HYDROXYMERISTOTROPIC ACID FROM THE ROOTS OF Meristotropis triphylla

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The isolation by the acid hydrolysis of the roots of M. triphylla of three triterpene acids – meristotropic, isomeristotropic, and triphyllic – has been reported previously [1-3]. Continuing a study of the triterpene compounds of this species, we have isolated yet another pentacyclic triterpene acid, which we have called hydroxymeristotropic acid. The acid was obtained from the neutral fraction of the hydrolyzate in the form of the methyl ester with mp 236-238°C (from ethanol), which gives a positive Liebermann–Burchard reaction. On chromatography in a thin layer of alumina (inactivated, with chloroform containing traces of ethanol as the solvent), one spot was found. The saponification of this methyl ester yielded an acid with the composition $C_{30}H_{44}O_5$, mp 300-301°C.

The IR spectrum of the acid had bands at (cm^{-1}): 1725 (CO of a carboxy group), 1695 (CO of a six-membered ring ketone), 1620, 990, 780 (double bonds), 3580 and 3470 (hydroxy groups). The acid obtained, like meristotropic acid, contains one carboxy group, oxo and hydroxy groups, and a conjugated system of double bonds. In contrast to meristotropic acid, it contains a second hydroxy group, which is shown by the formation of the diacetate of the methyl ester of the acid. The carbonyl group is hindered. The carbonyl groups in the two acids have circular dichroism curves of the same sign and shape in the two acids. This shows the identity of the localization of the carbonyl groups.

The UV spectra of hydroxymeristotropic acid and all its derivatives have three maxima – at 242, 250, and 258 nm – which confirms a conjugated system of double bonds present in different rings (C and D). Consequently, this acid is a heteroannular diene.

The acetylation of hydroxymeristotropic acid takes place similarly to that of the other acids mentioned. It follows from this that the carboxy group in hydroxymeristotropic acid is located in position 29 and one of the hydroxy groups in position 3. The location of the second hydroxyl has not yet been determined.

On the basis of the facts given above, we consider that hydroxymeristotropic acid belongs to the β-amyrene series and is a derivative of meristotropic acid.

LITERATURE CITED

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