

Culturable hydrocarbonoclastic marine bacterial isolates from Indonesian seawater in the Lombok Strait and Indian Ocean

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Title	Culturable hydrocarbonoclastic marine bacterial isolates from Indonesian seawater in the Lombok Strait and Indian Ocean
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Abstract	<p>a:4:{i:0;s:187:"Purpose: The study aims to isolate the culturable marine bacteria and to assess their potential as the bioremediation agent for petroleum hydrocarbons contamination in marine environment.";i:1;s:468:"Methods: Bacteria isolates were obtained by repetitive streaks to obtain purified bacteria on Zobell marine agar plates before further analysis and culture through direct visualization on agar plates. Identification were conducted using 16S rDNA sequence which are compared using NCBI BLAST and, combined with phenotypic and phylogenetic data. The potential use of the selected bacteria was tested by culturing them with two carbon sources i.e., glucose and crude oil.";i:2;s:722:"Result: Fifty-one culturable marine hydrocarbonoclastic bacteria were isolated from the Lombok Strait (LS-3, LS13, LS-14, LS-15, LS-16 and LS-20) and Indian Ocean (IO-1, IO-6, IO-8, IO-19, IO-24 and IO-25). Twelve isolates were found to degrade crude oil efficiently at a >2% concentration and to grow with crude oil as their sole carbon and energy source. These 12 strains belong to the genus Bacillus, which is well known to produce surface active agents, and the oil displacement assay indicated the production of these agents by these strains. Within the genera Bacillus, five species (Bacillus flexus, B. methylotrophicus, B. aquimaris, B. horikoshii, and B. thioparans) were represented by the 12 identified strains.";i:3;s:274:"Conclusion: Selected strains from the Lombok Strait and Indian Ocean were capable of degrading crude oil (2% v/v) by 43.9-71.9% over 14 days. These results are important for marine bioremediation in Indonesia, which often faces risks of oil spill contamination and disaster.";}</p>
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