

Register list for 21 new names including *Kuafuiibacterium* gen. nov.

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Class *Kuafuiibacteriia*

Etymology

[Kua'fu.i.i.bac.te.ri.ia] **N.L. neut. n.** *Kuafuiibacterium*, referring to the type genus *Kuafuiibacterium*; *-ia*, ending to denote a class; **N.L. neut. pl. n.** *Kuafuiibacteriia*, the *Kuafuiibacterium* class

Nomenclatural type

Genus *Kuafuiibacterium*

Description

The description is the same as that for the genus *Kuafuiibacterium*. The type genus is *Kuafuiibacterium*. The class belongs to the phylum *Myxococcota*.

Classification

Bacteria » *Myxococcota* » *Kuafuiibacteriia*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32868>

Order *Kuafuiibacteriales*

Etymology

[Kua'fu.i.i.bac.te.ri.a'les] **N.L. neut. n.** *Kuafuiibacterium*, referring to the type genus *Kuafuiibacterium*; *-ales*, ending to denote an order; **N.L. fem. pl. n.** *Kuafuiibacteriales*, the *Kuafuiibacterium* order

Nomenclatural type

Genus *Kuafuiibacterium*

Description

The description is the same as that for the genus *Kuafuiibacterium*. The type genus is *Kuafuiibacterium*. The order belongs to the class *Kuafuiibacteriia*.

Classification

Bacteria » *Myxococcota* » *Kuafuiibacteriia* » *Kuafuiibacteriales*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32867>

Family *Houyiibacteriaceae*

Etymology

[ˈHou.yi.i.bac.te.ri.a.ce'ae] **N.L. neut. n.** *Houyiibacterium*, referring to the type genus *Houyiibacterium*; *-aceae*, ending to denote a family; **N.L. fem. pl. n.** *Houyiibacteriaceae*, the *Houyiibacterium* family

Nomenclatural type

Genus *Houyiibacterium*

Description

The description is the same as that for the genus *Houyiibacterium*. The type genus is *Houyiibacterium*. The family belongs to the order *Polyangiales*.

Classification

Bacteria » *Myxococcota* » *Polyangiia* » *Polyangiales* » *Houyiibacteriaceae*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32835>

Family *Kuafuiibacteriaceae*

Etymology

[Kua'fu.i.i.bac.te.ri.a.ce'ae] **N.L. neut. n.** *Kuafuiibacterium*, referring to the type genus *Kuafuiibacterium*; *-aceae*, ending to denote a family; **N.L. fem. pl. n.** *Kuafuiibacteriaceae*, the *Kuafuiibacterium* family

Nomenclatural type

Genus *Kuafuiibacterium*

Description

The description is the same as that for the genus *Kuafuiibacterium*. The type genus is *Kuafuiibacterium*. The family belongs to the order *Kuafuiibacteriales*.

Classification

Bacteria » *Myxococcota* » *Kuafuiibacteriia* » *Kuafuiibacteriales* » *Kuafuiibacteriaceae*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32866>

Genus *Houyiibacterium*

Etymology

[ˈHou.yi.i.bac.te'ri.um] **N.L. masc. n.** *Houyi*, Sun-shooting archer in Chinese mythology; **L. neut. n.** *bacterium*, a bacterium; **N.L. neut. n.** *Houyiibacterium*, a microbe associated with phototrophy

Nomenclatural type

Species *Houyiibacterium oceanicum*^{Ts}

Description

The type species is *Houyiibacterium oceanica*.

Classification

Bacteria » *Myxococcota* » *Polyangiia* » *Polyangiales* » *Houyiibacteriaceae* » *Houyiibacterium*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32834>

Genus *Kuafuibacterium*

Etymology

[Kua'fu.i.i.bac.te'ri.um] **N.L. masc. n.** *Kuafu*, Sun-chasing giant in Chinese mythology; **L. neut. n.** *bacterium*, a bacterium; **N.L. neut. n.** *Kuafuibacterium*, a microbe associated with phototrophy

Nomenclatural type

Species *Kuafuibacterium phototrophicum*^{Ts}

Description

The type species is *Kuafuibacterium phototrophicum*.

Classification

Bacteria » *Myxococcota* » *Kuafuibacteriia* » *Kuafuibacteriales* » *Kuafuibacteriaceae* » *Kuafuibacterium*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32838>

Genus *Kuafuihalomonas*

Etymology

[Kua'fu.i.i.ha.lo.mo'nas] **N.L. masc. n.** *Kuafu*, Sun-chasing giant in Chinese mythology; **Gr. fem. n.** *hals*, sea, saline, salt; **L. fem. n.** *monas*, a monad; **N.L. fem. n.** *Kuafuihalomonas*, a microbe found in salt environments associated with phototrophy

Nomenclatural type

Species *Kuafuihalomonas phototrophica*^{Ts}

Description

The type species is *Kuafuihalomonas phototrophica*.

Classification

Bacteria » *Myxococcota* » *Kuafuibacteriia* » *Kuafuibacteriales* » *Kuafuibacteriaceae* » *Kuafuihalomonas*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32856>

Genus *Xiheibacterium*

Etymology

[Xi.he.i.bac.te'ri.um] **N.L. fem. n.** *Xihe*, Sun goddess in Chinese mythology; **L. neut. n.** *bacterium*, a bacterium; **N.L. neut. n.** *Xiheibacterium*, a microbe associated with phototrophy

Nomenclatural type

Species *Xiheibacterium phototrophicum*^{Ts}

Description

The type species is *Xiheibacterium phototrophicum*.

Classification

Bacteria » *Myxococcota* » *Polyangiia* » *Nannocystales* » *Nannocystaceae* » *Xiheibacterium*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32862>

Genus *Xiheicaenibacterium*

Etymology

[Xi.he.i.cae'ni.bac.te'ri.um] **N.L. fem. n.** *Xihe*, Sun goddess in Chinese mythology; **L. neut. n.** *caenum*, mud, sludge; **L. neut. n.** *bacterium*, a bacterium; **N.L. neut. n.** *Xiheicaenibacterium*, a microbe found in sludge environments associated with phototrophy

Nomenclatural type

Species *Xiheicaenibacterium phototrophicum*^{Ts}

Description

The type species is *Xiheicaenibacterium phototrophicum*.

Classification

Bacteria » *Myxococcota* » *Polyangiia* » *Polyangiales* » *Polyangiaceae* » *Xiheicaenibacterium*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32863>

Genus *Xiheicaenimonas*

Etymology

[Xi.he.i.cae'ni.mo'nas] **N.L. fem. n.** *Xihe*, Sun goddess in Chinese mythology; **L. neut. n.** *caenum*, mud, sludge; **L. fem. n.** *monas*, a monad; **N.L. fem. n.** *Xiheicaenimonas*, a microbe found in sludge environments associated with phototrophy

Nomenclatural type

Species *Xiheicaenimonas phototrophica*^{Ts}

Description

The type species is *Xiheicaenimonas phototrophica*.

Classification

Bacteria » *Myxococcota* » *Myxococcia* » *Myxococcales* » *Myxococcaceae* » *Xiheicaenimonas*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32859>

Genus *Xiheilimnobacterium*

Etymology

[Xi.he.i.lim.no.bac.te'ri.um] **N.L. fem. n.** *Xihe*, Sun goddess in Chinese mythology; **Gr. fem. n.** *limne*, a lake; **L. neut. n.** *bacterium*, a bacterium; **N.L. neut. n.** *Xiheilimnobacterium*, a microbe found in lakes associated with phototrophy

Nomenclatural type

Species *Xiheilimnobacterium phototrophicum*^{Ts}

Description

The type species is *Xiheilimnobacterium phototrophicum*.

Classification

Bacteria » *Myxococcota* » *Myxococcia* » *Myxococcales* » *Myxococcaceae* » *Xiheilimnobacterium*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32861>

Genus *Xiheimicrobium*

Etymology

[Xi.he.i.mi.cro'bi.um] **N.L. fem. n.** *Xihe*, Sun goddess in Chinese mythology; **N.L. neut. n.** *microbium*, a microbe; **N.L. neut. n.** *Xiheimicrobium*, a microbe associated with phototrophy

Nomenclatural type

Species *Xiheimicrobium aquaticum*^{Ts}

Description

The type species is *Xiheimicrobium phototrophicum*.

Classification

Bacteria » *Myxococcota* » *Myxococcia* » *Myxococcales* » *Myxococcaceae* » *Xiheimicrobium*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32860>

Species *Houyiibacterium oceanicum*^{Ts}

Etymology

[o.ce.a'ni.cum] **N.L. fem. adj.** *oceanicum*, of or pertaining to the ocean

Nomenclatural type

[NCBI Assembly: GCA_031800675.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-15_3 (GCA_031800675.1). Genome is predicted to 9.41 Mb in 214 scaffolds. The GC content is 73.94%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genome also has PR, suggesting the potential capacity using both proton-pumping and bacteriochlorophyll-based photosystems. Genomic assemblies for this species originated from seawater.

Classification

Bacteria » *Myxococcota* » *Polyangiia* » *Polyangiales* » *Houyiibacteriaceae* » *Houyiibacterium* » *Houyiibacterium oceanicum*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:31318>

Species *Kuafuiibacterium phototrophicum*^{Ts}

Etymology

[pho.to'tro.phi.cum] **Gr. n.** *phos*, photos, light; **Gr. adj.** *trophikos*, nursing, tending or feeding; **N.L. neut. adj.** *phototrophicum*, referring to the likely ability to use light for energy generation

Nomenclatural type

[NCBI Assembly: GCA_016703535.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-17_1 (GCA_016703535.1). Genome of LLY-WYZ-17_1 is predicted to 9.76 Mb in 2 scaffolds. The GC content is 66.46%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genome also has key enzymes of CBB cycle, suggesting potential autotrophic capacity. Genome for this species originated from activated sludge.

Classification

Bacteria » *Myxococcota* » *Kuafuiibacteriia* » *Kuafuiibacteriales* » *Kuafuiibacteriaceae* » *Kuafuiibacterium* » *Kuafuiibacterium phototrophicum*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32839>

Species *Kuafuiihalomonas phototrophica*^{Ts}

Etymology

[pho.to'tro.phi.ca] **Gr. n.** *phos*, photos light; **Gr. adj.** *trophikos*, nursing, tending or feeding; **N.L. fem. adj.** *phototrophica*, referring to the likely ability to use light for energy generation

Nomenclatural type

[NCBI Assembly: GCA_031800475.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-16_1 (GCA_031800475.1). Genome of LLY-WYZ-16_1 is predicted to 5.30 Mb in 386 scaffolds. The GC content is 66.71%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genome also has PR and *b/h*, suggesting potential capacity using both proton-pumping and bacteriochlorophyll-based photosystems. Genome for this species originated from salt lagoon.

Classification

Bacteria » *Myxococcota* » *Kuafuiibacteriia* » *Kuafuiibacteriales* » *Kuafuiibacteriaceae* » *Kuafuiihalomonas* » *Kuafuiihalomonas phototrophica*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32841>

Species *Xiheibacterium aquaticum*

Etymology

[a.kwa'ti.cum] **L. neut. adj.** *aquaticum*, living, growing, or found in the water

Nomenclatural type

[NCBI Assembly: GCA_001464385.1](#) ^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-11_1 (GCA_001464385.1). Genome is predicted to 10.24 Mb in 400 scaffolds. The GC content is 72.20%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genome for this species originated from drinking water treatment.

Classification

Bacteria » *Myxococcota* » *Polyangia* » *Nannocystales* » *Nannocystaceae* » *Xiheibacterium* » *Xiheibacterium aquaticum*

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32848>

Species *Xiheibacterium phototrophicum*^{Ts}

Etymology

[pho.to'tro.phi.cum] **Gr. n.** *phos*, photos light; **Gr. adj.** *trophikos*, nursing, tending or feeding; **N.L. neut. adj.** *phototrophicum*, referring to the likely ability to use light for energy generation

Nomenclatural type

[NCBI Assembly: GCA_016709225.1](#) ^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-10_1 (GCA_016709225.1). Genome is predicted to 9.61 Mb in 12 scaffolds. The GC content is 71.15%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genomic assemblies for this species originated from activated sludge.

Classification

Bacteria » *Myxococcota* » *Polyangia* » *Nannocystales* » *Nannocystaceae* » *Xiheibacterium* » *Xiheibacterium phototrophicum*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32850>

Species *Xiheicaenibacterium phototrophicum*^{Ts}

Etymology

[pho.to'tro.phi.cum] **Gr. n.** *phos*, photos light; **Gr. adj.** *trophikos*, nursing, tending or feeding;
N.L. neut. adj. *phototrophicum*, referring to the likely ability to use light for energy generation

Nomenclatural type

[NCBI Assembly: GCA_016794345.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-9_1 (GCA_016794345.1). Genome is predicted to 9.66 Mb in 321 scaffolds. The GC content is 69.69%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genome for this species originated from activated sludge.

Classification

Bacteria » *Myxococcota* » *Polyangiia* » *Polyangiales* » *Polyangiaceae* » *Xiheicaenibacterium* » *Xiheicaenibacterium phototrophicum*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32851>

Species *Xiheicaenimonas phototrophica*^{Ts}

Etymology

[pho.to'tro.phi.ca] **Gr. n.** *phos*, photos light; **Gr. adj.** *trophikos*, nursing, tending or feeding;
N.L. fem. adj. *phototrophica*, referring to the likely ability to use light for energy generation

Nomenclatural type

[NCBI Assembly: GCA_016793725.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-6_1 (GCA_016793725.1). Genome is predicted to 9.75 Mb in 939 scaffolds. The GC content is 69.60%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genome for this species originated from activated sludge.

Classification

Bacteria » *Myxococcota* » *Myxococcia* » *Myxococcales* » *Myxococcaceae* » *Xiheicaenimonas* » *Xiheicaenimonas phototrophica*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32844>

Species *Xiheilimnobacterium phototrophicum*^{Ts}

Etymology

[pho.to'tro.phi.cum] **N.L. neut. adj.** *phototrophicum*, referring to the likely ability to use light for energy generation

Nomenclatural type

[NCBI Assembly: GCA_903911905.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-2_2 (GCA_903911905.1). Genome is predicted to 7.57 Mb in 907 scaffolds. The GC content is 69.08%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genomic assemblies for this species originated from freshwater lake.

Classification

Bacteria » *Myxococcota* » *Myxococcia* » *Myxococcales* » *Myxococcaceae* » *Xiheilimnobacterium* » *Xiheilimnobacterium phototrophicum*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32847>

Species *Xiheimicrobium aquaticum*^{Ts}

Etymology

[a.qua'ti.cum] **L. neut. adj.** *aquaticum*, living, growing, or found in the water

Nomenclatural type

[NCBI Assembly: GCA_020247085.1](#)^{Ts}

Description

The nomenclatural type for the species is the genomic assembly LLY-WYZ-4_1 (GCA_020247085.1). Genome is predicted to 7.36 Mb in 641 scaffolds. The GC content is 72.03%. Genome has complete bacteriochlorophyll synthesis pathways, and encodes reaction center proteins and other key enzymes, suggesting potential phototrophic lifestyle. Genomic assemblies for this species originated from freshwater lake.

Classification

Bacteria » *Myxococcota* » *Myxococcia* » *Myxococcales* » *Myxococcaceae* » *Xiheimicrobium* » *Xiheimicrobium aquaticum*^{Ts}

References

Effective publication: Li et al., 2023 [1]

Registry URL

<https://seqco.de/i:32845>

References

1. Li et al. (2023). Globally distributed Myxococcota with photosynthesis gene clusters illuminate the origin and evolution of a potentially chimeric lifestyle. *Nature Communications*. [DOI:10.1038/s41467-023-42193-7](https://doi.org/10.1038/s41467-023-42193-7)

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:kouay5c4** submitted by **Li, Liuyang** and including 21 new names has been successfully validated.

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