

## Order *Asgardarchaeales*

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### Etymology

[As.gar.dar.chae.a'les] **N.L. neut. n.** *Asgardarchaeum*, referring to the type genus *Asgardarchaeum*; *-ales*, ending to denote an order; **N.L. fem. pl. n.** *Asgardarchaeales*, the *Asgardarchaeum* order

### Nomenclatural type

Genus *Asgardarchaeum*

### Description

Based on protein content and compositional features, we infer that *Asgardarchaeia* is an acetogenic chemoheterotroph, possibly a facultative lithoautotroph, and is adapted to a thermophilic lifestyle. Utilizing genomes from Asgard archaea, TACK, and Euryarchaea, we perform phylogenomic reconstructions using the GTDB archaeal marker genes, the current reference set for taxonomic classification. Calibrating relative evolutionary divergence (RED) values for *Asgardarchaeota* using established *Thermoproteota* lineages in the GTDB r207 reference tree, we establish a robust classification and propose *Asgardarchaeum* as the type genus for the family *Asgardarchaeaceae*, the order *Asgardarchaeales*, the class *Asgardarchaeia* and the phylum *Asgardarchaeota*.

### Classification

*Archaea* » *Asgardarchaeota* » *Asgardarchaeia* » *Asgardarchaeales*

### References

Effective publication: Tamarit et al., 2024 [1]

### Registry URL

<https://seqco.de/i:44141>

## References

1. Tamarit et al. (2024). Description of *Asgardarchaeum abyssi* gen. nov. spec. nov., a novel species within the class *Asgardarchaeia* and phylum *Asgardarchaeota* in accordance with the SeqCode. *Systematic and Applied Microbiology*. DOI:10.1016/j.syapm.2024.126525