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Identifiable mercury methylation genes and enzymes, biochemical pathways in archaea and bacteria

Disclosure Number

201202869

Technology Summary

Methylmercury is a contaminant with global environmental impact and constitutes a major health concern. Generated from inorganic Hg(II) in anerobic environments it is highly toxic and bioaccumulates, leading to its biomagnification in higher trophic organisms. Primary contributors to methylmercury production include anaerobic sulfate-reducing bacteria, but the involvement of iron-reducing and methanogenic bacteria are also increasingly apparent. Methylmercury is a potent bioaccumulative neurotoxin produced by microbes from inorganic Hg(II). We report the identification of a two-gene cluster responsible for methylmercury biosynthesis in Archaea and Bacteria.

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