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Chemical analysis of aqueous extracts of *Origanum majorana* and *Foeniculum vulgare* and their e□cacy on *Blastocystis spp.* Cysts. (2018). Phytomedicine (43) pp 158–163.

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Abstract

Background: *Origanum majorana* (*O. majorana*) and *Foeniculum vulgare* (*F. vulgare*) are traditionally used herbs in Egypt for treatment of several diseases including parasitic diseases. The Purpose was to determine the e□cacy of *O. majorana* and *F. vulgare* aqueous extracts (AEs) on *Blastocystis spp*. in vitro, and to reveal their phenolic, flavonoids components and antioxidant activities through chemical analysis**. Methods**: The E□cacy of both plant AEs on human Peripheral Blood Mononuclear Cells (PBMCs) viability was assessed using MTT assay. Isolated *Blastocystis spp*. cysts from patients' diarrhea samples were incubated with di□erent concentrations of *O. majorana* and *F. vulgare* AEs for di□erent incubation periods (24, 48 and 72 h) in comparison with nitazoxanide (NTZ) as a drug control. The total contents of phenolic and flavonoid compounds in the AEs and their ability to reduce DPPH were assessed. High performance liquid chromatography (HPLC) analysis for quantitative and qualitative determination of the phenolic and flavonoid contents was performed. **Results**: *O. majorana* AE at a dose of 400 µg /ml showed e□cacy rates of 96% and 100% against *Blastocystis* parasite after 48 and 72 h, respectively, which nearly equivalent to NTZ at a dose of 500 µg/ml. *F. vulgare* at a dose of 250 µg/ml showed less e▪ cacy rate of 56.4% after 48 h and increased to 70.7% after 72 h. Both extracts contain high phenolic and flavonoid compounds that possess antioxidant and free radical scavenging activities. **Conclusion**: *O. majorana* and *F. vulgare* AEs showed dose and time dependent anti-Blastocystis activity.

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