

# GLABROLIDE FROM THE ROOTS OF *Glycyrrhiza aspera*

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The mixture of unpurified saponins isolated by the extraction of 150 g of the roots and rhizomes of *Glycyrrhiza aspera* Pall with water was hydrolyzed with 6%  $H_2SO_4$  in methanol (on the boiling water bath for 8 h). The neutral hydrolysis products (3 g) were chromatographed on a column containing 120 g of  $Al_2O_3$  (inactive), with elution by means of chloroform. The first fractions gave a substance of triterpene nature with mp 266°C having no absorption maxima in the UV spectrum; the IR spectrum showed a band at 1760  $cm^{-1}$  (CO group of a  $\gamma$ -lactone).

The following product – methyl glycyrrhetate (yield 0.06% of the weight of the air-dry roots) – has been detected previously in the roots of this liquorice [1], and we identified it by its IR and UV spectra.

The main hydrolysis product (0.25%), with the composition  $C_{30}H_{44}O_4$ , which eluted simultaneously with the methyl glycyrrhetate, was recrystallized from ethanol, mp 360–365°C,  $[\alpha]_D^{20} + 80^\circ$  (c 0.4; chloroform); UV spectrum:  $\lambda_{max}$  243 nm; IR spectrum,  $cm^{-1}$ : 3550 (OH), 1762 (CO group of a  $\gamma$ -lactone), 1665 (CO group conjugated with a double bond), and 1628 (double bond). The compound isolated was identical in its chemical and spectral properties with glabrolide, which has been found in the roots of common liquorice [2]. For a more complete identification, its monoacetate was prepared:  $C_{32}H_{46}O_5$ , mp 330–332°C (decomp.),  $[\alpha]_D^{20} + 65^\circ$  (c 0.17; chloroform); UV spectrum:  $\lambda_{max}$  244 nm; IR spectrum,  $cm^{-1}$ : 1782 (CO group of a  $\gamma$ -lactone), 1740 (CO of an acetyl group), 1662 (CO group conjugated with a double bond), and 1625 (double bond). In addition, the hydrogenation of the glabrolide isolated formed deoxoglabrolide,  $C_{30}H_{46}O_3$  with mp 272–274°C.

The subterranean organs of *Gl. aspera* were collected on June 5, 1970, in the flowering phase in the Kazakh SSR (near the village of Chelkar).

## LITERATURE CITED

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