SUPPORTING INFORMATION

One-step Chemoselective Conversion of Tetrahydropyranyl Ethers to Silyl-protected Alcohols.

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General Remarks. Solvents were dried according to published methods and distilled before use.[1] All other reagents were commercial compounds of the highest purity available. Reactions were carried out under atmosphere of argon in flame-dried glassware with magnetic stirring. Visualization of analytical thin-layer chromatography (TLC) was accomplished with phosphomolybdic acid ethanolic solution (10%) stain followed by heating. Proton (^{1}H) and carbon (^{13}C) magnetic resonance spectra (NMR) were recorded using $CDCl_3$ or CD_2Cl_2as solvent. Chemical shifts (δ) are expressed in parts per million (ppm) relative to tetramethylsilane as internal reference. ^{13}C multiplicities were assigned with the aid of the DEPT pulse sequence. All the solutions employed were degassed by argon bubbling over 15 min.

Experimental procedures for significant esperiments:

General procedure for the synthesis of tetrahydropyranyl protected alcohols $\mathbf{1x_1}$:

To a suspension of alcohol (1 eq.) in dry THF at room temperature under argon was added DHP (1.5 eq.) dropwise, and the mixture was stirred for 5 min. *p*TSOH was added and the resulting solution was stirred for 4 h. Reaction was quenched with aqueous $NaHCO_3$ (20%), and extracted with diethyl ether. The organic phase was dried (Na_2SO_4) and filtered, and the solvent was removed. Chromatography column (SiO_2, 95:5 or 70:30 hexane/AcOEt) of the residue afforded the protected alcohol $\mathbf{1x_1}$.

2-(Octyloxy)tetrahydro-2*H*-pyran ($\mathbf{1a_1}$): Following the general procedure, reaction of octan-1-ol (1.00 g, 7.68 mmol) and DHP (1.01 mL, 11.52 mmol) with *p*TSOH (14.6 mg, 7.68 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound $\mathbf{1a_1}$ (1.35 g, 82%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.85 (t, *J* = 7.0 Hz, 3H, CH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.5-1.8 (m, 8H, 4xCH_2), 3.3-3.4 (m, 2H, CH_2), 3.7-3.9 (m, 2H, CH_2), 4.5-4.6 (m, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 13.9 (CH_3), 19.5 (CH_2), 22.5 (CH_2), 25.4 (CH_2), 26.1 (CH_2), 29.1 (CH_2), 29.3 (CH_2), 29.6 (CH_2), 30.6 (CH_2), 31.7 (CH_2), 62.1 (CH_2), 67.5 (CH_2), 98.6 (CH) ppm. MS (CI) *m/z* (%) 215 (M^++1, 9), 113 (M^+-OTHP, 15), 85 (100). HMRS (CI) calc for $C_{13}H_{26}O_2$, 215.2011; found, 215.2007.

(*E*)-2-(Pent-2-en-4-yn-1-yloxy)tetrahydro-*2H*-pyran ($\mathbf{1b_1}$):[2] Following the general procedure, reaction of (*E*)-pent-2-en-4-yn-1-ol (1.00 g, 12.18 mmol) and DHP (1.6 mL, 18.27 mmol) with *p*TSOH (13 mg, 0.122 mmol) in CH_2Cl_2 (20 mL) afforded compound $\mathbf{1b_1}$ (1.7 g, 84%) as a light yellow oil.

2-(Benzyloxy)tetrahydro-*2H*-pyran ($\mathbf{1c_1}$): Following the general procedure, reaction of phenylmethanol (1.00 g, 9.25 mmol) and DHP (1.2 mL, 13.87 mmol) with *p*TSOH (18 mg, 9.25 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound $\mathbf{1c_1}$ (1.40 g, 79%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.5-1.9 (m, 6H, 3xCH_2), 3.5-3.6 (m, 1H, CH_2), 3.9-4.0 (m, 1H, CH_2), 4.52 (d, *J* = 12.0 Hz, 1H, CH_2), 4.72 (t, *J* = 3.1 Hz, 1H, CH), 4.81 (d, *J* = 12.0 Hz, 1H, CH_2), 7.3-7.4 (m,

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[1]Armarego, W. L. F.; Perrin, D. D. *Purification of Laboratory Chemicals*, 4th Ed; Butterworth-Heinemann: Oxford, **1996**.

[2] J. Montenegro, J. Bergueiro, C. Saa, S. Lopez, *Org. Lett.* **2009**. *11*. 141-144.

5H, 5xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 18.8 (CH_2), 25.3 (CH_2), 30.4 (CH_2), 61.9 (CH_2), 68.6 (CH_2), 97.6 (CH), 127.3 (CH), 127.6 (2xCH), 128.2 (2xCH), 138.2 (C) ppm. MS (ÈI) *m/z* (%) 192 (M^+, 1), 91 (M^+-OTHP, 100). HMRS (EI) calc for $C_{14}H_{27}O_3Si$, 192.1150; found, 192.1142.

2-(Prop-2-yn-1-yloxy)tetrahydro-*2H*-pyran (**1d$_1$**): Following the general procedure, reaction of prop-2-yn-1-ol (1.00 g, 17.84 mmol) and DHP (2.34 ,mL, 26.76 mmol) with *p*TSOH (34 mg, 0.178 mmol) in CH_2Cl_2 (20 mL) afforded compound **1d$_1$** (2.13 g, 85%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.5-1.8 (m, 6H, 3xCH_2), 2.38 (s, 1H, CH), 3.5-3.5 (m, 1H, CH_2), 3.8-3.8 (m, 1H, CH_2), 4.2-4.3 (m, 2H, CH_2), 4.77 (t, *J* = 3.0 Hz, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 18.8 (CH_2), 25.2 (CH_2), 30.0 (CH_2), 53.8 (CH_2), 61.8 (CH_2), 73.8 (CH), 79.6 (C), 96.6 (CH) ppm. MS (ESI) *m/z* (%) 163 (M^++Na, 1). HMRS (ESI) calcd for $C_8H_{12}O_2$, 141.0837; found, 141.0835.

2-((6-Chlorohex-2-yn-1-yl)oxy)tetrahydro-*2H*-pyran (**1e$_1$**): Following the general procedure, reaction of 6-chlorohex-2-yn-1-ol (1.00 g, 7.54 mmol) and DHP (988 μL, 11.31 mmol) with *p*TSOH (14 mg, 7.54 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound **1e$_1$** (71.36 g, 83%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.4-1.9 (m, 6H, 3xCH_2), 1.9-2.0 (m, 2H, CH_2), 2.4-2.4 (m, 2H, CH_2), 3.4-3.5 (m, 1H, CH_2), 3.61 (td, *J* = 6.4, 1.2 Hz, 2H, CH_2), 3.8-3.8 (m, 1H, CH_2), 4.1-4.3 (m, 2H, CH_2) 4.75 (t, *J* = 3.0 Hz, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 16.1 (CH_2), 18.9 (CH_2), 25.2 (CH_2), 30.0 (CH_2), 31.1 (CH_2), 43.5 (CH_2), 54.3 (CH_2), 61.8 (CH_2), 73.8 (C), 84.3 (C), 96.6 (CH) ppm. MS (CI) *m/z* (%) 215 (M^+-1, 2), 115 (M^+-OTHP, 55), 85 ($OTHP^+$, 99). HMRS (EI) calc for $C_{11}H_{17}ClO_2$, 216.0917; found, 216.0919.

2-(Cyclohexyloxy)tetrahydro-*2H*-pyran (**1f$_1$**): Following the general procedure, reaction of cyclohexanol (1.00 g, 9.98 mmol) and DHP (1.31 mL, 14.98 mmol) with *p*TSOH (19 mg, 9.98 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound **1f$_1$** (1.47 g, 80%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.7-0.9 (m, 2H, CH_2), 1.1-1.4 (m, 6H, 3xCH_2), 1.4-1.5 (m, 4H, 2xCH_2), 1.6-1.7 (m, 2H, CH_2), 1.8-2.0 (m, 2H, CH_2), 3.4-3.4 (m, 1H, CH), 3.5-3.6 (m, 1H, CH_2), 3.8-3.9 (m, 1H, CH_2), 4.6-4.7 (m, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 20.5 (CH_2), 24.8 (CH_2), 25.0 (CH_2), 26.2 (CH_2), 26.3 (CH_2), 31.9 (CH_2), 32.4 (CH_2), 34.3 (CH_2), 63.2 (CH_2), 74.9 (CH), 97.1 (CH) ppm. MS (EI) *m/z* (%) 184 (M^+, 6), 101 (M^+-OTHP, 34), 83 ($OTHP^+$, 20). HMRS (EI) calc for $C_{11}H_{20}O_2$, 184.1463; found, 184.1459.

2-(Hept-4-yn-2-yloxy)tetrahydro-*2H*-pyran (**1g$_1$**): Following the general procedure, reaction of hept-4-yn-2-ol (1.00 g, 8.92 mmol) and DHP (1.17 mL, 13.37 mmol) with *p*TSOH (17 mg, 8.91 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound **1g$_1$** (1.42 g, 81%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.09 (t, *J* = 7.5 Hz, 3H, CH_3), 1.21 (d, *J* = 6.2 Hz, 1.5H, CH_3), 1.28 (d, *J* = 6.2 Hz, 1.5H, CH_3)^d, 1.4-1.9 (m, 6H, 3xCH_2), 2.1-2.6 (m, 4H, 2xCH_2), 3.4-3.5 (m, 1H, CH_2), 3.8-4.0 (m, 1H, CH_2), 3.8-4.0 (m, 1H, CH)^d, 4.7-4.8 (m, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 12.4 (CH_2), 14.2 (CH_3), 18.9 (CH_3), 19.5 (CH_2), 19.9 (CH_2)^d, 21.2 (CH_3)^d, 25.5 (CH_2), 25.5 (CH_2)^d, 26.2 (CH_2), 27.5 (CH_2)^d, 31.0 (CH_2), 31.0(CH_2)^d, 62.2 (CH_2), 62.7 (CH_2)^d, 71.1 (CH), 71.7 (CH)^d, 76.1 (C), 76.5 (C)^d, 83.2

(C), 96.5 (CH), 97.9 (CH)[d] ppm. MS (ESI) *m/z* (%) 219 (M^++23, 100), 197 (M^+, 7). HMRS (ESI) calc for $C_{12}H_{20}NaO_2$, 219.1352; found, 219.1356.

2-((3*s*,5*s*,7*s*)-adamanatan-1-yloxy)tetrahydro-*2H*-pyran (**1h$_1$**): Following the general procedure, reaction of (3*s*,5*s*,7*s*)-adaman-1-ol (1.00 g, 6.57 mmol) and DHP (861 μL, 9.85 mmol) with *p*TSOH (13 mg, 6.57 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound **1h$_1$** (1.37 g, 88%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.4-1.5 (m, 4H, 2xCH_2), 1.5-1.6 (m, 7H, CH_2), 1.7-1.8 (m, 7H, CH_2), 2.10 (s, 3H, 3xCH), 3.3-3.5 (m, 1H, CH_2), 3.9-4.0 (m, 1H, CH_2), 4.81 (m, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 20.9 (CH_2), 25.3 (CH_2), 30.5 (3xCH), 32.4 (CH_2), 36.2 (3xCH_2), 42.5 (3xCH_2), 63.3 (CH_2), 73.3 (C), 92.5 (CH) ppm. MS (EI) *m/z* (%) 236 (M^+, 1), 135 (M^+-OTHP, 100). HMRS (EI) calc for $C_{15}H_{24}O_2$, 236.1766; found, 236.1757.

2-Phenoxytetrahydro-*2H*-pyran (**1i$_1$**): Following the general procedure, reaction of phenol (1.00 g, 10.63 mmol) and DHP (1.39 mL, 15.94 mmol) with *p*TSOH (20 mg, 0.106 mmol) in CH_2Cl_2 (20 mL) afforded compound **1i$_1$** (1.80 g, 95%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.5-1.8 (m, 4H, 2xCH_2), 1.8-2.0 (m, 2H, CH_2), 3.6-3.7 (m, 1H, CH_2), 3.9-4.0 (m, 1H, CH_2), 5.45 (t, *J* = 3.3 Hz, 1H, CH), 7.00 (t, *J* = 7.9 Hz, 1H, CH), 7.1-7.1 (m, 2H, 2xCH), 7.2-7.3 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 18.8 (CH_2), 25.2 (CH_2), 30.3 (CH_2), 62.0 (CH_2), 96.3 (CH), 116.4 (2xCH), 121.5 (CH), 129.3 (2xCH), 157.0 (C) ppm. MS (ESI-TOF) *m/z* (%) 201 (M^++23, 3), 158 (100). HMRS (ESI-TOF) calc for $C_{11}H_{14}NaO_2$, 201.0886; found, 201.10885.

2-(4-bromophenoxy)tetrahydro-*2H*-pyran (**1j$_1$**): Following the general procedure, reaction of 4-bromophenol (1.00 g, 5.78 mmol) and DHP (757 μL, 8.67 mmol) with *p*TSOH (11 mg, 5.78 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound **1j$_1$** (1.37 g, 92%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.5-1.7 (m, 4H, 2xCH_2), 1.8-1.9 (m, 2H, CH_2), 3.5-3.6 (m, 1H, CH_2), 3.8-3.9 (m, 1H, CH_2), 5.35 (t, *J* = 3.2 Hz, 1H, CH), 6.9-6.9 (m, 2H, 2xCH), 7.3-7.4 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 18.6 (CH_2), 25.1 (CH_2), 30.2 (CH_2), 61.9 (CH_2), 96.4 (CH), 113.8 (C), 118.3 (2xCH), 132.2 (2xCH), 156.1 (C) ppm. MS (EI) *m/z* (%) 256 (M^+, 7), 76 (M^+-OTHP-Br, 3). HMRS (EI) calc for $C_{11}H_{13}BrO_2$, 256.0090; found, 256.0085.

7-((Tetrahydro-*2H*-pyran-2-yl)oxy)hepta-1-ol (**1k$_1$**): Following the general procedure, reaction of heptane-1,7-diol (1.00 g, 7.56 mmol) and DHP (991 μL, 11.35 mmol) with *p*TSOH (14 mg, 7.56 x 10^{-2} mmol) in CH_2Cl_2 (20 mL) afforded compound **1k$_1$** (736 mg, 45%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.2-1.4 (m, 6H, 3xCH_2), 1.4-1.8 (m, 10H, 5xCH_2), 1.96 (s, 1H, OH), 3.3-3.4 (m, 1H, CH_2), 3.4-3.5 (m, 1H, CH_2), 3.57 (t, *J* = 6.6 Hz, 2H, CH_2) 3.6-3.7 (m, 1H, CH_2), 3.8-3.9 (m, 1H, CH_2), 4.53 (t, *J* = 4.2 Hz, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 19.8 (CH_2), 25.7 (CH_2), 25.9 (CH_2), 26.4 (CH_2), 29.5 (CH_2), 29.8 (CH_2), 30.9 (CH_2), 32.9 (CH_2), 62.5 (CH_2), 63.0 (CH_2), 67.8 (CH_2), 99.0 (CH) ppm. MS (CI) *m/z* (%) 217 (M^++1, 100), 133 (M^++1-OTHP, 68), 86 (THP^+, 17). HMRS (CI) calcd for $C_{12}H_{24}O_3$, 217.1804; found, 217.1811.

4-((Tetrahydro-*2H*-pyran-2-yl)oxy)but-2-yn-1-ol (**1l$_1$**): Following the general procedure, reaction of but-2-yne-1,4-diol (1.00 g, 11.62 mmol) and DHP (1.52 mL, 17.42 mmol) with *p*TSOH (22 mg, 0.116 mmol) in CH_2Cl_2 (20 mL) afforded compound **1l$_1$** (1.03 g, 52%) as a colourless oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.4-1.9 (m, 6H, 3xCH_2), 2.4-2.6 (m, 1H, OH), 3.5-3.6 (m, 1H, CH_2), 3.8-3.9 (m, 1H, CH_2), 4.2-4.4 (m, 4H, 2xCH_2), 4.79 (s, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 18.9 (CH_2), 25.2 (CH_2), 30.1 (CH_2), 50.9 (CH_2), 54.3 (CH_2), 61.9 (CH_2), 81.4 (C), 84.4 (C), 96.8 (CH) ppm. MS (CI) *m/z* (%) 171 (M^++1, 53), 85 (THP^+, 100). HMRS (CI) calcd for $C_9H_{14}O_3$, 171.1021; found, 171.1022.

1-(Methoxymethoxy)octane (**1a$_2$**): To a cooled (0 ºC) suspension of octan-1-ol (2.00 g, 15.38 mmol) in dry CH_2Cl_2 (35 mL) under argon was added diisopropylethylamine (13 mL, 76.9 mmol), and the mixture was stirred for 10 min. MOMCl (2.1 mL, 18.5 mmol) was added, then the resulting solution was stirred for 48 h at 65 ºC. The reaction mixture was cooled (0 ºC), quenched with aqueous $NaHCO_3$ (100 mL, 20%), and extracted with CH_2Cl_2 (3 x 50 mL). The organic phase was dried (Na_2SO_4) and filtered, and the solvent was removed. Chromatography column (SiO_2, 95:5 hexane/AcOEt) of the residue afforded **1a$_2$** (2.35 g, 75%).

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.86 (t, *J* = 6.6 Hz, 3H, CH_3), 1.2-1.4 (m, 10H, 5xCH_2), 1.5-1.6 (m, 2H, CH_2), 3.34 (s, 3H, CH_3), 3.50 (t, *J* = 6.6 Hz, 2H, CH_2), 4.60 (s, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 14.1 (CH_3), 22.7 (CH_2), 26.2 (CH_2), 29.3 (CH_2), 29.4 (CH_2), 29.8 (CH_2), 31.8 (CH_2), 55.1 (CH_3), 67.9 (CH_2), 96.4 (CH_2) ppm. MS (ESI) *m/z* (%) 197 (M^++23, 3), 183 (M^+-Me+23, 10), 167 (M^+-OMe, 1). HMRS (ESI) calcd for $C_{10}H_{22}NaO_2$, 197.1517; found, 197.1518.

1-(1-Ethoxyethoxy)octane (**1a$_3$**): To a cooled (0 ºC) suspension of octan-1-ol (2.00 g, 15.38 mmol) in dry CH_2Cl_2 (35 mL) under argon was added ethyl vinyl ether (8.9 g, 123.04 mmol) dropwise, and the mixture was stirred for 5 min. PPTS (590 mg, 3.1 mmol) was added, then the resulting solution was stirred for 30 min.. Reaction mixture was quenched with aqueous $NaHCO_3$ (40 mL, 20%), and extracted with diethyl ether (3 x 25 mL). The organic phase was dried (Na_2SO_4) and filtered, and the solvent was removed. Chromatography column (SiO_2, 95:5 hexane/AcOEt) of the residue afforded **1a$_3$** (2.34 g, 81%).

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.7-0.9 (m, 6H, 2xCH_3), 1.18 (t, *J* = 7.0 Hz, 3H, CH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.54 (t, *J* = 7.0 Hz, 2H, CH_2), 3.3-3.7 (m, 4H, 2xCH_2), 4.65 (c, *J* = 5.4 Hz, 1H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 14.0 (CH_3), 15.2 (CH_3), 19.8 (CH_3), 22.6 (CH_2), 26.2 (CH_2), 29.2 (CH_2), 29.4 (CH_2), 29.9 (CH_2), 31.8 (CH_2), 60.5 (CH_2), 65.2 (CH_2), 99.5 (CH) ppm. MS (CI) *m/z* (%) 202 (M^+, 1), 113 (M^+-$OCHCH_3OCH_3$, 5), 75 ($OCHCH_3OCH_3^+$, 22).73 (100) HMRS (CI) calcd for $C_{12}H_{26}O_2$, 202.1933; found, 202.1931.

General procedure for the deprotection-protection reaction:

Silane was added to a suspension of Lewis acid (freshly sublimated in case of $AlCl_3$) in CH_2Cl_2, toluene or CH_3CN at 0 ºC. The mixture was stirred for 5 min and then the protected alcohol was added dropwise. After 0.5-2 h reaction was quenched with activated alumina (IV), passed through a sintered glass filter and washed with CH_2Cl_2. Solvents were removed and the crude was purified by column chromatography (SiO2, 95:5 or 70:30 hexane/AcOEt) to obtain the silylated alcohols **2x$_x$**.

Dimethyl(octyloxy)(phenyl)silane (**2a$_1$**):

From **1a$_1$**:

$BF_3{\cdot}OEt_2$ (0.05 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $BF_3{\cdot}OEt_2$ (3 μL, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 2 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (12 mg, 10%) as a light yellow oil.

$InCl_3$ (0.05 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $InCl_3$ (5.2 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 2 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (23 mg, 19%) as a light yellow oil.

$FeCl_3$ (0.05 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $FeCl_3$ (3.8 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 2 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (74 mg, 60%) as a light yellow oil.

$Sn(Otf)_2$ (0.05 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $Sn(Otf)_2$ (9.7 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 2 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (99 mg, 81%) as a light yellow oil.

$EtAlCl_2$ (0.05 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $EtAlCl_2$ (2.9 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 8 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (91 mg, 74%) as a light yellow oil.

$AlCl_3$ (0.025 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $AlCl_3$ (1.6 mg, 1.17 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (101 mg, 82%) as a light yellow oil.

$AlCl_3$ (0.05 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (112 mg, 91%) as a light yellow oil.

$AlCl_3$ (0.1 eq): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $AlCl_3$ (6.2 mg, 4.67 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (62 mg, 50%) as a light yellow oil.

$AlCl_3$ (Toluene): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and dimethylphenylsilane (89 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2}

mmol) in toluene (2 mL) for 2 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (105 mg, 85%) as a light yellow oil.

From **1a$_2$**: Following the general procedure, reaction of 1-(methoxymethoxy)octane (**1a$_2$**) (100 mg, 0.574 mmol) and dimethylphenylsilane (110 μL, 0.717 mmol) with $AlCl_3$ (3.8 mg, 2.87 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (118 mg, 78%) and 1-methoxyoctane (**4a$_2$**) (12 mg, 15%) and as light yellow oils.

From **1a$_3$**: Following the general procedure, reaction of 1-(1-ethoxymethoxy)octane (**1a$_3$**) (100 mg, 0.494 mmol) and dimethylphenylsilane (95 μL, 0.618 mmol) with $AlCl_3$ (3.3 mg, 2.47 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded dimethyl(octyloxy)(phenyl)silane (**2a$_1$**) (89 mg, 68%) and 1-ethoxyoctane (**4a$_3$**) (20 mg, 25%) and as light yellow oils.

2a$_1$: ^{1}H NMR (300 MHz, $CDCl_3$) δ 0.44 (s, 6H, 2xCH_3), 0.94 (t, *J* = 7.0 Hz, 3H, CH_3), 1.2-1.4 (m, 10H, 5xCH_2), 1.60 (t, *J* = 7.0 Hz, 2H, CH_2), 3.65 (t, *J* = 7.0 Hz, 2H, CH_2), 7.4-7.5 (m, 3H, CH), 7.6-7.7 (m, 2H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.8 (2xCH_3), 14.1 (CH_3), 22.6 (CH_2), 25.8 (CH_2), 29.3 (CH_2), 29.4 (CH_2), 31.8 (CH_2), 32.6 (CH_2), 63.1 (CH_2), 127.8 (2xCH), 129.5 (CH), 133.4 (2xCH), 138.1 (C) ppm. MS (EI) *m/z* (%) 264 (M^+, 5), 249 (M^+-CH_3, 18), 137 (100). HMRS (CI) calc for $C_{16}H_{28}OSi$, 264.1909; found, 264.1901.

4a$_2$: ^{1}H NMR (300 MHz, $CDCl_3$) δ 0.87 (t, *J* = 6.9 Hz, 3H, CH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.5-1.6 (m, 2H, CH_2), 3.18 (s, 3H, CH_3), 3.37 (t, *J* = 6.9 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 14.0 (CH_3), 22.6 (CH_2), 26.3 (CH_2), 29.2 (CH_2), 29.5 (CH_2), 30.0 (CH_2), 31.8 (CH_2), 48.3 (CH_3), 60.7 (CH_2) ppm. MS (CI) *m/z* (%) 167 (M^++23, 2). HMRS (ESI) calcd for $C_9H_{20}NaO$, 167.1412; found, 167.1412.

4a$_3$: ^{1}H NMR (300 MHz, $CDCl_3$) δ 0.8-1.0 (m, 3H, CH_3), 1.19 (t, *J* = 7.0 Hz, 3H, CH_3), 1.2-1.4 (m, 10H, 5xCH_2), 1.57 (t, *J* = 7.0 Hz, 2H, CH_2), 3.40 (t, *J* = 7.0 Hz, 2H, CH_2), 3.46 (c, *J* = 7.0 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 14.6 (CH_3), 15.8 (CH_3), 23.2 (CH_2), 26.9 (CH_2), 29.9 (CH_2), 30.5 (CH_2), 32.2 (CH_2), 32.5 (CH_2), 66.6 (CH_2), 71.4 (CH_2) ppm. MS (CI) *m/z* (%) 181 (M^++23, 2). HMRS (CI) calcd for $C_{10}H_{22}O_2$, 181.1671; found, 181.1669.

Benzyldimethyl(octyloxy)silane (**2a$_2$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and benzyldimethylsilane (92 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded benzyldimethyl(octyloxy)silane (**2a$_2$**) (116 mg, 89%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.10 (s, 6H, 2xCH_3), 0.91 (t, *J* = 7.0 Hz, 3H, CH_3), 1.2-1.4 (m, 10H, 5xCH_2), 1.5-1.6 (m, 2H, CH_2), 2.20 (s, 2H, CH_2), 3.58 (t, *J* = 6.8 Hz, 2H, CH_2), 7.0-7.1 (m, 3H, 3xCH), 7.2-7.3 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -7.1 (2xCH_3), 9.4 (CH_3), 18.0 (CH_2), 21.1 (CH_2), 22.0 (CH_2), 24.6 (CH_2), 24.7 (CH_2), 27.2 (CH_2), 28.1 (CH_2), 58.4 (CH_2), 119.4 (CH), 123.5 (2xCH), 123.7 (2xCH), 134.5 (C) ppm. MS (EI) *m/z* (%) 278 (M^+, 8), 263 (M^+-CH_3, 3), 187 (M^+-Bn, 100). HMRS (EI) calc for $C_{17}H_{30}OSi$, 278.2066; found, 278.2059.

Ethoxydimethyl(octyloxy)silane (**2a$_3$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and ethoxydimethylsilane (80 μL, 0.583

mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded ethoxydimethyl(octyloxy)silane (**2a$_3$**) (87 mg, 80%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.98 (s, 6H, 2xCH_3), 0.85 (t, *J* = 7.0 Hz, 3H, CH_3), 1.19 (t, *J* = 7.0 Hz, 3H, CH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.5-1.5 (m, 2H, CH_2), 3.64 (t, *J* = 6.7 Hz, 2H, CH_2), 3.73 (c, *J* = 7.0 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -3.2 (2xCH_3), 14.0 (CH_3), 18.3 (CH_3), 22.6 (CH_2), 25.8 (CH_2), 29.3 (CH_2), 29.4 (CH_2), 31.8 (CH_2), 32.6 (CH_2), 58.0 (CH_2), 62.6 (CH_2) ppm. MS (EI) *m/z* (%) 232 (M^+, 1), 217 (M^+-CH_3, 100). HMRS (EI) calc for $C_{12}H_{28}O_2Si$, 232.1859; found, 232.1855.

Tert-butyl(dimethyl)(octyloxy)silane (**2a$_4$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and *tert*-butyl(dimethyl)silane (97 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded *tert*-butyl(dimethyl)(octyloxy)silane (**2a$_4$**) (95 mg, 83%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.06 (s, 6H, 2xCH_3), 0.87 (t, *J* = 7.1 Hz, 3H, CH_3), 0.87 (s, 9H, 3xCH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.4-1.6 (m, 2H, CH_2), 3.57 (t, *J* = 6.6 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -5.3 (2xCH_3), 14.1 (CH_3), 18.4 (C), 22.6 (CH_2), 25.8 (CH_2), 26.0 (3xCH_3), 29.3 (CH_2), 29.4 (CH_2), 31.8 (CH_2), 32.9 (CH_2), 63.3 (CH_2) ppm. MS (EI) *m/z* (%) 244 (M^+, 1), 229 (M^+-CH_3, 1), 187 (M^+-^{t}Bu, 100), 129 (M^+-$SiMe_2{}^t$Bu, 3), 115 ($SiMe_2{}^t$Bu$^+$, 4). HMRS (EI) calc for $C_{14}H_{27}O_3Si$, 244.2222; found, 24.2215.

(Octyloxy)triphenylsilane (**2a$_5$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and triephenylsilane (152 mg, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded (octyloxy)triphenylsilane (**2a$_5$**) (143 mg, 79%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.95 (t, *J* = 7.0 Hz 3H, CH_3), 1.3-1.5 (m, 10H, 5xCH_2), 1.6-1.7 (m, 2H, CH_2), 3.88 (t, *J* = 6.6 Hz, 2H, CH_2), 7.3-7.6 (m, 9H, 9xCH), 7.6-7.7 (m, 6H, 6xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 14.2 (CH_3), 22.8 (CH_2), 25.9 (CH_2), 29.4 (CH_2), 29.4 (CH_2), 31.9 (CH_2), 32.6 (CH_2), 64.1 (CH_2), 128.1 (6xCH), 130.0 (3xCH), 133.4 (3xC), 135.9 (6xCH) ppm. MS (EI) *m/z* (%) 388 (M^+, 1), 311 (M^+-Ph, 42), 259 ($SiPh_3$, 90), 199 (100). HMRS (EI) calc for $C_{26}H_{32}Osi$, 388.2222; found, 388.2212.

Triethyl(octyloxy)silane (**2a$_6$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and triethylsilane (93 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded triethyl(octyloxy)silane (**2a$_6$**) (98 mg, 86%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.57 (c, *J* = 7.9 Hz, 6H, 3xCH_2), 0.85 (t, *J* = 7.0 Hz, 3H, CH_3), 0.93 (t, *J* = 7.9 Hz, 9H, 3xCH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.5-1.5 (m, 2H, CH_2), 3.56 (t, *J* = 6.8 Hz, 2H, CH_2), ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 4.4 (3xCH_2), 6.8 (3xCH_3), 14.1 (CH_3), 22.6 (CH_2), 25.8 (CH_2), 29.3 (CH_2), 29.4 (CH_2), 31.8 (CH_2), 32.9 (CH_2), 64.0 (CH_2) ppm. MS (EI) *m/z* (%) 245 (M^++1, 10), 215 (M^+-CH_2CH_3, 36), 69 (100). HMRS (EI) calc for $C_{14}H_{32}Osi$, 244.2222; found, 244.2218.

Triisopropyl(octyloxy)silane (**2a$_7$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and triisopropylsilane (120 μL, 0.583 mmol)

with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded triisopropyl(octyloxy)silane (**2a$_7$**) (124 mg, 93%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.86 (t, *J* = 7.0 Hz, 3H, CH_3), 1.0-1.1 (m, 21H, 3xCH, 6xCH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.5-1.6 (m, 2H, CH_2), 3.65 (t, *J* = 6.7 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 12.0 (3xCH), 14.1 (CH_3), 18.0 (6xCH_3), 22.7 (CH_2), 25.8 (CH_2), 29.3 (CH_2), 29.4 (CH_2), 31.8 (CH_2), 33.1 (CH_2), 63.5 (CH_2) ppm. MS (EI) *m/z* (%) 286 (M^+, 1), 207 (100). HMRS (EI) calc for $C_{17}H_{38}OSi$, 286.2692; found, 286.2685.

Triethyl octyl orthosilicate (**2a$_8$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and triethylsilane (108 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded triethyl octyl orthosilicate (**2a$_8$**) (106 mg, 78%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.85 (t, *J* = 7.0 Hz, 3H, CH_3), 1.21 (t, *J* = 7.0 Hz, 9H, 3xCH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.5-1.6 (m, 2H, CH_2), 3.74 (t, *J* = 6.7 Hz, 2H, CH_2), 3.82 (q, *J* = 7.0 Hz, 6H, 3xCH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 14.0 (CH_3), 18.0 (3xCH_3), 22.6 (CH_2), 25.6 (CH_2), 29.2 (CH_2), 29.2 (CH_2), 31.7 (CH_2), 32.3 (CH_2), 59.1 (3xCH_2), 63.5 (CH_2) ppm. MS (CI) *m/z* (%) 293 (M^++1, 16), 209 (100). HMRS (CI) calc for $C_{14}H_{27}O_3Si$, 292.2070; found, 292.2061.

Di-*tert*-butyl(methyl)(octyloxy)silane (**2a$_9$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and di-*tert*-butyl(methyl)silane (122 μL, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded di-*tert*-butyl(methyl)(octyloxy)silane (**2a$_9$**) (107 mg, 80%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.02 (s, 3H, CH_3), 0.85 (t, *J* = 7.0 Hz, 3H, CH_3), 0.94 (s, 18H, 6xCH_3), 1.2-1.3 (m, 10H, 5xCH_2), 1.4-1.5 (m, 2H, CH_2), 3.63 (t, *J* = 6.5 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -9.4 (CH_3), 14.1 (CH_3), 20.7 (2xC), 22.7 (CH_2), 25.8 (CH_2), 27.7 (6xCH_3), 29.3 (CH_2), 29.4 (CH_2), 31.8 (CH_2), 33.1 (CH_2), 64.3 (CH_2) ppm. MS (EI) *m/z* (%) 286 (M^+, 1), 229 (M^+-^{t}Bu, 5) 85 (100). HMRS (EI) calc for $C_{14}H_{27}O_3Si$, 286.2692; found, 286.2687.

Tri-*tert*-butyl(Octyloxy)silane (**2a$_{10}$**): Following the general procedure, reaction of 2-(octyloxy)tetrahydro-2*H*-pyran (**1a$_1$**) (100 mg, 0.467 mmol) and tri-*tert*-butylsilane (117 mg, 0.583 mmol) with $AlCl_3$ (3.1 mg, 2.33 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 1 h afforded tri-*tert*-butyl(octyloxy)silane (**2a$_{10}$**) (121 mg, 79%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.08 (s, 30H, 10xCH_3), 1.5-1.6 (m, 10H, 5xCH_2), 1.7-1.9 (m, 2H, CH_2), 3.88 (t, *J* = 6.0 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 23.1 (3xC), 23.5 (CH_2), 29.6 (CH_3), 30.0 (9xCH_3), 32.2 (CH_2), 32.3 (CH_2), 32.7 (CH_2), 34.7 (CH_2), 44.9 (CH_2), 64.3 (CH_2) ppm. MS (EI) *m/z* (%) 328 (M^+, 1), 207 (100). HMRS (EI) calc for $C_{20}H_{44}OSi$, 328.3161; found, 328.3158.

(*E*)-Dimethyl(pent-2-en-4-yn-1-yloxy)(phenyl)silane (**2b$_1$**): Following the general procedure, reaction of (*E*)-2-(pent-2-en-4-yn-1-yloxy)tetrahydro-*2H*-pyran (**1b$_1$**) (100 mg, 0.602 mmol) and dimethyl(phenyl)silane (115 μL, 0.752 mmol) with $AlCl_3$ (4.0 mg, 3.01 x 10^{-2} mmol) in CH_2Cl_2 (2 mL)

for 30 min afforded (*E*)-dimethyl(pent-2-en-4-yn-1-yloxy)(phenyl)silane (**2b$_1$**) (117 mg, 90%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.45 (s, 6H, 2xCH_3), 2.9-2.9 (m, 1H, CH), 4.2-4.3 (m, 2H, CH_2), 5.78 (dc, *J* = 2.1, 15.8 Hz, 1H, CH), 6.30 (dt, *J* = 4.4, 15.8 Hz, 1H, CH) 7.4-7.5 (m, 3H, CH), 7.6-7.7 (m, 2H, CH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.6 (2xCH_3), 62.8 (CH_2), 77.8 (C), 82.1 (CH), 108.5 (CH), 128.2 (2xCH), 130.0 (CH) 133.6 (2xCH), 137.4 (C), 143.9 (CH) ppm. MS (CI) *m/z* (%) 216 (M^++1, 3), 201 (M^+-CH_3, 38), 135 (100). HMRS (CI) calcd for $C_{13}H_{16}OSi$, 216.0970; found, 216.0968.

(Benzyloxy)dimethyl(phenyl)silane (**2c$_1$**): Following the general procedure, reaction of 2-(benzyloxy)tetrahydro-*2H*-pyran (**1c$_1$**) (100 mg, 0.520 mmol) and dimethyl(phenyl)silane (100 μL, 0.650 mmol) with $AlCl_3$ (4.6 mg, 2.60 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded (benzyloxy)dimethyl(phenyl)silane (**2c$_1$**) (112 mg, 89%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.52 (s, 6H, 2xCH_3), 4.81 (s, 2H, CH_2), 7.3-7.5 (m, 8H, 8xCH), 7.7-7.8 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.2 (2xCH_3), 65.5 (CH_2), 127.0 (2xCH), 127.6 (CH), 128.4 (2xCH), 128.7 (2xCH), 130.1 (CH), 134.0 (2xCH), 138.0 (C), 141.2 (C) ppm. MS (EI) *m/z* (%) 242 (M^+, 1), 227 (M^+-Me, 52), 212 (M^+-2xMe, 1), 165 (M^+-Ph, 18), 107 (M^+-$SiMe_2Ph$, 1). HMRS (EI) calc for $C_{15}H_{18}OSi$, 242.1127; found, 242.1121.

Dimethyl(phenyl)(prop-2-yn-1-yloxy)silane (**2d$_1$**): Following the general procedure, reaction of 2-(prop-2-yn-1-yloxy)tetrahydro-*2H*-pyran (**1d$_1$**) (100 mg, 0.713 mmol) and dimethyl(phenyl)silane (137 μL, 0.892 mmol) with $AlCl_3$ (4.7 mg, 3.57 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded dimethyl(phenyl)(prop-2-yn-1-yloxy)silane (**2d$_1$**) (120 mg, 88%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.45 (s, 6H, 2xCH_3), 2.39 (t, *J* = 2.4 Hz, 1H, CH), 4.26 (d, *J* = 2.4 Hz, 2H, CH_2), 7.5-7.5 (m, 3H, 3xCH), 7.6-7.6 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.5 (2xCH_3), 51.4 (CH_2), 73.4 (C), 82.1 (CH), 128.1 (2xCH), 130.0 (CH), 133.7 (2xCH), 137.0 (C) ppm. MS (ESI-TOF) *m/z* (%) 191 (M^++1, 14), 173 (6), 135 (5). HMRS (ESI-TOF) calcd for $C_{11}H_{15}Osi$, 191.0887; found, 191.0882.

((6-Chlorohex-2-yn-1-yl)oxy)dimethyl(phenyl)silane (**2e$_1$**): Following the general procedure, reaction of 2-((6-chlorohex-2-yn-1-yl)oxy)tetrahydro-*2H*-pyran (**1e$_1$**) (100 mg, 0.462 mmol) and dimethyl(phenyl)silane (88 μL, 0.577 mmol) with $AlCl_3$ (3.1 mg, 2.31 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded ((6-chlorohex-2-yn-1-yl)oxy)dimethyl(phenyl)silane (**2e$_1$**) (105 mg, 85%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.40 (s, 6H, 2xCH_3), 1.88 (q, *J* = 6.5 Hz, 2H, CH_2), 2.34 (tt, *J* = 6.8, 2.1 Hz, 2H, CH_2), 3.57 (t, *J* = 6.4 Hz, 2H, CH_2), 4.24 (t, *J* = 2.1 Hz, 2H, CH_2), 7.3-7.4 (m, 3H, 3xCH), 7.5-7.6 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.7 (2xCH_3), 16.2 (CH_2), 31.2 (CH_2), 43.6 (CH_2), 51.6 (CH_2), 79.2 (C), 83.7 (C), 127.8 (2xCH), 129.7 (CH), 133.5 (2xCH), 137.1 (C) ppm. MS (EI) *m/z* (%) 265 (M^+-1, 6), 251 (M^+-Me, 18), 237 (M^+-2xMe, 15). 189 (M^+-Ph, 100), 115 (M^+-$SiMe_2Ph$, 14). HMRS (EI) calc for $C_{13}H_{17}ClOSi$, 266.0894; found, 266.0897.

(Cyclohexyloxy)dimethyl(phenyl)silane (**2f$_1$**): Following the general procedure, reaction of 2-(cyclohexyloxy)tetrahydro-*2H*-pyran (**1f$_1$**) (100 mg, 0.543 mmol) and dimethyl(phenyl)silane (166 μL, 1.085 mmol) with $AlCl_3$ (3.6 mg, 2.71 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded (cyclohexyloxy)dimethyl(phenyl)silane (**2f$_1$**) (102 mg, 80%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.40 (s, 6H, 2xCH_3), 1.1-1.5 (m, 6H, 3xCH_2), 1.6-1.9 (m, 4H, 2xCH_2), 3.6-3.7 (m, 1H, CH), 7.3-7.5 (m, 3H, 3xCH), 7.6-7.7 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -0.7 (2xCH_3), 24.6 (2xCH_2), 25.8 (CH_2), 36.1 (2xCH_2), 71.6 (CH), 128.0 (2xCH), 129.6 (CH), 133.7 (2xCH), 139.1 (C) ppm. MS (CI) *m/z* (%) 235 (M^++1, 12), 219 (M^+-Me, 48), 157 (M^+-Ph, 23). HMRS (CI) calc for $C_{14}H_{22}OSi$, 235.1518; found, 235.1517.

(Hept-4-yn-2-yloxy)dimethyl(phenyl)silane (**2g$_1$**): Following the general procedure, reaction of 2-(hept-4-yn-2-yloxy)tetrahydro-*2H*-pyran (**1g$_1$**) (100 mg, 0.510 mmol) and dimethyl(phenyl)silane (98 μL, 0.637 mmol) with $AlCl_3$ (3.4 mg, 2.55 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded (hept-4-yn-2-yloxy)dimethyl(phenyl)silane (**2g$_1$**) (102 mg, 81%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.40 (s, 6H, 2xCH_3), 1.10 (t, *J* = 7.4 Hz, 3H, CH_3), 1.20 (d, *J* = 6.1 Hz, 3H, CH_3), 2.1–2.4 (m, 4H, 2xCH_2), 3.8-4.0 (m, 1H, CH), 7.3-7.4 (m, 3H, 3xArCH), 7.6-7.7 (m, 2H, 2xArCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.1 (Si-CH_3), -1.0 (Si-CH_3), 12.5 (CH_2), 14.3 (CH_3), 23.2 (CH_3), 29.6 (CH_2), 68.4 (CH), 83.3 (2xC), 127.9 (2xCH), 129.6 (CH), 133.6 (2xCH), 138.3 (C) ppm. MS (ESI) *m/z* (%) 269 (M^++23, 25), 271 (M^+-OSiMe_2Ph+23, 100). HMRS (ESI) calc for $C_{15}H_{22}NaOSi$, 269.1332; found, 269.1329.

((3*s*,5*s*,7*s*)-Adamantan-1-yloxy)dimethyl(phenyl)silane (**2h$_1$**): Following the general procedure, reaction of 2-((3*s*,5*s*,7*s*)-adamantan-1-yloxy)tetrahydro-*2H*-pyran (**1h$_1$**) (100 mg, 0.423 mmol) and dimethyl(phenyl)silane (130 μL, 0.846 mmol) with $AlCl_3$ (2.8 mg, 2.12 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded ((3*s*,5*s*,7*s*)-adamantan-1-yloxy)dimethyl(phenyl)silane (**2h$_1$**) (97 mg, 80%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.39 (s, 6H, 2xCH_3), 1.5-1.6 (m, 6H, 3xCH_2), 1.7-1.8 (m, 6H, 3xCH_2), 2.06 (s, 3H, 3xCH), 7.3-7.4 (m, 3H, 3xCH), 7.5-7.7 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 1.8 (2xCH_3), 30.9 (3xCH), 36.2 (3xCH_2), 46.1 (3xCH_2), 72.0 (C), 127.6 (2xCH), 129.0 (CH), 133.3 (2xCH), 140.8 (C) ppm. MS (EI) *m/z* (%) 286 (M^+, 10), 271 (M^+-Me, 100), 151 (M^+-SiMe_2Ph, 33), 135 (M^+-OSiMe_2Ph, 44). HMRS (EI) calc for $C_{18}H_{26}OSi$, 286.1753; found, 286.1748.

Dimethyl(phenoxy)(phenyl)silane (**2i$_1$**): Following the general procedure, reaction of 2-phenoxytetrahydro-*2H*-pyran (**1i$_1$**) (100 mg, 0.561 mmol) and dimethyl(phenyl)silane (108 μL, 0.701 mmol) with $AlCl_3$ (3.7 mg, 2.81 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded dimethyl(phenoxy)(phenyl)silane (**2i$_1$**) (124 mg, 97%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 0.60 (s, 6H, 2xCH_3), 6.9-6.9 (m, 2H, 2xCH), 7.0-7.0 (m, 1H, CH), 7.2-7.3 (m, 2H, 2xCH), 7.4-7.5 (m, 3H, 3xCH), 7.7-7.8 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -0.4 (2xCH_3), 120.7 (2xCH), 122.2 (CH), 128.7 (2xCH), 130.1 (2xCH), 130.6 (CH), 134.2 (2xCH),

137.9 (C), 155.8 (C) ppm. MS (EI) *m/z* (%) 228 (M^+, 46), 213 (M^+-Me, 100), 151 (M^+-Ph, 3), 77 (M^+-$OSiMe_2Ph$, 5). HMRS (EI) calc for $C_{14}H_{16}OSi$, 228.0970; found, 228.0962.

(4-Bromophenoxy)dimethyl(phenyl)silane (**2j$_1$**): Following the general procedure, reaction of 2-(4-bromophenoxy)tetrahydro-*2H*-pyran (**1j$_1$**) (100 mg, 0.389 mmol) and dimethyl(phenyl)silane (75 μL, 0.486 mmol) with $AlCl_3$ (2.6 mg, 1.95 x 10^{-2} mmol) in CH_2Cl_2 (2 mL) for 30 min afforded (4-bromophenoxy)dimethyl(phenyl)silane (**2j$_1$**) (97 mg, 81%) as a light yellow oil.

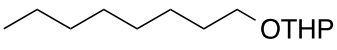
^{1}H NMR (300 MHz, $CDCl_3$) δ 0.50 (s, 6H, 2xCH_3), 6.6-6.7 (m, 2H, 2xCH), 7.2-7.3 (m, 2H, 2xCH), 7.3-7.4 (m, 3H, 3xCH), 7.6-7.6 (m, 2H, 2xCH) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ -1.3 (2xCH_3), 113.9 (C), 121.8 (2xCH), 128.0 (2xCH), 130.1 (CH), 132.3 (2xCH), 133.4 (2xCH), 136.6 (C), 154.2 (C) ppm. MS (EI) *m/z* (%) 306 (M^+, 73), 228 (M^+-Br, 5), 213 (M^+-Me-Ph, 14), 135 (M^+-Me-Ph-Br, 58). HMRS (EI) calc for $C_{14}H_{15}BrOSi$, 306.0073; found, 306.0067.

7-((Triisopropylsilyl)oxy)heptan-1-ol (**2k$_6$**): Following the general procedure, reaction of 7-((tetrahydro-*2H*-pyran-2-yl)oxy)heptan-1-ol (**1k$_1$**) (100 mg, 0.462 mmol) and triisopropylsilane (118 μL, 0.578 mmol) with $AlCl_3$ (3.1 mg, 2.31 x 10^{-2} mmol) in toluene (2 mL) for 2 h afforded 7-((triisopropylsilyl)oxy)heptan-1-ol (**2k$_6$**) (77 mg, 58%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.0-1.1 (m, 21H, 3xCH + 6xCH_3), 1.3-1.4 (m, 6H, 3xCH_2), 1.5-1.6 (m, 4H, 2xCH_2), 3.61 (t, *J* = 6.7 Hz, 2H, CH_2), 3.64 (t, *J* = 6.5 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 12.0 (3xCH), 18.0 (6xCH_3), 25.7 (CH_2), 25.8 (CH_2), 29.2 (CH_2), 32.7 (CH_2), 32.9 (CH_2), 63.0 (CH_2), 63.4 (CH_2) ppm. MS (ESI) *m/z* (%) 311 (M^++23, 1), 230 (M^+-3xCH_3, 100). HMRS (ESI) calcd for $C_{16}H_{36}NaO_2Si$, 311.2382; found, 311.2379.

4-((Triisopropylsilyl)oxy)but-2-yn-1-ol (**2l$_6$**): Following the general procedure, reaction of 4-((tetrahydro-*2H*-pyran-2-yl)oxy)but-2-yn-1-ol (**1l$_1$**) (100 mg, 0.588 mmol) and triisopropylsilane (151 μL, 0.734 mmol) with $AlCl_3$ (3.9 mg, 2.94 x 10^{-2} mmol) in Toluene (2 mL) for 2 h afforded 4-(triisopropylsilyl)oxy)but-2-yn-ol (**2l$_6$**): (100 mg, 70%) as a light yellow oil.

^{1}H NMR (300 MHz, $CDCl_3$) δ 1.0-1.2 (m, 21H, 3xCH + 6xCH_3), 4.30 (s, 2H, CH_2), 4.42 (t, *J* = 1.9 Hz, 2H, CH_2) ppm. ^{13}C NMR (75 MHz, $CDCl_3$) δ 12.2 (3xCH), 18.1 (6xCH_3), 51.5 (CH_2), 52.2 (CH_2), 82.9 (C), 84.9 (C) ppm. MS (ESI) *m/z* (%) 256 (M^++23, 81), 251 (M^+-Me+23, 6), 237 (M^+-Me_2+23, 4). HMRS (ESI) calcd for $C_{13}H_{26}NaO_2Si$, 256.1591; found, 256.1594.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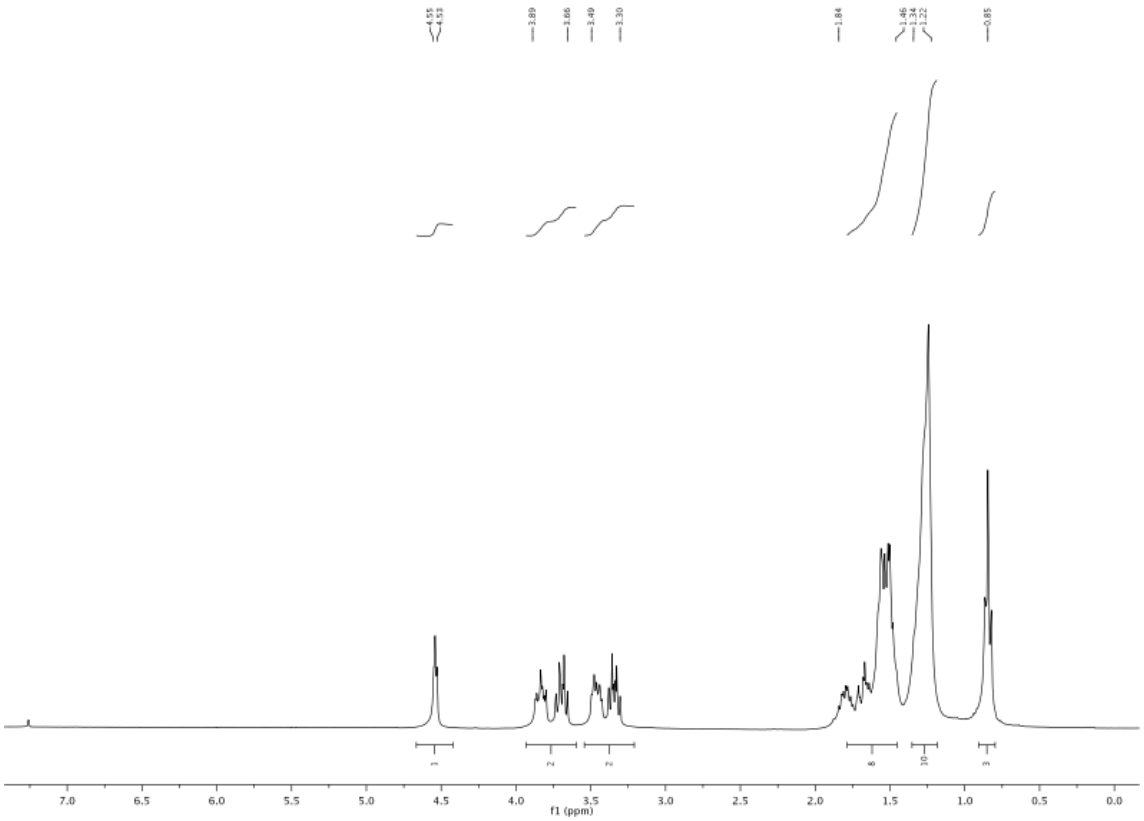
1a$_1$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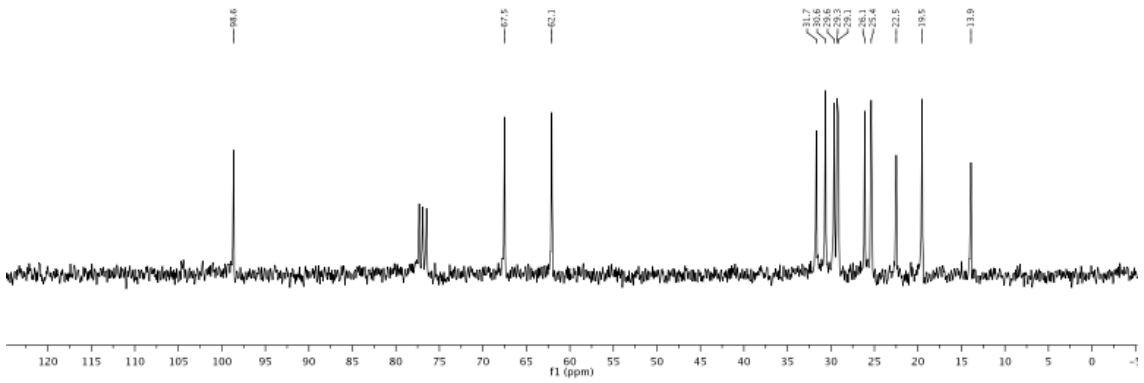
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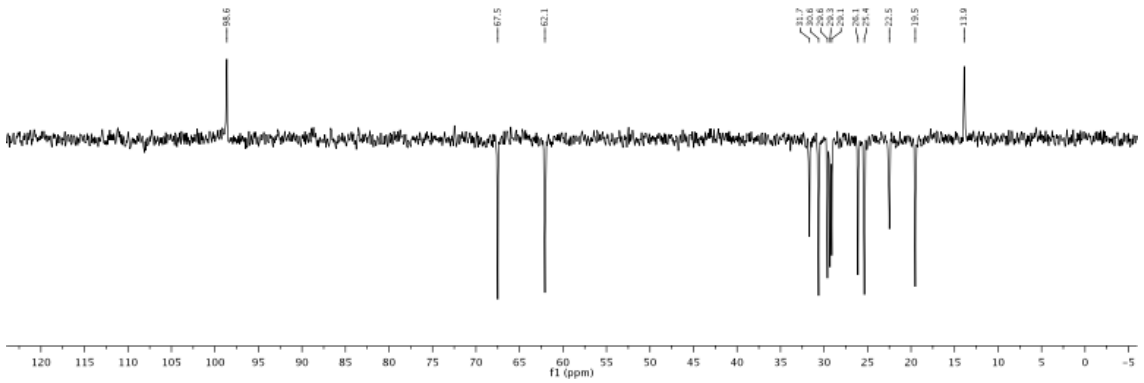
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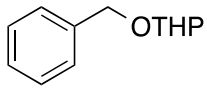
f1 (ppm)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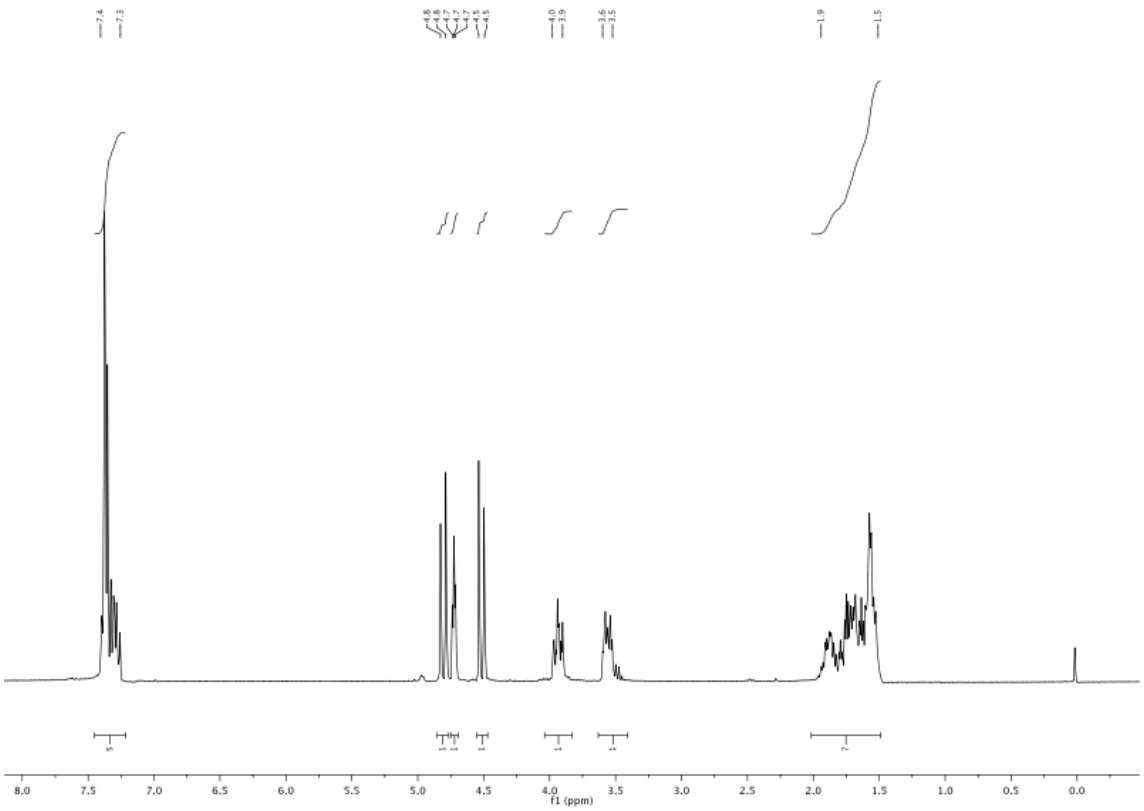
1c$_1$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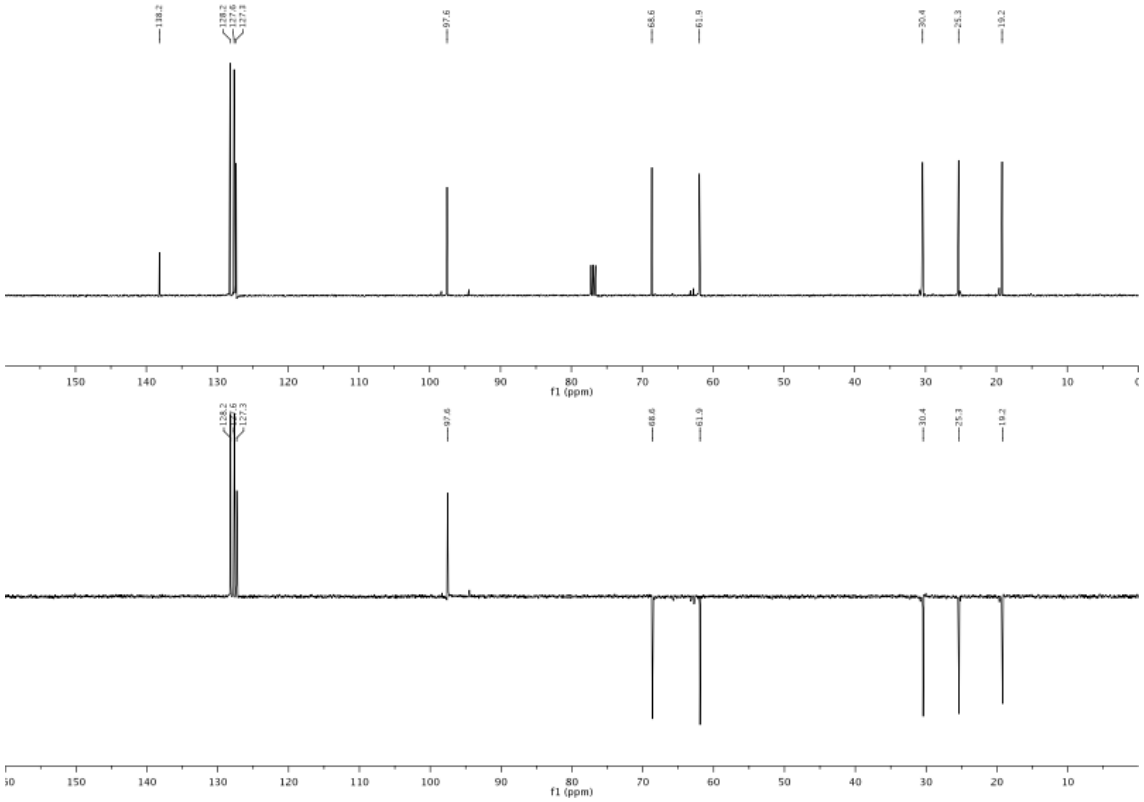
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40
30
20
10
f1 (ppm)

128.2
127.6
127.3
97.6
68.6
61.9
30.4
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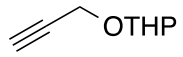
f1 (ppm)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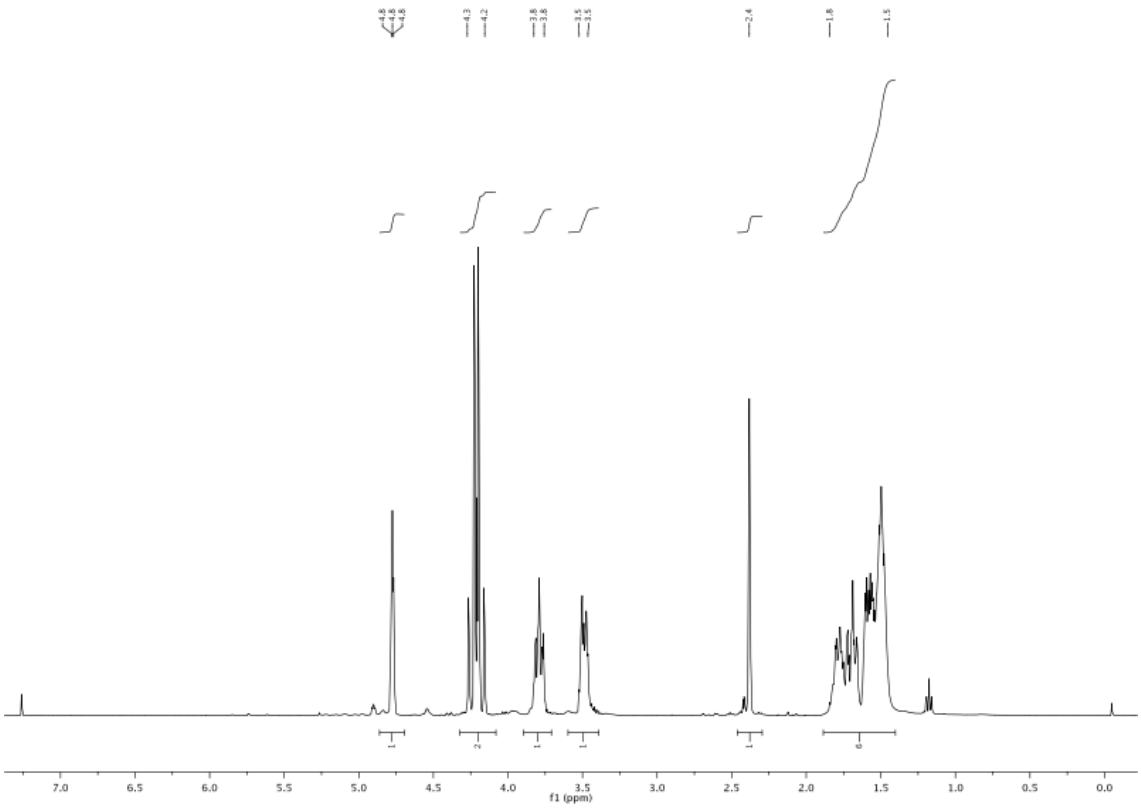
1d$_1$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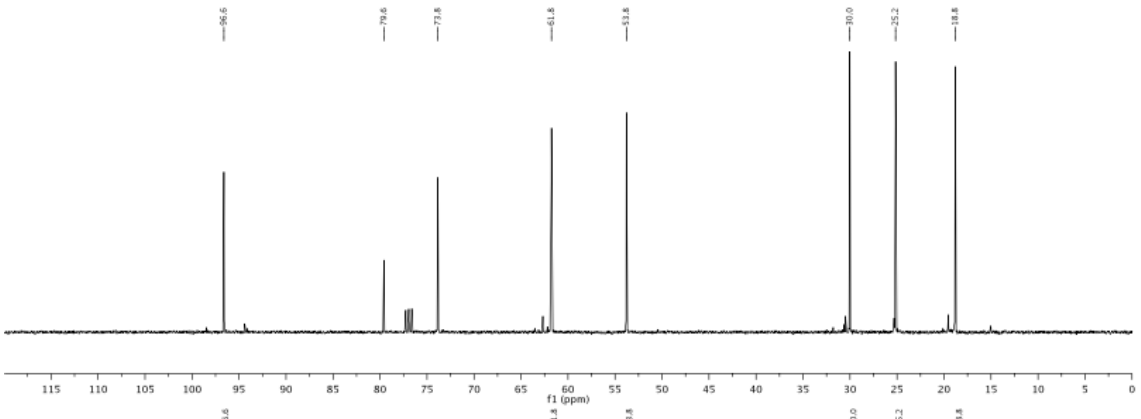
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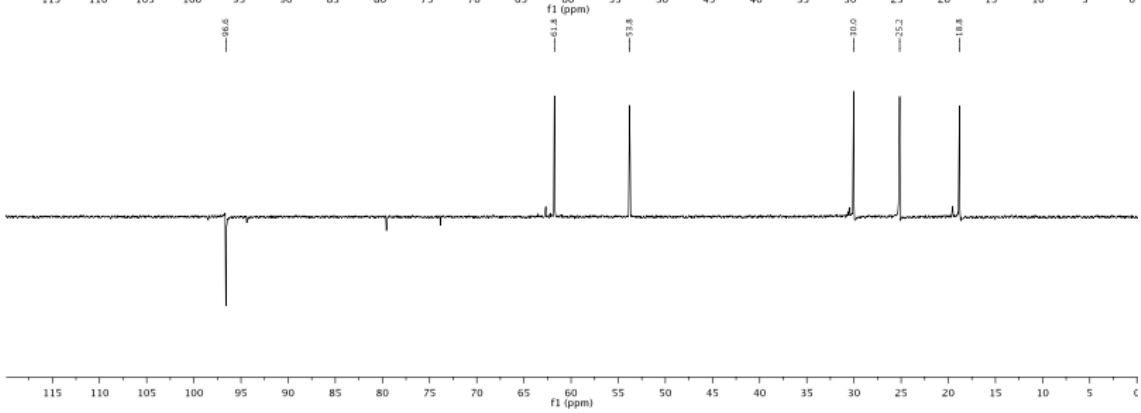
f1 (ppm)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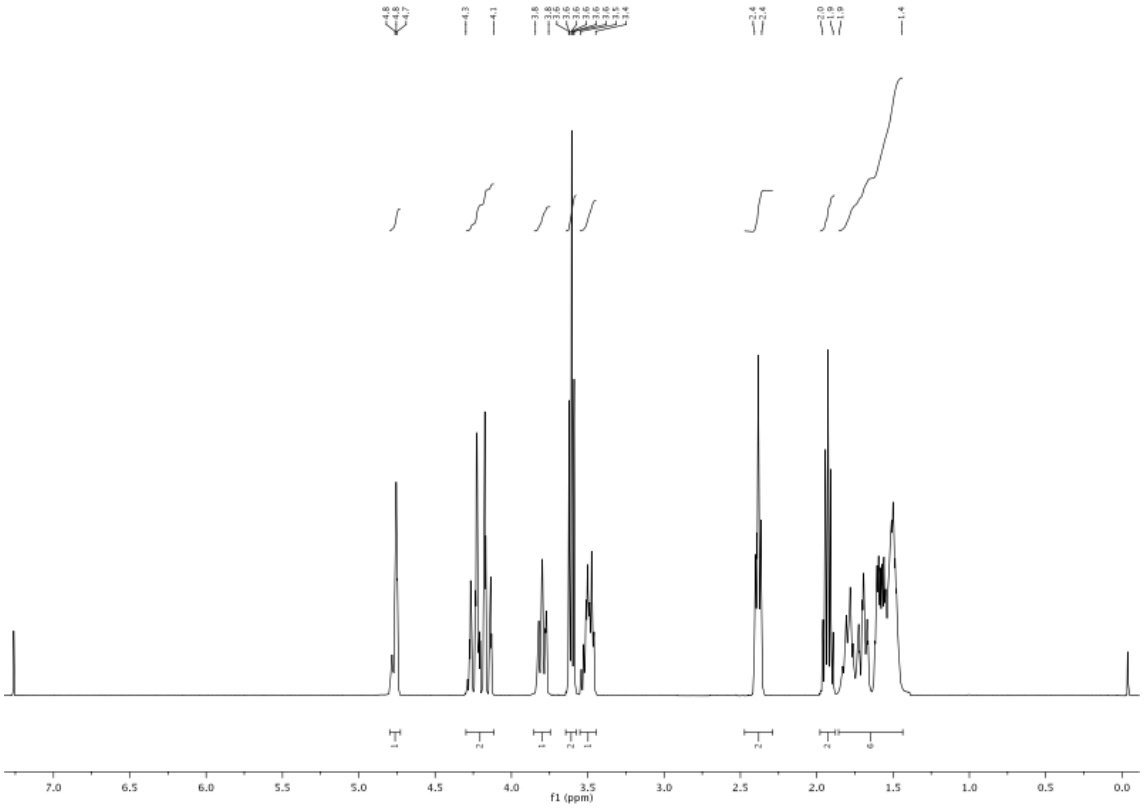
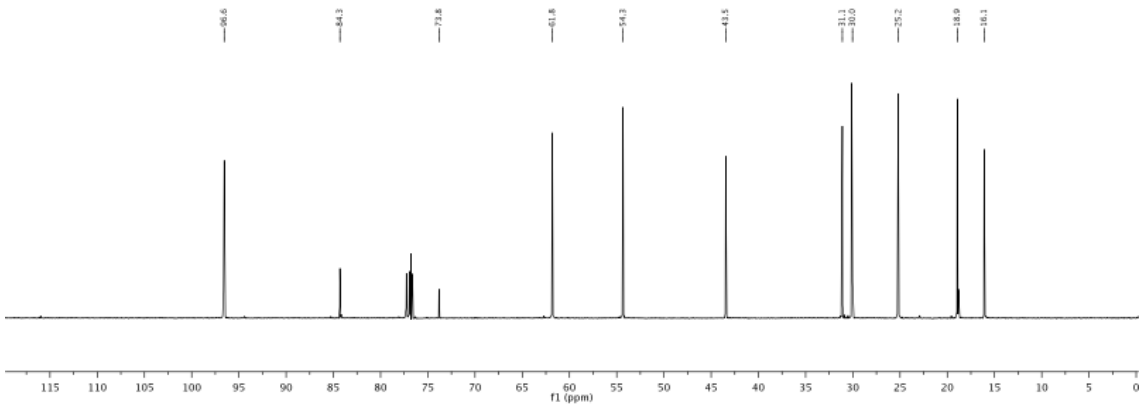
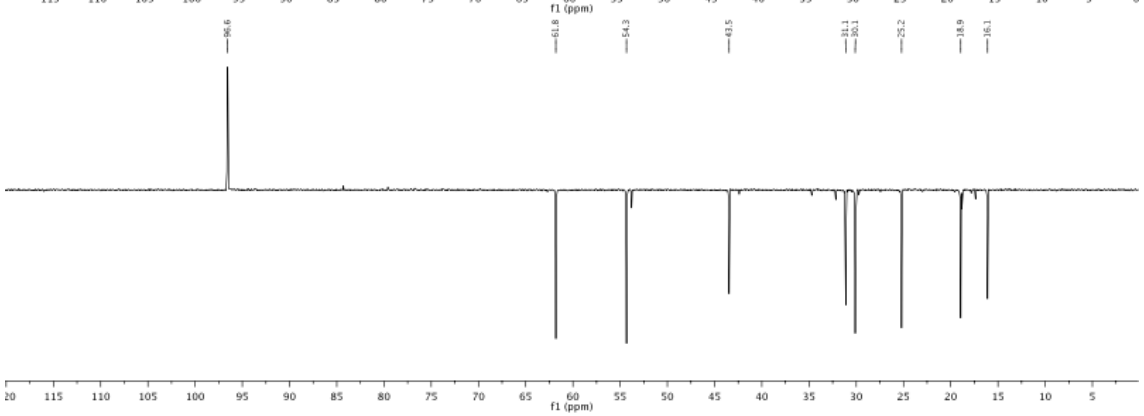
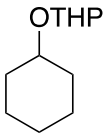
1e$_1$





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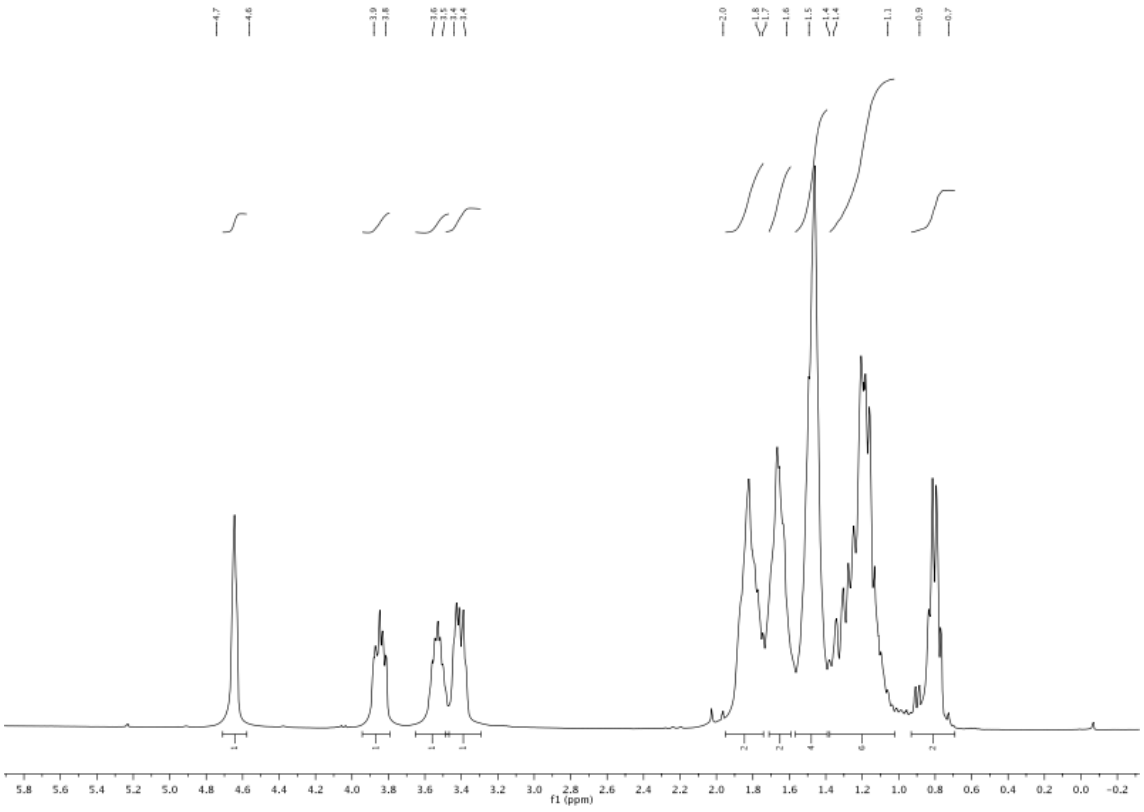
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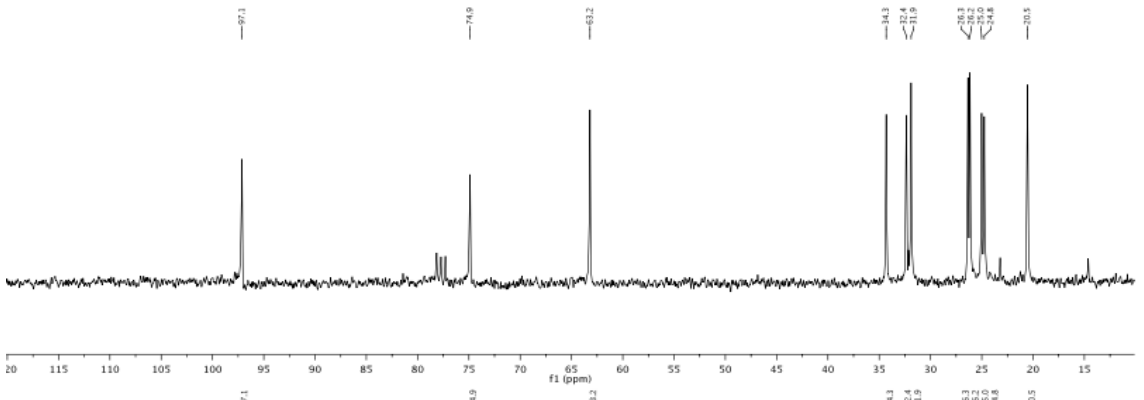
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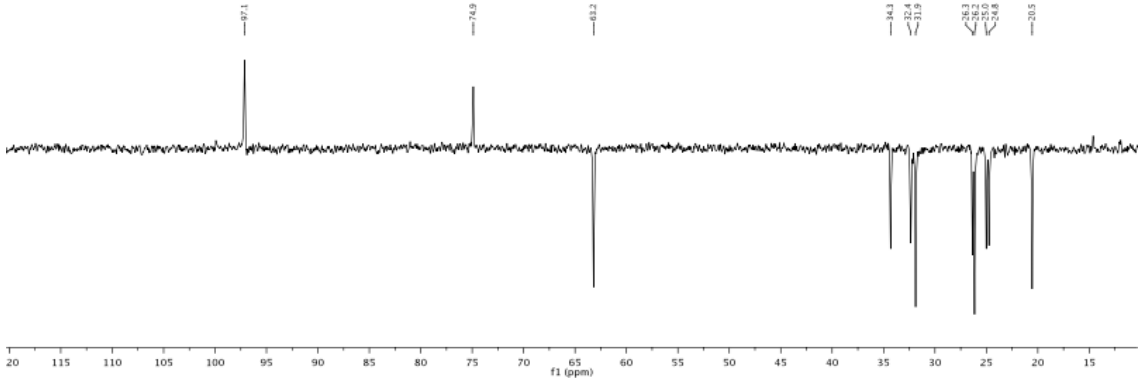
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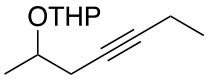
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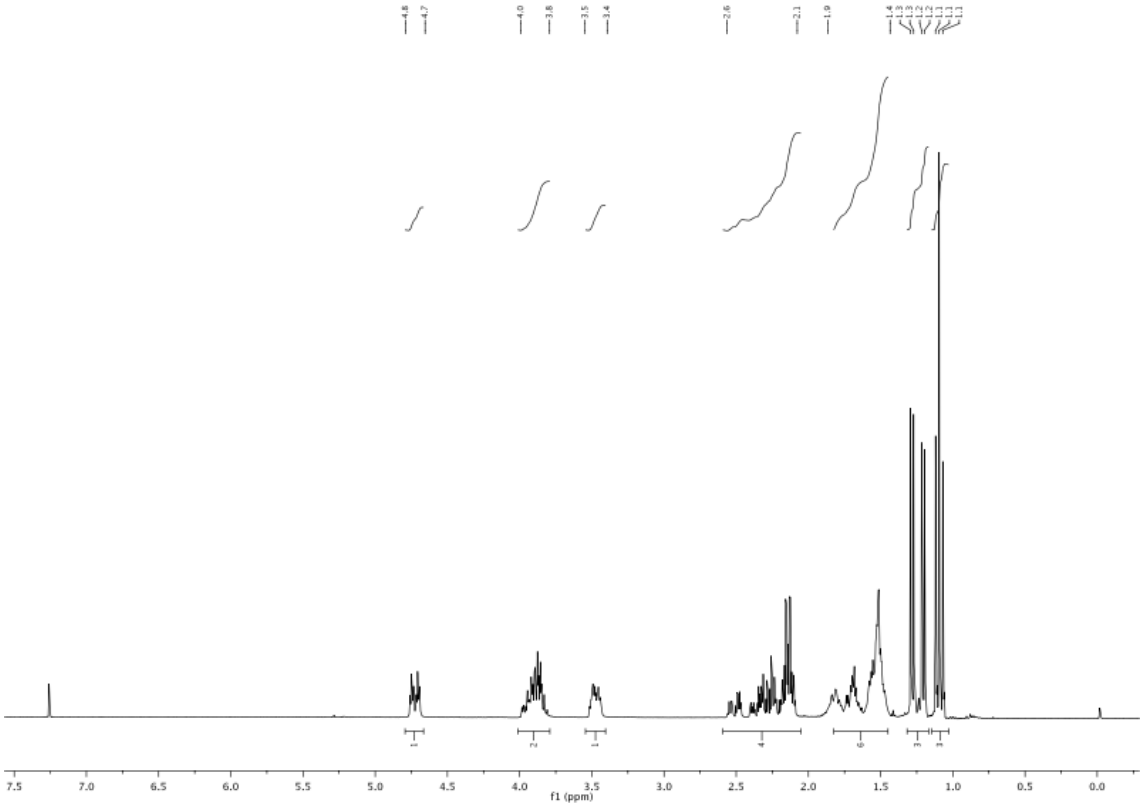
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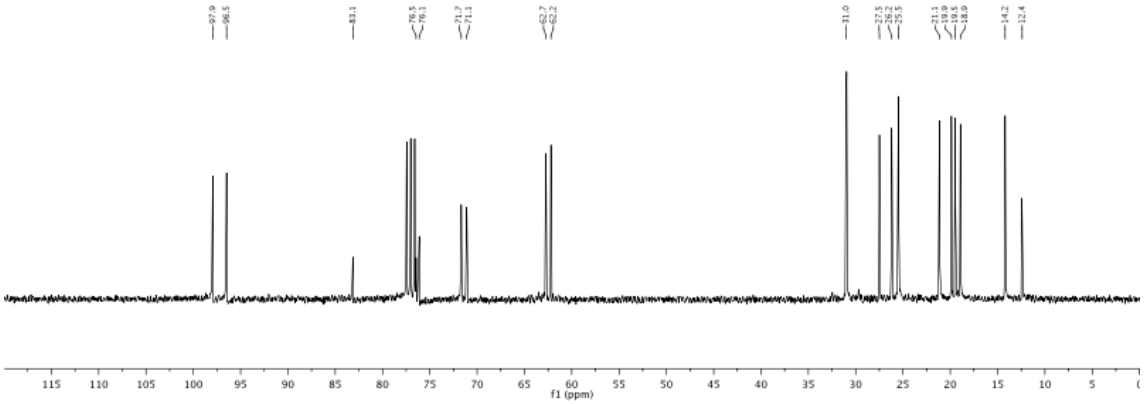
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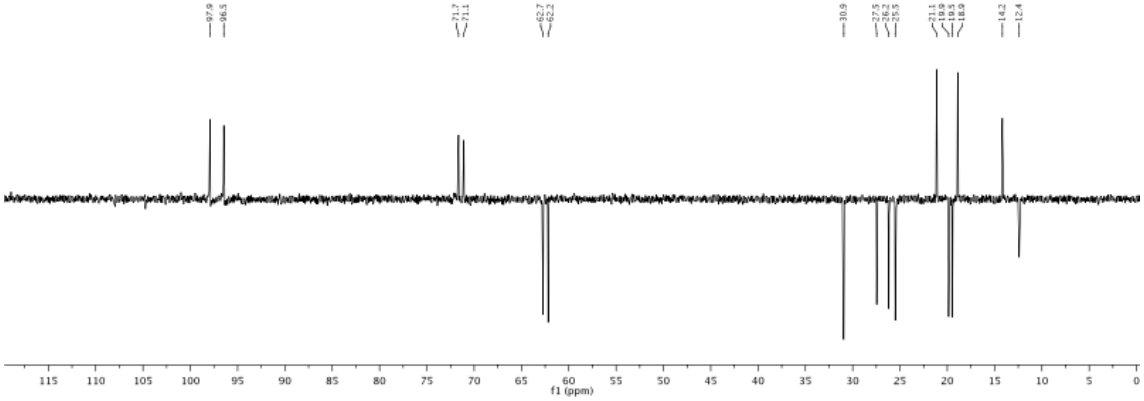
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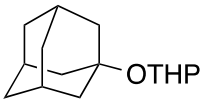
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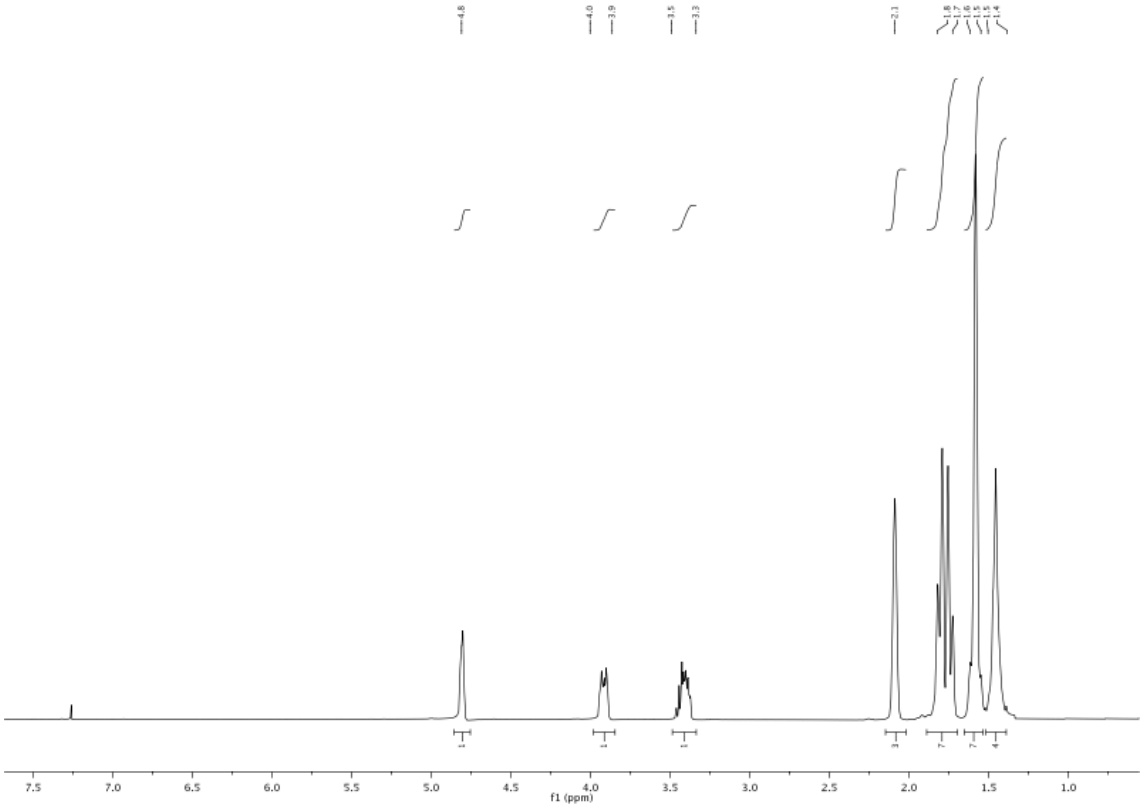
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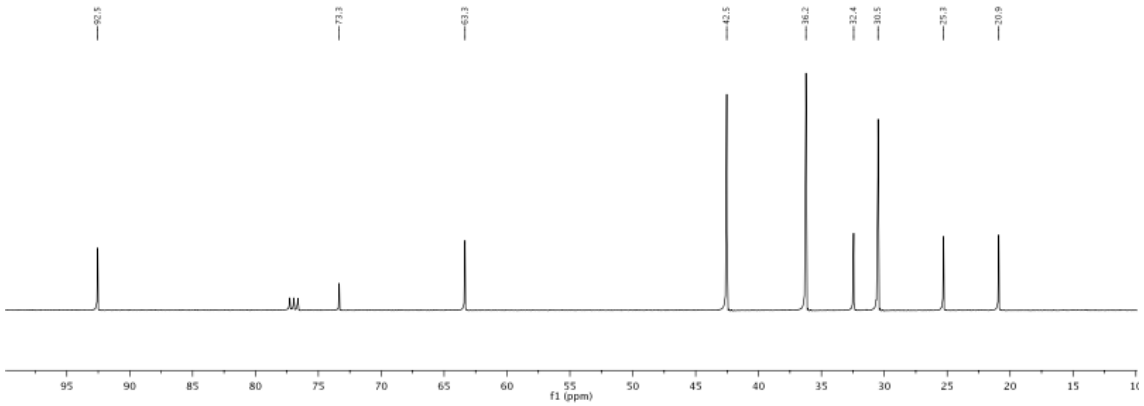
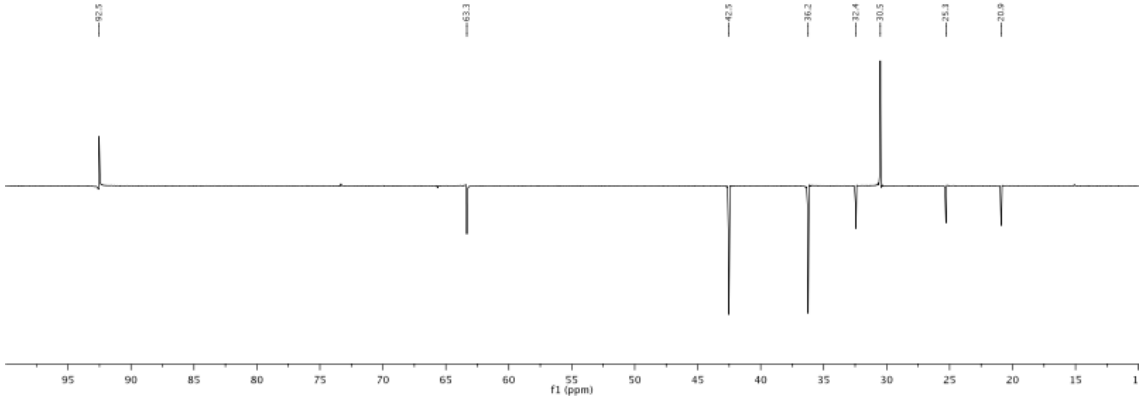
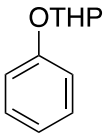
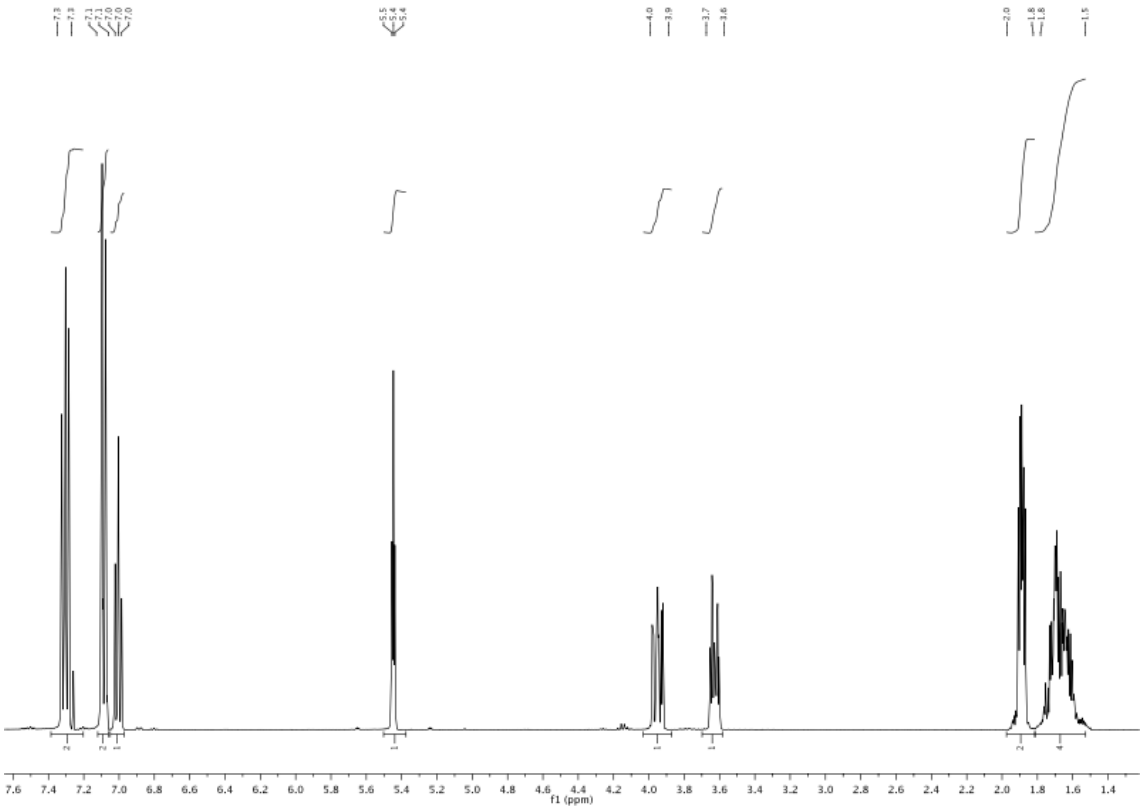
1.0
f1 (ppm)

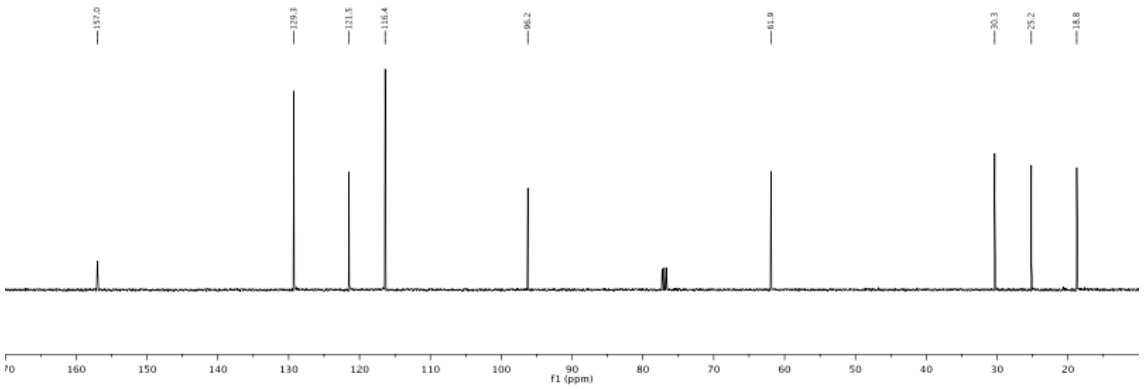

92.5
73.3
63.3
42.5
36.2
32.4
30.5
25.3
20.9
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
f1 (ppm)

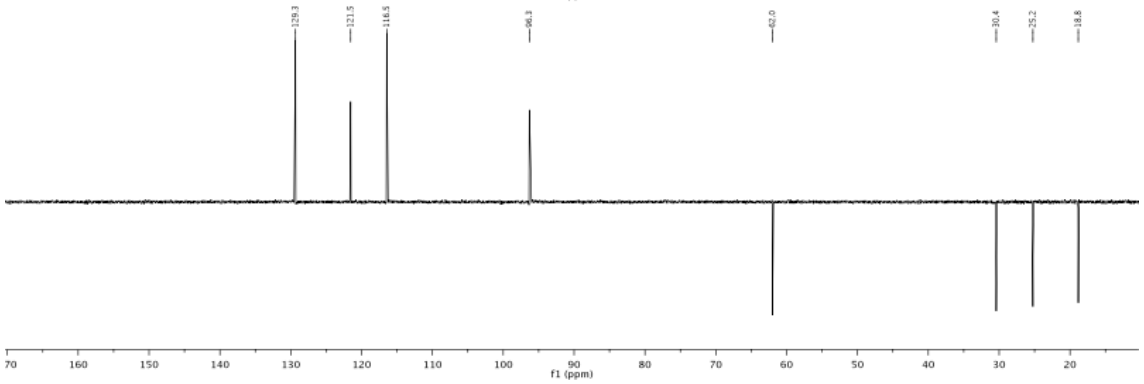

92.5
63.3
42.5
36.2
32.4
30.5
25.3
20.9
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
f1 (ppm)

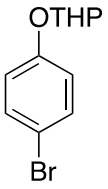

OTHP

1i$_1$

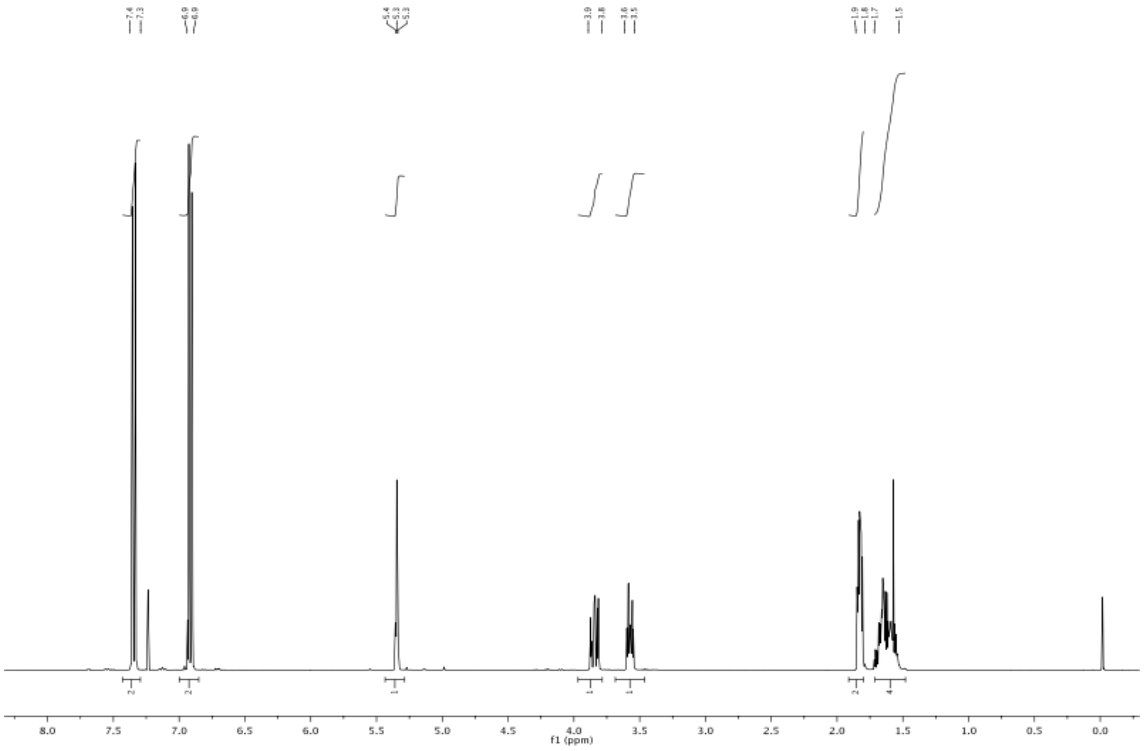

7.3
7.3
7.1
7.1
7.0
7.0
5.5
5.4
5.4
4.0
3.9
3.7
3.6
2.0
1.8
1.8
1.5
f1 (ppm)

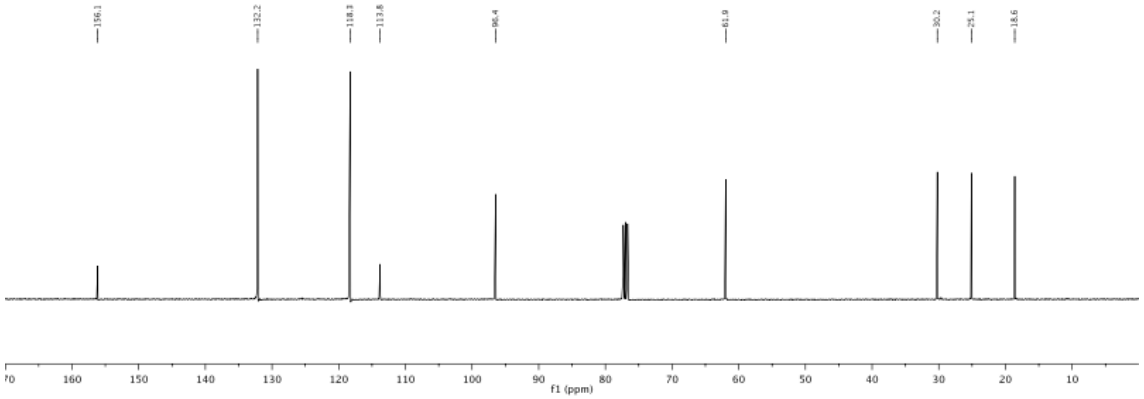

157.0
129.3
121.5
116.4
96.2
61.9
30.3
25.2
18.8
f1 (ppm)

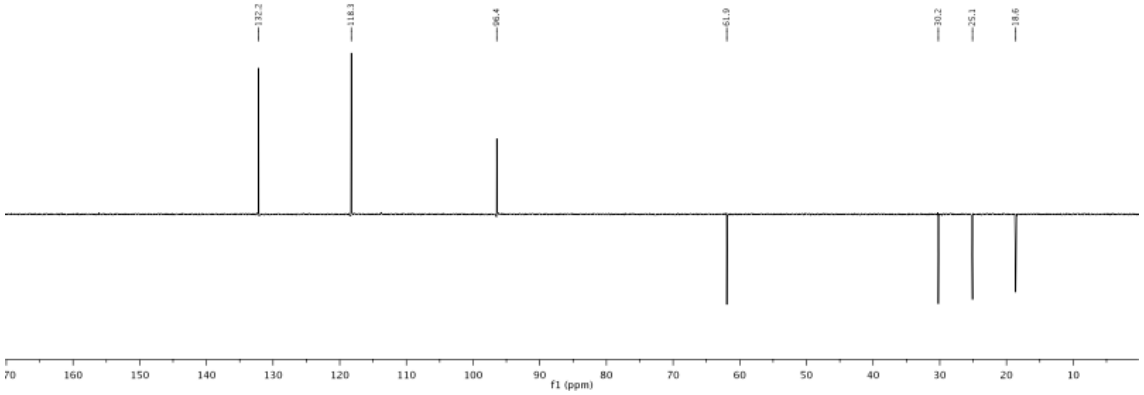

129.3
121.5
116.5
96.3
62.0
30.4
25.2
18.8
f1 (ppm)

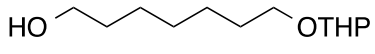


$1j_1$

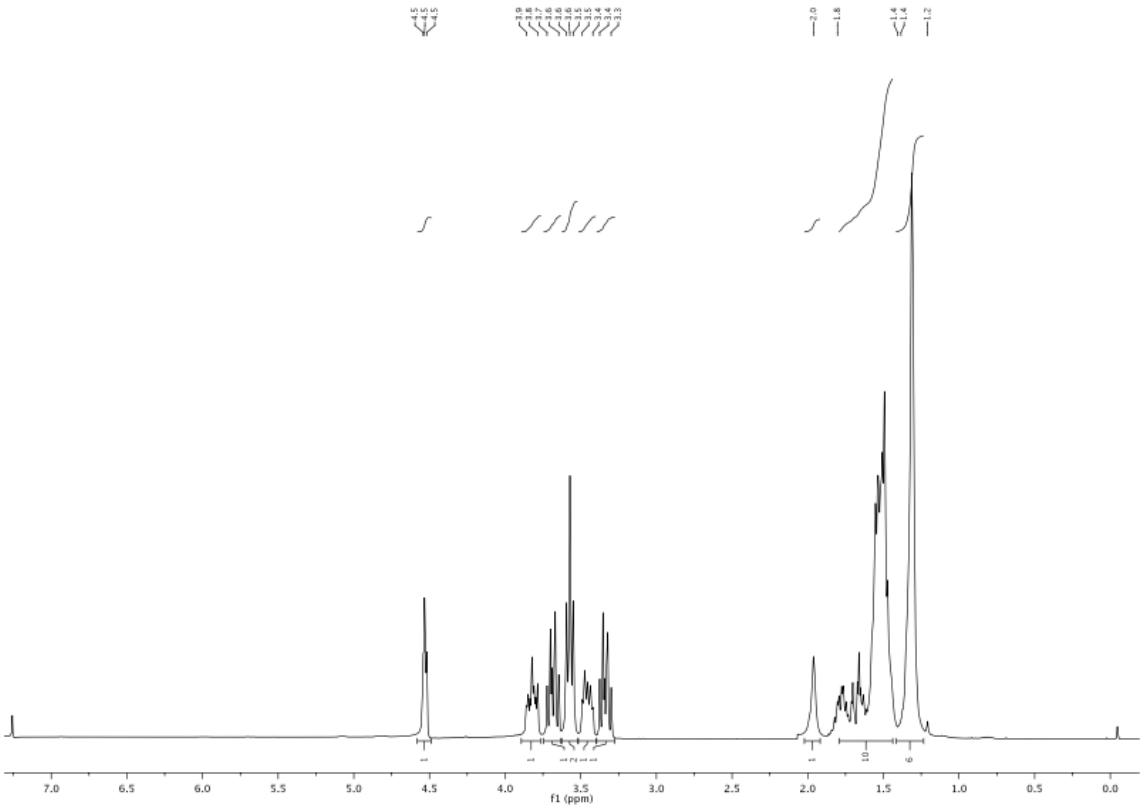


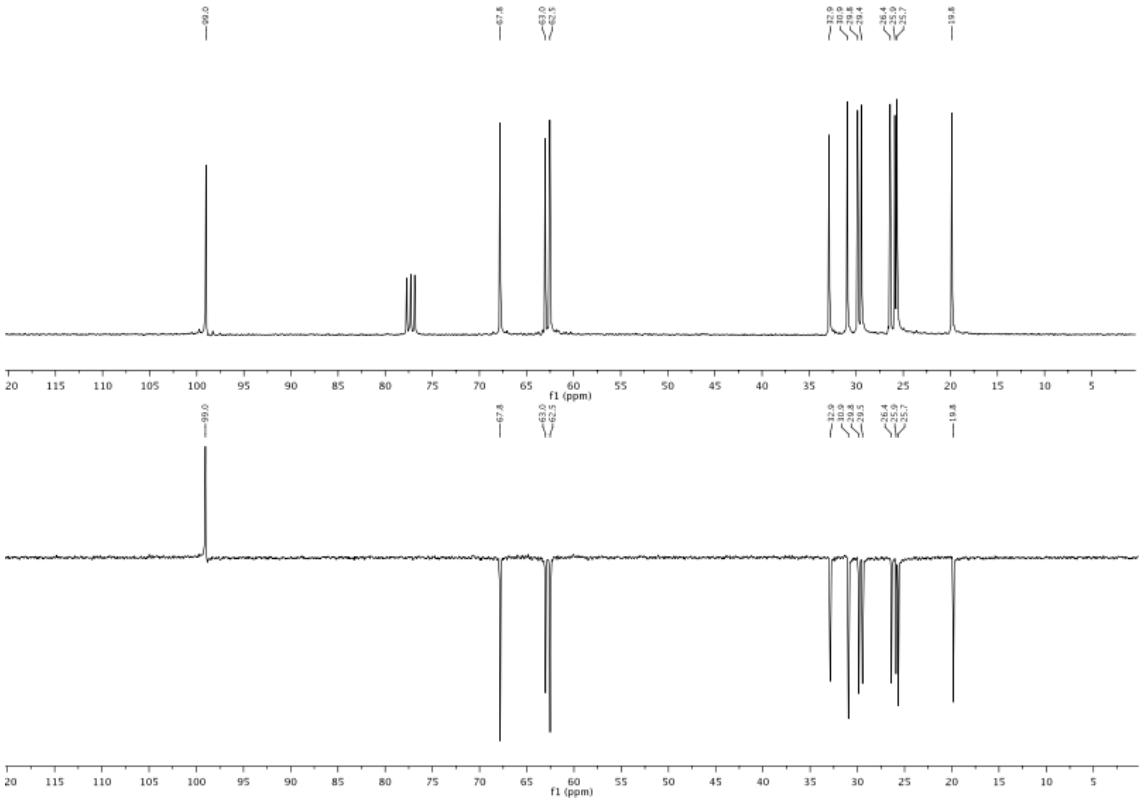





HO
OTHP

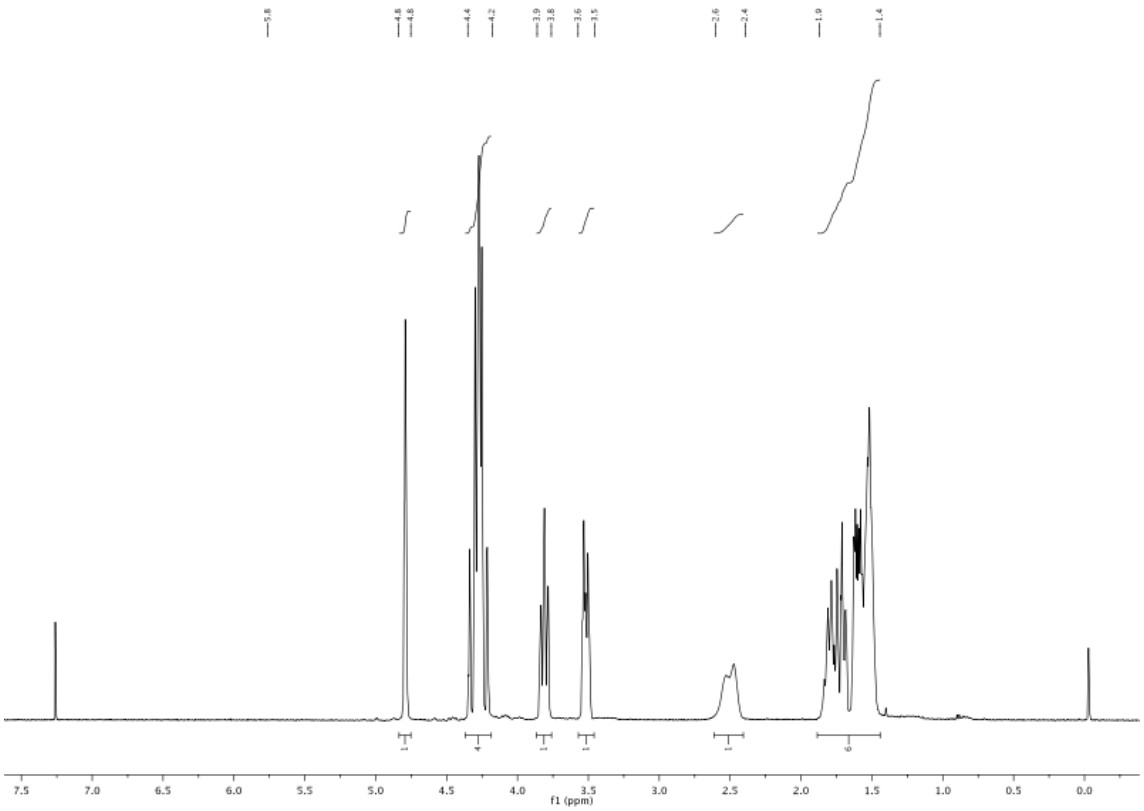
1k$_1$

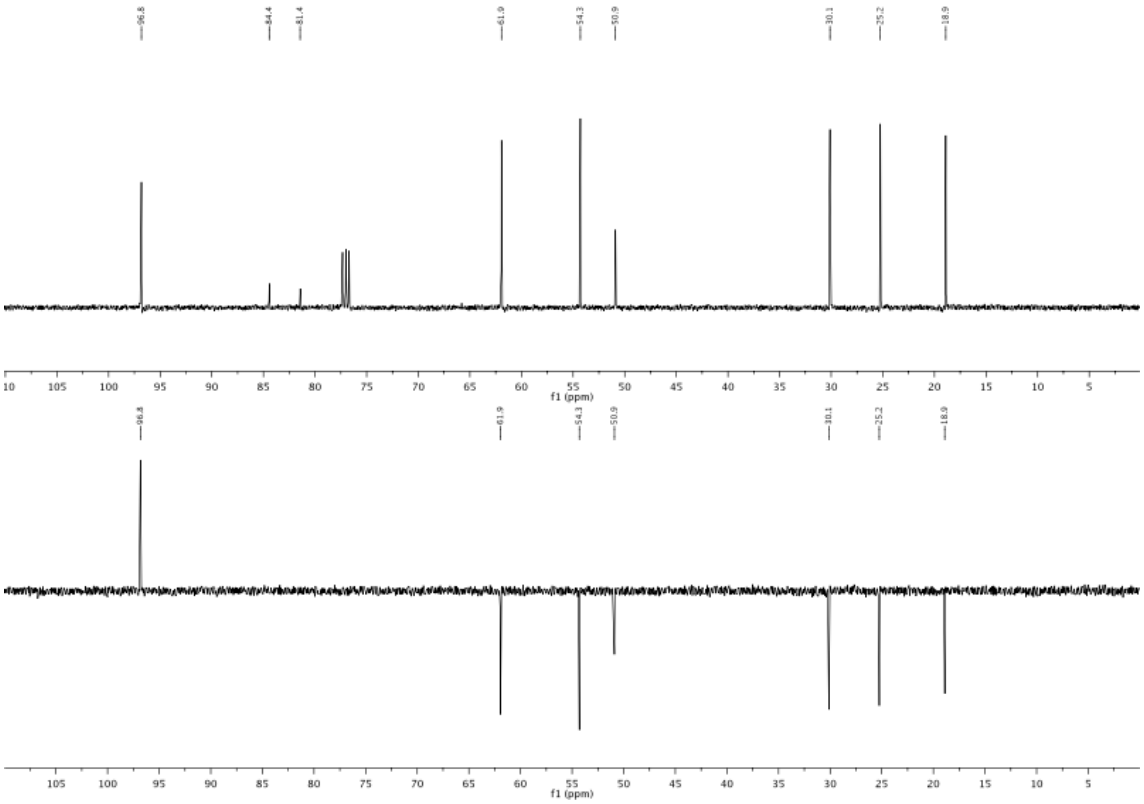

4.5
4.5
4.5
3.9
3.8
3.7
3.6
3.6
3.6
3.5
3.5
3.5
3.4
3.4
3.3
2.0
1.8
1.4
1.4
1.2
f1 (ppm)

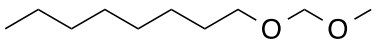

99.0
67.8
63.0
62.5
32.9
30.9
29.8
29.4
26.4
25.9
25.7
19.8
f1 (ppm)


HO
OTHP

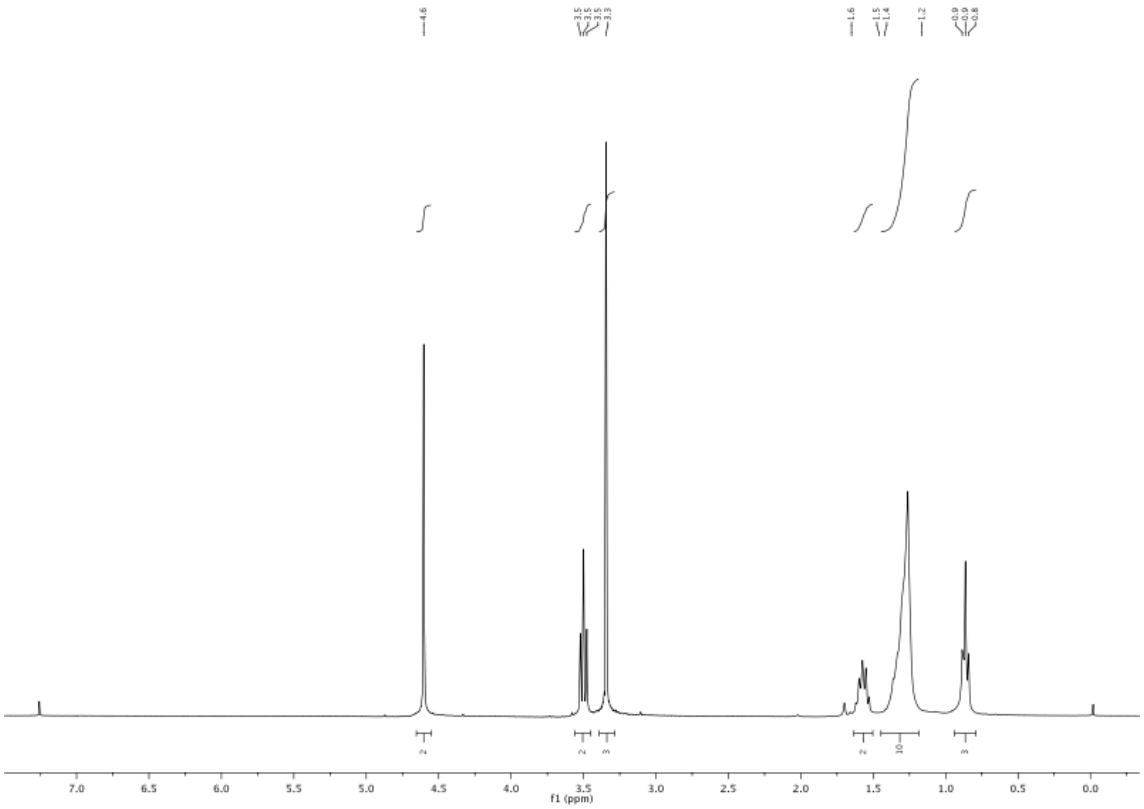
1l$_1$

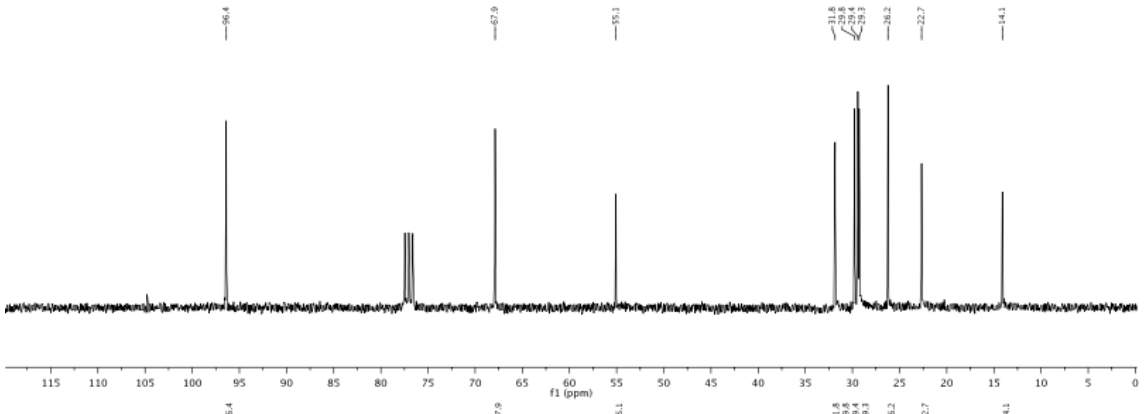

5.8
4.8
4.8
4.4
4.2
3.9
3.8
3.6
3.5
2.6
2.4
1.9
1.4
1
4
1
1
1
6
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)

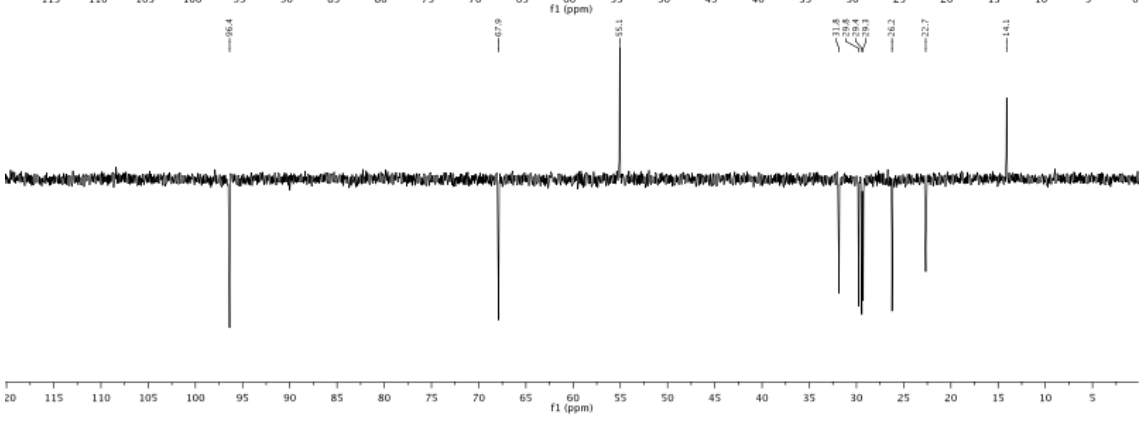

96.8
84.4
81.4
61.9
54.3
50.9
30.1
25.2
18.9
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
f1 (ppm)

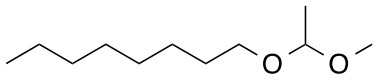


1a$_2$

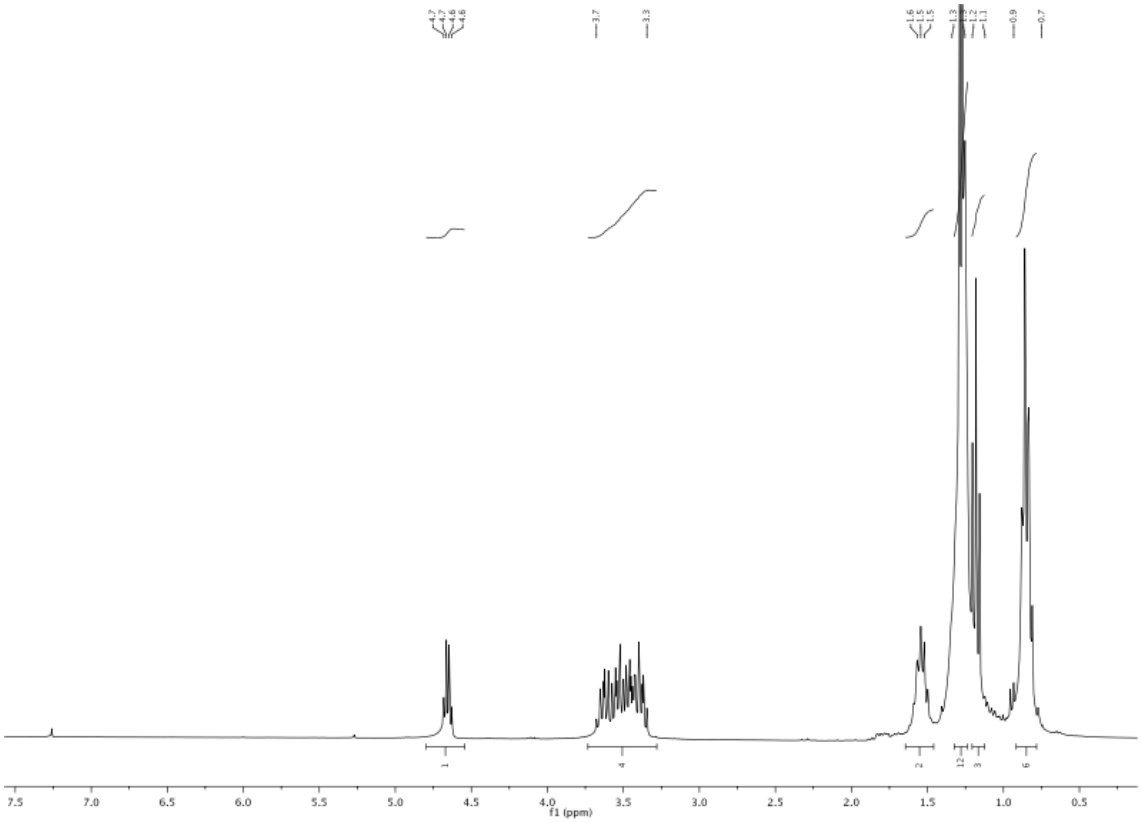

4.6
3.5
3.5
3.5
3.3
1.6
1.5
1.4
1.2
0.9
0.9
0.8
2
2
3
2
10
3
f1 (ppm)

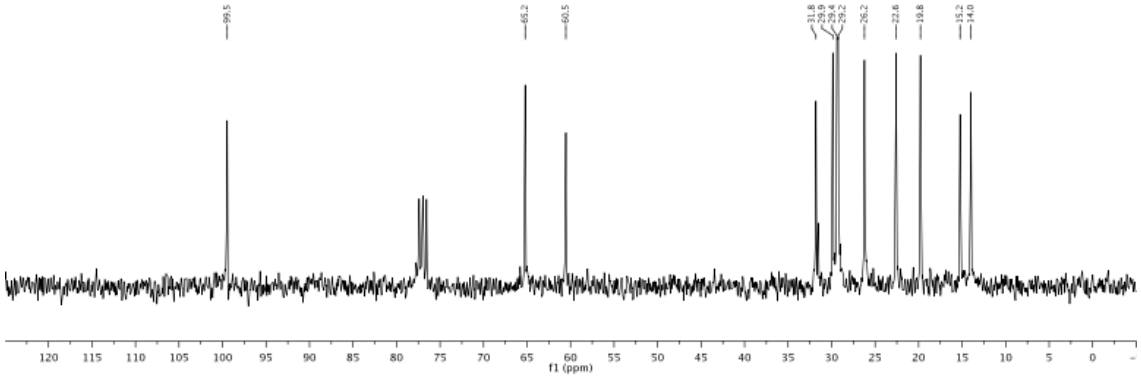

96.4
67.9
55.1
31.8
29.6
29.4
29.3
26.2
22.7
14.1
f1 (ppm)

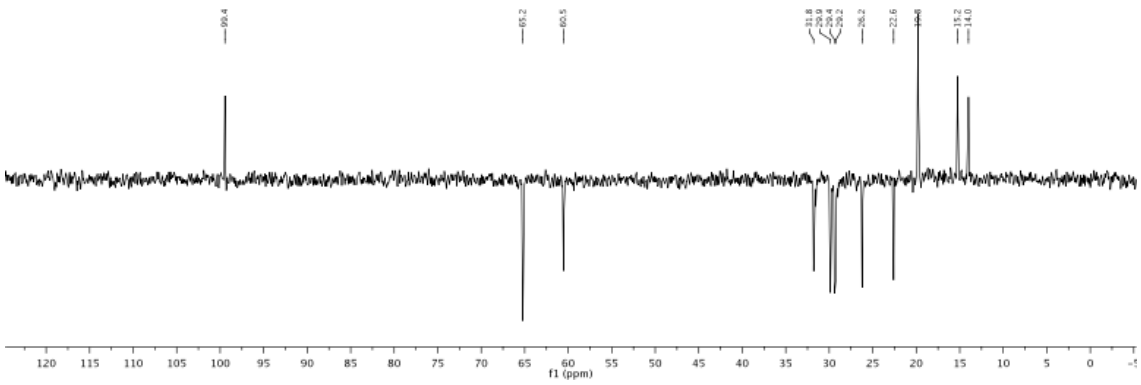

96.4
67.9
55.1
31.8
29.6
29.4
29.3
26.2
22.7
14.1
f1 (ppm)

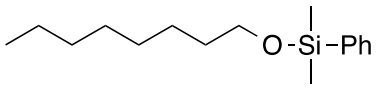


1a$_3$

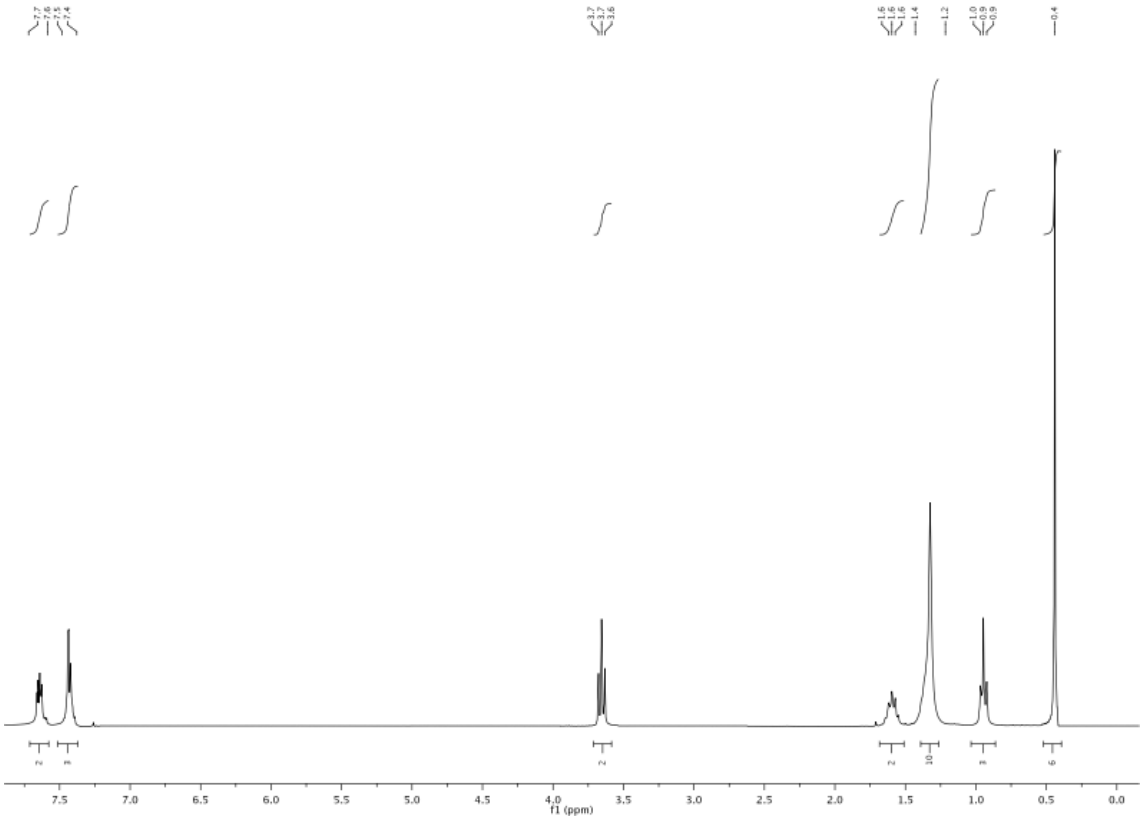

4.7
4.7
4.6
4.6
3.7
3.3
1.6
1.5
1.5
1.3
1.2
1.1
0.9
0.7
1
4
2
12
3
6
f1 (ppm)

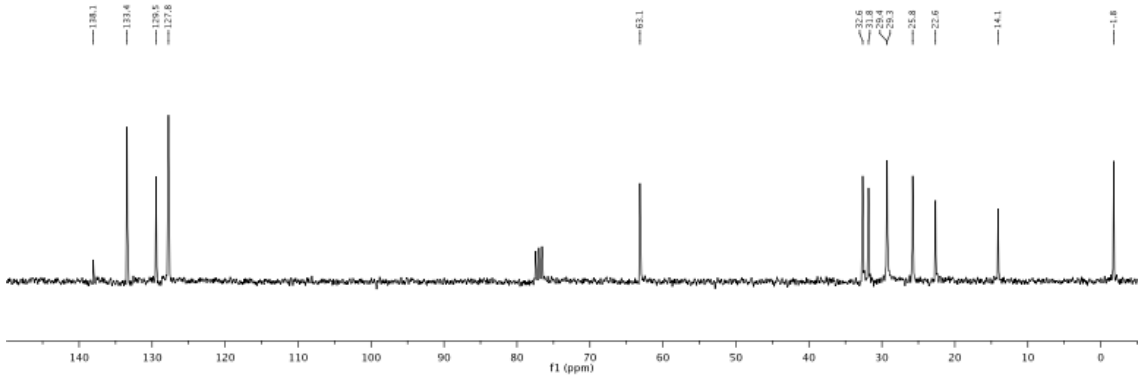

99.5
65.2
60.5
31.8
29.9
29.4
29.2
26.2
22.6
19.8
15.2
14.0
f1 (ppm)

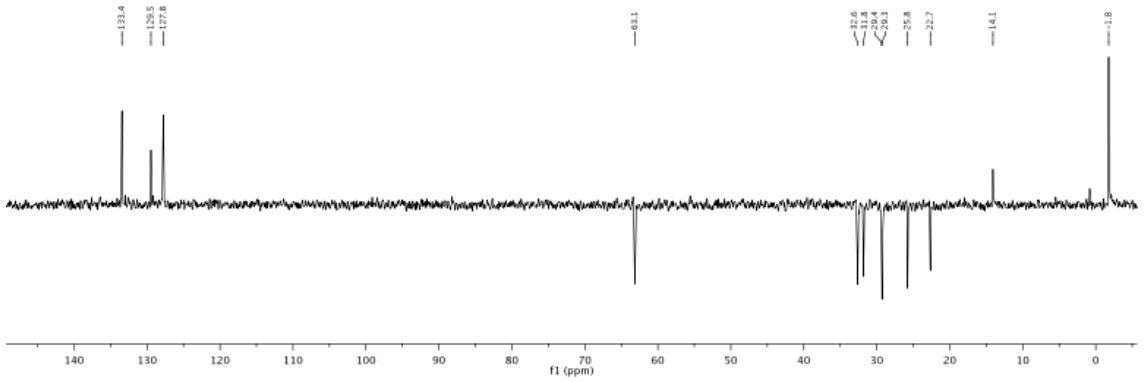

99.4
65.2
60.5
31.8
29.9
29.4
29.2
26.2
22.6
19.8
15.2
14.0
f1 (ppm)

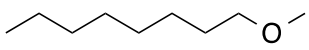


2a$_1$

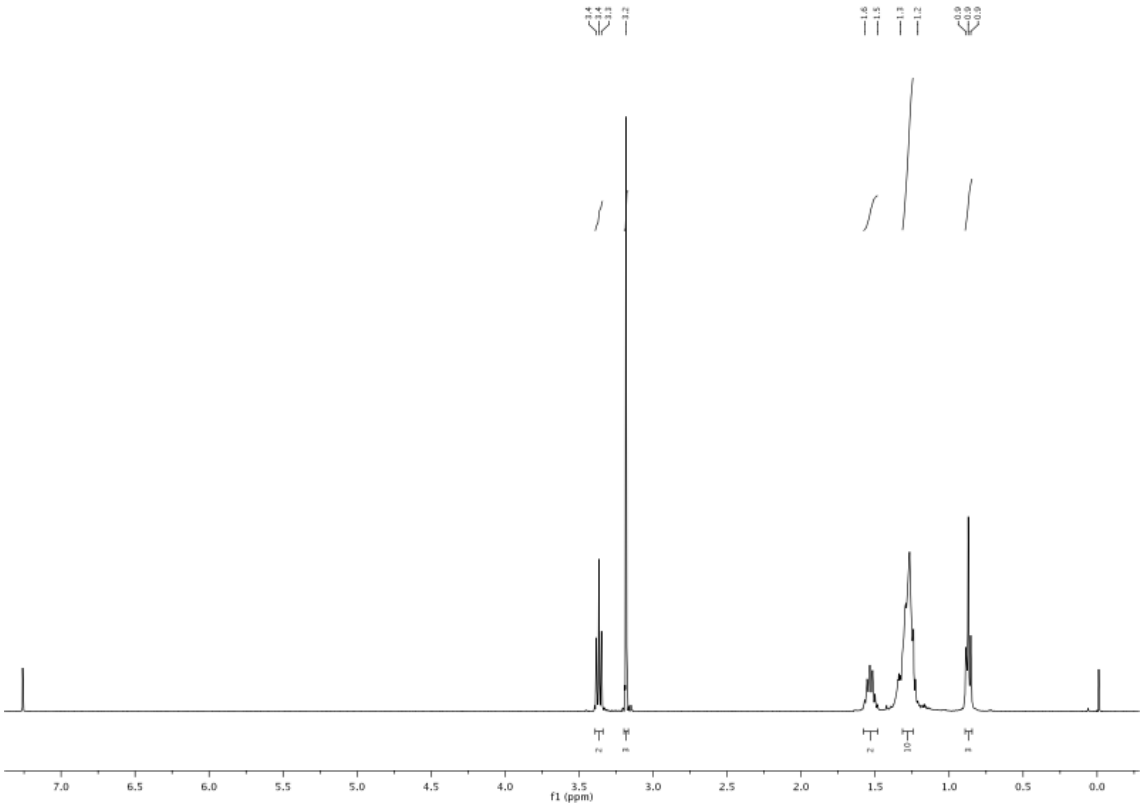


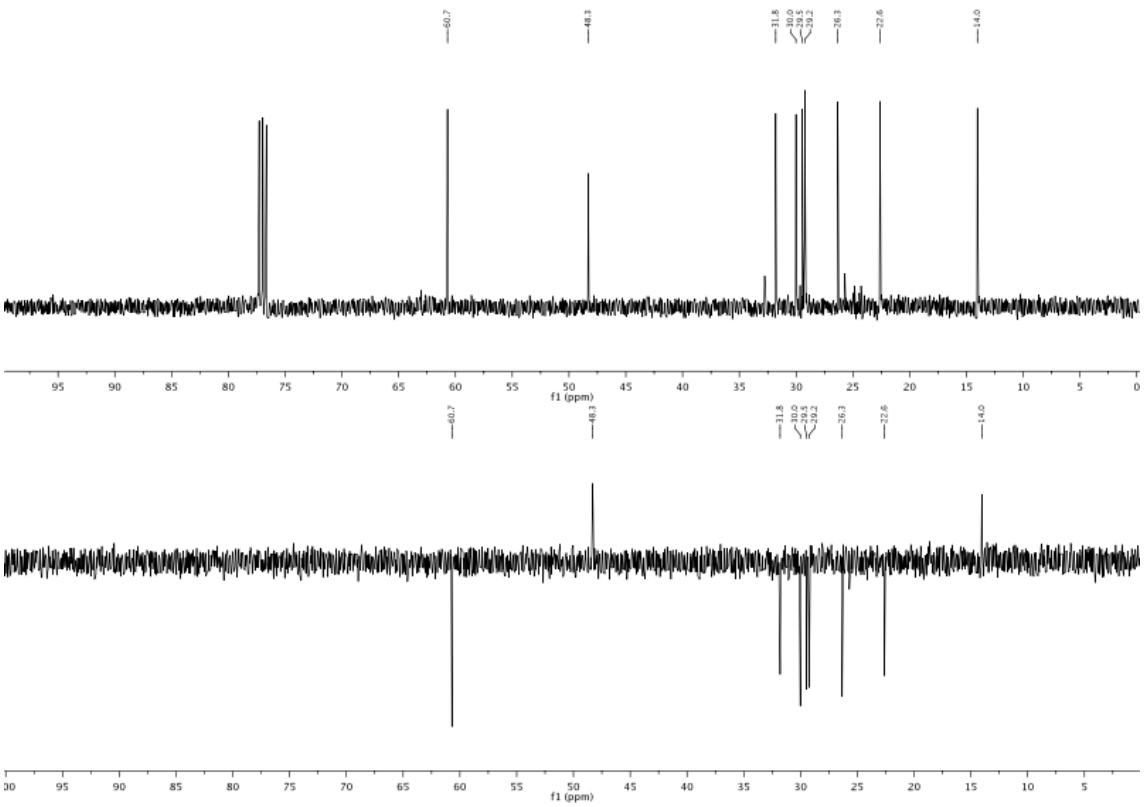


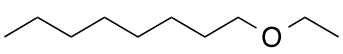




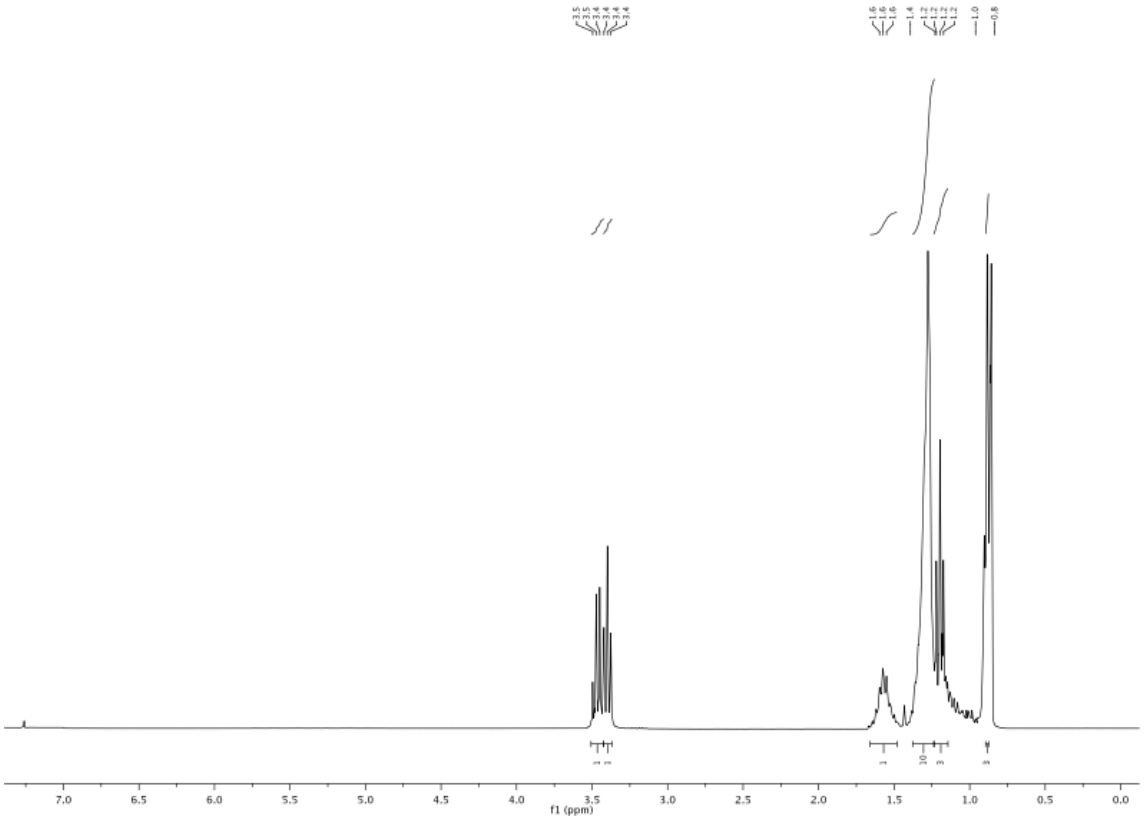
4a$_2$

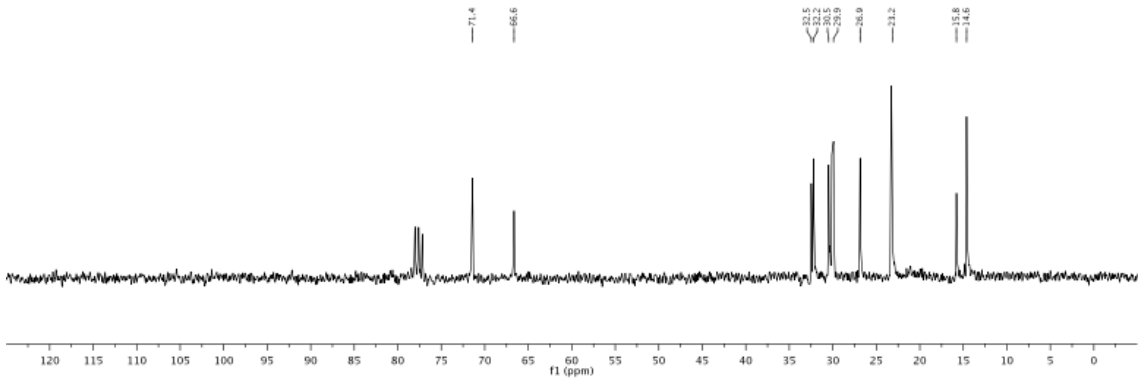


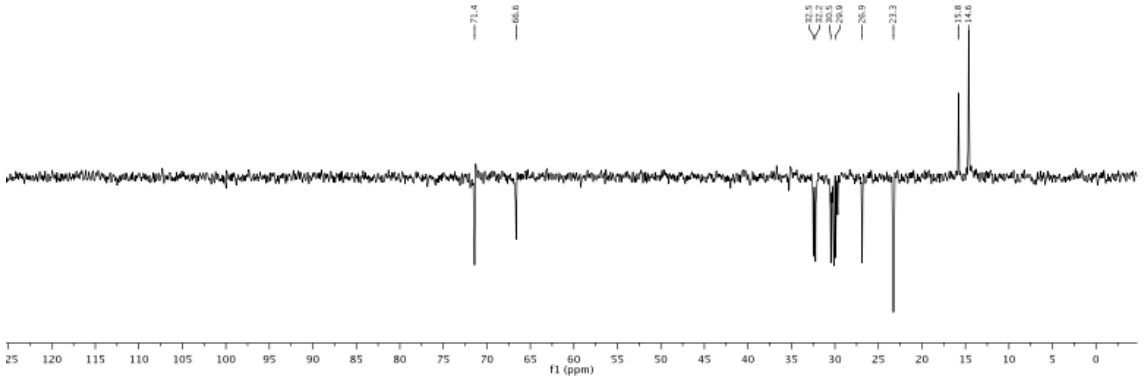


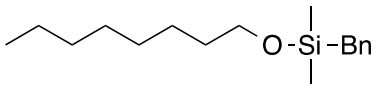


4a$_3$

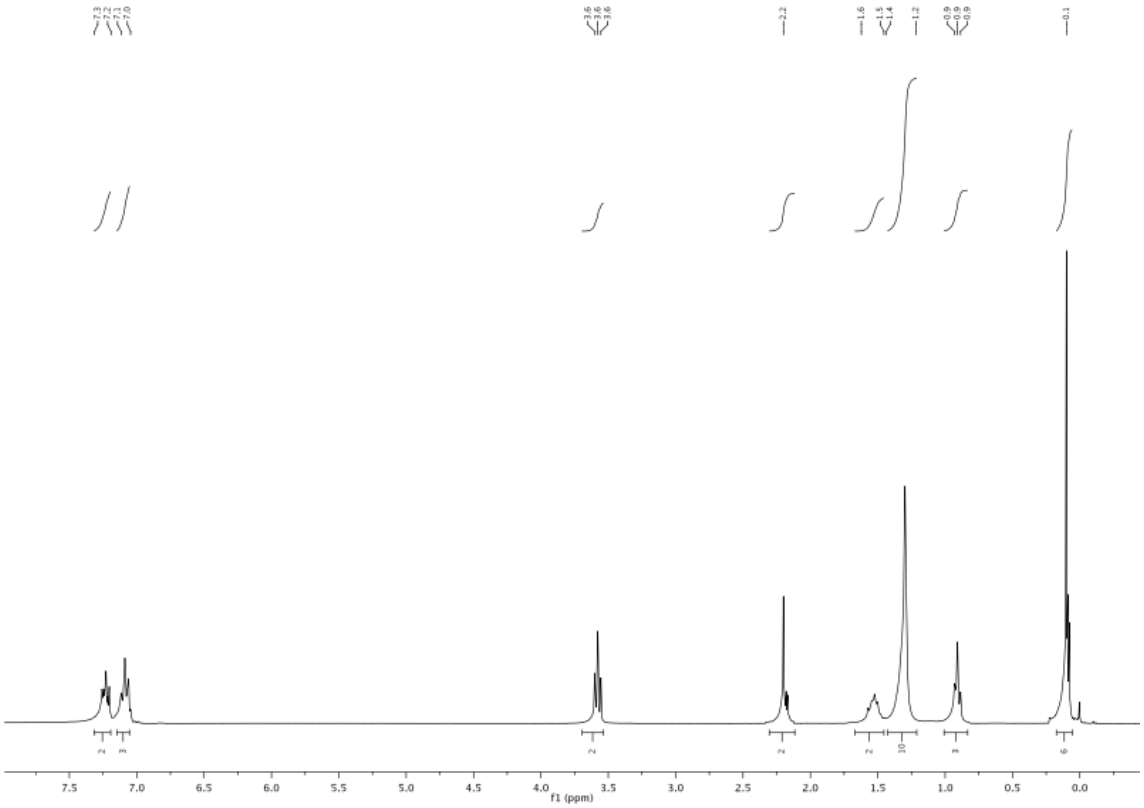


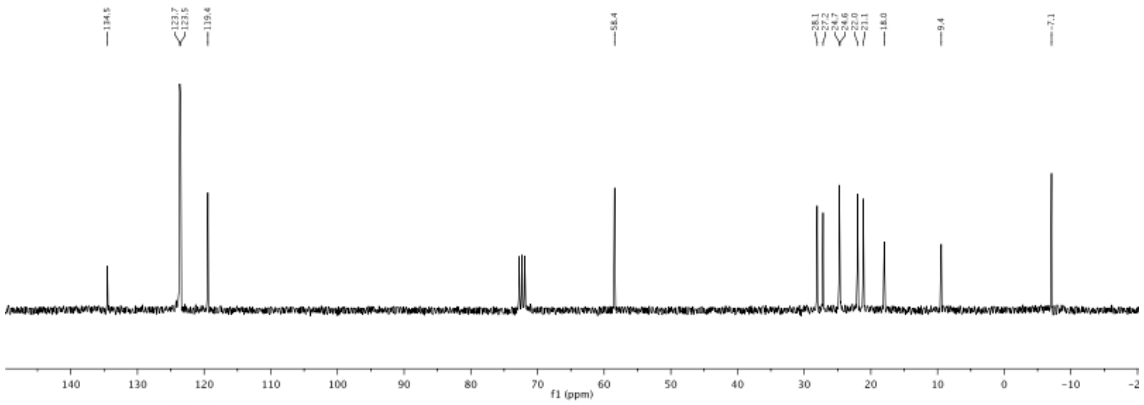


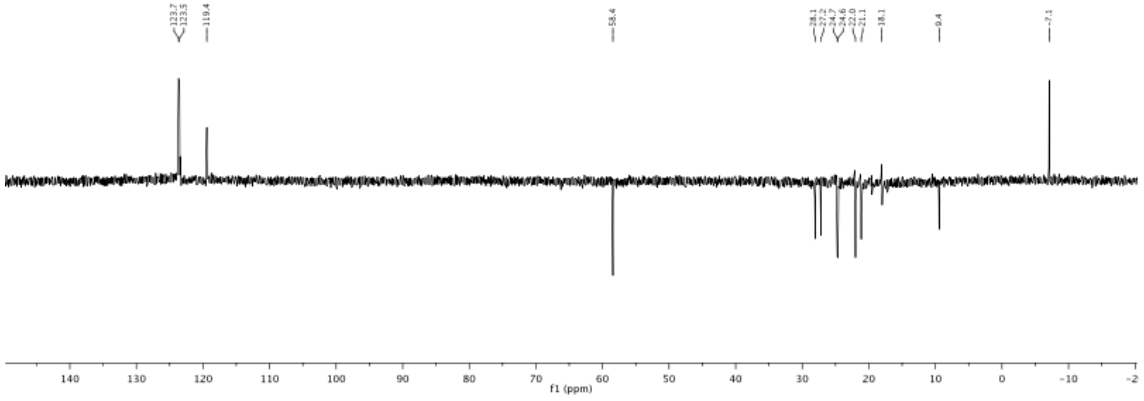


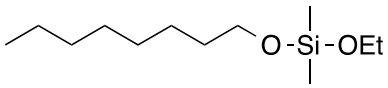


2a$_2$

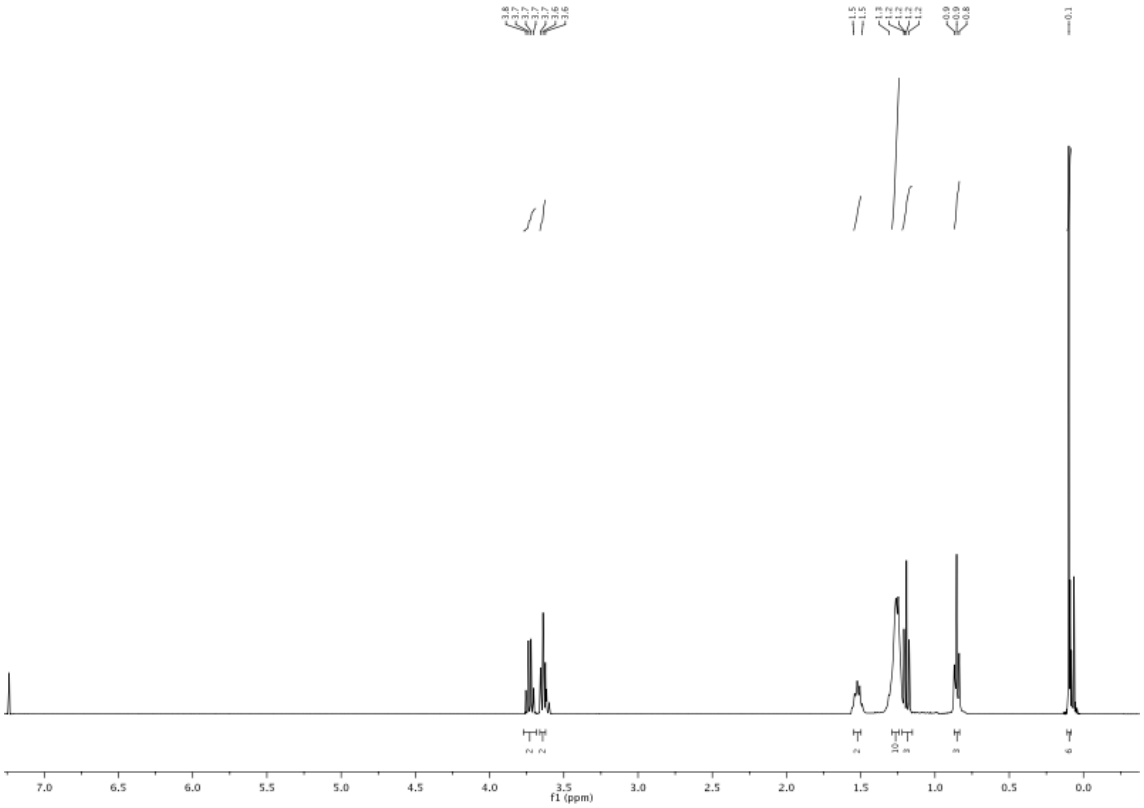


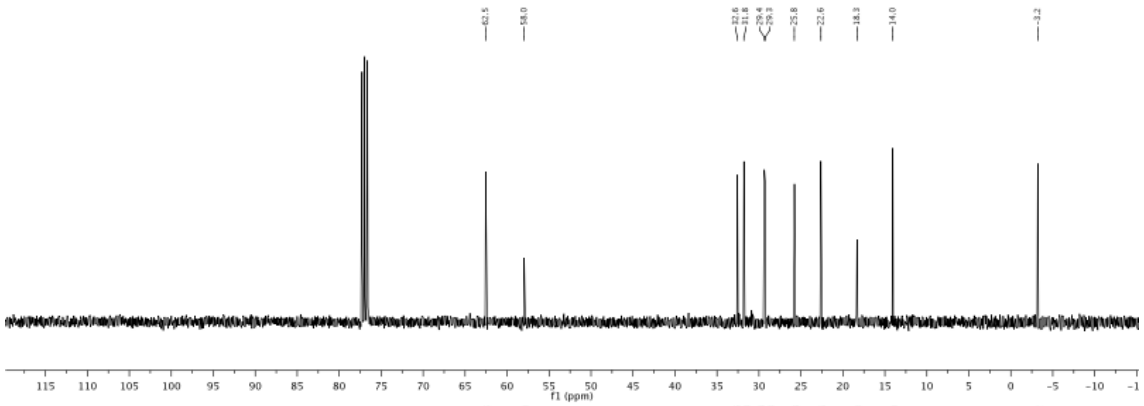


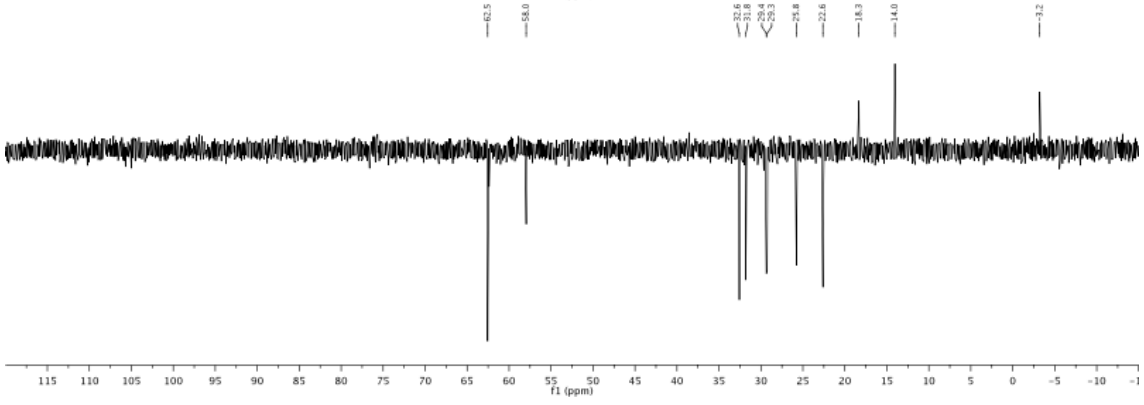


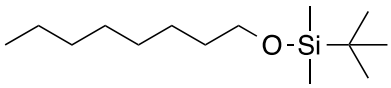


2a$_3$

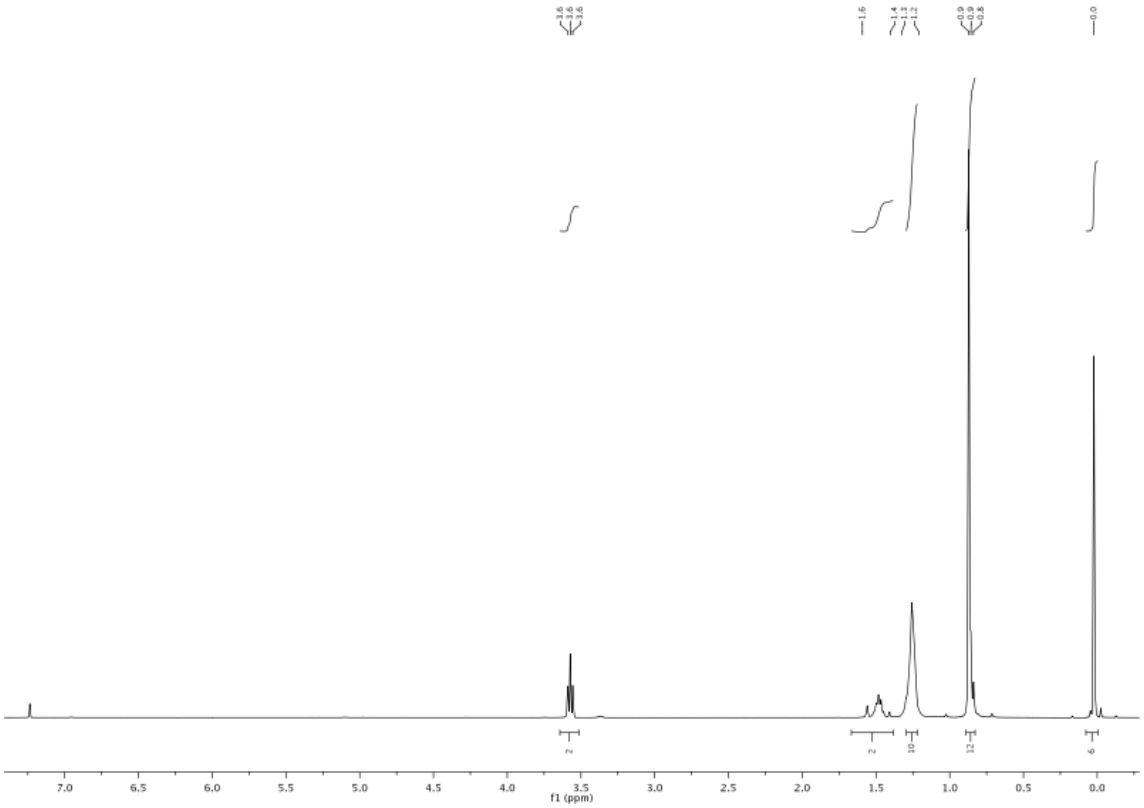


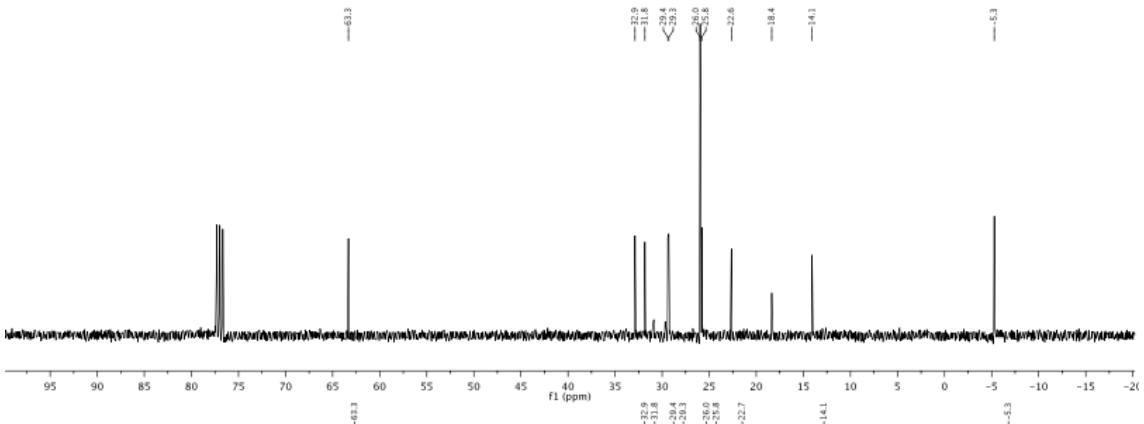


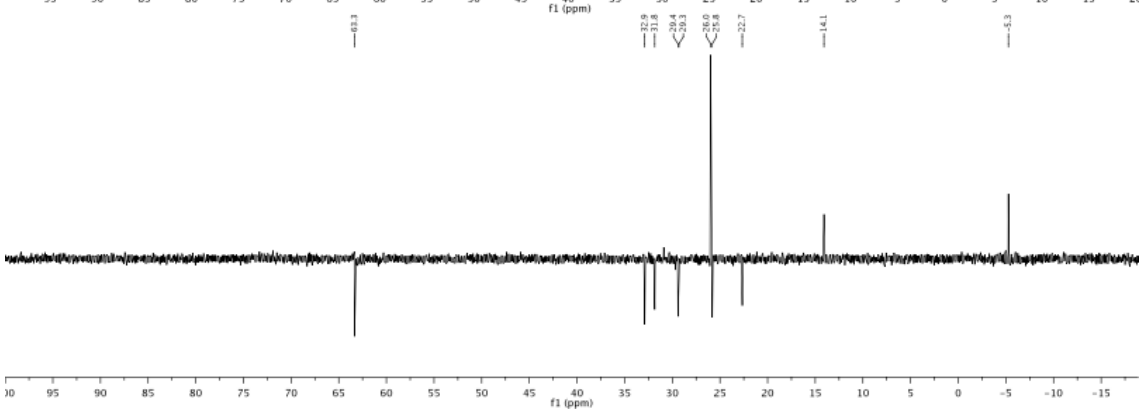


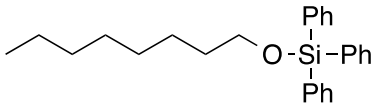


2a$_4$

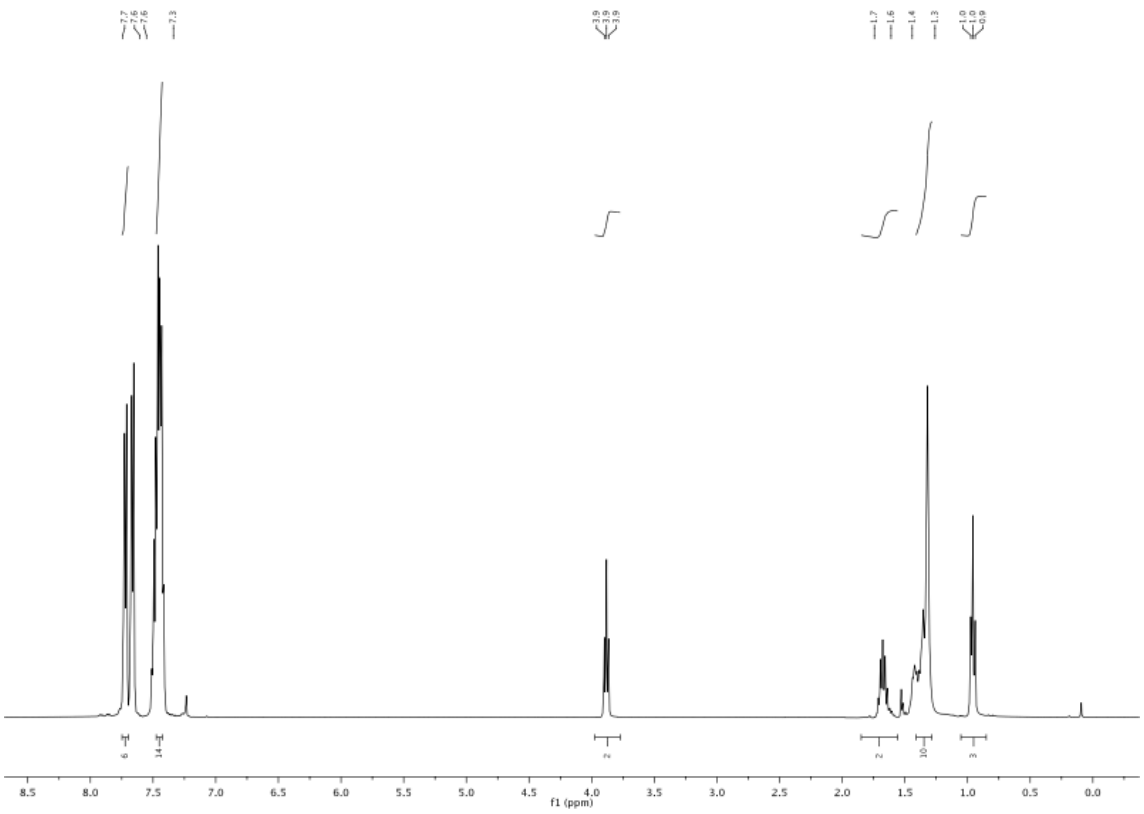


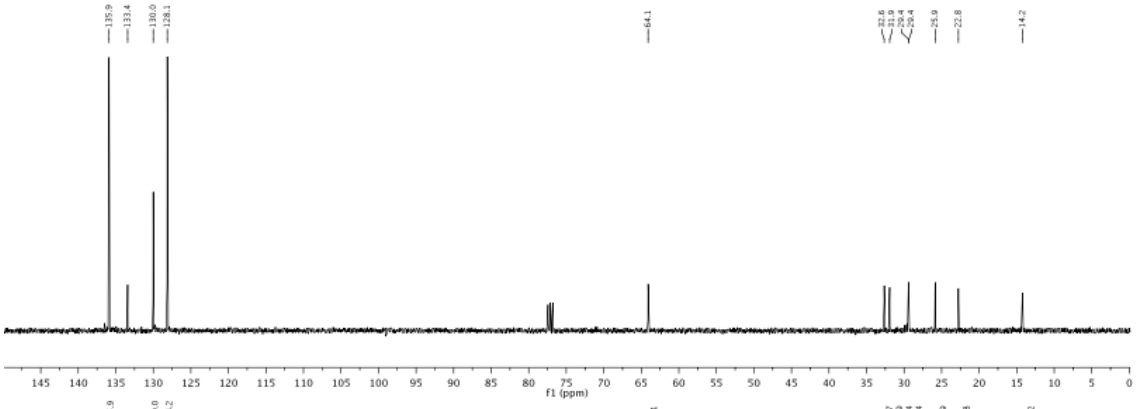


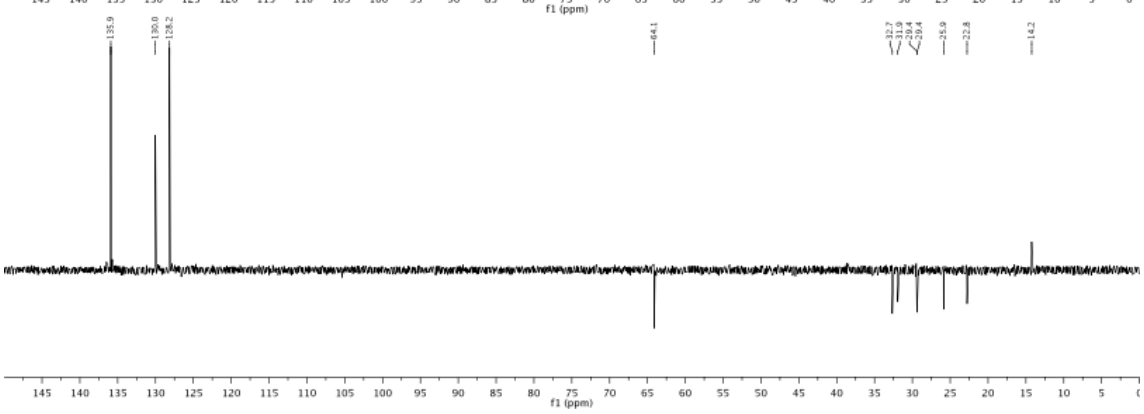


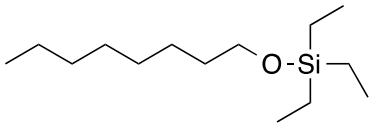

Ph
O-Si-Ph
Ph

2a$_5$

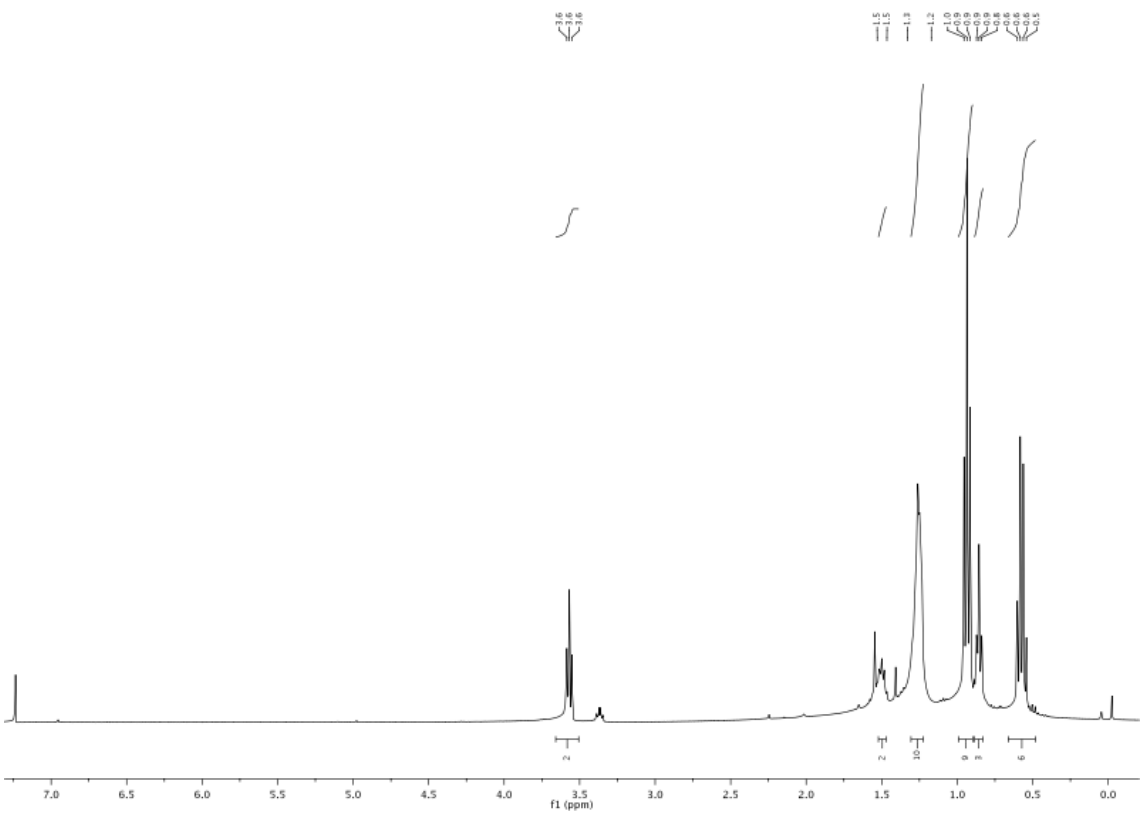

7.7
7.6
7.6
7.3
3.9
3.9
3.9
1.7
1.6
1.4
1.3
1.0
1.0
0.9
6
14
2
2
10
3
f1 (ppm)

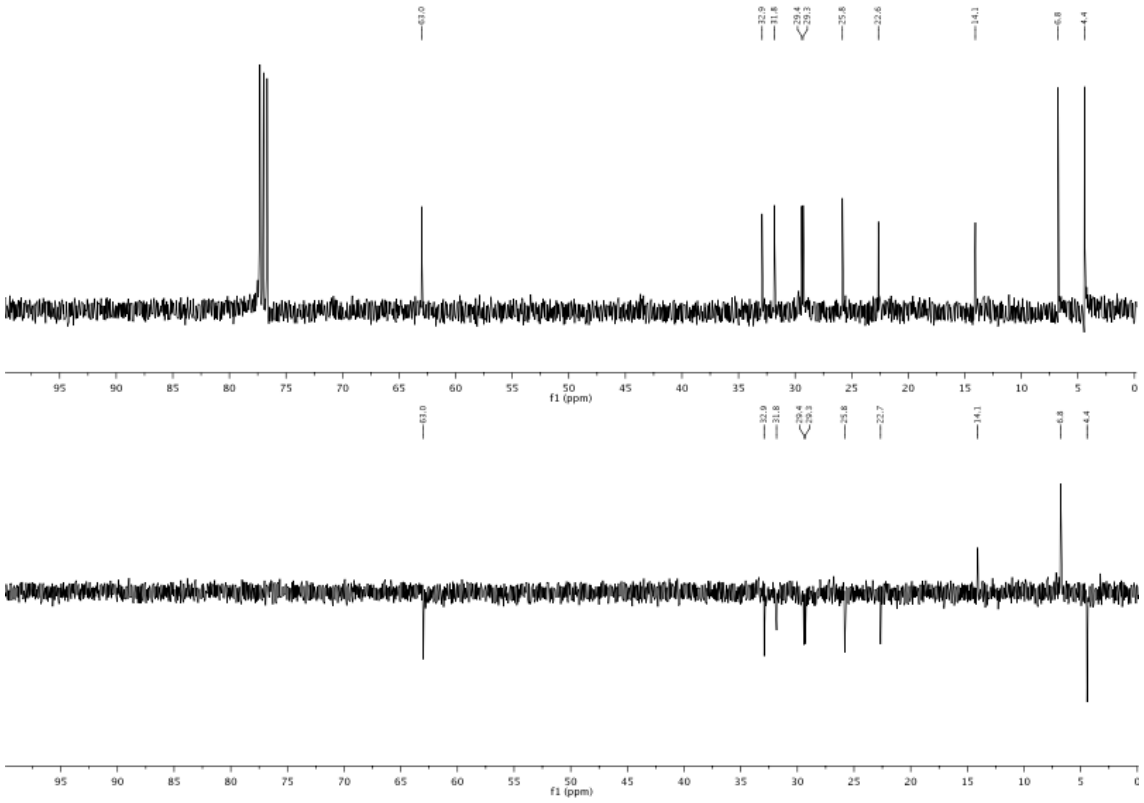

135.9
133.4
130.0
128.1
64.1
32.6
31.9
29.4
29.4
25.9
22.8
14.2
f1 (ppm)

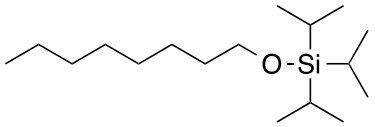

135.9
130.0
128.2
64.1
32.7
31.9
29.4
29.4
25.9
22.8
14.2
f1 (ppm)



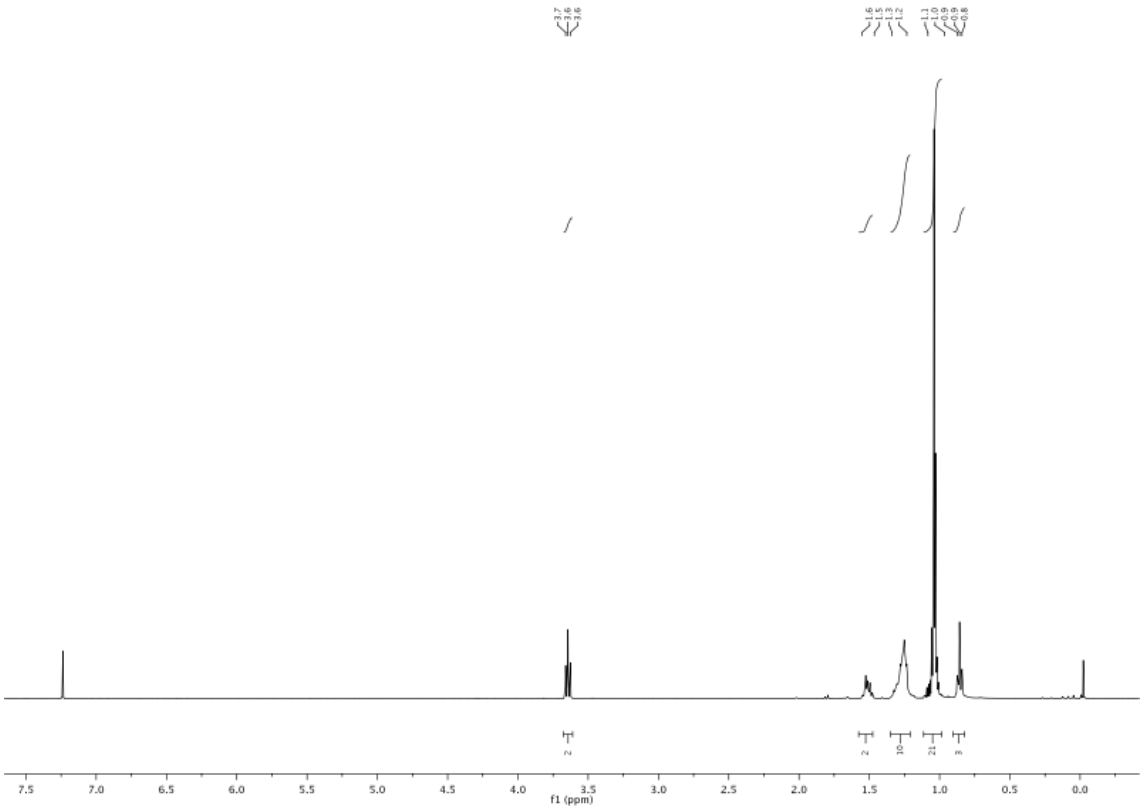
2a$_6$

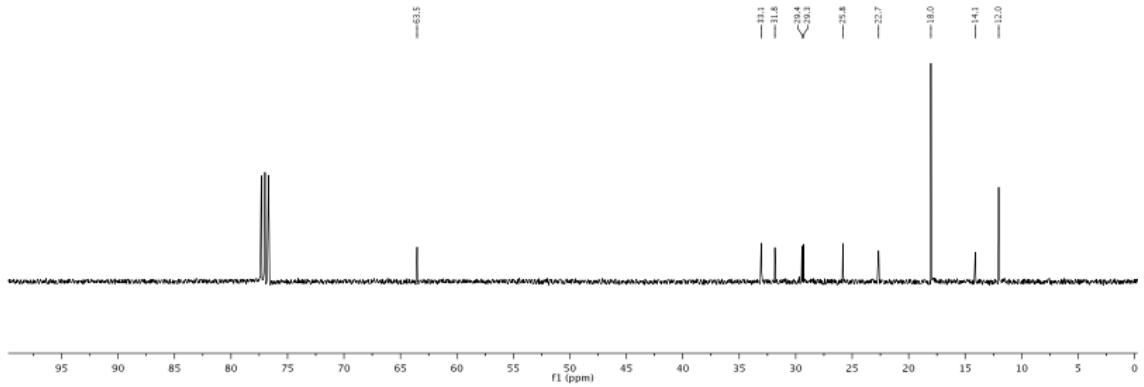


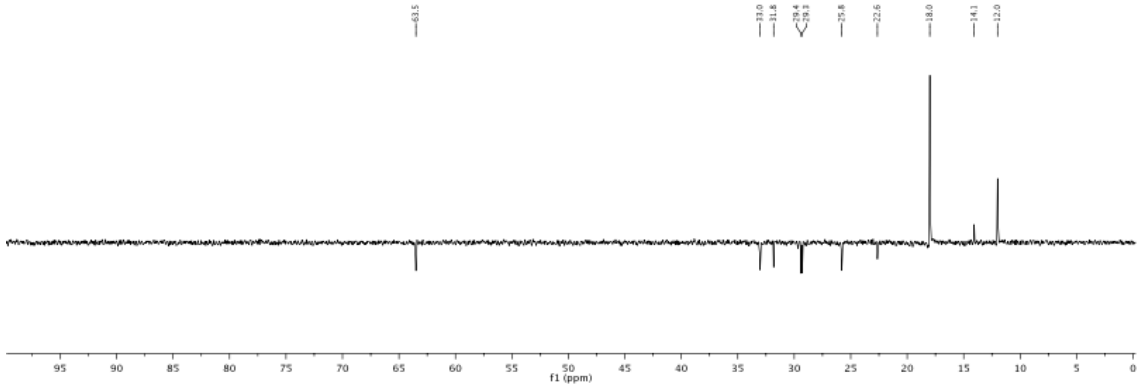


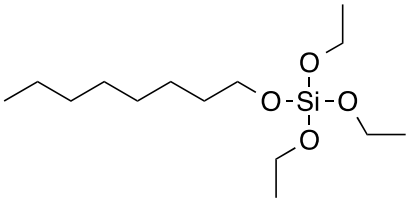


2a$_7$

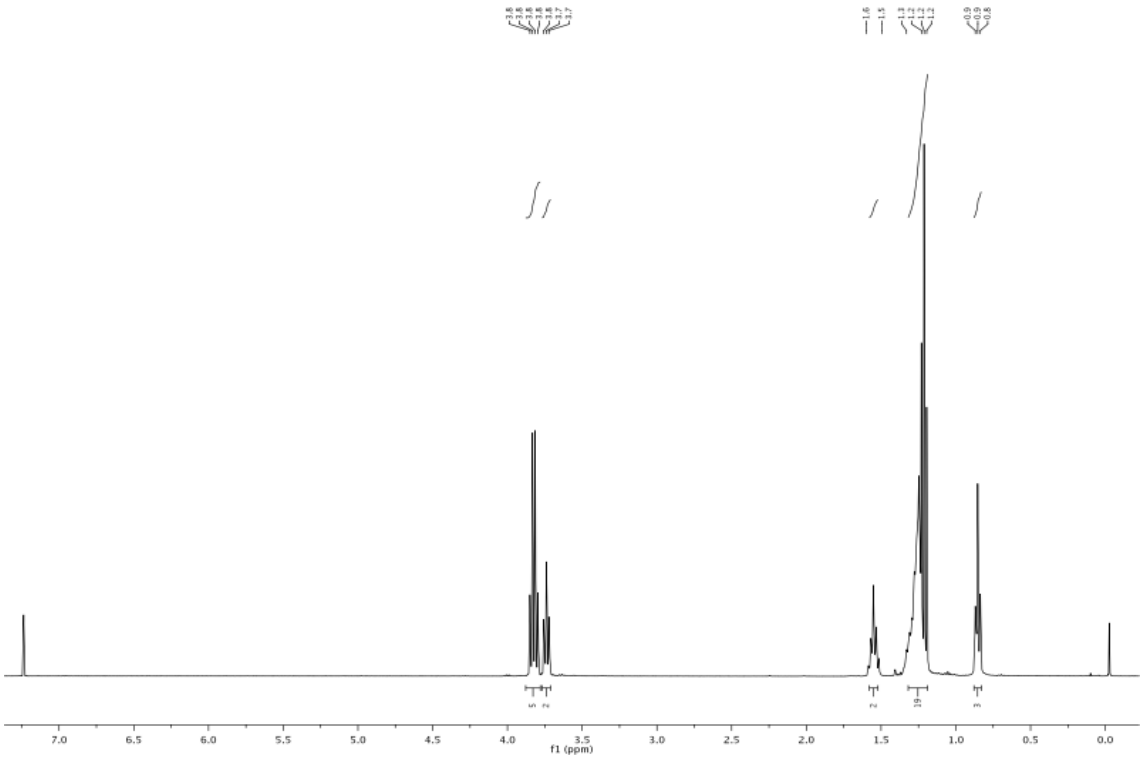


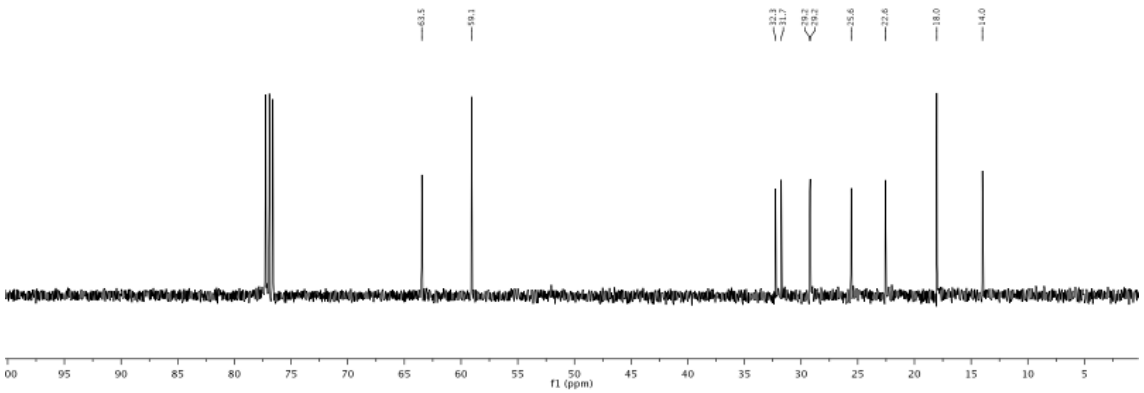


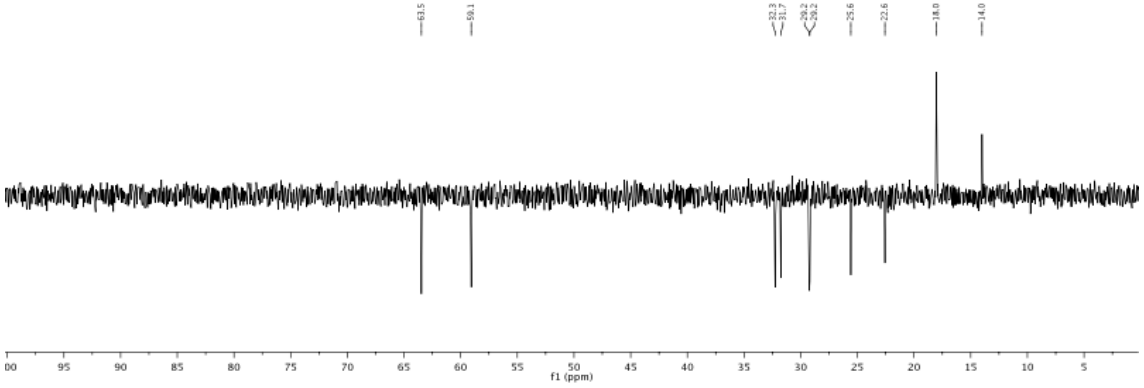


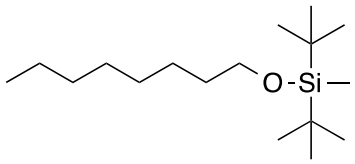


2a$_8$

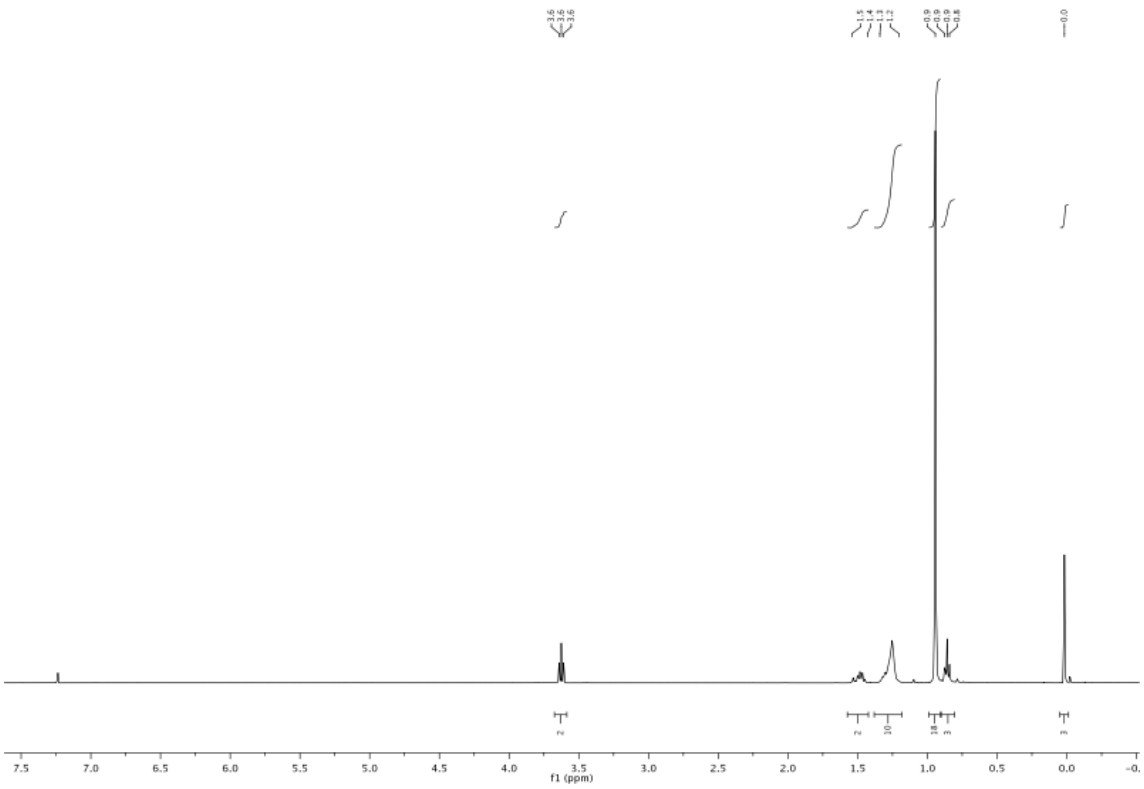


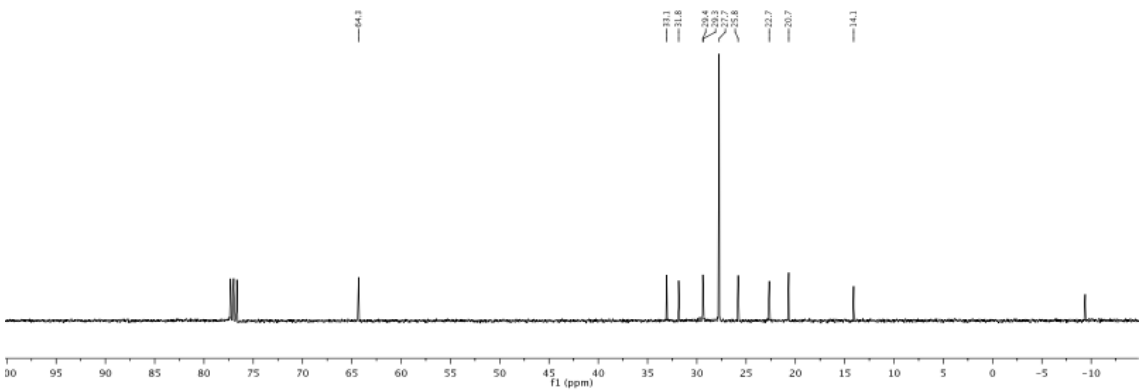


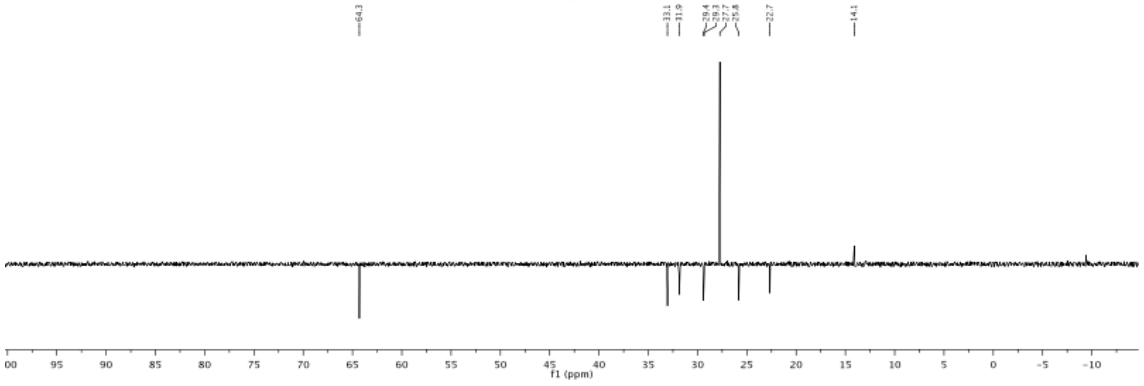


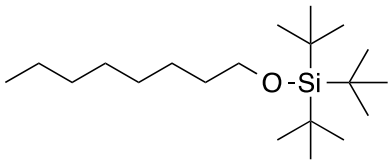


2a$_9$

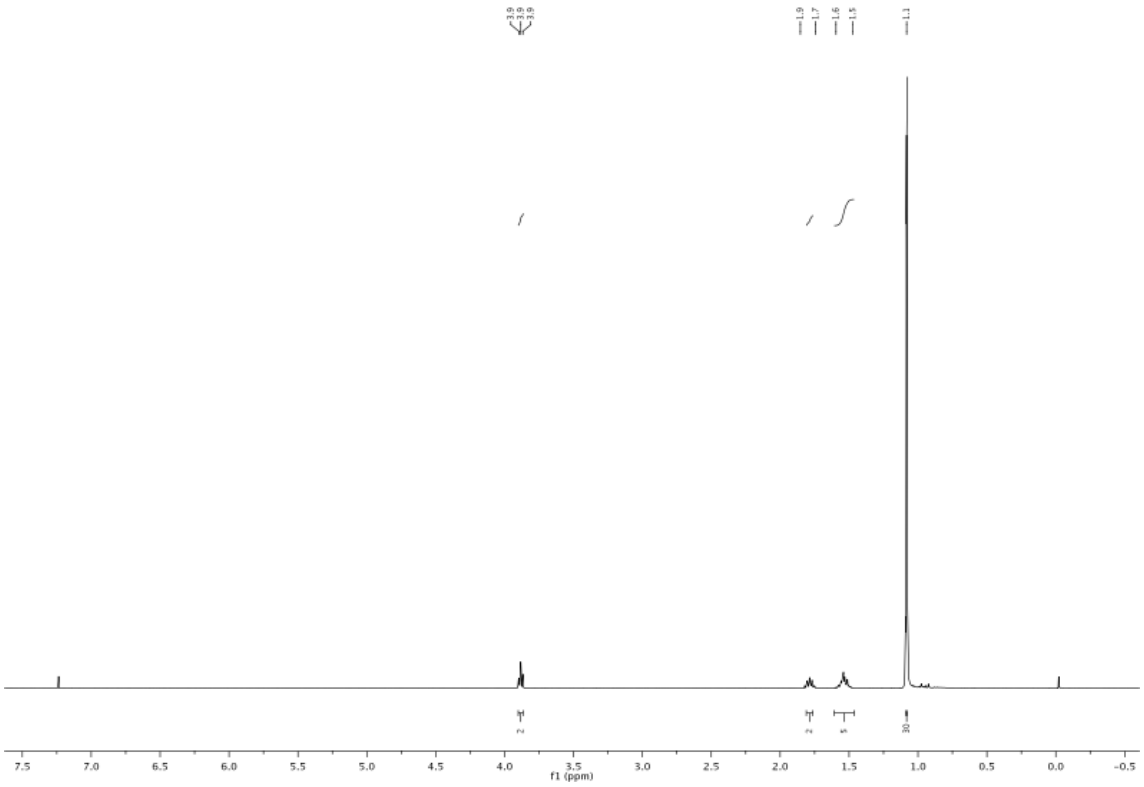


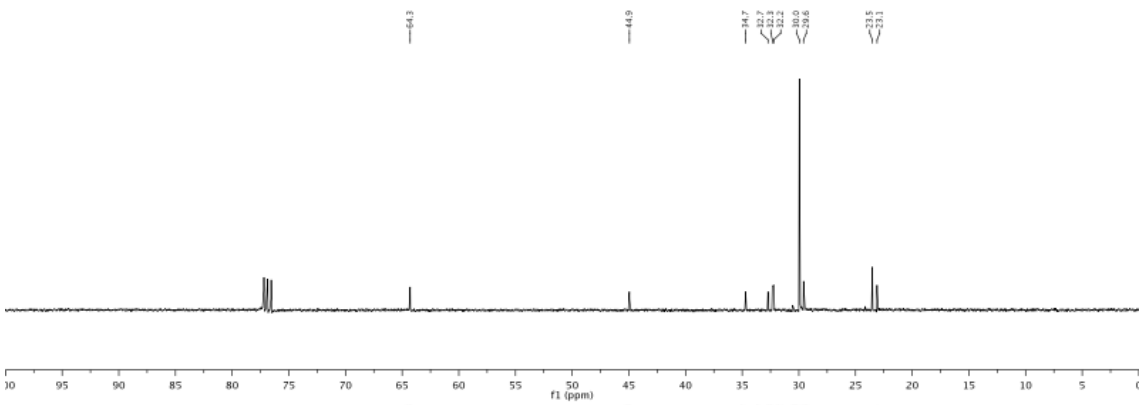


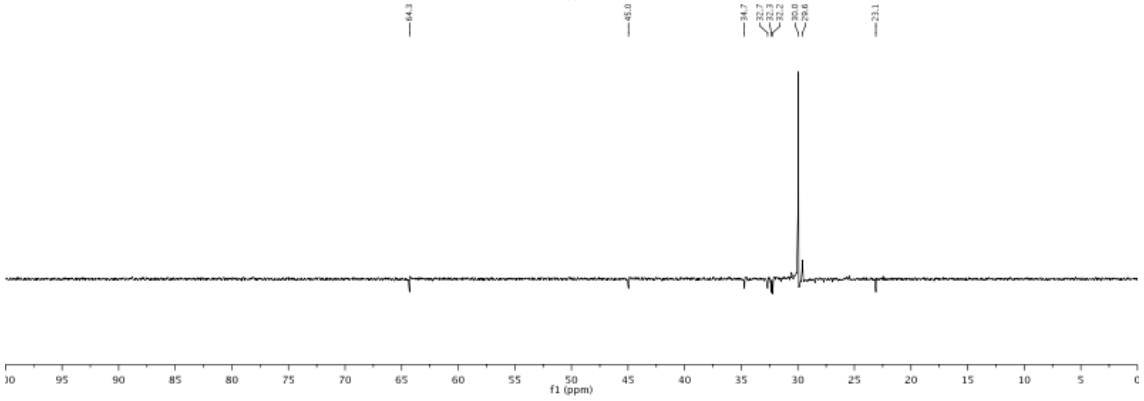


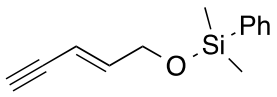


2a$_{10}$

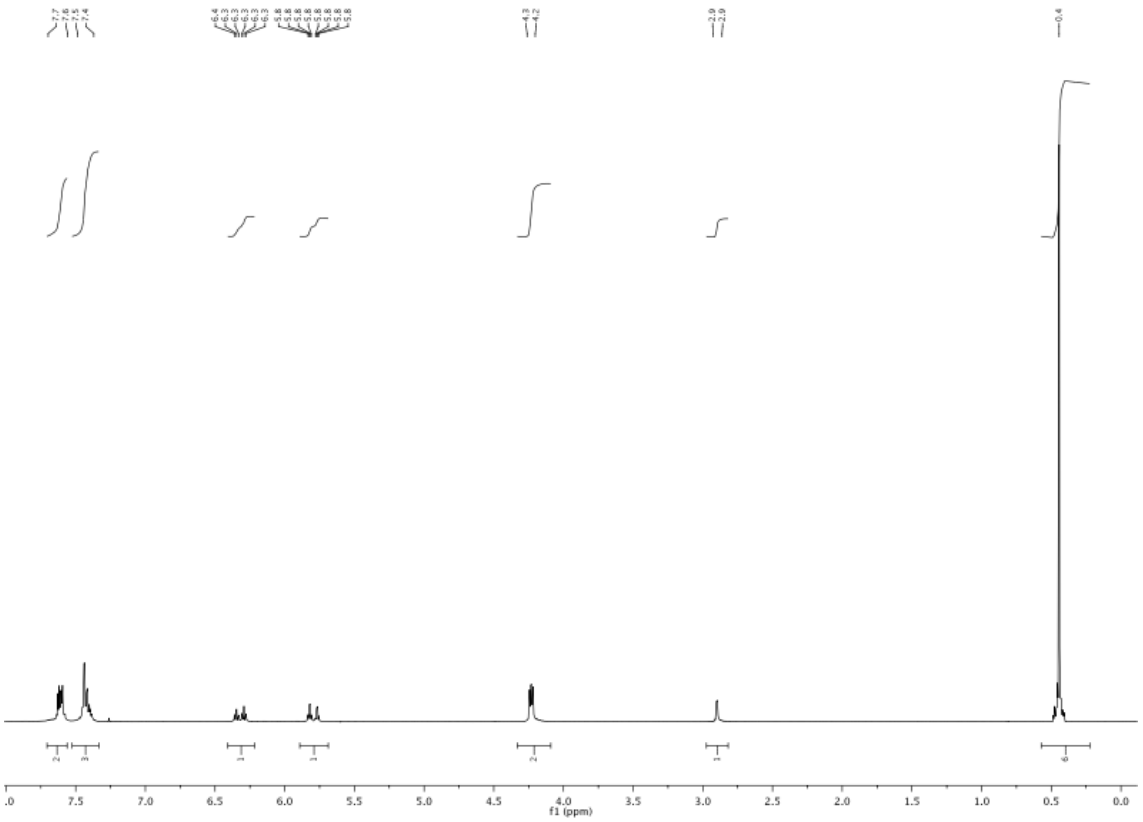


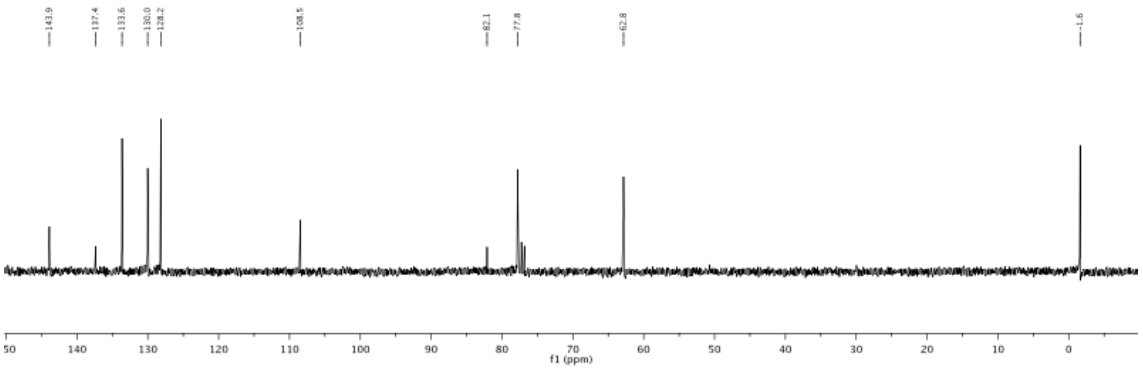


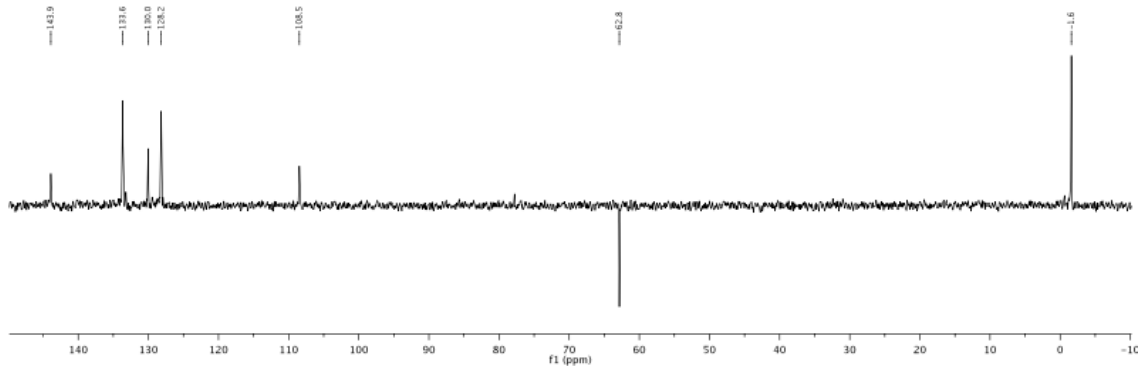


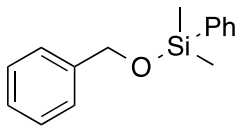


2b$_1$

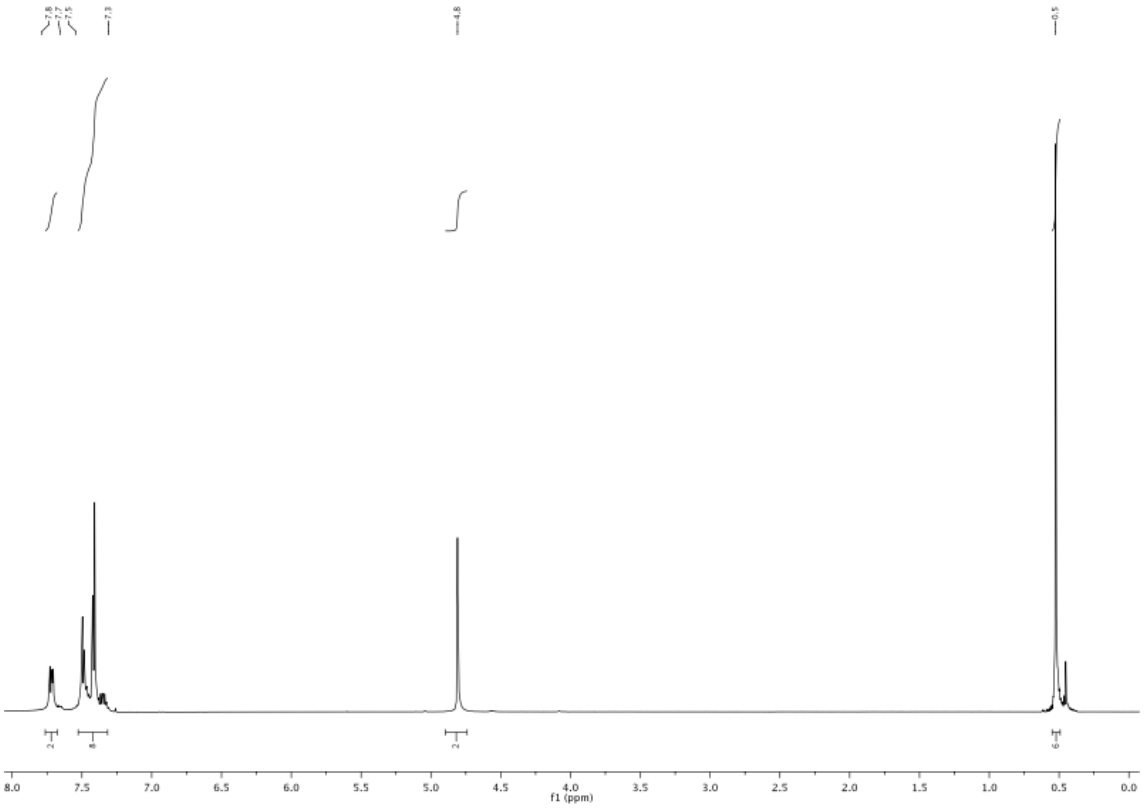


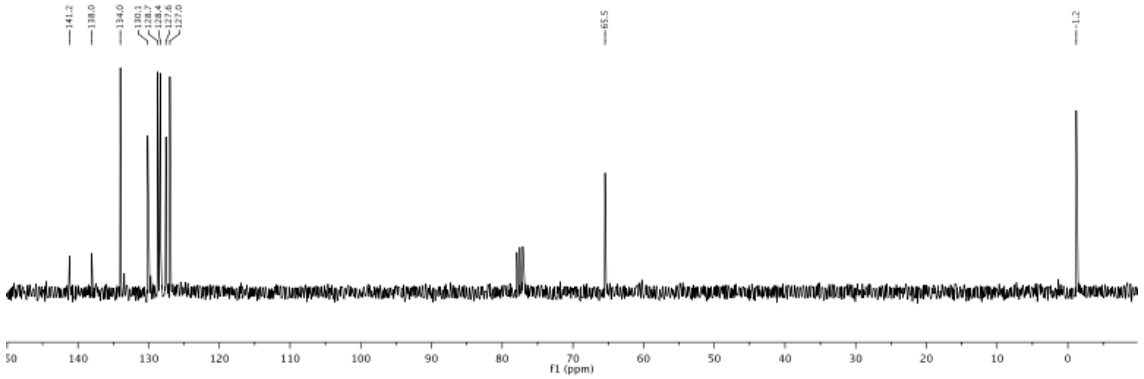


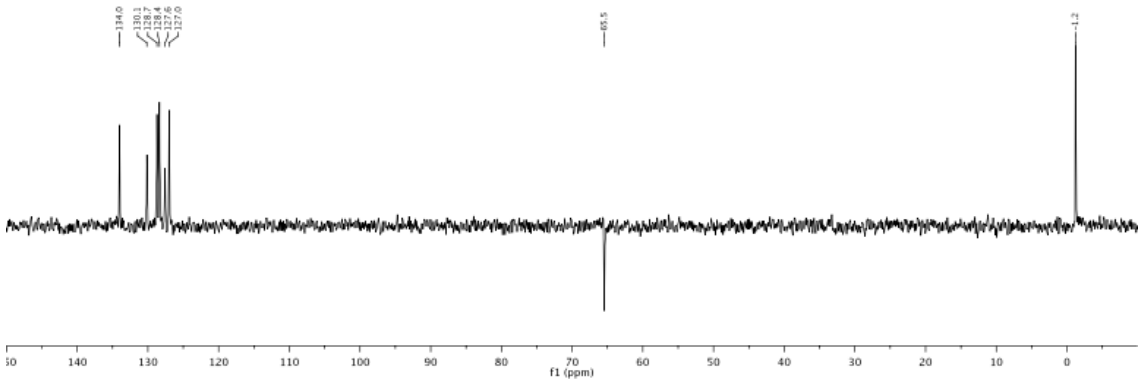


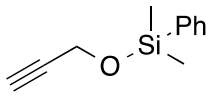

Ph
Si
O

2c$_1$

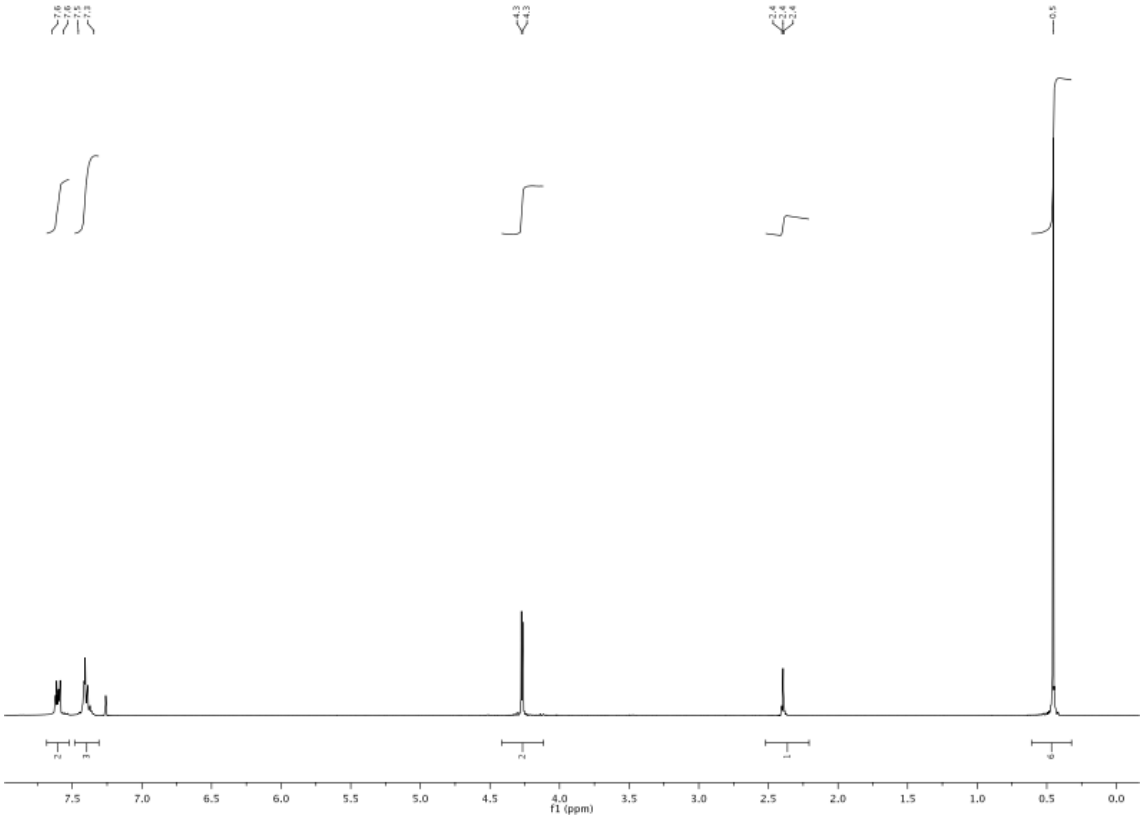

7.8
7.7
7.5
7.3
4.8
0.5
2
8
2
6
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)

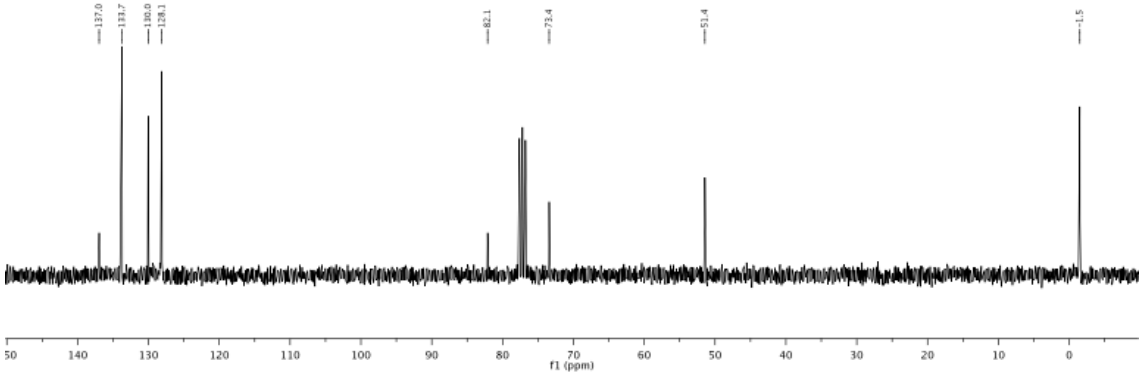

141.2
138.0
134.0
130.1
128.7
128.4
127.6
127.0
65.5
1.2
50
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

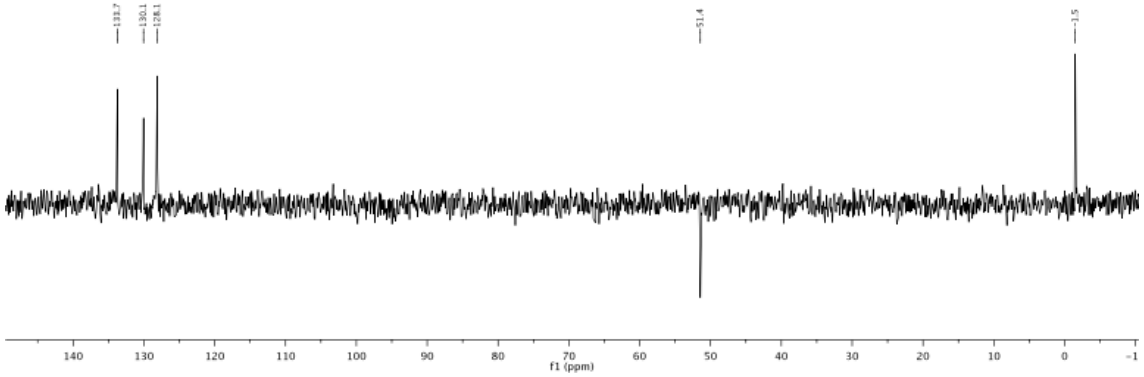

134.0
130.1
128.7
128.4
127.6
127.0
65.5
1.2
50
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

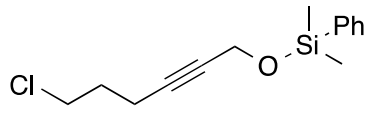

Ph
Si
O

2d$_1$

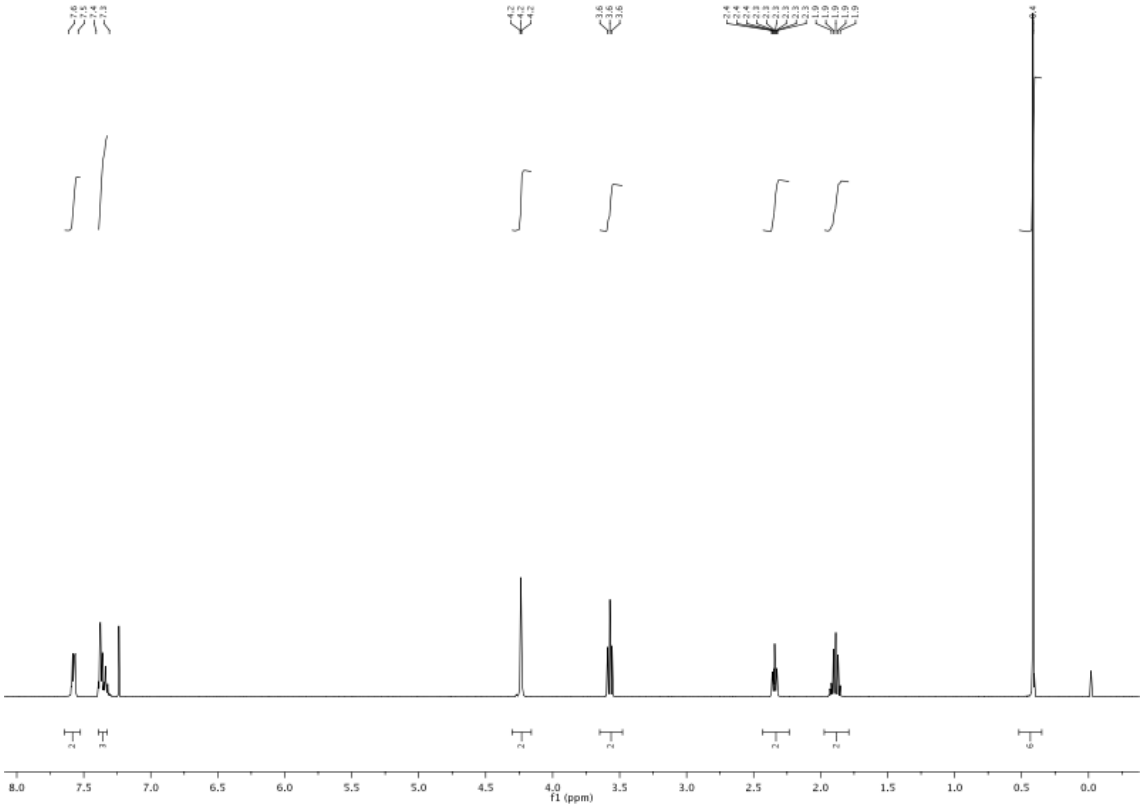

7.6
7.6
7.5
7.3
4.3
4.3
2.4
2.4
2.4
0.5
2
3
2
1
6
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)

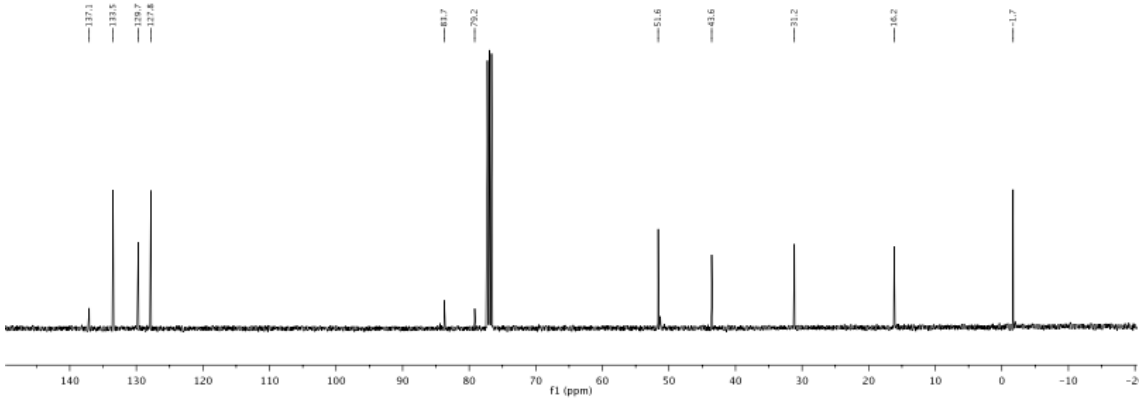

137.0
133.7
130.0
128.1
82.1
73.4
51.4
-1.5
50
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

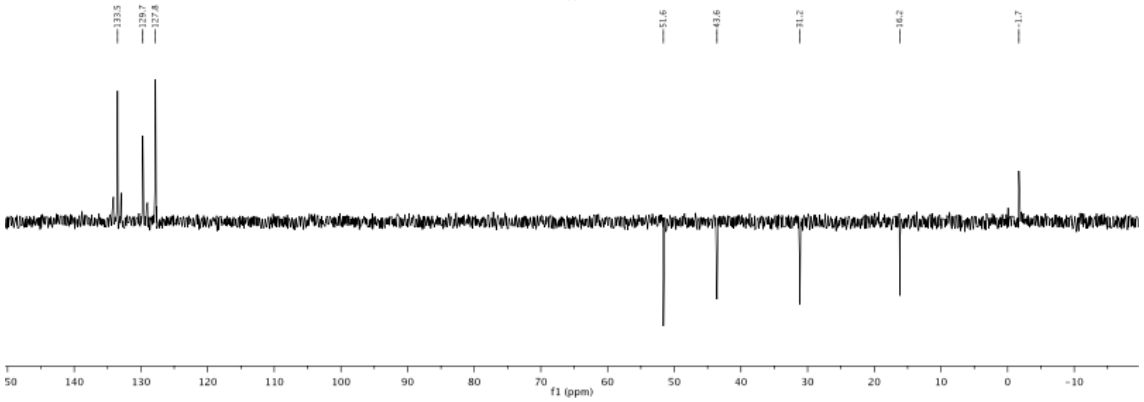

133.7
130.1
128.1
51.4
-1.5
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-1
f1 (ppm)

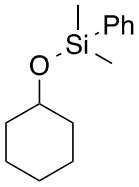


2e$_1$

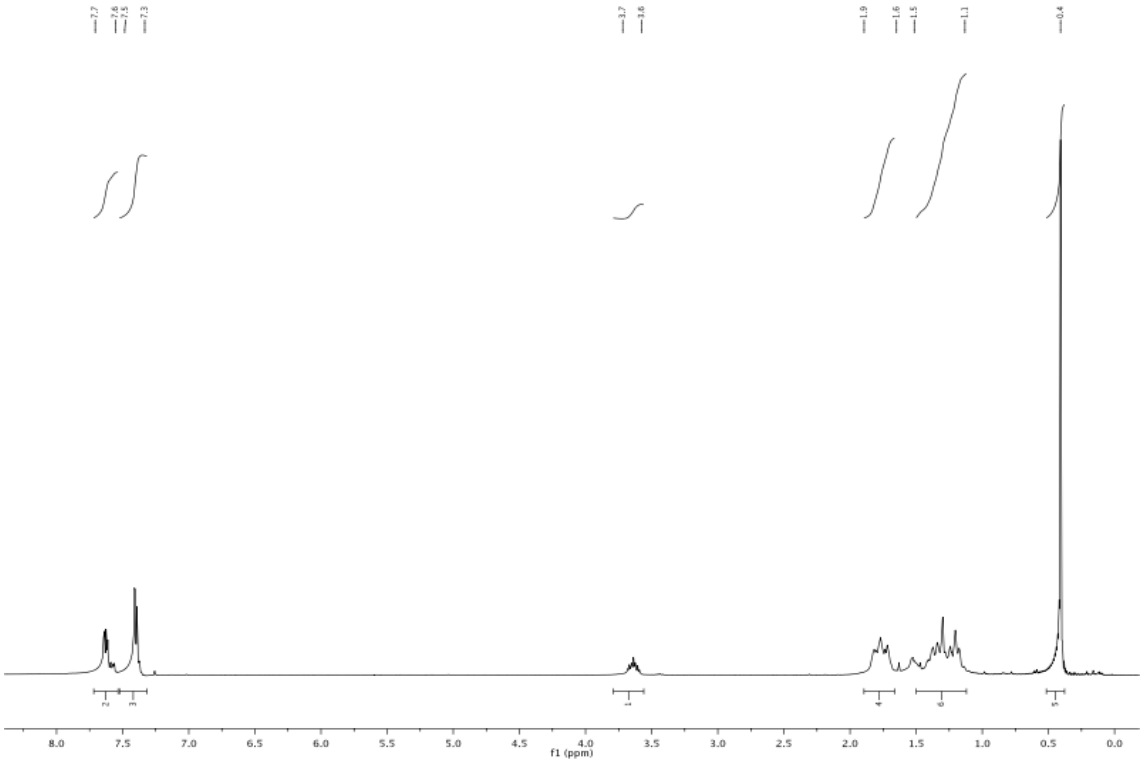


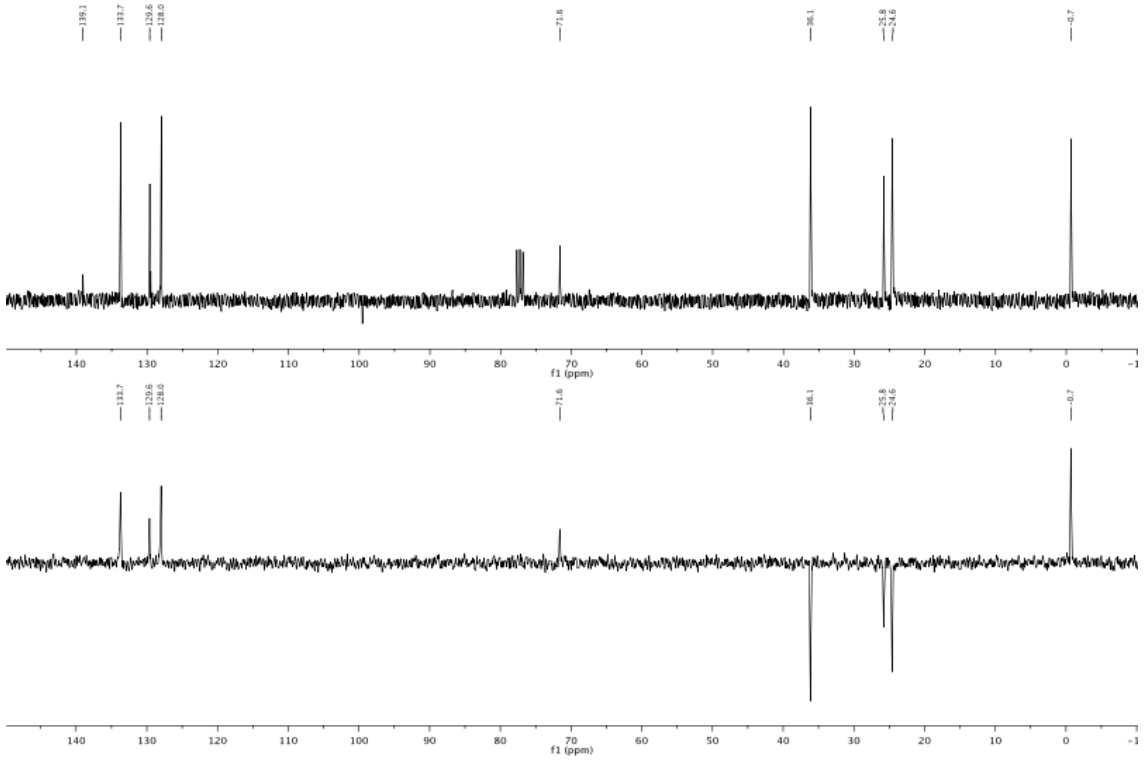


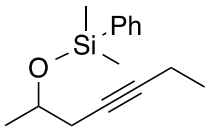



Ph
Si
O

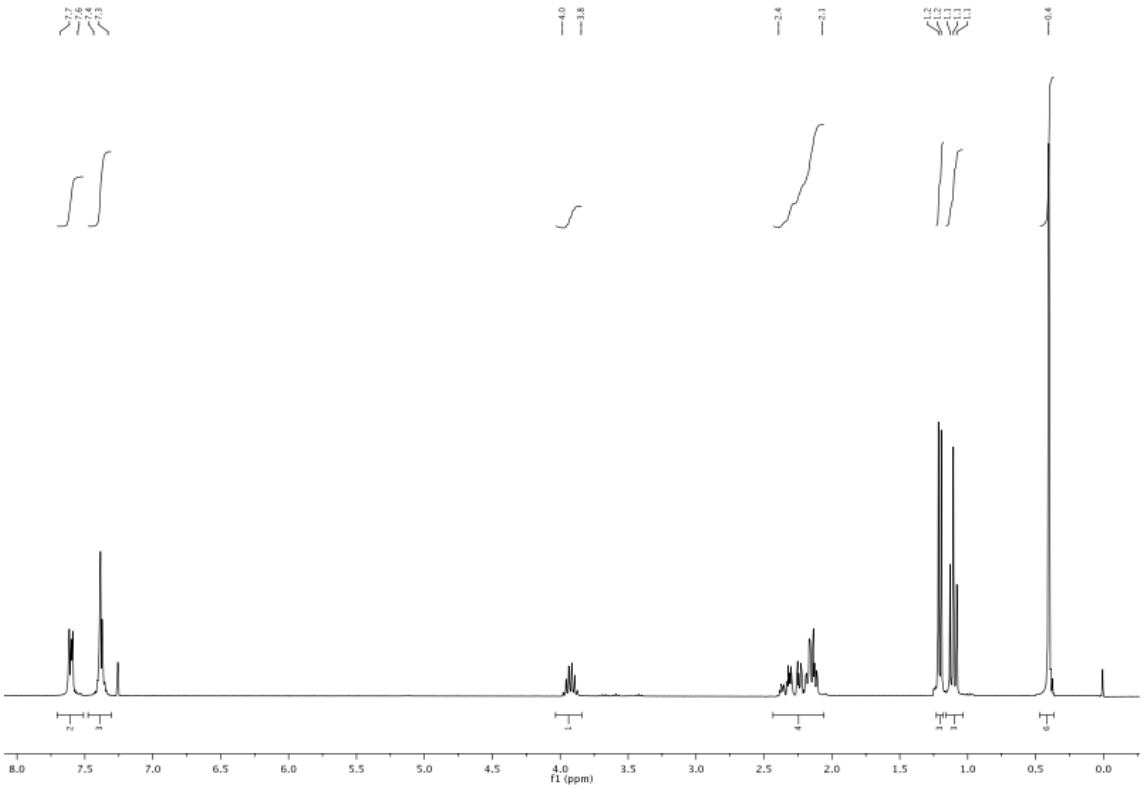
2f$_1$

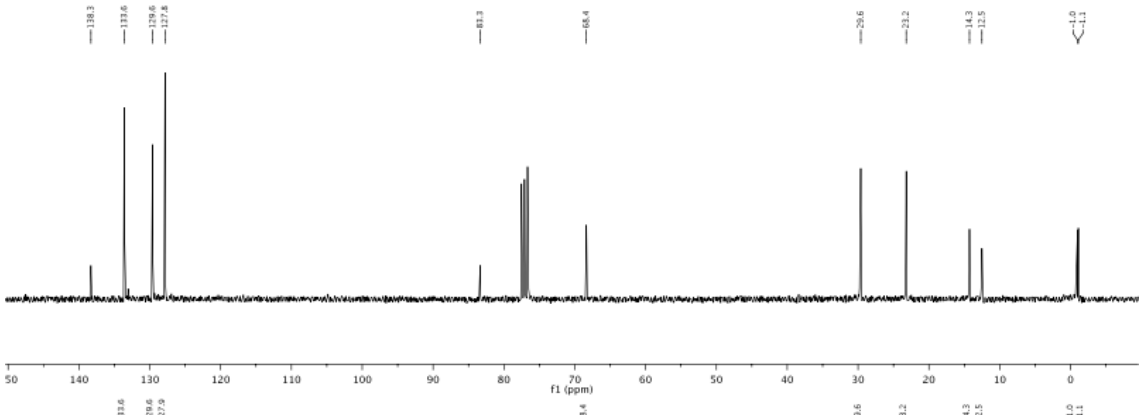

7.7
7.6
7.5
7.3
3.7
3.6
1.9
1.6
1.5
1.1
0.4
f1 (ppm)

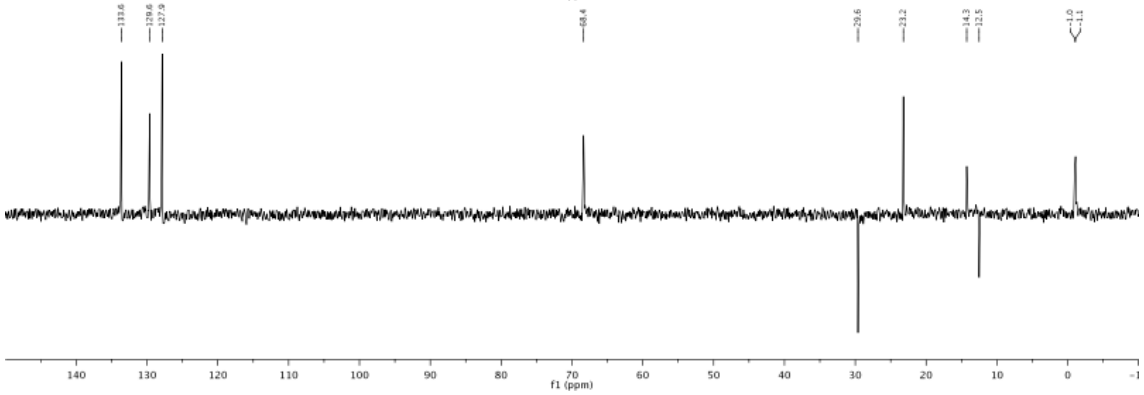

139.1
133.7
129.6
128.0
71.6
36.1
25.8
24.6
0.7
f1 (ppm)

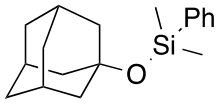

Ph
Si
O

$2g_1$

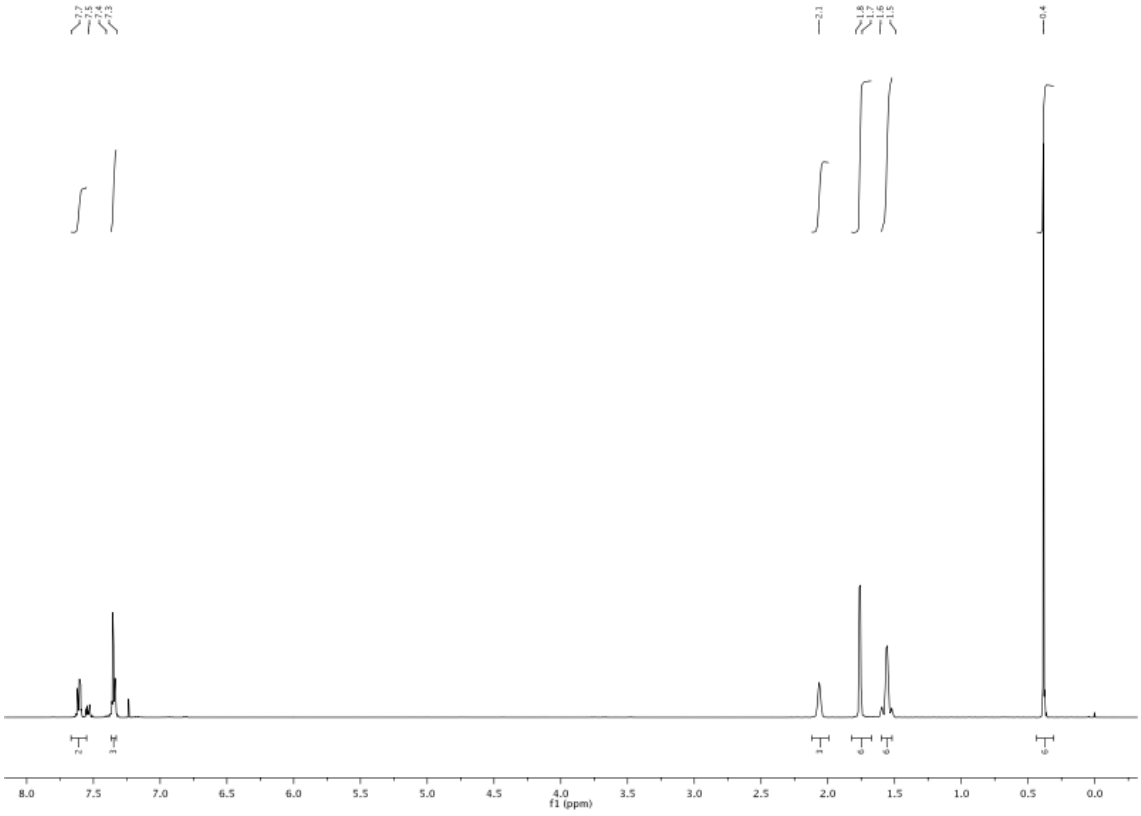

7.7
7.6
7.4
7.3
4.0
3.8
2.4
2.1
1.2
1.2
1.1
1.1
1.1
0.4
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)

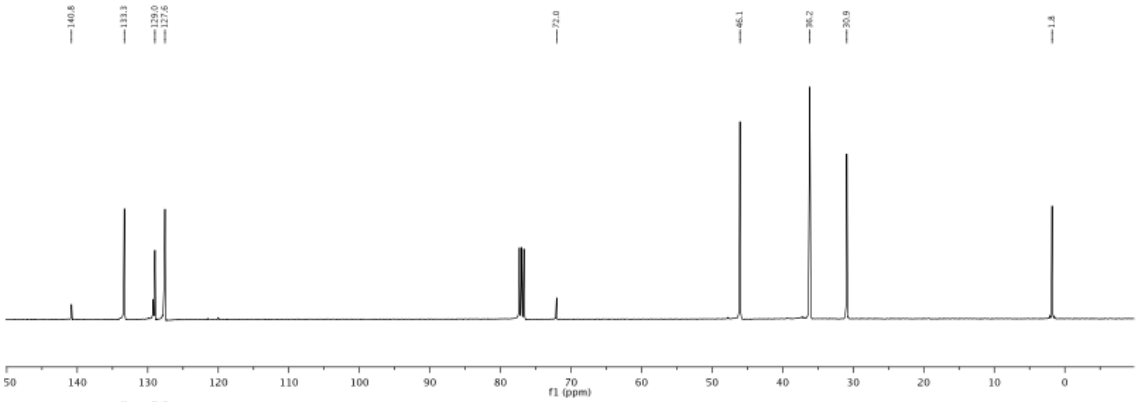

138.3
133.6
129.6
127.8
83.3
68.4
29.6
23.2
14.3
12.5
1.0
-1.1
50
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

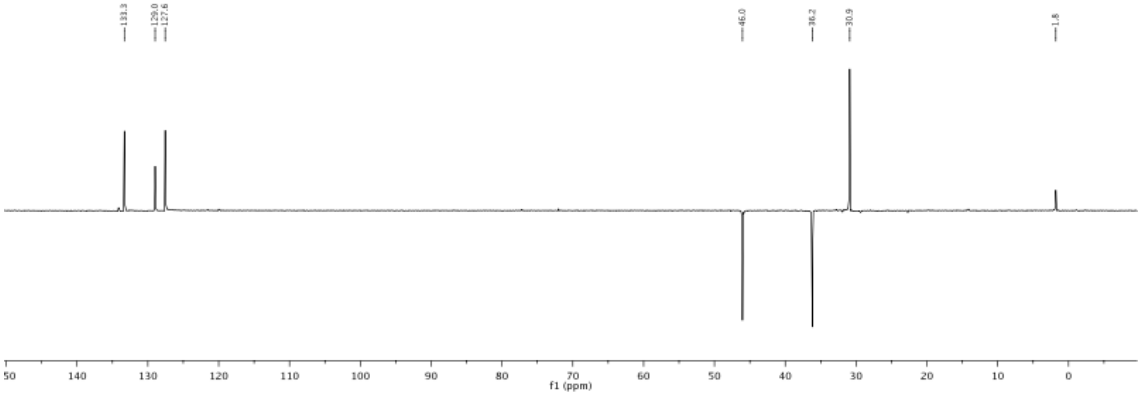

133.6
129.6
127.9
68.4
29.6
23.2
14.3
12.5
1.0
-1.1
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-1
f1 (ppm)

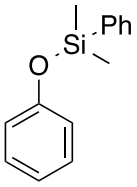


2h$_1$

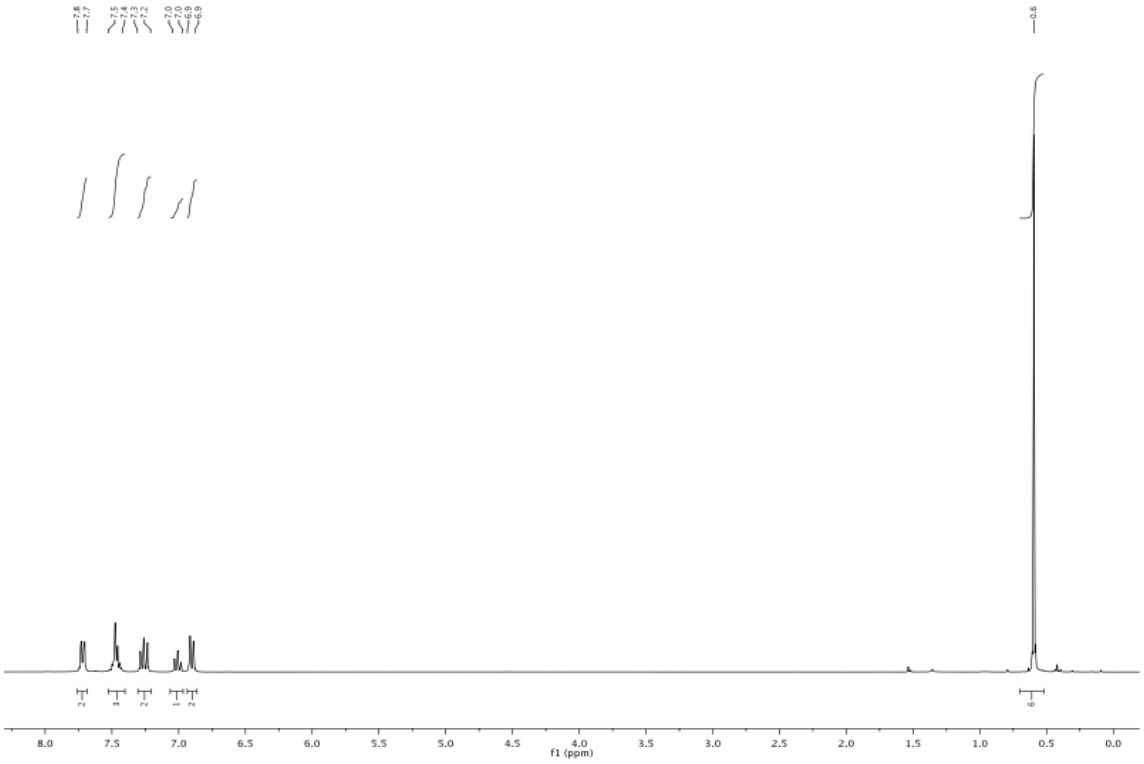


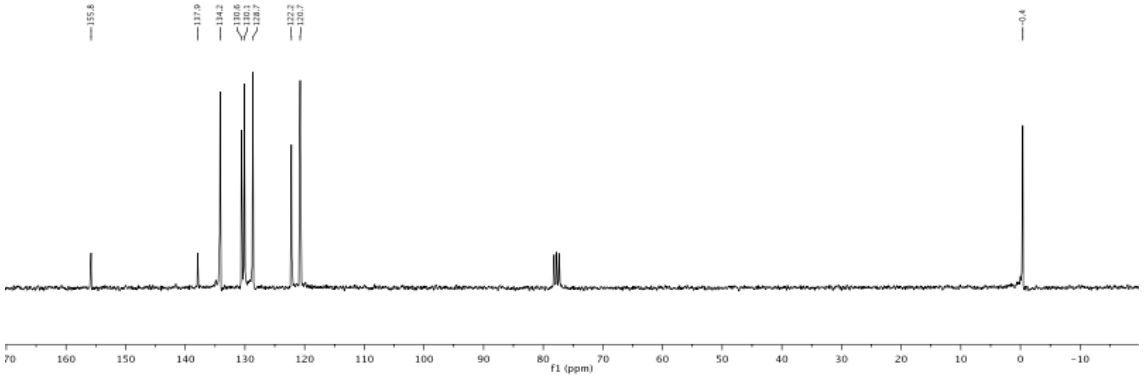


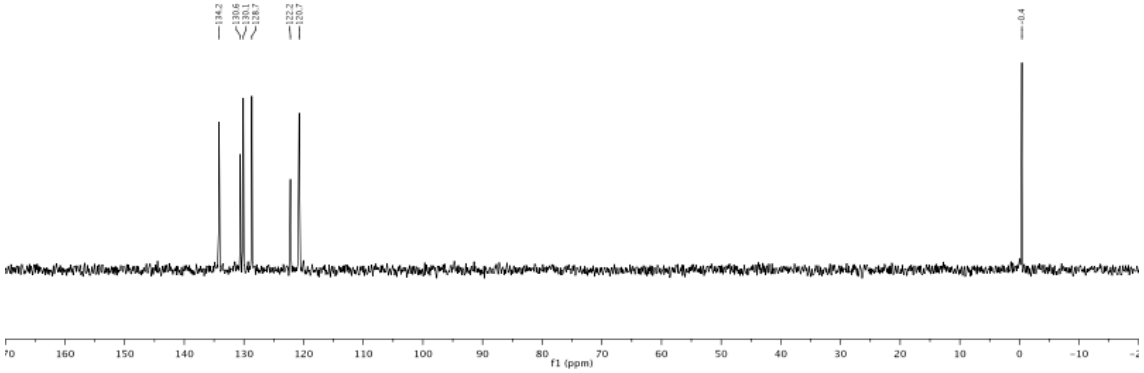


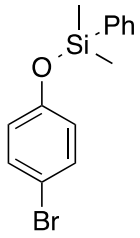


2i$_1$

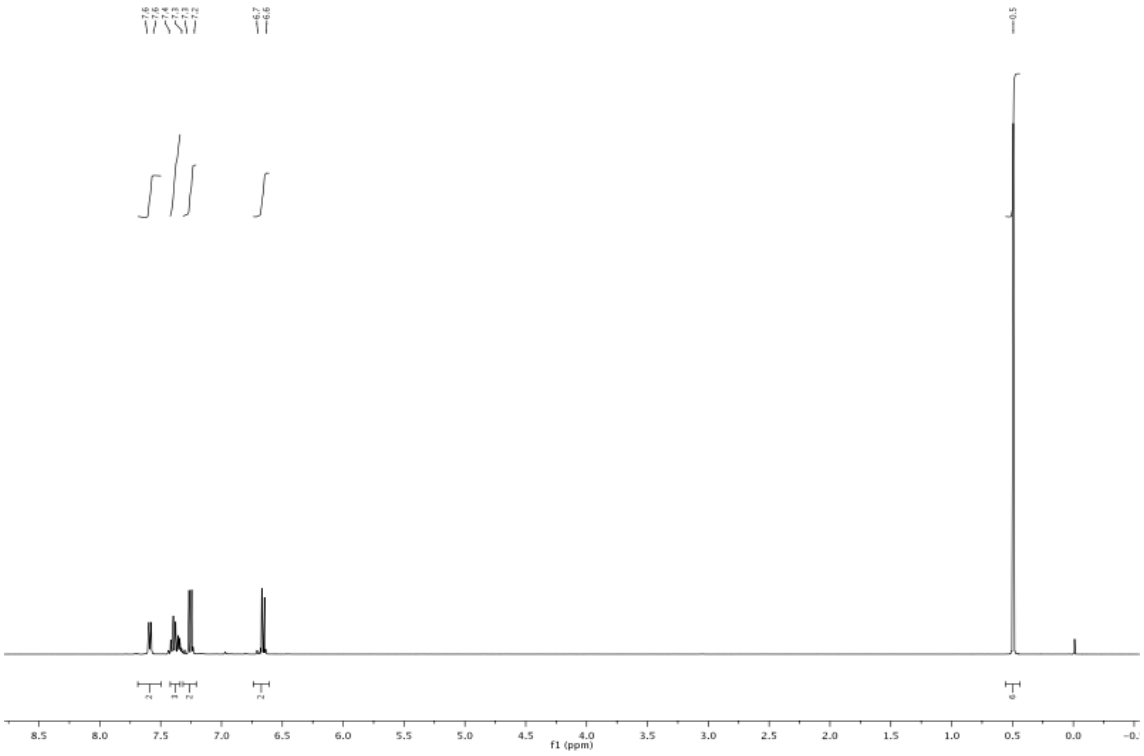


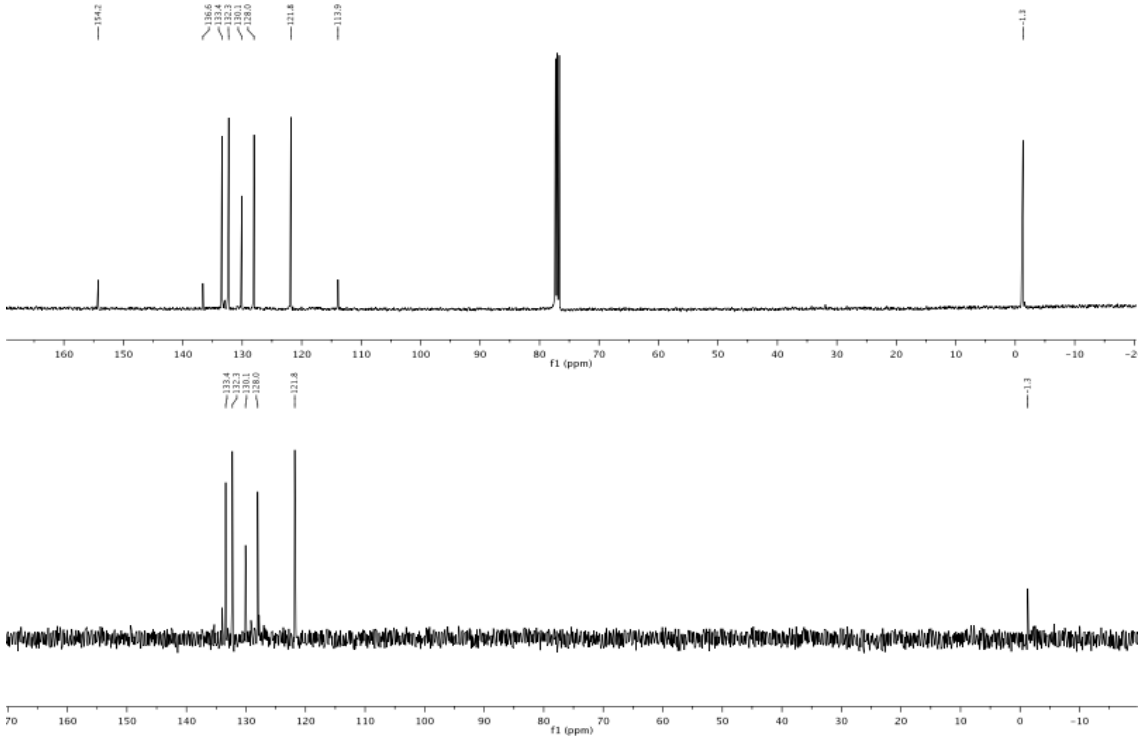


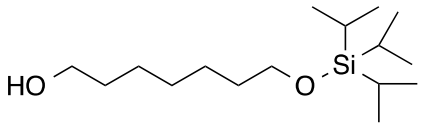




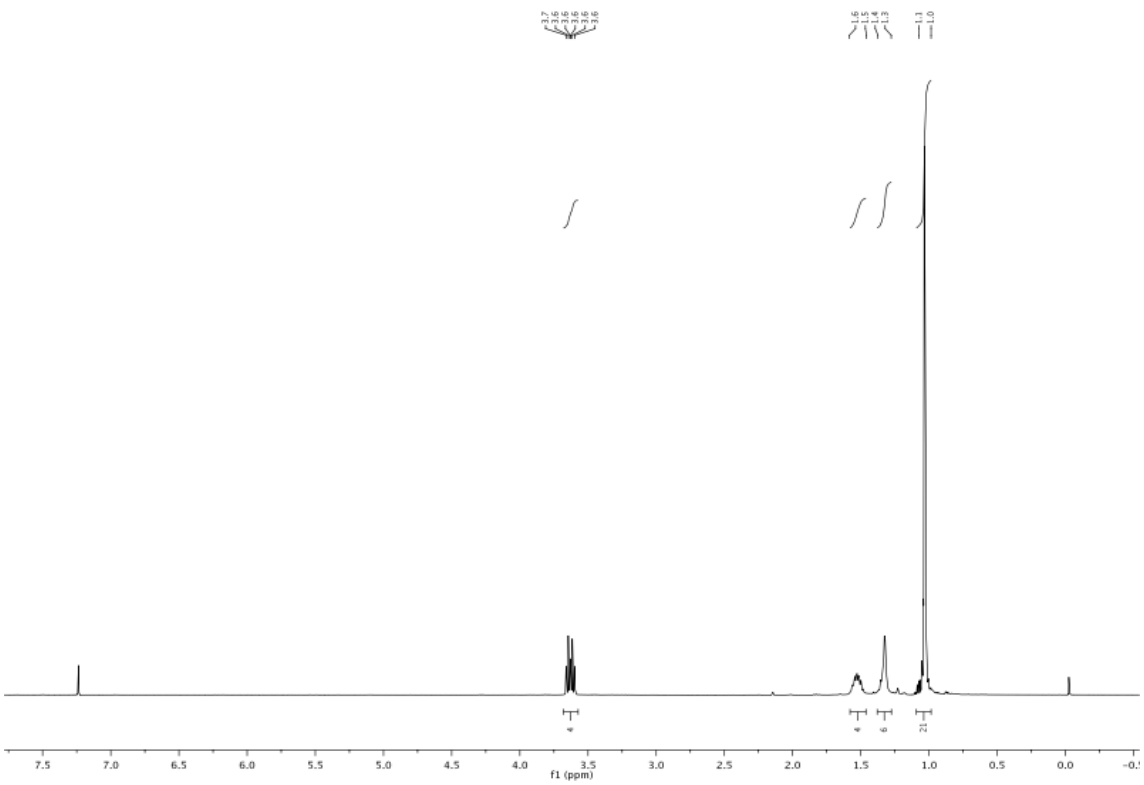
2j$_1$

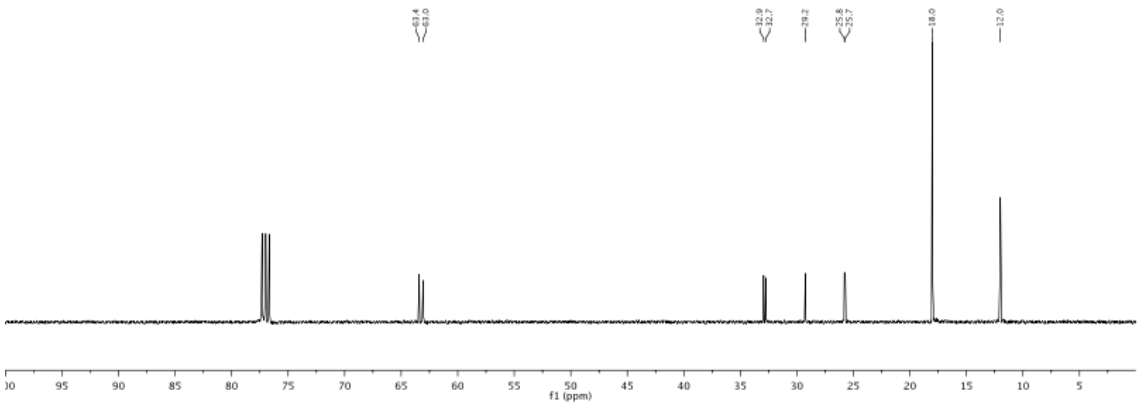


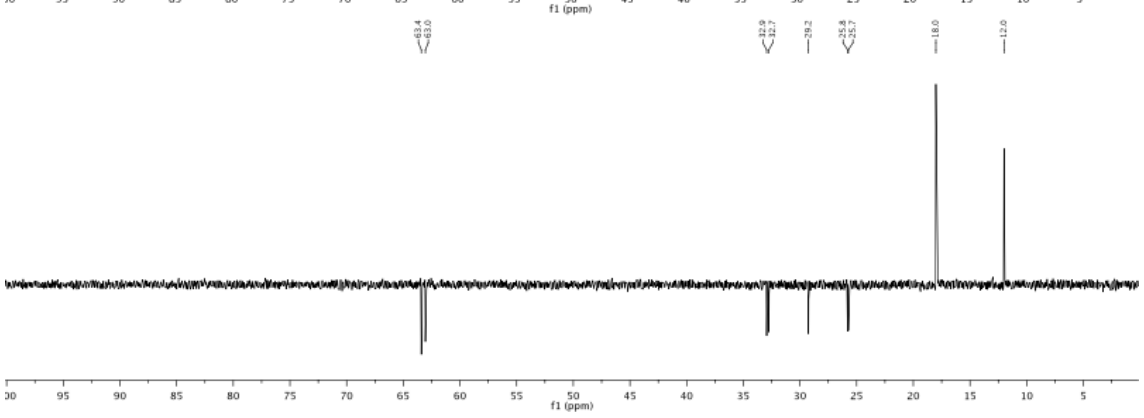


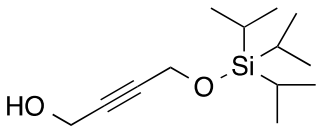


2k$_6$









2I$_6$