

Adhesion of *Pseudomonas putida* NCIB 9816-4 to soil particle surfaces by naphthalene

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Abstract

Most of microorganisms exist in natural environment as aggregated forms such as biofilms and bio-flocs¹⁾. Soil particle surface is covered with organic materials. Microorganisms transport and adhere to these organic materials. Microbial adhesion is initially reversible and becomes irreversible in time. It is supposed that the adhesion of bacteria to soil surfaces is influenced by the existence of organic materials such as naphthalene²⁾. In this experiment, microbial adhesion to soil surfaces by naphthalene was studied. *Pseudomonas putida* NCIB 9816-4 uses naphthalene as the carbon and energy source. Adhesion of *Pseudomonas putida* NCIB 9816-4 was determined by changing naphthalene concentration. It was compared to the same experiment of *Pseudomonas putida* DK1, which degraded toluene but did not degrade naphthalene. Bacterial adhesion was measured by batch test.

In batch test, observing viable cell number in time indicated adhesion of *Pseudomonas putida* NCIB 9816-4 to soil particle surfaces was influenced by naphthalene concentration. Adhesion rate of *Pseudomonas putida* DK1 was independent on naphthalene concentration.

References

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