

Title: ISOLATION OF PETROLEUM DEGRADING FUNGI FROM A CORAL ECOSYSTEM

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Abstract:

Coral reefs are under threat with petroleum industries activities, mainly, because of oil spill and its derivatives that can result in stress conditions and mortality in these ecosystems. The marine ecosystem represents a largely unexplored niche for unidentified fungi that could potentially be used in biotechnological processes. In recent years, decontamination biotechnological strategies of oil impacted areas have been developed, such as the use of fungal species that can degraded oil compounds in metabolic processes. The aim of this study was obtain fungi isolates with oil degradation potential. Samples of sea water and 3 coral species (*Millepora alcicornis*, *Phyllogorgia dilatata* and *Siderastrea stellata*) were used as sources of fungi propagules or spores. Directly plating and filter plating methods were used with or without oil in media composition. In culture media supplemented with oil were used two oil fractions (soluble or insoluble in water) and two NaCl concentrations (2.5% and 8%). The cells growth were observed after 28 days and colonies were isolated on plates containing Malt extract agar medium (2.5% NaCl). Fungi isolates were screened by growth in Bushnell Hass media with oil as sole carbon source and 2.5% NaCl (BH oil). In total, they were obtained 160 isolates divided into 53 yeast and 107 filamentous fungi. The isolates inoculated in BH oil were monitored in this environment for 25 days and at the end, 64 fungi grew in this medium, 53 filamentous fungi and 11 yeast. The methodologies presented sought isolate and select fungi from marine samples having degradation potential of petroleum and its derivatives. The results of this test will be complemented by biodegradation experiment in the next step of the work. This screening culture collection can yield a new genus and / or species for bioremediation, complementary to fungi known as potential degraders of petroleum compounds.

Keywords: fungi, degrading oil, coral.

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