PHENOLIC CONTENT AND *IN-VITRO* ANTIOXIDANT ACTIVITIES OF FRUITING BODIES EXTRACTS FROM THE OYSTER MUSHROOM *PLEUROTUS OSTREATUS*

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Mushrooms have been part of the normal human diet for thousands of years and, in recent times, there has been an upsurge of interest in this natural resource in view of the anti-mutagenic, anti-genotoxic, radioprotective and anti-aging effects, closed associated with their antioxidant potential. *Pleurotus sp*. is a genus of higher fungi widely distributed worldwide and includes edible and medicinal species of high economic value. In this study we determined the total phenolic content as well as the *in vitro* antioxidant activity of extracts from fruiting bodies of *Pleurotus sp* obtained at low (LT-E) and high temperatures (HT-E). The heat treatment of cellular biomass favored the releasing of phenolic compounds with values of 16 and 58 µg/mg, for LT-E and HT-E, respectively. The results in the DPPH assay indicated that the percentage of inhibition for LT-E at concentrations between 0.75 and 3 mg/mL was not statistically significant compared to the decoction (HT-E) at 1 mg/mL ($p<0.05$). However, with respect to the ABTS assay, the LT-E at 0.15 and 3 mg/mL showed better results than the decoction as judged by the radical-scavenging ability. In the cytoprotective evaluation, the LT-E displayed a hemolytic activity and hemoglobin denaturation index of 39.9% and 81, 96%, respectively while the decoction HT-E showed values of 16.9% and 128%, respectively. Both extracts modulated favorably the cytoxicity exerted by sodium lauryl sulphate. In addition, five extracts of fruit bodies of *Pleurotus* sp. were obtained with solvents of different polarity: n-hexane, ethyl acetate, acetone, ethanol and water. Phenolic compounds were detected in the five extracts; however, the highest levels were found in those obtained with the most polar solvents (water and ethanol) with values of 138.4 and 86.37 mg/100 g, dry base, respectively ($p< 0.05$). The extracts exerted a good antioxidant activity in the DPPH and ABTS radical scavenging assays as well as in the reducing power estimation, suggesting that the antioxidant potential did not depend solely on the concentration of total phenols. Moreover, in the inhibition of lipid peroxidation in erythrocyte membrane, the aqueous extract showed similar activity to that of a reference antioxidant compound butyated hydroxyl-toluene (BHT). Based on these results, the extracts could be potential candidates for designing antioxidant functional foods, dietary supplements and/or drugs useful in the management of diseases associated with oxidative stress.