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PROSPECTING SECONDARY METABOLITES IN *SACCHARICOLA* SP. AN ENDOPHYTIC FUNGUS *EUGENIA JAMBOLANA*

Maiara Stefanini Borges[1]; Vanderlan da Silva Bolzani[1]; Vanessa Mara Chapla[2]; Maria Claudia Marx Young[3]; Angela Regina Araujo[1]

[1]*NuBBE – Nucleus of Bioassays, Biosynthesis and Ecophysiology of Natural Product, State University of São Paulo "Julio de Mesquita Filho", Chemistry Institute, Araraquara, São Paulo, Brazil;*
[2]*Universidade Federal do Tocantins, Gurupi, TO, Brazil;*
[3]*Physiology and Plants Biochemistry Section, Botanical Institute, São Paulo, SP, Brazil.*
maiara.borges26@gmail.com

Eugenia jambolana an evergreen native tree to tropical areas has been used in traditional Brazilian medicine for the treatment of cardiovascular disease, hypertension and diabetes [1]. This observation prompted us to launch a program aiming to search novel bioactive metabolites from cultures of endophytes colonized inside *E. jambolana*. Leaves, branches and roots of *E. jambolana* were submitted to isolation of endophytic fungi and eleven isolates were obtained, preserved and cultivated on liquid medium to get their crude extracts [2]. The strain *Saccharicola* sp. was selected for chemical and biological investigation because of the antifungal activity against the phytopatogenic fungi *Cladosporium sphaerospermum* and *C. cladosporioides*. *Saccharicola* sp. was inoculated in 40 Erlenmeyer flasks of 500 mL, each containing 300 mL of Czapek (liquid medium) for 28 days at 25 ºC in the static condition. After this period the fermented material was extracted repeatedly with EtOAc (3 x 50% of the broth volume each), and the organic solvent was evaporated to dryness in rotatory evaporator to afford the crude extract (350 mg), which was fractionated by chromatography column (CC) using C18 silica gel as the stationary phase and eluted with a H_2O:MeOH gradient (5%–100% MeOH), affording 06 fractions (Ss.C-Fr1–Ss.C-Fr06). The fraction Ss.C-Fr1 (100mg) was subjected to preparative HPLC using H_2O:ACN (10-100% ACN, over 40 min, at a rate of 8 mL min^{-1}, λmax = 254 nm) as the eluent, yielding pure fusaric acid **1** (0,9 mg). The new natural product was purified via preparative LC-SPE-TT using H_2O:CH_3OH (5-100% CH_3OH, over 40 min at a rate of 0.8 mL min^{-1}, λmax = 254 nm) as the eluent to yield (2E, 4E) - 6,7 dihydroxy-4, 6-dimethyl octanoate **2** (0,5 mg). The structures were elucidated by 1D and 2D NMR and MS spectral data and compared with the literature [3]. The biological activities of the pure compounds are under investigation. The fusaric acid is probably one of the most widely mycotoxins distributed in nature having the ability to increase the toxicity of other mycotoxins [3]. These results reinforce the potential of these microorganisms as source of new and bioactive secondary metabolites and can help with the understanding of endophytic interaction and the host plant.

References:

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