

USING NON-AQUEOUS SOLVENTS IN TECHNOLOGY OF OINTMENTS

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One of the common missions of the modern pharmaceutical sciences is to create a new and more effective medicines, as well as improving the well-known drugs proven to treat various diseases, based on their comprehensive (biopharmaceutical and technological) research.

The liniment of streptocide became an object of our attention due to its demand among the population for the treatment of inflammatory skin diseases. However, the existing structure of auxiliary substances which are coming along with the liniment itself does not provide stability, as well as the desired release of streptocide. Therefore, the aim of our research was to study the effect of some excipients on the structural and mechanical properties and release of streptocidum from emulsion bases. The most suitable hydrophilic co-solvents for semisolid dispersions are considered to be propyleneglycol, glycerol and polyethylenglycole. We studied the effect of the concentration of PEO-400 and PEO-1500 on how they obtained delay in growth of microorganisms.

The basis of liniment was obtained in the traditional way. The "Reotest 2" was used for measuring the rheological parameters on given liniments. Rheological studies have shown that the introduction of polyethyleneoxides into the structure of liniment is effective. Flow curves of some samples are being seen to be within the rheological optimum for hydrophilic ointments. The presence of "hysteresis loop" on the rheogram proves its thixotropy. Antimicrobial activity of the samples was determined by the method of diffusion in agar gel and further studying the rate of growth of test microbes. Further the rate of growth of our liniment was compared with the liniment of factory production. Obtained data shows that the presence of polyethyleneoxide in all cases affects the growth retardation of microorganisms, and thus the antimicrobial effect on a liniment. In respect to the concentration and molecular weight the rate changes differently. Diffusion of streptocide in agar gel increases in the presence of polyethyleneoxide based. Low molecular weight PEO-400 has a greater affect by the diameter of zones of microbial growth rate inhibition. Maximum diameter that was obtained is when adding 30% PEO-400. Further increase in concentration slightly increases the inhibition or keeps it on the same rate. Adding 5% PEO-1500 leads to a slight increase in the release of streptocide. The increase in its concentration affects very slightly. The highest release is obtained when there is 30% PEO-400 in the structure of the liniment.