Phytochemical analysis and evaluation of anti-inflammatory and antimicrobial activity of extracts prepared lime flower.

Lime flower also known, as linden flower is a popular herbal drug used in the form of self-prepared infusion in the prevention and treatment of symptoms of common cold such as sore throat, cough and fever. Available on the market drugs containing lime flower come from different tree species. According to the regulations for lime lower it should contain only flowers obtained from Tilia platyphyllos, Tilia cordata and Tilia x vulgaris. In the scientific literature there are limited and insufficient reports on the chemical composition of extracts prepared from linden flower. There is also no answer to the question whether the chemical composition of infusions from lime flower may differ depending upon the species of the tree from which they were collected. The data on bioactivity of linden flower are scarce.

The aim of the current project is the comprehensive investigation of the chemical composition of extracts obtained from lime flower originated from different lime tree species and to evaluate its anti-inflammatory and antimicrobial activity.

During the research the chemical composition of lime flower will be established using chromatographic techniques. The method standardization method allowing the quantification of certain group of chemicals occurring in the analysed material will also be developed. The chemical composition of lime flowers obtained from small-leaved lime (Tilia cordata) will be studies and its major constituents will be isolated. In the course of the present proposal the anti-inflammatory and antimicrobial activity of extracts from lime flower will be evaluated.

The obtained results will significantly enlarge the knowledge about the chemical composition of lime flower and will resolve the question about the justification of the use of this drug as anti-inflammatory agent. Performed experiments will also explain whether the lime flower extracts posses antimicrobial properties. The project will also answer the question about differences in the chemical composition of lime flower obtained from different lime tree species. In the future the results may contribute to the improvement in the quality and efficacy of manufactured preparations containing lime flower.