FLAVONOLS AND COUMARINS OF Rhodiola coccinea AND R. quadrifida

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The isolation of the following biologically active substances has been reported previously [1, 2]: p-tyrosol from the roots of Rhodiola quadrifida (Pall.) Fisch. et Mey, and arbutin and hydroquinone from Rh. coccinea (Royle) A. Boriss, [3].

We have investigated the epigeal part of these plants collected in July, 1971-1972, in the flowering period in the Seminskii pass, Gorno-Altai Autonomous Oblast, and in the Tyuzashu pass, Frunze oblast, Kirghiz SSR. The raw material was exhaustively extracted with 96% ethanol. The ethanolic extracts were evaporated under vacuum and the residue was dissolved in water and extracted successively with petroleum ether, chloroform, and ethyl acetate. The ethyl acetate extracts of both species were chromatographed on columns of Kapron powder obtained by reprecipitation from acetic acid. On elution with water, two coumarin compounds were found – scopoletin and umbelliferone, these being identified by two-dimensional chromatography in a thin layer of acidic Al_2O_3 (activity grade II) in the cyclohexane–ethyl acetate (3:1) and ethyl acetate–chloroform–cyclohexane (2:1:7) systems. On further elution with 10-30% ethanol, the extract from Rh. coccinea yielded isoquercitrin (I), hyperoside (II), quercetin (III), and kaempferol (IV), and that from Rh. quadrifida yielded substances (III) and (IV).

The aglycones of the flavonoids were identified on the basis of their physicochemical constants and derivatives, and the isoquercitrin and hyperoside from the products of acid hydrolysis, the results of qualitative reactions, and UV spectroscopy with ionizing and complex-forming reagents [4].

LITERATURE CITED

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