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Biodegradation of poly aromatic hydrocarbons

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Soil pollution and water pollution are posing a big threat today. With the multiplying population and progress of urban civilization, pollution caused by petroleum products and their wastes is increasing in logarithmic manner. In bioremediation of petroleum compound process in the environment, bacteria have been shown to be relatively more successful in breaking down the higher molecular weight compounds. The n-alkanes are generally considered the most readily degrading components in petroleum mixture. The hydrocarbons are broken by a series of enzyme mediated reactions. First it is mono terminal attack and oxygen serves as an external electron acceptor, while an organic component of the contaminating substance functions as the electron donor or energy source. The general pathway involves sequential formation of an alcohol, an aldehyde and a fatty acid. These organisms carry out their normal life processes using these contaminants as their source of nutrients. Metabolic processes of these organisms are capable of using chemical contaminants as energy source, rendering the contaminants harmless or less toxic in most cases. This review provides an outline of the occurrence of PAHs in the environment and the ability of bacteria to degrade the compound, including pathways for PAHs degradation by these organisms.

Biography

Hardik Pathak has completed his PhD in 2009 from University Of Rajasthan, Jaipur. He has got 10 years of teaching experience in the field of biotechnology, especially environmental biotechnology. Presently, he is the Head, Department of Biotechnology at JECRC University, Jaipur, Rajasthan. He has published more than 15 papers in reputed journal and also published 7 books. Being an educationalist he wants to be a research developer cum trainee in near future, who can guide and do some fruitful invention in the field of bioremediation for the betterment of human welfare and his nation.

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