The fourth substance had the composition $C_{17}H_{24}O_5$, mp 179°C, $[\alpha]_D^{20}$ +45.3° (c 1.0; CH_3OH), M^+ 308. The spectral characteristics were close to those of the sesquiterpene lactone cumambrin A. IR spectrum, ν_{max}^{KBr}, cm^{-1}: 3490, 1780, 1740, 1260. PMR spectrum (δ scale, C_5D_5N, ppm): 1.17 (s, CH_3-C_{10}); 1.21 (d, J = 7 Hz, CH_3-C_{11}); 1.86 (s, CH_3-C_4); 4.06 (t, ^3J 10 Hz each, H-6); 5.12-5.30 (m, H-3, H-8); 5.80 (br.s, $OH-C_{10}$). The PMR spectrum differed from that of cumambrin A only by the absence of the signals of an oxycyclic methylene group. By reducing cumambrin A with sodium tetrahydroborate we obtained dihydrocymambrin A [4], which proved to be identical with our substance. This is the first time that dihydrocumambrin A has been isolated from a plant.

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NEW GUAIANOLIDES FROM *Artemisia absinthium*

Sh. Z. Kasamov, M. D. Abdullaev,
M. I. Yusunov, G. P. Sidyakin,
and M. R. Yagudaev

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From the epigeal part of *Artemisia absinthium* L. collected in the Tashkent province, by extraction with chloroform and separation of the purified extract on silica gel, we have isolated two new guaianolides: (I) — $C_{15}H_{22}O_4$, M^+ 266, mp 203-205°, λ_{max}^{KBr}, cm^{-1}: 3400-3470 (OH), 1750 (C=O of a γ-lactone); and (II) — $C_{15}H_{20}O_4$, M^+ 264, mp 205-207°, λ_{max}^{KBr}, cm^{-1}: 3420 (OH), 1780 (C=O of a γ-lactone).

In the PMR spectrum of (I) ($CDCl_3$, 0 — HMDS), the resonance signals were characterized by the following CS values (δ, ppm): 1.21 (3 H, d, ^3J = 6.8 Hz, $\underline{CH_3}-C-OH$); 1.31 (3 H, c, $\underline{CH_3}-C-OH$); 1.89 (3 H, br.s, $CH_3-C=C$); 2.68 (1 H, br.s, ^2J = 14.5 Hz, H-2); 3.23 (1 H, br.s, ^3J = 11.1 Hz, H-5); 4.18 (1 H, q, ^3J = 11.1 and 9.7 Hz, H-6); 5.43 (1 H, br.s, $\underline{H}-C=CH_3$).

Using the double proton-proton resonance procedure, we found that the broadened doublet at 2.68 ppm belonged to the proton of a methylene group which experienced spin-spin coupling (SSC) with the proton geminal to it having ^2J = 14.5 Hz and interacted similarly only with an olefinic proton (5.43 ppm) having ^3J = 2 Hz, which is characteristic for a guaianolide with a double bond in the cyclopentane ring [1-3].

We also made an assignment of the broadened doublet at 3.23 ppm to H-5 and of the multiplet at 2.27 ppm to H-7, which interacted trans-diaxially with the lactone proton with ^3J = 11.1 and 9.7 Hz, respectively. Consequently, H-5 interacted vicinally only with H-6. Furthermore, we detected the existence of a long-range SSC between the protons of a methyl group at a double bond and H-2, H-3, and H-5, which explained the broadened signals at 2.68, 5.43, 3.23, and 1.89 ppm. The magnitude of the SSCC between H-7 and H-11 measured with suppression of the SSCC of the $C\underline{H}(11)-C\underline{H}_3$ protons was 11 Hz.

It followed from all that had been said that compound (I) had a guaiane structure with a double bond at C-3—C-4, a tertiary group at C-1 with the formation of a CH_3-OH group at C-10 and the trans-linkage of the lactone ring at C-6 and C-7. The value of ^3J = 11 Hz between C-7 and C-11 showed the α-orientation of the second methyl group at C-11.

Thus, (I) has the structure of 1,10-dihydroxy-5,7α(H)-6,11β(H)-guai-3-em-6,12-olide and was identical with arlatin [4].

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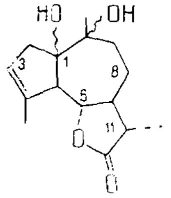
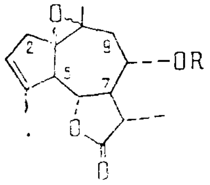
The PMR spectrum of (II) (C_5D_5N, 0 — TMS) was characterized by the following signals (ppm): 1.27 (3 H, s, $CH_3-\overset{O}{\widehat{C-C}}$); 1.66 (3 H, d, ^3J = 6.8 Hz, CH_3-CH); 2.02 (3 H, br.s, $CH_3-C{=}C$); 4.1 (1 H, m, $C\underline{H}OH$); 4.20 (1 H, t, Σ^3J = 21 Hz, H-6); 5.45 (1 H, br.s., $\underline{H}-C{=}C-CH_3$); and 6.30 ppm (1 H, d, ^3J = 6 Hz, $CH-O\underline{H}$).

The acetylation of (II) with acetic anhydride in pyridine gave a monoacetyl derivative (III) with mp 146-148°C. In the PMR spectrum of (III) ($CDCl_3$, 0 — TMS) characteristic signals were located at (ppm):1.27 (3 H, d, ^3J = 6.7 Hz, $C\underline{H}_3-CH$); 1.36 (3 H, s, $CH_3-\overset{O}{\widehat{C-C}}$); 1.92 (3 H, br.s, $CH_3-C{=}C$); 2.08 (3 H, s, OAc); 4.11 (1 H, t, Σ^3J = 20 Hz, H-6); 5.20 (1 H, sx, ^3J = 10, 10, and 4 Hz, $C\underline{H}-OAc$, H-8); and 5.53 (1 H, br.s, $\underline{H}-C{=}C-CH_3$, H-3). These characteristics of compound (III) correspond to those of globicin [5, 6].

On the basis of these facts was established that the second new guaianolide (II) corresponded to the structure of deacetylglobicin.





II. R = H; III. R = $COCH_3$

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ARLATIN — A NEW SESQUITERPENE LACTONE FROM *Artemisia latifolia*

S. M. Adekenov, G. M. Kadirberlina,
A. D. Kagarlitskii, M. N. Mukhametzhanov,*
A. A. Fomichev, and N. I. Golovtsov

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We have previously [1] found that the sum of the substances from *Artemisia latifolia* Lbd. inhibits the germination of the seeds of some plants to the extent of 78%. In order to establish the inhibiting principle we have investigated the individual components from this species of wormwood.

By extraction with acetone and chromatography of the combined substances on a column of type KSK silica gel (1:20) with elution by benzene—ether (4:1 and 1:1) and by ether we have isolated three crystalline substances from the flower heads and leaves of *A. latifolia* collected in the mass flowering phase in the gorges of the Abraly mountains, Semipalatinsk province, Kazakh SSR.

Substance (I) — $C_9H_6O_3$, mp 224-225°C (ethanol). Its IR spectrum has adsorption bands at (cm^{-1}) 3500 (OH groups), 3005, 2965, 2935, 1725 (C=O), 1620, 1590, 1515, 1465, 1420, 1325 1165, 1130, 1075, 1010, 970, 920, 850. On the basis of its physicochemical constants and

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*Deceased

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