

ABSTRACT

The inhibition activity of extracts from *Fontinalis antipyretica* and β -carboline alkaloids on enzymes acetylcholinesterase and butyrylcholinesterase

This thesis deals with testing of inhibition activity of methanolic and acetic extracts from water moss *Fontinalis antipyretica* (*Fontinalaceae*) and β -carboline alkaloids on activity of enzymes acetylcholinesterase (ACHE) and butyrylcholinesterase (BUCHE) using test „Fast Blue B salt“ at TLC desk and Ellman's test using spectrophotometer. It was also investigated how dimethylsulfoxide used as a solvent in combination with water affects activity of enzymes and alkaloids. Another part of this work is focused on discovering in which locality water moss occurs and what kind and quantity of β -carboline alkaloids contains. For this evaluation was applied HPLC analysis. Results show that better inhibition activity of extracts on ACHE and BUCHE has acetic extract whereas the highest activity show acetic extract on BUCHE. Harmine in form of base and salt in water and in mixture of DMSO and water has the highest inhibition activity on ACHE using eserine as reference substance. Harmalol in form of salt in water and harmine in form of base and salt in mixture of DMSO and water has the highest activity on BUCHE. It was found out that DMSO considerably affects activity of enzymes and alkaloids.

Keywords: *Fontinalis antipyretica*, β -carboline alkaloids, ACHE, BUCHE, inhibitors of ACHE and BUCHE, DMSO, Ellman's test, test „Fast Blue B salt“