

NEW FINDINGS OF DOCTORAL DISSERTATION

Name of Doctoral candidate: Tran Van Quang

Dissertation title: “ Study on botanical characteristics, chemical composition, memory improvement effects on hAPP transgenic fruit fly model of *Polygala karensium* Kurz collected in Sa Pa, Lao Cai .”

Specialty: Medicinal Materials - Traditional Pharmacology

Code of specciality: 9720206

Name of academic advisors:

1. Assoc.Prof.Dr. Nguyen Thuong Dong
2. Assoc.Pro Dr. Pham Thi Nguyet Hang

Training institution: National Institute of Medicinal Materials

Summary of new findings of the dissertation:

About botany

The thesis is the first document describing in detail the plant morphological characteristics, the characteristics of micro-dissection of the trunk and roots of *Polygala karensium* Kurz collected in Sa Pa, Lao Cai.

About chemistry

For the first time in Vietnam, the chemical composition from the roots of *Polygala karensium* Kurz (Polygalaceae) collected in Sa Pa, Lao Cai has been studied, and the structure of 17 compounds has been determined, including 3 new compounds and 9 compounds. isolated for the first time from this species.

Three newly isolated compounds are karensucrose A, karensucrose B, karenxanthon.

About biological effects

This is the first time, studying the biological effects of a species of the genus *Polygala* using a transgenic fruit fly model carrying Alzheimer's disease. The thesis is the first time to study the effects of *Polygala karensium* Kurz on a transgenic fruit fly model carrying Alzheimer's disease in Vietnam.

The thesis has demonstrated for the first time that the total ethanol extract and the fractional ethyl acetate extract of *Polygala karensium* Kurz have an improved effect on the migratory behavior of fruit fly tertiary larvae and adult fruit flies carrying Alzheimer's disease genes. For the first time, it was shown that the total ethanol extract, the fractional ethyl acetate extract and the aqueous extract improved the short-term memory of fruit fly tertiary larvae carrying the Alzheimer's disease gene. From this, it can be expected that *Polygala karensium* Kurz can improve the Alzheimer's neurobehavior of transgenic fruit flies expressing APP protein in humans through the following criteria including improvement of short-term memory impairment, improvement of motor behavior deficits, to explain the experience of using this species in folk medicine and traditional medicine and to guide the research and production of drugs to support the treatment of Alzheimer.

Ha Noi, January 30th, 2023

ACADEMIC ADVISORS

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