

Effects of *Phragmanthera capitata* (Sprengel) S. Balle (Loranthaceae) on a model of anxiety like behaviors induced by chronic immobilization stress (CIS) in mice.

Abstract

Phragmanthera capitata (Sprengel) S. Balle (Loranthaceae) is a medicinal plant known for the treatment of nerve pain in Cameroonian folk medicine. The aim of this work is to evaluate the anxiolytic-like effects of *Phragmanthera capitata* in a model of chronic immobilization stress in mice.

mice were divided into different groups and treated for ten consecutive days as follows: a normal control group that received distilled water per os, a negative control group that was submitted to chronic immobilization stress and received distilled water per os, three test groups that were submitted to chronic immobilization stress (CIS) and received three doses of the plant (25, 125, and 250 mg/kg, po), and a positive control group that was submitted to chronic immobilization stress received diazepam (2 mg/kg, ip). Open field and dark/light tests were used for the evaluation of anxiolytic effects. Antioxidant activities and the involvement of gabaergic neurotransmission were determined by measuring the levels of malondialdehyde, reduced glutathione (GSH), catalase (CAT), gamma amino butyric acid (GABA), and GABA-transaminase (GABA-T) in the brain of sacrificed stressed mice.

Our results show that the highest dose of *Phragmanthera capitata* induced a significant increase ($p < 0.001$) of time spent in the center, a significant increase ($p < 0.001$) of the number of crossing, and a significant increase of the number ($p < 0.001$) of grooming in the open field test. In the dark/light test, *Phragmanthera capitata* induced a significant increase ($p < 0.001$) of time spent in the light compartment and a significant increase ($p < 0.001$) of the latency of the first escape from the light compartment. The level of MDA and the activity of GABA-T were significantly decreased by the *Phragmanthera capitata* while reduced GSH, CAT and GABA levels were increased. The results suggest that *Phragmanthera capitata* possess anxiolytic-like effects that may be supported by its antioxidant activities and mediated at least in part by the GABA neurotransmission.

Key words: *Phragmanthera capitata*, chronic immobilisation stress, anxiolytic