

Evaluation of antioxidant activities of methanolic extract of *Cornus sanguinea* subsp. *australis* fruits

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Background and Aims: The genus *Cornus* (cornaceae) comprises about 55 species and there are 2 species in Iran including *C. mass* and *C. sanguinea* subsp. *australis*. The plants of *Cornus* genus have been used as antidiabetic, diuretic, analgesic and tonic. Some of the *Cornus* species have antioxidant, anti-inflammatory, anti-diabetic, anti-bacterial and cytotoxic activities. *C. sanguinea* subsp. *australis* is a native species in azarbaijan, kordestan, khorasan, north and center of Iran. The aim of this study was to evaluate antioxidant activities of the methanolic extract of fruits with DPPH and FRAP methods.

Methods: The fruits have been collected from Valiabad, Mazandaran province at September 2011. The voucher specimen was deposited in Herbarium of Faculty of Pharmacy, Tehran University of Medical Sciences. The plant materials were air dried at room temperature. The fruits were extracted using methanol containing 1% HCl. The antioxidant activities of methanolic extract were measured with DPPH and FRAP method.

Results: The DPPH test showed that methanolic extract of fruits have antioxidant activity with IC₅₀ 94.83 µg mL⁻¹. Radical scavenger activity of total extract at 100 µg mL⁻¹ were comparable with α-tocopherol (20 µg mL⁻¹) and at 200 µg mL⁻¹ were comparable with BHA (50 µg mL⁻¹), *p*>0.05. In FRAP method, antioxidant activity was calculated with a linear equation based on a standard curve using FeSO₄ (*y*= 0.0008*x*-0.0148, R²= 0.9961). The methanolic extract showed antioxidant activity with the FRAP value of 5.987 ± 0.0174 mmol g⁻¹.

Conclusions: This study showed that the fruits of *C. sanguinea* subsp. *australis* are a valuable source as antioxidants and can be used in different conditions as an antidiabetic and anticancer like other species of this plant. Other complementary studies are presented.

Keywords: *Cornus sanguinea* subsp; *Australis*; Antioxidant capacity; FRAP; DPPH