

Species *Candidatus Chloracidobacterium thermophilum*

Etymology

[ther.mo'phi.lum] Gr. n. *thermé*, heat; N.L. adj. *philus -a -um*, friend, loving (from Gr. adj. *philos -ê -on*); N.L. neut. adj. *thermophilum*, heat-loving

Nomenclatural type

Unknown

Description

Tank, Bryant (2015): Additional characteristics to those given in the genus description. Colonies on solid medium are greenish/brownish and lenticular in shape. Cells do not float in liquid medium and predominantly occur as solitary cells. Optimal irradiance is ~ 20–50 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$ from a tungsten bulb. The growth temperature range is 44–58 °C ($T_{\text{opt}} = 51$ °C) and the pH range is 5.5–9.5 ($\text{pH}_{\text{opt}} = \sim 7$) under microoxic conditions. Growth is restricted to a few carbon sources, and amino acids can serve as the sole carbon and nitrogen sources. Beneficial growth nutrients are 2-oxoglutarate, mannose and ethanol. Growth is possible with all combinations of amino acids as long as L-leucine, L-isoleucine, L-valine, L-lysine and a reduced sulfur source are included. Bicarbonate and vitamin B12 are also essential medium components. Weak growth in the dark occurs with mannose, 2-oxoglutarate and amino acids. Unable to grow on nitrate (2.5 mM), ammonia (1 mM) and 80 % (v/v) dinitrogen gas. Thioglycolate, L-methionine, L-cysteine/cystine, sulfur and thiosulfate can serve as sulfur sources. Fatty acids include *n*-C-14 : 0, *iso*-C-15 : 0, *anteiso*-C-15 : 0, *iso*-C-16 : 0, *n*-C-16 : 1 Δ 9, *n*-C-16 : 0, *iso*-C-17 : 0, *anteiso*-C-17 : 0, and 5-methyl *iso*-diabolic acid, but *iso*-diabolic acid is the most abundant. Shows substantial amounts of a C-18 *n*-alkane. Polar lipids are diacylglycerylhydroxymethyl-*N*, *N*, *N*-trimethyl- β -alanine, phosphatidylethanolamine, phosphatidylmonomethylethanolamine and phosphatidylcholine. Synthesizes three hopanoids: diploptene, bacteriohopanetetrol and bacteriohopanetetrolcylitol ether. The type strain, strain BT (ATCC BAA-2647, JCM 30199), was isolated from the phototrophic microbial mat community located in the effluent channel of Octopus Spring in the Lower Geyser Basin of Yellowstone National Park, Wyoming, USA. The genomic DNA G+C content of the type strain was 61.3 mol% (by sequence).

Classification

Bacteria » *Acidobacteriota* » *Blastocatellia* » “Chloracidobacteriales” » “Chloracidobacteriaceae” » *Candidatus Chloracidobacterium* » *Candidatus Chloracidobacterium thermophilum*

References

Effective publication: Bryant et al., 2007 [1]
Emendavit: Tank, Bryant, 2015 [2]

Registry URL

<https://seqco.de/i:134>

References

1. Bryant et al. (2007). *Candidatus Chloracidobacterium thermophilum*: An Aerobic Phototrophic Acidobacterium. *Science*. DOI:10.1126/science.1143236
2. Tank, Bryant (2015). *Chloracidobacterium thermophilum* gen. nov., sp. nov.: an anoxygenic microaerophilic chlorophotoheterotrophic acidobacterium. *International Journal of Systematic and Evolutionary Microbiology*. DOI:10.1099/ijs.0.000113