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ABSTRACT BOOK



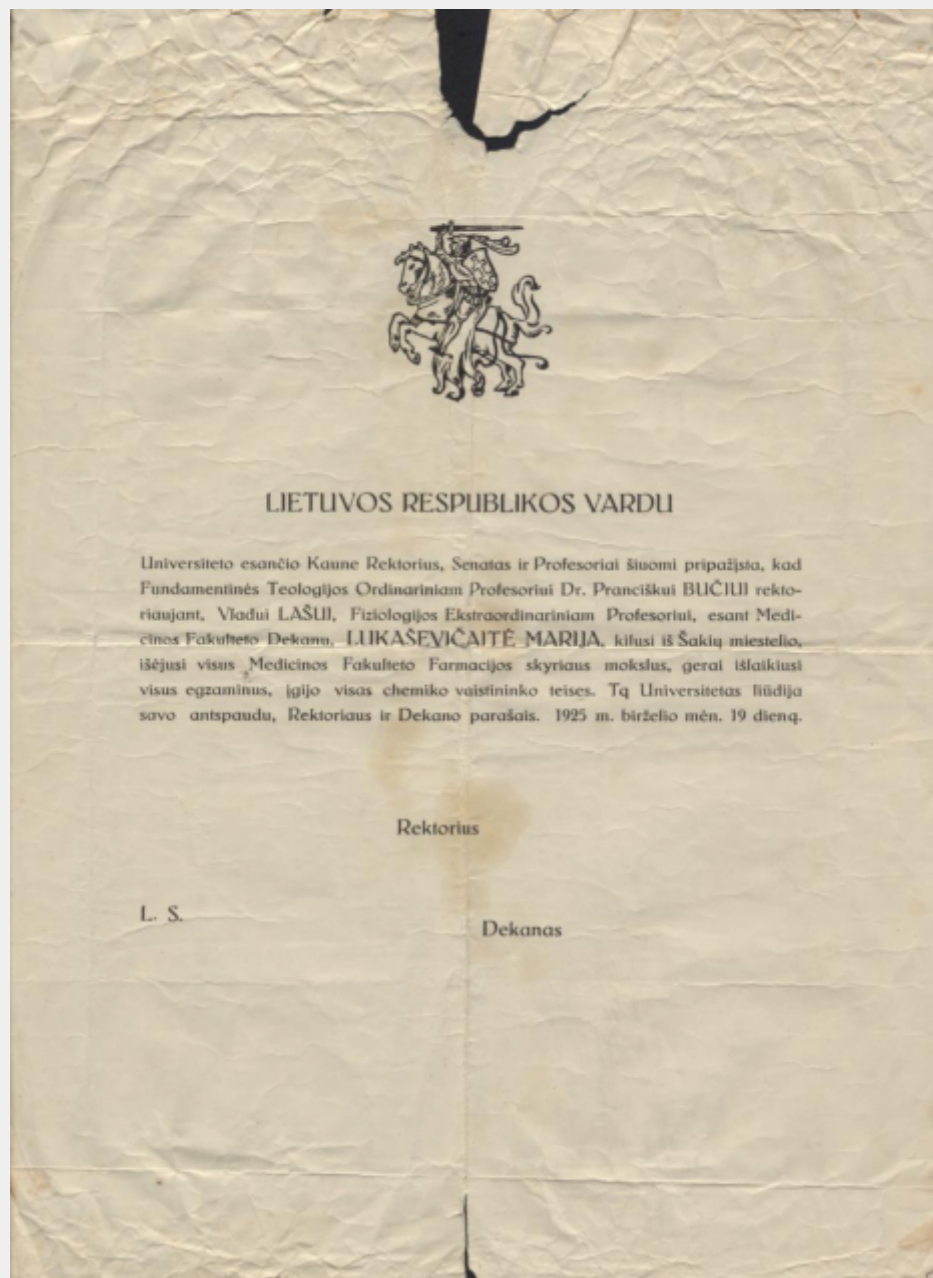
CONTEMPORARY PHARMACY: ISSUES, CHALLENGES AND EXPECTATIONS 2025

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Conference dedicated to the Centennial of the First Lithuanian Pharmacy Diploma.

One hundred years ago, the first nine graduates of the University of Lithuania completed their higher pharmacy studies and were awarded the diploma of Chemist-Pharmacist. Over the past 100 years, approximately 5,600 individuals have completed higher pharmacy studies in Kaunas. These graduates are not only the creators of Lithuanian pharmacy history but also contributors to the broader history of our country.

As we mark this centennial milestone, it is a fitting moment to look back and reflect on the remarkable journey we have taken...



Bioactive Compounds of *Ruta graveolens* L. of Ukrainian Origin

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Background: *Ruta graveolens* L. is a medicinal plant that is little known in the modern world and rarely found in official medicine. However, in the past, it held an important place. The plant was used as a fresh herb, infusion, decoction, powder or oils (1). It was especially widespread in the region of its natural growth, the Mediterranean, where ruta was traditionally used for diseases of the heart, gastrointestinal tract, nervous system, dermatitis (2). Despite the decline in interest in the plant in modern practice, its pharmacological activities, attributed to its chemical composition, suggest the potential for its reintroduction into phytotherapy.

Aim: to establish the link between traditional ethnopharmacological use of *Ruta graveolens* and modern applications using the principles of evidence-based pharmacy. Identification of main groups of bioactive substances and marker compounds in the plant raw material.

Materials and methods: *Ruta graveolens* was collected in the Ivan Franko Botanical Garden (Lviv, Ukraine) at different vegetative phases in 2023. The chemical composition was determined using qualitative reactions, HPLC, HPTLC and GC-MS methods.

Results: Analysis of ruta raw material allowed the identification of the following classes of compounds: alkaloids, hydroxycinnamic acids, coumarins, terpenoids, flavonoids and marker substances such as: rutin, chlorogenic acid, neochlorogenic acid, caffeic acid. Rutin was identified as the dominant compound. Considering the ethnopharmacological use of the raw material and properties of compounds, it can be assumed that it was rutin that caused its use in cardiovascular diseases in ancient times. Modern research confirms that this substance exhibits cardioprotective, antioxidant, antiapoptotic, and anti-inflammatory activity (3).

Conclusions: The high content of rutin ($>12,502 \pm 0,219$ mg/g) indicates the plant's potential in the treatment of cardiovascular diseases, as well as in the complex therapy of inflammatory pathologies. Further studies of the activity of other classes of substances from the rue will be carried out.

References

1. Colucci-D'Amato L, Cimaglia G. *Ruta graveolens* as a potential source of neuroactive compounds to promote and restore neural functions. *Journal of Traditional and Complementary Medicine*. 2020 Jun 4;10(3):309-314.
2. Coimbra AT, Ferreira S, Duarte AP. Genus *Ruta*: A natural source of high value products with biological and pharmacological properties. *Journal of Ethnopharmacology*. 2020 Oct 5;260:113076.
3. Meng X-L, Yu M-M, Liu Y-C, Gao Y-L, Chen X-S, Shou S-T and Chai Y-F. Rutin Inhibits Cardiac Apoptosis and Prevents Sepsis-Induced Cardiomyopathy. *Front Physiol*. 2022 Apr 14;13:834077.