Supporting Information

1. General Information

Reagents: Tetrahydrofuran (THF, super dehydrated) and diethyl ether (Et_2O, super dehydrated) were purchased from Kanto Chemical Co., Inc. and Sigma-Aldrich. Hexane and dimethylformamide (DMF) were purchased from Sigma-Aldrich as dry solvents. *tert*-Butyllithium (*t*-BuLi, 1.7 M in pentane) was purchased from Sigma-Aldrich. The substrates **1a**, **1b** and **1d** were prepared according to the literature procedures with some modification.[1] The substrate **1c** was prepared according to the literature.[2] Electrophiles were purchased from Sigma-Aldrich.

Devices: Two types of microreactor systems including a modular type (Figure S1-a and S1-b) and built-in type (Figure S1-c and S1-d) were used. For the modular-type system, stainless steel (SUS316) microtube reactors with inner diameters of 250 and 1000 μm were purchased from GL Science and were cut into appropriate lengths (3.5, 30, 50 or 100 cm). Stainless steel (SUS304) T-shaped micromixers with inner diameters of 250 and 500 μm were manufactured by Sanko Seiki Co. The micromixers and microtube reactors were connected with stainless steel fittings (GL Science, 1/16" OUW) to construct the microreaction system. The stainless steel (SUS316) built-in type device (inner diameter of M1, M2, and R1: 250 μm, length of R1: 1.0 cm) was manufactured by YMC Co., Ltd. The built-in type microreactor was used for controlling the residence time to less than 10 ms.[3]

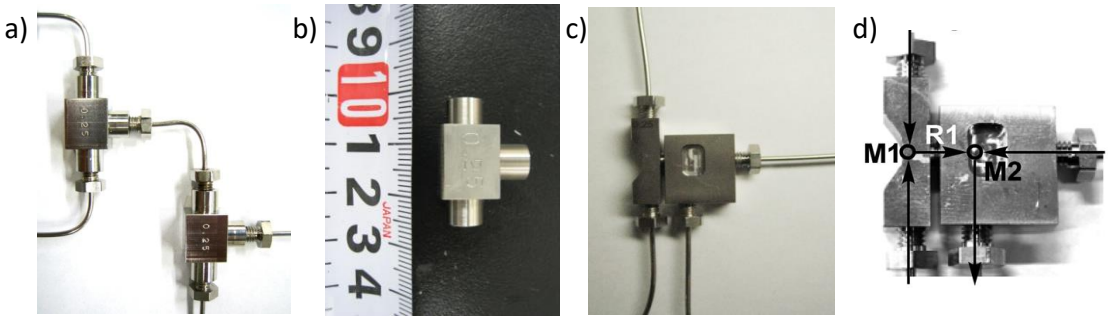


Figure S1. Photo of flow microreactors. a) modular-type flow microreactor assembly including two micromixers and microtube reactors. b) T-shaped micromixer (inner diameter: 250 μm). c) and d) built-in-type flow microreactor assembly.

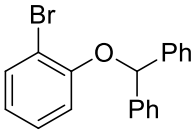
Reaction procedure: The microfluidic system was dipped in water bath or ice bath to control the temperature. The reagents were continuously injected to the microfluidic system using a syringe pumps (Harvard Model PHD 2000), equipped with gas tight syringes (50 mL, inner diameter: 27.6 mm) purchased from SGE Analytical Science. After a steady state was reached, the product solution was collected for 30 s unless otherwise noted.

Spectrometric identification: Nuclear magnetic resonance (NMR) spectra were recorded on Bruker Avance III (300 or 500 MHz for ^{1}H NMR, 125 or 150 MHz for ^{13}C NMR) or Varian MERCURYplus-400 (400 MHz for ^{1}H NMR, 100 MHz for ^{13}C NMR). ^{1}H and ^{13}C chemical shifts were recorded in ppm downfield of Me_4Si or $CHCl_3$ as a standard in $CDCl_3$ unless otherwise noted. Multiplicities were reported using the following abbreviations: s = singlet, d= doublet, t = triplet, q = quartet, quint = quintet, sext = sextet, sept = septet, m = multiplet, br = broad resonance. Unless otherwise noted, all commercial materials were used without further purification. High

resolution mass spectral data were obtained from the Korea Basic Science Institute (Daegu) on Jeol JMS 700 high resolution mass spectrometer by electron ionization (EI) or fast atom bombardment (FAB) technique unless otherwise noted. Electron ionization (EI) mass spectra of compound **2b** were recorded on Jeol JMS-SX102A spectrometer. Atomospheric pressure chemical ionization (APCI) mass spectra for compound **2d** were recorded on Thermo Fisher Scientific EXACTIVE spectrometer.

2. Preparation of Substrates **1a**, **1b**, **1c**, and **1d**

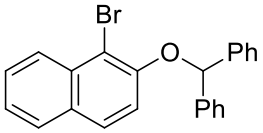
2-1. Preparation of ((2-bromophenoxy)methylene)dibenzene (**1a**)



1a

α-Bromodiphenylmethane (13.6 g, 55 mmol) and potassium carbonate (16.6 g, 120 mmol) were added to a solution of 2-bromophenol (8.65 g, 50 mmol) in dry DMF (120 mL). The resulting mixture was heated at reflux for 5 h, then cooled. The mixture was quenched with H_2O (180 mL) and exacted with Et_2O (3 x 150 mL), and the organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **1a** as a colorless oil (12.9 g, 76%): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.53 (dd, *J* = 7.9, 1.5 Hz, 1H), 7.49 (d, *J* = 7.5 Hz, 4H), 7.33 (t, *J* = 7.8 Hz, 4H), 7.26–7.23 (m, 2H), 7.10–7.06 (m, 1H), 6.82 (dd, *J* = 8.3, 0.9 Hz, 1H), 6.76 (td, *J* = 7.6, 1.3 Hz, 1H), 6.27 (s, 1H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 154.1, 141.0, 133.4, 128.6, 128.1, 127.8, 126.6, 122.1, 115.4, 113.1, 82.3 ppm; HRMS (EI) m/z cald. for $C_{19}H_{15}BrO^+$ $[M]^+$: 338.0306; found 338.0308.

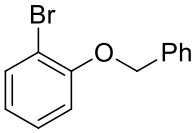
2-2. Preparation of 2-(benzhydryloxy)-1-bromonaphthalene (**1b**)



1b

α-Bromodiphenylmethane (13.6 g, 55 mmol) and potassium carbonate (16.6 g, 120 mmol) were added to a solution of 1-bromonaphthalen-2-ol (11.615 g, 50 mmol) in dry DMF (120 mL). The resulting mixture was heated at reflux for 5 h, then cooled. The mixture was quenched with H_2O (180 mL) and exacted with Et_2O (3 x 150 mL), and the organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **1b** as a yellowish powder (16.3 g, 84%). The spectral data were identical to those reported in the literature.[1]

2-3. Preparation of 1-(benzyloxy)-2-bromobenzene (**1c**)

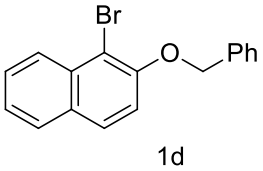


1c

Benzyl bromide (9.4 g, 55 mmol) and potassium carbonate (16.6 g, 120 mmol) were added to a solution of 2-bromophenol (8.65 g, 50 mmol) in dry DMF (120 mL). The resulting mixture was heated at reflux for 5 h, then cooled. The mixture was quenched with H_2O (180 mL) and exacted with Et_2O (3 x 150 mL), and the organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **1c**

as a yellowish oil (12.1 g, 92%). The spectral data was identical to those reported in the literature.[2]

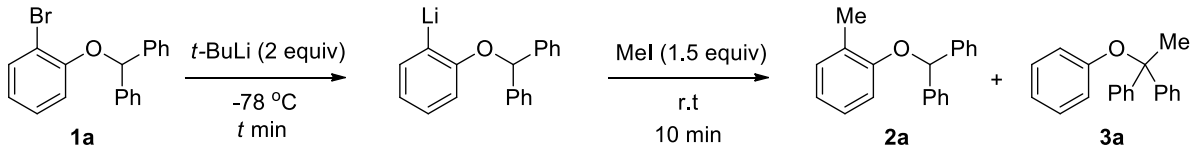
2-4. Preparation of 2-(benzyloxy)-1-bromonaphthalene (**1d**)



1d

Benzyl bromide (9.4 g, 55 mmol) and potassium carbonate (16.6 g, 120 mmol) were added to a solution of 1-bromonaphthalen-2-ol (11.62 g, 50 mmol) in dry DMF (120 mL). The resulting mixture was heated at reflux for 5 h, then cooled. The mixture was quenched with H_2O (180 mL) and exacted with Et_2O (3 x 150 mL), and the organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **1d** as a white powder (12.4 g, 79%). The spectral data was identical to those reported in literature.[1]

3. Br-Li Exchange Reaction of **1a** and Reaction with Iodomethane in a Flask



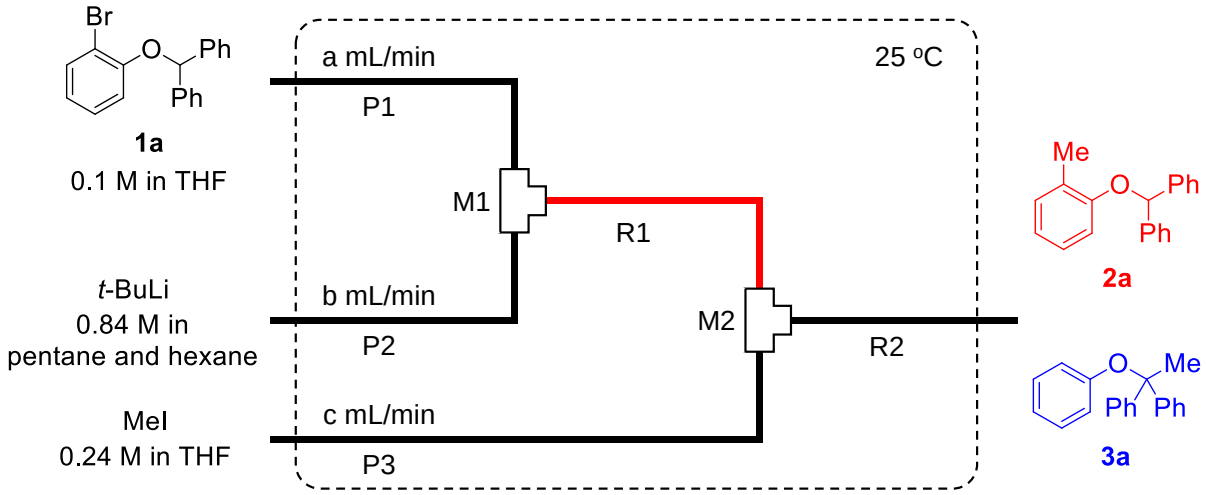
t-Butyllithium (1.7 M in pentane, 2.0 equiv) was added dropwise to a solution of ((2-bromophenoxy)methylene)dibenzene (**1a**; 0.10 M in THF) in a 25 mL round-bottom glass flask at regular pace with magnetic stirring for 1.0 min at -78 °C under argon. After stirring for *t* min, iodomethane (1.5 equiv) was added. After removing the cooling bath, the reaction mixture was stirred for 10 min at room temperature. The reaction mixture was quenched with saturated aqueous NH_4Cl solution (5 mL) and brine (5 mL) and the reaction bath was removed. After addition of 1,3,5-trimethoxybenzene (50 mg) as an internal standard and extracted with diethyl ether (6 mL), an aliquot (2 mL) of the organic phase was concentrated and analyzed by ^{1}H NMR spectroscopy. Based on the relative intensities of peaks at 2.38 ppm (3H of **2a**), 1.94 ppm (3H of **3a)** and 6.01 ppm (3H of 1,3,5-trimethoxybenzene), the ^{1}H NMR yields of **2a** and **3a** were determined (Table S1).

Table S1. Br-Li exchange of substrate **1a** and followed reaction with iodomethane in a flask.

Entry	*t* (min)	Yield of **2a** (%)	Yield of **3a** (%)
1	1	58	31
2	10	48	42
3	60	0	94

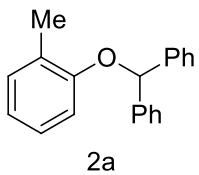
4. Br-Li Exchange Reaction of **1a, 1b, 1c,** and **1d** and Reaction with Iodomethane Using Flow Microreactors

4-1. Br-Li Exchange reaction of ((2-bromophenoxy)methylene)dibenzene (**1a**) followed by reaction with iodomethane using flow microreactors



A microfluidic system consisting of two T-shaped micromixers (M1 and M2), two microtube reactors (R1 and R2) and three tube pre-temperature-retaining units (for P1 and P3, 1000 μm of inner diameter (ø) and 50 cm of length (*L*); for P2, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of ((2-bromophenoxy)methylene)dibenzene (**1a**; 0.10 M in THF) and a solution of *t*-BuLi (0.84 M in pentane:hexane 1:1.2 v/v) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (various sizes) and was mixed with a solution of iodomethane (0.24 M in THF) in M2 (ø: 500 μm). The resulting solution was passed through R2 (ø: 1000 μm, *L*: 50 cm). The ratio of flow rate for ((2-bromophenoxy)methylene)dibenzene (**1a**), *t*-BuLi and iodomethane (a:b:c) was kept at 4:1:2, respectively. After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). Then, diethyl ether (6 mL), brine (2 mL), and 1,3,5-trimethoxybenzene (50 mg) were added, and then an aliquot (2 mL) of the organic phase was concentrated and analyzed by ^{1}H NMR spectroscopy or purified as following procedures. Based on the relative intensities of peaks at 2.38 ppm (3H of **2a**), 1.94 ppm (3H of **3a**), 2.79 ppm (1H of **4a**) and 6.01 ppm (3H of 1,3,5-trimethoxybenzene), the ^{1}H NMR yields of **2a**, **3a**, and **4a** were determined.

Preparation of ((*o*-tolyloxy)methylene)dibenzene (**2a**)

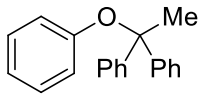


2a

The flow rates for three reagent solutions (a:b:c) were set to 9.0, 2.25 and 4.5 mL/min, respectively. The microtube reactor R1 with 250 μm of an inner diameter and 1 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **2a** (74.9 mg, 91%): ^{1}H

NMR (500 MHz, $CDCl_3$): δ 7.47 (d, *J* = 7.8 Hz, 4H), 7.36 (t, *J* = 7.8 Hz, 4H), 7.35–7.27 (m, 2H), 7.17 (d, *J* = 7.4 Hz, 1H), 7.03 (td, *J* = 7.4, 1.2 Hz, 1H), 6.84 (t, *J* = 7.4 Hz, 1H), 6.79 (d, *J* = 8.1 Hz, 1H), 6.25 (s, 1H), 2.38 (s, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ(ppm) 156.1, 141.8, 130.7, 128.5, 127.6, 127.5, 126.6, 126.5, 120.6, 113.2, 81.4, 16.7 ppm; HRMS (EI) m/z cald. for $C_{20}H_{18}O^+$ $[M]^+$: 274.1358; found: 274.1355.

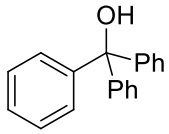
Preparation of (1-phenoxyethane-1,1-diyl)dibenzene (**3a**)



3a

The flow rates for three reagent solutions (a:b:c) were set to 6.0, 1.5 and 3.0 mL/min, respectively. The microtube reactor R1 with 1000 μm of an inner diameter and 100 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **3a** (75.7 mg, 92%): ^1H NMR (500 MHz, $CDCl_3$): δ 7.46 (d, *J* = 7.0 Hz, 4H), 7.32 (t, *J* = 7.9 Hz, 4H), 7.43 (tt, *J* = 7.4, 1.1 Hz, 2H), 7.10 (t, *J* = 7.4 Hz, 2H), 6.91 (t, *J* = 7.4 Hz. 1H), 6.70 (d, *J* = 7.7 Hz, 2H), 1.94 (s, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 155.7, 146.9, 128.9, 128.3, 127.2, 126.7, 122.1, 121.1, 83.7, 26.5 ppm; HRMS (EI) m/z cald. for $C_{20}H_{18}O^+$ $[M]^+$: 274.1358; found: 274.1362.

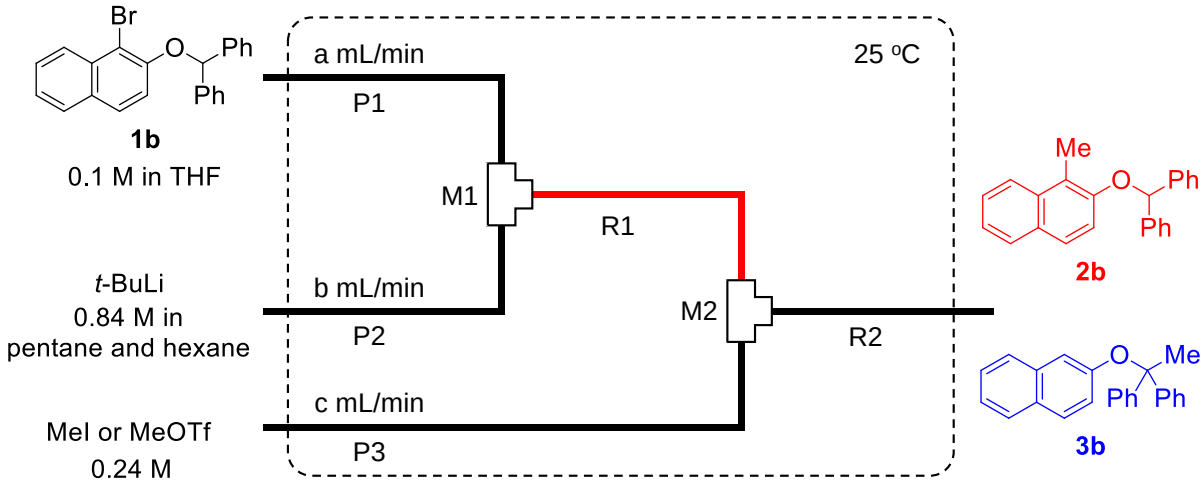
Preparation of triphenylmethanol (**4a**)



4a

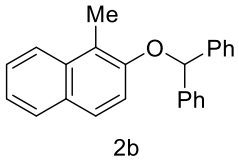
The flow rates for three reagent solutions (a:b:c) were set to 6.0, 1.5 and 3.0 mL/min, respectively. The microtube reactor R1 with 1000 μm of an inner diameter and 1000 cm of a length was used. The microtube reactor R2 with 1000 μm of an inner diameter and 1000 cm of a length was used. The resulting solution from R2 was collected in a flask for 30 s and stirred for 1 h at 50 °C. After the heating bath was removed, the reaction mixture was quenched with saturated aqueous NH_4Cl solution (5 mL) and brine (5 mL). The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 10:1 to 1:1 hexane:ethyl acetate) to give the desired product **4a** (53.1 mg, 68%). The spectral data was identical to those reported in the literature.[4]

4-2. Br-Li exchange reaction of 2-(benzhydryloxy)-1-bromonaphthalene (**1b**) followed by reaction with iodomethane or methyl trifluoromethanesulfonate using flow microreactors



A microfluidic system consisting of two T-shaped micromixers (M1 and M2), two microtube reactors (R1 and R2) and three tube pre-temperature-retaining units (for P1 and P3, 1000 μm of inner diameter (ø) and 50 cm of length (*L*); for P2, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of 2-(benzhydryloxy)-1-bromonaphthalene (**1b**; 0.10 M in THF) and a solution of *t*-BuLi (0.84 M in pentane:hexane 1:1.2 v/v) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (various sizes) and was mixed with a solution of iodomethane (0.24 M in THF) or methyl trifluoromethanesulfonate (0.24 M in diethyl ether) in M2 (ø: 500 μm). The resulting solution was passed through R2 (ø: 1000 μm, *L*: 50 cm). The ratio of flow rate for 2-(benzhydryloxy)-1-bromonaphthalene (**1b**), *t*-BuLi and iodomethane or methyl trifluoromethanesulfonate (a:b:c) was kept at 4:1:2, respectively. After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). Then, diethyl ether (6 mL), brine (2 mL), and 1,3,5-trimethoxybenzene (50 mg) were added, and then an aliquot (2 mL) of the organic phase was concentrated and analyzed by ^{1}H NMR spectroscopy or purified as following procedures. Based on the relative intensities of peaks at 2.62 ppm (3H of **2b**), 2.03 ppm (3H of **3b**), 2.89 ppm (1H of **4b**) and 6.01 ppm (3H of 1,3,5-trimethoxybenzene), the ^{1}H NMR yields of **2b**, **3b**, and **4b** were determined.

Preparation of 2-(benzhydryloxy)-1-methylnaphthalene (**2b**)

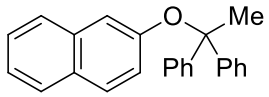


2b

The flow rates for three reagent solutions (a:b:c) were set to 9.0, 2.25 and 4.5 mL/min, respectively. The microtube reactor R1 with 250 μm of an inner diameter and 1 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **2b** (87.6 mg, 90%): ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.94 (d, *J* = 8.8 Hz, 1H), 7.72 (d, *J* = 8.0 Hz, 1H), 7.55 (d, *J* = 9.2 Hz, 1H), 7.50–7.42 (m, 3H), 7.38–7.29 (m, 5H), 7.29–7.21 (m, 3H), 7.17 (d, *J* = 9.2 Hz, 1H), 6.32 (s, 1H), 2.62 (s, 3H) ppm; ^{13}C NMR (100 MHz, $CDCl_3$): δ 152.8, 141.7, 133.7, 129.2, 128.5, 128.3, 127.6, 126.9, 126.8, 126.0, 123.5,

123.4, 120.6, 116.4, 82.9, 11.2 ppm; HRMS (EI) cald. for $C_{24}H_{20}O^+$ $[M]^+$: 324.1509; found 324.1507.

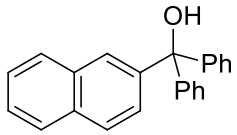
Preparation of 2-(1,1-diphenylethoxy)naphthalene (**3b**)



3b

The flow rates for three reagent solutions (a:b:c) were set to 6.0, 1.5 and 3.0 mL/min, respectively. The microtube reactor R1 with 1000 μm of an inner diameter and 10 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **3b** (85.6 mg, 88%): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.70 (d, *J* = 8.0 Hz, 1H), 7.63 (d, *J* = 8.5 Hz, 1H), 7.53–7.46 (m, 5H), 7.36–7.32 (m, 5H), 7.30–7.26 (m, 3H), 7.04 (dd, *J* = 8.8, 2.5 Hz, 1H) 6.94 (d, *J* = 2.2 Hz, 1H), 2.03 (s, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 153.4, 146.8, 134.1, 129.5, 128.8, 128.3, 127.5, 127.2, 127.1, 126.7, 126.0, 124.1, 122.5, 116.1, 84.1, 26.5 ppm; HRMS (EI) m/z cald. for $C_{24}H_{20}O^+$ $[M]^+$: 324.1514; found: 324.1518.

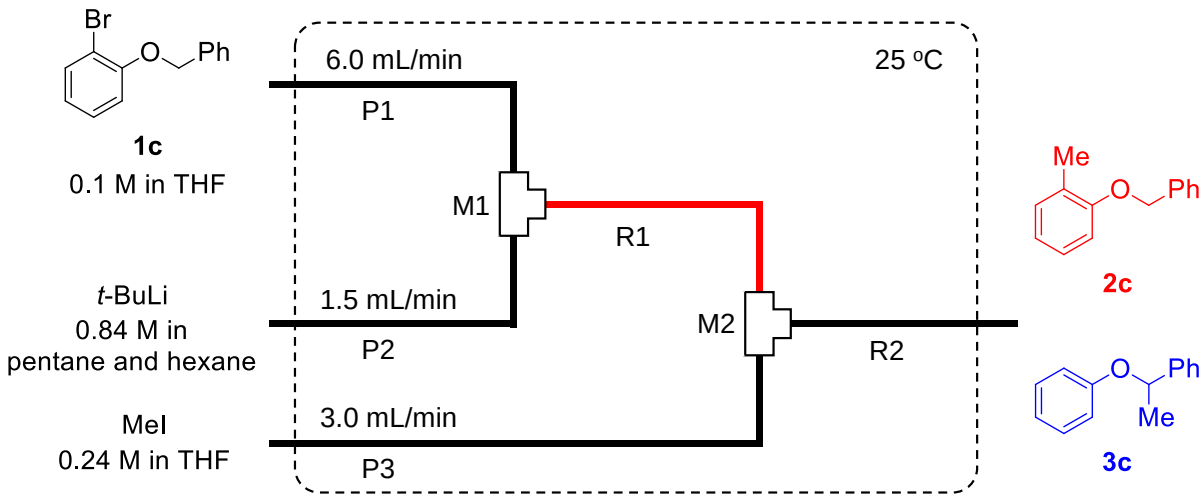
Preparation of naphthalen-2-yldiphenylmethanol (**4b**)



4b

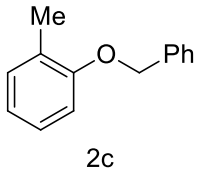
The flow rates for three reagent solutions (a:b:c) were set to 6.0, 1.5 and 3.0 mL/min, respectively. The microtube reactor R1 with 1000 μm of an inner diameter and 1000 cm of a length was used. The microtube reactor R2 with 1000 μm of an inner diameter and 1000 cm of a length was used. The resulting solution from R2 was collected in a flask for 30 s and stirred for 1 h at 50 °C. After the reaction bath was removed, the reaction mixture was quenched with saturated aqueous NH_4Cl solution (5 mL) and brine (5 mL). The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 10:1 to 1:1 hexane:ethyl acetate) to give the desired product **4b** (67.9 mg, 73%): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.83–7.81 (m, 1H), 7.78 (d, *J* = 7.2 Hz, 1H), 7.75–7.74 (m, 1H), 7. 69 (s, 1H), 7.49–7.44 (m, 3H), 7.33–7.29 (m, 10H), 2.89 (s, 1H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 146.7, 144.1, 132.7 (two peaks), 132.5, 128.4, 128.0, 127.7, 127.5, 127.4, 126.5, 126.3, 126.2, 126.1, 82.2 ppm; HRMS (EI) m/z cald. for $C_{23}H_{18}O^+$ $[M]^+$: 310.1358; found: 310.1361. The spectral data was identical to those reported in the literature.[5]

4-3. Br-Li exchange reaction of 1-(benzyloxy)-2-bromobenzene (**1c**) followed by reaction with iodomethane using flow microreactors



A microfluidic system consisting of two T-shaped micromixers (M1 and M2), two microtube reactors (R1 and R2) and three tube pre-temperature-retaining units (for P1 and P3, 1000 μm of inner diameter (ø) and 50 cm of length (*L*); for P2, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of of 1-(benzyloxy)-2-bromobenzene (**1c**; 0.10 M in THF; 6.0 mL/min) and a solution of *t*-BuLi (0.84 M in pentane:hexane 1:1.2 v/v; 1.5 mL/min) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (various sizes) and was mixed with a solution of iodomethane (0.24 M in THF; 3.0 mL/min) in M2 (ø: 500 μm). The resulting solution was passed through R2 (ø: 1000 μm, *L*: 50 cm). After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). Then, diethyl ether (6 mL), brine (2 mL), and 1,3,5-trimethoxybenzene (50 mg) were added, and then an aliquot (2 mL) of the organic phase was concentrated and analyzed by ^{1}H NMR spectroscopy or purified as following procedures. Based on the relative intensities of peaks at 2.29 ppm (3H of **2c**), 1.63 ppm (3H of **3c**)[6], 5.86 (1H of **4c**)[7] and 6.01 ppm (3H of 1,3,5-trimethoxybenzene), the ^{1}H NMR yields of **2c**, **3c** and **4c** were determined.

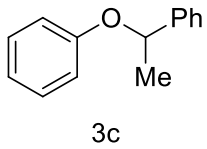
Preparation of 1-(benzyloxy)-2-methylbenzene (**2c**)



2c

The microtube reactor R1 with 250 μm of an inner diameter and 4 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **2c** (55.9 mg, 94%): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.44 (d, *J* = 7.5 Hz, 2H), 7.38 (t, *J* = 7.6 Hz, 2H), 7.31 (t, *J* = 6.8 Hz, 1H), 7.17–7.12 (m, 2H), 6.87 (d, *J* = 7.8 Hz, 2H), 5.08 (s, 2H), 2.29 (s, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 155.9, 137.5, 130.7, 128.5, 127.7, 127.1 (two peaks), 126.8, 120.6, 111.4, 69.8, 16.4 ppm; HRMS (EI) m/z cald. for $C_{14}H_{14}O^+$ $[M]^+$: 198.1045; found: 198.1047. The spectral data was identical to those reported in the literature.[8]

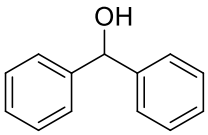
Preparation of (1-phenoxyethyl)benzene (**3c**)



3c

The microtube reactor R1 with 1000 μm of an inner diameter and 1000 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The spectral data was identical to those reported in the literature.[6]

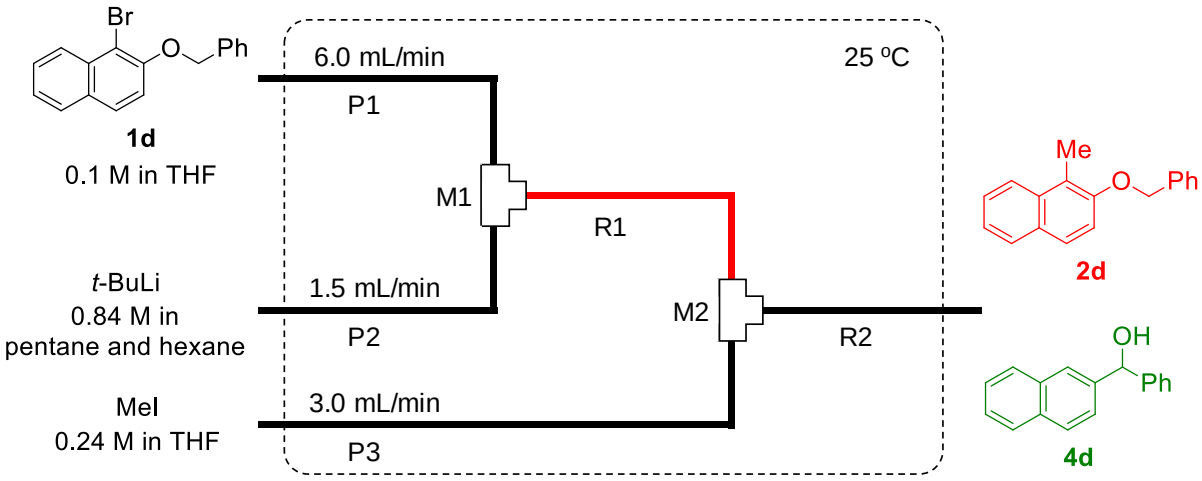
Preparation of diphenyl methanol (**4c**)



4c

The flow rates for three reagent solutions (a:b:c) were set to 6.0, 1.5 and 3.0 mL/min, respectively. The microtube reactor R1 with 1000 μm of an inner diameter and 1000 cm of a length was used. The microtube reactor R2 with 1000 μm of an inner diameter and 1000 cm of a length was used. The resulting solution from R2 was collected in a flask for 30 s and stirred for 1 h at 50 °C. After the reaction bath was removed, the reaction mixture was quenched with saturated aqueous NH_4Cl solution (5 mL) and brine (5 mL). The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 10:1 to 1:1, hexane:ethyl acetate) to give the desired product **4c** (27.1 mg, 49%). The spectral data was identical to those reported in the literature.[7]

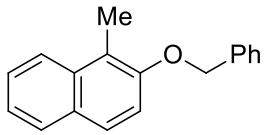
4-4. Br-Li exchange reaction of 2-(benzyloxy)-1-bromonaphthalene (**1d**) followed by reaction with iodomethane using flow microreactors



A microfluidic system consisting of two T-shaped micromixers (M1 and M2), two microtube reactors (R1 and R2) and three tube pre-temperature-retaining units (for P1 and P3, 1000 μm of inner diameter (ø) and 50 cm of length (L); for P2, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of of 2-(benzyloxy)-1-bromonaphthalene (**1d**; 0.10 M in THF; 6.0 mL/min) and a solution of *t*-BuLi (0.84 M in

pentane:hexane 1:1.2 v/v; 1.5 mL/min) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (various sizes) and was mixed with a solution of iodomethane (0.24 M in THF; 3.0 mL/min) in M2 (ø: 500 μm). The resulting solution was passed through R2 (ø: 1000 μm, *L*: 50 cm). After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). Then, diethyl ether (6 mL), brine (2 mL), and 1,3,5-trimethoxybenzene (50 mg) were added, and then an aliquot (2 mL) of the organic phase was concentrated and analyzed by ^{1}H NMR spectroscopy or purified as following procedures. Based on the relative intensities of peaks at 2.59 ppm (3H of **2d**), 5.90 ppm (1H of **4d**)[1] and 6.01 ppm (3H of 1,3,5-trimethoxybenzene), the ^{1}H NMR yields of **2d** and **4d** were determined.

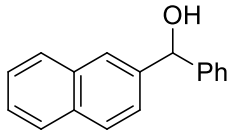
Preparation of 2-(benzyloxy)-1-methylnaphthalene (**2d**)



2d

The microtube reactor R1 with 250 μm of an inner diameter and 4 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **2d** (73.7 mg, 99%): ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.97 (d, *J* = 8.4 Hz, 1H), 7.79 (d, *J* = 8.0 Hz, 1H), 7.70 (d, *J* = 8.8 Hz, 1H), 7.53–7.47 (m, 3H), 7.43–7.29 (m, 5H), 5.20 (s, 2H), 2.61 (s, 3H) ppm; ^{13}C NMR (100 MHz, $CDCl_3$): δ 153.5, 137.6, 133.7, 129.3, 128.5, 128.3, 127.8, 127.3, 127.1, 126.1, 123.5, 123.5, 120.3, 115.4, 71.7, 10.9 ppm; HRMS (APCI) cald. for $C_{18}H_{17}O^+$ $[M+H]^+$: 249.1274; found 249.1267.

Preparation of naphthalen-2-yl(phenyl)methanol (**4d**)

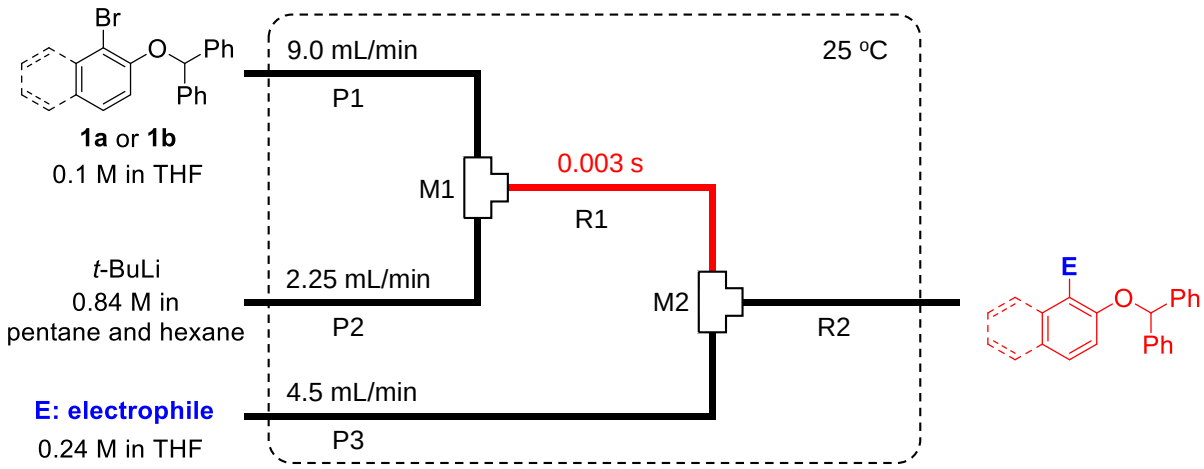


4d

The microtube reactor R1 with 1000 μm of an inner diameter and 1000 cm of a length was used. The reaction mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product **4d** (68.2 mg, 97%). The spectral data was identical to those reported in the literature.[1]

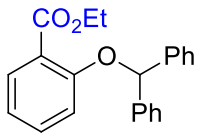
5. Selective Synthesis with Various Electrophiles Using Flow Microreactors

5-1. Reactions with various electrophiles under Condition A



A microfluidic system consisting of two T-shaped micromixers (M1 and M2), two microtube reactors (R1 and R2) and three tube pre-temperature-retaining units (for P1 and P3, 1000 μm of inner diameter (ø) and 50 cm of length (L); for P2, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of ((2-bromophenoxy)methylene)dibenzene (**1a**) or 2-(benzhydryloxy)-1-bromonaphthalene (**1b**; 0.10 M in THF; flow rate: 9.0 mL/min) and a solution of *t*-BuLi (0.84 M in pentane:hexane 1:1.2 v/v; flow rate: 2.25 mL/min) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (ø: 250 μm, *L*: 1 cm for 0.003 s of residence time) and was mixed with a solution of corresponding electrophile (0.24 M in THF; flow rate: 4.5 mL/min) in M2 (ø: 500 μm). The resulting solution was passed through R2 (ø: 1000 μm, *L*: 50 cm). After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). The resulting mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1, hexane:ethyl acetate) to give the desired product.

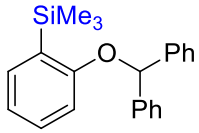
Ethyl 2-(benzhydryloxy)benzoate (**2aa**)



2aa

The product **2aa** from substrate **1a** and ethyl chloroformate was isolated in 80% yield (79.8 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.78 (dd, *J* = 7.7, 1.7 Hz, 1H), 7.51 (d, *J* = 7.5 Hz, 4H), 7.32 (t, *J* = 7.4 Hz, 4H), 7.26–7.22 (m, 3H), 6.92–6.88 (m, 2H), 6.30 (s, 1H), 4.38 (q, *J* = 7.2 Hz, 2H), 1.34 (t, *J* = 7.15 Hz, 3H) ppm; ^{13}C NMR (600 MHz, $CDCl_3$): δ 166.6, 156.8, 141.3, 132.9, 131.6, 128.6, 127.7, 126.6, 121.7, 120.4, 115.0, 82.0, 60.9, 14.3 ppm; HRMS (EI) m/z cald. for $C_{22}H_{20}O_3^+$ $[M]^+$: 332.1412; found: 332.1415.

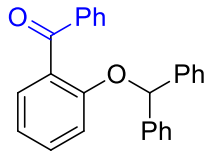
(2-(Benzhydryloxy)phenyl)trimethylsilane (**2ab**)



2ab

The product **2ab** from substrate **1a** and chlorotrimethylsilane was isolated in 82% yield (81.8 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.39 (d, J = 7.3 Hz, 5H), 7.33 (t, J = 7.8 Hz, 4H), 7.27–7.24 (m, 2H), 7.19–7.16 (m, 1H), 6.90 (td, J = 7.3, 0.7 Hz, 1H), 6.68 (d, J = 8.3 Hz, 1H), 6.21 (s, 1H), 0.24 (s, 9H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 162.6, 141.2, 135.1, 130.6, 128.6, 128.1, 127.7, 126.9, 120.4, 111.7, 81.9, -0.91 ppm; HRMS (EI) m/z cald. for $C_{22}H_{24}OSi^{+}$ $[M]^{+}$: 332.1596; found: 332.1592.

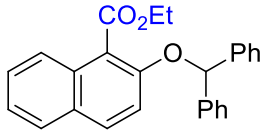
(2-(Benzhydryloxy)phenyl)(phenyl)methanone (**2ac**)



2ac

The product **2ac** from substrate **1a** and benzoyl chloride was isolated in 85% yield (92.9 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.83 (d, J = 7.1 Hz, 2H), 7.55–7.52 (m, 1H), 7.44–7.41 (m, 3H), 7.33–7.29 (m, 1H), 7.18–7.09 (m, 10H), 7.01 (t, J = 7.5 Hz, 1H), 6.90 (d, J = 8.4 Hz, 1H), 6.13 (s, 1H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 197.0, 155.5, 141.0, 138.5, 132.8, 131.8, 129.9, 129.9, 129.7, 128.4, 128.2, 127.5, 126.2, 120.9, 114.1, 82.0 ppm; HRMS (EI) m/z cald. for $C_{26}H_{20}O_2^{+}$ $[M]^{+}$: 364.1463; found: 364.1464.

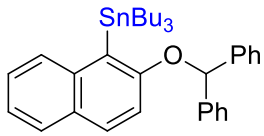
Ethyl 2-(benzhydryloxy)-1-naphthoate (**2ba**)



2ba

The product **2ba** from substrate **1b** and ethyl chloroformate was isolated in 81% yield (92.9 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.83 (d, J = 7.0 Hz, 1H), 7.75 (t, 7.0 Hz, 2H), 7.53–7.51 (m, 5H), 7.39–7.35 (m, 5H), 7.30–7.28 (m, 2H), 7.18 (d, J = 7.5 Hz, 1H), 6.42 (s, 1H), 4.51 (q, J = 6.0 Hz, 2H), 1.37 (t, J = 6.0 Hz, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 168.1, 152.7, 141.1, 131.0, 131.0, 128.7, 128.6, 128.0, 127.8, 127.5, 126.8, 124.3, 123.8, 119.2, 115.6, 82.8, 61.4, 14.2 ppm; HRMS (EI) m/z cald. for $C_{26}H_{22}O_3^{+}$ $[M]^{+}$: 382.1569; found: 382.1571.

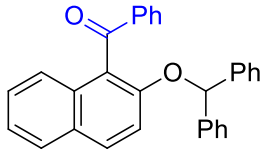
(2-(Benzhydryloxy)naphthalen-1-yl)tributylstannane (**2bb**)



2bb

The product **2bb** from substrate **1b** and tributyltin chloride was isolated in 84% yield (151.1 mg): ^{1}H NMR (600 MHz, $CDCl_3$): δ 7.82 (d, J = 8.5 Hz, 1H), 7.71 (d, J = 7.5 Hz, 1H), 7.64 (d, J = 9.0 Hz, 1H), 7.41–7.27 (m, 12H), 7.02 (d, J = 9.0 Hz, 1H), 6.32 (s, 1H), 1.45–1.39 (m, 6H), 1.27–1.19 (m, 6H), 1.04–1.00 (m, 6H), 0.82 (t, J = 7.3 Hz, 9H) ppm; ^{13}C NMR (125 MHz, $CDCl_3$): δ 160.9, 140.9, 140.5, 130.4, 129.7, 128.8, 128.5, 128.4, 127.8, 127.6, 125.9, 125.6, 123.0, 113.7, 82.8, 29.2, 27.3, 13.6, 12.0 ppm; HRMS (FAB) m/z cald. for $C_{31}H_{35}OSn^{+}$ $[M\text{-}C_4H_9]^{+}$: 543.1710; found: 543.1706.

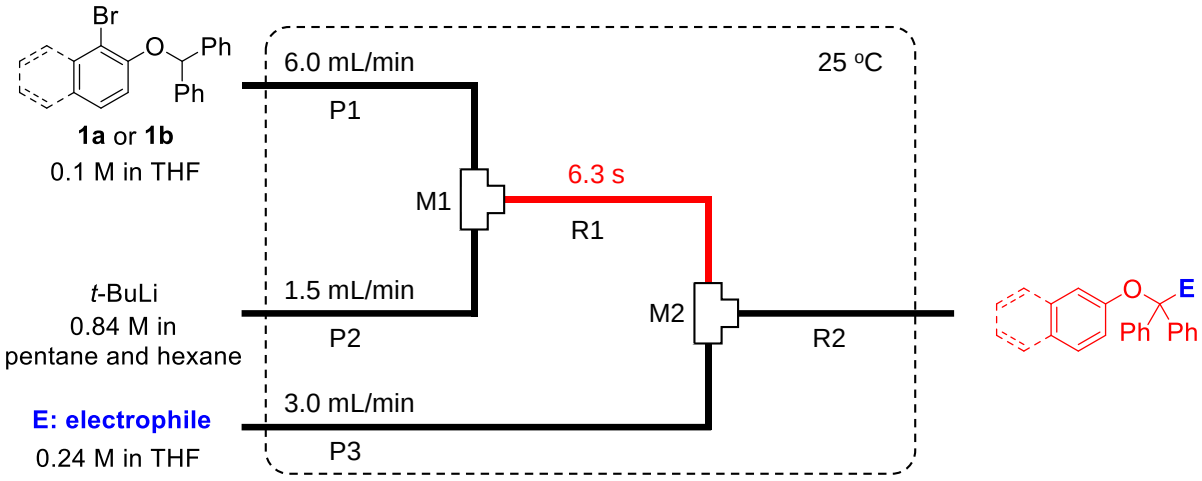
(2-(Benzhydryloxy)naphthalen-1-yl)(phenyl)methanone (**2bc**)



2bc

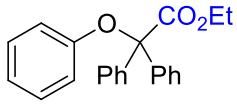
The product **2bc** from substrate **1b** and benzoyl chloride was isolated in 82% yield (102.0 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.87 (d, *J* = 7.1 Hz, 2H), 7.81 (t, *J* = 8.8 Hz, 2H), 7.60–7.55 (m, 2H), 7.74–7.33 (m, 4H), 7.23 (d, *J* = 9 Hz, 1H), 7.19–7.13 (m, 10H), 6.29 (s, 1H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 197.8, 152.4, 141.0, 138.5, 133.3, 131.9, 130.8, 129.6, 128.9, 128.5, 128.4, 128.0, 127.6, 127.4, 126.4, 124.2, 124.1, 124.1, 115.1, 82.3 ppm; HRMS (EI) m/z cald. for $C_{30}H_{22}O_2^+$ $[M]^+$: 414.1620; found: 414.1620.

5-2. Reactions with various electrophiles under Condition B



A microfluidic system consisting of two T-shaped micromixers (M1 and M2), two microtube reactors (R1 and R2) and three tube pre-temperature-retaining units (for P1 and P3, 1000 μm of inner diameter (ø) and 50 cm of length (L); for P2, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of ((2-bromophenoxy)methylene)dibenzene (**1a**) or 2-(benzhydryloxy)-1-bromonaphthalene (**1b**; 0.10 M in THF; flow rate: 6.0 mL/min) and a solution of *t*-BuLi (0.84 M in pentane:hexane 1:1.2 v/v; flow rate: 1.5 mL/min) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (ø: 1000 μm, *L*: 100 cm for 6.3 s of residence time) and was mixed with a solution of corresponding electrophile (0.24 M in THF; flow rate: 3.0 mL/min) in M2 (ø: 500 μm). The resulting solution was passed through R2 (ø: 1000 μm, *L*: 50 cm). After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). The resulting mixture was extracted with diethyl ether (15 mL x 3), and washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product.

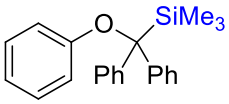
Ethyl 2-phenoxy-2,2-diphenylacetate (**3aa**)



3aa

The product **3aa** from substrate **1a** and ethyl chloroformate was isolated in 80% yield (79.8 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.67 (dd, J = 7.4, 0.3 Hz, 4H), 7.30 (t, J = 7.2 Hz, 4H), 7.26–7.23 (m, 2H), 7.10 (t, J = 8.2 Hz, 2H), 6.86 (t, J = 7.4 Hz, 1H), 6.79 (d, J = 8.5 Hz, 2H), 4.15 (q, J = 7.1 Hz, 2H), 1.01 (t, J = 7.1 Hz, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 170.9, 156.0, 140.9, 128.8, 128.1, 127.8, 127.4, 121.4, 118.3, 86.1, 61.8, 13.7 ppm; HRMS (EI) m/z cald. for $C_{22}H_{20}O_3^+$ $[M]^+$: 332.1412; found: 332.1410.

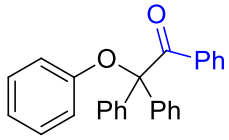
Trimethyl(phenoxydiphenylmethyl)silane (**3ab**)



3ab

The product **3ab** from substrate **1a** and chlorotrimethylsilane was isolated in 81% yield (80.8 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.50 (d, J = 8.3 Hz, 4H), 7.31 (t, J = 7.6 Hz, 4H), 7.20 (t, J = 7.2 Hz, 2H), 7.01 (t, J = 7.8 Hz, 2H), 6.76 (t, J = 7.3 Hz, 1H), 6.66 (d, J = 8.5 Hz, 2H), 0.04 (s, 9H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 156.7, 140.9, 128.3, 127.9, 127.3, 126.0, 120.2, 119.0, 84.5, -2.13 ppm; HRMS (EI) m/z cald. for $C_{22}H_{24}OSi^+$ $[M]^+$: 332.1596; found: 332.1593.

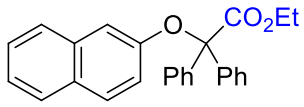
2-Phenoxy-1,2,2-triphenylethanone (**3ac**)



3ac

The product **3ac** from substrate **1a** and benzoyl chloride was isolated in 74% yield (80.9 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.88 (d, J = 7.3 Hz 2H), 7.68 (d, J = 7.4 Hz, 3H), 7.32–7.17 (m, 10H), 6.98 (t, J = 7.5 Hz, 2H), 6.75 (t, J = 7.3 Hz, 1H), 6.69 (d, J = 7.9 Hz, 2H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 198.5, 155.6, 141.2, 135.9, 132.4, 130.5, 128.9, 128.3, 127.8, 127.5, 126.8, 121.4, 118.2, 90.2 ppm; HRMS (EI) m/z cald. for $C_{26}H_{20}O_2^+$ $[M]^+$: 364.1463; found: 364.1459.

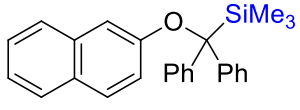
Ethyl 2-(naphthalen-2-yloxy)-2,2-diphenylacetate (**3ba**)



3ba

The product **3ba** from substrate **1b** and ethyl chloroformate was isolated in 61% yield (69.9 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.73 (d, J = 7.8 Hz, 4H), 7.69 (d, J = 8.0 Hz, 1H), 7.65 (d, J = 9.0 Hz, 1H), 7.50 (d, J = 8.2 MHz, 1H), 7.35–7.18 (m, 8H), 6.95 (d, J = 2.4 Hz, 1H), 4.16 (q, J = 6.6 Hz, 2H), 0.97 (t, J = 7.1 Hz, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 170.9, 153.7, 140.8, 133.8, 129.1, 128.8, 128.1, 127.9, 127.4, 127.0, 126.0, 123.9, 120.4, 86.4, 61.8, 13.7 ppm; HRMS (EI) m/z cald. for $C_{26}H_{22}O_3^+$ $[M]^+$: 382.1569; found: 382.1567.

Trimethyl((naphthalen-2-yloxy)diphenylmethyl)silane (**3bb**)

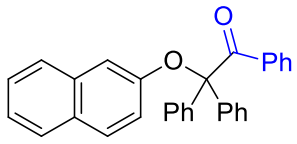


3bb

The product **3bb** from substrate **1b** and chlorotrimethylsilane was isolated in 81% yield (92.9 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.64 (d, J = 8.0 Hz, 1H), 7.56 (d, J = 9.0 Hz, 1H), 7.52 (d, J = 7.4 Hz, 4H), 7.34 (d, J = 8.1 Hz, 1H), 7.29 (t, J = 8.1 Hz, 4H), 7.25–7.16 (m, 4H), 7.07 (dd, J = 9.0, 2.5 Hz, 1H), 6.76 (d, J = 2.4 Hz, 1H) 0.04 (s, 9H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 154.4, 140.8, 133.8, 128.6, 128.3, 127.9, 127.4, 127.2, 126.8, 126.1, 125.8, 123.3, 120.9, 113.9, 85.0, -2.0 ppm; HRMS (EI) m/z cald. for $C_{26}H_{26}OSi^+$ $[M]^+$: 382.1753;

found: 382.1750.

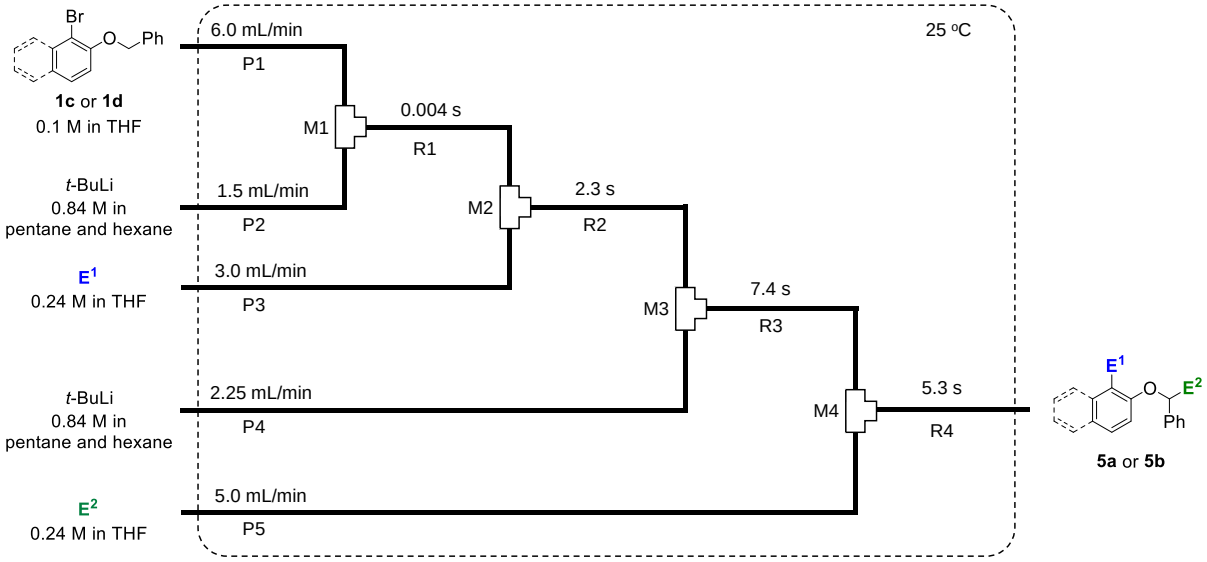
2-(Naphthalen-2-yloxy)-1,2,2-triphenylethanone (**3bc**)



3bc

The product **3bc** from substrate **1b** and benzoyl chloride was isolated in 73% yield (90.8 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.90 (d, *J* = 7.3 Hz 2H), 7.73 (d, *J* = 7.4 Hz, 4H), 7.60 (d, *J* = 8.0, 1H), 7.53 (d, *J* = 9.1 Hz, 1H), 7.43 (d, *J* = 8.3 Hz, 1H), 7.33–7.20 (m, 9H), 7.14 (t, *J* = 7.5 Hz, 2H), 7.08 (dd, *J* = 9.0, 2.6 Hz, 1H), 6.89 (d, *J* = 2.5 Hz, 1H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 198.5, 153.4, 141.2, 135.8, 133.7, 132.4, 130.3, 129.1, 129.0, 128.6, 128.3, 127.8, 127.5, 127.3, 127.0, 126.9, 126.8, 126.1, 124.0, 119.8, 113.0, 90.3 ppm; HRMS (EI) m/z cald. for $C_{30}H_{22}O_2^+$ $[M]^+$: 414.1620; found: 414.1622.

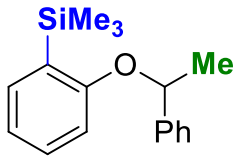
6. Dual Functionalization with Two Electrophiles Using Flow Microreactors



A microfluidic system consisting of four T-shaped micromixers (M1, M2, M3 and M4), four microtube reactors (R1, R2, R3, and R4) and five tube pre-temperature-retaining units (for P1, P3 and P5, 1000 μm of inner diameter (ø) and 500 cm of length (*L*); for P2 and P4, 1000 μm of inner diameter (ø) and 100 cm of length (*L*)) were used at 25 °C. A solution of 1-(benzyloxy)-2-bromobenzene (**1c**) or 2-(benzyloxy)-1-bromonaphthalene (**1d**; 0.10 M in THF; flow rate: 6.0 mL/min) and a solution of *t*-BuLi (0.84 M in pentane:hexane 1:1.2 v/v; flow rate: 1.5 mL/min) were individually introduced to M1 (ø: 250 μm) by syringe pumps. The resulting solution was passed through R1 (ø: 250 μm, *L*: 1 cm for 0.004 s of residence time) and was mixed with a solution of first electrophile (0.24 M in THF, flow rate: 3.0 mL/min) in M2 (ø: 500 μm). The resulting solution which passed through R2 (ø: 1000 μm, *L*: 50 cm) and a solution of *t*-BuLi (0.54 M in pentane:hexane 1:2.4 v/v; flow rate: 2.25 mL/min) were mixed in M3 (ø: 500 μm) and pass through R3 (ø: 1000 μm, *L*: 200 cm). The resulting solution was mixed with second electrophile (0.4 M in THF; flow rate: 5.0 mL/min) in M4 (ø: 500 μm) and pass through R4 (ø: 1000 μm, *L*: 200 cm). After a steady state was reached, the product solution was collected for 30 s while being quenched with saturated aqueous NH_4Cl solution (2 mL). The crude product was extracted with diethyl ether (15 mL x 3), and

washed with brine (15 mL). The organic phase was dried over sodium sulfate. The organic layer was concentrated on a rotary evaporator under reduced pressure. The crude product was purified by column chromatography (silica gel, 50:1 to 10:1 hexane:ethyl acetate) to give the desired product.

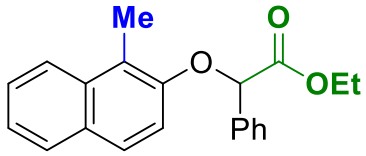
Trimethyl(2-(1-phenylethoxy)phenyl)silane (**5a**)



5a

The product **5a** from substrate (**1c**), chlorotrimethylsilane, and iodomethane was isolated in 70% yield (56.8 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 7.42–7.34 (m, 5H), 7.29–7.26 (m, 1H), 7.18–7.15 (m, 1H), 6.89 (t, J = 7.2 Hz, 1H), 6.59 (d, J = 8.3 Hz, 1H), 5.34 (q, J = 6.4 Hz, 1H), 1.68 (d, J = 6.5 Hz, 3H), 0.39 (s, 9H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 162.4, 143.4, 135.0, 130.5, 128.6, 127.8, 127.3, 125.4, 120.0, 111.4, 75.4, 24.8, -0.7 ppm; HRMS (EI) m/z cald. for $C_{17}H_{22}OSi^{+}$ $[M]^{+}$: 270.1440; found: 270.1442.

1-Ethoxy-2-((1-methylnaphthalen-2-yl)oxy)-2-phenylethenol (**5b**)



5b

The product **5b** from substrate (**1d**), iodomethane, and ethyl chloroformate was isolated in 73% yield (70.1 mg): ^{1}H NMR (500 MHz, $CDCl_3$): δ 8.08 (d, J = 8.5 Hz, 1H), 7.82 (d, J = 7.9 Hz, 1H), 7.73 (d, J = 8.6 Hz, 1H), 7.58 (d, J = 8.7 Hz, 1H), 7.54–7.47 (m, 2H), 7.33–7.31 (m, 5H), 4.21 (q, J = 5.5 Hz, 2H), 2.71 (s, 3H), 1.30 (t, J = 6.0 Hz, 3H) ppm; ^{13}C NMR (150 MHz, $CDCl_3$): δ 154.7, 139.4, 134.6, 133.1, 132.7, 131.6, 128.5, 128.3, 127.9, 127.1, 126.7, 126.1, 125.8, 124.7, 124.4, 78.1, 64.2, 14.4, 14.2 ppm; HRMS (EI) m/z cald. for $C_{21}H_{20}O_3$: 320.1412; found: 320.1413.

7. References

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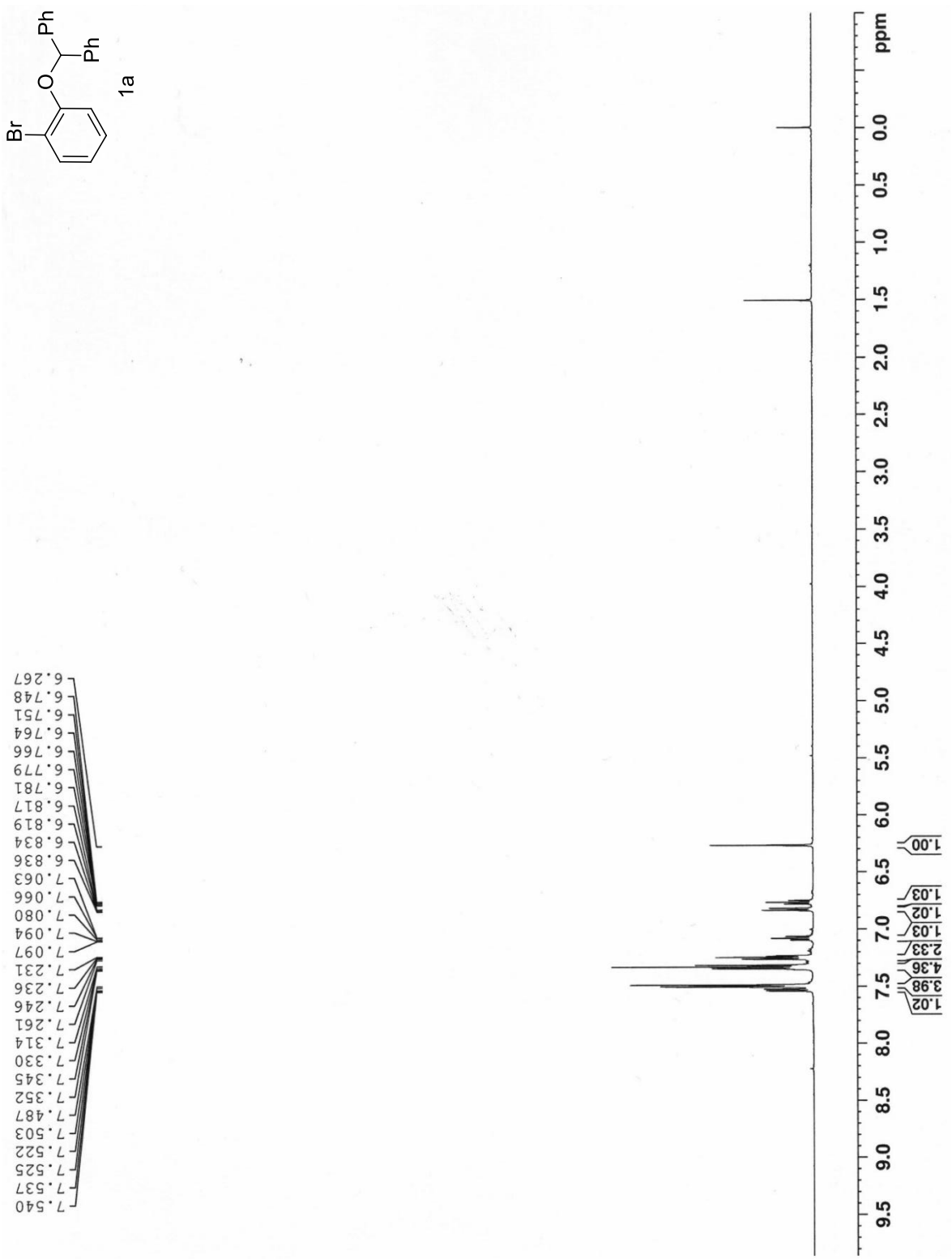
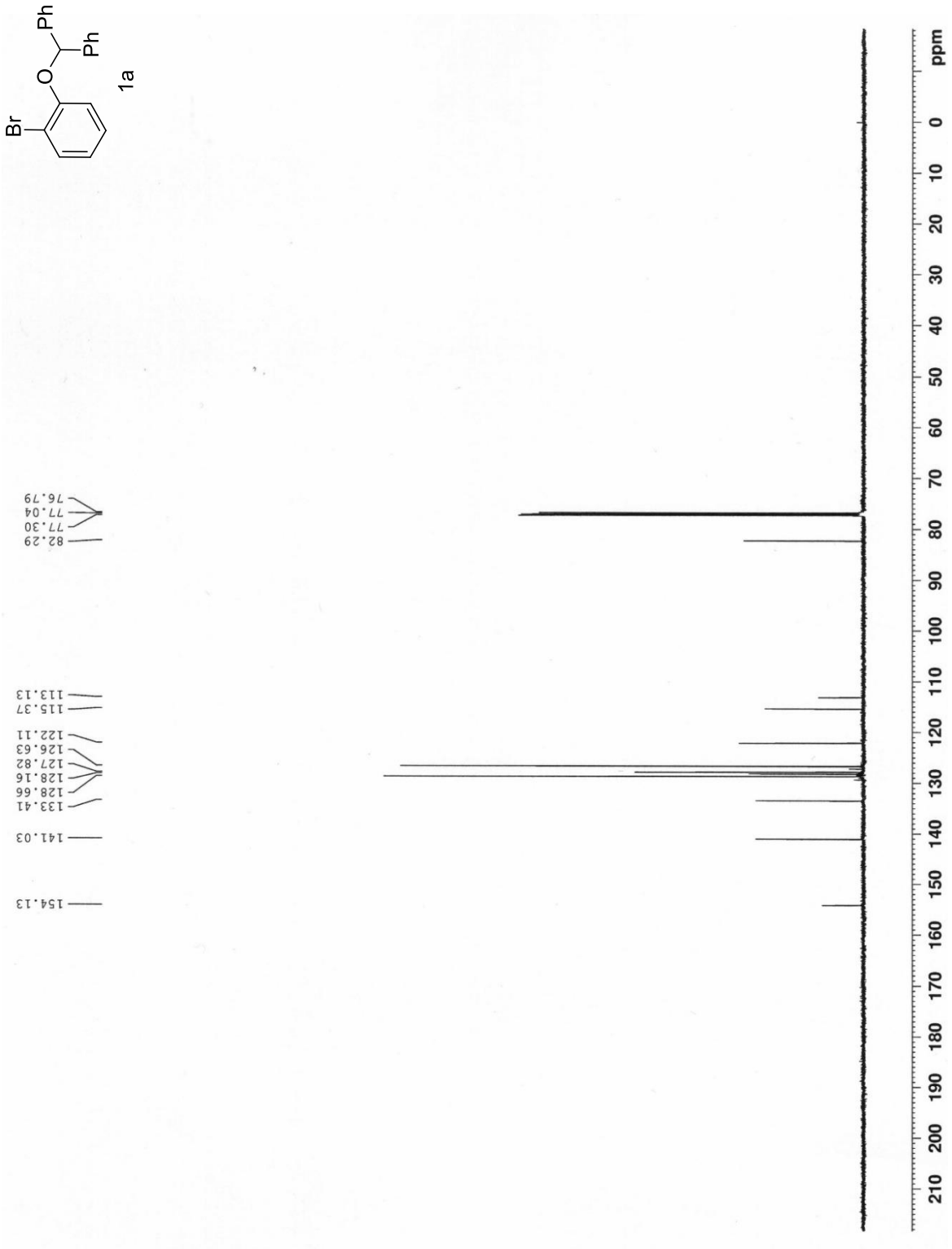
8. ^{1}H NMR and ^{13}C Spectra

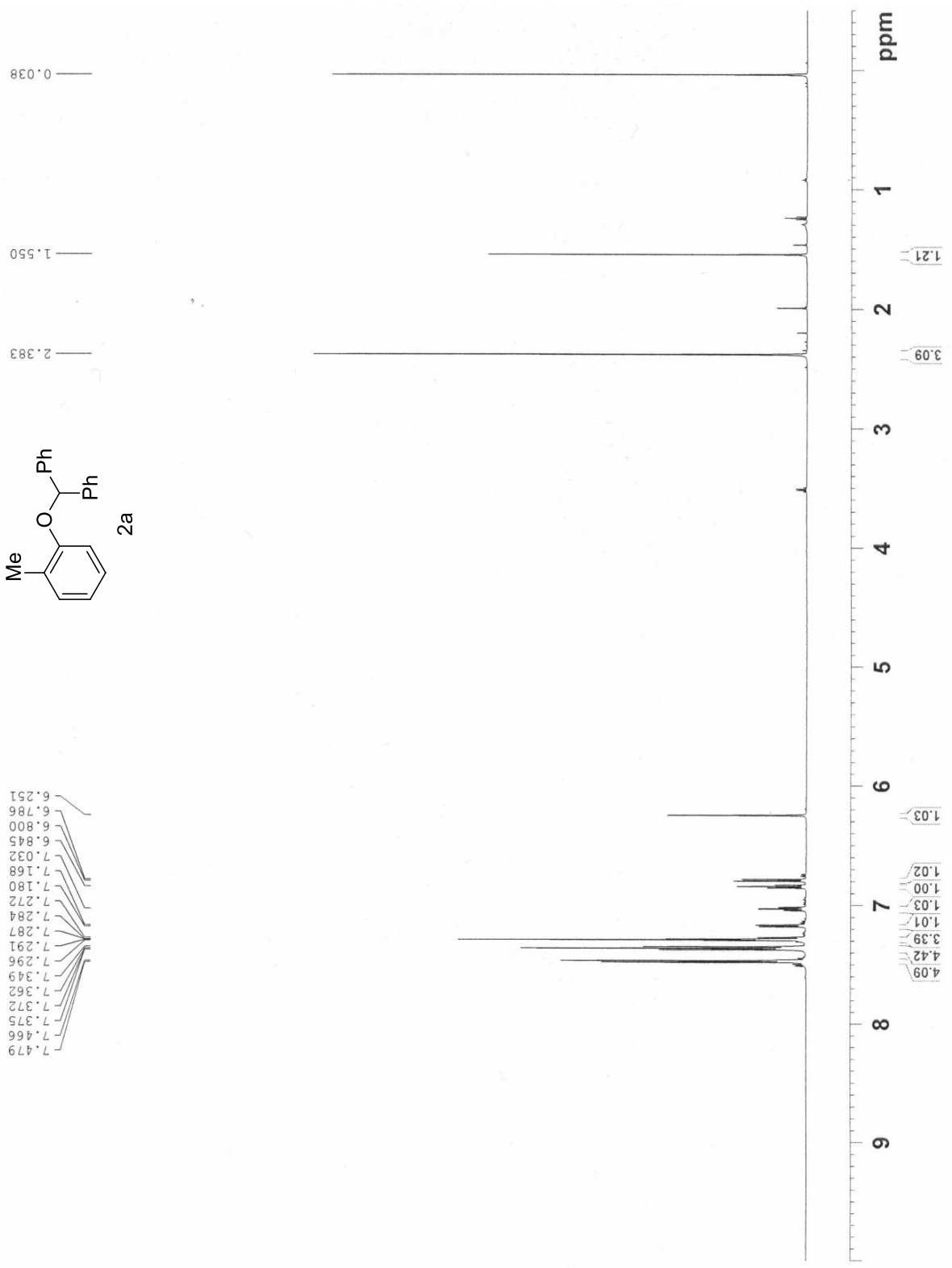
[1]H NMR spectrum of ((2-bromophenoxy)methylene)dibenzene (1a)



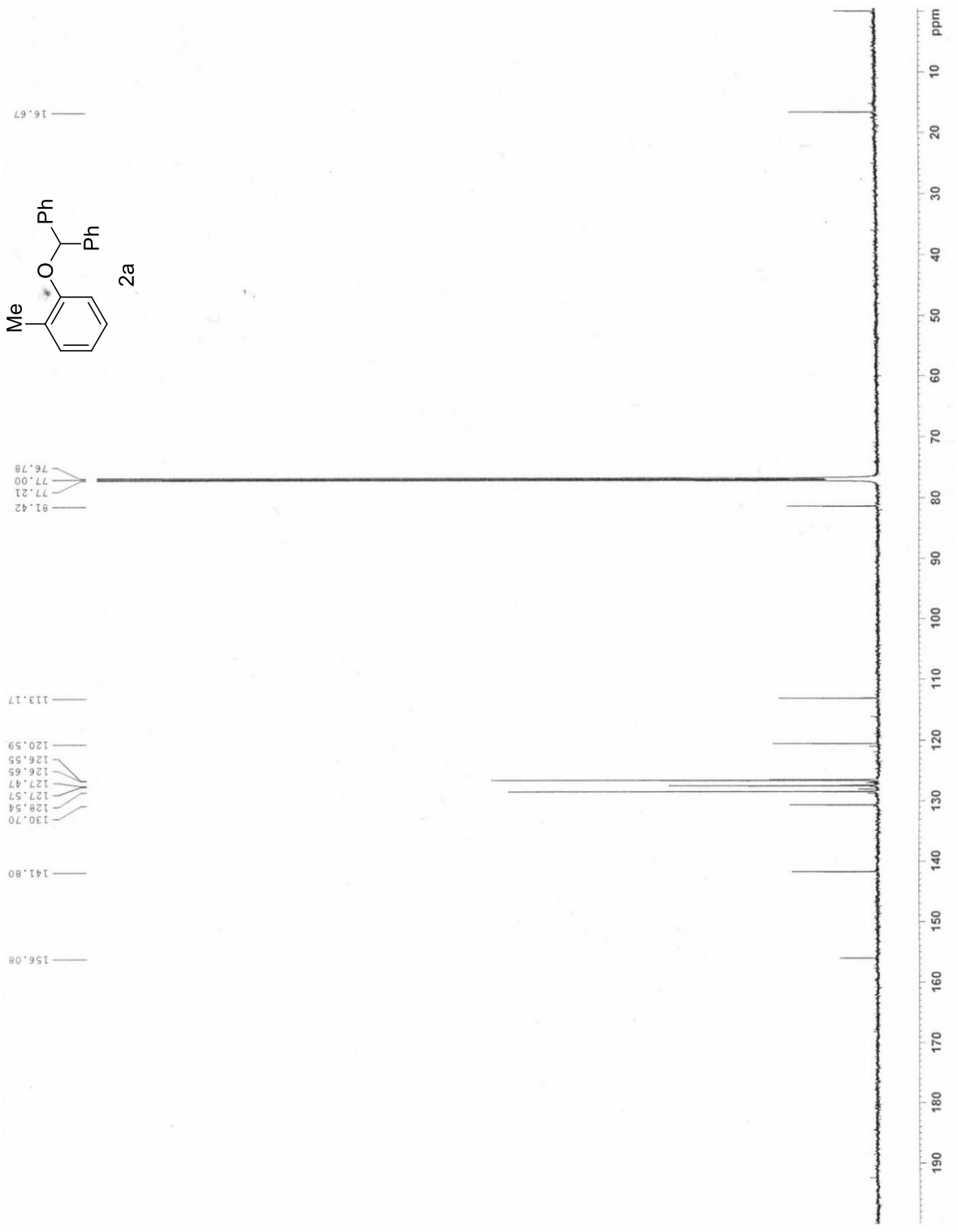
^{13}C NMR spectrum of ((2-bromophenoxy)methylene)dibenzene (1a)



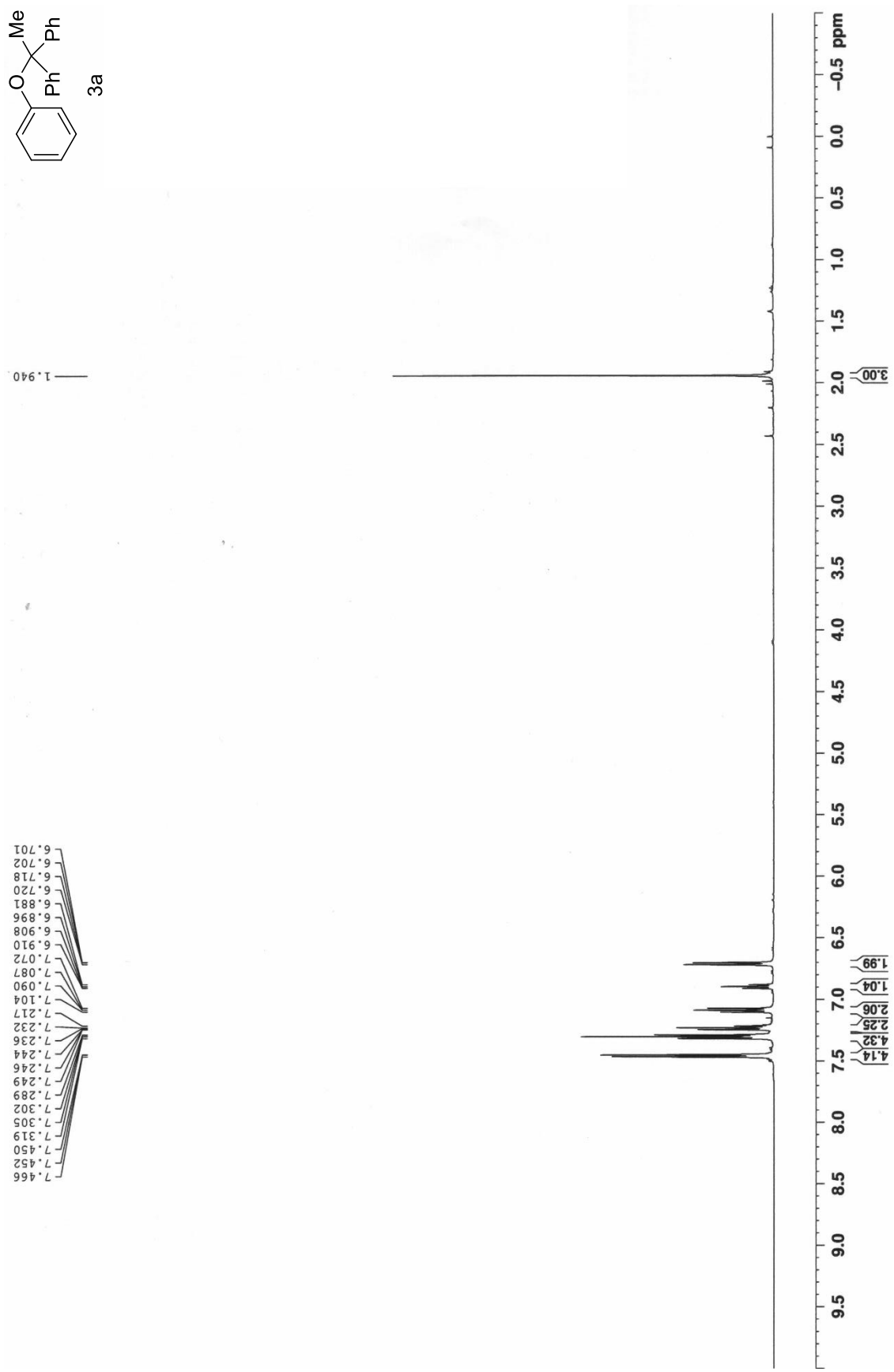
^{1}H NMR spectrum of ((*o*-tolyloxy)methylene)dibenzene (2a)



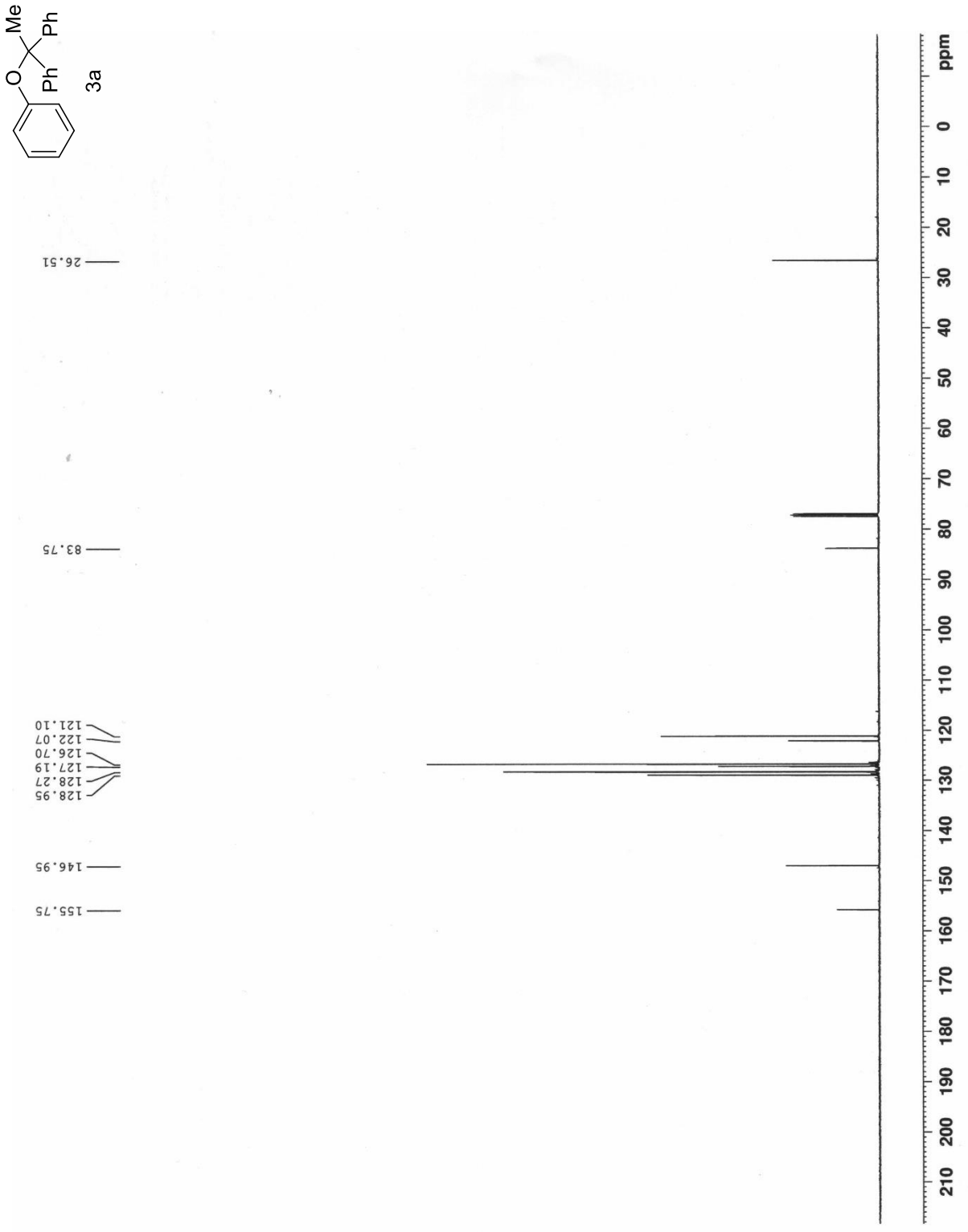
^{13}C NMR spectrum of ((*o*-tolyloxy)methylene)dibenzene (2a)



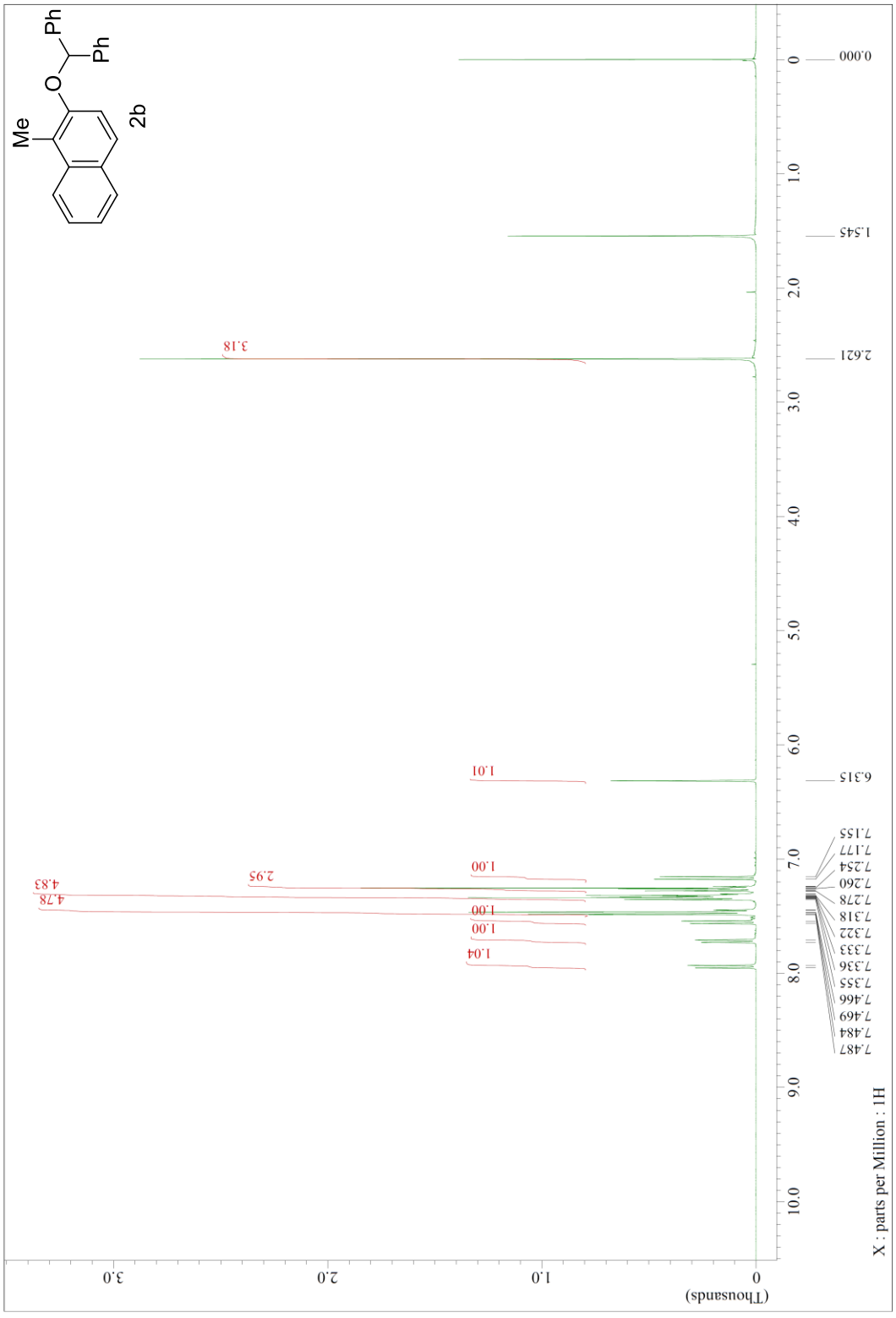
^{1}H NMR spectrum of (1-phenoxyethane-1,1-diyl)dibenzene (3a)



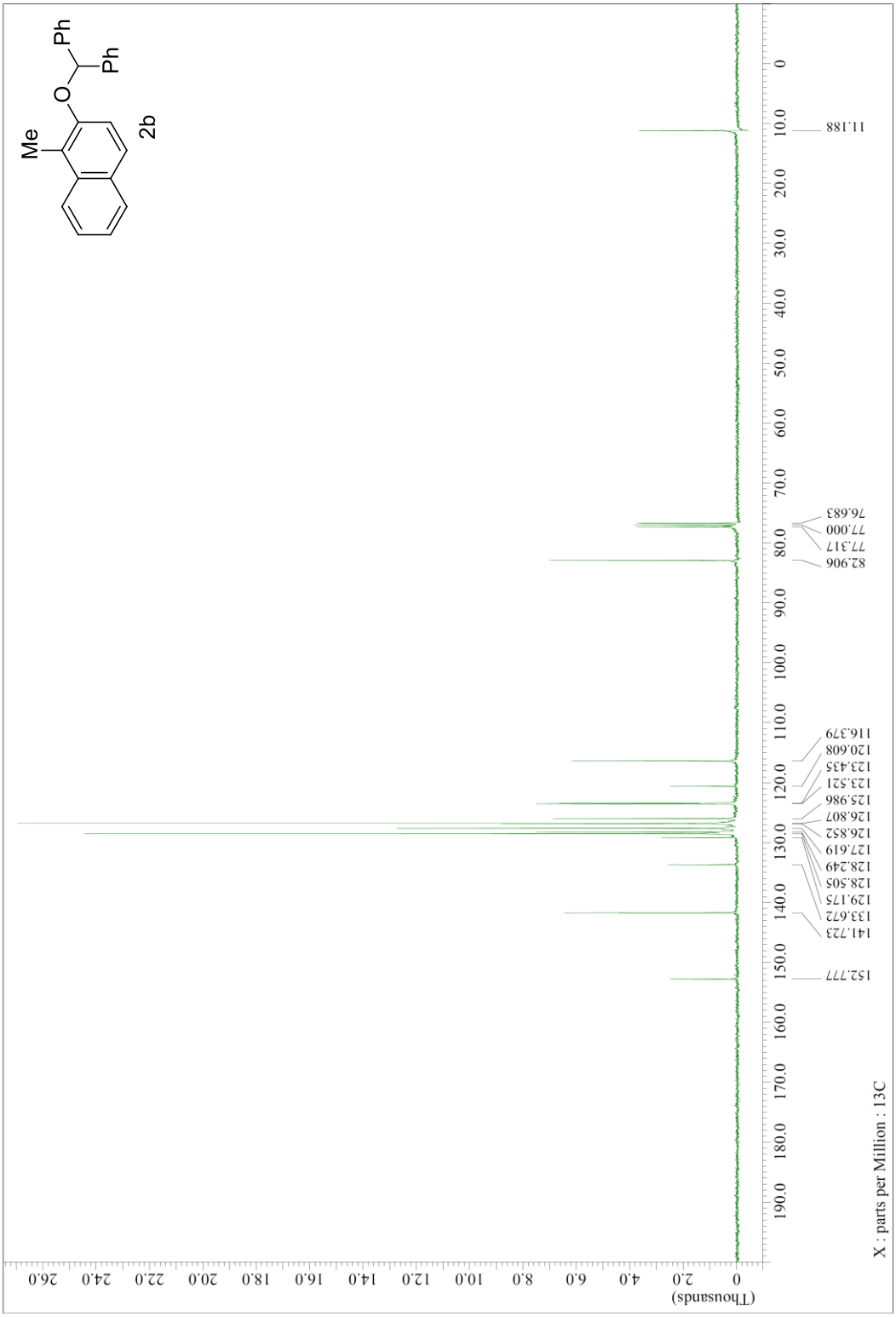
^{13}C NMR spectrum of (1-phenoxyethane-1,1-diyl)dibenzene (3a)



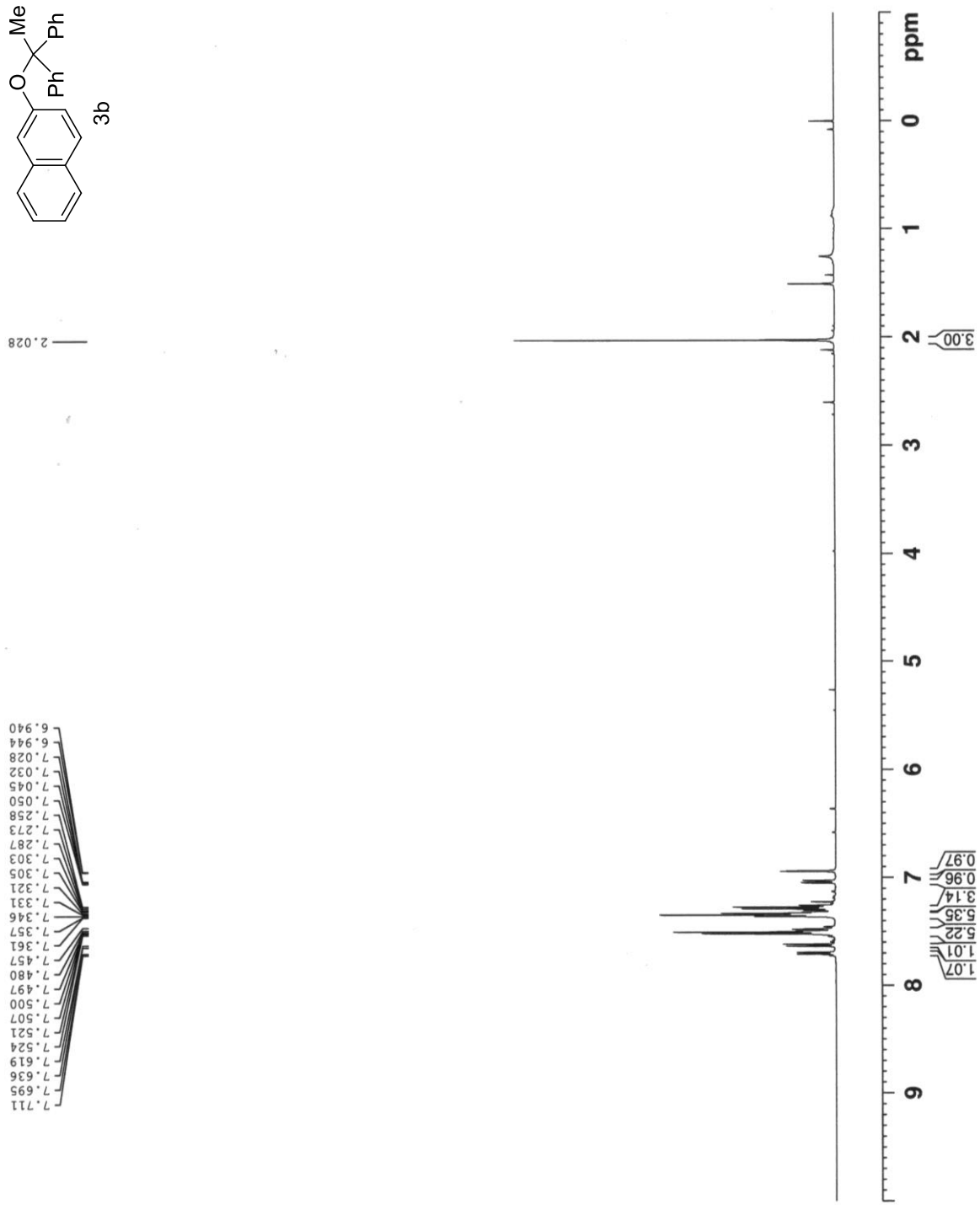
^{1}H NMR spectrum of 2-(benzhydryloxy)-1-methylnaphthalene (2b)



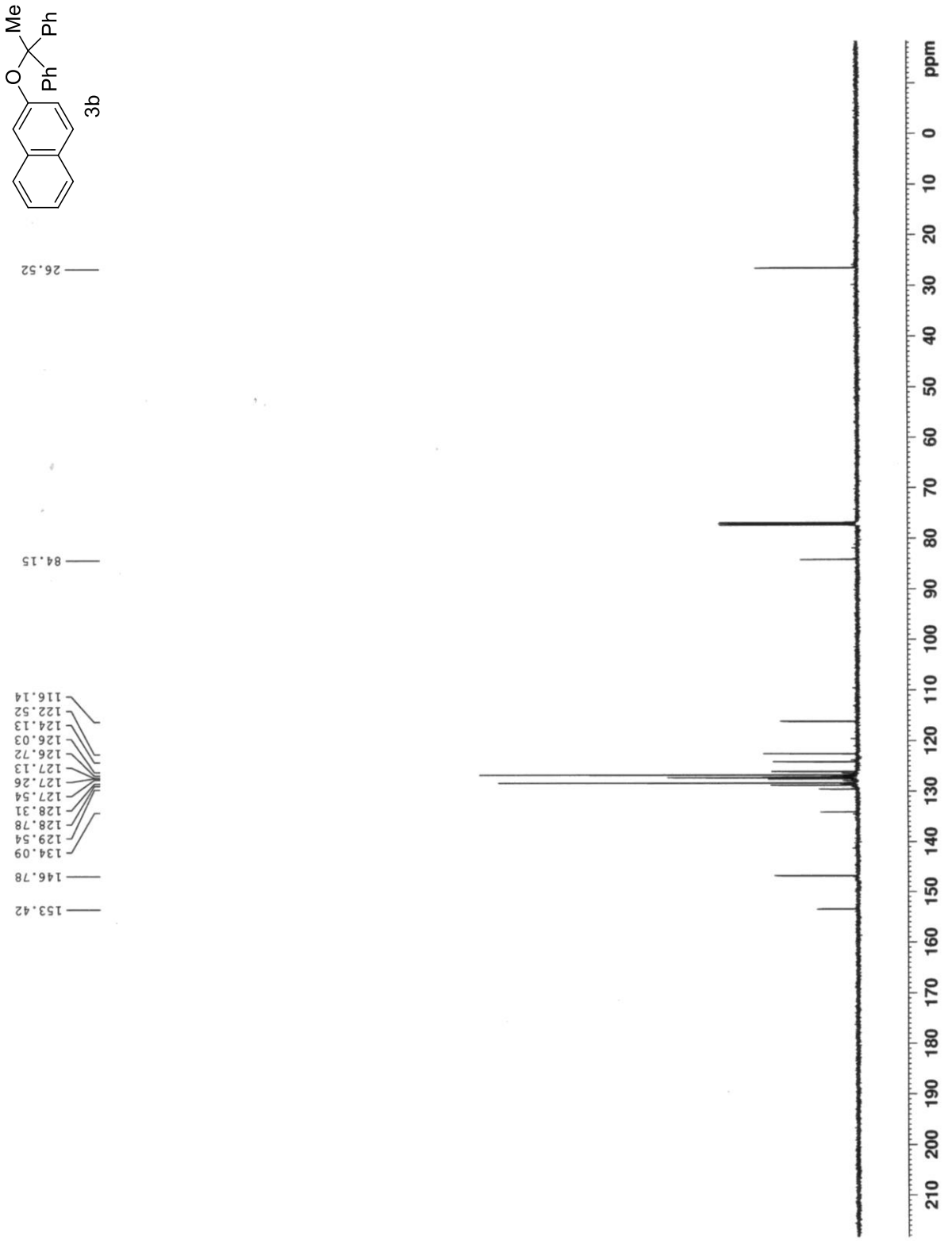
^{13}C NMR spectrum of 2-(benzhydryloxy)-1-methylnaphthalene (2b)



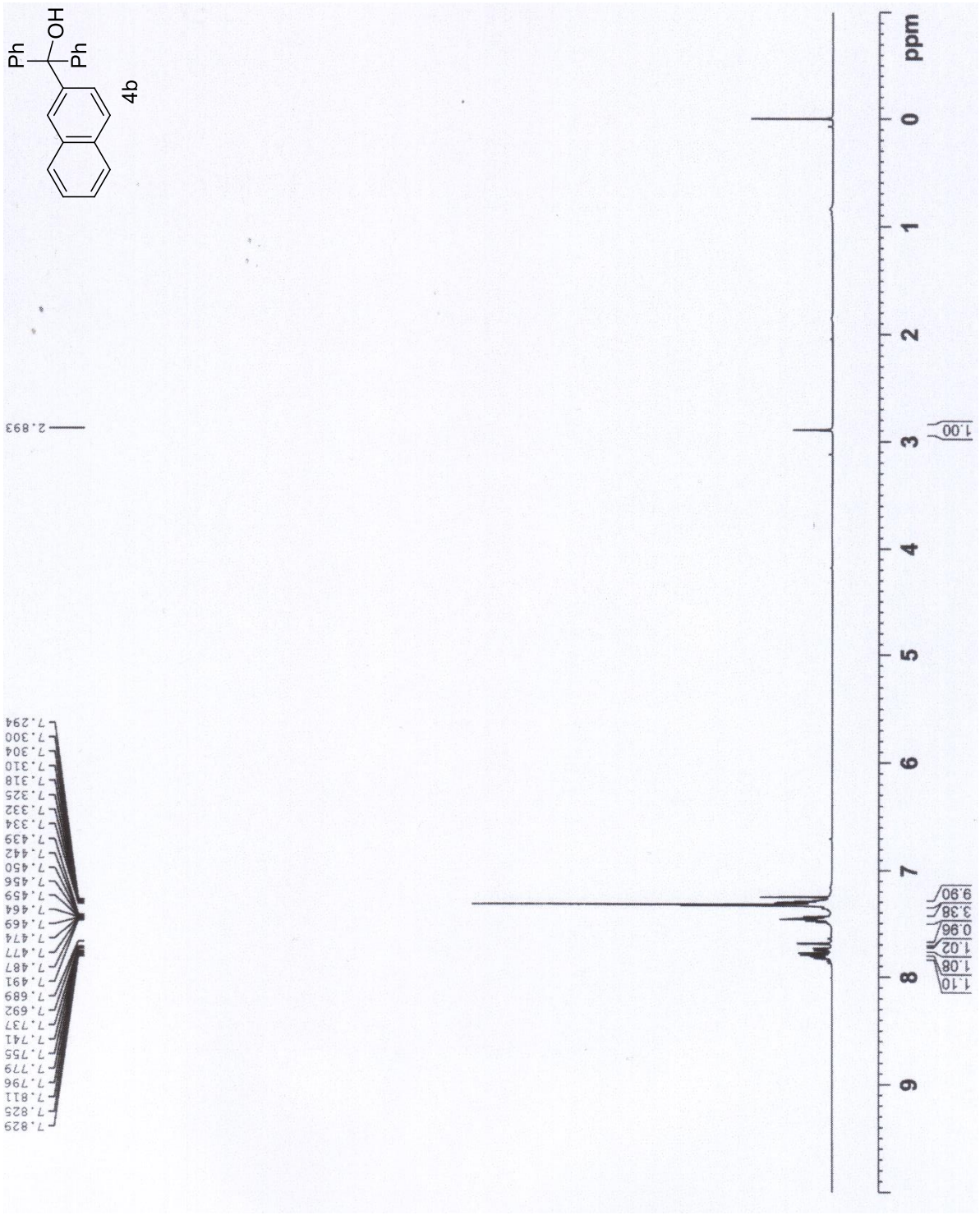
^{1}H NMR spectrum of 2-(1,1-diphenylethoxy)naphthalene (3b)



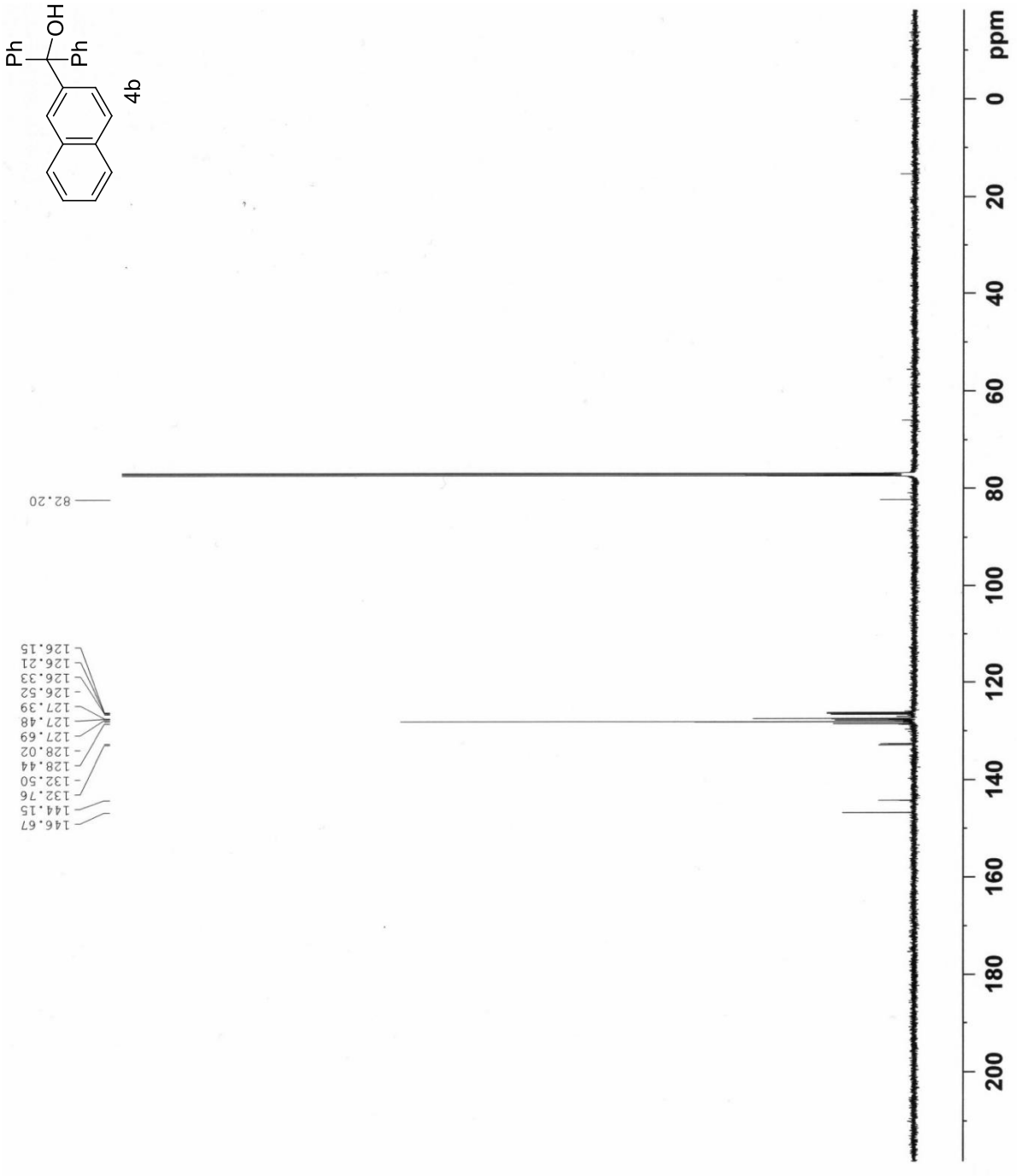
^{13}C NMR spectrum of 2-(1,1-diphenylethoxy)naphthalene (3b)



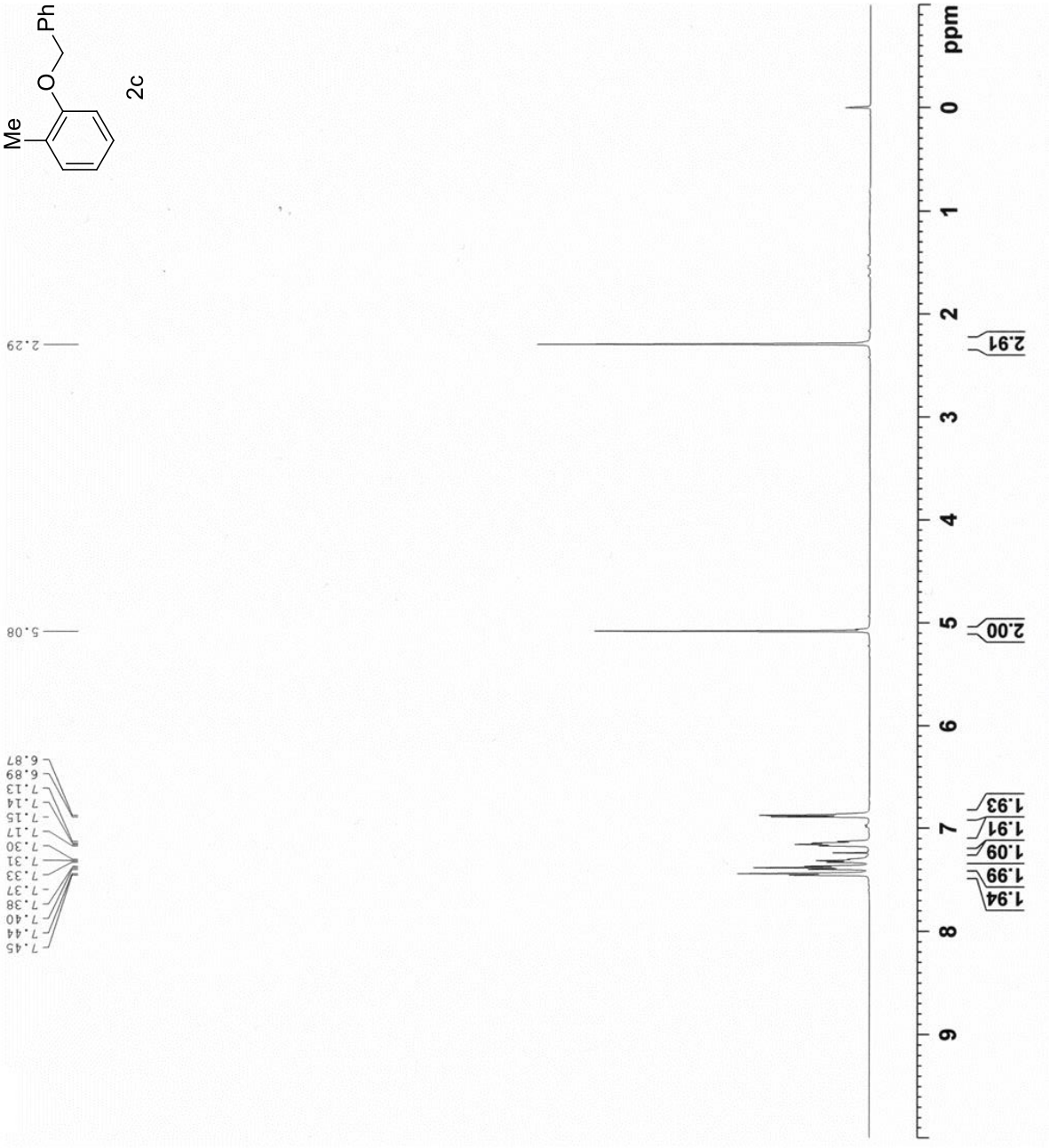
[1]H NMR spectrum of naphthalen-2-yldiphenylmethanol (4b)



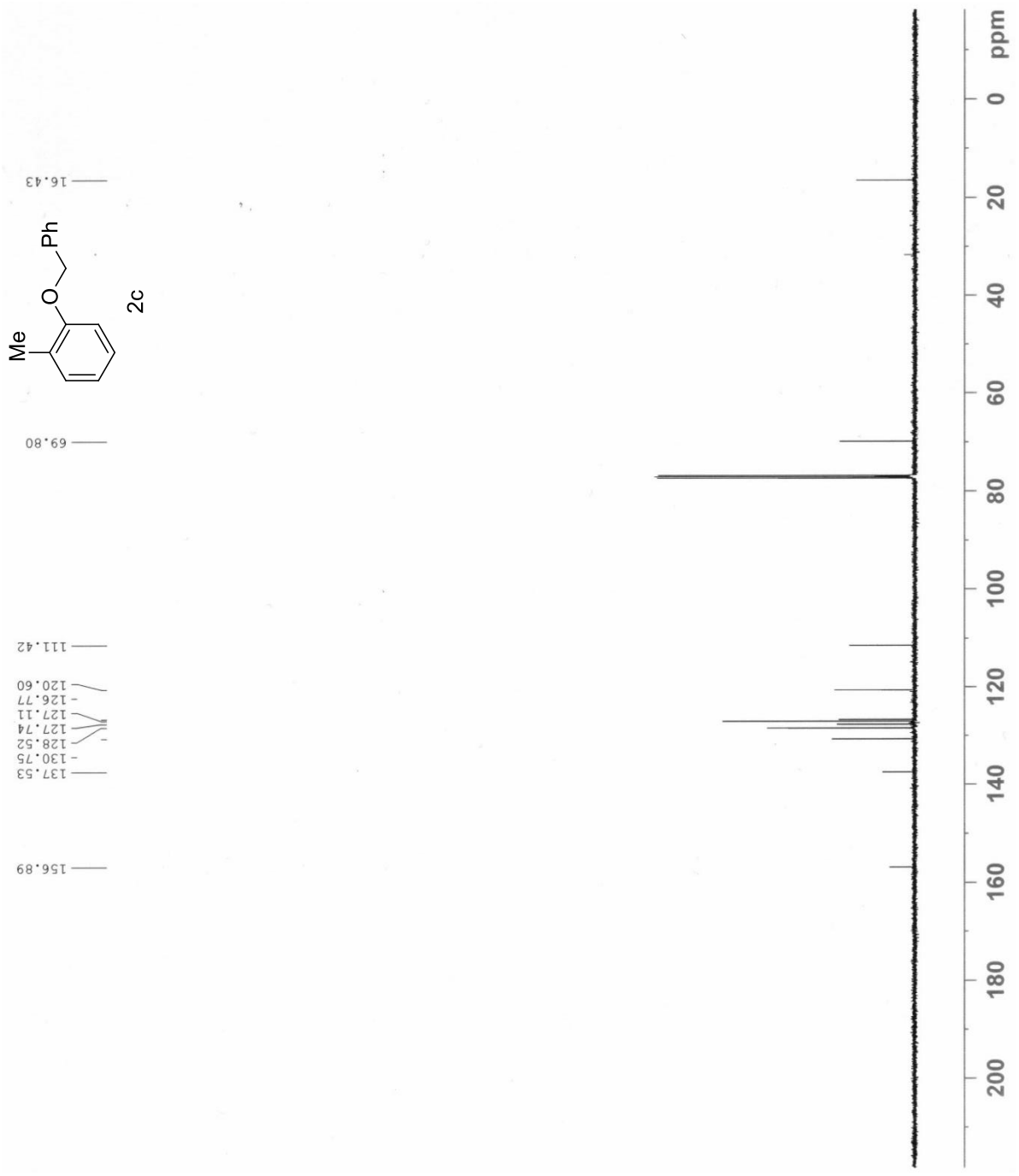
^{13}C NMR spectrum of naphthalen-2-yldiphenylmethanol (4b)



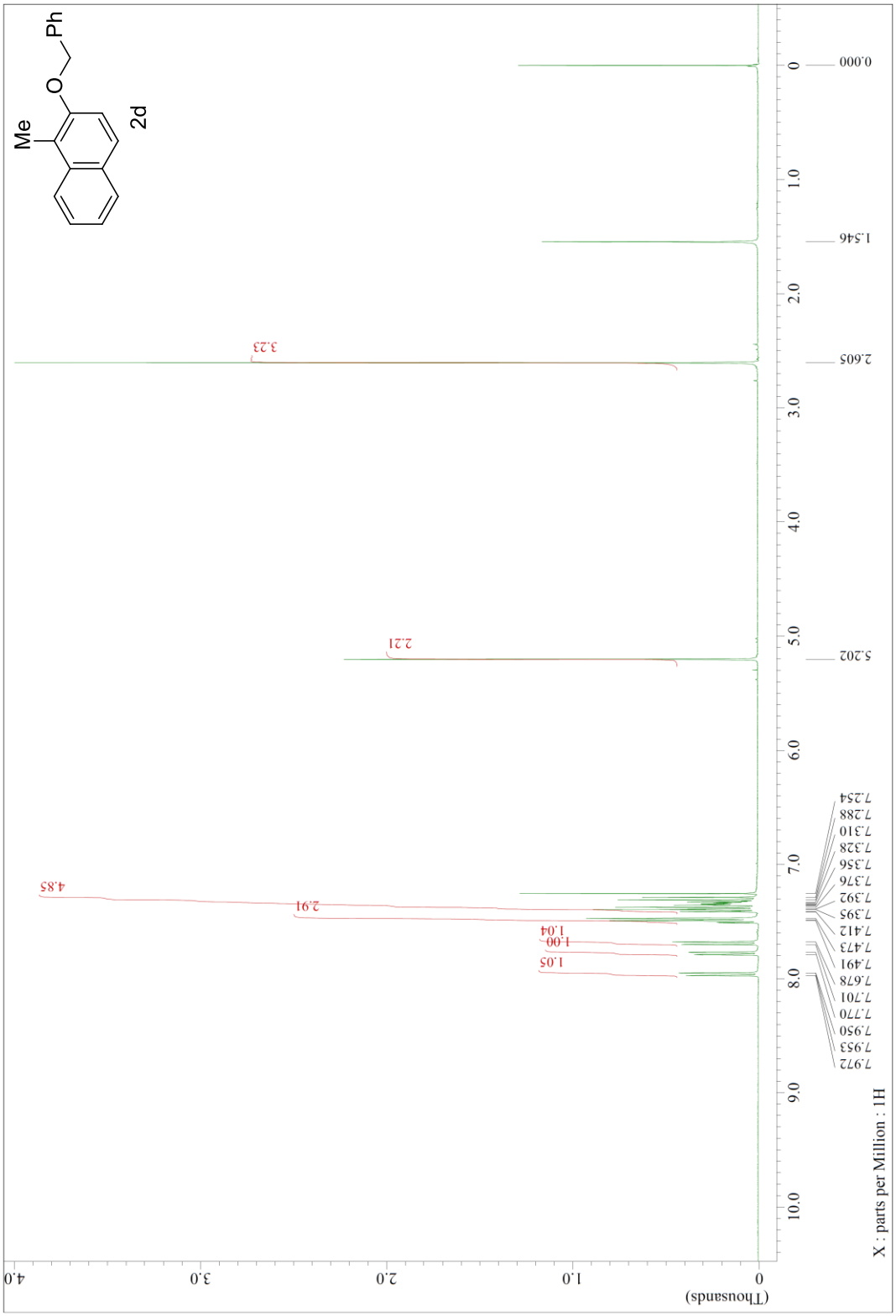
^{1}H NMR spectrum of 1-(benzyloxy)-2-methylbenzene (2c)



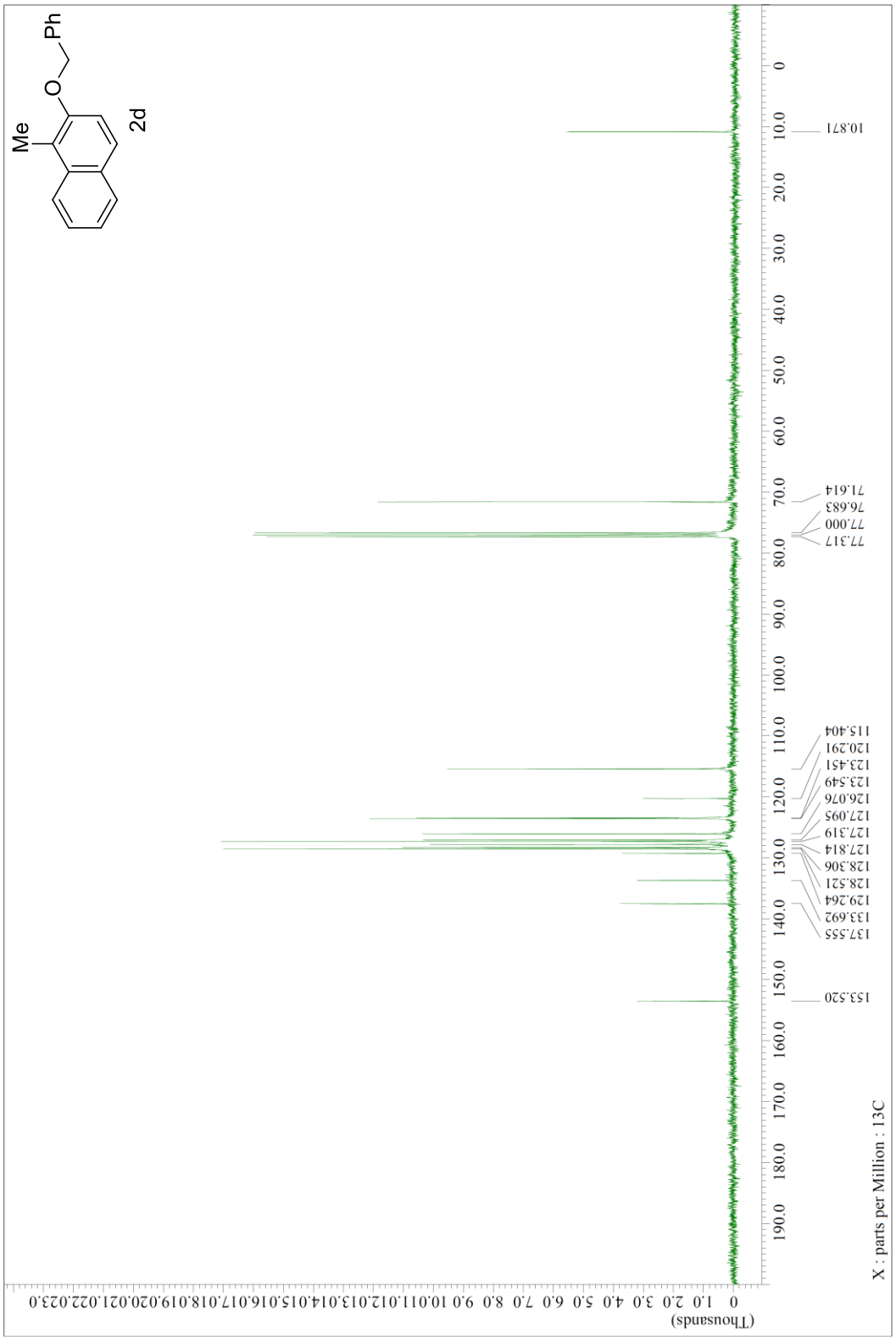
^{13}C NMR spectrum of 1-(benzyloxy)-2-methylbenzene (2c)



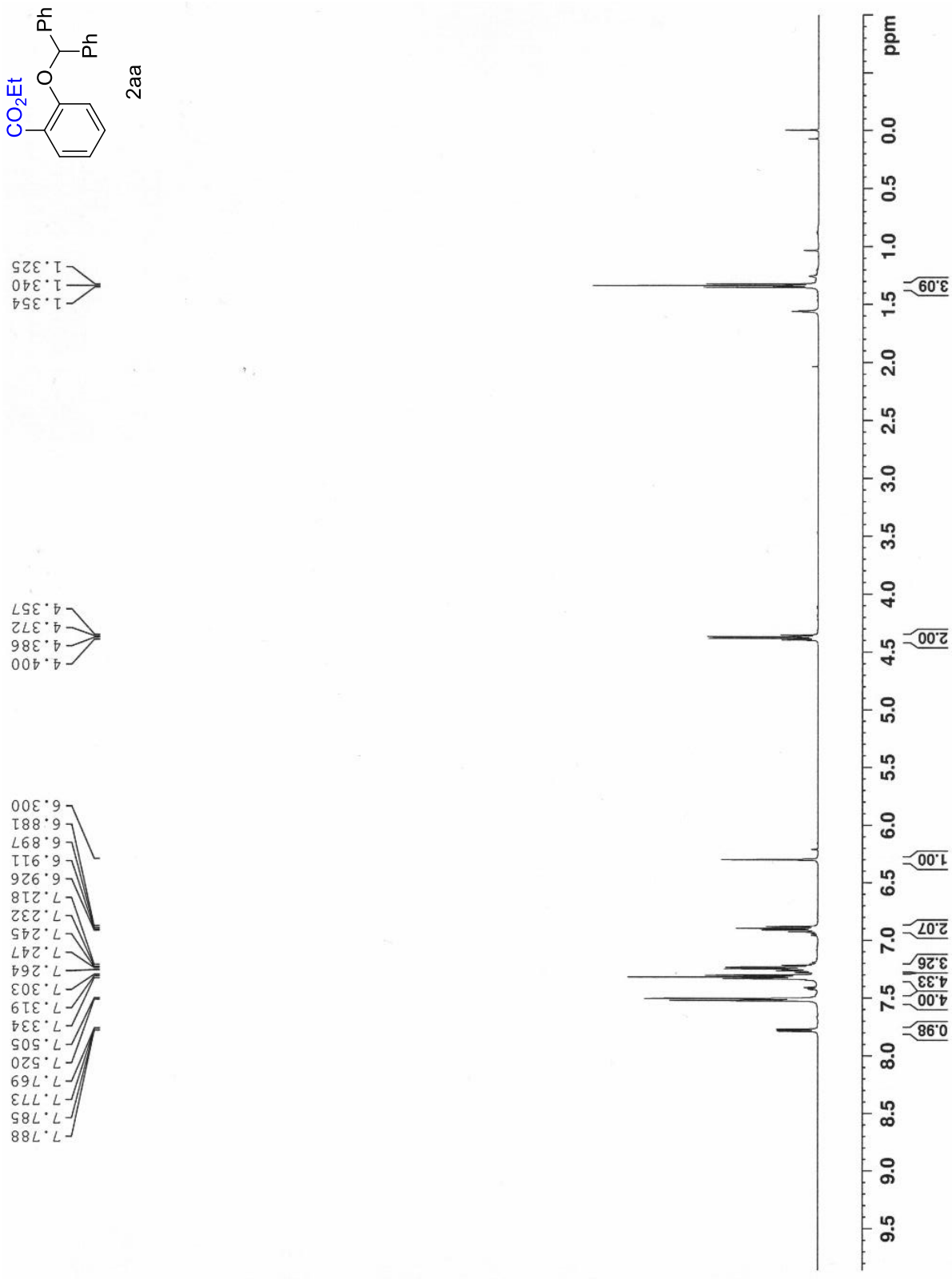
^{1}H NMR spectrum of 2-(benzyloxy)-1-methylnaphthalene (2d)



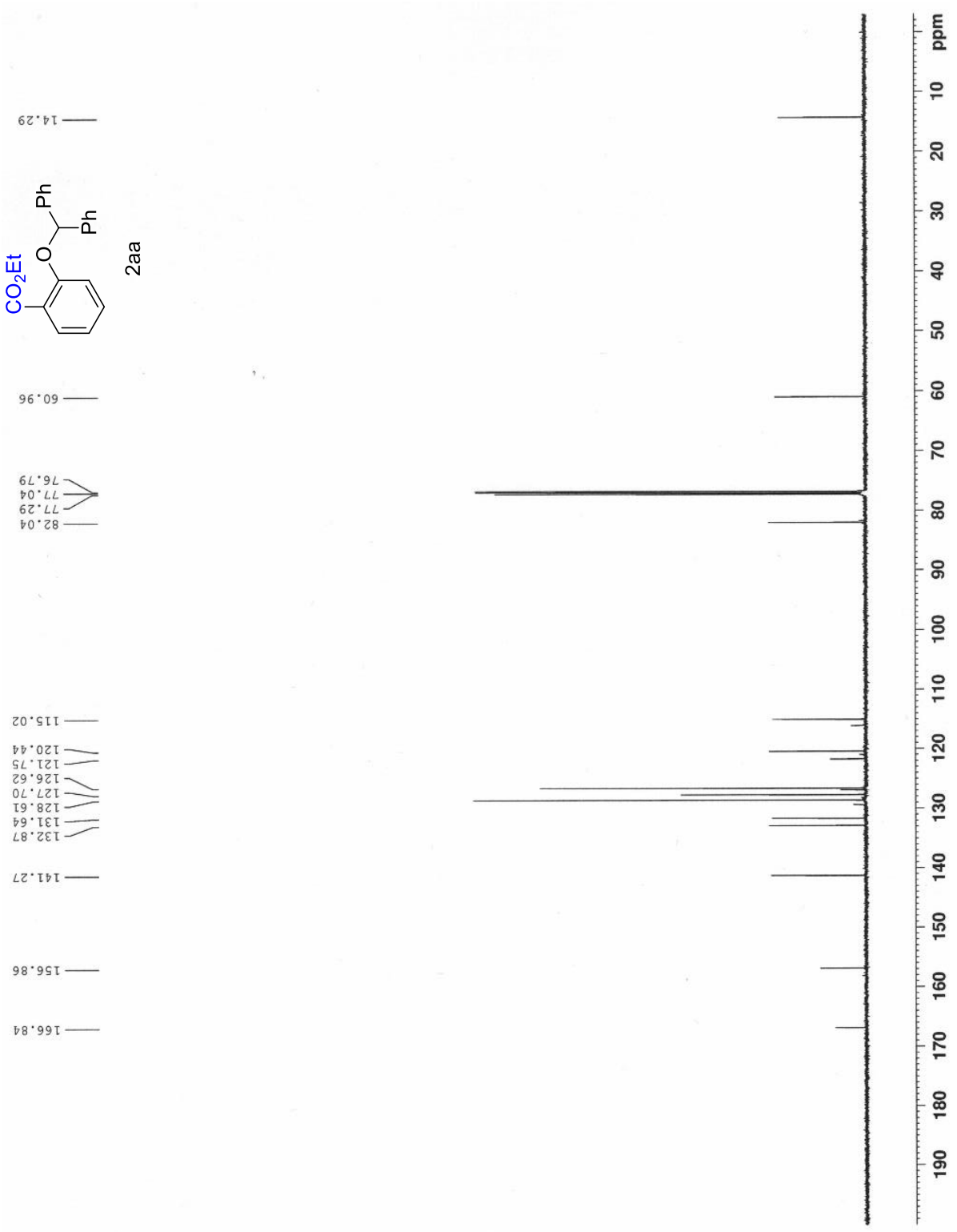
^{13}C NMR spectrum of 2-(benzyloxy)-1-methylnaphthalene (2d)



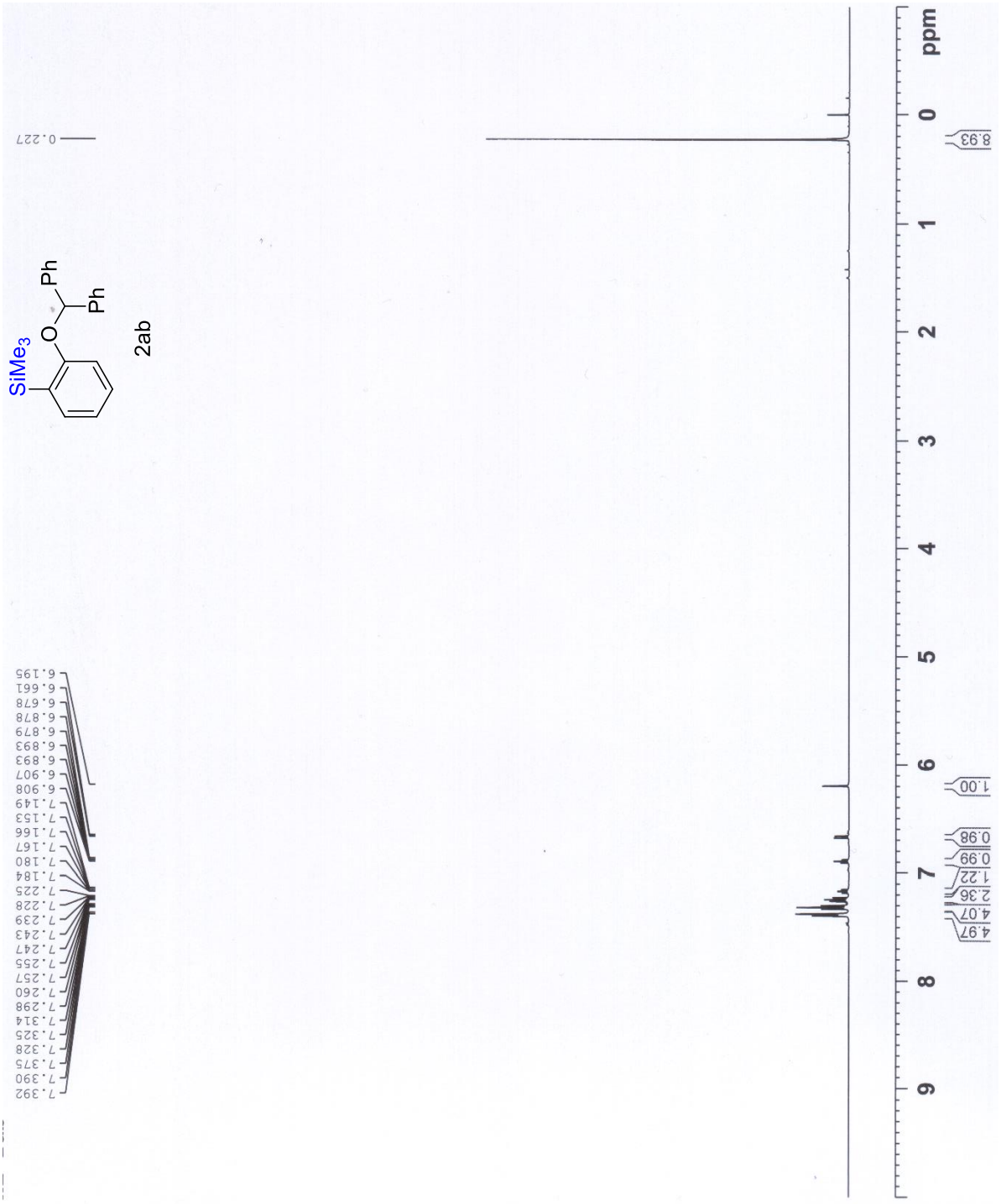
[1]H NMR spectrum of ethyl 2-(benzhydryloxy)benzoate (2aa)



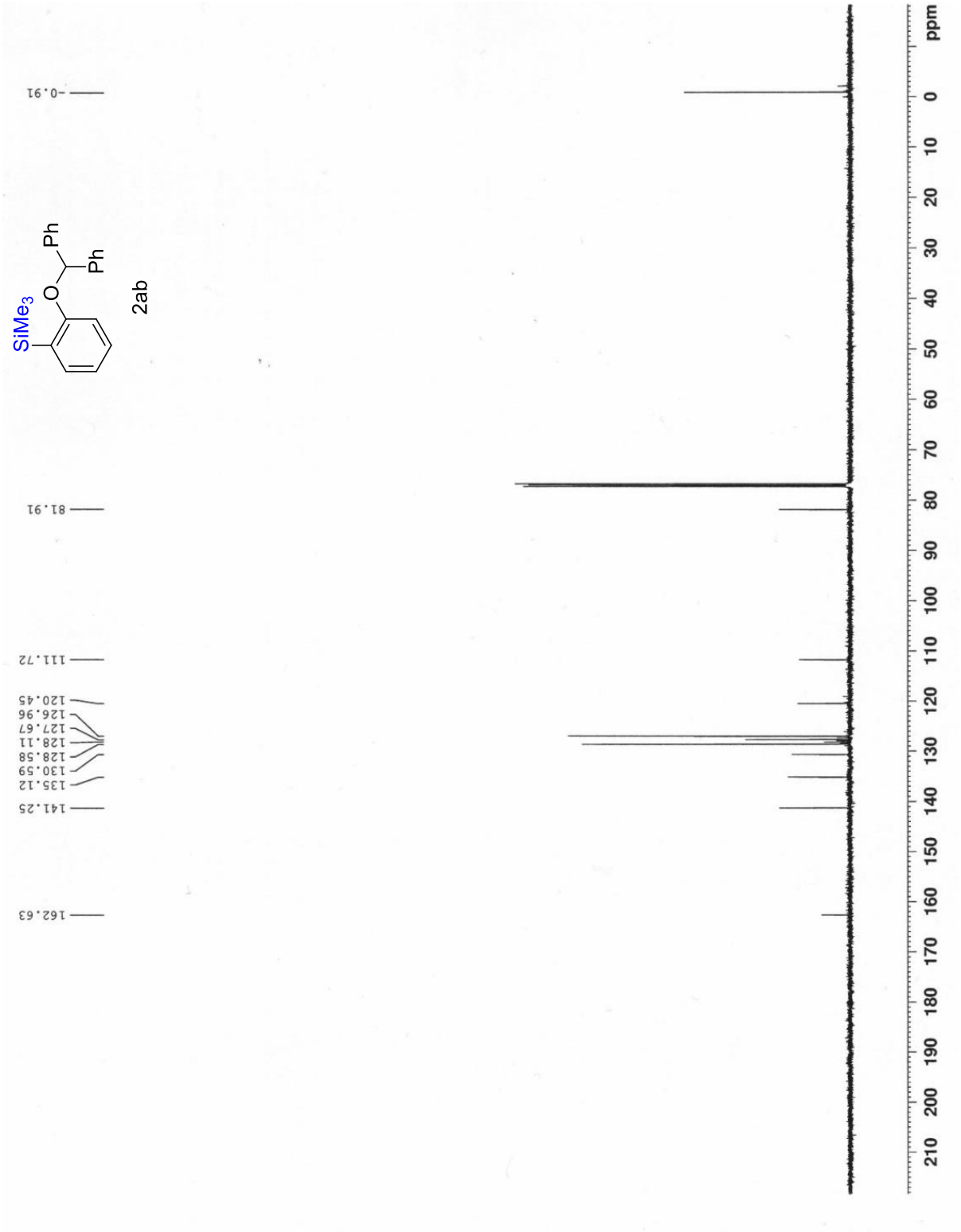
^{13}C NMR spectrum of ethyl 2-(benzhydryloxy)benzoate (2aa)



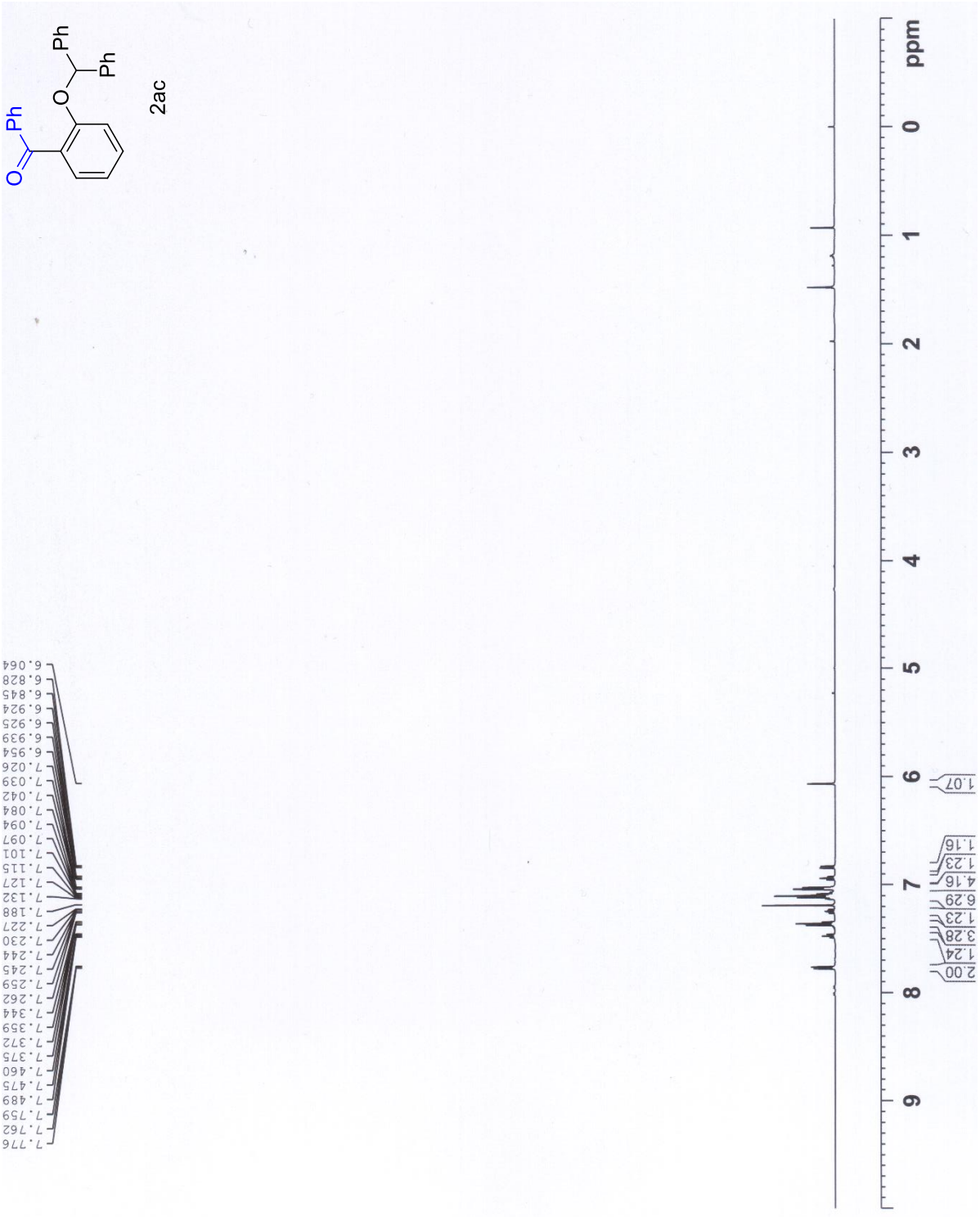
^{1}H NMR spectrum of (2-(benzhydryloxy)phenyl)trimethylsilane (2ab)



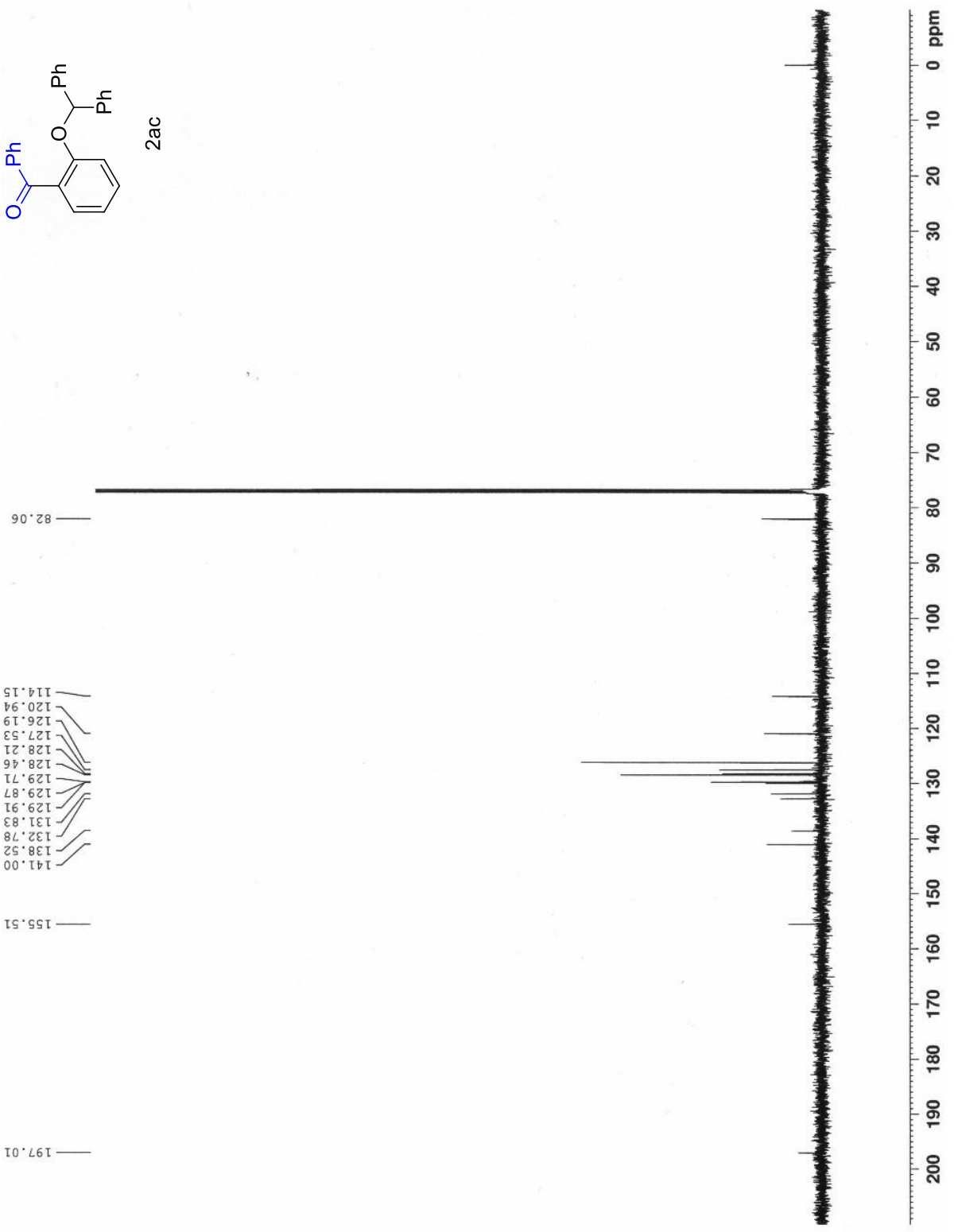
^{13}C NMR spectrum of (2-(benzhydryloxy)phenyl)trimethylsilane (2ab)



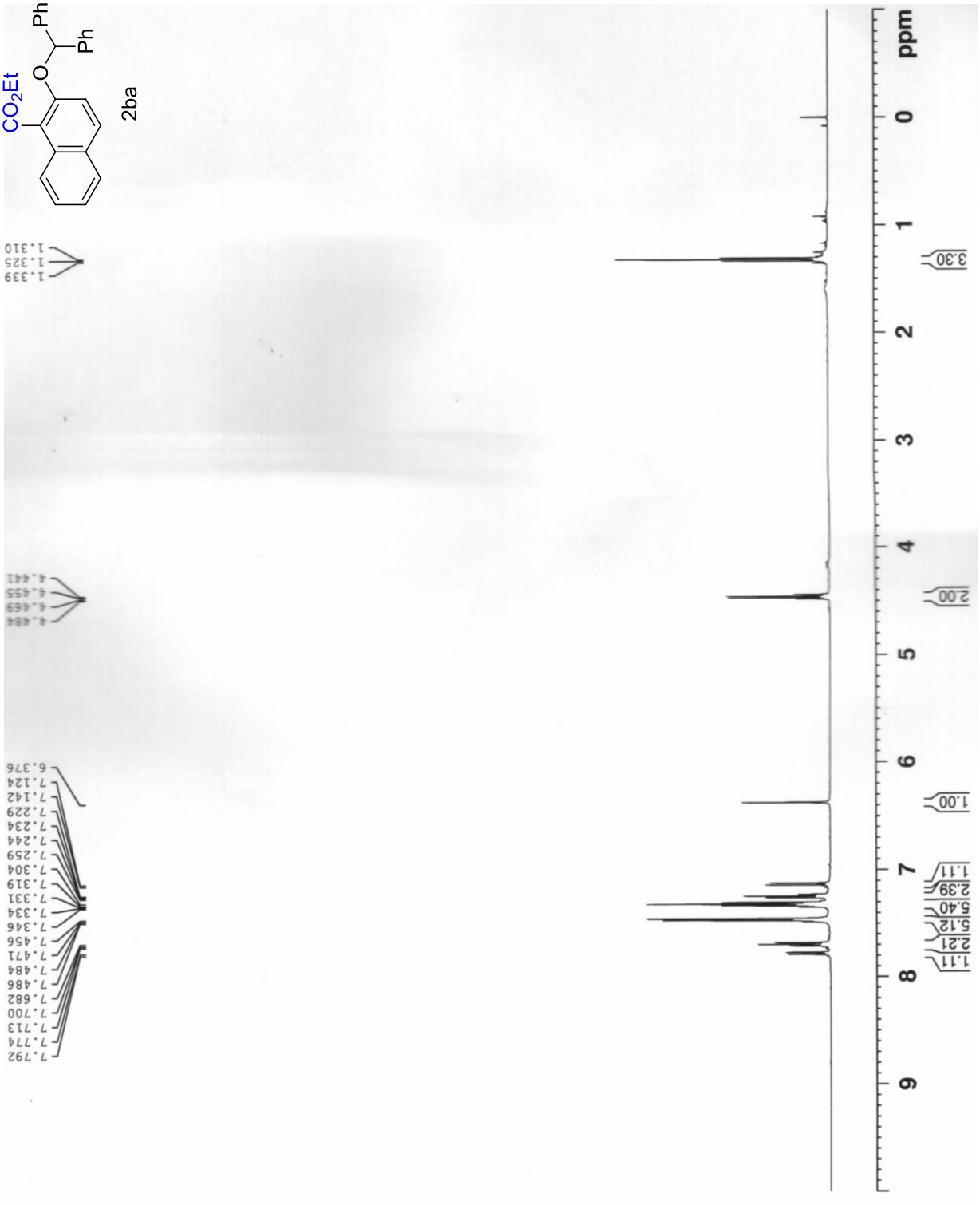
^{1}H NMR spectrum of (2-(benzhydryloxy)phenyl)(phenyl)methanone (2ac)



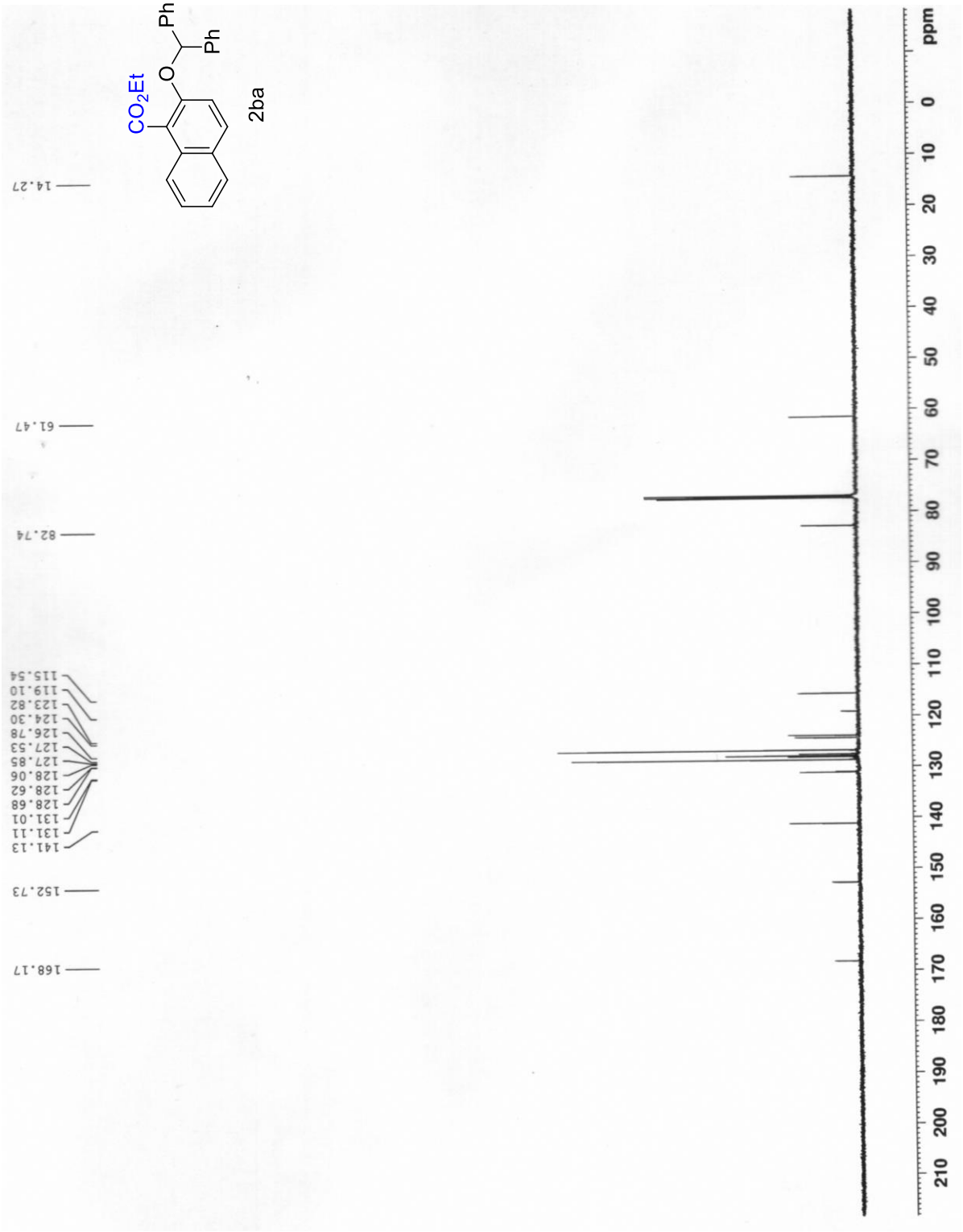
^{13}C NMR spectrum of (2-(benzhydryloxy)phenyl)(phenyl)methanone (2ac)



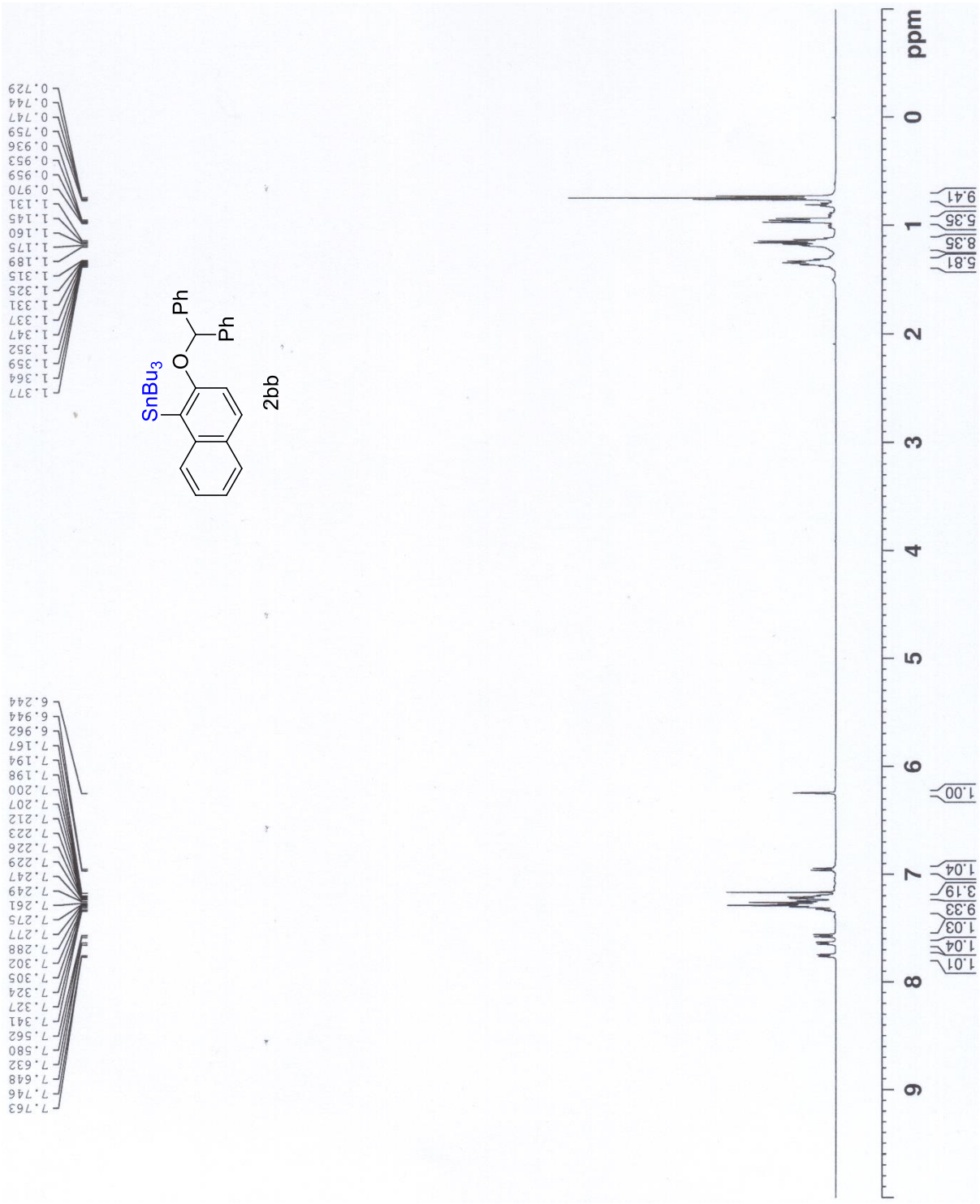
^{1}H NMR spectrum of ethyl 2-(benzhydryloxy)-1-naphthoate (2ba)



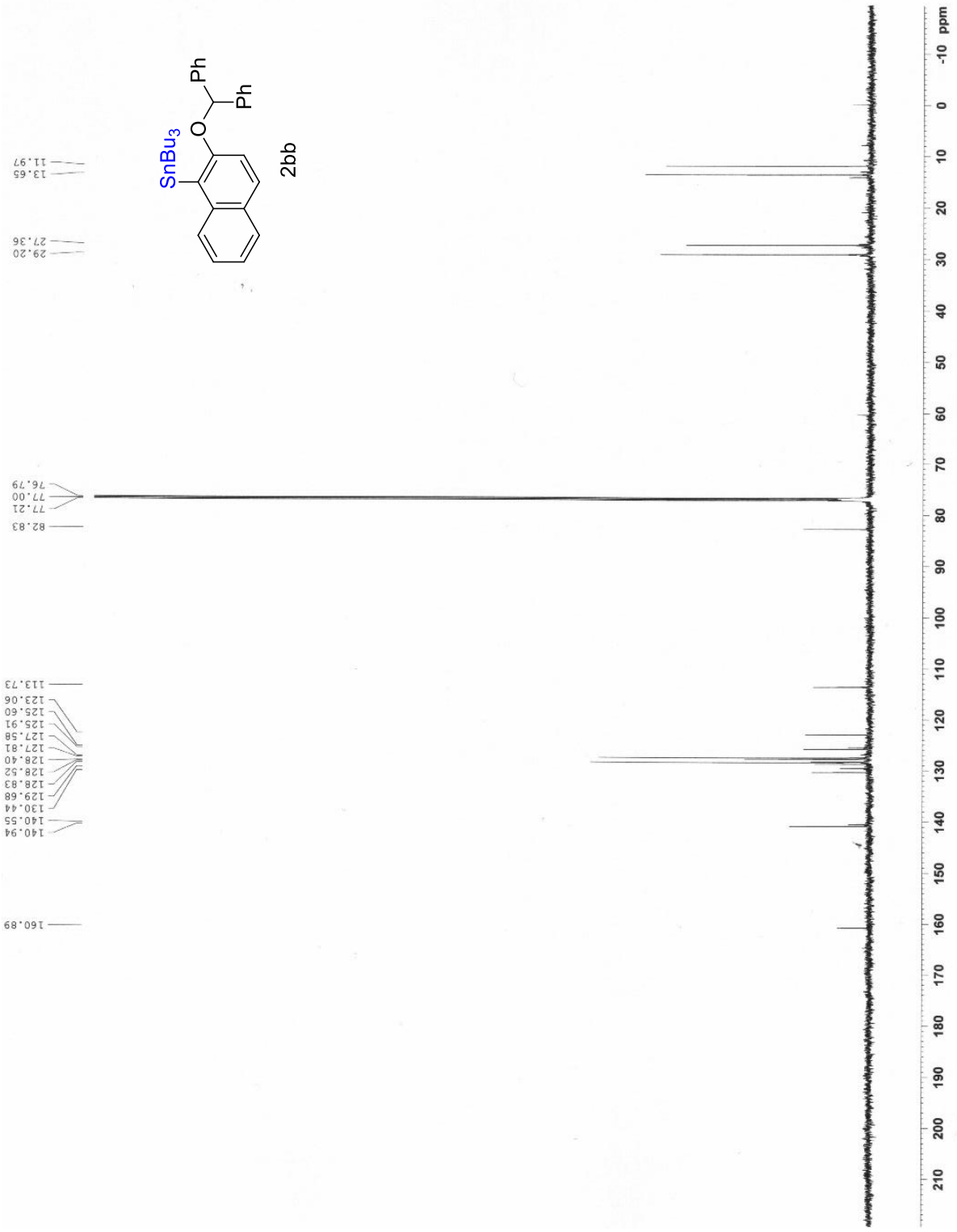
^{13}C NMR spectrum of ethyl 2-(benzhydryloxy)-1-naphthoate (2ba)



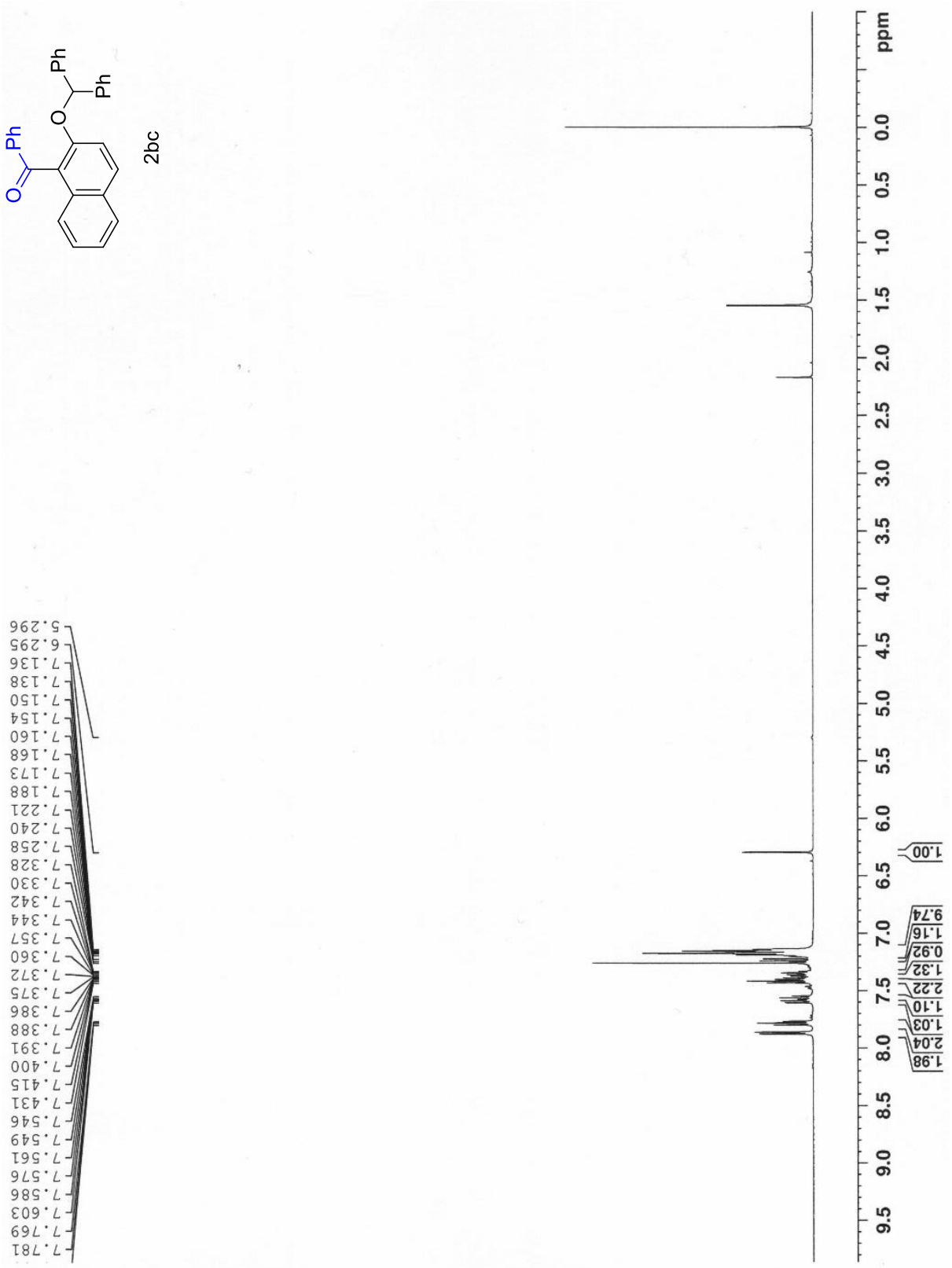
[1]H NMR spectrum of (2-(benzhydryloxy)naphthalen-1-yl)tributylstannane (2bb)



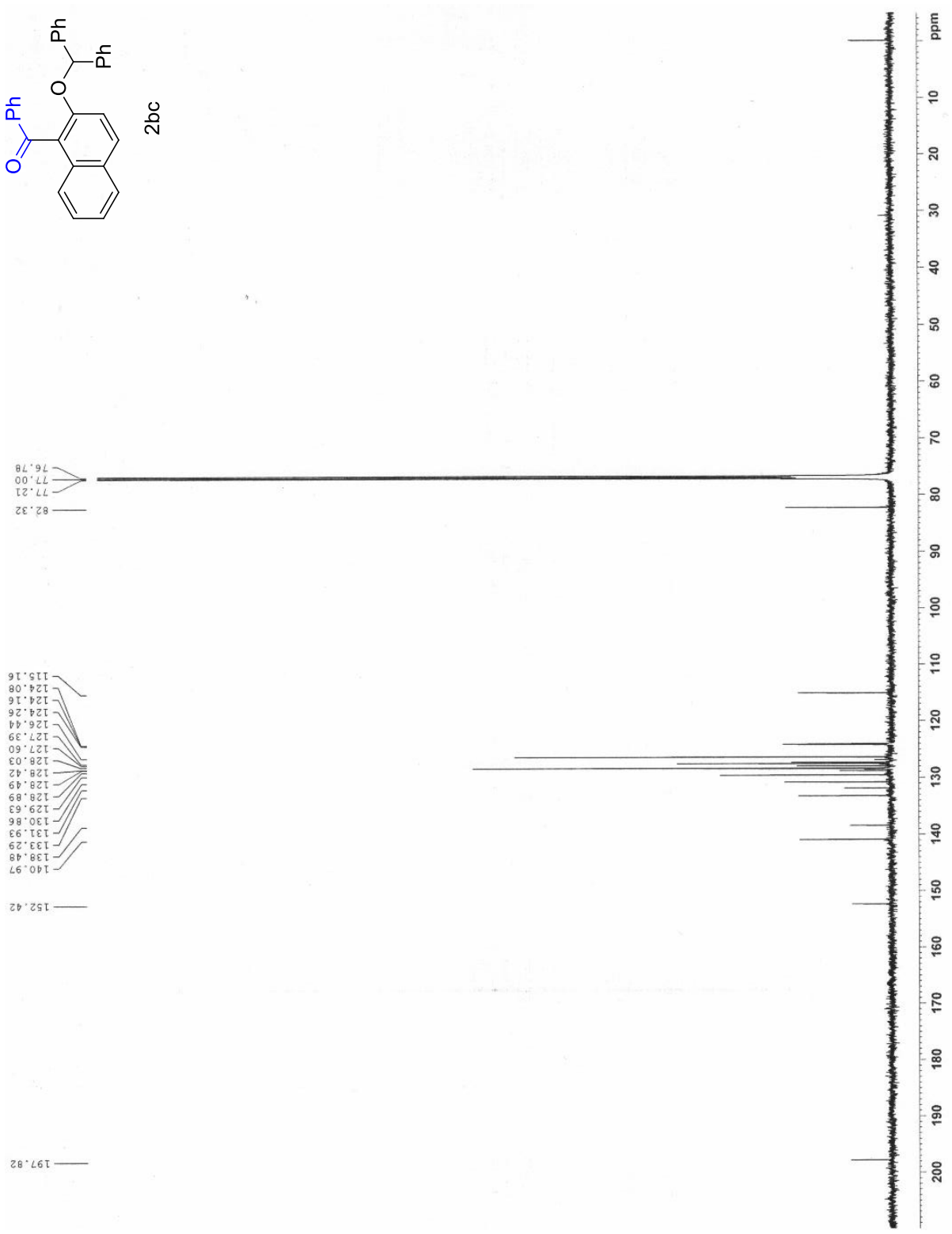
^{13}C NMR spectrum of (2-(benzhydryloxy)naphthalen-1-yl)tributylstannane (2bb)



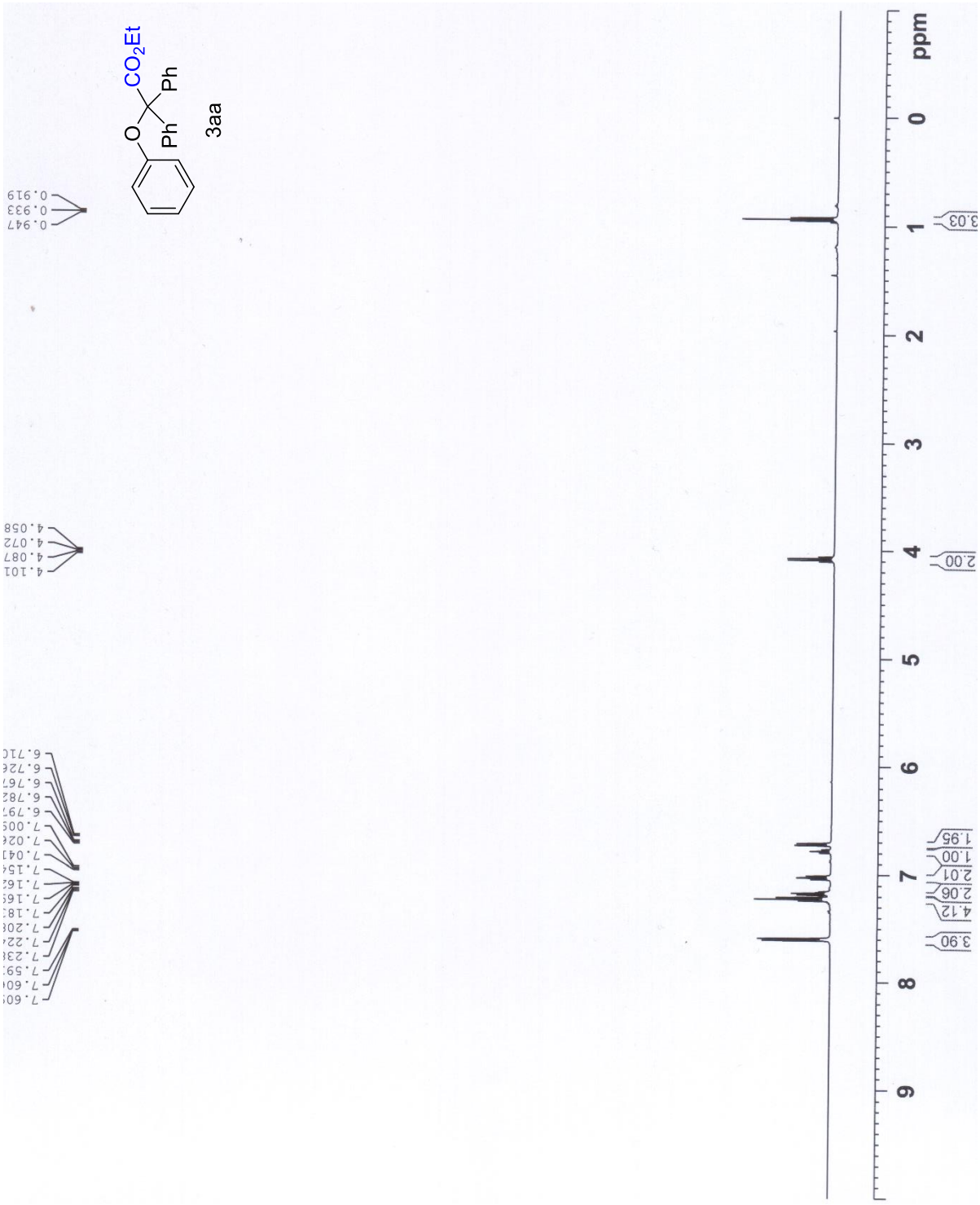
^{1}H NMR spectrum of (2-(benzhydryloxy)naphthalen-1-yl)(phenyl)methanone (2bc)



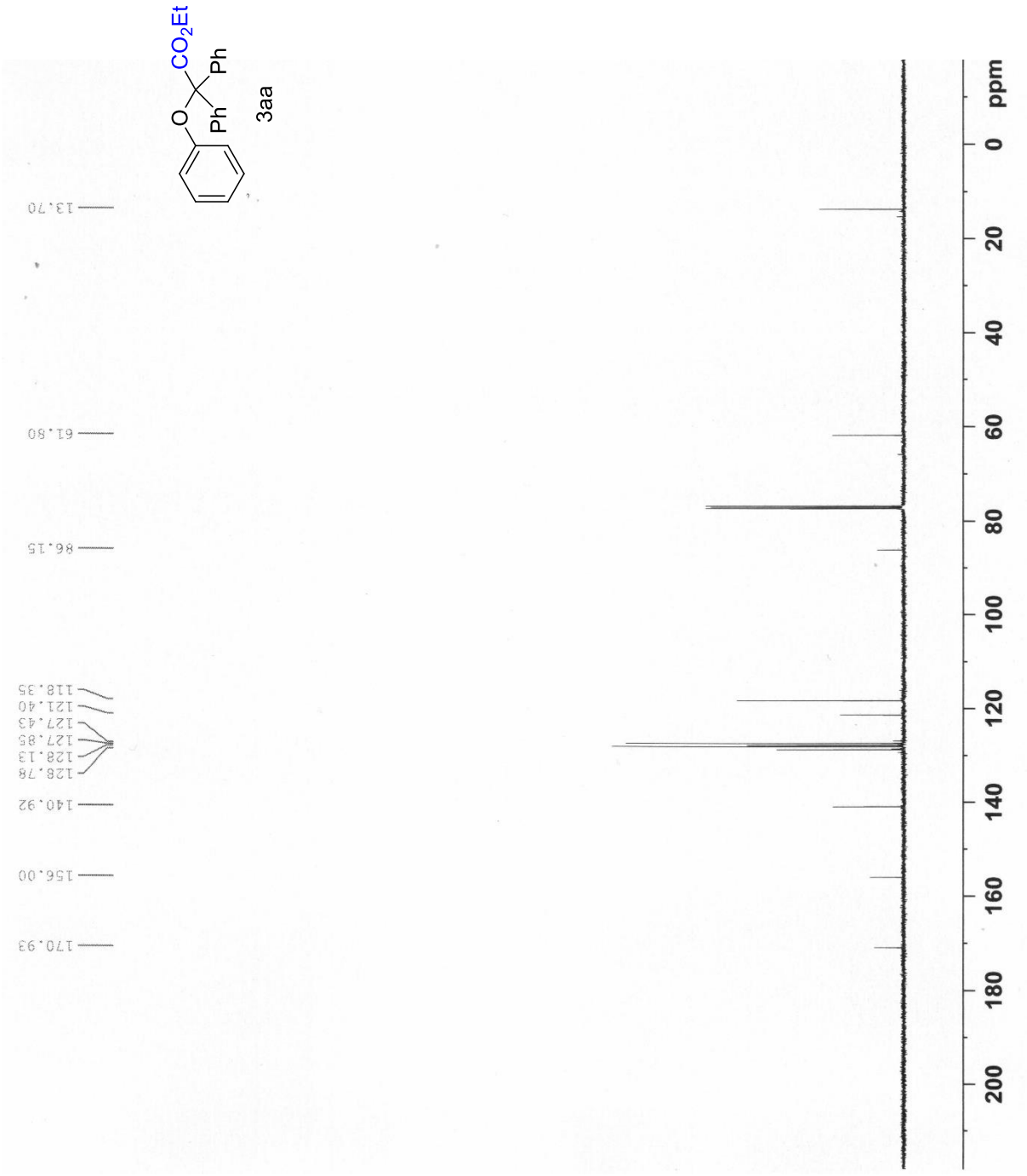
^{13}C NMR spectrum of (2-(benzhydryloxy)naphthalen-1-yl)(phenyl)methanone (2bc)



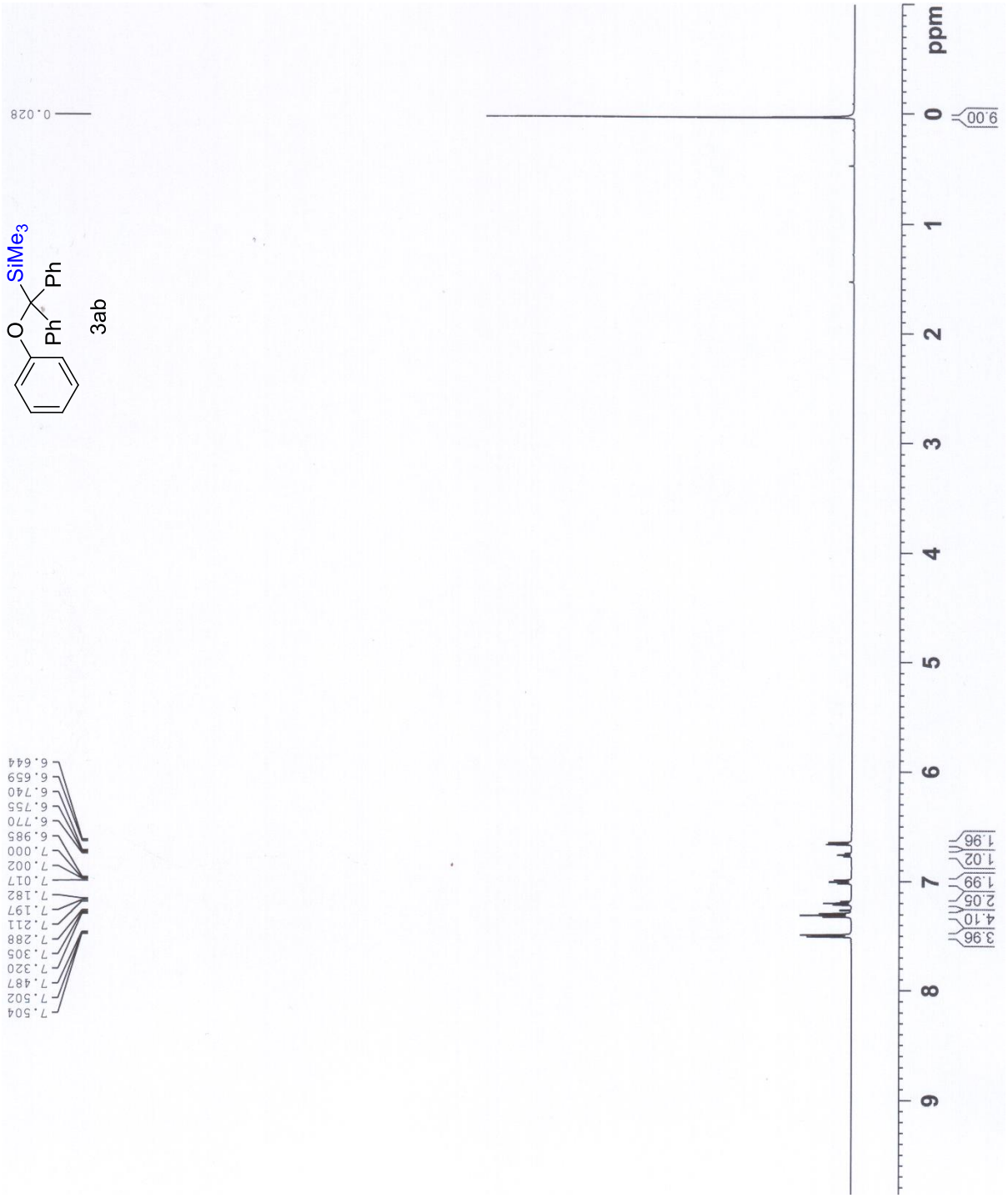
^{1}H NMR spectrum of Ethyl 2-phenoxy-2,2-diphenylacetate (3aa)



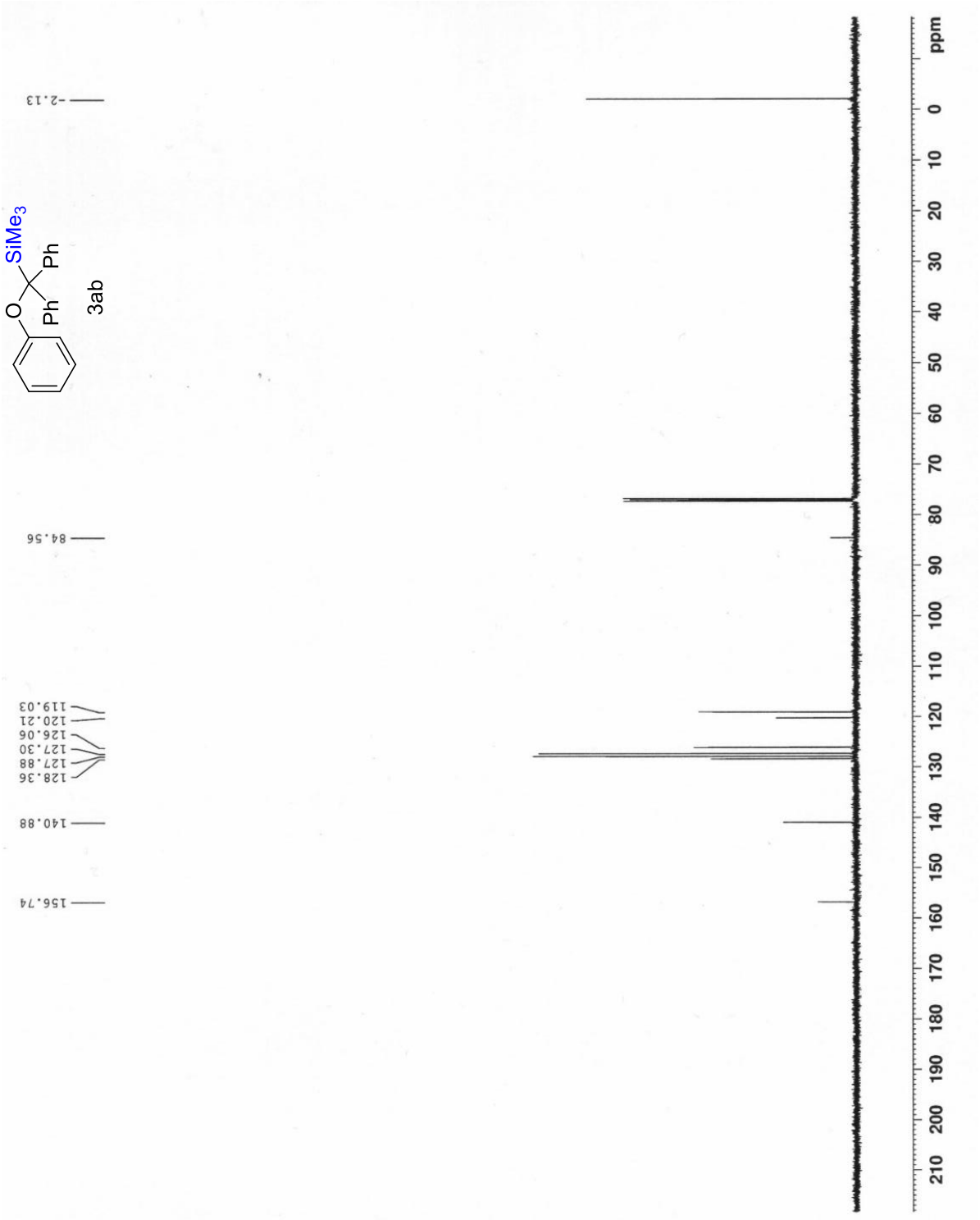
^{13}C NMR spectrum of Ethyl 2-phenoxy-2,2-diphenylacetate (3aa)



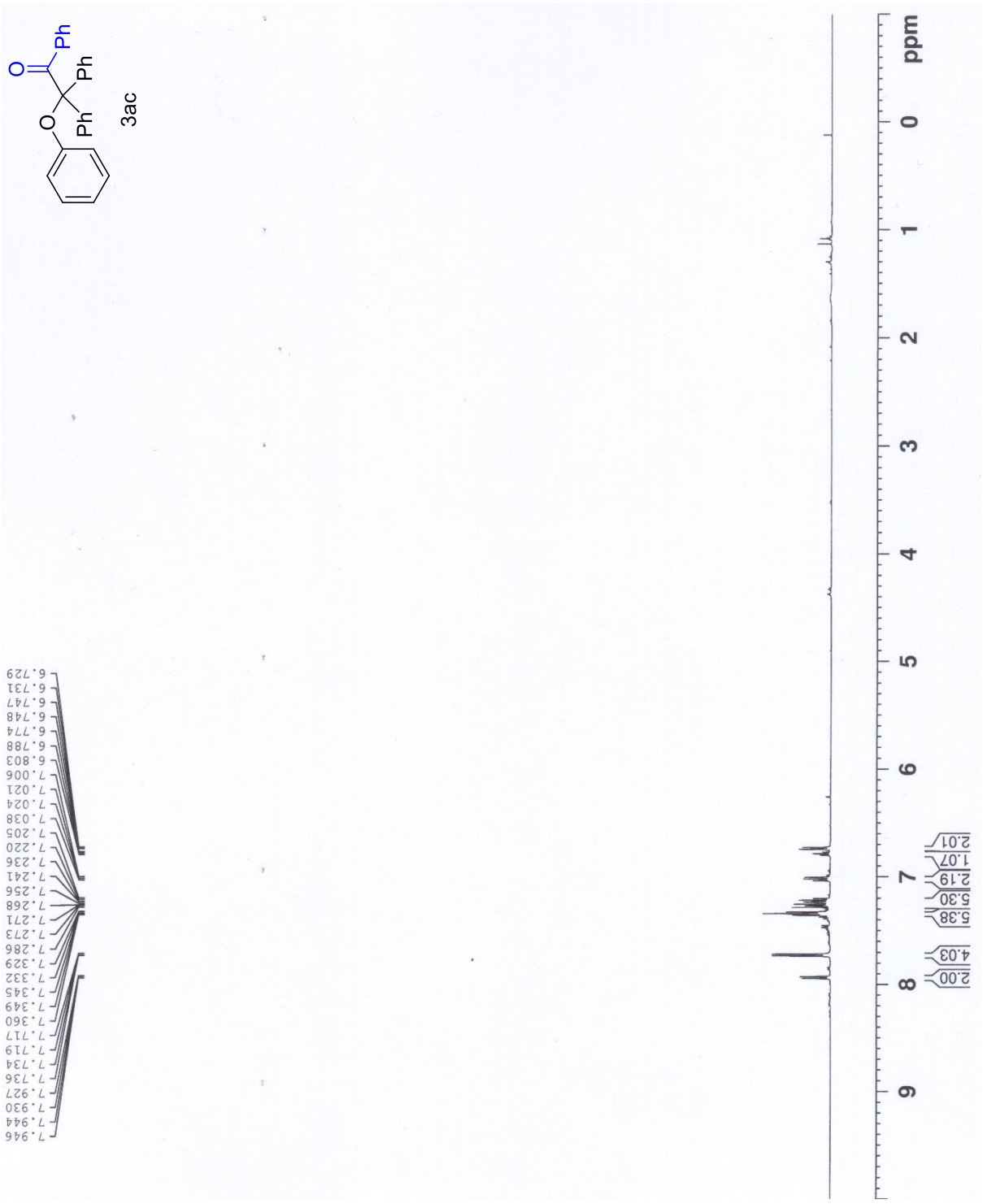
^{1}H NMR spectrum of Trimethyl(phenoxydiphenylmethyl)silane (3ab)



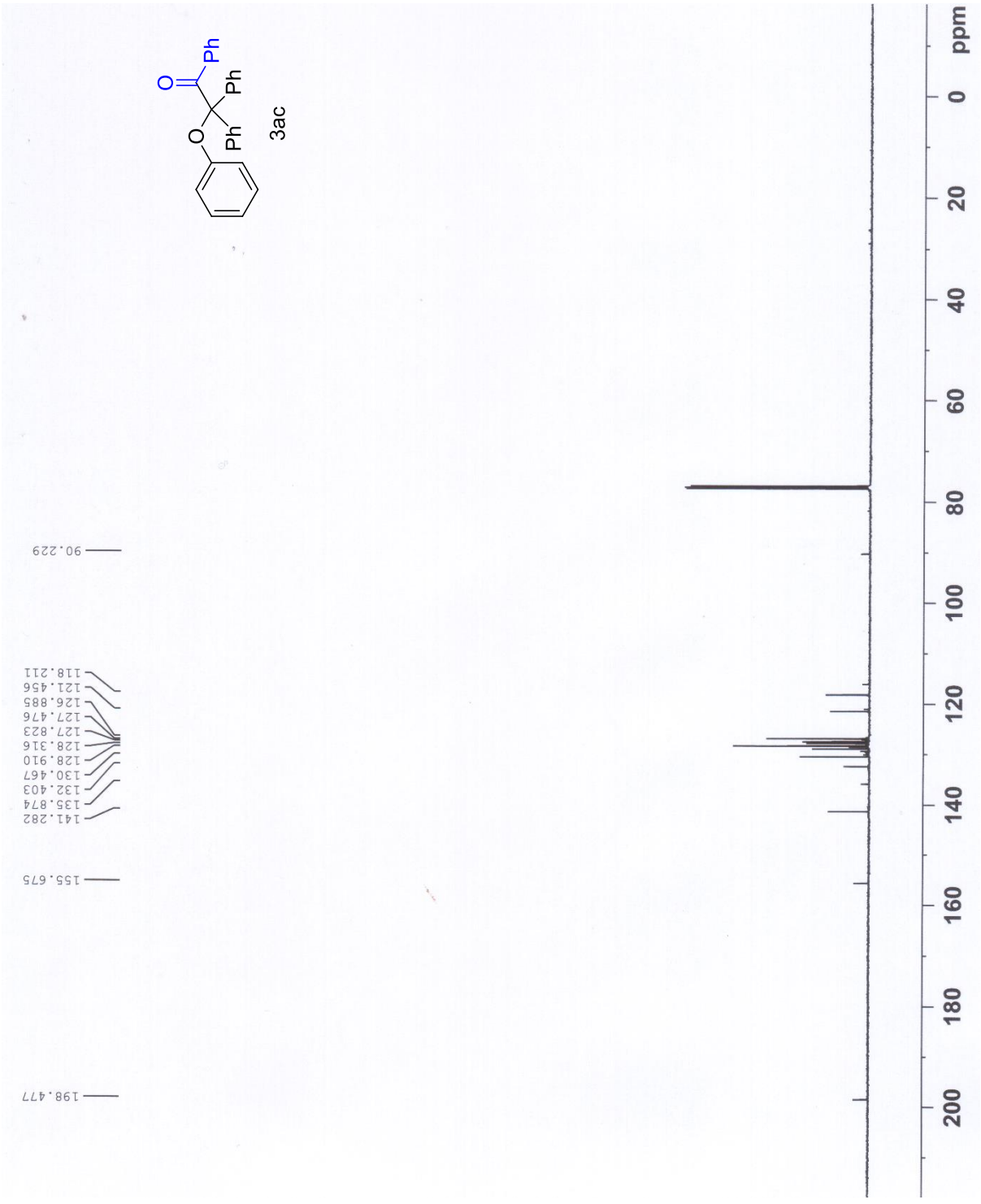
^{13}C NMR spectrum of Trimethyl(phenoxydiphenylmethyl)silane (3ab)



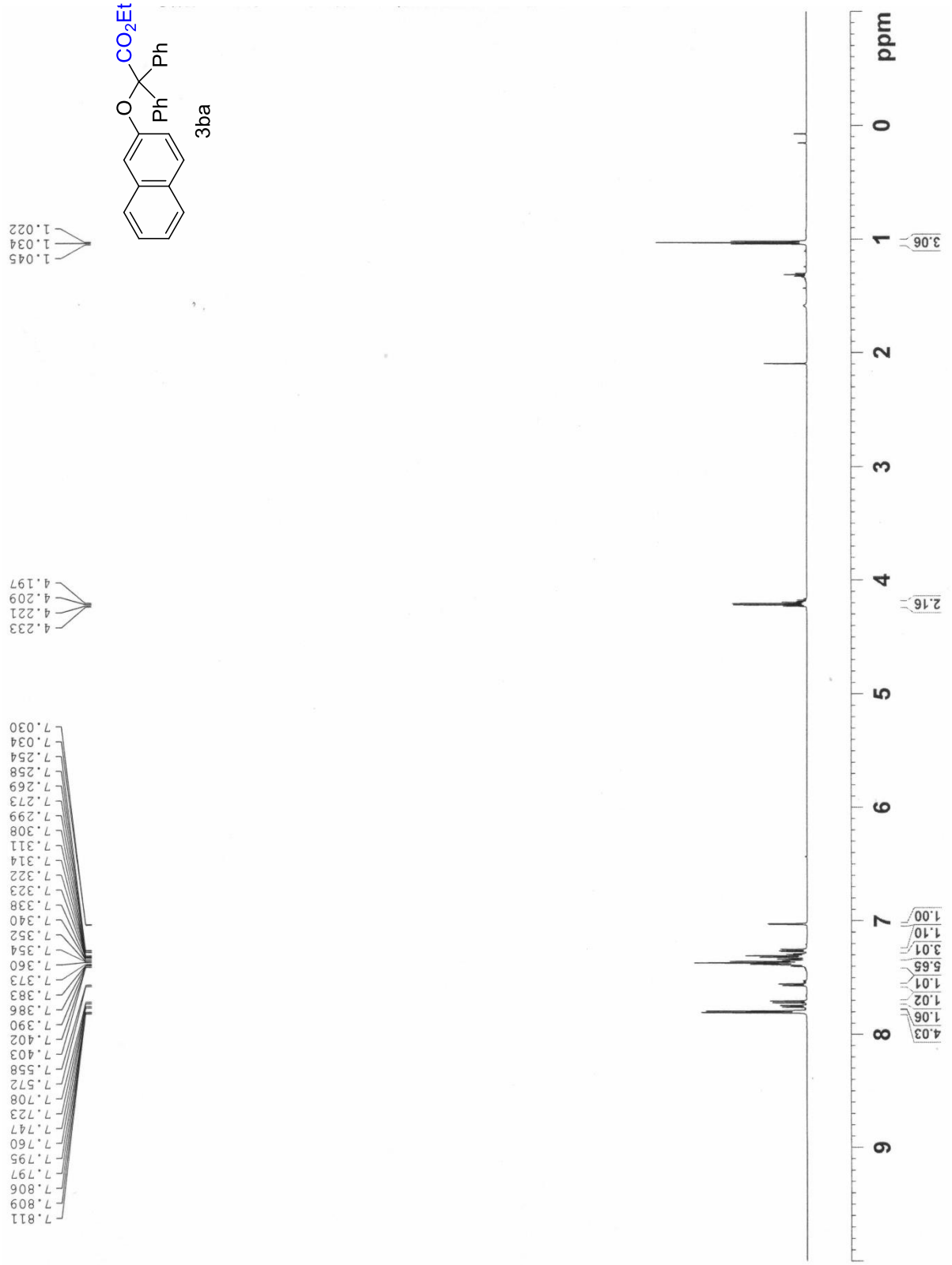
[1]H NMR spectrum of 2-phenoxy-1,2,2-triphenylethanone (3ac)



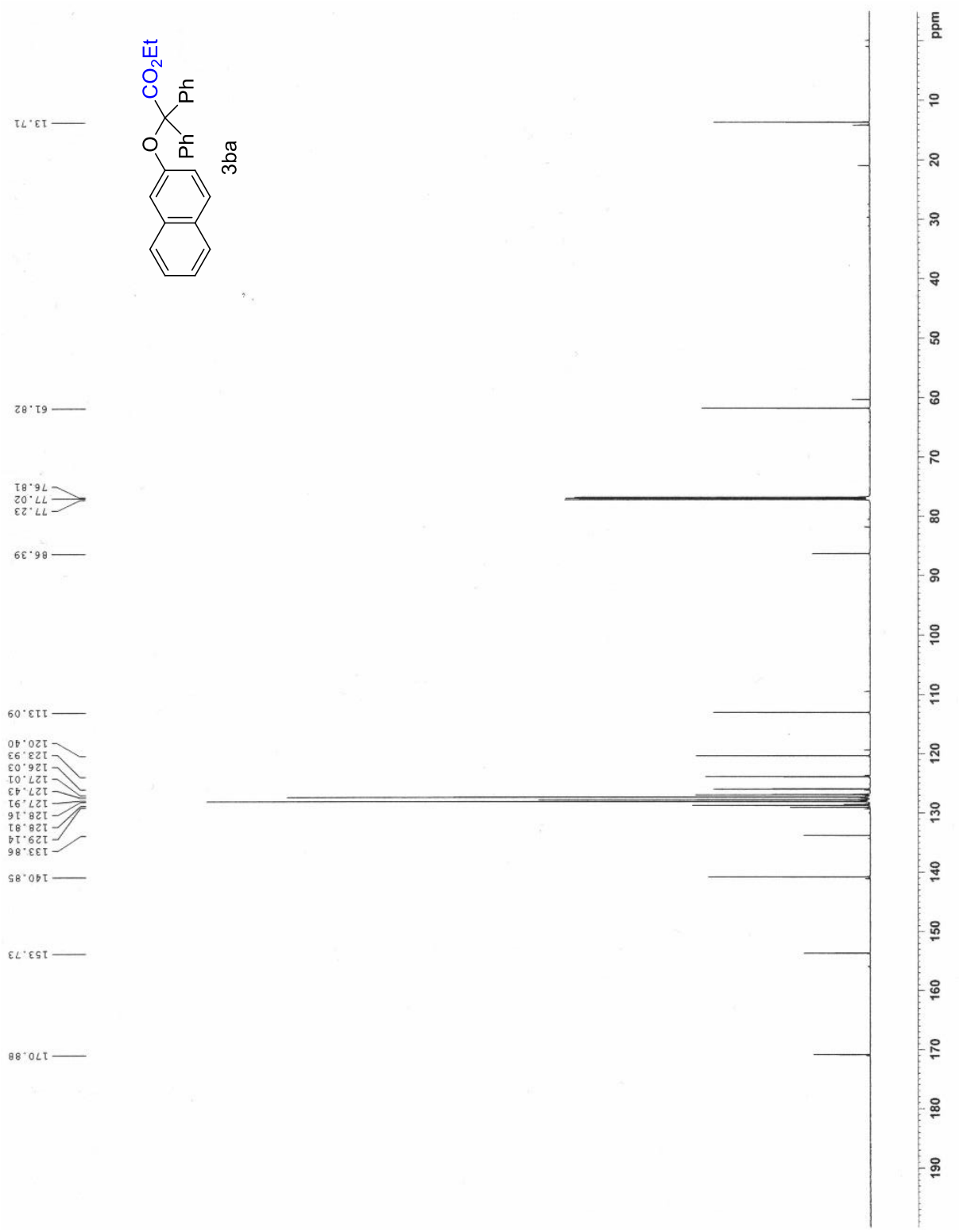
^{13}C NMR spectrum of 2-phenoxy-1,2,2-triphenylethanone (3ac)



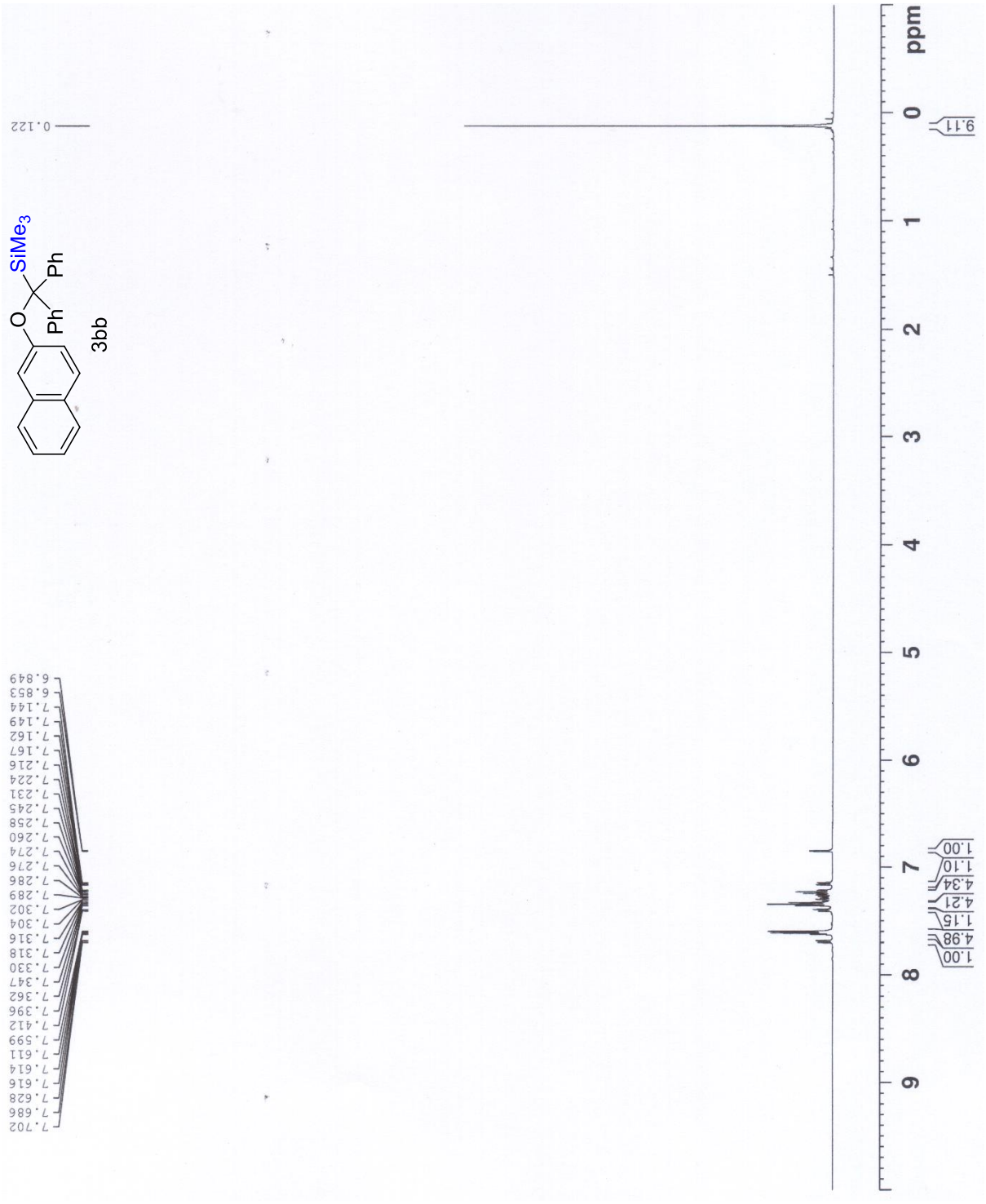
[1]H NMR spectrum of Ethyl 2-(naphthalen-2-yloxy)-2,2-diphenylacetate (3ba)



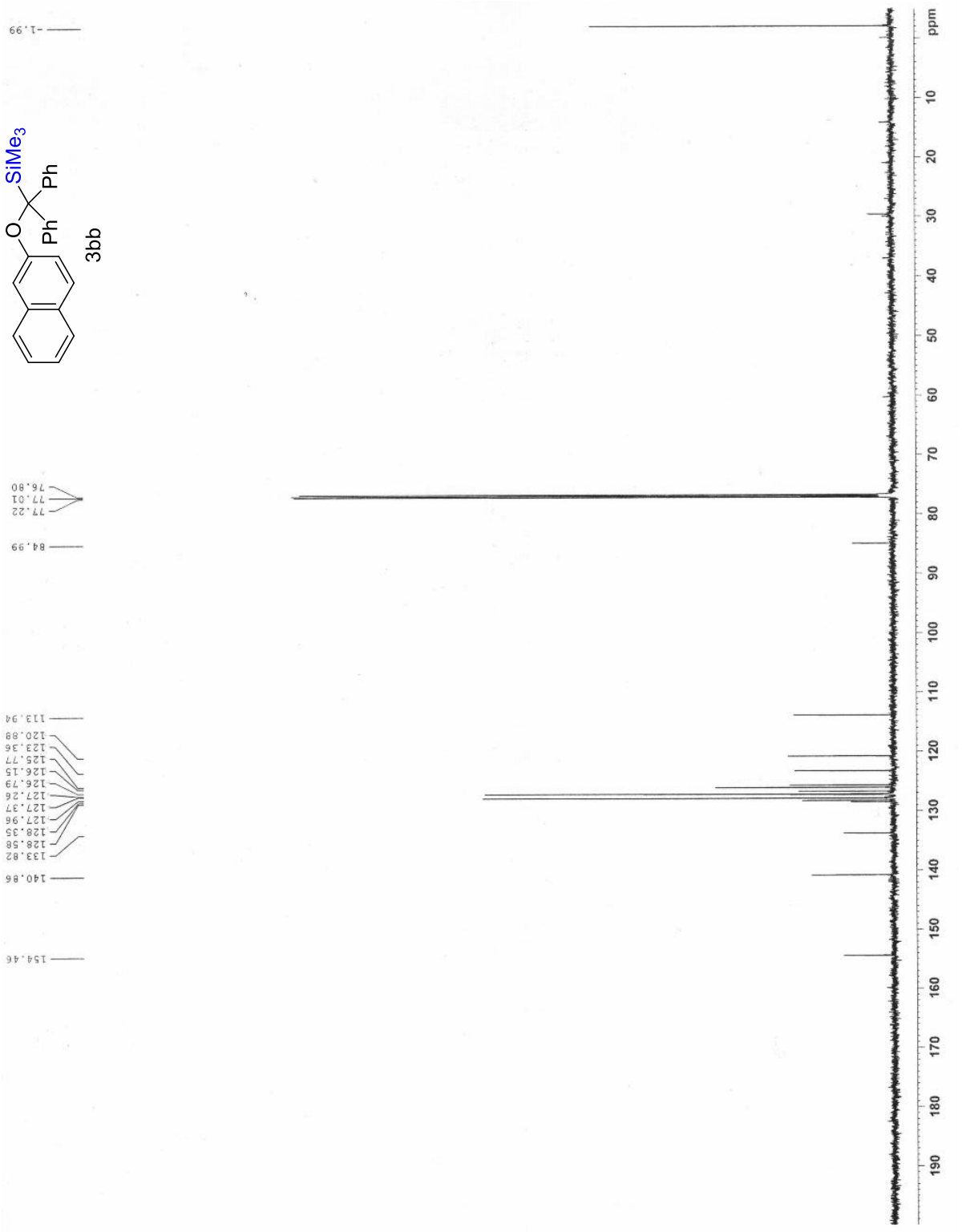
^{13}C NMR spectrum of Ethyl 2-(naphthalen-2-yloxy)-2,2-diphenylacetate (3ba)



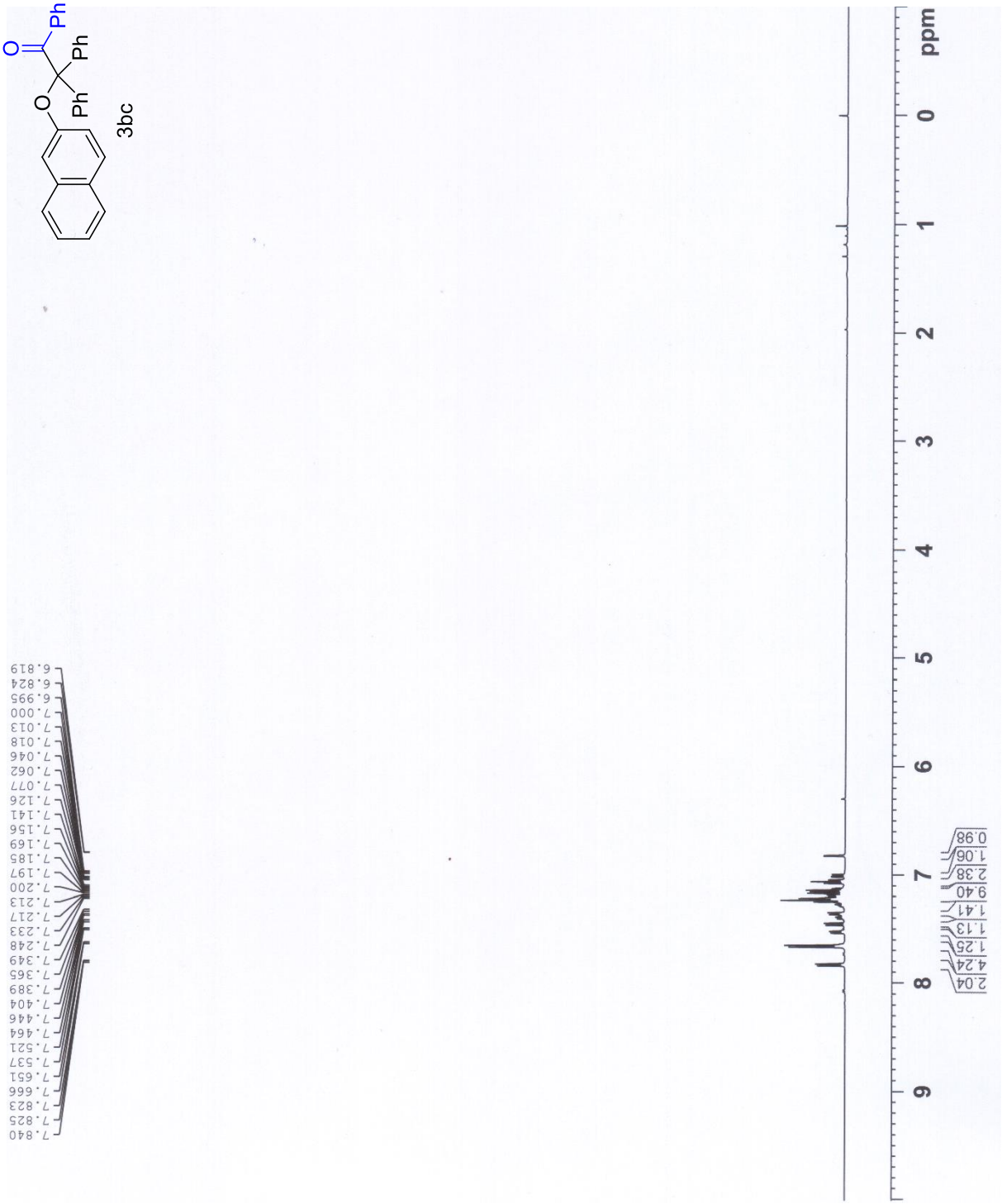
^{1}H NMR spectrum of Trimethyl((naphthalen-2-yloxy)diphenylmethyl)silane (3bb)



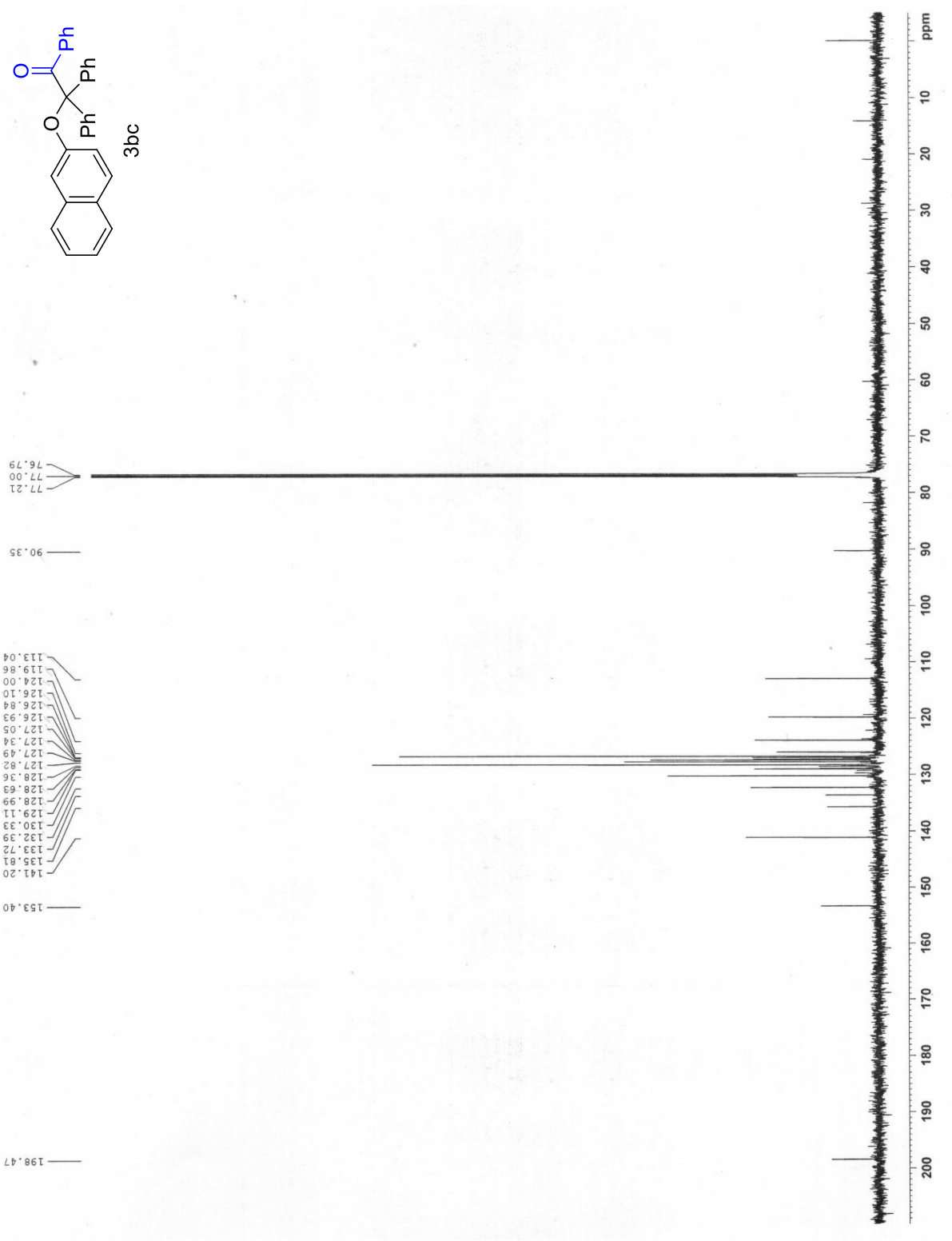
^{13}C NMR spectrum of Trimethyl((naphthalen-2-yloxy)diphenylmethyl)silane (3bb)



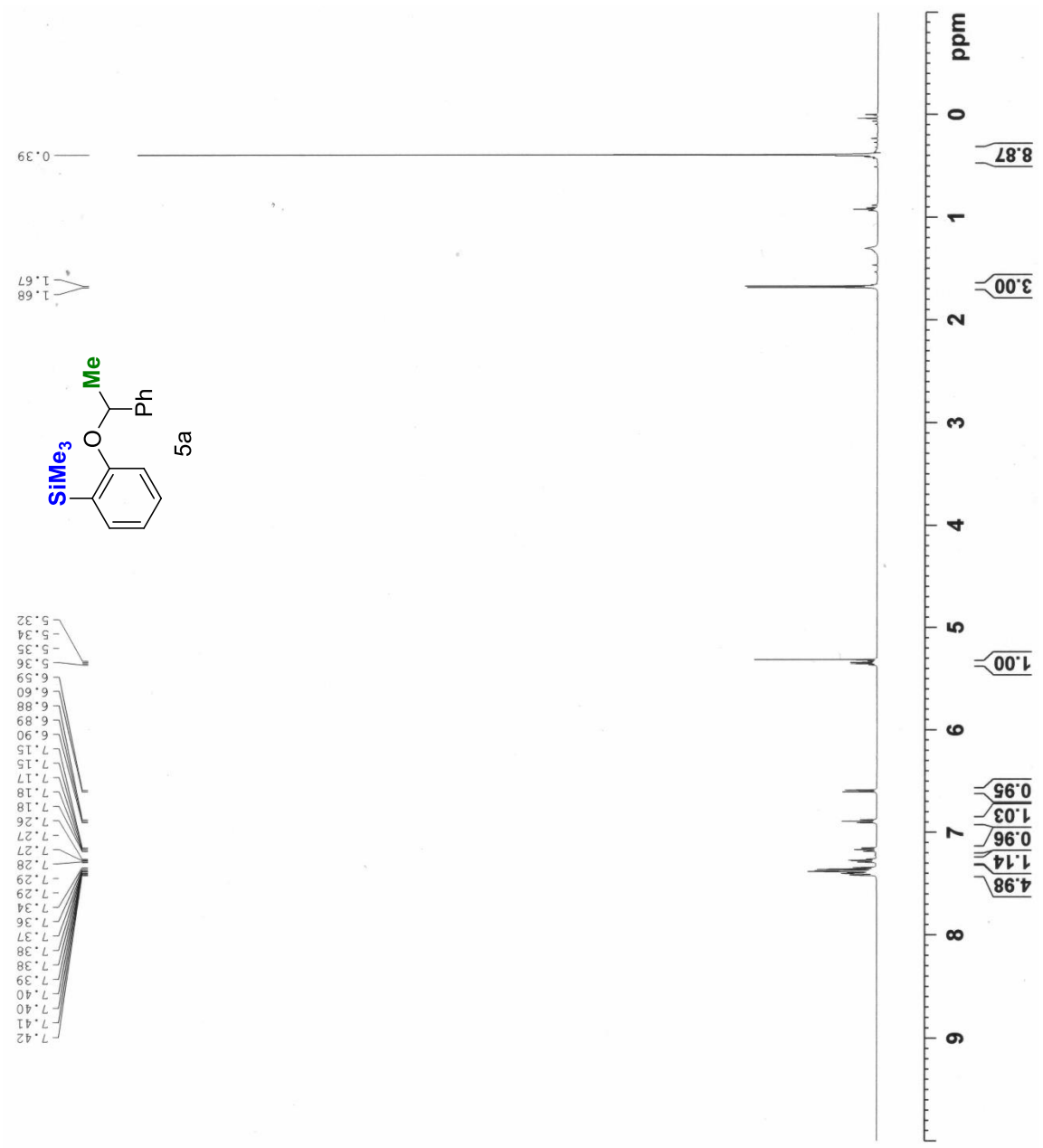
^{1}H NMR spectrum of 2-(naphthalen-2-yloxy)-1,2,2-triphenylethanone (3bc)



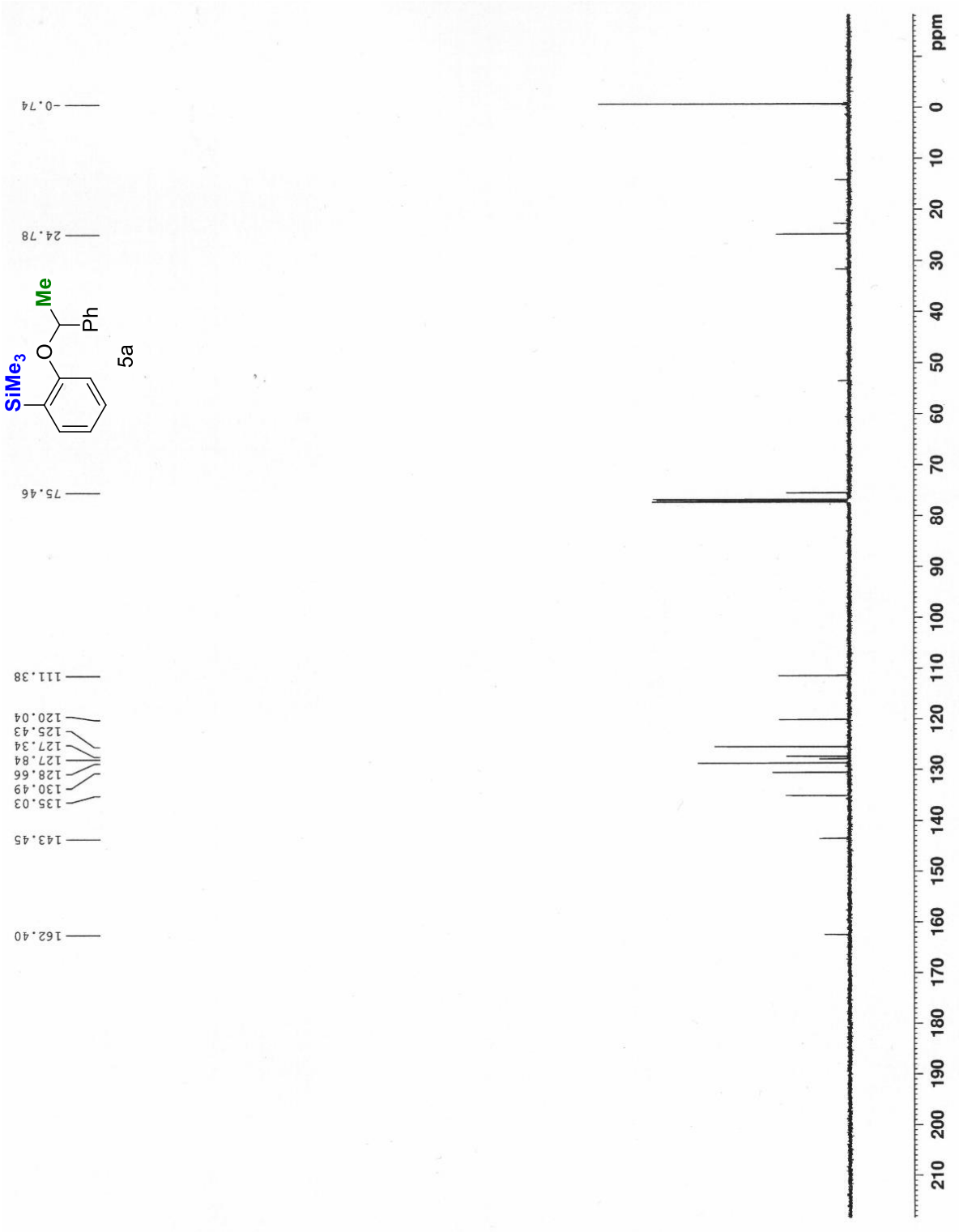
^{13}C NMR spectrum of 2-(naphthalen-2-yloxy)-1,2,2-triphenylethanone (3bc)



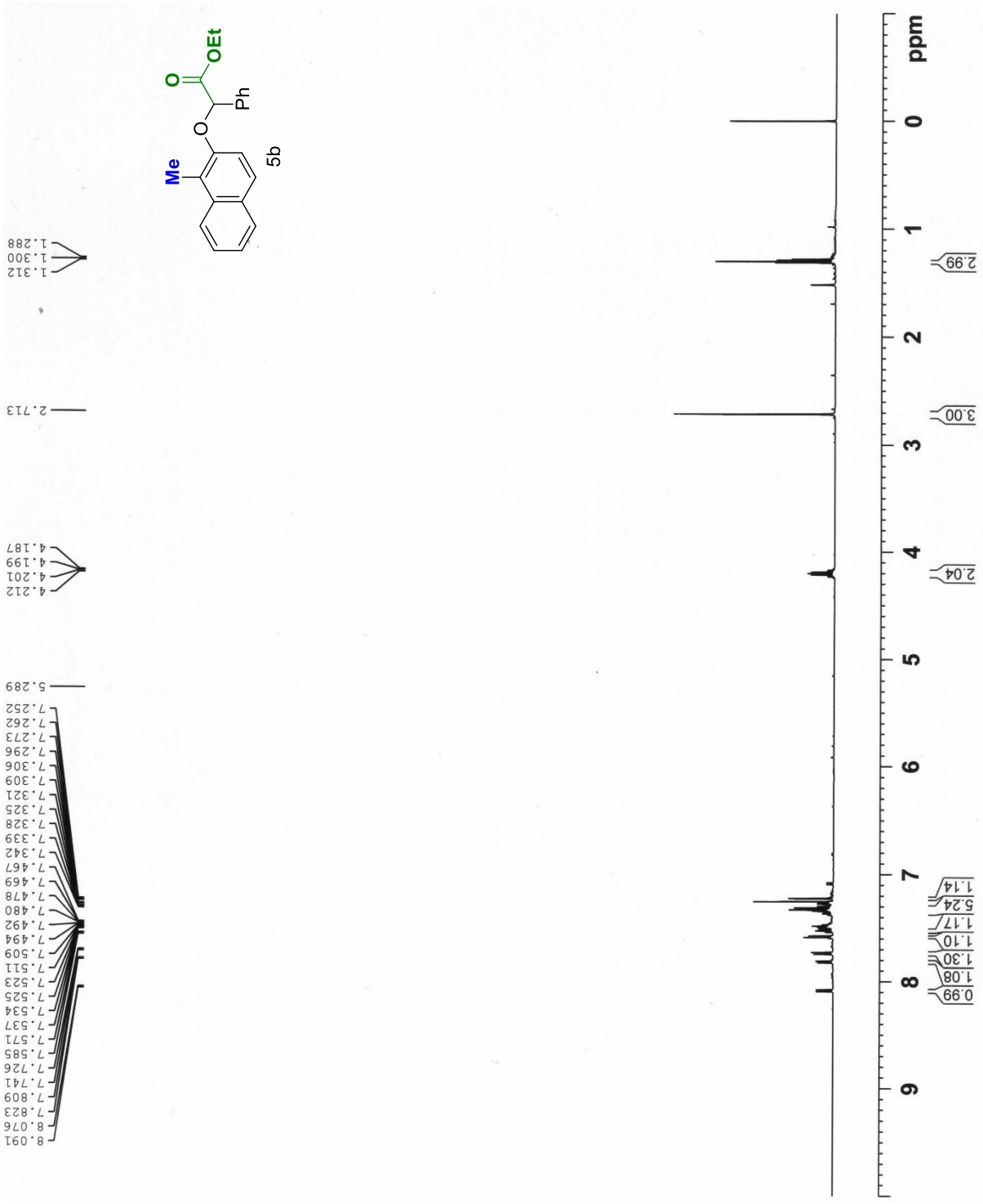
^{1}H NMR spectrum of Trimethyl(2-(1-phenylethoxy)phenyl)silane (5a)



^{13}C NMR spectrum of Trimethyl(2-(1-phenylethoxy)phenyl)silane (5a)



[1]H NMR spectrum of 1-ethoxy-2-((1-methylnaphthalen-2-yl)oxy)-2-phenylethenol (5b)



^{13}C NMR spectrum of 1-ethoxy-2-((1-methylnaphthalen-2-yl)oxy)-2-phenylethenol (5b)