



LC-MS profile of bioactive extracts from fruits and bark of *Eugenia pisiformis* Cambess. (Myrtaceae)

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Abstract:

In Brazil, Myrtaceae comprises about twenty-three genera and more than a thousand species. Basically one third of these species belongs to the genus *Eugenia*, which has great distribution, occurring from Mexico to Argentina. *Eugenia* genus is also well distributed in the various biomes of Brazil. Several phenolic substances, including flavonoids and tannins, and also terpenoid substances have been isolated and identified out of the species of this genus, specially from the ones used in popular medicine [1]. Aiming to contribute with the knowledge of this genus, *Eugenia pisiformis* Cambess., a species that occurs in areas of Atlantic Forest in the Rio de Janeiro state, was selected for chemical and biological studies. *E. pisiformis* was collected in Itatiaia National Park, Rio de Janeiro-RJ and ethanolic extracts of leaves, bark and twigs were prepared and tested against *Mycobacterium tuberculosis*. All extracts showed activity against this bacteria, but the ones from fruits and bark showed most prominent activity and were selected for chemical studies. Analysis by LC-MS of these extracts (fruits and bark) were performed, using a Shimadzu LC-10 instrument equipped with a Phenomenex Luna C₁₈ column and . As mobile phase, mixtures of methanol, water and 0.1% formic acid were used and a flow of 0.2 ml.min⁻¹. UV-detector used both wavelengths of 254 and 280 nm. MS analysis were carried out on a MicroTOFQII Bruker coupled to the Shimadzu apparatus, operating in negative mode, quadrupole ion energy 6.0 eV and collision energy 12 eV. Results suggest a mixture of ellagic acid glucosides (ellagic acid desoxyhexoside and pentoside) and the flavonoid quercetrin as major compounds for both extracts. Those metabolites were also identified in extracts of a novel chemotype of *Eugenia uniflora* [2]. Literature does not report identification of those substances in *E. pisiformis* and those metabolites might be correlated to the antimicrobial potential of the plant. This data contribute at some extent to the knowledge of the special metabolism occurring in *Eugenia* and Myrtaceae family as well.

References:

- [1] Romagnolo, M.B and Souza, M.C. 2006.O gênero *Eugenia* L. (Myrtaceae) na planície de alagável do Alto RioParaná, Estados de Mato Grosso do Sul e Paraná, Brasil.Acta bot. bras. 20(3): 529-548.
 - [2] Oliveira, A. L.; Destandau, E.;Fougère, L.; Lafosse, M. 2014. Isolation by pressurised fluid extraction (PPE) and identification using CPC and HPLC/ESI/MS of phenolic compounds from Brazilian cherry seeds. Food Chemistry 145: 522-529.
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