Medical Technologies Journal, Volume: 4, Issue: 1, January-March 2020, Pages: 520-521. Doi : https://doi.org/10.26415/2572-004X-vol4iss1p520-521

Study of the Biological Activities of the Seeds of the Plant Ceratonia Siliqua L. Recovered in the Bejaia Region

Type of article: Conference abstract

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Abstract:

Background: *Ceratonia siliqua* is a plant that belongs to the Fabaceae family. It is frequently used in our culinary and medical traditions to fight cholesterol, acute diarrhea and digestive disorders.

Methods: The hydrogen atom or electron donation abilities of the corresponding extracts and some pure compounds were measured from the bleaching of the purple-colored methanol solution of 2, 20-diphenylpicrylhydrazyl (DPPH), studying the anti-inflammatory effect by measuring the volume of the edema of the paw that has received carrageenan 1%. Antimicrobial activity *in vitro* was screened by using disc diffusion and micro-dilution methods.

Results: The determination of the polyphenols of the methanolic extracts of the seeds reveals the richness of our extracts in polyphenols is 30 mg of gallic acid / g of extract. The aqueous and methanolic extract flavonoid assay shows that they contain high levels of flavonoids with contents of 07 and 10 mg equivalent of quercetin / g of extract respectively. The aqueous and methanolic extracts *of Ceratonia siliqua* seeds from the Bejaia region could bring the stable free radical 2.2 diphenyl-1-picrylhydrazyl (DPPH) to yellow-colored diphenylpicrylhydrazine with respective IC 50 values of 0.7 mg/ml and 0.2 mg/ml. They exhibit lower antioxidant activity than ascorbic acid (0.038 µg / ml). Determination of anti-inflammatory activity revealed that our aqueous and methanolic extracts of *Ceratonia siliqua L* seeds are able to reduce edema up to 81.89%. The methanoid extracts of *Ceratonia siliqua L*. seeds have a medium antibacterial action against bacteria*: E. coli* (13 mm), *Staphylococcus aureus* (12 mm) and *Pseudomonas aeruginosa* (12 mm). On the other hand, the aqueous extracts of the seeds of *Ceratonia siliqua L* have a weak antibacterial action against the same bacteria with a diameter of inhibition of 9 mm. However, the aqueous extracts of *Ceratonia siliqua L* seeds are endowed with a very important inhibitory action against *candida albicans* and it is similar to that of the antibiotic, antifungal Econazole (1%).

Conclusion: According to the results observed, the two extracts of the seeds and pods have a potential anti-free radical and antioxidant measured compared to the standard antioxidant used. The results of the antimicrobial activity carried out in vitro on the 3 bacterial strains indicate that the two methanolic extracts of this plant have low antibacterial activity.

Keywords: Fabaceae, *Ceratonia Siliqua*, Secondary Metabolites, Polyphenols, Antioxidant Activity, Antimicrobial Activity, Reducing Power.

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1. Conflict of interest statement

This article is a conference abstract presented at the International Congress on Health Sciences and Medical Technologies, Tlemcen Algeria 5-7 December 2019, ICHSMT'19.

2. Authors' biography

No Biography.

3. References

[1] Burits, M., Bucar, F. 2000. Antioxidant activity of *Nigella sativa* essential oil. *Phytotherapy Research* 14: 323-328.

[2] Cuendet, M., Hostettmann, K., Potterat, O. 1997. Iridoid glucosides with free radical scavenging properties from *Fagraea blumei*. *Helvetica Chimica Acta* 80: 1144-1152.

[3] NCCLS (National Committee for Clinical Laboratory Standards), 1997. Performance Standards for antimicrobial disk susceptibility test, VIth ed. Wayne PA: Approved Standard, M2-A6.