Meetings International

18th International Conference on

FOOD MICROBIOLOGY

April 27-28, 2023 | Rome, Italy

HPLC-UV phenolic profile and biological potential of Propolis methanolic extract

Nora MIR

Moualy Ismail University, Morocco

Apitherapy is an alternate therapy that relies on the use of honeybee products most importantly propolis for the treatment of many human diseases [1]. Despite of its richness of bioactive molecules with important pharmaceutical benefits, propolis still understudied. Thus, we intended to explore the chemical composition and the biological properties of two propolis samples (P1 and P2) collected from two regions of Moroccan Atlas. The evaluation of the mineral content showed that both propolis samples have a high concentration of majors minrals (K, Ca, Mg, P, Na, Fe) with an average of 365,66 - 6498,02 mg/kg for P1 and 251,21 - 3809,45 mg/kg for P2. In the other hand, theses samples have a low concentration of heavy metals (Cd, Pd, Ni, Mo, Cr, As, Co) with an average of 0,13 - 4,85 mg/kg for P1 and 0,18 - 4,22 mg/kg for P2.

The total polyphenolic content of the methanolic extracts of P1 and P2 was 203,03 (mg EAG/g of extract) and 189.12 (mg EAG/g of extract) respectively, and the flavonoid content was 186,46 (mg EQ/g of extract) and 175.12 (mg EQ/g of extract) respectively for P1 and P2. Moreover, Phenolic compounds were identified using HPLC–UV, the analysis showed the presence of five phenolic acids and three flavonoids for P1 methanolic extract, and four phenolic acids and three flavonoids for P2 methanolic extract.

Concerning to the biological potential, the results of the DPPH test showed a powerful antioxidant activity. Both propolis samples showed a higher activity than the positive control (ascorbic acid) with IC50 values of 0.12 (µg/ml) for P1, 0.10 (µg/ml) for P2 and 0.49 (µg/ml) for the ascorbic acid. For the antibacterial potential, the best activity for both propolis samples was against staphyloccocus aureus with a Minimum inhibitory concentration (MIC) value of 2.08±0.15 and 2.08±0.23 mg/ml respectively for P1 and P2. On the other hand, both Propolis samples showed the same MIC value of 4.16±0.25 mg/ml as well as the same MBC value of 16.66±0.21 mg/ml against all other bacterial strains.

The results suggest that propolis could be valuable sources of health benefits compounds, contributing to its valorization and its further application in Apitherapy.

Keywords: Propolis, Phenolic composition, Biological potential, Apitherapy.

Biography

Nora MIR is a professional in laboratory of bioactives and environmental health and a faculty of Sciences in Moualy Ismail University, Morocco. He has done his researches along with Dr. Lhoussain HAJJI.

nora120@hotmail.fr