

Antioxidative Potential of Aqueous Extract of *Ocimum americanum* L. Leaves: An in vitro and in vivo Evaluation

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Abstract : *Ocimum americanum* L. (Lamiaceae) is an annual herb that is native to tropical Africa. The in vitro and in vivo antioxidant activity of its aqueous extract was carefully investigated by assessing the DPPH radical scavenging activity, ABTS radical scavenging activity and hydrogen peroxide radical scavenging activity. The reducing power, total phenol, total flavonoids and flavonols content of the extract were also evaluated. The data obtained revealed that the extract is rich in polyphenolic compounds and scavenged the radicals in a concentration-dependent manner. This was done in comparison with the standard antioxidants such as BHT and Vitamin C. Also, the induction of oxidative damage with paracetamol (2000 mg/kg) resulted in the elevation of lipid peroxides and significant ($P < 0.05$) decrease in activities of superoxide dismutase, glutathione peroxidase, glutathione reductase and catalase in the liver and kidney of rats. However, the pretreatment of rats with aqueous extract of *O. americanum* leaves (200 and 400 mg/kg), and silymarin (100 mg/kg) caused a significant ($P < 0.05$) reduction in the values of lipid peroxides and restored the levels of antioxidant parameters in these organs. These findings suggest that the leaves of *O. americanum* have potent antioxidant properties which may be responsible for its acclaimed folkloric uses.

Keywords : antioxidants, free radicals, *ocimum americanum*, scavenging activity

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