

Purification and characterization of lignin peroxidase from a versatile mushroom *Sparassis crispa* and screening their degradation property

Gayathri Chandrasekaran, 신현재*, 남형근¹, 김윤수¹
조선대학교; ¹조선대학교 생명화학공학과
(shinhj@chosun.ac.kr*)

Peroxidases are oxidoreductases enzyme present in number of microorganisms and plants. *Sparassis crispa*, commonly called Ggotsongyi in Korean. In the present study we performed different experimental procedures for the determination of various peroxidases like laccase, lignin and manganese from this mushroom. Peroxidase activity was monitored by spectrophotometric method as well as by the microtiter plate assay. The assay mixture consists of 80 mM pyrogallol, 100 mM sodium acetate buffer pH 5.4 and 80 mM hydrogen peroxide. Lignin peroxidase was measured with two assays: quantitation of the veratraldehyde produced on oxidation of veratryl alcohol. The assay was also used to monitor oxidation of the dye azure B involving absorbance measurements in the visible range. Application study was demonstrated by the enzymatic degradation of carbon nanotubes using the *S.crispa* lignin peroxidase. We summarize the potential application of this fungal peroxidase in chemical industry, coal chemistry and environmental production, etc.