Biodegradation of Sabah light crude oil by locally isolated Candida tropicalis RETL-Cr1 and Pseudomonas aeruginosa BAS-Cr1

Abstract

Increases in demand of petroleum hydrocarbon across the world inevitably contributed to the oil pollution in marine environment. Biodegradation is a proven cost effective approach for treatment of polluted marine environment. This study was performed to assess the biodegradation of Sabah Light Crude Oil by locally isolated microorganisms, C. tropicalis and P. aeruginosa in simulated seawater condition. Efficiency comparison and rate of biodegradation between single strain and consortia were investigated in shake flask trials. Utilization of 5% (v/v) crude oil as sole carbon source can support growth of bacteria up to 28 days. Consortia culture of C. tropicalis and P. aeruginosa has the highest degradation of 50% while single culture was 40% and 30% respectively. GC-MS analysis showed degradation of n-alkane in crude oil after four weeks of incubation. Present consortia culture has the potential as potent petroleum hydrocarbon degrader in the marine environment due to its specific ability to metabolize hydrocarbons.