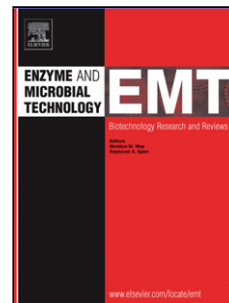


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Direct rate assessment of laccase catalysed radical formation in lignin by electron paramagnetic resonance spectroscopy

Line Munk^a, Mogens Larsen Andersen^b, Anne S. Meyer^{a,*}

^a Center for Bioprocess Engineering, Department of Chemical and Biochemical Engineering, Building 229, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark

^b University of Copenhagen, Faculty of Science, Department of Food Science, Rolighedsvej 30, 1958 Frederiksberg C, Denmark

* Corresponding author. Address as above, E-mail: am@kt.dtu.dk (Anne S. Meyer)

Highlights

- Time course EPR measurement of direct radical formation by fungal laccases on genuine lignin samples
- Assessment of enzyme kinetic rates of radical formation in lignin by two fungal laccases
- Identification of different radical formation patterns by a low and high redox potential laccase
- Demonstration of different laccase rates on different types of lignin substrates

Abstract

Laccases (EC 1.10.3.2) catalyse removal of an electron and a proton from phenolic hydroxyl groups, including phenolic hydroxyls in lignins, to form phenoxy radicals during reduction of O₂. We employed electron paramagnetic resonance spectroscopy (EPR) for real time measurement of such catalytic radical

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