

# NEW SCIENTIFIC APPROACH FOR QUALITY CONTROL OF PEPPERMINT PRODUCTS USING COMPREHENSIVE HPTLC FINGERPRINTING

*Khokhlova K.O., Zdoryk O.A., Vyshnevskaya L.I., Kovpak L.A., Rusak I.V., Kapustianskyi I.Yu.*

**National University of Pharmacy, Kharkiv, Ukraine**

**Introduction.** There are numerous herbal products that include Peppermint leaves (*Menthae piperitae folium*) that are present on Ukraine market. These are herbal raw materials, tinctures, dry extracts, herbal teas, oils, multicomponent preparations, etc. According to the State Pharmacopoeia of Ukraine there are three monographs included that allow to control quality of Peppermint leaf, Peppermint Dry Extract and Peppermint Oil. For standardization of these products the composition of flavonoids and essential oils, as well as determination of rosmarinic acid and essential oils content are assessed by combinations of different physicochemical methods [1]. The modern high-performance thin-layer chromatography (HPTLC) method allows conducting both – identification and quantification of multiple herbal drugs samples in a cheap and fast way.

The **aim** of this work was to develop HPTLC methods for comprehensive analysis of Peppermint's herbal products that allows doing identification and quantification of multiple different products economically reasonable and time-wise.

**Material and methods.** Instruments: CAMAG HPTLC Herbal System, VisionCats (software); Orbital Shaking Platform POS-300, Grand-Bio (extraction). Reagents were analytical grade. Reference substances were purchased from Extrasynthese, Sigma Aldrich. Chromatography was performed on HPTLC plates Si 60 F254 according to the developed methods.

**Results and discussions.** The existed TLC/HPTLC methods used in pharmacopoeial analysis of Peppermint products were evaluated. Multiple samples of *Mentha x piperita* L. and Peppermint finished products of Ukrainian manufactures were analyzed. Related species such as *Mentha arvensis* L., *Melissa officinalis* L. and *Nepeta cataria* L. were included for assessing the possibility of differentiation between related species. The new HPTLC method for simultaneous identification of flavonoids of Peppermint herbal products and quantification of rosmarinic acid was proposed [2-4]. The possibility of conducting of total flavonoids content test at the same mobile phase was determined. Thus, the new scientific approach for quality control of Peppermint products using “comprehensive” HPTLC fingerprinting was proposed.

## References:

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