



FLAVONOIDS AND HYDROXYCINNAMATES IN THE LEAVES OF *Solanum torvum* Sw. (SOLANACEAE)

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Abstract: *Solanum torvum* is plant belonging to the Solanaceae family popularly known as “jurubebas”. Its roots, stems, fruits and leaves are used in the Brazilian traditional medicine against hepatic and digestive troubles, as well as in culinary.¹ Due to morphological similarities with *S. paniculatum*, the two species are indistinctly used in traditional medicine.² In this communication we report the results of our ongoing phytochemical studies on this specie. HPLC/DAD analysis of the ethyl acetate partition indicated the presence of flavonoids and quinic acid derivatives. These compounds are strong antioxidants, the antioxidant activity increases in proportion to the number of caffeoyl residues in compound. Caffeoylquinic acid compounds also display anti-inflammatory activity, anti-spasmodic activity, antihyperglycemic activity, suppression of melanogenesis, inhibited replication of the human immunodeficiency virus-1 and reduction of the high cholesterol accumulation in rats.³ Our report focus on the results of the phytochemical analysis of the ethyl acetate was the development of a suitable methodology for separation and determination of hydroxycinnamates and flavonoids from the ethyl acetate partition, obtained from the water extract of leaves of *S. torvum*. Aqueous extracts, made from 50 g of dried and powdered leaves *S. torvum* were partitioned with ethyl acetate and the organic fraction was subjected to ESI HPLC/MS (analysis using a 100 x 2.1 mm, 3µm, RP-18 column and a linear gradient of methanol in water with formic acid 0,1% as mobile phase). UV detection was at 280, 310 and 365 nm. Evaluation of the chromatograms (retention times and UV spectra) and mass spectra obtained by ESI LC/MS analysis led to detection of chlorogenic acid, caffeic acid-O-β-D-glucoside, dicaffeoylquinic acid, tricaffeoylquinic acid, kaempferol-O-hexoside, quercetin-O-rutinoside, quercetin-O-robinobioside, isoquercetrin and other compounds were identified in this extract by comparison of rt and mass spectrum. These compounds are among the most abundant classes of secondary metabolites in the genus *Solanum*.⁴ Leaf flavonoids are structurally more diverse with respect to the sugar moiety keeping quercetin and kaempferol as the main aglycones. The presence of caffeoylquinic acids and flavonoids was associated to the reported hepatoprotective activity of *S. torvum* extracts.⁵ In general, hydroxycinnamates are esters of caffeic, ferulic, coumaric and sinapic with quinic acid. Chlorogenic acid (3-caffeoylquinic acid), was detected in 37 species of 14 Genera (including *Solanum*).⁶ Anti carcinogenic, antimutagenic and antioxidant activities, displayed by chlorogenic acid were reviewed by Friedman.⁷

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