J. Indian Chem. Soc.,
Vol. 74, August 1997, p. 656

NOTE

Studies on the Flavanones of *Leucaena glauca* Benth.

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Manuscript received 24 November 1995, revised 12 June 1996, accepted 21 June 1996

Leucaena glauca (family : Mimosaceae) is a large shrub with light yellow globose head inflorescences. The leaves are used as fodder for milching cattle. The plant is rich in selenium and used in traditional medicine[1]. Isolation of flavonols like quercetagetin and patuletin from the plant has been reported[2]. With a view to locating further flavanone in *L. glauca*, we undertook investigation of its fresh inflorescences and the results are reported here.

The fresh inflorescences of *L. glauca* (1 kg) (collected from Kanagappapuram, Kanyakumari district, S. India in October) were extracted with boiling ethanol and the extract was concentrated under reduced pressure. The residue from the ethanolic extract was successively fractionated with petroleum ether, peroxide-free Et_2O and EtOAc. The residue from ethereal fraction on crystallisation from MeOH afforded pale cream coloured leaflets (**1**; 50 mg), m.p. 245°. It was identified as hesperetin by m.p., m.m.p., PC and uv data with an authentic sample isolated from *Asclepias curassavica*[3]. The EtOAc fraction was concentrated and the residue on column chromatography over silica gel, on elution with acetone afforded a yellow solid (**2**; 160 mg), m.p. 248°, λ_{max} (MeOH) 283, 326; +NaOMe 242, 286, 318, 356; +$AlCl_3$ 308, 383; +$AlCl_3$–HCl 306, 379; +NaOAc 284, 328; +NaOAc–H_3BO_3 284, 326 nm; ^{1}H nmr δ(270 MHz; DMSO-d_6) 5.43 (1H, d, *J* 2.5 Hz, H-6), 6.14 (1H, d, *J* 2.5 Hz, H-8), 6.96 (3H, s, H-2′, H-5′ and H-6′), 4.99 (1H, q, J_{cis} 5 Hz, J_{trans} 11 Hz, H-2), 2.80 (2H, m, H-3), 3.81 (3H, s, 4′-OCH_3), 9.12 (1H, s, 3′-OH), 12.03 (1H, s, 5-OH), 4.50 (gluc H-1″), 4.65 (rhamn (H-1‴), 0.90 (rhamn-Me); ^{13}C nmr δ(100.61 MHz; DMSO-d_6) 78.4 (C-2), 42.1 (C-3), 197.0 (C-4), 163.1 (C-5), 96.5 (C-6), 165.2 (C-7), 95.7 (C-8), 162.6 (C-9), 103.4 (C-10), 131.0 (C-1′), 114.2 (C-2′), 146.5 (C-3′), 148.1 (C-4′), 112.1 (C-5′), 117.9 (C-6′), 55.8 (C of O-CH_3), 99.6 (C-1″), 73.1 (C-2″), 76.4 (C-3″), 70.8 (C-4″), 75.6 (C-5″), 66.1 (C-6″), 100.7 (C-1‴), 70.4 (C-2‴), 69.7 (C-3‴), 72.2 (C-4‴), 68.4 (C-5‴), 17.9 (C-6‴).

Compound **2** responded to the Gibb's[4], Molisch's and cyanidin[5] tests but did not respond to the Hörhammer-Hansel[6] and Wilson's boric acid[7] tests. The characteristic colour reactions and spectral properties indicated **2** to be a flavanone glycoside. It was hydrolysed (5% H_2SO_4, 100°, 2 h) to hesperetin, glucose and rhamnose. The aglycone and the sugars were indentified by co-chromatography on paper. The site of glycosidation at C-7 was apparent from the absence of a bathochromic shift in band-II of uv-spectrum of the glycoside **2** on addition of NaOAc, whereas the aglycone showed a bathochromic shift of 35 nm. In ^{13}C nmr the downfield signals of C-6 and C-8 and the upfield signal of C-7 confirm the site of glycosidation at C-7[8]. Compound **2** was prone to hydrolysis with pectinase[9] and it gave hesperetin 7-*O*-glucoside on partial hydrolysis with 10% formic acid in cyclohexanol[10]. These facts indicated the biose to be rutinose (α-L-rhamno-(1→6)-β-D-glucose) which was confirmed by the appearance of ^{1}H nmr signal of methyl protons of rhamnose[11] at δ 0.90 and ^{13}C nmr signals of C-6‴ of rhamnose at 17.9 ppm and that of C-6″ of glucose at 66.1 ppm[12]. Compound **2** was thus identified as hesperetin-7-*O*-rutinoside (hesperidin).

Acknowledgement

The authors are thankful to Prof. T. Selvakumar, Head of the Department of Chemistry, Government Arts College, Karur, for facilities and to U.G.C., New Delhi, for financial support.

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