

Hepatoprotective and iNOS down regulation activities of *Pleurotus florida*

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Pleurotus florida is a delicious edible mushroom cultivated on commercial scale in various parts of world. Methanol extract of *P. florida* was tested for its hepatoprotective and gene expression activities. Inflammation was induced in hepatocytes of BALB/c mice with 1.5 µg lipopolysaccharide (LPS)/25 g body weight followed by treatment with different concentrations of methanol extract of *P. florida* showed hepatoprotective activity. However 125 µg concentration of mushroom extract showed high hepatoprotection with no abnormalities. Total RNA of hepatocytes were isolated and RT-PCR was performed to study the down regulation of iNOS. At 125 µg concentration mushroom extract significantly reduced the expression of upregulated iNOS at transcriptional level. The findings of the present study indicate that *P. florida* is not only a nutritionally valuable food it is also an important source for therapeutic compounds.

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Glyphosate-based herbicide induces growth of three cyanobacteria species and cytogenotoxic effects on guppy *Poecilia reticulata*

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The organophosphate agrochemical glyphosate can be used as nutrient by cyanobacteria species capable of producing cyanotoxins, which has been reported to toxic effects on vertebrates. The aim of this study was to compare the influence of a glyphosate-based herbicide (GBH) in the proliferation of three cyanobacteria species (*Anabaena sp.*, *Cylindrospermopsis raciborskii* and *Microcystis aeruginosa*) and evaluate the toxicity of microcystin and GBH in the female guppy *Poecilia reticulata*. Cyanobacteria strains were inoculated in culture medium with different concentrations of GBH (0.5, 1, 2 and 4 mg GLY L⁻¹) and the cyanobacteria density was quantified every 5 days of exposure. The evaluation of the GBH and microcystin toxicity in *P. reticulata* was estimated by the determining of LC_{50/96h}, behavioural analysis and estimation of micronuclei (MN) and nuclear alterations frequency. The results showed that GBH induces a concentration-dependent increase of cyanobacteria growth and that *C. raciborskii* is the one that have faster growth. The GBH concentration of 4 mg L⁻¹ was the most effective for the cyanobacteria growth. The toxicological evaluation of GBH and microcystin in *P. reticulata* showed a LC_{50/96h} of 4.44 mg GLY L⁻¹ and 3.29 µg L⁻¹, respectively. Both microcystin as GBH induced behavioural changes and increase of the MN and nuclear erythrocyte alteration frequency in *P. reticulata*. We conclude that GBH increases the growth of cyanobacteria capable of producing cyanotoxins and both GBH as microcystin induced toxic effect on *P. reticulata*.

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