

By comparing the data obtained with those known from the literature, we concluded that from the substance (I) we have isolated is a new 4',5'-dihydrofurocoumarin, and we have called it ulopterole.

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FLAVONOIDS OF SORBARIA SORBIFOLIUM

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We have studied the flavonoids of Sorbaria sorbifolium L. (Ural false-spirea) collected in the Khekhtsirskii reserve (Khabarovsk territory).

From the distilled alcoholic extracts purified with chloroform and by repeated chromatographic separation on a column of polyamide sorbent, we isolated an individual substance (I) with the composition $C_{21}H_{20}O_{11} \cdot 2H_2O$, mp 230–231° C, $[\alpha]_D^{20} -44.1^\circ$ (c 0.1; ethanol); λ_{max} 267, 354 m μ , the chemical properties and UV and IR spectra of which corresponded to kaempferol 3-(β -D-galactopyranoside)—trifolin [1, 2]. A direct comparison of substance (I) with trifolin confirmed their complete identity (the sample of trifolin was obtained from Prof. Aritomi Masakazu, Japan).

In the mother liquor, after the extraction of substance (I), substances were detected which could not be separated on a column of polyamide sorbent. Substances (II) and (III) were isolated by preparative separation on Fn-16 paper in the ethyl acetate—formic acid—water (10 : 2 : 3) system. Substance (II) with R_f 0.68 was eluted with ethanol and was then subjected to acid hydrolysis. Quercetin and the sugar xylose were obtained. The attachment of the sugar at position 3 was shown by the citric acid—zirconium test [3], and, on the basis of this, substance (II) was characterized as quercetin 3-(xyloside). The hydrolysis of substance (III) (R_f 0.59) gave the aglycone kaempferol and the sugar xylose. The position of attachment of the sugar was shown in a similar manner to that for substance (II). Substance (III) is kaempferol 3-(xyloside).

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FLAVONOLS OF PRUNUS SPINOSA

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By separating on a Kapron column the flavonoids of the leaves of Prunus spinosa L. (family Rosaceae) we isolated glycoside 2, identified as kaempferol 7-(O- α -L-rhamnifuranoside) [1]. This glycoside was obtained by desorption with 45% ethanol. On elution with 40% ethanol, we obtained a mixture of glycoside 2 and glycoside 4, giving the color reactions characteristic for 3-substituted flavonols [2]. Attempts to separate glycoside 4 from glycoside 2 on Kapron were unsuccessful. To isolate glycoside 4, we used the different stabilities of the 3-glycosides and 7-glycosides in an alkaline medium. The action of a 0.5% aqueous solution of caustic potash in the boiling water bath for 2 hr led to the complete cleavage of the kaempferol 7-(rhamnoside), and the 3-glycoside was obtained in the pure state after the neutralization of the solution and purification on Kapron. Mp 210–212° C, $[\alpha]_D^{20} -154^\circ$ (c 0.1; methanol).