

# Register list for 38 new names from Eremiobacterota including Xenobiaceae fam. nov.

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## Class *Xenobiia*

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### Etymology

[Xe.no.bi'ia] N.L. neut. n. *Xenobium*, foreign life, referencing the artificial environment from which it was recovered; *-ia*, ending to denote a class; N.L. neut. pl. n. *Xenobiia*, the *Xenobium* class

### Nomenclatural type

Genus *Xenobium*

### Description

Class defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB. Defined as a class-level lineage based on UBP9 in Parks et al (2017).

### Classification

*Bacteria* » *Eremiobacterota* » *Xenobiia*

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:31316>

## Class *Eremiobacteria*

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### Etymology

[E.re.mi.o.bac.te'ri.a] N.L. masc. n. *Eremiobacter*, a rod from a desert; *-ia*, ending to denote a class; N.L. neut. pl. n. *Eremiobacteria*, the *Eremiobacter* class

### Nomenclatural type

Genus *Eremiobacter*

### Description

Class defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria*

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:41723>

## Order *Xenobiales*

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### Etymology

[Xe.no.bi.a'les] N.L. neut. n. *Xenobium*, foreign life, referencing the artificial environment from which it was recovered; *-ales*, ending to denote an order; N.L. fem. pl. n. *Xenobiales*, the *Xenobium* order

**Nomenclatural type**Genus *Xenobium***Description**

Order defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB. Defined as an order-level lineage based on UBA4705 in Parks et al (2017).

**Classification***Bacteria* » *Eremiobacterota* » *Xenobiia* » *Xenobiales***References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**<https://seqco.de/i:31315>

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**Order *Eremiobacterales***

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**Etymology**

[E.re.mi.o.bac.te.ra'les] **N.L. masc. n.** *Eremiobacter*, a rod from a desert; *-ales*, ending to denote an order; **N.L. fem. pl. n.** *Eremiobacterales*, the Eremiobacter order

**Nomenclatural type**Genus *Eremiobacter***Description**

Order defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification***Bacteria* » *Eremiobacterota* » *Eremiobacteria* » *Eremiobacterales***References**

Effective publication: Ji et al., 2021 [1]

Assigned taxonomically: Yabe et al., 2023 [2]

**Registry URL**<https://seqco.de/i:41907>

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**Family *Xenobiaceae***

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**Etymology**

[Xe.no.bi.a.ce'ae] **N.L. neut. n.** *Xenobium*, foreign life, referencing the artificial environment from which it was recovered; *-aceae*, ending to denote a family; **N.L. fem. pl. n.** *Xenobiaceae*, the Xenobium family

**Nomenclatural type**Genus *Xenobium***Description**

Family defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB. Defined as a family-level lineage based on UBA4705 in Parks et al (2017).

**Classification***Bacteria* » *Eremiobacterota* » *Xenobiia* » *Xenobiales* » *Xenobiaceae***References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**<https://seqco.de/i:41921>

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## Family *Eremiobacteraceae*

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### Etymology

[E.re.mi.o.bac.ter.a.ce'ae] N.L. **masc. n.** *Eremiobacter*, a rod from a desert; N.L. **suff.** *-aceae*, ending to denote a family; N.L. **fem. pl. n.** *Eremiobacteraceae*, the Eremiobacter family

### Nomenclatural type

Genus *Eremiobacter*

### Description

Family defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » *Eremiobacterales* » *Eremiobacteraceae*

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:41908>

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## Genus *Tyrphobacter*

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### Etymology

[Tyr.pho.ba'cter] Gr. **n.** *tyrpha*, *-ae*, peat; N.L. **masc. n.** *bacter*, a rod; N.L. **masc. n.** *Tyrphobacter*, bacterium from the peat, in reference to the recovery from peatlands

### Nomenclatural type

Species *Tyrphobacter aquilonaris*<sup>Ts</sup>

### Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Tyrphobacter*

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:43316>

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## Genus *Erabacter*

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### Etymology

[Era.bac'ter] Gr. **fem. n.** *era*, *-ae*, earth; N.L. **masc. n.** *bacter*, a rod; N.L. **masc. n.** *Erabacter*, earth bacterium, in reference to the recovery from soil

### Nomenclatural type

Species *Erabacter solicola*<sup>Ts</sup>

### Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Erabacter*

### References

Effective publication: Ji et al., 2021 [1]

## Registry URL

<https://seqco.de/i:43329>

## Genus *Cybelea*

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## Etymology

[Cy.be'le.a] N.L. fem. n. *Cybelea*, a bacterium named after Cybele, an ancient Anatolian earth goddess, in reference to the recovery from soil

## Nomenclatural type

Species *Cybelea septentrionalis*<sup>Ts</sup>

## Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

## Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » "Baltobacterales" » "Baltobacteraceae" » *Cybelea*

## References

Effective publication: Ji et al., 2021 [1]

## Registry URL

<https://seqco.de/i:42538>

## Genus *Nyctobacter*

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## Etymology

[Nyc.to.ba'cter] Gr. fem. n. *Nyx*, primordial goddess of the night in Greek mythology; N.L. masc. n. *bacter*, a rod; N.L. masc. n. *Nyctobacter*, referring to a bacterium capable of 'dark' carbon fixation (chemolithoautotrophy), as well as the long and dark winter of Antarctica

## Nomenclatural type

Species *Nyctobacter psychrophilus*<sup>Ts</sup>

## Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

## Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » "Baltobacterales" » "Baltobacteraceae" » *Nyctobacter*

## References

Effective publication: Ji et al., 2021 [1]

## Registry URL

<https://seqco.de/i:42523>

## Genus *Xenobium*

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## Etymology

[Xe.no'bi.um] Gr. adj. *xenos*, strange, foreign; Gr. masc. n. *bios*, life; N.L. neut. n. *Xenobium*, foreign life, referencing the artificial environment from which it was recovered

## Nomenclatural type

Species *Xenobium occultum*<sup>Ts</sup>

## Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Xenobiia* » *Xenobiales* » *Xenobiaceae* » *Xenobium*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:41922>

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## Genus *Meridianibacter*

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**Etymology**

[Me.ri.di.a.ni.bac'ter] L. masc. adj. *meridianus*, southern; N.L. masc. n. *bacter*, a rod; N.L. masc. n. *Meridianibacter*, southern bacterium, in reference to the recovery from Antarctic soil

**Nomenclatural type**

Species *Meridianibacter frigidus*<sup>Ts</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Meridianibacter*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43148>

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## Genus *Velthaea*

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**Etymology**

[Vel.tha'ea] N.L. fem. n. *Velthaea*, bacterium named after ancient Etruscan earth god Veltha, in reference to to the recovery from soil

**Nomenclatural type**

Species *Velthaea versatilis*<sup>Ts</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Velthaea*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43525>

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## Genus *Tumulicola*

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**Etymology**

[Tu.mu.li'co.la] L. masc. n. *tumulus*, mound, hill; L. masc. / fem. suff. *-cola*, inhabitant, dweller; N.L. fem. n. *Tumulicola*, mound-dweller, in reference to the recovery from a palsa (mound)

**Nomenclatural type**

Species *Tumulicola scandinaviensis*<sup>Ts</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Tumulicola*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43732>

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**Genus *Eremiobacter***

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**Etymology**

[E.re.mi.o.bac'ter] Gr. fem. n. *eremia*, desert, wilderness; N.L. masc. n. *bacter*, a rod; N.L. masc. n. *Eremiobacter*, a rod from a desert

**Nomenclatural type**

Species *Eremiobacter antarcticus*<sup>T5</sup>

**Description**

Type genus of Eremiobacterota. Genus defined based on phylogenomics of 38 conserved marker genes and the lack of any named close relative at the time.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » *Eremiobacterales* » *Eremiobacteraceae* » *Eremiobacter*

**References**

Effective publication: Ji et al., 2021 [1]

Original (not valid) publication: Ji et al., 2017 [3]

Assigned taxonomically: Ji et al., 2017 [3]

**Registry URL**

<https://seqco.de/i:42508>

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**Genus *Elarobacter***

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**Etymology**

[E.la.ro.bac'ter] Gr. fem. n. *Elara*, maiden in Greek mythology who was hidden beneath the earth, where she gave birth to Tityus; N.L. masc. n. *bacter*, a rod; N.L. masc. n. *Elarobacter*, in reference to a bacterium recovered from soil

**Nomenclatural type**

Species *Elarobacter winogradsky*<sup>T5</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Elarobacter*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:41726>

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**Genus *Mawsoniella***

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**Etymology**

[Maw.so'ni.el.la] N.L. fem. dim. n. *Mawsoniella*, in honor of Sir Douglas Mawson, an Australian Antarctic explorer and pioneer

**Nomenclatural type**

Species *Mawsoniella australis*<sup>Ts</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » *Eremiobacterales* » *Eremiobacteraceae* » *Mawsoniella*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:42719>

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**Genus *Lustribacter***

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**Etymology**

[Lus.tri.bac'ter] L. neut. n. *lustrum*, bog; N.L. masc. n. *bacter*, a rod; N.L. masc. n. *Lustribacter*, bacterium from the bog, in reference to the recovery from a bog

**Nomenclatural type**

Species *Lustribacter telmatis*<sup>Ts</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » "Baltobacterales" » "Baltobacteraceae" » *Lustribacter*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:42844>

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**Genus *Bruticola***

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**Etymology**

[Bru.ti.co'la] L. masc. n. *brutus*, of animals, beasts; L. masc. / fem. suff. *-cola*, inhabitant, dweller; N.L. fem. n. *Bruticola*, animal-dweller, in reference to the mammal (baboon) fecal microbiome

**Nomenclatural type**

Species *Bruticola papionis*<sup>Ts</sup>

**Description**

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Xenobiia* » *Xenobiales* » *Xenobiaceae* » *Bruticola*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:41962>

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## Genus *Zemelea*

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### Etymology

[Ze.me.le'a] N.L. fem. n. *Zemelea*, , named for Zemele, Lithuanian earth goddess, in reference to the recovery from soil

### Nomenclatural type

Species *Zemelea palustris*<sup>Ts</sup>

### Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Zemelea*

### References

Effective publication: Ji et al., 2021 [1]

Assigned taxonomically: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:48243>

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## Genus *Tityobacter*

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### Etymology

[Ti.ty.o.ba'cter] Gr. masc. n. *Tityos*, in Greek mythology, giant born from the earth, son of Elara; N.L. masc. n. *bacter*, a rod; N.L. masc. n. *Tityobacter*, bacterium named after Tityos (giant born from the earth), in reference to the recovery from soil

### Nomenclatural type

Species *Tityobacter terrigena*<sup>Ts</sup>

### Description

Genus defined based on 16S rRNA phylogeny and phylogenomic analysis of 15 ribosomal proteins and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Tityobacter*

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:43379>

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## Species *Xenobium occultum*<sup>Ts</sup>

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### Etymology

[oc.cul'tum] L. neut. adj. *occultum*, hidden

### Nomenclatural type

[NCBI Assembly: GCA\\_002423485.1](#)<sup>Ts</sup>

### Description

Obligate heterotroph. Microaerobic; anaerobic respiration by DNRA. Fermentative. Organic substrates include peptides, amino acids, carboxylates, glycerol, poly- and oligosaccharides, sugars, 4-hydroxybenzoate. Degradation of  $\beta$ -glucosides (GH3), cellulose (endoglucanase GH5\_5), starch (cyclomaltodextrinase GH13, and GH13\_2; 4- $\alpha$ -glucanotransferase GH77), maltodextrin (GH13\_21),  $\alpha$ -glucans (GH31), trehalose (GH37), and xyloglucan (GH74). PHA storage; glycogen storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.



**Classification**

*Bacteria* » *Eremiobacterota* » *Xenobiia* » *Xenobiales* » *Xenobiaceae* » *Xenobium* » *Xenobium occultum*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43215>

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**Species *Cybelea septentrionalis*<sup>Ts</sup>**

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**Etymology**

[sep.ten.tri.o.na'lis] L. fem. adj. *septentrionalis*, northern

**Nomenclatural type**

[NCBI Assembly: GCA\\_003158175.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. Hydrogen oxidation using Group 1h [NiFe] hydrogenase. Organic substrates include peptides, amino acids, carboxylates, taurine, urea, sarcosine, PVA, arylsulfates, poly- and oligosaccharides, sugars, fluoroacetate. Degradation of  $\beta$ -glucan (GH1, GH16), cellulose/ $\beta$ -glucan (GH5\_40), chitin (GH18),  $\beta$ -D-galactoside (GH35), and xyloglucan (GH74). PHA storage. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Cybelea* » *Cybelea septentrionalis*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43849>

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**Species *Erabacter solicola*<sup>Ts</sup>**

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**Etymology**

[so.li.co'la] L. neut. n. *solum*, soil; L. masc. / fem. suff. *-cola*, inhabitant, dweller; N.L. masc. n. *solicola*, inhabitant of the soil

**Nomenclatural type**

[NCBI Assembly: GCA\\_003136895.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. Organic substrates include peptides, amino acids, carboxylates, sarcosine, poly- and oligosaccharides, sugars. PHA storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Erabacter* » *Erabacter solicola*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43330>

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## Species *Tyrphobacter aquilonaris*<sup>Ts</sup>

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### Etymology

[aqui.lo.na'ris] L. masc. adj. *aquilonaris*, northern, northerly

### Nomenclatural type

[NCBI Assembly: GCA\\_003133745.1](#)<sup>Ts</sup>

### Description

Obligate heterotroph. Organic substrates include peptides, amino acids, carboxylates, methanol, poly- and oligosaccharides, sugars. PHA storage. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Tyrphobacter* » *Tyrphobacter aquilonaris*<sup>Ts</sup>

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:43739>

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## Species *Nyctobacter psychrophilus*<sup>Ts</sup>

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### Etymology

[psy.chro'phi.lus] Gr. adj. *psychros*, cold; Gr. adj. *philos*, loving; N.L. masc. adj. *psychrophilus*, cold-loving

### Nomenclatural type

[NCBI Assembly: GCA\\_014305025.1](#)<sup>Ts</sup>

### Description

Heterotroph and autotroph. Hydrogenotrophic chemolithoautotrophy using Group 1h [NiFe] hydrogenase and CBB cycle; capable of using atmospheric H<sub>2</sub>. Organic substrates include peptides, amino acids, carboxylates, poly- and oligosaccharides, sugars. PHA storage; glycogen storage. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Nyctobacter* » *Nyctobacter psychrophilus*<sup>Ts</sup>

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:42524>

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## Species *Velthaea versatilis*<sup>Ts</sup>

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### Etymology

[ver.sa'ti.lis] L. fem. adj. *versatilis*, versatile, in reference to metabolic versatility

### Nomenclatural type

[NCBI Assembly: GCA\\_003134035.1](#)<sup>Ts</sup>

**Description**

Heterotroph and autotroph. Hydrogenotrophic chemolithoautotrophy using Group 1h [NiFe] hydrogenase and CBB cycle; capable of using atmospheric H<sub>2</sub>. Photoautotrophy; carboxysomes; photoreceptors. CO oxidation. Anaerobic respiration: sulfoxides. Assimilatory nitrate reduction. Organic substrates include peptides, amino acids, carboxylates, glycerol, taurine, urea, cyanate, sarcosine, alcohols (including methanol, ethanol), poly- and oligosaccharides, sugars, catechol, propane. PHA storage; glycogen storage. Motile by flagella (including phototaxis). Polyphosphate storage. Bidirectional [NiFe] hydrogenase (Group 3b). Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Velthaea* » *Velthaea versatilis*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43526>

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**Species *Tumulicola scandinavensis*<sup>Ts</sup>**

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**Etymology**

[scan.di.na.vi.en'sis] L. **fem. n.** *Scandinavia*, region in northern Europe; *-ensis*, of or from (a place); **N.L. fem. adj.** *scandinavensis*, from Scandinavia (Sweden)

**Nomenclatural type**

[NCBI Assembly: GCA\\_003140835.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. CO oxidation. Organic substrates include peptides, amino acids, carboxylates, taurine, acetate, sarcosine, arylsulfates, poly- and oligosaccharides, sugars. PHA storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Tumulicola* » *Tumulicola scandinavensis*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43733>

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**Species *Mawsoniella australis*<sup>Ts</sup>**

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**Etymology**

[aus.tra'lis] L. **fem. adj.** *australis*, southern, of the south wind, in reference to the recovery from the southern continent of Antarctica

**Nomenclatural type**

[NCBI Assembly: GCA\\_014304875.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. Hydrogen oxidation using Group 1h [NiFe] hydrogenase. Organic substrates include peptides, amino acids, carboxylates, sarcosine, oligosaccharides, sugars, catechol, 4hydroxybenzoate. PHA storage. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » *Eremiobacterales* » *Eremiobacteraceae* » *Mawsoniella* » *Mawsoniella australis*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:42720>

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**Species *Cybelea tumulisoli***

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**Etymology**

[tu.mu.li.so'li] L. **masc. n.** *tumulus*, mound, hill; L. **neut. n.** *solum*, soil; N.L. **gen. n.** *tumulisoli*, from the mound soil, in reference to palsa

**Nomenclatural type**

[NCBI Assembly: GCA\\_003167155.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. Organic substrates include peptides, amino acids, carboxylates, taurine, urea, sarcosine, PVA, arylsulfates, poly- and oligosaccharides, sugars, fluoroacetate. Degradation of  $\beta$ -glucan (GH1), xylan (GH10), chitin (GH18), and xyloglucan (GH74). PHA storage. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Cybelea* » *Cybelea tumulisoli*

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43786>

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**Species *Elarobacter winogradskyi*<sup>Ts</sup>**

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**Etymology**

[wi.no.grad'skiy] N.L. **gen. n.** *winogradskyi*, in honor of Sergei Winogradsky, Russian microbiologist and ecologist

**Nomenclatural type**

[NCBI Assembly: GCA\\_003134965.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. CO oxidation. Organic substrates include peptides, amino acids, carboxylates, glycerol, urea, acetate, sarcosine, formate, ethanol, oligosaccharides, sugars, fluoroacetate. Degradation of trehalose (GH15),  $\alpha$ -mannoside (GH38), and xyloglucan (GH74). PHA storage; glycogen storage. Polyphosphate storage. Motile by flagella. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Elarobacter* » *Elarobacter winogradskyi*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:41727>

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## Species *Eremiobacter antarcticus*<sup>TS</sup>

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### Etymology

[an.tar'cti.cus] L. **masc. adj.** *antarcticus*, southern, pertaining to Antarctica

### Nomenclatural type

[NCBI Assembly: GCA\\_003244105.1](#)<sup>TS</sup>

### Description

Heterotroph and autotroph. Hydrogenotrophic chemolithoautotrophy using Group 1h [NiFe] hydrogenase and CBB cycle; capable of using atmospheric H<sub>2</sub>. Organic substrates include peptides, amino acids, carboxylates, acetate, sarcosine, formate, methanol, poly- and oligosaccharides, sugars, catechol, 4-hydroxybenzoate. Glycogen storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » *Eremiobacterales* » *Eremiobacteraceae* » *Eremiobacter* » *Eremiobacter antarcticus*<sup>TS</sup>

### References

Effective publication: Ji et al., 2021 [1]  
Assigned taxonomically: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:42509>

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## Species *Bruticola papionis*<sup>TS</sup>

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### Etymology

[pa.pi.o'nis] N.L. **gen. n.** *papionis*, pertaining to Papio, the primate genus that includes baboons

### Nomenclatural type

[NCBI Assembly: GCA\\_002407045.1](#)<sup>TS</sup>

### Description

Obligate heterotroph. Fermentative (no respiration). Organic substrates include peptides, amino acids, citrate, starch, maltodextrin, glucose. Bidirectional Fe-only hydrogenases (for redox balance?). Glycogen storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Xenobiia* » *Xenobiales* » *Xenobiaceae* » *Bruticola* » *Bruticola papionis*<sup>TS</sup>

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:41963>

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## Species *Zemelea palustris*<sup>TS</sup>

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### Etymology

[pa.lus'tris] L. **fem. adj.** *palustris*, marshy, swampy

### Nomenclatural type

[NCBI Assembly: GCA\\_003134695.1](#)<sup>TS</sup>

### Description

Obligate heterotroph. Anaerobic respiration: nitrate. Organic substrates include peptides, amino acids, carboxylates, sarcosine, formate, poly- and oligosaccharides, sugars. PHA storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Zemelea* » *Zemelea palustris*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]  
Assigned taxonomically: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:41948>

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**Species *Meridianibacter frigidus*<sup>Ts</sup>**

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**Etymology**

[fri'gi.dus] L. masc. adj. *frigidus*, cold

**Nomenclatural type**

[NCBI Assembly: GCA\\_003243975.1](#)<sup>Ts</sup>

**Description**

Obligate heterotroph. Organic substrates include peptides, amino acids, carboxylates, poly- and oligosaccharides, sugars. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Meridianibacter* » *Meridianibacter frigidus*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43149>

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**Species *Tityobacter terrigena*<sup>Ts</sup>**

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**Etymology**

[ter.ri.ge'na] L. masc. adj. *terrigena*, born of or from the earth; L. masc. adj. *terrigena*, earth-born; in reference to the recovery from soil

**Nomenclatural type**

[NCBI Assembly: GCA\\_003156715.1](#)<sup>Ts</sup>

**Description**

Heterotroph and autotroph. CO oxidation. Hydrogenotrophic chemolithoautotrophy using Group 1h [NiFe] hydrogenase and CBB cycle; capable of using atmospheric H<sub>2</sub>. Organic substrates include peptides, amino acids, carboxylates, glycerol, taurine, acetate, alcohols (including methanol, ethanol, polyvinyl alcohol), aldehydes, poly- and oligosaccharides, sugars, fluoroacetate, catechol. Glycogen storage. Polyphosphate storage. BMC for sequestering toxic metabolites. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

**Classification**

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Tityobacter* » *Tityobacter terrigena*<sup>Ts</sup>

**References**

Effective publication: Ji et al., 2021 [1]

**Registry URL**

<https://seqco.de/i:43380>

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## Species *Lustribacter telmatis*<sup>Ts</sup>

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### Etymology

[tel'ma.tis] Gr. n. *telma*, swamp; N.L. gen. n. *telmatis*, of the bog

### Nomenclatural type

[NCBI Assembly: GCA\\_003164045.1](#)<sup>Ts</sup>

### Description

Obligate heterotroph. Hydrogen oxidation using Group 1h [NiFe] hydrogenase. Anaerobic respiration: urocanate. Organic substrates include peptides, amino acids, carboxylates, taurine, urea, cyanate, acetate, formate, alcohols (including methanol, ethanol), arylsulfates, alkanesulfonates, oligosaccharides, sugars, fluoroacetate, halobenzoate, phenoxypropionate, ethylbenzene, 4-hydroxybenzoate, 4-sulfocatechol. PHA storage; glycogen storage. Motile by flagella. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Lustribacter* » *Lustribacter telmatis*<sup>Ts</sup>

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:42845>

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## Species *Cybelea palsarum*

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### Etymology

[pa.l.sa'rum] N.L. fem. n. *palsa*, peat mound (from Finnish *palsa*); N.L. gen. pl. n. *palsarum*, from *palsa* wetlands

### Nomenclatural type

[NCBI Assembly: GCA\\_003166915.1](#)<sup>Ts</sup>

### Description

Obligate heterotroph. Organic substrates include peptides, amino acids, carboxylates, taurine, urea, sarcosine, PVA, arylsulfates, poly- and oligosaccharides, sugars, fluoroacetate. Degradation of  $\beta$ -glucan (GH1, GH16), cellulose/ $\beta$ -glucan (GH5\_40), chitin (GH18),  $\beta$ -D-galactoside (GH35), and xyloglucan (GH74). PHA storage. Polyphosphate storage. Also defined based on ANI, and phylogenies of 16S rRNA gene, 15 ribosomal proteins, and the GTDB.

### Classification

*Bacteria* » *Eremiobacterota* » *Eremiobacteria* » “Baltobacterales” » “Baltobacteraceae” » *Cybelea* » *Cybelea palsarum*

### References

Effective publication: Ji et al., 2021 [1]

### Registry URL

<https://seqco.de/i:43705>

## References

1. Ji et al. (2021). *Candidatus* Eremiobacterota, a metabolically and phylogenetically diverse terrestrial phylum with acid-tolerant adaptations. *The ISME Journal*. DOI:10.1038/s41396-021-00944-8
2. Yabe et al. (2023). Correction: *Vulcanimicrobium alpinus* gen. nov. sp. nov., the first cultivated representative of the candidate phylum “Eremiobacterota”, is a metabolically versatile aerobic anoxygenic phototroph. *ISME Communications*. DOI:10.1038/s43705-023-00301-0
3. Ji et al. (2017). Atmospheric trace gases support primary production in Antarctic desert surface soil. *Nature*. DOI:10.1038/nature25014

### 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/rtgimo_87` submitted by Ferrari, Belinda and including 38 new names has been successfully validated.

Date of Priority: 2024-10-17 12:47 UTC

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