

Accepted Manuscript

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PII: S0141-0229(18)30239-4
DOI: <https://doi.org/10.1016/j.enzmictec.2018.04.011>
Reference: EMT 9207

To appear in: *Enzyme and Microbial Technology*

Received date: 18-12-2017
Revised date: 29-3-2018
Accepted date: 24-4-2018

Please cite this article as: Zeng Xinping, Zhang Mengtian, Liu Yunying, Tang Wenwei. Manganese(II) oxidation by the multi-copper oxidase CopA from *Brevibacillus panacihumi* MK-8. *Enzyme and Microbial Technology* (2018), <https://doi.org/10.1016/j.enzmictec.2018.04.011>

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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

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