

PHENOLIC CARBOXYLIC ACIDS FROM *Sempervivum*
ruthenicum

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On studying the flowers and leaves of *Sempervivum ruthenicum* we isolated from them a series of flavonol compounds [1-3], and from the leaves, together with flavonoid derivatives, we also obtained phenolic carboxylic acids with R_f 0.30 and 0.37 (2% CH_3COOH).

These compounds were fractionated with ethyl acetate from the acidified aqueous solution with subsequent separation on polyamide solvent. The phenolic acids were extracted from the organic phase with half-saturated aqueous sodium carbonate solution, and the extracts were acidified with sulfuric acid to pH 3 and treated with ethyl acetate. The ethyl acetate extract, after the solvent had been driven off, was separated on a column of Kapron with elution first by water and then by 50% ethanol, as a result of which two substances were isolated.

Substance I, $\text{C}_9\text{H}_8\text{O}_4$, mp 194-197°C (mp of the acetyl derivative 196-198°C). UV spectrum: λ_{max} 328 and 234 nm, characteristic for phenolic compounds [4].

Substance II, $\text{C}_{25}\text{H}_{24}\text{O}_{12}$, mp 228-231°C (mp of the acetylation product 103-105°C).

From their physicochemical properties, derivatives, and chromatographic studies with authentic samples, substance (I) was identified as 3,4-dihydroxycinnamic (caffeic) acid, and substance (II) as 1,4-dicaffeoylquinic acid.

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