

Antioxidant Activities and Properties of Coprinus comatus Mushroom Both Mycelium and Fruiting Body Extracts In Streptozotocin-Induced Hyperglycemic Rats Model

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Abstract	<p>Coprinus comatus, well-known as Shaggy Ink Cap mushroom, is potential herbal medicine. Synthetic medicines sometimes cause side effects; therefore, it is necessary to innovate with herbal medications with minimal side effects. The study evaluated in vitro and in vivo treatments to evaluate the antioxidant effect and activity of C. comatus. The in vivo treatment was conducted using six groups of Wistar rats (n = 24). Group 1 healthy control (HC), groups 2-6 received 45 mg/Kg BW of streptozotocin once, group 2 just streptozotocin-induced (NC), group 3 was given 45 mg/kg BW of metformin (PC), groups 4-6 were given 250 (T1), 500 (T2), and 750 mg (T3) of C. comatus extract for 14 days, and the in vitro was conducted using an antioxidant oxidant assay. Data were analyzed using analysis of variance and Duncan's multiple range tests. Based on qualitative analysis, C. comatus mycelium extract contained polyphenol, flavonoids, terpenoids, and fruiting body extract had flavonoids, alkaloids, and saponins. The in vitro analysis showed that the mycelium extract had an antioxidant activity by inhibiting free radicals up to 58.51% with an IC50 value of 72.77 mg/L. The in vivo treatment using C. comatus fruiting body extract showed that it could increase the endogenous antioxidant levels of GPx, SOD, catalase and reduce MDA levels (p 0.05). The most effective dose of C. comatus extract is 500 mg. This research has shown the potential of mycelium and C. comatus fruitbody extract as an antioxidant supplement in a diabetic rat model.</p>
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