

Abstract

Chemical Fingerprinting and Antimicrobial Evaluation of the Methanolic Extract of the Leaves of the Endemic Cuban Plant *Coccoloba cowellii*[†]

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Abstract: The genus *Coccoloba* (Polygonaceae) comprises approximately 150 species of flowering plants. It is native to the tropical and subtropical regions of America, in South America, the Caribbean and Central America. A wide variety of biological activities has been studied for *Coccoloba* species due to great diversity of metabolites (mainly flavonoids, tannins, terpenoids and volatile oils) and popular uses reported for different ailments like fever, diarrhea, menstrual disturbance, uterine hemorrhages, hemorrhoids and gonorrhoea. The methanolic extract of the leaves of *C. cowellii*, endemic of the Camagüey province of Cuba and critically endangered, was subjected to structural analysis. The obtained HPLC-DAD-QTOF-ESI-MS data were analyzed employing the MS-DIAL software. A dereplication of the ESI-MS data was realized using the feature-based molecular networking (FBMN) analysis method in the Global Natural Products Social Molecular Networking (GNPS) infrastructure, leading to 12 compound hits against the GNPS database. A total of 13 compounds were tentatively identified by means of MS data, together with the interpretation of the observed MS/MS spectra in comparison with those found in the literature. The major compounds were myricetin and quercetin glucuronides and glycosides and epichatechin-3-O-gallate. The total extract presented an antifungal effect against *Candida albicans* ATCC B59630 (azole-resistant) (IC₅₀ = 2.13 µg/mL) and was not cytotoxic (IC₅₀ > 64.00 µg/mL) in the resazurin MRC-5 SV2 cell viability assay employed. This is the first report related to chemical composition of *C. cowellii* plant. The research is now focused on determining the secondary metabolites responsible for the antifungal activity of the total extract.

Keywords: *Coccoloba cowellii*; endemic plant; UHPLC-ESI-QTOF-MS; molecular networking; antibacterial

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