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NOTE

Characterisation of Flavonoids From Seed Coat of *Bauhinia racemosa*

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In the present paper we are reporting the characterization of flavonoids from the seed of *Bauhinia racemosa* by spectral study.

Key words: Flavonoids, Seed coat, *Bauhinia racemosa*

Bauhinia racemosa[1] belongs to the Leguminosae family (sub family, *Caesalpinaceae*), which is known as Kachanal in Hindi. It is found throughout-India. The seed coat of seed is dark coloured. The whole plant has been reported to have medicinal[1, 2] use. We have earlier isolated four flavonoids[3] from the MeOH extract. From the acetone fraction we are reporting three more flavonoids. The seeds were obtained from Pratap nursery and seed store Dehradun and duly identified from the Botany department of the college.

The ethanolic extract was fractionated by acetone on a column of silica gel followed by TLC. TLC chromatography gave many fractions but only three fractions were obtained in reasonable quantity. All the three fractions responded to positive Schinoda test[4] for flavonoidal nature. The fractions were designated as fraction I, II and III. Fraction I also responded to Molisch test[5]. The structure of three flavonoids have been established by spectroscopic technique[6, 7].

Fraction I (62 mg) was identified as 5,4′-dihydroxy flavone 7-O-β-glucoside m.p. 144–146°C, UV λ_{max}; nm (MeOH) 265, 322; (+$AlCl_3$) 276, 298, 345sh, 380; (+HCl + $AlCl_3$) 274, 298, 344sh, 380; (+NaOAc) 260sh, 265, 380; (+H_3BO_3 + NaOAc) 265, 330. ^{1}H NMR (400 MHz, DMSO d_6): δ, 6.85 (1H, s, C-3); 6.42 (1H, s, C-6), 6.80 (1H, s, C-8), 6.92 (2H, d, J = 8.6 Hz, H-3′, 5′) and 7.92 (2H; d, J = 8.6 Hz, H-2′, 6′). ^{13}C NMR (100 MHz, DMSO d_6): δ; 180.8 (C-4), 164.3 (C-2), 161.2 (C-5), 161.0 (C-7), 105.6 (C-10), 102.8 (C-3), 99.0 (C-6) and 94.6 (C-8), 120.6 (C-1′); 128.2 (C-2′, 6′); 116.2 (C-3′, 5′), 160.8 (C-4′); sugar moiety 96.8 (C-1″), 72.4 (C-2″); 71.6 (C-3″); 72.6 (C-4″), 75.4 (C-5″) and 68.2 (C-6″).

Fraction II (45 mg) was identified as 7, 3′-dimethoxy 5,4′-dihydroxy flavanone; yellowish crystal, m.p. 148–149°C. UV λ_{max}; nm (MeOH) 291, 331; (+NaOMe) 290, 365; (+$AlCl_3$) 311, 380, (+HCl + $AlCl_3$) 310, 379; (+NaOAc) 290, 330 and (+NaOAc + H_3BO_3) 292, 328. ^{1}H NMR (200 MHz, $CDCl_3$) δ; 2.75 (1H; d, J = 2.8 Hz, H-3), 3.8 (3H, s, —OCH_3), 3.90 (3H, s, OCH_3), 5.32 (1H, d,

J = 2.8 Hz, H-2) 6.08 (1H, d, J = 2.1 Hz, H-6); 6.12 (1H, d, J = 2.1 Hz; H-8) and 6.86–6.98 (3H, m, H-2′, 5′, 6′). ^{13}C NMR (200 MHz, $CDCl_3$) δ; 198.2 (C-4); 168.4 (C-7), 164.2 (C-5), 162.4 (C-9), 103.2 (C-10), 95.2 (C-6.8),, 80.1 (C-2), 56.3 (OCH_3), 146.6 (C-3′, 4′), 130.2 (C-1′), 120.2 (C-6′) 115.1 (C-5′) and 108.2 (C-2′).

Fraction III (52 mg) was, identified as 7,3′-dimethoxy 3,5,4′-trihydroxy flavonone yellow crystal. m.p. 181–182°C. UV λ_{max}; nm (MeOH) 288, 325 sh, (+NaOMe) 288 358; (+$AlCl_3$) 310, 390; (+HCl + $AlCl_3$) 310, 390; (+NaOAc) 290, 320 and (+NaOAc + H_3BO_3) 290, 325 ^{1}H NMR (200 MHz, DMSO d_6) δ; 3.84 (3H, s, OCH_3); 3.88 (3H, s, OCH_3), 4.72 (1H, d, J = 3.6 Hz, H-3), 4.81 (1H, d, J = 3.6 Hz, 3-OH), 5.10 (1H, d, J = 11.4 Hz, H-2), 6.10 (1H, d, J = 2.7 Hz, H-6, 6.08 (1H, d, J = 2.7 Hz, H-8); 6.88 (1H, d, J = 8.7 Hz, H-5′) 7.1 (1H, d, J = 8.6 Hz, H-6′) and 7.21 (1H, d, J = 2.1 Hz, H-2′). ^{13}C NMR (200 MHz, DMSO d_6) δ; 196.6 (C-4), 168.2 (C-7), 164.2 (C-5), 162.4 (C-9), 103.4 (C-10), 96.4,(C-8), 96.2 (C-6), 44.2 (C-3), 56.3 (OCH_3), 55.6 (OCH_3), 145.2 (C-3′, 4′), 130.6 (C-1′) 121.2 (C-6′) 116.0 (C-5′) and 108.2 (C-2′).

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