

Melocorin — A New Herbacetin Glucuronide from *Melochia corchorifolia*

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A new glycoside, melocorin has been isolated from the leaves of *Melochia corchorifolia* along with hibifolin and trifolin. Based on chemical and spectral data, melochorin has been constituted as 3,4',5,7-tetrahydroxy-8-O-β-D-glucuronosylflavone (herbacetin-8-O-glucuronide).

IN continuation of our work on the flavonoids of the Sterculiaceae¹⁻³, we have examined the leaves of *Melochia corchorifolia* Linn.⁴ belonging to the same family. The isolation of three flavonol glycosides — one of them new — is reported here.

The air-dried leaves were exhaustively extracted with hot 90% ethanol and the flavonoids in the aqueous alcoholic concentrate partitioned using ether and ethyl acetate. The flavonol glycoside from the ether layer was identified (m.m.p., UV) as trifolin (kaempferol-3-O-β-D-galactoside) by comparison with an authentic sample⁶.

The ethyl acetate extract contained two closely related flavonol glycosides. They were separated by preparative paper chromatography (R_f, 0.51 and 0.74, BuOH-27% HOAc, 1:1). The component with lower R_f was identified as hibifolin (gossypetin-8-O-β-D-glucuronide) by comparison with an authentic sample⁶.

The flavonoid with higher R_f did not melt, but blackened above 280°. It was light yellow under UV and UV/NH₃ and gave a stable yellow colour with alkali; UV: 270, 323 sh, 364 (MeOH); 225 sh, 295, 348 sh, 395 (NaOMe); 278, 310 sh, 370 (NaOAc); 270 sh, 353, 425 (AlCl₃) and 273, 350, 425 (AlCl₃/HCl) and R_f (×100, Whatman No. 1, 28-30°) 52 (water), 16 (15% HOAc), 32 (30% HOAc), 48 (50% HOAc), 52 (BAW), 24 (phenol), 57 (Forestal) and 40 (*t*-BAW). On strong acid hydrolysis, it yielded an aglycone and D-glucuronic acid in equal ratio. It also underwent easy hydrolysis with β-glucuronidase at 37° in 12 hr. The aglycone, m.p. 280-82°, λ_{max} 275, 327, 378, was purple under UV and UV/NH₃ and gave a yellow colour changing to greenish blue colour with alkalis and yielded a pentaacetate, m.p. 190-92°.

The MS of the aglycone exhibited the parent ion (*m/e*≠302) and prominent fragment ions at *m/e* 168 (typical of trihydroxy A-ring fragment), 154, 138 (168-CHO-H), 121 (B-ring with CO), 110 (138-CO), 93 (121-CO) and 81 (110-CHO) indicating it to be a flavonol with a trisubstitution pattern in ring-A and monosubstitution in B-ring. The UV fluorescence, colour with alkali and shift in λ_{max} with standard reagents showed the presence of hydroxyls at 3,4',5,7 and 8 position. Thus, the compound was identified as 3,4',5,7,8-pentahydroxyflavone (herbacetin). A comparison of the UV fluorescence, alkali colour and λ_{max} of the glycoside with those of its aglycone clearly shows the absence of a free 8-OH in the glycoside. The λ_{max} with shift reagents points to the presence of free OH at C-3, C-4', C-5 and C-7. Hence, the C₈-OH is involved in glycosylation and the compound is thus shown to be herbacetin-8-O-glucuronide. The new glycoside is designated melocorin with its structure as 3,4',5,7-tetrahydroxy-8-O-β-D-glucuronosylflavone.

M. corchorifolia containing herbacetin and gossypetin (8-hydroxyflavones) resembles *Chiranthodendron pentadactylon*⁸ and *Fremontia californica*⁸ and differs from *Sterculia colorata*² and *S. foetida*³ (containing 6-oxygenated flavones) of the same family. The first glucuronide of herbacetin (4'-O-glucuronide) was recently isolated along with its five new glycosides (including three acyl derivatives) from *Rhodiola algida*⁹. Melocorin is a notable addition to the 8-O-glycosylflavonoids and can be listed as the tenth glycoside of this comparatively rare flavonol¹⁰.

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