

**INVESTIGATION OF PHENOLIC COMPOUNDS AND COUMARINS
OF NETTLE LEAF
AS A STAGE OF A NEW MEDICATION DEVELOPMENT**

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Introduction. The chronic arterial insufficiency belongs to blood circulation disorders and can manifest as obliterating endarteritis. This disease mainly affects blood vessels of legs and characterized by inflammation and constriction of arteriols and capillaries followed with the complete closure of their lumen and tissue necrosis. Obliterating endarteritis is diagnosed mostly in men and was shown to have an inflammatory origin. The treatment of the arterial insufficiency requires the usage of therapy with different pharmacological effects. Non-steroidal anti-inflammatory drugs possess a part of this treatment. For the successful treatment of ischemic syndrome the combination of anti-inflammatory and local irritating effect are beneficial. The medications that can cause local irritation help to dilate arteriols and capillars and improve the tissues trophic. Nettle leaf possesses both anti-inflammatory and local irritating effects and has been used by folk medicine for a long time.

Aim. Taking into consideration the need for the creation of additional and effective medications for the treatment of obliterating endarteritis the purpose of this study was the pharmaceutical analysis of nettle leaf suggested for the treatment of this disease and the determination of phenolic compounds and coumarins in it.

Materials and methods. The dried leaves of stinging nettle (*Urtica dioica*); the standardized reagents (the reagents were purchased from Sigma-Aldrich reagents, Germany), the methods of qualitative chemical analysis, paper chromatography, thin-layer chromatography, spectrophotometry, and high performance liquid chromatography.

Results and discussion. We have identified the phenolic compounds of such groups as hydroxycinnamic acids, flavonoids (groups of catechins, flavanons, and flavonols), and coumarins. Such groups of phenolic compounds as hydroxycinnamic acids, flavonoids and catechin-like compounds, as well as coumarins, were quantified.

Conclusion. The identification of phenolic compounds and coumarins in nettle leaf was carried out by the methods of qualitative chemical analysis, paper chromatography, thin-layer chromatography, and high performance liquid chromatography. The investigations showed that ten individual substances

(chlorogenic acid, neochlorogenic acid, p-coumaric acid, caffeic acid, naringin, hesperitin, kaempferol, isorhamnetin, quercetin, and rutin) were identified. The quantification of phenolic compounds and coumarins in nettle leaf was carried out by the methods of spectrophotometry and high performance liquid chromatography. The total content of phenolic compounds including unidentified polyphenols was 10.3mg/g, with the content of flavonoids 2.4 mg/g (rutin 1.1mg/g) and caffeic acid 0.5mg/g. The information sources data analysis gave us a possibility to conclude that during the further stages of a new medication development the analysis of biologically active amines in nettle leaf is necessary to carry out.

PROSPECTS OF STUDYING WILD AND CULTIVATED SPECIES OF THE GENUS VIOLET

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Introduction. Herbal medicines are widely used in modern medical practice. A promising source of antiseptic, anti-inflammatory, bronchodilator, expectorant and diuretic drugs are members of the violet family (Violaceae Batsch.), which belongs to the superorder Violanae, order Violales, includes 18 genera and 850 species distributed throughout the globe. There are about 40 species of violets on the territory of Ukraine, three of which are listed in the Red Book of Ukraine: violet white (*V. alba* Bess.) And violet Joya (*V. jooi* Janka) as endangered, and Crimean violet (*V. oreades* Bieb.) as a rare species. The most common species in Ukraine are violets tricolor, *V. arvensis* and *V. odorata*. In the Chernivtsi region are also common *V. canina*, *V. mirabilis*, *V. odorata*, and in the Kharkiv region, in addition to these species, grow *V. elatior*, *V. tanaitica*, *V. ambigua*, *V. Lavrenkova*, *V. suavis*, and *V. mirabilis*.

Today there is an artificially created and most evolutionarily developed group of hybrid violets, which the systematist Nikitin V.V. called Wittrock violet or garden pansies (Latin *V. wittrockiana*), and Dobrochaeva DN – hybrid violet or pansies – *V. hybrida hort* (*V. wittrockiana* Gams.). Under the name of a violet of Wittrock the numerous grades and the varietal groups deduced with participation of *V. tricolor* (*V. tricolor*), *V. Altaic* (*V. altaica*), *V. yellow* (*V. lutea*), *V. horned* (*V. cornuta*).

Aim. To determine the prospects of pharmacognostic study of species of the genus Violet and further creation of a theoretical basis for the development of drugs based on them.