LACTONES OF *Artemisia annua*

Sh. Z. Kasymov, A. Ovezdurdyev,
M. I. Yusupov, I. D. Sham'yanov, and
V. M. Malikov

UDC 547.314

The detection of the highly effective antimalarial sesquiterpene lactone atemisinin with an original action mechanism in sweet wormwood *Artemisia annua*, L., family Compositae, has aroused enormous interest and at the present time is the object of study by many workers [1-3].

In view of the wide distribution of *A. annua* in the USSR, we have determined the presence of artemisinin in the natural raw material. We investigated the epigeal part of the plant collected in various regions of the Republics of Central Asia and Kazakhstan in the period of flowering and fruit-bearing.

Artemisin was isolated by the method described by Klayman et al. [2] with some modifications in the chromatographic separation. A purified extract from 500 g of the epigeal part of *A. annua* was deposited on a column of silica gel in a ratio of 1:30 and was eluted with petroleum ether–ethyl acetate (19:1). Fractionation was begun from the moment of elimination of the essential oil and was completed when a subsance with mp 152°C, identified as arteannuin B, appeared.

A total of 30 fractions (300 ml each) was collected. Fractions 14-20 deposited acicular crystals with mp 153-154°C, composition $C_{15}H_{22}O_5$, $[\alpha]_D^{25}$ +64.5° (c 0.31; chl.), M^+ 283 (M^+ +1), the physicochemical constants and spectral characteristics of which were identical with those of artemisin (I).

The antimalarial activity of the artemisin that we had isolated was determined in the E. I. Martinovskii Institute of Parasitology and Tropical Medicine of the USSR Ministry of Health [4].

The amount of artemisinin in the samples studied range from 0.01 to 0.05% (on the dry weight).

Thus, *A. annua* in the region investigated contains artemisinin and in view of the large reserves of raw material available it may serve as a source for its preparation.

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Institute of the Chemistry of Plant Substances of the Uzbek Academy of Sciences, Tashkent, Translated from Khimiya Prirodnykh Soedinenii, No. 5, p. 636, September-October, 1986. Original article submitted May 11, 1986.

0009-3130/86/2205-0599$12.50