ABSTRACT

Míšek, V.: Alkaloid isolation from *Vinca minor* and their biological activity II.

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Key words: secondary metabolites, Apocynaceae, *Vinca minor*, cholinesterases, cytotoxicity, alkaloids, isolation, biological activity

Alzheimer's disease (AD) is a neurodegenerative disease characterized by the progressive development of cognitive dysfunction, impact on normal daily functions and neuropsychiatric symptoms. There is a limited number of compounds for pharmacotherapy AD, moreover, AD cannot be treated causally. Therefore, research focused on the discovery of new active substances, including natural origin ones, could be one of the possible options for widening the pool of substances used in AD treatment.

An extract was prepared by extracting the aerial parts of *Vinca minor* L. with ethanol and subsequent liquid-luquid extractin at different pH. Using column and preparative thin layer chromatography, this extract was further processed to isolate individual alkaloids. The structure of isolated alkaloids was determined by spectrometric methods (GC/MS and NMR). After comparing the obtained structures with the literature data, these alkaloids were identified as norvincorine and srictamine. The optical rotatability was measured for these substances.

Using a modified Ellman method, the isolated alkaloids were tested for inhibitory activity against human cholinesterases, enzymes, which are one of pharmacotherapy targets within the pathophysiology of AD. Norvincorine inhibiting activity against BuChE (IC_{50}= 15,52 ± 0,92 μM), on the other hand, inhibitory activity against AChE was insignificant (IC_{50} > 100 μM). Strictamine was not active against AChE or BuChE (IC_{50} > 100 μM).