Antioxidant potential of several wild Lentinus species grown in liquid fermentation

ABSTRACT

Background: Studies were performed to evaluate antioxidant capacities of cultivated fruiting bodies of five Lentinus species namely Lentinus fasciatus, L. polychrous, L. sajor-caju, L. squarrosulus and L. strigosus.

Methods: Antioxidant capacities were evaluated using Folin-Ciocalteu assay, scavenging effects on 1, 1-diphenyl-2-picrylhydrazyl radicals, β-carotene-linoleate bleaching assay, cupric ion reducing antioxidant capacity (CUPRAC), reducing power assay and lipid peroxidation assay.

Results: Among the species studied, L. squarrosulus extract was highest in Folin-Ciocalteu assay (58.23 mg GAE/g) and lipid peroxidation assay with 70.06% inhibition at 10 mg/mL concentration. While L. fasciatus extract was found to exhibit the highest radical-scavenging activity with IC50 of 14.17 mg/mL followed by L. squarrosulus extract (29.13 mg/mL). Lentinus fasciatus extract at concentration 1 mg/ml also exhibited the highest reducing capability on cupric (CUPRAC assay) and ferric ion (reducing power assay) with absorbance values of (A450, 1.22) and (A700, 0.65) respectively. This extract also showed the highest value of antioxidant activity based on β-carotene bleaching assay with EC50 value of 0.02 mg/mL.

Conclusion: Therefore, this finding suggests the potentials of L. squarrosulus and L. fasciatus extract to be used as complementary and alternative antioxidant ingredients either in pharmaceutical, industrial or cosmetic products.