B301 Overproduction and Product Charicteristics of Biosurfactant by Mutant of *Pseudomonas* sp. strain S5

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A NTG(*N*-Methyl-*N'*-nitro-*N*-nitrosoguanidine) and UV-induced mutant of *Pseudomonas* sp. strain S5, capable of overproduction of biosurfactant from glucose minimal media, was isolated and named as NU4. the mutant strain NU4 showed higher emulsification activity, more production yield about 3 times as compared to parent strain S5. Also, growth of mutant strain NU4 was much faster compared to the parent. These studies were carried out for 170 hours at 120rpm, 30℃ and surface tension measured tensiometer. Biosurfactant produced by mutant NU4 was extracted with chloroform-methanol(2:1, v/v). Freeze dried crude biosufactant had both properties of surfactant and emulsifier. Additionally, Crude biosufactant was higly stable at a broad range of pH, temperature and hardness. Biosurfactant produced by mutant NU4 has higher biodegradibility and lower toxicity to bacterial population in environmental sample than synthetic surfactants.

B302 Isolation and characterization of polycyclic aromatic hydrocarbon-degrading *Sphingomonas* sp. strain KS14

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Bacterial strains capable of degrading phenanthrene were isolated from soil. One strain which was effective in the degradation of polycyclic aromatic hydrocarbon was selected among the isolates. This strain was characterized phylogenetically as *Sphingomonas* sp. by 16S rDNA sequencing and MIDI identification system, and designated strain KS14. Strain KS14 was able to utilize phenanthrene and naphthalene as sole source of carbon and energy, and to degrade pyrene cometabolically. The secondary substrates for cometabolic degradation of pyrene were phenanthrene. Phenanthrene was mineralized to carbon dioxide by strain KS14. Strain KS14 had a relatively large degradative plasmid (ca. 230kb) and this unusual plasmid pKS14 could hybridize to *nah* A gene. *nah* Ac gene was detected by PCR amplification. It was considered that this catabolic plasmid might play an important role in phenanthrene and other PAH degradation.