ANHYDROPERFORINE FROM THE SEEDS OF Haplophyllum perforatum

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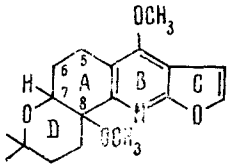
Continuing a study of the alkaloids of the seeds of H. perforatum collected in the "Galliya-Aral" collective farm, we have isolated from the neutral fraction of a petroleum ether extract, in addition to eudesmine [1] and haplamine [2], a new base (I) with mp 143-144°C (ethanol), $[\alpha]_D^{20}$ −35.12° (c 2.189; methanol). The content of haplamine was 0.15% and that of substance (I) 0.005% on the weight of the seeds. The haplamine was not extracted by 10% acid from an ethereal solution, and therefore it remained in the neutral fraction with the eudesmine.

The base, (I), $C_{18}H_{23}NO_4$, M^+ 317, was obtained from the first ether eluates when the neutral mother liquor was chromatographed on alumina. The alkaloid dissolves readily in ether, benzene, and chloroform and is insoluble in dilute acid and alkali; R_f 0.88 in the toulene–ethyl acetate–formic acid (5:4:1) system in TLC (silica gel).

The physicochemical constants of this alkaloid are close to those of anhydroperforine, previously obtained from perforine [3]. Results of a direct comparison of (I) with an authentic sample of anhydroperforine showed that they were identical.

In the NMR spectrum of anhydroperforine (taken in benzene on a JNM-4H 100/100 MHz instrument) there is a narrow quartet at 5.94 ppm with J_1=2 Hz, J_2=3.5 Hz from the proton at C_7. This shows the equatorial nature of this proton and, consequently, the cis linkage of rings A/D. The axial position remains for the methoxy group at C_8.



Anhydroperforine is the third representative of the 5,6,7,8-tetrahydrodictamnine series [3]. So far, alkaloids of this group have been found only in the seeds of H. perforatum.

LITERATURE CITED

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