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Antioxidant and Antimicrobial Activities of Matricaria pubscens Extracts: A Wild Space of North African Pharmacopeia

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Abstract : This study focused on the antioxidant and antimicrobial activity of four extracts from the plant Matricaria pubscens (Asteraceae) harvest in the region of Ghardaia, the northern Sahara of Algeria. The different extracts were analyzed for their content of phenolic compounds and their biological activities. The ethanol extract expresses a better extraction yield (44.22%). We have first performed the quantitative colorimetric methods for total polyphenols. Wherein the aqueous extract shows the highest total polyphenol content and total flavonoid (216.66±2.58 mg Eq GA/g and 111.04±0.49 mg Eq Q/g E, respectively) and ethanol extract 50% total tannins content (68.88±2.72 mg Eq AT/g E). The evaluation of the antioxidant activity of extracts of Matricaria pubscens by the arbitrary value IC50. The ethanol 50% extract is expressed strong activity with an IC50 14.19±1.25 mg/m against the DPPH radical and 11.66±0.53 mg/ml against the ABTS radical). In addition, the aqueous extract showed strong reducing power with an IC50 (48.61±1.14 mg/ml). However, the results obtained by the reducing power of phosphomolybdat the test are calculated by the iron maximum absorbance where ethanol extract 50% gives an absorbance of about 1.641 ± 0.01nm. Otherwise, methanol 70% and butanol 80% extracts gave a very large chelating effect of iron with an IC50 (38.38±0.01 µg/ml and 38.58±0.04 µg/ml respectively). By the method of disc Diffuson, the results of the antimicrobial activity are achieved butanolic extract 80% shows high activity towards MRSA (MIC: 3.51mg/ml; BMC>100 mg/ml). Their shares, the extracts were the most active for the antifungal test, the butanol 80% extract was the most active against A. niger (MIC: 12.5 mg/ml; FMC>100 mg/ml). These preliminary results could be used to justify the traditional use of this plant and their phenolic compounds could be exploited for therapeutic purposes, such as antioxidants and antimicrobial effects.

Keywords : Matricaria pubscens, phenolic compounds, antioxidant activity, antimicrobial activity, IC50, MIC
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