

Flavonoids from *Genista involucrata*

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Genista L. (Fabaceae) genus is represented by eleven species in Turkish flora. Among these species *G. involucrata*, *G. aucheri* and *G. burdurensis* are endemic (Gibbs 1970). In the course of our investigations on the Turkish *Genista* species, we previously reported alkaloids from eleven species (Tosun et al 1994), volatile components (Şener et al 1986) and flavonoids (Tosun&Akyüz 1997) from *Genista aucheri*. We now report flavonoids from the aerial parts of *Genista involucrata*. Plant material was collected from Ereğli (Konya, Turkey) in May 1997 during the flowering period. Dried and powdered aerial parts of *G. involucrata* were extracted with methanol in a Soxhlet. The methanol extract was evaporated to dryness under vacuum, and the residue dissolved in H₂O/CH₃OH (90:10). The soluble fraction was successively extracted with petrol and EtOAc. The resultant extract was dried with anhydrous Na₂SO₄ and evaporated under vacuum to give a mixture of flavonoids. The flavonoid mixture was applied to silica gel column, which was eluted with CHCl₃ / CH₃OH / H₂O (65:25:2). The collected fractions were further purified by preparative thin layer chromatography on silica gel plates using the same solvent system. The flavonoids isolated from the aerial parts of *Genista involucrata* were identified using thin-layer chromatography, melting points and spectroscopic methods.

Luteolin 7-O-rutinoside

Mp 192°C (dec.). UV λ_{max} (CH₃OH) 254, 265, 347, (NaOCH₃) 263, 299, 394, (AlCl₃) 272, 295, 331, 432, (AlCl₃ / HCl) 270, 295, 359, 389, (NaOAc) 258, 266, 365, 403, (NaOAc / H₃BO₃) 257, 370 nm. IR ν_{max} 3400 (O-H), 1660 (C=O) cm⁻¹. ¹H NMR (δ ppm) 0.88 (3H, d, rhamnosyl-CH₃), 3.22-3.76 (10H, m, rhamnosyl and glucosyl protons), 4.10 (1H, d, H-1'''), 5.21 (1H, d, H-1''), 6.27 (1H, d, H-6), 6.49 (1H, s, H-3), 6.67 (1H, d, H-8), 7.29 (1H, d, H-5'), 7.78 (2H, dd, H-2' and H-6'), 12.95 (3H, s, Ar-OH).

Biochanin-A 8-C-rhamnosylglucoside

Mp 209-10°C (dec.). UV λ_{max} (CH₃OH) 261, 330, (NaOCH₃) 275, 327, (AlCl₃) 272, 320, 375, (AlCl₃ /

HCl) 273, 318, 373, (NaOAc) 272, 327, (NaOAc / H₃BO₃) 263, 334 nm. IR ν_{max} 3460 (O-H), 1650 (C=O) cm⁻¹. ¹H NMR (δ ppm) 0.87 (3H, d, rhamnosyl-CH₃), 3.18-3.67 (10H, m, rhamnosyl and glucosyl protons), 3.83 (3H, s, Ar-OCH₃), 4.11 (1H, d, H-1'''), 4.72 (1H, d, H-1''), 6.13 (1H, s, H-6), 6.82 (2H, d, H-3' and H-5'), 7.38 (2H, d, H-2' and H-6'), 8.17 (1H, s, H-2), 13.15 (2H, s, Ar-OH).

Scoparin X''-O-rhamnosylglucoside

Mp 220-21°C. UV λ_{max} (CH₃OH) 251, 270, 345, (NaOCH₃) 277, 334, 398, (AlCl₃) 274, 296, 364, 392, (AlCl₃ / HCl) 277, 296, 354, 382, (NaOAc) 271, 279, 321, 394, (NaOAc / H₃BO₃) 271, 351 nm. IR ν_{max} 3420 (O-H), 1653 (C=O) cm⁻¹. ¹H NMR (δ ppm) 0.78 (3H, d, rhamnosyl-CH₃), 2.73-3.71 (16H, m, rhamnosyl and glucosyl protons), 3.84 (3H, s, Ar-OCH₃), 4.23 (1H, d, H-1'''), 5.07 (1H, d, H-1''), 5.81 (1H, d, H-1''), 6.22 (1H, s, H-3), 6.57 (1H, s, H-6), 7.18 (1H, d, H-5'), 7.46 (2H, dd, H-2' and H-6'), 12.92 (2H, s, Ar-OH).

Rhamnosyl vitexin

Mp 214-15°C. UV λ_{max} (CH₃OH) 268, 303, 337, (NaOCH₃) 278, 332, 396, (AlCl₃) 276, 303, 346, 387, (AlCl₃ / HCl) 276, 302, 344, 383 (NaOAc) 279, 303, 381, (NaOAc/H₃BO₃) 272, 326, 344 nm. IR ν_{max} 3445 (O-H), 1665 (C=O) cm⁻¹. ¹H NMR (δ ppm) 1.15 (3H, d, rhamnosyl-CH₃), 3.25-3.68 (10H, m, rhamnosyl and glucosyl protons), 4.15 (1H, d, H-1'''), 4.75 (1H, d, H-1''), 6.12 (1H, s, H-6), 6.65 (1H, s, H-3), 7.15 (2H, d, H-3' and H-5'), 7.85 (2H, d, H-2' and H-6'), 13.15 (3H, s, Ar-OH).

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