

## Abstract

Řepová, L.: Biological activity of plant metabolites VI. Influence of alkaloids from several taxons of plants on acetylcholinesterase. Diploma thesis, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, 2007.

In content of the diploma thesis it was realized screening of the alkaloids of some taxons of tribes Papaveraceae and Fumariaceae on acetylcholinesterase inhibition. It was introduced a method for obtaining optimum extracts (alkaloidal concentrates of certain type) from various morphological parts of plants *Corydalis cava* (L.) Schweigg. et Koerte (root), *Uncaria tomentosa* (WILLD.) DC. (bark), *Tabebuia impetiginosa* (Mart. ex DC.) Stangl. (bark), *Peumus boldus* (Molina) (leaf) a *Papaver somniferum* L. (poppy head).

After the preparation of primary extract, its acidification and preliminary cleaning, extracts of different basicity were prepared by extraction either by diethyl ether (L, pH ~2; A, pH ~8; B, pH ~12) or by chloroform (A1, pH~8; J, pH ~3; E, pH ~10). Single types of extracts were eluted by means of TLC metod both in neutral and in alkaline system of solvents on the silica gel and were tested on contents of alkaloids (detected by Dragendorff agent). Extracts containing alkaloids were further checked together with standards (physostigmine and galanthamine) by aid of bioautographic method serving for detection of inhibition activity on acetylcholinesterase. AChE originated from electric eel, for colour reaction 1-naphtyl-acetate and Fast Blue B salt were chosen. Spots of the TLC plate which contained AChE inhibitors showed up as white spots against the light violet background.

The attendance of AChE inhibitors of variant activity level has been proved in all tested samples of plant materials. But only the taxons of *Corydalis cava* (L.) Schweigg. et Koerte, *Peumus boldus* (Molina) a *Papaver somniferum* L have an importance for the next study (isolation of active substances).

Key words: plants, alkaloids, acetylcholinesterase inhibition, TLC, bioautographic method, *Corydalis cava* (L.) Schweigg. et Koerte, *Uncaria tomentosa* (WILLD.) DC., *Tabebuia impetiginosa* (Mart. ex DC.) Stangl., *Peumus boldus* (Molina), *Papaver somniferum* L.