Izemoplasma acidinucleici sp. nov.

Submitted by Loy, Alexander

Order *Izemoplasmatales*

Etymology
[I.ze.mo.plas.ma.ta'les] **N.L. neut. n.** *Izemoplasma*, the type genus of the order; **L. fem. pl. suff.** *-ales*, ending to denote an order; **N.L. fem. pl. n.** *Izemoplasmatales*, the Izemoplasma order

Nomenclatural type
Genus *Izemoplasma*

Description
The type species of this order is *Izemoplasma acidinucleici* capable of degrading and metabolizing nucleic acids. Comparative genomics indicated that diverse *Izemoplasmatales* members encode multiple (up to five) predicted extracellular nucleases and are probably specialized DNA-degraders.

Classification
Bacteria » *Bacillota* » *Bacilli* » *Izemoplasmatales*

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

Registry URL
https://seqco.de/i:23535

Family *Izemoplasmataceae*

Etymology
[I.ze.mo.plas.ma.ta'ce.ae] **N.L. neut. n.** *Izemoplasma*, the type genus of the family; **L. fem. pl. suff.** *-aceae*, ending to denote a family; **N.L. fem. pl. n.** *Izemoplasmataceae*, the Izemoplasma family

Nomenclatural type
Genus *Izemoplasma*

Description
The type species of this family is *Izemoplasma acidinucleici* capable of degrading and metabolizing nucleic acids. Comparative genomics indicated that diverse *Izemoplasmataceae* encode multiple (up to five) predicted extracellular nucleases and are probably specialized DNA-degraders.

Classification
Bacteria » *Bacillota* » *Bacilli* » *Izemoplasmatales* » *Izemoplasmataceae*

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

Registry URL
https://seqco.de/i:42145

Genus *Izemoplasma*

Etymology
[I.ze.mo.plas'ma] **Gr. neut. n.** *izema*, a settling down, sediment; **Gr. neut. n.** *plasma*, anything formed or moulded, image, figure; **N.L. neut. n.** *Izemoplasma*, a form from sediment

Nomenclatural type
Species *Izemoplasma acidinucleici*[Ts]

Description
We have revised the previously suggested genus name *Ca*. Izimaplasma (Skennerton et al., 2016) to *Izemoplasma* of the family *Izemoplasmataceae* and order *Izemoplasmatales*. Members of this genus degrade and metabolize nucleic acids.

Classification
Bacteria » *Bacillota* » *Bacilli* » *Izemoplasmatales* » *Izemoplasmataceae* » *Izemoplasma*

References
Effective publication: Wasmund et al., 2021 [1]
Original (not valid) publication: Skennerton et al., 2016 [2]
Assigned taxonomically: Wasmund et al., 2021 [1]

Registry URL
https://seqco.de/i:50971

Species *Izemoplasma acidinucleici*[Ts]

Etymology
[a.ci.di.nu.cle'i.ci.] **N.L. neut. n.** *acidum nucleicum*, nucleic acid; **N.L. gen. n.** *acidinucleici*, of nucleic acid, referring to the capacity of this species to degrade and metabolize nucleic acids

Nomenclatural type
NCBI Assembly: GCA_004195325.1 [Ts]

Description
Based on a combination of unique phylogeny (based on 16S rRNA genes and concatenated single copy marker proteins) and genomic similarity (ANI), as well as genome-based predictions of nucleic acid catabolism that are supported by SIP results, we propose a novel species name *Izemoplasma acidinucleici* for the *Izemoplasma* MAG recovered in this study. We have revised the previously suggested genus name *Ca*. Izimaplasma to *Izemoplasma* of the family *Izemoplasmataceae* and order *Izemoplasmatales*.

Classification
Bacteria » *Bacillota* » *Bacilli* » *Izemoplasmatales* » *Izemoplasmataceae* » *Izemoplasma* » *Izemoplasma acidinucleici*[Ts]

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

Registry URL
https://seqco.de/i:23533

References

1. Wasmund et al. (2021). Genomic insights into diverse bacterial taxa that degrade extracellular DNA in marine sediments. *Nature Microbiology*. DOI:10.1038/s41564-021-00917-9
2. Skennerton et al. (2016). Phylogenomic analysis of *Candidatus* 'Izimaplasma' species: free-living representatives from a *Tenericutes* clade found in methane seeps. *The ISME Journal*. DOI:10.1038/ismej.2016.55

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:di1mjuad** submitted by **Loy, Alexander** and including 4 new names has been successfully validated.

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