

## ABSTRACT

Kučerová J.: Biological activity of secondary plants metabolites VI. Alkaloids of *Vinca minor* L. Diploma thesis, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Department of pharmaceutical botany and ecology, Hradec Králové 2016, 67 pages.

Isolation of alkaloids was done from extract of *Vinca minor*, family Apocynaceae. Individual substances obtained were examined for their ability to inhibit human acetylcholinesterase and butyrylcholinesterase.

The basic extract was after an initial extraction with 95% ethanol pre-purified by extraction with chloroform. This chloroform extract was divided further by column chromatography on a total of 531 fractions. The fractions obtained were, based on the similarities identified by thin layer chromatography, interconnected in a final number of 17 fractions. The mobile phase for column chromatography were mixtures of chloroform and medical gasoline, chloroform and ethanol, and ethanol itself.

For further testing were used fractions number 2 and 5. From the fraction 2 was by preparative thin layer chromatography and subsequent crystallization isolated substance number 1. After analysis of this substance by GC/MS was found that it is a (+) - vincaminorein. Further was examined it's biological activity towards cholinesterases, which found a very significant inhibition of butyrylcholinesterase (8.71  $\mu\text{M}$ ), but did not inhibit acetylcholinesterase.

From fraction 5 was isolated substance number 2. This fraction was fractionated first by flash chromatography and then further separated by preparative thin layer chromatography. After subjecting the substance 2 of GC/MS analysis, found substance has been identified as the (+) - eburnamonine. For eburnamonine was also examined biological activity against cholinesterases, but measured values were not significant at all.

Keywords: *Vinca minor*, alkaloids, isolation, acetylcholinesterase, butyrylcholinesterase