Reductive dechlorination of 2,6-dichlorophenol using electrodes as electron donors in a microbial fuel cell

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Chlorophenols (CPs) persist in strongly toxic contaminants because of lack of electrons required for reductive dechlorination in groundwater. In order to support reductive dechlorination, microbial fuel cells (MFCs) can be developed as a new path for bioremediation reactions. In MFCs, it has been demonstrated that microorganisms can oxidize organic compounds and transfer electrons directly to electrodes. In this study, the new MFC was established from a sediment inoculum with carbonfelt electrode as the sole electron donor and 2,6-dichlorophenol as the electron donor for reductive dechlorination. The cathode and anode each in a chamber separated by a proton exchange membrane and was connected by a power supply. As a result of the study, 2,6-dichlorophenol was reduced with the consumption of electrical current.