LINAROSIDE – A NEW FLAVONE GLYCOSIDE FROM SOME SPECIES OF Linaria

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Continuing a chemical study of the total flavonoids of Linaria sessilis and L. kokanica [1], by chromatography on polyamide we have isolated a minor component – a light yellow microcrystalline substance. After decrystallization from methanol–acetone–water, it had the composition $C_{23}H_{24}O_{11}$, mp 259-262°C, $[\alpha]_D^{14}$ –68.1° (c 0.94; pyridine) R_f 0.35 (15% CH_3COOH, leningrad "M" ["slow"] paper), λ_{max} (methanol), 277, 330 nm, λ_{max} (methanol + CH_3ONa) 290 nm, λ_{max} (methanol + CH_3COONa) 277, 330 nm.

On acid hydrolysis, the substance formed glucose and pectolinarigenin. The NMR spectrum of the trimethylsilyl derivative showed the following signals: doublet at 7.72 ppm, J = 9 Hz, 2H (H-2', 6'); doublet at 6.88 ppm, J = 9 Hz, 2H (H-3', 5'); singlet at 646 ppm, 1 H (H-8); singlet at 642 ppm, 1H (H-3); doublet at 4.96 ppm, J = 6.5 Hz, 1H (anomeric proton on glucose); multiplet at 3.4-3.9 ppm, 6H (protons of a sugar); and singlet at 3.78 ppm, 6H (2 CH_3O).

The results of a comparison of the NMR spectra, the R_f values, and a mixed melting point with a sample of pectolinarigenin 7-glucoside obtained by the stepwise hydrolysis of pectolinarin showed the identity of these substances.

The flavone glycoside isolated is a new natural substance having the structure of 5,7-dihydroxy-4',6-dimethoxyflavone 7-O-β-D-glucopyranoside. We have proposed for it the name linaroside.

Thus, from toadflax we have obtained a successive chain of pectolinarogenin derivatives: the aglycone, its 7-glucoside, its 7-ramnoglucoside (pectolinarin), and acetylpectolinarin.

LITERATURE CITED

1. L. P. Smirnova, G. G. Zapesochnaya, A. I. Ban'kovskii, and K. I. Boryaev, Khim. Prirodn. Soedin., 118 (1973).

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