

THE ISOLATION OF MIBULACTONE FROM ARTEMISIA TAURICA WILLD.

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The isolation from Artemisia taurica Willd. (Tauric wormwood) of a sesquiterpene lactone $C_{15}H_{20}O_4$, called tauremisin, has been reported previously [1, 2].

The mother liquor after the separation of tauremisin has yielded a second sesquiterpene lactone with the composition $C_{15}H_{22}O_4$, mp 229-231° (from benzene), $[\alpha]_D^{20} + 166^\circ$ (c 1.2; alcohol); IR spectrum: λ_{max} 1764 cm^{-1} (γ -lactone), 3480 cm^{-1} (OH group).

The presence of a lactone ring is also confirmed by the solubility of the substance in alkalis on heating. The substance isolated is readily acetylated, forming an acetyl derivative with mp 220-222° (from alcohol). The IR spectrum of the latter exhibits the bands of a γ -lactone (1781 cm^{-1}), an O-acetyl group (1741 cm^{-1}), and an OH group (3456 cm^{-1}).

Comparison of the results obtained with published data [3, 4] shows the identity of the lactone that we have isolated with mibulactone — a sesquiterpene lactone from Artemisia monogyna W. et K.

A mixture of the substance isolated with a sample of mibulactone gave no depression of the melting point; the IR spectra of the lactones and of their acetyl derivatives were identical.

Thus, the leaves and flower calathides of Tauric wormwood contain mibulactone as well as tauremisin.

Experimental

Isolation of mibulactone. 20 g of resin after the isolation of tauremisin was chromatographed on 400 g of Al_2O_3 of activity IV (Table).

Fraction	Solvent	Volume of the solution, ml	Yield, g	Composition
I	Benzene	250	7.0	Non-crystallizing resin
II	Benzene	250	4.1	Tauremisin
III	Benzene	250	0.9	Crystals with mp 216-221°
IV-VI	Benzene	750	Traces	The same
VII	Benzene-alcohol (9:1)	250	0.8	Non-crystallizing resin
VIII	Benzene-alcohol (1:1)	250	Traces	The same

The crystalline substance from the IIIrd fraction was recrystallized from benzene, mp 229-231°

Found %: C 67.80, 67.47; H 8.59, 8.34. Calculated % for $C_{15}H_{22}O_4$: C 67.66; H 8.27.

Acetylmibulactone. A mixture of 0.4 g of the lactone isolated, 1.5 ml of acetic anhydride, and 3 ml of pyridine was heated in the water bath for 1 hour, and diluted with water after cooling; the crystals which deposited were recrystallized from alcohol: mp 220-222°.

REFERENCES

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