

# Register list for 7 new names including Poseidoniales ord. nov.

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## Abstract

The register list covers the proposal of two type species; *Poseidonia* *alphae* (GCA\_002505405.1) representing subgroup MG IIa and *Thalassarchaeum* *betae* (PSPG00000000) representing subgroup MG IIb. Based on these type species/genera, we further propose the families *Poseidoniaceae* fam. nov. and *Thalassarchaeaceae* fam. nov., the order *Poseidoniales* ord. nov. (formerly known as Marine Group II or MG II), and the class *Candidatus* *Poseidoniia* class nov. Note that the term *Candidatus* used in the effective publication has been omitted from the register.

## Class *Poseidoniia*

### Etymology

[Po.se.i.do.ni'i.a] N.L. fem. n. *Poseidonia*, referring to the type genus *Poseidonia*; *-ia*, ending to denote a class; N.L. neut. pl. n. *Poseidoniia*, the *Poseidonia* class

### Nomenclatural type

Genus *Poseidonia*

### Description

The description is the same as for *Poseidonia* gen. nov. with the following additions; *Poseidoniia* class. nov. comprises the type order *Poseidoniales* ord. nov. and order Marine group III (MGIII).

### Classification

*Archaea* » “*Poseidoniota*” » *Poseidoniia*

### References

Effective publication: Rinke et al., 2019 [1]

### Registry URL

<https://seqco.de/i:41458>

## Order *Poseidoniales*

### Etymology

[Po.se.i.do.ni.a'les] N.L. fem. n. *Poseidonia*, referring to the type genus *Poseidonia*; *-ales*, ending to denote an order; N.L. fem. pl. n. *Poseidoniales*, the *Poseidonia* order

### Nomenclatural type

Genus *Poseidonia*

### Description

The description is the same as for *Candidatus* *Poseidonia* gen. nov. with the following additions; *-ales* ending to denote a order. *Candidatus* *Poseidoniales* ord. nov. was previously known as “Marine Group II” and comprises two families *Candidatus* *Poseidoniaceae* fam. nov. and *Candidatus* *Thalassarchaeaceae* fam. nov.

### Classification

*Archaea* » “*Poseidoniota*” » *Poseidoniia* » *Poseidoniales*

**References**

Effective publication: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:41459>

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**Family *Poseidoniaceae***

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**Etymology**

[Po.se.i.do.ni.a'ce.ae] N.L. **fem. n.** *Poseidonia*, referring to the type genus *Poseidonia*; *-aceae*, ending to denote a family; N.L. **fem. pl. n.** *Poseidoniaceae*, the *Poseidonia* family

**Nomenclatural type**

Genus *Poseidonia*

**Description**

The description is the same as for *Poseidonia* gen. nov. with the following additions. *Poseidoniaceae* fam. nov. was previously known as and “**Group II- $\alpha$** ” and “**Marine Group IIa**”. Eleven genus-level clades I, J1, J2, J3, K1, K2, L1, L2, L3, L4, and *Poseidonia* (M) representing the rank of genera were assigned to this family. All members of the family were inferred to be marine, motile heterotrophs, encoding phototrophic and non-phototrophic lifestyles with a distribution from surface waters to the deep sea (1m-500m). Type genus: *Poseidonia* gen. nov.

**Classification**

*Archaea* » “*Poseidoniota*” » *Poseidoniia* » *Poseidoniales* » *Poseidoniaceae*

**References**

Effective publication: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:41476>

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**Family *Thalassarchaeaceae***

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**Etymology**

[Tha.las.sar.chae.a'ce.ae] N.L. **neut. n.** *Thalassarchaeum*, referring to the type genus *Thalassarchaeum*; *-aceae*, ending to denote a family; N.L. **fem. pl. n.** *Thalassarchaeaceae*, the *Thalassarchaeum* family

**Nomenclatural type**

Genus *Thalassarchaeum*

**Description**

*Thalassarchaeaceae* fam. nov. formerly Marine Group II (MGII) subgroup b, also known as MGIIb, is a family of the globally abundant marine order *Poseidoniales*.

**Classification**

*Archaea* » “*Poseidoniota*” » *Poseidoniia* » *Poseidoniales* » *Thalassarchaeaceae*

**References**

Effective publication: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:41460>

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**Genus *Thalassarchaeum***

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**Etymology**

[Tha.las.sar.chae'um] **Gr. fem. n.** *thalassa*, the sea; also the primeval spirit of the sea; ; **N.L. neut. n.** *archaeum*, (from Gr. adj. archaios -ê -on, ancient) archaeon; **N.L. neut. n.** *Thalassarchaeum*, the archaeon from the sea

**Nomenclatural type**

Species *Thalassarchaeum betae*<sup>Ts</sup>

**Description**

*Thalassarchaeum* the archaeon from the sea. Inferred to be of marine origin, representing non-motile, aerobic heterotrophs containing phototrophic and non-phototrophic members. Formerly identified as **clade O** and now as **genus O4** (this study). This genus name is proposed for continuity with the orthographically incorrect "*Thalassoarchaea*" suggested by [10.1038/ismej.2014.249] for low GC MGIIb fosmid-genomes. Type species: *Thalassarchaeum betae*.

**Classification**

*Archaea* » "Poseidoniota" » *Poseidoniia* » *Poseidoniales* » *Thalassarchaeaceae* » *Thalassarchaeum*

**References**

Effective publication: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:41473>

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**Genus *Poseidonia***

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**Etymology**

[Po.se.i.do'ni.a] **N.L. fem. n.** *Poseidonia*, named after Poseidon, the Greek god of the sea

**Nomenclatural type**

Species *Poseidonia alphae*<sup>Ts</sup>

**Description**

*Poseidonia* named after Poseidon, the Greek god of the sea. Inferred to be of marine origin, a motile, aerobic, photoheterotroph, and able to ferment a wide range of carbohydrates with a focus on peptides. Highest abundances were recorded for surface waters (0-10m). Formerly identified as **clade M**.

**Classification**

*Archaea* » "Poseidoniota" » *Poseidoniia* » *Poseidoniales* » *Poseidoniaceae* » *Poseidonia*

**References**

Effective publication: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:39404>

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**Species *Poseidonia alphae*<sup>Ts</sup>**

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**Etymology**

[alphae] **N.L. gen. n.** *alphae*, alpha, the first letter of Greek alphabet; to honour the original description of this group as II- $\alpha$

**Nomenclatural type**

[NCBI Assembly: GCA\\_002505405.1](#)<sup>Ts</sup>

**Description**

*Poseidonia* named after Poseidon, the Greek god of the sea). Inferred to be of marine origin, a motile, aerobic, photoheterotroph, and able to ferment a wide range of carbohydrates with a focus on peptides. Highest abundances were recorded for surface waters (0-10m).

**Classification**

Archaea » "Poseidoniota" » *Poseidoniia* » *Poseidoniales* » *Poseidoniaceae* » *Poseidonia* » *Poseidonia alphae*<sup>Ts</sup>

**References**

Effective publication: Rinke et al., 2019 [1]

Assigned taxonomically: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:41495>

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**Species *Thalassarchaeum betae*<sup>Ts</sup>**

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**Etymology**

[be'tae] N.L. gen. n. *betae*, the second letter for the Greek alphabet; named to honour the original description of this group as II-β

**Nomenclatural type**

[NCBI Assembly: GCA\\_003193925.1](#)<sup>Ts</sup>

**Description**

Description is the same as for *Candidatus* *Thalassarchaeum* gen. nov. Represented by the MAG (metagenome-assembled genome) GCA\_003193925.1 (former ID: PSPG00000000) with a genome size of 1.48 Mbp; obtained from metagenomic sequences retrieved from water deep sea water sample (1953 to 4946m) from the Mid-Cayman Rise, in western Caribbean Sea (18.32 N, 81.43 W).

**Classification**

Archaea » "Poseidoniota" » *Poseidoniia* » *Poseidoniales* » *Thalassarchaeaceae* » *Thalassarchaeum* » *Thalassarchaeum betae*<sup>Ts</sup>

**References**

Effective publication: Rinke et al., 2019 [1]

Assigned taxonomically: Rinke et al., 2019 [1]

**Registry URL**

<https://seqco.de/i:44377>

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**References**

1. Rinke et al. (2019). A phylogenomic and ecological analysis of the globally abundant Marine Group II archaea (*Ca.* *Poseidoniales* ord. nov.). *The ISME Journal*. DOI:10.1038/s41396-018-0282-y

## 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:ejqyx6s9](https://seqco.de/r:ejqyx6s9) submitted by **Rinke, Chris** and including 8 new names has been successfully validated.

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