

Abstract

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

From a selected fraction ND-6, which was obtained by column chromatography of an alkaloid extract of *Narcissus* 'Dutch Master' (preparation of the alkaloid extract and column chromatography was performed by Mgr. Daniela Hulcová within her doctoral thesis), lycorine alkaloid *O*-acetylpluviin was isolated using preparative TLC. Its structure was determined on the basis of MS, NMR analysis, and optical rotation, the obtained data were compared with the literature.

The isolated alkaloid was tested on its possibility to inhibit human acetylcholinesterase and butyrylcholinesterase. The activity was expressed as IC₅₀ values (IC₅₀ AChE = 648.03 ± 53.95 μM, IC₅₀ BChE = 602.50 ± 48.50 μM) and compared with IC₅₀ values of galanthamine, huperzine A and physostigmine. *O*-acetylpluviine showed a very low inhibitory cholinesterase activity, and so, the alkaloid does not seem to be a suitable cholinesterase inhibitor for potential use in the treatment of Alzheimer's disease.

Keywords: *Narcissus* 'Dutch Master', Amaryllidaceae, lycorine alkaloids, Alzheimer's disease, acetylcholinesterase, butyrylcholinesterase