

Supporting Information

Synthesis and Evaluation of Estrogen Agonism of Diaryl 4,5-Dihydroisoxazoles, 3-Hydroxyketones, 3-Methoxyketones and 1,3-Diketones: A Compound Set Forming a 4D Molecular Library.

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1. 4,5-Dihydroisoxazoles C (compounds 9-19 and 50-53).

5-Benzyl-3-phenyl-4,5-dihydroisoxazole¹ (9): yield 64 %, mp = 67.5-68.2 °C; ¹H NMR δ 7.64 (m, 2 H), 7.40-7.24 (m, 8 H), 4.99 (m, 1 H), 3.31 (dd, 1 H, *J* = 16.6, 10.2), 3.18 (dd, 1 H, *J* = 13.8, 6.1), 3.06 (dd, 1 H, *J* = 16.6, 7.8), 2.89 (dd, *J* = 13.8, 7.3); ¹³C NMR δ 156.5, 136.9, 136.9 (3 s), 130.0, 129.4, 128.8, 128.7, 126.8, 126.6, 81.9 (7 d), 41.0, 39.4 (2 t). Anal. (C₁₆H₁₅NO·0.1H₂O) C, H, N.

5-Phenethyl-3-phenyl-4,5-dihydroisoxazole² (10): yield 67 %, mp = 66.1-67.2 °C; ¹H NMR δ 7.62 (m, 2 H), 7.35-7.33 (m, 3 H), 7.26 (m, 2 H), 7.19-7.15 (m, 3 H), 4.67 (m, 1 H), 3.29 (dd, 1 H, *J* = 16.5, 10.4), 2.90 (dd, 1 H, *J* = 16.5, 8.1), 2.78 (ddd, 1 H, *J* = 13.9, 9.7, 5.7), 2.74 (dd, 1 H, *J* = 13.9, 9.4, 6.8), 2.05 (m, 2 H), 1.89 (m, 2 H); ¹³C NMR δ 156.4, 141.1 (2 s), 129.9 (d), 129.8 (s), 128.6, 128.4, 128.4, 126.5, 126.2, 80.2 (6 d), 39.9, 37.0, 31.8 (3 t). Anal. (C₁₇H₁₇NO·0.1H₂O) C, H, N.

3-Benzyl-5-phenyl-4,5-dihydroisoxazole³ (11): yield 75 %, a pale brown oil, ¹H NMR δ 7.35-7.26 (m, 7 H), 7.25-7.22 (m, 3 H), 5.52 (dd, 1 H, *J* = 10.9, 8.4), 3.74 (d, 1 H, *J* = 14.9), 3.70 (d, 1 H, *J* = 14.9), 3.22 (dd, 1 H, *J* = 17.1, 10.9), 2.80 (dd, 1 H, *J* = 17.1, 8.4); ¹³C NMR δ 157.4, 141.0, 135.7 (3 s), 128.9, 128.8, 128.7, 128.0, 127.1, 125.8, 81.9 (7 d), 44.5, 34.2 (2 t). Anal. (C₁₆H₁₅NO·0.1H₂O) C, H, N.

3-Phenethyl-5-phenyl-4,5-dihydroisoxazole⁴ (12): yield 49 %, mp = 35.0-36.3 °C; ¹H NMR δ 7.29 (m, 2 H), 7.26-7.22 (m, 5 H), 7.17-7.13 (m, 3 H), 5.44 (dd, 1 H, *J* = 10.8, 8.1), 3.20 (dd, 1 H, *J* = 17.0, 10.8), 2.87 (m, 2 H), 2.78 (dd, 1 H, *J* = 17.0, 8.1), 2.64 (m, 2 H); ¹³C NMR δ 157.7, 141.2, 140.4 (3 s), 128.6, 128.5, 128.2, 127.9, 126.3, 125.7, 81.2 (7 d), 45.4, 32.5, 29.2 (3 t). Anal. (C₁₇H₁₇NO·0.1H₂O) C, H, N.

5-Phenyl-3-(3-phenyl-propyl)-4,5-dihydro-isoxazole² (13): yield 48 %, a colourless oil; ¹H NMR δ 7.34-7.28 (m, 4 H), 7.28-7.23 (m, 3 H), 7.18-7.12 (m, 3 H), 5.49 (dd, 1 H, *J* = 10.8, 8.0), 3.27 (dd, 1 H, *J* = 17.0, 10.8), 2.87 (dd, 1 H, *J* = 17.0, 8.0), 2.64 (t, 2 H, *J* = 7.6), 2.36 (t, 2 H, *J* = 7.5), 1.89 (tt, 2 H, *J* = 7.6, 7.5); ¹³C NMR δ 158.1, 141.3, 141.3 (3 s), 128.6, 128.4, 128.4, 127.9, 126.0, 125.6, 81.1 (7 d), 45.3, 35.0, 27.9, 27.1 (4 t). Anal. (C₁₈H₁₉NO) C, H, N.

3,5-Dibenzyl-4,5-dihydroisoxazole⁵ (14): yield 82%, mp 57.3-57.9 °C; ¹H NMR δ 7.29-7.09 (m, 10 H), 4.75 (m, 1 H), 3.62, 3.57 (2 d, 2 H, *J* = 14.9), 2.95 (dd, 1 H, *J* = 13.8, 5.9), 2.73 (dd, 1 H, *J* = 17.1, 10.2), 2.72 (dd, 1 H, *J* = 13.8, 7.1), 2.48 (dd, 1 H, *J* = 17.1, 7.5); ¹³C NMR δ 157.8, 136.9, 135.9 (3 s), 129.4, 128.8, 128.8, 128.5, 127.0, 126.6, 81.0 (7 d), 40.8, 40.6, 34.2 (3 t). Anal. (C₁₇H₁₇NO·0.1H₂O) C, H, N.

5-benzyl-3-phenethyl-4,5-dihydroisoxazole (15): yield 51 %, a colourless oil; ¹H NMR δ 7.27-7.24 (m, 4 H), 7.21-7.15 (m, 6 H), 4.73 (m, 1 H), 2.95 (dd, 1 H, *J* = 13.8, 6.0), 2.84-2.76 (m, 3 H), 2.73 (dd, 1 H, *J* = 13.8, 6.9), 2.63-2.52 (m, 3 H); ¹³C NMR δ 158.1, 140.5, 137.0 (3 s), 129.4, 128.5, 128.5, 128.2, 126.6, 126.3, 80.5 (7 d), 41.6, 40.9, 32.6, 29.4 (4 t). Anal. (C₁₈H₁₉NO·0.1H₂O) C, H, N.

5-Benzyl-3-(3-phenyl-propyl)-4,5-dihydro-isoxazole (16): yield 58 %, a colourless oil; ¹H NMR δ 7.27-7.22 (m, 4 H), 7.20-7.11 (m, 6 H), 4.73 (m, 1 H), 2.96 (dd, 1 H, *J* = 13.9, 6.0), 2.81-2.74 (m, 2 H), 2.59-2.52 (m, 3 H), 2.25 (m, 2 H), 1.79 (m, 2 H); ¹³C NMR δ 158.4, 141.3, 137.0 (3 s), 129.4, 128.4, 128.4, 128.3, 126.6, 125.9, 80.3 (7 d), 41.4, 40.9, 35.1, 27.8, 27.1 (5 t). Anal. (C₁₉H₂₁NO·0.1H₂O) C, H, N.

3-benzyl-5-phenethyl-4,5-dihydroisoxazole (17): yield 38 %, a yellow viscous oil; ¹H NMR δ 7.31-7.28 (m, 2 H), 7.26-7.18 (m, 5 H), 7.17-7.12 (m, 3 H), 4.49 (m, 1 H), 3.64 (s, 2 H), 2.82 (dd, 1 H, *J* = 16.9, 10.3), 2.73-2.61 (m, 2 H), 2.42 (dd, 1 H, *J* = 16.9, 8.0) 1.93 (m, 1 H), 1.74 (m, 1 H); ¹³C NMR δ 157.7, 141.2, 135.9 (3 s), 128.8, 128.8, 128.4, 128.4, 127.0, 126.0, 79.6 (7 d), 41.3, 36.9, 34.2, 31.7 (4 t). Anal. (C₁₈H₁₉NO·0.33H₂O) C, H, N.

3,5-Di-phenethyl-4,5-dihydroisoxazole (18): yield 41 %, mp = 56.2-58.0 °C; ¹H NMR δ 7.30-7.25 (m, 4 H), 7.22-7.16 (m, 6 H), 4.49 (m, 1 H), 2.93-2.84 (m, 3 H), 2.74 (m, 1 H), 2.70-2.63 (m, 3 H), 2.47 (dd, 1 H, *J* = 16.8, 7.9), 1.95 (m, 1 H), 1.76 (m, 1 H); ¹³C NMR δ 158.1, 141.3, 140.6 (3 s), 128.5, 128.4, 128.4, 128.3, 126.3, 126.0, 79.2 (7 d), 42.4, 36.9, 32.7, 31.8, 29.6 (5 t). Anal. (C₁₉H₂₁NO) C, H, N.

5-Phenethyl-3-(3-phenylpropyl)-4,5-dihydro-isoxazole² (19): yield 47 %, a colourless oil; ¹H NMR δ 7.30-7.25 (m, 4 H), 7.20-7.16 (m, 6 H), 4.51 (m, 1 H), 2.93 (dd, 1 H, $J = 16.8, 10.2$), 2.78 (m, 1 H), 2.68 (m, 1 H), 2.66 (t, 2 H, $J = 7.7$), 2.50 (dd, 1 H, $J = 16.8, 7.9$), 2.34 (t, 2 H, $J = 7.7$), 1.98 (m, 1 H), 1.89 (m, 2 H), 1.81 (m, 1 H); ¹³C NMR δ 158.5, 141.4, 141.3 (3 s), 128.5, 128.5, 128.5, 128.4, 126.0, 126.0, 79.1 (7 d), 42.3, 37.0, 35.3, 31.9, 28.0, 27.4 (6 t). Anal. (C₂₀H₂₃NO) C, H, N.

5-(4-Methoxybenzyl)-3-phenethyl-4,5-dihydroisoxazole (50): yield 44 %, a colourless wax; ¹H NMR δ 7.26 (m, 2 H), 7.21-7.14 (m, 3 H), 7.09 (m, 2 H), 6.82 (m, 2 H), 4.70 (m, 1 H), 3.75 (s, 3 H), 2.89 (dd, 1 H, $J = 14.0, 6.0$), 2.84-2.77 (m, 3 H), 2.68 (dd, 1 H, $J = 13.8, 6.8$), 2.61-2.51 (m, 3 H); ¹³C NMR δ 158.4, 158.1, 140.5 (3 s), 130.3 (d), 129.0 (s), 128.5, 128.2, 126.3, 113.9, 80.7 (5 d), 55.2 (q), 41.5, 39.9, 32.6, 29.4 (4 t). Anal. (C₁₉H₂₁NO₂·0.2H₂O) C, H, N.

5-(4-Fuorobenzyl)-3-phenethyl-4,5-dihydroisoxazole (51): yield 30 %, mp = 51.5-52.9 °C; ¹H NMR δ 7.28 (m, 2 H), 7.22-7.16 (m, 3 H), 7.14 (m, 2 H), 6.96 (m, 2 H), 4.72 (m, 1 H), 2.89 (dd, 1 H, $J = 14.0, 6.3$), 2.86-2.78 (m, 3 H), 2.74 (dd, 1 H, $J = 14.0, 6.2$), 2.65-2.51 (m, 3 H); ¹³C NMR δ 161.8 (d), 158.1, 140.5 (2 s), 132.8 (d), 130.9 (dd), 128.6, 128.2, 126.3 (3 d), 115.3 (dd), 80.4 (d), 41.6, 40.0, 32.6, 29.4 (4 t). Anal. (C₁₈H₁₈FNO) C, H, N.

5-Naphthalen-1-yl-3-phenethyl-4,5-dihydroisoxazole (52): yield 35 %, a colourless wax; ¹H NMR δ 8.00 (d, 1 H, $J = 8.4$), 7.84 (dd, 1 H, $J = 8.6, 1.4$), 7.74 (d, 1 H, $J = 8.2$), 7.52-7.44 (m, 2 H), 7.38 (dd, 1 H, $J = 8.1, 7.1$), 7.29-7.23 (m, 3 H), 7.20-7.15 (m, 3 H), 4.95 (m, 1 H), 3.52 (dd, 1 H, $J = 14.1, 5.9$), 3.08 (dd, 1 H, $J = 14.1, 7.9$), 2.87-2.81 (m, 2 H), 2.76 (dd, 1 H, $J = 17.0, 10.0$), 2.68-2.57 (m, 3 H); ¹³C NMR δ 158.2, 140.5, 133.9, 133.1, 132.0 (5 s), 128.8, 128.5, 128.3, 127.5, 127.4, 126.3, 126.2, 125.7, 125.5, 123.6, 79.8 (11 d), 42.0, 37.9, 32.6, 29.4 (4 t). Anal. (C₂₂H₂₁NO·0.2H₂O) C, H, N.

5-Naphthalen-2-yl-3-phenethyl-4,5-dihydroisoxazole (53): yield 49 %, mp = 112.1-114.0 °C; ¹H NMR δ 7.82-7.75 (m, 3 H), 7.61 (s, 1 H), 7.45 (m, 2 H), 7.33 (dd, 1 H, $J = 8.4, 1.7$), 7.27 (m, 2 H), 7.20 (m, 1 H), 7.15 (m, 2 H), 4.87 (m, 1 H), 3.15 (dd, 1 H, $J = 13.9, 6.0$), 2.92 (dd, 1 H, $J = 13.9, 7.0$), 2.88-2.78 (m, 3 H), 2.66-2.55 (m, 3 H); ¹³C NMR δ 158.2, 140.5, 134.6, 133.5, 132.3 (5 s), 128.6, 128.3, 128.2, 127.9, 127.7, 127.6, 127.5, 126.3, 126.1, 125.6, 80.5 (11 d), 41.7, 41.0, 32.6, 29.4 (4 t). Anal. (C₂₂H₂₁NO·0.1H₂O) C, H, N.

2. Hydroxyketones D (compounds 20-30 and 54-57).

3-Hydroxy-1,4-diphenyl-butan-1-one⁶ (20): yield 28 %, mp = 85.0-86.0 °C, ¹H NMR δ 7.90 (m, 2 H), 7.59-7.42 (m, 4 H), 7.34-7.20 (m, 6 H), 4.48 (m, 1 H), 3.30 (d, 1 H, OH, $J = 3.5$), 3.12 (dd, 1 H, $J = 17.6, 3.4$), 3.08 (dd, 1 H, $J = 17.6, 8.3$), 2.96 (dd, 1 H, $J = 13.6, 7.1$), 2.84 (dd, 1 H, $J = 13.6, 6.3$), ¹³C NMR δ 200.5, 138.0, 136.7 (3 s), 133.5, 129.5, 128.7, 128.6, 128.1, 126.6, 68.9 (7 d), 44.1, 42.9 (2 t). Anal. (C₁₆H₁₆O₂) C, H.

3-Hydroxy-1,5-diphenyl-pentan-1-one⁷ (21): yield 52 %, a pale yellow wax; ¹H NMR δ 7.91 (m, 2 H), 7.55 (m, 1 H), 7.44 (m, 2 H), 7.27 (m, 2 H), 7.22 (m, 2 H), 7.17 (m, 1 H), 4.23 (m, 1 H), 3.39 (d, 1 H, OH, $J = 3.2$), 3.11 (dd, 1 H, $J = 17.7, 3.0$), 3.06 (dd, 1 H, $J = 17.7, 8.7$), 2.87 (ddd, 1 H, $J = 14.7, 9.8, 5.4$), 2.74 (ddd, 1 H, $J = 14.7, 9.5, 6.9$), 1.93 (m, 1 H), 1.80 (m, 1 H); ¹³C NMR δ 200.8, 141.9, 136.7 (3 s), 133.5, 128.7, 128.5, 128.4, 128.0, 125.8, 67.0 (7 d), 45.1, 38.2, 31.7 (3 t). Anal. (C₁₇H₁₈O₂) C, H.

4-Hydroxy-1,4-diphenyl-butan-2-one⁸ (22): yield 58 %, yellow wax, ¹H NMR δ 7.32-7.27 (m, 5 H), 7.27-7.22 (m, 3 H), 7.14 (m, 2 H), 5.09 (dd, 1 H, $J = 9.1, 3.2$), 3.67 (d, 1 H, $J = 15.4$), 3.66 (d, 1 H, $J = 15.4$), 3.26 (br s, 1 H, OH), 2.85 (dd, 1 H, $J = 17.3, 9.1$), 2.78 (dd, 1 H, $J = 17.3, 3.2$), ¹³C NMR δ 208.5, 142.8, 133.5 (3 s), 129.4, 128.8, 128.5, 127.6, 127.2, 125.6, 69.9 (7 d), 50.8, 50.3 (2 t). Anal. (C₁₆H₁₆O₂) H. C: calcd, 79.97; found, 80.69.

1-Hydroxy-1,5-diphenyl-pentan-3-one⁷ (23): yield 62 %, a colourless oil; ¹H NMR δ 7.28 (m, 4 H), 7.23 (m, 3 H), 7.15 (m, 1 H), 7.11 (m, 2 H), 5.08 (dd, 1 H, $J = 9.3, 3.3$), 2.85 (t, 2 H, $J = 7.6$), 2.78 (dd, 1 H, $J = 17.0, 9.3$), 2.68 (m, 2 H), 2.66 (dd, 1 H, $J = 17.0, 3.3$); ¹³C NMR δ 209.9, 143.0, 140.6 (3 s), 128.4, 128.4, 128.2, 127.5, 126.1, 125.5, 69.8 (7 d), 51.3, 45.0, 29.3 (3 t). Anal. (C₁₇H₁₈O₂) C, H.

1-Hydroxy-1,6-diphenyl-hexan-3-one⁹ (24): yield 73 %, a pale brown wax; ¹H NMR δ 7.36-7.33 (m, 3 H), 7.30-7.25 (m, 3 H), 7.19 (m, 1 H), 7.15 (m, 2 H), 5.13 (dd, 1 H, $J = 9.1, 3.0$), 3.21 (br s, 1 H, OH), 2.81 (dd, 1 H, $J = 17.5, 9.1$), 2.76 (dd, 1 H, $J = 17.5, 3.0$), 2.61 (t, 2 H, $J = 7.5$), 2.43 (t, 2 H, $J = 7.3$), 1.92 (tt, 2 H, $J = 7.5, 7.3$); ¹³C NMR δ 210.8, 143.0, 141.5 (3 s), 128.4, 128.4, 128.3, 127.6, 126.0, 125.6, 69.9 (7 d), 51.1, 42.7, 34.9, 24.9 (4 t). Anal. (C₁₈H₂₀O₂·0.1H₂O) C, H.

1,5-Diphenyl-4-hydroxy-pentan-2-one⁵ (25): yield 89%, a pale yellow oil; ¹H NMR δ 7.35-7.15 (m, 10 H), 4.26 (m, 1 H), 3.68 (s, 2 H), 3.29 (s, 1 H), 2.79 (dd, 1 H, $J = 13.6, 7.3$), 2.69 (dd, 1 H, $J = 13.6, 6.0$), 2.58 (d, 1 H, $J = 4.8$), 2.57 (d, 1 H, $J = 7.2$); ¹³C NMR δ 208.9, 137.9, 133.6 (3 s), 129.5, 129.4, 128.8, 128.5, 127.2, 126.6, 68.8 (7 d), 50.8, 47.6, 42.9 (3 t). Anal. (C₁₇H₁₈O₂) C, H.

5-Hydroxy-1,6-diphenylhexan-3-one¹⁰ (26): yield 76 %, a yellow wax; ¹H NMR δ 7.28-7.18 (m, 6 H), 7.16-7.10 (m, 4 H), 4.25 (m, 1 H), 3.02 (br s, 1 H, OH), 2.83 (t, 2 H, $J = 7.6$), 2.77 (dd, 1 H, $J = 13.6, 7.1$), 2.69-2.64 (m, 3 H), 2.47 (d, 2 H, $J = 6.0$); ¹³C NMR δ 210.3, 140.7, 137.9 (3 s), 129.4, 128.5, 128.5, 128.2, 126.5, 126.1, 68.6 (7 d), 48.4, 44.9, 43.0, 29.4 (4 t). Anal. (C₁₈H₂₀O₂) C, H.

2-Hydroxy-1,7-diphenyl-heptan-4-one (27): yield 64 %, a colourless oil; ¹H NMR δ 7.31-7.21 (m, 5 H), 7.20-7.14 (m, 2 H), 7.14-7.11 (m, 3 H), 4.25 (m, 1 H), 3.02 (br s, 1 H, OH), 2.80 (dd, 1 H, $J = 13.6, 7.1$), 2.69 (dd, 1 H, $J = 13.6, 7.1$), 2.58 (t, 2 H, $J = 7.6$), 2.49 (dd, 1 H, $J = 15.7, 2.5$), 2.47 (dd, 1 H, $J = 15.7, 6.1$), 2.37 (dd, 2 H, $J = 7.9, 6.7$), 1.86 (m, 2 H); ¹³C NMR δ 211.3, 141.4, 137.9 (3 s), 129.4, 128.5, 128.4, 128.4, 126.5, 126.0, 68.7 (7 d), 48.2, 42.9, 42.7, 34.9, 24.8 (5 t). Anal. (C₁₉H₂₂O₂·0.1H₂O) C, H.

4-Hydroxy-1,6-diphenylhexan-2-one (28): yield 91 %, a yellow wax; ¹H NMR δ 7.35-7.28 (m, 2 H), 7.26-7.21 (m, 3 H), 7.17-7.12 (m, 5 H), 4.00 (m, 1 H), 3.65 (s, 2 H), 3.01 (br s, 1 H, OH), 2.75 (m, 1 H), 2.65-2.52 (m, 3 H), 1.75 (m, 1 H), 1.63 (m, 1 H); ¹³C NMR δ 209.3, 141.8, 133.6 (3 s), 129.4, 128.8, 128.4, 128.4, 127.2, 125.8, 66.9 (7 d), 50.7, 48.4, 38.0, 31.7 (4 t). Anal. (C₁₈H₂₀O₂) C, H.

5-Hydroxy-1,7-diphenyl-heptan-3-one⁷ (29): yield 85 %, mp = 71.3-72.5 °C; ¹H NMR δ 7.29-7.22 (m, 4 H), 7.21-7.10 (m, 6 H), 4.03 (m, 1 H), 3.37 (br s, 1 H, OH), 2.88 (t, 1 H, $J = 7.5$), 2.86-2.62 (m, 2 H), 2.73 (t, 1 H, $J = 7.5$), 2.53 (m, 2 H), 1.78 (m, 1 H), 1.66 (m, 1 H); ¹³C NMR δ 211.0, 146.3, 141.8 (3 s), 128.5, 128.4, 128.4, 128.3, 126.2, 125.9, 66.9 (7 d), 49.3, 45.0, 38.1, 31.7, 29.4 (5 t). Anal. (C₁₉H₂₂O₂·0.5H₂O) C, H.

6-Hydroxy-1,8-diphenyl-octan-4-one (30): yield 80 %, yellow viscous oil, ¹H NMR δ 7.27-7.22 (m, 4 H), 7.20-7.14 (m, 6 H), 4.03 (m, 1 H), 2.81 (m, 1 H), 2.68 (m, 1 H), 2.61 (t, 2 H, $J = 7.5$), 2.53 (m, 2 H), 2.41 (t, 2 H, $J = 7.4$), 1.91 (tt, 2 H, $J = 7.4$), 1.81 (m, 1 H), 1.67 (m, 1 H); ¹³C NMR δ 211.7, 141.8, 141.3 (3 s), 128.5, 128.4, 128.4, 128.4, 126.0, 125.8, 66.9 (7 d), 49.1, 42.7, 38.1, 35.0, 31.7, 24.9 (6 t). Anal. (C₂₀H₂₄O₂) C, H.

5-Hydroxy-6-(4-methoxyphenyl)-1-phenyl-hexan-3-one (54): yield 74 %, a yellow wax; ¹H NMR δ 7.26-7.20 (m, 2 H), 7.16-7.12 (m, 3 H), 7.07 (m, 2 H), 6.81 (m, 2 H), 4.21 (m, 1 H), 3.73 (s, 3 H), 2.86-2.82 (m, 2 H), 2.75-2.60 (m, 4 H), 2.48 (m, 2 H); ¹³C NMR δ 210.5, 158.3, 140.8 (3 s), 130.3 (d), 129.8 (s), 128.5, 128.2, 126.1, 113.9, 68.8 (5 d), 55.2 (q), 48.4, 45.0, 42.1, 29.4 (4 t). Anal. (C₁₉H₂₂O₃·0.2H₂O) C, H.

5-Hydroxy-6-(4-fluorophenyl)-1-phenyl-hexan-3-one (55): yield 66 %, a yellow viscous oil; ¹H NMR δ 7.25 (m, 2 H), 7.17 (m, 1 H), 7.15-7.10 (m, 4 H), 6.96 (m, 2 H), 4.23 (m, 1 H), 2.96 (s, 1 H, OH), 2.87 (t, 2 H, $J = 7.5$), 2.77-2.70 (m, 3 H), 2.65 (dd, 1 H, $J = 13.8, 5.9$), 2.50 (m, 2 H); ¹³C NMR δ 210.5, 161.7 (d), 140.7 (s), 133.6 (d), 130.8 (dd), 128.5, 128.2, 126.2 (3 d), 115.2 (dd), 68.5 (d), 48.4, 45.0, 42.0, 29.4 (4 t). Anal. (C₁₈H₁₉FO₂·0.2H₂O) C, H.

5-Hydroxy-6-naphthalen-1-yl-1-phenyl-hexan-3-one (56): yield 95 %, a pale brown viscous oil; ¹H NMR δ 8.07 (d, 1 H, $J = 8.3$), 7.84 (d, 1 H, $J = 7.4$), 7.74 (d, 1 H, $J = 8.3$), 7.53-7.45 (m, 2 H), 7.38 (dd, 1 H, $J = 8.1, 7.0$), 7.30 (d, 1 H, $J = 6.6$), 7.23 (m, 2 H), 7.17-7.10 (m, 3 H), 4.44 (m, 1 H), 3.26 (dd, 1 H, $J = 13.8, 7.0$), 2.92 (s, 1 H, OH), 2.84 (m, 2 H), 2.74-2.65 (m, 2 H), 2.62-2.53 (m, 2 H); ¹³C NMR δ 210.5, 140.6, 134.0, 134.0, 132.1 (5 s), 128.8, 128.5, 128.2, 127.7, 127.5, 126.2, 126.1, 125.7, 125.4, 123.9, 68.0 (11 d), 48.7, 45.0, 40.1, 29.4 (4 t). Anal. (C₂₂H₂₂O₂·0.33H₂O) C, H.

5-Hydroxy-6-naphthalen-2-yl-1-phenyl-hexan-3-one (57): yield 90 %, a yellow wax; $^1\text{H NMR } \delta$ 7.79 (d, 1 H, $J = 7.6$), 7.77 (d, 1 H, $J = 7.1$), 7.77 (d, 1 H, $J = 8.4$), 7.61 (s, 1 H), 7.44 (m, 2 H), 7.31 (dd, 1 H, $J = 8.4, 1.6$), 7.23 (m, 2 H), 7.15 (m, 1 H), 7.12 (m, 2 H), 4.37 (m, 1 H), 2.96 (dd, 1 H, $J = 13.5, 7.1$), 2.88-2.82 (m, 3 H), 2.71-2.67 (m, 2 H), 2.54 (m, 2 H); $^{13}\text{C NMR } \delta$ 210.5, 140.7, 135.4, 133.5, 132.3 (5 s), 128.5, 128.2, 128.2, 127.9, 127.7, 127.6, 127.5, 126.2, 126.1, 125.5, 68.6 (11 d), 48.4, 45.0, 43.1, 29.4 (4 t). Anal. ($\text{C}_{22}\text{H}_{22}\text{O}_2$) C, H.

3. Methoxyketones E (compounds 31-33, 36-41 and 58-68).

3-Methoxy-1,4-diphenyl-butan-1-one (31): yield 31 %, pale brown oil, $^1\text{H NMR } \delta$ 7.89 (m, 2 H), 7.54 (m, 1 H), 7.43 (m, 2 H), 7.29 (m, 2 H), 7.25-7.19 (m, 3 H), 4.13 (m, 1 H), 3.33 (s, 3 H), 3.23 (dd, 2 H, $J = 16.5, 7.3$), 2.96 (dd, 2 H, $J = 13.8, 6.1$), 2.92 (dd, 2 H, $J = 16.5, 4.9$), 2.87 (dd, 2 H, $J = 13.8, 6.2$); $^{13}\text{C NMR } \delta$ 198.8, 138.2, 137.3 (3 s), 133.1, 129.6, 128.5, 128.4, 128.1, 126.4, 78.6 (7 d), 57.6 (q), 42.9, 40.2 (2 t). Anal. ($\text{C}_{17}\text{H}_{18}\text{O}_2$) C, H.

3-Methoxy-1,5-diphenyl-pentan-1-one¹¹ (32): yield 36 %, yellow viscous oil, $^1\text{H NMR } \delta$ 7.95 (m, 2 H), 7.56 (m, 1 H), 7.46 (m, 2 H), 7.27 (m, 2 H), 7.21-7.15 (m, 3 H), 3.93 (m, 1 H), 3.37 (s, 3 H), 3.32 (dd, 2 H, $J = 16.2, 6.6$), 2.98 (dd, 2 H, $J = 16.2, 5.7$), 2.74 (m, 2 H), 1.91 (m, 2 H); $^{13}\text{C NMR } \delta$ 198.8, 142.0, 137.3 (3 s), 133.1, 128.6, 128.4, 128.4, 128.2, 125.8, 77.1 (7 d), 57.3 (q), 43.2, 36.2, 31.5 (3 t). Anal. ($\text{C}_{18}\text{H}_{20}\text{O}_2$) C, H.

4-Methoxy-1,4-diphenyl-butan-2-one (33): yield 20 %, a pale yellow oil, $^1\text{H NMR } \delta$ 7.35-7.20 (m, 6 H), 7.16-7.10 (m, 4 H), 4.64 (dd, 1H, $J = 8.8, 4.5$), 3.69 (d, 1H, $J = 15.8$), 3.65 (d, 1H, $J = 15.8$), 3.18 (s, 3 H), 2.98 (dd, 1 H, $J = 15.9, 8.8$), 2.59 (dd, 1 H, $J = 15.9, 4.5$); $^{13}\text{C NMR } \delta$ 205.6, 141.0, 133.8 (3 s), 129.5, 128.6, 128.5, 127.8, 127.0, 126.5, 79.6 (7 d), 56.7 (q), 51.0, 50.3 (2 t). Anal. ($\text{C}_{17}\text{H}_{18}\text{O}_2$) C, H.

1,5-Diphenyl-4-methoxy-pentan-2-one⁵ (36): yield 78%, a pale yellow oil; $^1\text{H NMR } \delta$ 7.34-7.14 (m, 10 H), 3.90 (m, 1 H), 3.65 (s, 2 H), 3.28 (s, 3 H), 2.84 (dd, 1 H, $J = 13.7, 6.0$), 2.70 (dd, 1 H, $J = 13.7, 6.4$), 2.64 (dd, 1 H, $J = 16.3, 7.5$), 2.44 (dd, 1 H, $J = 16.3, 4.9$); $^{13}\text{C NMR } \delta$ 207.0, 138.2, 134.2 (3 s), 129.8, 129.8, 128.9, 128.6, 127.3, 126.6, 78.6 (7 d), 57.7 (q), 51.3, 46.5, 40.2 (3 t). Anal. ($\text{C}_{18}\text{H}_{20}\text{O}_2$) C, H.

5-Methoxy-1,6-diphenylhexan-3-one (37): yield 57 %, a brown oil; $^1\text{H NMR } \delta$ 7.26-7.20 (m, 4 H), 7.19-7.10 (m, 6 H), 3.90 (m, 1 H), 3.28 (s, 3 H), 2.89-2.80 (m, 3 H), 2.76-2.61 (m, 3 H), 2.56 (dd, 1 H, $J = 16.1, 7.9$) 2.36 (dd, 1 H, $J = 16.1, 4.5$); $^{13}\text{C NMR } \delta$ 208.3, 141.0, 137.9 (3 s), 129.7, 128.4, 128.4, 128.3, 126.4, 126.0, 78.6 (7 d), 57.3 (q), 47.0, 45.3, 39.8, 29.4 (4 t). Anal. ($\text{C}_{19}\text{H}_{22}\text{O}_2 \cdot 0.25\text{H}_2\text{O}$) C, H.

2-Methoxy-1,7-diphenyl-heptan-4-one (38): yield 36 %, a reddish brown oil; $^1\text{H NMR } \delta$ 7.30-7.23 (m, 4 H), 7.21-7.11 (m, 6 H), 3.91 (m, 1 H), 3.29 (s, 3 H), 2.86 (dd, 1 H, $J = 13.7, 5.8$), 2.70 (dd, 1 H, $J = 13.7, 6.6$), 2.61-2.50 (m, 3 H), 2.42-2.29 (m, 3 H), 1.85 (m, 2 H); $^{13}\text{C NMR } \delta$ 209.1, 141.6, 138.0 (3 s), 129.5, 128.4, 128.4, 128.3, 126.3, 125.9, 78.3 (7 d), 57.3 (q), 46.9, 43.0, 39.8, 35.0, 24.9 (5 t). Anal. ($\text{C}_{20}\text{H}_{24}\text{O}_2$) C, H.

4-Methoxy-1,6-diphenylhexan-2-one (39): yield 40 %, a pale brown oil; $^1\text{H NMR } \delta$ 7.31-7.21 (m, 5 H), 7.17-7.11 (m, 5 H), 3.67 (m, 1 H), 3.66 (s, 2 H), 3.27 (s, 3 H), 2.71 (dd, 1 H, $J = 16.0, 6.9$), 2.61 (m, 2 H), 2.49 (dd, 1 H, $J = 16.0, 5.4$), 1.75 (m, 2 H); $^{13}\text{C NMR } \delta$ 206.7, 141.8, 133.9 (3 s), 129.5, 128.7, 128.3, 128.3, 127.0, 125.8, 76.5 (7 d), 56.9 (q), 51.0, 46.3, 35.6, 31.2 (4 t). Anal. ($\text{C}_{19}\text{H}_{22}\text{O}_2 \cdot 0.33\text{H}_2\text{O}$) C, H.

5-Methoxy-1,7-diphenylheptan-3-one (40): yield 25 %, yellow viscous oil; $^1\text{H NMR } \delta$ 7.28-7.23 (m, 4 H), 7.18-7.14 (m, 6 H), 3.69 (m, 1 H), 3.28 (s, 3 H), 2.88 (t, 2 H, $J = 7.5$), 2.75-2.58 (m, 5 H), 2.43 (dd, 1 H, $J = 15.8, 5.2$), 1.77 (m, 2 H); $^{13}\text{C NMR } \delta$ 208.4, 141.8, 141.0 (3 s), 128.4, 128.4, 128.3, 128.3, 126.1, 125.8 (6 d), 76.6 (d), 56.9 (q), 47.4, 45.3, 35.7, 31.3, 29.5 (5 t). Anal. ($\text{C}_{20}\text{H}_{24}\text{O}_2 \cdot 0.25\text{H}_2\text{O}$) C, H.

3-Methoxy-1,8-diphenyl-octan-5-one (41): yield 13 %, colourless viscous oil, $^1\text{H NMR } \delta$ 7.26 (m, 4 H), 7.19-7.14 (m, 6 H), 3.70 (m, 1 H), 3.31 (s, 3 H), 2.70-2.58 (m, 5 H), 2.42 (m, 3 H), 1.90 (m, 2 H),

1.79 (m, 2 H); ^{13}C NMR δ 209.3, 141.9, 141.6 (3 s), 128.5, 128.4, 128.4, 128.3, 125.9, 125.9 (6 d), 76.7 (d), 57.0 (q), 47.2, 43.0, 35.7, 35.0, 31.4, 25.0 (6 t). Anal. ($\text{C}_{21}\text{H}_{26}\text{O}_2$) C, H.

5-Methoxy-6-(4-methoxyphenyl)-1-phenyl-hexan-3-one (58): yield 42 %, a reddish brown oil; ^1H NMR δ 7.24-7.21 (m, 2 H), 7.20-7.12 (m, 3 H), 7.07 (m, 2 H), 6.81 (m, 2 H), 3.86 (m, 1 H), 3.77 (s, 3 H), 3.29 (s, 3 H), 2.86-2.79 (m, 3 H), 2.73-2.62 (m, 3 H), 2.57 (dd, 1 H, $J = 16.1, 7.9$), 2.39 (dd, 1 H, $J = 16.1, 4.5$); ^{13}C NMR δ 208.5, 158.2, 141.1 (3 s), 130.4 (d), 129.9 (s), 128.4, 128.3, 126.0, 113.8, 78.5 (5 d), 57.3, 55.2 (2 q), 47.0, 45.4, 38.9, 29.4 (4 t). Anal. ($\text{C}_{20}\text{H}_{24}\text{O}_3 \cdot 0.33\text{H}_2\text{O}$) C, H.

5-Methoxy-6-(4-fluorophenyl)-1-phenylhexan-3-one (59): yield 89 %, a yellow viscous oil; ^1H NMR δ 7.26 (m, 2 H), 7.18-7.14 (m, 3 H), 7.11 (m, 2 H), 6.95 (m, 2 H), 3.86 (m, 1 H), 3.27 (s, 3 H), 2.86 (t, 2 H, $J = 7.7$), 2.79 (dd, 1 H, $J = 13.9, 6.0$), 2.76-2.65 (m, 3 H), 2.57 (dd, 1 H, $J = 16.2, 7.6$) 2.36 (dd, 1 H, $J = 16.2, 4.8$); ^{13}C NMR δ 208.3, 161.6 (d), 141.0 (s), 133.6 (d), 130.9 (dd), 128.5, 128.3, 126.1 (3 d), 115.1 (dd), 78.2 (d), 57.4 (q), 46.9, 45.4, 39.0, 29.4 (4 t). Anal. ($\text{C}_{19}\text{H}_{21}\text{FO}_2 \cdot 0.33\text{H}_2\text{O}$) C, H.

5-Methoxy-6-naphthalen-1-yl-1-phenyl-hexan-3-one (60): yield 83 %, a pale brown viscous oil; ^1H NMR δ 8.08 (d, 1 H, $J = 8.5$), 7.81 (d, 1 H, $J = 8.1$), 7.70 (d, 1 H, $J = 8.1$), 7.51 (dd, 1 H, $J = 8.1, 7.0$), 7.45 (dd, 1 H, $J = 8.1, 7.0$), 7.36 (dd, 1 H, $J = 7.1, 7.1$), 7.31 (d, 1 H, $J = 6.7$), 7.21 (m, 2 H), 7.15-7.08 (m, 3 H), 4.09 (m, 1 H), 3.36 (dd, 1 H, $J = 13.9, 6.4$), 3.24 (s, 3 H), 3.10 (dd, 1 H, $J = 13.9, 6.8$), 2.80 (m, 2 H), 2.70-2.57 (m, 3 H), 2.40 (dd, 1 H, $J = 16.2, 4.6$); ^{13}C NMR δ 208.3, 141.0, 134.2, 133.9, 132.2 (5 s), 128.8, 128.4, 128.3, 127.9, 127.3, 126.0, 126.0, 125.5, 125.4, 123.8, 77.8 (11 d), 57.6 (q), 47.6, 45.3, 37.9, 29.4 (4 t). Anal. ($\text{C}_{23}\text{H}_{24}\text{O}_2$) C, H.

5-Methoxy-6-naphthalen-2-yl-1-phenyl-hexan-3-one (61): yield 95 %, a pale brown viscous oil; ^1H NMR δ 7.80 (d, 1 H, $J = 7.3$), 7.77 (d, 1 H, $J = 7.1$), 7.76 (d, 1 H, $J = 8.3$), 7.61 (s, 1 H), 7.44 (m, 2 H), 7.32 (dd, 1 H, $J = 8.3, 1.7$), 7.23 (m, 2 H), 7.14 (m, 1 H), 7.11 (m, 2 H), 4.01 (m, 1 H), 3.32 (s, 3 H), 3.03 (dd, 1 H, $J = 13.7, 5.9$), 2.88-2.79 (m, 3 H), 2.74-2.59 (m, 3 H), 2.42 (dd, 1 H, $J = 16.1, 4.6$); ^{13}C NMR δ 208.4, 141.0, 135.6, 133.5, 132.2 (5 s), 128.4, 128.3, 128.0, 128.0, 127.9, 127.6, 127.5, 126.0, 126.0, 125.5, 78.3 (11 d), 57.5 (q), 47.1, 45.4, 40.1, 29.4 (4 t). Anal. ($\text{C}_{23}\text{H}_{24}\text{O}_2$) C, H.

4-Methoxy-1-(4-fluorophenyl)-5-naphthalen-1-yl-pentan-2-one (62): yield 32 %, a brown viscous oil; ^1H NMR δ 8.07 (d, 1 H, $J = 8.4$), 7.83 (d, 1 H, $J = 8.0$), 7.73 (d, 1 H, $J = 8.1$), 7.52 (dd, 1 H, $J = 7.5, 7.0$), 7.47 (dd, 1 H, $J = 7.5, 7.1$), 7.35 (dd, 1 H, $J = 7.9, 7.3$), 7.31 (d, 1 H, $J = 6.8$), 7.03 (m, 2 H), 6.95 (m, 2 H), 4.08 (m, 1 H), 3.58 (d, 1 H, $J = 16.2$), 3.57 (d, 1 H, $J = 16.2$), 3.37 (dd, 1 H, $J = 13.9, 6.4$), 3.27 (s, 3 H), 3.11 (dd, 1 H, $J = 13.9, 6.8$), 2.72 (dd, 1 H, $J = 16.3, 7.6$), 2.50 (dd, 1 H, $J = 16.3, 7.6$); ^{13}C NMR δ 206.5, 161.9 (d), 134.1, 133.9, 132.2 (3 s), 131.0, (dd), 129.6, 128.8, 127.9, 127.3, 126.1, 125.6, 125.4, 123.8 (8 d), 115.4 (dd), 77.8 (d), 57.6 (q), 49.8, 46.7, 37.3 (3 t). Anal. ($\text{C}_{22}\text{H}_{21}\text{FO}_2$) C, H.

4-Methoxy-1-(2-methoxyphenyl)-5-naphthalen-1-yl-pentan-2-one (63): yield 24 %, a brown oil; ^1H NMR δ 8.10 (d, 1 H, $J = 8.5$), 7.78 (d, 1 H, $J = 8.1$), 7.67 (d, 1 H, $J = 8.0$), 7.48 (dd, 1 H, $J = 8.5, 8.0$), 7.41 (dd, 1 H, $J = 8.5, 8.1$), 7.33 (dd, 1 H, $J = 7.0, 7.0$), 7.29 (d, 1 H, $J = 7.0$), 7.16 (dd, 1 H, $J = 7.8, 7.0$), 7.02 (d, 1 H, $J = 7.4$), 6.84 (dd, 1 H, $J = 7.8, 7.4$), 6.72 (d, 1 H, $J = 8.2$), 4.07 (m, 1 H), 3.59 (s, 2 H), 3.57 (s, 3 H), 3.25 (dd, 1 H, $J = 14.1, 7.0$), 3.15 (dd, 1 H, $J = 14.1, 6.1$), 2.73 (dd, 1 H, $J = 16.6, 6.9$), 2.53 (dd, 1 H, $J = 16.6, 5.4$); ^{13}C NMR δ 207.2, 157.3, 134.5, 133.9, 132.3 (5 s), 131.2, 128.7, 127.9, 127.1, 126.0, 125.5, 125.4, 124.0 (8 d), 123.3 (s), 120.6, 110.4, 77.7 (3 d), 57.7, 55.2 (2 q), 46.7, 45.6, 37.7 (3 t). Anal. ($\text{C}_{23}\text{H}_{24}\text{O}_3$) C, H.

4-Methoxy-1,5-di-naphthalen-1-ylpentan-2-one⁵ (64): yield 40 %, a dark brown oil; ^1H NMR δ 8.04 (d, 1 H, $J = 8.1$), 7.86-7.78 (m, 3 H), 7.75 (d, 1 H, $J = 8.3$), 7.71 (d, 1 H, $J = 8.2$), 7.52-7.42 (m, 4 H), 7.37 (dd, 1 H, $J = 8.3, 7.0$), 7.33 (dd, 1 H, $J = 8.2, 7.0$), 7.26 (d, 1 H, $J = 7.0$), 4.09 (d, 1 H, $J = 16.2$), 4.06 (m, 1 H), 4.04 (d, 1 H, $J = 16.2$), 3.29 (dd, 1 H, $J = 13.9, 6.6$), 3.21 (s, 3 H), 3.08 (dd, 1 H, $J = 13.9, 6.4$), 2.75 (dd, 1 H, $J = 16.3, 7.3$), 2.49 (dd, 1 H, $J = 16.3, 5.0$); ^{13}C NMR δ 207.1, 134.2, 133.9, 133.9, 132.3, 132.2, 130.7 (7 s), 128.8, 128.7, 128.3, 128.0, 127.9, 127.2, 126.4, 126.0, 125.8, 125.5, 125.5, 125.4, 123.9, 123.8, 78.0 (15 d), 57.7 (q), 49.3, 46.4, 37.5 (3 t). Anal. ($\text{C}_{26}\text{H}_{24}\text{O}_2 \cdot 0.5\text{H}_2\text{O}$) C, H.

4-Methoxy-5-naphthalen-2-yl-1-phenylpentan-2-one (65): yield 28 %, a pale yellow viscous oil; ^1H NMR δ 7.81-7.73 (m, 3 H), 7.58 (br s, 1 H), 7.47-7.40 (m, 2 H), 7.32-7.19 (m, 4 H), 7.10 (m, 2 H), 4.00 (m, 1 H), 3.64, 3.62 (2d, 2 H, $J = 15.7$), 3.30 (s, 3 H), 3.00 (dd, 1 H, $J = 13.7, 6.0$), 2.86 (dd, 1 H, J

= 13.7, 6.3), 2.69 (dd, 1 H, $J = 16.4, 7.5$), 2.49 (dd, $J = 16.4, 4.9$); ^{13}C NMR δ 206.8, 135.6, 133.9, 133.5, 132.2 (5 s), 129.5, 128.5, 127.9, 127.9, 127.9, 127.6, 127.5, 127.0, 126.0, 125.4, 78.3 (11 d), 57.5 (q), 50.9, 46.2, 40.0 (3 t). Anal. ($\text{C}_{22}\text{H}_{22}\text{O}_2$) C, H.

4-Methoxy-1-(2-methoxyphenyl)-5-naphthalen-2-yl-pentan-2-one (66): yield 34 %, a pale brown oil; ^1H NMR δ 7.76 (d, 1 H, $J = 7.5$), 7.73 (d, 1 H, $J = 8.5$), 7.71 (d, 1 H, $J = 8.5$), 7.58 (s, 1 H), 7.39 (m, 2 H), 7.30 (dd, 1 H, $J = 8.4, 1.6$), 7.17 (ddd, 1 H, $J = 8.3, 7.2, 1.0$), 7.02 (dd, 1 H, $J = 7.4, 1.5$), 6.84 (ddd, 1 H, $J = 7.9, 7.0, 1.0$), 6.74 (d, 1 H, $J = 8.2$), 4.00 (m, 1 H), 3.60 (s, 2 H), 3.60 (s, 3 H), 2.95 (dd, 1 H, $J = 13.8, 6.3$), 2.87 (dd, 1 H, $J = 13.8, 5.9$), 2.66 (dd, 1 H, $J = 16.6, 7.1$), 2.50 (dd, 1 H, $J = 16.6, 5.2$); ^{13}C NMR δ 206.9, 157.2, 135.9, 133.5, 132.1 (5 s), 131.2, 128.4, 128.0, 127.9, 127.8, 127.5, 127.5, 125.9, 125.3 (9 d), 123.2 (s), 120.6, 110.4, 78.1 (3 d), 57.3, 55.1 (2 q), 46.0, 45.5, 40.1 (3 t). Anal. ($\text{C}_{23}\text{H}_{24}\text{O}_3 \cdot 0.33\text{H}_2\text{O}$) C, H.

4-Methoxy-5-(2-methoxyphenyl)-1-naphthalen-2-yl-pentan-2-one (67): yield 20 %, mp = 76.2-78.7 °C; ^1H NMR δ 7.81-7.74 (m, 3 H), 7.59 (s, 1 H), 7.46-7.41 (m, 2 H), 7.24 (d, 1 H, $J = 8.4$), 7.17 (dd, 1 H, $J = 8.2, 7.4$), 7.08 (d, 1 H, $J = 7.4$), 6.84 (dd, 1 H, $J = 7.4, 7.4$), 6.79 (d, 1 H, $J = 8.2$), 3.98 (m, 1 H), 3.81 (s, 2 H), 3.74 (s, 3 H), 3.32 (s, 3 H), 3.01 (dd, 1 H, $J = 13.3, 5.3$), 2.66 (dd, 1 H, $J = 16.0, 8.5$), 2.62 (dd, 1 H, $J = 13.3, 7.5$), 2.48 (dd, 1 H, $J = 16.0, 3.9$); ^{13}C NMR δ 207.1, 157.6, 133.5, 132.4, 131.7 (5 s), 131.3, 128.2, 128.2, 127.8, 127.7, 127.6, 127.6 (7 d), 126.2 (s), 126.1, 125.7, 120.4, 110.3, 77.3 (5 d), 57.3, 55.2 (2 q), 51.0, 46.8, 34.5 (3 t). Anal. ($\text{C}_{23}\text{H}_{24}\text{O}_3 \cdot 0.1\text{H}_2\text{O}$) C, H.

4-Methoxy-5-(3-methoxynaphthalen-2-yl)-1-naphthalen-2-yl-pentan-2-one⁵ (68): yield 83%, a brown viscous oil; ^1H NMR δ 7.98 (d, 1 H, $J = 8.7$), 7.78-7.68 (m, 5 H), 7.50 (s, 1 H), 7.46-7.40 (m, 3 H), 7.30 (ddd, 1 H, $J = 8.0, 6.8, 1.1$), 7.17 (d, 1 H, $J = 9.0$), 7.16 (dd, 1 H, $J = 8.4, 1.8$), 4.10 (m, 1 H), 3.82 (s, 3 H), 3.72 (s, 2 H), 3.43 (dd, 1 H, $J = 13.4, 5.6$), 3.36 (s, 3 H), 3.16 (dd, 1 H, $J = 13.4, 8.2$), 2.79 (dd, 1 H, $J = 16.3, 8.6$), 2.43 (dd, 1 H, $J = 16.3, 3.8$); ^{13}C NMR δ 207.1, 155.0, 133.5, 133.4, 132.4, 131.7, 129.2 (7 s), 128.5, 128.4, 128.2, 128.1, 127.6, 127.6, 127.6, 126.5, 126.0, 125.7, 123.3, 123.3 (12 d), 119.1 (s), 113.0, 77.7 (2 d), 57.5, 56.2 (2 q), 50.9, 47.1, 29.3 (3 t). Anal. ($\text{C}_{27}\text{H}_{26}\text{O}_3 \cdot 0.1\text{H}_2\text{O}$) C, H.

4. (Dimethyl- λ^4 -sulfanylidene)-diones F (compounds 42-49).

2-(Dimethyl- λ^4 -sulfanylidene)-1,4-diphenylbutane-1,3-dione⁶ (42): yield 91 %, mp = 107.3-109.2 °C, ^1H NMR δ 7.46-36 (m, 5 H), 7.29-7.25 (m, 2 H), 7.23-7.17 (m, 3 H), 4.01 (s, 2 H), 2.90 (br s, 6 H); ^{13}C NMR δ 193.0, 189.9, 143.1, 137.1 (4 s), 129.9, 129.6, 128.3, 128.2, 127.2, 126.2 (6 d), 87.5 (s), 48.0 (t), 26.8 (q). Anal. ($\text{C}_{18}\text{H}_{18}\text{O}_2\text{S} \cdot 0.33\text{H}_2\text{O}$) C, H, S: calcd, 10.53; found, 9.73.

2-(Dimethyl- λ^4 -sulfanylidene)-1,5-diphenylpentane-1,3-dione (43): yield 47 %, a colourless viscous oil; ^1H NMR δ 7.39-7.32 (m, 5 H), 7.19 (m, 2 H), 7.12 (m, 3 H), 2.89 (br m, 2 H), 2.89 (br m, 2H), 2.80 (s, 6 H); ^{13}C NMR δ 194.6, 189.6, 143.2, 141.8 (4 s), 129.7, 128.5, 128.2, 128.1, 127.0, 125.6 (6 d), 88.1 (s), 43.0, 31.7 (2 t), 26.6 (q). Anal. ($\text{C}_{19}\text{H}_{20}\text{O}_2\text{S} \cdot 0.33\text{H}_2\text{O}$) C, H, S.

2-(Dimethyl- λ^4 -sulfanylidene)-1,6-diphenylhexane-1,3-dione (44): yield 98 %, a colourless wax; ^1H NMR δ 7.40-7.32 (m, 5 H), 7.21 (m, 2 H), 7.11 (m, 3 H), 2.84 (s, 6 H), 2.57 (t, 2H, $J = 7.5$), 2.52 (t, 2 H, $J = 7.7$), 1.87 (tt, 2 H, $J = 7.7, 7.5$); ^{13}C NMR δ 195.1, 189.7, 143.3, 142.3 (4 s), 129.6, 128.4, 128.2, 128.1, 127.0, 125.5 (6 d), 88.2 (s), 41.3, 35.6, 27.2 (3 t), 26.6 (q). Anal. ($\text{C}_{20}\text{H}_{22}\text{O}_2\text{S} \cdot 0.66\text{H}_2\text{O}$) C, H: calcd, 6.95; found, 6.50. S: calcd, 9.48; found, 8.97.

3-(Dimethyl- λ^4 -sulfanylidene)-1,5-diphenylpentane-2,4-dione⁵ (45): yield 80%, a pale yellow viscous oil; ^1H NMR δ 7.30-7.18 (m, 10 H), 4.07 (br s, 4 H), 2.63 (s, 6 H); ^{13}C NMR δ 191.4, 137.1 (2 s), 129.5, 128.4, 126.3 (3 d), 85.4 (s), 48.7 (t), 26.5 (q). Anal. ($\text{C}_{19}\text{H}_{20}\text{O}_2\text{S} \cdot 0.33\text{H}_2\text{O}$) C, H, S.

3-(Dimethyl- λ^4 -sulfanylidene)-1,6-diphenylhexane-2,4-dione (46): yield 25 %, colourless viscous oil, ^1H NMR δ 7.32-7.18 (m, 9 H), 7.15 (m, 1 H), 4.03 (br s, 2 H), 3.07 (br s, 2 H), 2.93 (t, 2 H, $J = 7.6$), 2.64 (s, 6 H); ^{13}C NMR δ 192.4, 191.0 (2 br s), 142.0, 137.1 (2 s), 129.4, 128.7, 128.4, 128.2, 126.3, 125.7 (6 d), 86.3 (s), 48.7, 42.9, 31.9 (3 t), 26.7 (q). Anal. ($\text{C}_{20}\text{H}_{22}\text{O}_2\text{S} \cdot 0.25\text{H}_2\text{O}$) C, H, S: calcd, 9.69; found, 9.17.

3-(Dimethyl- λ^4 -sulfanylidene)-1,7-diphenylheptane-2,4-dione (47): yield 92 %, mp = 92.4-94.8 °C; $^1\text{H NMR } \delta$ 7.28-7.19 (m, 6 H), 7.19-7.10 (m, 4 H), 3.98 (br s, 2 H), 2.80 (br s, 2 H), 2.64 (s, 3 H), 2.64 (br s, 2 H), 1.92 (tt, 2 H, $J = 7.7, 7.6$); $^{13}\text{C NMR } \delta$ 194.0, 190.3, 142.3, 137.1 (4 s), 129.2, 128.4, 128.3, 128.1, 126.2, 125.6 (6 d), 85.9 (s), 48.4, 41.1, 35.5, 27.1 (4 t), 26.6 (q). Anal. ($\text{C}_{21}\text{H}_{24}\text{O}_2\text{S}\cdot 0.1\text{H}_2\text{O}$) C, H, S: calcd, 9.37; found, 8.50.

4-(Dimethyl- λ^4 -sulfanylidene)-1,7-diphenylheptane-3,5-dione (48): yield 60 %, mp = 68.5-71.0 °C; $^1\text{H NMR } \delta$ 7.26-7.21 (m, 8 H), 7.17-7.13 (m, 2 H), 3.03 (br s, 4 H), 2.93 (m, 4 H), 2.68 (s, 6 H); $^{13}\text{C NMR } \delta$ 192.8 (br s), 142.1 (s), 128.7, 128.3, 127.8 (3 d), 87.2 (s), 42.9 (br t), 32.0 (t), 27.0 (q). Anal. ($\text{C}_{21}\text{H}_{24}\text{O}_2\text{S}\cdot 0.1\text{H}_2\text{O}$) C, H, S.

4-(Dimethyl- λ^4 -sulfanylidene)-1,8-diphenyl-octane-3,5-dione (49): yield 14 %, colourless viscous oil, $^1\text{H NMR } \delta$ 7.28-7.22 (m, 6 H), 7.22-7.18 (m, 2 H), 7.17-7.13 (m, 2 H), 3.00 (br s, 2 H), 2.94 (t, 2 H, $J = 7.6$), 2.78 (s, 6 H), 2.67 (s, 2 H), 2.66 (t, 2 H, $J = 7.7$), 1.93 (tt, 2 H, $J = 7.7, 7.6$); $^{13}\text{C NMR } \delta$ 193.7, 192.4 (2 br s), 142.4, 142.0 (2 s), 128.7, 128.5, 128.3, 128.2, 125.8, 125.7 (6 d), 87.0 (s), 42.7, 41.0, 35.6, 32.0, 29.6 (5 t), 27.0 (q). Anal. ($\text{C}_{22}\text{H}_{26}\text{O}_2\text{S}$) C, H, S.

5. Diketones G (compounds 1 and 4-8).

1,4-Diphenylbutane-1,3-dione⁶ (1): yield 31 %, a colourless wax, $^1\text{H NMR } \delta$ 16.06 (br s, OH), 7.82 (m, 2 H), 7.49 (m, 1 H), 7.41 (m, 2 H), 7.35 (m, 2 H), 7.31-7.23 (m, 3 H), 6.12 (s, 1 H), 3.65 (s, 2 H); $^{13}\text{C NMR } \delta$ 194.8, 183.4, 135.2, 134.7 (4 s), 132.4, 129.4, 128.8, 128.6, 127.1, 127.0, 96.2 (7 d), 46.1 (t). Anal. ($\text{C}_{16}\text{H}_{14}\text{O}_2$). C: calcd, 80.65; found, 81.26. H: calcd, 5.92; found, 6.36.

1,5-Diphenylpentane-2,4-dione⁵ (4): yield 88 %, mp = 64.1-65.2 °C, $^1\text{H NMR } \delta$ 15.27 (br, OH), 7.32-7.19 (m, 10 H), 5.42 (s, 1 H), 3.55 (s, 4 H); $^{13}\text{C NMR } \delta$ 192.3, 135.1 (2 s), 129.4, 128.7, 127.1, 99.6 (4 d), 45.1 (t). Anal. ($\text{C}_{17}\text{H}_{16}\text{O}_2$) C, H.

1,6-Diphenylhexane-2,4-dione¹² (5): yield 71 %, a dark brown viscous oil, $^1\text{H NMR } \delta$ 15.39 (br s, 1 H, OH), 7.31-7.27 (m, 2 H), 7.26-7.22 (m, 3 H), 7.20-7.15 (m, 3 H), 7.13-7.10 (m, 2 H), 5.37 (1 H), 3.53 (s, 2 H), 2.87 (t, 2 H, $J = 7.6$), 2.53 (t, 2 H, $J = 7.6$); $^{13}\text{C NMR } \delta$ 193.4, 192.0 (2 s), 140.5, 135.1 (2 s), 129.3, 128.6, 128.4, 128.2, 127.0, 126.2, (6 d), 99.5 (s), 45.0, 39.9, 31.4 (3 t). Anal. ($\text{C}_{18}\text{H}_{18}\text{O}_2\cdot 0.2\text{H}_2\text{O}$) C, H: calcd, 6.87; found, 7.34.

1,7-Diphenylheptane-2,4-dione (6): yield 87 %, dark brown viscous oil, $^1\text{H NMR } \delta$ 15.42 (br s, 1 H, OH), 7.33-7.29 (m, 2 H), 7.27-7.14 (m, 6 H), 7.13-7.10 (m, 2 H), 5.39 (s, 1 H), 3.56 (s, 2 H), 2.59 (t, 2 H, $J = 7.7$), 2.24, (t, 2 H, $J = 7.7$), 1.89 (m, 2 H); $^{13}\text{C NMR } \delta$ 193.9, 192.4, 141.4, 135.2 (2 s), 129.3, 128.7, 128.4, 128.4, 127.0, 126.0, (6 d), 99.4 (s), 45.2, 37.5, 35.1, 24.7 (4 t). Anal. ($\text{C}_{19}\text{H}_{20}\text{O}_2\cdot 0.5\text{H}_2\text{O}$) C, H.

1,7-Diphenylheptane-3,5-dione¹³ (7): yield 91 %, a pale brown viscous oil; $^1\text{H NMR } \delta$ 15.43 (br s, 1 H, OH), 7.28-7.22 (m, 4 H), 7.20-7.12 (m, 6 H), 5.41 (s, 1 H), 2.90 (t, 2 H, $J = 7.6$), 2.56 (t, 2 H, $J = 7.6$); $^{13}\text{C NMR } \delta$ 193.0 (br s), 140.6 (s), 128.5, 128.3, 126.2, 99.6 (4 d), 39.9, 31.5 (2 t). Anal. ($\text{C}_{19}\text{H}_{20}\text{O}_2\cdot 0.5\text{H}_2\text{O}$) C, H.

1,8-Diphenyloctane-3,5-dione (8): yield 81 %, a pale brown viscous oil; $^1\text{H NMR } \delta$ 15.46 (br s, 1 H, OH), 7.29-7.24 (m, 4 H), 7.20-7.13 (m, 6 H), 5.42 (s, 1 H), 2.92 (t, 2 H, $J = 7.6$), 2.62 (t, 2 H, $J = 7.7$), 2.59 (t, 2 H, $J = 7.7$), 2.27 (t, 2 H, $J = 7.4$), 1.92 (m, 2 H); $^{13}\text{C NMR } \delta$ 193.8, 193.3, 141.5, 140.7 (4 s), 128.5, 128.5, 128.4, 128.3, 126.2, 126.0, 99.5 (7 d), 40.1, 37.5, 35.2, 31.5, 27.2 (5 t). Anal. ($\text{C}_{20}\text{H}_{22}\text{O}_2\cdot 0.2\text{H}_2\text{O}$) C, H.

6. Phenolic 4,5-dihydroisoxazoles 69-76.

5-(4-Hydroxy-benzyl)-3-phenethyl-4,5-dihydro-isoxazole (69): yield 51 %, mp = 124.8-126.4 °C; $^1\text{H NMR } \delta$ 7.25 (m, 2 H), 7.17 (m, 1 H), 7.13 (m, 2 H), 6.99 (m, 2 H), 6.78 (m, 2 H), 4.71 (m, 1 H), 2.85-2.77 (m, 4 H), 2.68 (dd, 1 H, $J = 14.0, 6.4$), 2.60-2.53 (m, 3 H); $^{13}\text{C NMR } \delta$ 159.0, 155.1, 140.2 (3 s), 130.5, 128.5, 128.2 (3 d), 128.2 (s), 126.3, 115.6, 80.9 (3 d), 41.5, 39.8, 32.5, 29.3 (4 t). Anal. ($\text{C}_{18}\text{H}_{19}\text{NO}_2\cdot 0.75\text{H}_2\text{O}$) C, H, N.

5-Benzyl-3-[2-(2-hydroxy-phenyl)-ethyl]-4,5-dihydro-isoxazole (70): yield 96 %, brown viscous oil, $^1\text{H NMR } \delta$ 7.28 (m, 2 H), 7.23 (m, 1 H), 7.18 (m, 2 H), 7.11 (m, 1 H), 6.71-6.67 (m, 3 H), 5.57 (br s, 1 H, OH), 4.78 (m, 1 H), 2.96 (dd, 1 H, $J = 13.9, 6.0$), 2.85 (dd, 1 H, $J = 17.1, 10.1$), 2.78-2.72 (m, 3 H), 2.65-2.55 (m, 3 H); $^{13}\text{C NMR } \delta$ 159.4, 156.4, 141.8, 136.7 (4 s), 129.7, 129.3, 128.5, 126.7, 120.1, 115.4, 113.7, 80.7 (8 d), 41.6, 40.7, 32.3, 29.0 (4 t). Anal. ($\text{C}_{18}\text{H}_{19}\text{NO}_2$) H, C: calcd, 76.84; found, 76.00. N: calcd, 4.98; found, 4.31.

5-Benzyl-3-[2-(3-hydroxy-phenyl)-ethyl]-4,5-dihydro-isoxazole (71): yield 99 %, mp = 120.6-122.8 °C, $^1\text{H NMR } \delta$ 7.81 (br s, 1 H, OH), 7.28 (m, 2 H), 7.22 (m, 1 H), 7.18 (m, 2 H), 7.07 (m, 1 H), 6.92 (d, 1 H, $J = 7.9$), 6.84 (t, 1 H, $J = 6.9$), 4.79 (m, 1 H), 2.96 (dd, 1 H, $J = 13.9, 6.3$), 2.91-2.85 (m, 3 H), 2.78 (dd, 1 H, $J = 13.9, 6.5$), 2.70-2.62 (m, 3 H); $^{13}\text{C NMR } \delta$ 160.2, 154.5, 136.7 (3 s), 130.2, 129.3, 128.5, 127.8 (4 d), 127.2 (s), 126.7, 120.4, 116.9, 81.0 (4 d), 41.8, 40.6, 28.8, 26.6 (4 t). Anal. ($\text{C}_{18}\text{H}_{19}\text{NO}_2 \cdot \text{H}_2\text{O}$) N, C: calcd, 72.22; found, 71.68. H: calcd, 7.07; found, 6.57.

5-Benzyl-3-[2-(4-hydroxy-phenyl)-ethyl]-4,5-dihydro-isoxazole (72): yield 89 %, mp = 143.0-144.8 °C, $^1\text{H NMR } \delta$ 7.29 (m, 2 H), 7.22 (m, 1 H), 7.18 (m, 2 H), 6.98 (m, 2 H), 6.79 (m, 2 H), 6.52 (br s, 1 H, OH), 4.78 (m, 1 H), 2.95 (dd, 1 H, $J = 13.9, 6.1$), 2.88 (dd, 1 H, $J = 17.1, 10.2$), 2.76 (dd, 1 H, $J = 13.9, 6.7$), 2.72 (m, 2 H), 2.62 (dd, 1 H, $J = 17.1, 7.5$), 2.57 (m, 2 H); $^{13}\text{C NMR } \delta$ 159.3, 155.4, 137.0, 131.4 (4 s), 129.5, 129.3, 128.6, 126.8, 115.5, 80.8 (6 d), 41.7, 40.9, 31.9, 29.7 (4 t). Anal. ($\text{C}_{18}\text{H}_{19}\text{NO}_2 \cdot 0.75\text{H}_2\text{O}$) C, H, N.

5-(4-Fluoro-benzyl)-3-(2-hydroxy-phenethyl)-4,5-dihydro-isoxazole (73): yield 99 %, mp = 124.8-126.4 °C, $^1\text{H NMR } \delta$ 7.12-7.09 (m, 3 H), 7.07 (d, 1 H, $J = 7.8$), 6.92 (m, 2 H), 6.71-6.67 (m, 2 H), 6.66 (d, 1 H, $J = 7.7$), 4.71 (m, 1 H), 2.87-2.81 (m, 2 H), 2.76-2.68 (m, 3 H), 2.61-2.50 (m, 3 H); $^{13}\text{C NMR } \delta$ 161.7 (d), 159.3, 156.4, 141.8 (3 s), 132.6 (d), 130.9 (dd), 129.7, 120.1, 115.4 (dd), 115.2, 113.6, 80.5 (3 d), 41.6, 39.9, 32.3, 28.9 (4 t). Anal. ($\text{C}_{18}\text{H}_{18}\text{FNO}_2 \cdot 0.5\text{H}_2\text{O}$) C, H, N.

5-(4-Fluoro-benzyl)-3-(4-hydroxy-phenethyl)-4,5-dihydro-isoxazole (74): yield 62 %, a dark brown viscous oil, $^1\text{H NMR } \delta$ 7.11 (m, 2 H), 6.95-6.92 (m, 4 H), 6.75 (m, 2 H), 4.72 (m, 1 H), 2.90-2.83 (m, 2 H), 2.74-2.66 (m, 3 H), 2.59-2.52 (m, 3 H); $^{13}\text{C NMR } \delta$ 161.7 (d), 159.3, 154.8 (2 s), 132.5 (d), 131.5 (s), 130.9 (dd), 129.2, 115.6 (2 d), 115.3 (dd), 80.5 (d), 41.5, 39.8, 31.6, 29.3 (4 t). Anal. ($\text{C}_{18}\text{H}_{18}\text{FNO}_2 \cdot \text{H}_2\text{O}$) C, N, H: calcd, 6.35; found, 5.78.

5-(4-Hydroxy-benzyl)-3-(2-hydroxy-phenethyl)-4,5-dihydro-isoxazole (75): yield 98 %, a dark brown viscous oil, $^1\text{H NMR}$ (in CH_3OD) δ 7.04-7.00 (m, 4 H), 6.74 (d, 1 H, $J = 7.6$), 6.73-6.69 (m, 3 H), 4.69 (m, 1 H), 2.95 (dd, 1 H, $J = 17.2, 10.1$), 2.82-2.78 (m, 3 H), 2.72-2.56 (m, 4 H); $^{13}\text{C NMR}$ (in MeOD) δ 161.4, 156.9, 156.2 (3 s), 131.3, 131.0 (2 d), 129.1 (s), 128.4 (d), 127.8 (d), 120.5 (s), 116.1, 115.9, 82.3 (3 d), 42.1, 40.8, 28.6, 28.3 (4 t). Anal. ($\text{C}_{18}\text{H}_{19}\text{NO}_3 \cdot \text{H}_2\text{O}$) C, H, N

5-(4-Hydroxy-benzyl)-3-(4-hydroxy-phenethyl)-4,5-dihydro-isoxazole (76): yield 99 %, a dark brown viscous oil, $^1\text{H NMR}$ (in CH_3OD) δ 7.01 (m, 2 H), 6.99 (m, 2 H), 6.71 (m, 2 H), 6.71 (m, 2 H), 4.69 (m, 1 H), 2.89 (dd, 1 H, $J = 17.2, 10.2$), 2.76 (dd, 1 H, $J = 14.0, 6.1$), 2.72-2.62 (m, 4 H), 2.55 (m, 2 H); $^{13}\text{C NMR}$ (in MeOD) δ 160.8, 157.0, 156.7, 132.5 (4 s), 131.4, 130.2 (2 d), 129.0 (s), 116.2, 116.1, 82.2 (3 d), 42.1, 40.8, 32.7, 30.4 (4 t). Anal. ($\text{C}_{18}\text{H}_{19}\text{NO}_3 \cdot \text{H}_2\text{O}$) C, H, N.

7. Table of elemental analysis data

Compound	Formula	Calculated			Found		
		C	H	N	C	H	N
1	C ₁₆ H ₁₄ O ₂	80.65	5.92		81.26	6.36	
4	C ₁₇ H ₁₆ O ₂	80.93	6.39		81.22	6.45	
5	C ₁₈ H ₁₈ O ₂ ·0.2H ₂ O	80.09	6.87		80.26	7.34	
6	C ₁₉ H ₂₀ O ₂ ·0.5H ₂ O	78.86	7.31		78.61	6.92	
7	C ₁₉ H ₂₀ O ₂ ·0.5H ₂ O	78.86	7.31		78.67	7.12	
8	C ₂₀ H ₂₂ O ₂ ·0.2H ₂ O	80.61	7.58		80.55	7.57	
9	C ₁₆ H ₁₅ NO·0.1H ₂ O	80.37	6.41	5.86	80.48	6.39	5.79
10	C ₁₇ H ₁₇ NO·0.1H ₂ O	80.67	6.85	5.53	80.75	6.84	5.85
11	C ₁₆ H ₁₅ NO·0.1H ₂ O	80.37	6.41	5.86	80.46	6.34	5.76
12	C ₁₇ H ₁₇ NO·0.1H ₂ O	80.67	6.85	5.53	80.70	6.86	5.64
13	C ₁₈ H ₁₉ NO	81.48	7.22	5.28	81.19	7.31	5.35
14	C ₁₇ H ₁₇ NO·0.1H ₂ O	80.67	6.85	5.53	80.76	6.81	5.57
15	C ₁₈ H ₁₉ NO·0.1H ₂ O	80.93	7.24	5.24	80.91	7.24	5.23
16	C ₁₉ H ₂₁ NO·0.1H ₂ O	81.16	7.60	4.98	80.87	7.59	5.07
17	C ₁₈ H ₁₉ NO·0.33H ₂ O	79.67	7.31	5.16	79.37	7.06	5.19
18	C ₁₉ H ₂₁ NO	81.68	7.58	5.01	81.47	7.70	4.99
19	C ₂₀ H ₂₃ NO	81.87	7.90	4.77	81.51	7.92	4.77
20	C ₁₆ H ₁₆ O ₂	79.97	6.71		79.84	6.68	
21	C ₁₇ H ₁₈ O ₂	80.28	7.13		80.39	7.22	
22	C ₁₆ H ₁₆ O ₂	79.97	6.71		80.69	6.62	
23	C ₁₇ H ₁₈ O ₂	80.28	7.13		80.32	7.33	
24	C ₁₈ H ₂₀ O ₂ ·0.1H ₂ O	80.03	7.54		80.04	7.54	
25	C ₁₇ H ₁₈ O ₂	80.28	7.13		80.38	7.39	
26	C ₁₈ H ₂₀ O ₂	80.56	7.51		80.49	7.65	
27	C ₁₉ H ₂₂ O ₂ ·0.1H ₂ O	80.30	7.87		80.07	7.86	
28	C ₁₈ H ₂₀ O ₂	80.56	7.51		80.64	7.68	
29	C ₁₉ H ₂₂ O ₂ ·0.5H ₂ O	78.32	7.96		78.69	8.07	
30	C ₂₀ H ₂₄ O ₂	81.04	8.16		81.40	8.37	
31	C ₁₇ H ₁₈ O ₂	80.28	7.13		80.23	7.12	
32	C ₁₈ H ₂₀ O ₂	80.56	7.51		80.73	7.56	
33	C ₁₇ H ₁₈ O ₂	80.28	7.13		80.17	7.10	
36	C ₁₈ H ₂₀ O ₂	80.56	7.51		80.62	7.50	
37	C ₁₉ H ₂₂ O ₂ ·0.25H ₂ O	79.55	7.91		79.54	7.63	
38	C ₂₀ H ₂₄ O ₂	81.04	8.16		81.19	7.94	
39	C ₁₉ H ₂₂ O ₂ ·0.33H ₂ O	79.13	7.92		79.26	7.69	
40	C ₂₀ H ₂₄ O ₂ ·0.25H ₂ O	79.83	8.21		79.72	8.10	
41	C ₂₁ H ₂₆ O ₂	81.25	8.44		81.64	8.06	

Compound	Formula	Calculated				Found			
		C	H	N	S	C	H	N	S
42	C ₁₈ H ₁₈ O ₂ S·0.33H ₂ O	71.02	6.18		10.53	70.96	5.95		9.73
43	C ₁₉ H ₂₀ O ₂ S·0.33H ₂ O	71.68	6.54		10.07	71.58	6.37		9.74
44	C ₂₀ H ₂₂ O ₂ S·0.66H ₂ O	71.00	6.95		9.48	70.96	6.50		8.97
45	C ₁₉ H ₂₀ O ₂ S·0.33H ₂ O	71.68	6.54		10.07	71.66	6.27		9.68
46	C ₂₀ H ₂₂ O ₂ S·0.25H ₂ O	72.58	6.85		9.69	72.61	6.77		9.17
47	C ₂₁ H ₂₄ O ₂ S·0.1H ₂ O	73.69	7.13		9.37	73.60	7.14		8.50
48	C ₂₁ H ₂₄ O ₂ S·0.1H ₂ O	73.69	7.13		9.37	73.53	7.29		8.98
49	C ₂₂ H ₂₆ O ₂ S	74.54	7.39		9.04	74.78	7.24		8.79
50	C ₁₉ H ₂₁ NO ₂ ·0.2H ₂ O	76.33	7.21	4.68		76.44	7.35	4.26	
51	C ₁₈ H ₁₈ FNO	76.30	6.40	4.94		76.00	6.41	4.91	
52	C ₂₂ H ₂₁ NO·0.2H ₂ O	82.83	6.76	4.39		82.71	6.76	4.46	
53	C ₂₂ H ₂₁ NO·0.1H ₂ O	83.30	6.74	4.42		83.09	6.70	4.41	
54	C ₁₉ H ₂₂ O ₃ ·0.2H ₂ O	75.57	7.48			75.83	7.60		
55	C ₁₈ H ₁₉ FO ₂ ·0.2H ₂ O	74.56	6.74			74.58	6.65		
56	C ₂₂ H ₂₂ O ₂ ·0.33H ₂ O	81.47	7.04			81.54	6.93		
57	C ₂₂ H ₂₂ O ₂	82.99	6.96			83.05	7.17		
58	C ₂₀ H ₂₄ O ₃ ·0.33H ₂ O	75.46	7.81			75.31	7.45		
59	C ₁₉ H ₂₁ FO ₂ ·0.33H ₂ O	74.50	7.13			74.57	7.15		
60	C ₂₃ H ₂₄ O ₂	83.10	7.28			82.84	7.54		
61	C ₂₃ H ₂₄ O ₂	83.10	7.28			82.86	7.59		
62	C ₂₂ H ₂₁ FO ₂	78.55	6.29			78.47	6.25		
63	C ₂₃ H ₂₄ O ₃	79.28	6.94			79.01	6.90		
64	C ₂₆ H ₂₄ O ₂ ·0.5H ₂ O	82.73	6.68			82.98	6.46		
65	C ₂₂ H ₂₂ O ₂	82.99	6.96			82.85	6.93		
66	C ₂₃ H ₂₄ O ₃ ·0.33H ₂ O	77.94	7.01			77.98	6.82		
67	C ₂₃ H ₂₄ O ₃ ·0.1H ₂ O	78.87	6.96			78.69	6.88		
68	C ₂₇ H ₂₆ O ₃ ·0.1H ₂ O	81.01	6.60			80.90	6.42		
69	C ₁₈ H ₁₉ NO ₂ ·0.75H ₂ O	73.70	6.99	4.78		73.99	6.66	4.72	
70	C ₁₈ H ₁₉ NO ₂	76.84	6.81	4.98		76.00	6.42	4.31	
71	C ₁₈ H ₁₉ NO ₂ ·H ₂ O	72.22	7.07	4.68		71.68	6.57	4.45	
72	C ₁₈ H ₁₉ NO ₂ ·0.75H ₂ O	73.70	6.99	4.78		73.55	6.66	5.00	
73	C ₁₈ H ₁₈ FNO ₂ ·0.5H ₂ O	70.11	6.21	4.54		70.00	5.99	4.34	
74	C ₁₈ H ₁₈ FNO ₂ ·H ₂ O	68.12	6.35	4.41		68.36	5.78	4.23	
75	C ₁₈ H ₁₉ NO ₃ ·H ₂ O	68.55	6.71	4.44		68.44	6.37	4.47	
76	C ₁₈ H ₁₉ NO ₃ ·H ₂ O	68.55	6.71	4.44		68.17	6.56	4.40	

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