FLAVONOID COMPOSITION OF *Artemisia halodendron*

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We have studied the flavonoid composition of the epigeal part of *Artemisia halodendron* Turcz. ex Bess. collected in the Mongolian People's Republic, in the Eastern Aimak on the left bank of the R. Khalka-gol, in the budding phase.

The air-dry raw material (350.0 g) was extracted with chloroform and then, exhaustively, with aqueous ethanol. The chloroform extract was treated with hot water and the aqueous extract was treated with chloroform. The chloroform extract was chromatographed on a column of silica gel L 40/100. Elution was performed with chloroform, leading to the isolation of substances (I) and (II).

Substances (I) $C_{18}H_{16}O_7$, mp 204°C and (II), $C_{16}H_{14}O_6$, mp 220°C were identified by the agreement of their IR spectra and the absence of a depression of mixing melting points with authentic samples isolated from *A. xanthochroa* as cirsilineol and eriodictyol 7-methyl ether, respectively [1].

The aqueous ethanolic extract, after the elimination of the ethanol, was treated with ethyl acetate. The ethyl acetate extract was chromatographed on polyamide with elution by chloroform and chloroform–ethanol (19:1) and (9:1), giving substances (III) and (IV).

Substance (III) – $C_{16}H_{12}O_7$, mp 295°C, was identified as rhamnetin on the basis of the identity of their IR spectra and the absence of a depression of the melting point in a mixture with an authentic sample.

Substance (IV), mp 250°C, $[\alpha]_D^{25}$ –12.1° (s 0.33; ethanol), M^+ 478. UV spectrum, $\lambda_{max}^{CH_3OH}$ 259, 275, 367 nm. Analysis of the UV spectra with complex-forming and ionizing additives made it possible to suggest the presence of OH groups in positions 4', 5, and 7. The acid hydrolysis of (IV) (2 N HCl, 100°C, 2 h) gave the aglycon of (IV) and a monosaccharide which was identified by PC (FN-12 paper, butanol–pyridine–water (6:4:3)) as D-glucose. The aglycon of (IV) had the composition $C_{16}H_{12}O_7$, mp 305°C, M^+ 316. UV spectrum, $\lambda_{max}^{CH_3OH}$ 255, 278 (sh.) with additives, and also of a comparison of them with literature information [2], the aglycon of (IV) was identified as isorhamnetin. Methylation of the glycoside (IV) with diazomethane followed by acid hydrolysis of the reaction product yielded 3-hydroxy-3',4',5,7-tetramethoxyflavone with mp 196°C (according to the literature [3, 4] mp 193°C; 195-196°C) and confirmed the attachment of the glucose residue to position 3 of the aglycon. In its PMR spectrum, glycoside (IV) had the signal of the anomeric proton of the D-glucose residue at 5.54 ppm in the form of a doublet with the SSCC J = 8 Hz, which showed a β-glycosidic bond of the sugar moiety with the aglycon. On the basis of the results obtained, we identified substance (IV) as isorhamnetin 3-O-β-D-glucoside [4, 5].

This is the first time that the flavonoid composition of *A. halodendron* has been studied.

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