LITHUANIAN UNIVERSITY OF HEALTH SCIENCES
FACULTY OF PHARMACY

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ABSTRACT BOOK

CONTEMPORARY PHARMACY: ISSUES, CHALLENGES AND EXPECTATIONS 2025

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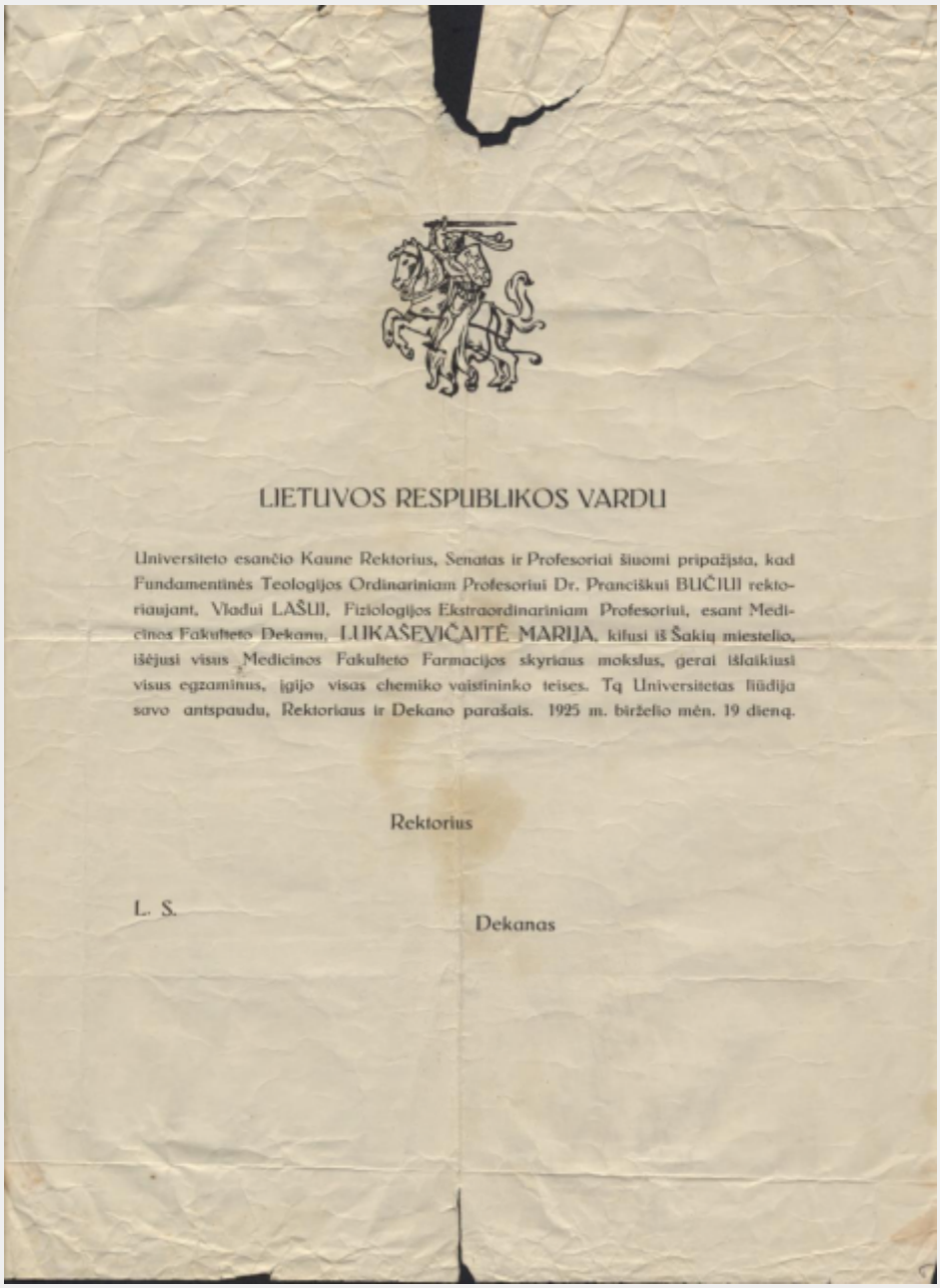
Conference dedicated to the Centennial of the First Lithuanian Pharmacy Diploma.

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...



LIETUVOS RESPUBLIKOS VARDU

Universiteto esančio Kaune Rektorius, Senatas ir Profesoriai šiuomi pripažįsta, kad Fundamentinės Teologijos Ordinariniam Profesoriui Dr. Pranciškui BUČIUI rektoriaujant, Vladui LAŠUI, Fiziologijos Ekstraordinariniam Profesoriui, esant Medicinos Fakulteto Dekanu, LUKAŠEVIČAITĖ MARIJA, kilusi iš Šakių miestelio, išėjusi visus Medicinos Fakulteto Farmacijos skyriaus mokslus, gerai išlaikiusi visus egzaminus, įgijo visas chemiko vaistininko teises. Tą Universitetas liudija savo antspaudu, Rektoriaus ir Dekano parašais. 1925 m. birželio mėn. 19 dieną.

Rektorius

L. S.

Dekanas

Hypochaeris & *Leontodon* are Sources of Sesquiterpene Lactones and Other Natural Products

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Background. *Hypochaeris* and *Leontodon* (Cichorieae tribe, Asteraceae family) are occurring throughout Europe, especially in temperate and subtropical climates. Members of these genera grow in a variety of habitats from grasslands to disturbed soils. Some well-known species include *H. radicata* L., *H. glabra* L., *L. hispidus* L., *L. saxatilis* Lam. etc. These plants have not yet found application in medicine and pharmacy, but they are used as food (1). Although these plants are not considered yet for the pharmaceutical industry, they might represent a unique source of new bioactive compounds.

Aim. To evaluate the literature data on chemical composition, with a focus on sesquiterpene lactones in *Hypochaeris* and *Leontodon* species, in order to identify the most promising samples.

Materials and methods: A systematic literature search on the chemical composition of the genera *Hypochaeris* and *Leontodon*.

Results. The selected species grow in temperate and Mediterranean climates, especially in grasslands and stony dry soils. *Hypochaeris* genus is particularly important for its rich content of sesquiterpene lactones, as well as flavonoids, lignans, phenolic acids and triterpenoids. In *H. radicata* roots have been found several representatives of the target class, namely hypochoeroside C, hypochoerosidic acid C, hypochoeroside D, hypochoerosidic acid D (2) as well as in *L. tenuiflorus* herb contains ixerisoside D, sonchuside A, 11,13β-dihydro-14-dihydroxyhypocretenolide, 11,13β-dihydro-14-hydroxyhypocretenolide-*β*-D-glucopyranoside etc. (3). Due to the presence of these compounds, *Hypochaeris* (4) and *Leontodon* (5) species have anti-cancer and anti-inflammatory activity.

Conclusions. *Hypochaeris* and *Leontodon* genera represents a promising source of bioactive compounds with significant pharmacological potential. At this stage of the study, *Hypochaeris glabra* L. was selected for a comparative analysis of sesquiterpene lactones profile with known species.

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References

1. Guarrera PM, Savo V. Wild food plants used in traditional vegetable mixtures in Italy. Journal of Ethnopharmacology. 2016;185:202-34.
2. Shulha O, Çiçek SS, Wangensteen H, Kroes J, Mäder M, Girreser U, et al. Lignans and sesquiterpene lactones from H*ypochaeris radicata subsp. neapolitana* (Asteraceae, Cichorieae). Phytochemistry. 2019;165:112047.
3. Di Lecce R, Galarza Pérez M, Mangoni A, Çiçek SS, Sönnichsen FD, Evidente A, et al. Sesquiterpenoids from *Leontodon tenuiflorus* (Asteraceae, Cichorieae): First record of a hypocretenoid from *Leontodon* section Asterothrix. Biochemical Systematics and Ecology. 2022;102:104408.
4. Souilah N, Ullah Z, Bendif H, Medjroubi K, Hazmoune T, Hamel T, et al. Phenolic Compounds from an algerian endemic species of *Hypochaeris laevigata var. hipponensis* and investigation of antioxidant activities. Plants (Basel). 2020;9(4).
5. Zidorn C, Stuppner H, Tiefenthaler M, Konwalinka G. Cytotoxic activities of hypocretenolides from *Leontodon hispidus*. J Nat Prod. 1999;62(7):984-7.