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Biodegradation of nonionic surfactants based on PEG in *Pseudomonas mendocina* VKM B-1729

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Abstract

Degradation of nonionic surfactants - acyl and alkyl derivatives of PEG - in bacterial cells of *Pseudomonas mendocina* VKM-1729 was studied. The key step of conversion of the compounds tested was their cleavage into hydrophobic and PEG (PEG) moieties. Aliphatic moieties of detergents were utilized by the bacteria; PEG was accumulated in the environment and then transformed into carboxy derivatives. Cleavage of acyl-PEG resulted from hydrolysis mediated by lipases and produced a fatty acid. An aliphatic aldehyde was a hydrophobic intermediate of cleavage of alkyl-PEG, and the reaction obviously included an oxidation step.
