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Photochemistry, isolations and some pharmacological studies of ethanol leaf extract of *Piliostigma thonningii*

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This study was aimed at evaluation of phytochemical constituents and the effect of ethanol leaf extract of *Piliostigma thonningii* on the central and peripheral nervous systems in laboratory animals. Fresh leaves of *Piliostigma thonningii* were air-dried, pulverized extracted using soxhlet extraction technique with ethanol 148.24% w/w after being concentrated. The extract was screened for phytochemicals using standard methods. 20 g of the ethanol extract was subjected to column chromatographic (CC) analysis using ethyl acetate and n-butanol as mobile phase at different ratios and silica gel of 60-120 mesh as the stationary phase. Fractions obtained with similar retention factor (R_f) using thin layer chromatography (TLC) were combined, coded and subsequently screened for phytochemicals. Subsequent purification of fraction PTE3 was carried out using CC (ethyl acetate and methanol were used as mobile phase at different ratios) and TLC until a sub-fraction PTE34 among other fractions gave a single spot on TLC and had a melting point of 102-103oC. The phytochemical studies of the ethanol leaf extract of *Piliostigma thonningii* revealed the presence of some useful chemical compounds such as flavonoids, cardiac glycosides, tannins, saponins, and terpenoids. The pharmacological effects of *Piliostigma thonningii* was determined by examining the effects of the leaf extract on phenobarbitone sleeping time, analgesic and muscle relaxant activities using experimental animals. The analgesic effect of the leaf extract was evaluated with acetic acid induced writhing and thermally induced nociception for pain. It was observed that the extract conferred 48.00 and 57.20% protection from writhes induced by acetic acid on mice when extract doses of 200 and 400 mg/Kg were administered. Similarly, there was a significant ($p<0.5$) dose dependent effect conferred on mice when pain was induced by heat. The extract also had a muscle relaxant effect as 20%, 60% and 80% were observed to slide down an inclined board in a dose dependent manner. The extract also significantly potentiated sleeping time of phenobarbitone dose dependently in rats of which the mean time duration of (72.0±04.64) min, (83.40±02.11) min, and (123.60±11.57) min were observed when rats were administered extract doses of 200, 400 and 600 mg/Kg b wt. Thus, the ethanol leaf extract of *Piliostigma thonningii* was able to provide depressant effects which were shown in its ability to potentiate barbiturate sleeping, analgesia and muscle relaxant effect.

Biography

Fanna Inna Abdulrahman is presently a Lecturer of Organic Chemistry in Department of Chemistry, University of Maiduguri. She completed her PhD in Medicinal Chemistry in 1997. She has published more than 100 research papers in the field of Organic/Medicinal Chemistry and Natural Product. Her current research interest is in the area of Organic/ Medicinal Chemistry and Natural product. She is a Fellow of Chemical Society of Nigeria, Fellow of Institute of Chartered Chemist of Nigeria, Member of West African Network of Natural Products Research Science and Member of Council of the Institute of Chartered Chemist of Nigeria. She was the Head of Department of Chemistry, University of Maiduguri, Borno State, Nigeria.

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