

Chromatography of the combined bases on alumina gave three alkaloids which were identified with known specimens: skimmianine, dictamnine, and dubamine [2]. Chloroform extraction of 600 g of the roots of *D. angustifolius* gave 1.3 g (0.21%) of total alkaloids. Separation of the mixture of bases on alumina yielded dubinidine and haploperine [3] for the first time, in addition to skimmianine, dictamnine, and dubamine.

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8 January 1969

Institute of the Chemistry of Plant Substances, AS UzSSR

UDC 547.944/945

ISOLATION OF VINCAMINE

Sh. Sh. Karabaev, Kh. N. Aripov, and T. T. Shakirov

Khimiya Prirodnikh Soedinenii, Vol. 5, No. 3, p. 196, 1969

The hydrochloride of the alkaloid vincamine [1-3] (vinkametrin) is a new preparation approved by the Pharmaceutical Committee of the Ministry of Public Health of the USSR for use in medicine. We have investigated the epigeal part of *Vinca erecta* with the aim of isolating the alkaloid vincamine by ion-exchange absorption.

The air-dry comminuted raw material (10 kg) was placed in a 40-liter extractor and was covered with 25 l of a 1% solution of sulfuric acid. A total of six decantations of 15 l each was made. The resulting extract was passed through a column of KU-1 cation exchanger in the hydrogen form (800 g) from the bottom upwards at the rate of 4 l/hr. The "breakthrough" of the alkaloids was monitored with Dragendorff's reagent. Then the resin was washed with water and the alkaloids were desorbed with a 1.5% solution of ammonia in 85% ethanol. The alkaloids were eluted at the rate of 0.2-0.3 l/hr. The ethanolic eluate (10 l) was treated with acetic acid to give pH 2 and the ethanol was distilled off in vacuum (720-730 mm Hg). The solution of the alkaloids (1 l) was brought to pH 10 with 25% ammonia and extracted with benzene (6 l). The benzene was evaporated in vacuum (720-730 mm) to 200 ml. On standing, the vincamine crystallized out, yield 2 g.

To obtain vincamine from the epigeal part of *V. erecta* by the adsorption method, more than 100 kg of the plant was treated. It was found that this method is the most suitable for the industrial production of vinkametrine.

It was also found that *V. erecta* collected in the village of Darbaz (Tadzh SSR) is a better raw material for the isolation of vincamine than the plants from the Fergana, Osh, and Tashkent Oblasts. The content of vincamine in the plants from Darbaz amounts to 0.03-0.035% (of the weight of the raw material, i. e., approximately 3-4 times more than in the raw material from the oblasts mentioned).

REFERENCES

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17 January 1969

Institute of the Chemistry of Plant Substances, AS UzSSR