

ISOECHINATIC ACID FROM THE ROOTS OF *Glycyrrhiza*
echinata

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UDC 547.913

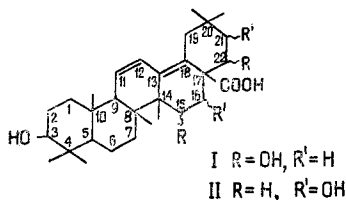
Echinatic acid in the form of its methyl ester has been isolated previously from the neutral substances of the acid hydrolysis of an extract of the roots of *Glycyrrhiza echinata* [1]. On subsequent chromatography of the mother liquors on a column of Al_2O_3 (inactivated) with petroleum ether-diethyl ether (1:2) we eluted several individual substances, one of which, with mp 256-257°C (from ethanol), had the composition $C_{31}H_{48}O_5$, IR spectrum: 1720, 3303 cm^{-1} , R_f 0.26 [Al_2O_3 , inactivated, petroleum ether-diethyl ether (1:2)]. The yield was not more than 0.1% (on the dry roots). The substance formed a triacetate with mp 192°C, IR spectrum: 1735 cm^{-1} .

On saponification, a trihydroxy acid was obtained with mp 309-311°C, IR spectrum 1695, 3300 cm^{-1} , melting point of the triacetate 297°C, IR spectrum: 1717, 1740, 3300 cm^{-1} ; we have called this acid isoechinatic acid. UV spectrum of isoechinatic acid: λ_{max} 259, 249, 241 nm ($\log \epsilon$ 4.03, 4.22, 4.17). The same three maxima are found in derivatives of the acid.

The facts given above permit the conclusion that the substance isolated is the methyl ester of an isoechinatic acid containing a conjugated system of double bonds in rings C and D [2].

The triacetate of methyl isoechinatate (mp 192°C) had properties identical with those of the heteroannular diene (M^+ 626, mass spectrometry) obtained by the action of SeO_2 on the triacetate of methyl echinatic acid and gave no depression of the melting point in admixture with it [3].

Thus, considering the probable structure of echinatic acid, one of the following structures may be suggested for isoechinatic acid:



LITERATURE CITED

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V. L. Komarov Botanical Institute of the Academy of Sciences of the USSR. Translated from *Khimiya Prirodnikh Soedinenii*, No. 3, p. 378, May-June, 1971. Original article submitted February 11, 1971.

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