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### Isolation and Initial Characterization of A Pure Cultures Capable to Degradation Methyl tert- Butyl Ether (MTBE)

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#### Abstract:

Methyl tert-butyl ether (MTBE), a gasoline octane enhancer, was introduced as a substitute for lead tetraethyl over 30 years ago. Widespread use of MTBE in gasoline, has introduced MTBE into the environment compartments, mostly into the under ground and surface water and water as a second most frequently detected contaminant. In this study, we have isolated pure cultures from bacterial consortium capable to use MTBE as a sole carbon and energy source. MTBE biodegradation rate was measured in headspace by gas chromatography. Initial liner rates of biodegradation by Pinpoint and white strains were found  $2.9 \text{ mg MTBE h}^{-1} \text{ g}^{-1}$  wet biomass, respectively. The results of 16S rDNA PCR disclosed similarities in the banding patterns between the cultures, and the known degrading strain PM1. The results of this study suggest promising perspectives for engineering the in situ bioremediation of MTBE.

#### Keywords:

Methyl tert-butyl ether (MTBE) . Pure strain . 16S rDNA

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