

## ABSTRACT

V. Hojgrová: Alkaloids of *Vinca minor* L. and their biological activity VIII. Diploma thesis, Charles University, Faculty of Pharmacy in Hradec Králové, Department of Pharmaceutical Botany. Number of pages 69.

This diploma thesis deals with the isolation of alkaloids from *Vinca minor* L. from the family Apocynaceae. Separation of alkaloids from the selected fraction (VM 215–258) or from their subfractions (VM 34–41, VM 86, VM 87–113) was performed by preparative TLC. Two pure alkaloids were isolated from the subfraction (VH 34–41). The first VH-1 alkaloid not yet isolated and the second VH 2 alkaloid: (–)-raucubainin. Alkaloids were identified by EI-MS, LC-MS, NMR and optical rotation and were compared with data in the literature. Isolated alkaloids were tested for acetylcholinesterase (AChE), butyrylcholinesterase (BuChE) and prolyl oligopeptidase (POP) inhibitory activity and for cytotoxicity. Both substances did not show significant cholinesterase inhibitory activity  $IC_{50}$  against AChE after measurement, only (–)-raucubainin showed a slight activity against BuChE ( $IC_{50} = 94 \pm 7 \mu\text{M}$ ), VH-1 was found to be inactive ( $IC_{50} > 100 \mu\text{M}$ ). POP inhibitory activity has so far only been tested for (–)-raucubainin; was found to be inactive ( $IC_{50} > 1000 \mu\text{M}$ ). The results of the cytotoxic activity of the alkaloids (–)-raucubainin and VH-1 at the time of submission of this diploma thesis were not known (evaluation of their cytotoxic activity has not yet been completed).

Key words: *Vinca minor*, Apocynaceae, indole alkaloids, Alzheimer's disease, acetylcholinesterase, butyrylcholinesterase, prolyl oligopeptidase, cytotoxicity