

Register list for 3 new *Electrothrix* species names including *Electrothrix* gen. nov.

Submitted by Schramm, Andreas

Genus *Electrothrix*

Etymology

[E.lec'tro.thrix] Gr. neut. n. *élektron*, amber (which is the origin of the term electric); Gr. fem. n. *thrix*, hair; N.L. fem. n. *Electrothrix*, electric hair

Nomenclatural type

Species *Electrothrix communis*^{Ts}

Description

Multicellular filaments, up to several centimeters in length, with 15 to >70 characteristic longitudinal ridges and shared periplasm across cells; electron-conducting; typically spanning the suboxic zone in surface sediments; individual cells are 0.4–8 µm × 2–3 µm in size; polyphosphate inclusions; no sulfur inclusions; gliding motility; mostly marine, including coastal, salt marsh and salt lake inhabiting.

Classification

Bacteria » *Desulfobacterota* » *Desulfobulbia* » *Desulfobales* » *Desulfobulbaceae* » *Electrothrix*

References

Proposed: Plum-Jensen et al., 2024

Assigned taxonomically: Trojan et al., 2016

Registry URL

<https://seqco.de/i:32140>

Species *Electrothrix rattekaaiensis*

Etymology

[rat.te.kaai.en'sis] N.L. fem. adj. *rattekaaiensis*, from Rattekaai, referring to the location of sample collection

Nomenclatural type

[NCBI Assembly: GCA_032595675.1](#)^{Ts}

Reference Strain

Rat3

Description

Filamentous bacteria of centimeter length that inhabit the surface of brackish/intertidal sediment and conduct electrons from sulfide-oxidizing cells to oxygen-reducing cells. Gliding motility. Gram-negative, with 15 distinct ridges running longitudinally along the filament. Width of individual cells is 1.2 µm. Can assimilate acetate and propionate; CO₂ fixation via the Wood-Ljungdahl pathway. Contains c-type cytochromes, type IV pili (PilA) and Na⁺-antiporters. Polyphosphate and polyglucose storage. Distinguishable by morphology and genome.

Classification

Bacteria » *Desulfobacterota* » *Desulfobulbia* » *Desulfobales* » *Desulfobulbaceae* » *Electrothrix* » *Electrothrix rattekaaiensis*

References

Proposed: Plum-Jensen et al., 2024

Registry URL

<https://seqco.de/i:33364>

Species *Electrothrix aestuarii*

Etymology

[ae.stu.a'ri.i] L. gen. n. *aestuarii*, of a tidal flat/estuary, referring to the habitat it was collected from

Nomenclatural type

[NCBI Assembly: GCA_032595685.1](#)^{Ts}

Reference Strain

Rat1

Description

Filamentous bacteria of centimeter length that inhabit the surface of brackish/intertidal sediment and conduct electrons from sulfide-oxidizing cells to oxygen-reducing cells. Gliding motility. Gram-negative, with 15 distinct ridges running longitudinally along the filament. Width of individual cells is 1.2 µm. Can assimilate acetate and propionate; CO₂ fixation via the Wood-Ljungdahl pathway. Contains c-type cytochromes, type IV pili (PilA) and Na⁺ antiporters. Polyphosphate and polyglucose storage. Distinguishable by morphology and genome.

Classification

Bacteria » *Desulfobacterota* » *Desulfobulbia* » *Desulfobales* » *Desulfobulbaceae* » *Electrothrix* » *Electrothrix aestuarii*

References

Proposed: Plum-Jensen et al., 2024

Registry URL

<https://seqco.de/i:33363>

Species *Electrothrix communis*^{Ts}

Etymology

[com.mu'nis] L. fem. adj. *communis*, common

Nomenclatural type

[NCBI Assembly: GCA_030644725.1](#)^{Ts}

Reference Strain

RB

Description

Filamentous bacteria of centimeter length that inhabit the surface of brackish/intertidal sediment and conduct electrons from sulfide-oxidizing cells to oxygen-reducing cells. Gliding motility. Gram-negative, with 15 distinct ridges running longitudinally along the filament. Width of individual cells is 0.8 µm. Can assimilate acetate and propionate; CO₂ fixation via the Wood-Ljungdahl pathway. Contains c-type cytochromes, type IV pili (PilA) and Na⁺ antiporters. Polyphosphate and polyglucose storage. Distinguishable by morphology and genome.

Classification

Bacteria » *Desulfobacterota* » *Desulfobulbia* » *Desulfobales* » *Desulfobulbaceae* » *Electrothrix* » *Electrothrix communis*^{Ts}

References

Proposed: Plum-Jensen et al., 2024

Assigned taxonomically: Trojan et al., 2016

Registry URL

<https://seqco.de/i:32139>

References

1. Plum-Jensen et al. (2024). First single-strain enrichments of Electrothrix cable bacteria, description of *E. aestuarii* sp. nov. and *E. rattekaaensis* sp. nov., and proposal of a cable bacteria taxonomy following the rules of the SeqCode. *Systematic and Applied Microbiology*. DOI:10.1016/j.syapm.2024.126487
2. Trojan et al. (2016). A taxonomic framework for cable bacteria and proposal of the candidate genera *Electrothrix* and *Electronema*. *Systematic and Applied Microbiology*. DOI:10.1016/j.syapm.2016.05.006

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:lmyvwfoa submitted by **Schramm, Andreas** and including 4 new names has been successfully validated.

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