

Hypotensive, Free Radical Scavenging and Anti-Lipid Peroxidation Activities of *Crataegus azarolus* L. Leaves Extracts Growing in Algeria

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Abstract : The present study aimed to evaluate the hypotensive and the in vitro antioxidant activities of *Crataegus azarolus* L. (Rosaceae), a plant widely used as natural remedy for hypertension in folk medicine. The antioxidant potential of methanolic extract (ME) and its three fractions of Chloroform (CHE), ethyl acetate (EAE) and water (AqE) have been investigated using several assays, including the DPPH scavenging, ABTS scavenging, hydroxyl radical scavenging. Inhibition of lipid peroxidation was performed by the β -carotene bleaching assay, ferric thiocyanate method and thiobarbituric acid method. Total phenolic and total flavonoid contents of the extracts were estimated using Folin-Chiocalteu reagent and $AlCl_3$, respectively. EAE extract showed the highest polyphenolic and flavonoids contents (396.04 ± 1.20 mg GAE/g of dry extract and 32.73 ± 0.03 mg QE/g of dry extract) respectively. Similarly, this extract possessed the highest scavenging activity for DPPH radical ($IC_{50} = 0.006 \pm 0.0001$ mg/ml), ABTS radical ($IC_{50} = 0.0035 \pm 0.0007$ mg/ml) and hydroxyl radical ($IC_{50} = 0.283 \pm 0.01$ mg/ml). In addition, the EAE exhibited the highest antioxidant activity in the inhibition of linoleic acid/ β -carotene coupled oxidation (89.21%), lipid peroxidation in the ferric thiocyanate (FTC) method (90.13%), and thio-barbituric acid (TBA) method (74.23%). Intravenous administration of ME and EAE decreased mean arterial blood pressure, systolic and diastolic blood pressure in anesthetized rats dose-dependently, at the dose range of 0.4 to 12 mg/kg. The mean arterial blood pressure dropped by 27.58 and 39.37% for ME and EAE, respectively. In conclusion, The present study supported the significant potential to use *C. azarolus* by-products as a source of natural antioxidants and provides scientific justification for its traditional uses as cardio-protective and anti-hypertensive remedy.

Keywords : *Crataegus azarolus*, polyphenols, flavonoids, hypertension, antioxidant activity, free radicals, peroxidation

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