

SUBSTANTIATION OF THE CHOICE OF THE BASE WHEN DEVELOPING A GEL

Ignatova K.O., Bobro S.G., Tikhonov O.I.

The National University of Pharmacy, Kharkiv, Ukraine

sveta_bobro@mail.ru

When developing a soft drug for treating acne the choice of a base-carrier of medicinal substances is of great importance. First of all, this base must not overload the skin with the excess of fat and should have a moderate dehydrogenating power to provide the flow of the purulent exudate from the glands, besides, the drug itself should exhibit the antimicrobial, anti-inflammatory and reparative activity.

The combination of the propolis phenolic hydrophobic drug with the complex therapeutic effect with the antimicrobial substance – azelaic acid will provide the multidirectional action on the affected areas of the skin.

Taking into account the previous studies on solubility of the propolis hydrophobic drug, which determined its solubility in polyethylene oxide-400 and propylene glycol, it is necessary to study the effect of the concentration of the given substances on the dehydrogenating power. The samples of 1.5% carbopol gel containing 30% and 60% of PEO and propylene glycol each, as well as their combinations of 15% and 30% each in comparison with “Skinoren” gel have been investigated.

As a result of the study of the kinetics of water absorption by the samples through a semipermeable membrane at the temperature of 37°C it has been found that the sample with the PEO-400 content of 60% has the maximal dehydrogenating power at the level of 110% on the 24-th hour of observation. The least dehydrogenating power was observed in 1.5% carbopol gel containing neither PEO, nor propylene glycol (10%). “Skinoren” gel had an insignificant dehydrogenating power that was 35% on the 24-th hour of observation. Based on the data of the studies the samples of the gel base containing PEO-400 and propylene glycol of 30% each with the dehydrogenating power of 60% and 40%, respectively, have been selected.