

ABSTRACT

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Title of diploma thesis: **Biological activity of plants secondary metabolites XXX.; Basic search of selected taxons on anticholinesterase activity**

As part of the study of the biological activity of secondary metabolites, 7 taxa of higher plants were selected. The study deals with basic research of summary and alkaloid extracts prepared from morphological parts of plants *Annona muricata* (leaves), *Leonotis leonurus* (perch), *Turnera diffusa* (perch), *Hamelia patens* (perch), *Uncaria guianensis* (bark), *Allamanda cathartica* (perch) and *Morinda citrifolia* (leaves). To elucidate the presence of the major types of secondary metabolites, extracts were prepared and subjected to detection reactions by TLC using ten detection reagents. After detection by Dragendorff's reagent of ethyl acetate extracts, alkaloids were significantly present only in *Annona muricata*. Alkaloids were not detected in the bark of *Uncaria guianensis*.

Using the Ellman method, the extracts were tested for potential inhibitory activity against human brain cholinesterases, using both recombinant enzymes. No significant active substances were present in any of the measured extracts. However, the most significant activity against butyrylcholinesterase was shown by the alkaloid extract from *Hamelia patens* $\Delta = 30.98 \pm 2.47\%$ and *Annona muricata* $\Delta = 32.16 \pm 0.66\%$.

Based on the results, *Hamelia patens* appears to be promising for further study, whose inhibitory activity can be caused by alkaloids and other substances, including phenols, triterpenes and steroids.

Keywords: *Annona muricata*, *Leonotis leonurus*, *Turnera diffusa*, *Hamelia patens*, *Uncaria guianensis*, *Allamanda cathartica*, *Morinda citrifolia*, inhibition of brain cholinesterases, secondary metabolites