Functional expression of Coprinus cinereus peroxidase in Pichia pastoris

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In the present study, a functional recombinant CiP (rCiP) was successfully expressed by methylotrophic yeast Pichia pastoris. The 1095-bp gene encoding peroxidase from Coprinus cinereus (CiP) was cloned with a highly-inducible alcohol oxidase promoter and integrated into the genome of P.pastoris. Effects of signal sequence, cultivation temperature on the production of the rCiP and characters of expressed rCiP were investigated in this work. The rCiP proteins fused the -mating factor pre-pro leader sequence were not retained inside cell and well secreted into the culture medium. The expression at low temperature (at 25℃) increased peroxidase activity and the yield of rCiP. PAGE and Immunoblot analysis showed that rCiP was not hyperglycosylated and its α-factor pre and pro signal sequence correctly processed.