24-HYDROXYGLYCYRRHETIC ACID FROM THE ROOTS

OF Glycyrrhiza korshinskyi

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We have hydrolyzed a mixture of unpurified saponins (84 g) obtained by the acidification of a concentrated sodium carbonate and aqueous extract of the roots and rhizomes of Glycyrrhiza korshinskyi G. Grig. by heating it with 6% methylsulfuric acid in the water bath for 17 h.

The neutral hydrolysis products (23.5 g) were separated on inactive alumina (1:100). The first fractions, eluted with a mixture of petroleum ether and diethyl ether (1:1), contained a mixture of homo- and heteroannular dienes (0.1-0.2%). Then the main hydrolysis product (about 50%) — methyl glycyrrhetate, identified by its UV and IR spectra — was eluted. After the removal of the methyl glycyrrhetate, fractions were obtained consisting of mixtures of homo- and heteroannular dienes (0.2%). One of the substances of these fractions was the methyl ester of a triterpene acid, $C_{31}H_{48}O_4$, mp 264°C, M⁺ 484, UV spectrum: λ_{max} 280 nm; IR spectrum: 1730, 3200-3300 cm⁻¹.

From the following fractions, eluted with a mixture of diethyl ether and chloroform (1:3),we isolated a substance (6%) with the formula $C_{31}H_{48}O_5$, mp 245-246°C, M⁺ 500; UV spectrum: λ_{max} 248 nm; IR spectrum: 1620, 1660, 1727, 3200-3500 cm⁻¹. Its acetylation with a mixture of pyridine and acetic anhydride formed a diacetate, $C_{35}H_{52}O_7$, mp 256-257°C, M⁺ 584; UV spectrum: λ_{max} 248 nm; IR spectrum: 1620, 1660, 1735 cm⁻¹.

The triterpene acid methyl ester with mp 245-246°C that was obtained is identical in properties and spectra with the methyl 24-hydroxyglycyrrhetate isolated previously from the roots of Glycyrrhiza glabra L. by Italian workers [1].

The hypogeal organs of Glycyrrhiza korshinskyi were collected by T. P. Nadezhina on June 5, 1970, in the flowering phase in the Kazakh SSR (environs of Chelkar station).

LITERATURE CITED

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