Abstract of Presentation

Presentation Title:

Microbial transformation of arsenic

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Abstract:

Despite the environmental significance of microbial transformation of arsenic, the detailed assessment of this process has not yet been elucidated due to the complexity of the bacterial oxidation, reduction and methylation processes. Among the microbial transformation of arsenic, reduction and methylation play important roles in arsenic transportation in soil environment. Microbial reduction of arsenate is the activity of dissimilatory arsenic-reducing bacteria (DAsRB). DAsRB usually couple the reduction of As (V) to the oxidation of an organic compound or H_2 and thereby conserve energy for growth. Microbial methylation of inorganic arsenic generally follows microbial reduction of arsenate and undergoes a multi-step process with production of volatile methylarsine gases such as Monomethylarsine (MMA), Dimethylarsine (DMA) and Trimethylarsine (TMA). This presentation introduces the transformation mechanisms of arsenic in natural environment and laboratory condition.