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## BACTERIA, PRODUCERS OF BIOSURFACTANTS ISOLATED FROM SOILS OF GEORGIA

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### Abstract

Thirty nine bacterial strains were isolated from biota of oil contaminated soils in Georgia. Among them 11 strains were identified as representatives of the genus *Pseudomonas*, 17 ones—as that *Bacillus* and 4—as that of *Rhodococcus*. Seven strains, producers of biosurfactans were selected by preliminary screening on oil-containing solid nutrient medium. The production of biosurfactants was evaluated at different growth times and results showed that biosurfactants yield reaches its maximum after 24 hours from the *Bacillus* strains and 72 from *Pseudomonas* and *Rhodococcus* isolates. Determination of surface tension by tensiometric method revealed 3 active producers of extracellular surfactants: *Bacillus* sp. GV34 (32.0 mN/m), *Pseudomonas* sp. GV19 (47.4 mN/m) and *Rhodococcus* sp. GV13 (48.1mN/m). Influence of different compounds (molasses, glycerin, hexadecane) on the yield of biosurfactants was studied. They had various impacts on different strains. In case of *Bacillus* sp. GV34, addition of any of compounds had no significant influence; in case of *Rhodococcus* sp. GV13, hexadecane had the best result (surface tension was decreased to 37.1 mN/m), and in case of *Pseudomonas* sp. GV19, molasses (surface tension was decreased to 37.1 mN/m) displayed the best result. The evaluation of the ability of biosurfactants-producer strains to degrade higher order hydrocarbons is ongoing.

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