# Article information:

Anaerobic methanotroph ‘Candidatus Methanoperedens nitroreducens’ has a pleomorphic life cycle | Nature Microbiology  
<https://www.nature.com/articles/s41564-022-01292-9>

# Article summary:

1. Anaerobic oxidation of methane (AOM) is a key biological process that helps to reduce the release of methane into the atmosphere.

2. The Methanoperedenaceae family has been found to be metabolically diverse, with some species having the potential to use multiple terminal electron acceptors for AOM.

3. FISH analysis of an anaerobic lab-scale bioreactor revealed two distinct morphotypes of ‘Ca. M. nitroreducens’, leading to a comprehensive investigation of their potential genomic and gene expression differences.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Anaerobic methanotroph ‘Candidatus Methanoperedens nitroreducens’ has a pleomorphic life cycle | Nature Microbiology” is a well-researched and detailed piece that provides insight into the metabolic diversity and potential lifestyle of the Methanoperedenaceae family, which plays an important role in mitigating the release of methane into the atmosphere. The article is based on data from laboratory experiments and molecular techniques such as metagenomics, metatranscriptomics and fluorescence in situ hybridization (FISH).

The article is reliable in its presentation of data and evidence, as it provides clear references for each claim made throughout the text. It also presents both sides equally by providing evidence for both positive and negative findings from laboratory experiments, such as the presence or absence of obligate physical associations between different populations within the bioreactor biomass. Furthermore, it acknowledges possible risks associated with its findings by noting that further research is needed to elucidate whether archaellum structures are involved in extracellular electron transfer (EET) or motility.

In terms of trustworthiness, there are no obvious biases or unsupported claims present in this article; all claims are supported by evidence from laboratory experiments or molecular techniques such as FISH or metagenomics. Additionally, all points are presented objectively without any promotional content or partiality towards one side over another.

In conclusion, this article is reliable and trustworthy due to its clear presentation of data and evidence from laboratory experiments and molecular techniques, objective presentation without bias or promotional content, acknowledgement of possible risks associated with its findings, and equal representation of both sides throughout the text.

# Topics for further research:

* Methanoperedenaceae family
* Methane mitigation
* Obligate physical associations
* Archaellum structures
* Extracellular electron transfer (EET)
* Metagenomics and metatranscriptomics

# Report location:

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