

ABSTRACT

Microorganisms have many properties include the ability to degrade waste products. In this study Haemolysis was used as an initial selection criterion for the primary isolation of surfactant-producing bacteria. Only β and γ Haemolytic activity were detected in this study which as the presence of a definite clear zone around a colony. From this study, Out of 139 (49 %) hemolytic colonies were observed in this study had shown strong haemolytic activity. The Gram stain results had showed: cocci and bacilli shapes. The colony morphology identification had shown rough, smooth and mucoid appearance. 120 of 139 (86%) isolates possessed biocleaner activity with emulsification against crude oil. Susceptibility towards antibiotics of 138 soil bacterial isolates were tested with impregnated discs (Oxoid) by the Kirby-Bauer method. Inhibition zones were assessed on Mueller-Hinton agar and evaluated after 18 and 24 hours of incubation at 37°C. The disc antibiotic result had shown 29 different types of antibiogram patterns. The lysis solution test could be used as a tool for differentiation between gram positive and gram negative bacteria. All isolates are plasmidless and mice virulence test (LD50) had shown no virulence occurred in all colonies tested.

ABSTRAK

Mikroorganisma mempunyai pelbagai ciri-ciri termasuk abiliti atau keupayaan mendegradasikan (menghancurkan) bahan-bahan buangan. Ujian hemolisis digunakan sebagai salah satu kriteria awal bagi pemilihan bacteria-bakteria biosurfaktan. Aktiviti hemolitik telah diperhatikan sebagai kehadiran zon inhibisi di sekeliling koloni bacteria di mana (49%) daripada 139 isolat-isolat koloni ini telah menunjukkan aktiviti hemolitik. Melalui ujian pewarnaan gram pula, telah didapati kehadiran bacteria-bakteria berbentuk koki dan basili. Melalui pengecaman morfologi koloni telah menunjukkan kehadiran bentuk-bentuk koloni yang kasar, licin and mukoid. 120 daripada 139 (86%) asingan bacteria telah menunjukkan aktiviti 'biocleaner' beremulsifikasi terhadap minyak mentah. Kerintangan terhadap antibiotic telah dijalankan dengan menggunakan kaedah Kirby-Bauer. Zon-zon inhibisi telah diases atas plat-plat agar Mueller-Hinton dan dianalisis selepas 18 dan 24 jam pada suhu pengeraman 37°C. Keputusan disk antibiotic telah menunjukkan terdapat 29 jenis corak antibiogram. Dalam kajian ini juga telah menunjukkan bahawa ujian larutan lisis boleh digunakan bagi pembezaan pewarnaan gram bacteria negatif dan positif. Semua isolat tidak mengandungi plasmid dan tidak toksik bila disuntik dalam tikus melalui ujian LD50.