

ABSTRACT

Marečková, L.: Biological activity of secondary plant metabolites VII. Alkaloids of *Vinca minor* L. Diploma thesis, Charles University, Faculty of Pharmacy in Hradec Kralove, Hradec Králové, Department of pharmaceutical botany and ecology, Hradec Králové 2018

There was prepared an extract from aerial parts of the plant *Vinca minor* L. This prepared extract was separated by the column chromatography into individual fractions. One chosen fraction was separated by TLC on silicagel. Two substances were isolated and they were identified by GC/MS and NMR as (-)-minovincin and (+)-minovincin. These two substances were tested for their inhibition activity against human acetylcholinesterase (hemolysate of human erythrocytes) and butyrylcholinesterase (human plasma). Their inhibition activity was compared to standards which were Galanthamin, Huperzin A and Eserin. (+)-Minovincin did not show significant inhibitory activity against either enzyme ($IC_{50} = AChE > 1000 \mu M$, $BuChE 655,05 \pm 35,37 \mu M$) and it is not suitable for further investigation. (-)-Minovincin showed no significant activity against AChE ($IC_{50} = 234,27 \pm 63,40 \mu M$), activity against BuChE ($IC_{50} = 26,32 \pm 2,52 \mu M$) was higher than inhibitory activity of Galanthamin, but still relatively low for further investigation. The aim of this work was mainly the selection of suitable *Vinca minor* L. alkaloids, which could potentially be relevant in the treatment of Alzheimer's disease.

Key words: *Vinca minor* L., Alzheimer's disease, cholinesterase, indole alkaloids, minovincin, minovincin