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1, 5, 8-Trihydroxy-3-methoxyxanthone from *Swertia corymbosa* (Griseb.) Wight ex.C.B.Clarke

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Abstract
1,5,8-Trihydroxy-3-methoxyxanthone was isolated from *Swertia corymbosa* (Griseb.) Wight ex.C.B.Clarke

Key-Words: *Swertia corymbosa*, 1,5,8-Trihydroxy-3-methoxyxanthone

Introduction
Swertia corymbosa (Griseb.) Wight ex.C.B.Clarke(Gentianaceae) is known as Poovainagai in Tamil[1] is used in the traditional systems of medicine as an antidote for poisons, diarrhoea, fever and as a stomach wash in cattle[2]. Friedelin, epi-friedelinol, mangiferin, α-amyrin, lupeol, oleanolic acid, ursolic acid [3] were reported from the n-hexane and chloroform extacts of the plant. Further work on the methanol extract yielded yet another xanthone 1, 5, 8-trihydroxy-3-methoxyxanthone. This is the first report of the compound from this plant.

Material and Methods
Collection of plant material
The plant material was collected from Thiruneveli District, Tamil Nadu in the month of January and identified by Dr M.B. Vishwanathan Dept. of botany, of Sri Paramakalyani centre for environmental sciences, Manonmaniam Sundaranar University of Tamilnadu. A voucher specimen (MBV and NR 6759) has been deposited in the herbarium of the centre.

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Extraction and isolation
The shade dried plant material (**1**kg) was coarsely powdered and extracted successively with n-hexane, chloroform and methanol. The extracts were concentrated under vacuum after distilling off the solvent on a water bath. The methanol extract (60g) was suspended in water (1000 ml) and partitioned successively in a separating funnel with diethyl ether (250ml), ethyl acetate (250ml) and n-butanol(100ml). Ethyl acetate soluble fraction after drying over anhydrous sodium sulphate and concentration (1.5g) was column chromatographed over silica gel (acme,100-200 mesh,1:22). Elution of the column with chloroform - ethyl acetate (9:1) afforded a solid which was crystallised from chloroform to get the pure compound as pale yellow amorphous powder. M.p 212 -214˚C. UV λ max (MeOH) nm 210, 239, 268, 328. IR ν_{max} (KBr) hydroxyl (3459 cm-^{1}), chelated carbonyl (1661, 1644 cm-^{1}) and aromatic system at 1608, 1581,1496, 838-650 cm-^{1} .^{1}H NMR δ($CDCl_3$) :11.96,11.87(1H each, br s, 1-OH and 8-OH), 7.30(1H,d, J=9.0Hz,7-H), 6.84(1H,d, J=9.0Hz,6-H), 6.34(1H,d, J=2.3Hz, 2-H), 6.41(1H,d, J=2.3Hz,4-H), 5.38(1H, s, 5-OH), 3.89(3H, s, 3-OCH_3).

Results and Conclusion
The pale yellow compound isolated from the ethyl acetate fraction appeared brown on exposure to iodine vapour, UV 366nm and with vanillin sulphuric acid (m.p. 212 - 214˚) was analyzed for $C_{14}H_{10}O_6$ (M^+ 274). It gave a green colour iron (III) chloride. The UV spectrum of the compound run in MeOH showed λmax 210, 239, 268, 328 nm, suggesting it to be a xanthone. Addition of $AlCl_3$ shifted the bands at 268 and 328 nm to 287 and 362. However, addition of con. HCl did not affect the shifts much. This indicated peri interaction of

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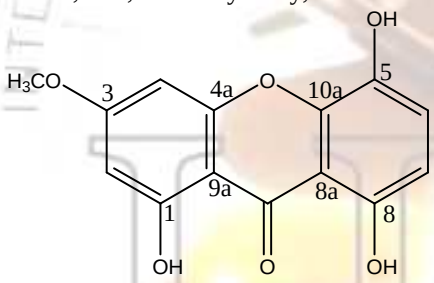
phenolic OH with carbonyl. Neither bathochromic nor hypsochromic shifts were observed in the UV spectrum recorded in the methanolic sodium acetate indicating the absence of free hydroxyl at C-3. Its IR spectrum had bands for the presence of xanthone hydroxyl (3459 cm-^{1}), chelated carbonyl (1661, 1644 cm-^{1}) and aromatic system at 1608, 1581,1496, 838-650 cm-^{1}. In the ^{1}HNMR spectrum two aromatic protons with meta coupling (J=2.3Hz) appeared at δ 6.34(C2 - H) and 6.41(C4 - H). Two ortho coupled aromatic proton appeared at doublet 7.30, 6.84 with J=9.0Hz corresponding to C7- H, C6- H. The methoxy methyl protons appear as singlet at 3.89. The broad singlet at 5.38 indicated the presence of C5- hydroxyl. Two chelated hydroxyls (C1-OH and C8-OH) appeared at 11.96 and 11.87 as broad singlet. The physical and spectroscopic data were comparable with those reported for 1, 5, 8-trihydroxy, 3-methoxy xanthone[4-9]. From the above evidences the compound was identified as 1, 5, 8-trihydroxy, 3-methoxy xanthone.



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