JOLANTIDINE — A NEW BASE FROM *Merendera jolantae*

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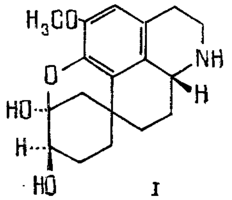
By the chromatographic separation on a column of alumina of the mixture of bases from the epigeal parts of *Merendera jolantae* Czerniak, collected in the fruit-bearing period (March, 1976), we have isolated fractions of eluates from acetone and acetone–methanol (95:5 and 90:10). The fraction contained two identical compounds differing in their physicochemical constants from known tetrahydroisoquinoline alkaloids of colchicine-containing species of plants [1-4]. The first of these bases, which has been called jolantidine (I), had the composition $C_{18}H_{23}O_4N$, M^+ 317, mp 275-277°C (acetone), $[\alpha]_D$ +102° (c 0.4; methanol). The second base (II), with the composition $C_{19}H_{27}O_4N$, had mp 201-202°C (acetone–methanol) and $[\alpha]_D$ +10° (c 0.3; methanol). The structure of (I) has been established.

The UV spectrum of (I) has absorption maxima at 216 and 290 nm and the IR spectrum absorption bands of the C=C bonds of a benzene ring (1600 cm^{-1}), of active hydrogens (3580, 3360 cm^{-1}), and of methylene groups (1470-1440 cm^{-1}). In the PMR spectrum of (I) there are the signals of one aromatic proton (6.50 ppm) and the protons of a methoxy group (3.86 ppm).

Under the action of acetyl chloride, (I) formed a O,O,N-triacetyl derivative (III) the IR spectrum of which showed absorption bands at 1750, 1745, and 1645 cm^{-1}. The hydrolysis of (III) led to the N-monoacetyl derivative (IV) (IR spectrum: 1645 cm^{-1}). These transformations showed the presence in the molecule of (I) of two hydroxy groups and an imine group. Confirmation of this was provided by the following transformations: Under the action of methyl iodide in the presence of potassium acetate, a methiodide (V) was formed, the PMR spectrum (in CF_3COOH) of which showed the signals of the protons of two N-methyl groups (2.95; 2.55 ppm) of a methoxy group (3.54 ppm), and of an aromatic proton (6.38 ppm). In the PMR spectrum of acetylated (V) — (VI) — the signals appeared of the protons of two O-acetyl groups (6 H, s, 2.00 ppm) of 2 N-methyl groups (3.62, 3.00 ppm), of a methoxy group (3.85 ppm), of an aromatic proton (6.58 ppm), and of a tertiary proton geminal to an acetoxy group (5.10 ppm). According to the half-width of its signal (J = 6 Hz), the last-mentioned proton has the equatorial orientation. The IR spectrum of (VI) contains absorption bands at 1750 and 1740 cm^{-1}.

On the basis of the facts given above, structure (I) was proposed for jolantidine, and this has been confirmed by the identity of its methiodide (V) with the methiodide of regelamine [2] and the identity of their acetyl derivatives (VI).



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LITERATURE CITED

1. A. S. Sadykov and M. K. Yusupov, Acta Universit. Palack. Olomuc., 73, 13 (1975).
2. M. K. Yusupov, D. A. Abdullaeva, Kh. A. Aslanov, and A. S. Sadykov, Khim. Prir. Soedin., 383 (1975).
3. M. K. Yusupov and A. S. Sadykov, Khim. Prir. Soedin., 350 (1976).
4. D. A. Abdullaeva, M. K. Yusupov, and Kh. A. Aslanov, Khim. Prir. Soedin., 783 (1976).

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