

## DETERMINATION OF SOLVENT SYSTEM FOR QUALITATIVE ANALYSIS LIME FLORES (TILIAE FLOS) USING TLC

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Linden is tall deciduous tree spread throughout Europe. Family *Tiliaceae* include around 45 species, expect that there are more than hundred hybrid species in the world. Today *Tilia cordata* is widely used in folk and officinal medicine as a diuretic, diaphoretic, antispasmodic, expectorant, sedatives for treating influenza, cough, migraine, nervous tension and various types of spasm (liver, gallbladder). The officinal raw material is flowers (inflorescences) with flower bunds (*Tiliae flos*), which are introduced into many pharmacopoeis of the world. The raw material contains essential oils, vitamins, mucilage and flavonoids. Nowadays there are only packed raw material and collections as medicines on the pharmaceutical market of Ukraine.

Because of variety of genus species and a large number of variety hybrids of species it is expedient to develop a method of TLC analysis of raw materials for identification and determination of its quality. Therefore the major aim of study was selection a mobile phase for TLC analysis, which will allow separating the derivatives of kaempferol, quercetrin and acacetin in extracts from the flowers of *Tilia cordata*.

*Tilia flos* was used as a plant material for analysis, collected in Warsaw, Poland, in 2014, 2015, 2016. For determining the mobile phase of TLC analysis of extracts from *Tiliae flos* were used: tetrahydrofuran (POCH basis), dichloromethane (POCH basis), formic acid (Merck), acetic acid (Merck) and distilled water in different ratios.

The analysis was carried out at the Department of Pharmacognosy and Molecular Basis of Phytotherapy of Medical University of Warsaw. For analysis used: CAMAG Linomat 5, CAMAG ADC 2 Automatic Developing Chamber 2, CAMAG TLC plate heater III, CAMAG derivatizer, CAMAG TLC Visualizer 2; HPTLC plates, silica gel 60 F254, Merck. Standard samples of flavonoids which were used for comparison: quercetin derivatives (isoquercetin, rutin, avicularin), keampferol derivatives (keampferol 3-O-glucosid-7-rhamnozide, trans-tyrolizide, astragalin) and acacetin derivatives (linarin).

The best resolution of these substances was found after selecting the ratio of these solvents and provided by a mobile phase which contains tetrahydrofuran - dichloromethane - formic acid - acetic acid – water P in a ratio of 16:20:4:2:4, accordingly.

The identified solvent system will be used in the development of normative documentation for raw materials and extracts on its basis.