



FLAVONOIDS AND HYDROXYCINNAMATES FROM THE LEAVES OF *Solanum paniculatum* L. (SOLANACEAE)

¹Souza, G.R.; ²Oliveira, A.C.A.X.; ²Paumgarten, F.J.R.; ³Barbi, N.S.; ¹da Silva, A.J.R.

¹Instituto de Pesquisas de Produtos Naturais, Bloco H, ²Escola Nacional de Saúde Pública, Fundação Oswaldo Cruz, 21041-210; ³Departamento de Análises Clínicas e Toxicológicas, Bloco A, 2^o andar, Universidade Federal do Rio de Janeiro, Centro de Ciências da Saúde, 21941-902, Rio de Janeiro, RJ, Brasil. e-mail: gabipharma@gmail.com

Abstract: *Solanum paniculatum*, is popularly called “jurubeba” in Northeastern Brazil and their roots, stems, leaves and fruits are used in folk medicine as a tonic and in the treatment of tuberculosis, gastric and liver disorders and as antianemic.¹ In 2006, Brazilian Ministry of Health published a list, comprising 71 species, including *S. paniculatum*, to guide research aiming at the expansion of the number of herbal medicines available for basic health care in Brazil. Recent reports support the use of *S. paniculatum* preparations for hepatoprotection.² In this communication we report the development of a suitable methodology for separation and determination of hidroxicinnamates and flavonoids from the ethyl acetate partition, obtained from the water extract of leaves of *S. paniculatum*. Dried and milled leaves of SP were extracted with CH₂Cl₂ (25 g/ 600 mL) in ultrasound for 24 minutes. Then, the extract was vacuum filtered and the residue was extracted with ethanol (600 mL) under ultrasound for 24 minutes. The organic extract was evaporated and subjected to separation on a XAD-2 column. The fraction eluted with methanol/water (3:7) was fractionated by HPLC (RP-18 column, 150 x 4.6 mm, 5µm, and a linear gradient of acetonitrile in water with TFA 0.05%) revealing the predominance of one flavonoid. The flavonoidic fraction was purified in a cellulose column and subjected mass spectrometry and NMR analysis revealing the presence of two flavonoids. These flavonoids were separated by HPLC (C8 column, 150 x 4.6 mm, 5µm, and a linear gradient of acetonitrile in 0.1% aqueous formic acid). The two flavonoids were characterized by NMR (500 MHz, CD₃OD) as rutin and robinobioside of quercetin confirmed by HPLC/DAD and mass spectrometry (m/z 609.1455). The ethyl acetate partition of leaves was analyzed by ESI HPLC/MS (RP-18 column, 100 x 2.1 mm, 2.7µm, and a linear gradient of methanol in 0.1% aqueous formic acid). Evaluation of the chromatograms and mass spectra obtained by ESI LC/MS analysis revealed peaks indicative of protocatechuic acid; hexoside of coumaric acid; quinic, caffeic, coumaric and chlorogenic acid; feruloylquinic acid; coumaroylquinic acid; dicaffeoylquinic acid, miricetin; coumaroylhexoside of kaempferol; rutinose of kaempferol; grossamide or cannabinsine F and other non-identified compounds. These compounds are among the most abundant classes of secondary metabolites in the genus *Solanum*.³ The indication of use of *S. paniculatum* for liver disorders is compatible with the presence of flavonoids and hydroxicinnamates in this plant.⁴

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References:

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