FLAVONOIDS OF Sedum pallescens

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UDC 547.972

In an ethanolic extract of the epigeal part of Sedum pallescens Freyn. (plume stonecrop), family Crassulaceae, collected in the flowering phase in the Amur region, we have found not less than five substances of flavonoid nature. Two substances were isolated by chromatography on polyamide with elution by a mixture of ethanol and chloroform.

The first substance, $C_{21}H_{20}O_{10}$, mp 231-234°C (Kofler), $[\alpha]_D^{20}$ −140° (c 0.2; methanol), UV spectrum (nm): MeOH 254 (sh.), 267, 324 (sh.), 368 (log ε 4.27, 4.32). On acid hydrolysis it formed rhamnose and an aglycone $C_{15}H_{10}O_6$ with mp 260-266°C identical with kaempferol.

UV and NMR spectroscopy [1] showed that the substance was kaempferol 7-O-α-L-rhamnoside.

The second substance, $C_{27}H_{30}O_{14} \cdot {}^3/_2H_2O$, mp 187-189°C, $[\alpha]_D^{20}$ −224° (c 0.55; methanol), UV spectrum (nm): MeOH 230 (sh.), 266, 320 (sh.), 346 (log ε 4.43, 4.26). Acid hydrolysis gave rhamnose and kaempferol with mp 266-272°C. Stepwise hydrolysis in 15% CH_3COOH [2] led to the formation of a monoglycoside with mp 234-236°C, $[\alpha]_D^{20}$ −170° (c 0.2; methanol), identical with the first substance. The NMR spectrum of the silyl ether had signals of aromatic protons at (ppm) 7.71 (H-2',6'), 6.82 (H-3',5') 6.70 (H-8), and 6.18 (H-6). The signals of the CH_3 groups of the two rhamnose residues are easily distinguished [1]: a doublet at 0.77 ppm with J = 6 Hz is given by the methyl group of rhamnose substituted in the 3-OH group of the flavonoid and a complex signal at 1.18 ppm (3H) by the CH_3 of the rhamnose attached at the 7-OH group. Two doublets with J = 2 Hz at 5.17 and 5.03 ppm are due to the anomeric protons, and the signals of the other eight protons are located at 2.85-4.28 ppm. The facts presented show that the substance is kaempferol 3,7-di-O-α-L-rhamnoside.

LITERATURE CITED

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Translated from Khimiya Prirodnykh Soedinenii, No. 4, p. 557, July-August, 1973. Original article submitted February 12, 1973.