Efficacy of *Lygodium microphyllum* in Mitigating Carbon Tetrachloride (CCl₄)-Mediated Oxidative Hepatic Injury in Rats.

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INTERNATIONAL CONFERENCE ON RECENT TRENDS IN HUMANITIES AND SCIENCE 2018, 'ICRTHS-2018'. UNIVERSITI TUNKU ABDUL RAHMAN, BANDAR BARAT, 31900 KAMPAR, PERAK, MALAYSIA. 26TH OCTOBER 2018. American J of Bio-pharm Biochem and Life Sci 2014 December, Vol. 6: OP43

ABSTRACT

Aqueous extract of Lygodium microphyllum (Cav.) R.Br. (Lygodiaceae), a medicinal plant used by local communities in Sabah, was tested for antioxidative and hepatoprotective activity. Several in vitro studies on various extracts of L. microphyllum were carried to determine total phenolic and flavonoids contents, DPPH radical scavenging activity. In vivo animal studies were carried out to evaluate hepatoprotective effects of L. microphyllum at different doses (200, 400 & 600 mg/kg b.w.) against CCl4 (1.0 ml/kg b.w.)-mediated liver injury and histopathological alterations. L. microphyllum possessed strong antioxidant activity in vitro and has the ability to scavenge DPPH free radicals effectively. Aqueous extract of L. microphyllum was able to reduce the levels of ALT, AST and MDA in a dose-dependent manner. GSH levels and antioxidant enzymes activities (GPx, GR, CAT, GST and QR) were significantly elevated dose-dependently in L. microphyllum treated groups. L. microphyllum alone treated group (600 mg/kg b.w.) exhibited similar results as normal control group. Histopathological (H&E) alterations proved the protective effects of L. microphyllum towards normalization of hepatocytes. The ethnobotanical claim is in harmony with the findings of this experiment. Antioxidative properties of L. microphyllum could be attributed for the hepatoprotective effect of this plant.