Evalution polyphenol contents and antioxidant capacities by DPPH and *phenanthroline* antioxidant assays from hydromethanolic extract of *Athamanta sicula L*

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Abstract

traditional medcine has a key role in helth care worldwide, the search for antioxidant agents from plants has been a growing interest in the last few decades and it has been a growing interest in the study of medicinal plants. Plants containing phenolic compounds have been reported to possess strong antioxidant activity. The objectives of this study is to evaluate total polyphenols and flavonoids contents as well as examine the *in vitro* antioxidative properties from hydromethanolic extract of *Athamanta sicula L* (HME.AT). Total polyphenol contents were determined using Folin-Ciocalteu's reagent. Total flavonoid contents were estimated using aluminum chloride. The antioxidant properties of this extract were evaleated using DPPH and *phenanthroline* antioxidant tests. Indeed, results showed that the HME.AT is rich in polyphenols (149.58 ± 0.77 ug gallic acid equivalents/mg of dry weight), and flavonoids (34.79 ± 9.64 ug quercetin equivalent/ mg dry weight). these phytochemicals compounds possess significant antioxidant activities. DPPH scavenging assay showed taht HME.AT presents a good ability to scavenge the DPPH radical with an IC_{50} of 46.62 ± 0.1 µg/mL. *phenanthroline* antioxidant assay showed that HME.AM exhibited a strong effect with an $A_{0.5}$ of 172.71 ±10.70 µg/mL. These results indicate that hydromethanolic extract of *Athamanta sicula L* (HME.AT) has potent antioxidant activities and may prove to be of potential health benefit.

Key words : polyphenol, antioxidant capacities, DPPH, *phenanthroline*, hydromethanolic extract, *Athamanta sicula L*