SUPPLEMENTARY MATERIAL

A new secoiridoid glycoside from the fruits of *Cornus officinalis* (Cornaceae)

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A new secoiridoid glycoside, \(7\beta\)-O-dimethyl butanedioate morroniside (1) was isolated from the fruits of *Cornus officinalis* (Cornaceae) along with the known compound, caffeoyltartaric acid dimethyl ester (2) which was isolated from the family Cornaceae for the first time. Their structures were elucidated by physical and spectroscopic data analysis, including 1D and 2D NMR, ESI-MS, and CD experiments.

**Keywords:** *Cornus officinalis*; Cornaceae; secoiridoid glycoside

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We provided the original NMR spectra for 7β-O-dimethyl butanedioate morroniside (1) and experimental data for caffeoyltartaric acid dimethyl ester (2).

Figure S1. $^1$H-NMR (700 MHz, CD$_3$OD) spectrum of compound 1.
Figure S2. $^{13}$C-NMR (175 MHz, CD$_3$OD) spectrum of compound 1.

Figure S3. HSQC NMR spectrum of compound 1.
Figure S4. HMBC NMR spectrum of compound 1.

Figure S5. Expansion of the HMBC NMR spectrum of compound 1.
Figure S5. Expansion of the HMBC NMR spectrum of compound 1 (continued).
Figure S5. Expansion of the HMBC NMR spectrum of compound 1 (continued).

Figure S6. COSY NMR spectrum of compound 1.
**Figure S7.** NOESY NMR spectrum of compound 1.

**Figure S8.** Key HMBC correlations ($^1$H→$^{13}$C) of compound 1.
Figure S9. Key NOESY correlations of compound 1.
Table S1. $^1$H- (400 MHz) and $^{13}$C-NMR (100 MHz) data of compound 2 in CD$_3$OD (δ in ppm).

| Positions | $\delta_H$ | $\delta_C$ | HMBC ($^1$H→$^{13}$C) |
|-----------|------------|------------|------------------------|
| 1         | -          | 127.5      | 1, 3, 4, 6, 7          |
| 2         | 7.22 (1H, d, $J = 1.9$ Hz) | 111.8      | 1, 3, 4, 6, 7          |
| 3         | -          | 149.6      |                        |
| 4         | -          | 151.3      |                        |
| 5         | 6.82 (1H, d, $J = 8.3$ Hz) | 116.6      | 1, 3, 4                |
| 6         | 7.10 (1H, dd, $J = 8.3, 1.9$ Hz) | 124.6      | 2, 4, 7                |
| 7         | 7.71 (1H, d, $J = 16$ Hz) | 148.4      | 2, 6, 8, 9             |
| 8         | 6.43 (1H, d, $J = 16$ Hz) | 114.1      | 1, 9                   |
| 9         | -          | 167.9      |                        |
| 1'        | -          | 172.2      |                        |
| 2'        | 5.56 (1H, d, $J = 3.0$ Hz) | 75.3       | 9, 1', 3', 4'          |
| 3'        | 4.71 (1H, d, $J = 3.0$ Hz) | 72.1       | 1', 2', 4'             |
| 4'        | -          | 169.1      |                        |
| 1'-OCH$_3$ | 3.80 (3H, s) | 53.0       | 1'                     |
| 4'-OCH$_3$ | 3.76 (3H, s) | 53.0       | 4'                     |

Spectral data of compound 2.

_Caffeoyltartaric acid dimethyl ester_ (2): yellowish white powder; [α]$^25_D$ +6.0 (c = 0.1, MeOH); CD (c = 0.16 mM, MeOH) $\Delta$ε$_{185}$ +9.20, $\Delta$ε$_{216}$ −21.2; UV (MeOH) $\lambda_{\text{max}}$ nm (log ε): 328.5 (4.58), 235 (4.37); IR (KBr) $\nu_{\text{max}}$ cm$^{-1}$: 3457, 2919, 1742, 1593, 1515, 1151; $^1$H-NMR (CD$_3$OD, 400 MHz) and $^{13}$C-NMR (CD$_3$OD, 100 MHz), see Table 1; Key COSY correlations: H-7/H-8, H-2'/H-3'; Key NOESY correlations: H-2/H-7; H-6/H-8; Key HMBC correlations: H-2/C-1, C-3, C-4, C-6, C-7; H-5/C-1, C-3, C-4; H-6/C-2, C-4, C-7; H-7/C-2, C-6, C-8, C-9; H-8/C-1, C-9; H-2'/C-9, C-1'; C-3', C-4'; H-3'/C-1', C-2', C-4'; OCH$_3$-1'/C-1'; OCH$_3$-4'/C-4''; HRESIMS $m/z$ 340.0795 [M]$^+$ (calcd for C$_{15}$H$_{16}$O$_9$, 340.0794).