

NOTE

A New Bis-Coumarin from the Seeds of *Colvillea racemosa*

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The new bis-coumarin, 6-methoxy-7-hydroxy bis-coumarin (**1**) was isolated from the seeds of *Colvillea racemosa*.

Colvillea racemosa (Leguminosae) is native of Madagascar. The present paper deals with the isolation and identification of 6-methoxy-7-hydroxy bis-coumarin (**1**) from the seeds of this plant.

Colvillea racemosa seeds are procured from "Shidh Seeds Sales Corporation", Dehradun (U.P.), India, in July 1998 and authenticated by an expert taxonomist of the Department of Botany, Dr. H.S. Gour University, Sagar (MP), India. Voucher specimen (18A) is deposited in the Department of Chemistry, Dr. H.S. Gour University, Sagar (MP), India. Interest in (**1**) has been rekindled recently because of the *in-vivo* antineoplastic activity shown against the Ehrlich ascites carcinoma in mice^{1, 2}.

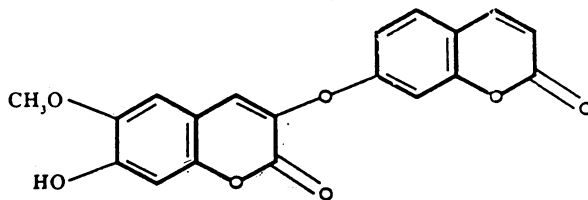


Fig. 1

Extraction and fractionation: Extraction of the air dried and milled seeds (2.7 kg) of *Colvillea racemosa* with petroleum ether (b.p. 60–80°C) afforded a petroleum ether extract (14.5 g). The remaining mass was extracted with chloroform and evaporation *in vacuo* afforded a chloroform extract (16 g). Partition between petroleum ether and methanol : water (9 : 1) yielded a petroleum ether soluble fraction (3.5 g) and further extraction with chloroform gave a chloroform soluble fraction (5 g) and a chloroform insoluble fraction (1.45 g). Only the chloroform soluble fraction was further examined.

Chromatographic separation of the chloroform soluble fraction

The chloroform soluble fraction (5 g) was chromatographed on silicagel (75 g)

and eluted with chloroform and chloroform-methanol mixtures of increasing polarity. About 30 fractions of 100 mL each were collected. Fraction 4, eluted with chloroform-1% methanol, yielded the title product (**1**) as solid (0.145 g), which crystallised from chloroform/methanol, m.p. 234–236°C.

IR, ν_{\max} (KBr) (cm^{-1}): 3400, 1730, 1620, 1590, 1510 and 1280.

UV, λ_{\max} (MeOH): 228 ($\log \epsilon$ 4.21), 260 (3.60) and 340 nm (4.20).

$^1\text{H-NMR}$, (DMSO- d_6 , 60 MHz) TMS Internal standard at $\delta = 0$: 3.82 (3H, s, AroCH₃), 6.40 (1H, d, $J = 9.8$ Hz, 3¹-H), 7.15 (1H, d, $J = 8.7$ Hz, 6¹-H), 7.30 (1H, d, $J = 8.7$ Hz, 5¹-H), 6.95, 7.70, 7.90 and 7.98 (1H each, s, 4xAr-H) and 8.10 (1H, d, $J = 9.8$ Hz, 4¹-H)

Mass spectra, 70 eV E.I.

M/s 352 (M^+ , 100%), 324 (5), 309 (12), 294 (4), 270 (5), 191 (3), 179 (52), 164 (14), 145 (10), 120 (4), 117 (12), 89 (58), 68 (23), 62 (37) and 50 (12).

Compound (**1**), m.f. C₁₉H₁₂O₇, m.p. 234–236°C, [M^+] 352, isolated from the chloroform extracts of the seeds, is a bis-coumarin derivative found rarely in the Leguminosae³⁻⁵ family. The isolated product (**1**) from the seeds of *Colvillea racemosa* is structurally confirmed by $^1\text{H NMR}$ and mass spectra, infrared and UV spectral studies⁶.

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