

FLAVONOIDS AND COUMARINS OF THE LEAVES OF

Heracleum lehmanianum

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In the leaves of *Heracleum lehmanianum* L., which cause severe photodermatoses, we have found flavonoids and coumarins. In order to isolate them, the comminuted raw material was treated with strong ethanol, the extract was evaporated under vacuum, and the residue was mixed with distilled water and filtered from the material that deposited. The coumarins were extracted from the aqueous filtrate with chloroform and separated as described previously [1].

As a result, we isolated and identified by their physicochemical properties, melting points, mixed melting points, and UV and IR spectra isobergaptin, bergaptin, angelicin, psoralen and sphondin.

Paper chromatography of the chloroform extract in various systems of solvents showed the presence of umbelliferone and scopoletin.

The aqueous phase remaining after the separation of the chloroform was evaporated to small bulk and deposited on a column of polyamide sorbent. On elution with mixtures of water and ethanol, a flavonoid glycoside was obtained ($C_{27}H_{30}O_{16}$, mp 187-189° C [α]_D²⁰ + 6° (c 1.0; ethanol)), and this was hydrolyzed with 2% sulfuric acid to form quercetin ($C_{15}H_{10}O_7$, mp 309-311° C), D-glucose and L-rhamnose, while rhamnodiastase split it into rutinose and the aglycone.

In the glycoside, β -glycosidic bonds were found [2, 3] both for the L-rhamnose and for the D-glucose. On stepwise hydrolysis, the L-rhamnose split off first with the formation of quercetin 3- β -D-glucoside. The comparative ease of splitting off of the terminal sugar gives grounds for assuming that the glycoside has the furanose form.

Thus, the most probable structure for the glycoside studied can be given as quercetin 3-O- β -D-glucopyranosyl-(6-1)-O- β -L-rhamnofuranoside (epirutin).

Epirutin is one of the isomers of quercetin 3-glucorhamnoside [4].

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