

Abstract

ISOLATION OF ALKALOIDS OF THE SPECIES *GEISSOSPERMUM VELLOSI* ALLEMÃO AND STUDY THEIR BIOLOGICAL ACTIVITY VIII.

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The aim of this work was to determine the activity of indole alkaloids, including their separation and purification from the South American tree *Geissospermum vellosi*, which is used in traditional medicine to treat various diseases. It shows possible use in the treatment of benign prostatic hyperplasia, tumor treatment, plasmodial diseases, and especially cognitive disorders. The isolated structures were subsequently tested for inhibition of human cholinesterases.¹ These substances could be used to treat Alzheimer's disease, which has been increasing in recent years. We are not yet able to stop disease, just slow it down.

The starting product was a summary alkaloid extract from crushed tree bark, which showed very interesting activity against AChE and BChE ($IC_{50} = 15,19 \pm 0,96 \mu\text{g/ml}$ for AChE and $IC_{50} = 0,37 \pm 0,049 \mu\text{g/ml}$ for BChE).

The GV-4 fraction has been processed using preparative thin-layer chromatography in this work. Three already known substances (anhydropereirine, geissoschizoline diastereomer, deoxydihydronorfluorocurarine) and one new alkaloid were obtained. Substances were subjected to GC-MS and NMR structure analysis for identification. Subsequently, pure compounds were tested for cholinesterase's inhibition and hepatotoxicity.

References

- 1 Lima J A, Thiago T W, da Fonseca A C C, et al. Geissoschizoline, a promising alkaloid for Alzheimer's disease: Inhibition of human cholinesterases, anti-inflammatory effects and molecular docking[J]. Bioorganic Chemistry, Academic Press Inc., 2020, 104.