

From the clovers growing in the northern Caucasus we have previously isolated **polyphenolic compounds** [1-3]. Continuing a study of the chemical composition of the herbage of *Trifolium medium* L. and *T. pratense* L. (zigzag clover and red clover), from an ethyl acetate extract of the combined flavonoids by chromatography on a column of polyamide sorbent and on paper, followed by fractional crystallization, we have isolated an individual substance.

The substance has the composition  $C_{22}H_{22}O_{10}$  and forms colorless crystals soluble in ethanol and methanol, with mp 208-209°C (from dimethylformamide),  $[\alpha]_D^{20} -48.6^\circ$  (c 0.25; methanol). Its UV spectrum has absorption maxima at 263 and 325 nm. With ionizing and complex-forming additives the presence of a free hydroxy group in the  $C_5$  position was established; either there are no hydroxy groups at  $C_7$  and  $C_4'$  or they are substituted. The appearance of bathochromy under the influence of  $C_2H_5ONa$  on the aglycone ( $\Delta\lambda$  14 nm) after acid hydrolysis shows the presence of a carbohydrate component (D-glucose) in the  $C_4'$  position.

The aglycone, with the composition  $C_{16}H_{12}O_5$ , mp 216-218°C (from dimethylformamide) was identified on the basis of UV spectroscopy, alkaline degradation, and melting point of the demethylated product (290-291°C) as 4',5-dihydroxy-7-methoxyisoflavone (prunetin). In the IR region bands were found characteristic for the  $\beta$ -configuration of the glycosidic bond ( $897\text{ cm}^{-1}$ ) and for a pyranose D-glucose ring (1080, 1056, 1021,  $930\text{ cm}^{-1}$ ). These facts confirm the results of a determination of  $[M]_D^{20} \cdot k_p = -123.6^\circ$  and of enzymatic hydrolysis.

Thus, the substance isolated has been characterized as 4'-O- $\beta$ -D-glucopyranosyl-5-hydroxy-7-methoxyisoflavone (prunitrin [4]).

## LITERATURE CITED

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Pyatigorsk Pharmaceutical Institute. Translated from *Khimiya Prirodnikh Soedinenii*, No. 4, pp. 538-539, July-August, 1976. Original article submitted December 11, 1975.

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