



STUDY OF ANTIMICROBIAL ACTIVITY OF COSMETIC EMULSION "EMULZARMAJ"

Tayirova D.B.
Tukhtaev.Kh.R.

Tashkent Pharmaceutical Institute, Uzbekistan, Tashkent, oybek 45

e-mail: dilobartayirova@mail.ru, tel: +998 93 581 05 07

<https://doi.org/10.5281/zenodo.17343877>

Relevance: In modern cosmetology, interest in the use of herbal remedies with not only caring but also therapeutic and prophylactic properties is growing. *Juniperus seravschanica* Kom. belongs to the cypress family (Cupressaceae). This evergreen coniferous plant is endemic to the mountainous regions of Central Asia, particularly Uzbekistan, Tajikistan, and Kyrgyzstan. It plays an important role in the region's ecosystems and is valuable both in folk medicine and in modern pharmacology and cosmetology. *Juniperus seravschanica* Kom. is an endemic species of Central Asia, known for its high content of essential oils, flavonoids, terpenoids, and phenolic compounds. These biologically active substances exhibit pronounced antibacterial, anti-inflammatory, and fungicidal properties.

Based on juniper oil extract, the cosmetic emulsion "EMULZARMAJ" was created for skin care with antiseptic and restorative effects. The use of juniper in cosmetics opens up new possibilities for creating natural products with antimicrobial activity.

Propose of study The aim of the study is to investigate the antimicrobial activity of the cosmetic emulsion "EMULZARMAJ", created on the basis of the extract of the Zarafshan juniper (*Juniperus seravschanica* Kom.), in relation to pathogenic and opportunistic microorganisms (bacteria and fungi), to justify its use in cosmetology as a means.

Methods and methodology: To obtain an emulsion, soy lecithin and an oil extract of *Juniperus zaravshanica* were used. For this purpose, 15 g of crushed *Juniperus zaravshanica* berries were added to 100 g of oil and macerated for 24 hours. Bacterial activity was studied using the methods of Lunka.

The dishes were filled with solid MPA medium (Himede) and the opportunistic pathogens were propagated. Standard McFarland medium (usually corresponding to a McFarland turbidity standard of 0.5) was prepared. It was left to diffuse at room temperature for 30 minutes. After 30 minutes, an 8 mm diameter furrow was made in the agar using a sterile test tube. The liquid preparation was poured into a vial and incubated for 24 hours at 37°C.

Results: According to the analysis results, the cosmetic emulsion "EMULZARMAJ" was effective against only four of the seven microorganisms tested. It was most effective against *Proteus mirabilis*, with a growth inhibition diameter of 20 mm. At concentrations of 0.5%, 0.25%, and 0.125%, the growth inhibition diameter against *Proteus mirabilis* was 20 mm, 16 mm, and 10 mm, respectively. The growth inhibition diameter against *Bacillus subtilis* was 15 mm, and the growth inhibition diameter against *Candida albicans* was 20 mm, 16 mm, and 12 mm, respectively.

Conclusion: Based on the experimental results, it can be concluded that the cosmetic emulsion "EMULZARMAJ" has antimicrobial activity. At a concentration of 0.5%, it is more effective against *Staphylococcus aureus*, *Proteus mirabili*, *Bacillus subtilis*, and *Candida albicans*.