MeCOEt extract. Chrysin-7-rutinoside, yield, 0·4%, m.p. 248–250°, λ_{max} (EtOH) 269, 308 nm, λ_{min} 235 nm, λ_{AlCl_3} 281, 322, 382 nm, no shift with NaOAc in either band, IR (KBr) 3465, 2920, 1658, 1610, 1590, 1495, 1455, 1250, 769, 680, 665 cm^{-1}; R_f—Table 1, acetate, m p 247–250° (EtOH), glycoside sparingly soluble in usual organic solvents, soluble in pyridine On boiling with 10% H_2SO_4 in HOAc for 4 hr, hydrolysed to chrysin (R_f, Table 1, co-chromatography with authentic sample, acetate, m.p 192–194°) and glucose and rhamnose (R_f and co-chromatography) in equal proportions Further, on partial hydrolysis (N HCl, 100°, 5 min), chrysin-7-glucoside (R_f—Table 1) and rhamnose were obtained

EtOAc extract Chrysin-7-rutinoside identified (PC)

Comment This is the first report of chrysin-7-rutinoside; chrysin and its glucuronide are known to occur in *Oroxylum indicum*[2] and *Scutellaria*[3] of the same family

Acknowledgements—We thank Dr T R Govindachari, Director, CIBA Research Centre, Bombay-63 for the spectral data and Prof K. Rangaswami Ayyangar, Annamalai University for the authenticated plant material Our thanks are due to the Principal, J I P.M E R for encouragement

[2] P K BOSE and S N BHATTACHARYA, *J Indian Chem Soc* **15**, 311 (1938)
[3] C A. MARSH, *Biochem J* **59**, 58 (1955)

Key Word Index—Dolichandrone falcata, Bignoniaceae, flavones, chrysin-7-rutinoside

---

Phytochemistry, 1972, Vol 11, pp 439 to 440 Pergamon Press Printed in England

FLAVONOIDS OF THE LEAVES OF *OROXYLUM INDICUM* AND *PAJANELIA LONGIFOLIA*

S. SANKARA SUBRAMANIAN and A. G R NAIR

Department of Chemistry, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry-6, India

(*Received* 5 *August* 1971)

Plant Oroxylum indicum Vent [1] *Uses* Medicinal.[1] *Previous work* Chrysin, baicalein and oroxylin-A from the bark of stem and root,[1] baicalein-7-glucoside from seeds [1]

Present work Fresh leaves extracted with hot 80% alcohol and the aq concentrate fractionated into petrol, ether, EtOAc soluble fractions and the aq. mother liquor

Ether fraction. Baicalein and scutellarein (R_f, colour reactions, co-chromatography with authentic samples).

EtOAc *fraction.* Flavone glycoside—0·1%, yellow needles (MeOH), m.p. 198–200°, λ_{max} (EtOH) 215, 281, 332 nm, (NaOAc) 281, 330 nm and ($AlCl_3$) 292, 349 nm. IR bands at

[1] *Wealth of India, Raw Materials*, Vol VII, pp 107, 211, C S I R , New Delhi (1966)

3380, 2920, 1730, 1660, 1608, 1575, 1495, 1440 sh, 1465, 1400, 1355, 1285 sh, 1245, 1220, 1195, 1160, 1145, 1095, 1065, 1040, 910, 895, 840, 810, 735 and 715 cm^{-1}, NH_3—dull yellow, Fe^{3+}—green colour, hydrolysed when refluxed with 10% H_2SO_4 in HOAc medium for 5 hr to yield baicalein and glucuronic acid in equal amount. The m.p., solubility and λ_{max} of the glycoside were different from those of baicalein-7-glucuronide (245, 279 and 314 nm), though their PC behaviour was similar In analogy with the occurrence of baicalein-6-methyl ether in the bark and 6-glucoside in the seeds of *O indicum*,[1] and on the basis of spectral data,[2] the glycoside was identified as baicalein-6-glucuronide The difference in the UV absorption of the aglycone and glycoside and the absence of the shift with NaOAc as in the case of dinatin[3] (6-methoxyapigenin) and nepetin[4] (6-methoxyluteolin) support our identification

Aqueous mother liquor. Yellow crystalline glucuronides (1 5%) on addition of acetone and keeping in the ice chest; more on addition of dil H_2SO_4 to a concentration of 7% and heating on a water bath for 10 min The mixture fractionated by preparative PC as well as fractional crystallization of the mixture of acetates (EtOAc) Scutellarein-7-glucuronide (scutellarin), m p > 320° (sintering 195°), $[\alpha]_D^{30}$ −138° (0 05, py), λ_{max} (EtOH) 286, 338 nm with practically no shift with NaOAc (Band II) and +27 nm with $AlCl_3$ (Band I), acetyl derivative, m p 205–206°, hydrolysis with 10% H_2SO_4 (HOAc med) and by β-glucuronidase yielded scutellarein and glucuronic acid Confirmed by direct comparison with an authentic sample of scutellarin from *Millingtonia hortensis*[5] Baicalein-7-glucuronide (baicalin), m.p 220–222°, $[\alpha]_D^{28}$ −140°, acetyl derivative, m p 251–252°, baicalein and glucuronic acid by acid and enzymatic hydrolysis

Plant Pajanelia longifolia K Schum[1] (syn. *P rheedii* Wight, *P multijuga* DC) *Uses* Medicinal.[1] *Previous work* Pajanelin and *p*-hydroxycinnamic acid from stem and root bark[6]

Present work Leaves *Ether.* Quercetin and kaempferol. EtOAc Quercetin and kaempferol-3-sophorosides (R_f, products of acid hydrolysis and co-chromatography with authentic samples from *Petunia hybrida*[7]). *Aqueous mother liquor.* Dihydrokaempferol-7-glucoside (R_f).

Acknowledgements—Our thanks are due to Dr T R Govindachari, Director, CIBA Research Centre, Bombay-63 for the spectral data, Dr J Jayaraman, Madurai University, for the kind supply of β-glucuronidase, and the Principal, J I P M E R for encouragement

[2] T J MABRY, K R MARKHAM and M. B THOMAS, *The Systematic Identification of Flavonoids*, Springer-Verlag, New York (1969)
[3] D K BHARADWAJ, S NEELAKANTAN and T R SESHADRI, *Indian J Chem* **4**, 173 (1966)
[4] N R KRISHNASWAMY, T R SESHADRI and P J TAHIR, *Indian J Chem* **8**, 1076 (1970)
[5] S S SUBRAMANIAN, S NAGARAJAN and N SULOCHANA, *Curr Sci* **40**, 194 (1971)
[6] A KAMESWARAMMA and T R SESHADRI, *Proc Indian Acad Sci* **25A**, 43 (1947)
[7] L BIRKOFER and C KAISER, *Z Naturforsch* **176**, 359 (1962)

Key Word Index—Oroxylum indicum, Pajanelia longifolia, Bignoniaceae, flavonoids, scutellarin, baicalein-7-glucuronide, quercetin and kaempferol-3-sophoroside