Assessment the feasibility of bioconversion of greenhouse gas methane to bio-fuel by screening of methanotrophs bacteria

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ABSTRACT
Methane is the main component of natural gas and biogas. But methane is one of the most important gas with global warming. A key process that offsets methane production is biological oxidation by methanotrophs. The purpose of this research is to isolate methane oxidizing bacteria conversion of methane to biomass or biodiesel fuel possible. In this study, we isolated the strain with high methane oxidation capability from soils and identified according to 16S rDNA gene sequences, called Pseudomonas sp.Wu-S19 (NCBI JX088028). Changes in various factors of methane concentration, pH and incubation temperature will also be in the study. The maximal cell concentration could reach 461 mg dry cell weight/L, the total FAMEs (fatty acid methyl esters) content have 13% of dried cell weight. The result indicated that Pseudomonas sp.Wu-S19 may be a viable biodiesel fuel.

Keywords: Assessment the feasibility

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