

Pharmacological effects of *Piliostigma thonningii* leaf extract on anxiety-like behaviour and spatial memory in Wistar albino rats

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Abstract

Preparation of *Piliostigma thonningii* Schum. (Caesalpiniaceae) leaf is used traditionally in managing fever, toothache, amnesia and anxiety. The aim of the study was to evaluate the effect of the extract on anxiety-like and spontaneous alternation behaviour in rats. The oral median lethal (LD₅₀) dose of *Piliostigma thonningii* ethanol leaf extract (PTLE) was evaluated using modified Lorke's method in rats. The effect of PTLE (50-200 mg/kg p.o), diazepam (2.5 mg/kg, i.p) and 10 ml normal Saline/kg on anxiety-like behavior and escape latency of rats were assessed on EPM. The oral median lethal (LD₅₀) dose of PTLE was estimated to be 5000 mg/kg weight in rats respectively. The extract significantly ($F_{4, 25} = 1840, p < 0.0001$) increased the percentage of time spent and the number of entries ($F_{4, 25} = 28, p < 0.0001$) into the open arms. The administration of the extract produced significant ($F_{3, 16} = 3.5, p < 0.001$) decrease in escape latency of rats from the open arm of the Elevated Plus Maze. The results of the present study provided evidence for anxiolytic and nootropic effects of the PTLE thus providing scientific basis for its use in the management of brain disorders characterized by apprehension and amnesia.

Keywords: Rats, amnesia, anxiety, *Piliostigma thonningii*

Introduction

Anxiety has been described as a frequent and serious disorder affecting the world's population, independent of ethnicity, and is considered a cardinal symptom of many psychiatric disorders (Cassano *et al.*, 1999; Goddard *et al.*, 2001, Tijani *et al.*, 2012). Research findings in the area of behavioral pharmacology has contributed immensely to the identification, diagnosis and treatment of anxiety disorders, such as generalized anxiety disorder, panic disorder, phobias, obsessive compulsive disorder, acute stress, and posttraumatic stress disorder. Substantial numbers of patients suffering from anxiety disorders have to bear the con-