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NEW COMPONENTS OF *Artemisia taurica*

A. G. Safarova and S. V. Serkerov

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The isolation and identification of sesquiterpene lactones from the epigeal part of a species new for Azerbaidzhan — *Artemisia taurica* Willd. — has been reported previously [1]. On analyzing the structural formulas of the sesquiterpene lactones isolated from *A. taurica* — taurin, artemin, and tauremisin — from the point of view of their biosynthesis, we came to the conclusion that in the mother solutions obtained in the crystallization of taurin, artemisin, and tauremisin it is possible to detect intermediate components of the biosynthesis of these sesquiterpene lactones. Chromatic investigations on Silufol UV-254 plates of both the mother solutions and individual fractions obtained in the column chromatography of the total lactones from *A. taurica* gathered in the Kusarskii region of the Azerbaidzhan Republic showed that in addition to the spots corresponding to taurin, artemin, and tauremisin, there were several spots probably belonging to other components of the biosynthetic process.

By using preparative chromatographic separation on plates, we have isolated four minor compounds belonging, according to their IR spectra, to the group of sesquiterpene lactones.

Compound (1) — $C_{15}H_{18}O_3$, mp 137—138°C. The IR spectrum contained the bands of the CO group of a γ-lactone ring (1785 cm^{-1}), of cyclohexenone (1670 cm^{-1}), and of conjugated double bonds (1635 and 1590 cm^{-1}).

Compound (2) $C_{15}H_{20}O_4$, mp 168-170°C (from hexane–ether). The IR spectrum contained the absorption bands of the CO group of a γ-lactone (1790 cm^{-1}) and of a ketone group in a six-membered ring (1725 cm^{-1}).

Compound (3) — $C_{15}H_{22}O_3$, mp 173-175°C (from ethanol). The IR spectrum had bands at 3500 cm^{-1} (OH group), 1758 cm^{-1} (CO of a γ-lactone ring), and 1668 cm^{-1} (double bond). The oxidation of **(3)** with chromic anhydride in acetone solution led to a ketolactone ($C_{15}H_{20}O_3$, mp 118-119°C; ν_{max} 1785 and 1717 cm^{-1}) identical with taurin.

Compound (4) — $C_{15}H_{22}O_4$, mp 129-130°C (from ether–hexane). In the region of characteristic frequencies, the IR spectrum of the substance showed the absorption bands of a γ-lactone ring (1760 cm^{-1}) and of a hydroxy group (3480 cm^{-1}). The oxidation of compound **(4)** with chromic anhydride in acetone solution gave a compound with the composition $C_{15}H_{20}O_4$, mp 168-170°C, identical with compound **(2)** according to a comparison of IR spectra.

From a comparison of the compositions, melting points, and IR spectra of sesquiterpene lactones **(1-4)** with those of anhydrotauremisin [2], the product of the oxidation of shonachalin B (dehydroshonachalin B) [3], dihydrotaurin (artesin [4]) [5, 6], and shonachalin B [3], they were identified as anhydrotauremisin, dehydroshonachalin B, dihydrotaurin, and shonachalin B, respectively. This is the first time that compounds **(1-4)** have been isolated from *A. taurica* Willd.

It is interesting to note that the qualitative composition of the sesquiterpene lactones of *A. taurica* Willd. is close to that of *A. maritima gallica* [7].

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