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Methods. To search for new highly active substances with antimicrobial and antiviral activity with low toxicity the molecular design of derivatives was performed using the PASS software program in the first stage of research. Some esters of N-acyl thiosulfanyl acids were synthesized in the second stage. The minimum inhibitory concentrations on nutrient media of the synthesized compounds were determined to assess their antimicrobial activity. The initial concentration of substances in the substrate was 200 μg /ml.

The strains of *Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Bacillus subtilis, Proteus vulgaris*, two strains of pathogenic fungi of the genus *Candida* and some species of anthropophilic and zoophilic dermatophytes, including *Microsporum lanosum, Trichophyton gipseum, Trichophyton rubrum* were used as test cultures. Additionally, the antiviral activity of the test compounds was determined by their phagostatic concentration against salmonellosis and staphylococcal bacteriophages. The toxicity of the synthesized compounds under the different administrations was evaluated by the QUSAR program.

Results. The results of the research indicate moderate antimicrobial activity of synthesized compounds against gram-positive and some species of gram-negative bacteria, as well as fungi of the genus *Candida*. High antifungal activity was recorded against dermatophytes. Characteristically, this activity was commensurate with the activity of some antibiotics. It should be noted that one of the synthesized esters of N-acyl thiosulfanyl acid showed high antiphage efficiency against both salmonellosis and staphylococcal bacteriophages besides its high antifungal activity against dermatophytes. It is important to emphasize that all tested compounds have low toxicity.

Conclusions. The synthesized esters of N-acyl thiosulfanyl acids can be considered as substances with potential antifungal activity, and the ethyl ester of N-acyl thiosulfanyl acid can be considered as a promising compound with antiviral activity. In order to increase the bioavailability of the tested compounds, it is advisable to combine compounds in composite drugs with biosurfactants produced by microorganisms, which not only improve the penetration of the drug into the cell, but also can potentiate the antimicrobial activity.

LUCERNE'S FLAVONOIDS

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The medicine remedies derived from plants are of great importance in the therapy of various types of diseases and are widely used in medical practice. They are included in more than 30 pharmacotherapeutic groups of medicine remedies and practically do not have equivalent substitutes. Ukrainian domestic medical practice of new types of herbal substances and their derivative products, require the expansion of the range of herbal formulations.

A. Decandol first grounded the theory of plant introduction as a complex biological process, which requires knowledge of the limits of endurance of the introduced, and its features – the temperature reaction, soil and air humidity, light, phylogenetic features and geographical origin. Because only the investigation of the whole complex of factors: thermal, bioecological, geographic and chemical, revealing among them the integral and functional dependence can give an opportunity to predict the effect of introduction.

Cultivated medicinal herbs and raw materials gathered from it have several advantages over wild-growing thickets. Growing can use mechanized processing techniques, improving agronomy and plant breeding, etc. Cultivated medicinal herbs and raw materials gathered from it have several advantages over compounding wild-growing thickets, where can use mechanized processing techniques, improving agronomy and plant breeding, etc.

As we conduct the introduction of medicinal plants, a special place is given to the most important features of the chemical composition in view of its possible variability at the new conditions of existence. The countries population with a high standard of living today consumes from 23 mg to 1-2 g of flavonoids daily with food.

Flavonoid preparations are powerful antioxidants, immunomodulators, and anti-inflammatory pharmacologically active compounds. They have attracted the attention of phytochemical researchers due to their wide range of pharmacodynamics and lowly toxicity. Dietary plants containing flavonoids are reported to be functional foods that provide a wide range of protection against different organ-induced oxidative damage and protects from various lethal disorders by increasing antioxidants and suppressing inflammation and apoptosis in various tissues including the brain, liver, kidney and the heart. It vides prescribe as a potential inhibitor of COVID 19 and other viruses.

Medicago sativa L., Fabaceae is known as perennial herbaceous leguminous plant species that originated in southwestern Asia and is used as a folk medicine for the treatment of various ailments. The upper ground part of Lucerne contains phenolic compound such as flavonoids etc. contributes to its biological activities. We are determined widely known flavonoids in extracts 20 alfalfa varieties herb at the Ukrainian steppe growing. We selected 50 seeds of the same size from twenty alfalfa cultivars from different countries, were cultivated under controlled areas of the southern part of the Ukrainian left-bank at the border of forest-steppe and steppe zones (Zaporizhzhya, Ukraine) from April to June, with 15 °C/ 07 °C (day/night), 14 h/10 h (light/dark) and 60–65% relative humidity. The content of flavonoids was found unequable in ethanol extracts. The chemical compositions and their content were assessed by ultrahigh-performance liquid chromatography. The content of flavonoids was different in the 20 alfalfa varieties raw materials. Umbelliferone was found high in ethanol extract of Mongolian colorful hybrid (Mongolia, 0.23 mg/g). Four sorts have not contained umbelliferone: Kisvardai (Hungary), Nizona (Cuba), Tanhuato (Mexico), and Mesopotamian (Iraq). The leader from cinaroside content was sort Commercial 2-52-75 of UK origin. Routine has been found in the highest quantities in WL 50 from the USA. Ferganska 700 from Uzbekistan was the leader in luteolin content and Kisvardai, Hungary was the leader in an average of kaempferol content (0.030 mg/g). Have been followed by hierarchical clustering analysis the link from sorts origin and similarities in their flavonoids composition in Ukrainian growing. We performed a tree structure containing a k-block set partition for each value of k between 1 and n, where n is the number of data points to cluster. Note have been connectioned the sorts origin only to the five flavonoids composition in clusterig analysis.

SYNTHESIS AND PROPERTIES OF S-ALKYL 5-R-4-PHENYL-1,2,4-TRIAZOLE-3-THIOL DERIVATIVES

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Azaheterocyclic compounds are of considerable interest to scientists as a source of creation of various biologically active substances. Compounds that combine pyrazole, 1,2,4-triazole and indole fragments in their structure attract considerable attention in this aspect. The mentioned heterocyclic systems belong to the group of compounds, the use of which is associated with significant successes in the field of creating new medicines.

The aim of the work was to optimize the synthesis conditions and study the properties of S-alkyl derivatives of 5-R-4-phenyl-1,2,4-triazole-3-thiol, which contain 5-methylpyrazole and (indol-3-yl)propyl fragments in their structure .

Methods and results. Diethyl oxalate, acetone, sodium methylate and 4-(indol-3-yl)butanoic acid were used as key starting reagents. The target intermediate with a pyrazole fragment was

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