

FLAVONOID AGLYCONES OF THE INFLORESCENCES OF *Helichrysum arenarium*

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The inflorescences of *Helichrysum arenarium*, family Compositae, are used as a medicinal material for the production of various pharmaceutical preparations – tinctures, decoctions, extracts, and purified total preparations [1-3]. According to pharmacological tests in the pharmacology laboratory of the Khar'kov Chemical and Pharmaceutical Scientific-Research Institute (Prof. Ya. I. Khadzhai), the physiologically active substances of preparations of *H. arenarium* are flavonoids possessing chologogic, spasmolytic, capillary-strengthening, antiinflammatory, and other effects.

The results of an analysis of the flavonoid composition by paper chromatography (30% formic acid; chromogenic reagent 10% KOH) showed that the inflorescences of *H. arenarium* contain aglycones, as well as glycosides. To isolate them, the inflorescences were extracted with 70% ethanol, and the extract was purified with chloroform and chromatographed on a column of polyamide sorbent. Pure fractions were extracted from the column with aqueous ethanol of various concentrations, and, from these, five individual flavonoid aglycones crystallized out. From a study of their physicochemical properties, it was established that they are: (±)-naringenin (mp 253-254°C, $[\alpha]_D^{18}$ 0° (c 1; ethanol), $\lambda_{C_2H_5OH}^{max}$ 290, 325, nm); apigenin (mp 345-347°C, $\lambda_{C_2H_5OH}^{max}$ 270, 336, nm); luteolin (mp 327-329°C, $\lambda_{C_2H_5OH}^{max}$ 255, 265 (sh.) 350 nm), kaempferol (mp 272-273°C, $\lambda_{C_2H_5OH}^{max}$ 265, 368, nm), and quercetin (mp 310-312°C, $\lambda_{C_2H_5OH}^{max}$ 255, 265 (sh.) 370, nm).

In addition, as products of the acid and enzymatic hydrolysis of the naringenin glycosides of *H. arenarium* we obtained (-)-naringen [mp 250-252°C, $[\alpha]_D^{18}$ -10-30° (c 0.5; ethanol)] and (+)-naringenin [mp 251-253°C, $[\alpha]_D^{18}$ +10-20° (c 0.5; ethanol)].

LITERATURE CITED

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