

Species *Pampinifervens florentissimum*

Etymology

[flo.ren.tis.si'mum] **L. neut. adj.** *florentissimum*, flourishing, referring to their high standing biomass in many springs in the Rehai Geothermal field

Nomenclatural type

[INSDC Nucleotide: CP048795.1](#)^{Ts}

Reference Strain

[Strain sc|0040510](#): T-8 = [JCM 33569](#) = [CGMCC 1.5214](#)

Description

In addition to characteristics described for the genus, this species is capable of chemolithoheterotrophy using glucose, yeast extract, peptone, and casamino acids. This species can also utilize nitrate as electron acceptor during anaerobic growth, and encode all genes associated with complete denitrification of nitrate to dinitrogen, and nitrification of nitrite to nitrate. This species also encodes an arsenite transporter, arsenite oxidase, and arsenate reductase, although arsenite as an electron donor has not been tested, and arsenate was not used as electron acceptor under conditions tested before (Hedlund et al., 2015). Growth occurs at 50-80 °C with an optimum at 70 °C, at pH 5.5-10.0 with an optimum at 7.0, at 0.2-10% oxygen with an optimum of 4-6%, and at sodium chloride concentrations ≤ 200 mM. Cells are 1.9-2.2 µm in length, and 0.3-0.4 µm in width, occurring singly. Colonies are 0.5 mm in diameter, round, with entire margins, and cream in color, and form after 7 days incubation under chemoautotrophic conditions. Major cellular fatty acids are C20:1ω9c, C18:0, *cy*-21, and C16:0; minor fatty acids include C20:0, C18:1ω9c, and C19:0. Genomic G+C content range between 44.03% and 44.45%. Genealogical concordance and ANI support the novelty of this species, and phylogenomics and AAI places this species in the genus *Pampinifervens* gen. nov. The strain T-8 (= CGMC 1.5214T = JCM 33569T), was isolated from a white streamer community in Qiao Quan (Bridge Spring) in the Rehai Geothermal Field, Tengchong County, China. The GenBank genome accession number for the complete genome sequence of strain T-8 is CP048795 (BioProject: PRJNA605417, BioSample: SAMN14057017).

Classification

Bacteria » *Aquificota* » *Aquificia* » *Aquificales* » *Aquificaceae* » *Pampinifervens* » *Pampinifervens florentissimum*

References

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

Registry URL

<https://seqco.de/i:43941>

References

1. Palmer et al. (2025). Nitrogen fixation in *Pampinifervens*, a new species-rich genus of Aquificaceae that inhabits a wide pH range in terrestrial hot springs. *Systematic and Applied Microbiology*. [DOI:10.1016/j.syapm.2025.126644](https://doi.org/10.1016/j.syapm.2025.126644)