

SUPPLEMENTARY DATA

Nuclear magnetic resonance (NMR) spectra of five constituents isolated from fraction A of the *Angelica dahurica* root extract were analyzed to determine their chemical structures. NMR spectra were recorded using a JNM-ECS400 NMR spectrometer (JEOL Ltd., Akishima, Tokyo, Japan) operated at 400 MHz (^1H) and 100 MHz (^{13}C) with tetramethylsilane as an internal standard. Tetramethylsilane and deuterated chloroform (CDCl_3) were purchased from Euriso-Top (Saint-Aubin, France).

Compound 1

^1H NMR (400 MHz, CDCl_3) δ : 1.68 (3H, s, H-5''), 1.79 (3H, s, H-4''), 4.91 (2H, d, $J = 7.2$ Hz, H-1''), 5.52 (1H, t-like, $J = 7.2$ Hz, H-2''), 6.25 (1H, d, $J = 9.1$ Hz, H-3), 6.95 (1H, dd, $J = 2.7, 0.8$ Hz, H-3'), 7.15 (1H, s, H-8), 7.59 (1H, d, $J = 2.7$ Hz, H-2'), 8.15 (1H, d, $J = 9.1$ Hz, H-4); ^{13}C NMR (100 MHz, CDCl_3) δ : 18.3 (C-5''), 25.9 (C-4''), 69.8 (C-1''), 94.3 (C-8), 105.1 (C-3'), 107.5 (C-4a), 112.6 (C-3), 114.2 (C-2'), 119.1 (C-2''), 139.7 (C-4), 139.9 (C-3''), 144.9 (C-2'), 149.0 (C-5), 152.7 (C-8a), 158.2 (C-7), 161.4 (C-2). The ^1H - and ^{13}C -NMR spectra of **1** were identical to the previously reported spectra of isoimperatorin [1].

Compound 2

^1H NMR (400 MHz, CDCl_3) δ : 1.32 (3H, s, H-5''), 1.39 (3H, s, H-4''), 3.22 (1H, dd, $J = 6.6, 4.3$ Hz, H-2''), 4.42 (1H, dd, $J = 10.9, 4.3$ Hz, H-1a''), 4.59 (1H, dd, $J = 10.9, 6.8$ Hz, H-1b''), 6.30 (1H, d, $J = 10.0$ Hz, H-3), 6.94 (1H, dd, $J = 2.7, 0.9$ Hz, H-3'), 7.18 (1H, s, H-8), 7.60 (1H, d, $J = 2.7$ Hz, H-2'), 8.2 (1H, d, $J = 10.0$ Hz, H-4); ^{13}C -NMR (100 MHz, CDCl_3) δ : 19.1 (C-5''), 24.6 (C-4''), 58.5 (C-3''), 61.2 (C-2''), 72.3 (C-1''), 94.9 (C-8), 104.5 (C-3'), 107.5 (C-4a), 113.2 (C-3), 114.2 (C-6), 139.1 (C-4), 145.4 (C-2'), 148.4 (C-5), 152.6 (C-8a), 158.1 (C-7), 161.2 (C-2). The ^1H - and ^{13}C -NMR spectra of **2** were identical to the previously reported spectra of oxypeucedanin [1].

Compound 3

^1H NMR (400 MHz, CDCl_3) δ : 1.71 (3H, s, H-6''), 1.73 (3H, s, H-5''), 4.99 (2H, d, $J = 7.2$ Hz, H-1''), 5.60 (1H, t, $J = 4.8$ Hz, H-2''), 6.36 (1H, d, $J = 9.5$ Hz, H-3), 6.80 (1H, d, $J = 2.3$ Hz, H-3'), 7.35 (1H, s, H-8), 7.68 (1H, d, $J = 2.3$ Hz, H-2'), 7.75 (1H, d, $J = 9.5$ Hz, H-4); ^{13}C -NMR (100 MHz, CDCl_3) δ : 18.2 (C-4''), 25.9 (C-5''), 70.2 (C-1''), 106.8 (C-3'), 113.2 (C-5), 114.8 (C-3), 116.5 (C-4a), 119.8 (C-3''), 125.9 (C-6), 131.7 (C-8), 139.9 (C-4''), 143.8 (C-8a), 144.4 (C-4), 146.7 (C-2'), 148.6 (C-7), 160.6 (C-2). The ^1H - and ^{13}C -NMR spectra of **3** were identical to the previously reported spectra of imperatorin [1].

Compound 4

^1H NMR (400 MHz, CDCl_3) δ : 1.69 (3H, s, H-5''), 1.73 (3H, s, H-4''), 4.16 (3H, s, 6-OMe), 4.83 (2H, d, $J = 7.2$ Hz, H-1''), 5.61 (1H, t, $J = 7.2$ Hz, H-2''), 6.27 (1H, d, $J = 9.7$ Hz, H-3), 6.98 (1H, d, $J = 2.3$ Hz, H-3'), 7.61 (1H, d, $J = 2.3$ Hz, H-2'), 8.11 (1H, d, $J = 9.7$ Hz, H-4); ^{13}C -NMR (100 MHz, CDCl_3) δ : 18.1 (C-5''), 25.9 (C-4''), 60.8 (5-OMe), 70.4 (C-1''), 105.1 (C-3'), 107.6 (C-3), 112.8 (C-4a), 119.8 (C-2''), 126.9 (C-8), 139.7 (C-3''), 139.5 (C-4), 144.4 (C-5), 144.8 (C-8a), 145.1 (C-2'), 150.8 (C-7), 160.6 (C-2). The ^1H - and ^{13}C -NMR spectra of **4** were identical to the previously reported spectra of phellopterin [2].

Compound 5

^1H NMR (400 MHz, CDCl_3) δ : 1.23 (3H, s, H-5''), 1.26 (3H, s, H-4''), 3.26 (3H, s, 3''-OMe), 3.92 (1H, dd, $J = 7.7, 2.7$ Hz, H-2''), 4.38 (1H, dd, $J = 10.0, 7.7$ Hz, H-1''), 4.56 (1H, dd, $J = 10.0, 2.7$ Hz, H-1''), 6.29 (1H, d, $J = 10.0$ Hz, H-3), 7.00 (1H, d, $J = 2.3$ Hz, H-3'), 7.17 (1H, s, H-8), 7.59 (1H, d, $J = 2.3$ Hz, H-2'), 8.22 (1H, d, $J = 10.0$ Hz, H-4); ^{13}C -NMR (100 MHz, CDCl_3) δ : 20.7 (C-5''), 20.8 (C-4''), 49.3 (3''-OMe), 74.3 (C-1''), 75.9 (C-3''), 77.1 (C-2''), 94.6 (C-8), 104.9 (C-3'), 107.4 (C-4a), 112.9 (C-3), 139.4 (C-4), 145.1 (C-2'), 148.8 (C-5), 152.6 (C-8a), 158.2 (C-7), 161.3 (C-2). The ^1H - and ^{13}C -NMR spectra of **5** were identical to the previously reported spectra of oxypeucedanin methanolate [3].

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