INCREASING OF THE BIOAVAILABILITY OF MODEL FLAVONOID IN SOLID DISPERSION SYSTEM WITH UREA

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Biologically active substances (BAS) of plant origin have a positive effect on the physiological processes of the human body, increasing its resistance. One of the representatives of the flavonoid nature BAS is hesperidin. The problem of its use in the composition of drugs is its low solubility, which significantly affects the bioavailability index [1]. Therefore, it is relevant to study the direction of increasing solubility of hesperidin.

The inclusion of flavonoid in the solid dispersive system (SDS) was chosen as a research method in this work. Main objective of this study is to investigate the effect of SDS composition on the solubility of hesperidine. Solid dispersion systems are multicomponent systems containing lipophilic substances and water-soluble carriers, where the substance is in the form of a highly dispersed solid phase with the formation of intermolecular complexes of variable composition with the carrier material [2]. The formation of SDS allows to significantly increase the dissolution of flavonoids and provides a uniform release of the active substance from the system, without changing the chemical structure of the molecule of the active pharmaceutical ingredient [3]. As carriers for the manufacture of SDS used urea, polyethylene glycol (PEG) of different molecular weight, polyvinyl alcohol (PVA), propylene glycol, mannitol. The results obtained are presented in the form of a diagram (Fig.1).

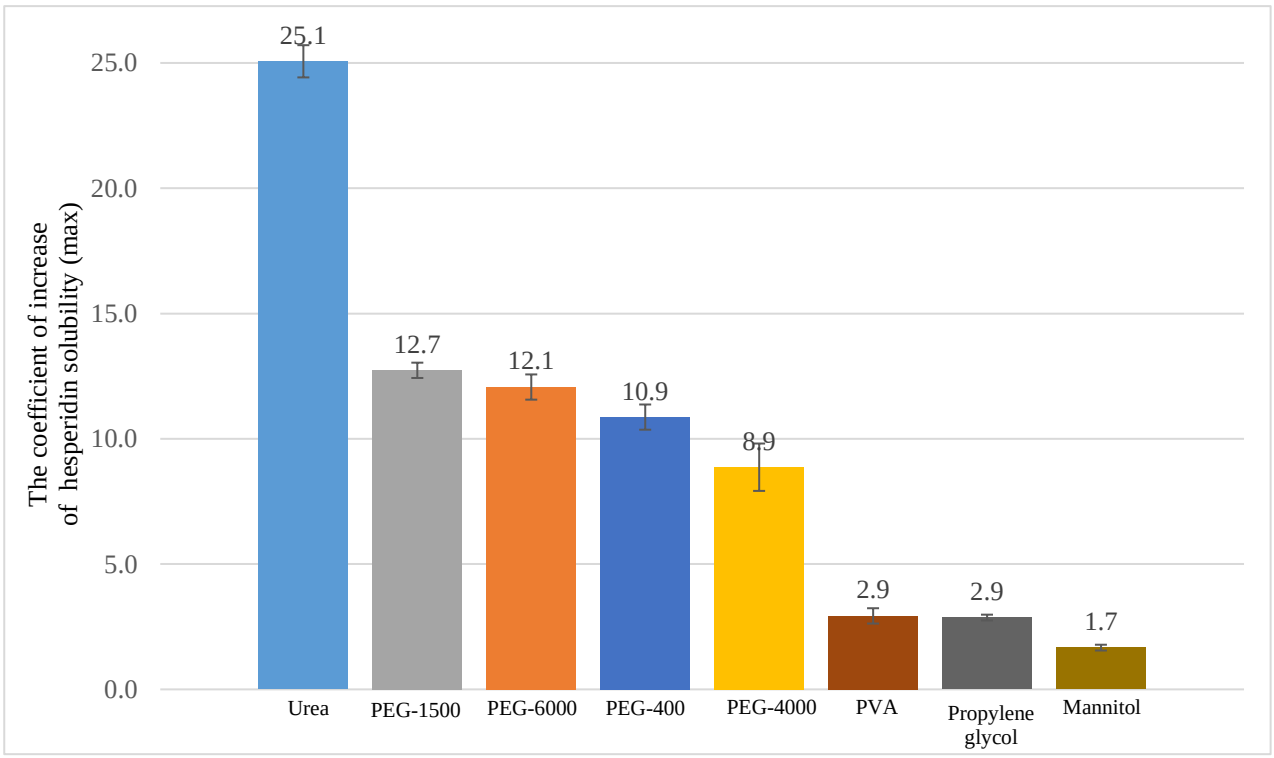

Fig. 1. Dependence of increasing solubility of hesperidin on the composition of the SDS

In conclusion, it was found that the increase in the solubility of hesperidin depends on the composition. The maximum value of solubility increase is observed in the system with urea – 25.1 times.

The authors is grateful to K. Yashchenko for her assistance with the research.

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