



## Evaluation of antimicrobial and antioxidant activities of solvent extracts of *Anacyclus pyrethrum* L., from Algeria

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**Abstract:** In the present study, solvent extracts from aerial parts of *Anacyclus pyrethrum* L. were assessed for their total phenol content, antimicrobial and antioxidant (1,1-diphenyl-2-picrylhydrazyl free radical scavenging and ferric-ion reducing power) activities. The amounts of total phenolics and flavonoids in the solvent extracts were determined spectrometrically. (310.78 mg GA/g extract) and antioxidant activity ( $IC_{50} = 0.056$  mg/mL). Increasing the concentration of the extracts resulted in increased ferric reducing antioxidant power for both extracts tested.

The methanolic extract exhibited the best antimicrobial activity against three gram-positive bacterium (*Listeria monocytogenes*: 100%, *Bacillus cereus*: 69% and *Staphylococcus aureus*: 66%), as well as against *Candida albicans* (81%).

Finally, a relationship was observed between the biological activities potential and total phenolic and flavonoid levels of the extract. The results of this study provided an alternative of utilising *Anacyclus pyrethrum* aerial parts as readily accessible source of natural antioxidant in food cosmetic and pharmaceutical industry.

**Keywords:** *Anacyclus pyrethrum* L.; Solvent extracts; Antioxidant and antimicrobial activities; DPPH, Reducing power.

### Introduction

Many oxidative stress related diseases are as a result of accumulation of free radicals in the body. A lot of researches are going on worldwide directed towards finding natural antioxidants of plants origins. The phenolic and flavonoid compounds are commonly found in plants and have been reported to have several biological activities including antioxidant and antimicrobial properties. The medicinal plants have become more and more important in primary health care, because of their secondary metabolites which may play numerous biological activities, against cancer and infectious diseases. Many pharmacological investigations are carried out to identify new drugs for the treatment of these diseases. Other hand, the synthetic antioxidants have disadvantages due to their possible toxicity and injurious properties to human health<sup>1</sup>. In addition, most consumers prefer additive free foods or a safer approach like the utilization of more effective antioxidant and antimicrobial agents from natural origins.

Accordingly, plant extracts and their derived secondary metabolites, such as phenolic components, offer the opportunity in this regard<sup>2</sup>. Among secondary metabolites, the

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