

عنوان مقاله:

Evaluation of the Antimicrobial Effects of Nano-Essences of *Allium sativum* L., *Thymus vulgaris* L., *Mentha piperita* L., and *Chamaemelum nobile* L. on Common Causes of Otitis Externa

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نویسندگان:

Samira Hassanzadeh Touri

Mansour Bayat

Afshin Mohsenifar

Setareh Haghighat

خلاصه مقاله:

Background: Inflammation or infection of the ear that refers to as otitis is a common ear disorder. The otitis externa infection involves outer ear and ear canal. *Streptococcus pyogenes*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa* can be pointed out as the common causative agents of this infection. Due to the detrimental effects of chemical drugs on humans, utilizing the new formulation of herbal essential oils, such as nano-encapsulation is considered owing to the more efficient and reduction of adverse effects resulting from the direct application of essential oils. In this in vitro study, the antimicrobial effects of ۴ nano-essences were compared to pure essential oils against four major microorganisms involved in otitis externa (namely, *S. pyogenes*, *S. aureus* and *P. aeruginosa*). Methods: To evaluate the antibacterial effects of nano-essences, minimum inhibitory concentration (MIC) quantitative determination and minimum bactericidal concentration (MBC) were first carried out, and then qualitative disk diffusion tests were conducted. Results: The MIC quantitative test results demonstrated that among the evaluated essential oils, garlic nanoessence had the most antimicrobial effect at the lowest concentration. Besides, the results showed that nanoessences had lower effect compared to pure essential oils. Diffusion disc test results revealed that nano-essences could not be released from paper discs diffusion in solid media. Conclusions: Results suggested great antibacterial effects of nano-essences of garlic, thyme, peppermint, and chamomile on ۳ strains of bacteria involved in .otitis externa and it can be promised to produce new drugs, with lower side effects in eliminating these pathogens

کلمات کلیدی:

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