Supporting Information


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1. General information: VSWDFA

All the reagents were purchased from Sigma-Aldrich and Alfa Aesar. The solvents were purchased from commercial suppliers and used without further purification. GC equipped with flame ionization detector and a capillary column (Elite-1, 30 m x 0.32 mm x 0.25 μm) was used for gas chromatography analysis. The mass of the products were identified using GCMS-QP 2010 instrument (Rtx-17, 30 m x 25 mm ID, film thickness (df) = 0.25 μm) (column flow 2 mLmin⁻¹, 80 °C to 240 °C at 10 °C/min rise). Products were purified by column chromatography on 60–120 mesh silica gels. The ¹H NMR spectra was recorded at 400 MHz spectrometer in CDCl₃ using TMS as an internal standard. The ¹³C NMR spectra were recorded at 100 MHz in CDCl₃ using TMS as an internal standard. Chemical shifts are reported in parts per million (δ) relative to tetramethylsilane as internal standard. J (coupling constant) values were reported in Hz. Splitting patterns of proton are described as s (singlet), d (doublet), t (triplet) and m (multiplet).

Temperature programme for GC-MS analysis

3. Copies of ¹H NMR and ¹³C NMR Spectra:

(3a) 1,3,3-triphenylpropan-1-one

![Chemical structure of 1,3,3-triphenylpropan-1-one](image)

White solid; yield: 213 mg (75%); ¹H NMR (CDCl₃, 400 MHz) δ 7.98-7.96 (m, 2H), 7.58-7.56 (m, 1H), 7.49-7.45 (m, 2H), 7.31-7.28 (m, 8H), 7.23-7.18 (m, 2H), 4.87 (t, J = 8Hz, 1H), 3.78 (d, J= 8Hz, 2H); ¹³C NMR (CDCl₃, 100 MHz) δ 198.01, 144.17, 137.11, 128.61,
128.57, 128.07, 127.86, 126.39, 45.97, 44.76; GCMS (EI): m/z 286 (10.5, M^+), 167 (31.3), 165 (15.5), 155 (28.0), 105 (100.0), 77 (28.3), 71(10.5), 43(11.4).

(3b) 3,3-diphenyl-1-p-tolylpropan-1-one

White solid; yield: 228 mg (76%); ^1H NMR (CDCl$_3$, 400 MHz) δ 7.90-7.88 (m, 2H), 7.31-7.26 (m, 7H), 7.23-7.20 (m, 5H), 4.87 (t, J = 8Hz, 1H), 3.76 (d, J= 8Hz, 2H), 2.44 (s, 3H); ^13C NMR (CDCl$_3$, 100 MHz) 197.63, 144.27, 143.88, 134.65, 129.29, 128.56, 128.22, 127.88, 126.36, 46.01, 44.62, 21.65; GCMS (EI): m/z 300 (10.7, M^+), 167 (25.8), 165 (12.8), 120 (9.9), 119 (100.0), 91 (24.8), 77 (4.9).

(3f) 3-(4-methoxyphenyl)-1,3-diphenylpropan-1-one

White solid; yield: 240 mg (76%); ^1H NMR (CDCl$_3$, 400 MHz) δ 7.98-7.96 (m, 2H), 7.58-7.56 (m, 1H), 7.49-7.45 (m, 2H), 7.31-7.19 (m, 7H), 6.86-6.84 (m, 2H), 4.83 (t, 1H), 3.79 (s, 3H), 3.74 (d, 2H); ^13C NMR (CDCl$_3$, 100 MHz) 198.16, 158.10, 144.57, 137.17, 136.32, 133.05, 128.80, 128.69, 128.61, 128.56, 128.21, 128.09, 127.90, 127.77, 126.32, 113.98, 55.22, 45.32, 44.98; GCMS (EI): m/z 316 (12.7, M^+), 198 (15.6), 197 (100.0), 165 (12.3), 121 (15.1), 105 (91.1), 77 (24.7).

(3g) 1,3-diphenyl-3-o-tolylpropan-1-one

White solid; yield: 210 mg (70%); ^1H NMR (CDCl$_3$, 400 MHz) δ 7.93-7.91 (m, 2H), 7.78-7.56 (m, 1H), 7.56-7.52 (m, 2H), 7.45-7.41 (m, 1H), 7.21-7.08 (m, 3H), 7.04-6.76 (m, 5H), 4.82 (t, 1H), 3.83 (dd, 2H), 2.29 (s, 3H); ^13C NMR (CDCl$_3$, 100 MHz) 198.00, 144.08, 142.27, 137.05, 136.06, 133.30, 128.83, 128.54, 128.20, 128.15, 126.62, 126.32, 126.29, 126.26, 44.74, 41.77, 19.96; GCMS (EI): m/z 300 (2.9, M^+), 282 (43.1), 191 (11.6), 181 (30.7), 180 (15.9), 179 (20.3), 178 (10.6), 166 (17.8), 165 (22.7), 105 (100.0), 103 (12.3), 77 (39.1), 51 (7.2).
(3a) $^1$H NMR

(3a) $^{13}$C NMR
(3b) $^1$H NMR

(3b) $^{13}$C NMR
(3f) $^1$H NMR

(3f) $^{13}$C NMR
(3g) $^1$H NMR

(3g) $^{13}$C NMR