Nutritional composition, antioxidant properties, and toxicology evaluation of the sclerotium of Tiger Milk Mushroom Lignosus tigris cultivar E

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ABSTRACT
The Tiger Milk Mushroom (Lignosus spp.) is an important medicinal mushroom in Southeast Asia and has been consumed frequently by the natives as a cure for a variety of illnesses. In this study, we hypothesized that Lignosus tigris (cultivar E) sclerotium may contain high nutritional value and antioxidant properties, is nontoxic and a potential candidate as a dietary supplement. The chemical and amino acid compositions of the sclerotium were evaluated and antioxidant activities of the sclerotial extracts were assessed using ferric reducing antioxidant power; 1,1-diphenyl-2-picrylhydrazyl; and superoxide anion radical scavenging assays. Acute toxicity of the L. tigris sclerotium was assessed using a rat model study. The sclerotium was found to be rich in carbohydrate, protein, and dietary fiber with small amounts of fat, calories, and sugar. The amino acid composition of the protein contains all essential amino acids, with a protein score of 47. The sclerotial extracts contain phenolics, terpenoids, and glycos. The ferric reducing antioxidant power values of the various sclerotial extracts (hot water, cold water, and methanol) ranged from 0.008 to 0.015 mmol min⁻¹ g⁻¹ extract, while the 1,1-diphenyl-2-picrylhydrazyl and superoxide anion radical scavenging activities ranged from 0.11 to 0.13, and ~2.81 to 9.623 mmol Trolox equivalents g⁻¹ extract, respectively. Acute toxicity assessment indicated that L. tigris E sclerotial powder was not toxic at the dose of 2000 mg kg⁻¹. In conclusion, L. tigris E sclerotium has the potential to be developed into a functional food and nutraceutical.

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