

Quantitative analysis, Evaluation of Antioxidant and Antidiabetic activities of flowers extracts from plant of Asteraceae family

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Introduction & Objectives:

The present work concerns the phytochemical and biological studies of the flowers of an Algerian plant belonging to the Asteraceae family.

Methodology (Material and methods):

- Polyphenols were estimated by the Folin-Ciocalteu method.
- Flavonoids were estimated by the aluminum trichloride method (AlCl₃).
- The antioxidant activity of our extracts was evaluated using DPPH and ABTS test.
- The evaluation of the ant-diabetic activity using α -amylase test is carried out by this enzyme according to the iodine / potassium iodine (IKI) method with few modifications.

Results and Discussion: Firstly, the flowers of this species were submitted to a phytochemical study, which revealed the presence of several secondary metabolites, such as alkaloids, flavonoids, tannins and others. Then Soxhlet extraction in three solvents of increasing polarity made it possible to obtain three extracts: CHCl₃, EtOAc, and *n*-BuOH. The results of the quantitative analysis reveal that the *n*-BuOH extract is the richest in total polyphenols and flavonoids, with values of 82.7±1.086 mgGAE/g of extract and 35.25±0.0784 mgQE/g of extract, respectively.

The DPPH and ABTS methods used to assess the antioxidant activity reveal that the *n*-BuOH extract has the highest antioxidant activity. In addition, the α -amylase test shows that all extracts possess dose-dependent antidiabetic activity, Based on the IC₅₀ values, the EtOAc extract has the best inhibitory activity with a value of 51.58±9.95 μ g/ml.

Conclusion: The studied plant which belongs to Asteraceae family is characterized by a fairly large reservoir of secondary metabolites such as alkaloids and flavonoids which are known by their specific therapeutic and pharmacological properties, the flower of this plant possess large antioxidant and antidiabetic activity.

Keywords: medicinal plants, polyphenols, flavonoids, antioxidant activity, α -amylase.

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