

Natranaerovirgaceae

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Firmicutes A/Clostridia/Lachnospirales/

Natranaerovirgaceae

fam. nov.

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Natr.an.aer.o.vir.ga'ce.ae N.L. fem. n. *Natranaerovirga*, the type genus of the family, *-aceae* ending to denote a family; N.L. fem. pl. n. *Natranaerovirgaceae*, the *Natranaerovirga* family.

The family *Natranaerovirgaceae* includes obligately anaerobic fermentative bacteria from soda lakes. They are highly salt-tolerant alkaliphiles utilizing carbohydrates as energy and carbon source. The family belongs to the order “Lachnospirales,” class *Clostridia*, and consists of a single genus *Natranaerovirga*. The family-level status was established by phylogenomic analysis based on the Genome Taxonomy Database classification (GDTB).

DNA G + C content (mol%): 31.3–32.3 (whole-genome sequence).

Type genus: **Natranaerovirga** Sorokin et al. 2012, VL145.

The genus *Natranaerovirga* was previously classified in the order *Clostridiales* and class *Clostridia* on the basis of 16S rRNA gene comparison (Sorokin et al., 2012). A more recent phylogenomic analysis based on 120 single-copy conserved bacterial marker genes revealed that this genus is forming a deep-branching lineage of the separate family *Natranaerovirgaceae* in the order “Lachnospirales” and class *Clostridia*. The family consists of a single genus *Natranaerovirga* and currently

includes two species: the type species *N. pectinivora* and the second species *N. hydrolytica*. These bacteria are highly salt-tolerant obligate alkaliphiles living in saline soda lakes and soda solonchak soils. They are fermentative saccharolytic anaerobes utilizing a few sugars limited to uronic acids and fructose and can grow with pectin and polygalacturonate. Cells are nonmotile endospore-forming rods with the Gram-positive type of cell wall. Nε-acetyl-beta-lysine is a potential compatible solute (on the basis of genome analysis) (Sorokin et al., 2012).

DNA G + C content (mol%): 31.3–32.3 (genomic).

Type genus: **Natranaerovirga** Sorokin et al. 2012, VL145.

References

Sorokin DY, Tourova TP, Panteleeva AN, Kaparullina EN, & Muyzer G (2012) Anaerobic utilization of pectinous substrates at extremely haloalkaline conditions by *Natranaerovirga pectinivora* gen. nov., sp. nov., and *Natranaerovirga hydrolytica* sp. nov., isolated from hypersaline soda lakes. *Extremophiles* **16**: 307–315.

Validation List No. 145 (2012) List of new names and new combinations previously effectively, but not validly, published. *Int J Syst Evol Microbiol* **62**: 1017–1019. **B**