Supporting Information

Metal-Catalyzed Hydrosilylation of Alkenes and Alkynes Using Dimethyl(pyridyl)silane

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Product Data for Rhodium-Catalyzed Hydrosilylation of Alkenes

Table 2

Dimethyl(1-octyl)(2-pyridyl)silane (2a). ^{1}H NMR (500 MHz, $CDCl_3$): δ 0.30 (s, 6 H), 0.80–0.84 (m, 2 H), 0.86 (t, *J* = 7.1 Hz, 3 H), 1.20–1.37 (m, 12 H), 7.18 (ddd, *J* = 7.7, 5.0, 1.5 Hz, 1 H), 7.48 (dt, *J* = 7.7, 1.5 Hz, 1 H), 7.57 (td, *J* = 7.7, 1.5 Hz, 1 H), 7.77 (dt, *J* = 5.0, 1.5 Hz, 1 H); ^{13}C NMR (125 MHz, $CDCl_3$): δ –3.6, 14.1, 14.8, 22.6, 23.7, 29.22, 29.23, 31.9, 33.5, 122.6, 129.0, 133.8, 150.1, 168.0; IR (neat) 1576, 1559, 1417, 1246 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{27}NSi$: 249.1913, found 249.1911. Anal. Calcd for $C_{15}H_{27}NSi$: C, 72.22; H, 10.91; N, 5.61. Found: C, 72.31; H, 10.63; N, 5.63.

Dimethyl(3-phenylpropyl)(2-pyridyl)silane (2b). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.31 (s, 6 H), 0.84–0.93 (m, 2 H), 1.60–1.72 (m, 2 H), 2.62 (dd, *J* = 7.8, 7.2 Hz, 2 H), 7.10–7.21 (m, 4 H), 7.22–7.30 (m, 2 H), 7.46 (ddd, *J* = 7.5, 1.5, 1.2 Hz, 1 H), 7.56 (td, *J* = 7.5, 1.8 Hz, 1 H), 8.77 (ddd, *J* = 4.8, 1.8, 1.2 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.8, 14.6, 25.8, 39.6, 122.7, 125.7, 128.2, 128.5, 129.1, 133.9, 142.6, 150.2, 167.7; IR (neat) 1574, 1497, 1453, 1246 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{16}H_{21}NSi$: 255.1443, found 255.1446.

Dimethyl(2-pyridyl)(2-trimethylsilylethyl)silane (2c). ^{1}H NMR (300 MHz, $CDCl_3$): δ –0.06 (s, 9 H), 0.29 (s, 6 H), 0.35–0.43 (m, 2 H), 0.66–0.74 (m, 2 H), 7.15 (ddd, *J* = 7.5, 5.1, 1.8 Hz, 1 H), 7.46 (ddd, *J* = 7.5, 1.8, 1.2 Hz, 1 H), 7.54 (td, *J* = 7.5, 1.8 Hz, 1 H), 8.76 (ddd, *J* = 5.1, 1.8, 1.2 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –4.4, –2.4, 6.8, 8.5, 122.6, 129.1, 133.8, 150.2, 168.0; IR (neat) 2955, 1246, 860 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{12}H_{23}NSi_2$: 237.1369, found 237.1370. Anal. Calcd for $C_{12}H_{23}NSi_2$: C, 60.69; H, 9.76; N, 5.90. Found: C, 60.94; H, 10.06; N, 5.88.

Dimethyl[2-(3-cyclohexenyl)ethyl](2-pyridyl)silane (2d). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.29 (s, 6 H), 0.78–0.87 (m, 2 H), 1.05–1.20 (m, 1 H), 1.23–1.33 (m, 2 H), 1.35–1.50 (m, 1 H), 1.50–1.65 (m, 1 H), 1.65–1.78 (m, 1 H), 1.90–2.05 (m, 2 H), 2.05–2.15 (m , 1 H), 5.605 (s, 1 H), 5.612 (s, 1 H), 7.15 (ddd, *J* = 7.8, 5.1, 1.8 Hz, 1 H), 7.46 (dm, *J* = 7.8 Hz, 1 H), 7.54 (td, *J* = 7.8, 1.5 Hz, 1 H), 8.75 (dm, *J* = 5.1 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.9, 11.6, 25.1, 28.3, 30.3, 31.5, 36.3, 122.6, 126.7, 127.0, 129.0,

133.9, 150.2, 167.9. HRMS (EI) *m/z* calcd for $C_{15}H_{23}NSi$: 245.1600, found 245.1600.

Dimethyl(4-methoxycarbonyl-3,3-dimethylpentyl)(2-pyridyl)silane (2e). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.24 (s, 6 H), 0.66–0.74 (m, 2 H), 0.87 (s, 6 H), 1.20–1.30 (m, 2 H), 2.11 (s, 2 H), 3.52 (s, 3 H), 7.11 (ddd, *J* = 7.5, 4.8, 1.5 Hz, 1 H), 7.42 (ddd, *J* = 7.5, 1.5, 0.9 Hz, 1 H), 7.50 (td, *J* = 7.5, 1.5 Hz, 1 H), 8.69 (ddd, *J* = 4.8, 1.2, 0.9 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –4.1, 8.4, 26.6, 33.9, 35.8, 44.9, 50.9, 122.7, 129.1, 133.9, 150.2, 167.6, 173.0; IR (neat) 1719, 1578, 1437, 1248 cm^{-1}. Anal. Calcd for $C_{15}H_{25}NO_2Si$: C, 64.47; H, 9.02; N, 5.01. Found: C, 64.68; H, 9.15; N, 5.04.

Dimethyl(3-cyanopropyl)(2-pyridyl)silane (2f). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.34 (s, 6 H), 0.93–1.01 (m, 2 H), 1.64–1.80 (m, 2 H), 2.33 (t, *J* = 7.2 Hz, 2 H), 7.21 (ddd, *J* = 7.5, 4.8, 1.5 Hz, 1 H), 7.48 (dm, *J* = 7.5 Hz, 1 H), 7.59 (td, *J* = 7.5, 1.8 Hz, 1 H), 8.76 (dm, *J* = 4.8 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.9, 14.6, 20.46, 20.51, 119.8, 123.1, 129.2, 134.2, 150.3, 166.6. Anal. Calcd for $C_{11}H_{16}N_2Si$: C, 64.45; H, 7.89; N, 13.71. Found: C, 64.80; H, 8.05; N, 13.47.

Figure 1 (Figure 3)

Dimethyl(1-octyl)(3-pyridyl)silane. ^{1}H NMR (500 MHz, $CDCl_3$): δ 0.27 (s, 6 H), 0.72–0.79 (m, 2 H), 0.86 (t, *J* = 7.0 Hz, 3 H), 1.19–1.32 (m, 12 H), 7.23 (ddd, *J* = 7.4, 4.9, 1.0 Hz, 1 H), 7.75 (dt, *J* = 7.4, 1.9 Hz, 1 H), 8.55 (dd, *J* = 4.9, 1.9 Hz, 1 H), 8.66 (dd, *J* = 1.9, 1.0 Hz, 1 H); ^{13}C NMR (125 MHz, $CDCl_3$): δ –3.3, 14.1, 15.4, 22.6, 23.7, 29.17, 29.19, 31.8, 33.5, 123.1, 134.4, 141.2, 149.8, 154.0; IR (neat) 1574, 1559, 1393, 1250 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{27}NSi$: 249.1913, found 249.1919. Anal. Calcd for $C_{15}H_{27}NSi$: C, 72.22; H, 10.91; N, 5.61. Found: C, 72.12; H, 11.19; N, 5.57.

Dimethyl(1-octyl)(4-pyridyl)silane. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.27 (s, 6 H), 0.70–0.78 (m, 2 H), 0.87 (t, *J* = 7.2 Hz, 3 H), 1.18–1.32 (m, 12 H), 7.41 (d, *J* = 5.4 Hz, 2 H), 8.51–8.64 (m, 2 H); ^{13}C NMR (125 MHz, $CDCl_3$): δ –3.6, 14.1, 15.0, 22.6, 23.6, 29.2, 31.9, 33.4, 128.4, 148.5, 149.8; IR (neat) 1584, 1402, 1250, 1125 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{27}NSi$: 249.1913, found 249.1912. Anal. Calcd for $C_{15}H_{27}NSi$: C, 72.22; H, 10.91; N, 5.61. Found: C, 72.26; H, 11.14; N, 5.60.

Dimethyl(1-octyl)phenylsilane.[1] ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.26 (s, 6 H), 0.73 (t, *J* = 7.8 Hz, 2 H), 0.87 (t, *J* = 6.8 Hz, 3 H), 1.14–1.35 (m, 12 H), 7.32–7.38 (m, 3 H), 7.48–7.56 (m, 2 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.0, 14.1, 15.7, 22.7, 23.8, 29.3, 31.9, 33.6, 127.7, 128.7, 133.6, 139.8.

Figure 2 (Figure 4)

Dimethyl(3-pyridyl)(2-trimethylsilylethyl)silane. ^{1}H NMR (300 MHz, $CDCl_3$): δ –0.04 (s, 9 H), 0.29 (s, 6 H), 0.34–0.40 (m, 2 H), 0.62–0.68 (m, 2 H), 7.27–7.35 (m, 1 H), 7.82 (dm, *J* = 7.5 Hz, 1 H), 8.54–8.62 (m, 1 H), 8.67 (s, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.9, –2.3, 7.5, 8.5, 123.1, 134.2, 141.3,

149.8, 154.1; IR (neat) 1248, 860, 835 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{12}H_{23}NSi_2$: 237.1369, found 237.1368. Anal. Calcd for $C_{12}H_{23}NSi_2$: C, 60.69; H, 9.76; N, 5.90. Found: C, 60.75; H, 10.04; N, 5.73.

Dimethyl(4-pyridyl)(2-trimethylsilylethyl)silane. ^1H NMR (300 MHz, $CDCl_3$): δ –0.03 (s, 9 H), 0.27 (s, 6 H), 0.31–0.38 (m, 2 H), 0.60–0.67 (m, 2 H), 7.41 (dd, *J* = 4.2, 1.5 Hz, 2 H), 8.56 (dd, *J* = 4.2, 1.5 Hz, 2 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –4.2, –2.3, 7.1, 7.5, 128.5, 148.4, 149.7; IR (neat) 1248, 1127, 837 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{12}H_{23}NSi_2$: 237.1369, found 237.1370. Anal. Calcd for $C_{12}H_{23}NSi_2$: C, 60.69; H, 9.76; N, 5.90. Found: C, 60.68; H, 10.04; N, 5.98.

Dimethylphenyl(2-trimethylsilylethyl)silane.[2] ^1H NMR (300 MHz, $CDCl_3$): δ –0.05 (s, 9 H), 0.34–0.42 (m, 2 H), 0.59–0.66 (m, 2 H), 7.32–7.40 (m, 3 H), 7.45–7.56 (m, 2 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.5, –2.2, 7.8, 8.8, 127.7, 128.8, 133.0, 133.6, 139.5.

Procedure for the Consecutive Use of the Recovered Rhodium Catalyst (Section 1-3)

First Run. To a solution of $RhCl(PPh_3)_3$ (23.1 mg, 5 mol %) in CH_3CN (1.0 mL) were added 1-octene (168 mg, 1.5 mmol) and **1** (69 mg, 0.5 mmol) under argon. After the mixture was stirred at room temperature for 1 h, toluene (2 mL) was added to the mixture. This mixture was extracted with 1 N aq HCl (6 × 3 mL). The evaporation of the organic phase afforded the recovered rhodium catalyst, which was used directly for the next run. The combined aqueous phase was neutralized by adding $NaHCO_3$ and then was extracted with EtOAc (3 × 10 mL). Drying over Na_2SO_4 and removal of the solvents under reduced pressure afforded **2a** (107 mg, 86%) as colorless oil.

Second Run. To a solution of the recovered rhodium catalyst in CH_3CN (1.0 mL) were added 1-octene (168 mg, 1.5 mmol) and **1** (69 mg, 0.5 mmol) under argon. After the reaction mixture was stirred at room temperature for 1 h, toluene (2 mL) was added to the reaction mixture. Exactly same separation procedure as a first run furnished the recovered rhodium catalyst and **2a** (84 mg, 67%).

Third Run. Exactly same procedure as a second run afforded the recovered rhodium catalyst and **2a** (74 mg, 59%).

Forth Run. Exactly same procedure as a second run afforded the recovered rhodium catalyst and **2a** (62 mg, 50%).

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(1) Matsumoto, A.; Ito, Y. *J. Org. Chem.* **2000**, *65*, 5707.
(2) Lukevic, E.; Pudova, O.; Sturkovich, R.; Gaukhman, A. *J. Organomet. Chem.* **1988**, *346*, 297.

Product Data for Platinum-Catalyzed Hydrosilylation of Alkynes

Table 4

(*E*)-1-Dimethyl(2-pyridyl)silyl-1-octene (3a). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.38 (s, 6 H), 0.87 (t, *J* = 6.9 Hz, 3 H), 1.25–1.32 (m, 6 H), 1.35–1.45 (m, 2 H), 2.15 (dd, *J* = 6.3, 1.5 Hz, 2 H), 5.81 (dt, *J* = 18.3, 1.5 Hz, 1 H), 6.19 (dt, *J* = 18.3, 6.3 Hz, 1 H), 7.19 (ddd, *J* = 7.5, 5.1, 1.2 Hz, 1 H), 7.51 (dt, *J* = 7.5, 1.2 Hz, 1 H), 7.58 (td, *J* = 7.5, 1.2 Hz, 1 H), 8.78 (dt, *J* = 5.1, 1.2 Hz, 1 H); ^{13}C NMR (125 MHz, $CDCl_3$): δ –3.2, 14.0, 22.5, 28.5, 28.8, 31.7, 36.8, 122.6, 126.1, 129.3, 133.9, 150.08, 150.09, 167.6; IR (neat) 1617, 1576, 1559, 1246 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1759. Anal. Calcd for $C_{15}H_{25}NSi$: C, 72.81; H, 10.18; N, 5.66. Found: C, 72.76; H, 10.39; N, 5.50.

2-Dimethyl(2-pyridyl)silyl-1-octene (4a). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.42 (s, 6 H), 0.84 (t, *J* = 6.8 Hz, 3 H), 1.13–1.38 (m, 8 H), 2.13 (tm, *J* = 7.5 Hz, 2 H), 5.44 (dt, *J* = 3.0, 0.9 Hz, 1 H), 5.71 (dt, *J* = 3.0, 1.2 Hz, 1 H), 7.18 (ddd, *J* = 7.5, 4.8, 1.5 Hz, 1 H), 7.50 (ddd, *J* = 7.5, 1.5, 1.2 Hz, 1 H), 7.56 (td, *J* = 7.5, 1.8 Hz, 1 H), 8.78 (ddd, *J* = 4.8, 1.8, 1.2 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.5, 14.1, 22.6, 28.8, 29.1, 31.7, 36.1, 122.7, 126.2, 129.4, 133.9, 149.7, 150.2, 166.9; IR (neat) 1576, 1559, 1418, 1246 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1758.

(*E*)-1-Dimethyl(2-pyridyl)silyl-6-chloro-1-hexene (3b). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.39 (s, 6 H), 1.50–1.62 (m, 2 H), 1.72–1.83 (m, 2 H), 2.19 (dtd, *J* = 7.5, 6.0, 1.5 Hz, 2 H), 3.54 (t, *J* = 6.6 Hz, 2 H), 5.84 (dt, *J* = 18.6, 1.5 Hz, 1 H), 6.17 (dt, *J* = 18.6, 6.0 Hz, 1 H), 7.21 (ddm, *J* = 7.5, 4.5 Hz, 1 H), 7.51 (dm, *J* = 7.5 Hz, 1 H), 7.60 (tm, *J* = 7.5 Hz, 1 H), 8.78 (dm, *J* = 4.5 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.2, 25.6, 32.0, 35.8, 44.8, 122.6, 127.1, 129.2, 133.9, 148.8, 150.1, 167.2; IR (neat) 1617, 1574, 1451, 1418, 1246 cm^{-1}. HRMS (FAB) *m/z* calcd for $C_{13}H_{21}ClNSi$ (M + H): 254.1132, found 254.1128. Anal. Calcd for $C_{13}H_{20}ClNSi$: C, 61.51; H, 7.94; N, 5.52. Found: C, 61.73; H, 8.22; N, 5.44.

(*E*)-1-Dimethyl(2-pyridyl)silyl-6-methoxy-1-hexene (3c). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.38 (s, 6 H), 1.41–1.63 (m, 4 H), 2.18 (dt, *J* = 7.2, 6.2 Hz, 2 H), 3.32 (s, 3 H), 3.37 (t, *J* = 6.3 Hz, 2 H), 5.82 (dt, *J* = 18.3, 1.5 Hz, 1 H), 6.18 (dt, *J* = 18.3, 6.2 Hz, 1 H), 7.19 (ddd, *J* = 7.5, 4.8, 1.2 Hz, 1 H), 7.50 (dt, *J* = 7.5, 1.2 Hz, 1 H), 7.58 (td, *J* = 7.5, 1.5 Hz, 1 H), 8.78 (ddd, *J* = 4.8, 1.5, 1.2 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.2, 24.9, 29.1, 36.4, 58.4, 72.6, 122.6, 126.5, 129.2, 133.8, 149.4, 150.0, 167.3; IR (neat) 1617, 1574, 1559, 1418, 1246 cm^{-1}. HRMS (FAB) *m/z* calcd for $C_{14}H_{24}ONSi$ (M + H): 250.1627, found 250.1628.

(*E*)-b -Dimethyl(2-pyridyl)silyl-styrene (3d). ^{1}H NMR (300 MHz, $CDCl_3$) δ 0.50 (s, 6 H), 6.65 (d, *J* = 19.2 Hz, 1 H), 7.02 (d, *J* = 19.2 Hz, 1 H), 7.21 (ddd, *J* = 6.9, 4.8, 2.1 Hz, 1 H), 7.26–7.36 (m, 3 H), 7.44–7.49 (m, 2 H), 7.54–7.62 (m, 2 H), 8.81 (dt, *J* = 5.1, 1.2 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$) δ –3.4, 122.9, 126.1, 126.6, 128.3, 128.6, 129.5, 134.1, 138.2, 145.9, 150.4, 167.0. IR (neat) 2959, 1605, 1574, 1495, 1449, 1418, 1246 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{17}NSi$: 239.1131, found 239.1122. Anal.

Calcd for $C_{15}H_{17}NSi$: C, 75.26; H, 7.16; N, 5.85. Found: C, 75.49; H, 7.25; N, 5.83.

a **-Dimethyl(2-pyridyl)silyl-styrene (4d).** ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.51 (s, 6 H), 5.75 (d, *J* = 2.7 Hz, 1 H), 6.05 (d, *J* = 2.7 Hz, 1 H), 7.13–7.27 (m, 6 H), 7.52 (dt, *J* = 7.2, 1.5 Hz, 1 H), 7.57 (td, *J* = 7.2, 1.5 Hz, 1 H), 8.81 (dt, *J* = 4.8, 1.5 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –2.9, 122.9, 126.5, 126.9, 128.1, 129.6, 129.8, 134.1, 143.8, 150.0, 150.2, 166.5; IR (neat) 1574, 1418, 1248 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{17}NSi$: 239.1130, found 239.1133.

(*E*)-1-Dimethyl(2-pyridyl)silyl-2-trimethylsilylethene (3e). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.06 (s, 9 H), 0.39 (s, 6 H), 6.75 (s, 2 H), 7.17 (ddd, *J* = 7.5, 4.8, 1.2 Hz, 1 H), 7.47 (dt, *J* = 7.5, 1.2 Hz, 1 H), 7.56 (td, *J* = 7.5, 1.8 Hz, 1 H), 8.77 (ddd, *J* = 4.8, 1.8, 1.2 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.6, –1.7, 122.7, 129.4, 133.9, 147.0, 150.2, 153.8, 167.0; IR (neat) 1576, 1558, 1418, 1248 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{12}H_{21}NSi_2$: 235.1213, found 235.1215. Anal. Calcd for $C_{12}H_{21}NSi_2$: C, 61.21; H, 8.99; N, 5.95. Found: C, 61.50; H, 9.09; N, 5.70.

1-Dimethyl(2-pyridyl)silyl-1-trimethylsilylethene (4e). ^{1}H NMR (300 MHz, $CDCl_3$): δ –0.02 (s, 9 H), 0.44 (s, 6 H), 6.38 (d, *J* = 4.8 Hz, 1 H), 6.44 (d, *J* = 4.8 Hz, 1 H), 7.17 (ddd, *J* = 7.5, 4.8, 1.5 Hz, 1 H), 7.48 (ddd, *J* = 7.5, 1.5, 0.9 Hz, 1 H), 7.57 (td, *J* = 7.5, 1.5 Hz, 1 H), 8.78 (ddd, *J* = 4.8, 1.5, 0.9 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –2.4, –0.5, 122.6, 129.6, 133.8, 142.4, 150.1, 151.6, 167.4; IR (neat) 1576, 1559, 1418, 1248 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{12}H_{21}NSi_2$: 235.1213, found 235.1212.

(*E*)-4-Dimethyl(2-pyridyl)silyl-4-octene (3f). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.40 (s, 6 H), 0.81 (t, *J* = 7.2 Hz, 3 H), 0.91 (t, *J* = 7.2 Hz, 3 H), 1.14–1.28 (m, 2 H), 1.33–1.47 (m, 2 H), 2.07–2.16 (m, 4 H), 5.86 (t, *J* = 6.6 Hz, 1 H), 7.19 (ddd, *J* = 7.5, 4.8, 1.5 Hz, 1 H), 7.50 (dm, *J* = 7.5 Hz, 1 H), 7.58 (td, *J* = 7.5, 1.5 Hz, 1 H), 8.78 (ddd, *J* = 4.8, 1.5, 0.9 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.1, 13.9, 14.4, 22.6, 23.3, 30.7, 32.1, 122.5, 129.4, 133.7, 138.2, 143.1, 150.0, 167.8; IR (neat) 1574, 1559, 1418, 1244 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1752. Anal. Calcd for $C_{15}H_{25}NSi$: C, 72.81; H, 10.18; N, 5.66. Found: C, 72.80; H, 10.45; N, 5.62.

(*E*)-1-Dimethyl(2-pyridyl)silyl-1,2-diphenylethene (3g). ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.50 (s, 6 H), 6.92–7.01 (m, 5 H), 7.05–7.11 (m, 3 H), 7.14–7.28 (m, 4 H), 7.52 (dt, *J* = 7.5, 1.5 Hz, 1 H), 7.57 (td, *J* = 7.5, 1.5 Hz, 1 H), 8.84 (dt, *J* = 4.8, 1.5 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.6, 122.8, 125.7, 127.1, 127.6, 127.8, 128.5, 129.5, 129.9, 133.8, 137.1, 139.8, 142.1, 143.8, 150.1, 166.1; IR (neat) 1574, 1559, 1246, 826 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{21}H_{21}NSi$: 315.1443, found 315.1445. Anal. Calcd for $C_{21}H_{21}NSi$: C, 79.95; H, 6.71; N, 4.44. Found: C, 79.73; H, 6.72; N, 4.47.

Figure 5

(*E*)-1-Dimethyl(3-pyridyl)silyl-1-octene. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.32 (s, 6 H), 0.85 (t, *J* = 6.6 Hz, 3 H), 1.16–1.44 (m, 8 H), 2.13 (q, *J* = 6.6 Hz, 2 H), 5.71 (dt, *J* = 18.6, 1.5 Hz, 1 H), 6.13 (dt, *J* =

18.6, 6.6 Hz, 1 H), 7.21 (ddd, *J* = 7.5, 5.1, 0.6 Hz, 1 H), 7.74 (dt, *J* = 7.5, 1.5 Hz, 1 H), 8.54 (dd, *J* = 5.1, 1.5 Hz, 1 H), 8.65 (d, *J* = 1.5 Hz, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –2.7, 14.0, 22.5, 28.4, 28.8, 31.6, 36.7, 123.0, 125.9, 134.1, 141.4, 149.8, 150.5, 154.2; IR (neat) 1574, 1393, 1250, 990 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1761.

2-Dimethyl(3-pyridyl)silyl-1-octene. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.39 (s, 6 H), 0.84 (t, *J* = 6.6 Hz, 3 H), 1.12–1.38 (m, 8 H), 2.09 (t, *J* = 7.5 Hz, 2 H), 5.38–5.42 (m, 1 H), 5.69–5.73 (m, 1 H), 7.25 (ddd, *J* = 7.8, 3.6, 0.6 Hz, 1 H), 7.77 (dt, *J* = 7.8, 1.8 Hz, 1 H), 8.57 (d, *J* = 3.6 Hz, 1 H), 8.67 (s, 1 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.1, 14.1, 22.6, 28.8, 29.0, 31.6, 35.9, 123.2, 126.5, 133.5, 141.7, 149.3, 149.9, 154.3; IR (neat) 1574, 1395, 1250 cm^{-1}. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1757.

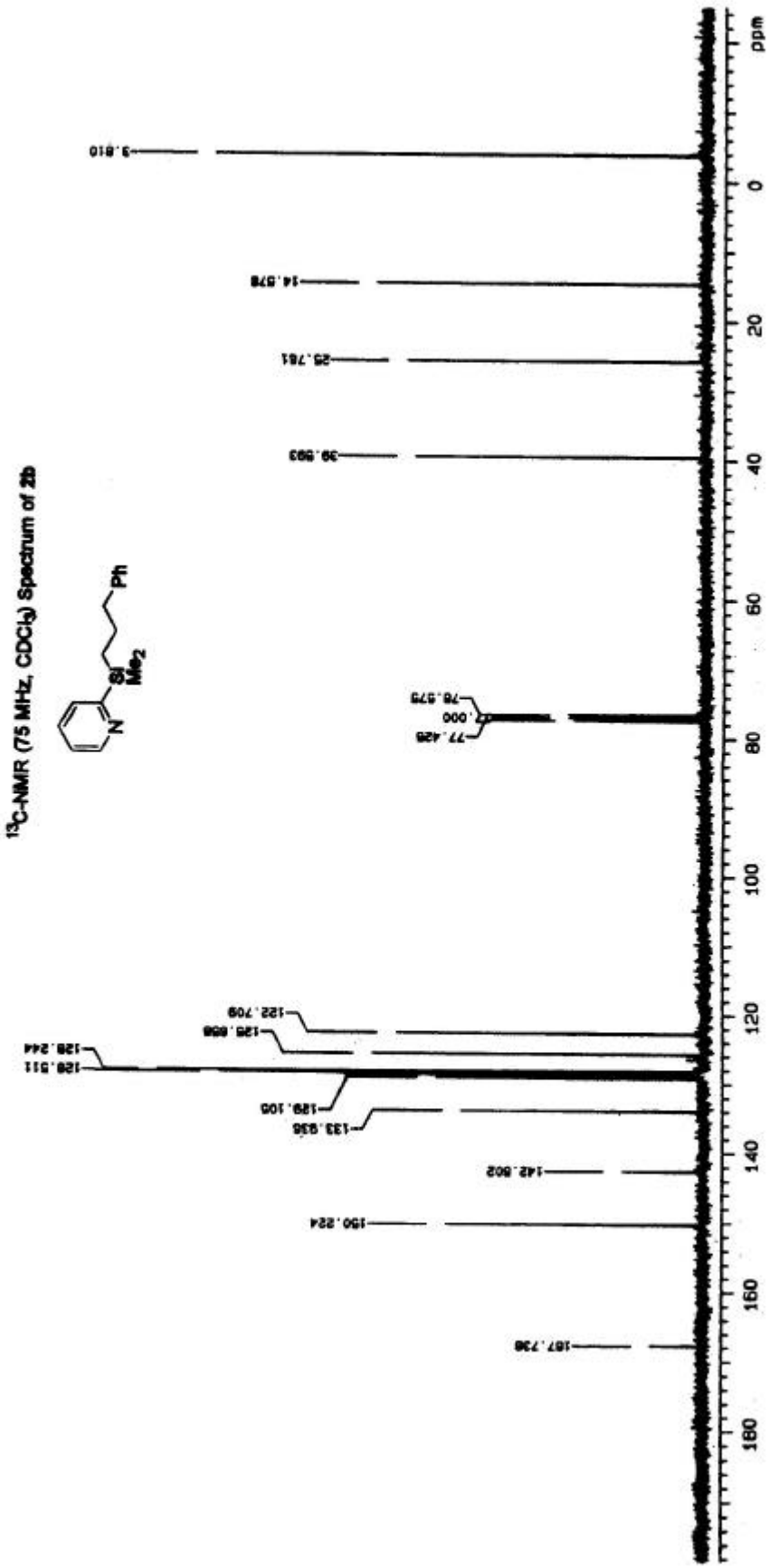
(*E*)-1-Dimethyl(4-pyridyl)silyl-1-octene. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.33 (s, 6 H), 0.88 (t, *J* = 7.2 Hz, 3 H), 1.23–1.31 (m, 6 H), 1.32–1.45 (m, 2 H), 2.15 (q, *J* = 6.6 Hz, 2 H), 5.70 (dt, *J* = 18.6, 1.5 Hz, 1 H), 6.15 (dt, *J* = 18.6, 6.6 Hz, 1 H), 7.44 (d, *J* = 3.0 Hz, 2 H), 8.74 (brs, 2H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.1, 14.1, 22.6, 28.4, 28.8, 31.6, 36.8, 125.3, 129.3, 148.7, 149.7, 150.9. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1758.

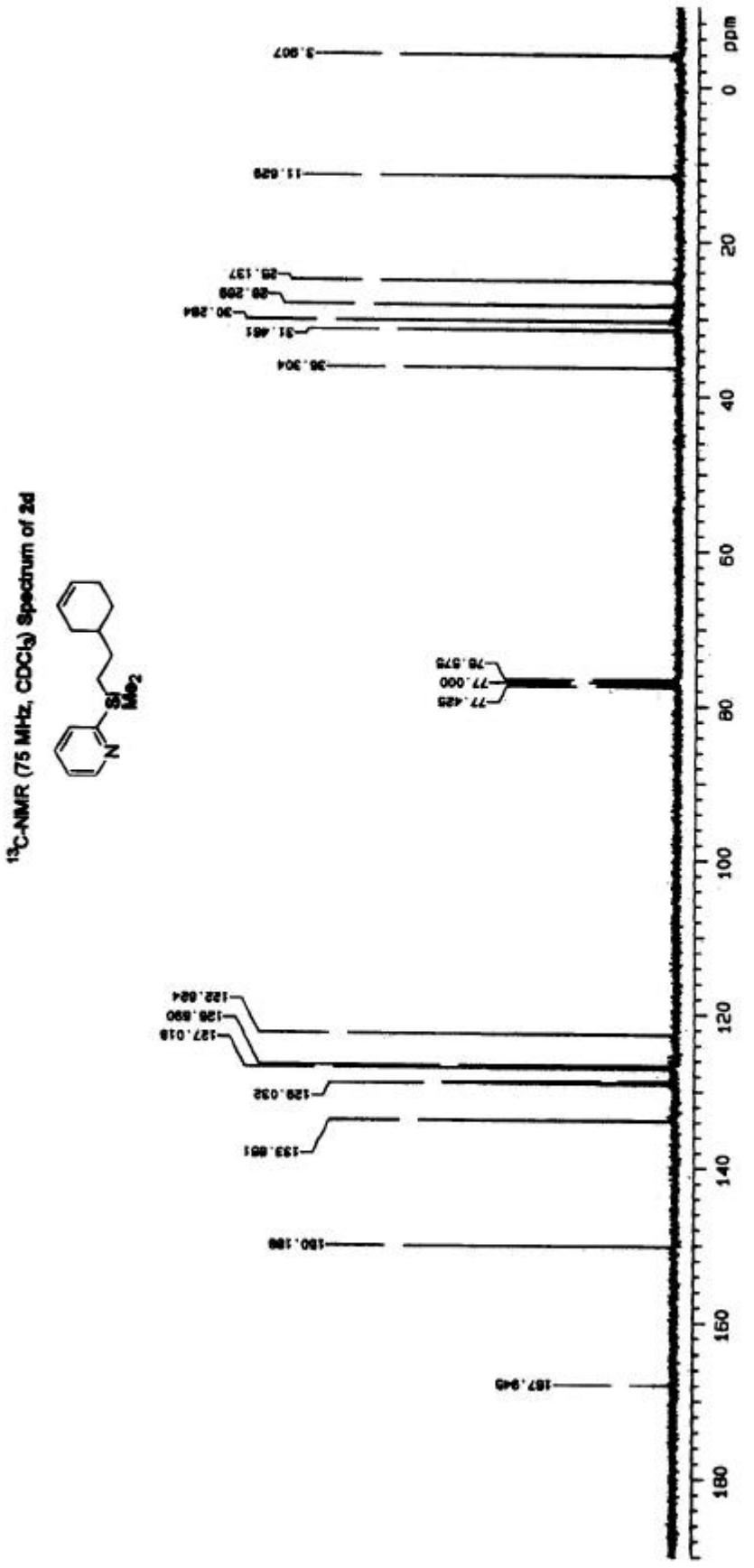
2-Dimethyl(4-pyridyl)silyl-1-octene. ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.38 (s, 6 H), 0.85 (t, *J* = 7.2 Hz, 3 H), 1.15–1.35 (m, 8 H), 2.08 (t, *J* = 7.5 Hz, 2 H), 5.40–5.43 (m, 1 H), 5.72–5.74 (m, 1 H), 7.41 (d, *J* = 4.5 Hz, 2 H), 8.59 (brs, 2 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –3.5, 14.0, 22.6, 28.8, 29.0, 31.6, 35.9, 126.8, 128.9, 148.3, 148.8, 149.3. HRMS (EI) *m/z* calcd for $C_{15}H_{25}NSi$: 247.1756, found 247.1757.

(*E*)-1-Dimethylphenylsilyl-1-octene.[3] ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.39 (s, 6 H), 0.96 (t, *J* = 7.2 Hz, 3 H), 1.31–1.39 (m, 6 H), 1.40–1.53 (m, 2 H), 2.21 (q, *J* = 6.6 Hz, 2 H), 5.83 (dt, *J* = 18.3, 1.5 Hz, 1 H), 6.20 (dt, *J* = 18.3, 6.3 Hz, 1 H), 7.38–7.43 (m, 3 H), 7.56–7.62 (m, 2 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –2.4, 14.1, 22.6, 28.6, 28.9, 31.7, 36.8, 127.2, 127.7, 128.8, 133.8, 139.4, 149.5.

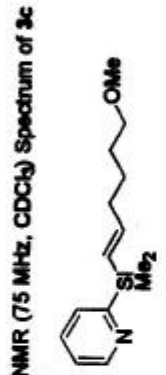
2-Dimethylphenylsilyl-1-octene.[3] ^{1}H NMR (300 MHz, $CDCl_3$): δ 0.38 (s, 6 H), 0.87 (t, *J* = 7.2 Hz, 3 H), 1.17–1.25 (m, 6 H), 1.25–1.40 (m, 2 H), 2.12 (t, *J* = 6.9 Hz, 2 H), 5.39–5.42 (m, 1 H), 5.68–5.71 (m, 1 H), 7.33–7.39 (m, 3 H), 7.50–7.56 (m, 2 H); ^{13}C NMR (75 MHz, $CDCl_3$): δ –2.9, 14.1, 22.6, 28.8, 29.1, 31.7, 36.0, 125.6, 127.7, 128.9, 133.9, 138.5, 150.6.

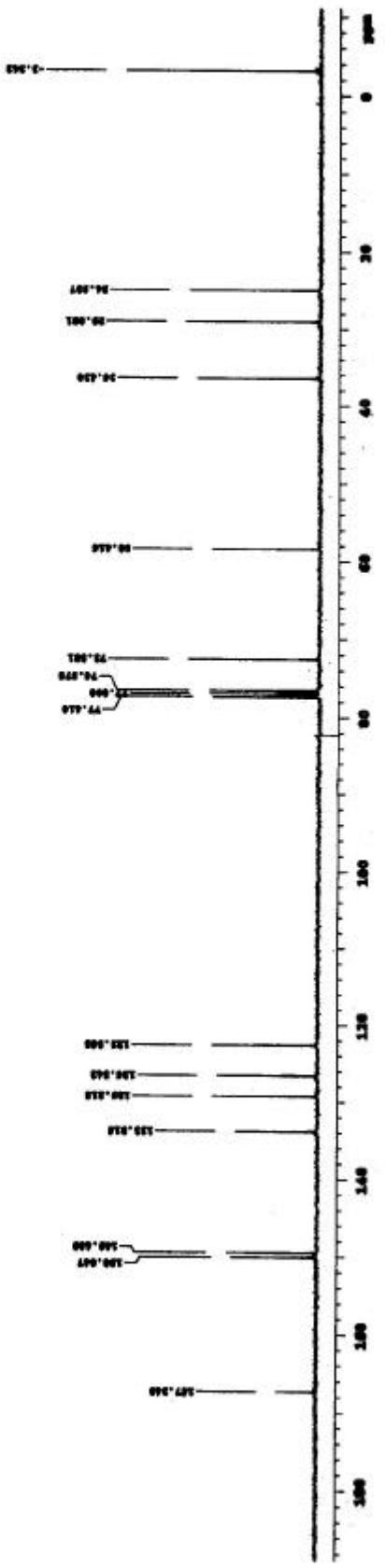
(3) Fugami, K.; Hibino, J.; Nakatsukasa, S.; Matsubara, S.; Oshima, K.; Utimoto, K.; Nozaki, H. *Tetrahedron* **1988**, *44*, 4277.


13C-NMR (75 MHz, CDCl3) Spectrum of 2b
Ph
SiMe2
N
-3.810
14.578
25.761
39.883
76.579
77.000
77.428
122.709
128.008
128.244
128.511
129.108
133.936
142.802
150.254
167.736
ppm
0
20
40
60
80
100
120
140
160
180

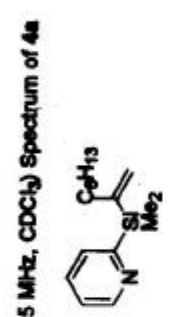

^{13}C-NMR (75 MHz, $CDCl_3$) Spectrum of 2d
Si
Me2
N
-3.907
11.629
25.137
29.268
30.284
31.461
36.304
76.579
77.000
77.425
122.824
126.890
127.018
129.032
133.861
180.188
187.945
ppm
0
20
40
60
80
100
120
140
160
180

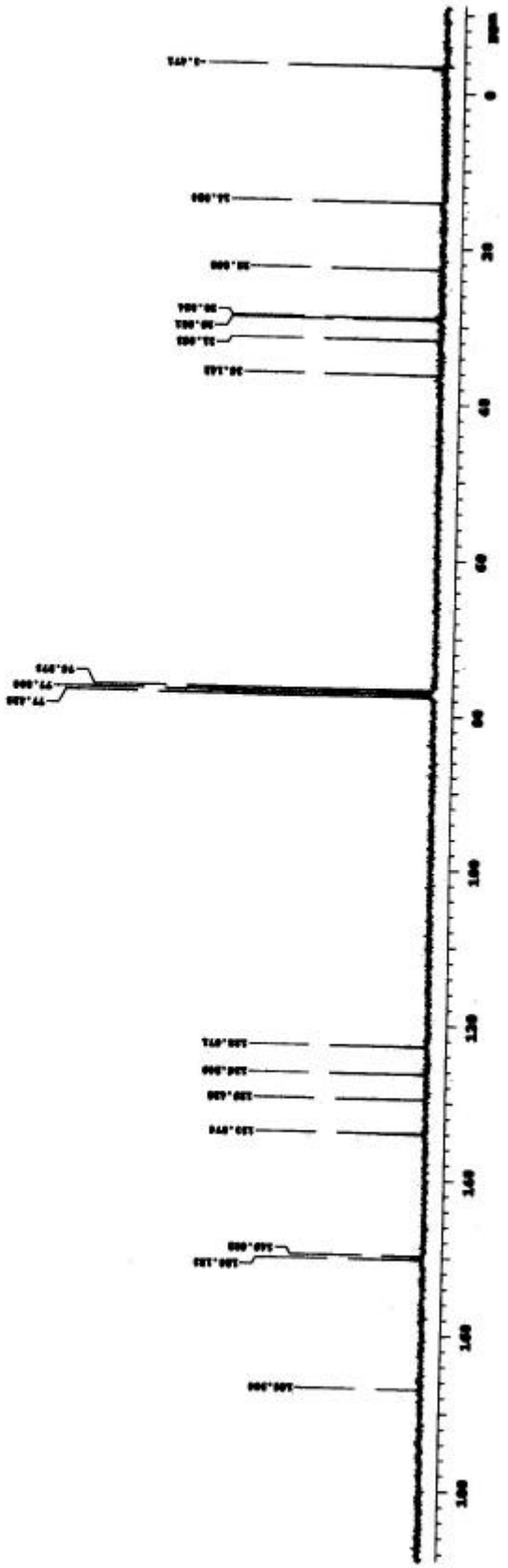
^{13}C-NMR (75 MHz, $CDCl_3$) Spectrum of 3c

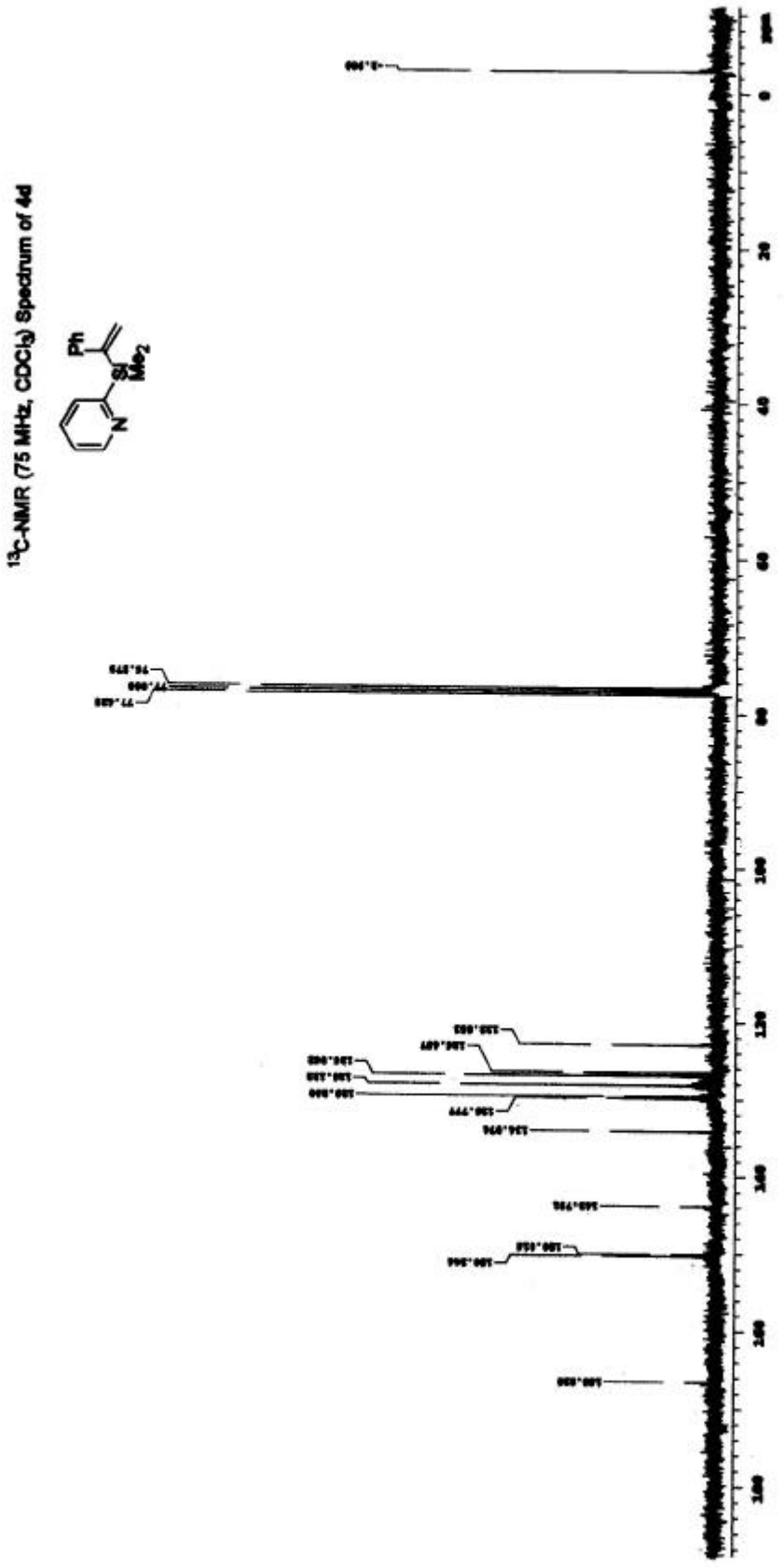


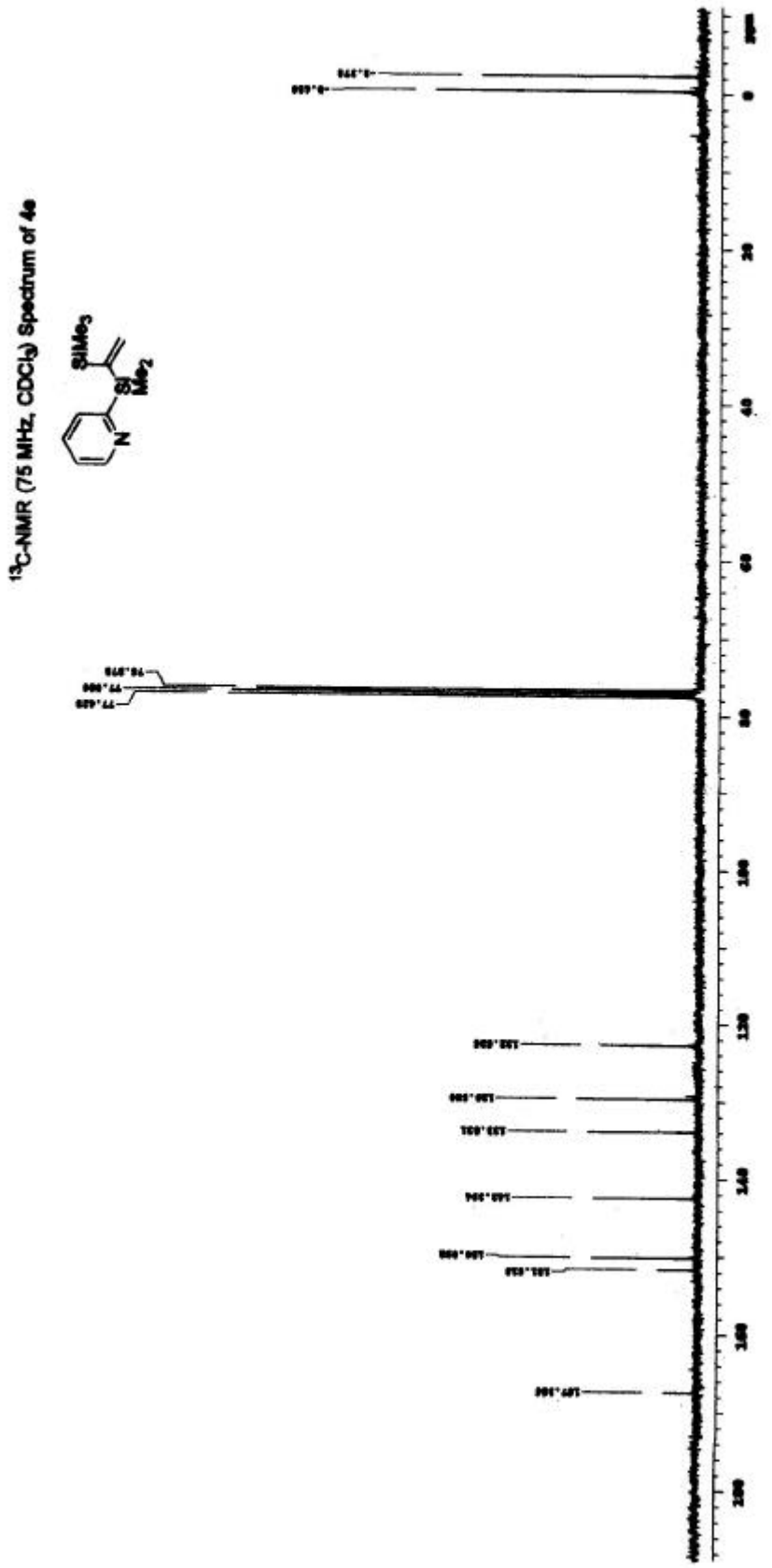


^{13}C-NMR (75 MHz, $CDCl_3$) Spectrum of 4a

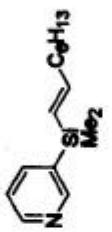


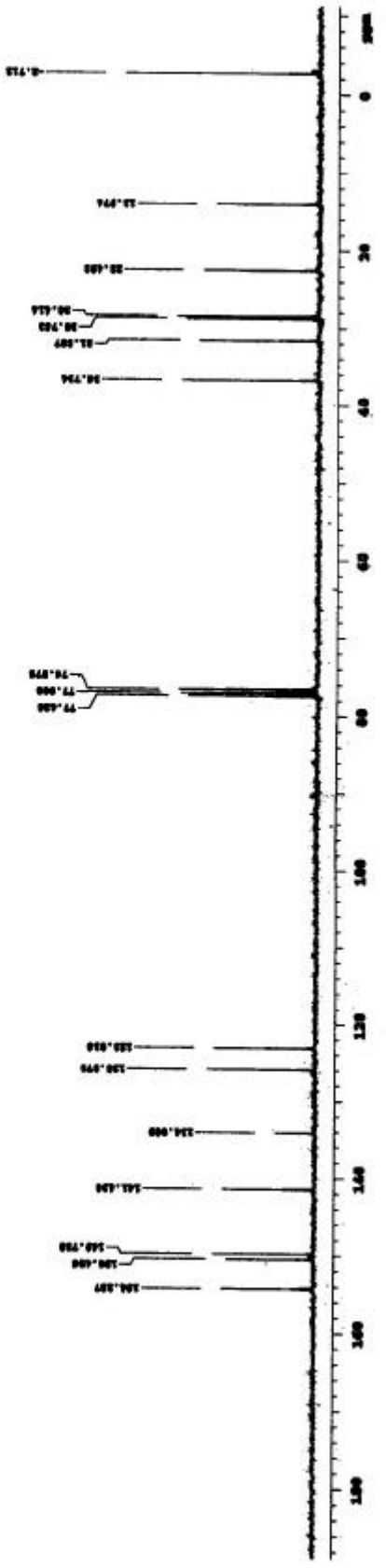


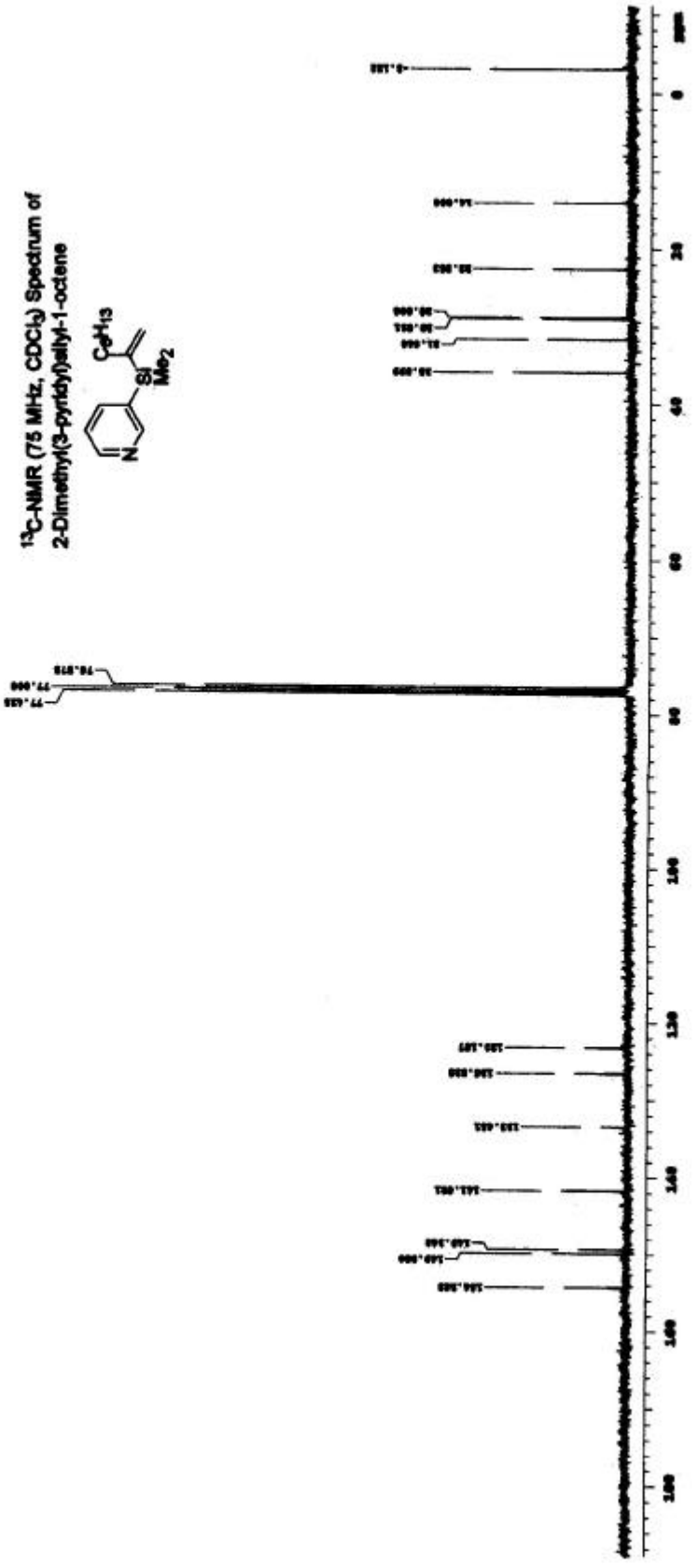

^{13}C-NMR (75 MHz, CDCl$_3$) Spectrum of 4d
Ph
Si
Me$_2$
N

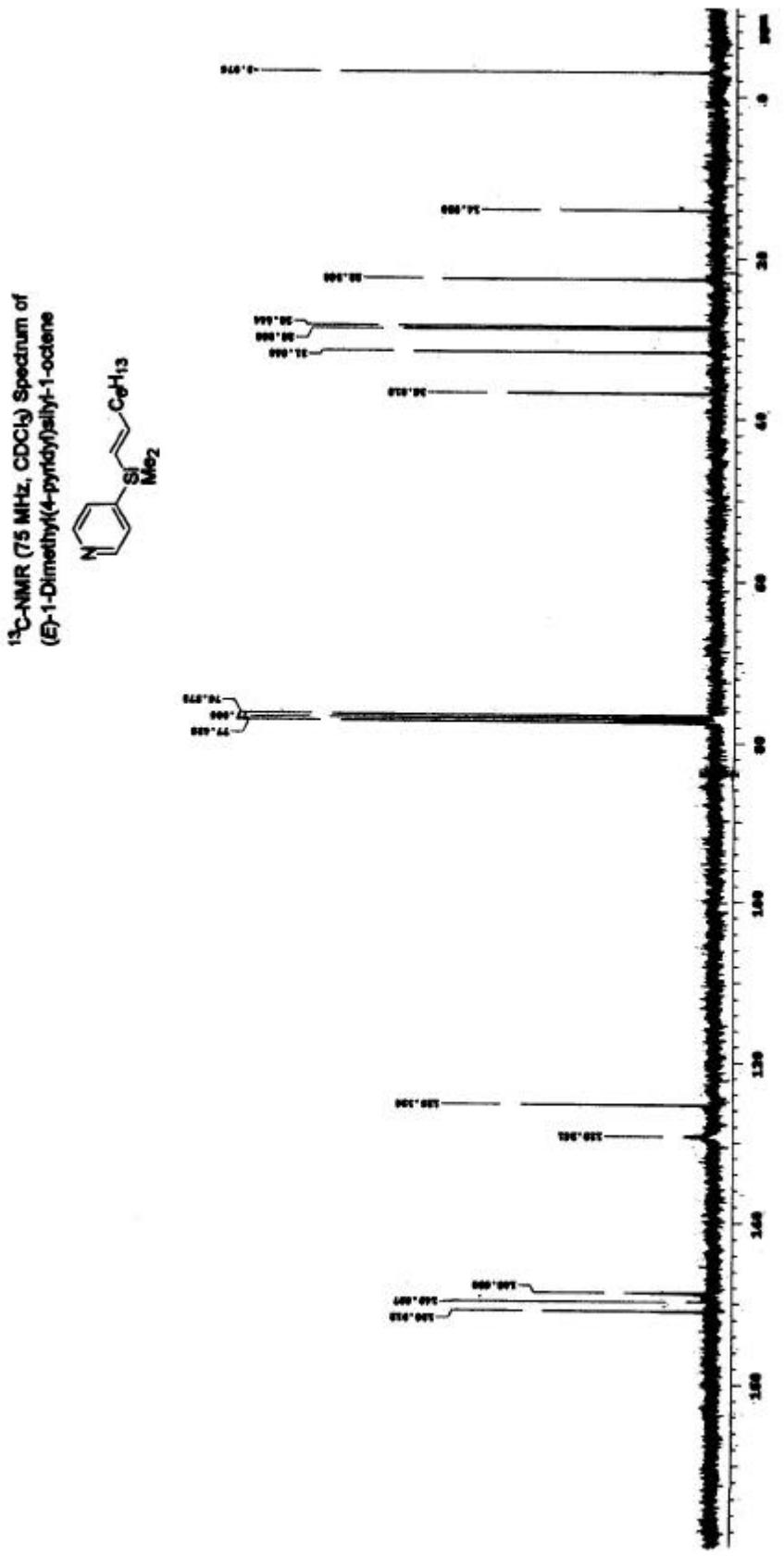

^{13}C-NMR (75 MHz, CDCl$_3$) Spectrum of 4e
SiMe$_3$
Si
Me$_2$
N

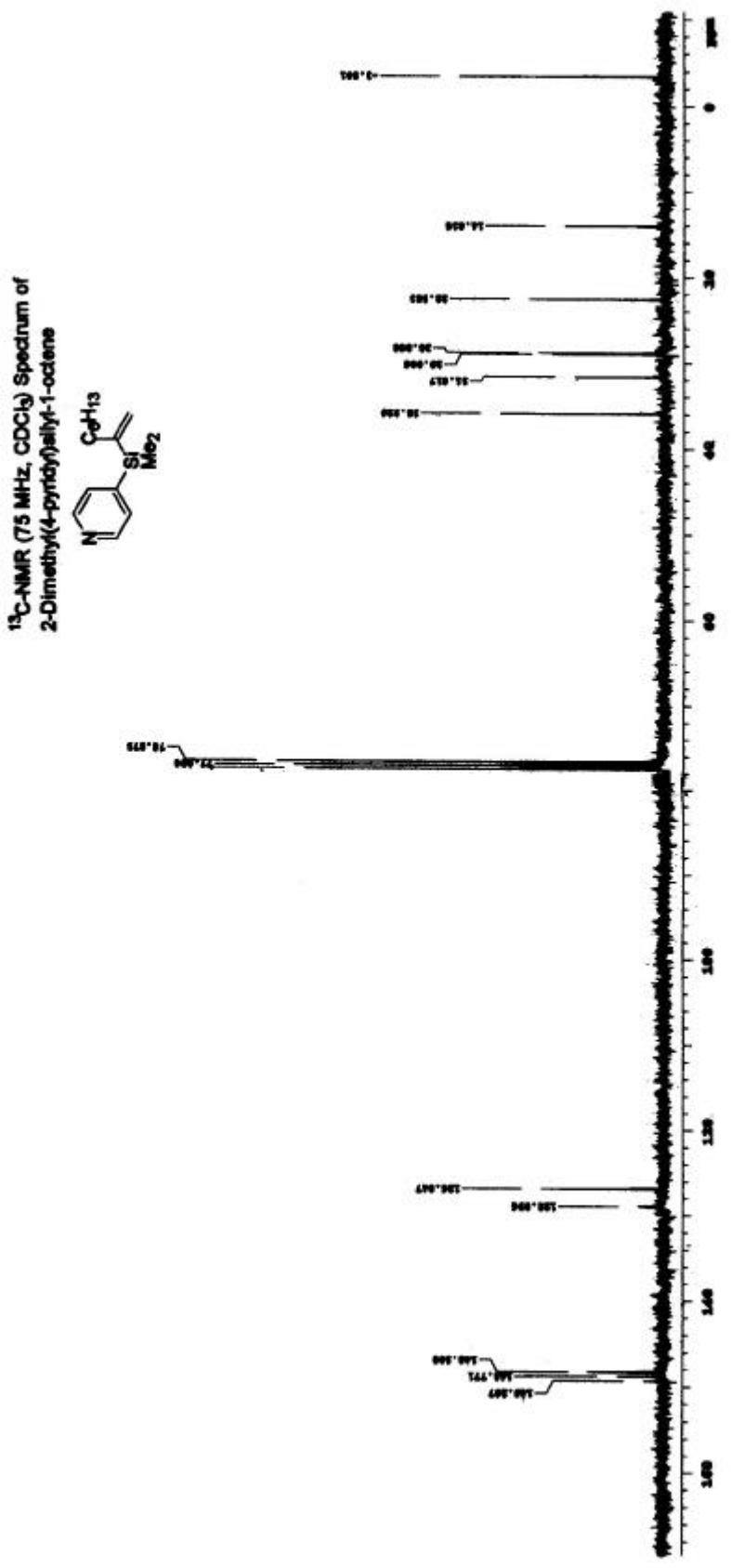
^{13}C-NMR (75 MHz, $CDCl_3$) Spectrum of
(*E*)-1-Dimethyl(3-pyridyl)silyl-1-octene






^{13}C-NMR (75 MHz, CDCl$_3$) Spectrum of
2-Dimethyl(3-pyridyl)allyl-1-octene
C_6H_{13}
Si
Me_2
N


^{13}C-NMR (75 MHz, CDCl$_3$) Spectrum of
(E)-1-Dimethyl(4-pyridyl)silyl-1-octene
C_6H_{13}
Si
Me_2
N


^{13}C-NMR (75 MHz, CDCl$_3$) Spectrum of
2-Dimethyl(4-pyridyl)silyl-1-octene
C_6H_{13}
Si
Me_2
N