

ISOLATION OF ALKALOIDS FROM THE EPIGEAL PART OF VINCA ERECTA

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More than 30 alkaloids have been isolated from the roots and epigeal part of Vinca erecta Rgl. et Schmalh. [1, 2].

The wide range of pharmacological properties of these alkaloids [3-5] has induced us to study the development of the technology of their isolation.

We attempted to isolate the alkaloids from the epigeal part of Vinca erecta collected in the unripe fruit stage (26-31 May 1965) in the settlement of Khamzaabad in the Fergana Oblast by extraction with dilute aqueous acids, using cation exchange resins. The total content of alkaloids in the raw material was 0.9%.

The alkaloids from the epigeal part were extracted with 1% acetic acid in a battery of four extractors (30 kg each) connected in series.

The solvent was passed continuously through the plant material at the rate of 18 l/hr. When about 100 l of extract had been drawn off from the fourth extractor, the first extractor was disconnected and replaced by an extractor with fresh plant material. In the extraction stage, about 80% of the total alkaloids was isolated.

The extract obtained was filtered and passed through a battery of adsorbers consisting of four columns (diameter 20 cm, depth of layer of resin 40 cm, weight of air-dry resin 4.2 kg) filled with KU-1 cation exchange resin in the H form. When "break-through" appeared after the fourth adsorber (test with silicotungstic acid), the first adsorber was disconnected and a new one was connected to the end of the adsorption battery. Twenty-four adsorbers were used for the extraction of 1700 kg of plant material. The alkaloids were eluted from the resin with a 1.5% solution of ammonia in 85% ethanol. The alcohol was distilled off in vacuum and the residual aqueous solution of the alkaloids was treated with chloroform. The chloroform extract was dried with sodium sulfate and evaporated in vacuum. The viscous residue of total alkaloids was dried in vacuum to the powdered state. Yield 11 kg.

It was established by paper and thin-layer chromatography that the qualitative and quantitative composition of the total alkaloids does not change under these conditions. At the present time, we are studying the composition of this mixture and are developing the technology of the isolation and separation of the main alkaloids.

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