



Letter to Editor

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PHYTOCHEMICAL AND LAXATIVE STUDIES OF *GLOBIMETULA BRAUNII* (ENGLE) VAN TIEGH GROWING ON *COLA ACUMINATA* (SCHOTT & ENDL).

Dear Sir,

Globimetula braunii (Engle) Van Tiegh is a member of the Loranthaceae family. The family is represented by 65 genera and 900 species found in the tropics and are mainly distributed in Africa, Asia, Australia and South America (Johnri, 1987). *G. braunii* grows as a hemi-parasite on host trees such as *Jatropha curcas*, *Citrus* species and *Cola* species. It is commonly known as mistletoe and "Afomo Onisana" in South West Nigeria. Mistletoes have been used traditionally for different medicinal purposes. In the Nigerian folklore medicine, *G. braunii* is used as a recipe for treating hypertension, rheumatism, epilepsy, infertility, stomach problems, digestive aid, diabetes and as a laxative. Olagunju *et al.* (1999) reported the hypoglycaemic activities of *G. braunii* in alloxan induced diabetic rats. This study carried out a phytochemical screening and the laxative activity of the ethanol extract of *G. braunii* leaf.

Albino rats (125 – 205g) of both sexes were obtained from the animal house of the Faculty of Pharmacy, Olabisi Onabanjo University. The animals were maintained in plastic cages under standard environmental conditions. They had access to water and standard pellet diet (Ladokun feeds, Ibadan).

Fresh leaves of *G. braunii* growing on *Cola acuminata* host were collected from Sagamu, Ogun State and authenticated at the Forestry Research Institute of Nigeria, Ibadan. A voucher specimen (FHI 106147) was deposited at the herbarium. Air dried powdered leaves of *Globimetula braunii* were macerated with 70% ethanol for 72 hrs. The filtrate was evaporated to dryness under vacuum at 40 °C and the dried extract was stored in the dessicator for further analysis.

Phytochemical screening of *G. braunii* leaf was carried out as described by Trease and Evans (Trease and Evans, 1987). The laxative activity of *G. braunii* was investigated with procedures described previously (Abo *et al.*, 1999; Elujoba *et al.*, 1999). The animals were divided into six groups of five rats each and fed orally with standard pellet diet (Ladokun feeds, Ibadan): Group 1: Five rats received water only (1ml/kg); Group 2: Five rats received Senna (500mg/kg); Group 3: Five rats received Senna (1000mg/kg); Group 4: Five rats received *G. braunii* ethanol extract (250mg/kg); Group 5: Five rats received *G. braunii* ethanol extract (500mg/kg); Group 6: Five rats received *G. braunii* ethanol extract (1000mg/kg). The rats were placed in individual cages lined with filter paper at the bottom. The animals were observed for passage of faeces over a period of eight hrs. The form of the stool for each rat was noted. The property of wet faeces was considered as a measure of laxative activities of the extract (Fairbairn and Moss, 1970; Yagi and Yamauchi, 1997, Elujoba *et al.*, 1999). The laxative effect was determined by comparing the wet and dry weights of the faecal samples. (Abo *et al.*, 1999; Chen *et al.*, 2006). Senna a known laxative agent was used as reference drug.

The phytochemical analysis of *G. braunii* leaf revealed the presence of Tannins, anthraquinone, saponins, cyanogenetic glycoside and absence of flavonoids and cardiac glycosides (Table 1).

Table 1: Phytochemical screening of *Globimetula braunii* leaf.

Tannins	Flavonoids	Anthraquinone Free	combined	Saponin	Cardiac glycoside	Cyanogenetic glycosides
+	-	+	+	+	-	+

+ = Present; - = Absent.

The ethanol extract of *G. braunii* at doses 500mg/kg and 1000mg/kg when administered orally, caused significant production of wet faeces (Figure 1). This property of wet faeces is an indication of a laxative effect (Fairbairn and Moss, 1970; Yamauchi *et al.*, 1976). The laxative activity of *G. braunii* leaf was based on more frequent passage of faeces whose character changed from formed and relatively solid pellets to unformed semi-fluid collagenous masses. The increased faecal wet weight was caused by increased moisture. The result of the

laxative activity of *G. braunii* at 500mg/kg and 1000mg/kg were similar to the laxative effect exerted by Senna at the same doses. (Figure 1).

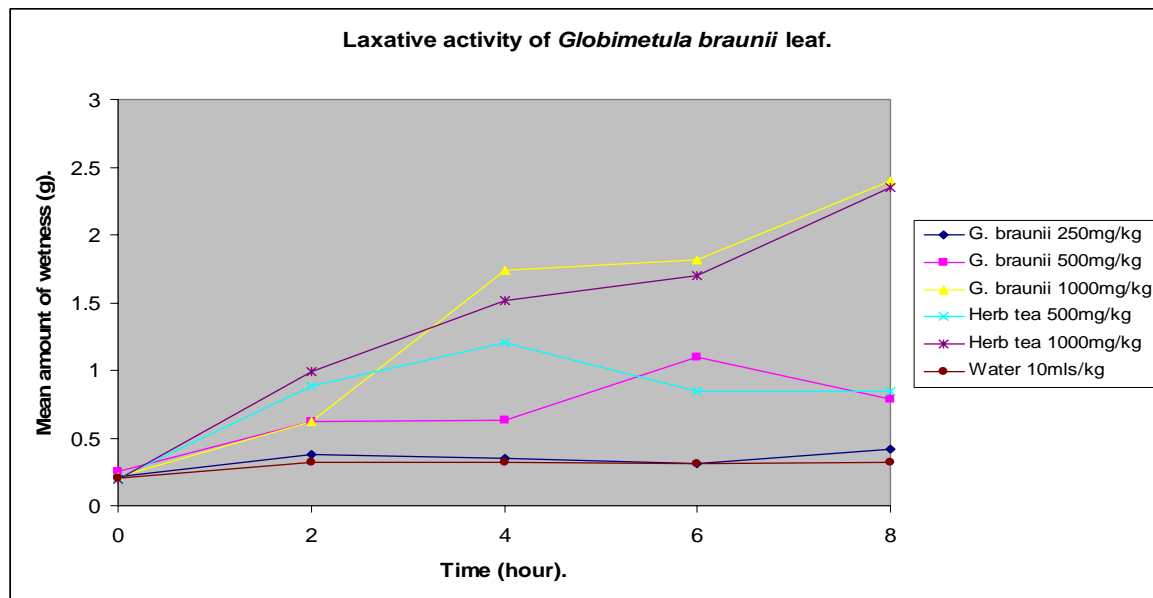


Figure 1: Laxative activity of *Globimetula braunii* leaf.

Anthranoids found in Senna are known to affect the large intestinal motility resulting in laxative effect (Gorkom *et al.*, 1997). The presence of anthraquinone in the leaf of *G. braunii* may, therefore, be responsible for the laxative effect exhibited by the ethanol extract. This study, therefore, justifies the use of *G. braunii* in the Nigerian folklore medicine as a laxative.

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