

anomocytic and anisocytic types of stomatal apparatus of the leaf epidermis; the shape of the cells of the epidermis of the leaf, calyx and petals.

Findings. Thus, the analysis of the *Pulmonaria obscura* herb showed the prospects for further study of this species.

PHARMACOGNOSTIC STUDY OF *VIOLA ODORATA* L.

Gontova T.M., Taoufik Kawtar

National Pharmaceutical University, Kharkov, Ukraine

Introduction. One of the most important tasks of pharmacy is the study of plants in terms of chemical composition and pharmacological action. Phytopreparations containing natural substances, in comparison with synthetic agents, have a mild effect on the human body, and can be used to treat diseases for a long time. One of the urgent tasks of pharmacy is the search for plants that can become an additional source of raw materials and expand the base of official plant species. Species such as field violet and tricolor violet are included in the HFC, EurPh, and are widely used as an expectorant, mucolytic, anti-inflammatory, diuretic and choleric agent. In the aspect of an additional species with a similar effect, fragrant violet, widespread in Europe and Asia, attracted attention.

Purpose of the study. Pharmacognostic study of *Viola odorata* herb to establish the possibility of using it as a promising source of biologically active substances.

Materials and methods. The objects of the study are grass, leaves, flowers of the *Viola odorata*, harvested in May 2021, dried in air-shadow conditions. Qualitative analysis of MPC and the quantitative content of the main groups of biologically active substances were studied using well-known pharmacopoeia methods.

Research work. "Pharmacognostic study of biologically active substances, the creation of herbal medicines" (state registration number 0103U000476).

Results. With the help of modern methods of identification and determination of the quantitative content of biologically active substances in the objects of study, amino acids, substances of a phenolic nature (hydroxycinnamic acids, flavonoids, phenolcarboxylic acids and anthocyanins) were identified, and the elemental composition was determined. At least 9 free amino acids were found in the grass and leaves of the fragrant violet, and 8 in the flowers. From hydroxycinnamic acids, chlorogenic, neochlorogenic, caffeic acids, phenolcarboxylic acids – gallic and salicylic acids, from flavonoids – kaempferol, quercetin, rutin and hyperoside were found; anthocyanins are represented by 2 substances of the delphinidin group. The content of the total anthocyanins in the grass is 1.47%, and in the flowers - 2.15%, the amount of hydroxycinnamic acids in the grass – 1.87%, leaves – 1.64%, flowers – 1.68%, the total

flavonoids – 2.28 %,– leaves – 1.64%, flowers – 1.58%. The elemental composition of the fragrant violet herb sample is represented by 6 macro- and 13 microelements. The content of heavy metals did not exceed the permissible limits. For MPS, macro- and microscopic diagnostic features have been identified.

Findings. Thus, the analysis of *Viola odorata* herb showed the prospects for further study of this species.

Literature

Державна Фармакопея України / ДП «Український науковий фармакопейний центр якості лікарських засобів». 2-е вид. Допов. 1. Харків : Державне підприємство «Український науковий фармакопейний центр якості лікарських засобів», 2016. 360 с.