For thin-layer chromatography we used KSK silica gel ground and passed through a Kapron sieve. The sorption material consisted of a mixture of silica gel and gypsum in a ratio of 9:1. The layer was deposited in an apparatus made as described by Stahl [3]. The layer thickness was 250 mμ. The prepared plates were activated by drying at 20° C for 24 hr. Chromatography was carried out in cylindrical chambers (120 × 300 mm). The bases were deposited in an amount of 5–10γ. The plates were revealed by being sprayed with a 1% solution of cerium ammonium sulfate in concentrated orthophosphoric acid.

Thus, this method enables the alkaloids of the plant Vinca erecta to be identified rapidly and it can be recommended for determining the quantitative composition of the individual fractions of a mixture of alkaloids.

REFERENCES

1. S. Yu. Yunusov, collection: Chemistry in Uzbekistan [in Russian], 26, Tashkent, 1965.
2. N. R. Fornsworth, R. N. Blomster, D. Damratoski, W. A. Meer, and L. V. Cammarato, Lloydia, 27, 302, 1964.
3. E. Stahl, Dünnschichtchromatographie, Springer Verlag, Berlin, 1962.

20 April 1967

Institute of the Chemistry
of Plant Substances,
AN UzSSR

UDC 547.944/945

ALKALOIDS OF THALICTRUM SIMPLEX

Kh. S. Umarov, M. V. Telezhenetskaya, Z. F. Ismailov, and S. Yu. Yunusov

Khimiya Prirodnykh Soedinenii, Vol. 3, No. 5, pp. 353–354, 1967

Continuing our investigation of the alkaloids of the roots of Th. simplex L. [1–3], we have isolated an optically inactive base with mp 169°–170° C (acetone) from the nonphenolic fraction by treatment with methanol. From a comparison of the UV and IR spectra, paper chromatography, and a mixed melting point test, the alkaloid has been shown to be identical with an authentic sample of β-allocryptopine [4].

The chloroform extract after the elimination of the bulk of the alkaloids was concentrated and treated repeatedly with 10% sulfuric acid, and the combined alkaloids were obtained by the usual method and separated on alumina. The benzene eluate yielded crystals of a base with mp 131°–132° C (ethanol), $[\alpha]_D$ + 20.26° C (c 1.38; chloroform), + 57.85° C (c 0.96; ethanol), hydrobromide, mp 250°–252° C (decomp.), sulfate mp 198°–202° C (decomp.), picrate mp 141°–150° C. The nitrogen in the base was tertiary, since it formed a methiodide having mp 224°–225° C. There were no CH_2O_2 and OH groups. UV spectrum: λ_{max} 220, 280, and 300 mμ. From its spectrum and the value of the specific rotation the base can be assigned to the aporphine series with an unsubstituted C-4 position. Preliminary data indicate that this base is new.

After the chloroform extraction, the roots were dried and were reextracted with methanol. This gave 0.1% (of the weight of the dry roots) of a quaternary base in the form of an iodide with mp 249°–251° C (methanol), which was identified by a comparison of the UV and IR spectra and by paper chromatography with an authentic sample of magnoflorine iodide.

REFERENCES

1. Z. F. Ismailov, S. Kh. Maekh, and S. Yu. Yunusov, DAN UzSSR, no. 7, 32, 1959.
2. S. T. Kholodkov, K. L. Lutfullin, and Z. F. Ismailov, DAN UzSSR, no. 4, 39, 1965.
3. S. Yu. Yunusov and M. V. Telezhenetskaya, DAN UzSSR, no. 5, 22, 1963.
4. K. I. Kuchkova and G. V. Lazur'evskii, Izv. AN MoldSSR, ser. khim. i biol. nauk, no. 11, 43, 1965.

22 April 1967

Institute of the Chemistry of Plant
Substances, AN UzSSR