

THE ISOLATION OF VINCINE AND N-ACETYLVINERINE

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The combined alkaloids (200 g) from the epigeal part of *Vinca erecta* Rgl. et Schmalh [1] were dissolved in 500 ml of 5% phosphoric acid, and the acid solution was washed with chloroform. The chloroform extracts were evaporated and the residue was dried to a powdery consistency (15 g). On treatment with acetone, 5 g of the amorphous powder yielded crystals with mp 119–120°C (200 mg). After recrystallization from methanol, the base had mp 125–126°C, $[\alpha]_D^{20} -431^\circ$ (c 0.09, acetone). From its R_f value and the melting point of a mixture, it was identified as ervineceine [2].

The mother liquor from the ervineceine was passed through a column of alumina. The working up of fractions 1–3 of the benzene eluates yielded crystals with mp 205–206°C (acetone), R_f 0.15 [in a thin layer of silica gel in the chloroform–ether (7:3) system]. UV spectrum (in ethanol): 232, 275, 300 nm ($\log \epsilon$ 4.45, 3.78, 3.70). IR spectrum (in KBr): 1750, 762, 746 cm^{-1} . Mass spectrum, m/e (%): 348 (100), 369 (6), 354 (7), 324 (12), 297 (16), 282 (31), 267 (13), 254 (16), 234 (13), 227 (20), 200 (15), 183 (15).

According to these results, the properties of the base with mp 205–206°C are identical with those of vincine [3].

Treatment of the mother liquors from the vincine with acetone yielded crystals having mp 152–153°C, R_f 0.90 [in a thin layer of silica gel in the ethyl acetate–methanol system]. The IR spectrum of the base had absorption bands at 1765, 1700, and 1638 cm^{-1} and lacked absorption in the region of active hydrogen. This shows that the base is possibly an oxindole derivative containing an N-acetyl group.

The mass spectrum of the alkaloid had strong peaks with m/e 440 M^+ (100) and 223 (40) and peaks of medium intensity with m/e 208 (9), 189 (7), 180 (7), and 69 (11). A comparison of the main peaks of the mass spectra of the base obtained and those of vinerine showed that they differed from one another by 42 m/e . It follows from this that the base probably has the structure of N-acetylvinerine [1].

The results of a comparison of the R_f values, the IR and mass spectra and the melting points of N-acetylvinerine and the base with mp 152–153°C showed their complete identity.

LITERATURE CITED

1. Sh. Z. Kasymov, P. Kh. Yuldashev, and S. Yu. Yunusov, KhPS [Chemistry of Natural Compounds], 960 (1966).
2. R. A. Rakhimov, V. M. Malikov, and S. Yu. Yunusov, KhPS [Chemistry of Natural Compounds], 330 (1969).
3. M. Plat, D. D. Manh, I. LeMen, M. M. Ianot, H. Budzikiewicz, I. M. Wilson, L. I. Durham, and C. Djerassi, Bull. Soc. Chim. Fr., 1082 (1962).

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