Supporting Information to:

Coumarins from *Cnidium monnieri* and their Antiosteoporotic Activity

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Melting Points and Spectroscopic Data for the Isolated Coumarins

Osthole (1)
Colourless needles, m.p. 83.5 – 84.6 °C (lit. [6] m.p. 83°C); \(^1\)H-NMR (CDCl\(_3\)): \(\delta = 1.68\) (3H, s), 1.86 (3H, s), 3.55 (2H, d, \(J = 7.3\) Hz), 3.93 (3H, s), 5.24 (1H, t, \(J = 7.3\) Hz), 6.24 (1H, d, \(J_{3,4} = 9.6\) Hz), 6.85 (1H, d, \(J_{6.5} = 9.6\) Hz), 7.30 (1H, dd, \(J_{5.6} = 9.6\) Hz), 7.63 (H, d, \(J_{4.3} = 9.6\) Hz); \(^1^3\)C-NMR (CDCl\(_3\)): \(\delta = 17.8, 21.8, 25.7, 55.9, 107.2, 112.8, 112.8, 117.7, 121.0, 126.2, 132.5, 143.7, 152.7, 160.1, 161.3\); IR (KBr): \(\nu = 3071, 2929, 2838, 1732\) (C=O), \(1601, 1561\) cm\(^{-1}\) (C=C); MS: \(m/z\) (%) = 244 (M\(^+\), 31), 229 (27), 213 (12), 201 (16), 189 (18), 131 (10), 77 (8), 58 (66), 43 (100), 41 (14).

Imperatorin (2)
Colourless needles, m.p. 96.1 – 97.0 °C (lit. [7] m.p. 97.5 – 99 °C); \(^1\)H-NMR (CDCl\(_3\)): \(\delta = 1.71\) (s), 1.73 (s), 5.00 (d, \(J = 7.3\) Hz), 5.60 (t, \(J = 7.3\) Hz), 6.35 (d, \(J_{3.4} = 9.6\) Hz), 6.81 (d, \(J = 2.3\) Hz), 7.36 (s), 7.69 (d, \(J = 2.3\) Hz), 7.77 (d, \(J_{4.3} = 9.6\) Hz); \(^1^3\)C-NMR (CDCl\(_3\)): \(\delta = 18.1, 25.8, 70.1, 106.7, 113.2, 114.6, 116.5, 119.8, 125.9, 131.6, 139.7, 143.8, 144.4, 146.6, 148.6, 160.6\); IR (KBr): \(\nu = 3104, 2965, 2932, 1715\) (C=O), 1623, 1586 (C=C), 875 cm\(^{-1}\) (furan); MS: \(m/z\) (%) = 270 (M\(^+\), 0.14), 203 (14), 202 (100), 174 (18), 89 (6), 69 (10), 63 (4), 58 (4), 43 (13), 41 (12).

Bergapten (3)
Yellowish crystals, m.p. 189.0 °C (lit. [7] m.p. 188 – 190 °C); \(^1\)H-NMR (CDCl\(_3\)): \(\delta = 4.27\) (3H, s), 6.26 (d, \(J_{3.4} = 9.9\) Hz), 7.02 (dd, \(J_{11,12} = 2.3\) Hz), 7.11 (s), 7.59 (d, \(J_{12.11} = 2.3\) Hz), 8.14 (d, \(J_{4.3} = 9.9\) Hz); \(^1^3\)C-NMR (CDCl\(_3\)): \(\delta = 60.0, 93.7, 105.0, 106.3, 112.4, 112.5, 139.3, 144.7, 149.5, 152.6, 158.3, 161.2\); IR (KBr): \(\nu = 3108, 1731\) (C=O), 1628, 1580 (C=C), 893
cm$^{-1}$ (furan); MS: $m/z$ (%) = 216 (M$^+$, 8), 190 (21), 175 (10), 147 (8), 59 (5), 58 (39), 57 (6), 44 (10), 43 (100), 42 (7).