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ABSTRACT BOOK



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**P-188 PHENOLIC COMPOUNDS IN *Coleostephus myconis* (L.)
Rchb.f.: CHARACTERIZATION BY HPLC-DAD-ESI/MS AND
PHENOLOGY EFFECTS**

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The Asteraceae family is spread worldwide. In Portugal, there are more than 300 species, standing out as one of the botanical families with largest representation in the Portuguese flora. *Coleostephus myconis* (L.) Rchb.f. is a scarcely studied Asteraceae species, characterized as having ruderal growth and persistence in abandoned soils (an expanding problem due to the desertification phenomena in rural areas). In this work, the flowers of *C. myconis* were collected in three different flowering stages (i: flower bud; ii: flower in anthesis; iii: senescent flower) from the Northwestern area of the Portuguese territory. Powdered samples (1 g) were extracted twice with ethanol:water 50:50 (v/v). After removing solvents, the combined extracts were re-dissolved, filtered through 0.22- μ m disposable LC filter disks and analyzed by high performance liquid chromatography coupled to a diode array detector and electrospray ionization-mass spectrometry (HPLC-DAD/ESI-MS). The phenolic compounds were characterized according to their UV and mass spectra, and retention times. For the quantitative analysis, calibration curves of standard compounds were used.

According to the UV spectra (λ_{\max} = 314-330 nm) and pseudomolecular ions ([M-H]⁻) at m/z 353 and 515, all producing an m/z 191 ion, four compounds derived from quinic acid were detected: 3-*O*-caffeoylquinic acid (Figure 1A), 5-*O*-caffeoylquinic acid (Figure 1B), 3,5-*O*-dicafeoylquinic acid (Figure 1C) and 4,5-*O*-dicafeoylquinic acid (Figure 1D), as also supported by the literature [1,2]. A fifth phenolic acid was identified as protocatechuic acid.

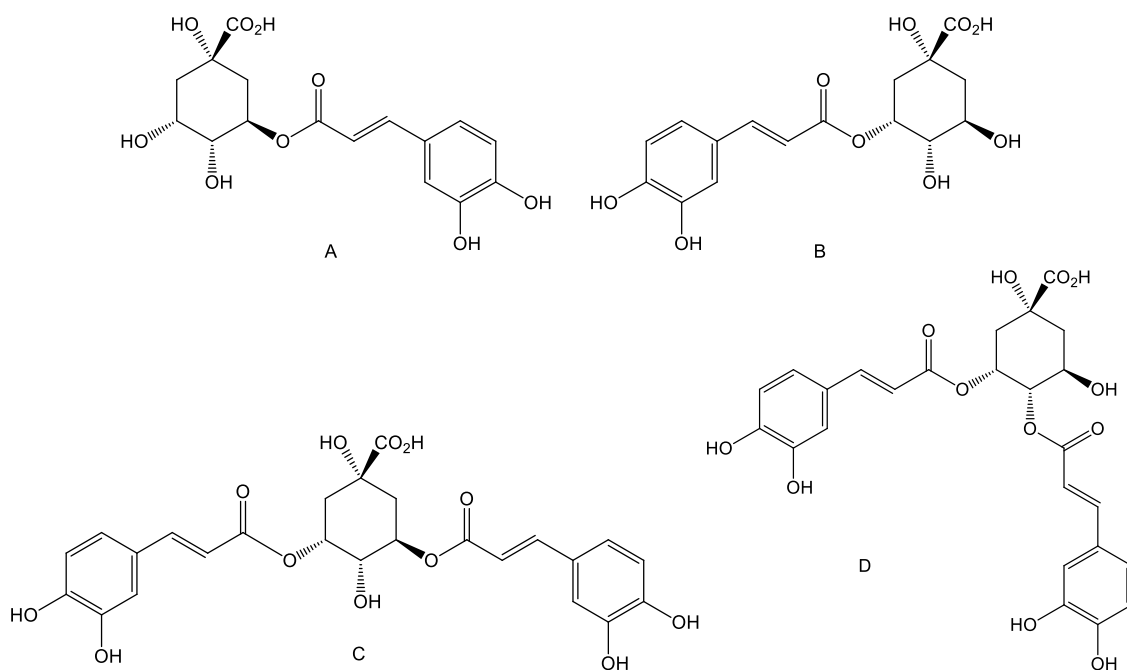


Figure 1. Chemical structures of 3-*O*-caffeoylquinic acid (A); 5-*O*-caffeoylquinic acid (B); 3,5-*O*-dicaffeoylquinic acid (C); and 4,5-*O*-dicaffeoylquinic acid (D).

The detected flavonoid were quercetin-*O*-glucuronide, quercetin-3-*O*-glucoside, myricetin-*O*-methyl-hexoside and a second glycosylated myricetin (not possible to identify completely). Some statistically significant changes were detected among the different assayed flowering stages; nevertheless, 3,5-*O*-dicaffeoylquinic acid was the major compound, independently of the phenologic stage.

According to the previous results, *C. myconis* might be considered as a potential natural source of these valuable bioactive compounds, especially considering the high botanical representativeness of this plant and its inexpensiveness.

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