

**PHYTOCHEMICAL AND BIOLOGICAL INVESTIGATION OF XYLOPIA SERICEA  
(ANNONACEAE) BARK EXTRACTS**

**Rubens Sousa Soares<sup>1\*</sup>**, Lucas Tavares dos Santos<sup>1</sup>, Francisca Maria Macêdo Pereira<sup>1</sup>,  
Jurandy do Nascimento Silva<sup>1</sup>, Sâmya Danielle Lima de Freitas<sup>1</sup>

soares@ufpi.edu.br

*1- Department of Chemistry, UFPI, Teresina, PI, 64049-550, Brazil.*

*Xylopia sericea* St. Hil. (Annonaceae) is an aromatic species native to Brazil, popularly known as “embiriba,” and traditionally used in folk medicine as an analgesic, anti-inflammatory, and for the treatment of gastrointestinal disorders<sup>1</sup>. The species occurs across several Brazilian biomes, including Cerrado, Amazon, Caatinga, and Atlantic Forest<sup>2</sup>. Given the scarcity of studies on *X. sericea*, this work aimed to perform the phytochemical and biological investigation of the ethanol extract from stem bark and its fractions. The ethanol extract (EX) was obtained by exhaustive extraction with ethanol, and the hexane (FH), ethyl acetate (FA), and methanolic (FM) fractions were obtained through column filtration chromatography. EX, FA, and FM were analyzed by HPLC-DAD to estimate the classes of compounds present, revealing intense absorption bands at 290 nm, indicative of phenolic compounds, in addition to broad bands between 15 and 45 minutes, characteristic of polyphenols belonging to the tannin class. The antioxidant activity of the extracts EX, FH, FA, and FM

was evaluated using the DPPH radical scavenging assay, with ascorbic acid and Trolox® as controls. All samples, except FH, showed EC<sub>50</sub> values lower than the standards, confirming high antioxidant potential. The total phenolic content, determined by the Folin-Ciocalteu method and expressed as gallic acid equivalents (GAE), ranged from 333.84 to 337.83 mg GAE mg<sup>-1</sup> and correlated with the antioxidant activity observed and the HPLC results. These findings highlight not only the abundance of phenolic compounds but also their functional efficiency against the DPPH radical, emphasizing the remarkable chemical and biological potential of *Xylopia sericea*. The authors thank the Natural Products Laboratory, the Ecobiomaterials Laboratory, and the Federal University of Piauí.

SAMPLE	EC <sub>50</sub> (µg mL <sup>-1</sup> )	Total phenolics (µg GAE mL <sup>-1</sup> of sample ± SD)
EX	7.13 ± 0.09	333.84 ± 1.26
FH	> 4000 (no response)	3.83 ± 1.24
FA	4.24 ± 0.02	337.46 ± 1.66
FM	3.66 ± 0.01	337.83 ± 1.09
Ascorbic acid	22.72 ± 0.13	-
Trolox®	14.92 ± 0.41	-

Table 1. Average efficient concentration (EC<sub>50</sub>) and total phenolics of samples

<sup>1</sup>MENDES, R. F. et al. **J. Pharm. Pharmacol.**, v. 69, n. 3, p. 341–348, 2017. <sup>2</sup>EMBRAPA. *Xylopia sericea* A. St.-Hil. Brasília, DF: Embrapa, [s.d.].

**Keywords:** *Xylopia sericea*, biological activities e phenolic compounds

