

Genus *Terraquivivens*

Etymology

[Ter.ra.qui'vi.vens] L. **fem. n.** *terra*, the earth; L. **fem. n.** *aqua*, water; L. **pres. part.** *vivens*, living; N.L. **fem. n.** *Terraquivivens*, living in water from the earth

Nomenclatural type

Species *Terraquivivens tikiterensis*^{T5}

Description

Genomes of members of this genus were recovered from metagenomic sequencing of samples obtained from geothermal springs from China, New Zealand and USA. AAI values among members of different species within the genus range between 78 and 86 %. Based on ancestral state reconstruction analysis, likely losses of cytochrome C oxidase and aerobic carbon monoxide dehydrogenase subunit encoding genes occurred in an ancestral population to the genus, indicating that members of this genus are likely anaerobes. Although no *in vitro* evidence of tungsten utilization or dependence for this organism is available, the presence of genes encoding the tungstate ABC transporter (*tupABC*) is conserved within the genus, which suggest the ability to take up tungstate from the environment. Of the tungsten-dependent AORs investigated in this study, several are conserved within the genus, but the type of aldehydes oxidized by these enzymes remain unclear. Sulfide-dependent respiration is likely in these organisms as sulfide:quinone oxidoreductase (*sqr*)-encoding genes are mostly present in the genomes of these organisms. Delineation of this taxon as a genus-level group is supported by phylogenomics, AAI and RED values.

Classification

Incertae sedis (Archaea) » "Caldarchaeales" » *Wolframiiiraptoraceae* » *Terraquivivens*

References

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

Registry URL

<https://seqco.de/i:22827>

References

1. Buessecker et al. (2022). An essential role for tungsten in the ecology and evolution of a previously uncultivated lineage of anaerobic, thermophilic Archaea. *Nature Communications*. DOI:10.1038/s41467-022-31452-8