

# ABSTRACT

Šikola V.: Screening of various plant taxa and their influence on human enzyme systems  
I. Diploma thesis, Charles University, Faculty of Pharmacy in Hradec Králové,  
Department of Pharmacognosy, Hradec Králové 2018, 52 pages.

The object of this diploma thesis was the screening of 5 chosen plant taxa (*Desmodium adscendens*, *Codonopsis pilosula*, *Centella asiatica*, *Bacopa monnieri*, *Epimedium sagittatum*) to identify chemical constituents (alkaloids) and to define inhibitory activity against human acetylcholinesterase (HuAChE) and butyrylcholinesterase (HuBuChE).

Summary extract of plants was prepared by extraction to ethanol, the presence of alkaloids was verified by control TLC (UV, Dragendorff's reagent). Alkaloidal extracts were prepared by extraction of an alkaline solution of summary extracts to ethyl acetate. Alkaloidal extracts were subjected to GC/MS analysis and tested for their inhibitory activity on human cholinesterases by Ellman's method.

Results of GS/MS analysis did not provide information on contained alkaloids – the alkaloids did not gasify or were not contented. Conclusions of measuring inhibition activity of extracts in comparison to standards (galantamine, huperzine A) eliminated an usage of alkaloids in a clinical praxis because the activity was many times lower than standards. The extract of *Bacopa monnieri* was not analyzed, because control TLC did not confirm the presence of alkaloids.

Keywords: alkaloids, Alzheimer's disease, *Desmodium adscendens*, *Codonopsis pilosula*, *Centella asiatica*, *Bacopa monnieri*, *Epimedium sagittatum*, acetylcholinesterase.