# GLYCOFLAVONOIDS OF ARTEMISIA TRANSILIENSIS. IV.

T. K. Chumbalov and O. V. Fadeeva

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From the epigeal part of Artemisia transiliensis P. in addition to O-glycosides [1, 2], the C-glycosides A, B, and C have been obtained. They were separated by chromatography of an aqueous methanolic extract on Kapron and by preparative chromatography on paper in 15% $CH_3COOH$. The physicochemical properties of the substances studied are given in the table.

Table

| Substance | Mp, °C | $[\alpha]_D^{20}$, deg | UV spectra, $\lambda_{max}$ | | | | *Rf* | |
|---|---|---|---|---|---|---|---|---|
| | | | in ethanol | in ethanol and Na acetate | in ethanol and Na ethoxide | in ethanol and zirconyl chloride | BAW (4:1:5) | 15 %-$CH_3COOH$ |
| A | 230–231 | +54,5 (c 0,2; dimethyl-formamide). | 236<br>274 | 380<br>282 | 395<br>280 | 365*<br>348<br>305<br>284 | 0.26 | 0.6 |
| B | 234–236 | +99,9 (c 0,2; dimethyl-formamide). | 234<br>272 | 364<br>282 | 400<br>282 | 368*<br>346<br>302<br>282 | 0.26 | 0.49 |
| C | 245–246 (разв) | +52 (c 0,4; methanol). | 334<br>270 | 350<br>277 | 405<br>278 | 362*<br>346<br>284 | 0.5 | 0.66 |
| D | 342–343 | – | 236<br>268 | 378<br>280 | 395<br>268 | 382<br>355<br>308<br>284 | 0.94 | 0.1 |

*Low-intensity absorption band.

Spectral study in the UV region showed that the substances under consideration are flavone derivatives with free OH groups in positions 5, 7, and 4'. Their positions on a chromatogram and the results of elementary analysis permit the assumptions that substances A and B are diglycosides, and substance C is a monoglycoside. These glycosides do not undergo enzymatic hydrolysis [1]. Their hydrolysis by Kiliani's method gave an apigenin C-glucoside, and traces of arabinose. On milder acid hydrolysis (5–10% solution of HCl in 50% methanol, 100° C) of the glycosides A and B, four substances were detected: two of them were identical with the glycosides under study and two had different $R_f$ values in 15% $CH_3COOH$ (0.37 and 0.12). The mixture was separated into the individual substances by preparative paper chromatography. Each compound isolated was hydrolyzed under the same conditions and gave the same four isomers. Under these conditions the glycoside C was isomerized into the second substance with $R_f$ 0.38 and 0.48. Isomerization is probably due to the rotation of the carbohydrate substituent around a C—C bond [3]. The structural features of the carbohydrate substituents were established by differential analysis in the IR region of the spectrum. The reduction in the bathochromic shifts of the zirconyl complexes of the glycosides show substitution in position 6 [4].

Thus, substance A may be characterized as apigenin 6,8-C-$\beta$,$\alpha$-diglucopyranoside, which has been described in the literature [5, 6], substance B as a rotation isomer of A, and substance C as apigenin 6-$\beta$,$\alpha$-glucopyranoside.

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Kirov Kazakh State University