

Enhanced production of manganese peroxidase from immobilized *Phanerochaete chrysosporium* and application

이동익, 정은용, 황상필, 김순엽, 권혁성, 안익성*
연세대학교
(iahn@yonsei.ac.kr*)

The white-rot fungus *Phanerochaete chrysosporium* produced manganese peroxidase (MnP) as a consequence of the secondary metabolism. In this study, the production of MnP by *Phanerochaete chrysosporium* immobilized on polyurethane foam was investigated. Maximum specific activities of MnP in the immobilized cultures were approximately 4.1 fold greater than in the free culture. We conclude that the immobilization of *P. chrysosporium* in the porous polyurethane foam allows the formation of relatively scattered mycelial pellets, leading to the enhanced production of MnP due to the increased autolysis of chlamydospore-like cells.

Manganese (III) acetate, initiator and monomer must all be present for the reactions to proceed. The polymer Mw values are 14,000 and 277,000 at the polymer yield 13.4% and 32.81%. As the concentration of initiator was increased, particle size was decreased to 80nm and observed morphology of the relatively monodisperse particles.

“This work was financially supported by the KOSEF through the AEBRC at POSTECH.”