

# Costitxia debesea sp. nov.

Submitted by Gago, Juan F.

## Class *Costitxia*

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### Etymology

[Cos.tit.xi'i.a] N.L. fem. n. *Costitxia*, referring to the type genus *Costitxia*; *-ia*, ending to denote a class; N.L. neut. pl. n. *Costitxia*, the *Costitxia* class

### Nomenclatural type

Genus *Costitxia*

### Description

The description of the class is identical to that given for the type species of the genus.

### Classification

*Bacteria* » *Bacteroidota* » *Costitxia*

### References

Effective publication: Gago et al., 2024 [1]

### Registry URL

<https://seqco.de/i:43915>

## Order *Costitxiales*

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### Etymology

[Cos.tit.xi.a'les] N.L. fem. n. *Costitxia*, referring to the type genus *Costitxia*; L. suff. *ales*, ending to denote an order; N.L. fem. pl. n. *Costitxiales*, the *Costitxia* order

### Nomenclatural type

Genus *Costitxia*

### Description

The description of the order is identical to that given for the type species of the genus.

### Classification

*Bacteria* » *Bacteroidota* » *Costitxia* » *Costitxiales*

### References

Effective publication: Gago et al., 2024 [1]

### Registry URL

<https://seqco.de/i:43914>

## Family *Costitxiaceae*

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### Etymology

[Cos.tit.xi.a.ce'ae] N.L. fem. n. *Costitxia*, referring to the type genus *Costitxia*; L. suff. *aceae*, ending to denote a family; N.L. fem. pl. n. *Costitxiaceae*, the *Costitxia* family

### Nomenclatural type

Genus *Costitxia*

**Description**

The description of the family is identical to that given for the type species of the genus.

**Classification**

*Bacteria* » *Bacteroidota* » *Costitxiia* » *Costitxiales* » *Costitxiaceae*

**References**

Effective publication: Gago et al., 2024 [1]

**Registry URL**

<https://seqco.de/i:43913>

## Family *Lloretiaceae*

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**Etymology**

[Llo.re.ti.a.ce'ae] N.L. fem. n. *Lloretia*, referring to the type genus *Lloretia*; L. suff. *aceae*, ending to denote a family; N.L. fem. pl. n. *Lloretiaceae*, the *Lloretia* family

**Nomenclatural type**

Genus *Lloretia*

**Description**

The description of the family is identical to that given for the type species of the genus.

**Classification**

*Bacteria* » *Elusimicrobiota* » *Elusimicrobia* » *Elusimicrobiales* » *Lloretiaceae*

**References**

Effective publication: Gago et al., 2024 [1]

**Registry URL**

<https://seqco.de/i:43918>

## Genus *Costitxia*

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**Etymology**

[Cos.tit'xi.a] N.L. fem. n. *Costitxia*, *Costitxia*, named after the town of Costitx (Mallorca)

**Nomenclatural type**

Species *Costitxia debesea*<sup>T5</sup>

**Description**

The description of the genus is identical to that given for the type species.

**Classification**

*Bacteria* » *Bacteroidota* » *Costitxiia* » *Costitxiales* » *Costitxiaceae* » *Costitxia*

**References**

Effective publication: Gago et al., 2024 [1]

**Registry URL**

<https://seqco.de/i:43912>

## Genus *Lloretia*

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**Etymology**

[Llo.re'ti.a] N.L. fem. n. *Lloretia*, named after the town of Lloret de Vista Alegre (Mallorca)

**Nomenclatural type**

Species *Lloretia debesea*<sup>Ts</sup>

**Description**

The description of the genus is identical to that given for the type species.

**Classification**

*Bacteria* » *Elusimicrobiota* » *Elusimicrobia* » *Elusimicrobiales* » *Lloretiaceae* » *Lloretia*

**References**

Effective publication: Gago et al., 2024 [1]

**Registry URL**

<https://seqco.de/i:43917>

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**Species *Costitxia debesea*<sup>Ts</sup>**

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**Etymology**

[de.be.se'a] N.L. fem. adj. *debesea*, arbitrary name formed from the DBSE (Deep Blue Sea Enterprise)

**Nomenclatural type**

[NCBI Assembly: GCA\\_963583855.1](#)<sup>Ts</sup>

**Description**

This species *Costitxia debesea* sp. nov. is the type to the new genus *Costitxia* gen. nov. This genus is also the type for the new family *Costitxiaceae* fam. nov., order *Costitxiales* ord. nov. and class *Costitxiaia* class. nov. Metabolic inference indicated that this organism is mainly aerobic since the complete electron transport chain could be detected, including cytochrome *bd* complex with high affinity to oxygen. The genetic repertoire also suggests that could be facultative anaerobe due to a putative capability to respire nitrate/nitrite or iron, and heterotrophic bacteria according to the central carbon metabolism. The MAG presents Cas-systems and lack the flagellar machinery required for motility. Genes could not be detected for oxidase, catalase and lysine decarboxylase. The MAG originates from groundwater on the island of Mallorca. The type material is strain T4.018, with a genome sequence available under ENA accession GCA\_963583855.

**Classification**

*Bacteria* » *Bacteroidota* » *Costitxiia* » *Costitxiales* » *Costitxiaceae* » *Costitxia* » *Costitxia debesea*<sup>Ts</sup>

**References**

Effective publication: Gago et al., 2024 [1]

**Registry URL**

<https://seqco.de/i:43911>

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**Species *Lloretia debesea*<sup>Ts</sup>**

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**Etymology**

[de.be.se'a] N.L. fem. adj. *debesea*, arbitrary name formed from the DBSE (Deep Blue Sea Enterprise)

**Nomenclatural type**

[NCBI Assembly: GCA\\_963986085.1](#)<sup>Ts</sup>

### Description

This species *Lloretia debesea* sp. nov. is the type to the new genus *Lloretia* gen. nov. This genus is also the type for the new family *Lloretiaceae* fam. nov. The MAG encodes for the complete set of complexes for the oxidative electron transport phosphorylation chain, suggesting an aerobic respiration. Despite aerobic respiration, the microorganism seems to be capable of dissimilatory nitrate reduction. Predicted central carbon metabolism indicated a heterotrophic-based lifestyle, encoding all the genes for glycolysis, non-oxidative pentose phosphate pathway, pyruvate oxidation and glycogen degradation, and also including the near-complete Krebs cycle. Genes could not be detected for oxidase, catalase and lysine decarboxylase, and also those involved in motility. The MAG originates from groundwater on the island of Mallorca. The type material is strain T5.010, with a genome sequence available under ENA accession GCA\_963583845.

### Classification

*Bacteria* » *Elusimicrobiota* » *Elusimicrobia* » *Elusimicrobiales* » *Lloretiaceae* » *Lloretia* » *Lloretia debesea*<sup>T5</sup>

### References

Effective publication: Gago et al., 2024 [1]

### Registry URL

<https://seqco.de/i:43916>

## References

1. Gago et al. (2024). Metagenomics of two aquifers with thermal anomalies in Mallorca Island, and proposal of new uncultivated taxa named following the rules of SeqCode. *Systematic and Applied Microbiology*.  
[DOI:10.1016/j.syapm.2024.126506](https://doi.org/10.1016/j.syapm.2024.126506)

## 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:4u3eoyk5](https://seqco.de/r:4u3eoyk5) submitted by Gago, Juan F. and including 8 new names has been successfully validated.

Date of Priority: 2024-04-18 07:32 UTC

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