

effects caused by mucilages and positive effect of intestinal microbiocenosis provided by inuline. The medicinal herbal tea K-1[®] contains different groups of biologically active compounds including carboxylic acids and aminoacids as well as carbohydrates represented by mucilages and inuline.

Purpose of the study. Identification and quantification of aliphatic carboxylic acids and aminoacids as well as carbohydrates in the patented medicinal herbal tea K-1[®] for the treatment of the diseases of urinary system.

Materials and methods. The medicinal herbal tea K-1[®] containing St. John's wort herb (*Hyperici herba*), Wild pansy herb (*Violae herba*), Peppermint (*Menthae folium*), Tansy flowers (*Tanacetii flores*), Horsetail field shoots (*Equiseti arvensis herba*), Coltsfoot leaf (*Farfarae folia*), Wild thyme herb (*Serpylli herba*), Elecampane rhizome and root (*Inulae rhizomata et radices*), Sunflower flowers (*Helianthi flores*), Elder fruits (*Sambuci fructus*), Common heather herb (*Callunae vulgaris herba*), Convallaria leaf (*Convallariae folia*), methods of pharmaceutical chemistry and pharmacognosy.

Results and conclusion. The identification of carboxylic acids and aliphatic aminoacids in the composition of the medicinal herbal tea K-1[®] for the treatment of diseases of urinary system was carried out by the method of thin layer chromatography. The identification of mucilages and inuline was carried out by the method of thin layer chromatography and by qualitative reactions. Quantification of free carboxylic acids in the composition of the medicinal herbal tea was carried out by the method of alkalimetry (calculation for malic acid). The assay of ascorbic acid was carried out by the method of redox titration by 2,6-dichlorophenolindophenol, the assay of aminoacids by the method of visible spectrophotometry (calculation for leicine). The assay of water soluble polysaccharides was carried out by the method of gravimetry.

IDENTIFICATION AND QUANTIFICATION OF PHENOLIC COMPOUNDS IN THE MEDICINAL HERBAL TEA FOR THE TREATMENT OF DISEASES OF URINARY SYSTEM

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Introduction. Derivatives of phenols represent a group of medicinal substances which possess the antimicrobial activity as one of the main pharmacological effects. A big variety of phenol derivatives can be found in the medicines of plant origin. The medicinal herbal tea K-1[®] contains different groups of biologically active compounds including phenolic compounds, which are represented by several groups, among which there are simple phenols, phenolic and cinnamic acids, flavonoids, and polyphenols.

Purpose of the study. Identification and quantification of the phenolic compounds in the patented medicinal herbal tea K-1[®] for the treatment of the diseases of urinary system.

Materials and methods. The medicinal herbal tea K-1[®] containing St. John's wort herb (*Hyperici herba*), Wild pansy herb (*Violae herba*), Peppermint (*Menthae folium*), Tansy flowers (*Tanacetii flores*), Horsetail field shoots (*Equiseti arvensis herba*), Coltsfoot leaf (*Farfarae folia*), Wild thyme herb (*Serpylli herba*), Elecampane rhizome and root (*Inulae rhizomata et radices*), Sunflower flowers (*Helianthi flores*), Elder fruits (*Sambuci fructus*), Common heather herb (*Callunae vulgaris herba*), Convallaria leaf (*Convallariae folia*), methods of pharmaceutical chemistry and pharmacognosy.

Results and conclusion. The identification of phenolic compounds in the composition of the medicinal herbal tea K-1[®] for the treatment of diseases of urinary system was carried out by the quality reactions and by the method of high-performance liquid chromatography. The groups of simple phenols, phenolic and cinnamic acids, flavonoids, and polyphenols were identified. Quantification of phenolic compounds in the composition of the medicinal herbal tea was carried out. The assay of simple phenols was carried out by the method of visible spectrophotometry, the assay of phenolic and cinnamic acids by the method of UV-spectrophotometry (calculation for gallic and chlorogenic acids correspondingly), the assay of oxidizable polyphenols by the method of permanganometry (calculation for tannin), and the

assay of flavonoids was carried out by two methods of visible spectrophotometry, correspondingly by the State Pharmacopoeia of USSR and by European Pharmacopoeia. The latter showed the results that correlate with each other.

MINERAL COMPOSITION OF THE NEW PLANT SUBSTANCE OF BURNET RHIZOMES AND ROOTS

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Introduction. Unlike mono- or conventional multicomponent preparations containing individual chemical compounds as active substances, medicinal plant preparations have a wide composition component. It is important to understand that the pharmacological activity of medicinal plant products is determined not only by the main groups of biologically active substances, but also by the composition of macro- and microelements. Thus, trace elements can act as activators or inhibitors of biochemical processes. Most often they perform in the human body the role of coenzymes or universal regulators of the activity of enzyme systems. Thus, the definition of the mineral composition of new plant substances becomes of particular relevance.

Aim. To study the qualitative composition and quantitative content of macro- and micronutrients in the plant material and medicinal plant material from which it was derived – a Burnet of rhizomes and roots.

Materials and methods. Composition of macro- and microelements Burnet rhizomes and roots (*Sanguisorba officinalis* L., fam. *Rosaceae*) and substances – Burnet extract studied on the basis of analytical chemistry department State Scientific Institution «Institute for Single Crystals» of National Academy of Sciences of Ukraine (Kharkiv). Determination of qualitative composition and quantitative content of elements was carried out by atomic-adsorption spectrophotometry with atomisation in air-acetylene flame on the device KAS-120.

Results and discussion. Based on the results of the analysis, the objects studied were installed on 19 elements. When comparing qualitative composition, it should be noted that all chemical elements during the process of extraction of medicinal plant raw materials of the Greater Burnet were transferred to the extract. In the Burnet of rhizomes and roots, there is a high content of such macroelements as potassium (880 mg / 100 g), calcium (490 mg / 100 g), magnesium (220 mg / 100 g), and among the trace elements it is silicon (245 mg / 100 g) and iron (59 mg / 100 g). In the extracted from the Burnet extract, a significant amount of potassium (1230 mg / 100 g), calcium (245 mg / 100 g), sodium (165 mg / 100 g), magnesium (165 mg / 100 g), silicon (33 mg / 100 g) and iron (18.4 mg / 100 g).

In medicinal herbal raw materials, a number of microelements in a small amount are determined, which can be arranged as follows: strontium > kuprum > nickel > molybdenum, and in the rodium of the extract – aluminum > manganese > zinc > strontium > nickel > kuprum > molybdenum.

A small amount of ultra micronutrients was found in the medicinal plant material and in the substance, namely: plumbum, cobalt and traces of arsenic, cadmium, mercury.

Conclusions. In the Burnet extract and medicinal plant raw material, the mineral fertilizer has been experimentally determined for 19 mineral elements. The content of macro- and micronutrients in the form of the extract expresses its value as a promising plant substance.