

## DEVELOPMENT OF THE COMPOSITION OF SUPPOSITORIES BASED ON NUTMEG SAGE, GROWING IN TAJIKISTAN

**Samadov B.Sh**

*Bukhara State Medical University named after  
Abu Ali ibn Sino, Bukhara, Uzbekistan*

**Musozoda S.M**

**Xolnazarov F.B**

**Musoev R.S**

**Raxmonov A.U**

**Maksudov K.S**

*Tajik National University, Dushanbe, Tajikistan*

### INTRODUCTION

Suppositories occupy an important place among the dosage forms, and recently there has been an increase in the interest of clinicians in their use [1,2,31]. The use of suppositories can reduce the level of allergic reactions, prolong the therapeutic effect, especially in the focus of inflammation, increase the rate of absorption of the drug and in some cases reduce the dose [3,4,32].

Materials and methods of research. Vaginal suppositories are often used in the treatment of inflammatory gynecological diseases [5,6,33]. Intravaginal administration of medicines in the treatment of bacterial, fungal, trichomonas, chlamydia, viral and other mixed urogenital infections provides a direct effect on the focus of the inflammatory process [7,8,34]. The main attention in the treatment of gynecological inflammatory diseases is paid to the widespread use of antimicrobials [9,10,35].

The results of the study. The Department of Pharmaceutical Technology and Pharmacology of TNU has developed a technology for obtaining a thick extract of nutmeg sage (TENS), which grows in Tajikistan [11,12,36]. Pharmacological and microbiological studies have proven its high antimicrobial activity, the presence of pronounced anti-inflammatory and reparative properties [13,14,37]. This paper reports the results of experimental studies on the development of the composition of suppositories, where this substance is recommended as an active pharmaceutical ingredient [15,16,38]. To justify the choice of a carrier for vaginal suppositories, suppositories were made on hydrophobic and hydrophilic bases – a mixture of PEO, cocoa butter and solid fat [17,18,39]. Suppositories were prepared by generally accepted technological methods and in appearance and pharmacotechnological parameters met the requirements of the GF [19,20,40]. Studies on the antimicrobial activity of samples of suppositories with TENS were carried out by the method of diffusion into agar, which is generally accepted in microbiological practice [21,22,41]. The results of a microbiological study show that the greatest antimicrobial activity is observed in suppositories prepared on the basis of PEO-1500:PEO-400 in a ratio of 9:1

[23,24,42]. The developed composition exhibits pronounced antimicrobial activity in relation to strains of *Staphylococcus aureus* and *Bacillus subtilis* [25,26,43]. Taking into account the data obtained, it was necessary to conduct biopharmaceutical studies for the final selection of the rational composition of the carrier of vaginal suppositories with TENS, since the processes of release and distribution of active substances can significantly depend on pharmaceutical factors, among which the influence of the carrier base is important [27,28,44]. To study the ability of the suppository base to release TENS, experiments were conducted in vitro by diffusion into an agar gel based on the formation of a colored zone, which appears as a result of the interaction of the active substance (flavonoids) with a reagent 1% solution of iron (III) chloride [29,30,45].

Conclusion. Analyzing the results obtained, it is possible to draw conclusions about the advantage of a polyethylene oxide base. The difference in the release of phenolic compounds with the studied lipophilic bases: solid fat and cocoa butter is insignificant. As a comparison drug, suppositories with propolis on a polyethylene oxide basis, manufactured by Apipol-Farma (Poland), were used. Thus, it is shown that a mixture of polyethylene oxide bases is a rational carrier of a thick extract of nutmeg sage in the form of suppositories.

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