

Evaluation of Antimicrobial Activity of *Thymbra spicata* L. var. *spicata* Essential Oil as a Potential Source of Herbal Medicine

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Article Information

Identifiers and Pagination:

Year: 2022

Volume: 3

Issue: 2

E-location ID: e290322202799

Publisher ID: [CNT-3-2-E290322202799](#)

DOI: [10.2174/2665978603666220329235246](#)

Article History:

Received Date: 23/02/2021

Revision Received Date: 21/12/2021

Acceptance Date: 10/01/2022

Electronic publication date: 2022

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Background: Since ancient times, human kind has used plants for their flavor and essence and especially for medical purposes; they are also used as food sources. Turkey, due to its geographical location, is home to many varieties of species of medicinal and aromatic plants. Aromatic and medicinal plants produce essential oils in the form of secondary metabolites. These essential oils are being used in the food, cosmetic, and pharmaceutical industries. Due to the various side effects of synthetic agents, the use of essential oils as antimicrobial agents comes to the fore.

Objective: The purpose of this study was to determine the essential oil composition of *Thymbra spicata* L. var. *spicata* collected from the Gaziantep Region of Turkey and to evaluate its antimicrobial efficacy against microorganism species commonly encountered in food, cosmetic, and pharmaceutical industries.

Methods: In this study, the antimicrobial effect of the volatile oil obtained from dried leaves of *Thymbra spicata* L. var. *spicata*, traditionally known as Zahter, was investigated. For this purpose, volatile oil was obtained from the leaves of the plant by steam vapor distillation method. Antimicrobial efficacy tests were conducted against microorganisms; *Staphylococcus aureus*, *Enterococcus hirae*, *Enterococcus faecalis*, *Listeria monocytogenes*, *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus hauseri*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, and *Candida albicans*.

Results: Results of the experiments showed that the volatile oil obtained from *Thymbra spicata* L. var. *spicata* had acidal effect on selected pathogenic microorganisms even at low concentrations.

Conclusion: This study showed that the high carvacrol content of the *T. spicata* L. var. *spicata* grown in the Gaziantep region of Turkey is a promising source of antimicrobial raw materials in the pharmaceutical, cosmetic, and food industries.

Keywords: *Thymbra spicata* L. var. *spicata*, antimicrobial activity, carvacrol, pharmaceutical ingredient, food additive, essential oil.