

Co-occurring nitrifying symbionts of marine sponges

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Genus *Nitrosokoinonia*

Etymology

[Ni.tro.so.ko.i.no'ni.a] **N.L. pref.** *nitroso-*, full of natron, nitrous; **Gr. fem. n.** *koinonia*, fellowship, joint participation, partnership; **N.L. fem. n.** *Nitrosokoinonia*, partner that consumes ammonia

Nomenclatural type

Species *Nitrosokoinonia keratosae*^{Ts}

Classification

Archaea » *Thermoproteota* » *Nitrososphaeria* » *Nitrosopumilales* » *Nitrosopumilaceae* » *Nitrosokoinonia*

References

Effective publication: Glasl et al., 2024 [1]

Registry URL

<https://seqco.de/i:33354>

Genus *Nitrosymbium*

Etymology

[Ni.tro.sym.bi'um] **N.L. pref.** *nitro-*, pertaining to nitrate; **Gr. pref.** *sym-*, together; **Gr. masc. n.** *bios*, life; **N.L. neut. n.** *Nitrosymbium*, nitrate-forming symbiont

Nomenclatural type

Species *Nitrosymbium coscinodermae*^{Ts}

Description

nitrite-oxidizing bacteria associated with marine sponges; they gain energy for CO₂ fixation via the oxidation of nitrite to nitrate; belonging to the lineage IVb *Nitrospirales* (previously referred to as “bin75”); members of this genus are predominantly associated with marine sponges (i.e., *Aplysina aerophoba*, *Coscinoderma matthewsi*, *Ircinia ramosa*, *Ircinia* sp., and *Stylissa flabelliformis*).

Classification

Bacteria » *Nitrospirota* » *Nitrospira* » *Nitrospirales* » *Nitrospiraceae* » *Nitrosymbium*

References

Effective publication: Glasl et al., 2024 [1]

Registry URL

<https://seqco.de/i:33379>

Species *Nitrosokoinonia keratosae*^{Ts}

Etymology

[ke.ra.to'sae] **N.L. gen. n.** *keratosae*, of *Keratosae*, a subclass of *Demospongiae*, comprising horny sponges with a spongin skeleton and without spicules, referring to the subclass of the host organism

Nomenclatural type

[NCBI Assembly: GCA_009843815.1](#)^{Ts}

Description

An ammonia-oxidizing, nitrite-producing archaeon associated with keratose sponges. Phylogenetically affiliated with the order *Nitrosopumilales*, phylum *Thermoproteota* (syn. *Crenarchaeota*). The metagenome-assembled genome (MAG) is 97.57% complete and has 0.00% contamination. It consists of 162 scaffolds, with a total of 1 505 883 bp. The DNA G + C content is 45.56%. *Nitrosokoinonia keratosae* was recovered from the tissue of two closely related marine sponge species (*I. ramosa* and *C. matthewsi*), collected at Great Barrier Reef in Queensland (Australia).

Classification

Archaea » *Thermoproteota* » *Nitrososphaeria* » *Nitrosopumilales* » *Nitrosopumilaceae* » *Nitrosokoinonia* » *Nitrosokoinonia keratosae*^{Ts}

References

Effective publication: Glasl et al., 2024 [1]
Assigned taxonomically: Glasl et al., 2024 [1]

Registry URL

<https://seqco.de/i:54845>

Species *Nitrosymbium coscinodermae*^{Ts}

Etymology

[cos.ci.no.der'mae] **N.L. gen. n.** *coscinodermae*, of *Coscinoderma*, referring to the sponge host genus

Nomenclatural type

[NCBI Assembly: GCA_011523385.1](#)^{Ts}

Description

Phylogenetically affiliated with the order *Nitrospirales*, phylum *Nitrospirota*. The MAG is 98.64% complete and has 3.86% contamination. It consists of 38 scaffolds, with a total of 2 506 777 bp. The DNA G + C content is 56.70%. *Nitrosymbium coscinodermae* was recovered from the tissue of the marine sponge *Coscinoderma matthewsi*, collected at the in-shore coral reef location Falcon Island (Great Barrier Reef, Queensland, Australia).

Classification

Bacteria » *Nitrospirota* » *Nitrospira* » *Nitrospirales* » *Nitrospiraceae* » *Nitrosymbium* » *Nitrosymbium coscinodermae*^{Ts}

References

Effective publication: Glasl et al., 2024 [1]
Assigned taxonomically: Glasl et al., 2024 [1]

Registry URL

<https://seqco.de/i:54846>

References

1. Glasl et al. (2024). Co-occurring nitrifying symbiont lineages are vertically inherited and widespread in marine sponges. *The ISME Journal*. [DOI:10.1093/ismejo/wrae069](https://doi.org/10.1093/ismejo/wrae069)

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:tknyjgi9** submitted by **Glasl, Bettina** and including 4 new names has been successfully validated.

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