

ALKALOIDS OF STEPHANIA HERNANDIFOLIA

V. Structure of hernandolinol

I. I. Fadeeva, T. N. Il'inskaya, M. E. Perel'son, and A. D. Kuzovkov

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From the herb Stephania hernandifolia (family Menispermaceae) growing in Transcaucasia, via its sparingly soluble hydrochloride, we have isolated a base with the composition $C_{20}H_{27}O_5N$, mp 114-115° C (from ether), 144.5° C (from methanol), $[\alpha]_D -97.9^\circ$ (c 0.7, ethanol), mol wt 370 (Rast); hydrochloride with mp 199.5-200.5° C (from ethanol). It contains three OCH_3 groups (signals in the NMR spectrum at 3.38, 3.47, and 3.65 ppm), two OH groups (3300 and 3520 cm^{-1}) and an NCH_3 group (signal at 2.46 ppm). The presence of these functional groups was also shown analytically. Absorption bands at 1590 and 1630 cm^{-1} in the IR spectrum confirm the presence of an aromatic ring in the molecule.

UV spectrum: λ_{max}^{EtOH} 216 and 285 $m\mu$ (log ϵ 3.94 and 3.48). This alkaloid has not been described in the literature and is new.

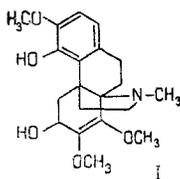
The Hofmann degradation of the alkaloid yielded a methiodide with mp 178-180° C and a desbase with mp 114-115° C giving no depression of the melting point in admixture with the desbase of hernandoline [1]; the two substances gave spots with the same R_f value in TLC on alumina in an ether-methanol (25:168) system.

On acetolysis, the desbase formed a substance with mp 163-164° C identical with the diacetoxymethoxyphenantrene obtained from hernandoline [1].

A comparison of the composition and constants of the described alkaloid with the product from the reduction of hernandoline with sodium borohydride [1], and also the formation of identical products by Hofmann degradation show that the structures of the substances are similar.

The IR spectra of reduced hernandoline and of the new alkaloid are identical.

On the basis of the facts given above, we have called the alkaloid "hernandolinol" and have proposed for it the structure I.



REFERENCE

1. I. I. Fadeeva, M. E. Perel'son, T. N. Il'inskaya, and A. D. Kuzovkov, *Farmatsiya*, no. 2, 28, 1970.

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All-Union Institute of Medicinal Plants