ABSTRACT

Horčičková, Z.: Biologically activ metabolites of plants. I. Alkaloids from *Eschscholtzia californica* Cham. and their inhibiting activity to acetylcholinesterase. Diploma thesis, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Department of Pharmaceutical Botany and Ecology, Hradec Králové 2011, 67 p.

Within the screening of plants that contains alkaloids inhibiting the activity of the human erythtocytic acetylcholinesterase and human serum butyrylcholinesterase *Eschscholzia californica* Cham. (*Papaveraceae*) was studied. This work connect to the diploma thesis Jakub Doležal (2008).

The task was to separate of alkaloids subfraction nonphenolic of chloride soluble in chloroform. The mother liquor was divided into various fractions by column chromatography on silica gel using a mixture of chloroform and ethanol increasing polarity. 45 fractions were obtained, which were joined by TLC monitoring. The united fractions 30-34 was obtained 4.57 g pěnovité white substance. The obtained substance was identified by MS and NMR studies as escholtzin.

Escholtzin inhibitory activity against acetylcholinesterase was IC_{50} = 519 ± 5.8 µM and butyrylcholinesterase was worth more than 1000 µM. The measured values were significantly higher than the IC_{50} values of standards (galanthamine, eserine), therefore, isolated the substance is rather dull in terms of further use as pharmaceuticals.

Keywords: *Eschscholzia californica*, escholtzin, secondary metabolites of plants, alkaloids, acetylcholinesterase, Alzheimer disease.