

## Abstract

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Title of diploma thesis: Derivates of Amaryllidaceae alkaloids and their biological activity:

Derivates of tazettine II

Plants of family Amaryllidaceae are a rich source of alkaloids that are characterized by a broad biological activity. Perhaps the world's best-known member of this family has become galanthamine, which, because of its potent inhibitory potential, has found a place in the treatment of Alzheimer's disease.

Based on the conducted studies, the alkaloid tazettine has been chosen for this thesis. The main purpose was to prepare more active derivatives of tazettine and to test the biological activity for potential use in the treatment of cancer and Alzheimer's disease. Ten aromatic esters of tazettine were prepared. Reaction yields ranged from 33,5-69,3 %. Derivatives were identified by MS, NMR and optical rotation.

Prepared compounds were tested for their inhibitory potential against human cholinesterases - AChE and BuChE. Unfortunately, it has not been possible to prepare derivatives, which exhibit significant activity in inhibiting AChE or BuChE.

Anti-tumor activity of the derivates has been tested on the panel of selected cell lines. However, we did not manage to prepare derivates with the desired toxicity even in this case.

Keywords: Amaryllidaceae alkaloids, Alzheimer's disease, tazettine, biological activity