

## MOLECULAR SCREENING TO IDENTIFICATION OF ACETOCLASTIC METHANOGENIC ARCHAEA IN SOILS FROM MANGROVE RESERVE DIOGO LOPES-RN.

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Many strains of indigenous bacteria 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 petroleum: the acetate. The objective is to make a molecular screening to detect the occurrence of acetoclastic methanogenic bacteria in metagenomic DNA samples extracted from mangrove soils contaminated with petroleum 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 choose the best sequences for PCR primers. The PCR reactions were analyzed in agarose gel 1,8%, observing amplicons of ~400 bp exclusively in metagenomics DNA samples from microcosms with petroleum. This result suggests the occurrence of indigenous acetoclastic methanogenic archaea communities in soil samples of Diogo Lopes-RN contaminated with petroleum. Also these findings stimulate the exploration of biodiversity in mangrove from Potiguar Petroliferous Basin aiming the biotechnological application. The cloning and library construction of environmental amplicons will allow the molecular identification of acetoclastic methanogenic.

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