

Methanotrophs

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About Methanotrophs

- **Methane-utilizing bacteria** (methanotrophs) are a diverse group of gram-negative bacteria that are related to other members of the Proteobacteria.
- Methanotrophic microorganisms oxidize methane to harness energy under oxic and anoxic conditions.
- They grow best when the **methane concentration is around 5,000-10,000** parts per million (ppm).

Key facts about *Methylobacterium burtonense* 5GB1C

- This bacterial strain consumes methane, which is over 85 times more potent than carbon dioxide (CO₂).

- This bacteria performed the best at 500 ppm. Further tests also showed that this strain grew well even at 200 ppm.
 - It can grow at **low methane concentrations ranging from 200-1,000 ppm**. These features make this strain a promising candidate for methane removal technology.
 - Bacteria produce **biomass after consuming methane**. This biomass can be used as feed in aquaculture.
 - For every tonne of methane consumed, the bacteria **can generate 0.78 tonne biomass** dry-weight methane.
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Q1) What is Methane?

Methane (CH₄) is a chemical compound and a hydrocarbon with the molecular formula consisting of one carbon atom bonded to four hydrogen atoms. It is the simplest alkane and is considered the primary component of natural gas. Methane is a potent greenhouse gas and plays a significant role in Earth's atmospheric and environmental processes.

Source: [Now, a bacteria that can eat methane. Can it reduce global warming? Researchers say it's possible](#)

Source: <https://vajiramandravi.com/current-affairs/methanotrophs/>

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