

CONSTITUENTS OF *MOCHINEA POLYMORPHA*

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As part of our continuing study of the genus *Mochinea* (Compositae) (1, 2), we are now reporting the isolation and identification of the sesquiterpene lactone dehydrocostus lactone (3) and a previously unknown, naturally occurring pentacyclic triterpene, bauerenyl acetate (1). This phyto-constituent was identical with bauerenol by comparison of the physical and chemical properties of its alkaline hydrolysis product. Subsequent Jones oxidation of our hydrolysis product furnished a ketone identical with bauerenone (4-6).

The cmr chemical shifts of compound 1 were assigned by comparison with models and on the basis of known substituent effects (7-11).

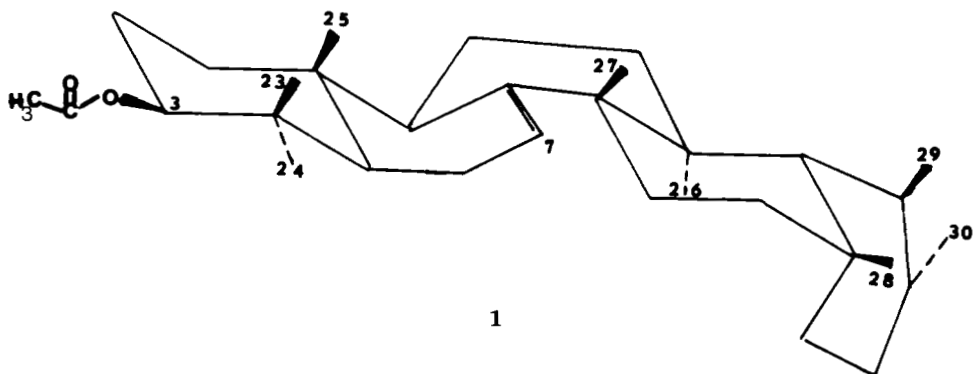
Previously unreported cmr data of 1 are described below.

This was characterized as dehydrocostus lactone (3).

Bauerenyl acetate.—Hexane extraction of the bark (500 g) furnished a precipitate (150 g), which after treatment with dry Et₂O and successive recrystallizations in CHCl₃-hexane (2:8), furnished a crystalline material (0.120 g), mp 290-292°, λ max (EtOH)=211 nm (ε=500);

$$[\alpha]_{\lambda}^{24^{\circ}} = \frac{589 \quad 578 \quad 546 \quad 436 \quad 365}{-1.1 \quad -1.3 \quad -1.1 \quad -2.3 \quad -4.2^{\circ}} \text{ nm (C=1.01)}$$

ν max (KBr) 2857, 1730 (C=O, OAc) and 1235 cm⁻²; pmr (400 MHz, CDCl₃, TMS int. st.); δ 5.41 (d, H-7; J=2 Hz); 4.52 (dd, H-3, J=2; 2 Hz); 2.04 (s, -OCOCH₃); 1.06 (d, C-29 methyl, J=4 Hz) (12); 1.04 (s, C-27 methyl); 1.00 (s, C-26, methyl); 0.96 (s, C-24 methyl); 0.94 (s, C-23 methyl); 0.91 (d, C-30 methyl, J=2 Hz) (13); 0.85 (s, C-28 methyl) and 0.78 (s, C-25 methyl); ms showed peaks at m/z M⁺ 468 (25); 453 [M⁺-CH₃] (8); 392 (13); 288 (90); 228 [288-CH₃COOH] (68); 57 (88) and 43 (100%); cmr (63 MHz, CDCl₃, TMS standard, using PRFT and spin echo technique) (14, 15) ppm, C₁ 37.9,



EXPERIMENTAL

PLANT MATERIAL.—The trunk and bark of *Mochinea polymorpha* (Less.) DC. (3.0 kg) was collected in Campinas, São Paulo, Brazil, December 1979.

EXTRACTION AND ISOLATION.—The dry, powdered, plant material (trunk, 1.0 kg) was extracted with hexane to yield a yellow, gummy solid (8.0 g). The crude extract (6.0 g) was chromatographed on Si gel (120 g), and the CHCl₃ eluate gave a solid that partly crystallized.

C₂ 24.1,¹ C₃ 81.3, C₄ 36.8, C₅ 50.8, C₆ 24.3,¹ C₇ 116.5, C₈ 145.6, C₉ 55.3, C₁₀ 35.3, C₁₁ 29.4, C₁₂ 29.7, C₁₃ 32.2,¹ C₁₄ 41.4, C₁₅ 17.0, C₁₆ 32.7, C₁₇ 31.7,¹ C₁₈ 48.7, C₁₉ 35.6, C₂₀ 38.0, C₂₁ 29.1, C₂₂ 37.9, C₂₃ 15.5, C₂₄ 27.6, C₂₅ 13.1, C₂₆ 22.7,¹ C₂₇ 22.5,¹ C₂₈ 25.7, C₂₉ 23.7, C₃₀ 21.1, OCOCH₃-170.7 and OCOCH₃, 21.1. Compound 1 (30 mg) was hydrolyzed at 85°, for 6 h, in EtOH-KOH 5% solution and worked up in the usual way to give bauerenol (20 mg, mp 206-208°) (4).

¹May be interchanged.

Bauerenone.—Bauerenol (20 mg) was oxidized with Jones reagent at room temperature for 15 min to yield a ketone. Recrystallization of the ketone (12 mg) from CHCl_3 gave a product which showed ir and mass spectra identical with those described in the literature for bauerenone (4-6).

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