

K. Samikov, R. Shakirov,  
D. U. Abdullaeva, and S. Yu. Yunusov

UDC 547.944/945

The plant *Korolkowia sewertzovii* Rgl., growing in Katrantau, Kirghiz SSR, has not been studied previously. From the epigeal part collected in the flowering stage, by chloroform extraction we isolated 1.68% of total alkaloids, and from the hypogeal part 1.55%. When the combined ether-soluble basis was separated on a column of alumina, in chloroform-methanol eluate it yielded korseveriline (I) [1, 2]. The sparingly soluble fraction of the combined material was passed through a column of silica gel, and the alkaloids were eluted with benzene-ethanol (4:1). The last fractions yielded a base with mp 236-238°C,  $[\alpha]_D -41.1^\circ$  (c 1.011; CH<sub>3</sub>OH), composition C<sub>28</sub>H<sub>43</sub>NO, (II), M<sup>+</sup> 591, which was identical with sevkorine (melting point,  $[\alpha]_D$  IR spectrum) [3]; however, the composition of the base (II) differed from that previously proposed for sevkorine.

The sevkorine was hydrolyzed with 10% hydrochloric acid in the presence of ethanol (1:1), and from the hydrolysis products by chromatography on a column of alumina we isolated D-glucose (paper chromatography) and bases with mp 135-136°C (acetone), C<sub>28</sub>H<sub>43</sub>N (III); 178-180°C (acetone), C<sub>28</sub>H<sub>43</sub>NO (IV); 241-243°C (acetone), and  $[\alpha]_D -43.2^\circ$  (c 0.11, C<sub>2</sub>H<sub>5</sub>OH), C<sub>28</sub>H<sub>47</sub>NO<sub>2</sub> (V). The alkaloid isolated in greatest amount was (V) which we have called sevkoridine. The bases (III) and (IV) proved to be identical with anhydrosevkoridine and sevkoridine [3], respectively. The IR spectrum of (V) has  $\nu_{\max}$  (cm<sup>-1</sup>) 3410, 3135 (OH), 2800 (N-CH<sub>3</sub>), 1670 (C=C). With digitonin, sevkoridine gives a digitonide, which shows the presence of a 3 $\beta$ -OH group in it [4]. In the mass spectrum of (V) there are the main peaks of ions with m/e 112 (100%), 125, 138, 149, 164, 178, 358, 400 (M - 29)<sup>+</sup>, 411 (M - 15), and 429 (M<sup>+</sup>) which are characteristic for typical steroid alkaloids of the edpetilidine series [5, 6]. The NMR spectrum of (V) showed singlets at (ppm) 0.98 (3H, 19-CH<sub>3</sub>), 0.54 (3H, 18-CH<sub>3</sub>), 2.12 (3H, N-CH<sub>3</sub>), a doublet at 0.81 (3H, 21-CH<sub>3</sub>), and a multiplet with its center at 5.35 (2H, olefinic proton) (CDCl<sub>3</sub> + CD<sub>3</sub>OD,  $\delta$  scale).

Sevkoridine forms an O,O'-diacetyl derivative with mp 179-181°C (VI), M<sup>+</sup> 513, in the IR spectrum of which there is no absorption band of an OH group, while the absorption bands of ester carbonyls appear at 1745 and 1250 cm<sup>-1</sup>.

The NMR spectrum of (VI) shows resonance singlets at (ppm) 1.99 and 2.01 (6H, OCOCH<sub>3</sub>), and multiplets at 4.62 (H<sub>(a)</sub>, HC-OCOCH<sub>3</sub>), and 4.89 (H<sub>(e)</sub>, HC-OCOCH<sub>3</sub>) from protons geminal to acetoxy groups [6].

When compound (V) was heated with 5% sulfuric acid, the dehydration of the molecule took place, with the formation of the anhydro compounds (III) and (IV) [3]. Consequently, in (II) the aglycone moiety is (V), and not (IV) as was previously found erroneously.

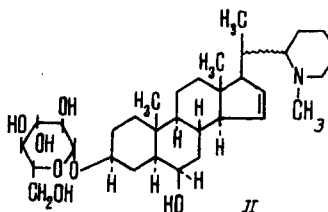
Sevkoridine has the same composition as edpetilidine (VII) [6, 7] and the same R<sub>f</sub> values. Their IR, NMR, and mass spectra are similar, but not identical. The difference in melting points for (V) and (VII) is 28°C, and their specific rotations differ in sign.

A comparative study of the chemical shifts of the protons from 19-CH<sub>3</sub> and 18-CH<sub>3</sub> in the NMR spectra of (V) and (VI) with those of (VII) and of diacetyledpetilidine [6] and also the passage from (V) to (IV) have shown that (V) and (VII) have the same heterocyclic skeleton and linkage of rings A, B, C, and D. A double bond is present between C<sub>15</sub> and C<sub>16</sub>, and there

Institute of the Chemistry of Plant Substances, Academy of Sciences of Uzbek SSR, Tashkent. Translated from *Khimiya Prirodnikh Soedinenii*, No. 2, pp. 269-270, March-April, 1976. Original article submitted July 1, 1975.

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are  $\beta$ -oriented hydroxy groups at C<sub>3</sub> and C<sub>6</sub>. However, in the NMR spectrum of (V) [0.98 ppm (19-CH<sub>3</sub>) 0.57 ppm (18-CH<sub>3</sub>), 0.81 ppm (21-CH<sub>3</sub>) (in CDCl<sub>3</sub> + CD<sub>3</sub>OD)], the signal from the 18-CH<sub>3</sub> proton is shifted upfield by 3 Hz as compared with that of (VII).



The facts given show that (V) is a diastereoisomer of (VII) at the C<sub>20</sub> or C<sub>22</sub> asymmetric center, the configurations of these centers having been determined for neither of these alkaloids. In the molecule of (II), according to biogenetic considerations, the D-glucose residue is attached at carbon atom 3 [8]. The results of a determination of molecular rotation differences between (II) and (V) according to Klyne's rule [9] have shown that in the (II) molecule the D-glucose is attached to the (V) by a  $\beta$ -glycosidic bond.

On the basis of what has been said, it may be concluded that sevkorine has the structure and partial configuration of 3 $\beta$ -O-D-glucopyranosylsevkoridine (II).

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#### AN INVESTIGATION OF THE ALKALOIDS OF *Reseda luteola*

M. M. Tadzhibaev, K. L. Lutfullin,  
V. M. Malikov, and S. Yu. Yunusov

UDC 547.94:547.78

Ten species of plants of the genus *Reseda* grow on the territory of the USSR [1], and none of them have been investigated for their alkaloid content [2]. The present paper gives preliminary information on a study of the alkaloids of *R. luteola*. The plant was collected in the flowering period in the Samarkand oblast by U. Rakhmankulov. The comminuted raw material (17 kg) was extracted with a 1% solution of sulfuric acid. The extract was passed through KU-1 and KU-2 cation-exchange resins. The alkaloids were desorbed with a 1% ethanolic solution of ammonia. The ammoniacal ethanolic solution was concentrated under vacuum, and the alkaloids were extracted successively with petroleum ether, diethyl ether, and chloroform. This gave 55.64 g of total alkaloids. By chromatographing the combined ether-soluble alkaloids in a column of silica gel (1:20) we isolated two new bases, which we have called *resedine* (5.5 g) and *resedinine* (3.5 g).

Institute of the Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR, Tashkent. M. I. Kalinin Andizhan Medical Institute. Translated from Khimiya Prirodnikh Soedinenii, No. 2, pp. 270-271, March-April, 1976. Original article submitted September 23, 1975.

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