

Phycocordibacterales ord. nov.

Submitted by Jonas, Lauren

Order *Phycocordibacterales*

Etymology

[Phy.co.cor.di.bac.ter.ales] **L. masc. n.** *Phycocordibacter*, referring to the type genus *Phycocordibacter*; **-ales**, ending to denote an order; **N.L. fem. pl. n.** *Phycocordibacterales*, the *Phycocordibacter* order

Nomenclatural type

Genus *Phycocordibacter*

Description

This is an order within the Patescibacteria phylum, some of whose members are symbionts of the microalgae *Nannochloropsis oceanica* strain IMET1 and *Tetradismus obliquus* strain HTB1. Both microalgae are grown with 10% CO₂ for carbon mitigation research.

Classification

Bacteria » *Patescibacteriota* » “Paceibacteria” » *Phycocordibacterales*

References

Effective publication: Jonas et al., 2025 [1]

Registry URL

<https://seqco.de/i:49171>

Family *Phycocordibacteraceae*

Etymology

[Phy.co.cor.di.bac.ter.a'ce.ae] **L. masc. n.** *Phycocordibacter*, referring to the type genus *Phycocordibacter*; **-aceae**, ending to denote a family; **N.L. fem. pl. n.** *Phycocordibacteraceae*, the *Phycocordibacter* family

Nomenclatural type

Genus *Phycocordibacter*

Description

This is a family within the Patescibacteria phylum, some of whose members are symbionts of the microalgae *Nannochloropsis oceanica* strain IMET1 and *Tetradismus obliquus* strain HTB1. Both microalgae are grown with 10% CO₂ for carbon mitigation research.

Classification

Bacteria » *Patescibacteriota* » “Paceibacteria” » *Phycocordibacterales* » *Phycocordibacteraceae*

References

Effective publication: Jonas et al., 2025 [1]

Registry URL

<https://seqco.de/i:49183>

Genus *Minusculum*

Etymology

[Mi.nu.scu.lum] **L. neut. n.** *Minusculum*, rather small, referring to the genome size

Nomenclatural type

Species *Minusculum obligatum*^{Ts}

Description

This is a genus within the Patescibacteria phylum, one of whose members is a symbiont of the microalgae *Nannochloropsis oceanica* strain IMET1 and *Tetrademus obliquus* strain HTB1. Both microalgae are grown with 10% CO₂ for carbon mitigation research.

Classification

Bacteria » *Patescibacteriota* » "Paceibacteria" » *Phycocordibacterales* » *Phycocordibacteraceae* » *Minusculum*

References

Effective publication: Jonas et al., 2025 [1]

Registry URL

<https://seqco.de/i:49177>

Genus *Phycocordibacter*

Etymology

[Phy.co.cor.di.bacter] **Gr. neut. n.** *phykos*, seaweed or algae; **L. neut. n.** *cordis*, the most central part or the heart; **N.L. masc. n.** *bacter*, a rod; **N.L. masc. n.** *Phycocordibacter*, A core bacteria of a microalgal culture

Nomenclatural type

Species *Phycocordibacter aenigmaticus*^{Ts}

Description

This is a genus within the Patescibacteria phylum, one of whose members is symbionts of the microalgae *Nannochloropsis oceanica* strain IMET1 and *Tetrademus obliquus* strain HTB1. Both microalgae are grown with 10% CO₂ for carbon mitigation research.

Classification

Bacteria » *Patescibacteriota* » "Paceibacteria" » *Phycocordibacterales* » *Phycocordibacteraceae* » *Phycocordibacter*

References

Effective publication: Jonas et al., 2025 [1]

Registry URL

<https://seqco.de/i:49176>

Species *Minusculum obligatum*^{Ts}

Etymology

[o.bli.ga'tum] **L. neut. adj.** *obligatum*, to bind, oblige, or require

Nomenclatural type

[NCBI Assembly: GCA_045401155.1](#)^{Ts}

Description

This is a Patescibacteria group bacterium that is a symbiont of the microalgae *Nannochloropsis oceanica* strain IMET1 and *Tetradasmus obliquus* strain HTB1. Both microalgae are grown with 10% CO₂ in our laboratory for carbon mitigation research. This bacterium was found at the 1 L and 500 L scale and has a genome size of 578,798 bp. It is a dominant bacterium based on relative abundance of the 16S rRNA gene at both scales regardless of whether the algae are bubbled with 10% CO₂ or ambient air. Its hyper reduced genome suggests its symbiosis may be obligatory.

Classification

Bacteria » *Patescibacteriota* » "Paceibacteria" » *Phycocordibacterales* » *Phycocordibacteraceae* » *Minusculum* » *Minusculum obligatum*^{Ts}

References

Effective publication: Jonas et al., 2025 [1]

Registry URL

<https://seqco.de/i:49173>

Species *Phycocordibacter aenigmaticus*^{Ts}

Etymology

[ae.nig.ma'ti.cus] **L. masc. adj.** *aenigmaticus*, enigmatic or obscure

Nomenclatural type

[NCBI Assembly: GCA_045401115.1](#)^{Ts}

Description

This is a Patescibacteria group bacterium that is a symbiont of the microalgae *Nannochloropsis oceanica* strain IMET1 and *Tetradasmus obliquus* strain HTB1. Both microalgae are grown with 10% CO₂ in our laboratory for carbon mitigation research. This bacterium was found at the 1 L and 500 L scale and has a genome size of 721,362 bp.

Classification

Bacteria » *Patescibacteriota* » "Paceibacteria" » *Phycocordibacterales* » *Phycocordibacteraceae* » *Phycocordibacter* » *Phycocordibacter aenigmaticus*^{Ts}

References

Effective publication: Jonas et al., 2025 [1]

Registry URL

<https://seqco.de/i:49172>

References

1. Jonas et al. (2025). Two novel Patescibacteria: *Phycocordibacter aenigmaticus* gen. nov. sp. nov. and *Minusculum obligatum* gen. nov. sp. nov., both associated with microalgae optimized for carbon dioxide sequestration from flue gas. *mBio*. [DOI:10.1128/mbio.01231-25](https://doi.org/10.1128/mbio.01231-25)

Register List Certificate of Validation

On behalf of the *Committee on the Systematics of Prokaryotes Described from Sequence Data* (SeqCode Committee), we hereby certify that the Register List **seqco.de/r:ywe1blo2** submitted by **Jonas, Lauren** and including 6 new names has been successfully validated.

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