

SCREENING OF ACETOCLASTIC METHANOGENIC ARCHAEA IN SOILS FROM MANGROVE RESERVE DIOGO LOPES/RN.

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Many strains of indigenous archaea in the oceans are responsible for the petroleum biodegradation. The strains of Methanosarcina and Methanosaeta are able to metabolize one of the most abundant organic acid of environment with oil: the acetate. The objective is to make a molecular screening to detect the occurrence of acetoclastic methanogenic archaea in metagenomic DNA samples extracted from mangrove soils contaminated with oil 3%, using the *cdhC* gene as molecular biomarker. The soil samples were obtained from Diogo Lopes/RN in order to make the microcosm assays and to extract metagenomic DNA samples. *In silico* screening for *cdhC* gene was performed with BLAST package, in NCBI, multiple alignment with Clustal-W and visualized in BioEdit program to select the best sequences for PCR primers. The PCR reactions were analyzed in 1,8% agarose gel, observing amplicons of ~ 400 bp exclusively in metagenomics DNA samples from microcosms with oil. This result suggests the occurrence of indigenous acetoclastic methanogenic archaea communities in mangrove samples of Diogo Lopes/RN contaminated with oil. These findings stimulate the exploration of biodiversity in mangrove from Potiguar Petroliferous Basin aiming the biotechnological application. The utilization of Denaturing Gradient Gel Electrophoresis - DGGE will determinate the profile diversity of bacterial communities from Diogo Lopes/RN.

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