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CHEMICAL AND BIOLOGICAL STUDIES OF EXTRACTS FROM *Trichilia silvatica* C.DC

Carolina R. C. Sudan[1], Andréia F. Silva[2], Denise de O. Scoaris[1], Luciana S. Salomon[1], Janete S. C. Santos[1], Cláudia G. Silva[1], Júlio C. D. Lopes[3], Priscilla R. V. Campana[3], Vera L. Almeida[1*]

[1] *FUNED , Belo Horizonte, Minas Gerais, Brasil, CEP. 30510-010*
[2] *EPAMIG, Belo Horizonte, Minas Gerais, Brazil, CEP.* 31170-495
[3] *Federal University of Minas Gerais, Belo Horizonte, MG, Brazil, 31.270-901*

e-mail: vera,almeida@funed.mg.gov,br

Trichilia silvatica C. DC. is known as "catigua" and has been used by the population to treat rheumatism. This species is an endemic Brazilian species and can be found in different Brazilian regions. Chemical studies of *T. silvatica* have revealed the presence of terpenes and coumarins.[1] The current study aims to evaluate the antioxidant and antimicrobial activities of *T. silvatica* stem extract and its fractions, as well as characterize its chemical composition using chromatographic techniques. The stems of *T. silvatica* were collected in Minas Gerais, Brazil. The extract was prepared through percolation using ethanol: water (8:2) and concentrated in a rotatory evaporator (TSS). The TSS (8g) was solubilized in ethanol: water (1:2). The pH was adjusted to 3, and it was partitioned with DCM. The DCM fraction was evaporated, and the residue was solubilized with a MeOH/H2O (90%). The hydromethanolic fraction was partitioned with n-hexane and concentrated, obtaining the TSS-MeOH and TSS-Hex, respectively. The initial aqueous fraction was basified (pH 9) and extracted with dichloromethane (TSS-DCM). The aqueous fraction was partitioned with ethyl acetate (TSS-EtOAc) and n-butanol (TSS-BuOH). The obtained fractions were concentrated. The antioxidant capacity of TSS and its fractions was evaluated using the DPPH assay and the β-carotene/linoleic acid system, while antimicrobial capacity was evaluated against *S. epidermidis* (ATCC 12228), *S. aureus* (ATCC 25923), and *E. coli* (ATCC 11775). The cytotoxicity of TSS against RAW 264.7 was evaluated. The assays were performed using a microplate reader. The phytochemical profile using TLC and HPLC-DAD was obtained. TSS, TSS-EtOAc, and TSS-BuOH showed antioxidant activity in DPPH and the β-carotene/linoleic acid assay, while TSS-MeOH showed activity in the β-carotene/linoleic acid assay. TSS-MeOH and TSS-EtOAc showed activity against *S. aureus* and *S. epidermidis*, while TSS-BuOH was active against *S. epidermidis.* The cytotoxicity of TSS against RAW 264.7 cells was 113.50 ± 3.54 µg/mL. The phytochemical screening by TLC revealed the presence of phenol carboxylic acids, flavonoids, terpenes, and coumarins in different fractions obtained. The presence of chlorogenic and caffeic acid was characterized by TLC with RF values similar to the standard compounds. In addition, these acids are also detected in the HPLC profile at λ= 280 nm. Phenol carboxylic acids are further confirmed through co-injection with standard compounds. The present studies showed the antioxidant and antimicrobial activities of a crude extract of the stem of *T. silvatica* and their fractions and performed its chemical characterization using chromatographic techniques. In the future, these extracts will be evaluated in vitro and in vivo models aiming to evaluate their anti-inflammatory potential.

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