PHYTOCHEMICAL, FREE RADICAL SCAVENGING EFFECTS AND ANTIOXYDANT ACTIVITY OF LOTUS LEAVES (*Nelumbo nucifera* Gaertn.)

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Summary

In the present study, phytochemical, free radical scavenging effects and antioxidant activity of Lotus leaves have been studied. Lotus leaves are rich in flavonoid, polyphenol and alkaloid. The results showed that extracts of mature leaves having total polyphenol content (304.42 mg GAE/g) higher than in young leaves extract (252.94 mg GAE/g). Young leaf extract having total flavonoid content (205.23 mg RE/g) was less than in mature leaf ones (140.53 mg RE/g). Total alkaloid contents contained in young leaves extracts (1.52-1.84%) and mature ones (1.66-1.91%). The antioxidative and hepatoprotective activity *in vivo* of young (30 mg/kg) and mature (30 mg/kg) leaves extracts through the mice liver protection model caused CCl_4 toxicity were confirmed. The lotus leaves exhibited 1,1-diphenyl-2-picryl-hydrazyl ($DPPH^{\cdot}$) and nitric oxide ($NO^{\cdot}$) free radicals scavenging effects. The HPLC/MS analysis revealed the presence of quercetine, demethylcorlaurin, catechin, O-nuciferine, nuciferine, roemerine, anonaine and pronuciferine in mature leaves. The results obtained in the present study demonstrated that mature lotus leaves possess strong antioxidant activity and good potential to explore as functional food to benefit human health and to improve local economy of the people.

Keywords: *Free radicals scavenging activities, lotus leaves, polyphenol, alkaloid, flavonoid, antioxidant.*