Original Article

Antimicrobial Effect of Stachys Lavandulifolia Vachl Essential Oil on Listeria Monocytogenes

MohammadpourKanzaq, H. (MSc)
MSc of Health and Food Safety, Faculty of Health, Qazvin University of Medical Sciences, Qazvin, Iran

Noroozi, M. (PhD)
Associate Professor of Nutrition, Faculty of Health, Qazvin University of Medical Sciences, Qazvin, Iran

Mahmoudi, R. (PhD)
Assistance Professor of Food Hygiene and Aquatics, Faculty of Veterinary Medicine, University of Tabriz, Tabriz, Iran

Mohammadpoorasl, A. (PhD)
Assistance Professor of Epidemiology, School of Health, Qazvin University of Medical Sciences, Qazvin, Iran

Zavoshy, R. (PhD)
Associate Professor of Department of nutrition, Faculty of Health, Qazvin University of Medical Sciences, Qazvin, Iran

AsadiNadari, M. (MSc)
MSc of Microbiology, Faculty of Veterinary Medicine, University of Tabriz, Tabriz, Iran

Corresponding Author: Noroozi, M.

Email: mnoroozi@ymail.com

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Abstract

Background and Objective: It has been proved that plant essential oils have antimicrobial effects. Stachys Lavandulifolia Vachl is a medicinal plant growing wild in many parts of Iran, and is used as a brewed drink to treat some diseases.

Material and Methods: Aerial parts of Stachys lavandulifolia Vachl at flowering were collected from the Sabalan mountainous area of Ardabil and its essential oil was extracted using a Clevenger-type apparatus. A GC/MS machine was used to identify the chemical constituents of this Essential oil. We used microdilution method to determine the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of Essential oil against Listeria Monocytogenes ATCC19118 bacteria.

Result: Sixteen chemical compounds were identified in this essential oil. Of these, γ-terpinene (28%), Phenol (18.16%), Myrcene (17.87%), and α-Pinen (12.7%) were the major ones. The MIC and MBC of the essential oil for Listeria Monocytogenes bacteria were 600 and 2400 ppm, respectively.

Conclusion: Results showed that the Monoterpene and Sesquiterpene groups are the main constituents of this essential oil having bactericidal effects against Listeria Monocytogenes bacteria.

Keywords: Essential Oil, Stachys Lavandulifolia, Listeria Monocytogenes

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