

Uji degradasi alkana oleh bakteri laut Indonesian culture collection inacc dari Pulau Pari Kepulauan Seribu dengan metode kromatografi gas = Alkane degradation of Indonesian culture collection inacc marine bacteria isolated from pari island kepulauan seribu with gas chromatography method

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Abstrak

[ABSTRAK

Alkana merupakan komponen senyawa hidrokarbon terbesar sebanyak 60% penyusun utama minyak bumi. Isolat bakteri potensial pendegradasi alkana telah diisolasi dari daerah perairan tercemar tumpahan minyak di Pulau Pari. Penelitian bertujuan untuk memperoleh isolat dengan kemampuan tinggi mendegradasi alkana. Pengukuran pertumbuhan isolat bakteri dilakukan pada 600 nm dan analisis degradasi alkana dengan metode GC/MS. Hasil penelitian menunjukkan bahwa dari 15 isolat yang diuji pertumbuhannya dengan menggunakan paraffin oil terdapat 2 isolat mewakili dua tipe kurva pertumbuhan yaitu isolat 97 kelompok I dengan pertumbuhan K(+) rendah (OD < 0,1 pada hari ke-12) dan isolat 19 kelompok II dengan pertumbuhan K(+) tinggi (OD > 0,5 pada hari ke-12). Analisis degradasi alkana menunjukkan penurunan luas area pada isolat 97 dengan kemampuan degradasi docosane (C₂₂H₄₆) paling tinggi sebesar 96,04% dan isolat 19 dengan kemampuan degradasi hexadecane (C₁₆H₃₄) paling tinggi sebesar 61,37%. Identifikasi molekuler menggunakan 16S rRNA menunjukkan isolat 97 sebagai *Pseudoalteromonas lypolitica* dan isolat 19 sebagai *Vibrio alginolyticus*.

ABSTRACT

Alkane is the largest hydrocarbon component of petroleum (60%). Potential alkane degrading bacteria have been isolated from oil contaminated waters at Pari Island. The study aims to obtain isolate with high capability of alkane degradation. The measurement of bacterial growth was performed at 600 nm and analysis of the alkane degradation with GC/MS method. Isolate 97 and 19 were selected out of 15 isolates with the highest growth represent the two groups of curve growth. Isolate 97 belong to group I with the low growth of K (+) OD < 0.1 on day 12 and isolate 19 belong to group II with the high growth of K (+) > 0.5 OD at day 12. The alkane degradation analysis showed isolate 97 had the highest decrease of docosane (C₂₂H₄₆) up to 96.04% and isolates 19 had the highest decrease of hexadecane (C₁₆H₃₄) up to 61.37%. The results of molecular identification using 16S rRNA indicate that isolate 97 and 19 were *Pseudoalteromonas lypolitica* and *Vibrio alginolyticus* respectively.

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