647/E2

Anti-oxidative activity of *Pleurotus cystidiosus*

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Antioxidants have been isolated from plants and fungi and they are mostly polyphenols and flavonoids. Ji-Kai Liu and his coworkers have reported the DPPH radical scavenging activities of ten natural *p*-Terphenyl derivatives obtained from three mushrooms indigenous to China. Curtisians A-D isolated from *Paxillus crutissii* have shown 10-20 times more antioxidant activities than that of vitamin E against lipid peroxidation. Betulinan A and B obtained from *Lenzites betulina* and hispidine derivatives obtained from *Phellinus linteus* mycelial culture broth have reported to have strong antioxidant activities. Pleuran (β-1,3-D glucan) isolated from *Pleurotus ostreatus* has also shown antioxidant activity. This study was carried out to investigate the antioxidant activities of the edible mushroom *Pleurotus cystidiosus,* commonly known as Abalone.

Compounds in fresh *P. cystidiosus* mushroom were extracted into acetone (A), dichloromethane (D) and hexane (H). Freeze dried extract A was fractionated using solvent extraction method to obtain A1, A2, A3 and A4 fractions. Fraction A4 was further separated into A4-1, A4-2 and A4-3 fractions using a reverse phase column. DPPH radical scavenging activity and nitric oxide radical scavenging activity were assayed for extract A and A4, A4-1, A4-2 & A4-3 fractions. All experiments were performed in triplicates. The respective EC_{50} values obtained for DPPH radical scavenging assay were 1.12 mg cm^{-3}, 1.13 mg cm^{-3}, 0.87 mg cm^{-3}, 0.81 mg cm^{-3} & 0.82 mg cm^{-3} and EC_{50} values of nitric oxide radical scavenging assay were 4.81 mg cm^{-3}, 3.82 mg cm^{-3}, 5.38 mg cm^{-3}, 0.87 mg cm^{-3} & 0.61 mg cm^{-3}. EC_{50} value obtained for ascorbic acid in DPPH radical scavenging assay was 44.57 µg cm^{-3}.

The antioxidant activity shown by the DPPH radical scavenging assay and nitric oxide radical scavenging assay indicates that fractions A4-2 and A4-3 to have the highest activity. We conclude that the polar aqueous fractions of *P. cystidiosus* contain the compounds having antioxidant activities and there exists a possibility to use such extracts as a food additive.

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