SHORT COMMUNICATIONS

Synthesis of Cinnamolide

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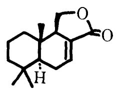
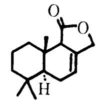
Cinnamolide (I), a driman type sesquiterpene lactone isolated from *Cinnamosma fragrans*,1) was reported to exhibit antifungal activity, which prompted us to synthesize I from drimenin II.

Reduction of II with lithium aluminum hydride afforded the corresponding diol (III), mp 75.5—77°C, which was subjected to oxidation with active manganese dioxide to give a mixture. Addition of *n*-hexane to the mixture afforded the crystalline (IVa), mp 95—97°C, IR (KBr) spectrum of IVa shows a strong band at 3300 cm^{-1} but no carbonyl absorption. In carbon tetrachloride IVa becomes an equilibrium mixture with IVb, the IR and NMR spectra of which show the presence of conjugated formyl group (1675 and 1628 cm^{-1} in IR (CCl_4) and 9.5 ppm in NMR).

The mixture of IVa and IVb was oxidized with chromic anhydride-pyridine complex in dichloromethane 2 to obtain a crystalline lactone (I), mp 88°C. Direct comparison of its IR and NMR spectra with those of natural cinnamolide, as well as conversion of I to diol (III) with lithium aluminum hydride indicate that the γ-lactone, thus obtained, is identical with (±)-cinnamolide.3)



(I)



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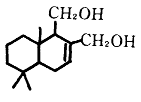

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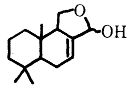
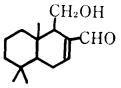


(IVa)



(IVb)

Since we have already carried out the synthesis of (±)-drimenin II based on biogenetic consideration,4) the conversion of II to I demonstrates the synthesis of (±)-cinnamolide.

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2) W. W. Hess, and F. J. Frank, *Tetrahderon Lett.*, **1968**, 3363.

3) The authors thank Prof. G. Jommi for his generous gift of natural cinnamolide.

4) Y. Kitahara, T. Kato, T. Suzuki, S. Kanno and T. Tanemura, *Chem. Commun.* **1969**, 342.