasai, Fumie **Locality:** inside NIES/Ibaraki/Japan (1992-06-17) **Isolator:** Kasai, Fumie **Identified by:** Nakano, Taketo; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Herbicide (simetryn) tolerant **Other strain no.:** B3-12 **Reference:** 327

- 801** **History:** < Kasai, Fumie **Locality:** inside NIES/Ibaraki/Japan (1992-06-17) **Isolator:** Kasai, Fumie **Identified by:** Nakano, Taketo; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Herbicide (simetryn) tolerant **Other strain no.:** B3-15 **Reference:** 327
- 802** **History:** < Kasai, Fumie **Locality:** inside NIES/Ibaraki/Japan (1992-06-17) **Isolator:** Kasai, Fumie **Identified by:** Nakano, Taketo; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Herbicide (simetryn) tolerant **Other strain no.:** B12-2 **References:** 326, 327, 1115, 1116, 1117, 1118

DESMOTETRA : Chlorophyceae*Desmotetra delicata* (S. Watanabe) S. WatanabeSyn. *Chlorosarcinopsis delicata* S. Watanabe

- 153** **History:** < Watanabe, Shin **Locality:** Kyoto/Japan (1975-04-07) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Soil) **Characteristics:** Authentic strain **Other strain no.:** KUC3-6 **References:** 515, 1073

DEVELOPAYELLA : Bigyromonadea*Developayella elegans* Tong

- 1388** **History:** < TKB **Locality:** Chiba Harbor/Chiba/Japan (2002-11-29) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + Wheat; 15°C; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Heterotrophic **Other strain no.:** TKB-017 (NY0124)

DICTYOCHLOROPSIS : Chlorophyceae*Dictyochloropsis irregularis* Nakano et Isagi

- 378** **History:** < Nakano, Taketo **Locality:** Akkeshi/Hokkaido/Japan (1982-07-25) **Isolator:** Isagi, Yuji **Identified by:** Nakano, Taketo **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Bark) **Characteristics:** Aerial on the surface of the bark of *Picea jezoensis* **Other strain no.:** CCHU-2227 **References:** 515, 592 **Remarks:** Cryopreserved

DICTYOSPHAERIUM : Trebouxiophyceae*Dictyosphaerium pulchellum* H. C. Wood

- 453** **History:** < Niiyama, Yuko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1988-12-11) **Isolator:** Yanai, Takanori **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Reference:** 515

DIMORPHOCOCCUS : Chlorophyceae*Dimorphococcus lunatus* A. Brown

- 134** **History:** < Kasai, Fumie **Locality:** Ozegahara/Gunma/Japan (1983-08-29) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 4-10 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Bog water) **Other strain no.:** 34-5 **Reference:** 515
- 135** **History:** < Kasai, Fumie **Locality:** Tsuchiura/Ibaraki/Japan (1983-10-03) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 4-10 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** F-61-4 **References:** 515, 1047

DINOBRYON : Chrysophyceae**Dinobryon divergens** Imhof

- 284** **History:** < Kasai, Fumie **Locality:** Lake Biwa/Shiga/Japan (1983-12-13) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6/2; 15°C; 20-30 µmol/m²/s; 4 M **Habitat:** Freshwater (Lake water) **Other strain no.:** F-75-26

DITYLUM : Bacillariophyceae**Ditylum brightwellii** (T. West) Grunow et Heurck

- 350** **History:** < Sawaguchi, Tomohiro **Locality:** Bentenjima/Shizuoka/Japan (1985-05-23) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 2M **Habitat:** Marine (Seawater) **Other strain no.:** KBB-10

DOCIDIUM : Charophyceae**Docidium undulatum** Bailey var. *undulatum*

- 285** **History:** < Kasai, Fumie **Locality:** Ozegahara/Fukushima/Japan (1983-08-29) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SW; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (Bog water) **Other strain no.:** 41-11

DUNALIELLA : Chlorophyceae**Dunaliella bioculata** Butcher

- 2253** **History:** < IAM (2007) < Hara, Yoshiaki (1989) < UTEX (1983-1986) **Other collection strain no.:** IAM C-523; CCAP 19/4; UTEX LB 199; Prague 281a; SAG 19-4 **Locality:** Russia **Isolator:** Mainx, F. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Salt water **Characteristics:** Authentic strain **References:** 32, 824, 825

Dunaliella parva Lerche

- 2254** **History:** < IAM (2007) < Hara, Yoshiaki (1989) < UTEX (1980?) **Other collection strain no.:** IAM C-527; UTEX 1983 **Isolator:** Ben-Amotz, A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 8-15 µmol/m²/s; 3 M **Reference:** 907

Dunaliella peircei Nicolai

- 2255** **History:** < IAM (2007) < Hara, Yoshiaki (1989) < UTEX (1980?) **Other collection strain no.:** IAM C-528; CCAP 19/2; SAG 19-2; UTEX LB 2192; IUCC 295 **Locality:** Lake Marina/California/U.S.A. **Isolator:** Nicolai, E. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 8-15 µmol/m²/s; 3 M

Dunaliella primolecta Butcher

- 2256** **History:** < IAM (2007) < Hara, Yoshiaki (1989) < UTEX (1980?) **Other collection strain no.:** IAM C-525; CCAP 11/34; UTEX LB 1000; SG 183.30; UTEX L 2355 **Locality:** Plymouth/Devon/U.K. **Isolator:** Gross **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 8-15 µmol/m²/s; 3 M **References:** 717, 1123

Dunaliella salina (Dunal) Teodoresco

- 2257** **History:** < IAM (2007) < Hara, Yoshiaki (1990) < UTEX (1980?) **Other collection strain no.:** IAM C-522; CCAP 19/3; SAG 19-3; UTEX LB 200 **Locality:** EUN (Soviet Union) **Isolator:** Mainx, F. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Salt water **References:** 432, 907

Dunaliella tertiolecta Butcher

- 2258** **History:** < IAM (2007) < Hara, Yoshiaki (1989) < UTEX **Other collection strain no.:** IAM C-524; UTEX LB 999; CCAP 19/6B **Locality:** Oslofjord/Norway **Isolator:** Foyn, B. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 8-15 µmol/m²/s; 3 M **References:** 27, 876, 907, 908, 1123

DYSNECTES : Metamonada *incertae sedis***Dysnectes brevis** Yubuki, Inagaki, Nakayama et Inouye

- 1843 History:** < TKB **Locality:** Yamakawa Harbor/Kagoshima/Japan (2005-03-15) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + mTYGM-9 + Rice; SUY1/10 + mTYGM-9 + Rice; 15°C; 1 M **Habitat:** (Seawater) **Characteristics:** Heterotrophic; Benthic; Authentic strain **Other strain no.:** TKB-272 **Reference:** 1138

ECHINOSPHAERIDIUM : Chlorophyceae**Echinospaeridium nordstedtii** Lemmermann

- 137 History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-23) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F-56-3 **References:** 333, 515, 1047

EMILIANIA : Prymnesiophyceae**Emiliana huxleyi** (Lohmann) Hay et Mohler

- 837 History:** < Kawachi, Masanobu **Locality:** Great Barrier Reef/Australia (1990-11-**) **Isolator:** Inouye, Isao **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Gene data:** EhSEP2 (AB205027) **Other strain no.:** EH-2 **References:** 55, 270, 673, 674, 675, 821, 822, 844, 845, 846, 847, 863, 864, 867, 868 **Remarks:** Unstable
- 1310 History:** < Kawachi, Masanobu **Locality:** South Pacific Ocean (2002-08-11) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Now as naked cells **Other strain no.:** MH 9
- 1311 History:** < Kawachi, Masanobu **Locality:** Bearing Sea (2002-08-02) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 15°C; 10-18 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 27
- 1312 History:** < Kawachi, Masanobu **Locality:** Bearing Sea (2002-08-02) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 15°C; 10-18 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 28
- 1313 History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 74
- 1314 History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** YK3-87

EPIPYXIS : Chrysophyceae**Epipyxis glabra** (Matvienko) Hilliard

- 1826 History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2004-05-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Mixotrophic **Other strain no.:** TKB-124

EREMOSPHAERA : Trebouxiophyceae**Eremosphaera gigas** (Archer) Fott et Kalina

- 379 History:** < IAM **Other collection strain no.:** IAM C-338 **Locality:** Osaka/Japan (1968-11-10) **Isolator:** Ichimura, Terunobu **Identified by:** Nakano, Taketo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Other strain no.:** O-2 **References:** 215, 515, 1047 **Remarks:** Cryopreserved

Eremosphaera viridis De Bary

- 380** **History:** < Kasai, Fumie **Locality:** Ozegahara/Fukushima/Japan (1983-08-30) **Isolator:** Kasai, Fumie **Identified by:** Nakano, Taketo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CAM; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** 43-23 **Reference:** 515
- 643** **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1992-04-27) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** 92-604-E-5 **Reference:** 515
- 644** **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1992-04-27) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** 92-604-E-3 **Reference:** 515

EUASTRUM : Charophyceae*Euastrum diverrucosum* Gontcharov et M. M. Watanabe

Syn. *Euastrum englerii* Schmidle var. *madagascariense* Bourrelly et Mangium

- 840** **History:** < Gontcharov, A. **Locality:** Hirosawa-ike Pond/Kyoto/Japan (1998-06-30) **Isolator:** Gontcharov, A. **Identified by:** Gontcharov, A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CAM; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Reference:** 114

Euastrum turgidum Wallich

- 772** **History:** < Kasai, Fumie **Locality:** Ishigaki Isl./Okinawa/Japan (1984-03-21) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Crosses with NIES-773 **Other strain no.:** 84-15-75
- 773** **History:** < Kasai, Fumie **Locality:** Ishigaki Isl./Okinawa/Japan (1984-03-21) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Crosses with NIES-772 **Other strain no.:** 84-15-76

EUDORINA : Chlorophyceae*Eudorina cylindrica* Korshikov

- 722** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1197 **Locality:** Iowa/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Soil) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB014033); *psaA* (AB044210); *psaB* (AB044441); *psbC* (AB044493); *rbcL* (D86833) **References:** 515, 647, 663, 666

Eudorina elegans Ehrenberg

- 351** **History:** < Suda, Shoichiro **Locality:** Lake Biwa/Shiga/Japan (1983-12-13) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Homothallic **Other strain no.:** B-Eud-6 **References:** 345, 515, 877

Eudorina elegans Ehrenberg var. *carteri* (G. M. Smith) Goldstein

- 721** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1212 **Locality:** Kentucky/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic; Monoecious **Gene data:** *atpB* (AB014012); *psaA* (AB044202); *psaA* (AB044203); *psaB* (AB044438); *psbC* (AB044487); *psbC* (AB044488); *rbcL* (D88806) **References:** 515, 648, 663, 666

Eudorina elegans Ehrenberg var. *elegans*

- 456** **History:** < Nozaki, Hisayoshi **Locality:** Imperial Palace/Tokyo/Japan (1977-09-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Heterothallic; Mating type (male); Crosses with NIES-457 **Gene data:** *atpB* (AB014009); *psaA* (AB044199); *psaB* (AB044435); *psbC* (AB044485); *rbcL* (D63432) **Other strain no.:** A-5 (m) **References:** 515, 624, 645, 646, 663, 666, 668

- 457 **History:** < Nozaki, Hisayoshi **Locality:** Imperial Palace/Tokyo/Japan (1977-09-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Heterothallic; Mating type (female); Crosses with NIES-456 **Other strain no.:** I-14 (f) **References:** 515, 624
- 717 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1193 **Locality:** Indiana/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond soil) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB047071); *rbcL* (D88803) **References:** 515, 648
- 718 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1195 **Locality:** Indiana/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond soil) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB047072); *rbcL* (D88810) **References:** 515, 648
- 719 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1199 **Locality:** Indiana/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond soil) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB047073); *rbcL* (D88804) **References:** 515, 648
- 720 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1205 **Locality:** Indiana/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB014010); *psaA* (AB044200); *psaA* (AB044201); *psaB* (AB044436); *psaB* (AB044437); *psbC* (AB044486); *rbcL* (D88805) **References:** 515, 648, 663, 666

Eudorina elegans Ehrenberg var. *synoica* Goldstein

- 458 **History:** < Nozaki, Hisayoshi **Locality:** Yokohama, Midori-ku/Kanagawa/Japan (1980-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic; Monoecious **Gene data:** *rbcL* (D88807) **Other strain no.:** 04427-1 **References:** 515, 630, 648
- 568 **History:** < Nozaki, Hisayoshi **Locality:** Kathmandu/Nepal (1986-09-22) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic; Monoecious **Gene data:** *atpB* (AB014011); *rbcL* (D88808) **Other strain no.:** 7914-E-6 **References:** 515, 631, 648, 666

Eudorina illinoisensis (Kofoid) Pascher

Syn. *Pleodorina illinoisensis* Kofoid

- 459 **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki, Saiwai-ku/Kanagawa/Japan (1984-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (female); Crosses with NIES-460 **Other strain no.:** 5607-E-14 (f) **References:** 515, 627, 659
- 460 **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki, Saiwai-ku/Kanagawa/Japan (1984-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (male); Crosses with NIES-459 **Gene data:** *atpB* (AB014013); *psaA* (AB044198); *psaB* (AB044434); *psbC* (AB044484); *rbcL* (D63433) **Other strain no.:** 5630-E-3 (m) **References:** 515, 627, 645, 646, 663, 666
- 723 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 808 **Locality:** Missouri/U.S.A. **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Soil) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB047069); *rbcL* (D88809) **References:** 515, 648
- 2259 **History:** < IAM (2007) < Nozaki, Hisayoshi **Other collection strain no.:** IAM C-596 **Locality:** Kawasaki/Kanagawa/Japan (1994-04-09) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi (1994-05-**) **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (female) **Other strain no.:** 94-409-E-10
- 2260 **History:** < IAM (2007) < Nozaki, Hisayoshi **Other collection strain no.:** IAM C-597 **Locality:** Kawasaki/Kanagawa/Japan (1994-04-09) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi (1994-05-**) **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (male) **Other strain no.:** 94-409-E-11

Eudorina minodii (Chodat) Nozaki et Krienitz

- 856 History:** < Nozaki, Hisayoshi **Locality:** Lake Altglobsow/Brandenburg/Germany (1997-07-27) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Homothallic; Dioecious; Anisogamy **Gene data:** *atpB* (AB047068); *rbcL* (AB047074); *rbcL* (AB047075); *rbcL* (AB047076) **Other strain no.:** 970728-E-8 **Reference:** 653

Eudorina peripheralis (Goldstein) T. K. Yamada

Syn. *Eudorina unicocca* G.M. Smith var. *peripheralis* Goldstein

- 726 History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1218 **Locality:** British Columbia/Canada **Identified by:** Nozaki, Hisayoshi; Yamada, Toshihiro (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Road side ditch) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB047070); *rbcL* (D86830) **References:** 515, 647

Eudorina unicocca G. M. Smith

- 724 History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 737 **Locality:** Indiana/U.S.A. **Identified by:** Nozaki, Hisayoshi; Yamada, Toshihiro (Reidentify) **Formerly identified as:** *Eudorina unicocca* G. M. Smith var. *unicocca* **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater **Characteristics:** Heterothallic **Gene data:** *atpB* (AB014008); *psaA* (AB044204); *psaA* (AB044205); *psaA* (AB044206); *psaB* (AB044439); *psbC* (AB044489); *psbC* (AB044490); *rbcL* (D86829) **References:** 515, 647, 663, 666
- 725 History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1215 **Locality:** Ohio/U.S.A. **Identified by:** Nozaki, Hisayoshi; Yamada, Toshihiro (Reidentify) **Formerly identified as:** *Eudorina unicocca* G. M. Smith var. *unicocca* **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Soil) **Characteristics:** Heterothallic **Gene data:** *atpB* (AB014007); *psaA* (AB044207); *psaA* (AB044208); *psaA* (AB044209); *psaB* (AB044440); *psbC* (AB044491); *psbC* (AB044492); *rbcL* (D63434) **References:** 515, 646, 663, 666
- 1855 History:** < Nozaki, Hisayoshi **Locality:** Lake Sagami/Kanagawa/Japan (1999-06-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Yamada, Toshihiro (2007-01-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Resting spore forming **Other strain no.:** 990601-IE-5
- 1856 History:** < Nozaki, Hisayoshi **Locality:** Lake Sagami/Kanagawa/Japan (1999-06-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Yamada, Toshihiro (2007-01-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Resting spore forming **Other strain no.:** 990601-IE-6
- 1857 History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2005-07-20) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2007-01-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Resting spore forming **Other strain no.:** TKI-C-1
- 1858 History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2005-07-20) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2007-01-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Resting spore forming **Other strain no.:** TKI-C-2

EUGLENA : Euglenophyceae*Euglena clara* Skuja

- 253 History:** < Suda, Shoichiro **Locality:** Higashiyata River/Ibaraki/Japan (1983-07-02) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 1 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (River sediment) **Other strain no.:** USI-21 **Reference:** 122

Euglena gracilis Klebs

- 47 History:** < IAM (1983) **Other collection strain no.:** IAM E-3 **Locality:** Japan **States:** Unialgal; Clonal; Axenic **Culture conditions:** HUT (semi-solid); 20°C; 4-10 µmol/m²/s; 1 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Material for Vitamin B₁₂ bioassay **References:** 215, 293, 420, 1013

- 48 **History:** < IAM (1983) **Other collection strain no.:** IAM E-6; UTEX 753 **Locality:** Japan **States:** Unialgal; Clonal; Axenic **Culture conditions:** HUT (semi-solid); 20°C; 4-10 µmol/m²/s; 1 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Material for Vitamin B₁₂ bioassay **Gene data:** OPRT-OMPDC (AB185845); PAC1 (AB126955); PAC2 (AB126956) **Other strain no.:** Z strain **References:** 67, 68, 69, 70, 71, 151, 152, 153, 215, 227, 242, 293, 411, 442, 449, 457, 458, 514, 536, 738, 739, 740, 741, 745, 746, 747, 749, 750, 751, 752, 853, 901, 902, 937, 963, 972, 974, 982, 991, 1120, 1121, 1122, 1132, 1140

Euglena gracilis Klebs var. *bacillaris* Pringsheim

- 49 **History:** < IAM (1983) **Other collection strain no.:** IAM E-2 (= E-10) **Locality:** Japan **States:** Unialgal; Clonal; Axenic **Culture conditions:** HUT; 20°C; 4-10 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **References:** 215, 267, 293, 615, 1013

Euglena mutabilis Schmitz

- 286 **History:** < Suda, Shoichiro **Locality:** Takatori River/Ibaraki/Japan (1984-12-11) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 1 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Bioindicator **Reference:** 128

Euglena sp.

- 2345 **History:** < Nozaki, Hisayoshi **Locality:** Lake Nojiri (depth 3.5 m)/Nagano/Japan (1992-05-14) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 10°C; 15-20 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** 92-517-E-1

Euglena viridis Ehrenberg

- 2149 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM E-11 (= E-9); UTEX 85; CCAP 1224/17A **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** HUT (semi-solid); 20°C; 40-50 µmol/m²/s; 20 D

EUNOTIA : Bacillariophyceae

Eunotia pectinalis (Kützing) Rabenhorst var. *minor* (Kützing) Rabenhorst

- 461 **History:** < Kasai, Fumie **Locality:** Mt.Tsukuba, Hatorisawa/Ibaraki/Japan (1987-04-17) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; 15°C; 15-22 µmol/m²/s; 4 M **Habitat:** Freshwater (River water) **Other strain no.:** (1)-16 **Reference:** 917

EUTREPTIELLA : Euglenophyceae

Eutreptiella gymnastica Throndsen

- 381 **History:** < KAGAWA **Locality:** Yashima Bay/Kagawa/Japan (1982-10-14) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Gene data:** *cox1* (AB000136); PAC1 (AB126953); PAC2 (AB126954) **Other strain no.:** KGW-63-1 **References:** 128, 240, 411

Eutreptiella sp.

- 2298 **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1981-03-**) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 20 D **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** OEu

- 2305 **History:** < Suda, Shoichiro **Locality:** Onagawa Bay/Miyagi/Japan (1984-08-28) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM2; 20°C; 15-22 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** 8280G27-10

- 2325 **History:** < Suda, Shoichiro **Locality:** Harima-nada/Japan (1988-08-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** 813H-4

FIBROCAPSA : Raphidophyceae**Fibrocapsa japonica** Toriumi et Takano

- 136** **History:** < KAGAWA **Locality:** Tsuda Bay/Kagawa/Japan (1978-07-19) **Isolator:** Yuki, Katsuhisa **Identified by:** Yuki, Katsuhisa **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-20-2 **References:** 224, 448, 1004 **Remarks:** Difficult to transport
- 462** **History:** < Sawaguchi, Tomohiro **Locality:** Hasaki/Ibaraki/Japan (1987-05-09) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Characteristics:** Red tide **Other strain no.:** HASS-8 **Reference:** 9 **Remarks:** Difficult to transport
- 560** **History:** < Honjo, Tsuneo **Locality:** Mikawa Bay/Aichi/Japan **Isolator:** Toriumi, Saburo **Identified by:** Honjo, Tsuneo **States:** Unialgal; Non-clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport
- 605** **History:** < Iwasaki, Hideo **Locality:** Seto Inland Sea/Yamaguchi/Japan (1970-08-**) **Isolator:** Iwasaki, Hideo **Identified by:** Takano, Hideaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Reference:** 103 **Remarks:** Difficult to transport
- 1303** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-01) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** YK03-75 **Reference:** 122 **Remarks:** Difficult to transport
- 1829** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-07-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Characteristics:** Red tide **Other strain no.:** TKB-301 **Remarks:** Difficult to transport

Fibrocapsa sp.

- 1378** **History:** < TKB **Locality:** Tokyo Bay/Kanagawa/Japan (2003-09-30) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** TKB-067 (AK-09) **Remarks:** Difficult to transport

FISCHERELLA : Cyanophyceae**Fischerella major** Gomont

- 592** **History:** < Hagiwara, Tomiji **Locality:** Yukawa Hot Spring/Iwate/Japan (1990-09-09) **Isolator:** Hagiwara, Tomiji **Identified by:** Hagiwara, Tomiji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-10 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Hot spring (Water) **Characteristics:** Benthic **Other strain no.:** Yu-50 **References:** 175, 202, 515, 1097

Fischerella sp.

- 2354** **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-263; TISTR 8218 **Locality:** Trat/Thailand **Isolator:** Mahakhant, Aparat **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); N-Free (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil) **Remarks:** Distribution for academic purpose only

FRAGILARIA : Bacillariophyceae**Fragilaria capucina** Desmazières

- 391** **History:** < Sawaguchi, Tomohiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1985-04-25) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Idei, Masahiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** KEB-24

GEPHYROCAPSA : Prymnesiophyceae**Gephyrocapsa oceanica** Kamptner

- 353** **History:** < Sawaguchi, Tomohiro **Locality:** Tsushima Isl./Nagasaki/Japan (1986-03-13) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Gene data:** *coxI* (AB000118) **Other strain no.:** TMCO-2 **References:** 127, 170, 398, 610

- 838** **History:** < Kawachi, Masanobu **Locality:** Mutsu Bay/Aomori/Japan (1990-11-**) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** GO-01 **References:** 55, 821, 864, 867 **Remarks:** Unstable
- 1000** **History:** < Kawachi, Masanobu **Other collection strain no.:** CCMP 2054 **Locality:** Miyake Isl., Chotaro-ike Pond/Tokyo/Japan (1999-11-23) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide
- 1315** **History:** < Kawachi, Masanobu **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2002-01-22) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 38
- 1316** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 63
- 1317** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 64
- 1318** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MH 73
- 1319** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-07-29) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Now as naked cells **Other strain no.:** YK3-7
- 1328** **History:** < TKB **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2002-12-13) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** TKB-001 (ym-01)
- 1329** **History:** < TKB **Locality:** Seto Inland Sea/Okayama/Japan (2002-08-**) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2002-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** TKB-061 (ym-06)

GIRAUDYOPSIS : Chrysochromyces*Giraudyopsis* sp.

- 1862** **History:** < TKB **Locality:** Awaji Isl./Hyogo/Japan (2005-12-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-334

GLAUCOCYSTIS : Glaucophyceae*Glaucocystis nostochinearum* Itzigsohn

- 966** **History:** < Kasai, Fumie **Locality:** Renge-numa/Fukushima/Japan (1987-08-11) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** F(6)-5
- 1369** **History:** < TKB **Locality:** Kanazawa, Kakuma-cho/Ishikawa/Japan (2003-07-01) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TKB-066 (AK-08)
- 1961** **History:** < TKB **Locality:** Kanazawa/Ishikawa/Japan (2003-07-01) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 20 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** TKB-333
- 2141** **History:** < IAM (2007) < UTEX (1989) **Other collection strain no.:** IAM M-124; UTEX 64; SAG B 229-1; CCAP 229/1; CAUP H2801; CAUP O101 **Isolator:** Lewin, Ralph A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 20°C; 13-18 µmol/m²/s; 3 M

GLENODINIOPSIS : Dinophyceae*Glenodiniopsis uliginosa* (Schilling) Woloszynska

- 463** **History:** < Sawaguchi, Tomohiro **Locality:** Shizukuishi/Iwate/Japan (1984-09-10) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6/2; 20°C; 40-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TM3D-6 **Reference:** 128 **Remarks:** Unstable; Difficult to transport

GLOEOCAPSA : Cyanophyceae*Gloeocapsa decorticans* (A. Brown) P. Richter

- 931** **History:** < Otsuka, Shigeto **Locality:** Kanagawa/Japan (2000-04-21) **Isolator:** Otsuka, Shigeto **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Benthic **Other strain no.:** GLC2 **Reference:** 124

GLOEOMONAS : Chlorophyceae*Gloeomonas lateperforata* (Skuja) Ettl

- 464** **History:** < Kasai, Fumie **Locality:** Tsukuba/Ibaraki/Japan (1982-11-15) **Isolator:** Kasai, Fumie **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** 1/4 **Reference:** 515

GLOSSOMASTIX : Pinguiphyceae*Glossomastix chrysoplata* O'Kelly

- 1002** **History:** < Kawachi, Masanobu < CCMP **Other collection strain no.:** CCMP 1537 **Locality:** Phillip Bay/Victoria/Australia **Isolator:** O'Kelly, Charles J. **Identified by:** O'Kelly, Charles J. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 22°C; 20-30 µmol/m²/s; 14 D **Habitat:** Marine **Characteristics:** Attached **Reference:** 122
- 1302** **History:** < Kogame, Kazuhiro **Locality:** Kumano/Mie/Japan (2001-03-27) **Isolator:** Kogame, Kazuhiro **Identified by:** Kogame, Kazuhiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 14 D **Habitat:** Marine (Seaweed) **Characteristics:** Attached **Other strain no.:** GLOSSO

GOMPHONEMA : Bacillariophyceae*Gomphonema angustatum* (Kützing) Rabenhorst var. *obtusatum* (Kützing) Grunow

- 620** **History:** < Kasai, Fumie **Locality:** Mt.Tsukuba, Hatorisawa/Ibaraki/Japan (1987-04-17) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River sediment) **Other strain no.:** 1-36 **Reference:** 917

Gomphonema gracile Ehrenberg var. *gracile*

- 465** **History:** < Kasai, Fumie **Locality:** Watarase River System/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** Ast-1-1 **Reference:** 917

Gomphonema parvulum Kützing var. *parvulum*

- 466** **History:** < Kasai, Fumie **Locality:** Shirai River/Hokkaido/Japan (1987-07-02) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; 10°C; 10-15 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** Tst-1-18 **Reference:** 917
- 467** **History:** < Kasai, Fumie **Locality:** Shirai River/Hokkaido/Japan (1987-07-02) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 10°C; 10-15 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** Tst-4-3 **Reference:** 917

GONATOZYGON : Charophyceae*Gonatozygon brebissonii* De Bary

- 138 **History**: < IAM (1983) **Locality**: Lake Kasumigaura/Ibaraki/Japan (1974-11-**) **States**: Unialgal; Clonal; Axenic **Culture conditions**: C; 20°C; 8-15 $\mu\text{mol/m}^2/\text{s}$; 4 M (20°C; 15-27 $\mu\text{mol/m}^2/\text{s}$) **Habitat**: Freshwater **Other strain no.**: KAS-4-43 **Reference**: 515
- 139 **History**: < TAC **Locality**: Lake Shoji/Yamanashi/Japan (1981-10-27) **Isolator**: Watanabe, Masayuki **Identified by**: Watanabe, Masayuki **States**: Unialgal; Clonal; Axenic **Culture conditions**: C; 20°C; 8-15 $\mu\text{mol/m}^2/\text{s}$; 4 M (20°C; 15-27 $\mu\text{mol/m}^2/\text{s}$) **Habitat**: Freshwater **Other strain no.**: TAC 56-1 (TAN-56-1) **Reference**: 515

Gonatozygon monotaenium De Bary

- 247 **History**: < Kasai, Fumie **Locality**: Tsukiyono/Gunma/Japan (1984-06-01) **Isolator**: Kasai, Fumie **Identified by**: Kasai, Fumie **States**: Unialgal; Clonal; Axenic **Culture conditions**: C; 20°C; 8-15 $\mu\text{mol/m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol/m}^2/\text{s}$) **Habitat**: Freshwater (Paddy water) **Characteristics**: Homothallic **Other strain no.**: 84-25-109
- 287 **History**: < TAC **Locality**: Lake Yamanaka/Yamanashi/Japan (1981-10-26) **Isolator**: Watanabe, Masayuki **Identified by**: Watanabe, Masayuki **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: MG; 20°C; 8-15 $\mu\text{mol/m}^2/\text{s}$; 2 M (20°C; 15-27 $\mu\text{mol/m}^2/\text{s}$) **Habitat**: Freshwater **Other strain no.**: TAC 53-3 (TAN-53-3) **Reference**: 515

GONIOMONAS : Goniomonadea*Goniomonas amphinema* Larsen et Patterson

- 1371 **History**: < TKB **Locality**: Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator**: Yubuki, Naoji **Identified by**: Yubuki, Naoji **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: f/2 + Wheat; 15°C; 1 M **Habitat**: Marine (Seawater) **Characteristics**: Heterotrophic **Other strain no.**: TKB-022 (NY0129)

Goniomonas pacifica Larsen et Patterson

- 1372 **History**: < TKB **Locality**: Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator**: Yoshida, Masaki **Identified by**: Yubuki, Naoji (2004-**-**) **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: f/2 + Wheat; 15°C; 1 M **Habitat**: Marine (Seawater) **Characteristics**: Heterotrophic **Other strain no.**: TKB-003 (ym-03)

Goniomonas sp.

- 1374 **History**: < TKB **Locality**: Tateyama, Sakata/Chiba/Japan (2003-01-22) **Isolator**: Yubuki, Naoji **Identified by**: Yubuki, Naoji **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: f/2 + Wheat; 15°C; 1 M **Habitat**: Marine (Water) **Characteristics**: Heterotrophic **Other strain no.**: TKB-024 (NY0135)

Goniomonas truncata (Fresenius) Stein

- 1373 **History**: < TKB **Locality**: Mito/Ibaraki/Japan (2002-05-15) **Isolator**: Yubuki, Naoji **Identified by**: Yubuki, Naoji **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: URO + Wheat; 15°C; 1 M **Habitat**: Freshwater (Lake water) **Characteristics**: Heterotrophic **Other strain no.**: TKB-015 (NY0120)

GONIUM : Chlorophyceae*Gonium multicocum* Pocock

- 737 **History**: < Nozaki, Hisayoshi **Other collection strain no.**: UTEX 2580 **States**: Unialgal; Clonal; Axenic **Culture conditions**: VT; 20°C; 32-40 $\mu\text{mol/m}^2/\text{s}$; 1 M **Characteristics**: F1 clone of UTEX 2579 **Gene data**: *atpB* (AB014020); *psaA* (AB044239); *psaA* (AB044240); *psaB* (AB044461); *psbC* (AB044481); *rbcL* (D63435) **Other strain no.**: 90-530-F1-5 **References**: 646, 658, 663, 666
- 885 **History**: < Nozaki, Hisayoshi < UTEX **Other collection strain no.**: UTEX 783 **Locality**: Lemoncove/California/U.S.A. **Isolator**: Stein, J. R. **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: AF-6; 20°C; 22-27 $\mu\text{mol/m}^2/\text{s}$; 1 M **Habitat**: (Soil or Mud) **References**: 635, 658
- 1038 **History**: < Nozaki, Hisayoshi **Locality**: Texas/U.S.A. **Isolator**: Starr, R. C. **Identified by**: Nozaki, Hisayoshi **States**: Unialgal; Clonal; Non-axenic **Culture conditions**: AF-6; 20°C; 15-27 $\mu\text{mol/m}^2/\text{s}$; 2 M **Gene data**: ITS2 (AB246191); *rbcL* (AB246187) **Other strain no.**: GQ-M-Tx-1 **Reference**: 1092

- 1039** **History:** < Nozaki, Hisayoshi **Locality:** Texas/U.S.A. **Isolator:** Starr, R. C. **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Other strain no.:** GQ-M-Tx-2
- 1707** **History:** < Nozaki, Hisayoshi **Locality:** Chikuzen/Fukuoka/Japan (2004-03-**) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2004-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming; Homothallic; Isogamy **Other strain no.:** Asa.Goni.6 **Reference:** 1092
- 1708** **History:** < Nozaki, Hisayoshi **Locality:** Chikuzen/Fukuoka/Japan (2004-03-**) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2004-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming; Homothallic; Isogamy **Gene data:** ITS2 (AB246192); *rbcL* (AB246188) **Other strain no.:** Asa.Goni.84 **Reference:** 1092
- 1709** **History:** < Nozaki, Hisayoshi **Locality:** Chikuzen/Fukuoka/Japan (2004-03-**) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2004-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming; Homothallic; Isogamy **Other strain no.:** AsCl-1 **Reference:** 1092

Gonium octonarium Pocock

- 851** **History:** < Nozaki, Hisayoshi **Isolator:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Gene data:** *atpB* (AB014018); *psaA* (AB044241); *psaB* (AB044462); *psbC* (AB044520) **Other strain no.:** GO-LC-1+ **References:** 663, 666, 668
- 852** **History:** < Nozaki, Hisayoshi **Isolator:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Other strain no.:** GO-LC-3- **Reference:** 666

Gonium pectorale O. F. Müller

- 1710** **History:** < Nozaki, Hisayoshi **Locality:** Kin/Okinawa/Japan (2000-03-**) **Isolator:** Nozaki, Hisayoshi; Kaneko, Daisuke **Identified by:** Nozaki, Hisayoshi (2001-10-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (-); Crosses with NIES-1711 **Other strain no.:** Kaneko3 **Reference:** 121
- 1711** **History:** < Nozaki, Hisayoshi **Locality:** Kin/Okinawa/Japan (2000-03-**) **Isolator:** Nozaki, Hisayoshi; Kaneko, Daisuke **Identified by:** Nozaki, Hisayoshi (2001-10-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (+); Crosses with NIES-1710 **Gene data:** *rbcL* (AB246190) **Other strain no.:** Kaneko4 **References:** 121, 1092
- 1712** **History:** < Nozaki, Hisayoshi **Locality:** Kitahiroshima/Hokkaido/Japan (2004-03-**) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2004-05-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (+); Crosses with NIES-1713 **Other strain no.:** Kita.Goni.1
- 1713** **History:** < Nozaki, Hisayoshi **Locality:** Kitahiroshima/Hokkaido/Japan (2004-03-**) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2004-05-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (-); Crosses with NIES-1712 **Gene data:** *rbcL* (AB246189) **Other strain no.:** Kita.Goni.3 **Reference:** 1092
- 2261** **History:** < IAM (2007) < Nozaki, Hisayoshi **Other collection strain no.:** IAM C-598 **Locality:** Kawasaki/Kanagawa/Japan (1994-04-09) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi (1994-05-**) **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+) **Other strain no.:** 94-409-G-4
- 2262** **History:** < IAM (2007) < Nozaki, Hisayoshi **Other collection strain no.:** IAM C-599 **Locality:** Kawasaki/Kanagawa/Japan (1994-04-09) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi (1994-05-**) **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** 94-409-G-6

Gonium pectorale O. F. Müller var. *pectorale*

- 468** **History:** < Nozaki, Hisayoshi **Locality:** Yokohama, Kohoku-ku/Kanagawa/Japan (1979-04-06) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-469 **Other strain no.:** 9406-10 **References:** 362, 515, 626, 635, 654

- 469** **History:** < Nozaki, Hisayoshi **Locality:** Yokohama, Kohoku-ku/Kanagawa/Japan (1979-04-06) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-468 **Other strain no.:** 9406-12 **References:** 515, 626
- 569** **History:** < Nozaki, Hisayoshi **Locality:** Kourakuen/Okayama/Japan (1988-10-12) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (+); Crosses with NIES-570 **Gene data:** *atpB* (AB014016); *atpB* (AB014017); *psaA* (AB044242); *psaB* (AB044463); *psbC* (AB044521); *rbcL* (D63437) **Other strain no.:** 88-1113-G-1 **References:** 345, 515, 646, 663, 666, 668
- 570** **History:** < Nozaki, Hisayoshi **Locality:** Kourakuen/Okayama/Japan (1988-10-12) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (-); Crosses with NIES-569 **Other strain no.:** 88-1113-G-2 **Reference:** 515
- 645** **History:** < Nozaki, Hisayoshi **Locality:** Near Goshokake Hot Spring/Akita/Japan (1985-07-10) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Isogamy; Mating type (+) **Other strain no.:** 5912-6 (+) **Reference:** 515
- 646** **History:** < Nozaki, Hisayoshi **Locality:** Near Goshokake Hot Spring/Akita/Japan (1985-07-10) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Isogamy; Mating type (-) **Other strain no.:** 5912-6 (-) **Reference:** 515
- Gonium quadratum* Pringsheim ex Nozaki
- 647** **History:** < Nozaki, Hisayoshi **Locality:** Japan **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Characteristics:** Heterothallic; Isogamy; Mating type (-); F1 clone of NIES-652 x 653; Sister clone to NIES-648, 649 and 650 from one zygote **Other strain no.:** 90-809-F1-2-1 **Reference:** 515
- 648** **History:** < Nozaki, Hisayoshi **Locality:** Japan **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Characteristics:** Mixotrophic; Heterothallic; Isogamy; Mating type (+); F1 clone of NIES-652 x 653; Sister clone to NIES-647, 649 and 650 from one zygote **Other strain no.:** 90-809-F1-2-2 **Reference:** 515
- 649** **History:** < Nozaki, Hisayoshi **Locality:** Japan **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Characteristics:** Mixotrophic; Heterothallic; Isogamy; Mating type (+); F1 clone of NIES-652 x 653; Sister clone to NIES-647, 648 and 650 from one zygote **Other strain no.:** 90-809-F1-2-3 **Reference:** 515
- 650** **History:** < Nozaki, Hisayoshi **Locality:** Japan **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Characteristics:** Mixotrophic; Heterothallic; Isogamy; Mating type (-); F1 clone of NIES-652 x 653; Sister clone to NIES-647, 648 and 649 from one zygote **Other strain no.:** 90-809-F1-2-4 **Reference:** 515
- 651** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 956 **Locality:** Klausen/Italy **Isolator:** Pringsheim, E. G. **Identified by:** Pringsheim, E. G. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Authentic strain **References:** 515, 635, 636
- 652** **History:** < Nozaki, Hisayoshi **Locality:** Itahari/Nepal (1989-10-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic; Heterothallic; Isogamy; Mating type (-); Crosses with NIES-653 **Other strain no.:** 90-423-3 **References:** 515, 636
- 653** **History:** < Nozaki, Hisayoshi **Locality:** Itahari/Nepal (1989-10-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic; Heterothallic; Isogamy; Mating type (+); Crosses with NIES-652 **Gene data:** *atpB* (AB014019); *psaA* (AB044243); *psaB* (AB044464); *psbC* (AB044522); *psbC* (AB044523); *rbcL* (D63438) **Other strain no.:** 90-423-2 **References:** 515, 636, 646, 654, 663, 666, 668

Gonium viridistellatum M. Watanabe

- 288** **History:** < Watanabe, Masayuki **Locality:** Okinawa/Japan (1973-06-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-289 and 290 **Other strain no.:** G4 **References:** 515, 633, 1024
- 289** **History:** < Watanabe, Masayuki **Locality:** Okinawa/Japan (1973-06-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Heterothallic; Mating type (+); Crosses with NIES-288 **Gene data:** *atpB* (AB076118); *atpB* (AB076119); *psaA* (AB076140); *psaA* (AB076141); *psaB* (AB076156); *psbC* (AB076173); *rbcL* (AB076091); *rbcL*-462 intron (AB076091) **Other strain no.:** G3 **References:** 515, 633, 671, 1024
- 290** **History:** < Watanabe, Masayuki **Locality:** Okinawa/Japan (1973-06-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Heterothallic; Mating type (+); Crosses with NIES-288 **Other strain no.:** G1 **References:** 515, 633, 1024
- 654** **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2519 **Locality:** Yokohama, Midori-ku/Kanagawa/Japan (1980-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (+) **Gene data:** *atpB* (AB014021); *psaA* (AB044244); *psaB* (AB044465); *psbC* (AB044524); *rbcL* (D86831); *rbcL*-462 intron (AB076090) **Other strain no.:** KY-4 (+) **References:** 515, 633, 645, 647, 663, 666, 671
- 655** **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2520 **Locality:** Yokohama, Midori-ku/Kanagawa/Japan (1980-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (-) **Other strain no.:** KY-7 (-) **References:** 515, 633
- 857** **History:** < Nozaki, Hisayoshi **Locality:** Kathmandu, Gaunsli/Nepal (1986-09-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Gene data:** *atpB* (AB076117); *psaA* (AB076139); *psaB* (AB076155); *psbC* (AB076172); *rbcL* (AB076092); *rbcL* (AB076093); *rbcL*-462 intron (AB076092) **Other strain no.:** 88-511-9 **Reference:** 671

GONYOSTOMUM : Raphidophyceae*Gonyostomum latum* Iwanoff

- 1808** **History:** < TKB **Locality:** Matsumi-ike Pond/Ibaraki/Japan (2005-08-30) **Isolator:** Yamaguchi, Haruyo **Identified by:** Yamaguchi, Haruyo (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-254 **Remarks:** Difficult to transport

Gonyostomum semen (Ehrenberg) Diesing

- 1009** **History:** < Moriya, Mayumi **Locality:** Lake Ozenuma/Fukushima/Japan (2002-08-28) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AAF-6; 15°C; 15-22 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Other strain no.:** M-87 **Remarks:** Difficult to transport
- 1380** **History:** < TKB **Locality:** Mizunuma Dam/Ibaraki/Japan (2004-07-07) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 32-40 µmol/m²/s; 2 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Red tide **Other strain no.:** TKB-132 (nak26) **Reference:** 122 **Remarks:** Difficult to transport

GRAESIELLA : Chlorophyceae*Graesiella emersonii* (Shihira et Krauss) Nozaki, Katagiri, Nakagawa, Aizawa et M. M. Watanabe

Syn. *Chlorella emersonii* Shihira et Krauss; *Chlorella fusca* Shihira et Krauss var. *vacuolata* Shihira et Krauss; *Graesiella vacuolata* (Shihira et Krauss) Kalina et Puncová

- 226** **History:** < IAM (1983) **Other collection strain no.:** IAM C-28 **Locality:** Japan **Identified by:** Nozaki, Hisayoshi *et al.* (Reidentify) **Formerly identified as:** *Chlorella pyrenoidosa* Chick **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **References:** 185, 215, 449, 451, 452, 471, 515, 601, 652, 921, 1013, 1074, 1134, 1135, 1136, 1137

- 687 **History:** < Katagiri, Masayuki < CCAP **Other collection strain no.:** CCAP 211/8B; IAM C-104 **Locality:** Pennsylvania/U.S.A. (2023-**-**) **Isolator:** Emerson, R. **Identified by:** Nozaki, Hisayoshi *et al.* (Reidentify) **Formerly identified as:** *Chlorella fusca* Shihira et Krauss var. *vacuolata* Shihira et Krauss (in IAM) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Authentic strain of *Chlorella fusca* Shihira et Krauss var. *vacuolata* Shihira et Krauss **Other strain no.:** C-104 **References:** 112, 160, 351, 401, 449, 451, 462, 498, 509, 510, 515, 652, 992
- 688 **History:** < Katagiri, Masayuki < CCAP **Other collection strain no.:** CCAP 211/8G **Locality:** Japan **Isolator:** Emerson, R. **Identified by:** Nozaki, Hisayoshi *et al.* (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** 211/8G **References:** 515, 652
- 689 **History:** < Katagiri, Masayuki < CCAP **Other collection strain no.:** CCAP 211/8H **Locality:** Japan **Isolator:** Emerson, R. **Identified by:** Nozaki, Hisayoshi *et al.* (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** 211/8H **References:** 515, 652
- 690 **History:** < Katagiri, Masayuki < CCAP **Other collection strain no.:** CCAP 211/11N **Locality:** Berlin/Germany **Isolator:** Emerson, R. pre **Identified by:** Nozaki, Hisayoshi *et al.* (Reidentify) **Formerly identified as:** *Chlorella emersonii* Shihira et Krauss (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Characteristics:** Authentic strain of *Chlorella emersonii* Shihira et Krauss **Other strain no.:** 211/11N **References:** 515, 652
- 2151 **History:** < IAM (2007) < BIU (UTEX; 1961) **Other collection strain no.:** IAM C-105; CCAP 211/8C; SAG 211-8c; UTEX 252; UTCC 89; NIBB 4001; NIBB 4002; NIBB 4003; NIBB 4004; NIBB 4005. NIBB 4006 **Locality:** Berlin-Dahlem/Germany **Isolator:** Emerson, R. **Identified by:** Kessler, E. (1993); Confirmed at NIES by DNA sequencing **Formerly identified as:** *Chlorella pyrenoidosa* Chick (before 1993) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (Tap water) **Gene data:** 18S rRNA (AB488562) **References:** 35, 351, 451, 452, 800

GUNGNIR : Chlorophyceae

Gungnir kasakii (Nozaki) Nakada

Syn. *Chlorogonium kasakii* Nozaki

- 761 **History:** < Nozaki, Hisayoshi < CCAP **Other collection strain no.:** CCAP 12/8 **Locality:** Priest Pot/England, Cambria/U.K. **Isolator:** Jaworski **Identified by:** Nozaki, Hisayoshi; Nakada, Takashi (Reidentify) **Formerly identified as:** *Chlorogonium* sp. (in CCAP) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Water) **Characteristics:** Authentic strain; Type specimen (NIES-50005, Epitype) **Gene data:** *rbcL* (AB010244) **References:** 555, 665
- 1359 **History:** < Nakada, Takashi **Locality:** Sakatagaike Pond/Chiba/Japan (2003-07-23) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Mixotrophic **Gene data:** *psaB* (AB451209); *rbcL* (AB206331) **Other strain no.:** SkCl-5 **References:** 551, 554, 555
- 1360 **History:** < Nakada, Takashi **Locality:** Kitahiroshima, Nakanosawa/Hokkaido/Japan (2004-03-27) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Mixotrophic **Gene data:** *rbcL* (AB206332) **Other strain no.:** KhCl-3 **References:** 551, 555

Gungnir neglectum (Pascher) Nakada

Syn. *Chlamydomonas neglecta* Korshikov ex Pascher; *Chlorogonium neglectum* Pascher

- 439 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1984-05-08) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro; Nozaki, Hisayoshi; Nakada, Takashi (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Type specimen (NIES-50006, Epitype) **Gene data:** *atpB* (AB084326); *psaB* (AB084366); *rbcL* (AB010243) **Other strain no.:** T-4-19 **References:** 252, 515, 555, 665, 668
- 1869 **History:** < Nakada, Takashi **Locality:** Kyoto, Sakyo-ku/Kyoto/Japan (2005-03-29) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2007-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 130-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Gene data:** *psaB* (AB451210) **Other strain no.:** IkCl-701 **Reference:** 554

GYMNODINIUM : Dinophyceae*Gymnodinium catenatum* Graham

- 1834** **History:** < TKB **Locality:** Mie/Japan (2005-04-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-264 **Remarks:** Difficult to transport
- 2410** **History:** < Iwataki, Mitsunori **Locality:** Usuka Bay/Nagasaki/Japan (2008-06-11) **Isolator:** Mizuno, Akane **Identified by:** Iwataki, Mitsunori (2008-07-29) **States:** Unialgal **Culture conditions:** ESM; MNK; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Remarks:** Difficult to transport

Gymnodinium sp.

- 2002** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW19 **Remarks:** Difficult to transport
- 2003** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW20 **Remarks:** Difficult to transport
- 2004** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW22 **Remarks:** Difficult to transport
- 2005** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW25 **Remarks:** Difficult to transport
- 2006** **History:** < Noël, Mary-Hélène **Locality:** Soma Harbor/Fukushima/Japan (2005-06-17) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW33 **Remarks:** Difficult to transport
- 2007** **History:** < Noël, Mary-Hélène **Locality:** Soma Harbor/Fukushima/Japan (2005-06-17) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW34 **Remarks:** Difficult to transport
- 2326** **History:** < Sawaguchi, Tomohiro **Locality:** Tsushima Isl./Nagasaki/Japan (1986-03-13) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Reservoir water) **Other strain no.:** TKDD-11 **Remarks:** Difficult to transport

GYRODINIUM : Dinophyceae*Gyrodinium instriatum* Freudenthal et Lee

- 2000** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-08-01) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW11 **Remarks:** Difficult to transport
- 2001** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-08-01) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW13 **Remarks:** Difficult to transport

HAEMATOCOCCUS : Chlorophyceae**Haematococcus lacustris** (Girod-Chantrons) RostafinskiSyn. *Haematococcus pluvialis* Flotow

- 144** **History:** < IAM (1983) **Other collection strain no.:** IAM C-392 **Locality:** Sapporo/Hokkaido/Japan (1964-07-16) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Homothallic; Isogamy **Gene data:** *atpB* (AB084325); *psaB* (AB084365); *rbcL* (AB084336); *rbcL* (AB084337); 14-3-3 protein (AY973204); β-carotene ketolase (AY603347); lycopene β-cyclase (AY182008) **Other strain no.:** MKF-8 **References:** 215, 307, 308, 346, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 422, 423, 515, 668, 884, 960, 961, 962, 1047
- 2263** **History:** < IAM (2007) < Nakayama, Ooki **Other collection strain no.:** IAM C-339 **Locality:** Kofu/Yamanashi/Japan **Isolator:** Nakayama, Ooki **Identified by:** Nakayama, Ooki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Nakayama 5032
- 2264** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-582 (= C-296/C-393); SAG 34-1b; UTEX 16; ATCC 30402; UTCC B 93; CCAP 34/1b **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Astaxantin production **Reference:** 431
- 2265** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-583 (= C-394); UTEX 294; ATCC 30453; CCAP 34/1j **Isolator:** Lewin, Ralph A. **Identified by:** Lewin, Ralph A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Lewin DD1/73

HAFNIOMONAS : Chlorophyceae**Hafniomonas conica** (Ettl) Nakada et NozakiSyn. *Pyramimonas reticulata* Korshikov var. *conica* Ettl; *Hafniomonas reticulata* Korshikov var. *conica* (Ettl) Ettl et Moestrup

- 1714** **History:** < Nozaki, Hisayoshi **Locality:** Mure/Nagano/Japan (2003-07-12) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Gene data:** 18S rRNA (AB248251); *psaB* (AB248257) **Other strain no.:** NgCl-3 **Reference:** 556

Hafniomonas laevis Nakada, Suda et Nozaki

- 257** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1983-10-30) **Isolator:** Suda, Shoichiro **Identified by:** Inouye, Isao; Nakada, *et al.* (Reidentify) **Formerly identified as:** *Hafniomonas montana* (Geitler) Ettl et Moestrup **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 1 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pool water) **Gene data:** *atpB* (AB101504); *psaB* (AB101515); *rbcL* (AB101509); *rbcL* (AB101510) **Other strain no.:** OUT-5 **References:** 515, 556, 599, 664, 889, 1047

Hafniomonas montana (Geitler) Ettl et Moestrup

- 656** **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1986-04-30) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond sediment) **Gene data:** *atpB* (AB101505); *psaB* (AB101516); *rbcL* (AB101511); *rbcL* (AB101512) **Other strain no.:** 430M3-3 **References:** 515, 556, 599, 664

Hafniomonas reticulata (Korshikov) Ettl et MoestrupSyn. *Pyramimonas reticulata* Korshikov

- 1715** **History:** < Nozaki, Hisayoshi **Locality:** Mitsukaido/Ibaraki/Japan (2003-08-11) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming **Gene data:** 18S rRNA (AB248247); *psaB* (AB248253) **Other strain no.:** MkCl-10 **Reference:** 556
- 1716** **History:** < Nozaki, Hisayoshi **Locality:** Ebina/Kanagawa/Japan (2004-02-26) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming **Gene data:** 18S rRNA (AB248250); *psaB* (AB248256) **Other strain no.:** EbCl-11 **Reference:** 556

1717 **History:** < Nozaki, Hisayoshi **Locality:** Kitahiroshima/Hokkaido/Japan (2004-03-27) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming **Gene data:** 18S rRNA (AB248248); *psaB* (AB248254) **Other strain no.:** KhCl-1 **Reference:** 556

1718 **History:** < Nozaki, Hisayoshi **Locality:** Kawagoe/Saitama/Japan (2004-05-30) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Resting spore forming **Gene data:** 18S rRNA (AB248249); *psaB* (AB248255) **Other strain no.:** KgCl-4-5 **Reference:** 556

Hafniomonas sp.

1841 **History:** < TKB **Locality:** Ryugasaki/Ibaraki/Japan (2005-09-29) **Isolator:** Chikuni, Tomoko **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** AF-6; 25°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-275

Hafniomonas turbinea Nakada et Nozaki

1719 **History:** < Nozaki, Hisayoshi **Locality:** Naruto/Chiba/Japan (2003-08-15) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic **Other strain no.:** NrCl-4

1720 **History:** < Nozaki, Hisayoshi **Locality:** Naruto/Chiba/Japan (2003-08-15) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic; Authentic strain **Gene data:** 18S rRNA (AB248252); *psaB* (AB248258) **Other strain no.:** NrCl-5 **Reference:** 556

1721 **History:** < Nozaki, Hisayoshi **Locality:** Naruto/Chiba/Japan (2003-08-15) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2005-11-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AFAC; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Mixotrophic **Other strain no.:** NrCl-8

HALOCHLOROCOCCUM : Ulvophyceae

Halochlorococcum sp.

1838 **History:** < TKB **Locality:** Tokyo/Japan (2005-01-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** (Seawater) **Other strain no.:** TKB-269

1839 **History:** < TKB **Locality:** Tokyo/Japan (2005-01-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** (Seawater) **Other strain no.:** TKB-270

HAMAKKO : Chlorophyceae

Hamakko caudatus Nakada

2293 **History:** < Nakada, Takashi **Locality:** Yokohama, Kohoku-ku/Kanagawa/Japan (2003-05-12) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2007-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; MG; 20°C; 130-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB451188); *psaB* (AB451212); *rbcL* (AB451193) **Other strain no.:** KzCl-4-1 **Reference:** 554

HANTZSCHIA : Bacillariophyceae

Hantzschia amphioxys (Ehrenberg) Grunow var. *compacta* Hustedt

587 **History:** < Hagiwara, Tomiji **Locality:** Tsukuba/Ibaraki/Japan (1990-04-19) **Isolator:** Hagiwara, Tomiji **Identified by:** Hagiwara, Tomiji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSI; 15°C; 35-50 µmol/m²/s; 1 M **Habitat:** Terrestrial (Concrete wall) **Other strain no.:** Wn-24

HAPALOSIPHON : Cyanophyceae*Hapalosiphon delicatulus* W. et G. S. West

2355 **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-266; TISTR 8224 **Locality:** Ratchaburi/Thailand **Isolator:** Mahakhant, Aparat **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil) **Remarks:** Distribution for academic purpose only

Hapalosiphon sp.

2356 **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-264; TISTR 8229 **Locality:** Thailand **Isolator:** Mahakhant, Aparat **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Remarks:** Distribution for academic purpose only

2357 **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-265; TISTR 8230 **Locality:** Bangkok /Thailand **Isolator:** Mahakhant, Aparat **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); N-Free (agar); 20°C; 8-15 µmol/m²/s; 3 M **Remarks:** Distribution for academic purpose only

HARAMONAS : Raphidophyceae*Haramonas dimorpha* Horiguchi

716 **History:** < Horiguchi, Takeo **Locality:** Daintree River/Australia (1991-09-21) **Isolator:** Horiguchi, Takeo **Identified by:** Horiguchi, Takeo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Brackish (Sediment) **Characteristics:** Benthic; Authentic strain **References:** 198, 224 **Remarks:** Difficult to transport

Haramonas pauciplastida Yamaguchi, Hoppenrath, Takishita et Horiguchi

1870 **History:** < Yamaguchi, Haruyo **Locality:** Vancouver Isl., Pacher Beach/Canada (2005-05-**) **Isolator:** Hoppenrath, Mona **Identified by:** Yamaguchi, Haruyo (2007-08-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 50 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Characteristics:** Benthic; Authentic strain **Remarks:** Difficult to transport

Haramonas sp.

1701 **History:** < Honda, Daiske **Locality:** Yashima Isl./Kagawa/Japan (2001-04-17) **Isolator:** Fukaya, Sachiko **Identified by:** Fukaya, Sachiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 32-40 µmol/m²/s; 14 D **Habitat:** Marine (Sand) **Characteristics:** Red tide; Benthic **Other strain no.:** SEK-115 **Remarks:** Difficult to transport

HEMIDINIUM : Dinophyceae*Hemidinium nasutum* Stein

471 **History:** < Sawaguchi, Tomohiro **Locality:** Tsuchiura/Ibaraki/Japan (1987-08-27) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** 87SPD-1 **Remarks:** Difficult to transport

HEMIFLAGELLOCHLORIS : Chlorophyceae*Hemiflagellochloris kazakhstanica* S. Watanabe, Tsujimura, Misono, Nakamura et Inoue

1722 **History:** < Watanabe, Shin **Locality:** Kazakhstan (1993-09-19) **Identified by:** Watanabe, Shin (2002-07-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Soil **Characteristics:** Authentic strain **Other strain no.:** BAKg15

HETEROCAPSA : Dinophyceae*Heterocapsa horiguchii* Iwataki, Takayama et Matsuoka

614 **History:** < Sawaguchi, Tomohiro **Locality:** Kashiwazaki/Niigata/Japan (1986-08-04) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **Formerly identified as:** *Cachonina niei* Loeblich III **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** KSTH-29 **Reference:** 295 **Remarks:** Difficult to transport

Heterocapsa niei (Loeblich III) Morrill et Loeblich IIISyn. *Cachonina niei* Loeblich III

- 420 **History:** < Sawaguchi, Tomohiro **Locality:** Iriomote Isl./Okinawa/Japan (1986-01-23) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** IID-1 **Reference:** 295 **Remarks:** Difficult to transport

Heterocapsa ovata Iwataki et Fukuyo

- 472 **History:** < Sawaguchi, Tomohiro **Locality:** Kashiwazaki/Niigata/Japan (1986-08-04) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **Formerly identified as:** *Heterocapsa pygmaea* Loeblich III, Schmidt et Sherley **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; IMK; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** KSTH-23 **References:** 180, 294, 295 **Remarks:** Difficult to transport

Heterocapsa pseudotriquetra Iwataki, Hansen et Fukuyo

- 473 **History:** < Sawaguchi, Tomohiro **Locality:** Tsushima Isl./Nagasaki/Japan (1986-03-13) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **Formerly identified as:** *Heterocapsa pygmaea* Loeblich III, Schmidt et Sherley **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TMUD-2 **References:** 180, 295 **Remarks:** Difficult to transport

Heterocapsa rotundata (Lohmann) HansenSyn. *Katodinium rotundatum* (Lohmann) Loeblich III

- 356 **History:** < Sawaguchi, Tomohiro **Locality:** Hachinohe Harbor/Aomori/Japan (1985-01-06) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 10°C; 6-12 µmol/m²/s; 1 M (10°C; 10-15 µmol/m²/s) **Habitat:** Marine (Seawater) **Other strain no.:** HHD-1 **Remarks:** Unstable; Difficult to transport

***Heterocapsa* sp.**

- 1403 **History:** < TKB **Locality:** Tsukuba Univ. Marine Research Center/Shizuoka/Japan (2003-04-03) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Toxic **Other strain no.:** TKB-060 (AK-04) **Remarks:** Toxic; Difficult to transport
- 2343 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Ago Bay/Mie/Japan (1992-12-**) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Clonal **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** Mie-92 **Remarks:** Difficult to transport
- 2344 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Uranouchi Bay/Kochi/Japan (1988-09-**) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Clonal **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** Uranouchi **Remarks:** Difficult to transport

Heterocapsa triquetra Stein

- 7 **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1981-04-**) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** OHet **References:** 180, 309, 398, 425, 426, 610, 611 **Remarks:** Difficult to transport
- 235 **History:** < KAGAWA **Locality:** Harima-Nada/Japan (1982-03-10) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-57 **References:** 180, 1004 **Remarks:** Difficult to transport

HETEROCHLAMYDOMONAS : Chlorophyceae***Heterochlamydomonas* sp.**

- 157 **History:** < Watanabe, Shin **Locality:** Mt. Shiroumadake/Nagano/Japan (1980-08-**) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **Formerly identified as:** *Chlamydomonas monticola* S. Watanabe **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Soil) **Other strain no.:** KUC80-4 **References:** 515, 758, 1073

HETEROSIGMA : Raphidophyceae**Heterosigma akashiwo** (Hada) Hada

- 5 **History:** < Iwasaki, Hideo **Locality:** Gokasho Bay/Mie/Japan (1966-**-**) **Isolator:** Iwasaki, Hideo **Identified by:** Hara, Yoshiaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** GHE **References:** 292, 793 **Remarks:** Difficult to transport
- 6 **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1979-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** OHE-1 **References:** 103, 136, 157, 355, 356, 357, 390, 391, 392, 394, 397, 398, 405, 512, 513, 516, 539, 566, 610, 676, 723, 819, 874, 875, 895, 1007, 1008, 1009, 1027, 1050, 1052, 1053, 1054, 1055, 1056, 1063, 1064, 1065, 1066, 1067, 1068, 1070, 1071, 1111, 1119 **Remarks:** Difficult to transport
- 9 **History:** < Watanabe, Makoto M. **Locality:** Harima-Nada/Japan (1983-02-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Red tide **Other strain no.:** H-28 **Reference:** 122 **Remarks:** Difficult to transport
- 10 **History:** < Watanabe, Makoto M. **Locality:** Harima-Nada/Japan (1983-02-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Red tide **Other strain no.:** H-40 **Remarks:** Difficult to transport
- 145 **History:** < KAGAWA **Locality:** Kagoshima/Japan (1978-05-21) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-11-5 **References:** 309, 1004 **Remarks:** Difficult to transport
- 146 **History:** < KAGAWA **Locality:** Shido Bay/Kagawa/Japan (1978-06-20) **Isolator:** Yuki, Katsuhisa **Identified by:** Yuki, Katsuhisa **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-21-2 **Remarks:** Difficult to transport
- 293 **History:** < Suda, Shoichiro **Locality:** Onagawa Bay/Miyagi/Japan (1984-08-28) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** 8280G21-1 **References:** 43, 52, 352, 920 **Remarks:** Difficult to transport
- 561 **History:** < Honjo, Tsuneo **Locality:** Mikawa Bay/Aichi/Japan **Isolator:** Toriumi, Saburo **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **References:** 782, 783, 966 **Remarks:** Difficult to transport
- 1830 **History:** < TKB **Locality:** Miyajima Isl./Hiroshima/Japan (2004-12-10) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** TKB-302 **Remarks:** Difficult to transport

HEXAMITA : Trepomonadea**Hexamita** sp.

- 1440 **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2003-05-26) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** UYTS + Rice; 15°C; 20 D **Habitat:** Freshwater (Pond water) **Characteristics:** Offensive taste and odor; Heterotrophic **Other strain no.:** TKB-057 (NY0140) **Reference:** 122

HYALOLITHUS : Prymnesiophyceae**Hyalolithus neolepis** Yoshida, Noël, Nakayama, Naganuma et Inouye

- 1393 **History:** < TKB **Locality:** Shiribeshi Seamount/Hokkaido/Japan (2001-07-19) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2001-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 18°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Authentic strain **Other strain no.:** TKB-005 (ym-05) **Reference:** 1124

HYALOTHECA : Charophyceae*Hyalotheca dissiliens* Brébisson ex Ralfs

- 147 **History:** < IAM (1983) **Other collection strain no.:** IAM C-510 **Locality:** Nagatoro/Saitama/Japan (1969-11-13) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Crosses with NIES-148 **Other strain no.:** S-9-18 **Reference:** 515
- 148 **History:** < IAM (1983) **Other collection strain no.:** IAM C-511 **Locality:** Nagatoro/Saitama/Japan (1969-11-13) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Crosses with NIES-147 **Other strain no.:** S-9-22 **Reference:** 515
- 150 **History:** < IAM (1983) **Other collection strain no.:** IAM C-513 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1975-12-16) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic **Other strain no.:** KAS-7-8 **Reference:** 515

Hyalotheca dissiliens Brébisson ex Ralfs f. *tridentula* (Nordstedt) Boldt

- 294 **History:** < Kasai, Fumie **Locality:** Tsukuba/Ibaraki/Japan (1982-**-**) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** H-1 **Reference:** 515

HYDROCOCCUS : Cyanophyceae*Hydrococcus rivularis* Kützing

- 593 **History:** < Hagiwara, Tomiji **Locality:** Yukawa Hot Spring/Iwate/Japan (1990-09-09) **Isolator:** Hagiwara, Tomiji **Identified by:** Hagiwara, Tomiji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 20°C; 4-10 $\mu\text{mol}/\text{m}^2/\text{s}$; 4 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Hot spring (Water) **Characteristics:** Benthic **Other strain no.:** Yu-52 **References:** 202, 515

HYDRODICTYON : Chlorophyceae*Hydrodictyon reticulatum* (Lagerheim) Lagerheim

- 295 **History:** < IAM (1983) **Other collection strain no.:** IAM C-335 **Locality:** Osaka/Japan (1968-11-10) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** O-2 **References:** 215, 515

HYMENOMONAS : Prymnesiophyceae*Hymenomonas coronata* Mills

- 1016 **History:** < Moriya, Mayumi **Locality:** Hirara, Shimajiri/Okinawa/Japan (2002-03-17) **Isolator:** Moriya, Mayumi **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Brackish (Water) **Other strain no.:** M-27 **Reference:** 127

IMANTONIA : Prymnesiophyceae*Imantonia rotunda* Reynolds emend. J. C. Green et Pienaar

- 1001 **History:** < Kawachi, Masanobu **Locality:** Chiba Harbor/Chiba/Japan (1990-10-**) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 $\mu\text{mol}/\text{m}^2/\text{s}$; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** Iman2
- 1394 **History:** < TKB **Locality:** Onahama Harbor/Fukushima/Japan (2004-07-07) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-128 (nak22)

INTERFILUM : Charophyceae**Interfilum paradoxum** Chodat et Topali

- 2180** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM C-161; CCAP 338/1; SAG 338-1; ATCC 30445; UTEX 177
Locality: U.K. **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** Pro (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil)

KARENIA : Dinophyceae**Karenia mikimotoi** (Miyake et Kominami ex Oda) Hansen et Moestrup

Syn. *Gymnodinium mikimotoi* Miyake et Kominami ex Oda; *Gymnodinium nagasakiense* Takayama et Adachi

- 680** **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Shodo Isl., Uchiumi Bay/Kagawa/Japan (1992-10-29) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; MNK; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Gene data:** *GapC1*-fd (AB164183); *GapC2* (AB164184); *GapC3* (AB164185); *GapC4* (AB164186) **References:** 9, 309, 932 **Remarks:** Difficult to transport
- 2411** **History:** < Iwataki, Mitsunori **Locality:** Katagami Bay/Nagasaki/Japan (2004-06-04) **Isolator:** Iwataki, Mitsunori **Identified by:** Iwataki, Mitsunori (2004-06-04) **States:** Unialgal **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Remarks:** Difficult to transport

KARLODINIUM : Dinophyceae**Karlodinium veneficum** (Ballantine) Larsen

- 1966** **History:** < TKB **Locality:** Kobe, Suma-ku/Hyogo/Japan (2005-12-10) **Isolator:** Nakayama, Takeshi **Identified by:** Yamaguchi, Haruyo (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 20 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-327 **Remarks:** Difficult to transport

KATHABLEPHARIS : Kathablepharidea**Kathablepharis japonica** Okamoto et Inouye

- 1334** **History:** < TKB **Locality:** Tokyo Bay/Japan (2004-01-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Mixed; Clonal; Non-axenic **Culture conditions:** mIMR (NIES-1333 should be cultured in advance as a prey); 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Feeds on *Chrysochromulina* sp. (NIES-1333) **Gene data:** 18S rRNA (AB193602) **Other strain no.:** TKB-090 (nrc066) **Reference:** 722

Kathablepharis sp.

- 1731** **History:** < Inouye, Isao **Locality:** Neuse River/North Carolina/U.S.A. (1998-12-01) **Isolator:** Andersen, Robert A. **Identified by:** Andersen, Robert A. (1998-**-**) **States:** Mixed; Clonal; Non-axenic **Culture conditions:** f/2 (NIES-1730 should be cultured together as a prey); 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Brackish (Water) **Characteristics:** Phagotrophic; Feeds on *Rhodomonas* sp. (NIES-1730) **Other strain no.:** A9269

KATODINIUM : Dinophyceae**Katodinium** sp.

- 2008** **History:** < Noël, Mary-Hélène **Locality:** New Castle/South Pacific Ocean (2005-06-21) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MHW17 **Remarks:** Difficult to transport
- 2009** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW18 **Remarks:** Difficult to transport

KENTROSPHAERA : Ulvophyceae**Kentrosphaera** sp.

- 154** **History:** < Watanabe, Shin **Locality:** Sasebo/Nagasaki/Japan (1975-08-12) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **Formerly identified as:** *Characium maximum* S. Watanabe **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Soil) **Other strain no.:** 6-EBO-2 **References:** 515, 1073 **Remarks:** Cryopreserved

KLEBSORMIDIUM : Charophyceae**Klebsormidium flaccidum** (Kützing) Silva, Mattox et Blackwell

- 2285** **History:** < IAM (2007) < BIU (UTEX; 1965) **Other collection strain no.:** IAM C-117; UTEX 321; SAG 335-1a; CCAP 335/1a **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Hormidium barlowi* **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Reference:** 77
- 2286** **History:** < IAM (2007) **Other collection strain no.:** IAM C-164 **Locality:** U.S.A. **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Hormidium flaccidum* (Kützing) A. Braun **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M
- 2408** **History:** < Nagao, Manabu **Locality:** Hokkaido University/Hokkaido/Japan (2000-10-08) **Isolator:** Nagao, Manabu **Identified by:** Nagao, Manabu (2001-02-01) **States:** Unialgal **Culture conditions:** C; 20°C; 30-60 µmol/m²/s; 2 M **Habitat:** Terrestrial (Soil) **Characteristics:** Cryophilic; Resting spore forming **References:** 543, 544, 545

LAGERHEIMIA : Trebouxiophyceae**Lagerheimia ciliata** (Lagerheim) Chodat

- 382** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-23) **Isolator:** Kasai, Fumie **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F37-1 **Reference:** 515 **Remarks:** Cryopreserved

LAGYNION : Chrysophyceae**Lagynion subglobosum** Starmach

- 1827** **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2004-06-24) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2004-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-133

LAMPROTHAMNIUM : Charophyceae**Lamprothamnium succinctum** (A. Braun) R. D. Wood

- 1606** **History:** < Sakayama, Hidetoshi **Locality:** Jaga-ike Pond/Tokushima/Japan (2004-06-14) **Identified by:** Sakayama, Hidetoshi (2004-06-14) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 1/3HerbstASW; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Brackish **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-100

LEPIDODINIUM : Dinophyceae**Lepidodinium chlorophorum** (Elbrachter et Schnepf) Hansen, Botes et de Salas
Syn. *Gymnodinium chlorophorum* Elbrachter et Schnepf

- 1868** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2004-07-28) **Isolator:** Noël, Mary-Hélène **Identified by:** Kawachi, Masanobu (2007-08-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 40 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Green chloroplast **Other strain no.:** MH210 **Remarks:** Difficult to transport

LEPTOLYNGBYA : Cyanophyceae*Leptolyngbya* sp.

- 30** **History:** < IAM (1983) **Other collection strain no.:** IAM M-40 **Locality:** Akita/Japan **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Watanabe, Makoto M. (Reidentify); Homma, Takamitsu (Re-reidentify) **Formerly identified as:** *Phormidium tenue* (C. Agardh ex Gomont) Anagnostidis et Komárek **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy field) **Gene data:** 16S rRNA (AB042857) **References:** 215, 515, 719, 862 **Remarks:** Cryopreserved
- 2103** **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-288 **Locality:** Himeji/Hyogo/Japan (2002-**-**) **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** HK-03
- 2104** **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-289 **Locality:** Himeji/Hyogo/Japan (2002-**-**) **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** HK-04

LEUCOCRYPTOS : Kathablepharidea*Leucocryptos marina* (Braarud) Butcher

- 1335** **History:** < TKB **Locality:** Tokyo Bay/Japan (2003-10-16) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Mixed; Non-clonal; Non-axenic **Culture conditions:** f/2 (NIES-1333 should be cultured in advance as a prey); 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Heterotrophic; Feeds on *Chrysochromulina* sp. (NIES-1333) **Gene data:** 18S rRNA (AB194980); β-tubulin (AB194977); β-tubulin (AB194978) **Other strain no.:** TKB-081 (nrc057) **References:** 358, 722

LIMNOTHRIX : Cyanophyceae*Limnothrix redekei* (Van Goor) MeffertSyn. *Oscillatoria redekei* Van Goor

- 847** **History:** < Suda, Shoichiro < NIVA **Other collection strain no.:** NIVA CYA 277/1 **Locality:** Lake Mälaren/Sweden (1990-**-**) **Isolator:** Skulberg, R. **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 22°C; 70-90 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AB045929) **References:** 202, 893 **Remarks:** Cryopreserved

LITHODESMIUM : Bacillariophyceae*Lithodesmium variabile* Takano

- 588** **History:** < Ono, Sachiko **Locality:** Hitachi/Ibaraki/Japan (1990-09-26) **Isolator:** Ono, Sachiko **Identified by:** Ono, Sachiko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** St-12

LOBOMONAS : Chlorophyceae*Lobomonas monstrosa* Korshikov

- 474** **History:** < Suda, Shoichiro **Locality:** Iwaki/Fukushima/Japan (1984-08-26) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *atpB* (AB044533); *psaA* (AB044421); *psaB* (AB044472); *psbC* (AB044530); *rbcL* (AB044171) **Other strain no.:** FL **References:** 515, 663, 668

Lobomonas piriformis Pringsheim

- 2266** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-584 (= C-297); ATCC 30403; SAG 45-1; UTEX 17; CCAP 45/1 **Locality:** shore of River Elbe/Czechoslovakia **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

LUTEOCERASUS : Dictyochophyceae**Luteocerasus tetraplastida** nom. nud.

- 1871 History:** < TKB **Locality:** Sesoko/Okinawa/Japan **Identified by:** Nakayama, Takeshi (2007-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 20-50 µmol/m²/s; 1-2 M **Habitat:** Marine (Seawater) **Characteristics:** Authentic strain **Other strain no.:** TKB-258

MALLOMONAS : Chrysophyceae**Mallomonas** sp.

- 1376 History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2004-01-25) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 18°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Sand and seawater) **Other strain no.:** TKB-089 (nrc065)

MAMIELLA : Prasinophyceae**Mamiella** sp.

- 2310 History:** < Suda, Shoichiro **Locality:** Toi Bay/Shizuoka/Japan (1988-07-23) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 8-15 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** 814To-3
- 2329 History:** < Sawaguchi, Tomohiro **Locality:** Hachinohe Harbor/Aomori/Japan (1986-08-**) **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal **Culture conditions:** ESM; 15°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** Hamam

MANTONIELLA : Prasinophyceae**Mantoniella squamata** (Manton et Parke) Desikachary

- 1409 History:** < TKB **Locality:** Tokyo/Japan (2004-10-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-190 (nak79)

MARSUPIOMONAS : Pedinophyceae**Marsupiomonas** sp.

- 1410 History:** < TKB **Locality:** Wakayama/Japan (2002-07-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Benthic **Gene data:** 16S rRNA (AB234295) **Other strain no.:** TKB-040 (nrc001-014)
- 1824 History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-03-30) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-243

MERISMOPEDIA : Cyanophyceae**Merismopedia tenuissima** Lemmermann

- 230 History:** < Kasai, Fumie **Locality:** Tsukuba/Ibaraki/Japan (1984-05-07) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** F98-2 **References:** 124, 175, 333, 515, 1097, 1139 **Remarks:** Cryopreserved

MEROTRICHA : Raphidophyceae*Merotricha bacillata* Mereschkowsky

- 1809 History:** < TKB **Locality:** Shishizuka-ohike Pond/Ibaraki/Japan (2005-08-29) **Isolator:** Yamaguchi, Haruyo **Identified by:** Yamaguchi, Haruyo (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** URO-H, AAF-6; 20°C; 25-40 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-253 **Remarks:** Difficult to transport

MESOSTIGMA : Mesostigmatophyceae*Mesostigma viride* Lauterborn

- 296 History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1985-07-03) **Isolator:** Suda, Shoichiro **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Gene data:** Mitochondrial DNA (AF353999); Plastid DNA (AF166114); Root cap protein 1-8 mRNAs (DQ287936-43) **Other strain no.:** KY-14 **References:** 123, 269, 433, 603, 994, 997, 1130
- 475 History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1986-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Mating type (+) **Other strain no.:** KY-Mes-2 **Reference:** 1130
- 476 History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1986-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** KY-Mes-1 **References:** 116, 459, 1130
- 477 History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1986-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** KY-Mes-3 **References:** 459, 1130
- 995 History:** < Miyamura, Shin-ichi **Locality:** Hojo-ohike Pond/Ibaraki/Japan (1995-11-01) **Isolator:** Watanabe, Satoru **Identified by:** Watanabe, Satoru **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Phototaxis; Cells larger than normal strains **Other strain no.:** Hojo1

MESOTAENIUM : Charophyceae*Mesotaenium caldariorum* (Lagerheim) Hansgirg

- 2287 History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-585 (= C-309); ATCC 30595; CCAP 648/1; SAG 648-1; UTEX 41; CAUP K101 **Locality:** Brunn/Czechoslovakia **Isolator:** Czurda **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Antibacterial activity **Reference:** 39

Mesotaenium kramstae Lemmermann

- 657 History:** < IAM (1983) < BIU (UTEX) **Other collection strain no.:** IAM C-330; UTEX LB 1024 **Locality:** Austin/Texas/USA **Isolator:** Starr, R. C. **Identified by:** Grönblad, R. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Air) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-658 **Reference:** 515
- 658 History:** < IAM (1983) < BIU (UTEX) **Other collection strain no.:** IAM C-331; UTEX LB 1025 **Locality:** Austin/Texas/USA **Isolator:** Starr, R. C. **Identified by:** Grönblad, R. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Air) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-657 **Reference:** 515

MICRACTINIUM : Trebouxiophyceae*Micractinium bornhemiensis* (Conrad) KorshikovSyn. *Errerella bornhemiensis* Conrad

- 455 History:** < IAM (1983) **Other collection strain no.:** IAM C-341 (= C-581) **Locality:** Between Ghorepani and Billethadi/Nepal (1965-12-02) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Other strain no.:** N-76-1 **References:** 215, 515 **Remarks:** Cryopreserved

Micractinium pusillum Fresenius

- 151** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-07-22) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F-19-4 **References:** 333, 515, 1047 **Remarks:** Cryopreserved

MICRASTERIAS : Charophyceae*Micrasterias anomala* Turner

- 774** **History:** < Kasai, Fumie **Locality:** near Cairns/Queensland/Australia (1988-09-01) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Homothallic **Other strain no.:** 88-95-12
- 776** **History:** < Kasai, Fumie **Locality:** near Melaka/Malaysia (1985-08-20) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic **Other strain no.:** 85-30-38

Micrasterias crux-melitensis Ralfs

- 152** **History:** < IAM (1983) **Other collection strain no.:** IAM C-427 **Locality:** Kathmandu/Nepal (1968-05-18) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Characteristics:** Homothallic **Other strain no.:** N-90-27 **References:** 215, 515

Micrasterias foliacea Bailey ex Ralfs

- 777** **History:** < Kasai, Fumie **Locality:** 2 km southwest of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-778 **Other strain no.:** M2-1
- 778** **History:** < Kasai, Fumie **Locality:** 2 km southwest of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-777 **Other strain no.:** M2-2

Micrasterias foliacea Bailey ex Ralfs var. *foliacea*

- 297** **History:** < Kasai, Fumie **Locality:** Higashiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** 83-24-24 **Reference:** 515

Micrasterias mahabuleshwariensis Hobson

- 779** **History:** < Kasai, Fumie **Locality:** 2 km southwest of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-780 **Other strain no.:** M2-6
- 780** **History:** < Kasai, Fumie **Locality:** 2 km southwest of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-779 **Other strain no.:** M2-7

Micrasterias thomasiana Archer var. *notata* (Nordstedt) Grönblad

- 781** **History:** < Kasai, Fumie **Locality:** 2 km east of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-782 **Other strain no.:** 85-28-14
- 782** **History:** < Kasai, Fumie **Locality:** 2 km east of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-781 **Other strain no.:** 85-28-57

Micrasterias truncata (Corda) Brébisson ex Ralfs var. *pusilla* G. S. West

- 783** **History:** < Kasai, Fumie **Locality:** Sydney, Centennial Park/Australia (1988-09-03) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Crosses with NIES-784 **Other strain no.:** 88-7-2
- 784** **History:** < Kasai, Fumie **Locality:** near Cairns/Queensland/Australia (1988-09-01) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Crosses with NIES-783 **Other strain no.:** 88-8-5

MICROCYSTIS : Cyanophyceae*Microcystis aeruginosa* (Kützinger) Lemmermann

Syn. *Microcystis ichthyoblabe* Kützinger; *Microcystis novacekii* (Komárek) Compère; *Microcystis viridis* (A. Brown) Lemmermann; *Microcystis wesenbergii* Komárek

- 44** **History:** < IAM (1983) **Other collection strain no.:** IAM M-176 (= M-228) **Locality:** Lake Kasumigaura/Ibaraki/Japan (1974-08-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **Formerly identified as:** *Microcystis aeruginosa* (Kützinger) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); ST 1 (Ref. 953) **Gene data:** 16S rRNA (AB015361); 16S-23S ITS region (AB015361); *ftsZ* (AB324850); *glnA* (AB324929); *gltX* (AB325008); *gyrB* (AB325087); *pgi* (AB325166); *recA* (AB325245); *tpi* (AB325324) **References:** 20, 45, 63, 130, 187, 215, 222, 296, 301, 323, 324, 333, 435, 515, 540, 541, 542, 548, 605, 756, 877, 911, 912, 951, 953, 959, 1010, 1047, 1059, 1107 **Remarks:** Cryopreserved
- 87** **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützinger) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 2 (Ref. 953) **Gene data:** 16S rRNA (D89031); *ftsZ* (AB324851); *glnA* (AB324930); *gltX* (AB325009); *gyrB* (AB325088); *pgi* (AB325167); *recA* (AB325246); *tpi* (AB325325) **Other strain no.:** K-MA-11 **References:** 252, 301, 403, 404, 405, 406, 408, 435, 515, 560, 561, 562, 563, 564, 605, 733, 953, 968, 1047, 1128, 1139 **Remarks:** Cryopreserved
- 88** **History:** < Watanabe, Makoto M. **Locality:** Lake Kawaguchi/Yamanashi/Japan (1981-06-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützinger) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 3 (Ref. 953) **Gene data:** 16S rRNA (AB023255); *ftsZ* (AB324852); *glnA* (AB324931); *gltX* (AB325010); *gyrB* (AB325089); *pgi* (AB325168); *recA* (AB325247); *tpi* (AB325326); *mcyA* (AF110103); *mcyD* (AF110114); *mcyG* (AF110125); *mcyJ* (AF110136) **Other strain no.:** KW-MA1-3 **References:** 246, 247, 249, 296, 297, 299, 300, 301, 349, 403, 404, 405, 406, 877, 953, 954, 977, 978, 1047, 1098, 1128, 1139 **Remarks:** Toxic; Cryopreserved
- 89** **History:** < Watanabe, Makoto M. **Locality:** Lake Kawaguchi/Yamanashi/Japan (1981-06-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützinger) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 4 (Ref. 953) **Gene data:** 16S rRNA (U03403); *ftsZ* (AB324853); *glnA* (AB324932); *gltX* (AB325011); *gyrB* (AB325090); *pgi* (AB325169); *recA* (AB325248); *tpi* (AB325327); *mcyA* (AF110104); *mcyD* (AF110115); *mcyG* (AF110126); *mcyJ* (AF110137) **Other strain no.:** KW-MA2-5 **References:** 255, 403, 404, 405, 406, 408, 435, 515, 604, 605, 953, 954, 1047, 1060, 1128, 1139 **Remarks:** Toxic; Cryopreserved
- 90** **History:** < Watanabe, Makoto M. **Locality:** Lake Kawaguchi/Yamanashi/Japan (1981-06-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützinger) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 5 (Ref. 953) **Gene data:** 16S rRNA (AB023256); *ftsZ* (AB324854); *glnA* (AB324933); *gltX* (AB325012); *gyrB* (AB325091); *pgi* (AB325170); *recA* (AB325249); *tpi* (AB325328); *mcyA* (AF110105); *mcyD* (AF110116); *mcyG* (AF110127); *mcyJ* (AF110138) **Other strain no.:** KW-MB-2 **References:** 248, 253, 403, 404, 405, 406, 515, 953, 954, 1047, 1059, 1128, 1139 **Remarks:** Toxic; Cryopreserved

- 91** **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 77 (Ref. 953) **Gene data:** 16S rRNA (AB023257); *ftsZ* (AB324926); *glnA* (AB325005); *gltX* (AB325084); *gyrB* (AB325163); *pgi* (AB325242); *recA* (AB325321); *tpi* (AB325400) **Other strain no.:** K-MB-13 **References:** 403, 404, 405, 406, 515, 953, 1047, 1139 **Remarks:** Cryopreserved
- 98** **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *flos-aquae* (Wittrock) Elenkin **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 6 (Ref. 953) **Gene data:** 16S rRNA (D89032); *ftsZ* (AB324855); *glnA* (AB324934); *gltX* (AB325013); *gyrB* (AB325092); *pgi* (AB325171); *recA* (AB325250); *tpi* (AB325329) **Other strain no.:** K-MF-K-3 **References:** 16, 228, 229, 255, 299, 300, 367, 403, 404, 405, 406, 408, 435, 515, 525, 605, 781, 953, 1032, 1047, 1078, 1139 **Remarks:** Cryopreserved
- 99** **History:** < Watanabe, Makoto M. **Locality:** Lake Suwa/Nagano/Japan (1982-08-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 7 (Ref. 953) **Gene data:** 16S rRNA (AB023258); *ftsZ* (AB324856); *glnA* (AB324935); *gltX* (AB325014); *gyrB* (AB325093); *pgi* (AB325172); *recA* (AB325251); *tpi* (AB325330) **Other strain no.:** S-MA-S5 **References:** 245, 296, 301, 403, 404, 405, 406, 515, 953, 1047, 1107, 1139 **Remarks:** Cryopreserved
- 100** **History:** < Watanabe, Makoto M. **Locality:** Lake Suwa/Nagano/Japan (1982-08-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 8 (Ref. 953) **Gene data:** 16S rRNA (AB023259); *ftsZ* (AB324857); *glnA* (AB324936); *gltX* (AB325015); *gyrB* (AB325094); *pgi* (AB325173); *recA* (AB325252); *tpi* (AB325331) **Other strain no.:** S-MB-S7 **References:** 403, 404, 405, 406, 515, 727, 730, 785, 953, 1032, 1047, 1095, 1139 **Remarks:** Cryopreserved
- 101** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1982-10-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 9 (Ref. 953) **Gene data:** 16S rRNA (AB023260); *ftsZ* (AB324858); *glnA* (AB324937); *gltX* (AB325016); *gyrB* (AB325095); *pgi* (AB325174); *recA* (AB325253); *tpi* (AB325332) **Other strain no.:** TAC 48 (S-TAN-48) **References:** 80, 403, 404, 405, 406, 515, 567, 953, 1032, 1047, 1139 **Remarks:** Cryopreserved
- 102** **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 10 (Ref. 953) **Gene data:** 16S rRNA (D89033); *ftsZ* (AB324859); *glnA* (AB324938); *gltX* (AB325017); *gyrB* (AB325096); *pgi* (AB325175); *recA* (AB325254); *tpi* (AB325333); *mcyA* (AF110106); *mcyD* (AF110117); *mcyG* (AF110128); *mcyJ* (AF110139) **Other strain no.:** K-MV-20 **References:** 175, 236, 237, 241, 260, 268, 333, 350, 370, 403, 404, 405, 406, 408, 421, 435, 453, 515, 593, 604, 605, 737, 785, 896, 897, 953, 954, 1037, 1060, 1078, 1095, 1096, 1097, 1107, 1128, 1139 **Remarks:** Toxic
- 103** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-12-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 55-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 10 (Ref. 953) **Gene data:** *mcyA* (AF110107); *mcyD* (AF110118); *mcyG* (AF110129); *mcyJ* (AF110140) **Other strain no.:** TAC 44 (K-TAN-44) **References:** 298, 300, 385, 515, 527, 953, 954, 1032 **Remarks:** Toxic; Cryopreserved
- 104** **History:** < Watanabe, Makoto M. **Locality:** Imperial Palace/Tokyo/Japan (1982-11-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; MA; 25°C; 55-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 11 (Ref. 953) **Gene data:** 16S rRNA (AB015387); 16S rRNA (AB023266); 16S rRNA (AJ133174); 16S-23S ITS region (AB015387); *ftsZ* (AB324860); *glnA* (AB324939); *gltX* (AB325018); *gyrB* (AB074771); *gyrB* (AB325097); *pgi* (AB325176); *recA* (AB325255); *tpi* (AB325334); *rpoC1* (AB074794); *rpoD1* (AB074821) **Other strain no.:** MW-H1 **References:** 403, 404, 405, 406, 408, 435, 515, 756, 848, 877, 953, 1095, 1128, 1139 **Remarks:** Cryopreserved

- 105 **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 55-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 12 (Ref. 953) **Gene data:** 16S rRNA (AB023267); *ftsZ* (AB324861); *glnA* (AB324940); *gltX* (AB325019); *gyrB* (AB325098); *pgi* (AB325177); *recA* (AB325256); *tpi* (AB325335) **Other strain no.:** K-MW-K4 **References:** 403, 404, 405, 406, 515, 953, 1128, 1139 **Remarks:** Cryopreserved
- 106 **History:** < Watanabe, Makoto M. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 55-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Large cell size; ST 1 (Ref. 953) **Gene data:** 16S rRNA (AB023268) **Other strain no.:** K-MW-19 **References:** 403, 404, 405, 406, 515, 785, 953, 1128, 1139 **Remarks:** Cryopreserved
- 107 **History:** < Watanabe, Makoto M. **Locality:** Lake Kawaguchi/Yamanashi/Japan (1981-06-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; MA; 25°C; 55-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 13 (Ref. 953) **Gene data:** 16S rRNA (U40333); *ftsZ* (AB324862); *glnA* (AB324941); *gltX* (AB325020); *gyrB* (AB325099); *pgi* (AB325178); *recA* (AB325257); *tpi* (AB325336); *mcyA* (AF110108); *mcyD* (AF110119); *mcyG* (AF110130); *mcyJ* (AF110141) **Other strain no.:** KW-MW-7 **References:** 298, 299, 300, 325, 406, 407, 464, 465, 515, 604, 605, 879, 953, 954, 1060 **Remarks:** Toxic; Cryopreserved
- 108 **History:** < Watanabe, Makoto M. **Locality:** Lake Suwa/Nagano/Japan (1982-08-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 55-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 14 (Ref. 953) **Gene data:** 16S rRNA (AB023269); *ftsZ* (AB324863); *glnA* (AB324942); *gltX* (AB325021); *gyrB* (AB325100); *pgi* (AB325179); *recA* (AB325258); *tpi* (AB325337) **Other strain no.:** S-MW-52 **References:** 403, 404, 405, 406, 515, 953, 1128, 1139 **Remarks:** Cryopreserved
- 109 **History:** < Watanabe, Makoto M. **Locality:** Lake Yogo/Shiga/Japan (1982-07-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 15 (Ref. 953) **Gene data:** 16S rRNA (AB023270); *ftsZ* (AB324864); *glnA* (AB324943); *gltX* (AB325022); *gyrB* (AB325101); *pgi* (AB325180); *recA* (AB325259); *tpi* (AB325338) **Other strain no.:** Y-MW-24 **References:** 13, 403, 404, 405, 406, 515, 953, 1128, 1139 **Remarks:** Cryopreserved
- 110 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 1 (Ref. 953) **Gene data:** 16S rRNA (AB023271) **Other strain no.:** TAC 36 (K-TAN-36) **References:** 403, 404, 405, 406, 515, 953, 1128, 1139 **Remarks:** Cryopreserved
- 111 **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 14 (Ref. 953) **Gene data:** 16S rRNA (D89034); 16S rRNA (AB015388); 16S-23S ITS region (AB015388) **Other strain no.:** TAC 37 (K-TAN-37) **References:** 403, 404, 405, 406, 408, 435, 515, 604, 605, 756, 877, 953, 1060, 1128, 1139 **Remarks:** Cryopreserved
- 112 **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1982-10-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 16 (Ref. 953) **Gene data:** 16S rRNA (U40334); 16S rRNA (AB023272); *ftsZ* (AB324865); *glnA* (AB324944); *gltX* (AB325023); *gyrB* (AB325102); *pgi* (AB325181); *recA* (AB325260); *tpi* (AB325339) **Other strain no.:** TAC 52 (S-TAN-52) **References:** 403, 404, 405, 406, 407, 408, 435, 515, 605, 953, 1032, 1107, 1128, 1139 **Remarks:** Cryopreserved

- 298** **History:** < TAC **Other collection strain no.:** TAC 47 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-16) **Isolator:** Watanabe, Masayuki **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 60 (Ref. 953) **Gene data:** 16S rRNA (AB023261); *ftsZ* (AB324909); *glnA* (AB324988); *gltX* (AB325067); *gyrB* (AB325146); *pgi* (AB325225); *recA* (AB325304); *tpi* (AB325383) **Other strain no.:** TAC 47 (K-TAN-47) **References:** 11, 80, 130, 175, 197, 236, 254, 255, 333, 403, 404, 405, 406, 408, 428, 429, 435, 515, 529, 605, 612, 728, 785, 919, 953, 1032, 1060, 1097, 1125, 1127, 1128, 1139 **Remarks:** Toxic; Unstable; Cryopreserved
- 299** **History:** < Takamura, Noriko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1979-08-**) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *aeruginosa* **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 61 (Ref. 953) **Gene data:** 16S rRNA (AB023262); *ftsZ* (AB324910); *glnA* (AB324989); *gltX* (AB325068); *gyrB* (AB325147); *pgi* (AB325226); *recA* (AB325305); *tpi* (AB325384) **Other strain no.:** KN1133 **References:** 130, 245, 250, 403, 404, 405, 406, 515, 953, 1128, 1139 **Remarks:** Cryopreserved
- 478** **History:** < Yagi, Osami **Locality:** Lake Kasumigaura/Ibaraki/Japan (1977-09-**) **Isolator:** Yagi, Osami **Identified by:** Yagi, Osami **Formerly identified as:** *Microcystis aeruginosa* (Kützing) Lemmermann f. *flos-aquae* (Wittrock) Elenkin **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MA; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Toxic; ST 62 (Ref. 953) **Gene data:** *ftsZ* (AB324911); *glnA* (AB324990); *gltX* (AB325069); *gyrB* (AB325148); *pgi* (AB325227); *recA* (AB325306); *tpi* (AB325385) **Other strain no.:** K-5 **References:** 251, 515, 953, 1084, 1085, 1086 **Remarks:** Toxic; Cryopreserved
- 604** **History:** < Yagi, Osami **Locality:** Lake Kasumigaura/Ibaraki/Japan (1977-09-**) **Isolator:** Yagi, Osami **Identified by:** Yagi, Osami **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 17 (Ref. 953) **Gene data:** 16S rRNA (AB023273); *ftsZ* (AB324866); *glnA* (AB324945); *gltX* (AB325024); *gyrB* (AB325103); *pgi* (AB325182); *recA* (AB325261); *tpi* (AB325340) **Other strain no.:** K-3A **References:** 120, 403, 404, 405, 406, 408, 417, 435, 515, 557, 852, 953, 1084, 1128, 1139 **Remarks:** Cryopreserved
- 843** **History:** < Otsuka, Shigeto **Other collection strain no.:** IAM M-247 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1997-08-28) **Isolator:** Otsuka, Shigeto **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Type strain; ST 18 (Ref. 953) **Gene data:** Total genome sequence (AP009552); 16S rRNA (AB035549); *ftsZ* (AB324867); *glnA* (AB324946); *gltX* (AB325025); *gyrB* (AB325104); *pgi* (AB325183); *recA* (AB325262); *tpi* (AB325341) **Other strain no.:** NC7 **References:** 322, 753, 757, 885, 953 **Remarks:** Toxic; Cryopreserved
- 901** **History:** < Otsuka, Shigeto **Locality:** Dundee/Scotland/U.K. (1997-08-**) **Isolator:** Otsuka, Shigeto **Identified by:** Otsuka, Shigeto **Formerly identified as:** *Microcystis novacekii* (Komárek) Compère **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko); Offensive taste and odor; ST 59 (Ref. 953) **Gene data:** *ftsZ* (AB324908); *glnA* (AB324987); *gltX* (AB325066); *gyrB* (AB325145); *pgi* (AB325224); *recA* (AB325303); *tpi* (AB325382) **Other strain no.:** BC18 **References:** 753, 953 **Remarks:** Cryopreserved
- 902** **History:** < Otsuka, Shigeto **Other collection strain no.:** TISTR 9196 **Locality:** Chon Buri/Thailand (1997-01-**) **Isolator:** Li, Renhui **Identified by:** Otsuka, Shigeto **Formerly identified as:** *Microcystis novacekii* (Komárek) Compère **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** (Freshwater) **Characteristics:** Cyanobacterial water bloom (aoko); Offensive taste and odor; Toxic; ST 22 (Ref. 953) **Gene data:** *ftsZ* (AB324871); *glnA* (AB324950); *gltX* (AB325029); *gyrB* (AB325108); *pgi* (AB325187); *recA* (AB325266); *tpi* (AB325345) **Other strain no.:** TL2 **References:** 753, 953 **Remarks:** Toxic; Cryopreserved; Distribution for academic purpose only
- 933** **History:** < PCC **Other collection strain no.:** PCC 7941 **Locality:** Little Rideau Lake/Ontario/Canada **Isolator:** Gorham, P. R.; Carmichael, W. W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; MA; 25°C; 20-30 µmol/m²/s; 1 M **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 21 (Ref. 953) **Other strain no.:** NRC-1 (SS-17) **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1025** **History:** < Sano, Tomoharu **Locality:** Sapporo, Chuo-ku/Hokkaido/Japan (2000-06-22) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** Doutyou-1-3 **Remarks:** Toxic; Cryopreserved

- 1026** **History:** < Sano, Tomoharu **Locality:** Sapporo, Chuo-ku/Hokkaido/Japan (2000-06-22) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** Douyou-1-4 **Remarks:** Toxic; Cryopreserved
- 1027** **History:** < Sano, Tomoharu **Locality:** Lake Kasumigaura, Takahama-iri/Ibaraki/Japan (2000-08-19) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** Takahama-Ma-2 **Remarks:** Toxic; Cryopreserved
- 1028** **History:** < Sano, Tomoharu **Locality:** Lake Teganuma/Chiba/Japan (2000-09-10) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** TEGA-Mv-1 **Remarks:** Toxic; Cryopreserved
- 1029** **History:** < Sano, Tomoharu **Locality:** Neuglobsow/Brandenburg/Germany (2000-08-15) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** DU-MA-6-1 **Remarks:** Toxic; Cryopreserved
- 1043** **History:** < Sano, Tomoharu **Locality:** Neuglobsow/Brandenburg/Germany (2000-08-19) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** DU-MA-4-1 **Remarks:** Toxic; Cryopreserved
- 1050** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-01-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 34 (Ref. 953) **Gene data:** *ftsZ* (AB324883); *glnA* (AB324962); *gltX* (AB325041); *gyrB* (AB325120); *pgi* (AB325199); *recA* (AB325278); *tpi* (AB325357) **Other strain no.:** TAC 4 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1051** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-01-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 34 (Ref. 953) **Other strain no.:** TAC 6 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1052** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-02-21) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 24 (Ref. 953) **Gene data:** *ftsZ* (AB324873); *glnA* (AB324952); *gltX* (AB325031); *gyrB* (AB325110); *pgi* (AB325189); *recA* (AB325268); *tpi* (AB325347) **Other strain no.:** TAC 15 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1053** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-02-21) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis novacekii* (Komárek) Compère **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; ST 25 (Ref. 953) **Gene data:** *ftsZ* (AB324874); *glnA* (AB324953); *gltX* (AB325032); *gyrB* (AB325111); *pgi* (AB325190); *recA* (AB325269); *tpi* (AB325348) **Other strain no.:** TAC 19 **References:** 760, 953, 1028, 1031, 1032, 1034 **Remarks:** Cryopreserved
- 1054** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-02-21) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; ST 24 (Ref. 953) **Gene data:** 16S rRNA (AB012336); 16S rRNA (AB015374) **Other strain no.:** TAC 20 **References:** 755, 756, 760, 953, 1028, 1031, 1032, 1034 **Remarks:** Cryopreserved
- 1055** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 38; ST 26 (Ref. 953) **Gene data:** 16S rRNA (AB012334); 16S rRNA (AB015389); 16S rRNA (AB023274); *ftsZ* (AB324875); *glnA* (AB324954); *gltX* (AB325033); *gyrB* (AB325112); *pgi* (AB325191); *recA* (AB325270); *tpi* (AB325349) **Other strain no.:** TAC 38-1 **References:** 341, 403, 404, 405, 755, 756, 760, 953, 1032 **Remarks:** Toxic; Cryopreserved

- 1056** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 1 (Ref. 953) **Other strain no.:** TAC 39 **Reference:** 953 **Remarks:** Cryopreserved
- 1057** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-08-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 1 (Ref. 953) **Other strain no.:** TAC 40 **References:** 785, 953 **Remarks:** Cryopreserved
- 1058** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-12-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 45; ST 26 (Ref. 953) **Gene data:** 16S rRNA (AB015400) **Other strain no.:** TAC 45-1 **References:** 341, 756, 953, 1032 **Remarks:** Toxic; Cryopreserved
- 1059** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1978-12-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 26 (Ref. 953) **Other strain no.:** TAC 46 **References:** 760, 953, 1030, 1031, 1032 **Remarks:** Toxic; Cryopreserved
- 1060** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1982-10-04) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 9 (Ref. 953) **Other strain no.:** TAC 50 **References:** 953, 1034 **Remarks:** Cryopreserved
- 1061** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1982-10-04) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; ST 9 (Ref. 953) **Gene data:** 16S rRNA (AB023281) **Other strain no.:** TAC 51 **References:** 341, 403, 404, 405, 614, 760, 785, 953, 977, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1062** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1982-10-04) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 57; ST 14 (Ref. 953) **Gene data:** 16S rRNA (AB015391); 16S rRNA (AB023276) **Other strain no.:** TAC 57-1 **Reference:** 953 **Remarks:** Cryopreserved
- 1063** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1982-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Other strain no.:** TAC 60 **References:** 341, 736, 760, 761, 762, 953, 1028, 1031, 1034 **Remarks:** Toxic; Cryopreserved
- 1064** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1982-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Other strain no.:** TAC 61 **References:** 341, 760, 953, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved
- 1065** **History:** < TAC **Locality:** Lake Kutsuzawa/Nagano/Japan (1982-09-12) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 4 (Ref. 953) **Other strain no.:** TAC 62 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1066** **History:** < TAC **Locality:** Lake Kutsuzawa/Nagano/Japan (1982-09-12) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 4 (Ref. 953) **Other strain no.:** TAC 63 **References:** 760, 785, 953, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved

- 1067** **History:** < TAC **Locality:** Chikatou-ike Pond/Nagano/Japan (1982-09-12) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 65; ST 27 (Ref. 953) **Gene data:** 16S rRNA (AB012337); 16S rRNA (AB015375); 16S rRNA (AB023285); *ftsZ* (AB324876); *glnA* (AB324955); *gltX* (AB325034); *gyrB* (AB325113); *pgi* (AB325192); *recA* (AB325271); *tpi* (AB325350) **Other strain no.:** TAC 65-2 **References:** 341, 614, 755, 756, 760, 953, 1028, 1031, 1032, 1034 **Remarks:** Cryopreserved
- 1068** **History:** < TAC **Locality:** Rokusuke-ike Pond/Nagano/Japan (1982-09-12) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis novacekii* (Komárek) Compère **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 66; ST 27 (Ref. 953) **Gene data:** 16S rRNA (AB015376); 16S rRNA (AB023286) **Other strain no.:** TAC 66-1 **References:** 341, 403, 404, 405, 614, 736, 756, 760, 953, 1028, 1031, 1034
- 1069** **History:** < TAC **Locality:** Rokusuke-ike Pond/Nagano/Japan (1982-09-12) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 35 (Ref. 953) **Gene data:** *ftsZ* (AB324884); *glnA* (AB324963); *gltX* (AB325042); *gyrB* (AB325121); *pgi* (AB325200); *recA* (AB325279); *tpi* (AB325358) **Other strain no.:** TAC 67 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1070** **History:** < TAC **Locality:** Rokusuke-ike Pond/Nagano/Japan (1982-09-12) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 69; ST 36 (Ref. 953) **Gene data:** *ftsZ* (AB324885); *glnA* (AB324964); *gltX* (AB325043); *gyrB* (AB325122); *pgi* (AB325201); *recA* (AB325280); *tpi* (AB325359) **Other strain no.:** TAC 69-1 **References:** 341, 760, 953, 1028, 1031, 1033, 1034, 1114 **Remarks:** Toxic; Cryopreserved
- 1071** **History:** < TAC **Locality:** Hakui, Ichinomiya-machi/Ishikawa/Japan (1982-09-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 70 **Other strain no.:** TAC 70-1 **References:** 341, 760, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved
- 1072** **History:** < TAC **Locality:** Hakui, Ichinomiya-machi/Ishikawa/Japan (1982-09-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 71; ST 4 (Ref. 953) **Gene data:** 16S rRNA (AB012332); 16S rRNA (AB015362) **Other strain no.:** TAC 71-1 **References:** 755, 756, 760, 953, 1028, 1031, 1034 **Remarks:** Toxic; Cryopreserved
- 1073** **History:** < TAC **Locality:** Hakui, Ichinomiya-machi/Ishikawa/Japan (1982-09-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 72 **Remarks:** Cryopreserved
- 1074** **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (1984-09-09) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 73 **Other strain no.:** TAC 73-1 **References:** 341, 760, 761, 762, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1075** **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (1984-09-09) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 63 (Ref. 953) **Gene data:** *ftsZ* (AB324912); *glnA* (AB324991); *gltX* (AB325070); *gyrB* (AB325149); *pgi* (AB325228); *recA* (AB325307); *tpi* (AB325386) **Other strain no.:** TAC 74-1 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1076** **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (1984-09-09) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 75; ST 64 (Ref. 953) **Gene data:** 16S rRNA (AB023287); *ftsZ* (AB324913); *glnA* (AB324992); *gltX* (AB325071); *gyrB* (AB325150); *pgi* (AB325229); *recA* (AB325308); *tpi* (AB325387) **Other strain no.:** TAC 75-1 **References:** 403, 404, 405, 614, 760, 953, 1028, 1031, 1034 **Remarks:** Cryopreserved

- 1077** **History:** < TAC **Locality:** Lake Yogo/Shiga/Japan (1984-09-09) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 37 (Ref. 953) **Gene data:** *ftsZ* (AB324886); *glnA* (AB324965); *gltX* (AB325044); *gyrB* (AB325123); *pgi* (AB325202); *recA* (AB325281); *tpi* (AB325360) **Other strain no.:** TAC 76 **References:** 341, 614, 760, 953, 1028, 1031, 1033, 1034 **Remarks:** Cryopreserved
- 1078** **History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (1984-09-09) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 79 **Remarks:** Cryopreserved
- 1079** **History:** < TAC **Locality:** Lake Suigetsu/Fukui/Japan (1984-09-08) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 80 **Other strain no.:** TAC 80-1 **References:** 341, 736, 760, 761, 762, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1080** **History:** < TAC **Locality:** Lake Suigetsu/Fukui/Japan (1984-09-08) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 81 **Other strain no.:** TAC 81-1 **References:** 760, 785, 977, 1028, 1034 **Remarks:** Cryopreserved
- 1081** **History:** < TAC **Locality:** Koyama-ike Pond/Tottori/Japan (1984-09-07) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 82 **Other strain no.:** TAC 82-1 **References:** 341, 760, 977, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1082** **History:** < TAC **Locality:** Koyama-ike Pond/Tottori/Japan (1984-09-07) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 83 **Other strain no.:** TAC 83-1 **Reference:** 1028
- 1083** **History:** < TAC **Locality:** Ukiginu-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected **Other strain no.:** TAC 84 **References:** 760, 977, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1084** **History:** < TAC **Locality:** Ukiginu-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected **Other strain no.:** TAC 85 **References:** 341, 736, 760 **Remarks:** Cryopreserved
- 1085** **History:** < TAC **Locality:** Koshi-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 86; ST 28 (Ref. 953) **Gene data:** 16S rRNA (AB012333); 16S rRNA (AB015363); *ftsZ* (AB324877); *glnA* (AB324956); *gltX* (AB325035); *gyrB* (AB325114); *pgi* (AB325193); *recA* (AB325272); *tpi* (AB325351) **Other strain no.:** TAC 86-1 **References:** 755, 756, 760, 761, 762, 953, 1028, 1031, 1034 **Remarks:** Toxic; Cryopreserved
- 1086** **History:** < TAC **Locality:** Koshi-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 87 **Gene data:** 16S rRNA (AB015364) **Other strain no.:** TAC 87-1 **References:** 341, 756, 760, 761, 762, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved
- 1087** **History:** < TAC **Locality:** Koshi-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 88 **Reference:** 1028 **Remarks:** Cryopreserved
- 1088** **History:** < TAC **Locality:** Koshi-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 89 **Reference:** 1028 **Remarks:** Cryopreserved

- 1089** **History:** < TAC **Locality:** Koshi-ike Pond/Shimane/Japan (1984-09-06) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 90 **Reference:** 1028 **Remarks:** Cryopreserved
- 1090** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1984-08-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 91; ST 2 (Ref. 953) **Gene data:** 16S rRNA (AB012339); 16S rRNA (AB015367); 16S rRNA (AB023282) **Other strain no.:** TAC 91-1 **References:** 341, 403, 404, 405, 614, 736, 755, 756, 760, 761, 762, 953, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1091** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1984-08-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 92; ST 26 (Ref. 953) **Gene data:** 16S rRNA (AB015402); 16S rRNA (AB023278) **Other strain no.:** TAC 92-1 **References:** 341, 403, 404, 405, 614, 756, 760, 953, 1030, 1031, 1032, 1114 **Remarks:** Toxic; Cryopreserved
- 1092** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1984-08-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 93; ST 26 (Ref. 953) **Gene data:** 16S rRNA (AB015403) **Other strain no.:** TAC 93-1 **References:** 756, 953 **Remarks:** Toxic; Cryopreserved
- 1093** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1984-08-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 95; ST 65 (Ref. 953) **Gene data:** *ftsZ* (AB324914); *glnA* (AB324993); *gltX* (AB325072); *gyrB* (AB325151); *pgi* (AB325230); *recA* (AB325309); *tpi* (AB325388) **Other strain no.:** TAC 95-1 **References:** 341, 736, 760, 953, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved
- 1094** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1984-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 39 (Ref. 953) **Gene data:** *ftsZ* (AB324888); *glnA* (AB324967); *gltX* (AB325046); *gyrB* (AB325125); *pgi* (AB325204); *recA* (AB325283); *tpi* (AB325362) **Other strain no.:** TAC 96 **Reference:** 953 **Remarks:** Cryopreserved
- 1095** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1984-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Gene data:** *ftsZ* (AB324878); *glnA* (AB324957); *gltX* (AB325036); *gyrB* (AB325115); *pgi* (AB325194); *recA* (AB325273); *tpi* (AB325352) **Other strain no.:** TAC 97 **References:** 341, 760, 953, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved
- 1096** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1984-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 39 (Ref. 953) **Other strain no.:** TAC 98 **Reference:** 953 **Remarks:** Cryopreserved
- 1097** **History:** < TAC **Locality:** Shigure Dam/Tokyo/Japan (1984-11-**) **Isolator:** Watanabe, Yasunori **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 28 (Ref. 953) **Other strain no.:** TAC 109 **References:** 341, 760, 953, 1028, 1031, 1034 **Remarks:** Toxic; Cryopreserved
- 1098** **History:** < TAC **Locality:** Shigure Dam/Tokyo/Japan (1984-11-**) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; Reisolated from TAC 110; ST 38 (Ref. 953) **Gene data:** *ftsZ* (AB324887); *glnA* (AB324966); *gltX* (AB325045); *gyrB* (AB325124); *pgi* (AB325203); *recA* (AB325282); *tpi* (AB325361) **Other strain no.:** TAC 110-1 **References:** 341, 760, 953, 977, 1028, 1031, 1034 **Remarks:** Cryopreserved
- 1099** **History:** < TAC **Locality:** Noborio-ike Pond/Ehime/Japan (1988-10-21) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 113 **Other strain no.:** TAC 113-1 **References:** 736, 760, 1028, 1031, 1033, 1034 **Remarks:** Toxic; Cryopreserved

- 1100 History:** < TAC **Locality:** Kathmandu/Nepal (1988-11-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 114; ST 30 (Ref. 953) **Gene data:** *ftsZ* (AB324879); *glnA* (AB324958); *gltX* (AB325037); *gyrB* (AB325116); *pgi* (AB325195); *recA* (AB325274); *tpi* (AB325353) **Other strain no.:** TAC 114-1 **Reference:** 953 **Remarks:** Cryopreserved
- 1101 History:** < TAC **Locality:** Kathmandu/Nepal (1988-11-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 115; ST 40 (Ref. 953) **Gene data:** *ftsZ* (AB324889); *glnA* (AB324968); *gltX* (AB325047); *gyrB* (AB325126); *pgi* (AB325205); *recA* (AB325284); *tpi* (AB325363) **Other strain no.:** TAC 115-1 **Reference:** 953 **Remarks:** Cryopreserved
- 1102 History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 66 (Ref. 953) **Gene data:** *ftsZ* (AB324915); *glnA* (AB324994); *gltX* (AB325073); *gyrB* (AB325152); *pgi* (AB325231); *recA* (AB325310); *tpi* (AB325389) **Other strain no.:** TAC 122 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1103 History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 66 (Ref. 953) **Other strain no.:** TAC 123 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1104 History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 67 (Ref. 953) **Gene data:** *ftsZ* (AB324916); *glnA* (AB324995); *gltX* (AB325074); *gyrB* (AB325153); *pgi* (AB325232); *recA* (AB325311); *tpi* (AB325390) **Other strain no.:** TAC 124 **References:** 953, 977 **Remarks:** Cryopreserved
- 1105 History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 125; ST 31 (Ref. 953) **Gene data:** 16S rRNA (AB015368); 16S rRNA (AB023283); *ftsZ* (AB324880); *glnA* (AB324959); *gltX* (AB325038); *gyrB* (AB325117); *pgi* (AB325196); *recA* (AB325275); *tpi* (AB325354) **Other strain no.:** TAC 125-1 **References:** 403, 404, 405, 614, 756, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1106 History:** < TAC **Locality:** Shin-ike Pond/Nagano/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 41 (Ref. 953) **Gene data:** *ftsZ* (AB324890); *glnA* (AB324969); *gltX* (AB325048); *gyrB* (AB325127); *pgi* (AB325206); *recA* (AB325285); *tpi* (AB325364) **Other strain no.:** TAC 126 **Reference:** 953 **Remarks:** Cryopreserved
- 1107 History:** < TAC **Locality:** Kamisawa-ike Pond/Nagano/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Microcystin not detected; ST 42 (Ref. 953) **Gene data:** *ftsZ* (AB324891); *glnA* (AB324970); *gltX* (AB325049); *gyrB* (AB325128); *pgi* (AB325207); *recA* (AB325286); *tpi* (AB325365) **Other strain no.:** TAC 128 **References:** 953, 1028, 1114 **Remarks:** Cryopreserved
- 1108 History:** < TAC **Locality:** Kamisawa-ike Pond/Nagano/Japan (1989-08-02) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 43 (Ref. 953) **Gene data:** *ftsZ* (AB324892); *glnA* (AB324971); *gltX* (AB325050); *gyrB* (AB325129); *pgi* (AB325208); *recA* (AB325287); *tpi* (AB325366) **Other strain no.:** TAC 129 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1109 History:** < TAC **Locality:** Dazaifu C.C./Fukuoka/Japan (1989-07-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 130 **Reference:** 1028 **Remarks:** Cryopreserved
- 1110 History:** < TAC **Locality:** Dazaifu C.C./Fukuoka/Japan (1989-07-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 131 **Reference:** 1028 **Remarks:** Cryopreserved

- 1111** **History:** < TAC **Locality:** Dazaifu C.C./Fukuoka/Japan (1989-07-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 132 **Remarks:** Cryopreserved
- 1112** **History:** < TAC **Locality:** Dazaifu C.C./Fukuoka/Japan (1989-07-10) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 133 **Remarks:** Cryopreserved
- 1113** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1989-07-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 51 (Ref. 953) **Gene data:** *ftsZ* (AB324900); *glnA* (AB324979); *gltX* (AB325058); *gyrB* (AB325137); *pgi* (AB325216); *recA* (AB325295); *tpi* (AB325374) **Other strain no.:** TAC 134 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1114** **History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1989-07-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 52 (Ref. 953) **Gene data:** *ftsZ* (AB324901); *glnA* (AB324980); *gltX* (AB325059); *gyrB* (AB325138); *pgi* (AB325217); *recA* (AB325296); *tpi* (AB325375) **Other strain no.:** TAC 135 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1115** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 136; ST 44 (Ref. 953) **Gene data:** 16S rRNA (AB015369); *ftsZ* (AB324893); *glnA* (AB324972); *gltX* (AB325051); *gyrB* (AB325130); *pgi* (AB325209); *recA* (AB325288); *tpi* (AB325367) **Other strain no.:** TAC 136-1 **References:** 756, 953, 1028 **Remarks:** Cryopreserved
- 1116** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 137 **Reference:** 1028
- 1117** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 138 **Gene data:** 16S rRNA (AB015370) **Other strain no.:** TAC 138-1 **References:** 756, 1028 **Remarks:** Cryopreserved
- 1118** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 141 **Remarks:** Cryopreserved
- 1119** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 143 **Remarks:** Cryopreserved
- 1120** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 144 **Remarks:** Cryopreserved
- 1121** **History:** < TAC **Locality:** Showa-tameike Pond/Fukuoka/Japan (1989-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 145 **Remarks:** Cryopreserved

- 1122** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 146; ST 45 (Ref. 953) **Gene data:** 16S rRNA (AB023284); *ftsZ* (AB324894); *glnA* (AB324973); *gltX* (AB325052); *gyrB* (AB325131); *pgi* (AB325210); *recA* (AB325289); *tpi* (AB325368) **Other strain no.:** TAC 146-1 **References:** 403, 404, 405, 614, 953, 1028 **Remarks:** Cryopreserved
- 1123** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 27 (Ref. 953) **Other strain no.:** TAC 147 **Reference:** 953
- 1124** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 27 (Ref. 953) **Other strain no.:** TAC 148 **References:** 953, 1028
- 1125** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 27 (Ref. 953) **Other strain no.:** TAC 149 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1126** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 73 (Ref. 953) **Other strain no.:** TAC 150 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1127** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 73 (Ref. 953) **Gene data:** *ftsZ* (AB324922); *glnA* (AB325001); *gltX* (AB325080); *gyrB* (AB325159); *pgi* (AB325238); *recA* (AB325317); *tpi* (AB325396) **Other strain no.:** TAC 151 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1128** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 46 (Ref. 953) **Other strain no.:** TAC 152 **Reference:** 953 **Remarks:** Cryopreserved
- 1129** **History:** < TAC **Locality:** Lake Ohnuma/Hokkaido/Japan (1989-09-05) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 46 (Ref. 953) **Gene data:** *ftsZ* (AB324895); *glnA* (AB324974); *gltX* (AB325053); *gyrB* (AB325132); *pgi* (AB325211); *recA* (AB325290); *tpi* (AB325369) **Other strain no.:** TAC 153 **Reference:** 953 **Remarks:** Cryopreserved
- 1130** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 154; ST 75 (Ref. 953) **Gene data:** *ftsZ* (AB324924); *glnA* (AB325003); *gltX* (AB325082); *gyrB* (AB325161); *pgi* (AB325240); *recA* (AB325319); *tpi* (AB325398) **Other strain no.:** TAC 154-1 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1131** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 76 (Ref. 953) **Other strain no.:** TAC 155 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1132** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 156; ST 74 (Ref. 953) **Gene data:** *ftsZ* (AB324923); *glnA* (AB325002); *gltX* (AB325081); *gyrB* (AB325160); *pgi* (AB325239); *recA* (AB325318); *tpi* (AB325397) **Other strain no.:** TAC 156-1 **References:** 953, 1028 **Remarks:** Cryopreserved

- 1133** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 157; ST 76 (Ref. 953) **Gene data:** 16S rRNA (AB023263); *ftsZ* (AB324925); *glnA* (AB325004); *glxX* (AB325083); *gyrB* (AB325162); *pgi* (AB325241); *recA* (AB325320); *tpi* (AB325399) **Other strain no.:** TAC 157-2 **References:** 614, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1134** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 159; ST 48 (Ref. 953) **Gene data:** *ftsZ* (AB324897); *glnA* (AB324976); *glxX* (AB325055); *gyrB* (AB325134); *pgi* (AB325213); *recA* (AB325292); *tpi* (AB325371) **Other strain no.:** TAC 159-1 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1135** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 160; ST 48 (Ref. 953) **Other strain no.:** TAC 160-1 **Reference:** 953 **Remarks:** Cryopreserved
- 1136** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 26 (Ref. 953) **Other strain no.:** TAC 162 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1137** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 1 (Ref. 953) **Other strain no.:** TAC 163 **References:** 953, 977 **Remarks:** Cryopreserved
- 1138** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Reisolated from TAC 164; ST 1 (Ref. 953) **Other strain no.:** TAC 164-1 **Reference:** 953 **Remarks:** Cryopreserved
- 1139** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 55 (Ref. 953) **Gene data:** *ftsZ* (AB324904); *glnA* (AB324983); *glxX* (AB325062); *gyrB* (AB325141); *pgi* (AB325220); *recA* (AB325299); *tpi* (AB325378) **Other strain no.:** TAC 165 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1140** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 4 (Ref. 953) **Other strain no.:** TAC 166 **References:** 342, 760, 953, 1028, 1031, 1034 **Remarks:** Toxic; Cryopreserved
- 1141** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 167 **References:** 342, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1142** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 56 (Ref. 953) **Gene data:** 16S rRNA (AB023264); *ftsZ* (AB324905); *glnA* (AB324984); *glxX* (AB325063); *gyrB* (AB325142); *pgi* (AB325221); *recA* (AB325300); *tpi* (AB325379) **Other strain no.:** TAC 169 **References:** 403, 404, 405, 614, 953, 1028, 1034 **Remarks:** Cryopreserved
- 1143** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis novacekii* (Komárek) Compère **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; Reisolated from TAC 170; ST 57 (Ref. 953) **Gene data:** 16S rRNA (AB012340); 16S rRNA (AB015365); *ftsZ* (AB324906); *glnA* (AB324985); *glxX* (AB325064); *gyrB* (AB325143); *pgi* (AB325222); *recA* (AB325301); *tpi* (AB325380) **Other strain no.:** TAC 170-1 **References:** 755, 756, 953 **Remarks:** Toxic; Cryopreserved

- 1144** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 58 (Ref. 953) **Gene data:** *ftsZ* (AB324907); *glnA* (AB324986); *gltX* (AB325065); *gyrB* (AB325144); *pgi* (AB325223); *recA* (AB325302); *tpi* (AB325381) **Other strain no.:** TAC 171 **Reference:** 953 **Remarks:** Cryopreserved
- 1145** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 58 (Ref. 953) **Other strain no.:** TAC 172 **References:** 342, 953 **Remarks:** Cryopreserved
- 1146** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-08-23) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 39 (Ref. 953) **Other strain no.:** TAC 173 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1147** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-08-23) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 39 (Ref. 953) **Other strain no.:** TAC 174 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1148** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-08-23) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Other strain no.:** TAC 175 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1149** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-08-23) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Other strain no.:** TAC 176 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1150** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-08-23) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 49 (Ref. 953) **Other strain no.:** TAC 177 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1151** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-08-23) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 49 (Ref. 953) **Gene data:** *ftsZ* (AB324898); *glnA* (AB324977); *gltX* (AB325056); *gyrB* (AB325135); *pgi* (AB325214); *recA* (AB325293); *tpi* (AB325372) **Other strain no.:** TAC 178 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1152** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 179 **References:** 342, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1153** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 180 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1154** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 181 **References:** 760, 761, 1028 **Remarks:** Cryopreserved
- 1155** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Other strain no.:** TAC 182 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved

- 1156** **History:** < TAC **Locality:** Lake Shirakaba/Nagano/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 29 (Ref. 953) **Other strain no.:** TAC 183 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1157** **History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 48 (Ref. 953) **Other strain no.:** TAC 185 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1158** **History:** < TAC **Locality:** Yame/Fukuoka/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 186 **Remarks:** Cryopreserved
- 1159** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 187 **References:** 342, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1160** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 188 **References:** 342, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1161** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 189 **References:** 342, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1162** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 190 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1163** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Other strain no.:** TAC 191 **References:** 342, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1164** **History:** < TAC **Locality:** Lake Okutama/Tokyo/Japan (1989-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 55 (Ref. 953) **Gene data:** 16S rRNA (AB023265) **Other strain no.:** TAC 192 **References:** 403, 404, 405, 614, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1165** **History:** < TAC **Locality:** Tsuruoka Park/Yamagata/Japan (1990-08-04) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 193 **Remarks:** Cryopreserved
- 1166** **History:** < TAC **Locality:** Tsuruoka Park/Yamagata/Japan (1990-08-04) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 194 **Remarks:** Cryopreserved
- 1167** **History:** < TAC **Locality:** Tsuruoka Park/Yamagata/Japan (1990-08-04) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 195 **Remarks:** Cryopreserved
- 1168** **History:** < TAC **Locality:** Tsuruoka Park/Yamagata/Japan (1990-08-04) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 196 **Remarks:** Cryopreserved

- 1169** **History:** < TAC **Locality:** Tsuruoka Park/Yamagata/Japan (1990-08-04) **Isolator:** Niiyama, Yuko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Moat water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 197 **Remarks:** Cryopreserved
- 1170** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1990-08-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 50 (Ref. 953) **Gene data:** *ftsZ* (AB324899); *glnA* (AB324978); *gltX* (AB325057); *gyrB* (AB325136); *pgi* (AB325215); *recA* (AB325294); *tpi* (AB325373) **Other strain no.:** TAC 198 **Reference:** 953 **Remarks:** Cryopreserved
- 1171** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1990-08-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 50 (Ref. 953) **Other strain no.:** TAC 199 **Reference:** 953 **Remarks:** Cryopreserved
- 1172** **History:** < TAC **Locality:** Lake Barato/Hokkaido/Japan (1990-08-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 50 (Ref. 953) **Other strain no.:** TAC 200 **Reference:** 953 **Remarks:** Cryopreserved
- 1173** **History:** < TAC **Locality:** Saburo-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 311 **Reference:** 1028 **Remarks:** Cryopreserved
- 1174** **History:** < TAC **Locality:** Saburo-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 312 **Remarks:** Cryopreserved
- 1175** **History:** < TAC **Locality:** Saburo-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 313 **Remarks:** Cryopreserved
- 1176** **History:** < TAC **Locality:** Saburo-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 314 **Remarks:** Cryopreserved
- 1177** **History:** < TAC **Locality:** Saburo-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 315 **Remarks:** Cryopreserved
- 1178** **History:** < TAC **Locality:** Shin-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 316 **Reference:** 1028 **Remarks:** Cryopreserved
- 1179** **History:** < TAC **Locality:** Shin-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 317 **Remarks:** Cryopreserved
- 1180** **History:** < TAC **Locality:** Shin-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 319 **Remarks:** Cryopreserved
- 1181** **History:** < TAC **Locality:** Shin-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 320 **Remarks:** Cryopreserved
- 1182** **History:** < TAC **Locality:** Sakase-ike Pond/Kagawa/Japan (1990-09-17) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis ichthyoblabe* Kützing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 321 **Reference:** 1028 **Remarks:** Cryopreserved

- 1198** **History:** < TAC **Locality:** Futago-ike Pond/Hyogo/Japan (1990-09-16) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 339 **Reference:** 1028 **Remarks:** Cryopreserved
- 1199** **History:** < TAC **Locality:** Futago-ike Pond/Hyogo/Japan (1990-09-16) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 340 **Remarks:** Cryopreserved
- 1200** **History:** < TAC **Locality:** Shinjaika-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 341 **Reference:** 1028 **Remarks:** Cryopreserved
- 1201** **History:** < TAC **Locality:** Shinjaika-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 342 **Remarks:** Cryopreserved
- 1202** **History:** < TAC **Locality:** Shinjaika-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 343 **Remarks:** Cryopreserved
- 1203** **History:** < TAC **Locality:** Shinjaika-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 344 **Reference:** 1028 **Remarks:** Cryopreserved
- 1204** **History:** < TAC **Locality:** Shinjaika-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 345 **Remarks:** Cryopreserved
- 1205** **History:** < TAC **Locality:** Johoku-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 346 **Reference:** 1028 **Remarks:** Cryopreserved
- 1206** **History:** < TAC **Locality:** Johoku-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 347 **Reference:** 1028
- 1207** **History:** < TAC **Locality:** Johoku-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 348 **Remarks:** Cryopreserved
- 1208** **History:** < TAC **Locality:** Johoku-ike Pond/Shimane/Japan (1990-09-18) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 349 **Remarks:** Cryopreserved
- 1209** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (1990-09-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 32 (Ref. 953) **Gene data:** *ftsZ* (AB324881); *glnA* (AB324960); *gltX* (AB325039); *gyrB* (AB325118); *pgi* (AB325197); *recA* (AB325276); *tpi* (AB325355) **Other strain no.:** TAC 350 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1210** **History:** < TAC **Locality:** Lake Toro/Hokkaido/Japan (1990-09-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 351 **Remarks:** Cryopreserved
- 1211** **History:** < TAC **Locality:** Lake Tofutsu/Hokkaido/Japan (1990-09-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 47 (Ref. 953) **Gene data:** *ftsZ* (AB324896); *glnA* (AB324975); *gltX* (AB325054); *gyrB* (AB325133); *pgi* (AB325212); *recA* (AB325291); *tpi* (AB325370) **Other strain no.:** TAC 352 **Reference:** 953

- 1212** **History:** < TAC **Locality:** Lake Tofutsu/Hokkaido/Japan (1990-09-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 353 **Reference:** 617 **Remarks:** Cryopreserved
- 1213** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 68 (Ref. 953) **Gene data:** *ftsZ* (AB324917); *glnA* (AB324996); *gltX* (AB325075); *gyrB* (AB325154); *pgi* (AB325233); *recA* (AB325312); *tpi* (AB325391) **Other strain no.:** TAC 355 **References:** 402, 617, 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1214** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 69 (Ref. 953) **Gene data:** *ftsZ* (AB324918); *glnA* (AB324997); *gltX* (AB325076); *gyrB* (AB325155); *pgi* (AB325234); *recA* (AB325313); *tpi* (AB325392) **Other strain no.:** TAC 356 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1215** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 70 (Ref. 953) **Gene data:** *ftsZ* (AB324919); *glnA* (AB324998); *gltX* (AB325077); *gyrB* (AB325156); *pgi* (AB325235); *recA* (AB325314); *tpi* (AB325393) **Other strain no.:** TAC 357 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1216** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 71 (Ref. 953) **Gene data:** *ftsZ* (AB324920); *glnA* (AB324999); *gltX* (AB325078); *gyrB* (AB325157); *pgi* (AB325236); *recA* (AB325315); *tpi* (AB325394) **Other strain no.:** TAC 358 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1217** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 71 (Ref. 953) **Other strain no.:** TAC 359 **Reference:** 953 **Remarks:** Cryopreserved
- 1218** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 71 (Ref. 953) **Other strain no.:** TAC 360 **Reference:** 953 **Remarks:** Cryopreserved
- 1219** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Gene data:** *ftsZ* (AB324921); *glnA* (AB325000); *gltX* (AB325079); *gyrB* (AB325158); *pgi* (AB325237); *recA* (AB325316); *tpi* (AB325395) **Other strain no.:** TAC 361 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1220** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 362 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1221** **History:** < TAC **Locality:** Kunma Dam/Okinawa/Japan (1990-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 363 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1222** **History:** < TAC **Locality:** Tatsugami Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 33 (Ref. 953) **Gene data:** *ftsZ* (AB324882); *glnA* (AB324961); *gltX* (AB325040); *gyrB* (AB325119); *pgi* (AB325198); *recA* (AB325277); *tpi* (AB325356) **Other strain no.:** TAC 364 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved

- 1223 History:** < TAC **Locality:** Tatsugami Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 33 (Ref. 953) **Other strain no.:** TAC 365 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1224 History:** < TAC **Locality:** Tatsugami Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 71 (Ref. 953) **Other strain no.:** TAC 368 **Reference:** 953 **Remarks:** Cryopreserved
- 1225 History:** < TAC **Locality:** Tatsugami Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 369 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1226 History:** < TAC **Locality:** Tatsugami Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 370 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1227 History:** < TAC **Locality:** Fukuchi Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 371 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1228 History:** < TAC **Locality:** Fukuchi Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 372 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1229 History:** < TAC **Locality:** Fukuchi Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 373 **Reference:** 953 **Remarks:** Toxic
- 1230 History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 78 (Ref. 953) **Gene data:** *ftsZ* (AB324927); *glnA* (AB325006); *gltX* (AB325085); *gyrB* (AB325164); *pgi* (AB325243); *recA* (AB325322); *tpi* (AB325401) **Other strain no.:** TAC 374 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1231 History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 78 (Ref. 953) **Other strain no.:** TAC 375 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1232 History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 71 (Ref. 953) **Other strain no.:** TAC 376 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1233 History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 71 (Ref. 953) **Other strain no.:** TAC 377 **Reference:** 953 **Remarks:** Cryopreserved
- 1234 History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 378 **References:** 953, 1028 **Remarks:** Toxic

- 1235** **History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 379 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1236** **History:** < TAC **Locality:** Ishigaki Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 380 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1237** **History:** < TAC **Locality:** Tengan Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 68 (Ref. 953) **Other strain no.:** TAC 381 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1238** **History:** < TAC **Locality:** Tengan Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 33 (Ref. 953) **Other strain no.:** TAC 382 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1239** **History:** < TAC **Locality:** Tengan Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 79 (Ref. 953) **Gene data:** *ftsZ* (AB324928); *glnA* (AB325007); *glxX* (AB325086); *gyrB* (AB325165); *pgi* (AB325244); *recA* (AB325323); *tpi* (AB325402) **Other strain no.:** TAC 383 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1240** **History:** < TAC **Locality:** Tengan Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 79 (Ref. 953) **Other strain no.:** TAC 384 **Reference:** 953 **Remarks:** Cryopreserved
- 1241** **History:** < TAC **Locality:** Tengan Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 385 **References:** 953, 1028 **Remarks:** Toxic; Cryopreserved
- 1242** **History:** < TAC **Locality:** Tengan Dam/Okinawa/Japan (1990-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); Toxic; ST 72 (Ref. 953) **Other strain no.:** TAC 386 **Reference:** 953 **Remarks:** Toxic; Cryopreserved
- 1243** **History:** < TAC **Locality:** Maesato Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 79 (Ref. 953) **Other strain no.:** TAC 387 **References:** 953, 1028 **Remarks:** Cryopreserved
- 1244** **History:** < TAC **Locality:** Maesato Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 79 (Ref. 953) **Other strain no.:** TAC 388 **Reference:** 953 **Remarks:** Cryopreserved
- 1245** **History:** < TAC **Locality:** Maesato Dam/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 79 (Ref. 953) **Other strain no.:** TAC 389 **Reference:** 953 **Remarks:** Cryopreserved
- 1246** **History:** < TAC **Locality:** Hyotan-ike Pond/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 390 **Reference:** 1028 **Remarks:** Cryopreserved

- 1247 History:** < TAC **Locality:** Hyotan-ike Pond/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 391
- 1248 History:** < TAC **Locality:** Hyotan-ike Pond/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 392 **Remarks:** Cryopreserved
- 1249 History:** < TAC **Locality:** Hyotan-ike Pond/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 393 **Remarks:** Cryopreserved
- 1250 History:** < TAC **Locality:** Hyotan-ike Pond/Okinawa/Japan (1990-10-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 394 **Remarks:** Cryopreserved
- 1251 History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1990-03-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 17 (Ref. 953) **Other strain no.:** TAC 395 **Reference:** 953 **Remarks:** Cryopreserved
- 1252 History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1990-03-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 53 (Ref. 953) **Gene data:** *ftsZ* (AB324902); *glnA* (AB324981); *gltX* (AB325060); *gyrB* (AB325139); *pgi* (AB325218); *recA* (AB325297); *tpi* (AB325376) **Other strain no.:** TAC 396 **Reference:** 953 **Remarks:** Cryopreserved
- 1253 History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1990-03-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 8 (Ref. 953) **Other strain no.:** TAC 401 **Reference:** 953 **Remarks:** Cryopreserved
- 1254 History:** < TAC **Locality:** Lake Suwa/Nagano/Japan (1990-03-31) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); ST 8 (Ref. 953) **Other strain no.:** TAC 402 **Reference:** 953 **Remarks:** Cryopreserved
- 1255 History:** < TAC **Locality:** Lake Tsukui/Kanagawa/Japan (1990-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 405 **Remarks:** Cryopreserved
- 1256 History:** < TAC **Locality:** Lake Tsukui/Kanagawa/Japan (1990-08-28) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Formerly identified as:** *Microcystis wesenbergii* Komárek **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 406 **Remarks:** Cryopreserved
- 1257 History:** < TAC **Locality:** Nakagusuku/Okinawa/Japan (1990-12-11) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 24°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 407
- 1354 History:** < TAC **Locality:** Chikatou-ike Pond/Nagano/Japan (1982-09-13) **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 64-1 **Remarks:** Cryopreserved
- 1355 History:** < TAC **Locality:** Lake Mikata/Fukui/Japan (1984-09-09) **Formerly identified as:** *Microcystis viridis* (A. Brown) Lemmermann **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 78-1 **Remarks:** Cryopreserved
- 1356 History:** < TAC **Locality:** Lake Teganuma/Chiba/Japan (1989-09-13) **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 18°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 158-1 **Remarks:** Cryopreserved

MICROMONAS : Prasinophyceae**Micromonas pusilla** (Butcher) Manton et Parke

- 1411** **History:** < TKB **Locality:** Tokyo/Japan (2004-10-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-189 (nak78)
- 1412** **History:** < TKB **Locality:** Motobu, Sesoko/Okinawa/Japan (2004-11-08) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-214 (nak100)
- 1413** **History:** < TKB **Locality:** Tennozu Canal/Tokyo/Japan (2004-12-03) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-215 (nak101)

MICROTHAMNION : Trebouxiophyceae**Microthamnion kützingerianum** Nägeli

- 479** **History:** < Kasai, Fumie **Locality:** Toyohira River/Hokkaido/Japan (1987-07-02) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 10°C; 6-12 µmol/m²/s; 6 M (10°C; 10-15 µmol/m²/s) **Habitat:** Freshwater (River water) **Gene data:** 18S rRNA (AB488588) **Other strain no.:** Tst11-6 **References:** 515, 917, 918 **Remarks:** Cryopreserved

MISCHOCOCCUS : Xanthophyceae**Mischococcus** sp.

- 1963** **History:** < TKB **Locality:** Ryugasaki/Ibaraki/Japan (2006-01-13) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 20 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-325

MONOMASTIX : Prasinophyceae**Monomastix minuta** Skuja

- 255** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1983-07-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Other strain no.:** SIS-Mono **References:** 123, 333, 620
- 256** **History:** < Suda, Shoichiro **Locality:** Ozegahara/Gunma/Japan (1983-08-29) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Bog water) **Other strain no.:** Oz-35-m

MONORAPHIDIUM : Chlorophyceae**Monoraphidium circinale** (Nygaard) Nygaard

- 480** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1983-07-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Gene data:** *rbcL* (AB175933); *rbcL* (AB175934) **Other strain no.:** SIS-1-M **Reference:** 515

Monoraphidium contortum (Thuret) Komárková-Legnerová

- 384** **History:** < Sawaguchi, Tomohiro **Locality:** Lake Unagiike/Kagoshima/Japan (1985-02-20) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** Ep-i **Reference:** 515

Monoraphidium griffithii (Berkeley) Komárková-Legnerová

385 History: < Sawaguchi, Tomohiro **Locality:** Urizura/Ibaraki/Japan (1984-10-28) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** AWA **Reference:** 515

Monoraphidium minutum (Nägeli) Komárková-Legnerová

Syn. *Selenastrum minutum* (Nägeli) Collins

2282 History: < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM C-139 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Monoraphidium sp.

2267 History: < IAM (2007) < Fujii, Katsuhiko **Other collection strain no.:** IAM C-632 **Locality:** Yamaguchi/Japan **Isolator:** Fujii, Katsuhiko **Identified by:** Fujii, Katsuhiko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Activated sludge) **Characteristics:** Astaxantin production **Other strain no.:** GK 12

MURIELLA : Chlorophyceae*Muriella zofingiensis* (Dönz) Hindák

Syn. *Chlorella zofingiensis* Dönz

2175 History: < IAM (2007) < BIU (UTEX; 1961) **Other collection strain no.:** IAM C-111; ATCC 30412; CCAP 211-14; SAG B211-14; UTEX 32; CAUP H6503 **Locality:** Ramooswald near Zofingen/Switzerland **Isolator:** Dönz, O. C. **Identified by:** Kessler, E.; Confirmed at NIES by DNA sequencing (1991) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Soil) **Gene data:** 18S rRNA (AB488563) **References:** 351, 449, 451, 452

MYCHONASTES : Chlorophyceae*Mychonastes* sp.

2334 History: < Takamura, Noriko **Locality:** Lake Kizaki/Nagano/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Confirmed at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488564) **Other strain no.:** KIZ 11

2336 History: < Takamura, Noriko **Locality:** Lake Yamanaka/Yamanashi/Japan (1991-04-11) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Confirmed at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488565) **Other strain no.:** YA 4

2339 History: < Takamura, Noriko **Locality:** Lake Sagami/Kanagawa/Japan (1991-04-11) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Confirmed at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488566) **Other strain no.:** SA 2

2340 History: < Takamura, Noriko **Locality:** Lake Nakatsuna/Nagano/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Confirmed at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488567) **Other strain no.:** NT 2

2341 History: < Takamura, Noriko **Locality:** Lake Tateshina/Nagano/Japan (1991-05-09) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko; Confirmed at NIES by DNA sequencing **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 18S rRNA (AB488568) **Other strain no.:** TATE 1

MYRMECIA : Trebouxiophyceae*Myrmecia biatorellae* (Tschermk-Woess et Plessl) Peterson

2181 History: < IAM (2007) **Other collection strain no.:** IAM C-356 **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

MYXOSARCINA : Cyanophyceae**Myxosarcina burmensis** Skuja

- 481 History:** < Kasai, Fumie **Other collection strain no.:** IAM M-481 **Locality:** Mt. Tsukuba/Ibaraki/Japan (1987-04-17) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 $\mu\text{mol}/\text{m}^2/\text{s}$; 5 M (20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Freshwater (Stream water) **Other strain no.:** (1)-45 **References:** 124, 515, 917 **Remarks:** Cryopreserved

NANNOCHLOROPSIS : Eustigmatophyceae**Nannochloropsis oculata** (Droop) Hibberd

- 2145 History:** < IAM (2007) < Hara, Yoshiaki (1988) < Suisan Center of Fukushima Prefecture **Other collection strain no.:** IAM ST-4 **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM (agar); 20°C; 10-20 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Habitat:** Marine
- 2146 History:** < IAM (2007) < Maruyama, Ko (around 1986) **Other collection strain no.:** IAM ST-6 **Locality:** Institute of Fisheries/Nagasaki/Japan **Isolator:** Maruyama, Ko **Identified by:** Maruyama, Ko, *et al.* **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM (agar); 20°C; 10-20 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Reference:** 450

NEMALIONOPSIS : Florideophyceae**Nemalionopsis tortuosa** Yoneda et Yagi

Syn. *Nemalionopsis shawii* Skuja f. *caroliniana* Howard et Parker

- 1464 History:** < Iima, Masafumi **Locality:** Kase River/Kumamoto/Japan (2000-05-31) **Isolator:** Iima, Masafumi **Identified by:** Iima, Masafumi (2000-05-31) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** ①
- 1465 History:** < Iima, Masafumi **Locality:** Koujiro River/Nagasaki/Japan (2001-06-10) **Isolator:** Tateno, Madoka **Identified by:** Iima, Masafumi (2001-06-10) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** ②
- 1466 History:** < Kawachi, Masanobu **Locality:** Ohkubo-ga/Okinawa/Japan (2002-03-16) **Isolator:** Ishimoto, Miwa **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** OOK-1 **Remarks:** Cryopreserved
- 1467 History:** < Higa, Atsushi **Locality:** Izumi/Kumamoto/Japan (2002-11-01) **Isolator:** Higa, Atsushi **Identified by:** Yoshida, Tadao (2002-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KS2 **Reference:** 127
- 1468 History:** < Higa, Atsushi **Locality:** Izumi/Kumamoto/Japan (2002-11-01) **Isolator:** Higa, Atsushi **Identified by:** Yoshida, Tadao (2002-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KS5 **Remarks:** Cryopreserved
- 1469 History:** < Higa, Atsushi **Locality:** Izumi/Kumamoto/Japan (2002-11-**) **Isolator:** Higa, Atsushi **Identified by:** Yoshida, Tadao (2002-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KS6 **Remarks:** Cryopreserved
- 1470 History:** < Iima, Masafumi **Locality:** Kashima/Kumamoto/Japan (2002-03-02) **Isolator:** Iima, Masafumi **Identified by:** Iima, Masafumi (2002-03-02) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** ③
- 1471 History:** < Iima, Masafumi **Locality:** Oh River/Nagasaki/Japan (2002-04-08) **Isolator:** Teruya, Akiko **Identified by:** Iima, Masafumi (2002-04-08) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** ④
- 1472 History:** < Iima, Masafumi **Locality:** Yamanota River (tributary stream of Yue River)/Nagasaki/Japan (2002-09-24) **Isolator:** Teruya, Akiko **Identified by:** Iima, Masafumi (2002-09-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** ⑤

- 2023** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN1
- 2024** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN2
- 2025** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN3
- 2026** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN4
- 2027** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN5
- 2028** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN6
- 2029** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN7
- 2030** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN8
- 2031** **History:** < Higa, Atsushi **Locality:** Kuma River, near Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** KMN9
- 2075** **History:** < Iima, Masafumi **Locality:** Kamabuta River/Nagasaki/Japan (2003-04-08) **Isolator:** Ishikawa, Yukari **Identified by:** Iima, Masafumi (2003-04-08) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 030408
- 2076** **History:** < Iima, Masafumi **Locality:** Kuma River, Branch/Kumamoto/Japan (2003-05-10) **Isolator:** Ishikawa, Yukari **Identified by:** Iima, Masafumi (2003-05-10) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 030510
- 2077** **History:** < Iima, Masafumi **Locality:** Kikuchi, Kikoji/Kumamoto/Japan (2003-05-12) **Isolator:** Iima, Masafumi **Identified by:** Iima, Masafumi (2003-05-12) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 030512
- 2078** **History:** < Iima, Masafumi **Locality:** Shizu River/Kumamoto/Japan (2003-06-01) **Isolator:** Ishikawa, Yukari **Identified by:** Iima, Masafumi (2003-06-01) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 030601
- 2079** **History:** < Iima, Masafumi **Locality:** Sueoyoshi/Kagoshima/Japan (2003-06-14) **Isolator:** Ishikawa, Yukari **Identified by:** Iima, Masafumi (2003-06-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 030314
- 2080** **History:** < Iima, Masafumi **Locality:** Asakura, Shimoura/Fukuoka/Japan (2005-06-12) **Isolator:** Kubota, Yuki **Identified by:** Iima, Masafumi (2005-06-14) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 050612
- 2081** **History:** < Iima, Masafumi **Locality:** Asakura, Kuwahara/Fukuoka/Japan (2005-06-30) **Isolator:** Kubota, Yuki **Identified by:** Iima, Masafumi (2005-06-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 050630

- 2082** **History:** < Iima, Masafumi **Locality:** Kawabe/Kagoshima/Japan (2006-03-29) **Isolator:** Iima, Masafumi **Identified by:** Iima, Masafumi (2006-03-29) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 060329
- 2083** **History:** < Iima, Masafumi **Locality:** Jin-ya River/Fukuoka/Japan (2006-06-19) **Isolator:** Yamashita, Hirokatsu **Identified by:** Iima, Masafumi (2006-06-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; CR+EN (Ref. 474) **Other strain no.:** 060619

NEPHROSELMIS : Prasinophyceae

Nephroselmis astigmatica Inouye et Pienaar

- 252** **History:** < Inouye, Isao **Locality:** Tateyama Harbor/Chiba/Japan (1983-08-10) **Isolator:** Inouye, Isao **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** 810-13 **Reference:** 1131
- 1415** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2003-06-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 14 D **Habitat:** Marine (Sand and seawater) **Characteristics:** Benthic **Other strain no.:** TKB-075 (nrc054)

Nephroselmis olivacea Stein

- 483** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Mating type (+) **Other strain no.:** S-N-2-1 **References:** 123, 443, 620, 890, 892, 1131
- 484** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Mating type (-) **Gene data:** Mitochondrial DNA (AF110138); Plastid DNA (AF137379) **Other strain no.:** S-N-5-8 **References:** 994, 995, 996
- 485** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** S-N-3-4 **References:** 443, 620, 890, 892

Nephroselmis pyriformis (Carter) Ettl

- 1416** **History:** < TKB **Locality:** East China Sea/Japan (2004-07-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-187 (nak76)
- 1817** **History:** < TKB **Locality:** Onahama Harbor/Fukushima/Japan (2004-07-07) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-247

Nephroselmis sp.

- 1414** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2003-06-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Characteristics:** Benthic **Other strain no.:** TKB-076 (nrc055)
- 1417** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2002-08-09) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-041 (nrc015-028)
- 1418** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2004-03-09) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-096 (nrc)
- 1818** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-03-30) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-244

2309 **History:** < Suda, Shoichiro **Locality:** Harima-nada/Japan (1988-08-**) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** 813H-7

Nephroselmis spinosa Suda et M. M. Watanabe

934 **History:** < Suda, Shoichiro **Locality:** Port Hedland/Australia (1991-10-10) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Marine (Sediment) **Characteristics:** Euryhaline **Other strain no.:** S222 **References:** 886, 1131

935 **History:** < Suda, Shoichiro **Locality:** Hamerin Pool/Australia (1991-10-10) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Marine (Sediment) **Characteristics:** Euryhaline **Other strain no.:** SD959-3 **References:** 886, 1131

Nephroselmis viridis Inouye nom. nud.

486 **History:** < Suda, Shoichiro **Locality:** Harima-Nada/Japan (1983-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Red tide; Authentic strain **Gene data:** 18S rRNA (AB214976) **Other strain no.:** H-70-2 **References:** 123, 1131

NETRIUM : Charophyceae

Netrium digitus (Ehrenberg ex Ralfs) Itzigsohn et Rothe var. *digitus*

2288 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-587 (= C-311); UTEX 1257 **Isolator:** Biebel **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Homothallic

Netrium digitus (Ehrenberg ex Ralfs) Itzigsohn et Rothe var. *lamellosum* (Brébisson) Grönblad

2289 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-588 (= C-312); UTEX 1255 **Isolator:** Biebel **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Heterothallic; Crosses with UTEX 1256

NITELLA : Charophyceae

Nitella acuminata A. Braun ex Wallman var. *capitulifera* (Allen) Imahori

1607 **History:** < Sakayama, Hidetoshi **Locality:** Kasumigaura General Park, aquatic plant area/Ibaraki/Japan (2004-07-28) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** SWCN-1; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-96

Nitella axilliformis Imahori

Syn. *Nitella translucens* (Persoon) C. Agardh f. *axilliformis* (Imahori) R. D. Wood

1608 **History:** < Shimmen, Teruo **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 22°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-27

1609 **History:** < Sakayama, Hidetoshi **Locality:** Tamatsukuri/Ibaraki/Japan (2004-06-29) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 22°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-81

Nitella comptonii J. Groves

1704 **History:** < Sakayama, Hidetoshi **Locality:** Kunigami/Okinawa/Japan (2005-03-03) **Identified by:** Sakayama, Hidetoshi (2005-03-03) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; SWCN-3; 20°C; 16 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious **Gene data:** ITS-5.8S rRNA (AB236678); *atpB* (AB236672); *psaB* (AB236675); *rbcL* (AB236669) **Other strain no.:** S091 **References:** 786, 787

1705 **History:** < Sakayama, Hidetoshi **Locality:** Kume Isl./Okinawa/Japan (2005-01-25) **Identified by:** Sakayama, Hidetoshi (2005-01-25) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; SWCN-3; 20°C; 16 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious **Gene data:** ITS-5.8S rRNA (AB236679); *atpB* (AB236673); *psaB* (AB236676); *rbcL* (AB236670) **Other strain no.:** S137 **References:** 786, 787

1706 **History:** < Sakayama, Hidetoshi **Locality:** Onna/Okinawa/Japan (2005-03-03) **Identified by:** Sakayama, Hidetoshi (2005-03-03) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; SWCN-3; 20°C; 16 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious **Gene data:** ITS-5.8S rRNA (AB236680); *atpB* (AB236674); *psaB* (AB236677); *rbcL* (AB236671) **Other strain no.:** S138 **References:** 786, 787

Nitella flexilis (L.) C. Agardh

1610 **History:** < Shimmen, Teruo **Locality:** Sanda/Hyogo/Japan **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-28

1611 **History:** < Sakayama, Hidetoshi **Locality:** Oh-ike Pond/Hyogo/Japan (2001-06-02) **Isolator:** Sakayama, Hidetoshi **Identified by:** Sakayama, Hidetoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-62; S069 **Reference:** 786

1612 **History:** < Sakayama, Hidetoshi **Locality:** Naradani-ike Pond/Kagawa/Japan (2004-06-15) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-78

1613 **History:** < Sakayama, Hidetoshi **Locality:** Lake Yunoko/Tochigi/Japan (2004-07-27) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-93

Nitella furcata (Roxburgh ex Bruzelius) C. Agardh var. *furcata*

1614 **History:** < Shimmen, Teruo **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-23

1615 **History:** < Sakayama, Hidetoshi **Locality:** Urabandai-kogen/Fukushima/Japan (1999-10-08) **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Gene data:** ITS-5.8S rRNA (AB169927); *atpB* (AB110843); *psaB* (AB191749); *rbcL* (AB076059) **Other strain no.:** CH-111; S037 **References:** 786, 788, 789, 790, 791

1616 **History:** < Sakayama, Hidetoshi **Locality:** Naradani-ike Pond/Kagawa/Japan (2004-06-15) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-68

1617 **History:** < Sakayama, Hidetoshi **Locality:** Kasumigaura General Park, aquatic plant area/Ibaraki/Japan (2004-07-28) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-95

Nitella gracilens Morioka

Syn. *Nitella furcata* (Roxburgh ex Bruzelius) C. Agardh f. *gracilens* (Morioka) R. D. Wood

1619 **History:** < Shimmen, Teruo **Identified by:** Sakayama, Hidetoshi (2004-04-13) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-26

1620 **History:** < Nozaki, Hisayoshi **Locality:** Lake Ashinoko/Kanagawa/Japan (1995-11-18) **Isolator:** Ishimoto, Miwa (Re-isolation) **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-34

1621 **History:** < Sakayama, Hidetoshi **Locality:** Ouji-ga-ike Pond/Hyogo/Japan (2004-06-18) **Isolator:** Ishimoto, Miwa (Re-isolation) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-76

1622 **History:** < Sakayama, Hidetoshi **Locality:** Ouji-ga-ike Pond/Hyogo/Japan (2004-06-18) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWC-1; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-77

Nitella hyalina (DC.) C. Agardh

1623 History: < Shimmen, Teruo **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-29

Nitella japonica Allen

Syn. *Nitella furcata* (Roxburgh ex Bruzelius) C. Agardh f. *japonica* (Allen) R. D. Wood

1624 History: < Sakayama, Hidetoshi **Locality:** Mannou/Kagawa/Japan (2004-06-16) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** SWCN-1; SWCN-3; 22°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-63

1625 History: < Sakayama, Hidetoshi **Locality:** Mannou/Kagawa/Japan (2004-06-16) **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** SWCN-1; SWCN-3; 22°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Other strain no.:** CH-64

Nitella megaspora (J. Groves) Sakayama

Syn. *Nitella pseudoflabellata* A. Braun f. *megaspora* (J. Groves) R. D. Wood

1628 History: < Sakayama, Hidetoshi **Locality:** Junsai-numa Pond/Hyogo/Japan (2002-09-12) **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Gene data:** ITS-5.8S rRNA (AB169944); *atpB* (AB169962); *psaB* (AB191768); *rbcL* (AB169970) **Other strain no.:** CH-114; S073 **References:** 786, 789, 790

Nitella mirabilis Nordstedt ex J. Groves

1629 History: < Higuchi, Sumio **Locality:** Ohgemi-ike Pond/Nagano/Japan **Identified by:** Sakayama, Hidetoshi (2004-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious **Other strain no.:** CH-107; S134

Nitella moriokae R. D. Wood

Syn. *Nitella moniliformis* Morioka non Zaneveld; *Nitella rigida* Allen f. *moriokae* (R. D. Wood) R. D. Wood

1632 History: < Nohara, Seiichi **Locality:** Lake Kasumigaura, Takahamairi/Ibaraki/Japan (2001-08-23) **Isolator:** Ishimoto, Miwa **Identified by:** Sakayama, Hidetoshi (2004-12-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-3; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Monoecious; Germinated from a buried oospore **Other strain no.:** CH-48; S133

1633 History: < Sakayama, Hidetoshi **Locality:** Sanda, Kamizukise/Hyogo/Japan (2002-09-20) **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious **Other strain no.:** CH-61; S105

Nitella pulchella Allen

Syn. *Nitella dualis* Nordstedt f. *pulchella* (Allen) R. D. Wood

1634 History: < Sakayama, Hidetoshi **Locality:** Lake Onifukuro-ike/Hyogo/Japan (2001-06-03) **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** SWC-1; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Monoecious; CR+EN (Ref. 474) **Gene data:** *atpB* (AB110841); *rbcL* (AB110867) **Other strain no.:** CH-112; S051 **References:** 786, 788

Nitella sp.

1618 History: < Sakayama, Hidetoshi **Locality:** Onnato River/Okinawa/Japan **Identified by:** Sakayama, Hidetoshi (2006-07-10) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Other strain no.:** CH-105

1635 History: < Satake, Kiyoshi **Locality:** Jinden-ike Pond/Ibaraki/Japan (2001-07-04) **Identified by:** Kawachi, Masanobu (2001-**-**) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-2; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Other strain no.:** CH-46

1636 History: < Sakayama, Hidetoshi **Locality:** Kasumigaura General Park, aquatic plant area/Ibaraki/Japan (2004-07-28) **Identified by:** Sakayama, Hidetoshi **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 1 M **Habitat:** Freshwater **Other strain no.:** CH-97

NITELLOPSIS : Charophyceae*Nitellopsis obtusa* (Desvaux) J. Groves

- 1637 History:** < Iwasaki, Naohiko **Locality:** Lake Nojiri/Nagano/Japan (1974-08-08) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Dioecious; CR+EN (Ref. 474) **Other strain no.:** CH-1
- 1638 History:** < Higuchi, Sumio < Iwasaki, Naohiko **Locality:** Lake Nojiri/Nagano/Japan (1974-08-08) **Identified by:** Iwasaki, Naohiko (1974-08-08) **States:** Clonal; Non-axenic **Culture conditions:** mSWC-2; SWCN-1; SWCN-2; SWCN-3; 20°C; 16-20 µmol/m²/s; 6 M **Habitat:** Freshwater **Characteristics:** Dioecious; Male; CR+EN (Ref. 474) **Gene data:** *rbcL* (AB195320) **Other strain no.:** CH-56 **Reference:** 339

NITZSCHIA : Bacillariophyceae*Nitzschia closterium* (Ehrenberg) Smith

- 2351 History:** < IAM (2007) **Other collection strain no.:** IAM B-16 **Locality:** Misaki/Kanagawa/Japan **Isolator:** Tokuda **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 8-15 µmol/m²/s; 3 M

Nitzschia palea (Kützing) W. Smith

- 487 History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-04-21) **Isolator:** Kasai, Fumie **Identified by:** Takamura, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSI; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 3st-0-57 **Reference:** 917

Nitzschia sp.

- 1339 History:** < Nakano, Shinichi **Locality:** Uchiumi/Ehime/Japan **Isolator:** Shime, Mari **Identified by:** Nakano, Shinichi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** A6
- 1340 History:** < Nakano, Shinichi **Locality:** Uchiumi/Ehime/Japan **Isolator:** Shime, Mari **Identified by:** Nakano, Shinichi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** B4

NOSTOC : Cyanophyceae*Nostoc carneum* Agardh

- 2107 History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-35 **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Characteristics:** Chromatic adaptation

Nostoc commune Vaucher ex Bornet et Flahault

- 24 History:** < IAM (1983) **Other collection strain no.:** IAM M-13 **Locality:** Kurobe Gorge/Toyama/Japan **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Moss) **Characteristics:** Isolated from *Cavicularia densa* **References:** 215, 515, 605, 910, 1013, 1047 **Remarks:** Cryopreserved
- 38 History:** < IAM (1983) **Other collection strain no.:** IAM M-115 **Locality:** Marble Point/Antarctica **Isolator:** Holm-Hansen, O. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Dry sand) **Other strain no.:** M-48-a **References:** 215, 515 **Remarks:** Cryopreserved

Nostoc entophytum Bornet et Flahault

- 2358 History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-267; TISTR 8161 **Locality:** Trat/Thailand **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-6 µmol/m²/s; 3 M **Habitat:** (Soil) **Remarks:** Distribution for academic purpose only

Nostoc linckia Bornet ex Bornet et Flauhault

- 25 **History:** < IAM (1983) **Other collection strain no.:** IAM M-16 (= M-251) **Locality:** Kagoshima/Japan **Isolator:** Ishikawa, Masako **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Gene data:** 16S rRNA (AB074503); *gyrB* (AB074769); *rpoC1* (AB074792); *rpoD1* (AB074819) **References:** 515, 848, 1013

Nostoc linckia Bornet ex Bornet et Flauhault var. *arvense* C. B. Rao

- 28 **History:** < IAM (1983) **Other collection strain no.:** IAM M-30 **Locality:** Kagoshima/Japan **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Maruyama, Ko; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **References:** 215, 515, 1013 **Remarks:** Cryopreserved

Nostoc minutum Desmazières ex Bornet et Flauhault

- 26 **History:** < IAM (1983) **Other collection strain no.:** IAM M-17 **Locality:** Ishigaki Isl./Okinawa/Japan **Isolator:** Ishikawa, Masako **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Chromatic adaptation **References:** 124, 515, 531, 729, 1013, 1047
- 29 **History:** < IAM (1983) **Other collection strain no.:** IAM M-31 **Locality:** Ishigaki Isl./Okinawa/Japan **Isolator:** Ishikawa, Masako **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **References:** 515, 1013, 1047

Nostoc punctiforme (Kützing) Hariot

- 2108 **History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM M-15 **Isolator:** Watanabe, Atsushi **Identified by:** Watanabe, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial (The lichen *Peltigera erumpens*) **Characteristics:** Nitrogen fixation; Chromatic adaptation

Nostoc sp.

- 2109 **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-270 **Locality:** Hyogo/Japan **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** HK-01
- 2110 **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-271 **Locality:** Japan **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** YK-01
- 2111 **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-272 **Locality:** Japan **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** KK-01
- 2112 **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM M-280 (= M-47) **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M
- 2113 **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-292 **Locality:** Iwate/Japan (2003-**-**) **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 4 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** IK-01
- 2114 **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-294 **Locality:** Himeji/Hyogo/Japan (2002-**-**) **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 4 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** HK-02

OCHROMONAS : Chrysophyceae*Ochromonas danica* Pringsheim

- 2142 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM CS-4 (= CS-2); ATCC 30004; CCAP 933/2; SAG 933-7; UTEX L 1298; CCAP 933/2B; CCMP 585 **Locality:** near Everdrup/Denmark **Isolator:** Pringsheim, E. G. **Identified by:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** O (semi-solid); 20°C; 40-50 µmol/m²/s; 14 D **Habitat:** Freshwater **References:** 51, 462, 1077

Ochromonas minuta Pringsheim

- 2143** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM CS-5 (= CS-3); CCAP 933/10; SAG 933-10; UTEX L 1300
Locality: Solling/Germany **Isolator:** Pringsheim, E. G. **States:** Unialgal; Clonal; Axenic **Culture conditions:** O (semi-solid); 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water)

Ochromonas sp.

- 1828** **History:** < TKB **Locality:** East China Sea (2004-07-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2004-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 3 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-152
- 2300** **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1986-01-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Pond sediment) **Other strain no.:** KY-1S

OCHROSPHAERA : Prymnesiophyceae*Ochrosphaera neapolitana* Schussnig

- 1395** **History:** < TKB **Locality:** Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mIMR; 15°C; 35-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-103 (ym-11)
- 1964** **History:** < TKB **Locality:** Tatsukushi Beach/Kochi/Japan (2006-07-14) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 20 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-324

ODONTELLA : Bacillariophyceae*Odontella aurita* Agardh

- 589** **History:** < Ono, Sachiko **Locality:** Penzance/U.K. (1991-03-15) **Isolator:** Ono, Sachiko **Identified by:** Ono, Sachiko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** St-22 **Reference:** 969

Odontella longicuris (Greville) Hoban

- 590** **History:** < Ono, Sachiko **Locality:** Hitachi/Ibaraki/Japan (1990-09-26) **Isolator:** Ono, Sachiko **Identified by:** Ono, Sachiko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** St-11

OEDOGONIUM : Chlorophyceae*Oedogonium obesum* Wittrock ex Hirn

- 203** **History:** < IAM (1983) **Other collection strain no.:** IAM C-348 **Locality:** Japan **Isolator:** Saito, E. **Identified by:** Saito, E. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Other strain no.:** 807 **References:** 215, 515

OLISTHODISCUS : Raphidophyceae*Olisthodiscus luteus* Carter

- 15** **History:** < Inouye, Isao **Locality:** Seto Inland Sea/Okayama/Japan **Isolator:** Inouye, Isao **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Coastal soil) **Characteristics:** Red tide **Other strain no.:** Olisth **References:** 9, 122, 135, 224, 354, 356, 448, 539, 677, 1004, 1119 **Remarks:** Difficult to transport
- 1379** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2004-03-09) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-097 (nrc) **Remarks:** Difficult to transport

1831 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-07-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-262 **Remarks:** Difficult to transport

OLTMANSIELLOPSIS : Ulvophyceae

Oltmannsiellopsis geminata Inouye et Chihara

672 **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Harima-nada/Japan (1986-06-04) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Reference:** 515

Oltmannsiellopsis unicellularis Inouye et Chihara

359 **History:** < Suda, Shoichiro **Locality:** Ieshima Isls./Hyogo/Japan (1984-08-10) **Isolator:** Suda, Shoichiro **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Authentic strain **Other strain no.:** 810YB-6 **References:** 44, 515

Oltmannsiellopsis viridis (Hargraves et Steele) Chihara et Inouye

360 **History:** < Suda, Shoichiro **Locality:** Onagawa Bay/Miyagi/Japan (1984-08-28) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** 18S rRNA (D86495); Plastid DNA (DQ291132) **Other strain no.:** 8280G41-2 **References:** 44, 515, 595, 767

1825 **History:** < TKB **Locality:** Shizugawa Bay/Miyagi/Japan (2005-08-31) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-249

OOCYSTIS : Trebouxiophyceae

Oocystis borgei Snow

659 **History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **Culture conditions:** C; 15°C; 8-15 µmol/m²/s; 6 M (15°C; 15-22 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** AT2-26 **References:** 515, 917 **Remarks:** Cryopreserved

Oocystis lacustris Chodat

660 **History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 15°C; 8-15 µmol/m²/s; 6 M (15°C; 15-22 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** Ast-3-1 **References:** 515, 917 **Remarks:** Cryopreserved

661 **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-05-22) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 6 M **Habitat:** Freshwater (River water) **Other strain no.:** 4st-3-9 **References:** 515, 917 **Remarks:** Cryopreserved

662 **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-02-25) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 6 M **Habitat:** Freshwater (River water) **Other strain no.:** 1st-2-9 **References:** 515, 916, 917 **Remarks:** Cryopreserved

OOLITHOTUS : Prymnesiophyceae

Oolithotus fragilis (Lohmann) Reinhardt

1320 **History:** < Kawachi, Masanobu **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2002-01-23) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 35

1321 **History:** < Kawachi, Masanobu **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2003-01-15) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 58

1322 **History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Now as naked cells **Other strain no.:** MH 80

OPHIOCYTIUM : Xanthophyceae

Ophiocytium capitatum Wolle

1011 **History:** < Moriya, Mayumi **Locality:** Shishizuka-ohike Pond/Ibaraki/Japan (2000-05-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** #86 **Reference:** 122

1384 **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2004-06-24) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 40-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-125 (nak19)

Ophiocytium parvulum Wolle

1385 **History:** < TKB **Locality:** Shishizuka-ohike Pond/Ibaraki/Japan (2004-06-24) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 40-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** TKB-126 (nak20)

OSCILLATORIA : Cyanophyceae

Oscillatoria amphibia Agardh ex Gomont

361 **History:** < Watanabe, Makoto M. **Locality:** Asaji Bay/Nagasaki/Japan (1985-07-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Benthic **Other strain no.:** Oa **References:** 124, 515 **Remarks:** Cryopreserved

Oscillatoria animalis Agardh ex Gomont

206 **History:** < IAM (1983) **Other collection strain no.:** IAM M-75 **Locality:** Japan **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **References:** 124, 215, 515 **Remarks:** Cryopreserved

Oscillatoria laetevirens Gomont

31 **History:** < IAM (1983) **Other collection strain no.:** IAM M-42 (= M-242) **Locality:** Kawaji Hot Spring/Tochigi/Japan **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Hot spring **References:** 215, 515, 1047

Oscillatoria limnetica Lemmermann

36 **History:** < IAM (1983) **Other collection strain no.:** IAM M-92 **Locality:** Nakano-ku/Tokyo/Japan **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial **References:** 19, 124, 215, 515, 720 **Remarks:** Cryopreserved

Oscillatoria mougeotii Kützing

2115 **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM M-281 (= M-72) **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M

Oscillatoria neglecta Lemmermann

2116 **History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM M-82 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Characteristics:** Toxic **Gene data:** 16S rRNA (AB003168) **Other strain no.:** Murano 400 (PC-G) **References:** 196, 256, 257, 909

Oscillatoria rosea Utermöhl

- 208** **History:** < Ichimura, Yoji **Other collection strain no.:** IAM M-220 **Locality:** Asaji Bay/Nagasaki/Japan (1983-08-19) **Isolator:** Ichimura, Yoji **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** 16S rRNA (AB033164) **Other strain no.:** NGS-1 **References:** 124, 196, 256, 257, 515, 827 **Remarks:** Cryopreserved

Oscillatoria sp.

- 2118** **History:** < IAM (2007) < Safferman, R. S. **Other collection strain no.:** IAM M-117 **Identified by:** Ishida, Tatuya **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Gene data:** 16S rRNA (AB003163) **Other strain no.:** CU 1407/1 **References:** 196, 256, 257
- 2308** **History:** < Yanagimoto, Masakatsu **Locality:** Lake Chad/Chad **Isolator:** Yanagimoto, Masakatsu **Identified by:** Yanagimoto, Masakatsu **States:** Unialgal **Culture conditions:** SOT; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 60-70 µmol/m²/s) **Habitat:** Salt water (Water)

Oscillatoria tenuis Agardh ex Gomont

- 33** **History:** < IAM (1983) **Other collection strain no.:** IAM M-50 **Locality:** Setagaya-ku, Ohara-cho/Tokyo/Japan **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Gene data:** 16S rRNA (AB042844) **References:** 124, 215, 515, 719 **Remarks:** Cryopreserved

OSTREOPSIS : Dinophyceae*Ostreopsis siamensis* Schmidt

- 1404** **History:** < TKB **Locality:** Yaene Harbor/Tokyo/Japan (2003-06-27) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-064 (AK-06) **Remarks:** Difficult to transport

OVULINATA : Imbricatea*Ovulinata parva* Anderson, Rogerson et Hannah

- 2377** **History:** < TKB **Locality:** Ashiya-hama/Hyogo/Japan (2005-06-27) **Isolator:** Yabuki, Akinori **Identified by:** Yabuki, Akinori (2008-**-**) **Culture conditions:** ESM; 20°C; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Benthic **Other strain no.:** TKB-342

OXYRRHIS : Oxyrrhea*Oxyrrhis marina* Dujardin

- 494** **History:** < Sawaguchi, Tomohiro **Locality:** Hachinohe/Aomori/Japan (1988-08-22) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Mixed; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Predator; Feeds on *Pyramimonas parkeae* (NIES-254) **Other strain no.:** 3700X **Remarks:** Difficult to transport

PANDORINA : Chlorophyceae*Pandorina colemaniae* Nozaki

- 572** **History:** < Nozaki, Hisayoshi **Locality:** Kourakuen/Okayama/Japan (1988-10-12) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Isogamy; Mating type (+); Crosses with NIES-573 **Gene data:** *atpB* (AB014027); *psaA* (AB044232); *psaB* (AB044457); *psbC* (AB044512); *rbcL* (D63441) **Other strain no.:** 88-1025-1 **References:** 515, 646, 657, 663, 666
- 573** **History:** < Nozaki, Hisayoshi **Locality:** Kourakuen/Okayama/Japan (1988-10-12) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Isogamy; Mating type (-); Crosses with NIES-572 **Other strain no.:** 89-0131-P-3 **References:** 515, 657

Pandorina morum (O. F. Müller) Bory

- 242** **History:** < Suda, Shoichiro **Locality:** Lake Ozenuma/Fukushima/Japan (1983-08-30) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-243 and 362 **Other strain no.:** Oz-Pa-2 **Reference:** 515
- 243** **History:** < Suda, Shoichiro **Locality:** Lake Ozenuma/Fukushima/Japan (1983-08-30) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-242 **Other strain no.:** Oz-Pa-3 **Reference:** 515
- 362** **History:** < Suda, Shoichiro **Locality:** Lake Ozenuma/Fukushima/Japan (1983-08-30) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-242 **Other strain no.:** Oz-Pa-1 **Reference:** 515
- 886** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 854 **Locality:** Bloomington/Indiana/U.S.A. (1955-09-**) **Isolator:** Coleman, A. W. **Identified by:** Coleman, A. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Heterothallic; Isogamy **Gene data:** *atpB* (AB044180); *psaA* (AB044231); *psaB* (AB044456); *psbC* (AB044510); *psbC* (AB044511); *rbcL* (AB044167) **References:** 50, 663
- 887** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 880 **Locality:** Tulare County/California/U.S.A. (1951-02-**) **Isolator:** Coleman, A. W. **Identified by:** Coleman, A. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** (Soil) **Characteristics:** Heterothallic; Isogamy **Gene data:** *atpB* (AB044179); *psaA* (AB044229); *psaA* (AB044230); *psaB* (AB044455); *psbC* (AB044509); *rbcL* (AB044166) **References:** 50, 663
- 888** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1726 **Locality:** Kimberley/South Africa (1967-07-22) **Isolator:** Palmer, E. **Identified by:** Palmer, E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** (Soil) **Characteristics:** Heterothallic; Isogamy; Mating type (+); Crosses with NIES-889 **Reference:** 663
- 889** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1727 **Locality:** Kimberley/South Africa (1967-07-22) **Isolator:** Palmer, E. **Identified by:** Palmer, E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** (Soil) **Characteristics:** Heterothallic; Isogamy; Mating type (-); Crosses with NIES-888 **Gene data:** *atpB* (AB044178); *psaA* (AB044228); *psaB* (AB044454); *psbC* (AB044508); *rbcL* (AB044165) **Reference:** 663
- 890** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2326 **Locality:** Kawai Dam/Ishikawa/Japan (1977-09-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Reservoir water) **Characteristics:** Other water bloom; Heterothallic; Isogamy **Gene data:** *atpB* (AB044177); *psaA* (AB044227); *psaB* (AB044453); *psbC* (AB044506); *psbC* (AB044507); *rbcL* (AB044164) **Other strain no.:** Ishi-1 **References:** 651, 663

Pandorina morum (O. F. Müller) Bory var. *morum*

- 574** **History:** < Nozaki, Hisayoshi **Locality:** Nepal (1986-09-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (+); Crosses with NIES-575 **Gene data:** *atpB* (AB014025); *atpB* (AB014026); *psaA* (AB044226); *psaB* (AB044452); *psbC* (AB044505); *rbcL* (D63442) **Other strain no.:** 7916-P-7 **References:** 515, 631, 646, 663, 666, 668
- 575** **History:** < Nozaki, Hisayoshi **Locality:** Nepal (1986-09-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (-); Crosses with NIES-574 **Other strain no.:** 7916-P-8 **References:** 515, 631

PARACHLORELLA : Trebouxiophyceae*Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et WolfSyn. *Chlorella kessleri* Fott et Nováková

- 2152** **History:** < IAM (2007) < Yakult < IAM **Other collection strain no.:** IAM C-33 **Isolator:** Watanabe, Atsushi **Identified by:** Kessler, E. (1994); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488589)
- 2153** **History:** < IAM (2007) < Yakult < IAM **Other collection strain no.:** IAM C-37 **Isolator:** Watanabe, Atsushi **Identified by:** Kessler, E. (1994); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488590)

- 2154 History:** < IAM (2007) < Yakult < IAM **Other collection strain no.:** IAM C-38 **Isolator:** Watanabe, Atsushi **Identified by:** Kessler, E. (1994); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488591)
- 2155 History:** < IAM (2007) < Yakult < IAM **Other collection strain no.:** IAM C-39 **Isolator:** Watanabe, Atsushi **Identified by:** Kessler, E. (1994); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488592)
- 2156 History:** < IAM (2007) < Yakult < IAM **Other collection strain no.:** IAM C-47 **Identified by:** Kessler, E. (1994); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488593)
- 2157 History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM C-143 **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Kessler E. (1993); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488594) **References:** 449, 498, 509, 510
- 2158 History:** < IAM (2007) **Other collection strain no.:** IAM C-155 **Identified by:** Kessler, E. (1994); Re-identified at NIES by DNA sequencing **Formerly identified as:** *Scenedesmus acutus* Meyen **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488595)
- 2159 History:** < IAM (2007) < Soeder, C. J. (1966) < CCAP **Other collection strain no.:** IAM C-208; CAUP H1901; CCAP 211/11G; SAG 211-11g; UTEX 262 **Isolator:** Winokur **Identified by:** Kessler, E. (1993); Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 16S rRNA (AJ242769); 16S rRNA (AJ387750); 18S rRNA (AJ242765); 18S rRNA (AB488596) **Reference:** 1094
- 2160 History:** < IAM (2007) < Tsuzuki, Mikio (1988) < Miyachi, Shigetoh (1977) < Schmid, G. H. **Other collection strain no.:** IAM C-531; ATCC 11468; CCAP 211/11H; SAG 211-11h; UTEX 263 **Locality:** U.S.A. **Isolator:** Pratt, R. **Identified by:** Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488597) **References:** 5, 111, 118, 178, 192, 193, 351, 414, 461, 487, 489, 491, 497, 498, 499, 504, 507, 508, 509, 510, 511, 570, 572, 573, 574, 575, 576, 577, 578, 579, 580, 705, 865, 866, 869, 870, 921, 922, 923, 985, 986, 987, 988, 989, 990, 991, 992, 993, 1093, 1100, 1101
- 2161 History:** < IAM (2007) < Kamiya, A.; Miyachi, Shigetoh < Schmid, G. H. **Other collection strain no.:** IAM C-425; SAG 211-11h/20 **Isolator:** Schwarze, P.; Frandsen, N. O. **Identified by:** Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella vulgaris* Beijerinck **States:** Unialgal; Clonal; Axenic **Culture conditions:** Tre (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Yellow mutant of NIES-2160 (IAM C-531) **Gene data:** 18S rRNA (AB488598) **References:** 461, 826, 992
- 2162 History:** < IAM (2007) < Kamiya, A. (1990-10-23) < Miyachi, Shigetoh < Schmid, G. H. **Other collection strain no.:** IAM C-539; SAG 9.80 **Identified by:** Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella vulgaris* Beijerinck **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** White mutant of NIES-2160 (IAM C-531) **Gene data:** 18S rRNA (AB488599) **Other strain no.:** Schwarze 125 **References:** 310, 311, 312, 313, 490, 491, 826, 992
- 2177 History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM C-625 (= C-151) **Identified by:** Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella* sp. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488600)
- 2178 History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM C-627 (= C-157) **Identified by:** Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella* sp. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488601)
- 2179 History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM C-628 (= C-160) **Identified by:** Re-identified at NIES by DNA sequencing **Formerly identified as:** *Chlorella* sp. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Gene data:** 18S rRNA (AB488602)

PARAPHYSOMONAS : Chrysophyceae

Paraphysomonas vestita De Saedeleer

- 1377 History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2004-10-15) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** URO + Wheat; 20°C; 20 D **Habitat:** Freshwater (Pond water) **Characteristics:** Heterotrophic **Other strain no.:** TKB-136 (NY0155)

PAULSCHULZIA : Chlorophyceae**Paulschulzia pseudovolvox** Skuja

727 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 167 **Locality:** Tvarminne/Finland **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater **Gene data:** *atpB* (AB014040); *psaA* (AB044422); *psaA* (AB044423); *psaB* (AB044473); *psbC* (AB044531); *psbC* (AB044532); *rbcL* (D86837) **References:** 75, 515, 663, 666

PAVLOVA : Pavlovophyceae**Pavlova gyrans** Butcher

623 **History:** < Sawaguchi, Tomohiro **Locality:** Matoya Bay/Mie/Japan (1984-09-01) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Marine (Water) **Other strain no.:** MB-D-24

Pavlova pinguis J. C. Green

1398 **History:** < TKB **Locality:** Wakayama/Japan (2003-05-19) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Water) **Other strain no.:** TKB-068 (AK-10)

Pavlova sp.

1399 **History:** < TKB **Locality:** Wakayama/Japan (2003-07-29) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Water) **Other strain no.:** TKB-069 (AK-11)

1400 **History:** < TKB **Locality:** Ishikawa/Japan **Isolator:** Yoshii, Yukie **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine **Other strain no.:** TKB-070 (AK-12)

1401 **History:** < TKB **Locality:** Amachi Beach/Okinawa/Japan (2003-12-**) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Benthic **Other strain no.:** TKB-093 (nrc)

1815 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-03-30) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-241

1816 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-03-30) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-242

1965 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-10-18) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 20 µmol/m²/s; 14 D **Habitat:** Marine (Sand) **Other strain no.:** TKB-326

PEDIASTRUM : Chlorophyceae**Pediastrum angulosum** Meneghini var. *angulosum*

300 **History:** < Kasai, Fumie **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-**) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** 83-24-1-7 **Reference:** 515

Pediastrum boryanum (Turpin) Meneghini

209 **History:** < Watanabe, Michiko H. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-12-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *coxI* (D63659) **Other strain no.:** K-P-40 **References:** 171, 515 **Remarks:** Cryopreserved

- 301** **History:** < TAC **Locality:** Lake Shoji/Yamanashi/Japan (1981-10-27) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** Pcy (AB218889) **Other strain no.:** TAC 56-3A (TAN-56-3A) **References:** 515, 568, 569 **Remarks:** Cryopreserved

Pediastrum duplex Meyen

- 212** **History:** < Watanabe, Michiko H. **Locality:** Lake Kawaguchi/Yamanashi/Japan (1981-06-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** KW-P-1 **References:** 515, 1001 **Remarks:** Cryopreserved

Pediastrum duplex Meyen var. *duplex*

- 210** **History:** < Yuri, Akira **Locality:** Tsukuba/Ibaraki/Japan (1983-05-25) **Isolator:** Yuri, Akira **Identified by:** Yuri, Akira; Watanabe, Masayuki (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** Pe-16 **Reference:** 515 **Remarks:** Cryopreserved
- 213** **History:** < Hiwatari, Takehiko **Locality:** Tsukuba/Ibaraki/Japan (1983-05-25) **Isolator:** Hiwatari, Takehiko **Identified by:** Hiwatari, Takehiko; Watanabe, Masayuki (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *atpB* (AB084306); *Pcy* (AB218890); *psaB* (AB084340); *rbcL* (AB084333) **Other strain no.:** AQ-P-1 **References:** 189, 515, 668, 1047 **Remarks:** Cryopreserved

Pediastrum duplex Meyen var. *gracillimum* W. et G. S. West

- 211** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-23) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F50-1 **Reference:** 515 **Remarks:** Cryopreserved
- 214** **History:** < Hiwatari, Takehiko **Locality:** Tsukuba/Ibaraki/Japan (1983-08-02) **Isolator:** Hiwatari, Takehiko **Identified by:** Hiwatari, Takehiko; Watanabe, Masayuki (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** KR-P-2 **Reference:** 515

Pediastrum simplex Meyen

- 215** **History:** < Watanabe, Michiko H. **Locality:** Lake Biwa/Shiga/Japan (1982-07-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** B-P-18 **Reference:** 515 **Remarks:** Cryopreserved
- 302** **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-23) **Isolator:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F-26-4 **Reference:** 515 **Remarks:** Cryopreserved

Pediastrum tetras (Ehrenberg) Ralfs

- 216** **History:** < Watanabe, Michiko H. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-12-**) **Isolator:** Watanabe, Michiko H. **Identified by:** Watanabe, Michiko H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** K-P-30 **Reference:** 515 **Remarks:** Cryopreserved

PEDINELLA : Dictyochophyceae

Pedinella sp.

- 2346** **History:** < Nozaki, Hisayoshi **Locality:** Lake Nojiri (depth 15m)/Nagano/Japan (1992-06-09) **Isolator:** Nozaki, Hisayoshi **Identified by:** Moestrup, Øjvind; Kawachi, Masanobu (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C/6G; 10°C; 15-20 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Mixotrophic; Authentic strain **Other strain no.:** 92-912-1

Pedinella squamata Sekiguchi, Kawachi, Nakayama et Inouye

- 1008** **History:** < Moriya, Mayumi **Locality:** Nakagusuku Bay/Okinawa/Japan (2002-03-16) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Mixotrophic **Other strain no.:** M-11

PEDINOMONAS : Pedinophyceae*Pedinomonas minor* Korshikov

- 363 **History:** < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1984-05-08) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Other strain no.:** H31P4

PELAGOMONAS : Pelagophyceae*Pelagomonas calceolata* Andersen et Saunders

- 1003 **History:** < Kawachi, Masanobu < CCMP **Other collection strain no.:** CCMP 1214 **Locality:** North Pacific, Central Gyre (1973-02-17) **Isolator:** Lewin, Ralph A. **Identified by:** Andersen, Robert A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 22°C; 20-30 µmol/m²/s; 14 D **Habitat:** Marine **Reference:** 122

PENIUM : Charophyceae*Penium margaritaceum* Brébisson

- 217 **History:** < IAM (1983) **Other collection strain no.:** IAM C-397 (= C-589) **Locality:** Rumbhara/Nepal (1965-11-01) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic **Other strain no.:** N-76-20 **References:** 215, 515
- 303 **History:** < Kasai, Fumie **Locality:** Tsukiyono/Gunma/Japan (1984-06-01) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Ditch water) **Other strain no.:** 84-25-1 **Reference:** 515

PERCOLOMONAS : Percolomonadea*Percolomonas* sp.

- 1441 **History:** < TKB **Locality:** Chiba Harbor/Chiba/Japan (2002-11-29) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + Wheat; 15°C; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Heterotrophic **Other strain no.:** TKB-016 (NY0123) **Reference:** 127

PERIDINIUM : Dinophyceae*Peridinium bipes* Stein f. *globosum* Lindemann

- 495 **History:** < Sawaguchi, Tomohiro **Locality:** Lake Onogawa/Fukushima/Japan (1985-07-30) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** LOND-9 **Reference:** 353 **Remarks:** Difficult to transport

Peridinium bipes Stein f. *occultatum* (Lindemann) Lefèvre

- 497 **History:** < Sawaguchi, Tomohiro **Locality:** Lake Kizaki/Nagano/Japan (1988-04-20) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Carefoot; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Red tide **Other strain no.:** LK420 **Remarks:** Difficult to transport

Peridinium pseudolaeve Lefèvre

- 1405 **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2003-01-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Other water bloom **Other strain no.:** TKB-048 (nak-03) **Remarks:** Difficult to transport

Peridinium volzii Lemmermann

- 365 **History:** < Sawaguchi, Tomohiro **Locality:** Ajiro/Iwate/Japan (1984-09-08) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** Carefoot; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** HND-1 **Remarks:** Difficult to transport

- 501** **History:** < Sawaguchi, Tomohiro **Locality:** Tsuchiura/Ibaraki/Japan (1986-04-**) **Isolator:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Carefoot; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic **Other strain no.:** SPSP-2 **Remarks:** Difficult to transport

Peridinium willei Huitfeldt-Kaas

- 304** **History:** < Sawaguchi, Tomohiro **Locality:** Tsukiyono/Gunma/Japan (1984-06-01) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** Carefoot; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** 8423-P **Reference:** 128 **Remarks:** Difficult to transport
- 366** **History:** < Sawaguchi, Tomohiro **Locality:** Tsuchiura/Ibaraki/Japan (1985-04-13) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** Carefoot; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** SPD-1 **Remarks:** Difficult to transport

PHACOTUS : Chlorophyceae

Phacotus lenticularis (Ehrenberg) Stein

- 858** **History:** < Nozaki, Hisayoshi **Locality:** Germany **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 2 M **Gene data:** 18S rRNA (X91628); *atpB* (AB014039); *psaB* (AB084373); *psaB* (AB084374); *rbcL* (AJ001883) **Other strain no.:** KR 91/1 **References:** 172, 666, 668
- 859** **History:** < Nozaki, Hisayoshi < SAG **Other collection strain no.:** SAG 61-1 **Locality:** Germany **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 2 M **Gene data:** *rbcL* (AJ001884) **Reference:** 172

PHAEOCYSTIS : Prymnesiophyceae

Phaeocystis globosa Scherffel

- 388** **History:** < Sawaguchi, Tomohiro **Locality:** Hachijo Isl./Tokyo/Japan (1984-04-19) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **Formerly identified as:** *Phaeocystis pouchetii* (Hariot) Lagerheim **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 10 D (20°C; 40-50 µmol/m²/s) **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Gene data:** *coxI* (AB000120) **Other strain no.:** 8-P **References:** 127, 170 **Remarks:** Unstable

Phaeocystis sp.

- 1396** **History:** < TKB **Locality:** Tsukuba Univ. Marine Research Center/Shizuoka/Japan (2003-04-02) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; mIMR; 20°C; 40-50 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** TKB-032 (AK-03)

PHORMIDIUM : Cyanophyceae

Phormidium ambiguum Gomont

- 2119** **History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM M-71 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Characteristics:** Hydrogen evolution **Gene data:** 16S rRNA (AB003167) **Other strain no.:** Murano 394 (W1-27(1)) **References:** 19, 196, 256, 257
- 2120** **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM M-283 (= M-89) **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M
- 2121** **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** NIG, Japan **Locality:** Africa **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial (Soil)
- 2122** **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) **Other collection strain no.:** IAM M-285 (= M-108) **Locality:** Kyoto/Kyoto/Japan **Isolator:** Murano, Fumio; Ishikawa, Masako **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M

Phormidium angustissimum W. et G. S. West

- 2123 History:** < IAM (2007) < Ishikawa, Masako **Other collection strain no.:** IAM M-21 **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M

Phormidium foveolarum Gomont

- 32 History:** < IAM (1983) **Other collection strain no.:** IAM M-43 **Locality:** Lake Shirakaba/Nagano/Japan **Isolator:** Ishikawa, Masako **Identified by:** Fukushima, Hiroshi; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **References:** 215, 515, 967, 998 **Remarks:** Cryopreserved
- 34 History:** < IAM (1983) **Other collection strain no.:** IAM M-59 **Locality:** Sakunami Hot Spring/Miyagi/Japan **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **References:** 215, 515 **Remarks:** Cryopreserved
- 503 History:** < Watanabe, Makoto M. **Locality:** Mt. Tsukuba/Ibaraki/Japan (1987-04-17) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Stream sediment) **Other strain no.:** (1)-48 **References:** 515, 917
- 504 History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-03-25) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River sediment) **Other strain no.:** 2st-2-4 **References:** 515, 916, 917, 918
- 505 History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River sediment) **Other strain no.:** AT4-17 **References:** 515, 917, 918

Phormidium henningsii Lemmermann

- 2124 History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM M-88 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Murano 387 (W1-21(2))

Phormidium jenkelianum G. Schmid

- 506 History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River sediment) **Other strain no.:** AT5-37 **References:** 515, 917
- 507 History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River sediment) **Other strain no.:** Ast-1-4 **References:** 124, 515, 917, 918

Phormidium luridum (Kützing) Gomont

- 2125 History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM M-84 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Murano 397 (W1-32(2))

Phormidium molle (Kützing) Gomont

- 509 History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River sediment) **Other strain no.:** AT2-17 **References:** 515, 917, 918
- 2126 History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM M-77 **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Murano 386 (W1-21U)

Phormidium mucicola Huber-Pestalozzi et Naum

- 510 History:** < Watanabe, Makoto M. **Other collection strain no.:** IAM M-221 **Locality:** Mt. Tsukuba/Ibaraki/Japan (1987-04-17) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 4 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Stream sediment) **Gene data:** 16S rRNA (AB003165) **Other strain no.:** (1)-23 **References:** 196, 256, 257, 515, 917

Phormidium ramosum Boye-Petersen

- 305** **History:** < Suda, Shoichiro **Locality:** Takatori River/Ibaraki/Japan (1984-12-11) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; CSi + Cu; 20°C; 4-10 µmol/m²/s; 4 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Sediment) **Other strain no.:** 841211St5-1 **References:** 124, 515, 916, 917

Phormidium sp.

- 2128** **History:** < IAM (2007) < BIU (UTEX; 1961-08-11) **Other collection strain no.:** IAM M-99; (BIU 426) **Isolator:** Boresch **Identified by:** Ishida, Tatuya **States:** Unialgal; Clonal; Axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Gene data:** 16S rRNA (AB003169); *gyrB* (AB074775); *rpoC1* (AB074798); *rpoD1* (AB074825) **References:** 256, 257, 848

PICOCHLORUM : Trebouxiophyceae*Picochlorum* sp.

- 1270** **History:** < Moriya, Mayumi **Locality:** Banzu Tidal Flat/Chiba/Japan (2002-05-14) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi; Confirmed at NIES by DNA sequencing **Formerly identified as:** *Nanochlorum* sp. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat water) **Gene data:** 18S rRNA (AB488603) **Other strain no.:** M-66 **Remarks:** Cryopreserved

PLACIDIA : Placididea*Placidia cafeteriopsis* Moriya, Nakayama et Inouye

- 1013** **History:** < Moriya, Mayumi **Locality:** Tokyo Bay/Kanagawa/Japan (1998-01-11) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SUY 1/10; 15°C; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Heterotrophic **Gene data:** 18S rRNA (AB061218) **Other strain no.:** #51
- 1014** **History:** < Moriya, Mayumi **Locality:** Kamaishi Harbor/Iwate/Japan (1999-01-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SUY 1/10; 15°C; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Heterotrophic **Other strain no.:** #69 **Reference:** 522

PLANCTONEMA : Chlorophyceae*Planctonema lauterbornii* Schmidle

- 514** **History:** < Niiyama, Yuko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1988-08-18) **Isolator:** Niiyama, Yuko **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** K880818 **Reference:** 515 **Remarks:** Cryopreserved

PLANKTOSPHAERIA : Chlorophyceae*Planktosphaeria gelatinosa* G. M. Smith

- 2268** **History:** < IAM (2007) **Other collection strain no.:** IAM C-405 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 8-15 µmol/m²/s; 3 M

PLANKTOTHRICOIDES : Cyanophyceae*Planktothricoides raciborskii* Suda et M. M. Watanabe

Syn. *Oscillatoria raciborskii* Woloszynska

- 207** **History:** < Suda, Shoichiro **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-06-16) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; MG; 20°C; 15-25 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Type strain **Gene data:** 16S rRNA (AB045960) **Other strain no.:** K-O-R **References:** 435, 515, 605, 893, 1047
- 917** **History:** < Suda, Shoichiro **Locality:** Lake Inbanuma/Chiba/Japan **Identified by:** Li, Renhui **Culture conditions:** CT; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Water bloom **Gene data:** 16S rRNA (AB045953) **Other strain no.:** INBaOR **Reference:** 893

PLANKTOTHRIX : Cyanophyceae**Planktothrix agardhii** (Gomont) Anagnostidis et KomárekSyn. *Oscillatoria agardhii* Gomont

- 204** **History:** < Suda, Shoichiro **Other collection strain no.:** IAM M-244; CCAP 1460/5; PCC 10704 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-24) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Type strain **Gene data:** 16S rRNA (AB045954) **Other strain no.:** K-O-A **References:** 45, 175, 264, 297, 435, 515, 530, 540, 541, 542, 605, 818, 856, 858, 860, 861, 893, 1047, 1074, 1139 **Remarks:** Cryopreserved
- 205** **History:** < TAC **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-09-16) **Isolator:** Watanabe, Masayuki **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** TAC 53 (K-TAN-53) **References:** 264, 435, 515, 526, 857, 893 **Remarks:** Cryopreserved
- 594** **History:** < Takamura, Noriko **Locality:** Northern Ireland/U.K. **Identified by:** Suda, Shoichiro (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater **Gene data:** 16S rRNA (AB045956) **Other strain no.:** K-8 **References:** 515, 893 **Remarks:** Cryopreserved
- 595** **History:** < Takamura, Noriko **Locality:** Northern Ireland/U.K. **Identified by:** Suda, Shoichiro (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater **Gene data:** 16S rRNA (AB045957) **Other strain no.:** 3A(2) **References:** 266, 515, 893 **Remarks:** Cryopreserved
- 596** **History:** < Takamura, Noriko **Locality:** Veluwemeer/Netherland **Identified by:** Suda, Shoichiro (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 4-10 µmol/m²/s; 2 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater **Gene data:** 16S rRNA (AB045958) **Other strain no.:** VLOA 7 **References:** 79, 264, 515, 526, 893 **Remarks:** Cryopreserved
- 905** **History:** < Suda, Shoichiro < CCAP **Other collection strain no.:** CCAP 1459/11A **Locality:** Windermere/England, Cambria/U.K. (1975-**-**) **Isolator:** Jaworski, G. H. M. **Identified by:** Suda, Shoichiro (Reidentify) **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Gene data:** 16S rRNA (AB045896) **References:** 799, 893 **Remarks:** Toxic; Cryopreserved
- 989** **History:** < Sano, Tomoharu **Locality:** Lake Mikata/Fukui/Japan (2000-12-05) **Isolator:** Sano, Tomoharu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Mikata1-3 **Remarks:** Cryopreserved
- 990** **History:** < Sano, Tomoharu **Locality:** Lake Mikata/Fukui/Japan (2000-12-05) **Isolator:** Sano, Tomoharu **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** Mikata1-6 **Remarks:** Cryopreserved
- 1263** **History:** < Sano, Tomoharu **Locality:** Germany (2000-08-18) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** DU-Oa-2-3 **Remarks:** Toxic; Cryopreserved
- 1264** **History:** < Sano, Tomoharu **Locality:** Neuglobsow/Brandenburg/Germany (2000-08-18) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** DU-Oa-3-3 **Remarks:** Toxic; Cryopreserved
- 1265** **History:** < Sano, Tomoharu **Locality:** Neuglobsow/Brandenburg/Germany (2000-08-15) **Isolator:** Sano, Tomoharu **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** DU-Oa-5-5 **Remarks:** Cryopreserved

Planktothrix mougeotii (Kützing ex Lemmermann) Suda, M. M. Watanabe, Otsuka, Mahakahant, Yongmanitchai, Nopartneraporn, Liu et Day

Syn. *Oscillatoria mougeotii* Kützing ex Lemmermann

- 844** **History:** < Suda, Shoichiro **Other collection strain no.:** TISTR 9197 **Locality:** Nakhon Pathon/Thailand (1996-03-18) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (River water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AB045971) **Other strain no.:** TR1-5; ANMR 20011 **Reference:** 893 **Remarks:** Cryopreserved; Distribution for academic purpose only

- 911** **History:** < Suda, Shoichiro **Other collection strain no.:** TISTR 9198 **Locality:** Thailand **Identified by:** Suda, Shoichiro **Culture conditions:** CT; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (River water) **Characteristics:** Water bloom **Gene data:** 16S rRNA (AB045972) **Other strain no.:** TR2-4; ANMR 20012 **Reference:** 893 **Remarks:** Cryopreserved; Distribution for academic purpose only
- 913** **History:** < Suda, Shoichiro **Other collection strain no.:** TISTR 9199 **Locality:** Thailand **Identified by:** Suda, Shoichiro **Culture conditions:** CT; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater (Ditch water) **Characteristics:** Water bloom **Gene data:** 16S rRNA (AB045970) **Other strain no.:** TK5-4 or 1; ANMR 20014 **Reference:** 893 **Remarks:** Cryopreserved; Distribution for academic purpose only

Planktothrix rubescens (DC. ex Gomont) Anagnostidis et Komárek

Syn. *Oscillatoria rubescens* DC. ex Gomont

- 610** **History:** < CCAP **Other collection strain no.:** CCAP 1459/22; NIVA CYA 18 **Locality:** Lake Gjersjøen/Norway **Isolator:** Romstad **Identified by:** Suda, Shoichiro (Reidentify) **Formerly identified as:** *Oscillatoria agardhii* Gomont **Culture conditions:** CB; MA; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Type strain **Gene data:** 16S rRNA (AB045959) **References:** 202, 515, 795, 796, 797, 893 **Remarks:** Cryopreserved
- 928** **History:** < Suda, Shoichiro < CCAP **Other collection strain no.:** CCAP 1459/14 **Locality:** England, Cambria/U.K. (1975-**-**) **Isolator:** Jaworski, G. H. M. **Identified by:** Suda, Shoichiro (Reidentified) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 22-30 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **References:** 798, 799 **Remarks:** Toxic; Cryopreserved
- 1266** **History:** < Sano, Tomoharu **Locality:** Neuglobsow/Brandenburg/Germany (2000-08-19) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** DU-Oa-4-1 **Remarks:** Toxic; Cryopreserved
- 1267** **History:** < Sano, Tomoharu **Locality:** Neuglobsow/Brandenburg/Germany (2000-08-19) **Isolator:** Sano, Tomoharu **Identified by:** Sano, Tomoharu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Toxic **Other strain no.:** DU-Oa-4-2 **Remarks:** Toxic; Cryopreserved

PLATYDORINA : Chlorophyceae

Platydorina caudata Kofoid

- 728** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1658 **Locality:** Kansas/U.S.A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 32-40 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *atpB* (AB014032); *psaA* (AB044211); *psaA* (AB044212); *psaB* (AB044442); *psbC* (AB044494); *rbcL* (D86828) **References:** 515, 647, 663, 666
- 729** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1661 **Locality:** Kansas/U.S.A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater marsh **Gene data:** *rbcL* (D86827) **References:** 515, 647

PLECTONEMA : Cyanophyceae

Plectonema calothricoides Gomont

- 2129** **History:** < IAM (2007) < Safferman, R. S. **Other collection strain no.:** IAM M-120; (BIU 598) **Isolator:** Allen, M. B. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M **Other strain no.:** Allen M931 **Reference:** 126

Plectonema radiosum Gomont

- 515** **History:** < Watanabe, Makoto M. **Locality:** Toyamasawa/Tochigi/Japan (1987-04-30) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CSi; 20°C; 4-10 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** NK-12 **References:** 202, 454, 515, 917, 918

PLEODORINA : Chlorophyceae**Pleodorina californica** Shaw

- 576** **History:** < Ogasawara, Yoshikazu **Locality:** Oumi-Hachiman/Gifu/Japan (1990-08-12) **Isolator:** Ogasawara, Yoshikazu **Identified by:** Ogasawara, Yoshikazu **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 25°C; 100-120 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy water) **Reference:** 515
- 735** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 809; SAG 162/1; IAM C-336 (= C-590) **Locality:** Bloomington/Indiana/U.S.A. **Isolator:** Starr, R. C. **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** (Freshwater) **Gene data:** *atpB* (AB014004); *psaA* (AB044190); *psaA* (AB044191); *psaA* (AB044192); *psaB* (AB044430); *psbC* (AB044480); *rbcL* (D63439) **References:** 113, 646, 663, 666

Pleodorina indica (Iyengar) Nozaki

- 736** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1990 **Locality:** Mexico **Isolator:** Morro, S. **Identified by:** Nozaki, Hisayoshi (Reidentify) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** (Soil) **Gene data:** *atpB* (AB014006); *psaA* (AB044195); *psaA* (AB044196); *psaA* (AB044197); *psaB* (AB044432); *psaB* (AB044433); *psbC* (AB044483); *rbcL* (D86834) **References:** 647, 663, 666

Pleodorina japonica Nozaki

- 577** **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2523 **Locality:** Fuji/Shizuoka/Japan (1986-07-13) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy water) **Characteristics:** Authentic strain; Homothallic; Dioecious; Anisogamy **Gene data:** *rbcL* (D63440) **Other strain no.:** 6715-7 **References:** 515, 646, 655, 663, 666

Pleodorina starrii Nozaki, Ott et Coleman

- 1361** **History:** < Nozaki, Hisayoshi **Locality:** Lake Sagami/Kanagawa/Japan (2000-06-02) **Identified by:** Nozaki, Hisayoshi (2005) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Male **Other strain no.:** 2000-602-P11
- 1362** **History:** < Nozaki, Hisayoshi **Locality:** Lake Sagami/Kanagawa/Japan (2000-06-02) **Identified by:** Nozaki, Hisayoshi (2005) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Female **Other strain no.:** 2000-602-P14 **Reference:** 669
- 1363** **History:** < Nozaki, Hisayoshi **Locality:** Lake Sagami/Kanagawa/Japan (2000-06-02) **Identified by:** Nozaki, Hisayoshi (2005) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Authentic strain; Heterothallic; Anisogamy; Male **Other strain no.:** 2000-602-P15
- 1364** **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2001-06-08) **Identified by:** Nozaki, Hisayoshi (2005) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Male **Other strain no.:** 2001-608-P17
- 1365** **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2001-06-08) **Identified by:** Nozaki, Hisayoshi (2005) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Male **Other strain no.:** 2001-608-P21
- 1366** **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2001-06-08) **Identified by:** Nozaki, Hisayoshi (2005) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Female **Other strain no.:** 2001-608-P26
- 1852** **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2001-06-08) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi (2005-07-01) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Male; F1 clone of NIES-1364, 1365 and 1366 **Other strain no.:** 2005-701-F1-1
- 1853** **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2001-06-08) **Identified by:** Nozaki, Hisayoshi (2005-07-01) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Male; F1 clone of NIES-1364, 1365 and 1366 **Gene data:** EF-1 like (AB272614); MID (AB272614) **Other strain no.:** 2005-701-F1-3

1854 **History:** < Nozaki, Hisayoshi **Locality:** Lake Tsukui/Kanagawa/Japan (2001-06-08) **Identified by:** Nozaki, Hisayoshi (2005-07-01) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Heterothallic; Anisogamy; Female; F1 clone of NIES-1364, 1365 and 1366 **Other strain no.:** 2005-701-F1-5

PLEUROCHRYISIS : Prymnesiophyceae

Pleurochrysis haptanemofera (Inouye et Chihara) Gayral et Fresnel

1813 **History:** < TKB **Locality:** Yufu Isl./Okinawa/Japan (2004-12-24) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Salt water **Other strain no.:** TKB-230

Pleurochrysis roscoffensis (Dangeard) Fresnel et Billard

Syn. *Cricosphaera roscoffensis* (Dangeard) Gayral et Fresnel

8 **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1978-09-**) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Gene data:** *coxI* (AB000117) **Other strain no.:** OCri **References:** 127, 170, 731

Pleurochrysis sp.

1814 **History:** < TKB **Locality:** Amami Isl./Kagoshima/Japan (2005-02-26) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-231

PLEUROTAENIUM : Charophyceae

Pleurotaenium cylindricum (Turner) Schmidle var. *stuhlmannii* (Hieronymus) Krieger

306 **History:** < Kasai, Fumie **Locality:** Niimi/Okayama/Japan (1983-09-11) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 60-70 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy water) **Characteristics:** Homothallic **Other strain no.:** F57-18-4 **Reference:** 515

Pleurotaenium ehrenbergii (Ralfs) De Bary var. *curtum* Krieger

308 **History:** < IAM (1983) **Other collection strain no.:** IAM C-379 **Locality:** Wakayama/Japan (1969-10-**) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** W-1-3 **Reference:** 515

311 **History:** < IAM (1983) **Other collection strain no.:** IAM C-430 **Locality:** Iriomote Isl./Okinawa/Japan (1973-06-10) **Isolator:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+) **Other strain no.:** R-13-19 **Reference:** 515

Pleurotaenium ehrenbergii (Ralfs) De Bary var. *ehrenbergii*

309 **History:** < IAM (1983) **Other collection strain no.:** IAM C-467 (= C-591) **Locality:** Iriomote Isl./Okinawa/Japan (1973-06-10) **Isolator:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-310 **Other strain no.:** R-13-27 **References:** 215, 515

310 **History:** < IAM (1983) **Other collection strain no.:** IAM C-468 **Locality:** Iriomote Isl./Okinawa/Japan (1973-06-10) **Isolator:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-309 **Other strain no.:** R-13-30 **References:** 215, 515

Pleurotaenium nodosum (Bailey ex Ralfs) Lundell var. *borgei* Grönblad

663 **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1993-09-13) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** 93-913-Gon-1 **Reference:** 515

664 **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1993-09-13) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** 93-913-Gon-3 **Reference:** 515

Pleurotaenium nodosum (Bailey ex Ralfs) Lundell var. *gutwinskii* Krieger

787 **History:** < Kasai, Fumie **Locality:** 4 km northwest of Melaka/Malaysia (1985-08-20) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-788 **Other strain no.:** 85-30-9

788 **History:** < Kasai, Fumie **Locality:** 4 km northwest of Melaka/Malaysia (1985-08-20) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Crosses with NIES-787 **Other strain no.:** 85-30-56

Pleurotaenium nodosum (Bailey ex Ralfs) Lundell var. *nodosum*

312 **History:** < Kasai, Fumie **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CAM; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** 83-24-3 **Reference:** 515

785 **History:** < Kasai, Fumie **Locality:** Imuta-ike Pond/Kagoshima/Japan (1986-10-09) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Crosses with NIES-786 **Other strain no.:** 86-7-15

786 **History:** < Kasai, Fumie **Locality:** Imuta-ike Pond/Kagoshima/Japan (1986-10-09) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Crosses with NIES-785 **Other strain no.:** 86-7-16

Pleurotaenium ovatum Nordstedt

313 **History:** < Kasai, Fumie **Locality:** Niimi/Okayama/Japan (1983-09-11) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy water) **Other strain no.:** F57-17-8 **Reference:** 515

POLYEDRIOPSIS : Chlorophyceae

Polyedriopsis spinulosa (Schmidle) Schmidle

232 **History:** < Kasai, Fumie **Locality:** Tsukuba/Ibaraki/Japan (1984-05-07) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** F128 **Reference:** 515

PORPHYRIDIDIUM : Porphyridiophyceae

Porphyridium aerugineum Geitler

1957 **History:** < TAC **Locality:** Nepal (1986-09-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Soil **Other strain no.:** TAC 578

1958 **History:** < TAC **Locality:** Nepal (1986-09-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Soil **Other strain no.:** TAC 579

1959 **History:** < TAC **Locality:** Nepal (1986-09-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Soil **Other strain no.:** TAC 580

1960 **History:** < TAC **Locality:** Nepal (1986-09-24) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Soil **Other strain no.:** TAC 581

Porphyridium purpureum (Bory) Drew et RossSyn. *Porphyridium cruentum* (Agardh) Nägeli

- 2138** **History:** < IAM (2007) < Fujita, Yoshihiko; Nozawa, Koji **Other collection strain no.:** IAM R-1 **Locality:** Takesako Hot Spring/Kagoshima/Japan **Isolator:** Nozawa, Koji **Identified by:** Nozawa, Koji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Hot spring **References:** 6, 334, 430, 778, 855, 988, 991, 1080, 1081
- 2139** **History:** < IAM (2007) < Murano, Fumio **Other collection strain no.:** IAM R-2 **Locality:** Botanical Garden at University of Tokyo/Tokyo/Japan **Isolator:** Murano, Fumio **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Reference:** 778
- 2140** **History:** < IAM (2007) < Imai **Other collection strain no.:** IAM R-3 **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 13-18 µmol/m²/s; 3 M **Reference:** 717

Porphyridium sp.

- 1032** **History:** < Hatakeyama, Noriko **Locality:** Iriomote Isl./Okinawa/Japan (1990-10-16) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama-Ishida, Noriko **Culture conditions:** ESM; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Brackish (Water) **Reference:** 127 **Remarks:** Cryopreserved
- 1033** **History:** < Hatakeyama, Noriko **Locality:** Iriomote Isl./Okinawa/Japan (1990-10-16) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama-Ishida, Noriko **Culture conditions:** ESM; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Brackish (Water) **Remarks:** Cryopreserved
- 1034** **History:** < Hatakeyama, Noriko **Locality:** Florida/U.S.A. (1991-08-11) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama-Ishida, Noriko **Culture conditions:** ESM; 20°C; 15-27 µmol/m²/s; 3 M **Habitat:** Brackish (Sediment) **Remarks:** Cryopreserved
- 1035** **History:** < Hatakeyama, Noriko **Locality:** Florida/U.S.A. (1991-08-11) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama-Ishida, Noriko **Culture conditions:** ESM; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Brackish (Sediment) **Remarks:** Cryopreserved
- 1807** **History:** < TKB **Locality:** Motobu/Okinawa/Japan (2005-01-22) **Isolator:** Yamaguchi, Haruyo **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-255

POTERIOCHROMONAS : Chrysophyceae**Poterioochromonas malhamensis** (Pringsheim) PeterfiSyn. *Ochromonas malhamensis* Pringsheim

- 2144** **History:** < IAM (2007) < SAG (2000) **Other collection strain no.:** IAM CS-7; UTEX L 1297; SAG 933-1a; ATCC 11532 **Locality:** Malham Tarn/England, Yorkshire/U.K. **Isolator:** Chen, T. Y. **States:** Unialgal; Clonal; Axenic **Culture conditions:** O (semi-solid); 20°C; 40-50 µmol/m²/s; 14 D **Characteristics:** Predator **Reference:** 51

PROCHLOROCOCCUS : Cyanophyceae**Prochlorococcus marinus** Chisholm, Frankel, Goericke, Olson, Palenik, Waterbury, West-Johnsrud et Zettler

- 2086** **History:** < Kawachi, Masanobu < CCMP **Other collection strain no.:** CCMP 1377 **Locality:** North Atlantic (Sargasso Sea) (1988-05-**) **Isolator:** Frankel, S.; West-Johnsrud, L. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** PRO-99; 20°C; 5 µmol/m²/s; 3 M **Habitat:** Marine (Seawater)
- 2087** **History:** < Kawachi, Masanobu < CCMP **Other collection strain no.:** CCMP 1986 **Locality:** East Mediterranean Sea **Isolator:** Vault, D. **Identified by:** Vault, D. (1991-03-01) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** PRO-99; 20°C; 18-23 µmol/m²/s; 3 M **Habitat:** Marine (Seawater)

PROROCENTRUM : Dinophyceae**Prorocentrum dentatum** Stein

- 682** **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Hiuchi-nada/Japan (1979-12-13) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport

- 900** **History:** < Yumoto, Kosei **Locality:** off Irago Cape/Aichi/Japan (2000-07-01) **Isolator:** Yumoto, Kosei **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** KC37-PD **Remarks:** Difficult to transport
- 2010** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2006-06-**) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu (2006-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** SY06-6 **Remarks:** Difficult to transport
- 2011** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2006-06-**) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu (2006-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** SY06-8 **Remarks:** Difficult to transport
- 2013** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2006-06-**) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu (2006-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** SY06-10 **Remarks:** Difficult to transport
- 2014** **History:** < Kawachi, Masanobu **Locality:** East China Sea (2006-06-**) **Isolator:** Kawachi, Masanobu **Identified by:** Kawachi, Masanobu (2006-06-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** SY06-11 **Remarks:** Difficult to transport

Prorocentrum gracile Schütt

- 315** **History:** < KAGAWA **Locality:** Harima-nada/Japan **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** 80 **Remarks:** Difficult to transport

Prorocentrum lima (Ehrenberg) Dodge

- 617** **History:** < Murata, Michio **Locality:** Motobu/Okinawa/Japan (1993-06-06) **Isolator:** Kobayashi, Hidetaka **Identified by:** Fukuyo, Yasuo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Plant) **Characteristics:** Toxic **Other strain no.:** PL-03 **Remarks:** Toxic; Difficult to transport

Prorocentrum mexicanum Osorio-Tafall

- 618** **History:** < Murata, Michio **Locality:** Motobu/Okinawa/Japan (1993-06-06) **Isolator:** Kobayashi, Hidetaka **Identified by:** Fukuyo, Yasuo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Plant) **Other strain no.:** PX-01 **Remarks:** Difficult to transport
- 1967** **History:** < TKB **Locality:** Motobu/Okinawa/Japan (2005-01-22) **Isolator:** Yamaguchi, Haruyo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** IMK; 20°C; 20 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-328 **Remarks:** Difficult to transport

Prorocentrum micans Ehrenberg

- 12** **History:** < Yamochi, Susumu **Locality:** Osaka Bay/Osaka/Japan (1981-07-**) **Isolator:** Yamochi, Susumu **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Gene data:** *coxI* (AB000133); *coxI* (AB000134); *psbA* (AB025585) **Other strain no.:** OPm **References:** 128, 239, 240, 539, 934, 1004, 1119 **Remarks:** Difficult to transport
- 218** **History:** < KAGAWA **Locality:** Yashima Bay/Kagawa/Japan (1978-08-05) **Isolator:** Yuki, Katsuhisa **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-13-7 **Remarks:** Difficult to transport
- 316** **History:** < Sawaguchi, Tomohiro **Locality:** Matoya Bay/Mie/Japan (1984-09-01) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** MB-D-4 **Remarks:** Difficult to transport
- 601** **History:** < Honjo, Tsuneo **Locality:** Mikawa Bay/Aichi/Japan **Isolator:** Toriumi, Saburo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Remarks:** Difficult to transport
- 608** **History:** < Iwasaki, Hideo **Locality:** Ise Bay/Mie/Japan (1978-06-**) **Isolator:** Iwasaki, Hideo **Identified by:** Steidnger, K. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport

1406 **History:** < TKB **Locality:** Saroma/Hokkaido/Japan (2003-10-**) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-138 (TC01) **Remarks:** Difficult to transport

Prorocentrum minimum (Pavillard) Schiller

237 **History:** < Watanabe, Makoto M. **Locality:** Osaka Bay/Osaka/Japan (1982-08-03) **Isolator:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** OPmin **Reference:** 103 **Remarks:** Difficult to transport

238 **History:** < KAGAWA **Locality:** Harima-Nada/Japan (1983-04-22) **Isolator:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-14-2-5 **Remarks:** Unstable; Difficult to transport

PROTCERATIUM : Dinophyceae

Protoceratium reticulatum (Claparède et Lachmann) Butschli

319 **History:** < KAGAWA **Locality:** Naoshima Isl./Kagawa/Japan (1982-07-30) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-62 **Reference:** 1004 **Remarks:** Difficult to transport

PROTODESMUS : Chlorophyceae

Protodesmus globulifer Nakahara, Tsubota et Handa

1703 **History:** < Nakanara, Miho **Locality:** Higashihiroshima/Hiroshima/Japan (1997-03-**) **Identified by:** Nakahara, Miho (2004-11-**) **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Brackish (*Paramecium* in a reservoir) **Characteristics:** Symbiotic; Authentic strain **Gene data:** 18S rRNA (AB212094) **Other strain no.:** HP1-13-26

PROTOTHECA : Trebouxiophyceae

Prototheca portoricensis Cifferi, Ashford et Dalmau var. *ciferrii* (Negroni et Blaistin) Cifferi, Ashford et Dalmau

2182 **History:** < IAM (2007) < IFO < JCM **Other collection strain no.:** IAM C-177; IFO 6994; JCM 9346 **Formerly identified as:** *Prototheca cifferii* Negroni et Blaisten **States:** Unialgal; Clonal; Axenic **Culture conditions:** Tre (agar); 20°C; 8-15 µmol/m²/s; 3 M

PRYMNESIUM : Prymnesiophyceae

Prymnesium calathiferum Chang et Ryan

1330 **History:** < TKB **Locality:** Awase/Okinawa/Japan (2003-05-**) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mIMR; MNK; 20°C; 22-32 µmol/m²/s; 14 D **Habitat:** Marine (Sand) **Characteristics:** Benthic **Other strain no.:** TKB-062 (ym-07)

Prymnesium parvum Carter

1017 **History:** < Moriya, Mayumi **Locality:** Jogashima/Kanagawa/Japan (1997-04-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** #22 **Reference:** 127

1018 **History:** < Moriya, Mayumi **Locality:** Hirara, Shimajiri/Okinawa/Japan (2002-03-17) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 15-22 µmol/m²/s; 1 M **Habitat:** Brackish (Water) **Other strain no.:** M-25

1812 **History:** < TKB **Locality:** Yufu Isl./Okinawa/Japan (2004-12-24) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Salt water **Other strain no.:** TKB-251

2350 History: < Kawachi, Masanobu **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2003-01-15) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 22°C; 10-18 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Characteristics:** Toxic; Epiphytic **Other strain no.:** MH 54 **Remarks:** Toxic

Prymnesium sp.

1397 History: < TKB **Locality:** Ishigaki Harbor/Okinawa/Japan (2003-12-25) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-084 (nrc060)

PSEUDANABAENA : Cyanophyceae

Pseudanabaena galeata Böcher

512 History: < Yamada, Naoki **Locality:** Nagoya Castle/Aichi/Japan (1981-11-01) **Isolator:** Yamada, Naoki **Identified by:** Yamada, Naoki; Homma, Takamitsu (Reidentify) **Formerly identified as:** *Phormidium tenue* (C. Agardh ex Gomont) Anagnostidis et Komárek **States:** Unialgal; Non-clonal; Axenic **Culture conditions:** CT; 20°C; 4-10 µmol/m²/s; 20 D (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Offensive taste and odor **Gene data:** 16S rRNA (AB042838) **Other strain no.:** PM-81A **References:** 202, 244, 428, 429, 515, 560, 564, 719, 720, 1090, 1091, 1141 **Remarks:** Cryopreserved

Pseudanabaena sp.

611 Locality: Lake Biwa/Shiga/Japan **Identified by:** Watanabe, Makoto M.; Homma, Takamitsu (Reidentify) **Formerly identified as:** *Phormidium tenue* (C. Agardh ex Gomont) Anagnostidis et Komárek **Culture conditions:** CT; 25°C; 100-120 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AB042842) **Other strain no.:** Bpt **Remarks:** Cryopreserved

PSEUDOCARTERIA : Chlorophyceae

Pseudocarteria mucosa (Korshikov) Ettl

522 History: < Suda, Shoichiro **Locality:** Izumi/Miyagi/Japan (1985-08-02) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Gene data:** *atpB* (AB084324); *psaB* (AB084364); *rbcL* (AB084335) **Other strain no.:** M-2 **References:** 515, 668, 891

523 History: < Suda, Shoichiro **Locality:** Higashiyata River/Ibaraki/Japan (1983-07-02) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Homothallic **Other strain no.:** USI-8 **References:** 515, 888, 891

524 History: < Suda, Shoichiro **Locality:** Izumi/Miyagi/Japan (1985-08-02) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** M-4 **References:** 515, 891

PSEUDOCHATTONELLA : Dictyochophyceae

Pseudochattonella verruculosa (Hara et Chihara) Tanabe-Hosoi, Honda, Fukaya, Inagaki et Sako

Syn. *Chattonella verruculosa* Hara et Chihara; *Verrucophora verruculosa* (Hara et Chihara) Eikrem

670 History: < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Harima-nada/Japan (1987-07-16) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Gene data:** 18S rRNA (AB217629) **References:** 34, 134, 199, 224 **Remarks:** Difficult to transport

850 History: < Sawaguchi, Tomohiro **Locality:** Shodo Isl./Kagawa/Japan (1989-01-**) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Hara, Yoshiaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; ESM; 15°C; 15-22 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Remarks:** Difficult to transport

PSEUDOKIRCHNERIELLA : Chlorophyceae*Pseudokirchneriella subcapitata* (Korshikov) Hindák

Syn. *Ankistrodesmus subcapitata* Korshikov; *Kirchneriella subcapitata* Korshikov; *Raphidocelis subcapitata* (Korshikov) Nygaard

- 35** **History:** < Yagi, Osami **Locality:** Nitelva River/Norway **Isolator:** Skulberg, O. M. **Formerly identified as:** *Selenastrum capricornutum* (Printz) Nygaard **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Characteristics:** AGP **Other strain no.:** P-26 **References:** 154, 201, 320, 321, 328, 333, 348, 409, 515, 559, 564, 567, 613, 618, 724, 735, 894, 930, 983, 1085, 1086, 1088, 1099, 1109 **Remarks:** Cryopreserved

PSEUDONITZSCHIA : Bacillariophyceae*Pseudonitzschia* sp.

- 1383** **History:** < TKB **Locality:** Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; mIMR; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-101 (ym-09)

PSEUDOPEDINELLA : Dictyochophyceae*Pseudopedinella pyriformis* Carter

- 1381** **History:** < TKB **Locality:** Edogawa-ku/Tokyo/Japan (2004-10-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-191 (nak80)

- 1810** **History:** < TKB **Locality:** East China Sea/Japan (2004-07-28) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2005-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-221

PSEUDOPLEUROCOCCUS : Chlorophyceae*Pseudopleurococcus printzii* Vischer var. *longissimus* S. Watanabe

- 159** **History:** < Watanabe, Shin **Locality:** Kyoto/Japan (1975-03-07) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Bark) **Characteristics:** Isolated from the bark of *Ulmus parviflora*; Authentic strain **Other strain no.:** KUC6-2 **References:** 515, 1073 **Remarks:** Cryopreserved

PSEUDOSCOURFIELDIA : Prasinophyceae*Pseudoscourfieldia marina* (Thronsen) Manton

- 1419** **History:** < TKB **Locality:** East China Sea/Japan (2004-07-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-144 (nak33)

- 1420** **History:** < TKB **Locality:** Motobu, Sesoko/Okinawa/Japan (2004-11-08) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-212 (nak99)

PSEUDOTREBOUXIA : Trebouxiophyceae*Pseudotrebouxia corticola* Archibald

- 2183** **History:** < IAM (2007) < BIU (UTEX; 1965) **Other collection strain no.:** IAM C-194; ASIB IB326; UTEX 909 **Isolator:** Ahmadjian, V. **Identified by:** Ahmadjian, V. **Formerly identified as:** *Trebouxia arboricola* Puymaly **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Reference:** 17

PTEROMONAS : Chlorophyceae**Pteromonas aculeata** Lemmermann

- 738** **History:** < Nozaki, Hisayoshi **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan (1996-10-17) **Isolator:** Tanaka, Shin-ichiro **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** 970603-PtAcl **Reference:** 955
- 860** **History:** < Nozaki, Hisayoshi **Locality:** Darstein/Germany (1997-07-31) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Ditch water) **Other strain no.:** 970801-2

Pteromonas angulosa (Carter) Lemmermann

- 739** **History:** < Nozaki, Hisayoshi **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan (1996-11-13) **Isolator:** Tanaka, Shin-ichiro **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** 970603-PtAng **Reference:** 955
- 861** **History:** < Nozaki, Hisayoshi **Locality:** Germany **Identified by:** Knieritz, L. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Gene data:** *atpB* (AB014038); *psaB* (B084371); *psaB* (B084372); *rbcL* (AJ001887) **Other strain no.:** KR 91/2 **References:** 172, 666, 668
- 862** **History:** < Nozaki, Hisayoshi **Locality:** Germany **Identified by:** Krienitz, L. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Gene data:** *rbcL* (AJ001888) **Other strain no.:** KR 91/3 **Reference:** 172

Pteromonas multipyrenoidea Iyenger

- 740** **History:** < Nozaki, Hisayoshi **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan (1996-11-13) **Isolator:** Tanaka, Shin-ichiro **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 15-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** 970603-PtMul **Reference:** 955

PTEROSPERMA : Prasinophyceae**Pterosperma cristatum** Schiller

- 221** **History:** < Suda, Shoichiro **Locality:** Harima-Nada/Japan (1983-02-**) **Isolator:** Suda, Shoichiro **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Red tide **Other strain no.:** H-88-1 **References:** 443, 1004 **Remarks:** Difficult to transport
- 626** **History:** < Sawaguchi, Tomohiro **Locality:** Seto Inland Sea/Kagawa/Japan (1989-02-14) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 $\mu\text{mol}/\text{m}^2/\text{s}$; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** 89KGW-1 **Remarks:** Difficult to transport
- 936** **History:** < Yoshii, Yukie **Locality:** Oku-Matsushima/Miyagi/Japan (1998-03-**) **Isolator:** Yoshii, Yukie **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** Pt **Reference:** 358 **Remarks:** Difficult to transport

PYRAMIMONAS : Prasinophyceae**Pyramimonas** aff. *amylifera* Conrad

- 251** **History:** < KAGAWA **Locality:** Yashima Bay/Kagawa/Japan (1982-10-14) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; ESM; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine **Characteristics:** Red tide **Other strain no.:** KGW-64-3 **References:** 123, 1004
- 320** **History:** < Suda, Shoichiro **Locality:** Onagawa Bay/Miyagi/Japan (1984-08-28) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 20°C; 32-40 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Other strain no.:** 8280G47-5

Pyramimonas cordata McFadden

- 1421** **History:** < TKB **Locality:** Chiba Harbor/Chiba/Japan (2004-07-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-130 (nak24)

1422 **History:** < TKB **Locality:** Amami Isl./Kagoshima/Japan (2004-10-14) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-203 (nak92)

1423 **History:** < TKB **Locality:** Takahama Canal/Tokyo/Japan (2004-12-03) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-218 (nak104)

Pyramimonas dissomata Butcher ex McFadden, Hill et Wetherbee

1819 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-03-30) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-226

Pyramimonas grossii Parke

1424 **History:** < TKB **Locality:** East China Sea/Japan (2004-07-31) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-141 (nak30)

1425 **History:** < TKB **Locality:** Amami Isl./Kagoshima/Japan (2004-10-14) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-202 (nak91)

1820 **History:** < TKB **Locality:** Onahama Harbor/Fukushima/Japan (2004-07-07) **Isolator:** Chikuni, Tomoko **Identified by:** Chikuni, Tomoko (2005-**-**) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-248

Pyramimonas parkeae Norris et Pearson

254 **History:** < Suda, Shoichiro **Locality:** Hachijo Isl./Tokyo/Japan (1984-04-17) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Water) **Characteristics:** Red tide **Other strain no.:** 8-25-2 **References:** 123, 362, 396, 398, 805

Pyramimonas propulsa Moestrup et Hill

1821 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2005-03-30) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-223

1822 **History:** < TKB **Locality:** Kanegahama/Miyazaki/Japan (2005-02-12) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Sand) **Other strain no.:** TKB-246

1823 **History:** < TKB **Locality:** Kesenuma Harbor/Miyagi/Japan (2005-08-30) **Isolator:** Chikuni, Tomoko **Identified by:** Nakayama, Takeshi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-250

Pyramimonas sp.

1426 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2003-11-**) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-086 (nrc062)

1427 **History:** < TKB **Locality:** East China Sea/Japan (2004-07-28) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-143 (nak32)

1428 **History:** < TKB **Locality:** Tokyo Bay/Japan **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Other strain no.:** TKB-104 (CH03A)

PYROCYSTIS : Dinophyceae**Pyrocystis lunura** (Schütt) Schütt

609 **History:** < Nakamura, Hideshi **Locality:** Japan **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine **Remarks:** Difficult to transport

RAPHIDIOPSIS : Cyanophyceae**Raphidiopsis curvata** F. E. Fritsch et F. Rich

932 **History:** < Otsuka, Shigeto **Locality:** Shinobazu-no-ike Pond/Tokyo/Japan (2000-07-04) **Isolator:** Otsuka, Shigeto **Identified by:** Otsuka, Shigeto **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CT; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** RAP1 **Reference:** 124

Raphidiopsis sp.

1729 **History:** < Li, Renhui **Locality:** Shinobazu-no-ike Pond, Ueno Park/Tokyo/Japan (1998-10-**) **Isolator:** Li, Renhui **Identified by:** Li, Renhui (1998-10-**) **States:** Unialgal **Culture conditions:** MG; 20°C; 12-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko); Resting spore forming **Other strain no.:** Rap J1

RAPHIDONEMA : Trebouxiophyceae**Raphidonema nivale** Lagerheim

2290 **History:** < IAM (2007) < Holm-Hansen, O. **Other collection strain no.:** IAM C-166 **Locality:** Wright Dry Valley/Antarctica **Isolator:** Holm-Hansen, O. **Identified by:** Confirmed at NIES by DNA sequencing **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** (Sand) **Gene data:** 18S rRNA (AB488604) **Other strain no.:** Holm-Hansen W-35

RHIZOCHROMULINA : Dictyochophyceae**Rhizochromulina** sp.

1382 **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2002-09-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** ESM (agar); 20°C; 40-50 µmol/m²/s; 6 M **Habitat:** Marine (Seawater) **Characteristics:** Benthic **Other strain no.:** TKB-042 (nrc029)

RHODELLA : Rhodellophyceae**Rhodella** sp.

1036 **History:** < Hatakeyama, Noriko **Locality:** Iriomote Isl./Okinawa/Japan (1990-10-16) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama-Ishida, Noriko **Culture conditions:** ESM; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Brackish (Water) **Reference:** 127 **Remarks:** Cryopreserved

1037 **History:** < Hatakeyama, Noriko **Locality:** Iriomote Isl./Okinawa/Japan (1990-10-16) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama-Ishida, Noriko **Culture conditions:** ESM; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Brackish (Water) **Remarks:** Cryopreserved

1972 **History:** < Sato, Mayumi **Locality:** Ishigaki Isl., Urasoko Bay/Okinawa/Japan (2004-02-19) **Isolator:** Sato, Mayumi **Identified by:** Yokoyama, Akiko (2007-02-20) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** M-182

RHODOMONAS : Cryptophyceae**Rhodomonas atrorosea** Butcher ex Hill et Wetherbee

Syn. *Chroomonas atrorosea* Butcher

699 **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 978/6a **Locality:** Isle of Wight/U.K. **Identified by:** Butcher, R. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB240957) **Other strain no.:** M07 **References:** 74, 127

Rhodomonas baltica KarstenSyn. *Cryptomonas pseudobaltica* Butcher

- 700** **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 979/9 **Locality:** Channel Isls./U.K. (1961-**-**) **Identified by:** Butcher, R. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB241128) **Other strain no.:** M06 **Reference:** 74

Rhodomonas chrysoidea Butcher ex Hill et WetherbeeSyn. *Cryptomonas chrysoidea* Butcher

- 701** **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 979/8 **Locality:** River Colne/Essex/U.K. (1953-**-**) **Identified by:** Butcher, R. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Brackish **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB240958); Nuclear actin-1 (AB126020); Nuclear actin-2 (AB126021); Nucleomorph actin (AB126026) **Other strain no.:** M03 **Reference:** 74

Rhodomonas duplex Hill et Wetherbee

- 765** **History:** < Erata, Mayumi **Locality:** Yaga/Okinawa/Japan (1986-**-**) **Isolator:** Inouye, Isao **Identified by:** Erata, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Gene data:** 18S rRNA (AB240960); Nuclear actin (AB126022); Nucleomorph actin (AB126027) **Other strain no.:** M14

Rhodomonas falcata Butcher ex Hill et WetherbeeSyn. *Chroomonas falcata* Butcher

- 702** **History:** < Erata, Mayumi < Hara, Yoshiaki < CCAP **Other collection strain no.:** CCAP 978/5a **Locality:** Aberystwyth/Wales/U.K. (1956-**-**) **Identified by:** Butcher, R. W. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB240959) **Other strain no.:** M10 **Reference:** 74

Rhodomonas salina (Wislouch) Hill et Wetherbee

- 1006** **History:** < Moriya, Mayumi **Locality:** Hirara, Shimajiri/Okinawa/Japan (2002-03-17) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** M-40
- 1375** **History:** < TKB **Locality:** Tokyo Bay/Kanagawa/Japan (2003-09-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + NH₄Cl; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-122 (AK-15)

Rhodomonas sp.

- 1005** **History:** < Moriya, Mayumi **Locality:** Shinjo Beach/Okinawa/Japan (2002-03-17) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **Formerly identified as:** *Rhodomonas chrysoidea* Butcher ex Hill et Wetherbee **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** M-23
- 1730** **History:** < Inouye, Isao < CCMP 768 **Other collection strain no.:** CCMP 768 **Locality:** North Island/New Zealand (1983-01-**) **Isolator:** Chang, F. **Identified by:** Hill, D. R. A. (1984-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Prey for *Kathablepharis* sp. (NIES-1731) **Gene data:** fbaC1 mRNA (partial) (AY699824) **Reference:** 78
- 2332** **History:** < Hatakeyama, Noriko **Locality:** Shizugawa Bay/Miyagi/Japan (1991-11-**) **Isolator:** Hatakeyama, Noriko **Identified by:** Hatakeyama, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; WESM; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Other strain no.:** Shiz-5

RIVULARIA : Cyanophyceae**Rivularia** sp.

- 2359** **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-261; TISTR 8248 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-6 µmol/m²/s; 3 M **Remarks:** Distribution for academic purpose only

ROYA : Charophyceae**Roya anglica** G. S. West

2291 History: < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-592 (= C-332); UTEX 934 **Locality:** North Carolina/U.S.A. **Isolator:** Fox, E. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 8-15 µmol/m²/s; 3 M **Characteristics:** Hydrogen evolution **Reference:** 35

RUBRATELLA : Foraminiferea**Rubratella** sp.

1445 History: < TKB **Locality:** Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator:** Yoshida, Masaki **Identified by:** Tsuchiya, Masashi (2006-**-**) **States:** Mixed; Clonal; Non-axenic **Culture conditions:** mIMR (*Pseudonitzschia* sp. NIES-1383 should be cultured in advance as a prey); 15°C; 10-18 µmol/m²/s; 2 M **Habitat:** Marine (Sand) **Characteristics:** Heterotrophic; Benthic **Other strain no.:** TKB-100 (ym-08)

RUSALKA : Chlorophyceae**Rusalka fusiformis** (Matvienko) Nakada

Syn. *Chlorogonium fusiforme* Matvienko

123 History: < IAM (1983) **Other collection strain no.:** IAM C-349 (= C-569) **Locality:** Lake Shinsen-numa/Hokkaido/Japan (1964-07-30) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu; Nozaki, Hisayoshi; Nakada, Takashi (Reidentify) **Formerly identified as:** *Chlorogonium metamorphum* Skuja (in IAM) **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 4-10 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater **Characteristics:** Homothallic; Authentic strain; Type specimen (NIES-50007, Epitype) **Gene data:** *atpB* (AB084329); *psaB* (AB084370); *rbcL* (AB010242) **Other strain no.:** MKF-14 **References:** 215, 515, 555, 642, 665, 668

SALPINGOECA : Choanoflagellata**Salpingoeca infusioformis** Kent

1442 History: < TKB **Locality:** Tokyo Bay/Kanagawa/Japan (2003-05-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** SUY 1/10 + Wheat; 15°C; 2 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic **Other strain no.:** TKB-117 (nak13)

SCENEDESMUS : Chlorophyceae**Scenedesmus acuminatus** (Lageraeim) Chodot var. *tetradesmoides* G. M. Smith

92 History: < Hiwatari, Takehiko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-26) **Isolator:** Hiwatari, Takehiko **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** K-S-1 **References:** 515, 1074 **Remarks:** Cryopreserved

Scenedesmus acutus Meyen

94 History: < Yuri, Akira **Locality:** Kosaka River/Akita/Japan (1983-04-19) **Isolator:** Yuri, Akira **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** 2-2-3-1 **References:** 515, 1074 **Remarks:** Cryopreserved

95 History: < Suda, Shoichiro **Locality:** Tsukuba/Ibaraki/Japan (1983-05-20) **Isolator:** Suda, Shoichiro **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** Aq-S-1 **References:** 189, 515, 1047 **Remarks:** Cryopreserved

120 History: < Suda, Shoichiro **Locality:** inside NIES/Ibaraki/Japan (1983-05-20) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** Aq-S-2 **References:** 515, 1047 **Remarks:** Cryopreserved

2269 History: < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-64 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

2270 **History:** < IAM (2007) < Tsuzuki, Mikio (1988) < Avramova, S. T. (1982) < Semenenko, V. (?) **Other collection strain no.:** IAM C-537 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Scenedesmus basiliensis Chodat

2271 **History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-65 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

2272 **History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-66 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Scenedesmus bijuga (Turpin) Lagerheim

2273 **History:** < IAM (2007) **Other collection strain no.:** IAM C-347 **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **References:** 565, 779

Scenedesmus chlorelloides Chodat

2274 **History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-67 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **References:** 565, 779

Scenedesmus coelastroides (Bohlin) Schmidle

2275 **History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-68 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Scenedesmus costulatus Chodat

2276 **History:** < IAM (2007) < Watanabe, Atsushi **Other collection strain no.:** IAM C-69 **Isolator:** Watanabe, Atsushi **Identified by:** Fukushima, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M

Scenedesmus dimorphus (Turpin) Kützing

93 **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-07-22) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F-18-1 **References:** 515, 1047

119 **History:** < Hiwatari, Takehiko **Locality:** Ozegahara/Gunma/Japan (1983-08-29) **Isolator:** Suda, Shoichiro **Identified by:** Hiwatari, Takehiko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** OZ-29 **Reference:** 515 **Remarks:** Cryopreserved

Scenedesmus obliquus (Turpin) Kützing

2279 **History:** < IAM (2007) < UTEX (1989-07-04) **Other collection strain no.:** IAM C-521 (= C-72); CCAP 276/6A; SAG 276-6; UTEX 393 **Isolator:** Gaffron, H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Gaffron D-3 **References:** 35, 565, 778, 779

2280 **History:** < IAM (2007) < Tsuzuki, Mikio (1988) < Oh-Hama, Takeshi < Senger, H. (1965) < Bishop, N. < Gaffron, H. **Other collection strain no.:** IAM C-538 **Isolator:** Gaffron, H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Other strain no.:** Gaffron D-3 **References:** 410, 510, 689, 690, 691, 692, 992

SCHIZOCLADIA : Schizocladiphyceae

Schizocladia ischiensis Henry, Okuda et Kawai

1044 **History:** < Kawai, Hiroshi **Locality:** Ischia Isl./Italy (1987-10-21) **Isolator:** Henry, Eric C. **Identified by:** Kawai, Hiroshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 4-10 µmol/m²/s; 3 M **Habitat:** Marine (Plant) **Characteristics:** Authentic strain **Gene data:** 18S rRNA (AB085614); *rbcL* (AB085615) **Other strain no.:** KU-333 **References:** 122, 347

SCHROEDERIA : Chlorophyceae

Schroederia setigera (Schröder) Lemmermann

246 **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-08-23) **Isolator:** Kasai, Fumie **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 25°C; 100-120 µmol/m²/s; 20 D **Habitat:** Freshwater (Lake water) **Other strain no.:** F47-3 **Reference:** 515

SCRIPPSIELLA : Dinophyceae*Scrippsiella* sp.

- 2016** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW26 **Remarks:** Difficult to transport
- 2017** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW27 **Remarks:** Difficult to transport
- 2018** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW29 **Remarks:** Difficult to transport
- 2019** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW30 **Remarks:** Difficult to transport
- 2020** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW31 **Remarks:** Difficult to transport
- 2021** **History:** < Noël, Mary-Hélène **Locality:** Kobe/Hyogo/Japan (2005-09-13) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW35 **Remarks:** Difficult to transport
- 2022** **History:** < Noël, Mary-Hélène **Locality:** Kobe/Hyogo/Japan (2005-09-13) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2006-01-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW36 **Remarks:** Difficult to transport

Scrippsiella sweeteneyae Balech

- 684** **History:** < KAGAWA < Yoshimatsu, Sadaaki **Locality:** Bisan-Seto/Japan (1982-07-30) **Isolator:** Yoshimatsu, Sadaaki **Identified by:** Yoshimatsu, Sadaaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide **Gene data:** 5.8S rRNA (AY499520) **Remarks:** Difficult to transport

Scrippsiella trochoidea (Stein) Loeblich III

- 369** **History:** < Sawaguchi, Tomohiro **Locality:** Hachinohe Harbor/Aomori/Japan (1985-08-26) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; Homothallic **Gene data:** 5.8S rRNA (AY499530); *coxI* (AB000135); *GapDH* (AB106702); *GapDH* (AB106703) **Other strain no.:** HHSS-1 **References:** 240, 539, 610, 931, 1119 **Remarks:** Unstable; Difficult to transport
- 2015** **History:** < Noël, Mary-Hélène **Locality:** Seto Inland Sea/Japan (2005-05-12) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène (2005-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 10-15 µmol/m²/s; 20 D **Habitat:** Marine (Sediment) **Other strain no.:** MHW28 **Remarks:** Difficult to transport

SCYTONEMA : Cyanophyceae*Scytonema javanicum* Bornet et Flahault

- 1956** **History:** < TAC **Locality:** Tsukuba Botanical Garden/Ibaraki/Japan **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **Culture conditions:** C (agar); 20°C; 4-6 µmol/m²/s; 1 M **Habitat:** Terrestrial (Greenhouse) **Other strain no.:** TAC 582

Scytonema sp.

- 2130** **History:** < IAM (2007) < Katoh, Hiroshi **Other collection strain no.:** IAM M-291 **Locality:** Himeji/Hyogo/Japan (2002-**-**) **Isolator:** Katoh, Hiroshi **Identified by:** Katoh, Hiroshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Terrestrial **Characteristics:** Drought tolerance **Other strain no.:** HK-06
- 2360** **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-262; TISTR 8209 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-6 µmol/m²/s; 3 M **Remarks:** Distribution for academic purpose only

SELLAPHORA : Bacillariophyceae*Sellaphora seminulum* (Grunow) D. G. MannSyn. *Navicula seminulum* Grunow

1353 **History:** < Mayama, Shigeki **Locality:** Taizoin Temple/Kyoto/Japan (2002-09-22) **Isolator:** Mayama, Shigeki **Identified by:** Mayama, Shigeki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi/5; 20°C; 15-27 µmol/m²/s; 2 M **Habitat:** Freshwater (Pool sediment) **Characteristics:** Epilithic

SKELETONEMA : Bacillariophyceae*Skeletonema marinoi-dohrnii* complex

16 **History:** < Watanabe, Makoto M. **Locality:** Harima-Nada/Japan (1982-02-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **Formerly identified as:** *Skeletonema costatum* (Greville) Cleve **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Red tide; DNA sequencing indicates this strain is included in *Skeletonema marinoi-dohrnii* clade **Gene data:** 18S rRNA (AB488607) **Other strain no.:** H-53-3 **References:** 372, 758, 827, 920

17 **History:** < Watanabe, Makoto M. **Locality:** Harima-Nada/Japan (1983-02-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **Formerly identified as:** *Skeletonema costatum* (Greville) Cleve **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 1 M **Habitat:** Marine (Sediment) **Characteristics:** Red tide; DNA sequencing indicates this strain is included in *Skeletonema marinoi-dohrnii* clade **Gene data:** 18S rRNA (AB488608) **Other strain no.:** H-90-2 **Reference:** 524

223 **History:** < KAGAWA **Locality:** Shodo Isl./Kagawa/Japan (1979-07-12) **Isolator:** Yuki, Katsuhisa **Formerly identified as:** *Skeletonema costatum* (Greville) Cleve **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 1 M **Habitat:** Marine **Characteristics:** Red tide; DNA sequencing indicates this strain is included in *Skeletonema marinoi-dohrnii* clade **Gene data:** 18S rRNA (AB488609) **Other strain no.:** KGW-26

323 **History:** < Osaka Pref. Fish. Exp. St. **Locality:** Osaka Bay/Osaka/Japan (1985-01-21) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **Formerly identified as:** *Skeletonema costatum* (Greville) Cleve **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; DNA sequencing indicates this strain is included in *Skeletonema marinoi-dohrnii* clade **Gene data:** 18S rRNA (AB488610); *psbC*, D, *petB*, D, etc. (AJ132263); *psaC*, *psbA*, etc. (AJ132264); *trnD*, I, T, etc. (AJ132265); *petG*, *psbK*, D, *psaI*, etc. (AJ132266); *ycf24* (partial) (AJ132267) **Other strain no.:** Sk-85w **References:** 103, 122, 263, 398, 914

324 **History:** < Osaka Pref. Fish. Exp. St. **Locality:** Osaka Bay/Hyogo/Japan (1985-07-02) **Isolator:** Yamochi, Susumu **Identified by:** Yamochi, Susumu **Formerly identified as:** *Skeletonema costatum* (Greville) Cleve **States:** Unialgal; Clonal; Axenic **Culture conditions:** f/2; 10°C; 6-12 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Red tide; DNA sequencing indicates this strain is included in *Skeletonema marinoi-dohrnii* clade **Gene data:** 18S rRNA (AB488611) **Other strain no.:** Sk-85su **References:** 103, 550, 725

SPHAEROSOMA : Charophyceae*Sphaerosoma* sp.

2306 **History:** < Suda, Shoichiro **Locality:** Lake Ozenuma/Fukushima/Japan (1983-08-30) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CA; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** OZ-N-1-12

SPINOCLOSTERIUM : Charophyceae*Spinoclosterium cuspidatum* (Bailey ex Ralfs) Hirano

325 **History:** < Ichimura, Terunobu **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SW; 20°C; 8-15 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** 83-24-19 **Reference:** 218

SPIRULINA : Cyanophyceae**Spirulina platensis** (Gomont) GeitlerSyn. *Arthrospira platensis* Gomont

- 39** **History:** < IAM (1983) **Other collection strain no.:** IAM M-135 (= M-222) **Locality:** Lake Chad/Chad **States:** Unialgal; Clonal; Axenic **Culture conditions:** SOT; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 60-70 µmol/m²/s) **Habitat:** Salt water **Characteristics:** Hydrogen evolution; Contains good quality of proteins **Gene data:** 16S rRNA (AB074508); *gyrB* (AB074765); *rpoC1* (AB074788); *rpoD1* (AB074815) **References:** 19, 126, 179, 215, 427, 437, 477, 515, 693, 694, 848, 905, 970, 1022, 1035, 1039, 1047
- 45** **History:** < IAM (1983) **Other collection strain no.:** IAM M-184 **Locality:** Lake Kasumigaura/Ibaraki/Japan (1975-11-**) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** KAS-6-50 **References:** 175, 215, 515, 905, 1035, 1039, 1047, 1074, 1097
- 46** **History:** < IAM (1983) **Other collection strain no.:** IAM M-185 **Locality:** Lake Texcoco/Mexico **States:** Unialgal; Clonal; Axenic **Culture conditions:** SOT; 20°C; 4-10 µmol/m²/s; 4 M (25°C; 60-70 µmol/m²/s) **Habitat:** Salt water **Characteristics:** Cyanobacterial water bloom (aoko); Hydrogen evolution **References:** 16, 19, 25, 26, 124, 215, 427, 515, 905, 1035, 1039, 1047
- 597** **History:** < Hagiwara, Tomiji **Locality:** Lake Teganuma/Chiba/Japan (1990-07-24) **Isolator:** Hagiwara, Tomiji **Identified by:** Hagiwara, Tomiji **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MA; 20°C; 60-70 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Cyanobacterial water bloom (aoko) **Other strain no.:** T-43 **References:** 124, 515

Spirulina subsalsa Oersted ex Gomont

- 27** **History:** < IAM (1983) **Other collection strain no.:** IAM M-183 (= M-223) **States:** Unialgal; Clonal; Axenic **Culture conditions:** MA; 25°C; 20-30 µmol/m²/s; 1 M **Gene data:** 16S rRNA (AB003166) **References:** 196, 215, 256, 257, 258, 435, 515, 1074
- 527** **History:** < IAM (1983) **Other collection strain no.:** IAM M-182 **Locality:** Hokkaido/Japan (1976-04-**) **Isolator:** Watanabe, Makoto M.; Ichimura, Terunobu **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 25°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine **References:** 215, 515
- 598** **History:** < Hagiwara, Tomiji **Locality:** Chiyoda-ku/Tokyo/Japan (1989-10-02) **Isolator:** Hagiwara, Tomiji **Identified by:** Hagiwara, Tomiji **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** CB; CT; CSI; 20°C; 8-15 µmol/m²/s; 2 M (25°C; 60-70 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Other strain no.:** KO-39 **References:** 124, 515

SPUMELLA : Chrysophyceae**Spumella** sp.

- 1846** **History:** < TKB **Locality:** Tsukuba, Namiki/Ibaraki/Japan (2002-09-11) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** URO + Wheat; 15°C; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Phagotrophic **Other strain no.:** TKB-010 (NY0108)

STAUSTRUM : Charophyceae**Staurastrum dorcidentiferum** W. et G. S. West

- 665** **History:** < Ishida, Yuzaburo **Locality:** Lake Biwa/Shiga/Japan (1986-09-**) **Isolator:** Ohara, S. **Identified by:** Nakanishi, Masami **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 25°C; 100-120 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** NB **Reference:** 515

Staurastrum inconspicuum Nordstedt

- 390** **History:** < Kasai, Fumie **Locality:** Ozegahara/Gunma/Japan (1983-08-29) **Isolator:** Kasai, Fumie **States:** Unialgal; Clonal; Axenic **Culture conditions:** CAM; 20°C; 8-15 µmol/m²/s; 3 M (20°C; 15-27 µmol/m²/s) **Habitat:** Freshwater (Bog water) **Other strain no.:** 34-10' **Reference:** 515

Staurastrum levanderi Grönblad

- 841** **History:** < Gontcharov, A. **Locality:** Namiki-ike Pond/Ibaraki/Japan (1998-07-24) **Isolator:** Gontcharov, A. **Identified by:** Gontcharov, A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Reference:** 114

Staurastrum paradoxum Meyen

- 528 **History:** < Watanabe, Michiko H. **Locality:** Lake Kasumigaura/Ibaraki/Japan (1982-12-**) **Isolator:** Watanabe, Michiko H. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 2 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** Kas-K-3 **Reference:** 515

Staurastrum tsukubicum Gontcharov et M. M. Watanabe

- 842 **History:** < Gontcharov, A. **Locality:** Tsukuba/Ibaraki/Japan (1997-12-07) **Isolator:** Gontcharov, A. **Identified by:** Gontcharov, A. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** (Freshwater) **Characteristics:** Authentic strain **Reference:** 114

STAURODESMUS : Charophyceae*Staurodesmus dejectum* (Brébisson ex Ralfs) Teiling

Syn. *Staurastrum dejectum* Brébisson ex Ralfs

- 224 **History:** < TAC **Locality:** Lake Yamanaka/Yamanashi/Japan (1981-10-26) **Isolator:** Watanabe, Masayuki **Identified by:** Watanabe, Masayuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 8-15 µmol/m²/s; 2 M (20°C; 22-32 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** TAC 53-1 (TAN-53-1) **Reference:** 515

STICHOCOCCUS : Trebouxiophyceae*Stichococcus ampulliformis* S. Handa

- 996 **History:** < Handa, Shinji **Locality:** Taishakukyo Valley/Hiroshima/Japan (1987-12-13) **Isolator:** Handa, Shinji **Identified by:** Handa, Shinji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Bark) **Characteristics:** Epiphytic; Authentic strain **Gene data:** 18S rRNA (AB087559) **Other strain no.:** Handa-299(f) **Reference:** 131 **Remarks:** Cryopreserved

Stichococcus bacillaris Nägeli

- 529 **History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 3 M **Habitat:** Freshwater (River water) **Gene data:** 18S rRNA (AB488606) **Other strain no.:** AT2-16 **References:** 515, 917 **Remarks:** Cryopreserved
- 530 **History:** < Kasai, Fumie **Locality:** Watarase River/Gunma/Japan (1987-08-15) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie; Confirmed at NIES by DNA sequencing **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 3 M **Habitat:** Freshwater (River water) **Gene data:** 18S rRNA (AB488605) **Other strain no.:** AT5-17 **References:** 515, 917, 918 **Remarks:** Cryopreserved
- 2184 **History:** < IAM (2007) < Holm-Hansen, O. **Other collection strain no.:** IAM C-170 **Locality:** Marble Point/Antarctica **Isolator:** Holm-Hansen, O. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **Other strain no.:** Holm-Hansen M-13-d

STIGEOCLONIUM : Chlorophyceae*Stigeoclonium aestivale* (Hazen) Collins

- 531 **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-03-25) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater (River water) **Other strain no.:** 2st-3-12 **References:** 515, 916, 917

Stigeoclonium fasciculare Kützing var. *fasciculare*

- 532 **History:** < Kasai, Fumie **Locality:** Lake Mashu/Hokkaido/Japan (1987-08-**) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 10°C; 6-12 µmol/m²/s; 3 M (10°C; 10-15 µmol/m²/s) **Habitat:** Freshwater **Other strain no.:** M-2 **References:** 515, 917

Stigeoclonium sp.

- 454** **History:** < Kasai, Fumie **Locality:** Shirai River/Hokkaido/Japan (1987-10-**) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **Formerly identified as:** *Draparnaldia plumosa* (Vaucher) Agardh **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 10°C; 6-12 µmol/m²/s; 3 M (10°C; 10-15 µmol/m²/s) **Habitat:** Freshwater (River water) **Other strain no.:** 2Tst-2-1 **References:** 515, 917

STIGONEMA : Cyanophyceae*Stigonema hormoides* (Kützing) Bornet et FlahaultSyn. *Scytonema hormoides* Kützing

- 2361** **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-268; TISTR 8251 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); N-Free (agar); 20°C; 4-6 µmol/m²/s; 3 M **Remarks:** Distribution for academic purpose only

Stigonema ocellatum (Dillwyn) Thuret ex Bornet et Flahault

- 2131** **History:** < IAM (2007) < SAG **Other collection strain no.:** IAM M-252; SAG D48.90 **Locality:** Allgäu/Germany (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 13-18 µmol/m²/s; 3 M **Habitat:** Freshwater **Other strain no.:** A. Zehnder 232

SYMPLOCA : Cyanophyceae*Symploca muscorum* (Agardh) Gomont

- 2132** **History:** < IAM (2007) **Other collection strain no.:** IAM M-133 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 13-18 µmol/m²/s; 3 M

SYNECHOCOCCUS : Cyanophyceae*Synechococcus* sp.

- 937** **History:** < Takamura, Noriko **Locality:** Lake Junsainuma/Hokkaido/Japan (1991-06-20) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223433) **Other strain no.:** JUS 1 **Reference:** 773 **Remarks:** Cryopreserved
- 938** **History:** < Takamura, Noriko **Locality:** Lake Harutori/Hokkaido/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Euryhaline **Gene data:** *cpcBA*-IGS (AF223434) **Other strain no.:** HAR 3 **Reference:** 773 **Remarks:** Cryopreserved
- 939** **History:** < Takamura, Noriko **Locality:** Lake Harutori/Hokkaido/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Euryhaline **Gene data:** *cpcBA*-IGS (AF223438) **Other strain no.:** HAR 10 **Reference:** 773 **Remarks:** Cryopreserved
- 940** **History:** < Takamura, Noriko **Locality:** Lake Harutori/Hokkaido/Japan (1991-05-29) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223452) **Other strain no.:** HIM 1 **Reference:** 773 **Remarks:** Cryopreserved
- 941** **History:** < Takamura, Noriko **Locality:** Lake Teganuma/Chiba/Japan (1991-06-04) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223439) **Other strain no.:** TEG 1 **Reference:** 773 **Remarks:** Cryopreserved
- 942** **History:** < Takamura, Noriko **Locality:** Lake Ushikunuma/Ibaraki/Japan (1991-06-04) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223440) **Other strain no.:** USK 1 **Reference:** 773 **Remarks:** Cryopreserved
- 943** **History:** < Takamura, Noriko **Locality:** Lake Kojima/Okayama/Japan (1991-07-09) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223441) **Other strain no.:** KOJ 1 **Reference:** 773 **Remarks:** Cryopreserved

- 944 **History:** < Takamura, Noriko **Locality:** Lake Abashiri/Hokkaido/Japan (1991-05-10) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Brackish (Water) **Gene data:** *cpcBA*-IGS (AF223453) **Other strain no.:** ABS 10 **Reference:** 773 **Remarks:** Cryopreserved
- 945 **History:** < Takamura, Noriko **Locality:** Lake Biwa, North Basin/Shiga/Japan (1990-09-12) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AF216951); *cpcBA*-IGS (AF223428) **Other strain no.:** B 1 **Reference:** 773 **Remarks:** Cryopreserved
- 946 **History:** < Takamura, Noriko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-02-06) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223443) **Other strain no.:** 2K 11 **Reference:** 773 **Remarks:** Cryopreserved
- 947 **History:** < Takamura, Noriko **Locality:** Lake Sagami/Kanagawa/Japan (1991-04-11) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223444) **Other strain no.:** SA 1 **Reference:** 773 **Remarks:** Cryopreserved
- 948 **History:** < Takamura, Noriko **Locality:** Lake Abashiri/Hokkaido/Japan (1991-05-10) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Brackish (Water) **Gene data:** *cpcBA*-IGS (AF223454) **Other strain no.:** ABS 11 **Reference:** 773 **Remarks:** Cryopreserved
- 949 **History:** < Takamura, Noriko **Locality:** Lake Ushikunuma/Ibaraki/Japan (1991-06-04) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** CB; 15°C; 15-22 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223455) **Other strain no.:** USK 2 **Reference:** 773 **Remarks:** Cryopreserved
- 950 **History:** < Takamura, Noriko **Locality:** Lough Neagh/North Ireland/U.K. (1991-03-09) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223448) **Other strain no.:** LN 3 **Reference:** 773 **Remarks:** Cryopreserved
- 951 **History:** < Takamura, Noriko **Locality:** Lake Akan/Hokkaido/Japan (1991-05-14) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** AKN 3 **Reference:** 773 **Remarks:** Cryopreserved
- 952 **History:** < Takamura, Noriko **Locality:** Lake Kizaki/Nagano/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** CB; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223449) **Other strain no.:** KIZ 5/3 **Reference:** 773 **Remarks:** Cryopreserved
- 953 **History:** < Takamura, Noriko **Locality:** Lake Biwa, North Basin/Shiga/Japan (1990-09-12) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AF216953); *cpcBA*-IGS (AF223430) **Other strain no.:** B 10 **Reference:** 773 **Remarks:** Cryopreserved
- 954 **History:** < Takamura, Noriko **Locality:** Lake Biwa, North Basin/Shiga/Japan (1990-09-12) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** *cpcBA*-IGS (AF223456) **Other strain no.:** B 8 **Reference:** 773 **Remarks:** Cryopreserved
- 955 **History:** < Takamura, Noriko **Locality:** Lake Kizaki/Nagano/Japan (1991-04-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223445) **Other strain no.:** KIZ 5/1 **References:** 358, 359, 773 **Remarks:** Cryopreserved
- 956 **History:** < Takamura, Noriko **Locality:** Lake Nojiri/Nagano/Japan (1991-05-09) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** CT; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** *cpcBA*-IGS (AF223450) **Other strain no.:** NOJ 1 **Reference:** 773 **Remarks:** Cryopreserved
- 957 **History:** < Takamura, Noriko **Locality:** Lake Biwa, North Basin/Shiga/Japan (1991-06-14) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AF216954); *cpcBA*-IGS (AF223431) **Other strain no.:** B 11 **Reference:** 773 **Remarks:** Cryopreserved
- 958 **History:** < Takamura, Noriko **Locality:** Lake Biwa, North Basin/Shiga/Japan (1990-09-12) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** *cpcBA*-IGS (AF223435) **Other strain no.:** B 4 **Reference:** 773 **Remarks:** Cryopreserved

- 959** **History:** < Takamura, Noriko **Locality:** Lake Biwa, North Basin/Shiga/Japan (1990-09-12) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **States:** Unialgal **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Cyanobacterial water bloom (aoko) **Gene data:** 16S rRNA (AF216955); *cpcBA*-IGS (AF223432) **Other strain no.:** B 3 **Reference:** 773 **Remarks:** Cryopreserved
- 960** **History:** < Takamura, Noriko **Locality:** Lake Tsukui/Kanagawa/Japan (1991-04-11) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223436) **Other strain no.:** TSU 3 **Reference:** 773 **Remarks:** Cryopreserved
- 961** **History:** < Takamura, Noriko **Locality:** Lake Kasumigaura/Ibaraki/Japan (1991-02-06) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223446) **Other strain no.:** 2K 12 **Reference:** 773 **Remarks:** Cryopreserved
- 962** **History:** < Takamura, Noriko **Locality:** Lake Ohnuma/Hokkaido/Japan (1991-06-20) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** CB; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223442) **Other strain no.:** ONM 3 **Reference:** 773 **Remarks:** Cryopreserved
- 963** **History:** < Takamura, Noriko **Locality:** Lake Nakatsuna/Nagano/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223447) **Other strain no.:** NT 5 **Reference:** 773 **Remarks:** Cryopreserved
- 964** **History:** < Takamura, Noriko **Locality:** Lake Megami/Nagano/Japan (1991-05-09) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223437) **Other strain no.:** Me 5 **Reference:** 773 **Remarks:** Cryopreserved
- 965** **History:** < Takamura, Noriko **Locality:** Lake Misuzu/Nagano/Japan (1991-05-15) **Isolator:** Takamura, Noriko **Identified by:** Takamura, Noriko **Culture conditions:** C; 15°C; 10-18 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *cpcBA*-IGS (AF223451) **Other strain no.:** MSZ 2 **Reference:** 773 **Remarks:** Cryopreserved
- 969** **History:** < Tezuka, Naoaki **Locality:** East China Sea (1998-06-01) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Gene data:** 16S rRNA (AF448060); *rpoC1* (AF448082) **Other strain no.:** 1002 **Remarks:** Cryopreserved
- 970** **History:** < Tezuka, Naoaki **Locality:** Tokunoshima Isl./Kagoshima (1998-08-28) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Tidal flat sand water) **Gene data:** 16S rRNA (AF448073) **Other strain no.:** T71 **Remarks:** Cryopreserved
- 971** **History:** < Tezuka, Naoaki **Locality:** Tokunoshima Isl./Kagoshima (1998-08-28) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Tidal flat sand water) **Characteristics:** Euryhaline **Gene data:** 16S rRNA (AF448061); *rpoC1* (AF448083) **Other strain no.:** T7cc1 **Remarks:** Cryopreserved
- 972** **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl./Okinawa/Japan (1998-11-05) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Tidal flat seawater) **Characteristics:** Euryhaline **Gene data:** 16S rRNA (AF448079); *rpoC1* (AF448117) **Other strain no.:** IR11 **Remarks:** Cryopreserved
- 973** **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Urauchi River/Okinawa/Japan (1998-11-05) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C + 10% Seawater; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Tidal flat sediment) **Gene data:** 16S rRNA (AF448062) **Other strain no.:** 48 **Remarks:** Cryopreserved
- 974** **History:** < Tezuka, Naoaki **Locality:** Irimomote Isl., Funaura/Okinawa/Japan (1998-11-06) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Gene data:** *rpoC1* (AF448101) **Other strain no.:** 58E8 **Remarks:** Cryopreserved
- 975** **History:** < Tezuka, Naoaki **Locality:** Irimomote Isl., Funaura/Okinawa/Japan (1998-11-06) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Gene data:** *rpoC1* (AF448099) **Other strain no.:** 58g6 **Remarks:** Cryopreserved
- 976** **History:** < Tezuka, Naoaki **Locality:** Irimomote Isl., Funaura/Okinawa/Japan (1998-11-06) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Marine (Seawater) **Gene data:** *rpoC1* (AF448100) **Other strain no.:** 59 **Remarks:** Cryopreserved

- 977 **History:** < Tezuka, Naoaki **Locality:** Taiyo/Ibaraki/Japan (1999-01-08) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** *rpoC1* (AF448105) **Other strain no.:** taiyo **Remarks:** Cryopreserved
- 978 **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Urauchi/Okinawa/Japan (1999-02-04) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C + 10% Seawater; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Characteristics:** Euryhaline **Gene data:** 16S rRNA (AF448063); *rpoC1* (AF448084) **Other strain no.:** UBR **Remarks:** Cryopreserved
- 979 **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Urauchi/Okinawa/Japan (1999-02-04) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Gene data:** 16S rRNA (AF448074); *rpoC1* (AF448109) **Other strain no.:** UH7 **Remarks:** Cryopreserved
- 980 **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Komi/Okinawa/Japan (1999-06-30) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Gene data:** *rpoC1* (AF448097) **Other strain no.:** kom **Remarks:** Cryopreserved
- 981 **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Hoshidate/Okinawa/Japan (1999-07-01) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Gene data:** 16S rRNA (AF448064); *rpoC1* (AF448085) **Other strain no.:** Hos **Remarks:** Cryopreserved
- 982 **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Hoshidate/Okinawa/Japan (1999-07-01) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Gene data:** *rpoC1* (AF448113) **Other strain no.:** Hosso **Remarks:** Cryopreserved
- 983 **History:** < Tezuka, Naoaki **Locality:** Sagami Bay/Shizuoka/Japan (1999-07-11) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** *rpoC1* (AF448104) **Other strain no.:** St235 **Remarks:** Cryopreserved
- 984 **History:** < Tezuka, Naoaki **Locality:** Takori River/Nagasaki/Japan (1999-08-02) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Axenic **Culture conditions:** C + 10% Seawater; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Gene data:** 16S rRNA (AF448066); *rpoC1* (AF448087) **Other strain no.:** TAG **Remarks:** Cryopreserved
- 985 **History:** < Tezuka, Naoaki **Locality:** Miyake Isl./Tokyo/Japan (1999-11-29) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Gene data:** *rpoC1* (AF448102) **Other strain no.:** miyaR **Remarks:** Cryopreserved
- 986 **History:** < Tezuka, Naoaki **Locality:** Iriomote Isl., Ohara/Okinawa/Japan (1998-11-06) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** 74 **Remarks:** Cryopreserved
- 987 **History:** < Tezuka, Naoaki **Locality:** Futtsu/Chiba/Japan (1999-06-15) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Tidal flat sediment) **Other strain no.:** FUT **Remarks:** Cryopreserved
- 988 **History:** < Tezuka, Naoaki **Locality:** Miyake Isl./Tokyo/Japan (1999-11-25) **Isolator:** Tezuka, Naoaki **Identified by:** Tezuka, Naoaki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** miyaY **Remarks:** Cryopreserved
- 1341 **History:** < Crosbie, Nicholas D. **Locality:** Lake Mondsee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY151248); *cpcBA*-IGS (AY151212) **Other strain no.:** MW10#1 **References:** 53, 54 **Remarks:** Cryopreserved
- 1342 **History:** < Crosbie, Nicholas D. **Locality:** Lake Mondsee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY151232); *cpcBA*-IGS (AY151215) **Other strain no.:** MW15#2 **References:** 53, 54 **Remarks:** Cryopreserved
- 1343 **History:** < Crosbie, Nicholas D. **Locality:** Lake Hallstättersee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY151240) **Other strain no.:** MW72C6 **References:** 53, 54 **Remarks:** Cryopreserved

- 1344** **History:** < Crosbie, Nicholas D. **Locality:** Lake Hallstättersee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY151250) **Other strain no.:** MW73B4 **References:** 53, 54 **Remarks:** Cryopreserved
- 1345** **History:** < Crosbie, Nicholas D. **Locality:** Lake Hallstättersee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY151245) **Other strain no.:** MW76B2 **References:** 53, 54 **Remarks:** Cryopreserved
- 1346** **History:** < Crosbie, Nicholas D. **Locality:** Lake Hallstättersee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY151246); *cpcBA*-IGS (AY151217) **Other strain no.:** MW77D1 **References:** 53, 54 **Remarks:** Cryopreserved
- 1347** **History:** < Crosbie, Nicholas D. **Locality:** Lake Mondsee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY224199); *cpcBA*-IGS (AY224205) **Other strain no.:** MH301 **References:** 53, 54 **Remarks:** Cryopreserved
- 1348** **History:** < Crosbie, Nicholas D. **Locality:** Lake Mondsee/Austria (2001-**-**) **Isolator:** Crosbie, Nicholas, D. **Identified by:** Crosbie, Nicholas D. **States:** Unialgal; Clonal; Axenic **Culture conditions:** CB; 15°C; 10-18 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Gene data:** 16S rRNA (AY224198); *cpcBA*-IGS (AY224206) **Other strain no.:** MH305 **References:** 53, 54 **Remarks:** Cryopreserved

SYNURA : Chrysophyceae*Synura petersenii* Korshikov

- 233** **History:** < Suda, Shoichiro **Locality:** Higashiyata River/Ibaraki/Japan (1983-07-02) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Other strain no.:** USI-10 **Reference:** 877
- 1007** **History:** < Moriya, Mayumi **Locality:** Bibi River/Hokkaido/Japan (1999-11-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** #73

Synura sphagnicola (Korshikov) Korshikov

- 695** **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1992-04-27) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Freshwater (Stream water) **Other strain no.:** 92-520-S-6
- 696** **History:** < Nozaki, Hisayoshi **Locality:** Miyatoko Mire/Fukushima/Japan (1992-10-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 20°C; 15-22 µmol/m²/s; 1 M **Habitat:** Freshwater (Stream water) **Other strain no.:** 92-1001-S-2

Synura spinosa Korshikov

- 234** **History:** < Suda, Shoichiro **Locality:** Tsuchiura/Ibaraki/Japan (1983-07-22) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Other strain no.:** SIS-1 **Reference:** 877

TABELLARIA : Bacillariophyceae*Tabellaria flocculosa* (Roth) Kützing

- 225** **History:** < Watanabe, Makoto M. **Locality:** Ozegahara/Fukushima/Japan (1983-08-30) **Isolator:** Watanabe, Makoto M. **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** CSi; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** OZ-43-4 **Reference:** 758

TABRIS : Chlorophyceae**Tabris heimii** (Bourrelly) NakadaSyn. *Chlorogonium heimii* Bourrelly

2294 **History:** < Nakada, Takashi **Locality:** Lake Okegaya-numa/Shizuoka/Japan (2004-07-23) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2007-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mAC; 20°C; 130-200 µmol/m²/s; 14 D **Habitat:** Freshwater (Sediment) **Characteristics:** Mixotrophic; Authentic strain **Gene data:** 18S rRNA (AB451189); *psaB* (AB451216); *rbcL* (B451194) **Other strain no.:** IwCl-10 **Reference:** 554

2295 **History:** < Nakada, Takashi **Locality:** Lake Okegaya-numa/Shizuoka/Japan (2004-07-23) **Isolator:** Nakada, Takashi **Identified by:** Nakada, Takashi (2007-12-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mAC; 20°C; 130-200 µmol/m²/s; 14 D **Habitat:** Freshwater (Sediment) **Characteristics:** Mixotrophic **Other strain no.:** IwCl-12 **Reference:** 554

TETRABAENA : Chlorophyceae**Tetrabaena socialis** (Dujardin) Nozaki et ItoSyn. *Gonium sociale* (Dujardin) Warming

691 **History:** < Nozaki, Hisayoshi **Locality:** King George Isl./Antarctica (1990-12-**) **Isolator:** Ohtani, Shuji **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** AF-6; 10°C; 15-20 µmol/m²/s; 1 M **Habitat:** Snow **Characteristics:** Cryophilic **Other strain no.:** KG-4-8th **References:** 515, 667

1437 **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2003-01-**) **Isolator:** Nakayama, Takeshi **Identified by:** Nakayama, Takeshi **Formerly identified as:** *Basichlamys sacculifera* (Scherffel) Skuja **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Characteristics:** Benthic **Other strain no.:** TKB-051 (nak-06)

Tetrabaena socialis (Dujardin) Nozaki et Ito var. *socialis*Syn. *Gonium sociale* (Dujardin) Warming var. *sociale*

571 **History:** < Nozaki, Hisayoshi **Locality:** Yokohama, Kohoku-ku/Kanagawa/Japan (1982-08-24) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Homothallic; Isogamy **Gene data:** *atpB* (AB014014); *psaA* (AB044415); *psaB* (AB044466); *psbC* (AB044525); *rbcL* (D63443) **Other strain no.:** 21028-4 **References:** 515, 629, 645, 646, 663, 666, 667, 668

TETRACYSTIS : Chlorophyceae**Tetracystis chlorococcoides** (Korshikov) S. Watanabe

155 **History:** < Watanabe, Shin **Locality:** Mt. Eboshidake/Nagasaki/Japan (1975-08-15) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Soil) **Other strain no.:** 3-EBO-1 **References:** 515, 1073

TETRAHYMENA : Oligohymenophorea**Tetrahymena pyriformis** Ehrenberg

403 **History:** < Sudo, Ryuichi **Locality:** Lake Kasumigaura/Ibaraki/Japan (1976-08-**) **Isolator:** Sudo, Ryuichi **Identified by:** Sudo, Ryuichi **Culture conditions:** LE; 10°C; 20 D (20°C) **Habitat:** Freshwater **Characteristics:** Other water bloom **Other strain no.:** Tetra-1 **Reference:** 267 **Remarks:** Difficult to transport

TETRASELMIS : Prasinophyceae**Tetraselmis cordiformis** (Carter) Stein

18 **History:** < Watanabe, Makoto M. **Locality:** Shimokubo Dam/Gunma/Japan (1980-04-**) **Isolator:** Watanabe, Makoto M. **Identified by:** Inouye, Isao **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom **Other strain no.:** SM-6-9 **References:** 123, 1047

- 533** **History:** < Suda, Shoichiro **Locality:** Mitsukaido/Ibaraki/Japan (1985-07-03) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 22-32 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond water) **Other strain no.:** KY-20-1

Tetraselmis levis Butcher

- 1430** **History:** < TKB **Locality:** Ishigaki Isl./Okinawa/Japan (2003-12-**) **Isolator:** Kai, Atsushi **Identified by:** Kai, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + NH₄Cl; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-121 (AK-14)

Tetraselmis sp.

- 1429** **History:** < TKB **Locality:** Ishigaki Harbor/Okinawa/Japan (2003-12-25) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-083 (nrc059)
- 1431** **History:** < TKB **Locality:** Amachi Beach/Okinawa/Japan (2003-12-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Benthic **Other strain no.:** TKB-091 (nrc067)
- 1432** **History:** < TKB **Locality:** Wakayama/Japan (2002-07-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-043 (nrc030-035)
- 1433** **History:** < TKB **Locality:** Isonoura Beach/Wakayama/Japan (2003-06-**) **Isolator:** Okamoto, Noriko **Identified by:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Sand and seawater) **Other strain no.:** TKB-073 (nrc052*)
- 1434** **History:** < TKB **Locality:** Ishigaki Harbor/Okinawa/Japan (2003-12-**) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-095 (nrc)

Tetraselmis striata Butcher

- 1019** **History:** < Moriya, Mayumi **Locality:** Nagahama/Hiroshima/Japan (2001-03-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 32-40 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** #96

Tetraselmis verrucosa (Butcher) Parke

- 1836** **History:** < TKB **Locality:** Naha/Okinawa/Japan (2005-01-22) **Isolator:** Yamaguchi, Haruyo **Identified by:** Yamaguchi, Haruyo (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-276

THALASSIONEMA : Bacillariophyceae

Thalassionema nitzschioides (Grunow) Hustedt

- 534** **History:** < Sawaguchi, Tomohiro **Locality:** Matoya Bay/Mie/Japan (1984-09-01) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** MBB-6 **Reference:** 758

THAUMATOMASTIX : Imbricatea

Thaumatomastix sp.

- 1443** **History:** < TKB **Locality:** Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** BESM2; 15°C; 20 D **Habitat:** Marine (Seawater) **Characteristics:** Heterotrophic **Other strain no.:** TKB-023 (NY0134) **Reference:** 122
- 2378** **History:** < TKB **Locality:** Tokyo Bay/Chiba/Japan (2007-02-25) **Isolator:** Yabuki, Akinori **Identified by:** Yabuki, Akinori (2007-**-**) **Culture conditions:** ESM; 20°C; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Benthic **Other strain no.:** TKB-345

THORACOSPHAERA : Dinophyceae**Thoracosphaera heimii** (Lohmann) Kamptner

- 1325 History:** < Kawachi, Masanobu **Locality:** Hachijo Isl., Yaene Harbor/Tokyo/Japan (2002-01-23) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 36 **Remarks:** Difficult to transport
- 1326 History:** < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 78 **Remarks:** Difficult to transport

THOREA : Florideophyceae**Thorea gaudichaudii** C. Agardh

- 1473 History:** < Higa, Atsushi **Locality:** Okinawa/Japan (2002-03-16) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku; Kumano, Shigeru (2002-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** IK1 **Reference:** 127
- 1474 History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2002-03-17) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku; Kumano, Shigeru (2002-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** NUG-1
- 1475 History:** < Ishimoto, Miwa **Locality:** Nugusuku-ga/Okinawa/Japan (2002-07-10) **Isolator:** Ishimoto, Miwa **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Monoecious; CR+EN (Ref. 474) **Other strain no.:** NUG-4
- 1476 History:** < Ishimoto, Miwa **Locality:** Nugusuku-ga/Okinawa/Japan (2002-07-10) **Isolator:** Ishimoto, Miwa **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Monoecious; CR+EN (Ref. 474) **Other strain no.:** NUG-5
- 1477 History:** < Ishimoto, Miwa **Locality:** Nugusuku-ga/Okinawa/Japan (2002-07-10) **Isolator:** Ishimoto, Miwa **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Monoecious; CR+EN (Ref. 474) **Other strain no.:** NUG-2
- 1478 History:** < Ishimoto, Miwa **Locality:** Nugusuku-ga/Okinawa/Japan (2002-07-10) **Isolator:** Ishimoto, Miwa **Identified by:** Kawachi, Masanobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Monoecious; CR+EN (Ref. 474) **Other strain no.:** NUG-3
- 1479 History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2004-02-19) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** UJU-1
- 1480 History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2004-02-19) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** UJU-2
- 1481 History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2004-02-19) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** UJU-3
- 1482 History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2004-02-19) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** UJU-4

- 1751** **History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03nj2-1
- 1752** **History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03nj221
- 1753** **History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03nj6
- 1754** **History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03nj811
- 1755** **History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03nj91
- 1756** **History:** < Higa, Atsushi **Locality:** Nju-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03nj10
- 1757** **History:** < Higa, Atsushi **Locality:** Kucha-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03KC2
- 1758** **History:** < Higa, Atsushi **Locality:** Kucha-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03KC3
- 1759** **History:** < Higa, Atsushi **Locality:** Kucha-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03KC4
- 1760** **History:** < Higa, Atsushi **Locality:** Kucha-ga/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03KC5
- 1761** **History:** < Higa, Atsushi **Locality:** Shikinaen, Ikutoku-sen Spring/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03si3
- 1762** **History:** < Higa, Atsushi **Locality:** Shikinaen, Ikutoku-sen Spring/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03si51

- 1763** **History:** < Higa, Atsushi **Locality:** Shikinaen, Ikutoku-sen Spring/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03si11
- 1764** **History:** < Higa, Atsushi **Locality:** Shikinaen, Ikutoku-sen Spring/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03si12
- 1765** **History:** < Higa, Atsushi **Locality:** Shikinaen, Ikutoku-sen Spring/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03si13
- 1766** **History:** < Higa, Atsushi **Locality:** Shikinaen, Ikutoku-sen Spring/Okinawa/Japan (2005-03-23) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2005-03-23) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 03sii
- 1767** **History:** < Higa, Atsushi **Locality:** Ohkubo-ga/Okinawa/Japan (2005-06-29) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** OB1
- 1768** **History:** < Higa, Atsushi **Locality:** Ohkubo-ga/Okinawa/Japan (2005-06-29) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** OB2
- 1769** **History:** < Higa, Atsushi **Locality:** Ohkubo-ga/Okinawa/Japan (2005-06-29) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** OB3
- 1770** **History:** < Higa, Atsushi **Locality:** Yafu-ga/Okinawa/Japan (2005-06-29) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** YF1
- 1771** **History:** < Higa, Atsushi **Locality:** Yafu-ga/Okinawa/Japan (2005-06-29) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** YF2
- 1772** **History:** < Higa, Atsushi **Locality:** Kucha-ga/Okinawa/Japan (2005-06-29) **Isolator:** Higa, Atsushi **Identified by:** Higa, Atsushi (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06KC1
- 2032** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu1
- 2033** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu2

- 2034** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu3
- 2035** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu4
- 2036** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu5
- 2037** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu6
- 2038** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu7
- 2039** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu8
- 2040** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu9
- 2041** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu10
- 2042** **History:** < Higa, Atsushi **Locality:** Nugusuku-ga/Okinawa/Japan (2006-**-**) **Isolator:** Higa, Atsushi **Identified by:** Kamura, Shintoku (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophytes differentiated from sporophytes in culture; Monoecious; CR+EN (Ref. 474) **Other strain no.:** 06nu11

Thorea hispida (Thore) Desvaux

- 1572** **History:** < Kawachi, Masanobu **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2001-10-22) **Isolator:** Iwaki, Hiroyuki **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** KAW-1 **Remarks:** Cryopreserved
- 1573** **History:** < Higa, Atsushi **Locality:** Sugao-numa/Ibaraki/Japan (2004-01-**) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; CR+EN (Ref. 474) **Other strain no.:** sg1 **Remarks:** Cryopreserved
- 1574** **History:** < Ishimoto, Miwa **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2002-09-25) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** KAW-3 **Remarks:** Cryopreserved

- 1575** **History:** < Ishimoto, Miwa **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2002-09-25) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** KAW-4 **Remarks:** Cryopreserved
- 1576** **History:** < Higa, Atsushi **Locality:** Higashinire River/Ibaraki/Japan (2004-05-16) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; CR+EN (Ref. 474) **Other strain no.:** HN51
- 1577** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** kwu2 **Remarks:** Cryopreserved
- 1578** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** kwu3 **Remarks:** Cryopreserved
- 1579** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** kwd3 **Remarks:** Cryopreserved
- 1580** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** kwu4 **Remarks:** Cryopreserved
- 1582** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** kwd4 **Remarks:** Cryopreserved
- 1583** **History:** < Higa, Atsushi **Locality:** Inawashiro, Kawakami/Fukushima/Japan (2004-05-10) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Monoecious; CR+EN (Ref. 474) **Other strain no.:** kwd7 **Remarks:** Cryopreserved
- 1584** **History:** < Higa, Atsushi **Locality:** Sugao-numa/Ibaraki/Japan (2004-05-16) **Isolator:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; CR+EN (Ref. 474) **Other strain no.:** sg3
- 2043** **History:** < Higa, Atsushi **Locality:** Sugao-numa/Ibaraki/Japan (2006-05-17) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-05-17) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; CR+EN (Ref. 474) **Other strain no.:** 06sg3
- 2044** **History:** < Higa, Atsushi **Locality:** Sugao-numa/Ibaraki/Japan (2006-05-17) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-05-17) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; CR+EN (Ref. 474) **Other strain no.:** 06sg5

Thorea okadae Yamada

- 1483** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2000-**-**) **Isolator:** Iwaki, Hiroyuki **Identified by:** Kumano, Shigeru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** NAK-8
- 1484** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2000-**-**) **Isolator:** Iwaki, Hiroyuki **Identified by:** Kumano, Shigeru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** NAK-13 **Remarks:** Cryopreserved
- 1485** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2001-04-28) **Isolator:** Iwaki, Hiroyuki **Identified by:** Miyashita, Mamoru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** NAK-21
- 1486** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2001-04-28) **Isolator:** Iwaki, Hiroyuki **Identified by:** Miyashita, Mamoru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** NAK-23 **Remarks:** Cryopreserved

- 1487** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2000-**-**) **Isolator:** Iwaki, Hiroyuki **Identified by:** Kumano, Shigeru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** NAK-6 **Remarks:** Cryopreserved
- 1488** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2000-**-**) **Isolator:** Iwaki, Hiroyuki **Identified by:** Kumano, Shigeru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** NAK-7
- 1489** **History:** < Kawachi, Masanobu **Locality:** Naka River/Ibaraki/Japan (2001-05-11) **Isolator:** Iwaki, Hiroyuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** NAK-31 **Remarks:** Cryopreserved
- 1490** **History:** < Kawachi, Masanobu **Locality:** Kikuchi River/Kumamoto/Japan (2001-11-**) **Isolator:** Iwaki, Hiroyuki **Identified by:** Suzawa, Yuzuru; Iwaki, Hiroyuki **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-1 **Remarks:** Cryopreserved
- 1491** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Nakagawa Bridge/Kumamoto/Japan (2002-04-19) **Isolator:** Ishimoto, Miwa **Identified by:** Miyashita, Mamoru; Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-33
- 1492** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2002-04-19) **Isolator:** Ishimoto, Miwa **Identified by:** Miyashita, Mamoru; Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-41 **Remarks:** Cryopreserved
- 1493** **History:** < Ishimoto, Miwa **Locality:** Yahagi River/Aichi/Japan (2002-05-19) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** YAH-5
- 1494** **History:** < Ishimoto, Miwa **Locality:** Yahagi River/Aichi/Japan (2002-05-19) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** YAH-6 **Remarks:** Cryopreserved
- 1495** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Nakagawa Bridge/Kumamoto/Japan (2002-04-19) **Isolator:** Ishimoto, Miwa **Identified by:** Miyashita, Mamoru; Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-25
- 1496** **History:** < Ishimoto, Miwa **Locality:** Yahagi River/Aichi/Japan (2001-**-**) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** YAH-1 **Remarks:** Cryopreserved
- 1497** **History:** < Ishimoto, Miwa **Locality:** Yahagi River/Aichi/Japan (2001-**-**) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** YAH-2 **Remarks:** Cryopreserved
- 1498** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2002-04-19) **Isolator:** Ishimoto, Miwa **Identified by:** Miyashita, Mamoru; Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-35 **Remarks:** Cryopreserved
- 1499** **History:** < Ishimoto, Miwa **Locality:** Yahagi River/Aichi/Japan (2001-**-**) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** YAH-3
- 1500** **History:** < Ishimoto, Miwa **Locality:** Yahagi River/Aichi/Japan (2002-05-19) **Isolator:** Ishimoto, Miwa **Identified by:** Suzawa, Yuzuru **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** YAH-4

- 1501** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River/Kumamoto/Japan (2002-04-19) **Isolator:** Ishimoto, Miwa **Identified by:** Miyashita, Mamoru; Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-21
- 1502** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-23) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** KIK-48
- 1503** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-53 **Remarks:** Cryopreserved
- 1504** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-54 **Remarks:** Cryopreserved
- 1505** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-57 **Remarks:** Cryopreserved
- 1506** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-58
- 1507** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-67
- 1508** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-68 **Remarks:** Cryopreserved
- 1509** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-69 **Remarks:** Cryopreserved
- 1510** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-70
- 1511** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-71 **Remarks:** Cryopreserved
- 1512** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-72 **Remarks:** Cryopreserved
- 1513** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Bunda Bridge/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 $\mu\text{mol}/\text{m}^2/\text{s}$; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-73 **Remarks:** Cryopreserved

- 1527 **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Takashima Bridge/Kumamoto/Japan (2003-04-23) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-51
- 1528 **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k2
- 1529 **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k9 **Remarks:** Cryopreserved
- 1530 **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** k10 **Remarks:** Cryopreserved
- 1531 **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** k14 **Remarks:** Cryopreserved
- 1532 **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k22 **Remarks:** Cryopreserved
- 1533 **History:** < Ishimoto, Miwa **Locality:** Naka River/Ibaraki/Japan (2003-05-29) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** NAK-32 **Remarks:** Cryopreserved
- 1534 **History:** < Higa, Atsushi **Locality:** Ohyodo River, Dainomaru Bridge/Miyazaki/Japan (2004-01-22) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** oh8 **Remarks:** Cryopreserved
- 1535 **History:** < Higa, Atsushi **Locality:** Ohyodo River, Dainomaru Bridge/Miyazaki/Japan (2004-01-22) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** oh13
- 1536 **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** s2
- 1537 **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** s6 **Remarks:** Cryopreserved
- 1538 **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** s7 **Remarks:** Cryopreserved
- 1539 **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** s11 **Remarks:** Cryopreserved

- 1540** **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** s12
- 1541** **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** s13 **Remarks:** Cryopreserved
- 1542** **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** s14 **Remarks:** Cryopreserved
- 1543** **History:** < Higa, Atsushi **Locality:** Chikugo River, Chikugo Bridge/Fukuoka/Japan (2004-01-25) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** chh2
- 1544** **History:** < Higa, Atsushi **Locality:** Chikugo River, Chikugo Bridge/Fukuoka/Japan (2004-01-25) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** ch2 **Remarks:** Cryopreserved
- 1545** **History:** < Higa, Atsushi **Locality:** Yakata River, Ukishima Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** yg1
- 1546** **History:** < Higa, Atsushi **Locality:** Yakata River, Ukishima Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** yg9
- 1547** **History:** < Ishimoto, Miwa **Locality:** Yabe River/Fukuoka/Japan (2002-11-15) **Isolator:** Ishimoto, Miwa **Identified by:** Miyashita, Mamoru; Kawachi, Masanobu; Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** YBE-3
- 1548** **History:** < Higa, Atsushi **Locality:** Yabe River, Funagoyaonsen Bridge/Fukuoka/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** YB2
- 1549** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Takashima Bridge/Kumamoto/Japan (2003-04-22) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-52
- 1550** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-59
- 1551** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-60
- 1552** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Dioecious; Female; VU (Ref. 474) **Other strain no.:** KIK-61
- 1553** **History:** < Ishimoto, Miwa **Locality:** Kikuchi River, Yamaga Weir/Kumamoto/Japan (2003-04-24) **Isolator:** Ishimoto, Miwa **Identified by:** Higa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Dioecious; VU (Ref. 474) **Other strain no.:** KIK-65

- 1554** **History:** < Higa, Atsushi **Locality:** Amori River, Wakaayu Bridge/Kagoshima/Japan (2004-01-23) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** AM2
- 1555** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k5
- 1556** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** k8 **Remarks:** Cryopreserved
- 1558** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k12
- 1559** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** k18
- 1560** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k20 **Remarks:** Cryopreserved
- 1561** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 15°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k23
- 1562** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** k25
- 1563** **History:** < Higa, Atsushi **Locality:** Ohyodo River, Dainomaru Bridge/Miyazaki/Japan (2004-01-22) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** oh6 **Remarks:** Cryopreserved
- 1564** **History:** < Higa, Atsushi **Locality:** Ohyodo River, Dainomaru Bridge/Miyazaki/Japan (2004-01-22) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** oh7 **Remarks:** Cryopreserved
- 1565** **History:** < Higa, Atsushi **Locality:** Ohyodo River, Dainomaru Bridge/Miyazaki/Japan (2004-01-22) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** oh23
- 1566** **History:** < Higa, Atsushi **Locality:** Sendai River, Shimomasaki Bridge/Miyazaki/Japan (2004-01-20) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** s5 **Remarks:** Cryopreserved
- 1568** **History:** < Higa, Atsushi **Locality:** Chikugo River, Chikugo Bridge/Fukuoka/Japan (2004-01-25) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** ch13 **Remarks:** Cryopreserved
- 1569** **History:** < Higa, Atsushi **Locality:** Chikugo River, Chikugo Bridge/Fukuoka/Japan (2004-01-25) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** ch15

- 1570** **History:** < Higa, Atsushi **Locality:** Chikugo River, Chikugo Bridge/Fukuoka/Japan (2004-01-25) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** ch21 **Remarks:** Cryopreserved
- 1571** **History:** < Higa, Atsushi **Locality:** Yakata River, Ukishima Bridge/Kumamoto/Japan (2004-01-24) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** yg4 **Remarks:** Cryopreserved
- 1773** **History:** < Higa, Atsushi **Locality:** Amori River, Wakaayu Bridge/Kagoshima/Japan (2004-01-23) **Isolator:** Higa, Atsushi **Identified by:** Suzawa, Yuzuru (2004-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** AM1 **Remarks:** Cryopreserved
- 1774** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB1
- 1775** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB2 **Remarks:** Cryopreserved
- 1776** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB3 **Remarks:** Cryopreserved
- 1777** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB4 **Remarks:** Cryopreserved
- 1778** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB5 **Remarks:** Cryopreserved
- 1779** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB6 **Remarks:** Cryopreserved
- 1780** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB7 **Remarks:** Cryopreserved
- 1781** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB8
- 1782** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB9 **Remarks:** Cryopreserved
- 1783** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB10 **Remarks:** Cryopreserved
- 1784** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB11 **Remarks:** Cryopreserved
- 1785** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB12 **Remarks:** Cryopreserved

- 1802** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB29 **Remarks:** Cryopreserved
- 1803** **History:** < Higa, Atsushi **Locality:** Naka River/Ibaraki/Japan (2003-05-**) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** IB30 **Remarks:** Cryopreserved
- 2045** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-01-24) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-01-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** ym1
- 2046** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-01-24) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-01-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** ym2
- 2047** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-01-24) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-01-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** ym3
- 2048** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-01-24) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-01-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** ym6
- 2049** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-01-24) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-01-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** ym8
- 2050** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-01-24) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-01-24) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; VU (Ref. 474) **Other strain no.:** ym9
- 2051** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** 06k1
- 2052** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** 06k3
- 2053** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** 06k4
- 2054** **History:** < Higa, Atsushi **Locality:** Kuma River, Meuba Bridge/Kumamoto/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-30) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** 06k6
- 2055** **History:** < Higa, Atsushi **Locality:** Sendai River, Aratatenjin Bridge/Kagoshima/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-29) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** AT1
- 2056** **History:** < Higa, Atsushi **Locality:** Sendai River, Aratatenjin Bridge/Kagoshima/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-29) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Female; VU (Ref. 474) **Other strain no.:** AT2
- 2057** **History:** < Higa, Atsushi **Locality:** Sendai River, Aratatenjin Bridge/Kagoshima/Japan (2006-03-30) **Isolator:** Higa, Atsushi **Identified by:** Kumano, Shigeru (2006-03-29) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** ATC2-1

- 2073** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-05-25) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-03-31) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Sporophyte; Dioecious; VU (Ref. 474) **Other strain no.:** 06ym12 **Remarks:** Cryopreserved
- 2074** **History:** < Higa, Atsushi **Locality:** Yasumuro River/Hyogo/Japan (2006-05-25) **Isolator:** Higa, Atsushi **Identified by:** Sugino, Nobuyoshi (2006-05-25) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** Bold 3N; 20°C; 3-12 µmol/m²/s; 1-2 M **Habitat:** Freshwater **Characteristics:** Epilithic; Gametophyte; Dioecious; Male; VU (Ref. 474) **Other strain no.:** 06ym13

TOGULA : Dinophyceae

Togula britannica (Herdman) Jørgensen, Murray et Daugbjerg
Syn. *Amphidinium britannicum* (Herdmann) Lebour

- 405** **History:** < Sawaguchi, Tomohiro **Locality:** Hasaki/Ibaraki/Japan (1987-05-09) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Benthic **Other strain no.:** HASS-1 **Remarks:** Difficult to transport

TOLYPOTHRIX : Cyanophyceae

Tolypothrix sp.

- 2362** **History:** < IAM (2007) < TISTR (2001) **Other collection strain no.:** IAM M-259; TISTR 8247 **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-6 µmol/m²/s; 3 M **Remarks:** Distribution for academic purpose only

Tolypothrix tenuis Kützing ex Bornet et Flahault

- 37** **History:** < IAM **Other collection strain no.:** IAM M-29; PCC 7101 **Locality:** Borneo/Indonesia **Isolator:** Watanabe, Atsushi **Identified by:** Negoro, Ken-ichiro; Watanabe, Makoto M. (Reidentify) **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** MDM (agar); 20°C; 4-10 µmol/m²/s; 4 M (25°C; 70-80 µmol/m²/s) **Characteristics:** Heterotrophic; Nitrogen fixation; Chromatic adaptation; Material for studying on phycobilin production **References:** 56, 85, 86, 87, 88, 89, 91, 92, 126, 165, 166, 167, 168, 188, 215, 371, 515, 536, 823, 984, 1002, 1011, 1012, 1013, 1014, 1016, 1017, 1018, 1019, 1021, 1126 **Remarks:** Cryopreserved
- 2135** **History:** < IAM (2007) < Tsuzuki, Mikio (2005) < IAM (1994) < Ishikawa, Masako **Other collection strain no.:** IAM M-287 (= M-110) **Locality:** (1960-06-**) **Isolator:** Ishikawa, Masako **Identified by:** Maruyama, Ko **States:** Unialgal; Clonal; Axenic **Culture conditions:** BG-11 (agar); 20°C; 13-18 µmol/m²/s; 3 M

TRACHELOMONAS : Euglenophyceae

Trachelomonas sp.

- 2299** **History:** < Suda, Shoichiro **Locality:** Ozegahara/Gunma/Japan (1983-08-28) **Isolator:** Suda, Shoichiro **Identified by:** Suda, Shoichiro **States:** Unialgal **Culture conditions:** AF-6/2; 20°C; 15-22 µmol/m²/s; 2 M **Habitat:** Freshwater (Bog water) **Other strain no.:** OZ-4 Eug8

TREBOUXIA : Trebouxiophyceae

Trebouxia anticipata Archibald

- 1271** **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Punctelia rufecta* on a stone column) **Characteristics:** Symbiotic **Other strain no.:** AYO4776 **Remarks:** Cryopreserved
- 1272** **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Punctelia rufecta* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4780 **Remarks:** Cryopreserved

1273 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Flavoparmelia caperata* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4870 **Remarks:** Cryopreserved

Trebouxia arboricola Puymaly

1274 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Ramalina yasudae* on a stone column) **Characteristics:** Symbiotic **Other strain no.:** AYO4775 **Remarks:** Cryopreserved

1275 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Ramalina yasudae* on a stone column) **Characteristics:** Symbiotic **Other strain no.:** AYO4779 **Remarks:** Cryopreserved

1276 **History:** < Ohmura, Yoshihito **Locality:** Mt.Fuji, Okuniwa/Yamanashi/Japan (2003-05-05) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea longissima* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO5316 **Remarks:** Cryopreserved

1277 **History:** < Ohmura, Yoshihito **Locality:** Mt.Fuji, Ochudo/Yamanashi/Japan (2003-05-05) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea trichodeoides* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO5321 **Remarks:** Cryopreserved

Trebouxia corticola (Archibald) Gärtner

1278 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea bismolliuschula* on a stone column) **Characteristics:** Symbiotic **Other strain no.:** AYO4774 **Remarks:** Cryopreserved

1279 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Rimelia clavurifera* on a stone column) **Characteristics:** Symbiotic **Other strain no.:** AYO4777 **Remarks:** Cryopreserved

1280 **History:** < Ohmura, Yoshihito **Locality:** Suki, Sakanoshita/Miyazaki/Japan (2002-02-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Ramalina peruviana* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4860 **Remarks:** Cryopreserved

1281 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea baileyi* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4863 **Remarks:** Cryopreserved

1282 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea rubicunda* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4864 **Remarks:** Cryopreserved

1283 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea ceratina* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4865 **Remarks:** Cryopreserved

1284 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Usnea ceratina* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4867 **Remarks:** Cryopreserved

- 1286** **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Dirinaria applanata* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4882 **Remarks:** Cryopreserved
- 1287** **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Rimelia clavurifera* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4884 **Remarks:** Cryopreserved
- 1288** **History:** < Ohmura, Yoshihito **Locality:** Mt.Fuji, Aokigahara/Yamanashi/Japan (2003-05-04) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Usnea rubrotincta* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO5330 **Remarks:** Cryopreserved
- 1446** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177821) **Other strain no.:** AYO5357A **Reference:** 713
- 1447** **History:** < Ohmura, Yoshihito **Locality:** Zui-un-in Temple/Shizuoka/Japan (2003-10-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177822) **Other strain no.:** AYO5357B **Reference:** 713
- 1448** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177823) **Other strain no.:** AYO5357C **Reference:** 713
- 1449** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177825) **Other strain no.:** AYO5361A **Reference:** 713
- 1450** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177826) **Other strain no.:** AYO5361B **Reference:** 713
- 1451** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-20) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177828) **Other strain no.:** AYO5372 **Reference:** 713
- 1452** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-21) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177829) **Other strain no.:** AYO5375A **Reference:** 713
- 1453** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-21) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177830) **Other strain no.:** AYO5375B **Reference:** 713
- 1454** **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-21) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 6 M (25°C; 70-80 $\mu\text{mol}/\text{m}^2/\text{s}$) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177831) **Other strain no.:** AYO5376 **Reference:** 713 **Remarks:** Cryopreserved

1455 **History:** < Ohmura, Yoshihito **Locality:** Shimizu/Shizuoka/Japan (2003-10-21) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on a gravestone) **Characteristics:** Symbiotic **Gene data:** ITS rRNA (AB177832) **Other strain no.:** AYO5380 **Reference:** 713

Trebouxia erici Ahmadjian

2185 **History:** < IAM (2007) < BIU (UTEX; 1961) **Other collection strain no.:** IAM C-116; UTEX 912 **Locality:** Massachusetts/U.S.A. **Isolator:** Ahmadjian, V. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (The lichen *Cladonia cristatella*) **Characteristics:** Symbiotic **Reference:** 17

2186 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-593 (= C-188); UTEX 910 **Locality:** Massachusetts/U.S.A. **Isolator:** Ahmadjian, V. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (The lichen *Cladonia cristatella*) **Characteristics:** Symbiotic **Gene data:** Actin (AB080314) **References:** 17, 1101

Trebouxia glomerata (Waren) Ahmadjian

2187 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-594 (= C-115); UTEX 896 **Locality:** Massachusetts/U.S.A. **Isolator:** Ahmadjian, V. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (The lichen *Stereocaulon pileatum*) **Characteristics:** Symbiotic **Reference:** 17

2188 **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM C-595 (= C-187); UTEX 897 **Locality:** Massachusetts/U.S.A. **Isolator:** Ahmadjian, V. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Terrestrial (The lichen *Stereocaulon pileatum*) **Characteristics:** Symbiotic **Reference:** 17

Trebouxia higginsiae (Hildreth et Ahmadjian) Gärtner

1289 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4781 **Remarks:** Cryopreserved

1290 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Dirinaria appplanata* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4782 **Remarks:** Cryopreserved

1291 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4866 **Remarks:** Cryopreserved

1292 **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Myelochroa aurulenta* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4877 **Remarks:** Cryopreserved

1293 **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4879 **Remarks:** Cryopreserved

1294 **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Dirinaria appplanata* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4880 **Remarks:** Cryopreserved

1295 **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Parmotrema tinctorum* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4885 **Remarks:** Cryopreserved

1296 **History:** < Ohmura, Yoshihito **Locality:** Hiroshima University/Hiroshima/Japan (2002-03-26) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Parmotrema austrosinense* on bark) **Characteristics:** Symbiotic **Other strain no.:** AYO4887 **Remarks:** Cryopreserved

Trebouxia showmanii (Hildreth et Ahmadjian) Gärtner

1297 **History:** < Ohmura, Yoshihito **Locality:** Tsukuba-san Shrine/Ibaraki/Japan (2002-01-19) **Isolator:** Ohmura, Yoshihito **Identified by:** Takeshita, Shunji **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Xanthoparmelia coreana* on a stone wall) **Characteristics:** Symbiotic **Other strain no.:** AYO4778 **Remarks:** Cryopreserved

Trebouxia sp.

2349 **History:** < Ohmura, Yoshihito **Locality:** Chikurin-ji Temple/Hiroshima/Japan (2002-03-24) **Isolator:** Ohmura, Yoshihito **Identified by:** Ohmura, Yoshihito **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 µmol/m²/s; 6 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (The lichen *Punctelia rudecta* on a bark roof) **Characteristics:** Symbiotic **Other strain no.:** AYO4869

TRENTEPOHLIA : Ulvophyceae

Trentepohlia sp.

967 **History:** < Hagiwara, Tomiji **Locality:** Nozawa Hot Spring/Nagano/Japan (1989-12-28) **Isolator:** Hagiwara, Tomiji **Identified by:** Hagiwara, Tomiji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 22-27 µmol/m²/s; 6 M **Habitat:** Terrestrial (Concrete bank) **Other strain no.:** TP-5

TREPOMONAS : Trepomonadea

Trepomonas sp.

1444 **History:** < TKB **Locality:** Hyotaro-ike Pond/Ibaraki/Japan (2003-05-26) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** UYTS + Rice; 15°C; 20 D **Habitat:** Freshwater (Pond water) **Characteristics:** Offensive taste and odor; Heterotrophic **Other strain no.:** TKB-058 (NY0141) **Reference:** 122

TREUBARIA : Chlorophyceae

Treubaria triappendiculata Bernard

394 **History:** < Kasai, Fumie **Locality:** Lake Kasumigaura/Ibaraki/Japan (1983-10-04) **Isolator:** Kasai, Fumie **Identified by:** Niiyama, Yuko **States:** Unialgal; Clonal; Axenic **Culture conditions:** C; 20°C; 4-10 µmol/m²/s; 2 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Lake water) **Other strain no.:** F67-5 **Reference:** 515

TRICERATIUM : Bacillariophyceae

Triceratium dubium Brightwell

556 **History:** < Ono, Sachiko **Locality:** Okinawa/Japan (1990-**-**) **Isolator:** Ono, Sachiko **Identified by:** Ono, Sachiko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 1 M **Habitat:** Marine (Seawater) **Other strain no.:** No.20 **Reference:** 792

TRIPLOCERAS : Charophyceae

Triploceras gracile Bailey

789 **History:** < Kasai, Fumie **Locality:** 2 km east of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** 85-28-1 **Reference:** 220

- 790** **History:** < Kasai, Fumie **Locality:** 2 km east of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** 85-28-2 **Reference:** 220
- 791** **History:** < Kasai, Fumie **Locality:** 2 km east of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** 85-28-3 **Reference:** 220
- 792** **History:** < Kasai, Fumie **Locality:** 2 km east of Melaka/Malaysia (1985-08-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Paddy soil) **Characteristics:** Homothallic **Other strain no.:** 85-28-4 **Reference:** 220
- 793** **History:** < Kasai, Fumie **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Mating type (+) **Other strain no.:** 83-24-2 **Reference:** 220
- 794** **History:** < Kasai, Fumie **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Mating type (+) **Other strain no.:** 83-24-7 **Reference:** 220
- 795** **History:** < Kasai, Fumie **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** 83-24-3 **Reference:** 220
- 796** **History:** < Kasai, Fumie **Locality:** Higashihiroshima/Hiroshima/Japan (1983-10-19) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 22°C; 55-70 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Mating type (-) **Other strain no.:** 83-24-6 **Reference:** 220

TYCHONEMA : Cyanophyceae

Tychonema bourrellyi Anagnostidis et Komárek

- 846** **History:** < Suda, Shoichiro < CCAP **Other collection strain no.:** CCAP 1459/11B **Locality:** Loughgall/North Ireland/U.K. **Isolator:** Fitzsimons **Identified by:** Suda, Shoichiro (Reidentify) **Formerly identified as:** *Oscillatoria bourrellyi* J. W. G. Lund f. *tenuis* Skuja **States:** Unialgal; Clonal; Axenic **Culture conditions:** CT; 20°C; 15-25 µmol/m²/s; 1 M **Habitat:** Freshwater **Characteristics:** Cyanobacterial water bloom (aoko); Type strain **Gene data:** 16S rRNA (AB045897) **References:** 202, 893 **Remarks:** Cryopreserved

ULOTHRIX : Ulvophyceae

Ulothrix variabilis Kützing

- 329** **History:** < Suda, Shoichiro **Locality:** Takatori River/Ibaraki/Japan (1984-12-11) **Isolator:** Suda, Shoichiro **Identified by:** Watanabe, Makoto M. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 20°C; 15-22 µmol/m²/s; 3 M **Habitat:** Freshwater (Lake water) **References:** 123, 515, 916, 917

Ulothrix zonata (Weber et Mohr) Kützing

- 536** **History:** < Kasai, Fumie **Locality:** Hitachi/Ibaraki/Japan (1987-05-22) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 10°C; 6-12 µmol/m²/s; 3 M (10°C; 10-15 µmol/m²/s) **Habitat:** Freshwater (Water) **Other strain no.:** 4st-1'-24 **References:** 123, 515, 917
- 537** **History:** < Kasai, Fumie **Locality:** Shirai River/Hokkaido/Japan (1987-10-**) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 10°C; 10-15 µmol/m²/s; 2 M **Habitat:** Freshwater (River water) **Other strain no.:** 2Tst-1-1 **References:** 515, 917

UMBILICOSPHAERA : Prymnesiophyceae**Umbilicosphaera sibogae** (Weber-van Bosse) Gaarder var. *sibogae*

1324 History: < Kawachi, Masanobu **Locality:** East China Sea (2003-08-06) **Isolator:** Noël, Mary-Hélène **Identified by:** Noël, Mary-Hélène **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MNK; 20°C; 25-40 µmol/m²/s; 14-20 D **Habitat:** Marine (Seawater) **Other strain no.:** MH 67

UNIDENTIFIED COCCOID PRASINOPHYTE : Prasinophyceae**Unidentified coccoid prasinophyte**

1435 History: < TKB **Locality:** Amami Isl., Sani/Kagoshima/Japan (2000-06-**) **Isolator:** Yoshii, Yukie **Identified by:** Yoshii, Yukie **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM; 20°C; 20-30 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-025 (YY-01)

UNIDENTIFIED FLAGELLATE METAMONAD : Metamonada *incertae sedis***Unidentified flagellate metamonad**

1844 History: < TKB **Locality:** Yamakawa Harbor/Kagoshima/Japan (2005-03-15) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji (2005-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2 + mTYGM-9 + Rice; SUY 1/10 + mTYGM-9 + Rice; 15°C; 1 M **Habitat:** (Seawater) **Characteristics:** Heterotrophic; Benthic **Other strain no.:** TKB-273

UNIDENTIFIED METAMONAD : Metamonada *incertae sedis***Unidentified metamonad**

1968 History: < TKB **Locality:** Sagami Bay/Shizuoka/Japan (2006-03-12) **Isolator:** Yubuki, Naoji **Identified by:** Yubuki, Naoji (2006-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** ESM + mTYGM-9 + Rice; SUY 1/10 + mTYGM-9 + Rice; 15°C; 14 D **Habitat:** Marine (Seawater) **Characteristics:** Heterotrophic; Benthic **Other strain no.:** TKB-336

UNIDENTIFIED PELAGOPHYTE : Pelagophyceae**Unidentified pelagophyte**

1386 History: < TKB **Locality:** Ishigaki Harbor/Okinawa/Japan (2003-12-25) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-085 (nrc061)

1387 History: < TKB **Locality:** Hachijo Isl./Tokyo/Japan (2002-12-13) **Isolator:** Yoshida, Masaki **Identified by:** Yoshida, Masaki (2003-**-**) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** mIMR; 20°C; 40-50 µmol/m²/s; 20 D **Habitat:** Marine (Seawater) **Other strain no.:** TKB-102 (ym-10)

UNIDENTIFIED YELLOW HETEROKONTOPHYTE : Heterokontophyta *incertae sedis***Unidentified yellow heterokontophyte**

1389 History: < TKB **Locality:** Yonehara/Okinawa/Japan (2003-12-**) **Isolator:** Okamoto, Noriko **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** f/2; 20°C; 40-50 µmol/m²/s; 2 M **Habitat:** Marine (Seawater) **Other strain no.:** TKB-092 (nrc068)

URNELLA : Chlorophyceae**Urnella terrestris** Playfair

156 History: < Watanabe, Shin **Locality:** Pokhara/Nepal (1975-10-**) **Isolator:** Watanabe, Shin **Identified by:** Watanabe, Shin **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C (agar); 20°C; 4-10 µmol/m²/s; 3 M (25°C; 70-80 µmol/m²/s) **Habitat:** Terrestrial (Soil) **Other strain no.:** NPL-111 **References:** 515, 1072 **Remarks:** Cryopreserved

UROGLENA : Chrysophyceae*Uroglena americana* Calkins

- 395** **History:** < Ishida, Yuzaburo **Locality:** Lake Biwa/Shiga/Japan (1978-05-11) **Isolator:** Ishida, Yuzaburo **Identified by:** Ishida, Yuzaburo **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** DY-V; 15°C; 20-30 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Phagotrophic **Other strain no.:** Strain 78 **References:** 243, 365, 366 **Remarks:** Difficult to transport

URONEMA : Chlorophyceae*Uronema confervicolum* Lagerheim

- 538** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-05-22) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **Other strain no.:** 4st-2-10 **References:** 515, 916, 917

Uronema gigas Vischer

- 539** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-05-22) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **Other strain no.:** 4st-3-5 **References:** 515, 917 **Remarks:** Cryopreserved

- 540** **History:** < Kasai, Fumie **Locality:** Miyata River/Ibaraki/Japan (1987-05-22) **Isolator:** Kasai, Fumie **Identified by:** Kasai, Fumie **States:** Unialgal; Non-clonal; Non-axenic **Culture conditions:** C; 20°C; 8-15 µmol/m²/s; 3 M **Habitat:** Freshwater **Other strain no.:** 4st-0-16 **References:** 515, 917 **Remarks:** Cryopreserved

VISCHERIA : Eustigmatophyceae*Vischeria punctata* Vischer

- 2147** **History:** < IAM (2007) < UTEX (1996) **Other collection strain no.:** IAM X-36 (= X-4); ATCC 30441; CCAP 887/1; SAG 887-1; UTEX 153 **Locality:** Unterengadin/Switzerland **Isolator:** Vischer, W. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 40-50 µmol/m²/s; 3 M **Habitat:** Terrestrial (Soil)

Vischeria stellata Pascher

- 2148** **History:** < IAM (2007) < BIU (UTEX) **Other collection strain no.:** IAM X-5; CCAP 887/2B; SAG 887-2; UTEX 312 **Locality:** Switzerland **Isolator:** Chodat, R. **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 40-50 µmol/m²/s; 3 M **Habitat:** Terrestrial (Soil)

VITREOCHLAMYS : Chlorophyceae*Vitreochlamys aulata* (Pascher) Batko

- 875** **History:** < Nakazawa, Atsushi **Locality:** Atsugi/Kanagawa/Japan (1998-02-19) **Isolator:** Nakazawa, Atsushi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Gene data:** *atpB* (AB076121); *psaA* (AB076143); *psaB* (AB076158); *psbC* (AB076175); *psbC* (AB076176); *psbC* (AB076177); *rbcL* (AB050486); *rbcL* (AB050487); *rbcL*-462 intron (AB076097) **Other strain no.:** Spha-5/1998-3-9 **References:** 597, 598, 668, 671

- 876** **History:** < Nakazawa, Atsushi **Locality:** Habikino/Osaka/Japan (1998-03-14) **Isolator:** Nakazawa, Atsushi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Paddy soil) **Gene data:** *rbcL* (AB050488); *rbcL* (AB050489) **Other strain no.:** Spha-8/1998-7-14 **Reference:** 597

- 877** **History:** < Nakazawa, Atsushi < SAG **Other collection strain no.:** SAG 69.72 **Locality:** South Bohemia/Czech **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Ditch water) **Gene data:** *rbcL* (AB050492) **Reference:** 597

- 878** **History:** < Nakazawa, Atsushi < SAG **Other collection strain no.:** SAG 80.81 **Locality:** Zool/Slovakia **Formerly identified as:** *Sphaerellopsis aulata* Pascher **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Pond water) **Gene data:** *rbcL* (AB050493) **Reference:** 597

Vitreochlamys fluviatilis (Stein) Batko

- 879** **History:** < Nakazawa, Atsushi **Locality:** Nerima-ku/Tokyo/Japan (1997-11-13) **Isolator:** Nakazawa, Atsushi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Gene data:** *rbcL* (AB050484) **Other strain no.:** Spha-1/1997-12-5 **Reference:** 597

Vitreochlamys gloeocystiformis (Dill) Nakazawa

Syn. *Sphaerellopsis gloeocystiformis* (Dill) Gerloff

- 880** **History:** < Nozaki, Hisayoshi **Locality:** Lake Altglobsow/Brandenburg/Germany (1997-08-04) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *rbcL* (AB050485) **Other strain no.:** 970805-U-4 **Reference:** 597

Vitreochlamys nekrassovii (Korshikov) Nakazawa

Syn. *Sphaerellopsis nekrassovii* (Korshikov) Ettl

- 881** **History:** < Nakazawa, Atsushi < SAG **Other collection strain no.:** SAG 11-10 **Locality:** Shore of River Elbe, near Celakovice/Czech **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *rbcL* (AB050494) **Reference:** 597

Vitreochlamys ordinata (Skuja) Nakazawa

Syn. *Sphaerellopsis ordinata* Skuja

- 882** **History:** < Nozaki, Hisayoshi **Locality:** Lake Altglobsow/Brandenburg/Germany (1997-08-04) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Gene data:** *atpB* (AB014036); *psaA* (AB044420); *psaB* (AB044471); *psbC* (AB044529); *rbcL* (AB014041) **Other strain no.:** 970804-S-4 (= Nozaki S-4) **References:** 597, 663, 666, 668

Vitreochlamys pinguis Nakazawa

- 883** **History:** < Nakazawa, Atsushi **Locality:** Shakujii Park/Tokyo/Japan (1998-06-02) **Isolator:** Nakazawa, Atsushi **Identified by:** Nakazawa, Atsushi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Authentic strain **Gene data:** *atpB* (AB076120); *psaA* (AB076142); *psaB* (AB076157); *psbC* (AB076174); *rbcL* (AB050490); *rbcL* (AB050491) **Other strain no.:** Spha-12/1998-7-16 **References:** 597, 668, 671

VOLVOX : Chlorophyceae*Volvox africanus* G. S. West

- 863** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1891 **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6/2; 23°C; 180-200 µmol/m²/s; 20 D **Characteristics:** Heterothallic; Dioecious; Oogamy; Female **Remarks:** Difficult to transport

Volvox aureus Ehrenberg

- 241** **History:** < IAM (1983) **Other collection strain no.:** IAM C-419 **Locality:** Nagatoro/Saitama/Japan (1969-11-13) **Isolator:** Ichimura, Terunobu **Identified by:** Ichimura, Terunobu **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 25°C; 100-120 µmol/m²/s; 20 D **Habitat:** Freshwater (Pond sediment) **Characteristics:** Fertility lost **Other strain no.:** S-9-8 **References:** 215, 515 **Remarks:** Difficult to transport
- 396** **History:** < Ogasawara, Yoshikazu **Locality:** Nagano/Japan (1983-08-27) **Isolator:** Ogasawara, Yoshikazu **Identified by:** Ogasawara, Yoshikazu **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 23°C; 180-200 µmol/m²/s; 20 D **Habitat:** Freshwater (Paddy water) **Characteristics:** Homothallic **Reference:** 515 **Remarks:** Difficult to transport
- 693** **History:** < Nozaki, Hisayoshi **Locality:** Tokyo/Japan (1977-06-22) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Stream water) **Characteristics:** Other water bloom; Homothallic; Dioecious; Oogamy **Other strain no.:** k-5 **Reference:** 515 **Remarks:** Difficult to transport
- 694** **History:** < Nozaki, Hisayoshi **Other collection strain no.:** IAM C-600 **Locality:** Kyoto University/Kyoto/Japan (1983-10-04) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Stream water) **Characteristics:** Other water bloom; Homothallic; Dioecious; Oogamy **Other strain no.:** 31202-2-9 **Reference:** 515 **Remarks:** Difficult to transport

- 864** **History:** < Nozaki, Hisayoshi **Locality:** Neuglobsow/Brandenburg/Germany (1997-07-17) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Other strain no.:** 970717-1 **Remarks:** Difficult to transport
- 891** **History:** < Nozaki, Hisayoshi **Locality:** Neuglobsow/Brandenburg/Germany (1997-07-17) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 35-50 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Gene data:** *atpB* (AB076104); *psaA* (AB076123); *psaB* (AB076145); *psbC* (AB076160); *rbcL* (AB076096) **Other strain no.:** 970717-2 **Reference:** 671 **Remarks:** Difficult to transport
- 892** **History:** < Nozaki, Hisayoshi **Locality:** Lake Sagami/Kanagawa/Japan (1999-06-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 15°C; 35-50 µmol/m²/s; 1 M **Habitat:** Freshwater (Lake water) **Characteristics:** Other water bloom; Homothallic; Dioecious; Oogamy **Gene data:** *atpB* (AB076105); *psaA* (AB076124); *psaB* (AB076146); *psbC* (AB076161); *rbcL* (AB076086) **Other strain no.:** 990601-IV-9 **Reference:** 671 **Remarks:** Difficult to transport

Volvox aureus Ehrenberg var. *aureus*

- 541** **History:** < Nozaki, Hisayoshi **Locality:** Lake Yamanaka/Yamanashi/Japan (1981-**-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Sediment) **Gene data:** *atpB* (AB013998); *psaA* (AB044182); *psaB* (AB044424); *psbC* (AB044474) **Other strain no.:** 1706-2 **References:** 515, 625, 639, 645, 646, 663, 666 **Remarks:** Difficult to transport
- 542** **History:** < Nozaki, Hisayoshi **Locality:** Lake Yamanaka/Yamanashi/Japan (1981-**-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Sediment) **Other strain no.:** 1706-4 **References:** 515, 625 **Remarks:** Difficult to transport

Volvox barberi Shaw

- 730** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 804; IAM C-601 **Locality:** Lemoncove/California/U.S.A. **Isolator:** Stein, J. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** C; 23°C; 180-200 µmol/m²/s; 20 D **Habitat:** Freshwater (Soil) **Gene data:** *atpB* (AB014001); *psaA* (AB044186); *psaB* (AB044427); *psbC* (AB044477); *rbcL* (D86835) **References:** 647, 663, 666 **Remarks:** Difficult to transport

Volvox carteri Stein

- 397** **History:** < Ogasawara, Yoshikazu **Locality:** Ichinomiya, Asai/Aichi/Japan (1983-06-12) **Isolator:** Ogasawara, Yoshikazu **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 25°C; 100-120 µmol/m²/s; 20 D **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic; Female; Crosses with NIES-398 **Other strain no.:** V-4 **Reference:** 515 **Remarks:** Difficult to transport
- 398** **History:** < Ogasawara, Yoshikazu **Locality:** Ichinomiya, Asai/Aichi/Japan (1983-06-12) **Isolator:** Ogasawara, Yoshikazu **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 25°C; 100-120 µmol/m²/s; 20 D **Habitat:** Freshwater (Paddy water) **Characteristics:** Heterothallic; Male; Crosses with NIES-397 **Other strain no.:** V-11 **Reference:** 515 **Remarks:** Difficult to transport

Volvox carteri Stein f. *kawasakiensis* Nozaki

- 580** **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki/Kanagawa/Japan (1984-01-30) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Dioecious; Oogamy; Female; Crosses with NIES-581 **Other strain no.:** 6823-+-2 **References:** 515, 632 **Remarks:** Difficult to transport
- 581** **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki/Kanagawa/Japan (1990-10-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Dioecious; Oogamy; Male; Crosses with NIES-580 **Other strain no.:** 90-1111-5 **References:** 515, 632 **Remarks:** Difficult to transport
- 732** **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki/Kanagawa/Japan (1984-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Heterothallic; Dioecious; Oogamy; Female; Crosses with NIES-733 **Gene data:** *atpB* (AB013999); *psaA* (AB044184); *psaA* (AB044185); *psaB* (AB044425); *psbC* (AB044475); *rbcL* (D63446) **Other strain no.:** KK-3 **References:** 632, 639, 646, 663, 666, 668 **Remarks:** Difficult to transport

- 733** **History:** < Nozaki, Hisayoshi **Locality:** Kawasaki/Kanagawa/Japan (1984-01-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Authentic strain; Heterothallic; Dioecious; Oogamy; Male; Crosses with NIES-732 **Other strain no.:** KK-5 **Reference:** 632 **Remarks:** Difficult to transport

Volvox carteri Stein f. *nagariensis* Iyengar

- 865** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1885 **Locality:** Kobe/Hyogo/Japan **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 23°C; 180-200 µmol/m²/s; 20 D **Characteristics:** Heterothallic; Dioecious; Oogamy; Female **Remarks:** Difficult to transport

Volvox carteri Stein f. *weismannia* (Powers) Iyengar

- 866** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1875 **Locality:** Waterford/Australia **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 23°C; 180-200 µmol/m²/s; 20 D **Characteristics:** Heterothallic; Dioecious; Oogamy; Male **Remarks:** Difficult to transport

Volvox dissipatrix (Shaw) Printz

- 731** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2184 **Isolator:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 23°C; 180-200 µmol/m²/s; 14 D **Habitat:** Freshwater **Gene data:** *atpB* (AB014000); *psaA* (AB044183); *psaB* (AB044426); *psbC* (AB044476); *rbcL* (D63447) **References:** 646, 663, 666 **Remarks:** Difficult to transport

Volvox gigas Pocock

- 867** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1895 **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 23°C; 180-200 µmol/m²/s; 14 D **Characteristics:** Heterothallic; Dioecious; Oogamy; Female **Remarks:** Difficult to transport

Volvox obversus (Shaw) Printz

- 868** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1865 **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 µmol/m²/s; 14 D **Characteristics:** Heterothallic; Dioecious; Oogamy; Male **Remarks:** Difficult to transport

Volvox prolificus Iyengar

- 543** **History:** < Ogasawara, Yoshikazu **Locality:** Japan **Isolator:** Ogasawara, Yoshikazu **Identified by:** Suda, Shoichiro **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater **Other strain no.:** V-sp **Reference:** 515 **Remarks:** Difficult to transport

Volvox rousseletii G. S. West

- 734** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1862 **Isolator:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 23°C; 180-200 µmol/m²/s; 1 M **Habitat:** Freshwater **Gene data:** *atpB* (AB014003); *psaA* (AB044188); *psaB* (AB044429); *psbC* (AB044479); *rbcL* (D63448) **References:** 646, 663, 666 **Remarks:** Difficult to transport

Volvox sp.

- 2307** **History:** < Ogasawara, Yoshikazu **Locality:** Ichinomiya/Aichi/Japan (1986-06-04) **Isolator:** Ogasawara, Yoshikazu **Identified by:** Ogasawara, Yoshikazu **States:** Unialgal **Culture conditions:** AF-6; 23°C; 180-200 µmol/m²/s; 20 D **Habitat:** Freshwater (Paddy water) **Characteristics:** Homothallic **Remarks:** Difficult to transport

Volvox tertius Meyer

- 544** **History:** < Ogasawara, Yoshikazu **Locality:** Kisofukushima/Nagano/Japan (1986-08-27) **Isolator:** Ogasawara, Yoshikazu **Identified by:** Ogasawara, Yoshikazu **States:** Unialgal; Clonal; Axenic **Culture conditions:** MG; 23°C; 180-200 µmol/m²/s; 20 D **Habitat:** Freshwater (Paddy water) **Characteristics:** Homothallic **Gene data:** *atpB* (AB086173); *psaA* (AB086175); *psaA* (AB086176); *psaB* (AB086177); *psbC* (AB086178); *rbcL* (AB086174) **References:** 515, 640 **Remarks:** Difficult to transport

- 869** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 132 **Locality:** Cambridge, Queen's Ditch/England/U.K. (1947-**-**) **Isolator:** George, E. A. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 23°C; 180-200 µmol/m²/s; 14 D **Habitat:** Freshwater (Ditch water) **Remarks:** Difficult to transport

VOLVULINA : Chlorophyceae*Volvulina boldii* O'Neil et Starr nom. nud.

- 893** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2185 **Locality:** Peurith/North Carolina/U.S.A. **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Characteristics:** Heterothallic; Isogamy; Mating type (+) **Gene data:** *atpB* (AB044176); *psaA* (AB044225); *psaB* (AB044451); *psbC* (AB044504); *rbcL* (AB044162); *rbcL* (AB044163) **Reference:** 663
- 894** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 2186 **Locality:** Peurith/North Carolina/U.S.A. **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Characteristics:** Heterothallic; Isogamy; Mating type (-)

Volvulina compacta Nozaki

- 582** **History:** < Nozaki, Hisayoshi **Locality:** Birtamod/Nepal (1988-10-07) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-583 **Gene data:** *atpB* (AB014029); *psaA* (AB044217); *psaA* (AB044218); *psaA* (AB044219); *psaB* (AB044446); *psbC* (AB044498); *rbcL*-462 intron (AB076089) **Other strain no.:** 89-804-4 **References:** 515, 647, 656, 663, 666, 668, 671
- 583** **History:** < Nozaki, Hisayoshi **Locality:** Birtamod/Nepal (1988-10-07) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VT; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-582 **Other strain no.:** 89-804-7 **References:** 515, 656

Volvulina pringsheimii Starr

- 895** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1020 **Locality:** Fredricksburg/Texas/U.S.A. **Isolator:** Starr, R. C. **Identified by:** Starr, R. C. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MG; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Terrestrial (Rock) **Characteristics:** Heterothallic; Isogamy **Gene data:** *atpB* (AB014028); *psaA* (AB044220); *psaB* (AB044447); *psbC* (AB044499); *rbcL* (D63444) **References:** 646, 663, 666

Volvulina steinii Playfair

- 545** **History:** < Nozaki, Hisayoshi **Locality:** Hayama/Kanagawa/Japan (1980-12-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VTAC; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (-); Crosses with NIES-546 **Gene data:** *atpB* (AB044713); *psaA* (AB044221); *psaA* (AB044222); *psaB* (AB044448); *psbC* (AB044500); *rbcL* (AB044159) **Other strain no.:** 1107-5 (-) **References:** 515, 622, 643, 663
- 546** **History:** < Nozaki, Hisayoshi **Locality:** Hayama/Kanagawa/Japan (1980-12-**) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Axenic **Culture conditions:** VTAC; 20°C; 15-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Mating type (+); Crosses with NIES-545 **Other strain no.:** 1107-8 (+) **References:** 345, 515, 622
- 584** **History:** < Nozaki, Hisayoshi **Locality:** Bahrabise/Nepal (1988-09-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (+); Crosses with NIES-585 **Other strain no.:** 89-306-1 **References:** 515, 634
- 585** **History:** < Nozaki, Hisayoshi **Locality:** Bahrabise/Nepal (1988-09-01) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 µmol/m²/s; 1 M **Habitat:** Freshwater (Paddy soil) **Characteristics:** Heterothallic; Isogamy; Mating type (-); Crosses with NIES-584 **Other strain no.:** 89-423-1 **References:** 515, 634
- 896** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1525 **Locality:** Farmington/California/U.S.A. **Isolator:** Carefoot, J. R. **Identified by:** Carefoot, J. R. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Ditch mud) **Characteristics:** Mixotrophic; Heterothallic; Isogamy **Gene data:** *atpB* (AB044174); *psaA* (AB044223); *psaB* (AB044449); *psbC* (AB044501); *rbcL* (AB044160) **References:** 40, 622, 643, 663
- 897** **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1527 **Locality:** Bloomington/Indiana/U.S.A. **Isolator:** Carefoot, J. R. **Identified by:** Carefoot, J. R. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Salt water (Salt creek mud) **Characteristics:** Mixotrophic; Heterothallic; Isogamy **References:** 40, 622, 643

898 **History:** < Nozaki, Hisayoshi < UTEX **Other collection strain no.:** UTEX 1531 **Locality:** Wilson County/Texas/U.S.A. **Isolator:** Carefoot, J. R. **Identified by:** Carefoot, J. R. **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Mud) **Characteristics:** Mixotrophic; Heterothallic; Isogamy **Gene data:** *atpB* (AB044175); *psaA* (AB044224); *psaB* (AB044450); *psbC* (AB044502); *psbC* (AB044503); *rbcL* (AB044161) **References:** 40, 622, 643, 663

WATANABEA : Trebouxiophyceae

Watanabea reniformis Hanagata, Karube, Chihara et Silva

2189 **History:** < IAM (2007) < Soeder, C. J. (1966) < CCAP **Other collection strain no.:** IAM C-211; CCAP 211/9b **Isolator:** Pringsheim, E. G. **Formerly identified as:** *Chlorella saccharophila* (Krüger) Migula **States:** Unialgal; Clonal; Axenic **Culture conditions:** C (agar); 20°C; 8-15 $\mu\text{mol}/\text{m}^2/\text{s}$; 3 M **Other strain no.:** Cambridge Univ. 211-9b **References:** 129, 173, 388, 389, 1093, 1094

WOBLIA : Placididea

Wobblia lunata Moriya, Nakayama et Inouye

1015 **History:** < Moriya, Mayumi **Locality:** Osabe Harbor/Iwate/Japan (1996-08-**) **Isolator:** Moriya, Mayumi **Identified by:** Moriya, Mayumi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** SUY; 15°C; 1 M **Habitat:** Marine (Seawater) **Characteristics:** Phagotrophic; Heterotrophic; Authentic strain **Gene data:** 18S rRNA (AB032606) **Other strain no.:** #1 **Reference:** 521

WOLOSZYNSKIA : Dinophyceae

Woloszynskia leopoliense (Woloszynska) Thompson

619 **History:** < Sawaguchi, Tomohiro **Locality:** Mitsukaido/Ibaraki/Japan (1985-04-13) **Isolator:** Sawaguchi, Tomohiro **Identified by:** Sawaguchi, Tomohiro **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** MW/5; 20°C; 40-50 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Homothallic **Other strain no.:** KRYZ-3 **Remarks:** Difficult to transport

YAMAGISHIELLA : Chlorophyceae

Yamagishiella unicocca (Rayburn et Starr) Nozaki

Syn. *Pandorina unicocca* Rayburn et Starr

578 **History:** < Nozaki, Hisayoshi **Locality:** Kamogawa/Chiba/Japan (1980-10-19) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Isogamy; Mating type (+); Crosses with NIES-579 **Other strain no.:** 01209-1 **References:** 515, 670

579 **History:** < Nozaki, Hisayoshi **Locality:** Kamogawa/Chiba/Japan (1980-10-19) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VTAC; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond sediment) **Characteristics:** Heterothallic; Isogamy; Mating type (-); Crosses with NIES-578 **Other strain no.:** 01209-7 **Reference:** 515

666 **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2428 **Locality:** Nobi/Kanagawa/Japan (1979-05-**) **Isolator:** Kato, Sueo **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Isogamy; Mating type (+); Crosses with NIES-667 **Gene data:** *atpB* (AB014030); *psaA* (AB044213); *psaB* (AB044443); *psbC* (AB044495); *rbcL* (D86823) **Other strain no.:** X-441 **References:** 362, 515, 621, 647, 659, 663, 666

667 **History:** < Nozaki, Hisayoshi **Other collection strain no.:** UTEX 2429 **Locality:** Nobi/Kanagawa/Japan (1979-05-**) **Isolator:** Kato, Sueo **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** VT; 20°C; 22-27 $\mu\text{mol}/\text{m}^2/\text{s}$; 1 M **Habitat:** Freshwater (Pond water) **Characteristics:** Heterothallic; Isogamy; Mating type (-); Crosses with NIES-666 **Other strain no.:** X-443 **References:** 515, 621

870 **History:** < Nozaki, Hisayoshi **Locality:** Lake Rößlin/Fürstenberg/Germany (1997-07-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 $\mu\text{mol}/\text{m}^2/\text{s}$; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Isogamy; Mating type (+) **Other strain no.:** 970730-E-1

- 871** **History:** < Nozaki, Hisayoshi **Locality:** Lake Röblin/Fürstenberg/Germany (1997-07-29) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** Freshwater (Lake water) **Characteristics:** Heterothallic; Isogamy; Mating type (-) **Other strain no.:** 970730-E-7
- 872** **History:** < Nozaki, Hisayoshi **Locality:** Brandenburg/Germany (1997-07-31) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Heterothallic; Isogamy; Mating type (+) **Gene data:** *atpB* (AB044172); *psaA* (AB044216); *psaB* (AB044445); *psbC* (AB044497); *rbcL* (AB044168) **Other strain no.:** 970801-E-5 (= Nozaki E-5) **Reference:** 663
- 873** **History:** < Nozaki, Hisayoshi **Locality:** Brandenburg/Germany (1997-07-31) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Heterothallic; Isogamy; Mating type (-) **Other strain no.:** 970801-E-9
- 874** **History:** < Nozaki, Hisayoshi **Locality:** Brandenburg/Germany (1997-07-31) **Isolator:** Nozaki, Hisayoshi **Identified by:** Nozaki, Hisayoshi **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 15°C; 20-30 µmol/m²/s; 2 M **Habitat:** (Freshwater) **Characteristics:** Heterothallic; Isogamy; Mating type (-) **Other strain no.:** 970801-E-10
- 1859** **History:** < Nozaki, Hisayoshi **Locality:** Noumi Isl./Hiroshima/Japan (2004-08-18) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2005-06-17) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (-); Crosses with NIES-1861 **Other strain no.:** Hasu-1
- 1860** **History:** < Nozaki, Hisayoshi **Locality:** Noumi Isl./Hiroshima/Japan (2004-08-18) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2005-06-17) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (-); Crosses with NIES-1861 **Other strain no.:** Hasu-2
- 1861** **History:** < Nozaki, Hisayoshi **Locality:** Noumi Isl./Hiroshima/Japan (2004-08-18) **Isolator:** Yamada, Toshihiro **Identified by:** Yamada, Toshihiro (2005-06-17) **States:** Unialgal; Clonal; Non-axenic **Culture conditions:** AF-6; 20°C; 22-32 µmol/m²/s; 1 M **Habitat:** Freshwater (Soil) **Characteristics:** Heterothallic; Dioecious; Isogamy; Mating type (+); Crosses with NIES-1859, 1860 **Other strain no.:** Hasu-4

3. List of type specimens (タイプ標本リスト)

Specimen ID: NIES-50001

Scientific name: *Chlorogonium capillatum* Nozaki, M. M.
Watanabe et Aizawa

Class name: Chlorophyceae

Deposition date: 2007-3-31

Depositor(s): Nakada, T. & Nozaki, H. (University of Tokyo)

Type status: Epitype

Specimen status: Cryopreserved

Corresponding active culture strain: NIES-692

Reference: See section VIII References 555.

Specimen ID: NIES-50002

Scientific name: *Chlorogonium elongatum* (P. A. Dangeard) Francé

Class name: Chlorophyceae

Basionym: *Cercidium elongatum* P. A. Dangeard

Deposition date: 2007-3-31

Depositor(s): Nakada, T. & Nozaki, H. (University of Tokyo)

Type status: Epitype

Specimen status: Cryopreserved

Corresponding active culture strain: NIES-751 (IAM C-293,
CCAP 12/1, UTEX 204)

Reference: See section VIII References 555.

Specimen ID: NIES-50003

Scientific name: *Chlorogonium euchlorum* (Ehrenberg) Ehrenberg

Class name: Chlorophyceae

Basionym: *Astasia euchlora* Ehrenberg

Deposition date: 2007-3-31

Depositor(s): Nakada, T. & Nozaki, H. (University of Tokyo)

Type status: Epitype

Specimen status: Cryopreserved

Corresponding active culture strain: NIES-755 (UTEX 2010)

Reference: See section VIII References 555.

Specimen ID: NIES-50005

Scientific name: *Gungnir kasakii* (Nozaki) Nakada

Class name: Chlorophyceae

Basionym: *Chlorogonium kasakii* Nozaki

Deposition date: 2007-3-31

Depositor(s): Nakada, T. & Nozaki, H. (University of Tokyo)

Type status: Epitype

Specimen status: Cryopreserved

Corresponding active culture strain: NIES-761 (CCAP 12/8)

Reference: See section VIII References 555.

Specimen ID: NIES-50006

Scientific name: *Gungnir neglectum* (Pascher) Nakada

Class name: Chlorophyceae

Basionym: *Chlorogonium neglectum* Pascher

Synonym: *Chlamydomonas neglecta* (Pascher) Korshikov

Deposition date: 2007-3-31

Depositor(s): Nakada, T. & Nozaki, H. (University of Tokyo)

Type status: Epitype

Specimen status: Cryopreserved

Corresponding active culture strain: NIES-439

Reference: See section VIII References 555.

Specimen ID: NIES-50007

Scientific name: *Rusalka fusiformis* (Matvienko) Nakada

Class name: Chlorophyceae

Basionym: *Chlorogonium fusiforme* Matvienko

Deposition date: 2007-3-31

Depositor(s): Nakada, T. & Nozaki, H. (University of Tokyo)

Type status: Epitype

Specimen status: Cryopreserved

Corresponding active culture strain: NIES-123 (IAM C-349)

Reference: See section VIII References 555.

4. List of synonyms (シノニムリスト)

Synonym → Current name

- Achnanthes minutissima* Kützing → *Achnantheidium minutissimum* (Kützing) Czarnecki
Achnanthes minutissima Kützing var. *saprophila* Kobayasi et Mayama
 → *Achnantheidium minutissimum* (Kützing) Czarnecki var. *saprophilum* Kobayasi et Mayama
- Amphidinium britannicum* (Herdmann) Lebour → *Togula britannica* (Herdman) Jørgensen, Murray et Daugbjerg
- Anabaena spiroides* Klebahn f. *crassa* (Lemmermann) Elenkin
 → *Anabaena crassa* (Lemmermann) Komárková-Legnerová et Cronberg
- Anabaena spiroides* Klebahn var. *crassa* Klebahn
 → *Anabaena crassa* (Lemmermann) Komárková-Legnerová et Cronberg
- Arthrospira platensis* Gomont → *Spirulina platensis* (Gomont) Geitler
- Asterionella glacialis* Castracane → *Asterionellopsis glacialis* (Castracane) Round
- Batrachospermum vagum* (Roth) Agardh → *Batrachospermum turfosum* Bory
- Cachonina niei* Loeblich III → *Heterocapsa niei* (Loeblich III) Morrill et Loeblich III
- Chattonella verruculosa* Hara et Chihara
 → *Pseudochattonella verruculosa* (Hara et Chihara) Tanabe-Hosoi, Honda, Fukaya, Inagaki et Sako
- Chilomonas paramecium* Ehrenberg → *Cryptomonas paramaecium* (Ehrenberg) Hoef-Emden et Melkonian
- Chlamydomonas neglecta* Korshikov ex Pascher → *Gungnir neglectum* (Pascher) Nakada
- Chlorella kessleri* Fott et Nováková
 → *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
- Chlorella protothecoides* Krüger → *Auxenochlorella protothecoides* (Krüger) Kalina et Puncochárová
- Chlorella zofingiensis* Dönz → *Muriella zofingiensis* (Dönz) Hindák
- Chlorogonium fusiforme* Matvienko → *Rusalka fusiformis* (Matvienko) Nakada
- Chlorogonium kasakii* Nozaki → *Gungnir kasakii* (Nozaki) Nakada
- Chlorogonium neglectum* Pascher → *Gungnir neglectum* (Pascher) Nakada
- Chlorosarcinopsis delicata* S. Watanabe → *Desmotetra delicata* (S. Watanabe) S. Watanabe
- Cricosphaera roscoffensis* (Dangeard) Gayral et Fresnel → *Pleurochrysis roscoffensis* (Dangeard) Fresnel et Billard
- Errerella bornhemienensis* Conrad → *Micractinium bornhemienensis* (Conrad) Korshikov
- Eudorina unicocca* G.M. Smith var. *peripheralis* Goldstein → *Eudorina peripheralis* (Goldstein) T. K. Yamada
- Gonium sacculiferum* Scherffel → *Basichlamys sacculifera* (Scherffel) Skuja
- Gonium sociale* (Dujardin) Warming → *Tetrabaena socialis* (Dujardin) Nozaki et Ito
- Gonium sociale* (Dujardin) Warming var. *sociale* → *Tetrabaena socialis* (Dujardin) Nozaki et Ito var. *socialis*
- Gymnodinium mikimotoi* Miyake et Kominami ex Oda
 → *Karenia mikimotoi* (Miyake et Kominami ex Oda) Hansen et Moestrup
- Gymnodinium nagasakiense* Takayama et Adachi
 → *Karenia mikimotoi* (Miyake et Kominami ex Oda) Hansen et Moestrup
- Haematococcus pluvialis* Flotow → *Haematococcus lacustris* (Girod-Chantrons) Rostafinski
- Katodinium rotundatum* (Lohmann) Loeblich III → *Heterocapsa rotundata* (Lohmann) Hansen
- Microcystis ichthyoblabe* Kützing → *Microcystis aeruginosa* (Kützing) Lemmermann
- Microcystis novacekii* (Komárek) Compère → *Microcystis aeruginosa* (Kützing) Lemmermann
- Microcystis viridis* (A. Brown) Lemmermann → *Microcystis aeruginosa* (Kützing) Lemmermann
- Microcystis wesenbergii* Komárek → *Microcystis aeruginosa* (Kützing) Lemmermann
- Oscillatoria agardhii* Gomont → *Planktothrix agardhii* (Gomont) Anagnostidis et Komárek
- Oscillatoria mougeotii* Kützing ex Lemmermann
 → *Planktothrix mougeotii* (Kützing ex Lemmermann) Suda, M. M. Watanabe, Otsuka, Mahakahant, Yongmanitchai, Nopartnaraporn, Liu et Day
- Oscillatoria raciborskii* Woloszyńska → *Planktothricoides raciborskii* Suda et M. M. Watanabe

- Oscillatoria rubescens* DC. ex Gomont → *Planktothrix rubescens* (DC. ex Gomont) Anagnostidis et Komárek
Pandorina unicocca Rayburn et Starr → *Yamagishiella unicocca* (Rayburn et Starr) Nozaki
Phacus agilis Skuja → *Cryptoglana skujae* Marin et Melkonian
Protogonyaulax catenella (Whedon et Kofoid) Taylor → *Alexandrium catenella* (Whedon et Kofoid) Balech
Scenedesmus abundans (Kirchner) Chodat → *Desmodesmus abundans* (Kirchner) Hegewald
Scenedesmus gutwinskii Chodat var. *heterospina* Bodrogközy
→ *Desmodesmus subspicatus* (Chodat) Hegewald et Schmidt
Scenedesmus serratus (Corda) Bohlin → *Desmodesmus serratus* (Corda) Friedl et Hegewald
Selenastrum minutum (Nägeli) Collins → *Monoraphidium minutum* (Nägeli) Komárková-Legnerová
Staurastrum dejectum Brébisson ex Ralfs → *Staurodesmus dejectus* (Brébisson ex Ralfs) Teiling
Tetraëdron incus (Teiling) G. M. Smith → *Chlorotetraedron incus* (Teiling) MacEntee *et al.*
Verrucophora verruculosa (Hara et Chihara) Eikrem
→ *Pseudochattonella verruculosa* (Hara et Chihara) Tanabe-Hosoi, Honda, Fukaya, Inagaki et Sako

5. List of former (previously used) names (前名リスト)

Former name and NIES No. → Current name

- Achnanthes longipes* Agardh 330 → *Achnanthes subconstricta* (Meister) Toyoda
Anabaena flos-aquae Brébisson ex Bornet et Flahault f. *flos-aquae* 74 → *Anabaena kisseleviana* Elenkin
Anabaena mendotae Trelease 808 → *Anabaena lemmermannii* Richter
Anabaena solitaria Klebahn f. *solitaria* 80 → *Anabaena planctonica* Brunthaler
Anabaena spiroides Klebahn f. *spiroides* 77 → *Anabaena crassa* (Lemmermann) Komárková-Legnerová et Cronberg
Anabaena spiroides Klebahn f. *spiroides* 79 → *Anabaena pseudocompacta* M. Watanabe
Anabaena spiroides Klebahn f. *spiroides* 263 → *Anabaena ucrainica* (Schkorbatow) M. Watanabe
Cachonina niei Loeblich III 614 → *Heterocapsa horiguchii* Iwataki, Takayama et Matsuoka
Carteria inversa (Korshikov) Bourrelly 424 → *Carteria cerasiformis* Nozaki, Aizawa et M. M. Watanabe
Carteria inversa (Korshikov) Bourrelly 425 → *Carteria cerasiformis* Nozaki, Aizawa et M. M. Watanabe
Characium maximum S. Watanabe 154 → *Kentrosphaera* sp.
Chattonella antiqua (Hada) Ono 557 → *Chattonella marina* (Subrahmanyam) Hara et Chihara
Chlorella fusca Shihira et Krauss var. *fusca* 685 → *Desmodesmus abundans* (Kirchner) Hegewald
Chlorella protothecoides Krüger var. *mannophila* Shihira et Krauss 2165
→ *Auxenochlorella protothecoides* (Krüger) Kalina et Puncochárová
Chlorella pyrenoidosa Chick 226
→ *Graesiella emersonii* (Shihira et Krauss) Nozaki, Katagiri, Nakagawa, Aizawa et M. M. Watanabe
Chlorella pyrenoidosa Chick 2151
→ *Graesiella emersonii* (Shihira et Krauss) Nozaki, Katagiri, Nakagawa, Aizawa et M. M. Watanabe
Chlorella sp. 2176 → *Auxenochlorella protothecoides* (Krüger) Kalina et Puncochárová
Chlorella sp. 1269 → *Chlorella vulgaris* Beijerinck
Chlorella sp. 2177 → *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
Chlorella sp. 2178 → *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
Chlorella sp. 2179 → *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
Chlorella vulgaris 2163 → *Auxenochlorella protothecoides* (Krüger) Kalina et Puncochárová
Chlorella vulgaris 2161
→ *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
Chlorella vulgaris 2162
→ *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
Chlorella vulgaris Beijerinck 2167 → *Chlorella sorokiniana* Shihira et Krauss

- Chlorella vulgaris* Beijerinck 2168 → *Chlorella sorokiniana* Shihira et Krauss
Chlorella vulgaris Beijerinck 2171 → *Chlorella* sp.
Chlorogonium metamorphum Skuja 446 → *Chlamydomonas tetragama* (Bohlin) Ettl
Chlorogonium metamorphum Skuja (in IAM) 123 → *Rusalka fusiformis* (Matvienko) Nakada
Chlorosarcinopsis caeca S. Watanabe 160 → *Chlorokybus* sp.
Draparnaldia plumosa (Vaucher) Agardh 454 → *Stigeoclonium* sp.
Eudorina unicocca G. M. Smith var. *unicocca* 724 → *Eudorina unicocca* G. M. Smith
Eudorina unicocca G. M. Smith var. *unicocca* 725 → *Eudorina unicocca* G. M. Smith
Hafniomonas montana (Geitler) Ettl et Moestrup 257 → *Hafniomonas laevis* Nakada, Suda et Nozaki
Heterocapsa pygmaea Lobelich III, Schmidt et Sherley 472 → *Heterocapsa ovata* Iwataki et Fukuyo
Heterocapsa pygmaea Lobelich III, Schmidt et Sherley 473
→ *Heterocapsa pseudotriquetra* Iwataki, Hansen et Fukuyo
Melosira granulata (Ehrenberg) Ralfs var. *angustissima* O. Müller f. *spiralis* O. Müller 333
→ *Aulacoseira granulata* (Ehrenberg) Simonsen
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 44 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 87 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 88 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 89 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 90 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 91 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 99 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 100 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 101 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 298 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *aeruginosa* 299 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *flos-aquae* (Wittrock) Elenkin 98
→ *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis aeruginosa (Kützing) Lemmermann f. *flos-aquae* (Wittrock) Elenkin 478
→ *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1026 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1061 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1070 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1079 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1090 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1105 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1122 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1182 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis ichthyoblabe Kützing 1183 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis novacekii (Komárek) Compère 901 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis novacekii (Komárek) Compère 902 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis novacekii (Komárek) Compère 1053 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis novacekii (Komárek) Compère 1068 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis novacekii (Komárek) Compère 1143 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis viridis (A. Brown) Lemmermann 102 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis viridis (A. Brown) Lemmermann 103 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis viridis (A. Brown) Lemmermann 1058 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis viridis (A. Brown) Lemmermann 1059 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis viridis (A. Brown) Lemmermann 1091 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis viridis (A. Brown) Lemmermann 1102 → *Microcystis aeruginosa* (Kützing) Lemmermann

- Microcystis wesenbergii* Komárek 1252 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis wesenbergii Komárek 1253 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis wesenbergii Komárek 1254 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis wesenbergii Komárek 1255 → *Microcystis aeruginosa* (Kützing) Lemmermann
Microcystis wesenbergii Komárek 1256 → *Microcystis aeruginosa* (Kützing) Lemmermann
Nanochlorum sp. 1270 → *Picochlorum* sp.
Oscillatoria agardhii Gomont 610 → *Planktothrix rubescens* (DC. ex Gomont) Anagnostidis et Komárek
Phormidium tenue (C. Agardh ex Gomont) Anagnostidis et Komárek 30 → *Leptolyngbya* sp.
Phormidium tenue (C. Agardh ex Gomont) Anagnostidis et Komárek 512 → *Pseudanabaena galeata* Böcher
Phormidium tenue (C. Agardh ex Gomont) Anagnostidis et Komárek 611 → *Pseudanabaena* sp.
Rhodomonas chrysoidea Butcher ex Hill et Wetherbee 1005 → *Rhodomonas* sp.
Scenedesmus acutus Meyen 2158
→ *Parachlorella kessleri* (Fott et Nováková) Krienitz, Hegewald, Hepperle, Huss, Rohr et Wolf
Scenedesmus nanus Chodat 2277 → *Desmodesmus* sp.
Scenedesmus nanus Chodat 2278 → *Desmodesmus* sp.
Scenedesmus quadricauda (Turpin) Brébisson sensu Chodat 96 → *Desmodesmus* sp.
Selenastrum capricornutum (Printz) Nygaard 35 → *Pseudokirchneriella subcapitata* (Korshikov) Hindák
Skeletonema costatum (Greville) Cleve 16 → *Skeletonema marinoi-dohrnii* complex
Skeletonema costatum (Greville) Cleve 17 → *Skeletonema marinoi-dohrnii* complex
Skeletonema costatum (Greville) Cleve 223 → *Skeletonema marinoi-dohrnii* complex
Skeletonema costatum (Greville) Cleve 323 → *Skeletonema marinoi-dohrnii* complex
Skeletonema costatum (Greville) Cleve 324 → *Skeletonema marinoi-dohrnii* complex

III. INFORMATION ON STRAINS (保存株関連情報)

1. Phylogenetic position of the cyanobacterial strains (シアノバクテリア保存株の系統的位置)

Neighbor-joining (NJ) tree based on 16S rDNA sequences: The tree contains 78 strains of NIES cyanobacteria. Some cyanobacterial genera such as *Synechococcus* and *Phormidium* are polyphyletic in this tree. Strains showing identical or more than 99% identical sequences are listed in the same branch. Bootstrap values >50 are shown near branches (maximum parsimony (MP) / NJ). Sequences were aligned by using ClustalX (Thompson *et al.* 1997) and edited manually with BioEdit 7.01 (Hall 1999). Phylogenetic analysis was conducted with PHYLIP ver.

3.66 (Felsenstein 1993). NJ analysis using “dnadist” and MP analysis using “dnapars” were performed. Bootstrap values (100 replicates) were obtained by using “seqboot” in PHYLIP.

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IV. 培地作製, 継代培養, 凍結保存の方法

1. ストック液と培地の作り方

1.1. ストック液

培地は一般に多量栄養素, 微量金属, およびビタミン類から成る。これらの諸成分のストック液を作製しておく, 培地作製が簡便になる。これらのうち微量金属やビタミン類のストック液の濃度は非常に低いので, まず, 秤量しやすい, より高濃度の液を作製し, それを順次希釈してストック液を作製する必要がある。以下, 各々についてストック液の濃度と作り方について述べる。

1.1.1 多量栄養素

各栄養素につき, 10 mg/mL の濃度のストック液を別々に作製し, 冷蔵庫 (5°C) で保管する。

1.1.2 微量金属

各種のストック液として別々に作製され保管される場合と, いくつかの金属溶液を混合した混液で保管される場合がある。

1.1.2.1 各種ストック液

1 ~ 10 mg/mL の濃度で各種金属のストック液を作製し, 冷蔵庫 (5°C) に保管する。

1.1.2.2 混合ストック液

- i) 1 ~ 10 mg/mL の濃度で各種金属液を作製する。
- ii) 必要量の 80% の蒸留水をビーカーに加える。
- iii) 十分に攪拌しながら各種金属液を必要量添加する。
- iv) 蒸留水を加え, 最終量に調整し, 冷蔵庫 (5°C) に保管する。

1.1.3. ビタミン類

ビタミン B₁₂, ビオチン, チアミンの 3 種のビタミンだけでなく多くの藻類が増殖するので, 殆どの培地はこれら 3 種のビタミン類だけが添加されている。しかし, 培地によっては, 他のビタミン類が添加されている場合もある。

1.1.3.1. ビタミン B₁₂, ビオチン, チアミン

- i) ビタミン B₁₂ とビオチンについては, 各々 100 µg/mL の原液, チアミンについては 10 mg/mL の原液を作製し, それぞれ 1 mL ずつ小分けして -20°C のフリーザーに保管する。
- ii) 各ビタミンについて, 保存原液の 1 mL を融解し, 蒸留水で 1/100 に希釈し, ビタミン B₁₂ とビオチンについては 1 µg/mL, チアミンについては 100 µg/mL のストック液を作製し, 冷蔵庫に保管しながら使用する。

1.1.3.2. ビタミン類混液

培地によっては, 多種のビタミン類が混液の形で添加される場合がある。大量に作製しておくとい。

- i) 各種のビタミンについて 0.1 ~ 1 mg/mL の原液を作製する。
- ii) 必要量の 80% の蒸留水をビーカーに加える。
- iii) 十分に攪拌しながら各種ビタミンを必要量加える。
- iv) 蒸留水で最終量に調整し, 10 mL ずつ小分けし, 使用する分は冷蔵庫 (5°C) に, 使用しない分は -20°C のフリーザーに保存する。

1.2. 培地

培地は, 合成培地と強化培地に大別される。すべての淡水藻類や一部の海産藻類は合成培地で, ほとんどの海産藻類は強化培地で保存されている。ほとんどの培地は, 試験管等に分注した後オートクレーブ滅菌して使用するが, 濾過滅菌しなければならない培地もある。

1.2.1. 淡水藻類用合成培地

- i) 必要量の 80 ~ 90% の蒸留水をビーカーに加える。
- ii) Tris, glycylglycine, HEPES, TAPS, Bicine, MES 等の緩衝剤 (必要とされる場合) を必要量天秤で秤量し, 十分に攪拌しながら添加する。
- iii) 各種栄養塩を各々のストック液から必要量添加する。
- iv) 蒸留水で最終量に調整する。
- v) 緩衝剤が使用されている場合は, 1 mol/L HCl あるいは 1 mol/L NaOH で, 使用されていない場合は各々 1/10 の濃度で pH を調整する。
- vi) 培地 10 mL ずつを試験管 (18 × 150 mm) に分注し, オートクレーブで滅菌する (121°C, 20 min)。

1.2.2. 海産藻類用合成培地

- i) 必要量の 80% の蒸留水をビーカーに加える。
- ii) 十分に攪拌しながら, 緩衝剤 (Tris, NTA 等) および多量栄養塩類 (NaCl, MgSO₄ · 7H₂O, KCl, CaCl₂ · 2H₂O) を必要量天秤で秤量し, 添加する。
- iii) 他の各種栄養塩を各々のストック液から必要量添加する。
- iv) 蒸留水で最終量に調整する。
- v) 1 mol/L HCl で pH を調整する (通常 8.0)。
- vi) 培地 10 mL ずつを試験管に分注し, オートクレーブで滅菌する (121°C, 20 min)。

1.2.3. 海産藻類用栄養塩強化培地

- i) 汚染のない外洋海水を採取し, ワットマン GF/C フィルターでろ過し, 粒子を除く。通常の外洋海水の塩分

は約 35%である。

- ii) 必要量の 80～90%の海水をビーカーに加える。
- iii) 必要量の Tris 等の緩衝剤を天秤で秤量し (必要とされる場合)、攪拌しながら溶解する。
- iv) 他の栄養塩類を各々のストック液から必要量添加する。
- v) 海水で最終量に調整する。
- vi) pHを測定する。指示されている場合は 1 mol/L HCl で調整する (通常 8.0)。
- vii) 培地 10 mL ずつを試験管に分注し、オートクレーブで滅菌する (121°C, 20 min)。

1.2.4. 濾過滅菌

MNK 培地は濾過滅菌をして使用している。オートクレーブ滅菌 (121°C, 20 min) したフィルターセット (ミリポアフィルター 0.22 μm) を用いて濾過滅菌する。濾過滅菌された培地は、滅菌シリンジや滅菌した分注器を用いて、あらかじめ滅菌された試験管に 10 mL ずつ分注する。分注は無菌室で行う。

1.2.5. 寒天斜面培地

通常寒天は 1.5% の濃度で滅菌する前に液体培地に加える。

- i) 寒天を必要量天秤で秤量し、液体培地に添加し、オートクレーブまたはホットプレートで熱し、溶解する。
- ii) 溶解後、速やかに 10 mL ずつ試験管に分注し、オートクレーブで滅菌する (121°C, 20 min)。
- iii) 滅菌後、試験管上部に直径 1 cm の枕木をして寝かせ、放冷して培地を斜面状に固める。

1.2.6. 原生動物用培地

培地には、餌となるバクテリアを増殖させるための有機物が含まれている。穀類を添加する培地は、予め、小麦や米をシャーレなどに入れ、乾熱滅菌 (150°C, 30 min) し、冷蔵保存したものを、使用直前に液体培地 10 mL に対して 1 粒添加する。

1.2.7. シャジクモ類用培地

1.2.7.1. 培養土

本施設では、培養土に用いる黒土、川砂、腐葉土、苦土石灰は園芸店で購入しているが、水田や池等の底泥は独自に採取している。土質によって株の生育に多少の差が生じる。使用する培養土の種類は、各保存株データおよび培地リストに示した。

1.2.7.2. 水

培地に加える水は、通常、脱イオン水 (または蒸留水) を用いるが、汽水産の株の場合は 1/3 Herbst 人工海水を、脱イオン水でさらに 1/3～1/2 に希釈して使用する。

1.2.7.3. 培地作製

- i) 容器の底から 1/4～1/5 まで土を入れる。
- ii) 脱イオン水 (または蒸留水) で土を湿らす。
- iii) 容器にゆるく蓋をし、オートクレーブで 2 回滅菌する (121°C, 20 min)。その際、1 回目のオートクレーブ後、一晚放置し再度オートクレーブする。
- iv) 冷めたら、オートクレーブ滅菌した脱イオン水 (または蒸留水) を静かに加える。単藻株用の培地では、土に水を注ぐ操作をクリーンベンチ内で行う。

1.2.7.4. 二酸化ゲルマニウム溶液の作製法

保存されているシャジクモ類株の多くは単藻化されていない。したがって、本施設では混在する藻類、特に珪藻の増殖を抑えるために以下に示す方法で二酸化ゲルマニウム溶液 (濃度 1 mg/L) を作製し、培地に添加している。

- i) 1 mol/L の水酸化ナトリウム溶液 200 mL を沸騰させる。
- ii) 突沸させないように気をつけて二酸化ゲルマニウム 0.5 g を添加する。
- iii) 溶液を室温まで冷ます。
- iv) 1 mol/L の塩酸で pH を調整する (7.8～8.0)。
- v) 蒸留水を加えて 500 mL にする。
- vi) オートクレーブで滅菌し (121°C, 20 min)、冷えたら冷蔵庫で保存する。

2. 培地リスト

Media list (p. 214～227) 参照。

3. 継代培養の方法

3.1. 微細藻類, 原生動物, 淡水産紅藻

株は、ねじ口試験管に培養された状態で送付される。株を受け取ったら、キャップを緩め、保存株データに示された培養条件に合った適当な場所に保管する。株を維持するには、以下の方法で植え継ぎ、培養を行う。なお、培地は株を受け取る前に作製しておく。

- i) 植え継ぐ前に培地を培養条件と同じ温度にする。
- ii) 無菌操作にて、適量の細胞懸濁液を新鮮な培地に植え継ぐ。本施設では、予め滅菌した綿栓ピペットを用いて接種している (口絵プレート 7-1, 2)。細胞が沈殿する株や容器に付着する株ではピペッティングによって懸濁させてから培養液を取り出す。但し、細胞壁を持たない細胞では、ピペッティングによって細胞が壊れるので、攪拌せず、細胞の多いところを静かに吸い取る。接種する細胞懸濁液の量は、藻類の種や株の状態によって異なり、10 mL の培地に、よく増殖した培養では 1, 2 滴と少量でよいが、細胞が大きく細胞密度が低い場合は 4, 5 滴と多めに接種する。寒天培地の場合は、ガ

スパーナーで滅菌した白金耳で細胞塊を掻き取り、新鮮な寒天培地の上になすり付ける。

- iii) 保存株情報で指定された温度と光条件下で培養し（口絵プレート 7-3, 4），指定された期間毎に，新鮮な培地に植え継ぐ。明暗周期は 12 時間明期 12 時間暗期とし，ねじ口試験管のねじ蓋をゆるくする。
- iv) 本施設では，1 週間毎に，目視または顕微鏡で生育状況を確認している。生育が悪い場合は，再度植え継ぎ，培地や培養条件を検討している。

原生動物株では，以下の点に留意する。

- i) 植え継ぐ際に，培地に穀類，餌となる生物などを接種する場合がある（口絵プレート 7-5）。または，事前に餌となる生物を接種する場合がある。
- ii) 餌として藻類を接種した場合を除き，培養に光を必要としない。
- iii) 培養容器に付着する性質をもつ株では，植え継ぎの際にピペティングする必要がある。

3.2. シャジクモ類

シャジクモ類株は，藻体の一部を切り取った状態で送付される。株を受け取ったら，速やかに以下の方法に従って藻体を新鮮な培地へ植え込む。

- i) 培地は株を受け取る前に作製しておく。その際，濃度 1 mg/L の二酸化ゲルマニウム溶液を 1～2 mL 添加しておく（900 mL マヨネーズ瓶の場合。単藻株では不要。）。
- ii) 培養土へ竹串またはピンセットを用いて，藻体をやさしく植え込む（口絵プレート 7-6）。この時，節部が必ず 1 つは培養土の中に埋め込まれた状態とする。なお，シラタマモ属 (*Lamprothamnium*) は仮根部の球状体を，ホシツリモ属 (*Nitellopsis*) は星状体を土に埋め込む。
- iii) 保存株情報に示された温度と光条件下で培養する。株は新鮮な培地へ植え込んでから約 2 週間後に新たに生長を開始する（極端な高温，低温でなければ，実験室などの直射日光の当たらない，明るい窓辺でも培養できる）。
- iv) 良好な生長が確認された後に，更に株を継代培養する場合は，下記の方法に従って，保存株情報に示された期間毎に新鮮な培地に移植する必要がある。
 - a) 生長した藻体の上端から 3～4 節を，ハサミまたはピンセットを用いて切り取る（口絵プレート 7-7）。
 - b) 絵筆を用いて，切り取った藻体表面に付着している他の藻類を取り除き（口絵プレート 7-8），よくすすぐ（単藻株では不要）。

- c) 二酸化ゲルマニウム溶液を添加した新鮮な培地へ，ii) と同様に植え込む。

4. 凍結保存法

NIES コレクションでの凍結保存は，プログラムフリーザーを用いて徐々に -40°C まで下げた後，液体窒素で -196°C まで急速凍結させる二段階凍結法を用いている。シアノバクテリアの多くの株，緑藻と単細胞性紅藻の一部の株，および大型の淡水産紅藻について，現在本施設で採用している凍結方法の概要を紹介する。また，微細藻類の凍結法については Mori *et al.* (2002) および森 (2007) に詳細な説明がある。

引用文献

- Mori, F., Erata, M. & Watanabe, M. M. 2002. Cryopreservation of cyanobacteria and green algae in the NIES-Collection. *Microbiol. Cult. Coll.* 18: 45-55.
- 森史 2007. 微細藻類の凍結保存法. *日本微生物資源学会誌* 23: 89-93.

4.1. 微細藻類の凍結保存

4.1.1. 準備するもの

- i) 細胞懸濁液：対数増殖期終期から定常期初期の細胞。
- ii) 培地：通常当該株の培養に用いている，滅菌済みの培地。
- iii) 凍結保護剤：シアノバクテリアの凍結保存には，適当な培地で希釈した 6% ジメチルスルホキシド (DMSO) を用意する。緑藻および紅藻には 10% DMSO を用いる。これらは最終濃度の 2 倍の濃度である。DMSO は Millex-LG フィルターで濾過滅菌しておく。
- iv) 器具および機器
 - ① クリーンベンチおよび無菌操作に必要な器具類。
 - ② 2 mL クライオチューブ：あらかじめ滅菌済みのものを使用する。チューブには株番号等，必要事項をラベルしておく。
 - ③ プログラムフリーザー：NIES コレクションでは Planer Kryo 320-1.7 を使用している。
 - ④ デュワー瓶：10 L シャトルドラム JIK-S10 を使用している。
 - ⑤ 大きめのピンセット (19 cm)，クライオ手袋，クライオエプロン，ゴーグル。
 - ⑥ 箱，ラック，液体窒素槽：NIES コレクションでは Nunc ポリカーボネート製ストレージボックス，8 段ステンレスラック，太陽日酸 DR-245LM を使用している。
 - ⑦ 凍結保存容器：DR-245LM (太陽日酸) の液体窒素槽を使用している。
 - ⑧ 恒温槽：サーマルロボ TR-1 を使用している。

4.1.2. 凍結手順

- i) 滅菌した器具を用い，ii) から v) の操作はクリーンベンチで行う。

- ii) 滅菌した培地で最終濃度の2倍になるよう希釈した凍結保護剤を、氷上で冷やしておく。
- iii) あらかじめ株番号等をラベルした2 mL クライオチューブに細胞懸濁液（対数期終期から定常期初期の細胞）0.5 mL を分注する。
- iv) 冷やしてあった凍結保護剤 0.5 mL を加え、クライオチューブを振って混合する。
- v) 室温に15分間静置する。
- vi) プログラムフリーザーにクライオチューブをセットし、毎分 -1°C の冷却速度で -40°C まで冷却する（口絵プレート7-9）。
- vii) プログラムフリーザー内（ -40°C ）で15分間保持する。
- viii) クライオチューブをプログラムフリーザーから速やかに取り出し、デュワー瓶に入れた液体窒素中に投入する（口絵プレート7-10）。
- ix) 1時間後、クライオチューブをストレージボックスに詰めてラックに収納し、液体窒素保存槽（気相）内に保管する（口絵プレート7-11）。

4.1.3. 解凍手順

- i) 恒温槽を 40°C に設定し、準備しておく。
- ii) 恒温槽にて、クライオチューブ内の氷晶が完全に消えるまで手でよく振り、融解する（口絵プレート7-12）。
- iii) クリーンベンチで、解凍した細胞懸濁液を新しい液体培地の入った試験管に移してよく攪拌し、通常培養より暗めの光条件で数日間培養し（株によって異なる）、その後通常の培養条件に移す。

4.2. 淡水産紅藻の凍結保存

4.2.1. 準備するもの

- i) 細胞培養液：植え替え後2週間以上経った藻体。但し藻体が大きい場合は、ピンセットおよびハサミを使って細かく裁断し、2週間以上培養する。
- ii) 培地：Bold 3N 培地。
- iii) 凍結保護剤：チスジノリ (*Thorea okadae*)、フ

トチスジノリ (*T. hispida*) およびオキチモズク (*Nemalionopsis tortuosa*) には40% DMSOを用い、オキチモズクには30%メタノールも使用する。これらは最終濃度の2倍の濃度である。DMSOおよびメタノールはMillex-LG フィルターで濾過滅菌し、滅菌したBold 3Nで希釈してある。

- iv) 器具および機器：微細藻類の場合と同様。

4.2.2. 凍結手順

- i) 滅菌した器具を用い、ii) から iv) の操作はクリーンベンチで行う。
- ii) Bold 3N 培地でDMSOを40%、メタノールを30%に希釈し、氷上で冷やしておく。
- iii) 2 mL クライオチューブに細胞培養液 0.8 mL を分注する。
- iv) iii) へ40%DMSOまたは30%メタノールを0.8 mL ずつ加え、クライオチューブを振って混合する。DMSOを加えた場合は、室温に15分間静置する。
- v) 4.1.2. vi) から ix) と同じ手順で凍結する。

4.2.3. 解凍手順

- i) 恒温槽を 40°C に設定し、培地を氷水で冷やしておく。
- ii) クライオチューブを速やかに恒温槽へ入れ、手でよくチューブを振る（口絵プレート7-12）。クライオチューブ内の氷晶が完全に消える寸前に氷水へ移す。
- iii) クリーンベンチで、直ちにチューブ内の細胞懸濁液を50 mL 遠心管に移し、氷水で冷やした新しい培地40 mL を加え、静置する。
- iv) 上澄み液をピペットで完全に取り除く。
- v) 再び新しい培地を40 mL 加え、静置し、上澄み液をピペットで完全に取り除く。
- vi) 藻体を新しい液体培地の入った三角フラスコに移し、通常の培養条件で培養する。

IV. MEDIA PREPARATION, SUBCULTURE AND CRYOPRESERVATION

1. How to prepare stock solutions and media

1.1. Stock solutions

Media are generally composed of three types of components; macronutrients, trace metals, and vitamins. For convenience we recommend to prepare stock solutions of these components. Stock solutions of trace metals and vitamins are prepared at extremely low concentrations, and therefore required dilution steps. The following methods are currently used at the NIES-Collection.

1.1.1. Macronutrients

Prepare stock solutions of individual macronutrients separately at a concentration of 10 mg/mL, and store them in a refrigerator (5°C).

1.1.2. Trace metals

These elements are prepared as either separate stock solutions or mixed stock solutions.

1.1.2.1. Separate stock solutions

Prepare stock solutions of individual metals separately at concentrations of 1–10 mg/mL, and store in a refrigerator (5°C).

1.1.2.2. Mixed stock solution

- i) Prepare each metal solution as for the separate stock solutions shown in 1.1.2.1
- ii) Add approximately 80% of the final volume of distilled water in a beaker.
- iii) First, dissolve the required amount of Na₂EDTA, while stirring, if applicable.
- iv) Add the required volume of each trace metal solution one at a time, while stirring.
- v) Adjust to the final volume by adding distilled water, and store in a refrigerator (5°C).

1.1.3. Vitamins

Vitamins requirement is in majority fulfilled with three vitamins; vitamin B₁₂, biotin, and thiamine HCl. Therefore, most of the media contain only these three vitamins. However, several media contain additional vitamins.

1.1.3.1. Vitamin B₁₂, biotin, and thiamine HCl

- i) Prepare 0.1 mg/mL solutions of vitamin B₁₂ and biotin and a 10 mg/mL solution of thiamine HCl.

Disperse 1 mL of each solution into a separate micro-tube, and store in a freezer at –20°C.

- ii) Thaw and dilute the vitamin solution to 1/100 to prepare stock solutions of 1 µg/mL vitamin B₁₂ or biotin, and a stock solution of 100 µg/mL thiamine HCl. Store in a refrigerator (5°C).

1.1.3.2. Other vitamins

Additional vitamins are added to some media as a mixture. We recommend to prepare a large volume of mixed stock solutions at once.

- i) Prepare each vitamin solution at concentrations of 0.1–1.0 mg/mL. (Store these original solutions in a freezer at –20°C, if needed.)
- ii) Add approximately 80% of the required volume of distilled water in a beaker.
- iii) Add the required volume of each vitamin solution one at a time, while stirring.
- iv) Adjust to the final volume by adding distilled water.
- v) Dispense 10 mL of the vitamin mixture into several vessels, and store in a refrigerator (5°C) for use or in a freezer (–20°C) for storage.

1.2. Media preparation

Two categories of media are usually used; synthetic and enriched. The former is used for maintenance of all freshwater algal cultures and some marine ones and the latter for most marine ones. Most of the media are dispensed to test tubes and autoclaved before use, whereas some media should be filter sterilized.

1.2.1. Synthetic medium for freshwater algae

- i) Add approximately 80–90% of the required volume of distilled water to a beaker.
- ii) Dissolve appropriate quantities of buffers such as Tris (hydroxymethyl) aminomethane (known as Tris), glycylglycine, HEPES, TAPS, Bicine, or MES (if required), while stirring.
- iii) Add the appropriate nutrients from previously prepared stock solutions, while stirring.
- iv) Adjust to the final volume by adding distilled water.
- v) Check and adjust pH as specified in the media list with either 1 mol/L HCl or 1 mol/L NaOH (if buffers are used) or with either 0.1 mol/L HCl or 0.1 mol/L NaOH (if no buffers are used).
- vi) Dispense 10 mL of medium into each test tube (18

× 150mm) and sterilize by autoclaving (121°C, 20 min).

1.2.2. Synthetic medium for marine algae

- i) Add approximately 80% of the required volume of distilled water to a beaker.
- ii) Dissolve appropriate quantities of Tris, nitrilotriacetic acid (known as NTA) and major salts such as NaCl, MgSO₄ · 7H₂O, KCl and CaCl₂ · 2H₂O, while stirring.
- iii) Add the other nutrients from previously prepared stock solutions.
- iv) Adjust to the final volume by adding distilled water.
- v) Check and adjust pH with 1mol/L HCl, if pH is specified in the media list. (usually pH 8.0)
- vi) Dispense 10 mL of medium into each test tube and sterilize by autoclaving (121°C, 20 min).

1.2.3. Enriched seawater medium

- i) Collect offshore seawater free from pollution, and remove particulate matter by filtering through Whatman GF/C filters.
- ii) Check salinity. (Usually salinity of offshore seawater is 35‰)
- iii) Add approximately 80–90% of the required volume of seawater to a beaker.
- iv) Dissolve appropriate quantities of Tris (if required).
- v) Add the appropriate nutrients from previously prepared stock solutions.
- vi) Adjust to the final volume by adding the filtered seawater.
- vii) Check and adjust the pH to 8.0 with 1 mol/L HCl if required.
- viii) Dispense 10 mL of medium into each test tube and sterilize by autoclaving (121°C, 20 min).

1.2.4. Filter sterilization

MNK medium should be filter sterilized by using a filter apparatus with a filter (Millipore 0.22 µm), which is previously autoclaved (121°C, 20 min). Then, the medium is dispensed into previously sterilized test tubes by using a sterilized syringe or dispenser under aseptic conditions.

1.2.5. Agar slants

Agar is usually added at a concentration of 1.5% after liquid medium has been prepared, and before autoclaving.

- i) Add the appropriate quantities of agar to the liquid medium and heat by autoclaving or on a hot plate.
- ii) After melting, quickly dispense 10 mL of agar medium into each test tube and sterilize by

autoclaving (121°C, 20 min).

- iii) After sterilization, lay the test tubes down with the upper part of the tubes elevated on a rod (1 cm φ), and cool to form agar slants.

1.2.6. Medium for protozoa

These media contain organic matter to encourage multiplication of bacteria as a food source for protozoa. For media containing wheat or rice grains, these cereals should be sterilized by dry heat (150°C, 30 min) in advance, and kept in a cool place. For use, one grain of cereal is added to 10 mL of medium.

1.2.7. Medium for Charales

1.2.7.1. Soils

Black soil, river sand, leaf mould, and garden lime used in the NIES-Collection are purchased from garden centers, whereas bottom mud from paddy fields, reservoirs, and ponds is collected by us. Soil quality influences the growth of Charales to a greater or lesser degree. Please refer to the media list and individual strain data for soil composition.

1.2.7.2. Water

Freshwater strains: Deionized water (or distilled water).

Brackish water strains: one-third to one-half diluted 1/3 Herbst ASW, i.e. the original medium is diluted to one-third to one-half with deionized water (or distilled water).

1.2.7.3. Soil water medium

- i) Put appropriate soil into a glass vessel up to one-quarter to one-fifth.
- ii) Dampen the soil with deionized water (or distilled water).
- iii) Cover the glass vessel with a plastic cap or aluminum foil, and autoclave it twice (121°C, 20 min, overnight cooling down, and again 121°C, 20 min).
- iv) After the vessel has cooled down to room temperature, pour sterilized water (see 1.2.7.2 Water) into the glass vessel carefully (do not disturb the soil). When you make media for unialgal strains, use a clean bench (or a clean room) for this process.

1.2.7.4. Germanium dioxide solution

Germanium dioxide solution especially discourages the growth of diatoms. To suppress the growth of undesired diatoms, add germanium dioxide solution (1 mg/L GeO₂) to the media.

- i) Boil 200 mL NaOH solution (1 mol/L).
- ii) Add 0.5 g GeO₂ to the boiling NaOH solution very

carefully.

- iii) Cool down to room temperature.
- iv) Check the pH and adjust to 7.8–8.0 with 1 mol/L HCl.
- v) Adjust to 500 mL by adding deionized water (or distilled water).
- vi) Autoclave (121°C, 20 min).

2. Media list (培地リスト)

2.1. Media for freshwater, terrestrial, hot spring and salt water algae

(淡水産, 陸生, 温泉産, 塩水産藻類用培地)

Media indicated with asterisks (*) are available for distribution. Reference numbers are shown in parentheses after medium names.

(* 分譲可能な培地を示す。培地に関する文献番号を培地名の後のカッコ内に示した。)

1. AAF-6*

Prepare as for AF-6¹⁾ medium but adjust to pH 5.5–5.8.

- 1) See AF-6

2. Acid-CSi/5*

Dilute CSi medium with distilled water to one-fifth. Adjust to pH 3 with sulfuric acid.

3. AF-6* (338)

NaNO ₃	14	mg
NH ₄ NO ₃	2.2	mg
MgSO ₄ · 7H ₂ O	3	mg
KH ₂ PO ₄	1	mg
K ₂ HPO ₄	0.5	mg
CaCl ₂ · 2H ₂ O	1	mg
CaCO ₃ ²⁾	1	mg
Fe-citrate	0.2	mg
Citric acid	0.2	mg
Biotin	0.2	µg
Thiamine HCl	1	µg
Vitamin B ₆	0.1	µg
Vitamin B ₁₂	0.1	µg
Trace metals ¹⁾	0.5	mL
Distilled water	99.5	mL
pH 6.6 ²⁾		

- 1) In the NIES-Collection, CaCO₃ is removed and PIV metals are used instead of Trace metals.
- 2) In the NIES-Collection, 40 mg MES is added and pH is

adjusted to 6.6.

4. AF-6/2*

AF-6¹⁾ medium is diluted with distilled water to one-half.

- 1) See AF-6

5. AFAC*

To 100 mL AF-6¹⁾ medium add 20 mg sodium acetate.

- 1) See AF-6

6. Allen* (11, 883)

(NH ₄) ₂ SO ₄	132	mg
KH ₂ PO ₄	27.2	mg
MgSO ₄ · 7H ₂ O	24.6	mg
CaCl ₂ · 2H ₂ O	7.4	mg
Allen metals ¹⁾	0.01	mL
Distilled water	99.9	mL
pH 2.5 ²⁾		

- 1) See Allen metals

- 2) pH is adjusted to 2.5 with 0.5 mol/L H₂SO₄.

7. BBM (33)

NaNO ₃	25	mg
KH ₂ PO ₄	17.5	mg
K ₂ HPO ₄	10	mg
MgSO ₄ · 7H ₂ O	7.5	mg
CaCl ₂ · 2H ₂ O	2.5	mg
NaCl	2.5	mg
KOH	3.1	mg
FeSO ₄ · 7H ₂ O	0.498	mg
H ₃ BO ₃	1.142	mg
ZnSO ₄ · 7H ₂ O	0.882	mg
MnCl ₂ · 7H ₂ O	0.144	mg
MoO ₃	0.071	mg
CuSO ₄ · 5H ₂ O	0.157	mg
Co(NO ₃) ₂ · 6H ₂ O	0.049	mg
Na ₂ EDTA	5	mg
Distilled water	100	mL

8. BG-11*

NaNO ₃	150	mg
K ₂ HPO ₄ · 3H ₂ O	4	mg
MnSO ₄ · 7H ₂ O	4	mg
CaCl ₂ · 2H ₂ O	7.5	mg
Citric acid	3.6	mg

Ferric ammonium citrate	0.6	mg
Na ₂ EDTA-Mg	0.1	mg
Na ₂ CO ₃	2	mg
Trace metal mix A ₅ + Co ¹⁾	0.1	mg
Agar	1.5	g
Distilled water	99.9	mL
pH 7.4		

1) See Trace metal mix A₅ + Co

9. C* (208)

Ca(NO ₃) ₂ · 4H ₂ O	15	mg
KNO ₃	10	mg
β-Na ₂ glycerophosphate · 5H ₂ O	5	mg
MgSO ₄ · 7H ₂ O	4	mg
Vitamin B ₁₂	0.01	μg
Biotin	0.01	μg
Thiamine HCl	1	μg
PIV metals ¹⁾	0.3	mL
Tris (hydroxymethyl) aminomethane	50	mg
Distilled water	99.7	mL
pH 7.5		

Add 1.5 g agar to 100 mL of medium to give a solid medium.

1) See PIV metals

10. C + 10% Seawater (N. Tezuka, unpubl.)

C¹⁾ medium with 10% filtered seawater.

1) See C

11. C/6G

Mix 1 volume of C¹⁾ medium and 5 volumes of Lake Nojiri water (sterilized through GF/F filter, and store at 5°C).

1) See C

12. CA* (221)

Ca(NO ₃) ₂ · 4H ₂ O	2	mg
KNO ₃	10	mg
NH ₄ NO ₃	5	mg
β-Na ₂ glycerophosphate · 5H ₂ O	3	mg
MgSO ₄ · 7H ₂ O	2	mg
Vitamin B ₁₂	0.01	μg
Biotin	0.01	μg
Thiamine HCl	1	μg
PIV metals ¹⁾	0.1	mL
Fe (as EDTA; 1:1 molar) ²⁾	0.1	mg

HEPES	40	mg
Distilled water	99.9	mL
pH 7.2		

- 1) See PIV metals
- 2) See Fe (as EDTA; 1:1 molar)

13. CAM*

CA¹⁾ medium with pH adjusted to 6.5 by buffering with MES instead of HEPES.

1) See CA

14. Carefoot* (41)

NaNO ₃	24.7	mg
CaCl ₂ · 2H ₂ O	1.1	mg
MgSO ₄ · 7H ₂ O	4.7	mg
K ₂ HPO ₄	0.9	mg
KH ₂ PO ₄	2.3	mg
NaCl	1.5	mg
PIV metals ¹⁾	0.5	mL
Distilled water	99.5	mL

pH 7.5

In the NIES-Collection, 0.02 μg vitamin B₁₂, 0.02 μg biotin and 2 μg thiamine HCl are added to this medium.

1) See PIV metals

15. CB*

To C¹⁾ medium add Bicine instead of Tris (hydroxymethyl) aminomethane, and adjust pH to 9.0.

1) See C

16. CB-V*

Make B-V¹⁾ medium with C²⁾ medium.

- 1) See B-V
- 2) See C

17. CC (215)

C¹⁾ medium with pH adjusted to 3.0 by buffering with 1,2,3,4-cyclopentane tetracarboxylic acid instead of Tris (hydroxymethyl) aminomethane.

1) See C

18. CSI*

C¹⁾ medium with pH adjusted to 7.0 by buffering with

50 mg HEPES instead of Tris (hydroxymethyl) aminomethane. Thereafter, 10 mg $\text{Na}_2\text{SiO}_3 \cdot 9\text{H}_2\text{O}$ is added.

1) See C

19. CSi + Cu

To 100 mL CSi¹⁾ medium add 0.25 mg $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ and 100 mg agar.

1) See CSi

20. CSi/5*

Dilute CSi¹⁾ medium with distilled water to 1/5.

1) See CSi

21. CT* (1039)

C¹⁾ medium with pH adjusted to 8.2 by buffering with 40 mg TAPS instead of Tris (hydroxymethyl) aminomethane.

1) See C

22. CYT*

To 100 mL C¹⁾ medium add 100 mg yeast extract and 200 mg tryptone.

1) See C

23. DH + Fe (I.I. Brown, unpubl.)

D stock medium ¹⁾	5	mL
HEPES	0.12	mg
$\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$	11.4	mg
Distilled water	95	mL
pH 8.24 – 8.26		

After autoclaving, keep in room temperature overnight. Next day, adjust pH to 7.5–7.6 and add 1.5 g agar.

1) See D stock medium

24. DY-V*

MES	20	mg
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	5	mg
KCl	0.3	mg
NH_4Cl	0.27	mg
NaNO_3	2	mg
$\beta\text{-Na}_2\text{glycerophosphate} \cdot 5\text{H}_2\text{O}$	0.22	mg
H_3BO_3	0.08	mg
$\text{Na}_2\text{EDTA} \cdot 2\text{H}_2\text{O}$	0.8	mg

$\text{Na}_2\text{SiO}_3 \cdot 9\text{H}_2\text{O}$	1.4	mg
$\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$	0.1	mg
$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	7.5	mg
Vitamin B ₁₂	0.05	μg
Biotin	0.05	μg
Thiamine HCl	10	μg
DY trace metal solution ¹⁾	0.1	mL
Distilled water	99.9	mL
pH 6.8		

1) See DY trace metal solution

25. HUT* (207)

KH_2PO_4	2	mg
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	2.5	mg
Sodium acetate	40	mg
Potassium citrate	4	mg
Polypeptone	60	mg
Yeast extract	40	mg
Vitamin B ₁₂	0.05	μg
Thiamine HCl	0.04	mg
Distilled water	100	mL
pH 6.4		

Add 150 mg agar to 100 mL of medium to give a semi-solid medium.

26. M-11* (120, 1087)

NaNO_3	10	mg
K_2HPO_4	1	mg
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	7.5	mg
$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	4	mg
Na_2CO_3	3	mg
$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$	0.1	mg
$\text{Na}_2\text{EDTA} \cdot 2\text{H}_2\text{O}$	0.1	mg
Distilled water	100	mL
pH 8.0		

27. MA* (211)

$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$	5	mg
KNO_3	10	mg
NaNO_3	5	mg
Na_2SO_4	4	mg
$\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$	5	mg
$\beta\text{-Na}_2\text{glycerophosphate} \cdot 5\text{H}_2\text{O}$	10	mg
$\text{Na}_2\text{EDTA} \cdot 2\text{H}_2\text{O}$	0.5	mg
$\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$	0.05	mg
$\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$	0.5	mg

ZnCl ₂	0.05	mg
CoCl ₂ · 6H ₂ O	0.5	mg
Na ₂ MoO ₄ · 2H ₂ O	0.08	mg
H ₃ BO ₃	2	mg
Bicine	50	mg
Distilled water	100	mL
pH 8.6		

28. MAF-6*

To 100 mL of AF-6¹⁾ medium add 10 mg glucose and 10 mg sodium acetate.

1) See AF-6

29. M-Allen*

(NH ₄)SO ₄	262	mg
KH ₂ PO ₄	54	mg
MgSO ₄ · 7H ₂ O	50	mg
CaCl ₂ · 2H ₂ O	14	mg
A2 trace elements stock solution ¹⁾	0.2	mL
Distilled water	99.4	mL
pH 2.5 ²⁾		

After autoclaving, add 0.4 mL of A2 Fe stock solution³⁾ (filter-sterilized).

1) See A2 trace elements stock solution

2) pH is adjusted to 2.5 with 0.5 mol/L H₂SO₄.

3) See A2 Fe stock solution

Indicated as "MA" medium in reference.

30. M-Allen (+ U)*

To 100 mL M-Allen¹⁾ medium add 50 mg uracil.

1) See M-Allen

31. MBM* (215)

KNO ₃	25	mg
MgSO ₄ · 7H ₂ O	7.5	mg
K ₂ HPO ₄	7.5	mg
KH ₂ PO ₄	17.5	mg
NaCl	2.5	mg
CaCl ₂ · 2H ₂ O	1	mg
Fe solution ¹⁾	0.1	mL
A ₅ solution ²⁾	0.1	mL
Agar	1.5	g
Distilled water	99.8	mL
pH 6.0		

1) See Fe solution.

2) See A₅ solution.

Indicated as "Modified Bristol medium" in reference.

32. M Chu No. 10* (47)

Ca(NO ₃) ₂ · 4H ₂ O	2	mg
KH ₂ PO ₄	0.62	mg
MgSO ₄ · 7H ₂ O	2.5	mg
Na ₂ CO ₃	2	mg
Na ₂ SiO ₃ · 9H ₂ O	2.5	mg
HCl (1 mol/L) ¹⁾	0.025	mL
Na ₂ EDTA · 2H ₂ O	0.2	mg
FeCl ₃ · 6H ₂ O	0.1	mg
H ₃ BO ₃	0.248	mg
MnCl ₂ · 4H ₂ O	0.139	mg
(NH ₄) ₆ Mo ₇ O ₂₄ · 4H ₂ O	0.1	mg
Vitamin B ₁₂	1	μg
Thiamine HCl	0.1	μg
Biotin	0.1	μg
Distilled water	100	mL

1) In the NIES-Collection, pH is adjusted to 7.6 with 1 mol/L HCl.

33. MDM* (1013)

KNO ₃	100	mg
MgSO ₄ · 7H ₂ O	25	mg
K ₂ HPO ₄	25	mg
NaCl	10	mg
CaCl ₂ · 2H ₂ O	1	mg
Fe solution ¹⁾	0.1	mL
A ₅ solution ²⁾	0.1	mL
Agar	1.5	g
Distilled water	99.8	mL
pH 8.0		

1) See Fe solution

2) See A₅ solution

34. MG* (210)

Ca(NO ₃) ₂ · 4H ₂ O	2	mg
KNO ₃	10	mg
β-Na ₂ glycerophosphate · 5H ₂ O	3	mg
MgSO ₄ · 7H ₂ O	2	mg
Vitamin B ₁₂	0.01	μg
Biotin	0.01	μg
Thiamine HCl	1	μg
PIV metals ¹⁾	0.1	mL

Fe (as EDTA; 1:1 molar) ²⁾	0.1	mL	Vitamin B ₁₂	0.02	µg
HEPES	40	mg	Thiamine HCl	2	µg
Distilled water	99.8	mL	Biotin	0.02	µg
pH 7.2			Glycylglycine	10	mg
			Distilled water	100	mL
			pH 7.2		

1) See PIV metals

2) See Fe (as EDTA; 1:1 molar)

35. MGM

MG¹⁾ medium with pH adjusted to 6.5 by buffering with MES instead of HEPES.

1) See MG

36. Modified acetate medium (mAC) (672)

To 100 mL AF-6¹⁾ medium, add 40 mg glucose, yeast extract, tryptone, and sodium acetate.

1) See AF-6

37. Modified M-1 (mM-1) (194)

CaCl ₂ · 2H ₂ O	0.5	mg
NaNO ₃	2.5	mg
NH ₄ Cl	0.5	mg
CaSO ₄ · 2H ₂ O	0.4	mg
MgSO ₄ · 7H ₂ O	0.5	mg
Na ₂ SiO ₃ · 9H ₂ O	0.2	mg
Fe (as EDTA; 1:1 molar) ¹⁾	25	mL
mM-1 Trace elements ²⁾	0.1	mL
K ₂ HPO ₄	6.96	mg
KH ₂ PO ₄	266.5	mg
Distilled water	74.9	mL
pH 5.1 – 5.3		

1) See Fe (as EDTA; 1:1 molar)

2) See mM-1 Trace elements

38. MW* (794)

Urea	0.85	mg
NaNO ₃	0.17	mg
NH ₄ Cl	0.042	mg
Ca(NO ₃) ₂ · 4H ₂ O	10	mg
CaCO ₃	1	mg
CaCl ₂ · 2H ₂ O	1.4	mg
KNO ₃	1	mg
KHCO ₃	0.9	mg
β-Na ₂ glycerophosphate · 5H ₂ O	2	mg
MgSO ₄ · 7H ₂ O	1.5	mg
PIV metals ¹⁾	0.05	mL

39. MW/5*

MW¹⁾ medium is diluted with distilled water to 1/5.

1) See MW

40. N-Free*

NaCl	7	mg
MgSO ₄ · 7H ₂ O	38	mg
CaCl ₂ · 2H ₂ O	10.6	mg
K ₂ HPO ₄	60	mg
Fe ₂ (SO ₄) ₃ · 6H ₂ O	1	mg
Na ₂ EDTA · 2H ₂ O	2.7	mg
H ₃ BO ₃	0.3	mg
MnSO ₄ · 4H ₂ O ¹⁾	0.2	mg
Na ₂ Mo ₄ · 2H ₂ O	0.8	mg
ZnSO ₄ · 7H ₂ O	0.03	mg
CuSO ₄ · 5H ₂ O	8	µg
CoCl ₂ · 6H ₂ O	3.7	µg
Agar	1.5	g
Distilled water	100	mL
pH 7.5		

1) In the NIES-Collection, 0.2 mg MnSO₄ · 4H₂O is replaced by 0.22 mg MnSO₄ · 5H₂O.

41. O* (215, 880)

Glucose	100	mg
Tryptone	100	mg
Yeast extract	100	mg
Beef extract ¹⁾	50	mg
Agar	150	mg
Distilled water	100	mL

1) In the NIES-Collection, beef extract is removed. Indicated as "*Ochromonas* medium" in reference.

42. P 35* (211)

NH ₄ NO ₃	10	mg
MgSO ₄ · 7H ₂ O	4	mg
KCl	5	mg

CaCl ₂ · 2H ₂ O	7.4	mg
β-Na ₂ glycerophosphate · 5H ₂ O	5	mg
Sodium acetate	100	mg
Vitamin B ₁₂	0.01	μg
Biotin	0.01	μg
Thiamine HCl	1	μg
PIV metals ¹⁾	0.3	mL
Tris (hydroxymethyl) aminomethane	50	mg
Distilled water	99.7	mL
pH 8.0		

1) See PIVmetals

43. Pro* (215, 880)

To 100 mL MBM¹⁾ medium add 100 mg proteose peptone.

1) See MBM

Indicated as "Proteose medium" in reference.

44. SOT* (684)

NaHCO ₃	1.68	g
K ₂ HPO ₄	50	mg
NaNO ₃	250	mg
K ₂ SO ₄	100	mg
NaCl	100	mg
MgSO ₄ · 7H ₂ O	20	mg
CaCl ₂ · 2H ₂ O	4	mg
FeSO ₄ · 7H ₂ O	1	mg
Na ₂ EDTA · 2H ₂ O	8	mg
A ₅ solution ¹⁾	0.1	mL
Distilled water	99.9	mL

1) See A₅ solution

45. SW (768)

Put a small amount of dried soil into a test tube and add 20 mL distilled water.

46. TAP

NH ₄ Cl	40	mg
CaCl ₂ · 2H ₂ O	5.1	mg
MgSO ₄ · 7H ₂ O	10	mg
K ₂ HPO ₄	11.9	mg
KH ₂ PO ₄	6.03	mg
Hutner's trace elements ¹⁾	0.1	mL
Acetic acid	0.1	mL
Tris (hydroxymethyl) aminomethane	242	mg
Agar	1.5	g

Distilled water	99.8	mL
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1) See Hutner's trace elements

47. Tre* (215, 880)

To 100 mL MBM¹⁾ medium add 1 g proteose peptone and 2 g glucose.

1) See MBM

Indicated as "Trebouxia medium" in reference.

48. URO* (364, 558)

NH ₄ NO ₃	0.5	mg
β-Na ₂ glycerophosphate · 5H ₂ O	0.4	mg
MgSO ₄ · 7H ₂ O	1	mg
CaCl ₂ · 2H ₂ O	1	mg
KCl	0.1	mg
Thiamine HCl	1	μg
Vitamin B ₁₂	0.01	μg
Biotin	0.01	μg
Fe-EDTA	0.05	mg
PIV metals ¹⁾	0.1	mL
Distilled water	99.9	mL
pH 7.5 ²⁾		

1) See PIV metals

2) pH is adjusted to 7.5 with 0.1 mol/L HCl.

49. URO-H*

To 100 mL URO¹⁾ medium add 40 mg HEPES.

1) See URO

50. URO-T*

To 100 mL URO¹⁾ medium add 50 mg Tris (hydroxymethyl) aminomathane.

1) See URO

51. VT* (772, 882)

Ca(NO ₃) ₂ · 4H ₂ O	11.78	mg
β-Na ₂ glycerophosphate · 5H ₂ O	5	mg
MgSO ₄ · 7H ₂ O	4	mg
KCl	5	mg
Vitamin B ₁₂	0.01	μg
Biotin	0.01	μg
Thiamine HCl	1	μg
PIV metals ¹⁾	0.3	mL
Glycylglycine	50	mg

Distilled water 99.7 mL
pH 7.5

1) See PIV metals

52. VTAC* (655)

To 100 mL VT¹⁾ medium add 20 mg sodium acetate.

1) See VT

53. VTYT (215)

To 100 mL VT¹⁾ medium add 10 mg yeast extract and 20 mg tryptone.

1) See VT

54. W (1036)

Ca(NO ₃) ₂ · 4H ₂ O	10	mg
KNO ₃	1	mg
MgSO ₄ · 7H ₂ O	1.5	mg
β-Na ₂ glycerophosphate · 5H ₂ O	2	mg
Urea	1.7	mg
Thiamine HCl	0.2	μg
Vitamin B ₁₂	0.002	μg
Biotin	0.002	μg
PIV metals ¹⁾	0.05	mL
Glycylglycine	10	mg
Distilled water	99.95	mL

pH 7.5

1) See PIV metals

2.2. Media for marine and brackish water microalgae

(海産および汽水産藻類用培地)

Media indicated with asterisks (*) are available for distribution. Reference numbers are shown in parentheses after medium names.

(* 分譲可能な培地を示す。培地に関する文献番号を培地名の後のカッコ内に示した。)

55. BESM*

Make diluted seawater by mixing 27.5 mL seawater and 70 mL distilled water. Make ESM¹⁾ medium by using this diluted seawater instead of original seawater.

1) See ESM

56. BESM 2*

Make diluted seawater by mixing 47.5 mL seawater and 50 mL distilled water. Make ESM¹⁾ medium by using this diluted seawater instead of original seawater.

1) See ESM

57. ESM* (721)

NaNO ₃	12	mg
K ₂ HPO ₄	0.5	mg
Vitamin B ₁₂	0.1	μg
Biotin	0.1	μg
Thiamine HCl	10	μg
Fe-EDTA	25.9	μg
Mn-EDTA	33.2	μg
Tris (hydroxymethyl) aminomethane	100	mg
Soil extract ¹⁾	2.5	mL
Seawater	97.5	mL

pH 8.0

The amount of Soil extract depends on the quality of the soil. In the NIES-Collection, Soil extract was reduced from 5 mL to 2.5 mL after 2002.

Add 1.5 g agar to 100 mL of medium to give a solid medium.

1) See Soil extract

58. ESM2*

Prepare as for 100 mL ESM¹⁾ medium with 95.5 mL instead of 97.5 mL seawater and with 5 mL instead of 2.5 mL Soil extract²⁾.

1) See ESM

2) See Soil extract

59. f/2* (119)

NaNO ₃	7.5	mg
NaH ₂ PO ₄ · 2H ₂ O	0.6	mg
Vitamin B ₁₂	0.05	μg
Biotin	0.05	μg
Thiamine HCl	10	μg
Na ₂ SiO ₃ · 9H ₂ O	1	mg
f/2 metals ¹⁾	0.1	mL
Seawater	99.9	mL

1) See f/2 metals

60. f/2 + NH₄Cl*

To 100 mL f/2¹⁾ medium add 2.67 mg NH₄Cl.

1) See f/2

61. IMK

Into 100 mL seawater dissolve 21 mg powder medium of Daigo IMK (Nihon Pharmaceutical Co., Ltd.).

In the NIES-Collection, IMK medium is used after autoclaving (121°C, 20 min).

62. M-ASP7 (1058)

NTA	7	mg
NaCl	2.5	g
MgSO ₄ · 7H ₂ O	900	mg
KCl	70	mg
CaCl ₂ · 2H ₂ O	30	mg
NaNO ₃	5	mg
NaH ₂ PO ₄ · 2H ₂ O	2	mg
Vitamin B ₁₂	0.1	µg
Vitamin mix S ₃ ¹⁾	1	mL
Na ₂ SiO ₃ · 9H ₂ O	1	mg
P _N metals ²⁾	3	mL
Tris (hydroxymethyl) aminomethane	100	mg
Distilled water	96	mL
pH 8.0		

1) See Vitamin mix S₃

2) See P_N metals

63. MF

f/2¹⁾ medium with Na₂SiO₃ · 9H₂O replaced by 1 mL Soil extract²⁾ and adjusted to pH 8.0 by buffering with 100 mg Tris (hydroxymethyl) aminomethane.

1) See f/2

2) See Soil extract

64. mIMR* (modified IMR) (759)

KNO ₃	1.26	mg
K ₂ HPO ₄	0.22	mg
Na ₂ SiO ₃ ¹⁾	0.61	mg
mIMR trace metals ²⁾	0.1	mL
Thiamine	20	µg
Vitamin B ₁₂	1	µg
Biotin	0.1	µg
Seawater	100	mL

1) In the NIES-Collection, Na₂SiO₃ is replaced by Na₂SiO₃ · 9H₂O.

2) See mIMR trace metals

65. MKM (1013)

KNO ₃	75	mg
KH ₂ PO ₄	2.5	mg
MgSO ₄ · 7H ₂ O	2	mg
Fe-citrate	250	µg
Agar	1.5	g
Seawater	50	mL
Distilled water	50	mL

66. MNK* (617)

NaNO ₃	2	mg
K ₂ HPO ₄	0.1	mg
Na ₂ HPO ₄ · 12H ₂ O	0.028	mg
Vitamin B ₁₂	0.015	µg
Biotin	0.015	µg
Thiamine HCl	2	µg
CoSO ₄ · 7H ₂ O	0.12	µg
ZnSO ₄ · 7H ₂ O	0.24	µg
MnCl ₂ · 4H ₂ O	0.9	µg
CuSO ₄ · 5H ₂ O	0.006	µg
Na ₂ SeO ₃	0.003	µg
Na ₂ MoO ₄ · 2H ₂ O	0.07	µg
Na ₂ EDTA · 2H ₂ O	0.37	µg
Fe-EDTA	2.6	µg
Mn-EDTA	3.3	µg
Seawater	100	mL

Vitamins should be added at the end of the preparation. This medium should not be autoclaved but filter-sterilized.

67. PRO-99*

NaH ₂ PO ₄ · 2H ₂ O	3	mg
NH ₄ Cl	4.28	mg
PRO-99 trace metals ¹⁾	0.01	mL
Seawater	100	mL

1) See PRO-99 trace metals

68. WESM*

Make diluted seawater by mixing 87.5 mL seawater and 10 mL distilled water. Make ESM¹⁾ medium by using this diluted seawater instead of seawater.

1) See ESM

2.3. Bacteria-free check media for freshwater algae

(淡水産藻類用無菌検査培地)

Reference numbers are shown in parentheses after medium names.

(培地に関する文献番号を培地名の後のカッコ内に示した。)

69. B-I (222)

Appropriate medium	100	mL
Proteose peptone	100	mg

70. B-II (222)

Appropriate medium	100	mL
Yeast extract	500	mg

71. B-III (222)

Appropriate medium	100	mL
Peptone	500	mg
Beef extract	300	mg

72. B-IV (222)

Appropriate medium	100	mL
Glucose	100	mg
Peptone	100	mg

73. B-V (222)

Appropriate medium	100	mL
Sodium acetate	50	mg
Glucose	50	mg
Tryptone	50	mg
Yeast extract	30	mg

74. YT (215)

Appropriate medium	100	mL
Yeast extract	100	mg
Tryptone	200	mg

2.4. Bacteria-free check media for marine algae

(海産藻類用無菌検査培地)

Reference numbers are shown in parentheses after medium names.

(培地に関する文献番号を培地名の後のカッコ内に示した。)

75. Bf/2 (1129)

ASP 7 ¹⁾	100	mL
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Trypticase	50	mg
Yeast extract	5	mg

1) In the NIES-Collection, ASP 7 is replaced by f/2 medium. See f/2.

76. MM 23 (M. Tatewaki, pers. comm.)

NaCl	1.8	g
MgSO ₄ · 7H ₂ O	500	mg
KCl	60	mg
NaNO ₃	100	mg
CaCl ₂ · 2H ₂ O	36.7	mg
K ₂ HPO ₄	6	mg
Sucrose	400	mg
PII metals ¹⁾	2	mL
FeCl ₃ · 6H ₂ O	48	μg
Thiamine HCl	10	μg
Biotin	0.1	μg
Vitamin B ₁₂	0.2	μg
C-Source Mix II ²⁾	1	mL
Tris (hydroxymethyl) aminomethane	100	mg
Distilled water	97	mL
pH 8.0		

1) See PII metals

2) See C-Source Mix II

77. STP* (771)

NaNO ₃	20	mg
K ₂ HPO ₄	1	mg
Sodium glutamate	50	mg
Glucose	20	mg
Glycine	10	mg
D,L-Alanine	10	mg
Vitamin mix 8 ¹⁾	0.1	mL
Trypticase	20	mg
Yeast autolysate ²⁾	20	mg
Sucrose	100	mg
Soil extract ³⁾	5	mL
Sea water	80	mL
Distilled water	15	mL
pH 7.5		

1) In the NIES-Collection, Vitamin mix 8 is replaced by Vitamin mix S₃. See Vitamin mix S₃.

2) In the NIES-Collection, yeast autolysate is replaced by yeast extract.

3) See Soil extract

2.5. Trace metals, vitamin mixtures and soil extracts (微量金属, ビタミン混液, 土壌浸出液)

Media indicated with asterisks (*) are available for distribution. Reference numbers are shown in parentheses after medium names.

(* 分譲可能な培地を示す。培地に関する文献番号を培地名の後のカッコ内に示した。)

78. A2 Fe stock solution*

EDTA · 2Na	700	mg
FeCl ₃ · 6H ₂ O	400	mg
Distilled water	100	mL

Sterilize by passing through a Millipore filter (0.22 μm).

79. A2 trace element stock solution*

H ₃ BO ₃	285	mg
MnCl ₂ · 4H ₂ O	180	mg
ZnCl ₂	10.5	mg
Na ₂ MoO ₄ · 2H ₂ O	39	mg
CoCl ₂ · 6H ₂ O	4	mg
CuCl ₂ · 2H ₂ O	4.3	mg
Distilled water	100	mL

80. A₅ solution* (195)

H ₃ BO ₃	286	mg
MnSO ₄ · 7H ₂ O ¹⁾	250	mg
ZnSO ₄ · 7H ₂ O	22.2	mg
CuSO ₄ · 5H ₂ O	7.9	mg
Na ₂ MoO ₄ · 2H ₂ O	2.1	mg
Distilled water	100	mL

1) In the NIES-Collection, 250 mg MnSO₄ · 7H₂O is replaced by 217 mg MnSO₄ · 5H₂O.

81. Allen metals* (11)

Fe-EDTA	30.16	g
MnCl ₂ · 4H ₂ O	1.79	g
H ₃ BO ₃	2.86	g
ZnSO ₄ · 7H ₂ O	220	mg
CuSO ₄ · 5H ₂ O	79	mg
(NH ₄) ₆ Mo ₇ O ₂₄ · 4H ₂ O	130	mg
NH ₄ VO ₃	23	mg
Distilled water	100	mL

In the NIES-Collection, Allen metals are used after dilution with distilled water to 1/1000.

82. C-Source Mix II* (M. Tatewaki, pers. comm.)

Glycine	100	mg
D,L-Alanine	100	mg
L-Asparagine	100	mg
Sodium acetate · 3H ₂ O ¹⁾	200	mg
Glucose	200	mg
L-Glutamic acid	200	mg
Distilled water	100	mL

1) In the NIES-Collection, 200 mg sodium acetate · 3H₂O is replaced by 120 mg sodium acetate, anhydrous.

83. D stock medium (42)

NTA	0.2	g
D trace mix ¹⁾	1	mL
FeCl ₃ · 6H ₂ O	0.58	mg
CaSO ₄ · 2H ₂ O	120	mg
MgSO ₄ · 7H ₂ O	200	mg
NaCl	16	mg
KNO ₃	200	mg
NaNO ₃	1.4	g
Na ₂ HPO ₄ ²⁾	220	mg
Distilled water	99	mL

1) See D trace mix

2) In the NIES-Collection, 220 mg Na₂HPO₄ is replaced by 550 mg Na₂HPO₄ · 12H₂O.

84. D trace mix (42)

Conc H ₂ SO ₄	0.05	mL
MnSO ₄ · H ₂ O ¹⁾	228	mg
ZnSO ₄ · 7H ₂ O	50	mg
H ₃ BO ₃	50	mg
CuSO ₄ · 5H ₂ O	2.5	mg
Na ₂ MoO ₄ · 2H ₂ O	2.5	mg
CoCl ₂ · 6H ₂ O	4.5	mg
Distilled water	100	mL

1) In the NIES-Collection, 228 mg MnSO₄ · H₂O is replaced by 349 mg MnSO₄ · 5H₂O.

85. DY trace metal solution*

MnCl ₂ · 4H ₂ O	20	mg
ZnSO ₄ · 7H ₂ O	4	mg
CoCl ₂ · 6H ₂ O	0.8	mg
Na ₂ MoO ₄ · 6H ₂ O ¹⁾	2	mg
Na ₃ VO ₄	0.2	mg
H ₂ SeO ₃	0.2	mg

Distilled water	100	mL
1) In the NIES-Collection, Na ₂ MoO ₄ · 6H ₂ O is replaced by Na ₂ MoO ₄ · 2H ₂ O.		

86. Fe (as EDTA; 1:1 molar)* (770)

Fe(NH ₄) ₂ (SO ₄) ₂ · 6H ₂ O	70.2	mg
Na ₂ EDTA · 2H ₂ O	66	mg
Distilled water	100	mL

1 mL of this solution contains 0.1 mg Fe.

87. Fe solution (215)

FeSO ₄ · 7H ₂ O	200	mg
Distilled water	100	mL
Conc · H ₂ SO ₄ ¹⁾	0.026	mL ¹⁾

1) 2 drops/500 mL (Ref. 215)

88. f/2 metals* (119)

Na ₂ EDTA · 2H ₂ O	440	mg
FeCl ₃ · 6H ₂ O	316	mg
CoSO ₄ · 7H ₂ O	1.2	mg
ZnSO ₄ · 7H ₂ O	2.1	mg
MnCl ₂ · 4H ₂ O	18	mg
CuSO ₄ · 5H ₂ O	0.7	mg
Na ₂ MoO ₄ · 2H ₂ O	0.7	mg
Distilled water	100	mL

89. Hutner's trace elements

Na ₂ EDTA · 2H ₂ O	5	g
ZnSO ₄ · 7H ₂ O	2.2	g
H ₃ BO ₃	1.14	g
MnCl ₂ · 4H ₂ O	506	mg
FeSO ₄ · 7H ₂ O	499	mg
CoCl ₂ · 6H ₂ O	161	mg
CuSO ₄ · 5H ₂ O	157	mg
(NH ₄) ₆ Mo ₇ O ₂₄ · 4H ₂ O	110	mg
Distilled water	100	mL

Adjust the pH to 6.5–6.8 with KOH (~1.6 g). Store the solution in a refrigerator (5°C). The solution should have turned to violet color before use. This process takes a while and is necessary.

90. mIMR trace metals*

FeCl ₃ · 6H ₂ O	100	mg
MnSO ₄ · 4H ₂ O	85.5	mg

ZnSO ₄ · 7H ₂ O	25	mg
Na ₂ MoO ₄ · 2H ₂ O	13	mg
CoCl ₂ · 6H ₂ O	0.4	mg
CuSO ₄ · 5H ₂ O	0.4	mg
Na ₂ SeO ₃	0.173	mg
Na ₂ EDTA ¹⁾	600	mg
Distilled water	100	mL

1) In the NIES-Collection, Na₂EDTA is replaced by Na₂EDTA · 2H₂O.

91. mM-1 Trace elements (194)

CuSO ₄ · 5H ₂ O	10	mg
MnCl ₂ · 7H ₂ O	10	mg
Br (1 mol/L solution)	0.01	mL
ZnSO ₄ · 7H ₂ O	10	mg
CoCl ₂ · 6H ₂ O	5	mg
BaCl ₂ · 2H ₂ O	1	mg
H ₃ BO ₃	10	mg
FeCl ₃ · 6H ₂ O	10	mg
Na ₂ MoO ₄ · 2H ₂ O	5	mg
Distilled water	100	mL

Indicated as "Trace elements" in reference.

92. mTYGM-9***Pre-solution**

K ₂ HPO ₄	0.28	mg
KH ₂ PO ₄	40	mg
Casein Digest	0.2	g
Yeast extract	0.1	g
NaCl	0.75	g
Mucin, gastric	0.2	g
Distilled water	97	mL

Sterilize Pre-solution by autoclaving (121°C, 15 min), add aseptically 3 mL horse serum and 50 µL 10% Tween 80 dissolved in absolute ethanol (both filter-sterilized). Keep in a cool place.

93. P II metals* (769)

Na ₂ EDTA · 2H ₂ O	100	mg
H ₃ BO ₃	114	mg
FeCl ₃ · 6H ₂ O	4.9	mg
MnSO ₄ · 4H ₂ O	16.4	mg
ZnSO ₄ · 7H ₂ O	2.2	mg
CoSO ₄ · 7H ₂ O	480	µg
Distilled water	100	mL

94. P IV metals* (772)

Na ₂ EDTA · 2H ₂ O	100	mg
FeCl ₃ · 6H ₂ O	19.6	mg
MnCl ₂ · 4H ₂ O	3.6	mg
ZnCl ₂ ¹⁾	2.2	mg
CoCl ₂ · 6H ₂ O	0.4	mg
Na ₂ MoO ₄ · 2H ₂ O	0.25	mg
Distilled water	100	mL

1) In the NIES-Collection, ZnCl₂ is replaced by ZnSO₄ · 7H₂O.

95. P_N metals (1058)

Na ₂ EDTA · 2H ₂ O	100	mg
H ₃ BO ₃	113	mg
FeCl ₃ · 6H ₂ O	6.3	mg
CoSO ₄ · 7H ₂ O	0.093	mg
ZnSO ₄ · 7H ₂ O	4.66	mg
MnCl ₂ · 4H ₂ O	3.2	mg
Distilled water	100	mL

96. PRO-99 trace metals*

Na ₂ EDTA · 2H ₂ O	0.145	mg
FeCl ₃ · 6H ₂ O	0.422	mg
ZnSO ₄ · 7H ₂ O	2.9	mg
CoCl ₂ · 6H ₂ O	1.3	mg
MnCl ₂ · 4H ₂ O	1.3	mg
Na ₂ MoO ₄ · 2H ₂ O	0.85	mg
Na ₂ SeO ₃	0.173	mg
NiCl ₂ · 6H ₂ O	0.36	mg
Distilled water	100	mL

97. Soil extract (771)

To 1000 mL distilled water add 200 mL of soil (soil from undisturbed deciduous woodland is best) and heat by autoclaving for 1 h at 105°C. When cool, heat by autoclaving for 1 h at 105°C again. Pass the supernatant through a GF/C filter and Celite, and then pass the filtrate through a GF/F filter. Adjust to 1000 mL by adding distilled water. Dispense 10 mL of the final filtrate into each test tube and sterilize by autoclaving for 20 min at 121°C. Keep in a cool place.

98. Trace metal mix A₅ + Co*

H ₃ BO ₃	286	mg
MnCl ₄ · 4H ₂ O	181	mg
ZnSO ₄ · 7H ₂ O	22.2	mg

Na ₂ MoO ₄ · 2H ₂ O	39	mg
CuSO ₄ · 5H ₂ O	7.9	mg
Co(NO ₃) ₂ · 6H ₂ O	4.9	mg
Distilled water	100	mL

99. Vitamin mix S₃ (769)

Thiamine HCl	5	mg
Nicotinic acid	1	mg
Calcium pantothenate	1	mg
<i>p</i> -Aminobenzoic acid	0.1	mg
Biotin	0.01	mg
Inositol	50	mg
Folic acid	0.02	mg
Thymine	30	mg
Distilled water	100	mL

2.6. Media for protozoa**(原生動物用培地)**

Media indicated with asterisks (*) are available for distribution. Reference numbers are shown in parentheses after medium names.

(* 分譲可能な培地を示す。培地に関する文献番号を培地名の後のカッコ内に示した。)

100. ESM + mTYGM-9 + Rice

Beforehand, sterilize polished rice by dry heating (150°C, 30 min). Keep in a cool place. For use, add 500 µL mTYGM-9¹⁾ and a grain of sterile rice to 10 mL ESM²⁾ medium.

- 1) See mTYGM-9
- 2) See ESM

101. f/2 + mTYGM-9 + Rice

Beforehand, sterilize polished rice by dry heating (150°C, 30 min). Keep in a cool place. For use, add 500 µL mTYGM-9¹⁾ and a grain of sterile rice to 10 mL f/2²⁾ medium.

- 1) See mTYGM-9
- 2) See f/2

102. f/2 + Wheat

Beforehand, sterilize wheat grains by dry heating (150°C, 30 min). Keep in a cool place. For use, add a grain of sterile wheat to 10 mL f/2¹⁾ medium.

- 1) See f/2

103. LE

L solution: White part of lettuce is dried at 90°C for 16–18 h without scorching; 300 mg of the dried lettuce is added to 100 mL boiling water (9:1 distilled water to tap water) and boiled for 30 min, while stirring. The supernatant is passed through cotton wool.

E solution: 300 mg of crushed yolk of hardboiled egg is added to 100 mL water (9:1 distilled water to tap water) and boiled for 30 min, while stirring. The supernatant is passed through cotton wool.

Equal quantities of L and E solutions are mixed. The pH is adjusted to 6.8–7.0 with 1 mol/L NaOH, and 100 mL of the solution is dispensed into each 200-mL Erlenmeyer flask and sterilized by autoclaving (121°C, 15 min).

104. SUY* (521)

Prepare as for 100 mL URO¹⁾ medium with seawater instead of distilled water. Add 10 mg yeast extract and 20 mg tryptone.

Indicated as "URO-YT" in reference.

1) See URO

105. SUY 1/10* (522)

Prepare as for 100 mL URO¹⁾ medium with seawater instead of distilled water. Add 1 mg yeast extract and 2 mg tryptone.

Indicated as "URO-1/10 YT" in reference.

1) See URO

106. SUY 1/10 + mTYGM-9 + Rice

Beforehand, sterilize polished rice by dry heat (150°C, 30 min). Keep in a cool place. For use, add 500 µL mTYGM-9¹⁾ and a grain of sterile rice to 10 mL SUY 1/10²⁾ medium.

1) See mTYGM-9

2) See SUY 1/10

107. SUY 1/10 + Wheat

Beforehand, sterilize wheat grains by dry heating (150°C, 30 min). Keep in a cool place. For use, add a grain of sterile wheat to 10 mL SUY 1/10¹⁾ medium.

1) See SUY 1/10

108. URO + Wheat

Beforehand, sterilize wheat grains by dry heating (150°C, 30 min). Keep in a cool place. For use, add a grain of sterile wheat to 10 mL URO¹⁾ medium.

1) See URO

109. UYTS + Rice

Prepare as for 100 mL URO¹⁾ medium with 99.2 mL instead of 99.9 mL distilled water. Adjust to pH 7.5 with 0.1 mol/L HCl, and add 10 mg yeast extract, 20 mg tryptone and 0.3 ml horse serum (UYTS medium).

Beforehand, sterilize polished rice by dry heating (150°C, 30 min). Keep in a cool place. For use, add a grain of sterile rice to 10 mL UYTS medium.

1) See URO

2.7. Media for freshwater red algae**(淡水産紅藻用培地)**

Media indicated with asterisks (*) are available for distribution. Reference numbers are shown in parentheses after medium names.

(* 分譲可能な培地を示す。培地に関する文献番号を培地名の後のカッコ内に示した。)

110. Bold 3N*

NaNO ₃	75	mg
CaCl ₂ · 2H ₂ O	2.5	mg
MgSO ₄ · 7H ₂ O	7.5	mg
K ₂ HPO ₄	7.5	mg
KH ₂ PO ₄ ¹⁾	17.5	mg
NaCl	2.5	mg
Vitamin B ₁₂ ²⁾	0.015	µg
PIV metals	0.6	mL
Soil extract ³⁾	4	mL
Distilled water	95.4	mL

1) In the NIES-Collection, the amount of KH₂PO₄ is reduced from 17.5 mg to 10.5 mg.

2) In the NIES-Collection, the amount of vitamin B₁₂ is increased from 0.015 µg to 0.02 µg.

3) See Soil extract

2.8. Media for Charales**(シャジクモ類用培地)****111. mSWC-2 (Modified SWC-2) (788)**

Put leaf mould into a glass vessel to make a thin bottom layer, and add river sand onto the bottom layer up to one-

quarter to one-fifth from the bottom. Add a pinch of garden lime to the river sand before use.

Dampen the soil with deionized water (or distilled water). Cover the glass vessel with a plastic cap or aluminum foil, and autoclave it twice with overnight rest in between (121°C, 20 min). After cooling the mixture to room temperature, pour sterilized deionized water (or sterilized distilled water) into it carefully (so as not to disturb the soil). In the case of brackish water strains, deionized water is replaced by about one-third-diluted Herbst artificial seawater (1/3 Herbst ASW).

112. SWC-1 (788)

Put leaf mould into a glass vessel to make a thin bottom layer, and add black soil onto the bottom layer up to one-quarter to one-fifth from the bottom.

Dampen the soil with deionized water (or distilled water). Cover the glass vessel with a plastic cap or aluminum foil, and autoclave it twice with overnight rest in between (121°C, 20 min). After cooling the mixture to room temperature, pour sterilized deionized water (or sterilized distilled water) into it carefully (so as not to disturb the soil).

113. SWCN-1

Put bottom mud from a paddy field into a glass vessel up to one-quarter to one-fifth from the bottom. Dampen the mud with deionized water (or distilled water). Cover the glass vessel or jar with a plastic cap or aluminum foil, and autoclave it twice with overnight rest in between (121°C, 20 min). After cooling the mixture to room temperature, pour sterilized deionized water (or sterilized distilled water) into it carefully (so as not to disturb the soil).

114. SWCN-2

Put leaf mould into a glass vessel to make a thin bottom layer, and add a mixture of black soil and river sand onto the bottom layer up to one-quarter to one-fifth from the bottom. Dampen the soil with deionized water (or distilled water). Cover the glass vessel or jar with a plastic cap or aluminum foil, and autoclave it twice with overnight rest in between (121°C, 20 min). After cooling the mixture to room temperature, pour sterilized deionized water (or sterilized distilled water) into it carefully (so as not to disturb the soil). In the case of brackish water strains, deionized water is replaced by about one-third-diluted Herbst artificial seawater (1/3 Herbst ASW).

115. SWCN-3

Put a mixture of black soil and bottom mud from a paddy field into a glass vessel up to one-quarter to one-fifth from the bottom. Dampen the soil with deionized water (or distilled water). Cover the glass vessel or jar with a plastic cap or aluminum foil, and autoclave it twice with overnight rest in between (121°C, 20 min). After cooling the mixture to room temperature, pour sterilized deionized water (or sterilized distilled water) into it carefully (so as not to disturb the soil).

116. 1/3 Herbst ASW* (726)

NaCl	3	mg
KCl ¹⁾	81.4	mg
CaCl ₂ ¹⁾	132	mg
MgSO ₄ ¹⁾	660	mg
NaHCO ₃ ¹⁾	504	mg
Distilled water	100	mL

- 1) In the NIES-Collection, the amount of KCl is reduced from 81.4 mg to 80.0 mg, 132 mg CaCl₂ is replaced by 172 mg CaCl₂ · 2H₂O, 660 mg MgSO₄ is replaced by 1.35 g MgSO₄ · 7H₂O, and the amount of NaHCO₃ is reduced from 504 mg to 49.5 mg.

3. Subculture methods

3.1. Microalgae, protozoa, and freshwater red algae

You will receive the culture strains in a screw-cap test tube. Slightly loosen the screw cap and keep the test tube in an appropriate place, as indicated in individual strain data. If you want to maintain the culture strain, please transfer the culture into fresh medium according to the following methods.

- i) Before you receive the strains, prepare the appropriate medium according to the media list.
- ii) Adapt the fresh medium to the culturing temperature.
- iii) Transfer an appropriate quantity of cell suspension to the fresh medium by an aseptic technique. In the NIES-Collection, we transfer cell suspensions by using a sterilized pipette with a cotton plug (Plate 7-1, 2). Agitate the culture liquid by pipetting if cells settle out or become attached to the container when you are sucking up the cell suspension. In the case of cells such as those of *Chattonella*, which are weak and lack cell-coverings, gently suck up a concentrated part of the

cell suspension without agitating to prevent breakage of the cells during the pipetting. The quantity of cell suspension differs with the species and the condition of the strain: to 10 mL fresh medium, we usually transfer 1 or 2 drops of cell suspension for small strains that grow well, whereas we use 4 or 5 drops for large strains and sparse cultures. In the case of agar slants, scratch a mass of cells off the surface of the agar with a sterile platinum loop and spread it on a fresh agar slant.

- iv) Incubate the culture at the temperature and light conditions indicated in the individual strain data (Plate 7-3, 4). The light-dark cycle should be 12 h light: 12 h dark. The screw cap on the tube should be slightly loosened. Transfer to new medium at the intervals indicated in the individual strain data (sometimes shorter or longer depends on your laboratory conditions).
- v) In the NIES-Collection, we visually check the cultures every week and when needed with a microscope. If the culture does not grow well, we transfer again, and sometimes test other media and light conditions.

For heterotrophic strains, pay attention to the following points.

- i) Some strains need cereal grain or other algae as food sources added to each medium during transfer (Plate 7-5). Others need algae multiplied in advance, in accordance with individual strain data.
- ii) Incubation of these strains does not need light, except in the case of cultures that contain algae as food.
- iii) Always agitate the culture liquid by pipetting before transferring. In the case of adherent strains, strong pipetting is needed.

3.2. Charales

You will receive several pieces of thallus. As soon as you receive them, transplant them into fresh culture media according to the following methods.

- i) Prepare appropriate culture media before you receive the strains. Add 1 to 2 mL of germanium dioxide solution (1 mg/L) to a 900-mL glass vessel, each containing fresh medium. For unialgal strains, germanium solution is not necessary.
- ii) Inoculate individual thalli gently into soil in a glass vessel by using a bamboo skewer or tweezers (Plate 7-6). Make sure that one or more nodes of the thallus (root bulbils in the case of *Lamprothamnium*, stellate bulbils in the case of *Nitellopsis*) are embedded into the

soil.

- iii) Incubate transplanted cultures at the temperature and light conditions indicated in the strain data. About 2 weeks after the transplantation, the thalli should start to grow. (You may place the cultures near a window in the laboratory, provided that the cultures are not exposed to direct sunlight or extremely high or low temperatures.)
- iv) Transfer into new media at the intervals suggested in the strain data, by using the following methods.
 - a) Cut 3 or 4 apical internodes from a well-developed thallus with scissors or tweezers (Plate 7-7).
 - b) Remove microalgae from the surface of each piece with a paintbrush (Plate 7-8) and rinse with deionized water (or distilled water). (For unialgal strains this process is not necessary.)
 - c) Inoculate the rinsed pieces into a fresh medium as described in ii) to iii).

4. Methods of cryopreservation

A two-step freezing protocol is used in the NIES Collection: algal culture is cooled to -40°C by a programmable freezer and then cooled rapidly to -196°C in liquid nitrogen. Most cyanobacterial strains, some strains of green and red microalgae, and some strains of freshwater red algae are cryopreserved by the methods described in 4.1 and 4.2. Detailed methods for microalgae are also explained in Mori *et al.* (2002) and Mori (2007).

REFERENCES

- Mori, F., Erata, M. & Watanabe, M. M. 2002. Cryopreservation of cyanobacteria and green algae in the NIES-Collection. *Microbiol. Cult. Coll.* 18: 45-55.
- Mori, F. 2007. Cryopreservation methods of microalgae. *Microbiol. Cult. Coll.* 23: 89-93. (In Japanese)

4.1. Cryopreservation of microalgae

4.1.1. Materials and instruments

- i) Culture: late log or early stationary phase cultures.
- ii) Medium: appropriate sterile medium for each strain.
- iii) Cryoprotectant: 6% dimethyl sulfoxide (DMSO) for cyanobacterial strains, and 10% DMSO for green and red algal strains dissolved in the appropriate media. These concentrations are double the final concentration. DMSO is previously sterilized by filtering through an alcohol-stable filter (Millex-LG).
- iv) Laminar-flow cabinet and materials for aseptic treatment.
- v) Cryovials: 2-mL presterilized polypropylene cryovials, pre-labeled with the strain number and date.

- vi) Programmable freezer (e.g. Planer Kryo 320-1.7 is used in the NIES-Collection).
- vii) Liquid nitrogen Dewar vessel: 10-L wide-neck Dewar vessel (Shuttle Drum JIK-S10).
- viii) Long forceps (19 cm), cryogloves, a cryoapron, and goggles.
- ix) Nunc polycarbonate storage boxes, 8-decker stainless-steel racks, a liquid nitrogen tank (Taiyo Nippon Sanso DR-245LM; vapor phase).
- x) Water bath (e.g. As-One-Corp. Thermal Robo TR-1).

4.1.2. Freezing

- i) The processes ii)-iv) should be done under aseptic conditions.
- ii) Dilute the cryoprotectant with appropriate medium to obtain double the final concentration, and cool it on ice.
- iii) Dispense 0.5 mL of cell suspension (late log or early stationary phase culture) into each labeled 2-mL-cryovial.
- iv) Add 0.5 mL of the cryoprotectant (diluted and cooled) to each cryovial and mix well.
- v) Leave the cryovials at room temperature for 15 min.
- vi) Place the cryovials in a programmable freezer (Plate 7-9), and start cooling at $-1^{\circ}\text{C}/\text{min}$ to -40°C .
- vii) Hold the cryovials in the programmable freezer at -40°C for 15 min.
- viii) Transfer the cryovials rapidly to the Dewar vessel containing liquid nitrogen (Plate 7-10).
- ix) After 1 h, transfer the cryovials in the Dewar vessel to a storage box and place the box on a stainless-steel rack set in the vapor phase of liquid nitrogen in a liquid nitrogen tank (Plate 7-11).

4.1.3. Thawing

- i) Preheat a water bath to 40°C .
- ii) Shake the cryovials well in the water bath until the last ice crystal in the cryovials has melted (Plate 7-12).
- iii) Under aseptic conditions transfer the contents of the cryovials into test tubes each containing fresh liquid medium. Incubate under dim light for a few days (depending on the strain), and transfer to ordinary culture conditions as suggested in the strain data.

4.2. Cryopreservation of freshwater red algae

4.2.1. Materials and instruments

- i) Culture: several thalli cultured for at least 2 weeks after the last transplantation. If a thallus is large, cut it into

small pieces with scissors or tweezers, and culture for more than 2 weeks (for recovery), before use.

- ii) Medium: sterile Bold 3N medium.
- iii) Cryoprotectant: 40% dimethyl sulfoxide (DMSO) for cryopreservation of *Thorea okadae*, *T. hispida*, and *Nemalionopsis tortuosa*; and 30% methanol for *N. tortuosa*. These concentrations are double of the final ones. DMSO and methanol are previously sterilized by filtration through an alcohol-stable filter (Millex-LG), and dissolved in sterile Bold 3N medium.
- iv) Instruments: same as the instruments for microalgae.

4.2.2. Freezing

- i) Dilute the cryoprotectant (DMSO or methanol) with medium to obtain double the final concentrations (40% or 30%, respectively), and cool it on ice.
- ii) Dispense a 0.8 mL aliquot of culture into each of the cryovials.
- iii) Add 0.8 mL of 40% DMSO or 30% methanol to ii), and mix well. In the case of DMSO, leave the cryovials at room temperature for 15 min.
- iv) Then same as 4.1.2 vi) to ix).

4.2.3. Thawing

- i) Preheat a water bath to 40°C , and cool appropriate amount of medium in ice water.
- ii) Shake the cryovials well in the water bath, and transfer the cryovials into ice water just before the last ice crystals have begun melting.
- iii) Transfer the contents of the cryovials quickly into 50-mL centrifuge tubes, add 40 mL of cold medium, and leave the tubes until the thalli have settled to the bottom.
- iv) Remove the supernatant with a pipette.
- v) Add 40 mL of cold medium again, and again remove the supernatant with a pipette after the thalli have settled.
- vi) Transfer the thalli into 60 mL of fresh media in 100-mL conical flasks, and incubate under the culture conditions suggested in the strain data.
- vii) All manipulations from iii) to vi) should be done under aseptic conditions.

V. 寄託

1. 寄託条件

国立環境研究所微生物系統保存施設では基本的に次の条件を満たす株について寄託を受け付けています。寄託された株の受け入れの可否は微生物系統保存株評価委員会で決定します。寄託された株は、原則として、すべて分譲の対象になります。

- (1) 環境問題にかかわる微生物、指標生物、タイプ株や真核生物の場合はタイプ記載の基準とした株、有用な性質をもつ株、重要な研究で使われた株などの科学的に重要なシアノバクテリア、微細藻類、および原生動物。
- (2) 履歴が明らかであり、適正な種名のついた株であることを原則としますが、既に属名のみで多くの研究に使われている株は受け入れ対象とします。
- (3) 保存条件が確立しており、安定した培養が可能な株であること。無菌培養株が望ましいが、微細藻類の場合はクローン培養株か単藻培養株であること。原生動物の場合は、無菌株か餌としての生物のみが混入している単一種培養株、細菌類は純粋培養株であること。
- (4) その他、微生物系統保存株評価委員会が特に必要と認めた株。

2. 寄託にあたっての同意事項

国立環境研究所微生物系統保存施設(以後 NIES コレクションと記す)は以下の同意事項に同意していただいた方からの寄託を受け付けます。

- (1) 寄託者は、寄託株を NIES コレクションに無償で寄託することとします。この寄託においては、知的所有権の移転は含まれません。寄託を受けて、NIES コレクションは、寄託された培養株 (DNA を含む) の維持、保存、増殖を行い、また研究者に対し提供することができます。
- (2) 寄託者は、寄託にあたって、寄託株の特性や品質に関する正確な情報 (特許等を含む) を添付することとします (微生物株寄託依頼書兼同意書参照)。
- (3) NIES コレクションに寄託するにあたり、寄託株は法律上あるいは契約上いかなる制限も受けていないものであり、その由来は以下のいずれかに該当することとします。
 - ・寄託株は、寄託者が分離・開発した培養株である。
 - ・他者が分離・開発した培養株であるが、寄託にあたっては分離・開発者、原産国の共同研究者 (外国で採集した場合) の許可を得ている。
 - ・寄託者が購入したものであるが、譲渡や寄託をすることについて制限を受けていない、また購入先のコレクションの許可を得ている。

- (4) NIES コレクションは寄託者の定める以下の条件で利用を希望する者へ寄託株を提供することができます。
 - ・論文発表まで寄託株を公開・分譲しない。
 - ・その他、寄託者の定める条件。
 条件が付与されている場合でも、非公開は原則として寄託日から1年以内を目安とします。また、条件が付与されていない場合は、寄託後、保存株評価委員会等の審査を経て直ちに公開・分譲します。
- (5) 寄託者は、寄託株の維持・保存・増殖段階でのやむを得ない事情による変質・滅失あるいは自然災害その他の不可抗力による滅失・散逸などについて、NIES コレクションに対し責任を問うことはできません。
- (6) NIES コレクションは、保存株評価委員会等の意見等を踏まえ、維持方針の変更が生じた場合、寄託株の維持・保存・提供の中止その他の処分をすることができます。

3. 寄託方法

3.1. 培養株の寄託

「微生物株寄託依頼書兼同意書」(p. 328 ~ 331) に必要事項を記入し、原本2通を以下の宛先に郵送してください。

宛先：〒305-8506 つくば市小野川16-2
 (独) 国立環境研究所微生物系統保存施設
 電話：029-850-2556
 ファクス：029-850-2587
 電子メール：mcc@nies.go.jp

寄託の受理後、寄託者は NIES コレクションのスタッフの指示に従って培養株を送付してください。寄託された株の状態が「寄託依頼書」に記された内容と相違した場合、当施設の判断で株の受け入れを取り消すことがあります。

3.2. 外国産株の寄託に関する注意

NIES コレクションでは、外国産株の寄託の場合、原産国の共同研究者の書面による許可がない限り、その株の寄託を受け付けません。

3.3. 他の保存機関に保存されている株の寄託に関する注意

NIES コレクションでは、現在、他の保存機関で保存されている培養株の寄託は、元の保存機関の書面による許可がない限り受け付けません。保存機関が購入株の第三者への譲渡を制限していない場合も同様です。

VI. 分譲

1. 分譲にあたっての同意事項

独立行政法人国立環境研究所微生物系統保存施設（以後 NIES コレクションと記す）は、以下の事項に同意していただいた方に培養株を分譲します。

- (1) NIES コレクションから分譲された微生物培養株、それを増殖させたもの及び由来物（DNA を含む。以後培養株等と記す）は教育、試験、研究及びその他国立環境研究所が認めた目的であり、公共の安全が保証される目的にのみ使用できます。人に直接使用することはできません。有毒株の場合、利用者は使用の際に、分譲された培養株が有毒物質を生産する株であることを認識し、その国、自治体、機関等の法令や規則を遵守しなければなりません。利用者は使用中の管理に責任を持ち、使用後は培養株をオートクレーブ等で死滅させ、由来物については適当に処理しなければなりません。また、有毒株と明記されていない場合も、利用者は使用の際に、分譲された培養株に潜在的な危険性があることを認識し、その国、自治体、機関等の法令や規則を遵守しなければなりません。
- (2) 分譲を希望する場合は、利用者本人が分譲依頼書を提出してください。
- (3) 培養株等に関する知的所有権等が、分譲によって利用者へ与えられるものではありません。
- (4) 利用者が分譲時に示した使用目的から大幅に異なる目的に使用する場合、利用者はその旨を NIES コレクションに書面で連絡しなくてはなりません。
- (5) 利用者は分譲された培養株等を第三者に分与または販売することはできません。
- (6) NIES コレクションから分譲された株を利用した成果を発表する場合、番号の前に必ず NIES- をつけた株番号を記し（例：NIES-123）、国立環境研究所微生物系統保存施設に保存されている株であることを明記してください。分譲された株を利用して論文発表した場合は別刷りまたはコピーを 2 部、NIES コレクションに送ってください。
- (7) 分譲された培養株等の使用が第三者の知的所有権やその他の権利を侵害していた場合、利用者は利用者の責任によって対処しなければなりません。
- (8) 分譲された培養株等が、欠点、危険な特性、不具合等

を有している可能性があること、あるいは特定の目的に合致しているとは限らないことを認識し、分譲された培養株等の利用によって損失が生じた場合は、利用者は、利用者自らの責任で処理しなくてはなりません。

- (9) 利用者は、培養株を受領後、1 ヶ月以内に受領報告書を NIES コレクション宛に提出しなくてはなりません。輸送中の環境条件の変化などにより、その時点で増殖状態が悪い場合、利用者は NIES コレクションに無償で再分譲を要求することができます。ただし、NIES コレクションはその期間内であっても、利用者の過失に対する責任は負いません。

2. 株および培地の分譲依頼

2.1. 株の分譲依頼

「微生物株分譲依頼書兼同意書」（p. 332～337）2 通に必要事項を記入し、2 通とも以下の宛先に郵送してください。提供機関で署名した後、1 通を依頼者宛に返送します。依頼者が学生、非常勤職員などの場合は、指導教官、雇用者などから依頼するようお願いいたします。この他、以下の方法により依頼できますが、いずれの場合も、郵送による「微生物株分譲依頼書兼同意書」原本の送付が必要であり、株は同意書原本を確認したうえで発送されます。

郵送：〒305-8506 つくば市小野川 16-2

（独）国立環境研究所 微生物系統保存施設

オンライン注文：NIES コレクションホームページ

（<http://mcc.nies.go.jp/>）「株の注文方法」参照

電子メール：mcc@nies.go.jp

ファクス：029-850-2587

2.2. 株の受領報告

株を受け取った方は、受領後 1 ヶ月以内に「微生物株受領報告書」（p. 339）に必要事項を記入し、上記の宛先にファクス、郵送、または電子メールで連絡してください。

2.3. 培地の分譲依頼

「培地分譲依頼書」（p. 338）に必要事項を記入の上、郵送、ファクス、または PDF 添付の電子メールで依頼してください。分譲している培地は、培地リストに星印（*）で示されています。

3. 株および培地の価格と支払い

3.1. 価格

分譲物	単位	内容	分譲価格	
			大学・国公立の研究機関等の非営利団体	その他
培養株	1本	約15mLの培地に植込んだ状態	6,300円	10,500円
培地	1ユニット	約2L	6,300円	10,500円
試験管入液体培地	1ユニット	約10mLの培地入試験管10本	6,300円	10,500円
メタル溶液	1ユニット	約125mL	6,300円	10,500円

消費税は内税です。この他に郵送料がかかります。

培養株の場合、小、中、高等学校の学校教育用、また、大学であっても授業で使用する場合は無料です。ただし、種類の選択は保存施設にお任せいただきます。教育目的で使用する場合の培地については、少量の場合（試験管数本程度）は無料で分譲に応じますが、大量の場合は非営利団体扱いとして有料での分譲になります。

寒天培地は試験管入りのみの分譲です。

国立環境研究所職員、客員研究員、共同研究員に対しては、培養株は無料で分譲します。培地については、少量の場合（試験管数本程度）は無料で分譲に応じますが、大量の場合は分譲を行っていません。

3.2. 支払い

請求書に示されている支払期限までに、請求金額を指定された振込み先に振り込んでください。振込み手数料は利用者負担です。

4. 分譲にあたっての注意事項

4.1. 輸送が困難な株の分譲について

保存株リストの“Remarks”に“Difficult to transport（輸送困難）”と記されている株は、輸送中に壊れやすく、不具合の生じやすい株です。お近くの方は、とりに来ていただくと、よい状態の培養株を分譲することができます。遠方の方にお

送りする場合、1度ではうまくお送りできない場合があります。

4.2. 凍結保存株の分譲について

保存株リストの“Remarks”に“Cryopreserved（凍結保存）”と記されている場合は、凍結保存されている株を解凍後、培養してからお送りします。したがって株を発送するまでに1ヶ月くらいかかる場合があります。

4.3. 有毒物質を生産する株の取り扱い

現時点で有毒物質を生産することがわかっている培養株は、保存株リストの“Remarks”に“Toxic（有毒）”と記されています。この表示を確認し、使用目的が有毒であることと関連する場合はもとより、関連しない場合でも、有毒株であることを認識した上で使用してください。

4.4. TISTR と共有する株の取り扱い

保存株リストの“Other collection strain no.”にTISTRが付いた株番号が記されている株は、タイ国立科学技術研究所（TISTR）と共有している株です。タイ産の株については、教育および研究目的で使用する場合に限り分譲しています。

4.5. 1993年以降採集された外国産株の取り扱い

1993年1月以降に外国より採集された株については、リストに掲載されていても生物多様性条約に関連して当面分譲を見合わせているものがあります。分譲依頼に際しては必ず保存株リストで産地をご確認ください。

5. 国立環境研究所職員、客員研究員、共同研究員への分譲

「微生物株分譲依頼書兼同意書」(p. 334～337) 2通に必要事項を記入し、署名捺印のうえ所内便で送付するか、微生物系統保存施設のスタッフに直接渡してください。オンラインでも受け付けています。NIESコレクションホームページ (<http://mcc.nies.go.jp/>) を参照してください。オンラインで注文した場合でも、「微生物株分譲依頼書兼同意書」2通を必ず提出してください。

V. DEPOSITION

1. Conditions for deposition

The Committee for Evaluating Microbial Culture Strains at NIES (abbreviated hereafter to CEMCS) decides whether to accept deposited strains in accordance with the following conditions. In principle, all deposited strains are open to the public once their acceptance is approved by the CEMCS.

- (1) The organisms are scientifically important cyanobacteria, microalgae, or protozoa: e.g. microorganisms that cause or remediate environmental problems, bioindicators, type and authentic strains, microorganisms with useful physiological and biochemical properties, and established strains that have been used for valuable research.
- (2) The background of the strain has been clarified and the species name established. However, strains that have been used in a number of studies may be accepted even if only the genus name is known.
- (3) The strain should be stable under defined culture conditions and shall be in one of the following states:
 - microalgae: clonal or unialgal strain (axenic strains are preferable)
 - protozoa: axenic or xenic strain with supplemented microorganisms as food
 - bacteria: pure strain
- (4) Some other microorganisms may be accepted for deposit if the CEMCS recognizes their importance.

2. Agreement for deposition

The NIES-Collection shall accept the depositor's submission of the Strain Deposit Request and Agreement Form when he/she agrees to the following conditions:

- (1) The depositor shall deposit the strain in the NIES-Collection without charge. Transfer of intellectual property is not included in the agreement. The NIES-Collection may maintain and culture the strain (including extracted DNA) and distribute it to users.
- (2) Depositors shall submit accurate strain data to the NIES-Collection; these data shall include patents, properties, and states of the strain (see Strain Deposit Request and Agreement Form).
- (3) The strain shall be free from any limitation, legally and contractually, pursuant to one of the following reasons:
 - The strain was isolated/developed by the depositor.

- The strain is deposited with the permission of the isolator/ developer/ collaborator from the original country (if collected in a foreign country)
- The strain has been purchased without any limitation regarding the deposit thereof, and with the permission of the original collection.

- (4) The NIES-Collection may distribute the deposited strains to users in accordance with the following condition(s):

- The strain shall not be disclosed to the public until the paper regarding the strain has been published.
- Other conditions specified by the depositor.

These conditions shall last no longer than 1 year, and the strain will be open to the public after that year, even if the depositor imposes conditions. If the depositor does not specify any conditions, then the strain will be open to the public immediately after approval by the CEMCS.

- (5) The NIES-Collection shall bear no responsibility for inevitable change and loss during maintenance, or for loss caused by natural disasters.
- (6) The NIES-Collection may stop the maintenance and distribution of the strain according to a decision of the CEMCS.

3. How to deposit a strain

3.1. Deposition of the strain

Strains are deposited by completing the "Strain Deposit Request and Agreement Form" (pp. 340-343) and by sending two original copies of the "Strain Deposit Request and Agreement Form" to the following address by mail:

Microbial Culture Collection
National Institute for Environmental Studies,
16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan
Phone: +81-29-850-2556
Fax: +81-29-850-2587
E-mail: mcc@nies.go.jp

After the acceptance of the deposition, the depositor must send the actively growing cultures in accordance with the instructions of the collection staff.

If the state of the deposited strain does not coincide with the description on the Strain Deposit Request and

Agreement Form, or if the strain does not meet any of the conditions described above, then the NIES-Collection may cancel the deposition.

3.2. Notice for deposition of strains collected from foreign countries

The NIES-Collection shall not accept the deposition of strains collected from foreign countries without the written permission of the collaborator(s) in the original country.

3.3. Notice for the deposition of strains maintained in other culture collections

At present, the NIES-Collection does not accept the deposition of strains maintained in other culture collections by the user without written permission from the original collections, even if the collection does not prohibit distribution of the strains to a third party. We may accept strains from other culture collections only by exchange between the collections.

VI. ORDERING AND DISTRIBUTION

1. Agreement for distribution

The Microbial Culture Collection at the National Institute for Environmental Studies (NIES-Collection) will distribute strains to users who agree to the following conditions:

- (1) The strains (including DNA, replicates and derivatives from the strains) that are distributed from the NIES-Collection shall be available for education, research, tests, and other special purposes permitted by NIES, as well as for purposes in which public safety must be ensured. The strains are not intended to apply directly to humans. If the strains are toxic, the user hereby acknowledges and accepts the risks posed by toxic strains and shall use the strains in compliance with domestic and foreign laws, regulations, and guidelines. The user shall store and discard the strains appropriately. Even if “toxic” is not specified in the strain list, the user hereby acknowledges and accepts the potential risks of the strains and shall use the strains in compliance with domestic and foreign laws, regulations, and guidelines.
- (2) The user shall be requested to submit the application form personally.
- (3) The user shall not acquire any intellectual property rights by the purchase of the strain.
- (4) The user shall provide written notice to NIES when the purpose has changed considerably from the purpose that was stated at the time of submission.
- (5) The user shall not distribute the strains, or their replicates and derivatives to any third party.
- (6) The user shall use the NIES strain number (e.g., NIES-125) when he/she uses a NIES strain in a paper that is subsequently published, and shall send two copies of the reprint(s) or photocopies thereof to the NIES-Collection.
- (7) When the use of the strain violates another person’s rights, the user shall bear responsibility for this, and shall deal with the matter on his/her own.
- (8) The user shall acknowledge the possibility that the strain is deficient and harmful, and inadequate for the user’s aim. Thus, if the user suffers any loss by the strain, he/she shall bear responsibility for this and shall deal with the matter on his/her own.

- (9) The user shall submit the Strain Receipt Form within 1 month of the date of receipt of the strain. The user may request that the strain be sent again without charge if the strain does not show good growth during this warranty period. The NIES-Collection shall not bear any responsibility for mistakes by the user.

2. Ordering strains

2.1. Ordering culture strains

Requests to the NIES-Collection for strains shall be made by completing the “Strain Ordering and Agreement Form” (pp. 344-349), and by sending two original copies via mail to the following address. After being signed by the administrator at the NIES, one copy of the “Strain Ordering and Agreement Form” will be sent back to the user. If the user is a student or a part-time employee, we would prefer the order to come from his/her supervisor or an employer.

Requests by e-mail and fax and online orders are available, but in any requests to the NIES-Collection for strains two original copies of the “Strain Ordering and Agreement Form” with the user’s signature (and supervisor’s/ employer’s signature, if needed) and date are necessary. We will ship the strain only after we accept the original copies of the “Strain Ordering and Agreement Form”.

Postal address:

Microbial Culture Collection
National Institute for Environmental Studies,
16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Online ordering:

Refer “How to order” on the NIES-Collection website (<http://mcc.nies.go.jp/>)

Email: mcc@nies.go.jp

Fax: +81-29-850-2587

2.2. Receipt of the strain

Upon receipt of a strain, the “Strain Receipt Form” (p. 350) should be completed and returned to the NIES-Collection within 1 month.

3. Price and payment

3.1. Price

	Universities, public institutions	Companies, commercial organizations
About 15 mL aliquot of culture strain	6,300 JPY	10,500 JPY

Sales tax (5%) is included, but postage is additional to the price of the strain. However, the NIES-Collection distributes selected strains without charge for educational use in schools and universities. In this case, the user cannot specify the species or strains. Please contact the staff of the NIES-Collection for details.

3.2. Payment

Payment should be made before the due date by bank transfer to the bank account indicated on the invoice from NIES. Charges for bank transfer are incurred by the user.

4. Special notes regarding distribution

4.1. "Difficult to transport" strains

Some strains, such as those of dinoflagellates and raphidophytes, are fragile and can die easily during transportation. The strains are indicated as "Difficult to transport" in the Remarks column of the list of strains. For transport of these strains to foreign countries, we will use courier services, such as FedEx. Please understand that we may need several trials for transportation of such strains successfully.

4.2. "Cryopreserved" strains

Most of the cyanobacterial strains and some of the green and red algal strains are preserved only in liquid nitrogen. These cryopreserved strains are indicated in the Remarks column of the list of strains. Frozen cells of these cryopreserved strains are thawed and inoculated into fresh

medium just after the order is accepted. As a result, it takes at least 1 month for overseas shipping of these strains.

4.3. Toxic strains

Strains that have been reported to produce toxic substance are indicated as "toxic" in the list of strains. Users who order these strains must confirm and appreciate its implications before use of the strain, even if the user's purpose is not relevant to the strain's toxic characteristics.

4.4. Distribution of strains shared with TISTR

We distribute those strains shared with TISTR (Microbiological Resource Centre, Thailand Institute of Scientific and Technological Research) for educational and research purposes only. For these strains, TISTR strain numbers are also indicated in the "Other collection strain no." in the list of strains

4.5. Distribution of strains collected outside Japan since 1993

Distribution of some strains collected and isolated outside Japan since 1993 is now suspended pursuant to the Convention on Biological Diversity, although the strain data are available in the catalog. Please contact the staff of the NIES-Collection if you wish to request these strains.

5. Distribution to NIES researchers, guest researchers and collaborators

Strains are available to NIES researchers without charge. Please complete the "Strain Ordering and Agreement Form" (pp. 346-349) and send it via in-house mail or pass it on to the staff directly. Online ordering is also available. The "Strain Ordering and Agreement Form" is also required for online orders by NIES researchers.

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 211 *Pediastrum duplex* var. *gracillimum*
 212 *Pediastrum duplex*
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 214 *Pediastrum duplex* var. *gracillimum*
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 258 *Closterium aciculare* var. *subprorum*
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 268 *Calothrix scopulorum*
 271 *Closterium calosporum* var. *calosporum*
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 275 *Cryptomonas ovata*
 276 *Cryptomonas platyuris*
 277 *Cryptomonas rostratiformis*
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 279 *Cryptomonas tetrapyrenoidosa*
 280 *Cryptomonas tetrapyrenoidosa*
 281 *Cryptomonas tetrapyrenoidosa*
 282 *Cryptomonas tetrapyrenoidosa*
 284 *Dinobryon divergens*
 285 *Docidium undulatum* var. *undulatum*
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 287 *Gonatozygon monotaenium*
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 289 *Gonium viridistellatum*
 290 *Gonium viridistellatum*
 293 *Heterosigma akashiwo*
 294 *Hyalotheca dissiliens* f. *tridentula*
 295 *Hydrodictyon reticulatum*
 296 *Mesostigma viride*
 297 *Micrasterias foliacea* var. *foliacea*
 298 *Microcystis aeruginosa*
 299 *Microcystis aeruginosa*
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 301 *Pediastrum boryanum*
 302 *Pediastrum simplex*
 303 *Penium margaritaceum*
 304 *Peridinium willei*
 305 *Phormidium ramosum*
 306 *Pleurotaenium cylindricum* var. *stuhlmannii*
 308 *Pleurotaenium ehrenbergii* var. *curtum*
 309 *Pleurotaenium ehrenbergii* var. *ehrenbergii*
 310 *Pleurotaenium ehrenbergii* var. *ehrenbergii*
 311 *Pleurotaenium ehrenbergii* var. *curtum*
 312 *Pleurotaenium nodosum* var. *nodosum*
 313 *Pleurotaenium ovatum*
 315 *Prorocentrum gracile*
 316 *Prorocentrum micans*
 319 *Protoceratium reticulatum*
 320 *Pyramimonas* aff. *amylifera*
 323 *Skeletonema marinoi-dohrnii* complex
 324 *Skeletonema marinoi-dohrnii* complex
 325 *Spinoclosterium cuspidatum*
 329 *Ulothrix variabilis*
 330 *Achnanthes subconstricta*
 331 *Amphidinium carterae*
 333 *Aulacoseira granulata*
 334 *Calothrix parasitica*
 336 *Closterium calosporum* var. *himalayense*
 337 *Closterium incurvum*
 338 *Closterium rostratum* var. *subrostratum*
 339 *Closterium selenastrum*
 340 *Closterium selenastrum*
 341 *Closterium spinosporum* var. *crassum*
 342 *Coelastrum astroideum*
 343 *Coolia monotis*
 344 *Cryptomonas platyuris*
 345 *Cryptomonas rostratiformis*
 346 *Cryptomonas tetrapyrenoidosa*
 347 *Cryptomonas tetrapyrenoidosa*
 348 *Cryptomonas tetrapyrenoidosa*
 349 *Cylindrocystis brebissonii* var. *brebissonii*
 350 *Ditylum brightwellii*
 351 *Eudorina elegans*
 353 *Gephyrocapsa oceanica*
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 359 *Oltmannsiellopsis unicellularis*
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 377 *Chaetoceros sociale*
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450 *Closterium praelongum* var. *brevius*
451 *Closterium praelongum* var. *brevius*
452 *Cosmarium hians*
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454 *Stigeoclonium* sp.
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458 *Eudorina elegans* var. *synoica*
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461 *Eunotia pectinalis* var. *minor*
462 *Fibrocapsa japonica*
463 *Glenodiniopsis uliginosa*
464 *Gloeomonas lateperforata*
465 *Gomphonema gracile* var. *gracile*
466 *Gomphonema parvulum* var. *parvulum*
467 *Gomphonema parvulum* var. *parvulum*
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474 *Lobomonas monstruosa*
475 *Mesostigma viride*
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477 *Mesostigma viride*
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479 *Microthamnion kützingianum*
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481 *Myxosarcina burmensis*
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484 *Nephroselmis olivacea*
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495 *Peridinium bipes* f. *globosum*
497 *Peridinium bipes* f. *occultatum*
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509 *Phormidium molle*
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515 *Plectonema radiosum*
522 *Pseudocarteria mucosa*
523 *Pseudocarteria mucosa*
524 *Pseudocarteria mucosa*
527 *Spirulina subsalsa*
528 *Staurastrum paradoxum*
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530 *Stichococcus bacillaris*
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532 *Stigeoclonium fasciculare* var. *fasciculare*
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534 *Thalassionema nitzschioides*
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537 *Ulothrix zonata*
538 *Uronema confervicolum*
539 *Uronema gigas*

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546 *Volvulina steinii*
547 *Cyanophora paradoxa*
548 *Acinetospora crinita*
553 *Chaetoceros sociale*
556 *Triceratium dubium*
557 *Chattonella marina*
558 *Chattonella antiqua*
559 *Chattonella marina*
560 *Fibrocapsa japonica*
561 *Heterosigma akashiwo*
562 *Chrysochromulina parva*
564 *Astrephomene perforata*
565 *Astrephomene perforata*
566 *Basichlamys sacculifera*
567 *Characiochloris sasae*
568 *Eudorina elegans* var. *synoica*
569 *Gonium pectorale* var. *pectorale*
570 *Gonium pectorale* var. *pectorale*
571 *Tetrabaena socialis* var. *socialis*
572 *Pandorina colemaniae*
573 *Pandorina colemaniae*
574 *Pandorina morum* var. *morum*
575 *Pandorina morum* var. *morum*
576 *Pleodorina californica*
577 *Pleodorina japonica*
578 *Yamagishiella unicocca*
579 *Yamagishiella unicocca*
580 *Volvox carteri* f. *kawasakiensis*
581 *Volvox carteri* f. *kawasakiensis*
582 *Volvulina compacta*
583 *Volvulina compacta*
584 *Volvulina steinii*
585 *Volvulina steinii*
586 *Chaetoceros didymus*
587 *Hantzschia amphioxys* var. *compacta*
588 *Lithodesmium variabile*
589 *Odontella aurita*
590 *Odontella longicruris*
592 *Fischerella major*
593 *Hydrococcus rivularis*
594 *Planktothrix agardhii*
595 *Planktothrix agardhii*
596 *Planktothrix agardhii*
597 *Spirulina platensis*
598 *Spirulina subsalsa*
601 *Prorocentrum micans*
603 *Chattonella ovata*
604 *Microcystis aeruginosa*
605 *Fibrocapsa japonica*
608 *Prorocentrum micans*
609 *Pyrocystis lunura*
610 *Planktothrix rubescens*
611 *Pseudanabaena* sp.
612 *Alexandrium hiranoi*
613 *Amphidinium klebsii*
614 *Heterocapsa horiguchii*
615 *Coolia monotis*
617 *Prorocentrum lima*
618 *Prorocentrum mexicanum*
619 *Woloszynskia leopoliense*
620 *Gomphonema angustatum* var. *obtusatum*
621 *Botrydiopsis arrhiza*
622 *Botrydium granulatum*
623 *Pavlova gyrans*
624 *Chlorarachnion reptans*
626 *Pterosperma cristatum*
628 *Astrephomene gubernaculifera*
630 *Carteria crucifera*
631 *Carteria eugametos*
632 *Carteria eugametos*
633 *Carteria eugametos*
634 *Carteria eugametos*
635 *Carteria eugametos*
636 *Carteria eugametos*
637 *Characiochloris acuminata*
638 *Characiochloris sasae*
639 *Characium angustum*
640 '*Chlorella*' *saccharophila*
641 *Chlorella vulgaris* var. *vulgaris*
642 *Chlorella vulgaris* var. *vulgaris*
643 *Eremosphaera viridis*
644 *Eremosphaera viridis*
645 *Gonium pectorale* var. *pectorale*
646 *Gonium pectorale* var. *pectorale*
647 *Gonium quadratum*
648 *Gonium quadratum*
649 *Gonium quadratum*
650 *Gonium quadratum*
651 *Gonium quadratum*
652 *Gonium quadratum*
653 *Gonium quadratum*
654 *Gonium viridistellatum*
655 *Gonium viridistellatum*
656 *Hafniomonas montana*
657 *Mesotaenium kramstae*
658 *Mesotaenium kramstae*
659 *Oocystis borgei*
660 *Oocystis lacustris*
661 *Oocystis lacustris*
662 *Oocystis lacustris*
663 *Pleurotaenium nodosum* var. *borgei*
664 *Pleurotaenium nodosum* var. *borgei*
665 *Staurastrum dorcidentiferum*
666 *Yamagishiella unicocca*
667 *Yamagishiella unicocca*
670 *Pseudochattonella verruculosa*

- 671 *Chattonella ovata*
672 *Oltmannsiellopsis geminata*
674 *Alexandrium catenella*
675 *Alexandrium catenella*
677 *Alexandrium catenella*
678 *Alexandrium insuetum*
680 *Karenia mikimotoi*
682 *Prorocentrum dentatum*
684 *Scrippsiella sweeneyae*
685 *Desmodesmus abundans*
686 *Chlorella vulgaris* var. *vulgaris*
687 *Graesiella emersonii*
688 *Graesiella emersonii*
689 *Graesiella emersonii*
690 *Graesiella emersonii*
691 *Tetrabaena socialis*
692 *Chlorogonium capillatum*
693 *Volvox aureus*
694 *Volvox aureus*
695 *Synura sphagnicola*
696 *Synura sphagnicola*
697 *Cryptomonas acuta*
698 *Cryptomonas irregularis*
699 *Rhodomonas atrorosea*
700 *Rhodomonas baltica*
701 *Rhodomonas chrysoidea*
702 *Rhodomonas falcata*
703 *Chroomonas collegionis*
704 *Chroomonas dispersa*
705 *Chroomonas placoidea*
706 *Chroomonas nordstedtii*
707 *Chroomonas nordstedtii*
708 *Chroomonas nordstedtii*
709 *Chroomonas nordstedtii*
710 *Chroomonas nordstedtii*
711 *Chroomonas nordstedtii*
712 *Chroomonas caudata*
713 *Chroomonas coerulea*
714 *Chroomonas coerulea*
715 *Cryptomonas paramaecium*
716 *Haramonas dimorpha*
717 *Eudorina elegans* var. *elegans*
718 *Eudorina elegans* var. *elegans*
719 *Eudorina elegans* var. *elegans*
720 *Eudorina elegans* var. *elegans*
721 *Eudorina elegans* var. *carteri*
722 *Eudorina cylindrica*
723 *Eudorina illinoisensis*
724 *Eudorina unicocca*
725 *Eudorina unicocca*
726 *Eudorina peripheralis*
727 *Paulschulzia pseudovolvox*
728 *Platydorina caudata*
729 *Platydorina caudata*
730 *Volvox barberi*
731 *Volvox dissipatrix*
732 *Volvox carteri* f. *kawasakiensis*
733 *Volvox carteri* f. *kawasakiensis*
734 *Volvox rousseletii*
735 *Pleodorina californica*
736 *Pleodorina indica*
737 *Gonium multicocum*
738 *Pteromonas aculeata*
739 *Pteromonas angulosa*
740 *Pteromonas multipyrenoidea*
741 *Chrysochromulina hirta*
742 *Chlorogonium capillatum*
743 *Chlorogonium capillatum*
744 *Chlorogonium capillatum*
745 *Chlorogonium capillatum*
746 *Chlorogonium capillatum*
747 *Chlorogonium capillatum*
748 *Chlorogonium capillatum*
749 *Chlorogonium capillatum*
750 *Chlorogonium capillatum*
751 *Chlorogonium elongatum*
752 *Chlorogonium elongatum*
753 *Chlorogonium elongatum*
754 *Chlorogonium euchlorum*
755 *Chlorogonium euchlorum*
756 *Chlorogonium euchlorum*
757 *Chlorogonium euchlorum*
758 *Chlorogonium euchlorum*
759 *Chlorogonium euchlorum*
760 *Chlorogonium euchlorum*
761 *Gungnir kasakii*
763 *Cyanophora paradoxa*
764 *Cyanophora tetracyanea*
765 *Rhodomonas duplex*
766 *Cryptomonas paramaecium*
767 *Cryptomonas paramaecium*
768 *Cosmarium askenasyi*
769 *Cosmarium askenasyi*
770 *Cosmarium askenasyi*
771 *Cosmarium askenasyi*
772 *Euastrum turgidum*
773 *Euastrum turgidum*
774 *Micrasterias anomala*
776 *Micrasterias anomala*
777 *Micrasterias foliacea*
778 *Micrasterias foliacea*
779 *Micrasterias mahabuleshwariensis*
780 *Micrasterias mahabuleshwariensis*
781 *Micrasterias thomasiensis* var. *notata*
782 *Micrasterias thomasiensis* var. *notata*
783 *Micrasterias truncata* var. *pusilla*
784 *Micrasterias truncata* var. *pusilla*
785 *Pleurotaenium nodosum* var. *nodosum*
786 *Pleurotaenium nodosum* var. *nodosum*
787 *Pleurotaenium nodosum* var. *gutwinski*
788 *Pleurotaenium nodosum* var. *gutwinski*
789 *Triploceras gracile*

- 790 *Triploceras gracile*
791 *Triploceras gracile*
792 *Triploceras gracile*
793 *Triploceras gracile*
794 *Triploceras gracile*
795 *Triploceras gracile*
796 *Triploceras gracile*
797 *Desmodesmus subspicatus*
798 *Desmodesmus subspicatus*
799 *Desmodesmus subspicatus*
800 *Desmodesmus subspicatus*
801 *Desmodesmus subspicatus*
802 *Desmodesmus subspicatus*
803 *Cyclotella meneghiniana*
804 *Cyclotella meneghiniana*
805 *Cyclotella meneghiniana*
806 *Anabaena compacta*
807 *Anabaena kisseleviana*
808 *Anabaena lemmermannii*
809 *Anabaena mucosa*
810 *Anabaena planctonica*
811 *Anabaena planctonica*
812 *Anabaena planctonica*
813 *Anabaena planctonica*
814 *Anabaena planctonica*
815 *Anabaena planctonica*
816 *Anabaena planctonica*
817 *Anabaena planctonica*
818 *Anabaena smithii*
819 *Anabaena smithii*
820 *Anabaena smithii*
821 *Anabaena smithii*
822 *Anabaena smithii*
823 *Anabaena smithii*
824 *Anabaena smithii*
825 *Anabaena ucrainica*
826 *Anabaena ucrainica*
827 *Anabaena viguieri*
829 *Anabaena oumiana*
830 *Anabaena smithii*
831 *Anabaena smithii*
833 *Anabaena lemmermannii*
834 *Anabaena planctonica*
835 *Anabaena compacta*
836 *Botryococcus braunii*
837 *Emiliana huxleyi*
838 *Gephyrocapsa oceanica*
839 *Cosmarium dilatatum*
840 *Euastrum diverrucosum*
841 *Staurastrum levanderi*
842 *Staurastrum tsukubicum*
843 *Microcystis aeruginosa*
844 *Planktothrix mougeotii*
846 *Tychonema bourrellyi*
847 *Limnothrix redekei*
848 *Chattonella minima*
849 *Chattonella ovata*
850 *Pseudochattonella verruculosa*
851 *Gonium octonarium*
852 *Gonium octonarium*
853 *Astrephomene gubernaculifera*
854 *Astrephomene gubernaculifera*
855 *Astrephomene gubernaculifera*
856 *Eudorina minodii*
857 *Gonium viridistellatum*
858 *Phacotus lenticularis*
859 *Phacotus lenticularis*
860 *Pteromonas aculeata*
861 *Pteromonas angulosa*
862 *Pteromonas angulosa*
863 *Volvox africanus*
864 *Volvox aureus*
865 *Volvox carteri* f. *nagariensis*
866 *Volvox carteri* f. *weismannia*
867 *Volvox gigas*
868 *Volvox obversus*
869 *Volvox tertius*
870 *Yamagishiella unicocca*
871 *Yamagishiella unicocca*
872 *Yamagishiella unicocca*
873 *Yamagishiella unicocca*
874 *Yamagishiella unicocca*
875 *Vitreochlamys aulata*
876 *Vitreochlamys aulata*
877 *Vitreochlamys aulata*
878 *Vitreochlamys aulata*
879 *Vitreochlamys fluviatilis*
880 *Vitreochlamys gloeocystiformis*
881 *Vitreochlamys nekrassovii*
882 *Vitreochlamys ordinata*
883 *Vitreochlamys pinguis*
884 *Chlamydomonas debaryana* var. *crystata*
885 *Gonium multicocum*
886 *Pandorina morum*
887 *Pandorina morum*
888 *Pandorina morum*
889 *Pandorina morum*
890 *Pandorina morum*
891 *Volvox aureus*
892 *Volvox aureus*
893 *Volvulina boldii*
894 *Volvulina boldii*
895 *Volvulina pringsheimii*
896 *Volvulina steinii*
897 *Volvulina steinii*
898 *Volvulina steinii*
900 *Prorocentrum dentatum*
901 *Microcystis aeruginosa*
902 *Microcystis aeruginosa*
905 *Planktothrix agardhii*
911 *Planktothrix mougeotii*
913 *Planktothrix mougeotii*

- 917 *Planktothricoides raciborskii*
 928 *Planktothrix rubescens*
 930 *Cylindrospermopsis raciborskii*
 931 *Gloeocapsa decorticans*
 932 *Raphidiopsis curvata*
 933 *Microcystis aeruginosa*
 934 *Nephroselmis spinosa*
 935 *Nephroselmis spinosa*
 936 *Pterosperma cristatum*
 937 *Synechococcus* sp.
 938 *Synechococcus* sp.
 939 *Synechococcus* sp.
 940 *Synechococcus* sp.
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 963 *Synechococcus* sp.
 964 *Synechococcus* sp.
 965 *Synechococcus* sp.
 966 *Glaucocystis nostochinearum*
 967 *Trentepohlia* sp.
 968 *Chlamydomonas kuwadae*
 969 *Synechococcus* sp.
 970 *Synechococcus* sp.
 971 *Synechococcus* sp.
 972 *Synechococcus* sp.
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 987 *Synechococcus* sp.
 988 *Synechococcus* sp.
 989 *Planktothrix agardhii*
 990 *Planktothrix agardhii*
 991 *Cylindrospermopsis raciborskii*
 992 *Cylindrospermopsis raciborskii*
 993 *Cylindrospermopsis raciborskii*
 994 *Cylindrospermopsis raciborskii*
 995 *Mesostigma viride*
 996 *Stichococcus ampulliformis*
 997 *Calyptrosphaera sphaeroidea*
 998 *Chrysochromulina quadrikonta*
 1000 *Gephyrocapsa oceanica*
 1001 *Imantonia rotunda*
 1002 *Glossomastix chrysoplata*
 1003 *Pelagomonas calceolata*
 1004 *Chroomonas coerulea*
 1005 *Rhodomonas* sp.
 1006 *Rhodomonas salina*
 1007 *Synura petersenii*
 1008 *Pedinella squamata*
 1009 *Gonyostomum semen*
 1011 *Ophiocytium capitatum*
 1012 *Cafeteria roenbergensis*
 1013 *Placidia cafeteriopsis*
 1014 *Placidia cafeteriopsis*
 1015 *Wobblia lunata*
 1016 *Hymenomonas coronata*
 1017 *Prymnesium parvum*
 1018 *Prymnesium parvum*
 1019 *Tetraselmis striata*
 1020 *Apiocystis brauniana*
 1021 *Chlamydomonas coccoides*
 1022 *Chlamydomonas parkeae*
 1025 *Microcystis aeruginosa*
 1026 *Microcystis aeruginosa*
 1027 *Microcystis aeruginosa*
 1028 *Microcystis aeruginosa*
 1029 *Microcystis aeruginosa*
 1031 *Chroogloeocystis siderophila*
 1032 *Porphyridium* sp.
 1033 *Porphyridium* sp.
 1034 *Porphyridium* sp.
 1035 *Porphyridium* sp.
 1036 *Rhodella* sp.
 1037 *Rhodella* sp.
 1038 *Gonium multicocum*
 1039 *Gonium multicocum*
 1040 *Cylindrospermopsis raciborskii*
 1041 *Cylindrospermopsis raciborskii*
 1043 *Microcystis aeruginosa*
 1044 *Schizocladia ischiensis*
 1045 *Cylindrotheca closterium*

- 1159 *Microcystis aeruginosa*
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1256 *Microcystis aeruginosa*
1257 *Microcystis aeruginosa*
1258 *Aphanizomenon flos-aquae*
1259 *Cylindrospermopsis raciborskii*
1260 *Cylindrospermopsis raciborskii*
1261 *Cylindrospermopsis raciborskii*
1262 *Cylindrospermopsis raciborskii*
1263 *Planktothrix agardhii*
1264 *Planktothrix agardhii*
1265 *Planktothrix agardhii*
1266 *Planktothrix rubescens*
1267 *Planktothrix rubescens*
1268 *Amphidinium testudo*
1269 *Chlorella vulgaris*
1270 *Picochlorum* sp.

- 1271 *Trebouxia anticipata*
 1272 *Trebouxia anticipata*
 1273 *Trebouxia anticipata*
 1274 *Trebouxia arboricola*
 1275 *Trebouxia arboricola*
 1276 *Trebouxia arboricola*
 1277 *Trebouxia arboricola*
 1278 *Trebouxia corticola*
 1279 *Trebouxia corticola*
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 1284 *Trebouxia corticola*
 1286 *Trebouxia corticola*
 1287 *Trebouxia corticola*
 1288 *Trebouxia corticola*
 1289 *Trebouxia higginsiae*
 1290 *Trebouxia higginsiae*
 1291 *Trebouxia higginsiae*
 1292 *Trebouxia higginsiae*
 1293 *Trebouxia higginsiae*
 1294 *Trebouxia higginsiae*
 1295 *Trebouxia higginsiae*
 1296 *Trebouxia higginsiae*
 1297 *Trebouxia showmanii*
 1298 *Asterochloris* cf. *glomerata*
 1299 *Asterochloris* cf. *glomerata*
 1300 *Asterochloris* cf. *glomerata*
 1301 *Asterochloris* cf. *glomerata*
 1302 *Glossomastix chrysoplata*
 1303 *Fibrocapsa japonica*
 1304 *Calcidiscus leptoporus*
 1305 *Calcidiscus leptoporus*
 1308 *Calyptosphaera sphaeroidea*
 1309 *Calyptosphaera sphaeroidea*
 1310 *Emiliana huxleyi*
 1311 *Emiliana huxleyi*
 1312 *Emiliana huxleyi*
 1313 *Emiliana huxleyi*
 1314 *Emiliana huxleyi*
 1315 *Gephyrocapsa oceanica*
 1316 *Gephyrocapsa oceanica*
 1317 *Gephyrocapsa oceanica*
 1318 *Gephyrocapsa oceanica*
 1319 *Gephyrocapsa oceanica*
 1320 *Oolithotus fragilis*
 1321 *Oolithotus fragilis*
 1322 *Oolithotus fragilis*
 1324 *Umbilicosphaera sibogae* var. *sibogae*
 1325 *Thoracosphaera heimii*
 1326 *Thoracosphaera heimii*
 1327 *Cryptomonas rostratiformis*
 1328 *Gephyrocapsa oceanica*
 1329 *Gephyrocapsa oceanica*
 1330 *Prymnesium calathiferum*
 1331 *Asterococcus superbus*
 1332 *Cyanidioschyzon merolae*
 1333 *Chrysochromulina* sp.
 1334 *Kathablepharis japonica*
 1335 *Leucocryptos marina*
 1336 *Carteria palmata*
 1337 *Carteria palmata*
 1338 *Carteria palmata*
 1339 *Nitzschia* sp.
 1340 *Nitzschia* sp.
 1341 *Synechococcus* sp.
 1342 *Synechococcus* sp.
 1343 *Synechococcus* sp.
 1344 *Synechococcus* sp.
 1345 *Synechococcus* sp.
 1346 *Synechococcus* sp.
 1347 *Synechococcus* sp.
 1348 *Synechococcus* sp.
 1349 *Achnanthes kuwaitensis*
 1350 *Achnanthidium minutissimum*
 1353 *Sellaphora seminulum*
 1354 *Microcystis aeruginosa*
 1355 *Microcystis aeruginosa*
 1356 *Microcystis aeruginosa*
 1357 *Chlorogonium elongatum*
 1358 *Chlorogonium elongatum*
 1359 *Gungnir kasakii*
 1360 *Gungnir kasakii*
 1361 *Pleodorina starrii*
 1362 *Pleodorina starrii*
 1363 *Pleodorina starrii*
 1364 *Pleodorina starrii*
 1365 *Pleodorina starrii*
 1366 *Pleodorina starrii*
 1367 *Adenoides eludens*
 1368 *Amphidinium operculatum*
 1369 *Glaucocystis nostochinearum*
 1370 *Chroomonas mesostigmatica*
 1371 *Goniomonas amphinema*
 1372 *Goniomonas pacifica*
 1373 *Goniomonas truncata*
 1374 *Goniomonas* sp.
 1375 *Rhodomonas salina*
 1376 *Mallomonas* sp.
 1377 *Paraphysomonas vestita*
 1378 *Fibrocapsa* sp.
 1379 *Olisthodiscus luteus*
 1380 *Gonyostomum semen*
 1381 *Pseudopedinella pyriformis*
 1382 *Rhizochromulina* sp.
 1383 *Pseudonitzschia* sp.
 1384 *Ophiocytium capitatum*
 1385 *Ophiocytium parvulum*
 1386 Unidentified pelagophyte
 1387 Unidentified pelagophyte
 1388 *Developyella elegans*

- | | | | |
|------|--------------------------------------|------|---|
| 1389 | Unidentified yellow heterokontophyte | 1446 | <i>Trebouxia corticola</i> |
| 1391 | <i>Chrysochromulina</i> sp. | 1447 | <i>Trebouxia corticola</i> |
| 1392 | <i>Chrysochromulina simplex</i> | 1448 | <i>Trebouxia corticola</i> |
| 1393 | <i>Hyalolithus neolepis</i> | 1449 | <i>Trebouxia corticola</i> |
| 1394 | <i>Imantonia rotunda</i> | 1450 | <i>Trebouxia corticola</i> |
| 1395 | <i>Ochrosphaera neapolitana</i> | 1451 | <i>Trebouxia corticola</i> |
| 1396 | <i>Phaeocystis</i> sp. | 1452 | <i>Trebouxia corticola</i> |
| 1397 | <i>Prymnesium</i> sp. | 1453 | <i>Trebouxia corticola</i> |
| 1398 | <i>Pavlova pinguis</i> | 1454 | <i>Trebouxia corticola</i> |
| 1399 | <i>Pavlova</i> sp. | 1455 | <i>Trebouxia corticola</i> |
| 1400 | <i>Pavlova</i> sp. | 1456 | <i>Batrachospermum atrum</i> |
| 1401 | <i>Pavlova</i> sp. | 1457 | <i>Batrachospermum helminthosum</i> |
| 1402 | <i>Adenoides eludens</i> | 1458 | <i>Batrachospermum virgato-decaisneanum</i> |
| 1403 | <i>Heterocapsa</i> sp. | 1459 | <i>Batrachospermum</i> sp. |
| 1404 | <i>Ostreopsis siamensis</i> | 1460 | <i>Batrachospermum</i> sp. |
| 1405 | <i>Peridinium pseudolaevae</i> | 1461 | <i>Compsopogon coeruleus</i> |
| 1406 | <i>Prorocentrum micans</i> | 1462 | <i>Compsopogon coeruleus</i> |
| 1407 | <i>Cryptoglena pigra</i> | 1463 | <i>Compsopogonopsis japonica</i> |
| 1408 | <i>Chlorarachnion</i> sp. | 1464 | <i>Nemalionopsis tortuosa</i> |
| 1409 | <i>Mantoniella squamata</i> | 1465 | <i>Nemalionopsis tortuosa</i> |
| 1410 | <i>Marsupiomonas</i> sp. | 1466 | <i>Nemalionopsis tortuosa</i> |
| 1411 | <i>Micromonas pusilla</i> | 1467 | <i>Nemalionopsis tortuosa</i> |
| 1412 | <i>Micromonas pusilla</i> | 1468 | <i>Nemalionopsis tortuosa</i> |
| 1413 | <i>Micromonas pusilla</i> | 1469 | <i>Nemalionopsis tortuosa</i> |
| 1414 | <i>Nephroselmis</i> sp. | 1470 | <i>Nemalionopsis tortuosa</i> |
| 1415 | <i>Nephroselmis astigmatica</i> | 1471 | <i>Nemalionopsis tortuosa</i> |
| 1416 | <i>Nephroselmis pyriformis</i> | 1472 | <i>Nemalionopsis tortuosa</i> |
| 1417 | <i>Nephroselmis</i> sp. | 1473 | <i>Thorea gaudichaudii</i> |
| 1418 | <i>Nephroselmis</i> sp. | 1474 | <i>Thorea gaudichaudii</i> |
| 1419 | <i>Pseudoscourfieldia marina</i> | 1475 | <i>Thorea gaudichaudii</i> |
| 1420 | <i>Pseudoscourfieldia marina</i> | 1476 | <i>Thorea gaudichaudii</i> |
| 1421 | <i>Pyramimonas cordata</i> | 1477 | <i>Thorea gaudichaudii</i> |
| 1422 | <i>Pyramimonas cordata</i> | 1478 | <i>Thorea gaudichaudii</i> |
| 1423 | <i>Pyramimonas cordata</i> | 1479 | <i>Thorea gaudichaudii</i> |
| 1424 | <i>Pyramimonas grossii</i> | 1480 | <i>Thorea gaudichaudii</i> |
| 1425 | <i>Pyramimonas grossii</i> | 1481 | <i>Thorea gaudichaudii</i> |
| 1426 | <i>Pyramimonas</i> sp. | 1482 | <i>Thorea gaudichaudii</i> |
| 1427 | <i>Pyramimonas</i> sp. | 1483 | <i>Thorea okadae</i> |
| 1428 | <i>Pyramimonas</i> sp. | 1484 | <i>Thorea okadae</i> |
| 1429 | <i>Tetraselmis</i> sp. | 1485 | <i>Thorea okadae</i> |
| 1430 | <i>Tetraselmis levis</i> | 1486 | <i>Thorea okadae</i> |
| 1431 | <i>Tetraselmis</i> sp. | 1487 | <i>Thorea okadae</i> |
| 1432 | <i>Tetraselmis</i> sp. | 1488 | <i>Thorea okadae</i> |
| 1433 | <i>Tetraselmis</i> sp. | 1489 | <i>Thorea okadae</i> |
| 1434 | <i>Tetraselmis</i> sp. | 1490 | <i>Thorea okadae</i> |
| 1435 | Unidentified coccoid prasinophyte | 1491 | <i>Thorea okadae</i> |
| 1436 | <i>Choricystis minor</i> | 1492 | <i>Thorea okadae</i> |
| 1437 | <i>Tetrabaena socialis</i> | 1493 | <i>Thorea okadae</i> |
| 1438 | <i>Bicosoeca</i> sp. | 1494 | <i>Thorea okadae</i> |
| 1439 | <i>Bodo saltans</i> | 1495 | <i>Thorea okadae</i> |
| 1440 | <i>Hexamita</i> sp. | 1496 | <i>Thorea okadae</i> |
| 1441 | <i>Percolomonas</i> sp. | 1497 | <i>Thorea okadae</i> |
| 1442 | <i>Salpingoeca infusionum</i> | 1498 | <i>Thorea okadae</i> |
| 1443 | <i>Thaumatomastix</i> sp. | 1499 | <i>Thorea okadae</i> |
| 1444 | <i>Trepomonas</i> sp. | 1500 | <i>Thorea okadae</i> |
| 1445 | <i>Rubratella</i> sp. | 1501 | <i>Thorea okadae</i> |

1502	<i>Thorea okadae</i>	1559	<i>Thorea okadae</i>
1503	<i>Thorea okadae</i>	1560	<i>Thorea okadae</i>
1504	<i>Thorea okadae</i>	1561	<i>Thorea okadae</i>
1505	<i>Thorea okadae</i>	1562	<i>Thorea okadae</i>
1506	<i>Thorea okadae</i>	1563	<i>Thorea okadae</i>
1507	<i>Thorea okadae</i>	1564	<i>Thorea okadae</i>
1508	<i>Thorea okadae</i>	1565	<i>Thorea okadae</i>
1509	<i>Thorea okadae</i>	1566	<i>Thorea okadae</i>
1510	<i>Thorea okadae</i>	1568	<i>Thorea okadae</i>
1511	<i>Thorea okadae</i>	1569	<i>Thorea okadae</i>
1512	<i>Thorea okadae</i>	1570	<i>Thorea okadae</i>
1513	<i>Thorea okadae</i>	1571	<i>Thorea okadae</i>
1514	<i>Thorea okadae</i>	1572	<i>Thorea hispida</i>
1515	<i>Thorea okadae</i>	1573	<i>Thorea hispida</i>
1516	<i>Thorea okadae</i>	1574	<i>Thorea hispida</i>
1517	<i>Thorea okadae</i>	1575	<i>Thorea hispida</i>
1518	<i>Thorea okadae</i>	1576	<i>Thorea hispida</i>
1519	<i>Thorea okadae</i>	1577	<i>Thorea hispida</i>
1520	<i>Thorea okadae</i>	1578	<i>Thorea hispida</i>
1521	<i>Thorea okadae</i>	1579	<i>Thorea hispida</i>
1522	<i>Thorea okadae</i>	1580	<i>Thorea hispida</i>
1523	<i>Thorea okadae</i>	1582	<i>Thorea hispida</i>
1524	<i>Thorea okadae</i>	1583	<i>Thorea hispida</i>
1525	<i>Thorea okadae</i>	1584	<i>Thorea hispida</i>
1526	<i>Thorea okadae</i>	1585	<i>Chara australis</i>
1527	<i>Thorea okadae</i>	1586	<i>Chara braunii</i>
1528	<i>Thorea okadae</i>	1587	<i>Chara braunii</i>
1529	<i>Thorea okadae</i>	1588	<i>Chara braunii</i>
1530	<i>Thorea okadae</i>	1589	<i>Chara braunii</i>
1531	<i>Thorea okadae</i>	1590	<i>Chara braunii</i>
1532	<i>Thorea okadae</i>	1591	<i>Chara braunii</i>
1533	<i>Thorea okadae</i>	1592	<i>Chara braunii</i>
1534	<i>Thorea okadae</i>	1593	<i>Chara braunii</i>
1535	<i>Thorea okadae</i>	1594	<i>Chara braunii</i>
1536	<i>Thorea okadae</i>	1595	<i>Chara globularis</i>
1537	<i>Thorea okadae</i>	1597	<i>Chara globularis</i>
1538	<i>Thorea okadae</i>	1599	<i>Chara leptospora</i>
1539	<i>Thorea okadae</i>	1601	<i>Chara zeylanica</i>
1540	<i>Thorea okadae</i>	1602	<i>Chara</i> sp.
1541	<i>Thorea okadae</i>	1603	<i>Chara</i> sp.
1542	<i>Thorea okadae</i>	1604	<i>Chara braunii</i>
1543	<i>Thorea okadae</i>	1605	<i>Chara</i> sp.
1544	<i>Thorea okadae</i>	1606	<i>Lamprothamnium succinctum</i>
1545	<i>Thorea okadae</i>	1607	<i>Nitella acuminata</i> var. <i>capitulifera</i>
1546	<i>Thorea okadae</i>	1608	<i>Nitella axilliformis</i>
1547	<i>Thorea okadae</i>	1609	<i>Nitella axilliformis</i>
1548	<i>Thorea okadae</i>	1610	<i>Nitella flexilis</i>
1549	<i>Thorea okadae</i>	1611	<i>Nitella flexilis</i>
1550	<i>Thorea okadae</i>	1612	<i>Nitella flexilis</i>
1551	<i>Thorea okadae</i>	1613	<i>Nitella flexilis</i>
1552	<i>Thorea okadae</i>	1614	<i>Nitella furcata</i> var. <i>furcata</i>
1553	<i>Thorea okadae</i>	1615	<i>Nitella furcata</i> var. <i>furcata</i>
1554	<i>Thorea okadae</i>	1616	<i>Nitella furcata</i> var. <i>furcata</i>
1555	<i>Thorea okadae</i>	1617	<i>Nitella furcata</i> var. <i>furcata</i>
1556	<i>Thorea okadae</i>	1618	<i>Nitella</i> sp.
1558	<i>Thorea okadae</i>	1619	<i>Nitella gracilens</i>

- 1620 *Nitella gracilens*
 1621 *Nitella gracilens*
 1622 *Nitella gracilens*
 1623 *Nitella hyalina*
 1624 *Nitella japonica*
 1625 *Nitella japonica*
 1628 *Nitella megaspora*
 1629 *Nitella mirabilis*
 1632 *Nitella moriokae*
 1633 *Nitella moriokae*
 1634 *Nitella pulchella*
 1635 *Nitella* sp.
 1636 *Nitella* sp.
 1637 *Nitellopsis obtusa*
 1638 *Nitellopsis obtusa*
 1639 *Anabaena affinis*
 1640 *Anabaena affinis*
 1641 *Anabaena affinis*
 1642 *Anabaena affinis*
 1643 *Anabaena aphanizomenoides*
 1644 *Anabaena aphanizomenoides*
 1645 *Anabaena circinalis*
 1646 *Anabaena circinalis*
 1647 *Anabaena circinalis*
 1648 *Anabaena circinalis*
 1649 *Anabaena circinalis*
 1650 *Anabaena circinalis*
 1651 *Anabaena* sp.
 1652 *Anabaena crassa*
 1653 *Anabaena crassa*
 1654 *Anabaena crassa*
 1655 *Anabaena crassa*
 1656 *Anabaena crassa*
 1657 *Anabaena crassa*
 1658 *Anabaena crassa*
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 1661 *Anabaena crassa*
 1662 *Anabaena crassa*
 1663 *Anabaena crassa*
 1664 *Anabaena crassa*
 1665 *Anabaena crassa*
 1666 *Anabaena crassa*
 1667 *Anabaena danica*
 1668 *Anabaena flos-aquae*
 1669 *Anabaena flos-aquae*
 1670 *Anabaena flos-aquae*
 1671 *Anabaena flos-aquae*
 1672 *Anabaena flos-aquae*
 1673 *Anabaena lemmermannii*
 1674 *Anabaena lemmermannii*
 1675 *Anabaena lemmermannii*
 1676 *Anabaena lemmermannii*
 1677 *Anabaena mucosa*
 1678 *Anabaena oumiana*
 1679 *Anabaena oumiana*
 1680 *Anabaena planctonica*
 1681 *Anabaena planctonica*
 1682 *Anabaena planctonica*
 1683 *Anabaena planctonica*
 1684 *Anabaena pseudocompacta*
 1685 *Anabaena reniformis*
 1686 *Anabaena reniformis*
 1687 *Anabaena reniformis*
 1688 *Anabaena reniformis*
 1689 *Anabaena reniformis*
 1690 *Anabaena reniformis*
 1691 *Anabaena reniformis*
 1692 *Anabaena reniformis*
 1693 *Anabaena reniformis*
 1694 *Anabaena reniformis*
 1695 *Anabaena smithii*
 1696 *Anabaena ucrainica*
 1697 *Anabaena heterospora**
 1698 *Anabaenopsis* sp.
 1699 *Chrysophaeum taylorii*
 1700 *Chrysophaeum taylorii*
 1701 *Haramonas* sp.
 1703 *Protodesmus globulifer*
 1704 *Nitella comptonii*
 1705 *Nitella comptonii*
 1706 *Nitella comptonii*
 1707 *Gonium multicocum*
 1708 *Gonium multicocum*
 1709 *Gonium multicocum*
 1710 *Gonium pectorale*
 1711 *Gonium pectorale*
 1712 *Gonium pectorale*
 1713 *Gonium pectorale*
 1714 *Hafniomonas conica*
 1715 *Hafniomonas reticulata*
 1716 *Hafniomonas reticulata*
 1717 *Hafniomonas reticulata*
 1718 *Hafniomonas reticulata*
 1719 *Hafniomonas turbinea*
 1720 *Hafniomonas turbinea*
 1721 *Hafniomonas turbinea*
 1722 *Hemiflagellochloris kazakhstanica*
 1723 *Anabaena planctonica*
 1724 *Anabaena smithii*
 1725 *Anabaenopsis* sp.
 1726 *Aphanizomenon flos-aquae*
 1727 *Aphanizomenon flos-aquae*
 1728 *Aphanizomenon flos-aquae*
 1729 *Raphidiopsis* sp.
 1730 *Rhodomonas* sp.
 1731 *Kathablepharis* sp.
 1733 *Chlamydomonas parkeae*
 1734 *Compsopogon coeruleus*
 1735 *Nemalionopsis tortuosa*
 1736 *Nemalionopsis tortuosa*
 1737 *Nemalionopsis tortuosa*

- 1738 *Nemalionopsis tortuosa*
 1739 *Nemalionopsis tortuosa*
 1740 *Nemalionopsis tortuosa*
 1741 *Nemalionopsis tortuosa*
 1742 *Nemalionopsis tortuosa*
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 1747 *Nemalionopsis tortuosa*
 1748 *Nemalionopsis tortuosa*
 1749 *Nemalionopsis tortuosa*
 1750 *Nemalionopsis tortuosa*
 1751 *Thorea gaudichaudii*
 1752 *Thorea gaudichaudii*
 1753 *Thorea gaudichaudii*
 1754 *Thorea gaudichaudii*
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 1771 *Thorea gaudichaudii*
 1772 *Thorea gaudichaudii*
 1773 *Thorea okadae*
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 1775 *Thorea okadae*
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 1795 *Thorea okadae*
 1796 *Thorea okadae*
 1797 *Thorea okadae*
 1798 *Thorea okadae*
 1799 *Thorea okadae*
 1800 *Thorea okadae*
 1801 *Thorea okadae*
 1802 *Thorea okadae*
 1803 *Thorea okadae*
 1804 *Cyanidioschyzon merolae*
 1805 *Cyanidioschyzon merolae*
 1806 *Cyanidioschyzon merolae*
 1807 *Porphyridium* sp.
 1808 *Gonyostomum latum*
 1809 *Merotricha bacillata*
 1810 *Pseudopedinella pyriformis*
 1811 *Calyptrosphaera sphaeroidea*
 1812 *Prymnesium parvum*
 1813 *Pleurochrysis haptoneofera*
 1814 *Pleurochrysis* sp.
 1815 *Pavlova* sp.
 1816 *Pavlova* sp.
 1817 *Nephroselmis pyriformis*
 1818 *Nephroselmis* sp.
 1819 *Pyramimonas dissomata*
 1820 *Pyramimonas grossii*
 1821 *Pyramimonas propulsa*
 1822 *Pyramimonas propulsa*
 1823 *Pyramimonas propulsa*
 1824 *Marsupiomonas* sp.
 1825 *Oltmannsiellopsis viridis*
 1826 *Epipyxis glabra*
 1827 *Lagynion subglobosum*
 1828 *Ochromonas* sp.
 1829 *Fibrocapsa japonica*
 1830 *Heterosigma akashiwo*
 1831 *Olisthodiscus luteus*
 1832 *Akashiwo sanguinea*
 1833 *Coolia monotis*
 1834 *Gymnodinium catenatum*
 1836 *Tetraselmis verrucosa*
 1837 *Blidingia minima*
 1838 *Halochlorococcum* sp.
 1839 *Halochlorococcum* sp.
 1840 *Choricystis* sp.
 1841 *Hafniomonas* sp.
 1843 *Dysnectes brevis*
 1844 Unidentified flagellate metamonad
 1846 *Spumella* sp.
 1848 *Chlamydomonas perpusilla* var. *perpusilla*
 1849 *Chlamydomonas perpusilla* var. *perpusilla*
 1850 *Chlamydomonas pumilio* var. *pumilio*
 1852 *Pleodorina starrii*
 1853 *Pleodorina starrii*
 1854 *Pleodorina starrii*

- 1855 *Eudorina unicocca*
 1856 *Eudorina unicocca*
 1857 *Eudorina unicocca*
 1858 *Eudorina unicocca*
 1859 *Yamagishiella unicocca*
 1860 *Yamagishiella unicocca*
 1861 *Yamagishiella unicocca*
 1862 *Giraudyopsis* sp.
 1863 *Aurearena cruciata*
 1864 *Aurearena cruciata*
 1865 *Aurearena cruciata*
 1868 *Lepidodinium chlorophorum*
 1869 *Gungnir neglectum*
 1870 *Haramonas pauciplastida*
 1871 *Luteocerasus tetraplastida*
 1872 *Chattonella ovata*
 1873 *Chattonella ovata*
 1874 *Chrysoculter rhomboideus*
 1875 *Anabaena akankoensis*
 1876 *Anabaena akankoensis*
 1877 *Anabaena circinalis*
 1878 *Anabaena circinalis*
 1879 *Anabaena circinalis*
 1880 *Anabaena circinalis**
 1881 *Anabaena crassa*
 1882 *Anabaena crassa*
 1883 *Anabaena crassa*
 1884 *Anabaena crassa*
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 1898 *Anabaena crassa**
 1899 *Anabaena crassa**
 1900 *Anabaena crassa**
 1901 *Anabaena crassa**
 1902 *Anabaena crassa**
 1903 *Anabaena flos-aquae*
 1904 *Anabaena oumiana*
 1905 *Anabaena spiroides*
 1906 *Anabaena akankoensis*
 1907 *Anabaena akankoensis*
 1908 *Anabaena circinalis*
 1909 *Anabaena circinalis*
 1910 *Anabaena crassa*
 1911 *Anabaena crassa*
 1912 *Anabaena crassa*
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 1914 *Anabaena crassa*
 1915 *Anabaena crassa*
 1916 *Anabaena crassa*
 1917 *Anabaena crassa*
 1918 *Anabaena crassa*
 1919 *Anabaena crassa*
 1920 *Anabaena lemmermannii*
 1921 *Anabaena lemmermannii*
 1922 *Anabaena minispora*
 1923 *Anabaena minispora*
 1924 *Anabaena minispora*
 1925 *Anabaena mucosa**
 1926 *Anabaena mucosa**
 1927 *Anabaena mucosa**
 1928 *Anabaena mucosa**
 1929 *Anabaena circinalis*
 1930 *Anabaena circinalis*
 1931 *Anabaena oumiana*
 1932 *Anabaena oumiana*
 1933 *Anabaena oumiana*
 1934 *Anabaena planctonica*
 1935 *Anabaena pseudocompacta*
 1936 *Anabaena pseudocompacta*
 1937 *Anabaena pseudocompacta*
 1938 *Anabaena pseudocompacta*
 1939 *Anabaena pseudocompacta**
 1940 *Anabaena pseudocompacta**
 1941 *Anabaena reniformis*
 1942 *Anabaena reniformis*
 1943 *Anabaena reniformis*
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 1945 *Anabaena reniformis*
 1946 *Anabaena reniformis*
 1947 *Anabaena reniformis*
 1948 *Anabaena reniformis*
 1949 *Anabaena reniformis*
 1950 *Anabaena spiroides*
 1951 *Anabaena viguieri**
 1952 *Anabaena viguieri**
 1953 *Anabaena* sp.
 1954 *Anabaena* sp.
 1955 *Anabaena* sp.
 1956 *Scytonema javanicum*
 1957 *Porphyridium aerugineum*
 1958 *Porphyridium aerugineum*
 1959 *Porphyridium aerugineum*
 1960 *Porphyridium aerugineum*
 1961 *Glaucozystis nostochinearum*
 1962 *Anorthoneis* sp.
 1963 *Mischococcus* sp.
 1964 *Ochrosphaera neapolitana*
 1965 *Pavlova* sp.
 1966 *Karlodinium veneficum*
 1967 *Prorocentrum mexicanum*
 1968 Unidentified metamonad

1969	<i>Chroodactylon ornatum</i>	2045	<i>Thorea okadae</i>
1970	<i>Chroodactylon ornatum</i>	2046	<i>Thorea okadae</i>
1971	<i>Chroodactylon ornatum</i>	2047	<i>Thorea okadae</i>
1972	<i>Rhodella</i> sp.	2048	<i>Thorea okadae</i>
1987	<i>Akashiwo sanguinea</i>	2049	<i>Thorea okadae</i>
1988	<i>Alexandrium</i> sp.	2050	<i>Thorea okadae</i>
1989	<i>Alexandrium</i> sp.	2051	<i>Thorea okadae</i>
1990	<i>Alexandrium</i> sp.	2052	<i>Thorea okadae</i>
1991	<i>Alexandrium</i> sp.	2053	<i>Thorea okadae</i>
1993	<i>Alexandrium</i> sp.	2054	<i>Thorea okadae</i>
1994	<i>Alexandrium</i> sp.	2055	<i>Thorea okadae</i>
1995	<i>Cochlodinium polykrikoides</i>	2056	<i>Thorea okadae</i>
2000	<i>Gyrodinium instriatum</i>	2057	<i>Thorea okadae</i>
2001	<i>Gyrodinium instriatum</i>	2058	<i>Thorea okadae</i>
2002	<i>Gymnodinium</i> sp.	2059	<i>Thorea okadae</i>
2003	<i>Gymnodinium</i> sp.	2060	<i>Thorea okadae</i>
2004	<i>Gymnodinium</i> sp.	2061	<i>Thorea okadae</i>
2005	<i>Gymnodinium</i> sp.	2062	<i>Thorea okadae</i>
2006	<i>Gymnodinium</i> sp.	2063	<i>Thorea okadae</i>
2007	<i>Gymnodinium</i> sp.	2064	<i>Thorea okadae</i>
2008	<i>Katodinium</i> sp.	2065	<i>Thorea okadae</i>
2009	<i>Katodinium</i> sp.	2066	<i>Thorea okadae</i>
2010	<i>Prorocentrum dentatum</i>	2067	<i>Thorea okadae</i>
2011	<i>Prorocentrum dentatum</i>	2068	<i>Thorea okadae</i>
2013	<i>Prorocentrum dentatum</i>	2069	<i>Thorea okadae</i>
2014	<i>Prorocentrum dentatum</i>	2070	<i>Thorea okadae</i>
2015	<i>Scrippsiella trochoidea</i>	2071	<i>Thorea okadae</i>
2016	<i>Scrippsiella</i> sp.	2072	<i>Thorea okadae</i>
2017	<i>Scrippsiella</i> sp.	2073	<i>Thorea okadae</i>
2018	<i>Scrippsiella</i> sp.	2074	<i>Thorea okadae</i>
2019	<i>Scrippsiella</i> sp.	2075	<i>Nemalionopsis tortuosa</i>
2020	<i>Scrippsiella</i> sp.	2076	<i>Nemalionopsis tortuosa</i>
2021	<i>Scrippsiella</i> sp.	2077	<i>Nemalionopsis tortuosa</i>
2022	<i>Scrippsiella</i> sp.	2078	<i>Nemalionopsis tortuosa</i>
2023	<i>Nemalionopsis tortuosa</i>	2079	<i>Nemalionopsis tortuosa</i>
2024	<i>Nemalionopsis tortuosa</i>	2080	<i>Nemalionopsis tortuosa</i>
2025	<i>Nemalionopsis tortuosa</i>	2081	<i>Nemalionopsis tortuosa</i>
2026	<i>Nemalionopsis tortuosa</i>	2082	<i>Nemalionopsis tortuosa</i>
2027	<i>Nemalionopsis tortuosa</i>	2083	<i>Nemalionopsis tortuosa</i>
2028	<i>Nemalionopsis tortuosa</i>	2084	<i>Chara australis</i>
2029	<i>Nemalionopsis tortuosa</i>	2085	<i>Chara australis</i>
2030	<i>Nemalionopsis tortuosa</i>	2086	<i>Prochlorococcus marinus</i>
2031	<i>Nemalionopsis tortuosa</i>	2087	<i>Prochlorococcus marinus</i>
2032	<i>Thorea gaudichaudii</i>	2093	<i>Anabaena variabilis</i>
2033	<i>Thorea gaudichaudii</i>	2094	<i>Anabaena variabilis</i>
2034	<i>Thorea gaudichaudii</i>	2095	<i>Anabaena variabilis</i>
2035	<i>Thorea gaudichaudii</i>	2096	<i>Anacystis marina</i>
2036	<i>Thorea gaudichaudii</i>	2097	<i>Calothrix brevissima</i>
2037	<i>Thorea gaudichaudii</i>	2098	<i>Calothrix elenkinii</i>
2038	<i>Thorea gaudichaudii</i>	2099	<i>Calothrix gracilis</i>
2039	<i>Thorea gaudichaudii</i>	2100	<i>Calothrix gracilis</i>
2040	<i>Thorea gaudichaudii</i>	2101	<i>Calothrix</i> sp.
2041	<i>Thorea gaudichaudii</i>	2102	<i>Cylindrospermum muscicola</i>
2042	<i>Thorea gaudichaudii</i>	2103	<i>Leptolyngbya</i> sp.
2043	<i>Thorea hispida</i>	2104	<i>Leptolyngbya</i> sp.
2044	<i>Thorea hispida</i>	2107	<i>Nostoc carneum</i>

- 2108 *Nostoc punctiforme*
 2109 *Nostoc* sp.
 2110 *Nostoc* sp.
 2111 *Nostoc* sp.
 2112 *Nostoc* sp.
 2113 *Nostoc* sp.
 2114 *Nostoc* sp.
 2115 *Oscillatoria mougeotii*
 2116 *Oscillatoria neglecta*
 2118 *Oscillatoria* sp.
 2119 *Phormidium ambiguum*
 2120 *Phormidium ambiguum*
 2121 *Phormidium ambiguum*
 2122 *Phormidium ambiguum*
 2123 *Phormidium angustissimum*
 2124 *Phormidium henningsii*
 2125 *Phormidium luridum*
 2126 *Phormidium molle*
 2128 *Phormidium* sp.
 2129 *Plectonema calothricoides*
 2130 *Scytonema* sp.
 2131 *Stigonema ocellatum*
 2132 *Symploca muscorum*
 2135 *Tolypothrix tenuis*
 2136 *Batrachospermum turfosum*
 2137 *Cyanidium caldarium*
 2138 *Porphyridium purpureum*
 2139 *Porphyridium purpureum*
 2140 *Porphyridium purpureum*
 2141 *Glaucocystis nostochinearum*
 2142 *Ochromonas danica*
 2143 *Ochromonas minuta*
 2144 *Poterioochromonas malhamensis*
 2145 *Nannochloropsis oculata*
 2146 *Nannochloropsis oculata*
 2147 *Vischeria punctata*
 2148 *Vischeria stellata*
 2149 *Euglena viridis*
 2150 '*Chlorella ellipsoidea*'
 2151 *Graesiella emersonii*
 2152 *Parachlorella kessleri*
 2153 *Parachlorella kessleri*
 2154 *Parachlorella kessleri*
 2155 *Parachlorella kessleri*
 2156 *Parachlorella kessleri*
 2157 *Parachlorella kessleri*
 2158 *Parachlorella kessleri*
 2159 *Parachlorella kessleri*
 2160 *Parachlorella kessleri*
 2161 *Parachlorella kessleri*
 2162 *Parachlorella kessleri*
 2163 *Auxenochlorella protothecoides*
 2164 *Auxenochlorella protothecoides*
 2165 *Auxenochlorella protothecoides*
 2167 *Chlorella sorokiniana*
 2168 *Chlorella sorokiniana*
 2169 *Chlorella sorokiniana*
 2170 *Chlorella vulgaris*
 2171 *Chlorella* sp.
 2172 *Chlorella vulgaris*
 2173 *Chlorella vulgaris*
 2175 *Muriella zofingiensis*
 2176 *Auxenochlorella protothecoides*
 2177 *Parachlorella kessleri*
 2178 *Parachlorella kessleri*
 2179 *Parachlorella kessleri*
 2180 *Interfilum paradoxum*
 2181 *Myrmecia biatorellae*
 2182 *Prototheca portoricensis* var. *ciferrii*
 2183 *Pseudotrebouxia corticola*
 2184 *Stichococcus bacillaris*
 2185 *Trebouxia erici*
 2186 *Trebouxia erici*
 2187 *Trebouxia glomerata*
 2188 *Trebouxia glomerata*
 2189 *Watanabea reniformis*
 2190 *Ankistrodesmus angustus*
 2191 *Ankistrodesmus angustus*
 2192 *Ankistrodesmus angustus*
 2193 *Ankistrodesmus braunii*
 2194 *Ankistrodesmus braunii*
 2195 *Ankistrodesmus falcatus* var. *acicularis*
 2196 *Ankistrodesmus falcatus* var. *stipitatus*
 2197 *Ankistrodesmus nannoselene*
 2198 *Asterococcus superbis*
 2199 *Botryococcus braunii*
 2200 *Bracteacoccus giganteus*
 2201 *Chlamydomonas actinochloris*
 2202 *Chlamydomonas applanata*
 2203 *Chlamydomonas applanata*
 2204 *Chlamydomonas applanata*
 2205 *Chlamydomonas applanata*
 2206 *Chlamydomonas applanata*
 2207 *Chlamydomonas asymmetrica*
 2208 *Chlamydomonas asymmetrica*
 2209 *Chlamydomonas culleus*
 2210 *Chlamydomonas culleus*
 2211 *Chlamydomonas debaryana*
 2212 *Chlamydomonas debaryana*
 2213 *Chlamydomonas dorsoventralis*
 2214 *Chlamydomonas fimbriata*
 2215 *Chlamydomonas gerloffii*
 2216 *Chlamydomonas inflexa*
 2217 *Chlamydomonas leiostraca*
 2218 *Chlamydomonas mexicana*
 2219 *Chlamydomonas moewusii*
 2220 *Chlamydomonas moewusii*
 2221 *Chlamydomonas moewusii* var. *rotunda*
 2222 *Chlamydomonas moewusii* var. *rotunda*
 2223 *Chlamydomonas moewusii* var. *rotunda*
 2224 *Chlamydomonas mutabilis*
 2225 *Chlamydomonas nasuta*

- 2226 *Chlamydomonas nivalis*
2227 *Chlamydomonas noctigama*
2228 *Chlamydomonas noctigama*
2229 *Chlamydomonas noctigama*
2230 *Chlamydomonas orbicularis*
2231 *Chlamydomonas proteus*
2232 *Chlamydomonas pseudococcum*
2233 *Chlamydomonas pulvinata*
2234 *Chlamydomonas rapa*
2235 *Chlamydomonas reinhardtii*
2236 *Chlamydomonas reinhardtii*
2237 *Chlamydomonas reinhardtii*
2238 *Chlamydomonas reinhardtii*
2239 *Chlamydomonas reinhardtii*
2240 *Chlamydomonas segnis*
2241 *Chlamydomonas simplex*
2242 *Chlamydomonas sphaeroides*
2243 *Chlamydomonas subangulosa*
2244 *Chlamydomonas subtilis*
2245 *Chlamydomonas transita*
2246 *Chlamydomonas typica*
2247 *Chlamydomonas ulvaensis*
2248 *Chlamydomonas zebra*
2249 *Chlorococcum echinozygotum*
2250 *Chlorococcum elkhartiense*
2251 *Chlorococcum humicola*
2252 *Coccomyxa dispar*
2253 *Dunaliella bioculata*
2254 *Dunaliella parva*
2255 *Dunaliella peircei*
2256 *Dunaliella primolecta*
2257 *Dunaliella salina*
2258 *Dunaliella tertiolecta*
2259 *Eudorina illinoisensis*
2260 *Eudorina illinoisensis*
2261 *Gonium pectorale*
2262 *Gonium pectorale*
2263 *Haematococcus lacustris*
2264 *Haematococcus lacustris*
2265 *Haematococcus lacustris*
2266 *Lobomonas piriformis*
2267 *Monoraphidium* sp.
2268 *Planktosphaeria gelatinosa*
2269 *Scenedesmus acutus*
2270 *Scenedesmus acutus*
2271 *Scenedesmus basiliensis*
2272 *Scenedesmus basiliensis*
2273 *Scenedesmus bijuga*
2274 *Scenedesmus chlorelloides*
2275 *Scenedesmus coelastroides*
2276 *Scenedesmus costulatus*
2277 *Desmodesmus* sp.
2278 *Desmodesmus* sp.
2279 *Scenedesmus obliquus*
2280 *Scenedesmus obliquus*
2282 *Monoraphidium minutum*
2283 *Cylindrocystis crassa*
2284 *Cylindrocystis* sp.
2285 *Klebsormidium flaccidum*
2286 *Klebsormidium flaccidum*
2287 *Mesotaenium caldariorum*
2288 *Netrium digitus* var. *digitus*
2289 *Netrium digitus* var. *lamellosum*
2290 *Raphidonema nivale*
2291 *Roya anglica*
2293 *Hamakko caudatus*
2294 *Tabris heimii*
2295 *Tabris heimii*
2298 *Eutreptiella* sp.
2299 *Trachelomonas* sp.
2300 *Ochromonas* sp.
2301 *Cylindrocystis* sp.
2302 *Cylindrocystis* sp.
2303 *Cylindrocystis* sp.
2304 *Chromulina* sp.
2305 *Eutreptiella* sp.
2306 *Sphaerosozma* sp.
2307 *Volvox* sp.
2308 *Oscillatoria* sp.
2309 *Nephroselmis* sp.
2310 *Mamiella* sp.
2311 *Carteria* sp.
2312 *Carteria* sp.
2313 *Carteria* sp.
2314 *Chlamydomonas* sp.
2315 *Chlamydomonas* sp.
2316 *Chlamydomonas* sp.
2317 *Chlamydomonas* sp.
2318 *Chlamydomonas* sp.
2319 *Chlamydomonas* sp.
2320 *Chlamydomonas* sp.
2321 *Chlamydomonas* sp.
2322 *Chlamydomonas* sp.
2323 *Chlamydomonas* sp.
2324 *Chlamydomonas* sp.
2325 *Eutreptiella* sp.
2326 *Gymnodinium* sp.
2327 *Cochlodinium* sp.
2328 *Alexandrium* sp.
2329 *Mamiella* sp.
2330 *Chlorella* sp.
2331 *Chroomonas* sp.
2332 *Rhodomonas* sp.
2333 *Choricystis* sp.
2334 *Mychonastes* sp.
2335 *Choricystis* sp.
2336 *Mychonastes* sp.
2337 *Choricystis* sp.
2338 *Choricystis* sp.
2339 *Mychonastes* sp.
2340 *Mychonastes* sp.
2341 *Mychonastes* sp.

2342	<i>Choricystis</i> sp.	<i>Anabaena circinalis</i>	1909
2343	<i>Heterocapsa</i> sp.	<i>Anabaena circinalis</i>	1929
2344	<i>Heterocapsa</i> sp.	<i>Anabaena circinalis</i>	1930
2345	<i>Euglena</i> sp.	<i>Anabaena circinalis</i> *	1880
2346	<i>Pedinella</i> sp.	<i>Anabaena compacta</i>	806
2347	<i>Carteria</i> sp.	<i>Anabaena compacta</i>	835
2348	<i>Anabaena</i> sp.	<i>Anabaena crassa</i>	77
2349	<i>Trebouxia</i> sp.	<i>Anabaena crassa</i>	78
2350	<i>Prymnesium parvum</i>	<i>Anabaena crassa</i>	1652
2351	<i>Nitzschia closterium</i>	<i>Anabaena crassa</i>	1653
2352	' <i>Chlorella</i> ' <i>saccharophila</i>	<i>Anabaena crassa</i>	1654
2353	<i>Coccomyxa dispar</i>	<i>Anabaena crassa</i>	1655
2354	<i>Fischerella</i> sp.	<i>Anabaena crassa</i>	1656
2355	<i>Hapalosiphon delicatulus</i>	<i>Anabaena crassa</i>	1657
2356	<i>Hapalosiphon</i> sp.	<i>Anabaena crassa</i>	1658
2357	<i>Hapalosiphon</i> sp.	<i>Anabaena crassa</i>	1659
2358	<i>Nostoc entophytum</i>	<i>Anabaena crassa</i>	1660
2359	<i>Rivularia</i> sp.	<i>Anabaena crassa</i>	1661
2360	<i>Scytonema</i> sp.	<i>Anabaena crassa</i>	1662
2361	<i>Stigonema hormoides</i>	<i>Anabaena crassa</i>	1663
2362	<i>Tolypothrix</i> sp.	<i>Anabaena crassa</i>	1664
2377	<i>Ovulinata parva</i>	<i>Anabaena crassa</i>	1665
2378	<i>Thaumatomastix</i> sp.	<i>Anabaena crassa</i>	1666
2408	<i>Klebsormidium flaccidum</i>	<i>Anabaena crassa</i>	1881
2409	<i>Cochlodinium polykrikoides</i>	<i>Anabaena crassa</i>	1882
2410	<i>Gymnodinium catenatum</i>	<i>Anabaena crassa</i>	1883
2411	<i>Karenia mikimotoi</i>	<i>Anabaena crassa</i>	1884
2412	<i>Acaryochloris marina</i>	<i>Anabaena crassa</i>	1885
		<i>Anabaena crassa</i>	1886
		<i>Anabaena crassa</i>	1887
		<i>Anabaena crassa</i>	1888
		<i>Anabaena crassa</i>	1889
		<i>Anabaena crassa</i>	1890
		<i>Anabaena crassa</i>	1891
		<i>Anabaena crassa</i>	1892
		<i>Anabaena crassa</i>	1910
		<i>Anabaena crassa</i>	1911
		<i>Anabaena crassa</i>	1912
		<i>Anabaena crassa</i>	1913
		<i>Anabaena crassa</i>	1914
		<i>Anabaena crassa</i>	1915
		<i>Anabaena crassa</i>	1916
		<i>Anabaena crassa</i>	1917
		<i>Anabaena crassa</i>	1918
		<i>Anabaena crassa</i>	1919
		<i>Anabaena crassa</i> *	1893
		<i>Anabaena crassa</i> *	1894
		<i>Anabaena crassa</i> *	1895
		<i>Anabaena crassa</i> *	1896
		<i>Anabaena crassa</i> *	1897
		<i>Anabaena crassa</i> *	1898
		<i>Anabaena crassa</i> *	1899
		<i>Anabaena crassa</i> *	1900
		<i>Anabaena crassa</i> *	1901
		<i>Anabaena crassa</i> *	1902
		<i>Anabaena cylindrica</i>	19
			1908

2. Systematic index (分類群別索引)

CYANOPHYTA

Cyanophyceae

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<i>Anabaena affinis</i>	40	<i>Anabaena crassa</i>	1910
<i>Anabaena affinis</i>	1639	<i>Anabaena crassa</i>	1911
<i>Anabaena affinis</i>	1640	<i>Anabaena crassa</i>	1912
<i>Anabaena affinis</i>	1641	<i>Anabaena crassa</i>	1913
<i>Anabaena affinis</i>	1642	<i>Anabaena crassa</i>	1914
<i>Anabaena akankoensis</i>	1875	<i>Anabaena crassa</i>	1915
<i>Anabaena akankoensis</i>	1876	<i>Anabaena crassa</i>	1916
<i>Anabaena akankoensis</i>	1906	<i>Anabaena crassa</i>	1917
<i>Anabaena akankoensis</i>	1907	<i>Anabaena crassa</i>	1918
<i>Anabaena aphanizomenoides</i>	1643	<i>Anabaena crassa</i>	1919
<i>Anabaena aphanizomenoides</i>	1644	<i>Anabaena crassa</i> *	1893
<i>Anabaena circinalis</i>	41	<i>Anabaena crassa</i> *	1894
<i>Anabaena circinalis</i>	1645	<i>Anabaena crassa</i> *	1895
<i>Anabaena circinalis</i>	1646	<i>Anabaena crassa</i> *	1896
<i>Anabaena circinalis</i>	1647	<i>Anabaena crassa</i> *	1897
<i>Anabaena circinalis</i>	1648	<i>Anabaena crassa</i> *	1898
<i>Anabaena circinalis</i>	1649	<i>Anabaena crassa</i> *	1899
<i>Anabaena circinalis</i>	1650	<i>Anabaena crassa</i> *	1900
<i>Anabaena circinalis</i>	1877	<i>Anabaena crassa</i> *	1901
<i>Anabaena circinalis</i>	1878	<i>Anabaena crassa</i> *	1902
<i>Anabaena circinalis</i>	1879	<i>Anabaena cylindrica</i>	19
<i>Anabaena circinalis</i>	1908		

<i>Anabaena danica</i>	1667	<i>Anabaena pseudocompacta</i>	1937
<i>Anabaena flos-aquae</i>	73	<i>Anabaena pseudocompacta</i>	1938
<i>Anabaena flos-aquae</i>	75	<i>Anabaena pseudocompacta*</i>	1939
<i>Anabaena flos-aquae</i>	1668	<i>Anabaena pseudocompacta*</i>	1940
<i>Anabaena flos-aquae</i>	1669	<i>Anabaena reniformis</i>	1685
<i>Anabaena flos-aquae</i>	1670	<i>Anabaena reniformis</i>	1686
<i>Anabaena flos-aquae</i>	1671	<i>Anabaena reniformis</i>	1687
<i>Anabaena flos-aquae</i>	1672	<i>Anabaena reniformis</i>	1688
<i>Anabaena flos-aquae</i>	1903	<i>Anabaena reniformis</i>	1689
<i>Anabaena heterospora*</i>	1697	<i>Anabaena reniformis</i>	1690
<i>Anabaena kisseleviana</i>	74	<i>Anabaena reniformis</i>	1691
<i>Anabaena kisseleviana</i>	807	<i>Anabaena reniformis</i>	1692
<i>Anabaena lemmermannii</i>	808	<i>Anabaena reniformis</i>	1693
<i>Anabaena lemmermannii</i>	833	<i>Anabaena reniformis</i>	1694
<i>Anabaena lemmermannii</i>	1673	<i>Anabaena reniformis</i>	1941
<i>Anabaena lemmermannii</i>	1674	<i>Anabaena reniformis</i>	1942
<i>Anabaena lemmermannii</i>	1675	<i>Anabaena reniformis</i>	1943
<i>Anabaena lemmermannii</i>	1676	<i>Anabaena reniformis</i>	1944
<i>Anabaena lemmermannii</i>	1920	<i>Anabaena reniformis</i>	1945
<i>Anabaena lemmermannii</i>	1921	<i>Anabaena reniformis</i>	1946
<i>Anabaena minispora</i>	1922	<i>Anabaena reniformis</i>	1947
<i>Anabaena minispora</i>	1923	<i>Anabaena reniformis</i>	1948
<i>Anabaena minispora</i>	1924	<i>Anabaena reniformis</i>	1949
<i>Anabaena mucosa</i>	809	<i>Anabaena smithii</i>	818
<i>Anabaena mucosa</i>	1677	<i>Anabaena smithii</i>	819
<i>Anabaena mucosa*</i>	1925	<i>Anabaena smithii</i>	820
<i>Anabaena mucosa*</i>	1926	<i>Anabaena smithii</i>	821
<i>Anabaena mucosa*</i>	1927	<i>Anabaena smithii</i>	822
<i>Anabaena mucosa*</i>	1928	<i>Anabaena smithii</i>	823
<i>Anabaena oumiana</i>	829	<i>Anabaena smithii</i>	824
<i>Anabaena oumiana</i>	1678	<i>Anabaena smithii</i>	830
<i>Anabaena oumiana</i>	1679	<i>Anabaena smithii</i>	831
<i>Anabaena oumiana</i>	1904	<i>Anabaena smithii</i>	1695
<i>Anabaena oumiana</i>	1931	<i>Anabaena smithii</i>	1724
<i>Anabaena oumiana</i>	1932	<i>Anabaena</i> sp.	1651
<i>Anabaena planctonica</i>	1933	<i>Anabaena</i> sp.	1953
<i>Anabaena planctonica</i>	80	<i>Anabaena</i> sp.	1954
<i>Anabaena planctonica</i>	810	<i>Anabaena</i> sp.	1955
<i>Anabaena planctonica</i>	811	<i>Anabaena</i> sp.	2348
<i>Anabaena planctonica</i>	812	<i>Anabaena spiroides</i>	76
<i>Anabaena planctonica</i>	813	<i>Anabaena spiroides</i>	1905
<i>Anabaena planctonica</i>	814	<i>Anabaena spiroides</i>	1950
<i>Anabaena planctonica</i>	815	<i>Anabaena ucrainica</i>	263
<i>Anabaena planctonica</i>	816	<i>Anabaena ucrainica</i>	825
<i>Anabaena planctonica</i>	817	<i>Anabaena ucrainica</i>	826
<i>Anabaena planctonica</i>	834	<i>Anabaena ucrainica</i>	1696
<i>Anabaena planctonica</i>	1680	<i>Anabaena variabilis</i>	23
<i>Anabaena planctonica</i>	1681	<i>Anabaena variabilis</i>	2093
<i>Anabaena planctonica</i>	1682	<i>Anabaena variabilis</i>	2094
<i>Anabaena planctonica</i>	1683	<i>Anabaena variabilis</i>	2095
<i>Anabaena planctonica</i>	1723	<i>Anabaena viguieri</i>	827
<i>Anabaena planctonica</i>	1934	<i>Anabaena viguieri*</i>	1951
<i>Anabaena pseudocompacta</i>	79	<i>Anabaena viguieri*</i>	1952
<i>Anabaena pseudocompacta</i>	1684	<i>Anabaenopsis circularis</i>	21
<i>Anabaena pseudocompacta</i>	1935	<i>Anabaenopsis</i> sp.	1698
<i>Anabaena pseudocompacta</i>	1936	<i>Anabaenopsis</i> sp.	1725
		<i>Anacystis marina</i>	2096

<i>Aphanizomenon flos-aquae</i>	1258	<i>Microcystis aeruginosa</i>	104
<i>Aphanizomenon flos-aquae</i>	1726	<i>Microcystis aeruginosa</i>	105
<i>Aphanizomenon flos-aquae</i>	1727	<i>Microcystis aeruginosa</i>	106
<i>Aphanizomenon flos-aquae</i>	1728	<i>Microcystis aeruginosa</i>	107
<i>Aphanizomenon flos-aquae</i> f. <i>gracile</i>	81	<i>Microcystis aeruginosa</i>	108
<i>Aphanocapsa montana</i>	416	<i>Microcystis aeruginosa</i>	109
<i>Aulosira laxa</i>	50	<i>Microcystis aeruginosa</i>	110
<i>Calothrix brevissima</i>	22	<i>Microcystis aeruginosa</i>	111
<i>Calothrix brevissima</i>	2097	<i>Microcystis aeruginosa</i>	112
<i>Calothrix crustacea</i>	266	<i>Microcystis aeruginosa</i>	298
<i>Calothrix elenkinii</i>	2098	<i>Microcystis aeruginosa</i>	299
<i>Calothrix gracilis</i>	2099	<i>Microcystis aeruginosa</i>	478
<i>Calothrix gracilis</i>	2100	<i>Microcystis aeruginosa</i>	604
<i>Calothrix parasitica</i>	267	<i>Microcystis aeruginosa</i>	843
<i>Calothrix parasitica</i>	334	<i>Microcystis aeruginosa</i>	901
<i>Calothrix scopulorum</i>	268	<i>Microcystis aeruginosa</i>	902
<i>Calothrix</i> sp.	2101	<i>Microcystis aeruginosa</i>	933
<i>Chamaesiphon polymorphus</i>	433	<i>Microcystis aeruginosa</i>	1025
<i>Chamaesiphon subglobosus</i>	434	<i>Microcystis aeruginosa</i>	1026
<i>Chroogloeocystis siderophila</i>	1031	<i>Microcystis aeruginosa</i>	1027
<i>Cylindrospermopsis raciborskii</i>	930	<i>Microcystis aeruginosa</i>	1028
<i>Cylindrospermopsis raciborskii</i>	991	<i>Microcystis aeruginosa</i>	1029
<i>Cylindrospermopsis raciborskii</i>	992	<i>Microcystis aeruginosa</i>	1043
<i>Cylindrospermopsis raciborskii</i>	993	<i>Microcystis aeruginosa</i>	1050
<i>Cylindrospermopsis raciborskii</i>	994	<i>Microcystis aeruginosa</i>	1051
<i>Cylindrospermopsis raciborskii</i>	1040	<i>Microcystis aeruginosa</i>	1052
<i>Cylindrospermopsis raciborskii</i>	1041	<i>Microcystis aeruginosa</i>	1053
<i>Cylindrospermopsis raciborskii</i>	1259	<i>Microcystis aeruginosa</i>	1054
<i>Cylindrospermopsis raciborskii</i>	1260	<i>Microcystis aeruginosa</i>	1055
<i>Cylindrospermopsis raciborskii</i>	1261	<i>Microcystis aeruginosa</i>	1056
<i>Cylindrospermopsis raciborskii</i>	1262	<i>Microcystis aeruginosa</i>	1057
<i>Cylindrospermum muscicola</i>	2102	<i>Microcystis aeruginosa</i>	1058
<i>Fischerella major</i>	592	<i>Microcystis aeruginosa</i>	1059
<i>Fischerella</i> sp.	2354	<i>Microcystis aeruginosa</i>	1060
<i>Gloeocapsa decorticans</i>	931	<i>Microcystis aeruginosa</i>	1061
<i>Hapalosiphon delicatulus</i>	2355	<i>Microcystis aeruginosa</i>	1062
<i>Hapalosiphon</i> sp.	2356	<i>Microcystis aeruginosa</i>	1063
<i>Hapalosiphon</i> sp.	2357	<i>Microcystis aeruginosa</i>	1064
<i>Hydrococcus rivularis</i>	593	<i>Microcystis aeruginosa</i>	1065
<i>Leptolyngbya</i> sp.	30	<i>Microcystis aeruginosa</i>	1066
<i>Leptolyngbya</i> sp.	2103	<i>Microcystis aeruginosa</i>	1067
<i>Leptolyngbya</i> sp.	2104	<i>Microcystis aeruginosa</i>	1068
<i>Limnothrix redekei</i>	847	<i>Microcystis aeruginosa</i>	1069
<i>Merismopedia tenuissima</i>	230	<i>Microcystis aeruginosa</i>	1070
<i>Microcystis aeruginosa</i>	44	<i>Microcystis aeruginosa</i>	1071
<i>Microcystis aeruginosa</i>	87	<i>Microcystis aeruginosa</i>	1072
<i>Microcystis aeruginosa</i>	88	<i>Microcystis aeruginosa</i>	1073
<i>Microcystis aeruginosa</i>	89	<i>Microcystis aeruginosa</i>	1074
<i>Microcystis aeruginosa</i>	90	<i>Microcystis aeruginosa</i>	1075
<i>Microcystis aeruginosa</i>	91	<i>Microcystis aeruginosa</i>	1076
<i>Microcystis aeruginosa</i>	98	<i>Microcystis aeruginosa</i>	1077
<i>Microcystis aeruginosa</i>	99	<i>Microcystis aeruginosa</i>	1078
<i>Microcystis aeruginosa</i>	100	<i>Microcystis aeruginosa</i>	1079
<i>Microcystis aeruginosa</i>	101	<i>Microcystis aeruginosa</i>	1080
<i>Microcystis aeruginosa</i>	102	<i>Microcystis aeruginosa</i>	1081
<i>Microcystis aeruginosa</i>	103	<i>Microcystis aeruginosa</i>	1082

<i>Microcystis aeruginosa</i>	1195	<i>Microcystis aeruginosa</i>	1251
<i>Microcystis aeruginosa</i>	1196	<i>Microcystis aeruginosa</i>	1252
<i>Microcystis aeruginosa</i>	1197	<i>Microcystis aeruginosa</i>	1253
<i>Microcystis aeruginosa</i>	1198	<i>Microcystis aeruginosa</i>	1254
<i>Microcystis aeruginosa</i>	1199	<i>Microcystis aeruginosa</i>	1255
<i>Microcystis aeruginosa</i>	1200	<i>Microcystis aeruginosa</i>	1256
<i>Microcystis aeruginosa</i>	1201	<i>Microcystis aeruginosa</i>	1257
<i>Microcystis aeruginosa</i>	1202	<i>Microcystis aeruginosa</i>	1354
<i>Microcystis aeruginosa</i>	1203	<i>Microcystis aeruginosa</i>	1355
<i>Microcystis aeruginosa</i>	1204	<i>Microcystis aeruginosa</i>	1356
<i>Microcystis aeruginosa</i>	1205	<i>Myxosarcina burmensis</i>	481
<i>Microcystis aeruginosa</i>	1206	<i>Nostoc carneum</i>	2107
<i>Microcystis aeruginosa</i>	1207	<i>Nostoc commune</i>	24
<i>Microcystis aeruginosa</i>	1208	<i>Nostoc commune</i>	38
<i>Microcystis aeruginosa</i>	1209	<i>Nostoc entophyllum</i>	2358
<i>Microcystis aeruginosa</i>	1210	<i>Nostoc linckia</i>	25
<i>Microcystis aeruginosa</i>	1211	<i>Nostoc linckia</i> var. <i>arvense</i>	28
<i>Microcystis aeruginosa</i>	1212	<i>Nostoc minutum</i>	26
<i>Microcystis aeruginosa</i>	1213	<i>Nostoc minutum</i>	29
<i>Microcystis aeruginosa</i>	1214	<i>Nostoc punctiforme</i>	2108
<i>Microcystis aeruginosa</i>	1215	<i>Nostoc</i> sp.	2109
<i>Microcystis aeruginosa</i>	1216	<i>Nostoc</i> sp.	2110
<i>Microcystis aeruginosa</i>	1217	<i>Nostoc</i> sp.	2111
<i>Microcystis aeruginosa</i>	1218	<i>Nostoc</i> sp.	2112
<i>Microcystis aeruginosa</i>	1219	<i>Nostoc</i> sp.	2113
<i>Microcystis aeruginosa</i>	1220	<i>Nostoc</i> sp.	2114
<i>Microcystis aeruginosa</i>	1221	<i>Oscillatoria amphibia</i>	361
<i>Microcystis aeruginosa</i>	1222	<i>Oscillatoria animalis</i>	206
<i>Microcystis aeruginosa</i>	1223	<i>Oscillatoria laetevirens</i>	31
<i>Microcystis aeruginosa</i>	1224	<i>Oscillatoria limnetica</i>	36
<i>Microcystis aeruginosa</i>	1225	<i>Oscillatoria mougeotii</i>	2115
<i>Microcystis aeruginosa</i>	1226	<i>Oscillatoria neglecta</i>	2116
<i>Microcystis aeruginosa</i>	1227	<i>Oscillatoria rosea</i>	208
<i>Microcystis aeruginosa</i>	1228	<i>Oscillatoria</i> sp.	2118
<i>Microcystis aeruginosa</i>	1229	<i>Oscillatoria</i> sp.	2308
<i>Microcystis aeruginosa</i>	1230	<i>Oscillatoria tenuis</i>	33
<i>Microcystis aeruginosa</i>	1231	<i>Phormidium ambiguum</i>	2119
<i>Microcystis aeruginosa</i>	1232	<i>Phormidium ambiguum</i>	2120
<i>Microcystis aeruginosa</i>	1233	<i>Phormidium ambiguum</i>	2121
<i>Microcystis aeruginosa</i>	1234	<i>Phormidium ambiguum</i>	2122
<i>Microcystis aeruginosa</i>	1235	<i>Phormidium angustissimum</i>	2123
<i>Microcystis aeruginosa</i>	1236	<i>Phormidium foveolarum</i>	32
<i>Microcystis aeruginosa</i>	1237	<i>Phormidium foveolarum</i>	34
<i>Microcystis aeruginosa</i>	1238	<i>Phormidium foveolarum</i>	503
<i>Microcystis aeruginosa</i>	1239	<i>Phormidium foveolarum</i>	504
<i>Microcystis aeruginosa</i>	1240	<i>Phormidium foveolarum</i>	505
<i>Microcystis aeruginosa</i>	1241	<i>Phormidium henningsii</i>	2124
<i>Microcystis aeruginosa</i>	1242	<i>Phormidium jenkelianum</i>	506
<i>Microcystis aeruginosa</i>	1243	<i>Phormidium jenkelianum</i>	507
<i>Microcystis aeruginosa</i>	1244	<i>Phormidium luridum</i>	2125
<i>Microcystis aeruginosa</i>	1245	<i>Phormidium molle</i>	509
<i>Microcystis aeruginosa</i>	1246	<i>Phormidium molle</i>	2126
<i>Microcystis aeruginosa</i>	1247	<i>Phormidium mucicola</i>	510
<i>Microcystis aeruginosa</i>	1248	<i>Phormidium ramosum</i>	305
<i>Microcystis aeruginosa</i>	1249	<i>Phormidium</i> sp.	2128
<i>Microcystis aeruginosa</i>	1250	<i>Planktothricoides raciborskii</i>	207

<i>Planktothricoides raciborskii</i>	917	<i>Synechococcus</i> sp.	952
<i>Planktothrix agardhii</i>	204	<i>Synechococcus</i> sp.	953
<i>Planktothrix agardhii</i>	205	<i>Synechococcus</i> sp.	954
<i>Planktothrix agardhii</i>	594	<i>Synechococcus</i> sp.	955
<i>Planktothrix agardhii</i>	595	<i>Synechococcus</i> sp.	956
<i>Planktothrix agardhii</i>	596	<i>Synechococcus</i> sp.	957
<i>Planktothrix agardhii</i>	905	<i>Synechococcus</i> sp.	958
<i>Planktothrix agardhii</i>	989	<i>Synechococcus</i> sp.	959
<i>Planktothrix agardhii</i>	990	<i>Synechococcus</i> sp.	960
<i>Planktothrix agardhii</i>	1263	<i>Synechococcus</i> sp.	961
<i>Planktothrix agardhii</i>	1264	<i>Synechococcus</i> sp.	962
<i>Planktothrix agardhii</i>	1265	<i>Synechococcus</i> sp.	963
<i>Planktothrix mougeotii</i>	844	<i>Synechococcus</i> sp.	964
<i>Planktothrix mougeotii</i>	911	<i>Synechococcus</i> sp.	965
<i>Planktothrix mougeotii</i>	913	<i>Synechococcus</i> sp.	969
<i>Planktothrix rubescens</i>	610	<i>Synechococcus</i> sp.	970
<i>Planktothrix rubescens</i>	928	<i>Synechococcus</i> sp.	971
<i>Planktothrix rubescens</i>	1266	<i>Synechococcus</i> sp.	972
<i>Planktothrix rubescens</i>	1267	<i>Synechococcus</i> sp.	973
<i>Plectonema calothricoides</i>	2129	<i>Synechococcus</i> sp.	974
<i>Plectonema radiosum</i>	515	<i>Synechococcus</i> sp.	975
<i>Prochlorococcus marinus</i>	2086	<i>Synechococcus</i> sp.	976
<i>Prochlorococcus marinus</i>	2087	<i>Synechococcus</i> sp.	977
<i>Pseudanabaena galeata</i>	512	<i>Synechococcus</i> sp.	978
<i>Pseudanabaena</i> sp.	611	<i>Synechococcus</i> sp.	979
<i>Raphidiopsis curvata</i>	932	<i>Synechococcus</i> sp.	980
<i>Raphidiopsis</i> sp.	1729	<i>Synechococcus</i> sp.	981
<i>Rivularia</i> sp.	2359	<i>Synechococcus</i> sp.	982
<i>Scytonema javanicum</i>	1956	<i>Synechococcus</i> sp.	983
<i>Scytonema</i> sp.	2130	<i>Synechococcus</i> sp.	984
<i>Scytonema</i> sp.	2360	<i>Synechococcus</i> sp.	985
<i>Spirulina platensis</i>	39	<i>Synechococcus</i> sp.	986
<i>Spirulina platensis</i>	45	<i>Synechococcus</i> sp.	987
<i>Spirulina platensis</i>	46	<i>Synechococcus</i> sp.	988
<i>Spirulina platensis</i>	597	<i>Synechococcus</i> sp.	1341
<i>Spirulina subsalsa</i>	27	<i>Synechococcus</i> sp.	1342
<i>Spirulina subsalsa</i>	527	<i>Synechococcus</i> sp.	1343
<i>Spirulina subsalsa</i>	598	<i>Synechococcus</i> sp.	1344
<i>Stigonema hormoides</i>	2361	<i>Synechococcus</i> sp.	1345
<i>Stigonema ocellatum</i>	2131	<i>Synechococcus</i> sp.	1346
<i>Symploca muscorum</i>	2132	<i>Synechococcus</i> sp.	1347
<i>Synechococcus</i> sp.	937	<i>Synechococcus</i> sp.	1348
<i>Synechococcus</i> sp.	938	<i>Tolypothrix</i> sp.	2362
<i>Synechococcus</i> sp.	939	<i>Tolypothrix tenuis</i>	37
<i>Synechococcus</i> sp.	940	<i>Tolypothrix tenuis</i>	2135
<i>Synechococcus</i> sp.	941	<i>Tychonema bourrellyi</i>	846
<i>Synechococcus</i> sp.	942		
<i>Synechococcus</i> sp.	943	GLAUCOPHYTA	
<i>Synechococcus</i> sp.	944	Glaucophyceae	
<i>Synechococcus</i> sp.	945	<i>Cyanophora paradoxa</i>	547
<i>Synechococcus</i> sp.	946	<i>Cyanophora paradoxa</i>	763
<i>Synechococcus</i> sp.	947	<i>Cyanophora tetracyanea</i>	764
<i>Synechococcus</i> sp.	948	<i>Glaucocystis nostochinearum</i>	966
<i>Synechococcus</i> sp.	949	<i>Glaucocystis nostochinearum</i>	1369
<i>Synechococcus</i> sp.	950	<i>Glaucocystis nostochinearum</i>	1961
<i>Synechococcus</i> sp.	951	<i>Glaucocystis nostochinearum</i>	2141

RHODOPHYTA**Compsopogonophyceae**

<i>Compsopogon coeruleus</i>	1461
<i>Compsopogon coeruleus</i>	1462
<i>Compsopogon coeruleus</i>	1734
<i>Compsopogonopsis japonica</i>	1463

Cyanidiophyceae

<i>Cyanidioschyzon merolae</i>	1332
<i>Cyanidioschyzon merolae</i>	1804
<i>Cyanidioschyzon merolae</i>	1805
<i>Cyanidioschyzon merolae</i>	1806
<i>Cyanidium caldarium</i>	2137

Florideophyceae

<i>Batrachospermum atrum</i>	1456
<i>Batrachospermum helminthosum</i>	1457
<i>Batrachospermum</i> sp.	1459
<i>Batrachospermum</i> sp.	1460
<i>Batrachospermum turfosum</i>	2136
<i>Batrachospermum virgato-decaisneanum</i>	1458
<i>Nemalionopsis tortuosa</i>	1464
<i>Nemalionopsis tortuosa</i>	1465
<i>Nemalionopsis tortuosa</i>	1466
<i>Nemalionopsis tortuosa</i>	1467
<i>Nemalionopsis tortuosa</i>	1468
<i>Nemalionopsis tortuosa</i>	1469
<i>Nemalionopsis tortuosa</i>	1470
<i>Nemalionopsis tortuosa</i>	1471
<i>Nemalionopsis tortuosa</i>	1472
<i>Nemalionopsis tortuosa</i>	1735
<i>Nemalionopsis tortuosa</i>	1736
<i>Nemalionopsis tortuosa</i>	1737
<i>Nemalionopsis tortuosa</i>	1738
<i>Nemalionopsis tortuosa</i>	1739
<i>Nemalionopsis tortuosa</i>	1740
<i>Nemalionopsis tortuosa</i>	1741
<i>Nemalionopsis tortuosa</i>	1742
<i>Nemalionopsis tortuosa</i>	1743
<i>Nemalionopsis tortuosa</i>	1744
<i>Nemalionopsis tortuosa</i>	1745
<i>Nemalionopsis tortuosa</i>	1746
<i>Nemalionopsis tortuosa</i>	1747
<i>Nemalionopsis tortuosa</i>	1748
<i>Nemalionopsis tortuosa</i>	1749
<i>Nemalionopsis tortuosa</i>	1750
<i>Nemalionopsis tortuosa</i>	2023
<i>Nemalionopsis tortuosa</i>	2024
<i>Nemalionopsis tortuosa</i>	2025
<i>Nemalionopsis tortuosa</i>	2026
<i>Nemalionopsis tortuosa</i>	2027
<i>Nemalionopsis tortuosa</i>	2028
<i>Nemalionopsis tortuosa</i>	2029
<i>Nemalionopsis tortuosa</i>	2030
<i>Nemalionopsis tortuosa</i>	2031
<i>Nemalionopsis tortuosa</i>	2075

<i>Nemalionopsis tortuosa</i>	2076
<i>Nemalionopsis tortuosa</i>	2077
<i>Nemalionopsis tortuosa</i>	2078
<i>Nemalionopsis tortuosa</i>	2079
<i>Nemalionopsis tortuosa</i>	2080
<i>Nemalionopsis tortuosa</i>	2081
<i>Nemalionopsis tortuosa</i>	2082
<i>Nemalionopsis tortuosa</i>	2083
<i>Thorea gaudichaudii</i>	1473
<i>Thorea gaudichaudii</i>	1474
<i>Thorea gaudichaudii</i>	1475
<i>Thorea gaudichaudii</i>	1476
<i>Thorea gaudichaudii</i>	1477
<i>Thorea gaudichaudii</i>	1478
<i>Thorea gaudichaudii</i>	1479
<i>Thorea gaudichaudii</i>	1480
<i>Thorea gaudichaudii</i>	1481
<i>Thorea gaudichaudii</i>	1482
<i>Thorea gaudichaudii</i>	1751
<i>Thorea gaudichaudii</i>	1752
<i>Thorea gaudichaudii</i>	1753
<i>Thorea gaudichaudii</i>	1754
<i>Thorea gaudichaudii</i>	1755
<i>Thorea gaudichaudii</i>	1756
<i>Thorea gaudichaudii</i>	1757
<i>Thorea gaudichaudii</i>	1758
<i>Thorea gaudichaudii</i>	1759
<i>Thorea gaudichaudii</i>	1760
<i>Thorea gaudichaudii</i>	1761
<i>Thorea gaudichaudii</i>	1762
<i>Thorea gaudichaudii</i>	1763
<i>Thorea gaudichaudii</i>	1764
<i>Thorea gaudichaudii</i>	1765
<i>Thorea gaudichaudii</i>	1766
<i>Thorea gaudichaudii</i>	1767
<i>Thorea gaudichaudii</i>	1768
<i>Thorea gaudichaudii</i>	1769
<i>Thorea gaudichaudii</i>	1770
<i>Thorea gaudichaudii</i>	1771
<i>Thorea gaudichaudii</i>	1772
<i>Thorea gaudichaudii</i>	2032
<i>Thorea gaudichaudii</i>	2033
<i>Thorea gaudichaudii</i>	2034
<i>Thorea gaudichaudii</i>	2035
<i>Thorea gaudichaudii</i>	2036
<i>Thorea gaudichaudii</i>	2037
<i>Thorea gaudichaudii</i>	2038
<i>Thorea gaudichaudii</i>	2039
<i>Thorea gaudichaudii</i>	2040
<i>Thorea gaudichaudii</i>	2041
<i>Thorea gaudichaudii</i>	2042
<i>Thorea hispida</i>	1572
<i>Thorea hispida</i>	1573
<i>Thorea hispida</i>	1574
<i>Thorea hispida</i>	1575
<i>Thorea hispida</i>	1576

<i>Thorea hispida</i>	1577	<i>Thorea okadae</i>	1530
<i>Thorea hispida</i>	1578	<i>Thorea okadae</i>	1531
<i>Thorea hispida</i>	1579	<i>Thorea okadae</i>	1532
<i>Thorea hispida</i>	1580	<i>Thorea okadae</i>	1533
<i>Thorea hispida</i>	1582	<i>Thorea okadae</i>	1534
<i>Thorea hispida</i>	1583	<i>Thorea okadae</i>	1535
<i>Thorea hispida</i>	1584	<i>Thorea okadae</i>	1536
<i>Thorea hispida</i>	2043	<i>Thorea okadae</i>	1537
<i>Thorea hispida</i>	2044	<i>Thorea okadae</i>	1538
<i>Thorea okadae</i>	1483	<i>Thorea okadae</i>	1539
<i>Thorea okadae</i>	1484	<i>Thorea okadae</i>	1540
<i>Thorea okadae</i>	1485	<i>Thorea okadae</i>	1541
<i>Thorea okadae</i>	1486	<i>Thorea okadae</i>	1542
<i>Thorea okadae</i>	1487	<i>Thorea okadae</i>	1543
<i>Thorea okadae</i>	1488	<i>Thorea okadae</i>	1544
<i>Thorea okadae</i>	1489	<i>Thorea okadae</i>	1545
<i>Thorea okadae</i>	1490	<i>Thorea okadae</i>	1546
<i>Thorea okadae</i>	1491	<i>Thorea okadae</i>	1547
<i>Thorea okadae</i>	1492	<i>Thorea okadae</i>	1548
<i>Thorea okadae</i>	1493	<i>Thorea okadae</i>	1549
<i>Thorea okadae</i>	1494	<i>Thorea okadae</i>	1550
<i>Thorea okadae</i>	1495	<i>Thorea okadae</i>	1551
<i>Thorea okadae</i>	1496	<i>Thorea okadae</i>	1552
<i>Thorea okadae</i>	1497	<i>Thorea okadae</i>	1553
<i>Thorea okadae</i>	1498	<i>Thorea okadae</i>	1554
<i>Thorea okadae</i>	1499	<i>Thorea okadae</i>	1555
<i>Thorea okadae</i>	1500	<i>Thorea okadae</i>	1556
<i>Thorea okadae</i>	1501	<i>Thorea okadae</i>	1558
<i>Thorea okadae</i>	1502	<i>Thorea okadae</i>	1559
<i>Thorea okadae</i>	1503	<i>Thorea okadae</i>	1560
<i>Thorea okadae</i>	1504	<i>Thorea okadae</i>	1561
<i>Thorea okadae</i>	1505	<i>Thorea okadae</i>	1562
<i>Thorea okadae</i>	1506	<i>Thorea okadae</i>	1563
<i>Thorea okadae</i>	1507	<i>Thorea okadae</i>	1564
<i>Thorea okadae</i>	1508	<i>Thorea okadae</i>	1565
<i>Thorea okadae</i>	1509	<i>Thorea okadae</i>	1566
<i>Thorea okadae</i>	1510	<i>Thorea okadae</i>	1568
<i>Thorea okadae</i>	1511	<i>Thorea okadae</i>	1569
<i>Thorea okadae</i>	1512	<i>Thorea okadae</i>	1570
<i>Thorea okadae</i>	1513	<i>Thorea okadae</i>	1571
<i>Thorea okadae</i>	1514	<i>Thorea okadae</i>	1773
<i>Thorea okadae</i>	1515	<i>Thorea okadae</i>	1774
<i>Thorea okadae</i>	1516	<i>Thorea okadae</i>	1775
<i>Thorea okadae</i>	1517	<i>Thorea okadae</i>	1776
<i>Thorea okadae</i>	1518	<i>Thorea okadae</i>	1777
<i>Thorea okadae</i>	1519	<i>Thorea okadae</i>	1778
<i>Thorea okadae</i>	1520	<i>Thorea okadae</i>	1779
<i>Thorea okadae</i>	1521	<i>Thorea okadae</i>	1780
<i>Thorea okadae</i>	1522	<i>Thorea okadae</i>	1781
<i>Thorea okadae</i>	1523	<i>Thorea okadae</i>	1782
<i>Thorea okadae</i>	1524	<i>Thorea okadae</i>	1783
<i>Thorea okadae</i>	1525	<i>Thorea okadae</i>	1784
<i>Thorea okadae</i>	1526	<i>Thorea okadae</i>	1785
<i>Thorea okadae</i>	1527	<i>Thorea okadae</i>	1786
<i>Thorea okadae</i>	1528	<i>Thorea okadae</i>	1787
<i>Thorea okadae</i>	1529	<i>Thorea okadae</i>	1788

<i>Thorea okadae</i>	1789	<i>Porphyridium</i> sp.	1034
<i>Thorea okadae</i>	1790	<i>Porphyridium</i> sp.	1035
<i>Thorea okadae</i>	1791	<i>Porphyridium</i> sp.	1807
<i>Thorea okadae</i>	1792		
<i>Thorea okadae</i>	1793	Rhodellophyceae	
<i>Thorea okadae</i>	1794	<i>Rhodella</i> sp.	1036
<i>Thorea okadae</i>	1795	<i>Rhodella</i> sp.	1037
<i>Thorea okadae</i>	1796	<i>Rhodella</i> sp.	1972
<i>Thorea okadae</i>	1797		
<i>Thorea okadae</i>	1798	Stylonematophyceae	
<i>Thorea okadae</i>	1799	<i>Chroodactylon ornatum</i>	1969
<i>Thorea okadae</i>	1800	<i>Chroodactylon ornatum</i>	1970
<i>Thorea okadae</i>	1801	<i>Chroodactylon ornatum</i>	1971
<i>Thorea okadae</i>	1802		
<i>Thorea okadae</i>	1803	CHLOROPHYTA	
<i>Thorea okadae</i>	2045	Chlorophyceae	
<i>Thorea okadae</i>	2046	<i>Ankistrodesmus angustus</i>	2190
<i>Thorea okadae</i>	2047	<i>Ankistrodesmus angustus</i>	2191
<i>Thorea okadae</i>	2048	<i>Ankistrodesmus angustus</i>	2192
<i>Thorea okadae</i>	2049	<i>Ankistrodesmus braunii</i>	2193
<i>Thorea okadae</i>	2050	<i>Ankistrodesmus braunii</i>	2194
<i>Thorea okadae</i>	2051	<i>Ankistrodesmus falcatus</i> var. <i>acicularis</i>	2195
<i>Thorea okadae</i>	2052	<i>Ankistrodesmus falcatus</i> var. <i>stipitatus</i>	2196
<i>Thorea okadae</i>	2053	<i>Ankistrodesmus nannoselene</i>	2197
<i>Thorea okadae</i>	2054	<i>Apiocystis brauniana</i>	1020
<i>Thorea okadae</i>	2055	<i>Asterococcus superbus</i>	1331
<i>Thorea okadae</i>	2056	<i>Asterococcus superbus</i>	2198
<i>Thorea okadae</i>	2057	<i>Astrephomene gubernaculifera</i>	418
<i>Thorea okadae</i>	2058	<i>Astrephomene gubernaculifera</i>	419
<i>Thorea okadae</i>	2059	<i>Astrephomene gubernaculifera</i>	628
<i>Thorea okadae</i>	2060	<i>Astrephomene gubernaculifera</i>	853
<i>Thorea okadae</i>	2061	<i>Astrephomene gubernaculifera</i>	854
<i>Thorea okadae</i>	2062	<i>Astrephomene gubernaculifera</i>	855
<i>Thorea okadae</i>	2063	<i>Astrephomene perforata</i>	564
<i>Thorea okadae</i>	2064	<i>Astrephomene perforata</i>	565
<i>Thorea okadae</i>	2065	<i>Basichlamys sacculifera</i>	566
<i>Thorea okadae</i>	2066	<i>Brachiomonas submarina</i>	375
<i>Thorea okadae</i>	2067	<i>Bracteacoccus giganteus</i>	2200
<i>Thorea okadae</i>	2068	<i>Carteria cerasiformis</i>	424
<i>Thorea okadae</i>	2069	<i>Carteria cerasiformis</i>	425
<i>Thorea okadae</i>	2070	<i>Carteria crucifera</i>	421
<i>Thorea okadae</i>	2071	<i>Carteria crucifera</i>	630
<i>Thorea okadae</i>	2072	<i>Carteria eugametos</i>	631
<i>Thorea okadae</i>	2073	<i>Carteria eugametos</i>	632
<i>Thorea okadae</i>	2074	<i>Carteria eugametos</i>	633
		<i>Carteria eugametos</i>	634
		<i>Carteria eugametos</i>	635
		<i>Carteria eugametos</i>	636
		<i>Carteria inversa</i>	422
		<i>Carteria inversa</i>	423
		<i>Carteria klebsii</i>	426
		<i>Carteria multifilis</i>	427
		<i>Carteria obtusa</i>	428
		<i>Carteria obtusa</i>	429
		<i>Carteria obtusa</i>	430
		<i>Carteria obtusa</i>	431
Porphyridiophyceae			
<i>Porphyridium aerugineum</i>	1957		
<i>Porphyridium aerugineum</i>	1958		
<i>Porphyridium aerugineum</i>	1959		
<i>Porphyridium aerugineum</i>	1960		
<i>Porphyridium purpureum</i>	2138		
<i>Porphyridium purpureum</i>	2139		
<i>Porphyridium purpureum</i>	2140		
<i>Porphyridium</i> sp.	1032		
<i>Porphyridium</i> sp.	1033		

<i>Carteria palmata</i>	1336	<i>Chlamydomonas pseudococcum</i>	2232
<i>Carteria palmata</i>	1337	<i>Chlamydomonas pulsatilla</i>	122
<i>Carteria palmata</i>	1338	<i>Chlamydomonas pulvinata</i>	2233
<i>Carteria radiosa</i>	432	<i>Chlamydomonas pumilio</i> var. <i>pumilio</i>	1850
<i>Carteria</i> sp.	2311	<i>Chlamydomonas rapa</i>	2234
<i>Carteria</i> sp.	2312	<i>Chlamydomonas reinhardtii</i>	2235
<i>Carteria</i> sp.	2313	<i>Chlamydomonas reinhardtii</i>	2236
<i>Carteria</i> sp.	2347	<i>Chlamydomonas reinhardtii</i>	2237
<i>Characiochloris acuminata</i>	637	<i>Chlamydomonas reinhardtii</i>	2238
<i>Characiochloris sasae</i>	567	<i>Chlamydomonas reinhardtii</i>	2239
<i>Characiochloris sasae</i>	638	<i>Chlamydomonas segnis</i>	2240
<i>Characium angustum</i>	639	<i>Chlamydomonas simplex</i>	2241
<i>Characium polymorphum</i>	436	<i>Chlamydomonas</i> sp.	2314
<i>Chlamydomonas actinochloris</i>	2201	<i>Chlamydomonas</i> sp.	2315
<i>Chlamydomonas applanata</i>	2202	<i>Chlamydomonas</i> sp.	2316
<i>Chlamydomonas applanata</i>	2203	<i>Chlamydomonas</i> sp.	2317
<i>Chlamydomonas applanata</i>	2204	<i>Chlamydomonas</i> sp.	2318
<i>Chlamydomonas applanata</i>	2205	<i>Chlamydomonas</i> sp.	2319
<i>Chlamydomonas applanata</i>	2206	<i>Chlamydomonas</i> sp.	2320
<i>Chlamydomonas asymmetrica</i>	2207	<i>Chlamydomonas</i> sp.	2321
<i>Chlamydomonas asymmetrica</i>	2208	<i>Chlamydomonas</i> sp.	2322
<i>Chlamydomonas augustae</i> var. <i>ellipsoidea</i>	158	<i>Chlamydomonas</i> sp.	2323
<i>Chlamydomonas coccoides</i>	1021	<i>Chlamydomonas</i> sp.	2324
<i>Chlamydomonas culleus</i>	2209	<i>Chlamydomonas sphaeroides</i>	2242
<i>Chlamydomonas culleus</i>	2210	<i>Chlamydomonas subangulosa</i>	2243
<i>Chlamydomonas debaryana</i>	2211	<i>Chlamydomonas subtilis</i>	2244
<i>Chlamydomonas debaryana</i>	2212	<i>Chlamydomonas tetragama</i>	446
<i>Chlamydomonas debaryana</i> var. <i>cristata</i>	884	<i>Chlamydomonas transita</i>	2245
<i>Chlamydomonas dorsoventralis</i>	2213	<i>Chlamydomonas typica</i>	2246
<i>Chlamydomonas fasciata</i>	437	<i>Chlamydomonas ulvaensis</i>	2247
<i>Chlamydomonas fimbriata</i>	2214	<i>Chlamydomonas zebra</i>	2248
<i>Chlamydomonas gerloffii</i>	2215	<i>Chlorococcum echinozygotum</i>	2249
<i>Chlamydomonas inflexa</i>	2216	<i>Chlorococcum elkhartiense</i>	2250
<i>Chlamydomonas kuwadae</i>	968	<i>Chlorococcum humicola</i>	2251
<i>Chlamydomonas leiostraca</i>	2217	<i>Chlorogonium capillatum</i>	692
<i>Chlamydomonas mexicana</i>	2218	<i>Chlorogonium capillatum</i>	742
<i>Chlamydomonas moewusii</i>	2219	<i>Chlorogonium capillatum</i>	743
<i>Chlamydomonas moewusii</i>	2220	<i>Chlorogonium capillatum</i>	744
<i>Chlamydomonas moewusii</i> var. <i>rotunda</i>	2221	<i>Chlorogonium capillatum</i>	745
<i>Chlamydomonas moewusii</i> var. <i>rotunda</i>	2222	<i>Chlorogonium capillatum</i>	746
<i>Chlamydomonas moewusii</i> var. <i>rotunda</i>	2223	<i>Chlorogonium capillatum</i>	747
<i>Chlamydomonas monadina</i> var. <i>monadina</i>	438	<i>Chlorogonium capillatum</i>	748
<i>Chlamydomonas mutabilis</i>	2224	<i>Chlorogonium capillatum</i>	749
<i>Chlamydomonas nasuta</i>	2225	<i>Chlorogonium capillatum</i>	750
<i>Chlamydomonas nivalis</i>	2226	<i>Chlorogonium elongatum</i>	752
<i>Chlamydomonas noctigama</i>	1048	<i>Chlorogonium elongatum</i>	753
<i>Chlamydomonas noctigama</i>	2227	<i>Chlorogonium elongatum</i>	1357
<i>Chlamydomonas noctigama</i>	2228	<i>Chlorogonium elongatum</i>	1358
<i>Chlamydomonas noctigama</i>	2229	<i>Chlorogonium elongatum</i>	751
<i>Chlamydomonas orbicularis</i>	2230	<i>Chlorogonium euchlorum</i>	754
<i>Chlamydomonas parkeae</i>	440	<i>Chlorogonium euchlorum</i>	755
<i>Chlamydomonas parkeae</i>	1022	<i>Chlorogonium euchlorum</i>	756
<i>Chlamydomonas parkeae</i>	1733	<i>Chlorogonium euchlorum</i>	757
<i>Chlamydomonas perpusilla</i> var. <i>perpusilla</i>	1848	<i>Chlorogonium euchlorum</i>	758
<i>Chlamydomonas perpusilla</i> var. <i>perpusilla</i>	1849	<i>Chlorogonium euchlorum</i>	759
<i>Chlamydomonas proteus</i>	2231	<i>Chlorogonium euchlorum</i>	760

<i>Chloromonas insignis</i>	447	<i>Eudorina unicocca</i>	1857
<i>Chlorotetraedron incus</i>	392	<i>Eudorina unicocca</i>	1858
<i>Coccomyxa dispar</i>	2252	<i>Gloeomonas lateperforata</i>	464
<i>Coccomyxa dispar</i>	2353	<i>Gonium multicoccum</i>	737
<i>Coelastrum astroideum</i>	129	<i>Gonium multicoccum</i>	885
<i>Coelastrum astroideum</i>	130	<i>Gonium multicoccum</i>	1038
<i>Coelastrum astroideum</i>	244	<i>Gonium multicoccum</i>	1039
<i>Coelastrum astroideum</i>	342	<i>Gonium multicoccum</i>	1707
<i>Coelastrum morus</i>	231	<i>Gonium multicoccum</i>	1708
<i>Coelastrum proboscideum</i>	131	<i>Gonium multicoccum</i>	1709
<i>Coelastrum reticulatum</i>	132	<i>Gonium octonarium</i>	851
<i>Coelastrum reticulatum</i> var. <i>reticulatum</i>	245	<i>Gonium octonarium</i>	852
<i>Desmodesmus abundans</i>	685	<i>Gonium pectorale</i>	1710
<i>Desmodesmus serratus</i>	97	<i>Gonium pectorale</i>	1711
<i>Desmodesmus</i> sp.	96	<i>Gonium pectorale</i>	1712
<i>Desmodesmus</i> sp.	2277	<i>Gonium pectorale</i>	1713
<i>Desmodesmus</i> sp.	2278	<i>Gonium pectorale</i>	2261
<i>Desmodesmus subspicatus</i>	797	<i>Gonium pectorale</i>	2262
<i>Desmodesmus subspicatus</i>	798	<i>Gonium pectorale</i> var. <i>pectorale</i>	468
<i>Desmodesmus subspicatus</i>	799	<i>Gonium pectorale</i> var. <i>pectorale</i>	469
<i>Desmodesmus subspicatus</i>	800	<i>Gonium pectorale</i> var. <i>pectorale</i>	569
<i>Desmodesmus subspicatus</i>	801	<i>Gonium pectorale</i> var. <i>pectorale</i>	570
<i>Desmodesmus subspicatus</i>	802	<i>Gonium pectorale</i> var. <i>pectorale</i>	645
<i>Desmotetra delicata</i>	153	<i>Gonium pectorale</i> var. <i>pectorale</i>	646
<i>Dictyochloropsis irregularis</i>	378	<i>Gonium quadratum</i>	647
<i>Dimorphococcus lunatus</i>	134	<i>Gonium quadratum</i>	648
<i>Dimorphococcus lunatus</i>	135	<i>Gonium quadratum</i>	649
<i>Dunaliella bioculata</i>	2253	<i>Gonium quadratum</i>	650
<i>Dunaliella parva</i>	2254	<i>Gonium quadratum</i>	651
<i>Dunaliella peircei</i>	2255	<i>Gonium quadratum</i>	652
<i>Dunaliella primolecta</i>	2256	<i>Gonium quadratum</i>	653
<i>Dunaliella salina</i>	2257	<i>Gonium viridistellatum</i>	654
<i>Dunaliella tertiolecta</i>	2258	<i>Gonium viridistellatum</i>	655
<i>Echinosphaeridium nordstedtii</i>	137	<i>Gonium viridistellatum</i>	857
<i>Eudorina cylindrica</i>	722	<i>Gonium viridistellatum</i>	288
<i>Eudorina elegans</i>	351	<i>Gonium viridistellatum</i>	289
<i>Eudorina elegans</i> var. <i>carteri</i>	721	<i>Gonium viridistellatum</i>	290
<i>Eudorina elegans</i> var. <i>elegans</i>	456	<i>Graesiella emersonii</i>	226
<i>Eudorina elegans</i> var. <i>elegans</i>	457	<i>Graesiella emersonii</i>	687
<i>Eudorina elegans</i> var. <i>elegans</i>	717	<i>Graesiella emersonii</i>	688
<i>Eudorina elegans</i> var. <i>elegans</i>	718	<i>Graesiella emersonii</i>	689
<i>Eudorina elegans</i> var. <i>elegans</i>	719	<i>Graesiella emersonii</i>	690
<i>Eudorina elegans</i> var. <i>elegans</i>	720	<i>Graesiella emersonii</i>	2151
<i>Eudorina elegans</i> var. <i>synoica</i>	458	<i>Gungnir kasakii</i>	761
<i>Eudorina elegans</i> var. <i>synoica</i>	568	<i>Gungnir kasakii</i>	1359
<i>Eudorina illinoisensis</i>	459	<i>Gungnir kasakii</i>	1360
<i>Eudorina illinoisensis</i>	460	<i>Gungnir neglectum</i>	439
<i>Eudorina illinoisensis</i>	723	<i>Gungnir neglectum</i>	1869
<i>Eudorina illinoisensis</i>	2259	<i>Haematococcus lacustris</i>	144
<i>Eudorina illinoisensis</i>	2260	<i>Haematococcus lacustris</i>	2263
<i>Eudorina minodii</i>	856	<i>Haematococcus lacustris</i>	2264
<i>Eudorina peripheralis</i>	726	<i>Haematococcus lacustris</i>	2265
<i>Eudorina unicocca</i>	724	<i>Hafniomonas conica</i>	1714
<i>Eudorina unicocca</i>	725	<i>Hafniomonas laevis</i>	257
<i>Eudorina unicocca</i>	1855	<i>Hafniomonas montana</i>	656
<i>Eudorina unicocca</i>	1856	<i>Hafniomonas reticulata</i>	1715

<i>Hafniomonas reticulata</i>	1716	<i>Pleodorina californica</i>	735
<i>Hafniomonas reticulata</i>	1717	<i>Pleodorina indica</i>	736
<i>Hafniomonas reticulata</i>	1718	<i>Pleodorina japonica</i>	577
<i>Hafniomonas</i> sp.	1841	<i>Pleodorina starrii</i>	1361
<i>Hafniomonas turbinea</i>	1719	<i>Pleodorina starrii</i>	1362
<i>Hafniomonas turbinea</i>	1720	<i>Pleodorina starrii</i>	1363
<i>Hafniomonas turbinea</i>	1721	<i>Pleodorina starrii</i>	1364
<i>Hamakko caudatus</i>	2293	<i>Pleodorina starrii</i>	1365
<i>Hemiflagellochloris kazakhstanica</i>	1722	<i>Pleodorina starrii</i>	1366
<i>Heterochlamydomonas</i> sp.	157	<i>Pleodorina starrii</i>	1852
<i>Hydrodictyon reticulatum</i>	295	<i>Pleodorina starrii</i>	1853
<i>Lobomonas monstrosa</i>	474	<i>Pleodorina starrii</i>	1854
<i>Lobomonas piriformis</i>	2266	<i>Polyedriopsis spinulosa</i>	232
<i>Monoraphidium circinale</i>	480	<i>Protodesmus globulifer</i>	1703
<i>Monoraphidium contortum</i>	384	<i>Pseudocarteria mucosa</i>	522
<i>Monoraphidium griffithii</i>	385	<i>Pseudocarteria mucosa</i>	523
<i>Monoraphidium minutum</i>	2282	<i>Pseudocarteria mucosa</i>	524
<i>Monoraphidium</i> sp.	2267	<i>Pseudokirchneriella subcapitata</i>	35
<i>Muriella zofingiensis</i>	2175	<i>Pseudopleurococcus printzii</i> var. <i>longissimus</i>	159
<i>Mychonastes</i> sp.	2334	<i>Pteromonas aculeata</i>	738
<i>Mychonastes</i> sp.	2336	<i>Pteromonas aculeata</i>	860
<i>Mychonastes</i> sp.	2339	<i>Pteromonas angulosa</i>	739
<i>Mychonastes</i> sp.	2340	<i>Pteromonas angulosa</i>	861
<i>Mychonastes</i> sp.	2341	<i>Pteromonas angulosa</i>	862
<i>Oedogonium obesum</i>	203	<i>Pteromonas multipyrenoidea</i>	740
<i>Pandorina colemaniae</i>	572	<i>Rusalka fusiformis</i>	123
<i>Pandorina colemaniae</i>	573	<i>Scenedesmus acuminatus</i> var. <i>tetrademoides</i>	92
<i>Pandorina morum</i>	242	<i>Scenedesmus acutus</i>	94
<i>Pandorina morum</i>	243	<i>Scenedesmus acutus</i>	95
<i>Pandorina morum</i>	362	<i>Scenedesmus acutus</i>	120
<i>Pandorina morum</i>	886	<i>Scenedesmus acutus</i>	2269
<i>Pandorina morum</i>	887	<i>Scenedesmus acutus</i>	2270
<i>Pandorina morum</i>	888	<i>Scenedesmus basiliensis</i>	2271
<i>Pandorina morum</i>	889	<i>Scenedesmus basiliensis</i>	2272
<i>Pandorina morum</i>	890	<i>Scenedesmus bijuga</i>	2273
<i>Pandorina morum</i> var. <i>morum</i>	574	<i>Scenedesmus chlorelloides</i>	2274
<i>Pandorina morum</i> var. <i>morum</i>	575	<i>Scenedesmus coelastroides</i>	2275
<i>Paulschulzia pseudovolvox</i>	727	<i>Scenedesmus costulatus</i>	2276
<i>Pediastrum angulosum</i> var. <i>angulosum</i>	300	<i>Scenedesmus dimorphus</i>	93
<i>Pediastrum boryanum</i>	209	<i>Scenedesmus dimorphus</i>	119
<i>Pediastrum boryanum</i>	301	<i>Scenedesmus obliquus</i>	2279
<i>Pediastrum duplex</i>	212	<i>Scenedesmus obliquus</i>	2280
<i>Pediastrum duplex</i> var. <i>duplex</i>	210	<i>Schroederia setigera</i>	246
<i>Pediastrum duplex</i> var. <i>duplex</i>	213	<i>Stigeoclonium aestivale</i>	531
<i>Pediastrum duplex</i> var. <i>gracillimum</i>	211	<i>Stigeoclonium fasciculare</i> var. <i>fasciculare</i>	532
<i>Pediastrum duplex</i> var. <i>gracillimum</i>	214	<i>Stigeoclonium</i> sp.	454
<i>Pediastrum simplex</i>	215	<i>Tabris heimii</i>	2294
<i>Pediastrum simplex</i>	302	<i>Tabris heimii</i>	2295
<i>Pediastrum tetras</i>	216	<i>Tetrabaena socialis</i>	691
<i>Phacotus lenticularis</i>	858	<i>Tetrabaena socialis</i>	1437
<i>Phacotus lenticularis</i>	859	<i>Tetrabaena socialis</i> var. <i>socialis</i>	571
<i>Planctonema lauterbornii</i>	514	<i>Tetracystis chlorococcoides</i>	155
<i>Planktosphaeria gelatinosa</i>	2268	<i>Treubaria triappendiculata</i>	394
<i>Platydorina caudata</i>	728	<i>Urnella terrestris</i>	156
<i>Platydorina caudata</i>	729	<i>Uronema confervicolum</i>	538
<i>Pleodorina californica</i>	576	<i>Uronema gigas</i>	539

<i>Uronema gigas</i>	540	<i>Yamagishiella unicocca</i>	873
<i>Vitreochlamys aulata</i>	875	<i>Yamagishiella unicocca</i>	874
<i>Vitreochlamys aulata</i>	876	<i>Yamagishiella unicocca</i>	1859
<i>Vitreochlamys aulata</i>	877	<i>Yamagishiella unicocca</i>	1860
<i>Vitreochlamys aulata</i>	878	<i>Yamagishiella unicocca</i>	1861
<i>Vitreochlamys fluviatilis</i>	879		
<i>Vitreochlamys gloeocystiformis</i>	880	Pedinophyceae	
<i>Vitreochlamys nekrassovii</i>	881	<i>Marsupiomonas</i> sp.	1410
<i>Vitreochlamys ordinata</i>	882	<i>Marsupiomonas</i> sp.	1824
<i>Vitreochlamys pinguis</i>	883	<i>Pedinomonas minor</i>	363
<i>Volvox africanus</i>	863		
<i>Volvox aureus</i>	241	Prasinophyceae	
<i>Volvox aureus</i>	396	<i>Mamiella</i> sp.	2310
<i>Volvox aureus</i>	693	<i>Mamiella</i> sp.	2329
<i>Volvox aureus</i>	694	<i>Mantoniella squamata</i>	1409
<i>Volvox aureus</i>	864	<i>Micromonas pusilla</i>	1411
<i>Volvox aureus</i>	891	<i>Micromonas pusilla</i>	1412
<i>Volvox aureus</i>	892	<i>Micromonas pusilla</i>	1413
<i>Volvox aureus</i> var. <i>aureus</i>	541	<i>Monomastix minuta</i>	255
<i>Volvox aureus</i> var. <i>aureus</i>	542	<i>Monomastix minuta</i>	256
<i>Volvox barberi</i>	730	<i>Nephroselmis astigmatica</i>	252
<i>Volvox carteri</i>	397	<i>Nephroselmis astigmatica</i>	1415
<i>Volvox carteri</i>	398	<i>Nephroselmis olivacea</i>	483
<i>Volvox carteri</i> f. <i>kawasakiensis</i>	580	<i>Nephroselmis olivacea</i>	484
<i>Volvox carteri</i> f. <i>kawasakiensis</i>	581	<i>Nephroselmis olivacea</i>	485
<i>Volvox carteri</i> f. <i>kawasakiensis</i>	732	<i>Nephroselmis pyriformis</i>	1416
<i>Volvox carteri</i> f. <i>kawasakiensis</i>	733	<i>Nephroselmis pyriformis</i>	1817
<i>Volvox carteri</i> f. <i>nagariensis</i>	865	<i>Nephroselmis</i> sp.	1414
<i>Volvox carteri</i> f. <i>weismannia</i>	866	<i>Nephroselmis</i> sp.	1417
<i>Volvox dissipatrix</i>	731	<i>Nephroselmis</i> sp.	1418
<i>Volvox gigas</i>	867	<i>Nephroselmis</i> sp.	1818
<i>Volvox obversus</i>	868	<i>Nephroselmis</i> sp.	2309
<i>Volvox prolificus</i>	543	<i>Nephroselmis spinosa</i>	934
<i>Volvox rousseletii</i>	734	<i>Nephroselmis spinosa</i>	935
<i>Volvox</i> sp.	2307	<i>Nephroselmis viridis</i>	486
<i>Volvox tertius</i>	544	<i>Pseudoscourfieldia marina</i>	1419
<i>Volvox tertius</i>	869	<i>Pseudoscourfieldia marina</i>	1420
<i>Volvulina boldii</i>	893	<i>Pterosperma cristatum</i>	221
<i>Volvulina boldii</i>	894	<i>Pterosperma cristatum</i>	626
<i>Volvulina compacta</i>	582	<i>Pterosperma cristatum</i>	936
<i>Volvulina compacta</i>	583	<i>Pyramimonas</i> aff. <i>amylifera</i>	251
<i>Volvulina pringsheimii</i>	895	<i>Pyramimonas</i> aff. <i>amylifera</i>	320
<i>Volvulina steinii</i>	545	<i>Pyramimonas cordata</i>	1421
<i>Volvulina steinii</i>	546	<i>Pyramimonas cordata</i>	1422
<i>Volvulina steinii</i>	584	<i>Pyramimonas cordata</i>	1423
<i>Volvulina steinii</i>	585	<i>Pyramimonas dissomata</i>	1819
<i>Volvulina steinii</i>	896	<i>Pyramimonas grossii</i>	1424
<i>Volvulina steinii</i>	897	<i>Pyramimonas grossii</i>	1425
<i>Volvulina steinii</i>	898	<i>Pyramimonas grossii</i>	1820
<i>Yamagishiella unicocca</i>	578	<i>Pyramimonas parkeae</i>	254
<i>Yamagishiella unicocca</i>	579	<i>Pyramimonas propulsa</i>	1821
<i>Yamagishiella unicocca</i>	666	<i>Pyramimonas propulsa</i>	1822
<i>Yamagishiella unicocca</i>	667	<i>Pyramimonas propulsa</i>	1823
<i>Yamagishiella unicocca</i>	870	<i>Pyramimonas</i> sp.	1426
<i>Yamagishiella unicocca</i>	871	<i>Pyramimonas</i> sp.	1427
<i>Yamagishiella unicocca</i>	872	<i>Pyramimonas</i> sp.	1428

<i>Tetraselmis cordiformis</i>	18	<i>Myrmecia biatorellae</i>	2181
<i>Tetraselmis cordiformis</i>	533	<i>Oocystis borgei</i>	659
<i>Tetraselmis levis</i>	1430	<i>Oocystis lacustris</i>	660
<i>Tetraselmis</i> sp.	1429	<i>Oocystis lacustris</i>	661
<i>Tetraselmis</i> sp.	1431	<i>Oocystis lacustris</i>	662
<i>Tetraselmis</i> sp.	1432	<i>Parachlorella kessleri</i>	2152
<i>Tetraselmis</i> sp.	1433	<i>Parachlorella kessleri</i>	2153
<i>Tetraselmis</i> sp.	1434	<i>Parachlorella kessleri</i>	2154
<i>Tetraselmis striata</i>	1019	<i>Parachlorella kessleri</i>	2155
<i>Tetraselmis verrucosa</i>	1836	<i>Parachlorella kessleri</i>	2156
Unidentified coccoid prasinophyte	1435	<i>Parachlorella kessleri</i>	2157
		<i>Parachlorella kessleri</i>	2158
		<i>Parachlorella kessleri</i>	2159
Trebouxiophyceae		<i>Parachlorella kessleri</i>	2160
<i>Actinastrum hantzschii</i>	415	<i>Parachlorella kessleri</i>	2161
<i>Asterochloris</i> cf. <i>glomerata</i>	1298	<i>Parachlorella kessleri</i>	2162
<i>Asterochloris</i> cf. <i>glomerata</i>	1299	<i>Parachlorella kessleri</i>	2177
<i>Asterochloris</i> cf. <i>glomerata</i>	1300	<i>Parachlorella kessleri</i>	2178
<i>Asterochloris</i> cf. <i>glomerata</i>	1301	<i>Parachlorella kessleri</i>	2179
<i>Auxenochlorella protothecoides</i>	2163	<i>Picochlorum</i> sp.	1270
<i>Auxenochlorella protothecoides</i>	2164	<i>Prototheca portoricensis</i> var. <i>ciferrii</i>	2182
<i>Auxenochlorella protothecoides</i>	2165	<i>Pseudotrebouxia corticola</i>	2183
<i>Auxenochlorella protothecoides</i>	2176	<i>Raphidonema nivale</i>	2290
<i>Botryococcus braunii</i>	836	<i>Stichococcus ampulliformis</i>	996
<i>Botryococcus braunii</i>	2199	<i>Stichococcus bacillaris</i>	529
' <i>Chlorella ellipsoidea</i> '	2150	<i>Stichococcus bacillaris</i>	530
<i>Chlorella sorokiniana</i>	2167	<i>Stichococcus bacillaris</i>	2184
<i>Chlorella sorokiniana</i>	2168	<i>Trebouxia anticipata</i>	1271
<i>Chlorella sorokiniana</i>	2169	<i>Trebouxia anticipata</i>	1272
<i>Chlorella</i> sp.	2171	<i>Trebouxia anticipata</i>	1273
<i>Chlorella</i> sp.	2330	<i>Trebouxia arboricola</i>	1274
<i>Chlorella vulgaris</i>	1269	<i>Trebouxia arboricola</i>	1275
<i>Chlorella vulgaris</i>	2170	<i>Trebouxia arboricola</i>	1276
<i>Chlorella vulgaris</i>	2172	<i>Trebouxia arboricola</i>	1277
<i>Chlorella vulgaris</i>	2173	<i>Trebouxia arboricola</i>	1278
<i>Chlorella vulgaris</i> var. <i>vulgaris</i>	227	<i>Trebouxia arboricola</i>	1279
<i>Chlorella vulgaris</i> var. <i>vulgaris</i>	641	<i>Trebouxia arboricola</i>	1280
<i>Chlorella vulgaris</i> var. <i>vulgaris</i>	642	<i>Trebouxia arboricola</i>	1281
<i>Chlorella vulgaris</i> var. <i>vulgaris</i>	686	<i>Trebouxia arboricola</i>	1282
' <i>Chlorella</i> ' <i>saccharophila</i>	640	<i>Trebouxia arboricola</i>	1283
' <i>Chlorella</i> ' <i>saccharophila</i>	2352	<i>Trebouxia arboricola</i>	1284
<i>Choricystis minor</i>	1436	<i>Trebouxia arboricola</i>	1286
<i>Choricystis</i> sp.	1840	<i>Trebouxia arboricola</i>	1287
<i>Choricystis</i> sp.	2333	<i>Trebouxia arboricola</i>	1288
<i>Choricystis</i> sp.	2335	<i>Trebouxia arboricola</i>	1446
<i>Choricystis</i> sp.	2337	<i>Trebouxia arboricola</i>	1447
<i>Choricystis</i> sp.	2338	<i>Trebouxia arboricola</i>	1448
<i>Choricystis</i> sp.	2342	<i>Trebouxia arboricola</i>	1449
<i>Dictyosphaerium pulchellum</i>	453	<i>Trebouxia arboricola</i>	1450
<i>Eremosphaera gigas</i>	379	<i>Trebouxia arboricola</i>	1451
<i>Eremosphaera viridis</i>	380	<i>Trebouxia arboricola</i>	1452
<i>Eremosphaera viridis</i>	643	<i>Trebouxia arboricola</i>	1453
<i>Eremosphaera viridis</i>	644	<i>Trebouxia arboricola</i>	1454
<i>Lagerheimia ciliata</i>	382	<i>Trebouxia arboricola</i>	1455
<i>Micractinium bornhemiensis</i>	455	<i>Trebouxia erici</i>	2185
<i>Micractinium pusillum</i>	151	<i>Trebouxia erici</i>	2186
<i>Microthamnion kützingianum</i>	479		

<i>Trebouxia glomerata</i>	2187	<i>Closterium aciculare</i> var. <i>subpronum</i>	259
<i>Trebouxia glomerata</i>	2188	<i>Closterium calosporum</i> var. <i>calosporum</i>	271
<i>Trebouxia higginsiae</i>	1289	<i>Closterium calosporum</i> var. <i>galiciense</i>	128
<i>Trebouxia higginsiae</i>	1290	<i>Closterium calosporum</i> var. <i>galiciense</i>	162
<i>Trebouxia higginsiae</i>	1291	<i>Closterium calosporum</i> var. <i>galiciense</i>	163
<i>Trebouxia higginsiae</i>	1292	<i>Closterium calosporum</i> var. <i>galiciense</i>	164
<i>Trebouxia higginsiae</i>	1293	<i>Closterium calosporum</i> var. <i>galiciense</i>	165
<i>Trebouxia higginsiae</i>	1294	<i>Closterium calosporum</i> var. <i>galiciense</i>	166
<i>Trebouxia higginsiae</i>	1295	<i>Closterium calosporum</i> var. <i>galiciense</i>	167
<i>Trebouxia higginsiae</i>	1296	<i>Closterium calosporum</i> var. <i>galiciense</i>	168
<i>Trebouxia showmanii</i>	1297	<i>Closterium calosporum</i> var. <i>himalayense</i>	169
<i>Trebouxia</i> sp.	2349	<i>Closterium calosporum</i> var. <i>himalayense</i>	170
<i>Watanabea reniformis</i>	2189	<i>Closterium calosporum</i> var. <i>himalayense</i>	171
		<i>Closterium calosporum</i> var. <i>himalayense</i>	336
		<i>Closterium ehrenbergii</i>	228
Ulvophyceae		<i>Closterium ehrenbergii</i>	229
<i>Blidingia minima</i>	1837	<i>Closterium gracile</i>	179
<i>Halochlorococcum</i> sp.	1838	<i>Closterium gracile</i>	180
<i>Halochlorococcum</i> sp.	1839	<i>Closterium incurvum</i>	181
<i>Kentrosphaera</i> sp.	154	<i>Closterium incurvum</i>	337
<i>Oltmannsiellopsis geminata</i>	672	<i>Closterium moniliferum</i> var. <i>moniliferum</i>	172
<i>Oltmannsiellopsis unicellularis</i>	359	<i>Closterium moniliferum</i> var. <i>moniliferum</i>	173
<i>Oltmannsiellopsis viridis</i>	360	<i>Closterium moniliferum</i> var. <i>moniliferum</i>	174
<i>Oltmannsiellopsis viridis</i>	1825	<i>Closterium moniliferum</i> var. <i>submoniliferum</i>	182
<i>Trentepohlia</i> sp.	967	<i>Closterium moniliferum</i> var. <i>submoniliferum</i>	183
<i>Ulothrix variabilis</i>	329	<i>Closterium navicula</i>	175
<i>Ulothrix zonata</i>	536	<i>Closterium navicula</i>	176
<i>Ulothrix zonata</i>	537	<i>Closterium navicula</i>	177
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<i>Chara australis</i>	2084	<i>Closterium peracerosum-strigosum-littorale</i> complex	54
<i>Chara australis</i>	2085	<i>Closterium peracerosum-strigosum-littorale</i> complex	55
<i>Chara braunii</i>	1586	<i>Closterium peracerosum-strigosum-littorale</i> complex	56
<i>Chara braunii</i>	1587	<i>Closterium peracerosum-strigosum-littorale</i> complex	57
<i>Chara braunii</i>	1588	<i>Closterium peracerosum-strigosum-littorale</i> complex	58
<i>Chara braunii</i>	1589	<i>Closterium peracerosum-strigosum-littorale</i> complex	59
<i>Chara braunii</i>	1590	<i>Closterium peracerosum-strigosum-littorale</i> complex	60
<i>Chara braunii</i>	1591	<i>Closterium peracerosum-strigosum-littorale</i> complex	61
<i>Chara braunii</i>	1592	<i>Closterium peracerosum-strigosum-littorale</i> complex	62
<i>Chara braunii</i>	1593	<i>Closterium peracerosum-strigosum-littorale</i> complex	63
<i>Chara braunii</i>	1594	<i>Closterium peracerosum-strigosum-littorale</i> complex	64
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<i>Chara globularis</i>	1595	<i>Closterium peracerosum-strigosum-littorale</i> complex	66
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<i>Chara</i> sp.	1602	<i>Closterium peracerosum-strigosum-littorale</i> complex	69
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<i>Chara zeylanica</i>	1601	<i>Closterium peracerosum-strigosum-littorale</i> complex	262
<i>Chlorokybus</i> sp.	160	<i>Closterium pleurodermatum</i>	449
<i>Closterium acerosum</i>	124	<i>Closterium praelongum</i> var. <i>brevius</i>	450
<i>Closterium acerosum</i>	125	<i>Closterium praelongum</i> var. <i>brevius</i>	451
<i>Closterium acerosum</i>	127	<i>Closterium pusillum</i> var. <i>maius</i>	185
<i>Closterium acerosum</i>	448	<i>Closterium rostratum</i> var. <i>subrostratum</i>	338
<i>Closterium aciculare</i> var. <i>subpronum</i>	258		

<i>Closterium selenastrum</i>	339	<i>Micrasterias foliacea</i>	777
<i>Closterium selenastrum</i>	340	<i>Micrasterias foliacea</i>	778
<i>Closterium spinosporum</i> var. <i>crassum</i>	186	<i>Micrasterias foliacea</i> var. <i>foliacea</i>	297
<i>Closterium spinosporum</i> var. <i>crassum</i>	187	<i>Micrasterias mahabuleshwariensis</i>	779
<i>Closterium spinosporum</i> var. <i>crassum</i>	341	<i>Micrasterias mahabuleshwariensis</i>	780
<i>Closterium spinosporum</i> var. <i>malaysiense</i>	188	<i>Micrasterias thomasiana</i> var. <i>notata</i>	781
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<i>Closterium spinosporum</i> var. <i>ryukyuense</i>	191	<i>Micrasterias truncata</i> var. <i>pusilla</i>	783
<i>Closterium spinosporum</i> var. <i>ryukyuense</i>	192	<i>Micrasterias truncata</i> var. <i>pusilla</i>	784
<i>Closterium spinosporum</i> var. <i>ryukyuense</i>	193	<i>Netrium digitus</i> var. <i>digitus</i>	2288
<i>Closterium spinosporum</i> var. <i>spinosporum</i>	194	<i>Netrium digitus</i> var. <i>lamellosum</i>	2289
<i>Closterium spinosporum</i> var. <i>spinosporum</i>	195	<i>Nitella acuminata</i> var. <i>capitulifera</i>	1607
<i>Closterium spinosporum</i> var. <i>spinosporum</i>	196	<i>Nitella axilliformis</i>	1608
<i>Closterium spinosporum</i> var. <i>spinosporum</i>	197	<i>Nitella axilliformis</i>	1609
<i>Closterium tumidum</i>	198	<i>Nitella comptonii</i>	1704
<i>Closterium venus</i>	199	<i>Nitella comptonii</i>	1705
<i>Closterium wallichii</i>	200	<i>Nitella comptonii</i>	1706
<i>Closterium wallichii</i>	201	<i>Nitella flexilis</i>	1610
<i>Closterium wallichii</i>	202	<i>Nitella flexilis</i>	1611
<i>Cosmarium askenasyi</i>	768	<i>Nitella flexilis</i>	1612
<i>Cosmarium askenasyi</i>	769	<i>Nitella flexilis</i>	1613
<i>Cosmarium askenasyi</i>	770	<i>Nitella furcata</i> var. <i>furcata</i>	1614
<i>Cosmarium askenasyi</i>	771	<i>Nitella furcata</i> var. <i>furcata</i>	1615
<i>Cosmarium contractum</i>	133	<i>Nitella furcata</i> var. <i>furcata</i>	1616
<i>Cosmarium dilatatum</i>	839	<i>Nitella furcata</i> var. <i>furcata</i>	1617
<i>Cosmarium hians</i>	452	<i>Nitella gracilens</i>	1619
<i>Cosmocladium constrictum</i>	248	<i>Nitella gracilens</i>	1620
<i>Cylindrocystis brebissonii</i> var. <i>brebissonii</i>	349	<i>Nitella gracilens</i>	1621
<i>Cylindrocystis crassa</i>	2283	<i>Nitella gracilens</i>	1622
<i>Cylindrocystis</i> sp.	2284	<i>Nitella hyalina</i>	1623
<i>Cylindrocystis</i> sp.	2301	<i>Nitella japonica</i>	1624
<i>Cylindrocystis</i> sp.	2302	<i>Nitella japonica</i>	1625
<i>Cylindrocystis</i> sp.	2303	<i>Nitella megaspora</i>	1628
<i>Docidium undulatum</i> var. <i>undulatum</i>	285	<i>Nitella mirabilis</i>	1629
<i>Euastrum diverrucosum</i>	840	<i>Nitella moriokae</i>	1632
<i>Euastrum turgidum</i>	772	<i>Nitella moriokae</i>	1633
<i>Euastrum turgidum</i>	773	<i>Nitella pulchella</i>	1634
<i>Gonatozygon brebissonii</i>	138	<i>Nitella</i> sp.	1618
<i>Gonatozygon brebissonii</i>	139	<i>Nitella</i> sp.	1635
<i>Gonatozygon monotaenium</i>	247	<i>Nitella</i> sp.	1636
<i>Gonatozygon monotaenium</i>	287	<i>Nitellopsis obtusa</i>	1637
<i>Hyalotheca dissiliens</i>	147	<i>Nitellopsis obtusa</i>	1638
<i>Hyalotheca dissiliens</i>	148	<i>Penium margaritaceum</i>	217
<i>Hyalotheca dissiliens</i>	150	<i>Penium margaritaceum</i>	303
<i>Hyalotheca dissiliens</i> f. <i>tridentula</i>	294	<i>Pleurotaenium cylindricum</i> var. <i>stuhlmannii</i>	306
<i>Interfilum paradoxum</i>	2180	<i>Pleurotaenium ehrenbergii</i> var. <i>curtum</i>	308
<i>Klebsormidium flaccidum</i>	2285	<i>Pleurotaenium ehrenbergii</i> var. <i>curtum</i>	311
<i>Klebsormidium flaccidum</i>	2286	<i>Pleurotaenium ehrenbergii</i> var. <i>ehrenbergii</i>	309
<i>Klebsormidium flaccidum</i>	2408	<i>Pleurotaenium ehrenbergii</i> var. <i>ehrenbergii</i>	310
<i>Lamprothamnium succinctum</i>	1606	<i>Pleurotaenium nodosum</i> var. <i>borgei</i>	663
<i>Mesotaenium caldariorum</i>	2287	<i>Pleurotaenium nodosum</i> var. <i>borgei</i>	664
<i>Mesotaenium kramstae</i>	657	<i>Pleurotaenium nodosum</i> var. <i>gutwinskii</i>	787
<i>Mesotaenium kramstae</i>	658	<i>Pleurotaenium nodosum</i> var. <i>gutwinskii</i>	788
<i>Micrasterias anomala</i>	774	<i>Pleurotaenium nodosum</i> var. <i>nodosum</i>	312
<i>Micrasterias anomala</i>	776	<i>Pleurotaenium nodosum</i> var. <i>nodosum</i>	785
<i>Micrasterias crux-melitensis</i>	152	<i>Pleurotaenium nodosum</i> var. <i>nodosum</i>	786

<i>Pleurotaenium ovatum</i>	313	PERCOLOZOA	
<i>Roya anglica</i>	2291	Percolomonadea	
<i>Sphaerosozma</i> sp.	2306	<i>Percolomonas</i> sp.	1441
<i>Spinoclosterium cuspidatum</i>	325		
<i>Staurastrum dorcidentiferum</i>	665	CERCOZOA	
<i>Staurastrum inconspicuum</i>	390	Chlorarachniophyceae	
<i>Staurastrum levanderi</i>	841	<i>Chlorarachnion reptans</i>	624
<i>Staurastrum paradoxum</i>	528	<i>Chlorarachnion</i> sp.	1408
<i>Staurastrum tsukubicum</i>	842		
<i>Staurodesmus dejectus</i>	224	Imbricatea	
<i>Triploceras gracile</i>	789	<i>Ovulinata parva</i>	2377
<i>Triploceras gracile</i>	790	<i>Thaumatomastix</i> sp.	1443
<i>Triploceras gracile</i>	791	<i>Thaumatomastix</i> sp.	2378
<i>Triploceras gracile</i>	792		
<i>Triploceras gracile</i>	793	FORAMINIFERA	
<i>Triploceras gracile</i>	794	Foraminifera	
<i>Triploceras gracile</i>	795	<i>Rubratella</i> sp.	1445
<i>Triploceras gracile</i>	796		
Mesostigmatophyceae		CILIOPHORA	
<i>Mesostigma viride</i>	296	Oligohymenophorea	
<i>Mesostigma viride</i>	475	<i>Tetrahymena pyriformis</i>	403
<i>Mesostigma viride</i>	476		
<i>Mesostigma viride</i>	477	DINOPHYTA	
<i>Mesostigma viride</i>	995	Dinophyceae	
		<i>Adenoides eludens</i>	1367
		<i>Adenoides eludens</i>	1402
		<i>Akashiwo sanguinea</i>	1832
		<i>Akashiwo sanguinea</i>	1987
EUGLENOZOA		<i>Alexandrium catenella</i>	674
Euglenophyceae		<i>Alexandrium catenella</i>	675
<i>Cryptoglana pigra</i>	1407	<i>Alexandrium catenella</i>	677
<i>Cryptoglana skujajae</i>	387	<i>Alexandrium hiranoi</i>	612
<i>Euglena clara</i>	253	<i>Alexandrium insuetum</i>	678
<i>Euglena gracilis</i>	47	<i>Alexandrium</i> sp.	1988
<i>Euglena gracilis</i>	48	<i>Alexandrium</i> sp.	1989
<i>Euglena gracilis</i> var. <i>bacillaris</i>	49	<i>Alexandrium</i> sp.	1990
<i>Euglena mutabilis</i>	286	<i>Alexandrium</i> sp.	1991
<i>Euglena</i> sp.	2345	<i>Alexandrium</i> sp.	1993
<i>Euglena viridis</i>	2149	<i>Alexandrium</i> sp.	1994
<i>Eutreptiella gymnastica</i>	381	<i>Alexandrium</i> sp.	2328
<i>Eutreptiella</i> sp.	2298	<i>Amphidinium carterae</i>	331
<i>Eutreptiella</i> sp.	2305	<i>Amphidinium klebsii</i>	613
<i>Eutreptiella</i> sp.	2325	<i>Amphidinium operculatum</i>	1368
<i>Trachelomonas</i> sp.	2299	<i>Amphidinium testudo</i>	1268
		<i>Cochlodinium polykrikoides</i>	1995
Kinetoplastea		<i>Cochlodinium polykrikoides</i>	2409
<i>Bodo saltans</i>	1439	<i>Cochlodinium</i> sp.	2327
		<i>Coolia monotis</i>	343
METAMONADA		<i>Coolia monotis</i>	615
Trepomonadea		<i>Coolia monotis</i>	1833
<i>Hexamita</i> sp.	1440	<i>Glenodiniopsis uliginosa</i>	463
<i>Trepomonas</i> sp.	1444	<i>Gymnodinium catenatum</i>	1834
		<i>Gymnodinium catenatum</i>	2410
Metamonada incertae sedis		<i>Gymnodinium</i> sp.	2002
<i>Dysnectes brevis</i>	1843	<i>Gymnodinium</i> sp.	2003
Unidentified flagellate metamonad	1844	<i>Gymnodinium</i> sp.	2004
Unidentified metamonad	1968		

<i>Gymnodinium</i> sp.	2005	<i>Scrippsiella</i> sp.	2021
<i>Gymnodinium</i> sp.	2006	<i>Scrippsiella</i> sp.	2022
<i>Gymnodinium</i> sp.	2007	<i>Scrippsiella sweeneyae</i>	684
<i>Gymnodinium</i> sp.	2326	<i>Scrippsiella trochoidea</i>	369
<i>Gyrodinium instriatum</i>	2000	<i>Scrippsiella trochoidea</i>	2015
<i>Gyrodinium instriatum</i>	2001	<i>Thoracosphaera heimii</i>	1325
<i>Hemidinium nasutum</i>	471	<i>Thoracosphaera heimii</i>	1326
<i>Heterocapsa horiguchii</i>	614	<i>Togula britannica</i>	405
<i>Heterocapsa niei</i>	420	<i>Woloszynskia leopoliense</i>	619
<i>Heterocapsa ovata</i>	472		
<i>Heterocapsa pseudotriquetra</i>	473	Oxyrrhea	
<i>Heterocapsa rotundata</i>	356	<i>Oxyrrhis marina</i>	494
<i>Heterocapsa</i> sp.	1403		
<i>Heterocapsa</i> sp.	2343	HETEROKONTOPHYTA	
<i>Heterocapsa</i> sp.	2344	Aurearenophyceae	
<i>Heterocapsa triquetra</i>	7	<i>Aurearena cruciata</i>	1863
<i>Heterocapsa triquetra</i>	235	<i>Aurearena cruciata</i>	1864
<i>Karenia mikimotoi</i>	680	<i>Aurearena cruciata</i>	1865
<i>Karenia mikimotoi</i>	2411		
<i>Karlodinium veneficum</i>	1966	Bacillariophyceae	
<i>Katodinium</i> sp.	2008	<i>Achnanthes kuwaitensis</i>	1349
<i>Katodinium</i> sp.	2009	<i>Achnanthes subconstricta</i>	330
<i>Lepidodinium chlorophorum</i>	1868	<i>Achnanthidium minutissimum</i>	71
<i>Ostreopsis siamensis</i>	1404	<i>Achnanthidium minutissimum</i>	407
<i>Peridinium bipes</i> f. <i>globosum</i>	495	<i>Achnanthidium minutissimum</i>	408
<i>Peridinium bipes</i> f. <i>occultatum</i>	497	<i>Achnanthidium minutissimum</i>	409
<i>Peridinium pseudolaeve</i>	1405	<i>Achnanthidium minutissimum</i>	410
<i>Peridinium volzii</i>	365	<i>Achnanthidium minutissimum</i>	411
<i>Peridinium volzii</i>	501	<i>Achnanthidium minutissimum</i>	412
<i>Peridinium williei</i>	304	<i>Achnanthidium minutissimum</i>	413
<i>Peridinium williei</i>	366	<i>Achnanthidium minutissimum</i>	414
<i>Prorocentrum dentatum</i>	682	<i>Achnanthidium minutissimum</i>	1350
<i>Prorocentrum dentatum</i>	900	<i>Achnanthidium minutissimum</i> var. <i>saprophilum</i>	372
<i>Prorocentrum dentatum</i>	2010	<i>Anorthoneis</i> sp.	1962
<i>Prorocentrum dentatum</i>	2011	<i>Asterionellopsis glacialis</i>	265
<i>Prorocentrum dentatum</i>	2013	<i>Asterionellopsis glacialis</i>	417
<i>Prorocentrum dentatum</i>	2014	<i>Aulacoseira granulata</i>	333
<i>Prorocentrum gracile</i>	315	<i>Chaetoceros didymus</i>	586
<i>Prorocentrum lima</i>	617	<i>Chaetoceros sociale</i>	377
<i>Prorocentrum mexicanum</i>	618	<i>Chaetoceros sociale</i>	553
<i>Prorocentrum mexicanum</i>	1967	<i>Cyclotella meneghiniana</i>	803
<i>Prorocentrum micans</i>	12	<i>Cyclotella meneghiniana</i>	804
<i>Prorocentrum micans</i>	218	<i>Cyclotella meneghiniana</i>	805
<i>Prorocentrum micans</i>	316	<i>Cylindrotheca closterium</i>	1045
<i>Prorocentrum micans</i>	601	<i>Cylindrotheca fusiformis</i>	1046
<i>Prorocentrum micans</i>	608	<i>Cylindrotheca</i> sp.	1047
<i>Prorocentrum micans</i>	1406	<i>Ditylum brightwellii</i>	350
<i>Prorocentrum minimum</i>	237	<i>Eunotia pectinalis</i> var. <i>minor</i>	461
<i>Prorocentrum minimum</i>	238	<i>Fragilaria capucina</i>	391
<i>Protoceratium reticulatum</i>	319	<i>Gomphonema angustatum</i> var. <i>obtusatum</i>	620
<i>Pyrocystis lunura</i>	609	<i>Gomphonema gracile</i> var. <i>gracile</i>	465
<i>Scrippsiella</i> sp.	2016	<i>Gomphonema parvulum</i> var. <i>parvulum</i>	466
<i>Scrippsiella</i> sp.	2017	<i>Gomphonema parvulum</i> var. <i>parvulum</i>	467
<i>Scrippsiella</i> sp.	2018	<i>Hantzschia amphioxys</i> var. <i>compacta</i>	587
<i>Scrippsiella</i> sp.	2019	<i>Lithodesmium variabile</i>	588
<i>Scrippsiella</i> sp.	2020	<i>Nitzschia closterium</i>	2351

<i>Nitzschia palea</i>	487	Pelagophyceae	
<i>Nitzschia</i> sp.	1339	<i>Chrysophaeum taylorii</i>	1699
<i>Nitzschia</i> sp.	1340	<i>Chrysophaeum taylorii</i>	1700
<i>Odontella aurita</i>	589	<i>Pelagomonas calceolata</i>	1003
<i>Odontella longicuris</i>	590	Unidentified pelagophyte	1386
<i>Pseudonitzschia</i> sp.	1383	Unidentified pelagophyte	1387
<i>Sellaphora seminulum</i>	1353		
<i>Skeletonema marinoi-dohrnii</i> complex	16	Phaeophyceae	
<i>Skeletonema marinoi-dohrnii</i> complex	17	<i>Acinetospora crinita</i>	548
<i>Skeletonema marinoi-dohrnii</i> complex	223		
<i>Skeletonema marinoi-dohrnii</i> complex	323	Pinguiphyceae	
<i>Skeletonema marinoi-dohrnii</i> complex	324	<i>Glossomastix chrysoplata</i>	1002
<i>Tabellaria flocculosa</i>	225	<i>Glossomastix chrysoplata</i>	1302
<i>Thalassionema nitzschioides</i>	534		
<i>Triceratium dubium</i>	556	Raphidophyceae	
		<i>Chattonella antiqua</i>	1
Chrysomerothyceae		<i>Chattonella antiqua</i>	2
<i>Giraudyopsis</i> sp.	1862	<i>Chattonella antiqua</i>	83
		<i>Chattonella antiqua</i>	84
Chrysothyceae		<i>Chattonella antiqua</i>	85
<i>Chromulina</i> sp.	2304	<i>Chattonella antiqua</i>	86
<i>Dinobryon divergens</i>	284	<i>Chattonella antiqua</i>	113
<i>Epipyxis glabra</i>	1826	<i>Chattonella antiqua</i>	114
<i>Lagynion subglobosum</i>	1827	<i>Chattonella antiqua</i>	161
<i>Mallomonas</i> sp.	1376	<i>Chattonella antiqua</i>	558
<i>Ochromonas danica</i>	2142	<i>Chattonella marina</i>	3
<i>Ochromonas minuta</i>	2143	<i>Chattonella marina</i>	14
<i>Ochromonas</i> sp.	1828	<i>Chattonella marina</i>	115
<i>Ochromonas</i> sp.	2300	<i>Chattonella marina</i>	116
<i>Paraphysomonas vestita</i>	1377	<i>Chattonella marina</i>	118
<i>Poterioochromonas malhamensis</i>	2144	<i>Chattonella marina</i>	121
<i>Spumella</i> sp.	1846	<i>Chattonella marina</i>	557
<i>Synura petersenii</i>	233	<i>Chattonella marina</i>	559
<i>Synura petersenii</i>	1007	<i>Chattonella minima</i>	848
<i>Synura sphagnicola</i>	695	<i>Chattonella ovata</i>	603
<i>Synura sphagnicola</i>	696	<i>Chattonella ovata</i>	671
<i>Synura spinosa</i>	234	<i>Chattonella ovata</i>	849
<i>Uroglena americana</i>	395	<i>Chattonella ovata</i>	1872
		<i>Chattonella ovata</i>	1873
Dictyochophyceae		<i>Fibrocapsa japonica</i>	136
<i>Luteocerasus tetraplastida</i>	1871	<i>Fibrocapsa japonica</i>	462
<i>Pedinella</i> sp.	2346	<i>Fibrocapsa japonica</i>	560
<i>Pedinella squamata</i>	1008	<i>Fibrocapsa japonica</i>	605
<i>Pseudochattonella verruculosa</i>	670	<i>Fibrocapsa japonica</i>	1303
<i>Pseudochattonella verruculosa</i>	850	<i>Fibrocapsa japonica</i>	1829
<i>Pseudopedinella pyriformis</i>	1381	<i>Fibrocapsa</i> sp.	1378
<i>Pseudopedinella pyriformis</i>	1810	<i>Gonyostomum latum</i>	1808
<i>Rhizochromulina</i> sp.	1382	<i>Gonyostomum semen</i>	1009
		<i>Gonyostomum semen</i>	1380
Eustigmatophyceae		<i>Haramonas dimorpha</i>	716
<i>Nannochloropsis oculata</i>	2145	<i>Haramonas pauciplastida</i>	1870
<i>Nannochloropsis oculata</i>	2146	<i>Haramonas</i> sp.	1701
<i>Vischeria punctata</i>	2147	<i>Heterosigma akashiwo</i>	5
<i>Vischeria stellata</i>	2148	<i>Heterosigma akashiwo</i>	6
		<i>Heterosigma akashiwo</i>	9
		<i>Heterosigma akashiwo</i>	10

<i>Heterosigma akashiwo</i>	145	<i>Cryptomonas ovata</i>	274
<i>Heterosigma akashiwo</i>	146	<i>Cryptomonas ovata</i>	275
<i>Heterosigma akashiwo</i>	293	<i>Cryptomonas paramaecium</i>	715
<i>Heterosigma akashiwo</i>	561	<i>Cryptomonas paramaecium</i>	766
<i>Heterosigma akashiwo</i>	1830	<i>Cryptomonas paramaecium</i>	767
<i>Merotricha bacillata</i>	1809	<i>Cryptomonas platyuris</i>	276
<i>Olisthodiscus luteus</i>	15	<i>Cryptomonas platyuris</i>	344
<i>Olisthodiscus luteus</i>	1379	<i>Cryptomonas rostratiformis</i>	277
<i>Olisthodiscus luteus</i>	1831	<i>Cryptomonas rostratiformis</i>	278
		<i>Cryptomonas rostratiformis</i>	345
		<i>Cryptomonas rostratiformis</i>	1327
Schizocladiphyceae			
<i>Schizocladia ischiensis</i>	1044	<i>Cryptomonas tetrapyrenoidosa</i>	279
		<i>Cryptomonas tetrapyrenoidosa</i>	280
		<i>Cryptomonas tetrapyrenoidosa</i>	281
Xanthophyceae			
<i>Botrydiopsis arrhiza</i>	621	<i>Cryptomonas tetrapyrenoidosa</i>	282
<i>Botrydium granulatum</i>	622	<i>Cryptomonas tetrapyrenoidosa</i>	346
<i>Mischococcus</i> sp.	1963	<i>Cryptomonas tetrapyrenoidosa</i>	347
<i>Ophiocytium capitatum</i>	1011	<i>Cryptomonas tetrapyrenoidosa</i>	348
<i>Ophiocytium capitatum</i>	1384	<i>Rhodomonas atrorosea</i>	699
<i>Ophiocytium parvulum</i>	1385	<i>Rhodomonas baltica</i>	700
		<i>Rhodomonas chrysoidea</i>	701
		<i>Rhodomonas duplex</i>	765
Heterokontophyta incertae sedis			
Unidentified yellow heterokontophyte	1389	<i>Rhodomonas falcata</i>	702
		<i>Rhodomonas salina</i>	1006
		<i>Rhodomonas salina</i>	1375
		<i>Rhodomonas</i> sp.	1005
		<i>Rhodomonas</i> sp.	1730
		<i>Rhodomonas</i> sp.	2332
STRAMENOPILA INCERTAE SEDIS			
Bicoecea			
<i>Bicosoeca</i> sp.	1438		
<i>Cafeteria roenbergensis</i>	1012		
Bigyromonadea		Goniomonadea	
<i>Developayella elegans</i>	1388	<i>Goniomonas amphinema</i>	1371
		<i>Goniomonas pacifica</i>	1372
		<i>Goniomonas</i> sp.	1374
		<i>Goniomonas truncata</i>	1373
Placididea			
<i>Placidia cafeteriopsis</i>	1013		
<i>Placidia cafeteriopsis</i>	1014		
<i>Wobblia lunata</i>	1015		
CRYPTOPHYTA		KATHABLEPHARIDA	
Cryptophyceae		Kathablepharidea	
<i>Chroomonas caudata</i>	712	<i>Kathablepharis japonica</i>	1334
<i>Chroomonas coerulea</i>	713	<i>Kathablepharis</i> sp.	1731
<i>Chroomonas coerulea</i>	714	<i>Leucocryptos marina</i>	1335
<i>Chroomonas coerulea</i>	1004		
<i>Chroomonas collegionis</i>	703	HAPTOPHYTA	
<i>Chroomonas dispersa</i>	704	Pavlovophyceae	
<i>Chroomonas mesostigmatica</i>	1370	<i>Pavlova gyrans</i>	623
<i>Chroomonas nordstedtii</i>	706	<i>Pavlova pinguis</i>	1398
<i>Chroomonas nordstedtii</i>	707	<i>Pavlova</i> sp.	1399
<i>Chroomonas nordstedtii</i>	708	<i>Pavlova</i> sp.	1400
<i>Chroomonas nordstedtii</i>	709	<i>Pavlova</i> sp.	1401
<i>Chroomonas nordstedtii</i>	710	<i>Pavlova</i> sp.	1815
<i>Chroomonas nordstedtii</i>	711	<i>Pavlova</i> sp.	1816
<i>Chroomonas placoidea</i>	705	<i>Pavlova</i> sp.	1965
<i>Chroomonas</i> sp.	2331		
<i>Cryptomonas acuta</i>	697	Prymnesiophyceae	
<i>Cryptomonas irregularis</i>	698	<i>Calcidiscus leptoporus</i>	1304
		<i>Calcidiscus leptoporus</i>	1305
		<i>Calyptosphaera sphaeroidea</i>	997

<i>Calyptrosphaera sphaeroidea</i>	1308	<i>Hyalolithus neolepis</i>	1393
<i>Calyptrosphaera sphaeroidea</i>	1309	<i>Hymenomonas coronata</i>	1016
<i>Calyptrosphaera sphaeroidea</i>	1811	<i>Imantonia rotunda</i>	1001
<i>Chrysochromulina hirta</i>	741	<i>Imantonia rotunda</i>	1394
<i>Chrysochromulina parva</i>	562	<i>Ochrosphaera neapolitana</i>	1395
<i>Chrysochromulina quadrikonta</i>	998	<i>Ochrosphaera neapolitana</i>	1964
<i>Chrysochromulina simplex</i>	1392	<i>Oolithotus fragilis</i>	1320
<i>Chrysochromulina sp.</i>	1333	<i>Oolithotus fragilis</i>	1321
<i>Chrysochromulina sp.</i>	1391	<i>Oolithotus fragilis</i>	1322
<i>Chrysoculter rhomboideus</i>	1874	<i>Phaeocystis globosa</i>	388
<i>Emiliana huxleyi</i>	837	<i>Phaeocystis sp.</i>	1396
<i>Emiliana huxleyi</i>	1310	<i>Pleurochrysis haptonemofera</i>	1813
<i>Emiliana huxleyi</i>	1311	<i>Pleurochrysis roscoffensis</i>	8
<i>Emiliana huxleyi</i>	1312	<i>Pleurochrysis sp.</i>	1814
<i>Emiliana huxleyi</i>	1313	<i>Prymnesium calathiferum</i>	1330
<i>Emiliana huxleyi</i>	1314	<i>Prymnesium parvum</i>	1017
<i>Gephyrocapsa oceanica</i>	353	<i>Prymnesium parvum</i>	1018
<i>Gephyrocapsa oceanica</i>	838	<i>Prymnesium parvum</i>	1812
<i>Gephyrocapsa oceanica</i>	1000	<i>Prymnesium parvum</i>	2350
<i>Gephyrocapsa oceanica</i>	1315	<i>Prymnesium sp.</i>	1397
<i>Gephyrocapsa oceanica</i>	1316	<i>Umbilicosphaera sibogae</i> var. <i>sibogae</i>	1324
<i>Gephyrocapsa oceanica</i>	1317		
<i>Gephyrocapsa oceanica</i>	1318	CHOANOZOA	
<i>Gephyrocapsa oceanica</i>	1319	Choanoflagellata	
<i>Gephyrocapsa oceanica</i>	1328	<i>Salpingoeca infusionum</i>	1442
<i>Gephyrocapsa oceanica</i>	1329		

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IX. 委員会およびスタッフ

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Ken-ichiro SUZUKI: Director, Biological Resource Center, National Institute of Technology and Evaluation

Makoto M. WATANABE: Professor, University of Tsukuba

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Susan I. BLACKBURN: Head, CSIRO Collection of Living

Microalgae, CSIRO Marine and Atmospheric Research, Australia

Hideya FUKUZAWA: Associate Professor, Kyoto University

Takeo HORIGUCHI: Professor, Hokkaido University

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Fumi MORI: Curator (Microalgae, cryopreservation), Global Environmental Forum

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X. APPLICATION FORMS (各種依頼・報告様式)

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微生物株寄託依頼書兼同意書

寄託依頼年月日： 年 月 日

依頼者名（フリガナ付）：

所属機関名（日本語名）：

所属機関名（英語名）：

所属機関住所：〒

電話：(内線)

FAX：

Eメールアドレス：

下記微生物の寄託を依頼します。

【寄託理由】

【基本情報】

学名及び命名者名：

門名：

綱名：

目名：

科名：

シノニム：

同定者名（フリガナ付）：

同定年月日： 年 月 日

株番号又は符号：

他の寄託先情報（同じ株を別の機関に寄託している場合、機関名と保存株番号を記述してください）：

【採集】

採集年月日： 年 月 日

採集者名（フリガナ付）：

採集地情報

国名：

産地住所（県名から）：

地名（河川、湖、池、湾、砂浜等の名称）：

緯度経度：

海域名と最も近い国名：

生息環境：海 淡水 汽水（塩濃度： %_o） 陸上 塩水 温泉 冷泉 雪 氷その他（ ）生息環境の詳細：貧栄養 中栄養 富栄養 腐植栄養 表層 クロロフィル極大水深その他の水深（ m） その他（ ）海水環境の詳細：沿岸 外洋 潮だまり（タイドプール） 干潟 マングローブ 河口 港湾その他（ ）淡水環境の詳細：湖 池 貯水池 河川 小川 溝・水路 湿地 水田その他（ ）陸上環境の詳細：畑地 林床 樹皮 石堀 その他（ ）

生息環境コメント：

【分離】

分離年月日： 年 月 日

分離者名（フリガナ付）：

分離源：水 海水 砂 底泥 土 地衣 植物 海藻 海草 サンゴ スポンジその他の動物 雪または氷 その他（ ）分離物：運動性栄養細胞 非運動性栄養細胞 孢子 四分孢子 果孢子 接合子

単為発生配偶子 葉状体 その他 ()
 分離方法：ピペット洗浄法による単一細胞分離 切り出し 希釈法 寒天平板法による単一コロニー分離
走性 セルソーター その他 ()
 分離時の培養条件 (培地の種類, 濃度, 光, 温度条件等) が後述の保存条件と異なる場合, その詳細を記述してください:
 分離時の処理：無処理 抗生物質 (名称: , mg/L) 二酸化ゲルマニウム (GeO₂)
他の化学物質 (名称: , mg/L) 超音波処理 紫外線照射 その他 ()

【状態】

藻類・シアノバクテリア： 1) 単藻 混合
 2) クローン 非クローン
 3) 無菌 非無菌
 原生動物：無菌 二者培養 (餌生物:) 混合
 最新の無菌検査年月日： 年 月 日

【保存条件】

培地名：
 培地の出典：
 培地形状：液体 半固体 固体 二相 その他 ()
 培地作成等の特記事項：

継代培養による保存条件

温度： °C (必要な場合は前培養温度 °C)
 光強度： $\mu\text{mol m}^{-2}\text{s}^{-1}$ または lux
 (必要な場合は前培養光強度 $\mu\text{mol m}^{-2}\text{s}^{-1}$ または lux)
 光源：白色蛍光灯 昼光色蛍光灯 自然光 その他 ()
 明暗周期：12時間ごと その他 (時間明/ 時間暗)
 継代培養 (植え継ぎ) 周期： (日 月間隔) (必要な場合は前培養期間 日)
 培養用容器：試験管 三角フラスコ プラスチック培養フラスコ その他 ()
 培養条件や植え継ぎ操作に関する特記事項 (前培養の条件, 特別な処理, 最大の増殖率を得る条件, 細胞の接種方法や接種量など):

凍結保存：可 否 不明
 凍結保護剤名： (濃度 %)
 保存：液体窒素気相 液体窒素液相 -80°Cフリーザー その他 ()
 凍結方法：二段階凍結法 (°Cまで毎分 °Cで冷却後, 分間維持, その後液体窒素中に入れる)
その他の方法 ()
 融解後の培養の注意点：(暗黒, 薄明下で培養など)
 方法の出典：

凍結乾燥保存：可 否 不明
 可の場合は方法：
 方法の出典：

L-乾燥保存：可 否 不明
 可の場合は方法：
 方法の出典：

【特性】

環境上の特性
赤潮形成 水の華形成 有毒 水の華形成藻の捕食 異味 異臭 ろ過障害 有害物質分解
AGP試験 生物指標 その他 ()

生理生態的特性

独立栄養 従属栄養 混合栄養 ファゴトロフ 栄養要求性 (要求)
突然変異株 (詳細:)
窒素固定
浮遊性 底生 内生植物的生活 付着性 (植物着生 岩石着生 その他 ())

- 共生 寄生
 好熱性 好冷性 好塩性 好酸性 好乾性
 走光性 色順応 生物発光
 水素発生 オイル(炭化水素)生産 高 CO₂ 固定
 コスモポリタン 固有種 (国/地域)
 その他 ()

その他の特性

- タイプ株または真核生物の場合新種記載の基準とした株 分類学(系統・進化)上重要な株
 ヘテロタリック ホモタリック 雌雄異株 雌雄同株
 同型配偶 異型配偶 卵生殖
 交配型(+) 交配型(-) 雌 雄
 生活史の報告あり (詳細:)
 生活史の報告なし
 休眠胞子形成
 その他 ()

記載された特性の出典:

【遺伝子データ (随時コピーを行い、登録されている全てのデータを記入してください)】

登録番号 (および遺伝子名と登録年月日):

登録者名 (フリガナ付):

【文献】

この株を扱った文献 (以下の例に従って記述してください)

(例) Otsuka, S., Suda, S., Shibata, S., Oyaizu, H., Matsumoto, S. & Watanabe, M. M. 2001 A proposal for the unification of five species of the cyanobacterial genus *Microcystis* Kützing ex Lemmermann 1907 under the rules of the Bacteriological Code. *Int. J. Syst. Evol. Microbiol.*, **51**, 873-879.

この株に関する参考文献 (同定に用いた文献など, 上の例に従って記述してください)

【特許およびその他の知的財産権】 あり なし

【その他のコメント】

以上により、同意書を2通作成し、NIES コレクションおよび利用者がそれぞれ1通を所持する。

独立行政法人国立環境研究所微生物系統保存施設（提供機関）と利用者は、上記の使用目的のために株を分譲するにあたり、「分譲にあたっての同意事項」に記された事項に同意します。

《提供機関》

機関名：独立行政法人国立環境研究所微生物系統保存施設

住所：茨城県つくば市小野川 16-2

分譲責任者：

印

年 月 日

《利用者》

機関名・会社名（学部学科・部署名）：

住所：

担当者：

印

年 月 日

研究責任者・指導教官：

印

年 月 日

以上により、同意書を2通作成し、NIES コレクションおよび利用者がそれぞれ1通を所持する。

独立行政法人国立環境研究所微生物系統保存施設（提供機関）と利用者は、上記の使用目的のために株を分譲するにあたり、「分譲にあたっての同意事項」に記された事項に同意します。

《提供機関》

機関名：独立行政法人国立環境研究所微生物系統保存施設

住所：茨城県つくば市小野川 16-2

分譲責任者：

印

年 月 日

《利用者》

機関名（部署名）：独立行政法人国立環境研究所

住所：茨城県つくば市小野川 16-2

担当者：

印

年 月 日

研究責任者・指導教官：

印

年 月 日

以上により、同意書を2通作成し、NIESコレクションおよび利用者がそれぞれ1通を所持する。

独立行政法人国立環境研究所微生物系統保存施設（提供機関）と利用者は、上記の使用目的のために株を分譲するにあたり、「分譲にあたっての同意事項」に記された事項に同意します。

《提供機関》

機関名：独立行政法人国立環境研究所微生物系統保存施設

住所：茨城県つくば市小野川 16-2

分譲責任者：

印

年 月 日

《利用者》

機関名・会社名（学部学科・部署名）：

住所：

担当者：

印

年 月 日

研究責任者・指導教官：

印

年 月 日

Strain Deposit Request and Agreement Form

Date:

Depositor's full name with family name in capitals:

Depositor's affiliation and address:

Tel.:

Fax:

E-mail:

I wish to deposit the following microbial culture strain in the NIES-Collection.

[Reason for deposit]**[Basic information]**

Scientific name with author name(s):

Division:

Class:

Order:

Family:

Synonym:

Identified by (full name with family name in capitals):

Identification year:

Strain designation or code:

Other collection name and number (If the depositor has deposited the same strain in other collections):

[Collection]

Collection date:

Collector's name (full name with family name in capitals):

Site information

Country:

Address (most detailed one):

Place name (e.g. name of river, lake, pond, bay and coast):

Latitude and longitude:

Ocean name and nearest country to site:

 Habitat: marine freshwater brackish (salinity: ‰) terrestrial salt water hot spring
 cold spring snow ice others ()

 Details of habitats: oligotrophic mesotrophic eutrophic dystrophic surface
 depth in chlorophyll max other depth (- m) other ()

 Details of marine environment: coastal pelagic tidal pool tidal flat mangrove estuary
 harbor other ()

 Details of freshwater environment: lake pond reservoir river stream ditch wetland
 rice field other ()

 Details of terrestrial environment: farm land forest floor bark stone wall other ()

Other information or comments on the habitat:

[Isolation]

Date of isolation:

Isolator's name (full name with family name in capitals):

 Source of isolation: water seawater sand sediment soil lichen plant
 seaweed seagrass coral sponge other animals () snow ice
 other ()

 Isolation objective: motile vegetative cell non-motile vegetative cell spore tetraspore
 carpospore zygote parthenogenetic gamete thallus other ()

Isolation method: single-cell isolation by pipette washing cut-out of specimen dilution single colony isolation by agar plating taxis flow cytometry with cell sorter other ()

Notes on isolation conditions (e.g. medium, light, temperature, if different from maintenance conditions):

Treatment at isolation: none antibiotics (name: , mg/L) germanium dioxide (GeO₂)(mg/L)
 other chemicals (name: , mg/L) ultra-sonic wave UV radiation after cyst germination
 other ()

[Strain status]

Algae and cyanobacteria: 1) unialgal or mixed

2) clonal or non-clonal

3) axenic, non-axenic or non-axenic required

Protozoa: axenic, non-axenic or non-axenic required or monoxenic (as food)
 or mixed

Date of bacteria-free check:

[Preservation conditions]

Medium name:

Reference for medium:

Medium phase: liquid semi-solid solid soil water biphasic

Notes for preparation of medium:

Sub-culturing conditions

Temperature: °C (pre-culture temperature if needed, °C)

Light intensity: μmol m⁻² s⁻¹, or lux (preculture light intensity if needed μmol m⁻² s⁻¹, or lux)

Light source: white fluorescent lamps daylight fluorescent lamps natural light other ()

Light-Dark cycle: 12 h/ 12 h others (h/ h)

Interval of transfer: days or month(s) (pre-culture duration if needed, days)

Culture vessel: test tube Erlenmeyer flask plastic culture flask other ()

Additional notes on culture conditions (e.g. information for optimal growth conditions, transfer methods, quantity of cells to transfer:

Remarks on how to recover a good growth when strain state is bad:

Cryopreservation: yes no unknown

Cryoprotectant: (concentration: %)

Cryopreserved in: vapor-phase liquid nitrogen liquid-phase liquid nitrogen -80°C freezer

other ()

Methods: two step cooling (cool until °C at a rate of °C/min, hold at °C for min, and plunge into liquid N₂)

other methods: ()

Special notice for incubation just after thawing (e.g. darkness, dim light):

References for methods:

Notes and comments on cryopreservation:

Freeze-drying: yes no unknown

Method:

Reference for method:

L-drying: yes no unknown

Method:

Reference for method:

[Characteristics]

Environmental characteristics

red tide water bloom toxic predator of water bloom-forming species

offensive taste offensive odor filter and screen clogging decomposes hazardous substances

Agreement for deposition

1. The depositor shall deposit the strain in the NIES-Collection without charge. The transfer of intellectual properties is not included in the agreement. The NIES-Collection may maintain and culture the strain (including DNA) and distribute it to users.
2. The depositor shall submit accurate strain data to the NIES-Collection; these data shall include patents, properties and states of the strain.
3. The strain shall be free from any limitation, legally and contractually, pursuant to one of the following reasons (please tick):
 - The strain was isolated/developed by the depositor.
 - The strain is deposited with the permission of the isolator/developer/collaborator of the original country (if collected in a foreign country).
 - The strain has been purchased without any limitation regarding the deposit thereof, and with the permission of the original collection.
4. The NIES-Collection may distribute the deposited strains to users in accordance with the following condition (please tick):
 - The strain shall not be disclosed to the public until the paper regarding the strain has been published
 - Other reason (_____)
 This condition will last no longer than 1 year, and the strain will be open to the public even if the depositor imposes conditions. If the depositor does not specify any conditions, then the strain will be open to the public immediately after approval by the Committee for Evaluating Microbial Culture Strains.
5. The NIES-Collection shall bear no responsibility for inevitable change and loss during maintenance, or for loss caused by natural disasters.
6. The NIES-Collection may stop the maintenance and distribution of the strain in accordance with a decision made by the Committee for Evaluating Microbial Culture Strains.

The NIES-Collection (the Collection) and the depositor make two copies of the agreement; the Collection and the depositor each hold one.

We, the NIES-Collection (the Collection) and the depositor, accept the above conditions in order to transfer the strain(s).

<<Collection>>

Organization: Microbial Culture Collection, Laboratory of Intellectual Fundamentals for Environmental Studies, National Institute for Environmental Studies

Address: 16-2, Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Director:

Signature:

Date:

<<Depositor>>

Organization:

Address:

Name of depositor (with title):

Signature:

Date:

Strain Ordering and Agreement Form

Date:

Requestor's full name (family name in capital letters):

Requestor's affiliation and address:

Tel.:

Fax:

E-mail:

Billing address (if different from the above address):

I request the following culture strain(s).

Scientific name(s) and strain number(s):

Purpose of use (in detail):

1. The strains (including DNA, replicates and derivatives from the strains) that are distributed from the NIES-Collection, shall be available for education, research, tests, and other special purposes permitted by NIES, as well as for purposes in which public safety must be ensured. The strains are not intended to apply directly to humans. If the strains are toxic, the user hereby acknowledges and accepts the risks posed by toxic strains and shall use the strain in compliance with domestic and foreign laws, regulations, and guidelines. The user shall store and discard the strains appropriately. Even if "toxic" is not specified in the strain list, the user hereby acknowledges and accepts the potential risks of the strains and shall use the strains in compliance with domestic and foreign laws, regulations, and guidelines.
2. The user shall be requested to submit the application form personally.
3. The user shall not acquire any intellectual property rights by the purchase of the strain.
4. The user shall provide written notice to NIES when the purpose has changed considerably from the purpose that was stated at the time of submission.
5. The user shall not distribute the strains or their replicates and derivatives to any third party.
6. The user shall use the NIES strain number (e.g., NIES-125) when he/she uses a NIES strain in a paper that is subsequently published, and shall send two copies of the reprint(s) or photocopies thereof to the NIES-Collection.
7. When the use of the strain violates another person's rights, the user shall bear responsibility for this and shall deal with the matter on his/her own.
8. The user shall acknowledge the possibility that the strain is deficient and harmful, and inadequate for the user's aim. Thus, if the user suffers any loss by the strain, he/she shall bear responsibility for this and shall deal with the matter on his/her own.
9. The user shall submit the Strain Receipt Form within 1 month of the date of receipt of the strain. The user may request that the strain be sent again without charge if the strain does not show good growth during this warranty period. The NIES-Collection shall not bear any responsibility for mistakes by the user.

As mentioned above, the NIES-Collection (the supplier) and the user make two copies of the agreement, and the NIES-Collection and the user each hold one.

We, the NIES-Collection (the supplier) and the user, accept the above conditions in order to transfer the strain(s) used for the purpose(s) specified above.

<<Supplier>>

Organization: Microbial Culture Collection, Laboratory of Intellectual Fundamentals for Environmental Studies, National Institute for Environmental Studies

Address: 16-2, Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Director:

Signature:

Date:

<<User>>

Organization:

Address:

Name of user (with title):

Signature:

Date:

Name of responsible person (with title):

Signature:

Date

Strain Ordering and Agreement Form (For NIES staff)

Date:

Requestor's full name (family name in capital letters):

Requestor's affiliation at NIES:

Tel.:

Fax:

E-mail:

I request the following culture strain(s).

Scientific name(s) and strain number(s):

Purpose of use (in detail):

Registered research name:

Registered research code:

1. The strains (including DNA, replicates and derivatives from the strains) that are distributed from the NIES-Collection, shall be available for education, research, tests, and other special purposes permitted by NIES, as well as for purposes in which public safety must be ensured. The strains are not intended to apply directly to humans. If the strains are toxic, the user hereby acknowledges and accepts the risks posed by toxic strains and shall use the strain in compliance with domestic and foreign laws, regulations, and guidelines. The user shall store and discard the strains appropriately. Even if "toxic" is not specified in the strain list, the user hereby acknowledges and accepts the potential risks of the strains and shall use the strains in compliance with domestic and foreign laws, regulations, and guidelines.
2. The user shall be requested to submit the application form personally.
3. The user shall not acquire any intellectual property rights by the purchase of the strain.
4. The user shall provide written notice to NIES when the purpose has changed considerably from the purpose that was stated at the time of submission.
5. The user shall not distribute the strains or their replicates and derivatives to any third party.
6. The user shall use the NIES strain number (e.g., NIES-125) when he/she uses a NIES strain in a paper that is subsequently published, and shall send two copies of the reprint(s) or photocopies thereof to the NIES-Collection.
7. When the use of the strain violates another person's rights, the user shall bear responsibility for this and shall deal with the matter on his/her own.
8. The user shall acknowledge the possibility that the strain is deficient and harmful, and inadequate for the user's aim. Thus, if the user suffers any loss by the strain, he/she shall bear responsibility for this and shall deal with the matter on his/her own.
9. The user shall submit the Strain Receipt Form within 1 month of the date of receipt of the strain. The user may request that the strain be sent again without charge if the strain does not show good growth during this warranty period. The NIES-Collection shall not bear any responsibility for mistakes by the user.

As mentioned above, the NIES-Collection (the supplier) and the user make two copies of the agreement, and the NIES-Collection and the user each hold one.

We, the NIES-Collection (the supplier) and the user, accept the above conditions in order to transfer the strain(s) used for the purpose(s) specified above.

<<Supplier>>

Organization: Microbial Culture Collection, Laboratory of Intellectual Fundamentals for Environmental Studies, National
Institute for Environmental Studies

Address: 16-2, Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Director:

Signature:

Date:

<<User>>

Organization:

Address:

Name of user (with title):

Signature:

Date:

Name of responsible person (with title):

Signature:

Date

Strain Ordering and Agreement Form (For guest researchers and collaborators)

Date:

Requestor's full name (family name in capital letters):

Requestor's affiliation and address:

Tel.:

Fax:

E-mail:

Responsible researcher at NIES

Affiliation

I request the following culture strain(s).

Scientific name(s) and strain number(s):

Purpose of use (in detail):

-
1. The strains (including DNA, replicates and derivatives from the strains) that are distributed from the NIES-Collection, shall be available for education, research, tests, and other special purposes permitted by NIES, as well as for purposes in which public safety must be ensured. The strains are not intended to apply directly to humans. If the strains are toxic, the user hereby acknowledges and accepts the risks posed by toxic strains and shall use the strain in compliance with domestic and foreign laws, regulations, and guidelines. The user shall store and discard the strains appropriately. Even if "toxic" is not specified in the strain list, the user hereby acknowledges and accepts the potential risks of the strains and shall use the strains in compliance with domestic and foreign laws, regulations, and guidelines.
 2. The user shall be requested to submit the application form personally.
 3. The user shall not acquire any intellectual property rights by the purchase of the strain.
 4. The user shall provide written notice to NIES when the purpose has changed considerably from the purpose that was stated at the time of submission.
 5. The user shall not distribute the strains or their replicates and derivatives to any third party.
 6. The user shall use the NIES strain number (e.g., NIES-125) when he/she uses a NIES strain in a paper that is subsequently published, and shall send two copies of the reprint(s) or photocopies thereof to the NIES-Collection.
 7. When the use of the strain violates another person's rights, the user shall bear responsibility for this and shall deal with the matter on his/her own.
 8. The user shall acknowledge the possibility that the strain is deficient and harmful, and inadequate for the user's aim. Thus, if the user suffers any loss by the strain, he/she shall bear responsibility for this and shall deal with the matter on his/her own.
 9. The user shall submit the Strain Receipt Form within 1 month of the date of receipt of the strain. The user may request that the strain be sent again without charge if the strain does not show good growth during this warranty period. The NIES-Collection shall not bear any responsibility for mistakes by the user.

As mentioned above, the NIES-Collection (the supplier) and the user make two copies of the agreement, and the NIES-Collection and the user each hold one.

We, the NIES-Collection (the supplier) and the user, accept the above conditions in order to transfer the strain(s) used for the purpose(s) specified above.

<<Supplier>>

Organization: Microbial Culture Collection, Laboratory of Intellectual Fundamentals for Environmental Studies, National
Institute for Environmental Studies

Address: 16-2, Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Director:

Signature:

Date:

<<User>>

Organization:

Address:

Name of user (with title):

Signature:

Date:

Strain Receipt Form

Date:

Recipient's full name (family name with capital letters):

Recipient's affiliation and address:

Tel:

Fax:

E-mail:

I have received the following culture strain(s).

Date of strain receipt:

Scientific name(s) and strain number(s):

State of strain(s) received:

Good (strain number)

Poor (strain number)

Other (strain number)

Comments:

下記の出版物をご希望の方に頒布いたしますので、学会事務局（庶務）までお申し込み下さい（価格は送料を含む）。

1. 「藻類」バックナンバー

各号、会員価格 1,750 円、非会員価格 3,000 円；30 巻 4 号（創立 30 周年記念増大号，1-30 巻索引付き）のみ会員価格 5,000 円、非会員価格 7,000 円；欠号 1-2 巻全号，4 巻 1，3 号，5 巻 1，2 号，6-9 巻全号。

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3. 山田幸男先生追悼号

藻類 25 巻増補，1977，A5 判，xxviii + 418 頁。山田先生の遺影，経歴，業績一覧，追悼及び国内外の藻類学者より寄稿された論文 50 篇（英文 26 篇，和文 24 篇）を掲載。価格 7,000 円。

4. 日米科学セミナー記録

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