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Chapter 9 - Eco-friendly and cost-effective metal sequestration mechanism by the use of biosensor microorganisms

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Abstract

The rapid increase of industrial establishments has resulted in overutilization of resources, which is leading to environmental pollution. Due to their persistence, bioaccumulative nature, and toxicity, heavy metals are well-known environmental pollutants. They are a serious threat to living organisms in an ecosystem. Free radicals are formed due to metal toxicity due to which DNA is damaged, sulfhydryl homeostasis is altered, and lipid peroxidation. Thus, one of the major concerns is the elimination of heavy metals from the environment. Because of the efficient biosorption capacity, various microorganisms especially bacteria, yeast, and fungi play key role in the sequestration of heavy metals from the environment. Microorganisms have the ability to degrade and detoxify harmful organic compounds and are capable of accumulating heavy metals as biosorbent. Parameterization is an eco-friendly, cost-effective, and efficient process of eliminating heavy metals.

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