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Evaluation of selected biological activities of *Colletotrichum gloeosporioides*, *Nigrospora oryzae*, and *Marasmius palmivorus*

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Abstract:

Endophytic fungi inhabit plant tissues without causing disease symptoms and engage in continuous metabolic interactions with the host, serving as a significant source of diverse and potent bioactive metabolites. The endophytic fungi *Colletotrichum gloeosporioides*, *Nigrospora oryzae*, and *Marasmius palmivorus* were isolated from the leaves of *Gymnema sylvestre*, *Chrysophyllum* sp., and *Syngonium angustatum*, respectively, and were identified based on the sequence analysis of the ITS region of the rDNA gene. These fungal strains exhibited weak antioxidant activity in both DPPH radical scavenging and FRAP assays when compared to the ascorbic acid. At 1000 ppm, the α-glucosidase inhibitory activity of *Colletotrichum gloeosporioides*, *Nigrospora oryzae*, and *Marasmius palmivorus* was 95.10±1.44 %, 88.06±2.57 %, and 89.47±0.43 %, respectively. All fungal strains exhibited high α-glucosidase inhibitory activity. All three fungal strains exhibited weak acetylcholinesterase inhibitory activity. Weak α-amylase inhibitory activity was observed in *Colletotrichum gloeosporioides* and *Marasmius palmivorus*, while *Nigrospora oryzae* exhibited moderate inhibitory activity, with a percentage inhibition of 68.52±7.63%. These fungal strains exhibited weak cytotoxic activity against *Artemia salina* in comparison to the potassium dichromate. The minimum inhibitory concentrations for *Colletotrichum gloeosporioides* and *Nigrospora oryzae* in the lettuce seed germination assay were >500 mg/mL, while that for *Marasmius palmivorus* was >1000 mg/mL.

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