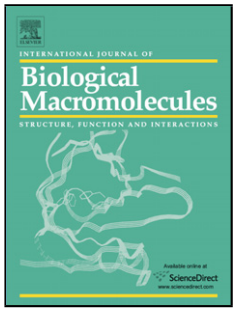

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Catalytic activation of *Bacillus* laccase after temperature treatment: Structural & biochemical characterization

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Abstract

Laccases belong to a family of multicopper oxidases that have strong oxidation ability towards phenolic compounds. Here, more detailed investigations were carried out on a *Bacillus* laccase with remarkable behavior of activation after thermal treatment. The k_{cat} of the enzyme was increased 2.5 fold after 50 min incubation at 70 °C. Copper content determination revealed a molar copper to protein ratio of 3.2 in the both sample. The present paper concerns the differences which are induced in enzyme structure after thermal treatment using common biochemical methods. Intrinsic fluorescence of the enzyme was increased after incubation at 70 °C indicating higher compactness of the structure in comparison to untreated molecules. Quenching analysis did not show any significant changes in flexibility of the enzyme structure.