Evaluation of antioxidant activity of aqueous extract derived from two medicinal plants *Viscum album* and *Cassia fistula*

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Medicinal plants are currently of major interest because of their interesting phytotherapeutic properties. The objective of this study is the determination of the content of bioactive compounds of the plant *Visum album* (stems and leaves) and the fruit of *Cassia fistula* and to evaluate the antioxidant activity of these two plants. The aqueous extract of *V.album* was obtained by infusion, for the total pod and the envelope only of *C.fistula* were prepared by decoction. The content of phenolic compounds was determined by the Folin-Ciocalteu method, flavonoids were evaluated using the aluminum trichloride method and for the determination of condensed tannins is also estimated by the vanillin method. Antioxidant capacity was evaluated by three different methods, scavenger tests (DPPH, ABTS) and β-carotene/linoleic acid bleaching test.The preliminary phytochemical test revealed the presence of some chemical compounds such as tannins, saponosides, anthocyanins and terpenoids for the extracts of *C. fistula* and *V. album.* The results of the phenolic compounds determination showed polyphenol contents of 85.411 ± 0.115, 69.144 ± 0.100 and 32.653 ± 0.014(µg GAE /mg extract) and flavonoids contents of 17. 571± 0.007, 16.763 ± 0.004 and 19.860 ± 0.009(µg QE /mg extract) for the aqueous extracts of (pod and envelope) of *C. fistula* and the aqueous extract of *V. album* respectively. For the condensed tannin contents in the extracts of *C. fistula* pod and envelope were 0.008 ± 0.000 and 0.001± 0.003(µg CATE /mg extract) respectively. The results of the DPPH test showed IC50 values of 0.167 ± 0.004 and 0.177 ± 0.008 µg/ml for the two aqueous extracts of pod and envelope of *C. fistula*, the aqueous extract of *V. album* showed an IC_{50} of 0.288 ± 0.007 µg/ml. For the ABTS test, the IC_{50} values are in the following order: 0.120 ± 0.010; 0.096 ± 0.005 and 0.395 ± 0.048 µg/ml, for the aqueous extracts of *C. fistula* (pod and envelope) and *V. album* (aqueous extract) respectively. For β-carotene bleaching assay, *C. fistula* envelope showed a percentage inhibition of 44.117 ± 8.813%, followed by *C. fistula* pod 41.049 ± 8.356% then *V. album* aqueous extract with a percentage inhibition of 15.867 ± 11.18%. Results of this study suggest a possibility to test the synergy of the two extracts and to exploit in a preventive strategy against the oxidative imbalance associated with some diseases.

Keywords: *Viscum album*, *Cassia fistula*, aqueous extract, phenolic compounds, antioxidant activity.