

Antioxidant Activities of Selected *Pleurotus* spp. Grown in Malaysia

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Pleurotus sajor-caju, *Ple. hungarian* and *Ple. cystidiosus* are extensively grown in Malaysia. However, there is a paucity of information on the pharmacological properties of these mushrooms. The present study was undertaken to evaluate the antioxidant activities and total phenolic content of the crude ethanol and crude water extracts of the selected *Pleurotus* spp. Crude ethanol and water extracts were prepared from the fruiting bodies of selected *Pleurotus* spp. (oyster mushrooms), namely *Ple. sajor-caju* (grey oyster mushroom), *Ple. cystidiosus* (abalone mushroom) and *Ple. hungarian* (white oyster mushroom). Three different assays, β -carotene and linoleic acid system, 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity and reducing power assay were used to evaluate the antioxidant property of these mushrooms. In the β -carotene/linoleic acid assay, the inhibition ratio of the oxidation of linoleic acid by crude waters extract of *Ple. sajor-caju* KUM50082 and *Ple. sajor-caju* KUM50083 was the highest, $96.7 \pm 3.99\%$ and $86.7 \pm 7.97\%$, respectively. Among crude ethanol extracts, extracts of *Ple. sajor-caju* KUM50084 exhibited the highest antioxidant activity ($85.9 \pm 1.39\%$) at 20 mg/ml, followed by *Ple. sajor-caju* KUM60203 ($84.0 \pm 7.70\%$) and *Ple. hungarian* ($70.0 \pm 5.35\%$). Crude ethanol extract exhibited more than 50% inhibition when tested for DPPH free radical scavenging activity at 5 mg/ml. The crude ethanol extracts of *Ple. sajor-caju* KUM50082, at 5 mg/ml, showed the highest scavenging activity ($83.8 \pm 1.95\%$). Crude ethanol extracts of *Ple. sajor-caju* KUM50084 exhibited the strongest antioxidant activity with the IC_{50} value of 2.4 mg/ml followed by crude ethanol extract of *Ple. sajor-caju* KUM50084 and *Ple. sajor-caju* KUM50083 with the IC_{50} values of 2.8 mg/ml and 3.4 mg/ml, respectively. Crude ethanol extracts of *Ple. cystidiosus* KUM50094 showed an excellent reducing power of 2.19 ± 0.02 at 20 mg/ml, followed by crude ethanol extract of *Ple. sajor-caju* KUM50082 (2.101 ± 0.01) and *Ple. sajor-caju* KUM50084 (2.008 ± 0.01). However, reducing power was low for all crude water extracts tested. Total phenolics in the crude ethanol extracts were higher than that of

the crude water extracts. Crude ethanol extracts of *Ple.sajor-caju* KUM50084 had a higher phenolic content followed by *Ple. sajor-caju* KUM50083 and *Ple. sajor-caju* KUM50081. Their phenolic contents were 492 ± 31.01 mg of GAE/L, 336 ± 50.5201 mg of GAE/L and 218 ± 24.0101 mg of GAE/L, respectively. Positive correlation was found between total phenolics content in the mushroom extracts and their antioxidant activities. Overall, crude ethanol extracts of *Ple. sajor-caju* KUM50084 was better in antioxidant activity in the b-carotene/linoleic acid assay, reducing power in reducing power assay and scavenging abilities in DPPH radical scavenging activity and higher in total phenol content.