

The choice of excipients in the development of suppositories with meadowsweet

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Having studied the literature data, we came to the conclusion that the creation of suppositories for the treatment of hemorrhoids based on an extract of meadowsweet is an urgent task of modern pharmacy.

To obtain suppositories with meadowsweet extract, we used a thick extract at a concentration of 10%. We investigated hydrophilic (mixture of PEG 1500 - PEG 400) and lipophilic bases: witepsol I 15, confectionery fat, cocoa butter, cocoa butter - wax mixture (4: 1). At the first stage, the external signs of suppositories with meadowsweet extract were evaluated. Table 1 shows the main external signs of suppositories with meadowsweet extract.

Table 1.

External signs of suppositories with meadowsweet extract

Suppository base	Suppository appearance
Cocoa butter	Torpedo-shaped, homogeneous, matte, beige, with a characteristic odor, no inclusions when cut
Cocoa butter + wax	Torpedo-shaped, homogeneous, glossy beige color, with a characteristic odor, no inclusions when cut
Confectionery fat	Homogeneous, soft beige consistency, odorless, no inclusions. The shape is indistinct, the mass is not dense, suppositories cannot be removed from the cells
Witepsol I 15	Torpedo-shaped, homogeneous, glossy beige, odorless, no inclusions when cut
Mixture of PEG 1500 - PEG 400 (8:2)	Torpedo-shaped, homogeneous, glossy, beige, no specific smell, no inclusions when cut

Suppositories with meadowsweet extract obtained on these bases were of a characteristic torpedo-like shape, homogeneous, beige in color, due to the presence of the extract. Separately, it was noted that when receiving suppositories from confectionery fat, their shape was indistinct, the process of extracting the suppositories from the molds was difficult. Therefore, they were excluded from further research.

For further selection of the base, their main structural and mechanical parameters were investigated: melting temperature and time of complete deformation of suppositories. Based on the results obtained, cocoa butter and witepsol I 15 were selected for further research.

The next phase of the research will be biopharmaceutical research to determine the rational excipient of suppositories.