

RESEARCH IN VOLATILE COMPOUNDS OF LIPOPHILIC COMPLEX OF THE HERB *GALIUM VERNUM*

Ivanov S. M.

Scientific supervisor: assist.-prof. Ilina T. V.

National University of Pharmacy, Kharkiv, Ukraine

ctac_ivanov95@mail.ru

Introduction. Researchers worldwide have long taken interest in the genus *Galium* L. family *Rubiaceae* Juss., *Galium vernum* Scop. being among them. This perennial herbaceous plant grows on sun-drenched clearings coniferous woodland. It is widely spread in the West of Ukraine.

Earlier studies established that anthraquinones are mostly accumulated in the underground parts of the plant, whereas flavonoids were mostly found in aerial parts.

Aim. The aim of this study consisted in the research in volatile compounds of the lipophilic complex of the herb *Galium vernum*.

Materials and methods. The subject of the study was the herb *Galium vernum* harvested in the Ivano-Frankivsk oblast in the flowering phase in the summer of 2016. The lipophilic fraction was obtained by means of exhaustive extraction of the herbal raw material with chloroform in the Soxhlet apparatus, whereupon the mixture was filtered and the filtrate was subsequently vacuum-evaporated with the use of the rotary evaporator and dried up at 40°C.

The study in the volatile compounds of the lipophilic complex the herb *Galium vernum* was carried out with the aid of hydrodistillation. The analysis was performed with the use of the chromatograph Agilent Technology 6890N and with the mass spectrometric detector 5973N. The content of the compounds was calculated with the internal standard taken into account (tridecane, 50 mg in hexane).

Results and discussion. The content of the volatile compounds in lipophilic complex of *Galium vernum* herb was quantified as 3.86 %, with 44 compounds identified. The dominant components in the mixture are linoleic acid (12632.9 mg/kg), coumarin dafnetine (8009.2 mg/kg) and palmitic acid (6030.8 mg/kg). Among the terpenoids, the identified compounds include dihydroactinidiolide, loliolide, 3 isomers of neofitadiene, phytol and squalene. Among the aromatic compounds, the following substances were identified: 2 isomers of dafnetine, cinnamic aldehyde, benzyl alcohol, β -phenylethyl alcohol, propiophenone, methylacetophenone, 4-vinylphenol, 2-methoxy-4-vinylphenol, acetovanillone and vanillic acid. Among the steroids, identified were campesterol and γ -sitosterol.

Conclusions. The results obtained suggest the necessity of further research in the herb *Galium vernum*.