

عنوان مقاله:

Iron Chelating Activity of *Nepeta Crispa* Willd., an Endemic Plant in the West of Iran

محل انتشار:

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خلاصه مقاله:

Background: *Nepeta crispa* Willd., a member of Lamiaceae family, is an annual plant native to western Iran, especially Hamedan, with many traditional uses. The plant effects have not been investigated yet. Iron chelating activity is a suitable test for measuring antioxidant activity. Objectives: The present study aimed to evaluate Iron-chelating activity of extract, fractions, and essential oil of the *N. crispa*, in vitro. Methods: The methanolic extract of *N. crispa* was prepared adopting maceration method. Then, the total methanolic extract was fractionated using hexane, chloroform, ethyl acetate, and water. The essential oil was isolated by hydrodistillation using a Clevenger-type apparatus. Chelating activity of total extract, each fraction and essential oil of *N. crispa* on Fe^{2+} ions was determined using Iron-chelating assay. EDTA was employed as positive control. Results: EDTA as positive control had the best activity with $IC_{50} = 0.02 \pm 0.001$ mg/mL, and ascorbic acid came second in this regard ($IC_{50} = 0.386 \pm 0.021$ mg/mL). The hexane fraction was the most active fraction among the different fractions of *N. crispa* ($IC_{50} = 0.435 \pm 0.032$ mg/mL). Chelating activity of hexane fraction was followed by aqueous, ethyl acetate, chloroform fractions, and methanolic extract with IC_{50} of 1.433 ± 0.098 , 2.158 ± 0.074 mg/mL, 3.624 ± 0.112 , and 3.051 ± 0.174 , respectively. The essential oil showed extremely poor activity in the tested concentrations. Conclusion: It was concluded that the n-hexane fraction had promising Iron chelating activity, and was likely capable of reducing Fe^{2+} ions concentration and preventing oxidative damage.

کلمات کلیدی:

Nepeta crispa, Lamiaceae, Antioxidant, Iron-chelating activity, in vitro, Extract

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