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LACOUMARIN FROM *LAWSONIA INERMIS*

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Key Word Index—*Lawsonia inermis* (*Syn*: *L. alba*); Lythraceae; coumarins; 5-alloxy-7-hydroxycoumarin.

Plant. Lawsonia inermis, whole plant. *Uses.* [1]. *Previous work.* [2–8].

Present work. This communication decribes the isolation and structural elucidation of a new coumarin, named lacoumarin. The air-dried whole plant (2 kg) was extracted exhaustively with hot EtOH and the solvent-free residue chromatographed on a Si gel column. Elution with petrol gave lawsone [9], and with petrol–C_6H_6 (1:3) gave laxanthones I and II [2]. The fraction obtained from the petrol–C_6H_6 (9:1) eluate, was purified by preparative-TLC using C_6H_6, and named lacoumarin (80 mg), mp 162–164°. It analysed for $C_{12}H_{10}O_4$ (M^+ 218), gave a green colour with EtOH–$FeCl_3$, blue UV fluorescence and negative flavonoid colour reactions. ν_{max}^{KBr} 3250 (–OH), 1720, 1640 (conj. C=O) cm^{-1}; λ_{max}^{MeOH} 250, 330 nm. *MS.* 218 (M^+ 100%), 203 (57%), 190 (100%), 178 (50%), 175 (76%), 163 (100%), 149 (62%). On acetylation with $(Ac)_2O$ and Py it gave an acetate which crystallised from C_6H_6–petrol, mp 136–7°. PMR of the acetate ($\delta CDCl_3$, TMS as internal standard), 2.30 (3H, *s*, –O–CO–Me), 4.65 (2H, *d*, –O–CH_2–), 5.22–5.65 (2H, *m*, >C=CH_2), 5.80–6.12 (1H, *m*, >C=CH–C<), 6.32 (1H, *d*, *J* 9 Hz, H–C_3), 6.55 and 6.75 (2H, *dd*, *J* 2 Hz, H–C_6 and C_8), 8.15 (1H, *d*, *J* 9 Hz, H–C_4). IR and UV spectra indicated the possibility of the compound being a coumarin with a free OH group. Signals at δ6.32 (*d*, *J* 9 Hz) and 8.15 (*d*, *J* 9 Hz) in the PMR spectrum of the acetate showed the presence of unsubstituted C-3 and C-4 in the coumarin ring. The presence of an –OCOMe group in lacoumarin acetate was shown by the singlet at δ2.30 whereas the presence of an allyloxy group was supported by the signals at δ4.65 (2-H, –OCH_2), 5.22–5.65 (2H, *m*, >C=CH_2), 5.80–6.12 (1H, *m*, –CH=C<). The aromatic protons at δ6.55 and 6.75 were doublets (*J* 2 Hz) which could be attributed to *m*-coupling between the C-6 and C-8 protons. Hence, the compound could be either 5-allyloxy-7-acetoxycoumarin or 5-acetoxy-7-allyloxycoumarin. However, it was found to be indentical (mp, mmp, co-TLC and superimposable IR) with 5-allyloxy 7-acetoxycoumarin obtained by the selective allylation [10] of 5,7-diacetoxycoumarin, Lacoumarin itself is 5-allyloxy-7-hydroxycoumarin and this was confirmed by comparison with a synthetic sample [10] (mp, mmp, co-TLC and superimposable IR).

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WIKSTROMOL, A NEW LIGNAN FROM *WIKSTROEMIA VIRIDIFLORA**

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Key Word Index—*Wikstroemia viridiflora*; Thymelaeaceae; lignan; arctigenin; matairesinol; pinoresinol; wikstromol.

Wikstroemia viridiflora (Meissn.) Hook. f. (= *W. indica* C. A. Mey) is reported to be effective in various ailments [1]. Chinese workers have reported diuretic activity in the bark and root cortex from which a flavonoid glycoside, wikstromin, was isolated [2]. Recently the crude plant extract was shown to exhibit potent anticancer activity[3].

The EtOH extractive of the plant was macerated successively with hexane and EtOAc and the anticancer activity was found to reside mainly in the EtOAc fraction. This fraction on gross separation on Hyflosupercel gave

*CDRI Communication No. 2004. *Wikstroemia viridiflora* was collected and identified by Mr. B. N. Mehrotra from Gindi Park, Madras, and a voucher specimen No. 7018, has been preserved in the Herbarium of the Institute.