Reduction of mercury by dissimilatory metal reducing bacteria
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ABSTRACT

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RESULTS

Fig 1: MR-1 causes loss of Hg(II) from culture supernatant

Fig 2: MerA protein is lost as elemental mercury

Comparing Hg(II) reduction by MR-1 and the mesoplasm

Cell density dependence of Hg(II) reduction by MR-1

Fig 3: As cell density increases, rate and specific activity of Hg(II) reduction decreases

Fig 4: MerB protein is lost as elemental mercury

Interactions between Hg(II) reduction and growth conditions

Fig 5: Electron donors and acceptors are required for Hg(II) reduction by MR-1

Fig 6: A higher reduction rate of Hg(II) occurs with iron as compared to fumarate as an electron acceptor

Hg(II) reduction by other DMRB

Fig 7: Different approaches to reduce Hg(II)

ENVIRONMENTAL RELEVANCE

Many DOE sites are contaminated with low levels of Hg(II). Dissimilatory reduction to reduce the non-ionized form of Hg(II) is not an inducible process.

This reduction is not as effective as the mer system (Table 1) and does not provide resistance to Hg(II). However, it is effective at low cell density (Fig. 4). Hg(II) reduction is not inducible. Many DOE sites are contaminated with low levels of Hg(II), possibly too low to induce the mer system (Table 1) and does not provide resistance to Hg(II). However, it is effective at low cell density (Fig. 4). Hg(II) reduction is not inducible. Many DOE sites are contaminated with low levels of Hg(II), possibly too low to induce the mer system (Table 1) and does not provide resistance to Hg(II). However, it is effective at low cell density (Fig. 4). Hg(II) reduction is not inducible. Many DOE sites are contaminated with low levels of Hg(II), possibly too low to induce the mer system (Table 1) and does not provide resistance to Hg(II). However, it is effective at low cell density (Fig. 4). Hg(II) reduction is not inducible. 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