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Investigation of foams for topical use

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The use of foams is becoming increasingly popular in the pharmaceutical and cosmetic fields. Foams are colloidal systems in which gas bubbles are dispersed in a solid or liquid dispersion medium. Pharmaceutical foams are usually applied topically, through dermal, vaginal, or rectal routes [1]. Foams have many beneficial properties over conventional carrier systems, which increases patient adherence, such as rapid and convenient application, even on extensive or hirsute, on sensitive and inflamed skin surfaces [2]. The aim of my work is to determine the investigation methods suitable for studying the physicochemical, structural properties and stability of dermally applied foams.

In the course of my research, the foam formulas were developed on the basis of literature and then I studied their characteristics by macroscopic, microscopic, rheological and structure analysis methods. Through microscopic examination the structure and bubble size of the foams were determined. The structure of foams was also studied by oscillometric rheology, during the measurements I proved what deformations would occur in the structure of the foam due to deforming forces. Furthermore, using Texture analyzer, I investigated the spreadability of the foams to model the dermal application.

Based on the results, it can be said that the selected instruments and the applied test methods are suitable for studying the properties and stability of foams.

References

1 Farkas et al. APH 89:5 (2019)

2 Parsa et al. Current Opinion in Colloid & Interface Science (2019)

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