

ABSTRACT

Dvořáková Zdeňka: Alkaloids of *Narcissus* 'Dutch Master' (Amaryllidaceae) and their biological activity II. Diploma thesis 2016, Charles University in Prague, Faculty of Pharmacy in Hradec Králové, Department of Pharmaceutical Botany and Ecology.

The content of this work was isolation of compounds from the selected fraction ND-6 obtained by column chromatography of *Narcissus* 'Dutch Master' alkaloid extract. Preparation of extract and its column chromatography was performed by Mrg. Daniela Hulcová as part of her doctoral studies. By the means preparative TLC was from fraction ND-6 homolycorine type alkaloid (+)-*O*-methyllycorenine gained. Its structure was determined on the basis NMR, GC-MS analysis and optical rotation. The obtained data were compared with facts in known literature.

By the isolated alkaloid was determined its cholinesterase inhibitory activity against acetylcholinesterase and butyrylcholinesterase. Its inhibitory activity was expressed as IC_{50} (μM) and compared with known standards galanthamine, physostigmine, and Huperzine A. This alkaloid is inactive against cholinesterase ($IC_{50} \text{ AChE} > 1000 \mu\text{M}$, $IC_{50} \text{ BChE} > 1000 \mu\text{M}$). On the basis of gained results, we can evaluate this alkaloid from the point of view of cholinesterase inhibition as potentially unusable in the treatment of AD.

Key words: *Narcissus* 'Dutch Master', Amaryllidaceae, homolycorine alkaloids, isolation, anticholinesterase activity, acetylcholinesterase, butyrylcholinesterase, Alzheimer's disease