CARDENOLIDES AND FLAVONOIDS OF *Syrenia sessiliflora*

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In ethanolic extracts from the epigeal part of Syrenia sessiliflora Ldb., collected in the flowering period, we have detected cardenolides and flavonoids by qualitative reactions. For their isolation, an ethanolic extract was evaporated to eliminate the solvent, the residue was mixed with water, and the precipitate of chlorophyll and other lypophilic substances that deposited was filtered off. The cardenolides were extracted from the aqueous filtrate with chloroform containing 15% of ethanol. Under these conditions, the flavonoids remained in the aqueous layer. After evaporation of the chloroform-ethanol extract, the residue was separated on a column of neutral alumina (activity grade III). The column was washed with water and with mixtures of chloroform and ethanol with the concentration of the latter being gradually increased to 7%. The qualitative compositions of the fractions collected were determined by paper chromatography in the chloroform–formamide and chloroform–tetrahydrofuran (1 : 1)–formamide systems. As a result we obtained and identified strophanthidin ($C_{23}H_{32}O_6$, mp 138-143°C/224-226°C, $[\alpha]_D^{21}$ +44° in ethanol), erysimotoxin ($C_{29}H_{42}O_9$, mp 175-177°C, $[\alpha]_D^{20}$ +23° in ethanol), and corchoroside A ($C_{29}H_{42}O_9$, mp 160-164°C, $[\alpha]_D^{21}$ +14° in ethanol).

The flavonoid glycosides present in the aqueous residue after the extraction of the cardenolides were separated on a column of polyamide sorbent [2]. The column was washed with water and with mixtures of water and ethanol. A diglycoside ($C_{28}H_{32}O_{16}$, mp 220-222°C, $[\alpha]_D^{20}$ −105° in ethanol) was isolated which, on acid hydrolysis, split into isorhamnetin ($C_{16}H_{12}O_7$, mp 305-307°C), D-glucose, and L-rhamnose. Cleavage of the glycoside with the enzymes of the grape snail or rhamnodiastase led to the formation of isorhamnetin 7-α-L-rhamnopyranoside ($C_{22}H_{22}O_{11}$, mp 119-120°C, $[\alpha]_D^{22}$ − 121° in ethanol) and D-glucose. Alkaline hydrolysis [3] gave isorhamnetin 3-β-glucopyranoside ($C_{22}H_{22}O_{12}$, mp 166-169°C, $[\alpha]_D^{21}$ −60° in ethanol) and L-rhamnose.

Thus, the structure of the flavonoid glycoside isolated can be represented as isorhamnetin 3-β-D-glucopyranosido-7-α-L-rhamnopyranoside. We isolated a similar substance previously from the leaves of sea buckthorn [4].

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