

Sulfuricystis multivorans gen. nov., sp. nov. and Sulfuricystis thermophila sp. nov.

Submitted by Rodriguez-R, Luis M

Genus *Sulfuricystis*

Etymology

[Sul.fu.ri.cys'tis] **L. neut. n.** *sulfur*, sulphur; **Gr. fem. n.** *kystis*, a bag; **N.L. fem. n.** *Sulfuricystis*, sulfur-oxidizing bag

Nomenclatural type

Species *Sulfuricystis multivorans*^{Ts}

Description

Grows by oxidation of sulfur compounds. Facultatively anaerobic and neutrophilic. Gram-stain-negative. Major cellular fatty acids are C16:0 and C16:1 (C16:1 ω 7c and/or C16:1 ω 6c). Phylogenetically, belongs the family *Sterolibacteriaceae*. The type species is *Sulfuricystis multivorans*.

Classification

Bacteria » *Pseudomonadota* » *Betaproteobacteria* » *Nitrosomonadales* » *Sterolibacteriaceae* » *Sulfuricystis*

References

Effective publication: Kojima et al., 2022 [1]
Assigned taxonomically: Kojima et al., 2022 [1]

Registry URL

<https://seqco.de/i:38887>

Species *Sulfuricystis multivorans*^{Ts}

Etymology

[mul.ti.vo'rans] **L. masc. adj.** *multus*, many; **L. pres. part.** *vorans*, devouring, eating; **N.L. fem. part. adj.** *multivorans*, devouring various substrates

Nomenclatural type

[NCBI Assembly: GCF_003966565.1](#)^{Ts}

Reference Strain

[Strain sc|0040544](#): J5BT = [BCRC 81386](#) = [DSM 104688](#) = [NBRC 112605](#)

Description

[Kojima et al., 2022 \(modified\)](#): In addition to properties listed in the genus description, cells are rod-shaped, 0.8–2.0 µm long and 0.4–0.5 µm wide. Uses oxygen and nitrate as electron acceptor. Under nitrate-reducing conditions, grows chemolithoautotrophically on thiosulfate and elemental sulfur, but not on sulfide, tetrathionate, or hydrogen gas. Grows heterotrophically on pyruvate, lactate, acetate, propionate, succinate, fumarate, malate, and butyrate. Does not grow on benzoate, isobutyrate, methanol, ethanol, formate, citrate, glucose, xylose, phenol, *o*-cresol, and *m*-cresol. Temperature range for growth is 28–55 °C, with an optimum of 45–50 °C. Growth occurs at pH 5.8–8.7, with an optimum of pH 6.7–7.4. G + C content of genomic DNA of the reference strain is 62.4 mol%.

The reference strain J5B(T) (= BCRC 81386(T) = DSM 104688(T) = NBRC 112605(T)) was isolated from a microbial mat of a hot spring in Japan. The GenBank/EMBL/DDBJ accession numbers for the chromosome and two plasmids of reference strain are AP018718 and AP018719-AP018720, respectively.

Classification

Bacteria » *Pseudomonadota* » *Betaproteobacteria* » *Nitrosomonadales* » *Sterolibacteriaceae* » *Sulfuricystis* » *Sulfuricystis multivorans*^{Ts}

References

Effective publication: Kojima et al., 2022 [1]

Registry URL

<https://seqco.de/i:38886>

Species *Sulfuricystis thermophila*

Etymology

[ther.mo'phi.la] **Gr. masc. adj.** *thermos*, hot; **Gr. masc. adj.** *philos*, loving; **N.L. fem. adj.** *thermophila*, heat-loving

Nomenclatural type

[NCBI Assembly: GCF_004323595.1](#) ^{Ts}

Reference Strain

[Strain sc|0040545](#): M52 = [BCRC 81387](#) = [NBRC 114016](#)

Description

[Kojima et al., 2022 \(modified\)](#): In addition to properties listed in the genus description, cells are rod-shaped, 1.8–3.2 µm long and 0.4–0.5 µm wide. Uses oxygen and nitrate as electron acceptor. Under nitrate-reducing conditions, grows chemolithoautotrophically on thiosulfate, tetrathionate and elemental sulfur, but not on sulfide or hydrogen gas. Grows heterotrophically on pyruvate, lactate, acetate, propionate, succinate, fumarate, malate, and butyrate and isobutyrate. Does not grow on benzoate, methanol, ethanol, formate, citrate, glucose, xylose, phenol, *o*-cresol, and *m*-cresol. Temperature range for growth is 18–55 °C, with an optimum of 50 °C. Growth occurs at pH 5.5–8.6, with an optimum of pH 6.6–6.9. G + C content of genomic DNA of the reference strain is 63.6 mol%.

The reference strain M52(T) (= BCRC 81387(T) = NBRC 114016(T)) was isolated from a microbial mat of a hot spring in Japan. The GenBank/EMBL/DDBJ accession number for the complete genome of the reference strain is AP019373.

Classification

Bacteria » *Pseudomonadota* » *Betaproteobacteria* » *Nitrosomonadales* » *Sterolibacteriaceae* » *Sulfuricystis* » *Sulfuricystis thermophila*

References

Effective publication: Kojima et al., 2022 [1]

Registry URL

<https://seqco.de/i:39151>

References

1. Kojima et al. (2022). *Sulfuricystis multivorans* gen. nov., sp. nov. and *Sulfuricystis thermophila* sp. nov., facultatively autotrophic sulfur-oxidizing bacteria isolated from a hot spring, and emended description of the genus *Rugosibacter*. *Archives of Microbiology*. DOI:10.1007/s00203-022-03186-0

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:fsxweagf** submitted by **Rodriguez-R, Luis M** and including 3 new names has been successfully validated.

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