C-GLYCOSIDES OF DIPSACACEAE SPECIES

G. N. Zemtsova, V. A. Bandyukova,
and A. L. Shinkarenko

UDC 547.972

Continuing an investigation of the chemical composition of Dipsacus strigosus Willd. ex Roem., Knautia montana (M.B.) D.C., and Scabiosa columbaria L. [1], we have detected difficultly hydrolyzable glycoflavones the aglycones of which are apigenin and chrysoeriol.

The C-glycosides were isolated from the flowers, which make up the bulk of the mass of raw material and give a purer product. The air-dry raw material was exhaustively extracted with methanol. The extract was concentrated to 1/3 of its volume. After 10 days, a substance with the composition $C_{27}H_{30}O_{15}$, mp 238-240°C (from methanol) was obtained. UV spectrum: λ_{max} in CH_3OH 335, 275 nm.

Exhaustive hydrolysis performed by Kiliani's method [2] gave apigenin, D-glucose, and D-arabinose. Acid hydrolysis with 5% H_2SO_4 for 3 h split off D-glucose and formed a substance having the composition $C_{21}H_{20}O_{10}$, mp 262-265°C (from methanol). UV spectrum: λ_{max} in CH_3OH 340, 265 nm. The IR spectrum showed absorption bands in the 1010-1040 cm^{-1} region that are characteristic for a C-glycosidic linkage [3]. On acid isomerization, the C-monoside formed vitexin – an isomer of saponaretin (4',5,7-trihydroxyflavone 6-C-β-D-glucopyranoside). On the basis of its NMR spectrum and a mixed melting point, the glycoflavone isolated was identified as saponaretin 7-O-glucoside. A sample of saponarin was given to us by V. Plouvier.

A second C-glycoside was isolated from Knautia montana (M.B.)D.C.

The flowers were extracted with methanol at room temperature, and the extract was concentrated to 1/10 of its volume and diluted with water (1 : 2). A substance with mp 245-248°C was obtained which, from a preliminary examination, is chrysoeriol 7-O-glucoside 8-C-glucoside.

LITERATURE CITED

1. G. N. Zemtsova and V. A. Bandyukova, Khim. Prirodn. Soedin., 138 (1972).
2. H. Kiliani, Ber., 63, 2866 (1930).
3. H. Wagner, "Infrared spectroscopy of flavonoids," in: Methods in Polyphenol Chemistry, J. B. Pridham (editor), Pergamon Press, Oxford (1964), Chap. 2, p. 37.

Pyatigorsk Pharmaceutical Institute. Translated from Khimiya Prirodnykh Soedinenii, No. 5, p. 678, September-October, 1972. Original article submitted May 4, 1972.