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Manganese(II) oxidation by the multi-copper oxidase CopA from *Brevibacillus panacihumi* MK-8

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Highlights

- There was a new manganese(II) oxidase CopA from *Brevibacillus panacihumi* MK-8.
- The *copA* gene was cloned and expressed in *Escherichia coli* strain BL21(DE3).
- The removal efficiency of manganese of purified CopA is higher than other reported recombinant manganese oxidase

Abstract: Manganese contamination of groundwater exists worldwide. Manganese removal is primarily performed through catalytic oxidation by manganese-oxidizing bacteria. In this study, we identified a new manganese(II) oxidase (CopA) from Brevibacillus panacihumi MK-8. The copA gene was cloned and expressed in Escherichia coli strain BL21(DE3), and the recombinant strain BL21-pET-copA was able to remove 85.87% of Mn(II) from LB medium containing 1 mM Mn(II) after