Azoamicus gen. nov.

Submitted by Speth, Daan

Genus *Azoamicus*

Etymology

[A.zo.a'mi.cus] **N.L. pref.** *azo-*, pertaining to nitrogen; **L. masc. n.** *amicus*, friend; **N.L. masc. n.** *Azoamicus*, friend that pertains to nitrogen

Nomenclatural type

Species *Azoamicus ciliaticola*[Ts]

Description

'*Candidatus* Azoamicus ciliaticola' is an obligate endosymbiont of an anaerobic ciliate and has a dedicated role in respiration and providing energy for its eukaryotic host. '*Candidatus* A. ciliaticola' contains a highly reduced 0.29-Mb genome that encodes core genes for central information processing, the electron transport chain, a truncated tricarboxylic acid cycle, ATP generation and iron–sulfur cluster biosynthesis. The genome encodes a respiratory denitrification pathway instead of aerobic terminal oxidases, which enables its host to breathe nitrate instead of oxygen. '*Candidatus* A. ciliaticola' and its ciliate host represent an example of a symbiosis that is based on the transfer of energy in the form of ATP, rather than nutrition.

Classification

Bacteria » *Pseudomonadota* » *Gammaproteobacteria* » "Azoamicales" » "Azoamicaceae" » *Azoamicus*

References

Effective publication: Graf et al., 2021 [1]

Registry URL

https://seqco.de/i:49071

Species *Azoamicus ciliaticola*[Ts]

Etymology

[ci.li.a.ti.co'la] **N.L. fem. n.** *ciliata*, referring to a group of ciliated protozoa; **N.L. masc. suff.** *-cola*, dweller or inhabitant; **N.L. masc. adj.** *ciliaticola*, dwelling within a ciliate

Nomenclatural type

NCBI Assembly: GCF_902860225.1 [Ts]

Description

Azoamicus ciliaticola, which is an obligate endosymbiont of an anaerobic ciliate and has a dedicated role in respiration and providing energy for its eukaryotic host. *A. ciliaticola* contains a highly reduced 0.29-Mb genome that encodes core genes for central information processing, the electron transport chain, a truncated tricarboxylic acid cycle, ATP generation and iron–sulfur cluster biosynthesis. The genome encodes a respiratory denitrification pathway instead of aerobic terminal oxidases, which enables its host to breathe nitrate instead of oxygen. *A. ciliaticola* and its ciliate host represent an example of a symbiosis that is based on the transfer of energy in the form of ATP, rather than nutrition.

Classification

Bacteria » *Pseudomonadota* » *Gammaproteobacteria* » "Azoamicales" » "Azoamicaceae" » *Azoamicus* » *Azoamicus ciliaticola*[Ts]

References

Effective publication: Graf et al., 2021 [1]
Assigned taxonomically: Graf et al., 2021 [1]

Registry URL
https://seqco.de/i:49070

References

1. Graf et al. (2021). Anaerobic endosymbiont generates energy for ciliate host by denitrification. *Nature*. DOI:10.1038/s41586-021-03297-6

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:nnau0hgf** submitted by **Speth, Daan** and including 2 new names has been successfully validated.

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