

ALKALOIDS OF AQUILEGIA KARELINI

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Magnoflorine has been isolated from four species of Aquilegia [1, 2], and berberine and aquilegenine in the form of iodides, as well as magnoflorine, have been isolated from A. hybrida [1].

We have investigated the alkaloids of A. karelini (Baker), O. et B. Fedtsch., collected in the basin of the R. Nura (Alai valley) in the fruit-bearing period on 4 August 1965.

Methanolic extraction of the roots gave 1.5% (of the weight of dry roots) of crystals of an iodide of a tertiary base with mp 249°–251° C (decomp.), $[\alpha]_D^{14} + 100.6^\circ$ (c 1.1; water). Its UV spectrum had the three maxima characteristic for aporphine bases. IR spectrum: 3100–3400 cm^{-1} (hydroxy group). The presence of two hydroxy groups in the iodide was confirmed by the preparation of an O, O-diacetyl derivative with mp 234°–235° C (decomp.), $[\alpha]_D^{18} + 115.2^\circ$ (c 0.9; methanol), and by the integration of the intensities of the bands in the IR spectrum [3]. Furthermore, the analytical results showed the presence of two methoxy groups. Consequently, the iodide of the base is a dihydroxydimethoxyaporphine.

The properties of this iodide are similar to those of the iodide of magnoflorine. Because we lacked a sample of magnoflorine, we methylated the iodide obtained with methyl iodide in the presence of sodium methoxide. A O, O-dimethyl derivative was formed which, by paper chromatography, a mixed melting point, and its IR spectrum, was identical with O-methylcorydine methiodide.

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ISOLATION OF KOPSINILAM AND ERVINCINE

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Continuing our investigation of the alkaloids of Vinca erecta Rgl. et Schmalh [1], by separating the total alkaloids with respect to their basicities and by chromatography on alumina we have isolated vincanine, vincanidine, kopsinine, vincamine, vincarine, tombozine, ervinidine, and two crystalline bases.

The first base with mp 248°–249° C, $[\alpha]_D - 13.5^\circ$ (c 2.30; chloroform) has a UV spectrum characteristic for indoline bases: λ_{max} (in ethanol): 246 and 295 $\text{m}\mu$ ($\log \epsilon$ 3.39, 3.50). Its IR spectrum has bands of the stretching vibrations of an NH group (3260 cm^{-1}), an ester carbonyl group (1742 cm^{-1}), indoline (1612 cm^{-1}), and a five-membered lactam ring (1690 cm^{-1}). Acetylation of the base gave a N-acetyl derivative with mp 250°–251° C. The IR spectrum of the latter lacked the band of an NH group (3260 cm^{-1}) and showed the band of an amide carbonyl group (1670 cm^{-1}).

When the base was reduced with lithium aluminum hydride in ether, an amino alcohol with mp 155°–156° C (from ethanol) was formed. Its IR spectrum lacked the absorption bands of an ester carbonyl group and a lactam ring and had a broad band due to the adsorption of a hydroxy group (3400–3500 cm^{-1}). A comparison of the IR spectra, R_f values (TLC on silica gel), and a mixed melting point of the amino alcohol with authentic kopsinol showed their