



Phytochemical Screening of Aqueous and Hydroalcoholic Extracts of *Guarea guidonia* (L.) Sleumer Leaves and Stems

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INTRODUCTION

Guarea guidonia (L.) Sleumer, also known as *yamagua*, *trompillo*, or *guaraguao*, belongs to the family Meliaceae. It is found in Cuba, particularly in plains and river banks. This traditional plant has proven its effects against intestinal hemorrhage and hematuria. It is also used as an emmenagogue, laxative, and anti-inflammatory.

However, there are few studies associated with this species (Gutiérrez *et al.*, 2020). Hence, this paper aims to conduct phytochemical screening of aqueous and hydroalcoholic extracts of *Guarea guidonia* (L.) Sleumer leaves and stems.

DEVELOPMENT

Collection of extracts

The extracts were made from plant material, at 20 g of drug/100 mL of solvent, by crushing for seven days, at 30 °C ± 2 °C. The solvent contained a hydroalcoholic mixture at 50%. The procedure described by Pujol *et al.* (2020) was followed.

Citations (APA)

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Phytochemical screening

It was performed according to the procedure described by Pujol *et al.* (2020), with the corresponding assays to the aqueous and hydroalcoholic fractions of the plant material.

Collection by crushing (seven days) is one of the most commonly used methods for extract preparation since it is not very aggressive to the sample due to the absence of heat. Besides, it is a simple and easy-to-perform method. Based on phytochemical procedures found in the literature linked to this species, the latest results have shown the presence of Triterpenoids (Hernández *et al.*, 2018). However, the presence of these compounds in the extracts studied is low. Moreover, high amounts of phenolic compounds have been observed. These compounds have demonstrated their antioxidant (Aryal *et al.*, 2019), hepatoprotective, anti-tumor, antiviral, and anti-inflammatory actions, with analgesic and hemostatic properties. Table 1 shows the outcome of the phytochemical screening.

Table 1. Phytochemical Screening of Aqueous and Hydroalcoholic Extracts of *Guarea guidonia* (L.) Sleumer Leaves and Stems

#	Assays	Metabolites	Extracts		
			LAE	LHE	SHE
1	Foam index	Saponins	+	±	±
2	Ninhydrin	NH ₃ Groups	++	++	++
3	Gelatin	Tannins	+	++	++
4	FeCl ₃	Flavonoids	+	++	++
5	Mayer	Alkaloids	++	+	+
6	Lieberman-buchard	Triterpenes and steroids	±	±	±
7	Fehling	Sugars and reducers	++	++	++

+ positive assay ++ very positive assay ± doubtful assay - negative assay. LAE: Leaf aqueous extract; LHE: Leave hydroalcoholic extract; SHE: Stem hydroalcoholic extract.

Figure 1 shows the results of this procedure.

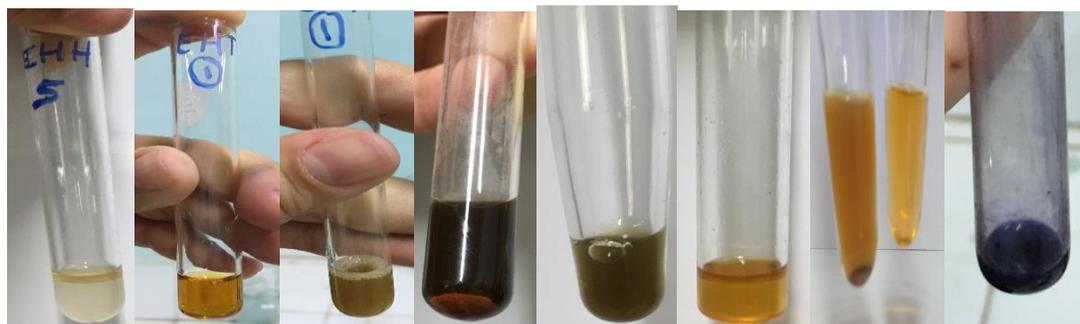


Figure 1. Results of the phytochemical screening of aqueous and hydroalcoholic extracts of *Guarea guidonia* (L.) Sleumer Leaves and Stems.

CONCLUSIONS

This plant contains several chemically and pharmaceutically relevant metabolites.

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AUTHOR CONTRIBUTION STATEMENT

Research conception and design: MHM, MAV; data analysis and interpretation: MHM, MAV; redaction of the manuscript: MHM, MAV.

CONFLICT OF INTEREST STATEMENT

The authors state there are no conflicts of interest whatsoever.