Macondimonas diazotrophica sp. nov. gen. nov.

Submitted by Rodriguez-R, Luis M

Genus *Macondimonas*

Etymology

[Ma.con.di.mo'nas] **L. fem. n.** *monas*, a unit, a monad; **N.L. fem. n.** *Macondimonas*, a monad from Macondo, Macondo Prospect, the site of DWH oil spill. Additionally, Macondo is a fictional town in A Hundred Years of Solitude by G. García Márquez. In the book, the town of Macondo has a rapid population growth, a period of economic prosperity, and then a rapid population fall, which is reminiscent of the ecologic pattern observed for this group upon crude-oil exposure

Nomenclatural type

Species *Macondimonas diazotrophica*[Ts]

Description

Members of this genus exhibit a coccobacilli morphology and a heterotrophic aerobic metabolism. No phototrophic, nor chemoautotrophic growth, or their corresponding genes in the genome were observed. The type species is *Macondimonas diazotrophica*.

Classification

Bacteria » *Pseudomonadota* » *Gammaproteobacteria* » *Chromatiales* » *Ectothiorhodospiraceae* » *Macondimonas*

References

Proposed: Karthikeyan et al., 2019

Registry URL

https://seqco.de/i:514

Species *Macondimonas diazotrophica*[Ts]

Etymology

[di.a.zo.tro'phi.ca] **Gr. pref.** *di-*, in two; **N.L. neut. n.** *azotum*, from Fr. n. azote (from Gr. prep. a, not; Gr. n. zôê, life; N.Gr. n. azôê, not sustaining life), nitrogen; **N.L. pref.** *diazo-*, pertaining to dinitrogen; **Gr. adj.** *trophikos -ê -on*, feeding, tending; **N.L. fem. adj.** *diazotrophica*, one that feeds on dinitrogen, named after its ability to fix atmospheric nitrogen

Nomenclatural type

NCBI Assembly: GCF_004684205.1 [Ts]

Description

Cells grown on solidified mineral artificial seawater media using hexadecane as substrate show a coccobacillus morphology, of about 0.6 µm in length and 0.35 µm in width, and formed circular colonies. Members of the species are aerobes, growing at a pH range of 6.5–8.5 with a pH optimum of 7.5, and a salinity range of 250–500 mM of NaCl, with an optimum concentration of 330 mM. The temperature range for optimal growth is 22–30 °C, with no growth observed at 4 °C and above 34 °C. Cells can grow with hexadecane and pyruvate as a sole carbon sources and fix nitrogen. Genome size is ~2.8 Mbp with a G+C% content of 61.56. The designated type material is strain KTK01, and its genome sequence can be found under NCBI BioSample accession number SAMN11302943.

Classification

Bacteria » *Pseudomonadota* » *Gammaproteobacteria* » *Chromatiales* » *Ectothiorhodospiraceae* » *Macondimonas* » *Macondimonas diazotrophica*[Ts]

References

Proposed: Karthikeyan et al., 2019

Registry URL
https://seqco.de/i:277

References

1. Karthikeyan et al. (2019). “Candidatus Macondimonas diazotrophica”, a novel gammaproteobacterial genus dominating crude-oil-contaminated coastal sediments. *The ISME Journal*. DOI:10.1038/s41396-019-0400-5

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:6ns_rdob** submitted by **Rodriguez-R, Luis M** and including 2 new names has been successfully validated.

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