

Novel compounds isolated from *Trichilia quadrijuga* (Meliaceae)

Virginia F. Rodrigues^{1,2*} (PG), Hadria M. Carmo² (IC), Raimundo Braz Filho² (PQ), Leda Mathias² (PQ), Rodrigo Rodrigues de Oliveira² (PQ) and Ivo J. Curcino Vieira^{1,2} (PQ)

¹Laboratório de Tecnologia de Alimentos, CCTA, ²Laboratório de Ciências Químicas, CCT, Universidade Estadual do Norte Fluminense Darcy Ribeiro; Avenida Alberto Lamago 2000, Horto – 28013-602 Campos dos Goytacazes – RJ, Brazil,

* vfi@farma@yahoo.com.br

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Introduction

The Meliaceae family has attracted much interest among bioproduction phytochemists because of its very complex and diverse chemical structures and its biological activity, mainly against insects [1,2]. Phytochemical studies show that the *Trichilia* genus, Meliaceae family, is rich in terpenoids (triterpenes, limonoids, steroids and other terpenes derivatives) [3].

To the best of our knowledge, the literature report no chemical investigation or biological activity evaluation of the species *T. quadrijuga*. This fact has stimulated our interest in the present work, involving isolation and structural elucidation of the bioorganic constituents from the stem and leaves of this species.

The study with the *T. quadrijuga* we afforded one new sesquiterpene with basic ambrosanolid skeleton named quadrijugol (**1**) [4] and a novel pregnane steroid 3 β ,4 β -dihydroxypregnan-16-one (**2**) [4], along with the other known compounds of spathulenol, kudtdiol, 2 β ,3 β ,4 β -trihydroxypregnan-16-one, bourjotinolone B, piscidinol, niloticin, dihydroniloticin, sitosterol, 3-O- β -D-glucopyranosyl sitosterol, itesmol and stigmasterol.

In the present paper, we describe the isolation of compound (**1**) and (**2**).

Results and Discussion

The material collected on November 2006, at Vale Company, Linhares, Espírito Santo State, Brazil.

The stems (2.9 kg) were extracted with methanol. The methanol extract (73.5 g) was partitioned with CH₂Cl₂:H₂O (1:1; v/v) obtained 5.3 g of the CH₂Cl₂ fraction. These fractions (2.9 g) were submitted to droplet counter-current chromatography (DCCC) by using a quaternary solvent system composed of hexane:ethyl acetate:methanol:water (1:2:1.75:1). The aqueous phase of the solvent system was used as mobile phase and the organic phase as stationary phase. 2.9 g of the extract were dissolved in both phases and injected through the injection

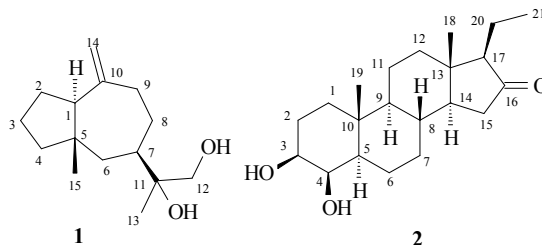


Figure 1: Structures new compounds from *T. quadrijuga*

valve. 193 fractions were obtained and analyzed by TLC and visualized under UV light 254 nm and vanillin-sulfuric acid/heat detection reagent and grouped in 18 fractions. The fraction 8 (238.3 mg) was rechromatographed to the silica gel column chromatography elute with hexane:ethyl acetate affording 8 fractions. Fraction 4 afforded a pure new sesquiterpene (**1**) (18 mg) and fraction 7 afforded a pure new pregnane steroid (**2**) (7.5 mg). Their structures were established by spectrometric techniques, mainly one- and two-dimensional NMR as well as mass spectra.

Conclusion

Droplet counter-current chromatography is excellent technique for plant metabolites separation, preserving the integrity of the separated compounds, such as occur in separation of compounds from *T. quadrijuga*, a plant rich in metabolites from terpenoids rote.

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