

## ABSTRACT

Průša, J.: Biological Active Plant Metabolites II. Alkaloids of *Corydalis cava* (L.) Schweigg. & Körte (*Fumariaceae*) and Screening of Their Biological Properties. Rigorous Thesis, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Department of Pharmaceutical Botany and Ecology, Hradec Králové 2010, 69 p.

Within the screening of plants that contains alkaloids inhibiting the activity of the human erythrocytic acetylcholinesterase and human serum butyrylcholinesterase *Corydalis cava* (L.) Schweigg. & Körte (*Fumariaceae*) was studied. This work connect to my diploma thesis (2009). The task was to separate mixture of alkaloids from extract „B-chloroform“ subfraction F<sub>1-3</sub>. This subfraction was prepared within the frame of diploma thesis. From this mixture, using preparative TLC, were isolated two compounds in the form of free bases. On the basis of MS, NMR and comparing data in literature these two substances were identified as sinoacutine and sebiferine. The isolated compounds inhibited the human erythrocyte acetylcholinesterase and human blood serum butyrylcholinesterase with IC<sub>50</sub> for AChE sinoacutine > 1 mM and sebiferine > 1 mM and with IC<sub>50</sub> for BuChE sinoacutine > 1 mM and sebiferine > 1 mM. These compounds showed no inhibition activity to AChE and BuChE for the development of potencial drugs against the Alzheimer's disease. In the patology of Alzheimer disease an important role play free radicals. On this account we determined also antioxidative activity of isolated alkaloids. The radical scavenging activity of sebiferine was EC<sub>50</sub> > 10 mM (EC<sub>50</sub> = 12,78 mM) and of sinoacutine was EC<sub>50</sub> = 0,209 mM. Sebiferine was also tested on antiprotozoal activity (IC<sub>50</sub> 71,1 μM).

**Keywords:** Alzheimer disease, alkaloids, *Corydalis cava*, acetylcholinesterase, butyrylcholinesterase, antioxidative activity, antiprotozoal activity.