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SUPPORTING INFORMATION

Silver(I)-Catalyzed Oxidative Coupling of Hydrosilanes with DMF to Symmetrical and Unsymmetrical Disiloxanes

Nan Wu, [†a] Chuang Li, [†a] Guichao Dong, [†a] Mengfei Jiang,[a] Zhou Xu*[a]

[a]Jiangsu Key Laboratory of New Drug Research and Clinical Pharmacy, School of Pharmacy,

Xuzhou Medical University, Tongshan Road 209, Xuzhou, 221004, China.

Corresponding author email: xuzhou@xzhmu.edu.cn

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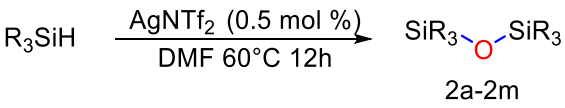
I. General procedures

All reagents and solvents were purchased from commercial sources and used without further purification unless otherwise stated. All reactions were monitored by thin-layer chromatography (TLC). All reactions were carried out in air unless otherwise stated. Column chromatography was performed on silica gel (300-400 mesh, 20 gram, length of column is about 20 cm) and visualized with ultraviolet light. Ethyl acetate and petroleum ether were used as eluents. ^{1}H, ^{13}C and ^{19}F spectra were recorded at room temperature on a JEOL ECZ400 with TMS as an internal standard and $CDCl_3$ as solvent. Fourier transform infrared spectra (FT-IR) were recorded on Agilent Technologies Cary 630 instrument. HRMS analyses were made by means of ESI-TOF. Melting points were measured on micro melting point apparatus and uncorrected.

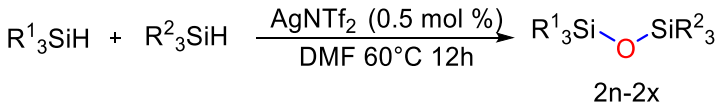
II. General procedures for oxidative coupling of hydrosilanes with DMF

1. Oxidative coupling of hydrosilanes with DMF to symmetrical disiloxanes.



$AgNTf_2$ (0.0125 mmol, 0.0049 g, 0.005 eq), DMF (2.5 ml), hydrosilane (2.5 mmol) were mixed in a 10 mL reaction flask and the reaction was stirred at 60 ℃. After the reaction was completed (monitored by TLC), the reaction was quenched with H_2O (5 mL) and extracted with DCM (2x10 mL). The combined organic layers were dried over Na_2SO_4 and the solution was concentrated in vacuo. The dissiloxane 2a was purified by flash chromatography (PE : EA = 100:1).

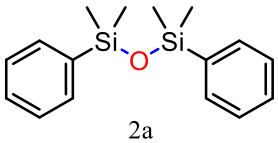
2. Synthesis of unsymmetrical disiloxanes.



$AgNTf_2$ (0.0125 mmol, 0.0049 g, 0.005 eq), DMF (4 ml), $R^1{}_3SiH$ (3 mmol), $R^2{}_3SiH$ (1 mmol) were mixed in a 10 mL reaction flask and the reaction was stirred at 60 ℃. After the reaction was completed, the reaction was quenched with H_2O (5 mL) and extracted with DCM (2 x 10 mL). The combined organic layers were dried over Na_2SO_4, and the solution was concentrated in vacuo. The crude dissiloxane was purified by flash chromatography on silica (PE : EA = 100:1).

III. Characterization data of dissiloxane

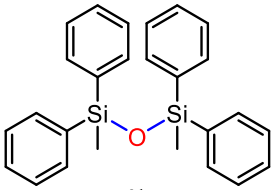
2-1,1,3,3-tetramethyl-1,3-diphenyldisiloxane (2a)[1,2]



2a

2a was obtained in 96% yield (343.4 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.55 (dd, *J* = 7.1, 2.1 Hz, 4H), 7.42-7.31 (m, 6H), 0.33 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.80, 132.98, 129.23, 127.68, 0.84. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -0.52. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{16}H_{22}OSi_2Na^+$ 309.1101; found: 309.1102.

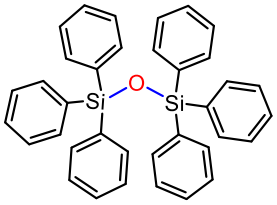
3-1,3-dimethyl-1,1,3,3-tetraphenyldisiloxane (2b)[1]



2b

2b was obtained in 90% yield (512.7 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1).^{1}H NMR (400 MHz, $CDCl_3$): δ 7.55-7.49 (m, 8H), 7.41-7.34 (m, 4H), 7.34-7.28 (m, 8H), 0.57 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 137.57, 133.99, 129.55, 127.71, -0.59. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -9.38. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{16}H_{26}OSi_2Na^+$ 433.1414; found: 433.1416.

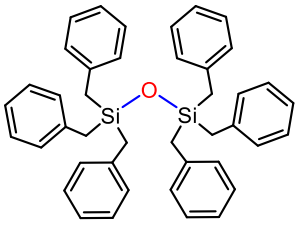
1,1,1,3,3,3-hexaphenyldisiloxane (2c)[2,3]



2c

2c was obtained in 91% yield (608.3 mg) as a white solid (m.p. 221-223 ºC) after silica gel column chromatography using PE/EtOAc (50:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.48- 7.46 (m, 10H), 7.39-7.35 (m, 5H), 7.28-7.24 (m, 15H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 135.44, 135.12, 129.77, 127.68. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -17.50.

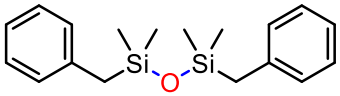
1,1,1,3,3,3-hexabenzyldisiloxane (2d)



2d

2d was obtained in 85% yield (657.6 mg) as a white solid (m.p. 206-208°C) after silica gel column chromatography using PE/EtOAc (50:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.11 (t, *J* = 7.3 Hz, 12H), 7.05 (t, *J* = 7.1 Hz, 6H), 6.31 (d, *J* = 6.9 Hz, 12H), 1.95 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 138.19, 128.75, 128.29, 124.62, 24.67. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -3.22. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{42}H_{42}OSi_2Na^+$ 641.2672; found: 641.2674.

1,3-dibenzyl-1,1,3,3-tetramethyldisiloxane(2e)[2]

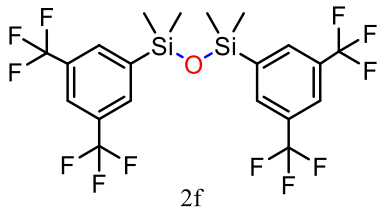


2e

2e was obtained in 91% yield (357.8 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.20 (t, *J* = 7.5 Hz, 4H), 7.07 (t, *J* = 7.5 Hz, 2H), 6.98 (d, *J* = 6.9 Hz, 4H), 2.05 (s, 4H), -0.02 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.38,

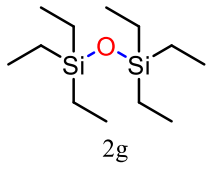
128.31, 128.11, 124.01, 28.50, -0.11. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 5.57. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{18}H_{26}OSi_2Na^+$ 337.1414; found: 337.1412.

1,3-bis(3,5-bis(trifluoromethyl)phenyl)-1,1,3,3-tetramethyldisiloxane (2f)


2f

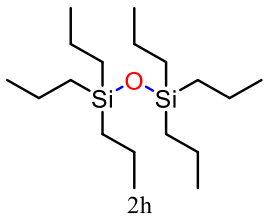
2f was obtained in 88% yield (613.8 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.87 (s, 6H), 0.43 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 142.27, 132.59, 130.98 (q, J = 32.6 Hz), 123.45 (q, J = 273.1 Hz), 123.36, 0.53; ^{19}F NMR (400 MHz, $CDCl_3$): -62.92. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 0.72. HRMS (ESI-TOF) m/z: $[M+F]^-$ calcd. for $C_{20}H_{18}F_{12}OSi_2F^-$ 577.0694; found: 577.0685.

1,1,1,3,3,3-hexaethyldisiloxane (2g)[2,3]


2g

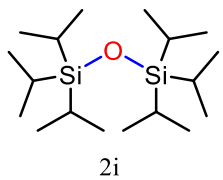
2g was obtained in 67% yield (206 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 0.93 (t, J = 16 Hz, 18H), 0.51 (q, J = 7.9 Hz, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 6.80, 6.38. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 9.38. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{12}H_{30}OSi_2Na^+$ 269.1727; found: 269.1725.

1,1,1,3,3,3-hexapropyldisiloxane (2h)


2h

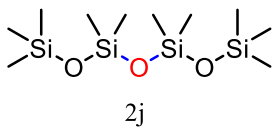
2h was obtained in 65% yield (393.2 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 1.38-1.28 (m, 12H), 0.95 (t, J = 7.3 Hz, 18H), 0.50 (t, J = 8.0 Hz, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 18.57, 18.47, 16.79. ^{29}Si NMR (79 MHz, $CDCl_3$): 5.83. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{18}H_{42}OSi_2Na^+$ 353.2666; found: 353.2669.

1,1,1,3,3,3-hexaisopropyldisiloxane (2i)


2i

2i was obtained in 50% yield (206.2 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, CD_3Cl): δ 1.049-0.999 (s, 42H); ^{13}C NMR (100 MHz, $CDCl_3$): δ 18.20, 13.67. ^{29}Si NMR (79 MHz, $CDCl_3$): δ15.50. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{18}H_{42}OSi_2Na^+$ 353.2666; found: 353.2666.

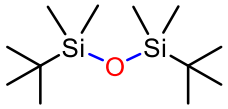
1,1,1,3,3,5,5,7,7,7-decamethyltetrasiloxane(2j)[4]


2j

2j was obtained in 78% yield (302.2 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 0.09 (s, 18H), 0.04 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 1.79,

1.14. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 7.74, -21.56. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{10}H_{30}O_3Si_4Na^+$ 333.1164; found: 333.1159.

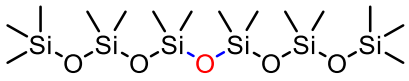
1,3-di-tert-butyl-1,1,3,3-tetramethyldisiloxane (2*k*)[5]



2k

2*k* was obtained in 64% yield (196.8 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 0.86 (s, 18H), -0.00 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 25.69, 18.11, -3.04. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 10.48. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{12}H_{30}OSi_2Na^+$ 269.1727; found: 269.1727.

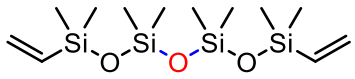
1,1,1,3,3,5,5,7,7,9,9,11,11,11-tetradecamethylhexasiloxane (2l)



2l

2l was obtained in 76% yield (435.1 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 0.08 (s, 18H), 0.06 (s, 12H), 0.04 (s, 12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 1.79, 1.14, 1.05. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 7.80, -20.93, -42.50. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{14}H_{42}O_5Si_6Na^+$ 481.1540; found: 481.1536.

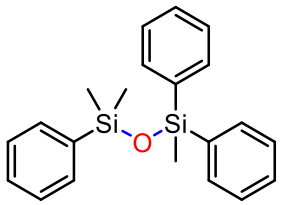
1-((dimethyl(vinyl)silyl)methyl)-1,1,3,3,5,5-hexamethyl-5-vinyltrisiloxane (2m)



2m

2m was obtained in 80% yield (334.2 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1). ^{1}H NMR (400 MHz, $CDCl_3$): δ 6.12 (dd, *J* = 20.4, 14.9 Hz, 2H), 5.92 (dd, *J* = 14.9, 3.9 Hz, 2H), 5.72 (dd, *J* = 20.4, 3.9 Hz, 2H), 0.18-0.12 (12H), 0.08-0.02 (12H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.34, 131.64, 1.16, 0.25. ^{29}Si NMR (79 MHz, $CDCl_3$): δ-2.57, -17.34. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{12}H_{30}O_3Si_4Na^+$ 357.1164; found: 357.1161.

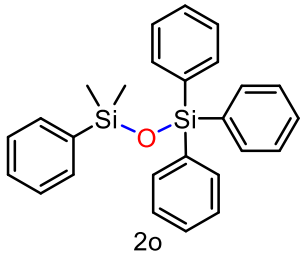
1,1,3-trimethyl-1,3,3-triphenyldisiloxane (2n)



2n

2n was obtained in 59% yield (256.7 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1), R_f = 0.33. ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.57-7.50 (m, 6H), 7.42-7.30 (m, 9H), 0.61-0.57 (3H), 0.33 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.50, 137.85, 133.90 132.99, 129.51,129.29, 127.71, 0.85, -0.55. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 0.52, -10.48. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{21}H_{24}OSi_2Na^+$ 371.1258; found: 371.1255.

1,1-dimethyl-1,3,3,3-tetraphenyldisiloxane (2o)

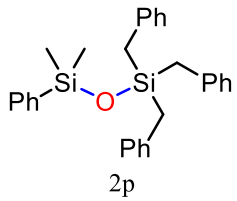


2o

2o was obtained in 65% yield (333.3 mg) as a white solid (m.p. 198-200 °C) after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.22. ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.61-7.55 (m, 6H), 7.55-7.50 (m, 2H), 7.42 (t, J = 6.6 Hz, 3H), 7.38-7.28 (m, 9H), 0.33 (s, 6H). ^{13}C NMR

(100 MHz, $CDCl_3$): δ 139.25, 136.38, 135.82, 134.99, 133.10, 129.77, 129.30, 127.71, 0.88. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 1.30, -19.86. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{26}H_{26}OSi_2Na^+$ 433.1414; found: 433.1411.

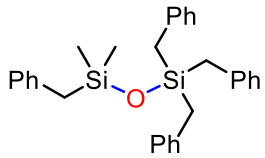
1,1,1-tribenzyl-3,3-dimethyl-3-phenyldisiloxane (2p)



2p

2p was obtained in 58% yield (327.8 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (100:1), R_f = 0.19. ^1H NMR (400 MHz, $CDCl_3$) δ 7.41-7.33 (m, 1H), 7.32-7.26 (m, 3H), 7.25-7.23 (1H), 7.18 (t, J = 7.5 Hz, 6H), 7.09 (t, J = 7.5 Hz, 3H), 6.98-6.91 (m, 6H), 2.12 (s, 6H), 0.08 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.39, 138.22, 132.98, 129.19, 128.74, 128.28, 127.63, 124.38, 24.69, 0.48. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -0.42, -3.15. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{29}H_{32}OSi_2Na^+$ 475.1884; found: 475.1901.

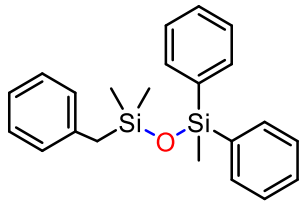
1,1,1,3-tetrabenzyl-3,3-dimethyldisiloxane (2q)



2q

2q was obtained in 56% yield (326.3 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.28. ^1H NMR (400 MHz, $CDCl_3$): δ 7.25-7.15 (m, 8H), 7.15-7.00 (m, 4H), 6.92 (d, *J* = 7.8 Hz, 6H), 6.79 (d, *J* = 8.2 Hz, 2H), 2.07 (s, 6H), 1.90 (s, 2H), -0.18 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ139.19, 138.34, 128.71, 128.42, 128.28, 128.15, 124.39, 124.16, 28.32, 24.67, -0.33. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 6.29, -3.77. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{30}H_{34}OSi_2Na^+$ 489.2040; found: 489.2040.

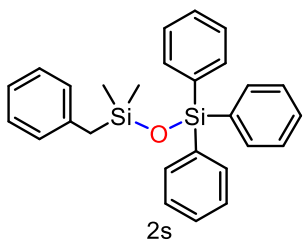
1-benzyl-1,1,3-trimethyl-3,3-diphenyldisiloxane (2r)



2r

2r was obtained in 62% yield (280.7 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.28. ^1H NMR (400 MHz, $CDCl_3$): δ 7.59-7.50 (m, 4H), 7.45-7.35 (m, 6H), 7.25-7.18 (2H), 7.12 (t, J = 7.3 Hz, 1H), 7.03 (d, J = 7.3 Hz, 2H), 2.20 (s, 2H), 0.58 (s, 3H), 0.12 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.11, 137.89, 133.85, 129.49, 128.31, 128.15, 127.69, 124.07, 28.51, -0.68. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 7.43, -11.04. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{22}H_{26}OSi_2Na^+$ 385.1414; found: 385.1424.

1-benzyl-1,1-dimethyl-3,3,3-triphenyldisiloxane (2s)

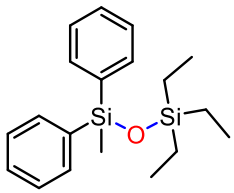


2s

2s was obtained in 67% yield (355.2 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.26. ^1H NMR (400 MHz, $CDCl_3$) δ 7.49 (d, J = 6.4 Hz, 6H), 7.42 (d, J = 7.2 Hz, 3H), 7.35 (t, J = 7.2 Hz, 6H), 7.14 (t, J = 7.2 Hz, 2H), 7.07 (t, J = 7.2 Hz, 1H), 6.95 (d, J = 8.0 Hz, 2H), 2.16 (s, 2H), 0.05 (s, 6H). ^{13}C NMR (100 MHz,

$CDCl_3$): δ 138.97, 135.87, 134.96, 129.74, 128.42, 128.17, 127.69, 124.07, 28.53，0.03. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 8.27, -20.34. HRMS (ESI-TOF) m/z: $[M+K]^+$ calcd. for $C_{27}H_{28}OSi_2K^+$ 463.1319; found: 463.1327.

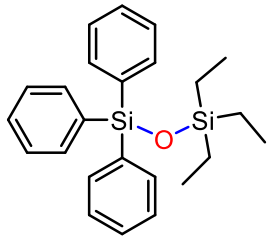
1,1,1-triethyl-3-methyl-3,3-diphenyldisiloxane (2t)[1]



2t

2t was obtained in 48% yield (196.9 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.47. ^1H NMR (400 MHz, $CDCl_3$): δ 7.56 (d, J = 7.3 Hz, 4H), 7.37 (t, J = 6.9 Hz, 6H), 0.90 (t, J = 7.8 Hz, 9H), 0.61 (s, 3H), 0.60-0.47 (6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 138.33, 133.81, 129.38, 127.64, 6.76, 6.27, -0.52. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 13.09, -12.35. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{19}H_{28}OSi_2Na^+$ 351.1571; found: 351.1573.

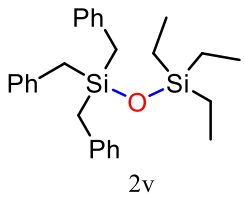
1,1,1-triethyl-3,3,3-triphenyldisiloxane (2u)[6]



2u

2u was obtained in 62% yield (302.4 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.42. ^1H NMR (400 MHz, $CDCl_3$): δ 7.59 (d, J = 9.6 Hz, 6H), 7.42 (t, J = 7.1 Hz, 3H), 7.39-7.33 (m, 6H), 0.87 (t, J = 8.0 Hz, 9H), 0.56 (q, J = 7.9 Hz, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 136.28, 134.95, 129.67, 127.65, 6.76, 6.35. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 13.97, -21.25. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{24}H_{30}OSi_2Na^+$ 413.1727; found: 413.1735.

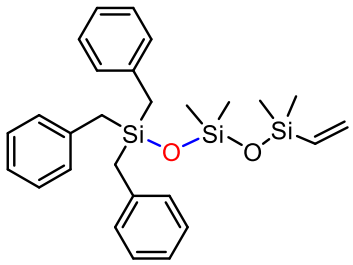
1,1,1-tribenzyl-3,3,3-triethyldisiloxane (2v)



2v

2v was obtained in 56% yield (313.4 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.27. ^1H NMR (400 MHz, $CDCl_3$): δ 7.23 (t, J = 8.0 Hz, 6H), 7.11 (t, J = 7.3 Hz, 3H), 7.02 (d, J = 7.8 Hz, 6H), 2.22-2.04 (6H), 0.86-0.70 (m, 9H), 0.39 (q, J = 7.9 Hz, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 138.44, 128.68, 128.22, 124.32, 24.79, 6.71, 6.16. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -3.98, -19.57. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{27}H_{36}OSi_2Na^+$ 455.2197; found: 455.2203.

1-allyl-5,5,5-tribenzyl-1,1,3,3-tetramethyltrisiloxane (2w)

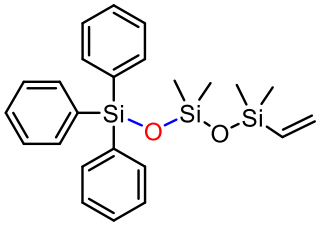


2w

2w was obtained in 47% yield (279.8 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f = 0.25. ^1H NMR (400 MHz, $CDCl_3$): δ 7.24-7.17 (6H), 7.09 (t, J = 7.3 Hz, 3H), 7.00 (d, J = 7.3 Hz, 6H), 6.10 (dd, J = 20.1, 14.6 Hz, 1H), 5.94 (dd, J = 14.6, 4.1 Hz, 1H), 5.72 (dd, J = 20.4, 3.9 Hz, 1H), 2.11 (s, 6H), 0.13 (s, 6H), -0.15 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ 139.17,

138.36, 131.85, 128.75, 128.24, 124.34, 25.54, 1.06, 0.24. ^{29}Si NMR (79 MHz, $CDCl_3$): δ 12.22, -3.24, -4.46. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{27}H_{36}O_2Si_3Na^+$ 499.1915; found: 4991929.

1-allyl-1,1,3,3-tetramethyl-5,5,5-triphenyltrisiloxane (2x)



2x

2x was obtained in 48% yield (260.5 mg) as a colorless liquid after silica gel column chromatography using PE/EtOAc (50:1), R_f= 0.31. ^{1}H NMR (400 MHz, $CDCl_3$): δ 7.66-7.52 (m, 6H), 7.42 (t, J = 6.6 Hz, 3H), 7.38-7.33 (6H), 6.06 (dd, J=8.6, 4.5Hz, 1H), 5.88 (dd, J=14..6, 4.1Hz, 1H), 5.67 (dd, J=6.7, 4.5 Hz, 1H), 0.07 (s, 6H), 0.06 (s, 6H). ^{13}C NMR (100 MHz, $CDCl_3$): δ139.13, 135.93, 135.01, 131.71, 129.72, 127.65, 1.34, 0.11. ^{29}Si NMR (79 MHz, $CDCl_3$): δ -2.69, -17.50, -19.19. HRMS (ESI-TOF) m/z: $[M+Na]^+$ calcd. for $C_{24}H_{30}O_2Si_3Na^+$ 457.1446; found: 457.1457.

Reference

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[4] J. Beckmann, K. Jurkschat, D. Müller, S. Rabe, M. Schürmann, 1,1,3,3,5,5,7,7-Octaphenyl-1,3,5,7-tetrasiloxane-1,7-diol and its organotin derivatives. Model compounds for diphenylsiloxane polymer, *Organometallics*, 2013, **32**, 3788−3794.

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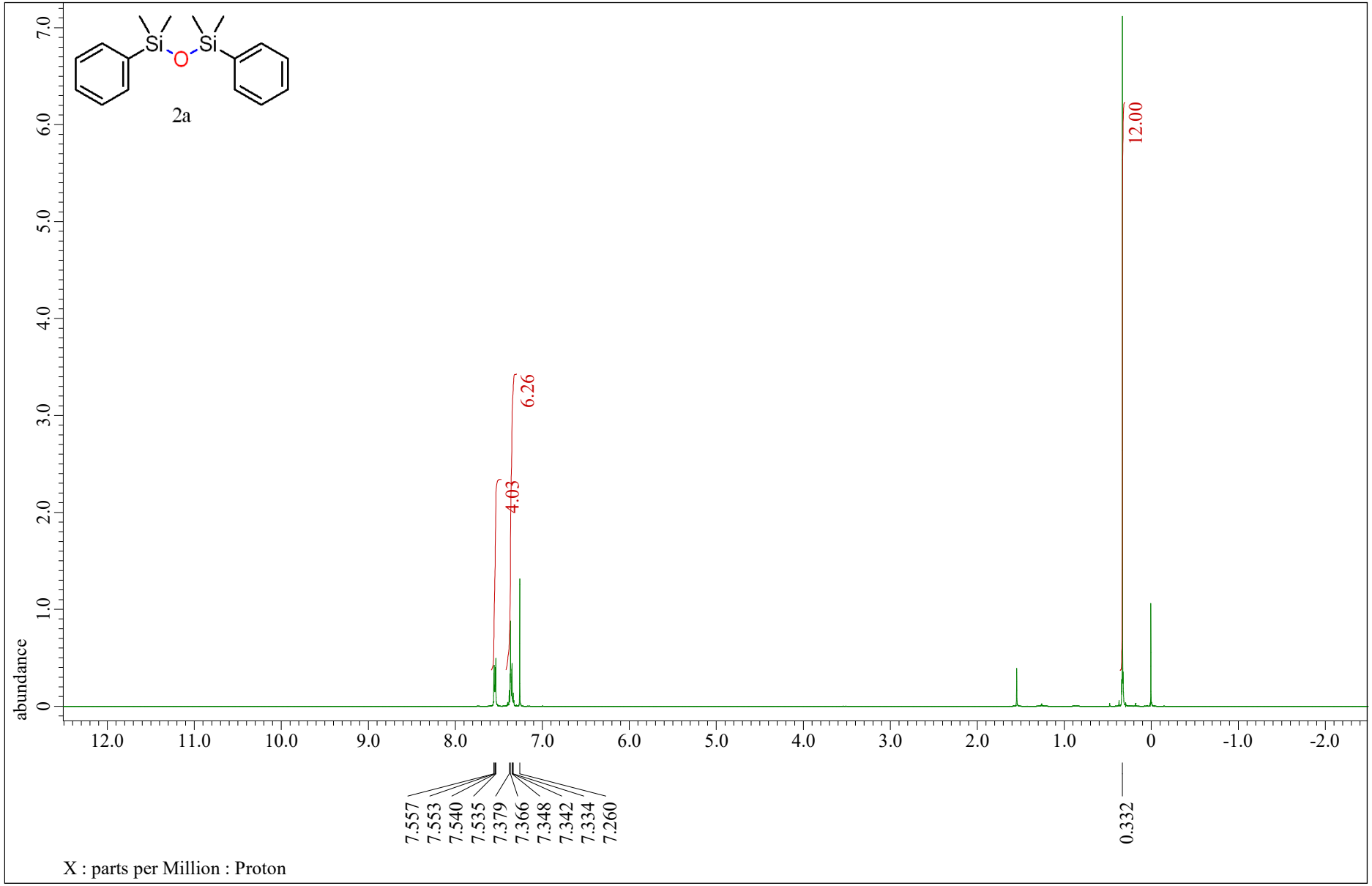
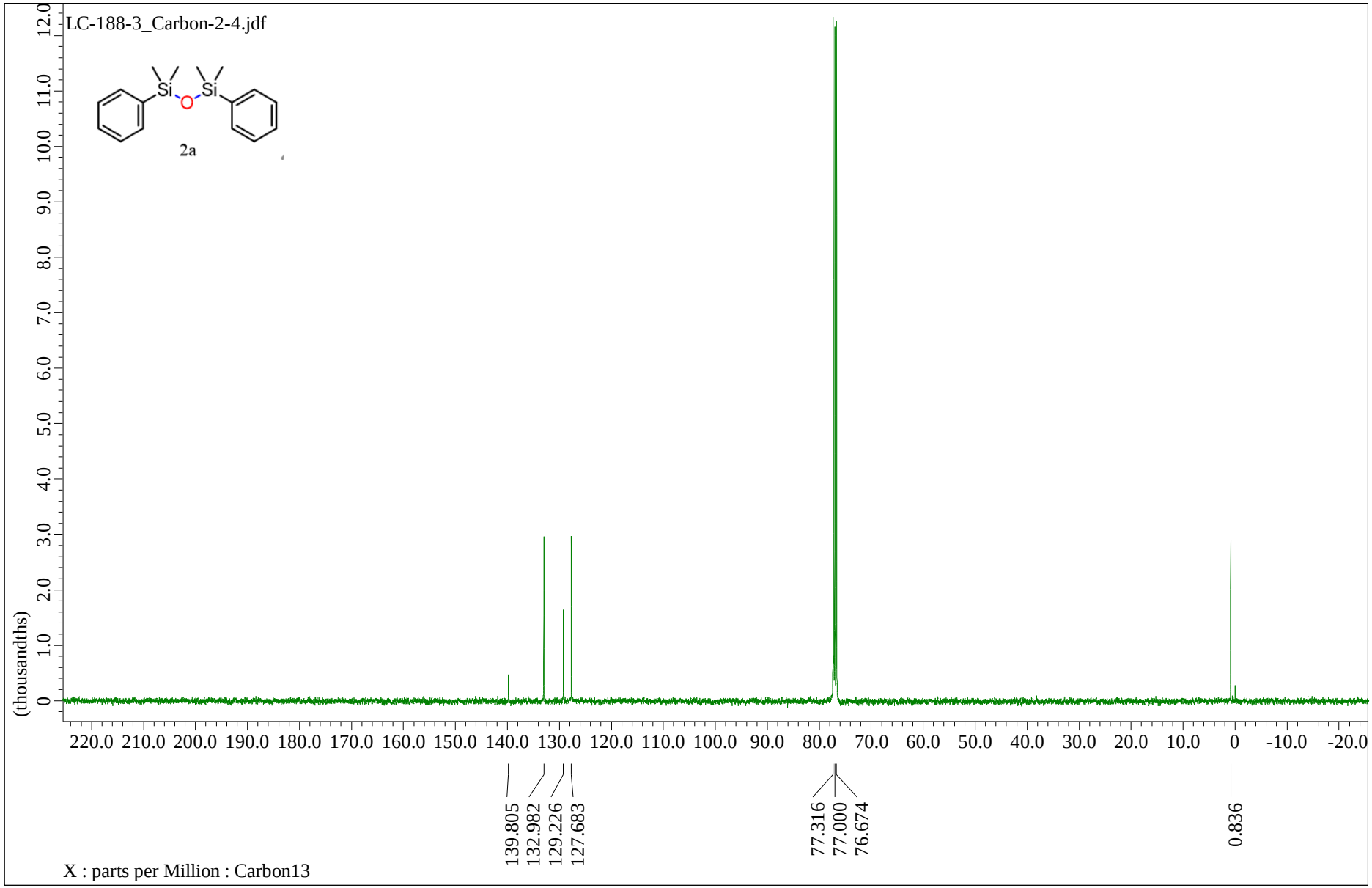
[6] R. T. Anderson, X. N. Zang, R. Fernando, M. J. Dzara, C. Ngo, M. Sharps, R. Pinals, S. Pylypenko, M. T. Lusk, A. Sellinger, Direct conversion of hydride- to siloxane-terminated silicon quantum dots, *J. Phys. Chem. C*, 2016, **120**, 25822−25831.

IV. Copies of the ^{1}H, ^{19}F and ^{13}C NMR spectra


2a
abundance
12.00
6.26
4.03
7.557
7.553
7.540
7.535
7.379
7.366
7.348
7.342
7.334
7.260
0.332
X : parts per Million : Proton


LC-188-3_Carbon-2-4.jdf
Si
O
Si
2a
(thousandths)
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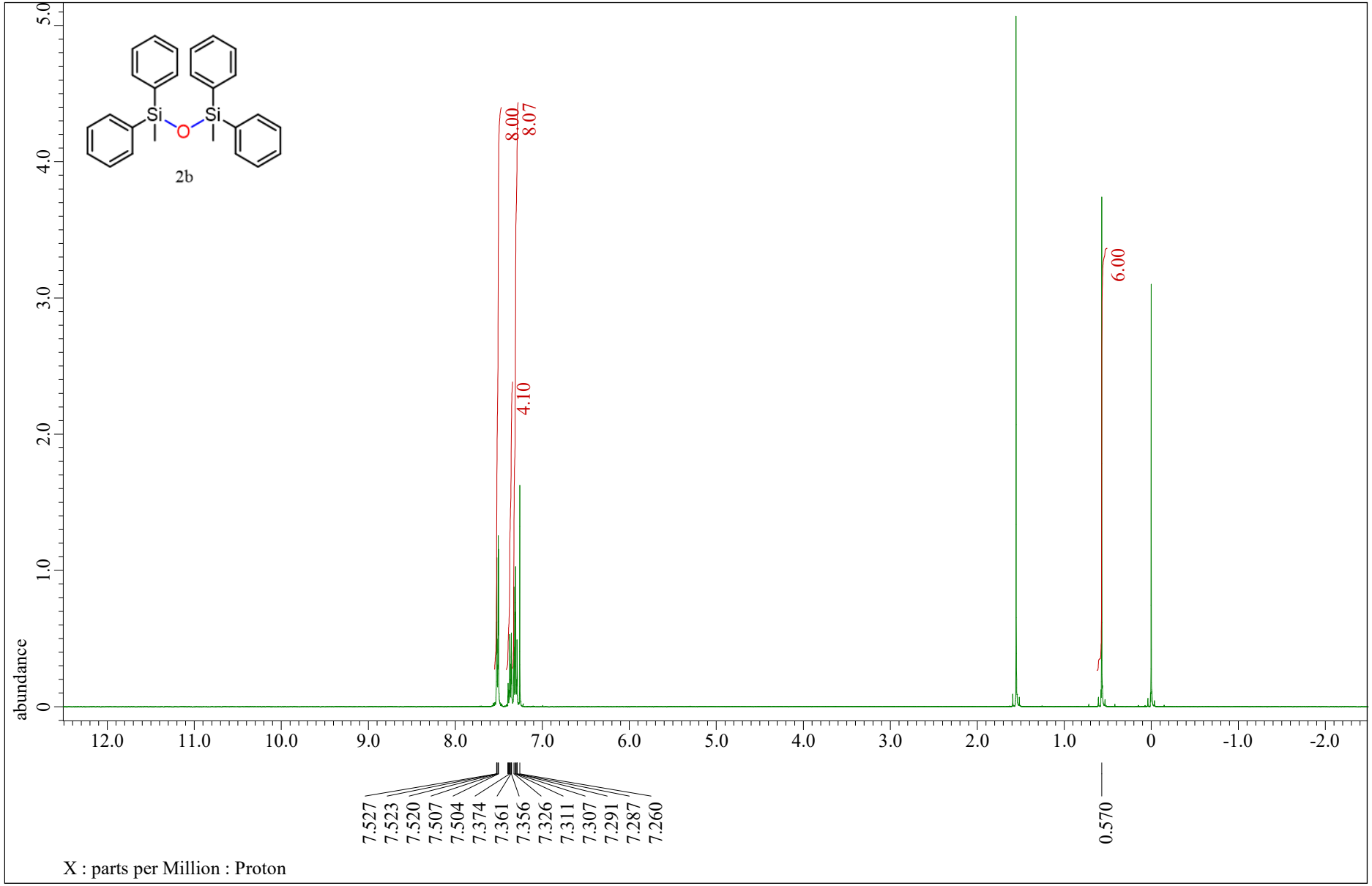
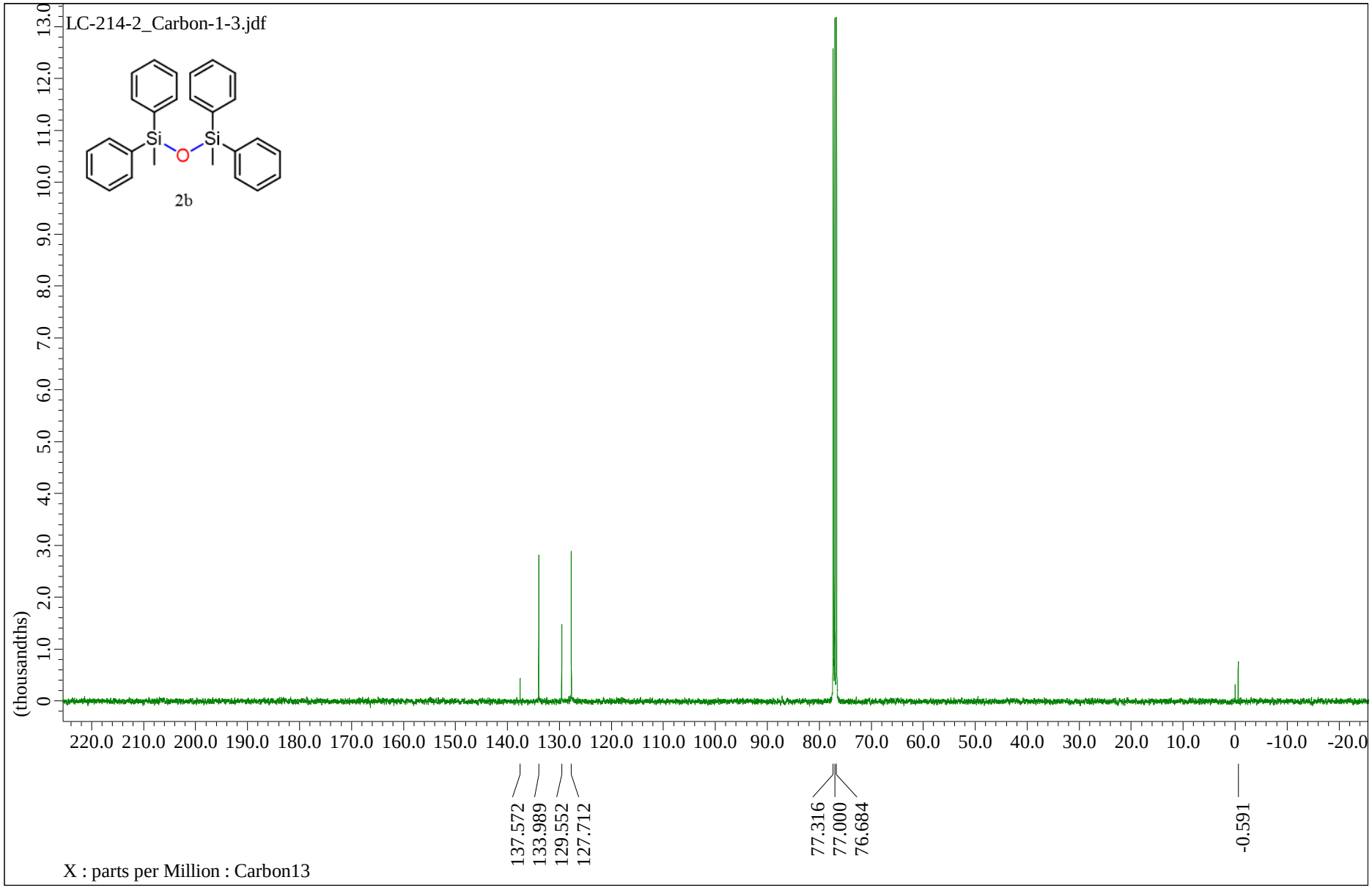
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.805
132.982
129.226
127.683
77.316
77.000
76.674
0.836
X : parts per Million : Carbon13


2b
Si
O
Si
8.00
8.07
4.10
6.00
0.570
abundance
5.0
4.0
3.0
2.0
1.0
0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.527
7.523
7.520
7.507
7.504
7.374
7.361
7.356
7.326
7.311
7.307
7.291
7.287
7.260
X : parts per Million : Proton


LC-214-2_Carbon-1-3.jdf
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O
Si
2b
(thousandths)
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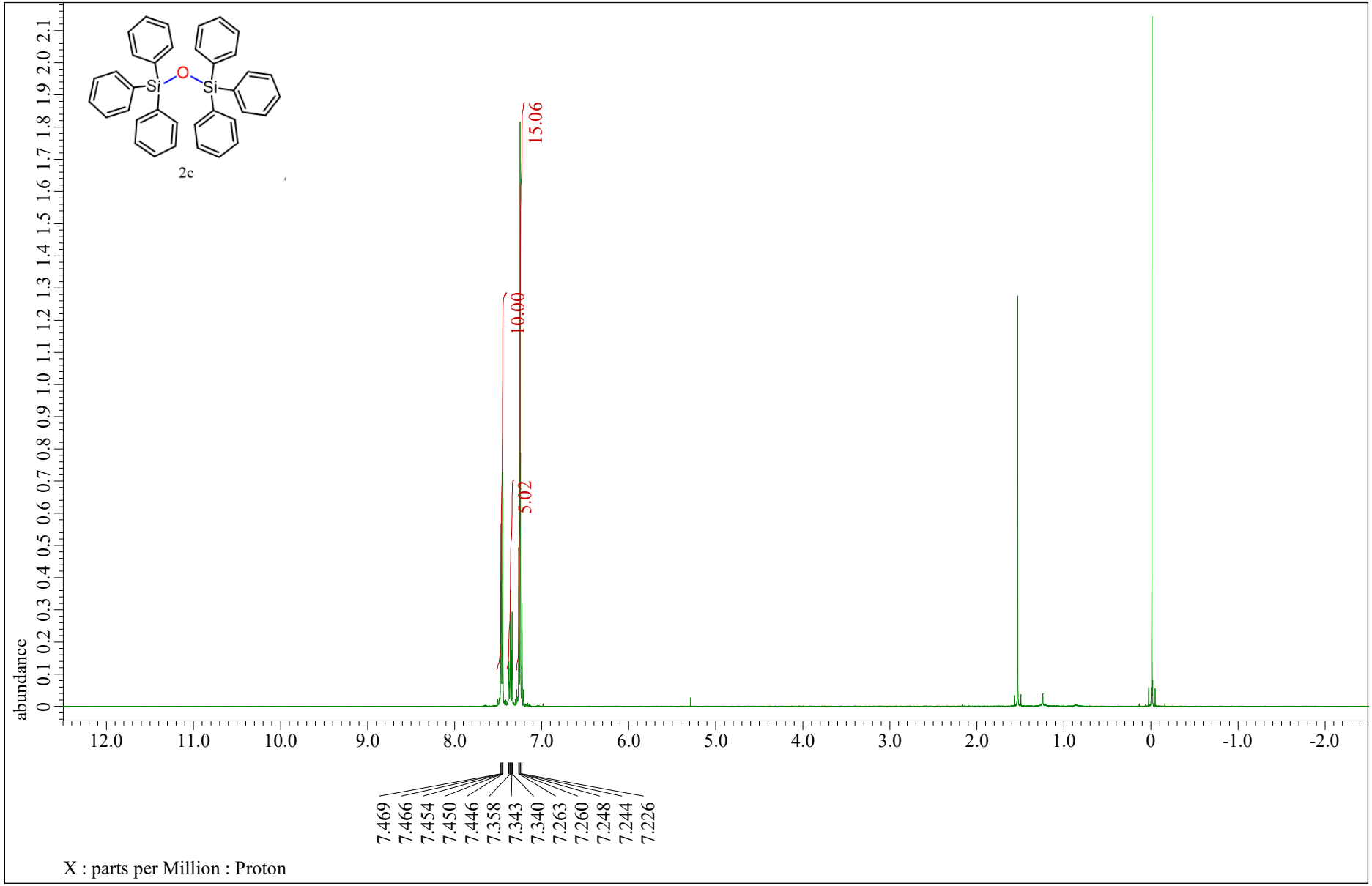
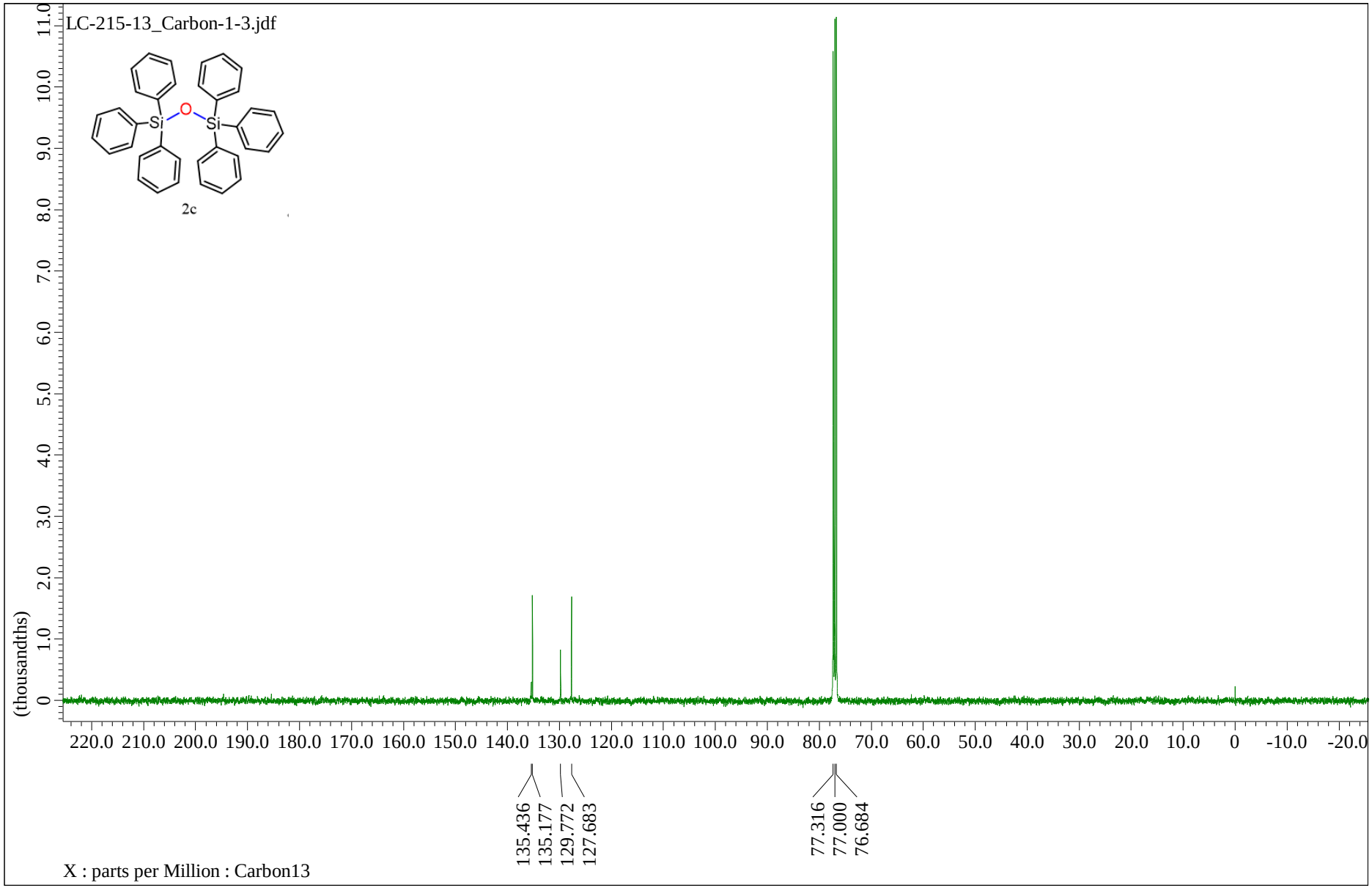
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
137.572
133.989
129.552
127.712
77.316
77.000
76.684
-0.591
X : parts per Million : Carbon13


2c
15.06
10.00
5.02
abundance
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1
12.0 11.0 10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 1.0 0 -1.0 -2.0
7.469 7.466 7.454 7.450 7.446 7.358 7.343 7.340 7.263 7.260 7.248 7.244 7.226
X : parts per Million : Proton


LC-215-13_Carbon-1-3.jdf
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O
Si
2c
(thousandths)
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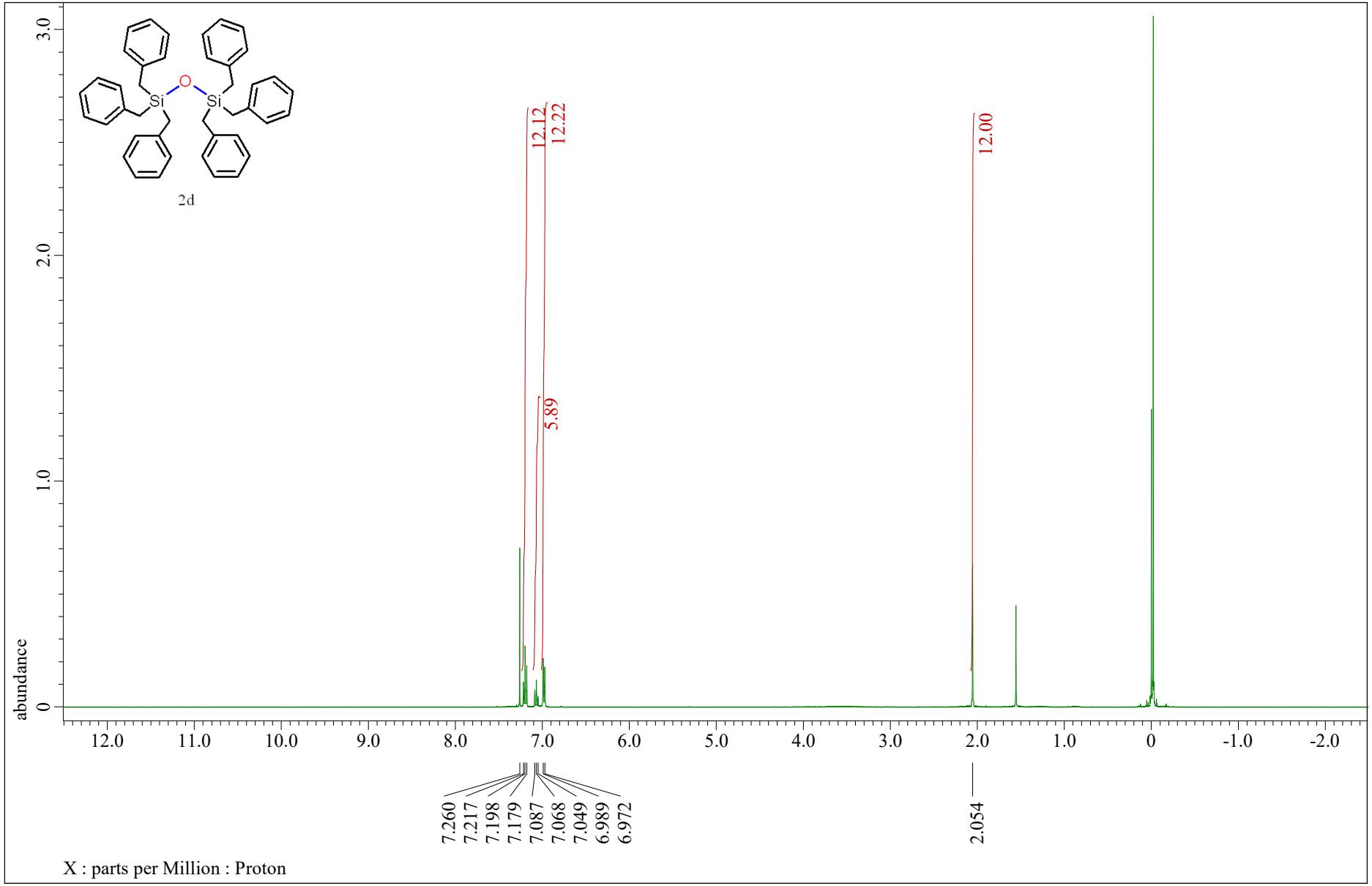
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
135.436
135.177
129.772
127.683
77.316
77.000
76.684
X : parts per Million : Carbon13


Si
O
Si
2d
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12.22
5.89
12.00
abundance
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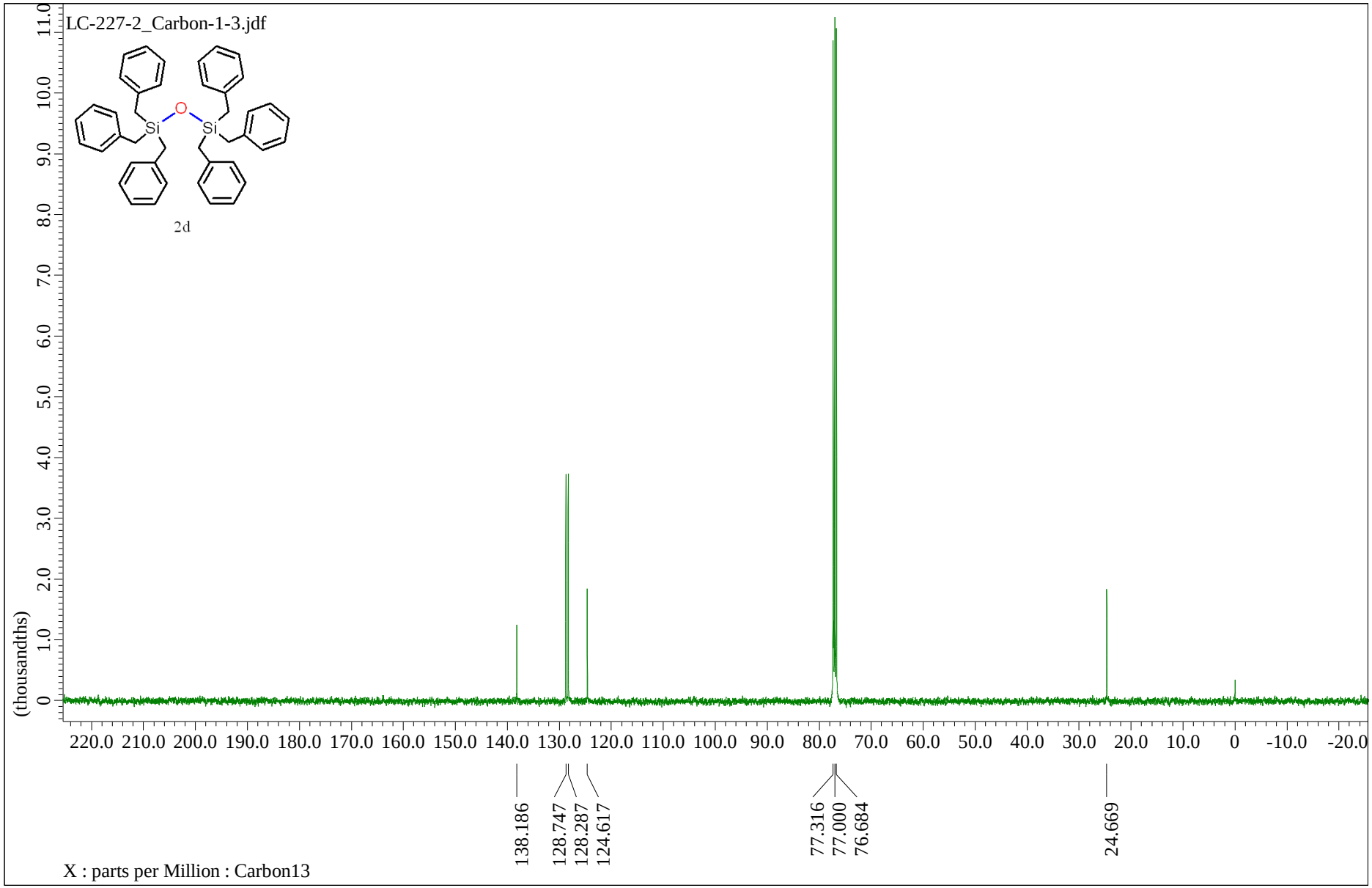
2.0
1.0
0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
7.217
7.198
7.179
7.087
7.068
7.049
6.989
6.972
2.054
X : parts per Million : Proton


LC-227-2_Carbon-1-3.jdf
Si
O
Si
2d
(thousandths)
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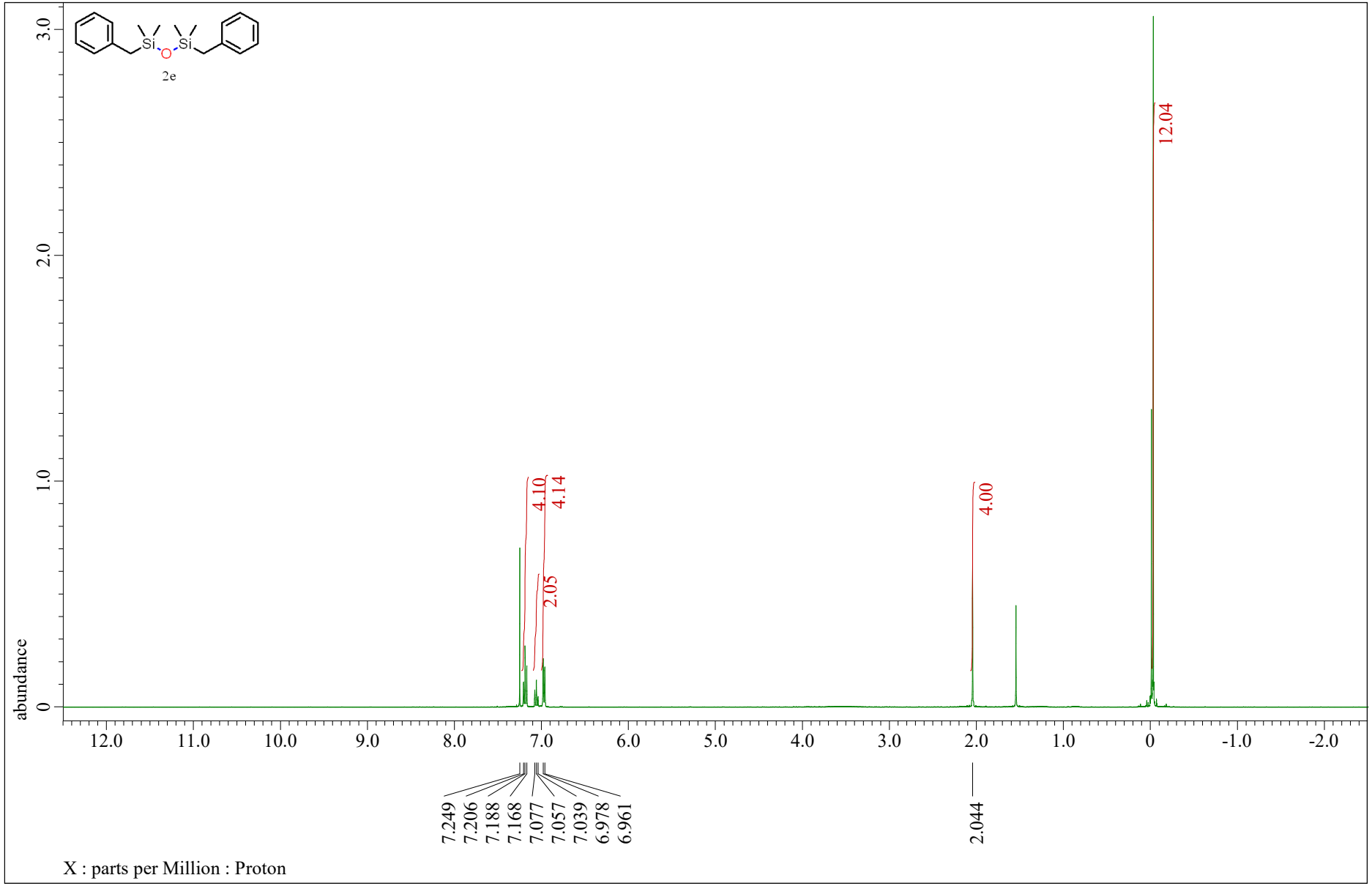
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
138.186
128.747
128.287
124.617
77.316
77.000
76.684
24.669
X : parts per Million : Carbon13


2e
abundance
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1.0
0
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4.10
4.14
2.05
4.00
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
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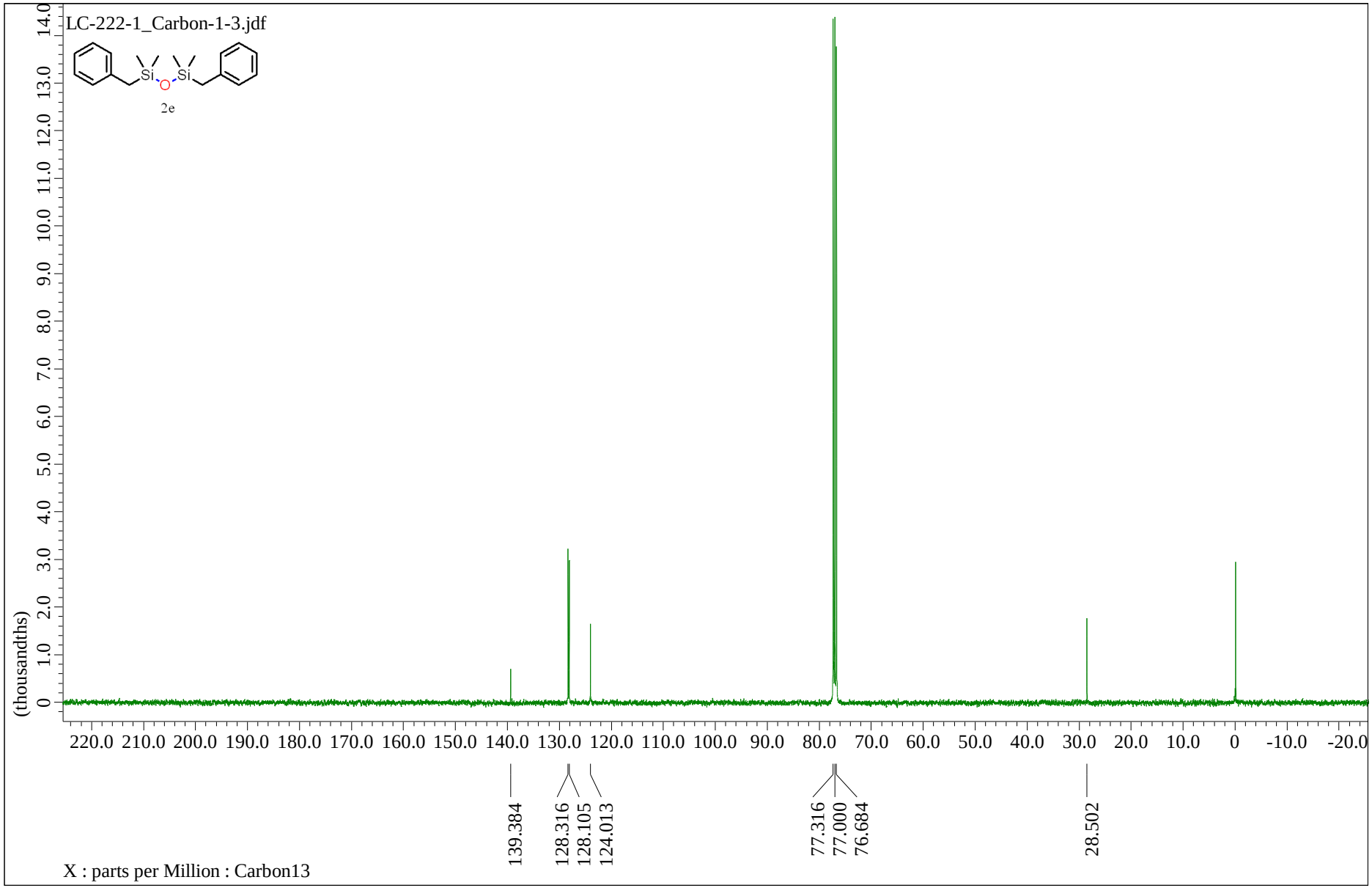
7.206
7.188
7.168
7.077
7.057
7.039
6.978
6.961
2.044
X : parts per Million : Proton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2e
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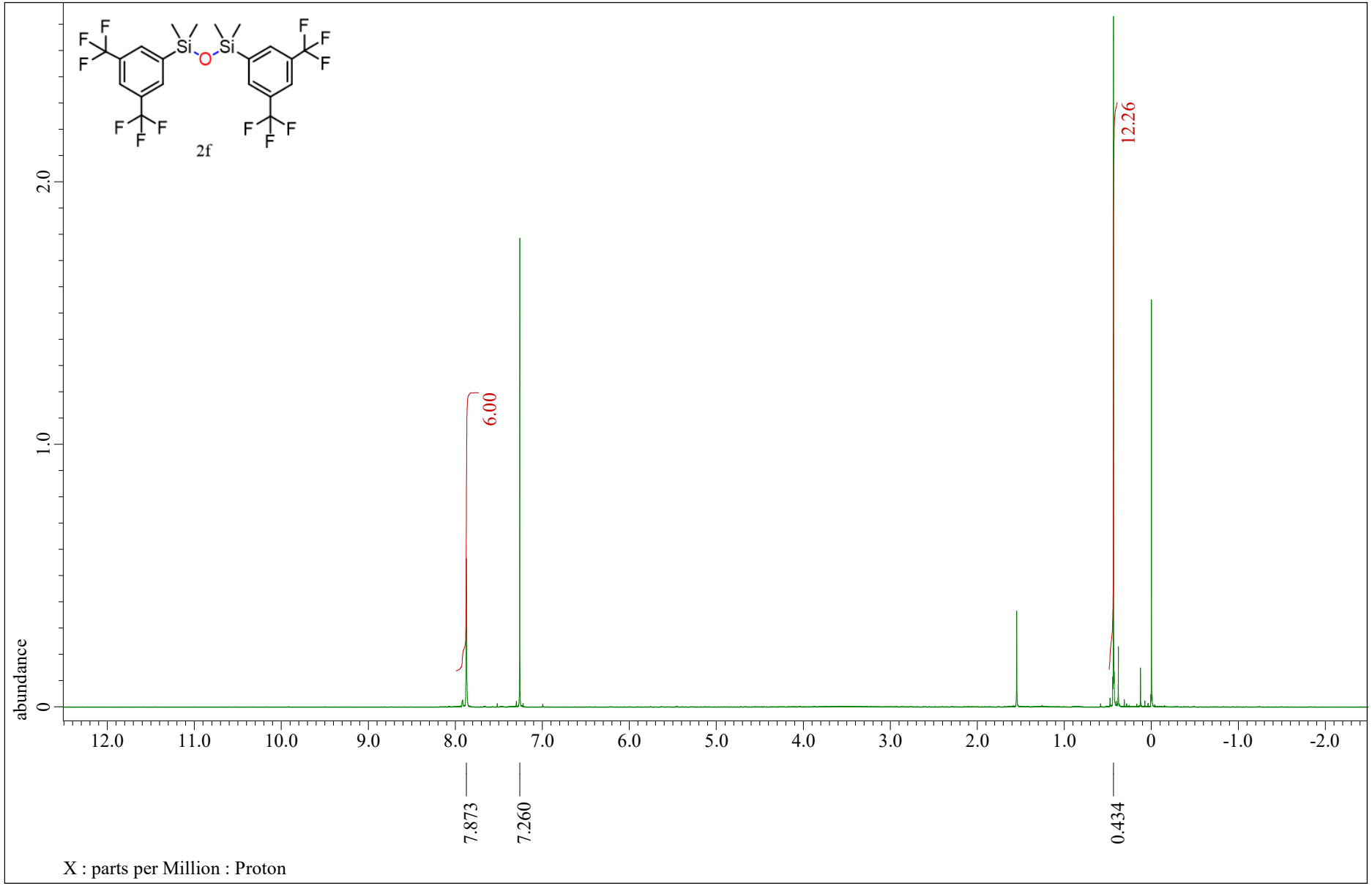
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.384
128.316
128.105
124.013
77.316
77.000
76.684
28.502
X : parts per Million : Carbon13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abundance
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0
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10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
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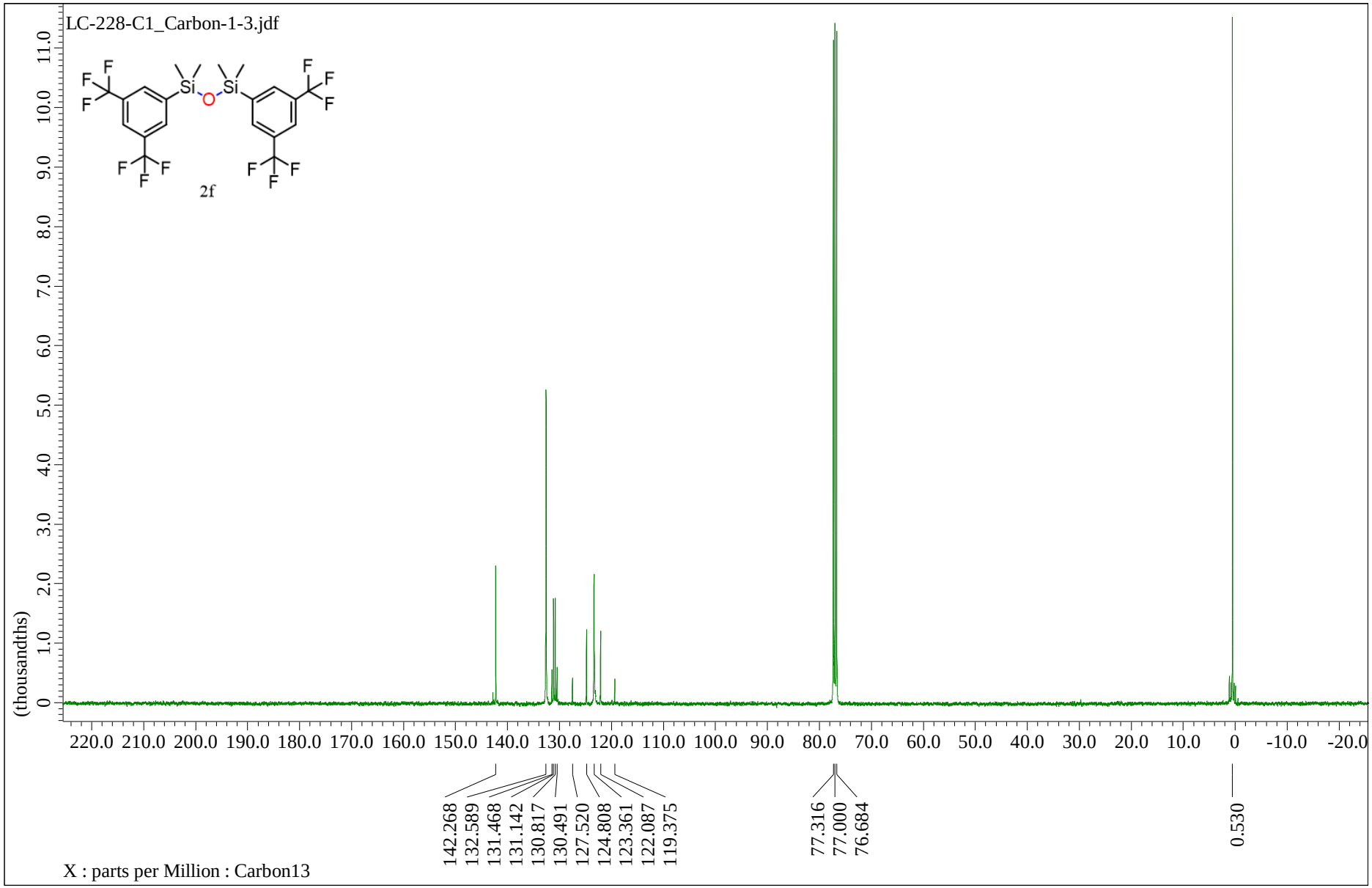
X : parts per Million : Proton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11.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
142.268
132.589
131.468
131.142
130.817
130.491
127.520
124.808
123.361
122.087
119.375
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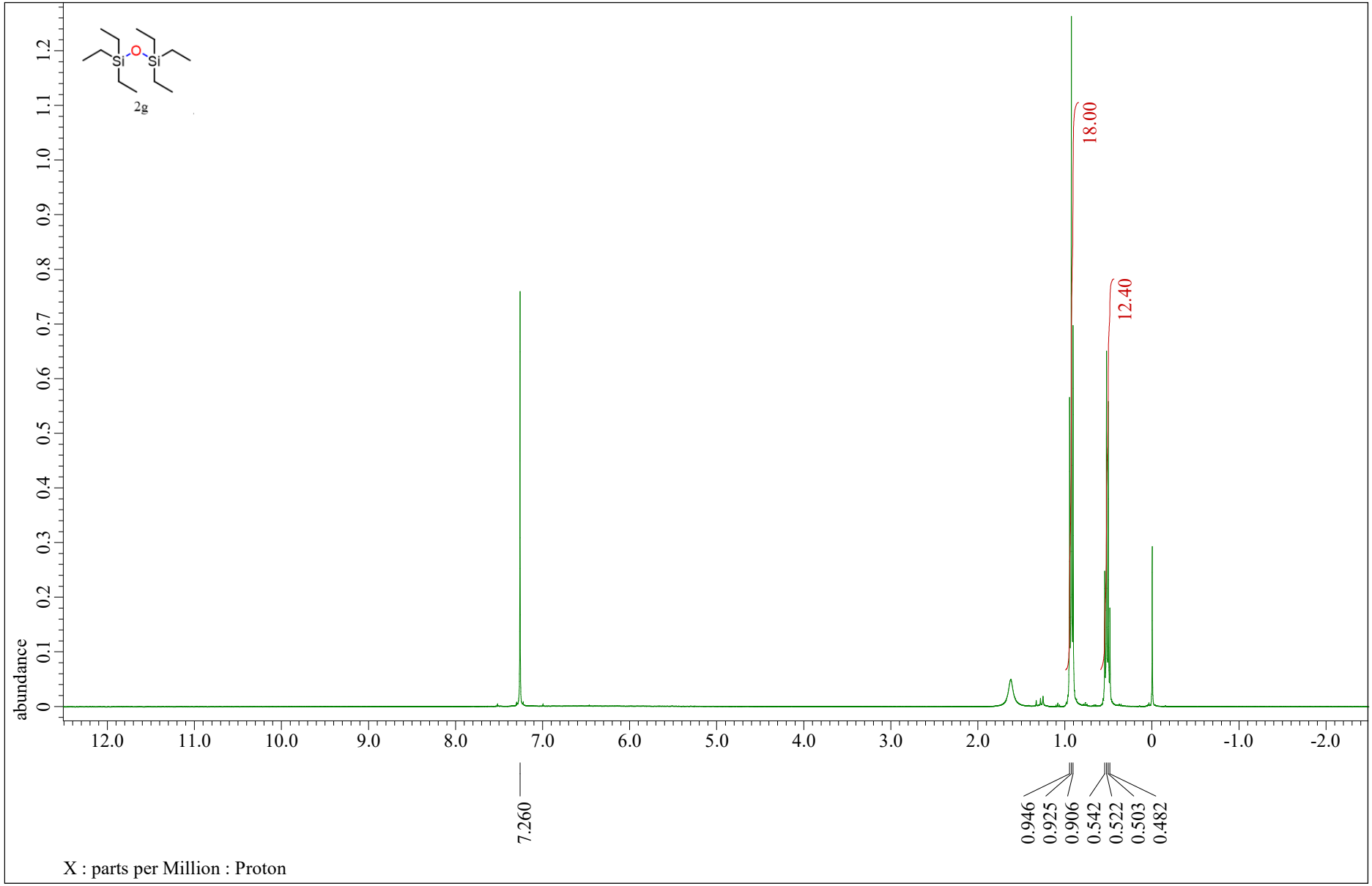
77.000
76.684
0.530
X : parts per Million : Carbon13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O
Si
2g
abundance
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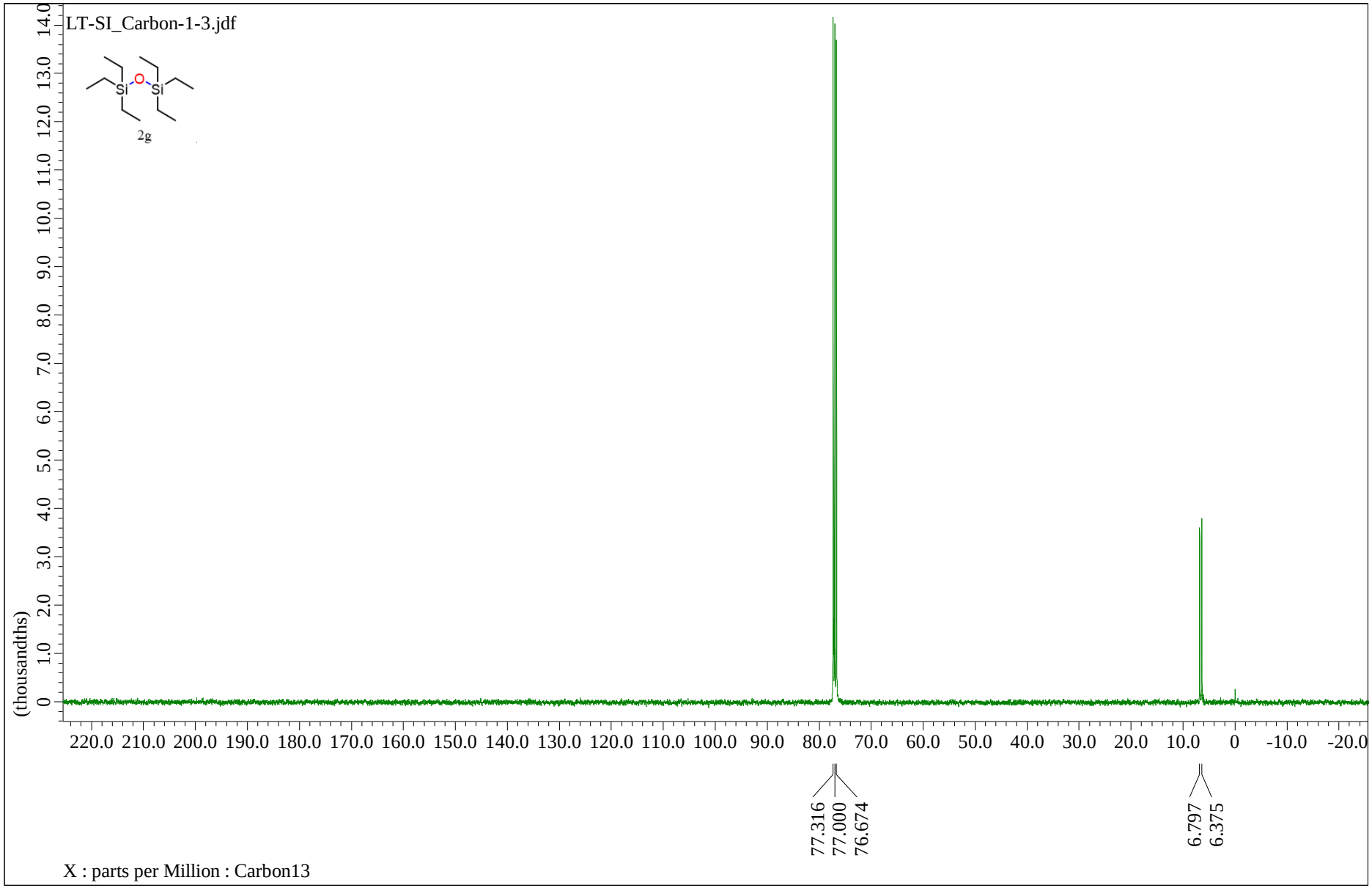
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
18.00
12.40
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
0.946
0.925
0.906
0.542
0.522
0.503
0.482
X : parts per Million : Proton


LT-SI_Carbon-1-3.jdf
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O
Si
2g
(thousandths)
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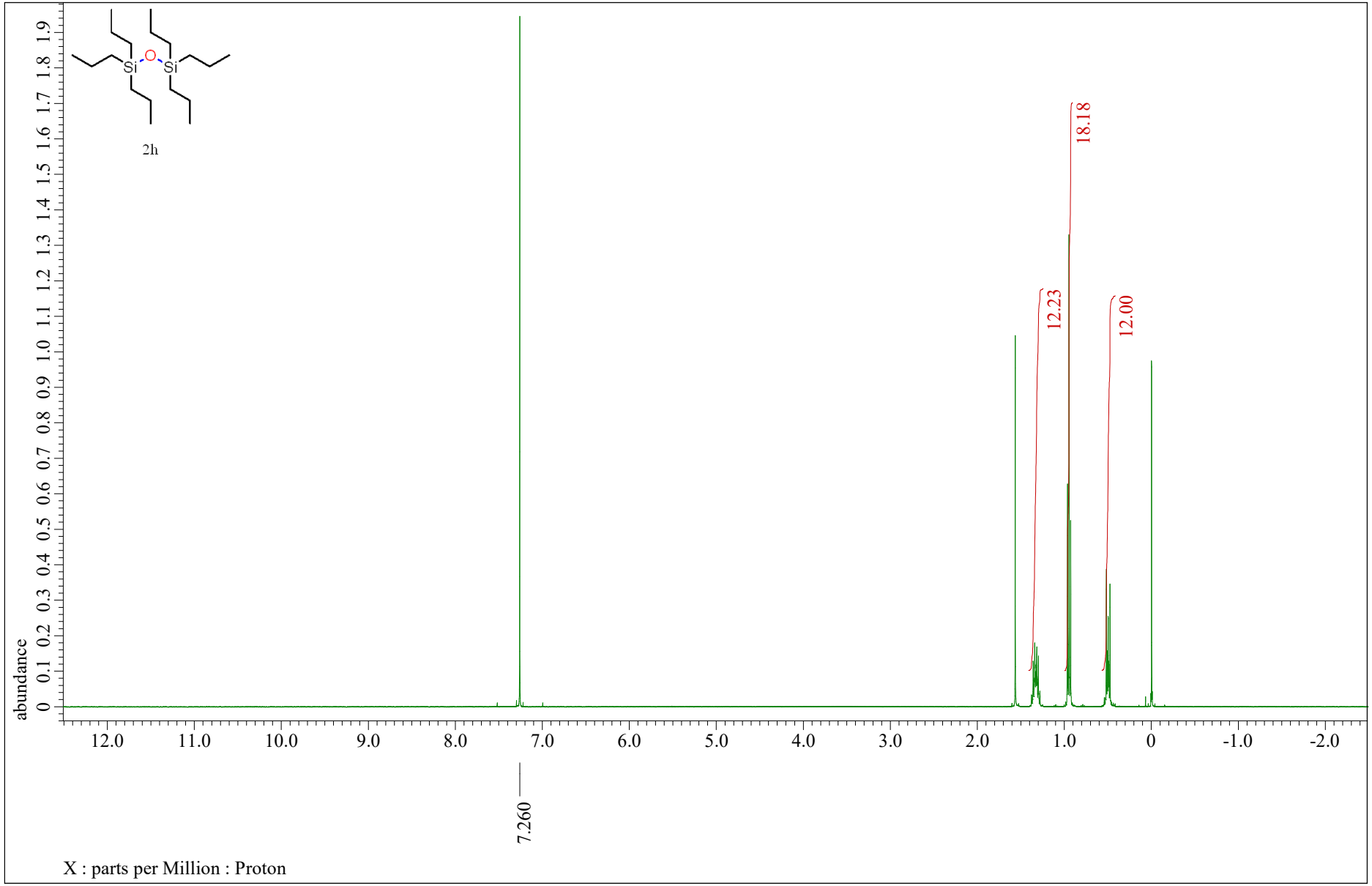
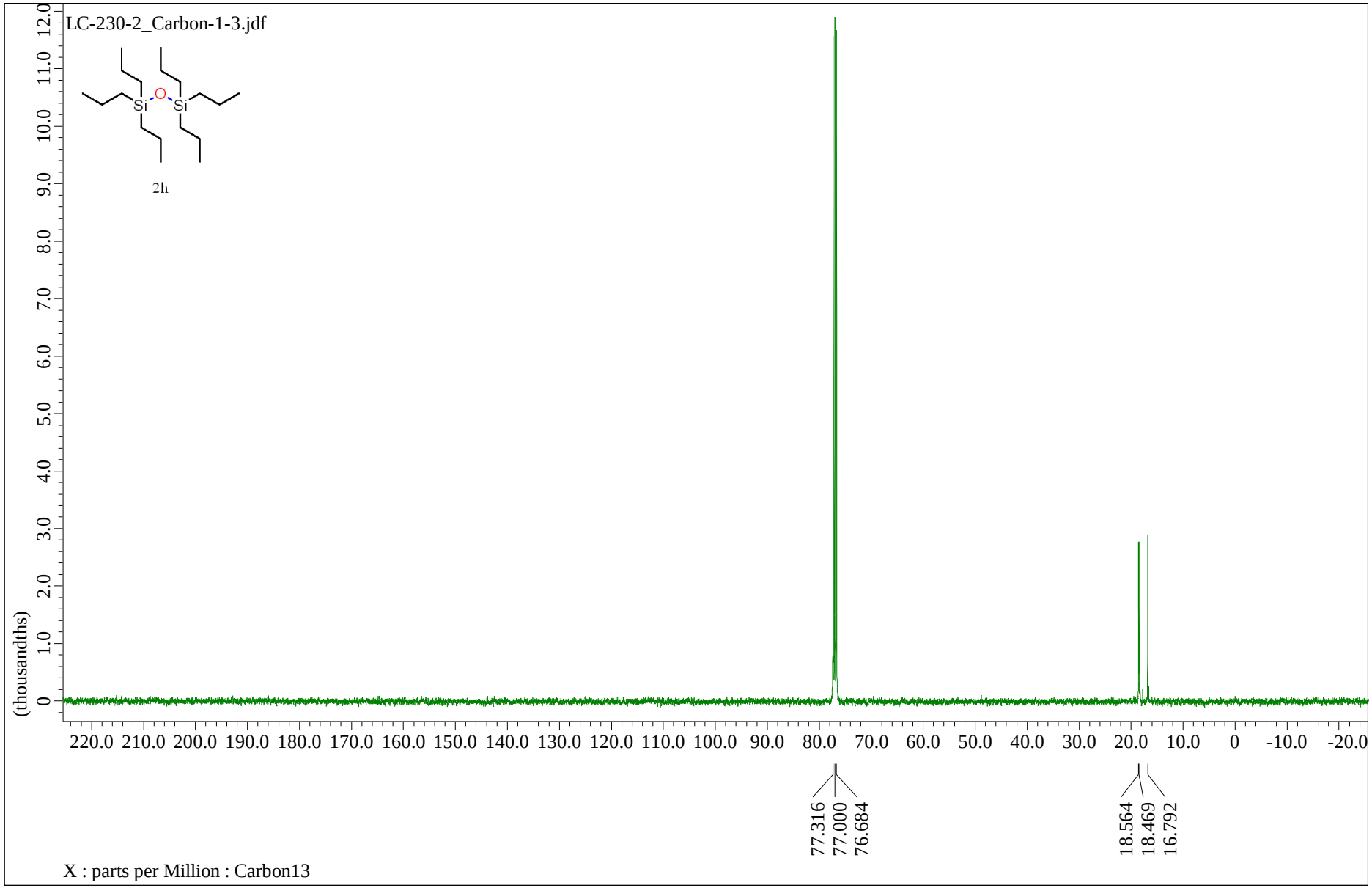
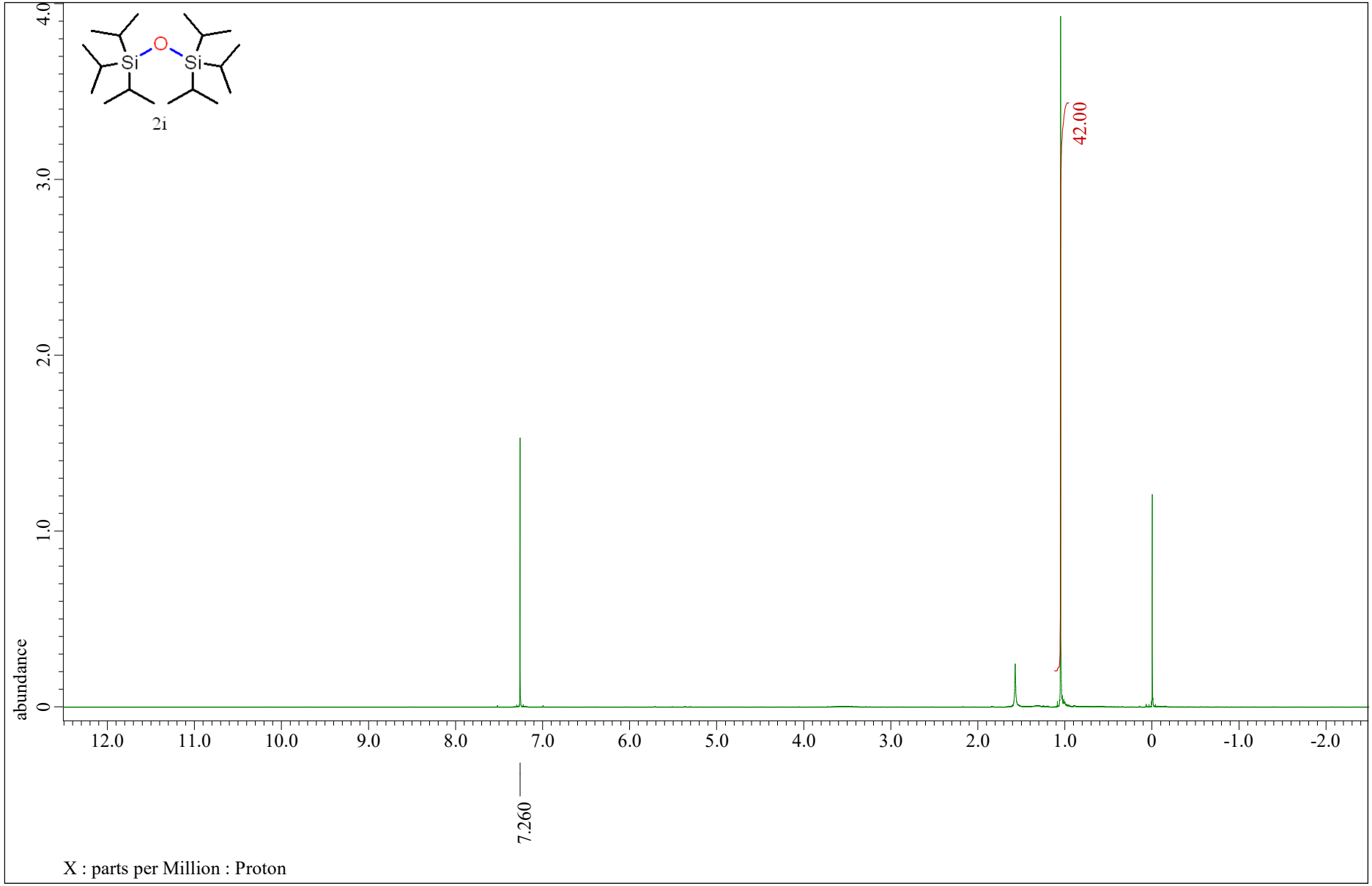
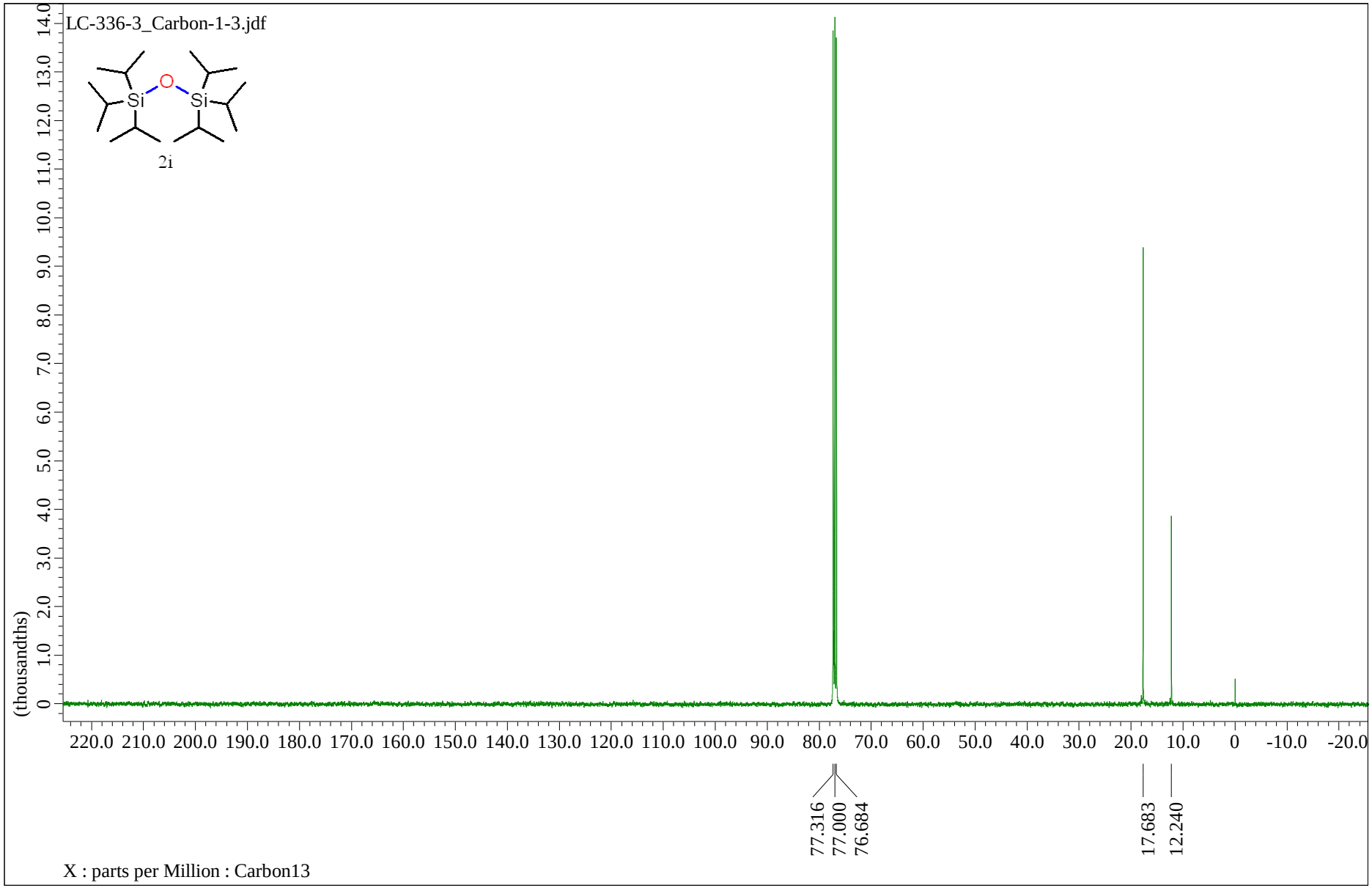
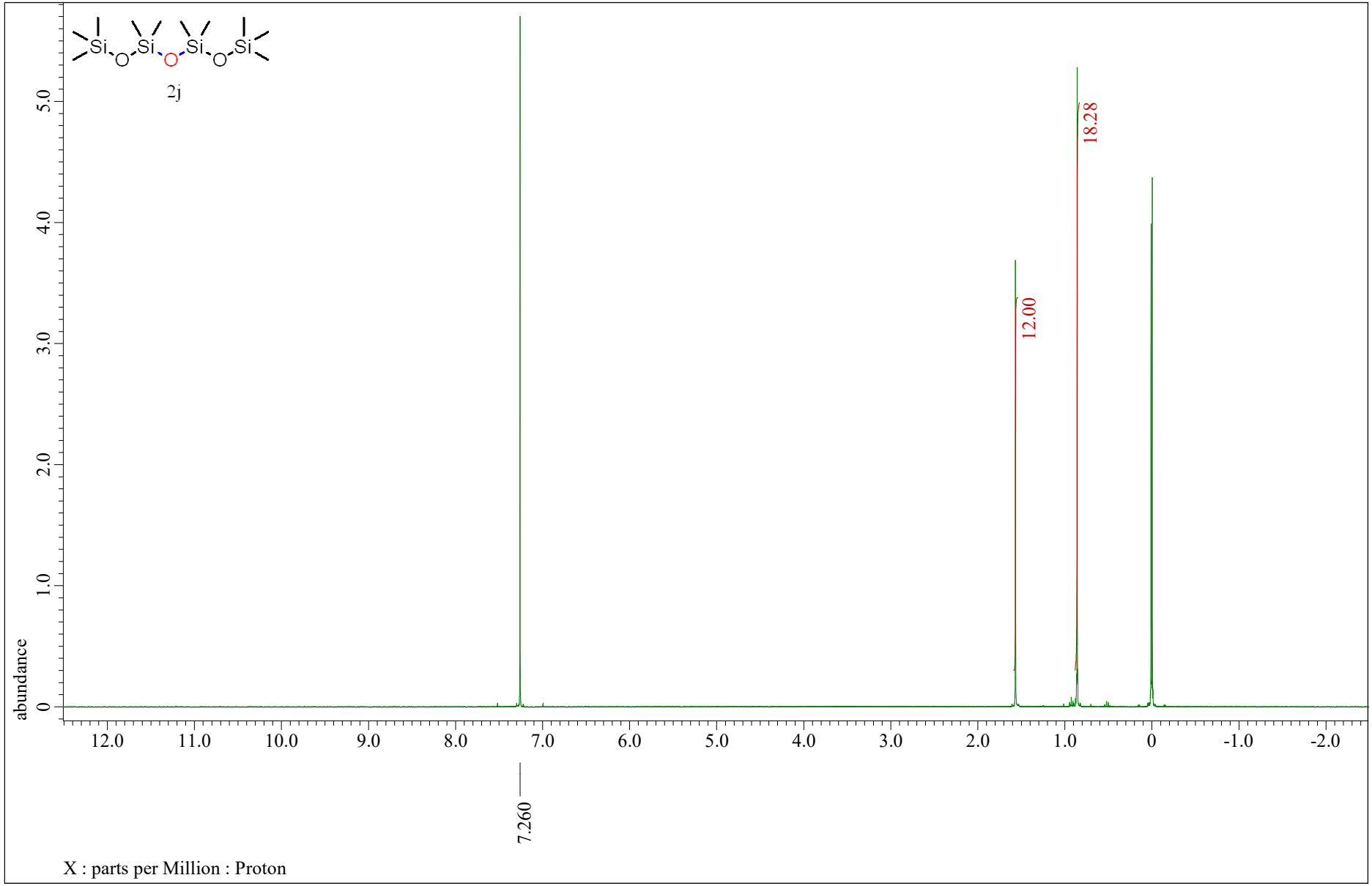
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
77.316
77.000
76.674
6.797
6.375
X : parts per Million : Carbon13

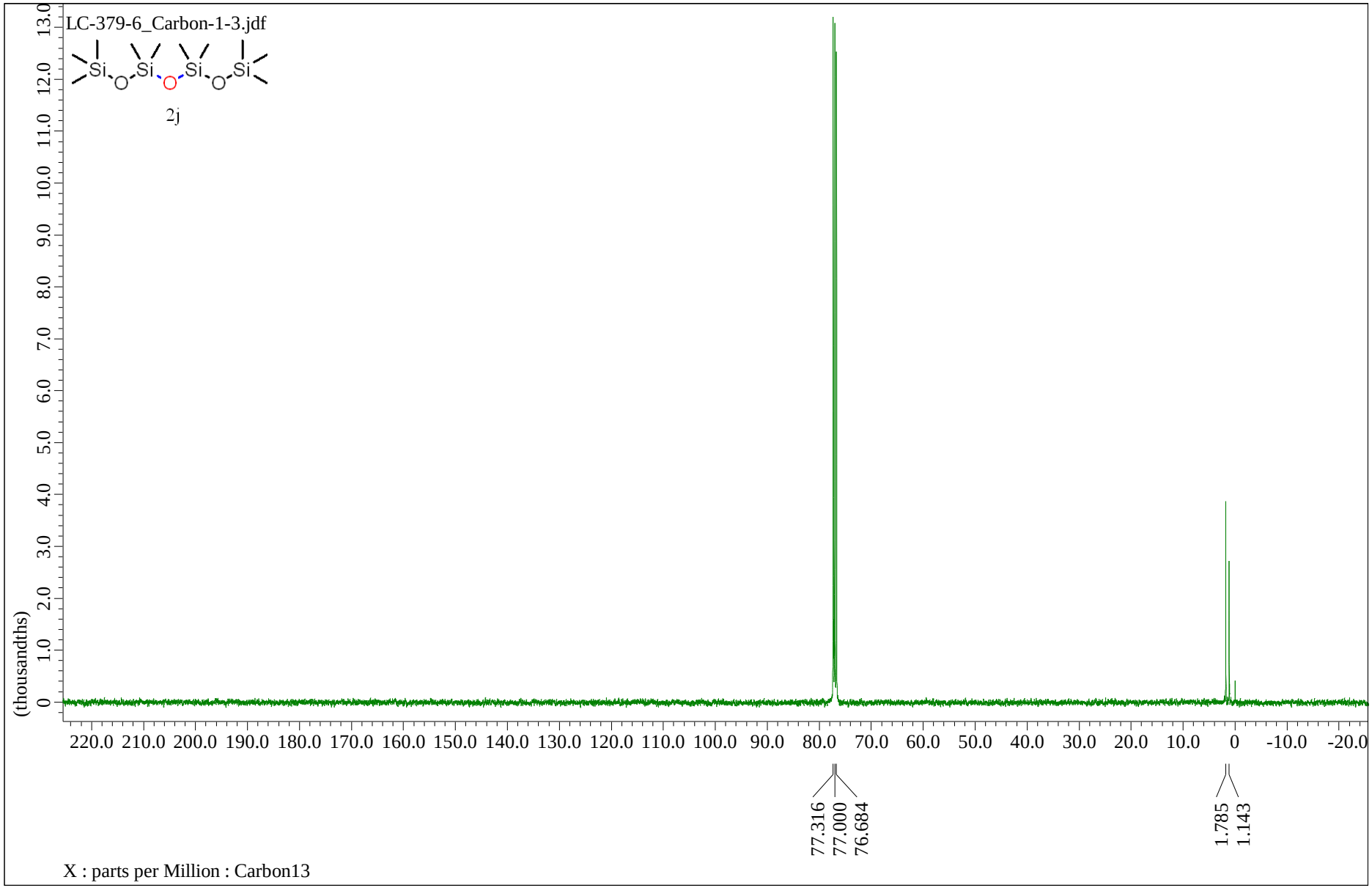

Si
O
Si
2h
abundance
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9
12.23
18.18
12.00
12.0 11.0 10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 1.0 0 -1.0 -2.0
7.260
X : parts per Million : Proton

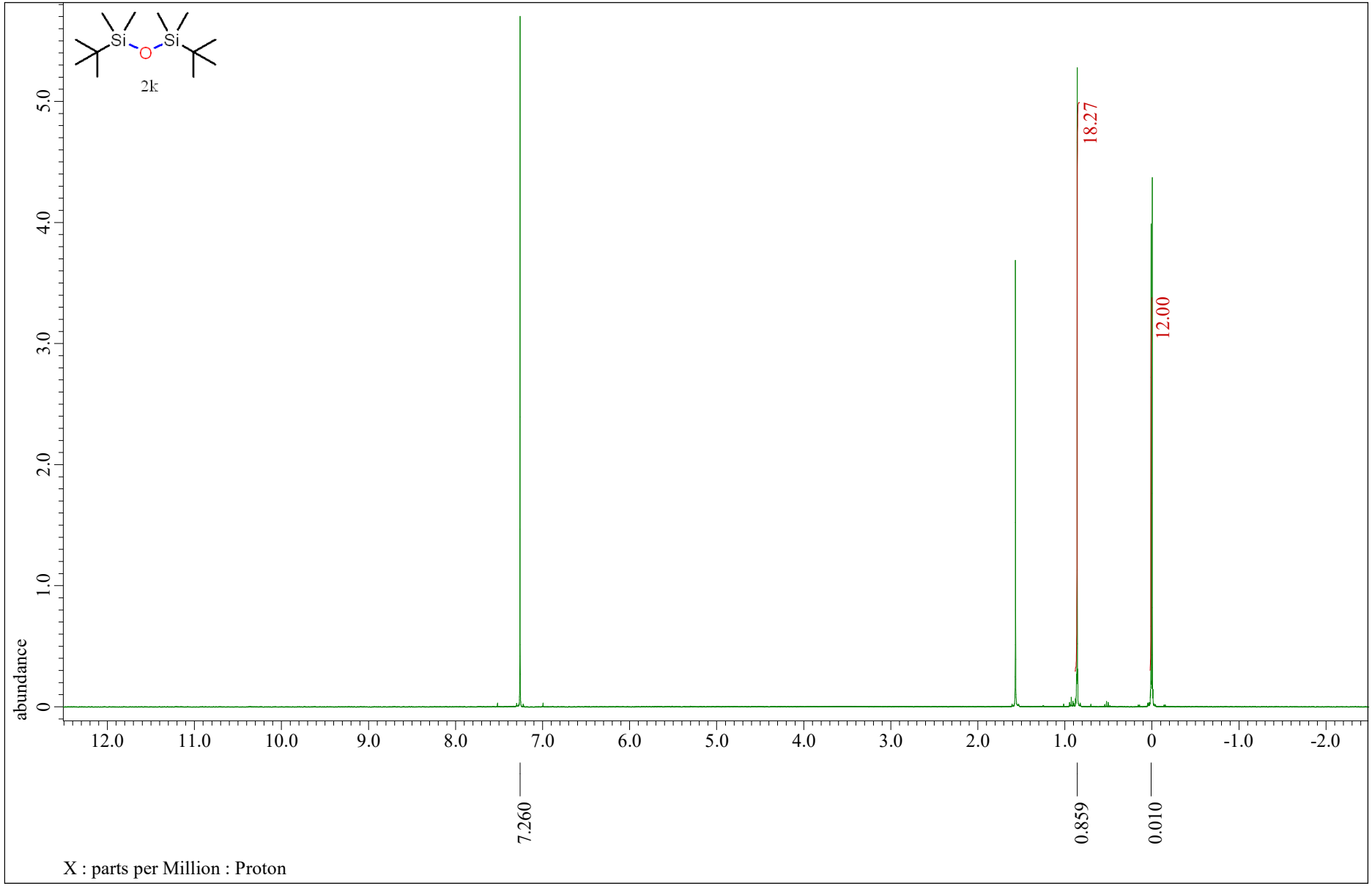

LC-230-2_Carbon-1-3.jdf
Si
O
Si
2h
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
77.316
77.000
76.684
18.564
18.469
16.792
X : parts per Million : Carbon13

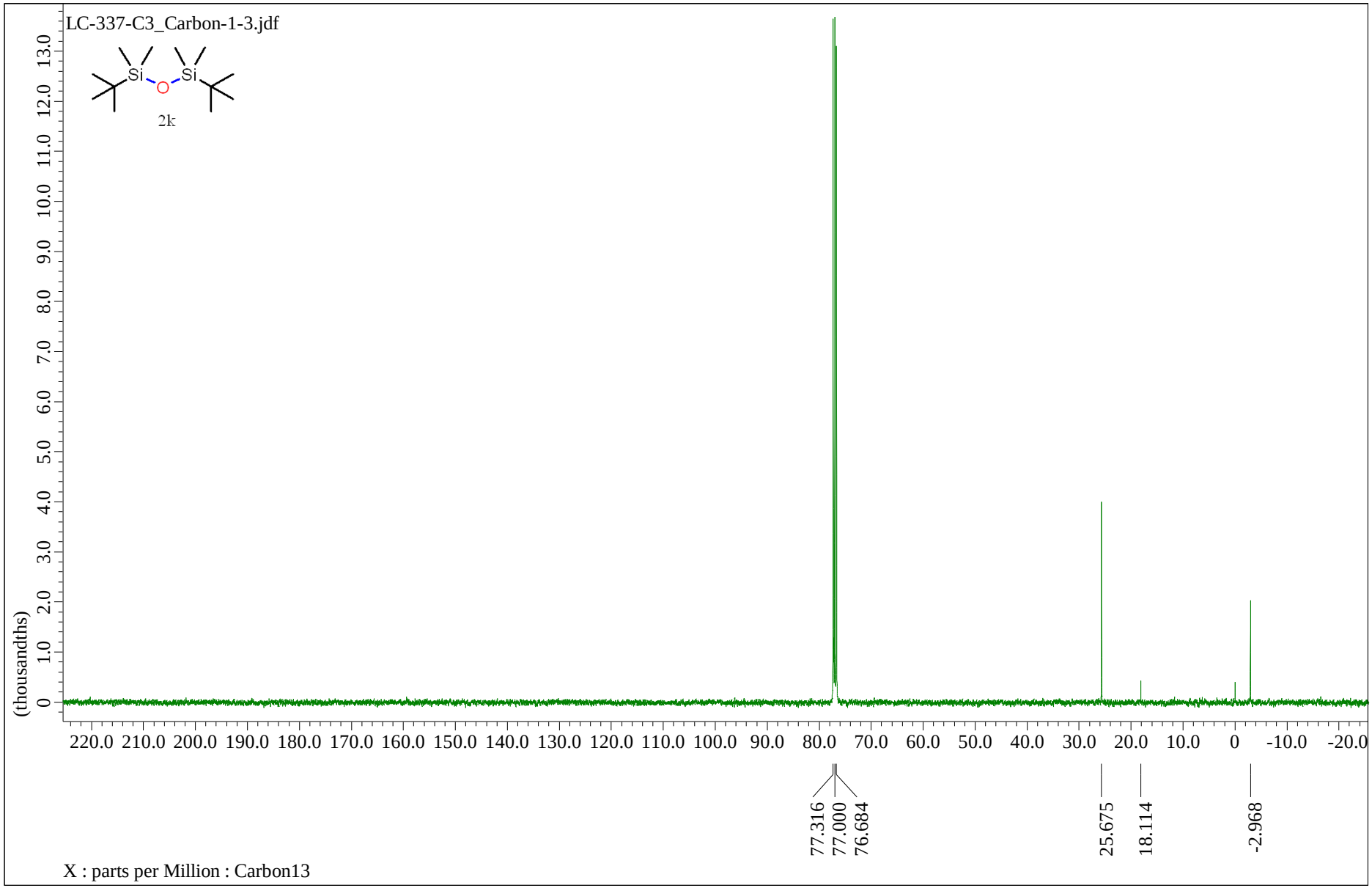

Si
O
Si
2i
4.0
3.0
2.0
1.0
0
abundance
42.00
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
X : parts per Million : Proton

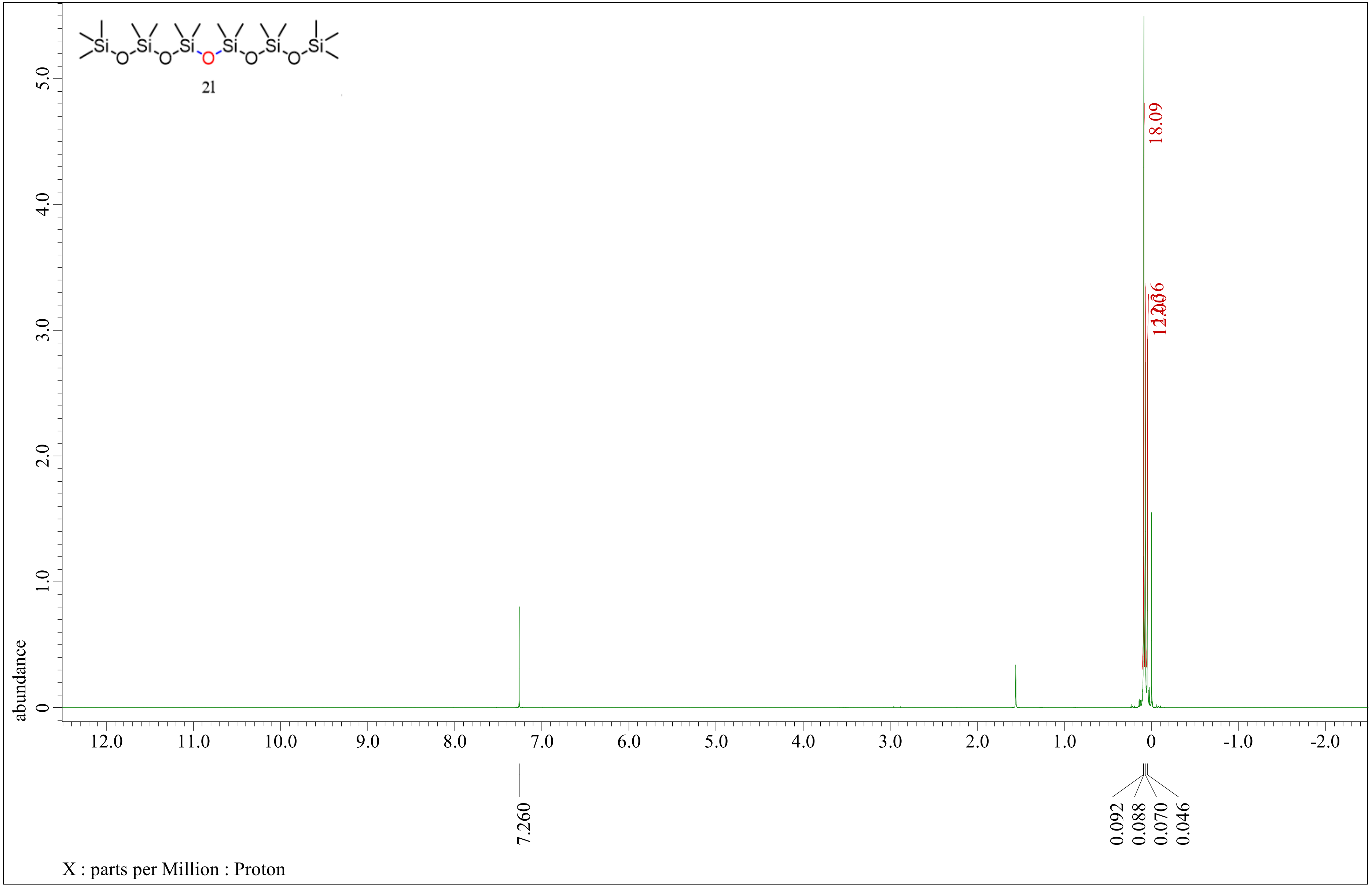

LC-336-3_Carbon-1-3.jdf
Si
O
Si
2i
(thousandths)
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
77.316
77.000
76.684
17.683
12.240
X : parts per Million : Carbon13

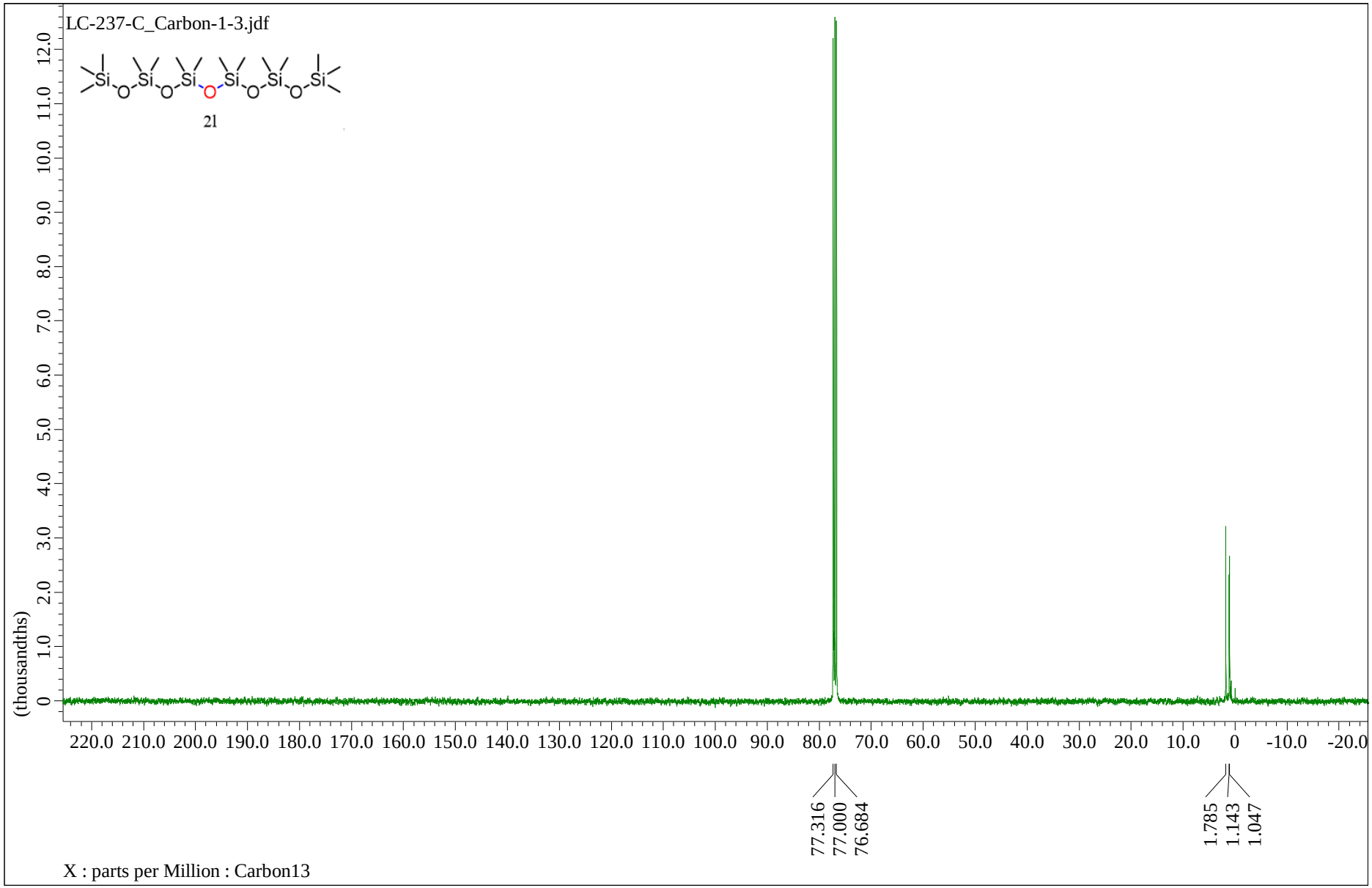

2j
abundance
0
1.0
2.0
3.0
4.0
5.0
12.00
18.28
7.260
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
X : parts per Million : Proton

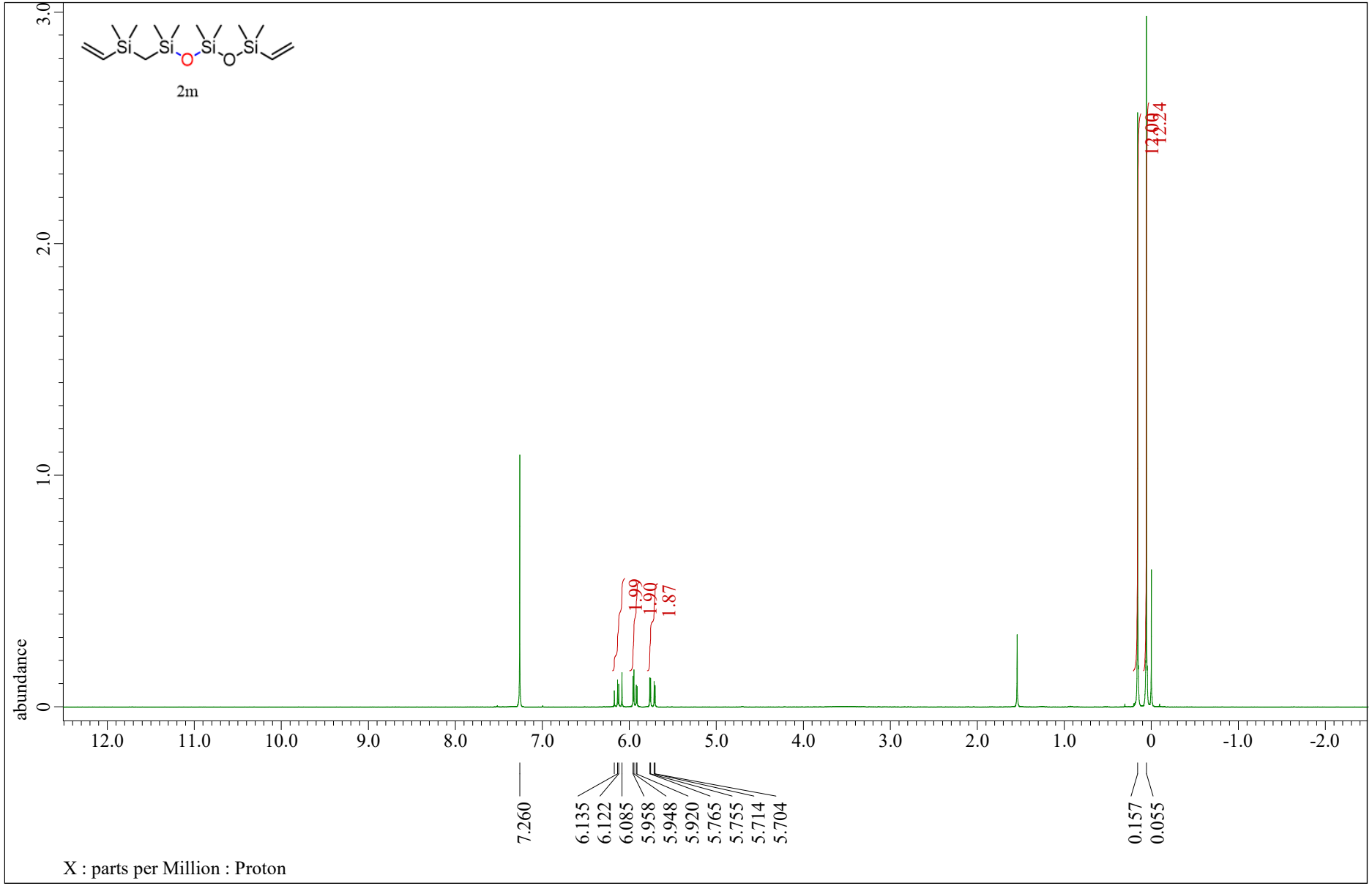

LC-379-6_Carbon-1-3.jdf
2j
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
77.316
77.000
76.684
1.785
1.143
X : parts per Million : Carbon13

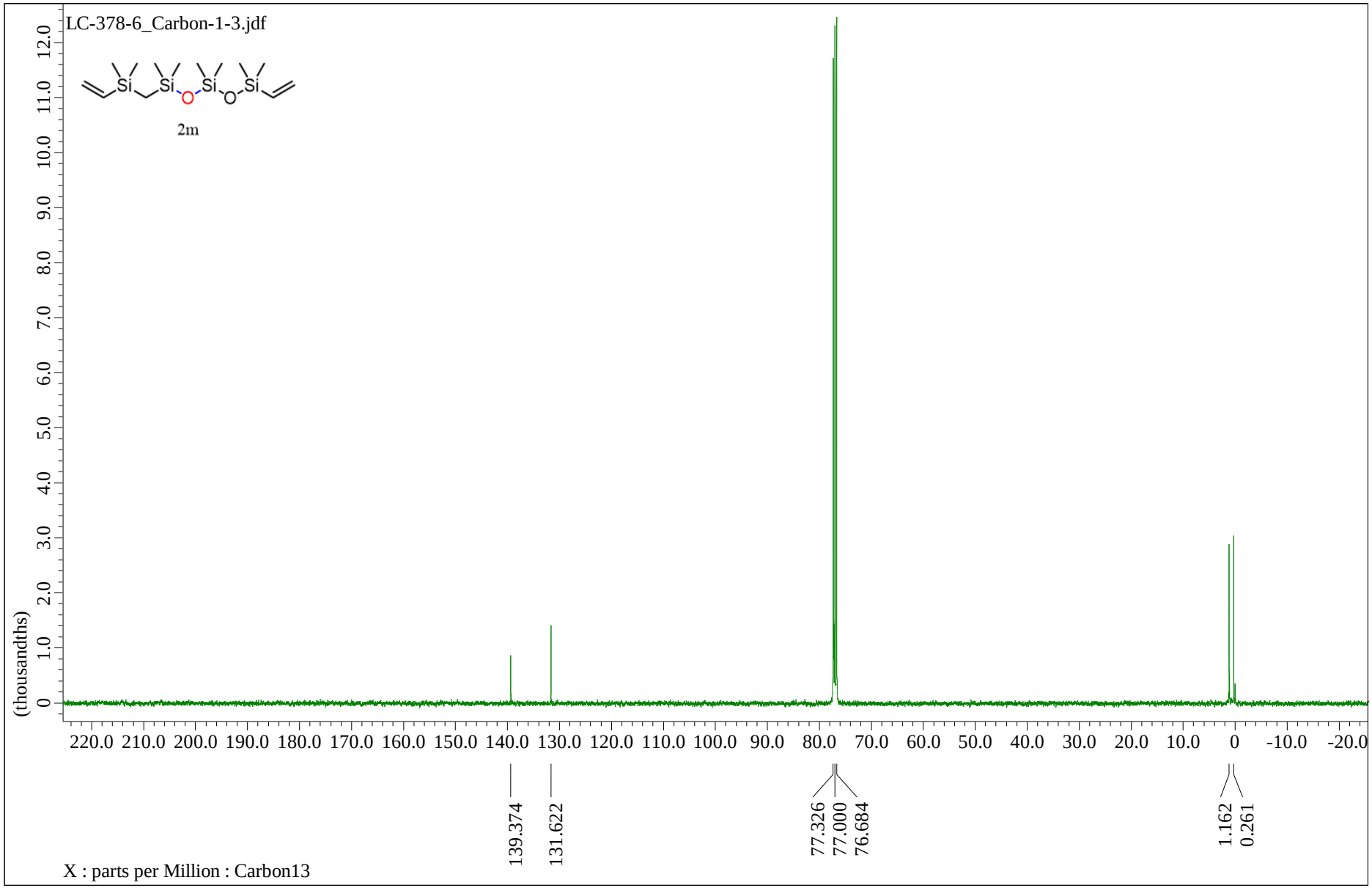

Si
O
Si
2k
abundance
0
1.0
2.0
3.0
4.0
5.0
18.27
12.00
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
0.859
0.010
X : parts per Million : Proton

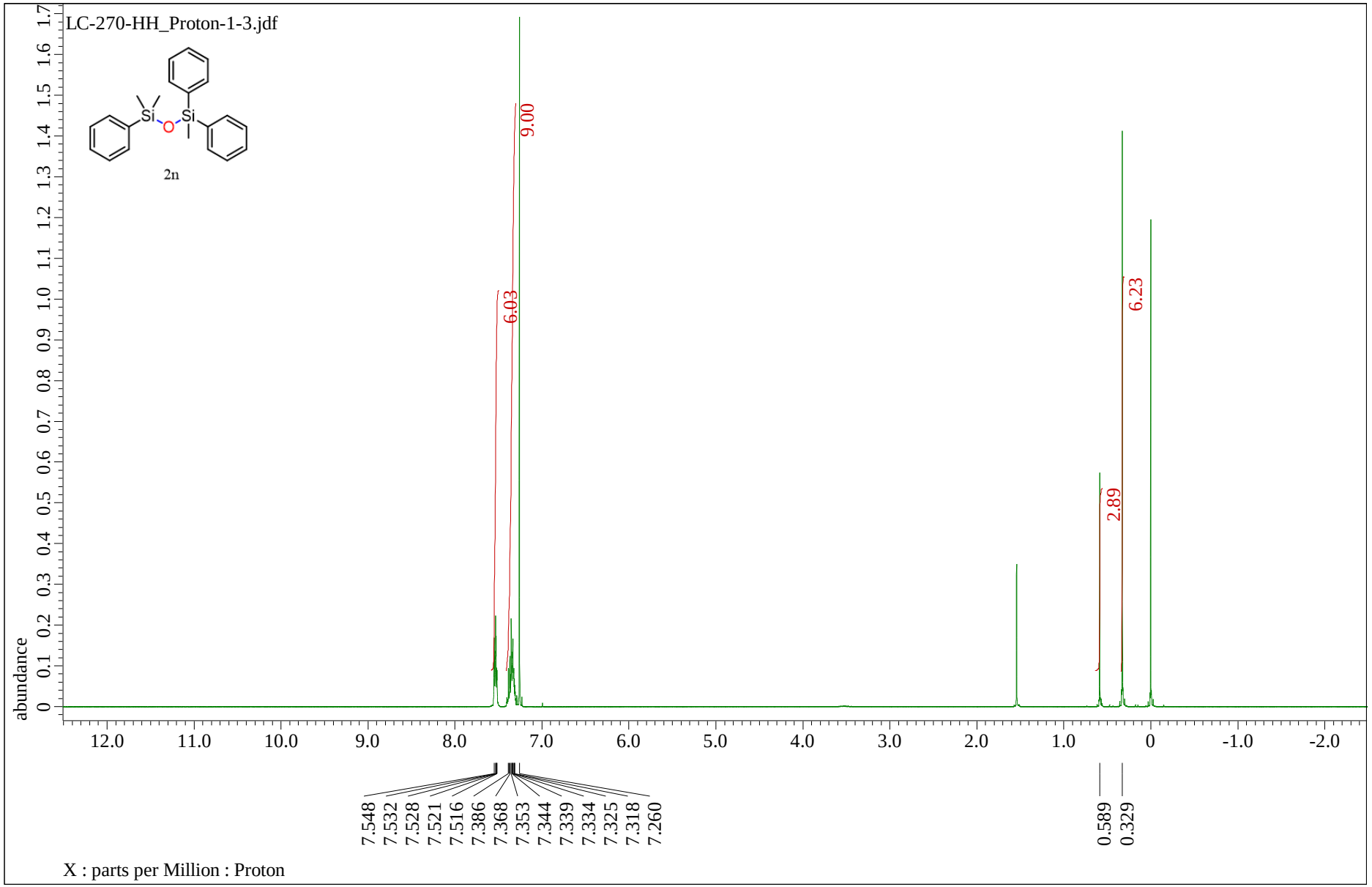

LC-337-C3_Carbon-1-3.jdf
Si
O
Si
2k
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
77.316
77.000
76.684
25.675
18.114
-2.968
X : parts per Million : Carbon13

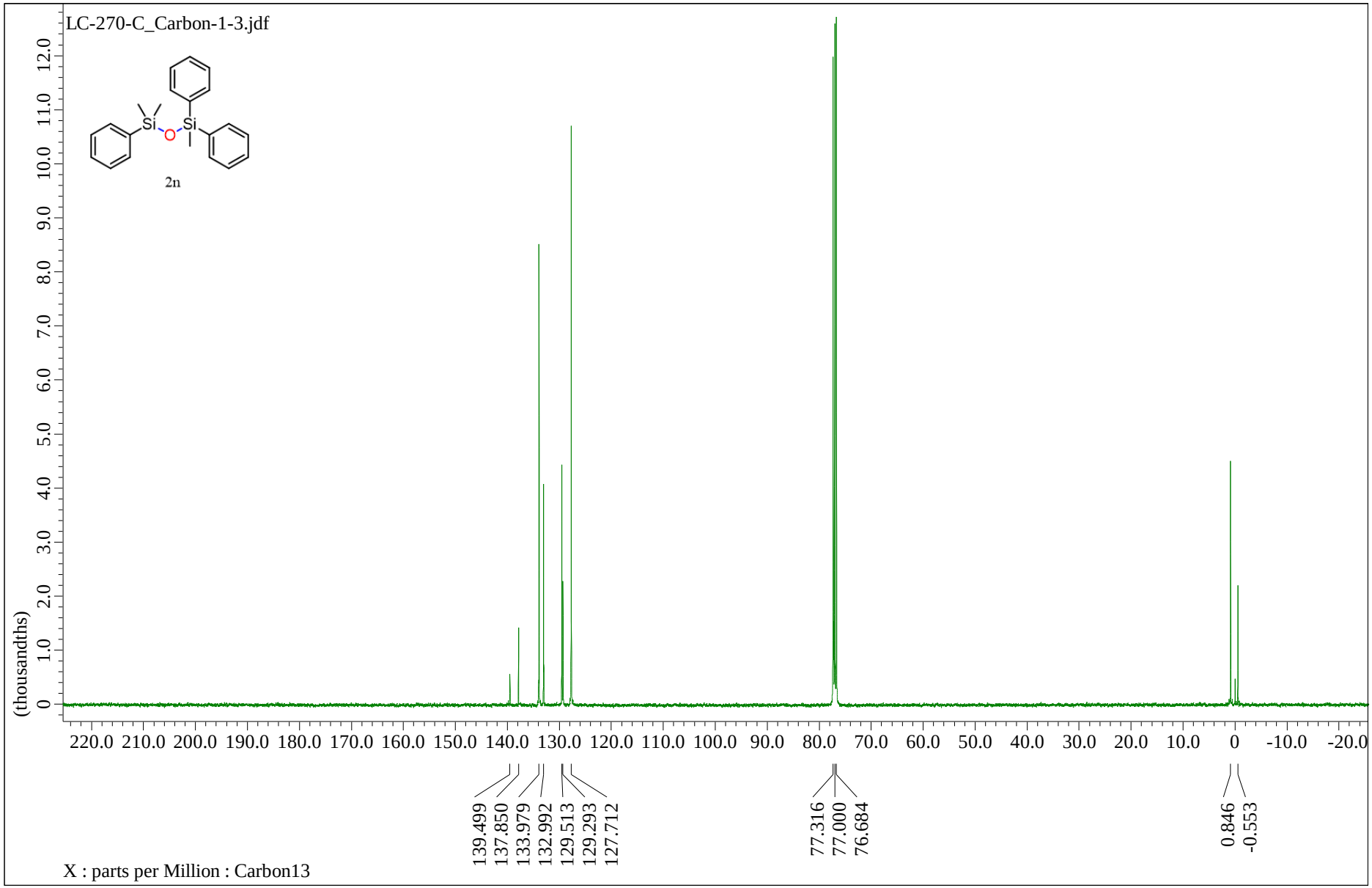

21
18.09
12.06
12.00
5.0
4.0
3.0
2.0
1.0
0
abundance
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
0.092
0.088
0.070
0.046
X : parts per Million : Proton

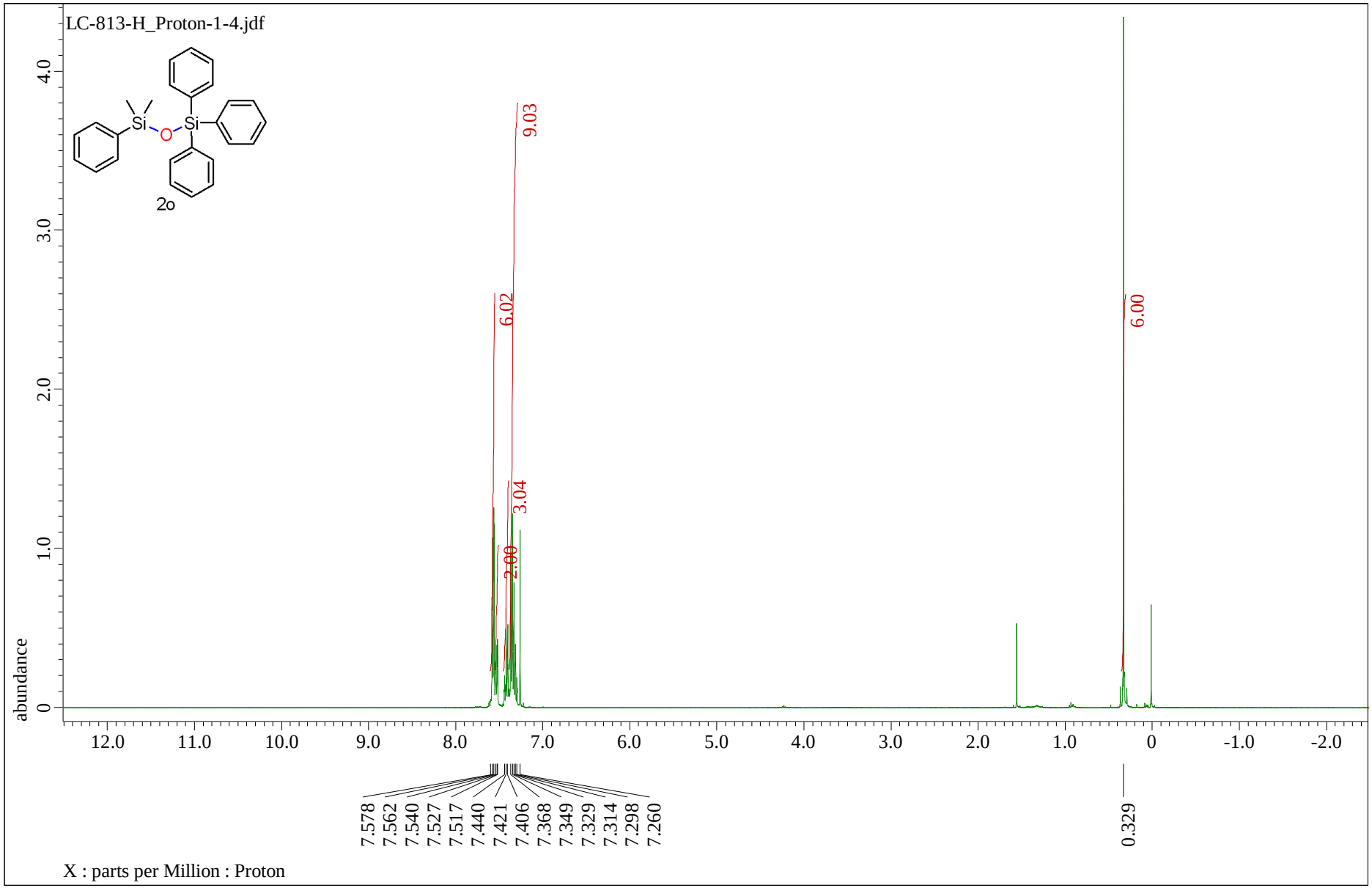

LC-237-C_Carbon-1-3.jdf
21
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
77.316
77.000
76.684
1.785
1.143
1.047
X : parts per Million : Carbon13

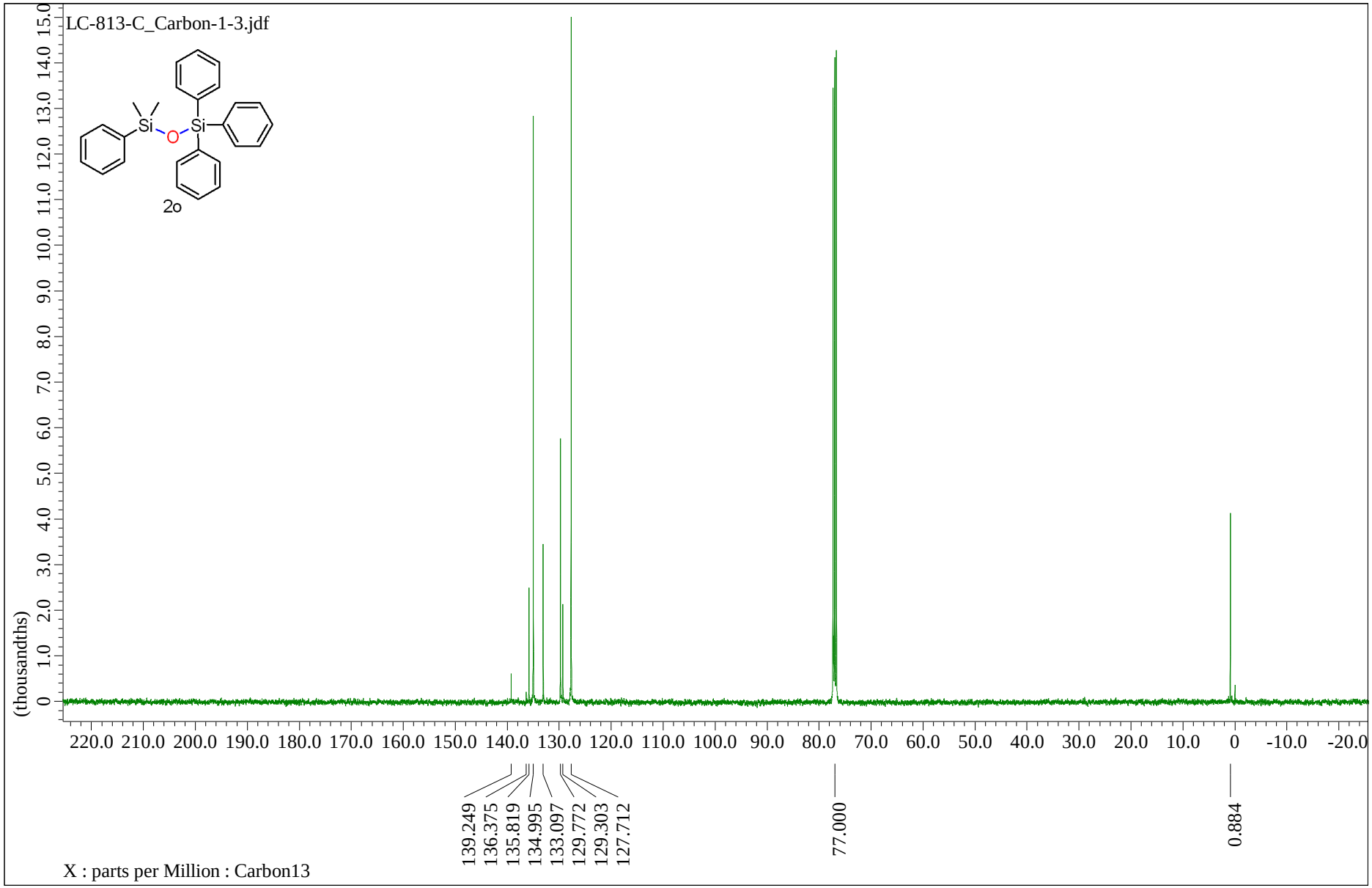

2m
abundance
3.0
2.0
1.0
0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
1.99
1.90
1.87
12.09
12.24
7.260
6.135
6.122
6.085
5.958
5.948
5.920
5.765
5.755
5.714
5.704
0.157
0.055
X : parts per Million : Proton

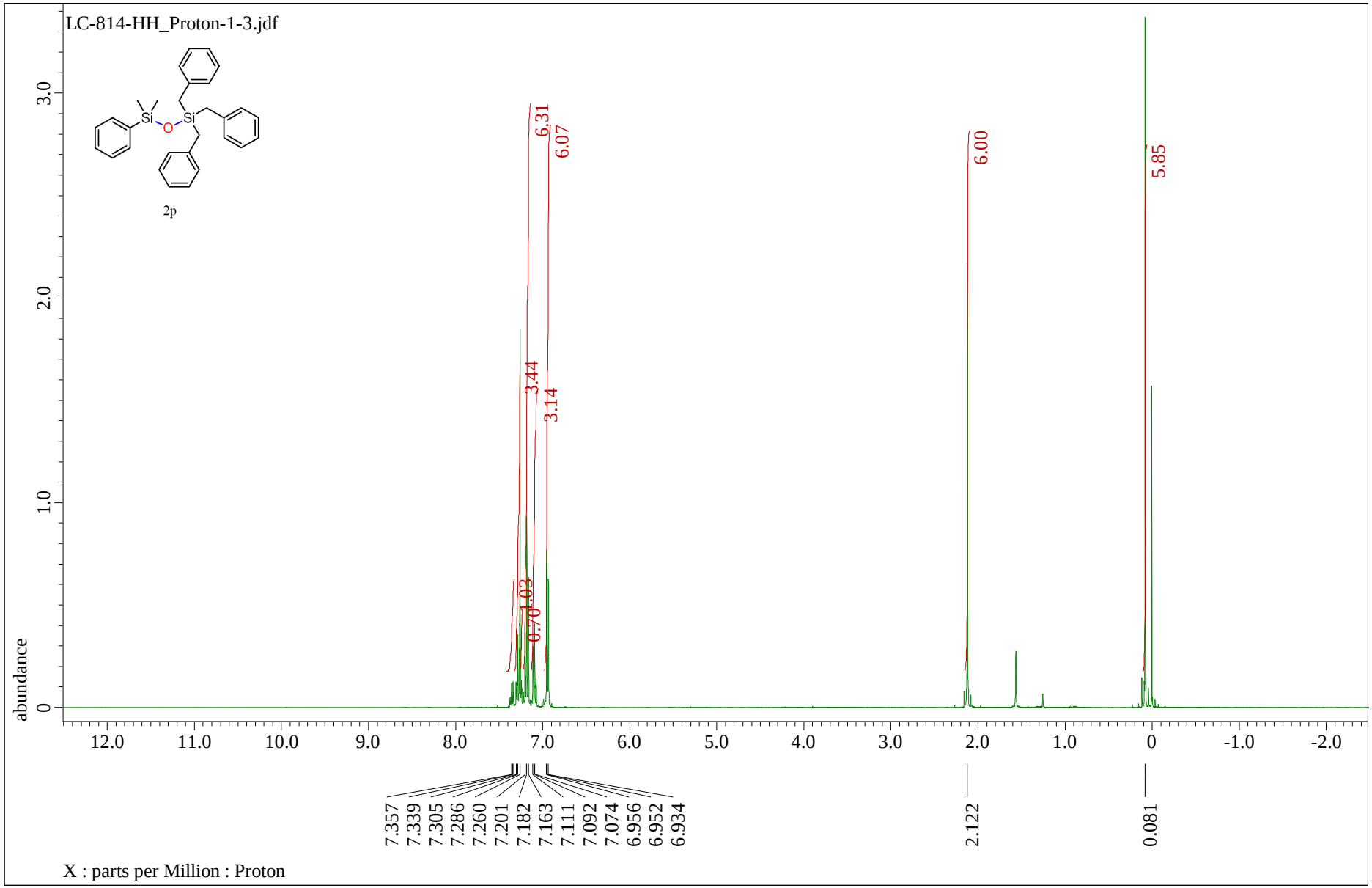

LC-378-6_Carbon-1-3.jdf
2m
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.374
131.622
77.326
77.000
76.684
1.162
0.261
X : parts per Million : Carbon13

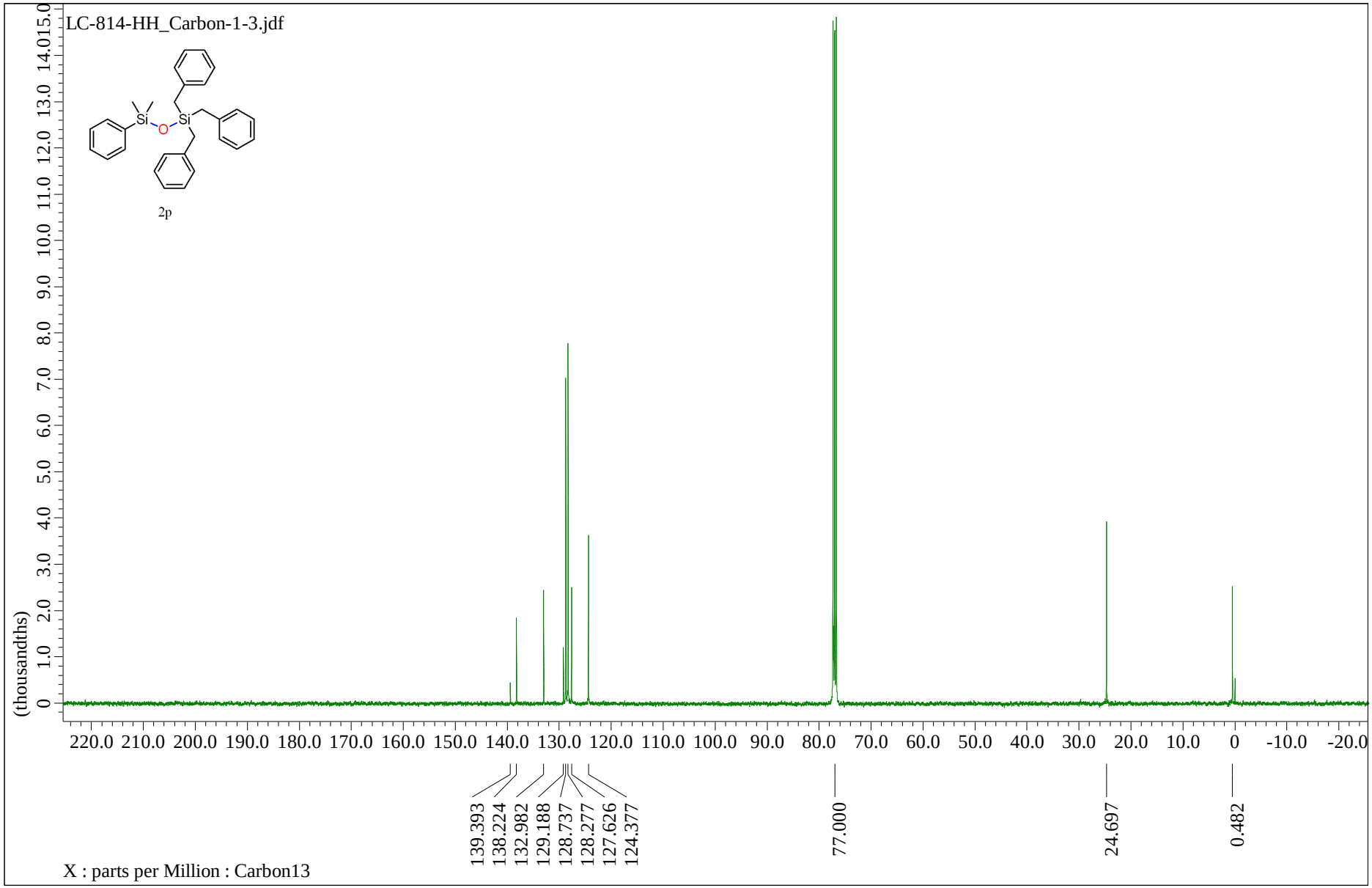

LC-270-HH_Proton-1-3.jdf
2n
abundance
9.00
6.03
6.23
2.89
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.548
7.532
7.528
7.521
7.516
7.386
7.368
7.353
7.344
7.339
7.334
7.325
7.318
7.260
0.589
0.329
X : parts per Million : Proton

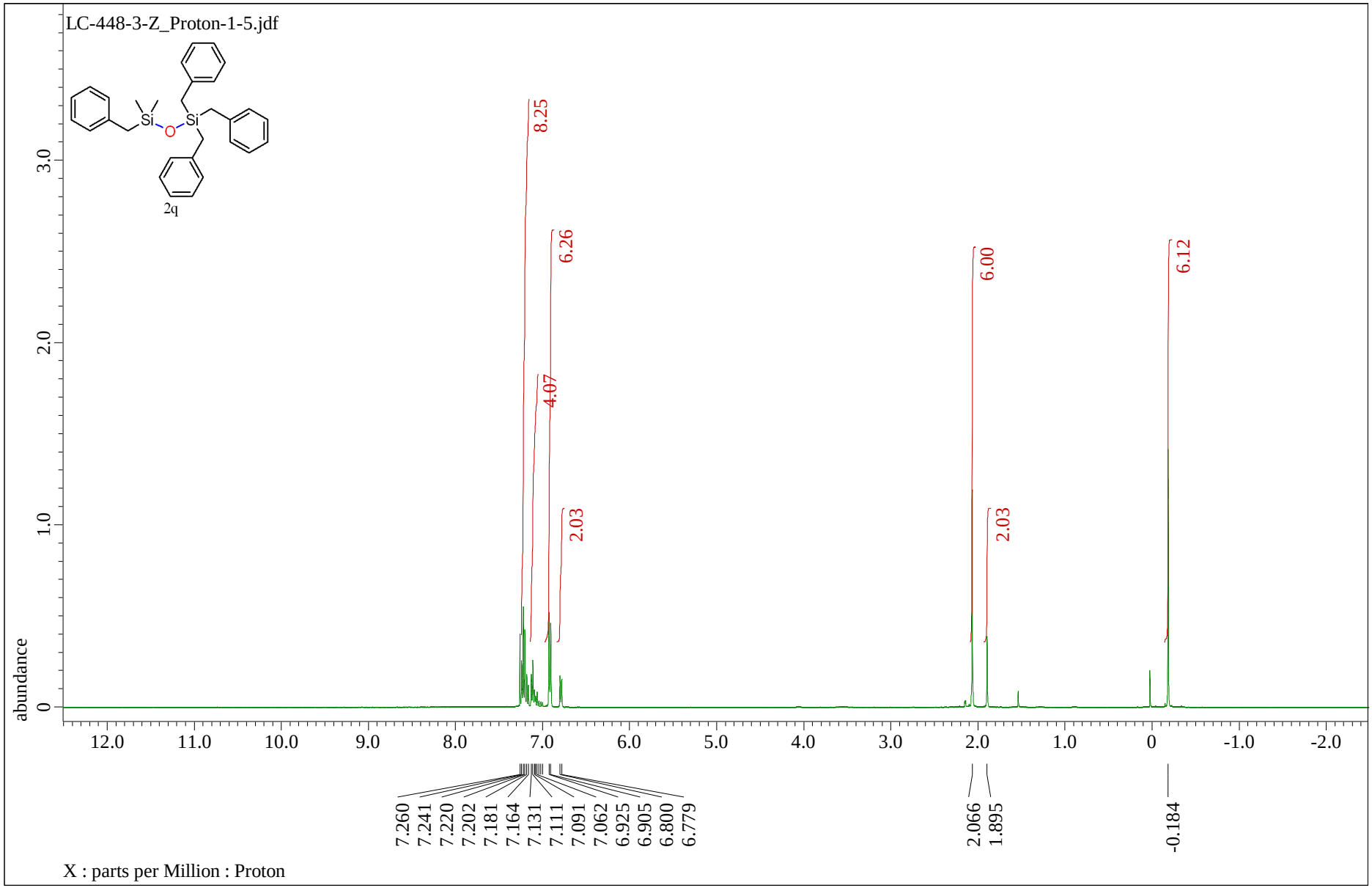

LC-270-C_Carbon-1-3.jdf
Si
O
Si
2n
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.499
137.850
133.979
132.992
129.513
129.293
127.712
77.316
77.000
76.684
0.846
-0.553
X : parts per Million : Carbon13

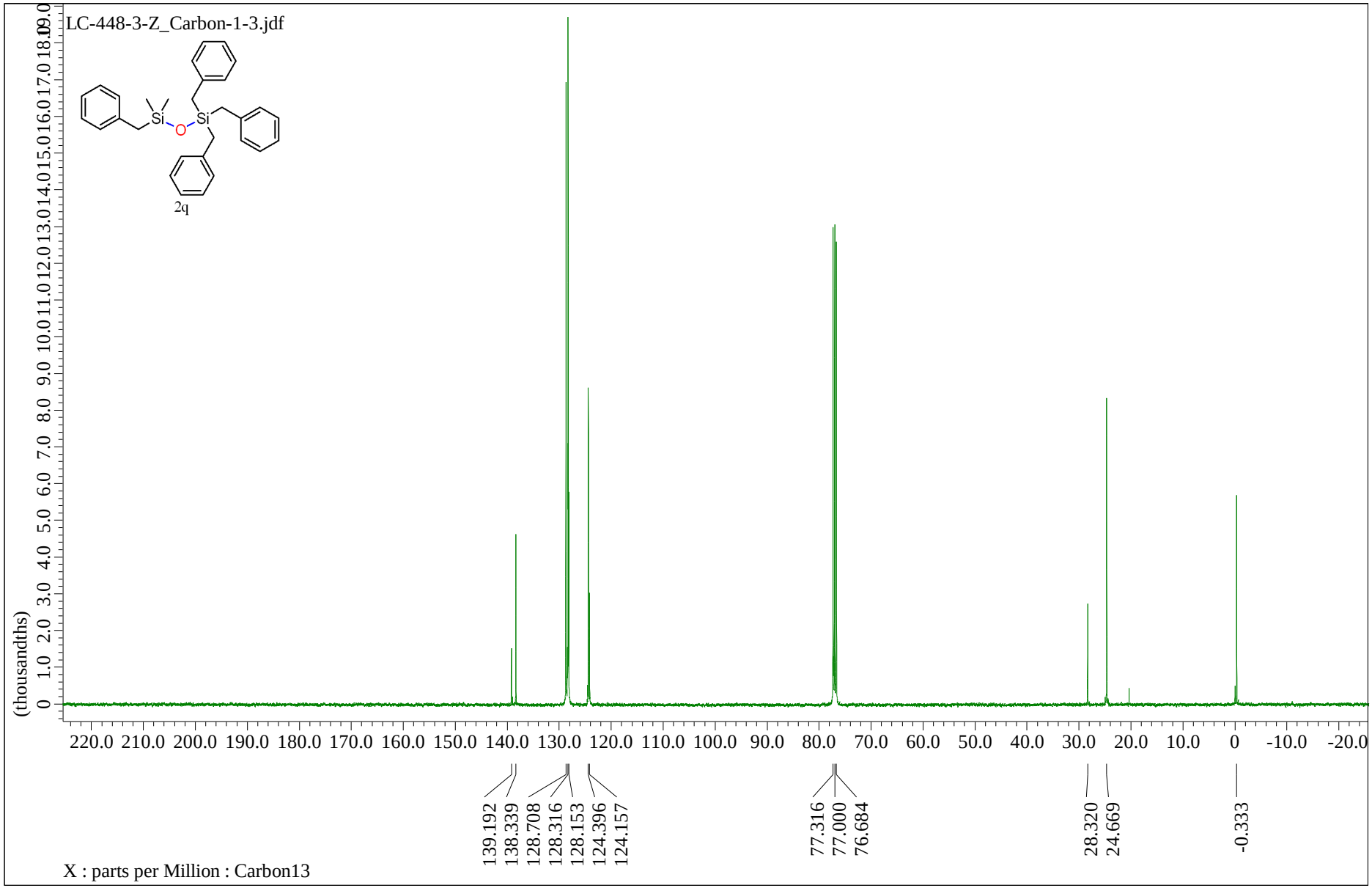

LC-813-H_Proton-1-4.jdf
Si
O
Si
2o
9.03
6.02
3.04
2.00
6.00
abundance
4.0
3.0
2.0
1.0
0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.578
7.562
7.540
7.527
7.517
7.440
7.421
7.406
7.368
7.349
7.329
7.314
7.298
7.260
0.329
X : parts per Million : Proton

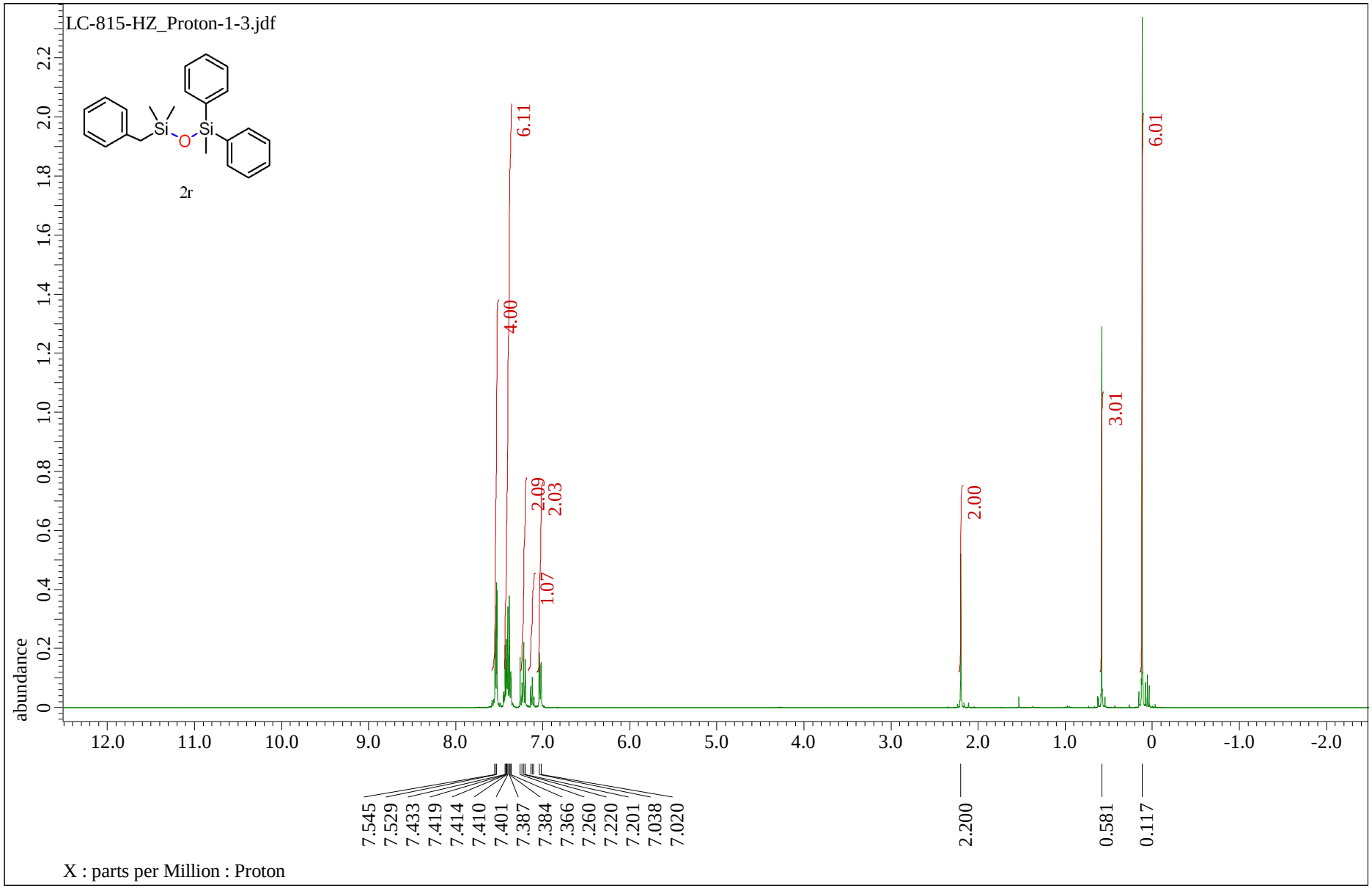

LC-813-C_Carbon-1-3.jdf
Si
O
Si
2o
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.249
136.375
135.819
134.995
133.097
129.772
129.303
127.712
77.000
0.884
X : parts per Million : Carbon13

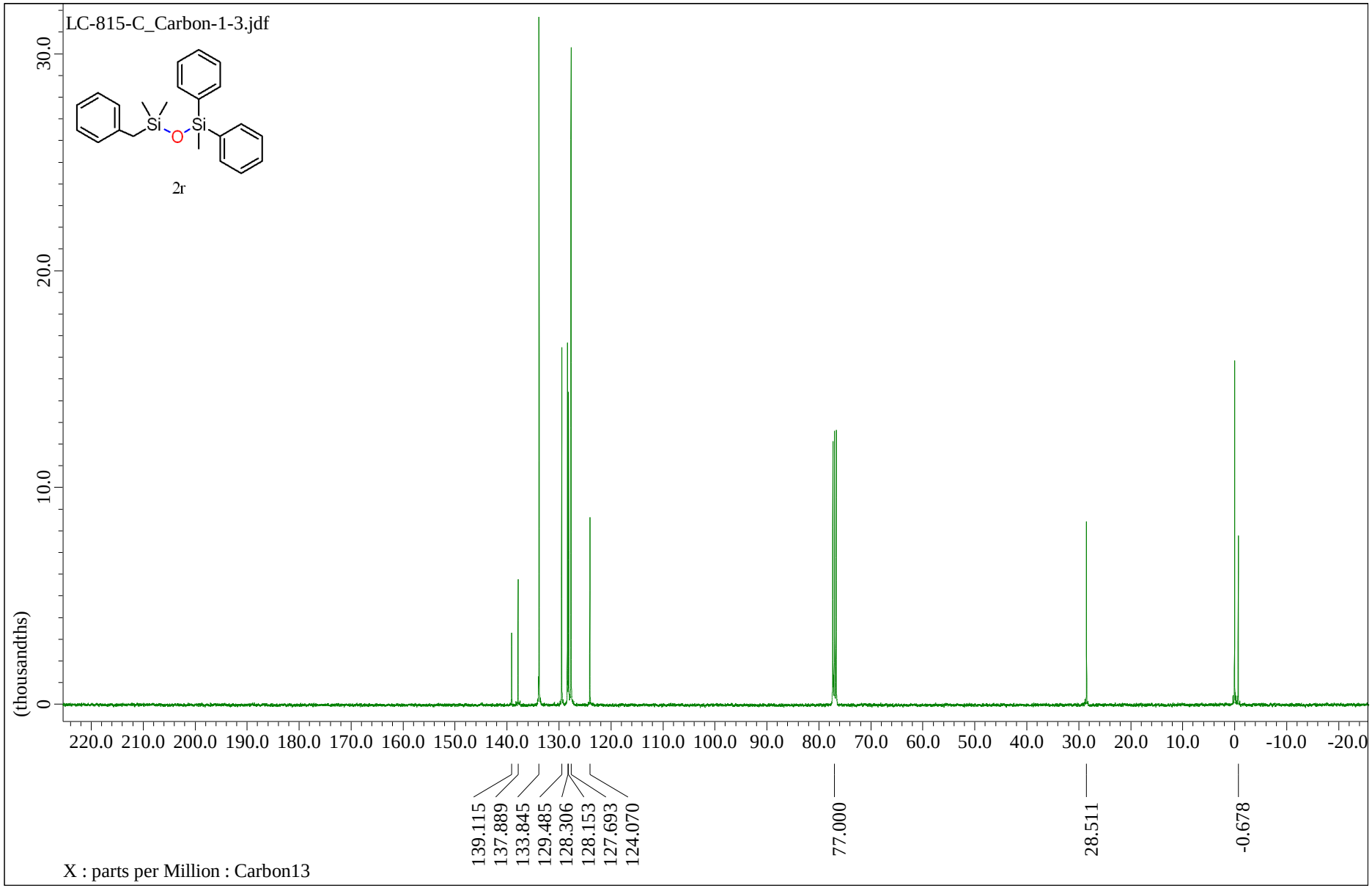

LC-814-HH_Proton-1-3.jdf
2p
abundance
3.0
2.0
1.0
0
6.31
6.07
6.00
5.85
3.44
3.14
0.70
1.03
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.357
7.339
7.305
7.286
7.260
7.201
7.182
7.163
7.111
7.092
7.074
6.956
6.952
6.934
2.122
0.081
X : parts per Million : Proton

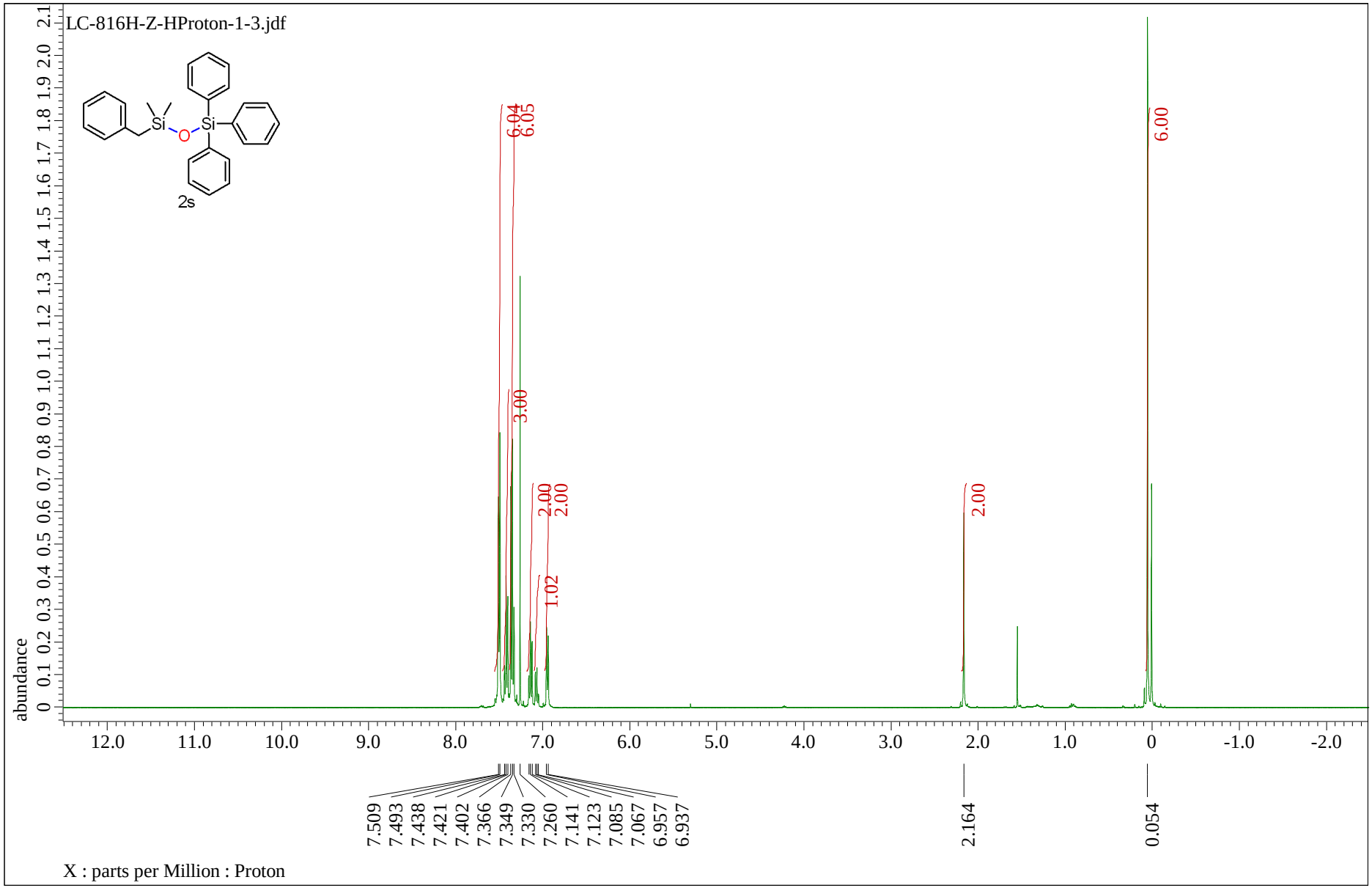

LC-814-HH_Carbon-1-3.jdf
2p
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.393
138.224
132.982
129.188
128.737
128.277
127.626
124.377
77.000
24.697
0.482
X : parts per Million : Carbon13

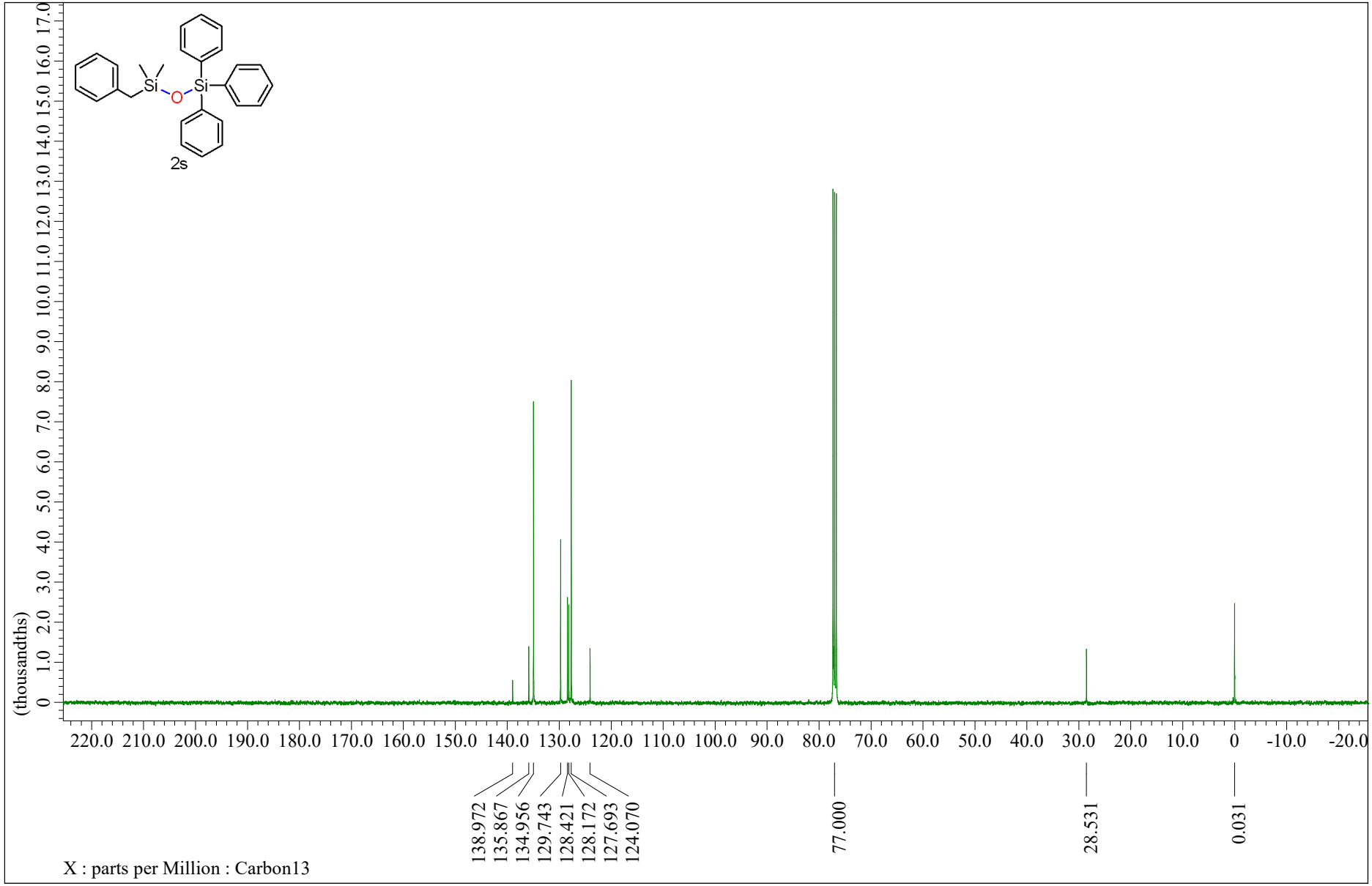

LC-448-3-Z_Proton-1-5.jdf
2q
8.25
6.26
4.07
2.03
6.00
2.03
6.12
abundance
0
1.0
2.0
3.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
7.241
7.220
7.202
7.181
7.164
7.131
7.111
7.091
7.062
6.925
6.905
6.800
6.779
2.066
1.895
-0.184
X : parts per Million : Proton

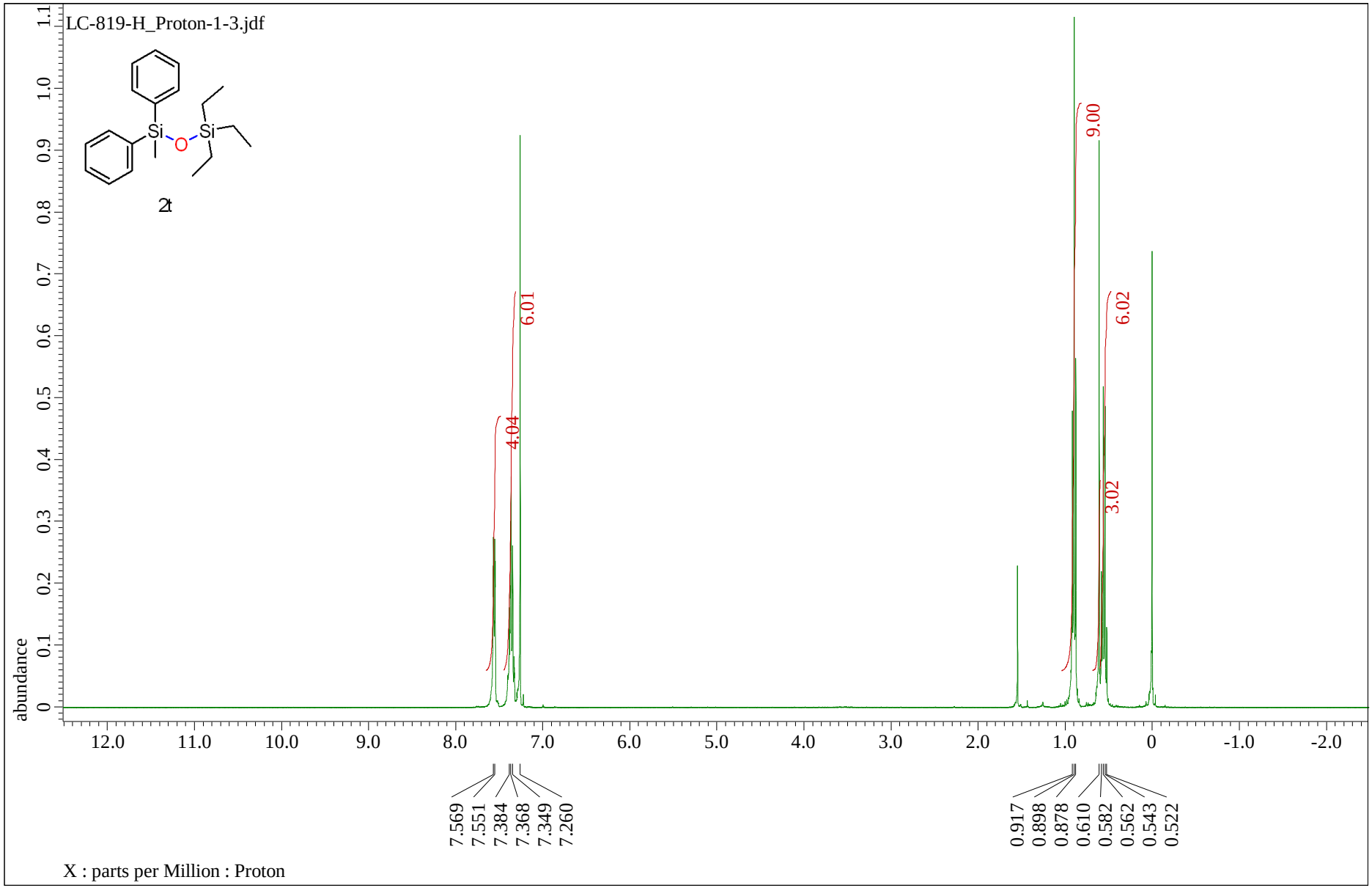

LC-448-3-Z_Carbon-1-3.jdf
2q
(thousandths)
0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.192
138.339
128.708
128.316
128.153
124.396
124.157
77.316
77.000
76.684
28.320
24.669
-0.333
X : parts per Million : Carbon13

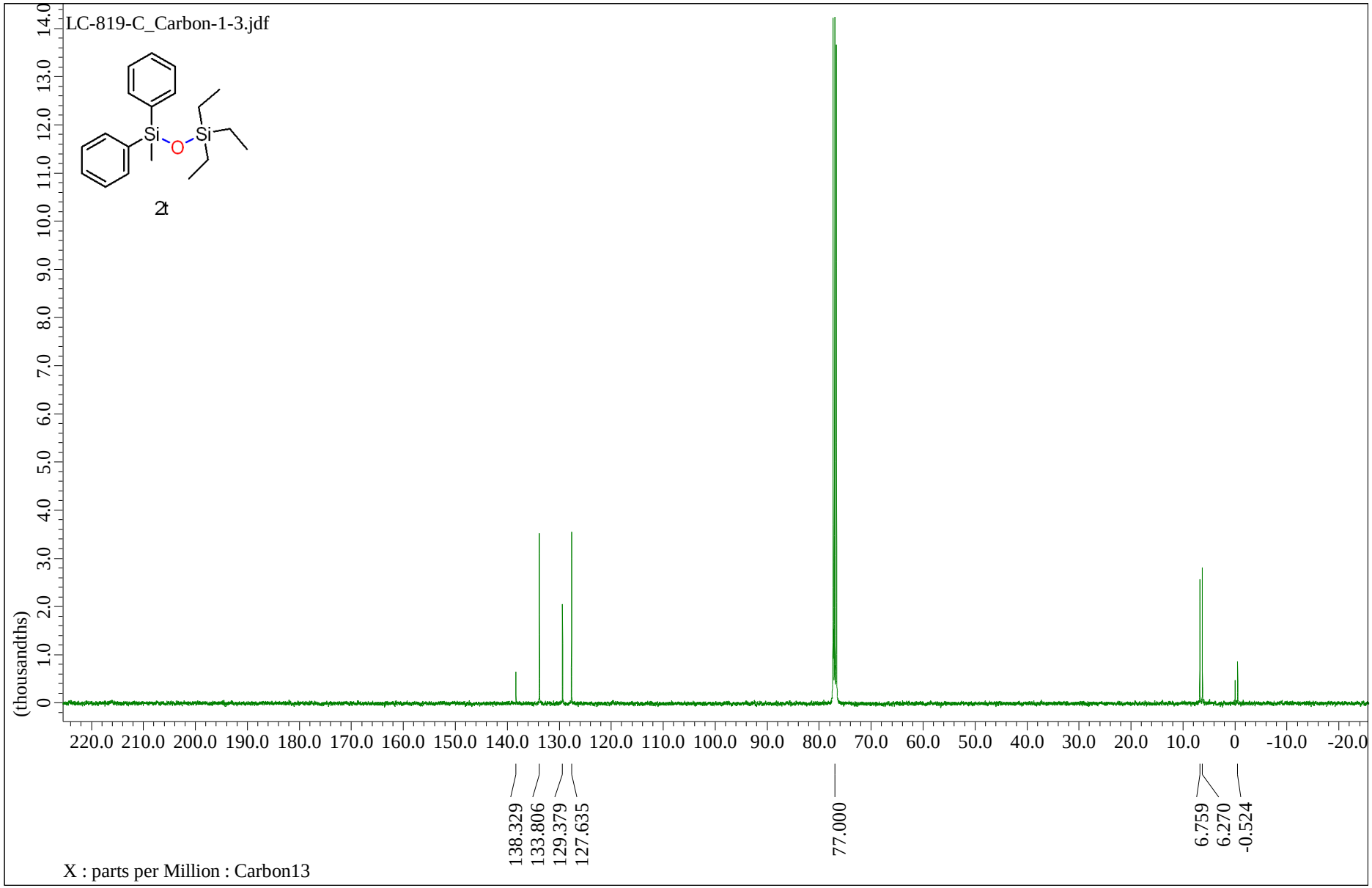

LC-815-HZ_Proton-1-3.jdf
2r
abundance
6.11
4.00
2.09
2.03
1.07
2.00
3.01
6.01
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.545
7.529
7.433
7.419
7.414
7.410
7.401
7.387
7.384
7.366
7.260
7.220
7.201
7.038
7.020
2.200
0.581
0.117
X : parts per Million : Proton

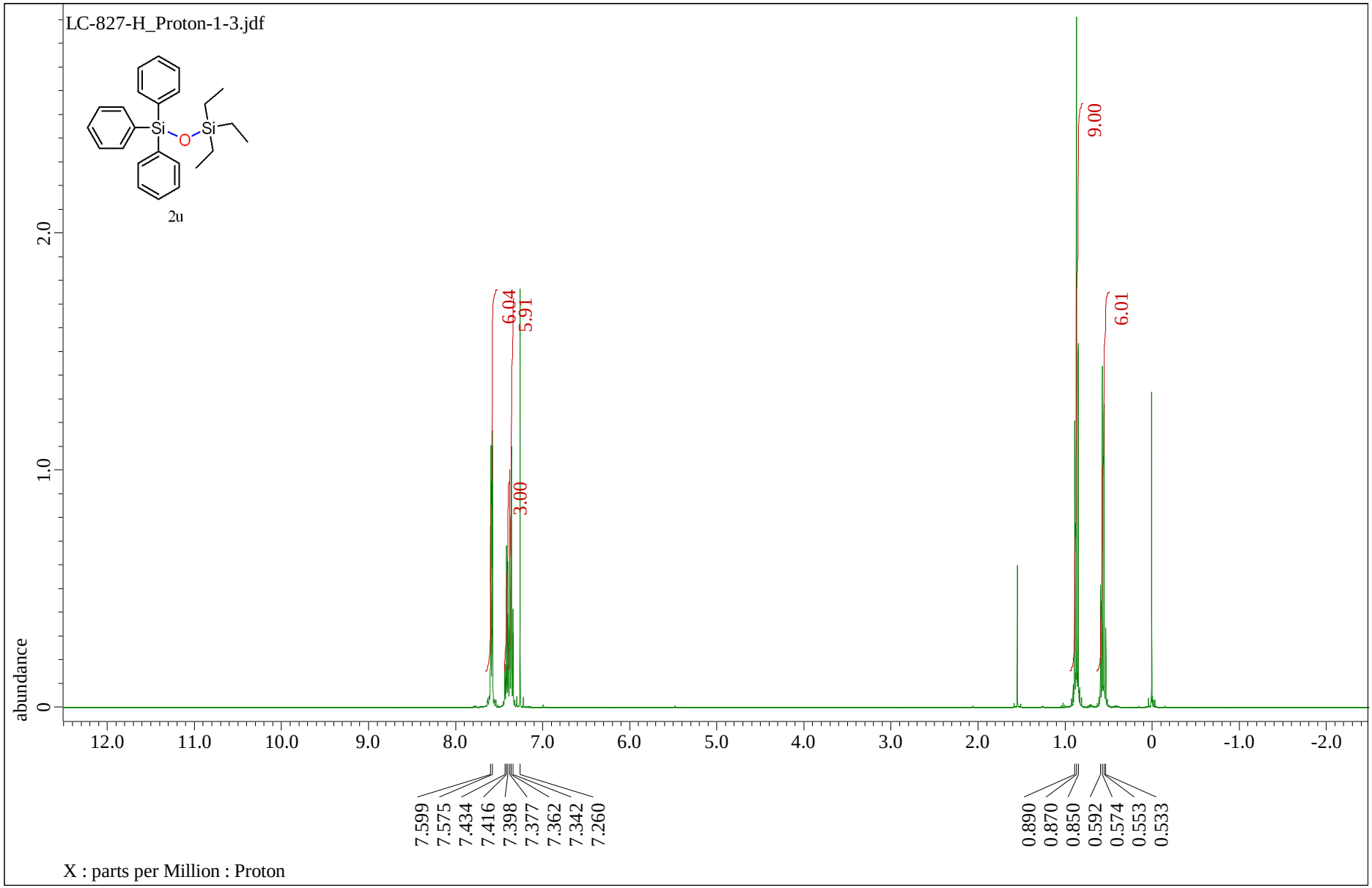

LC-815-C_Carbon-1-3.jdf
Si
O
Si
2r
30.0
20.0
10.0
0
(thousandths)
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.115
137.889
133.845
129.485
128.306
128.153
127.693
124.070
77.000
28.511
-0.678
X : parts per Million : Carbon13

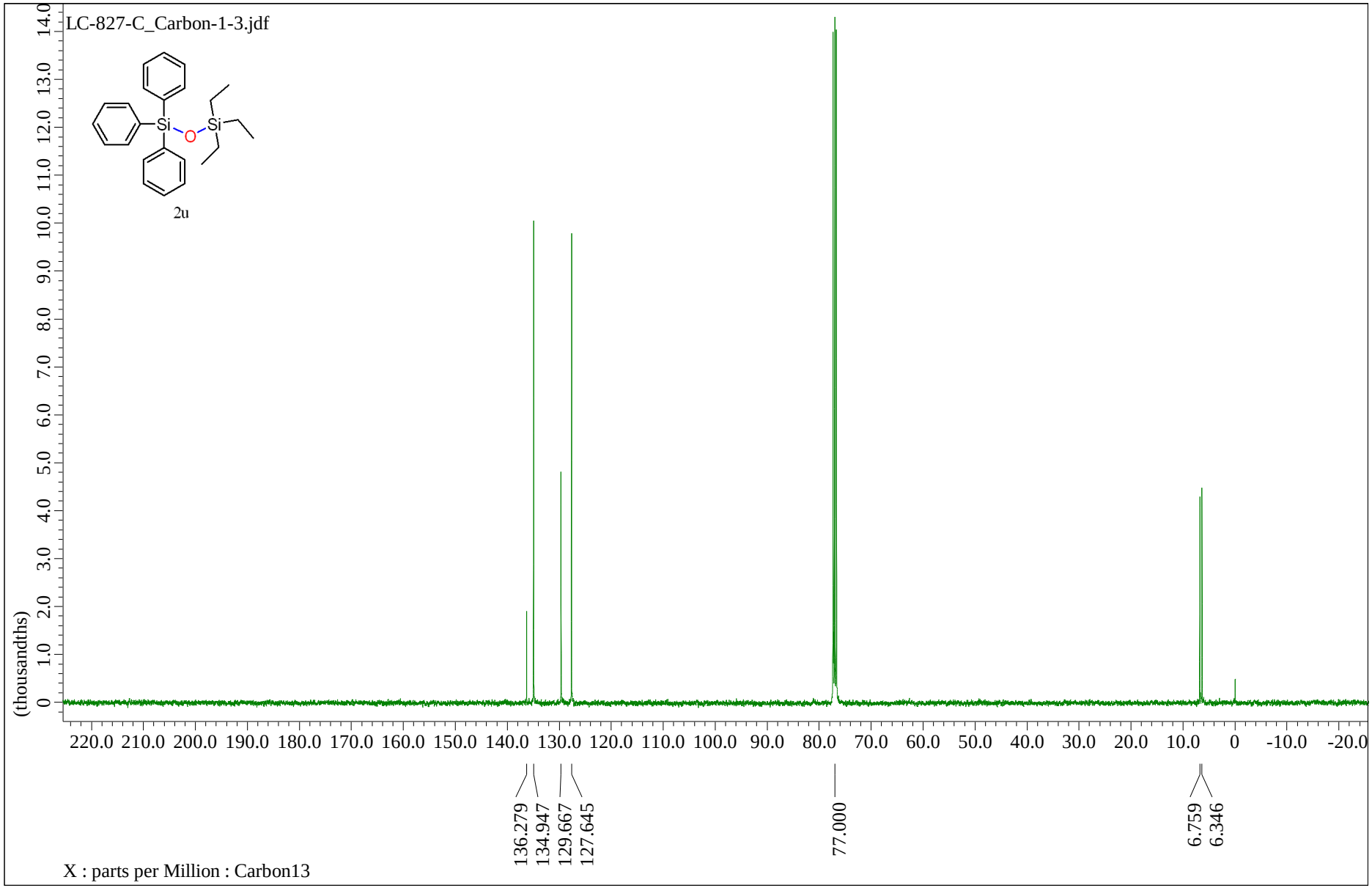

LC-816H-Z-HProton-1-3.jdf
Si
O
Si
2s
6.04
6.05
3.00
2.00
2.00
1.02
2.00
6.00
abundance
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1
12.0 11.0 10.0 9.0 8.0 7.0 6.0 5.0 4.0 3.0 2.0 1.0 0 -1.0 -2.0
7.509 7.493 7.438 7.421 7.402 7.366 7.349 7.330 7.260 7.141 7.123 7.085 7.067 6.957 6.937
2.164
0.054
X : parts per Million : Proton

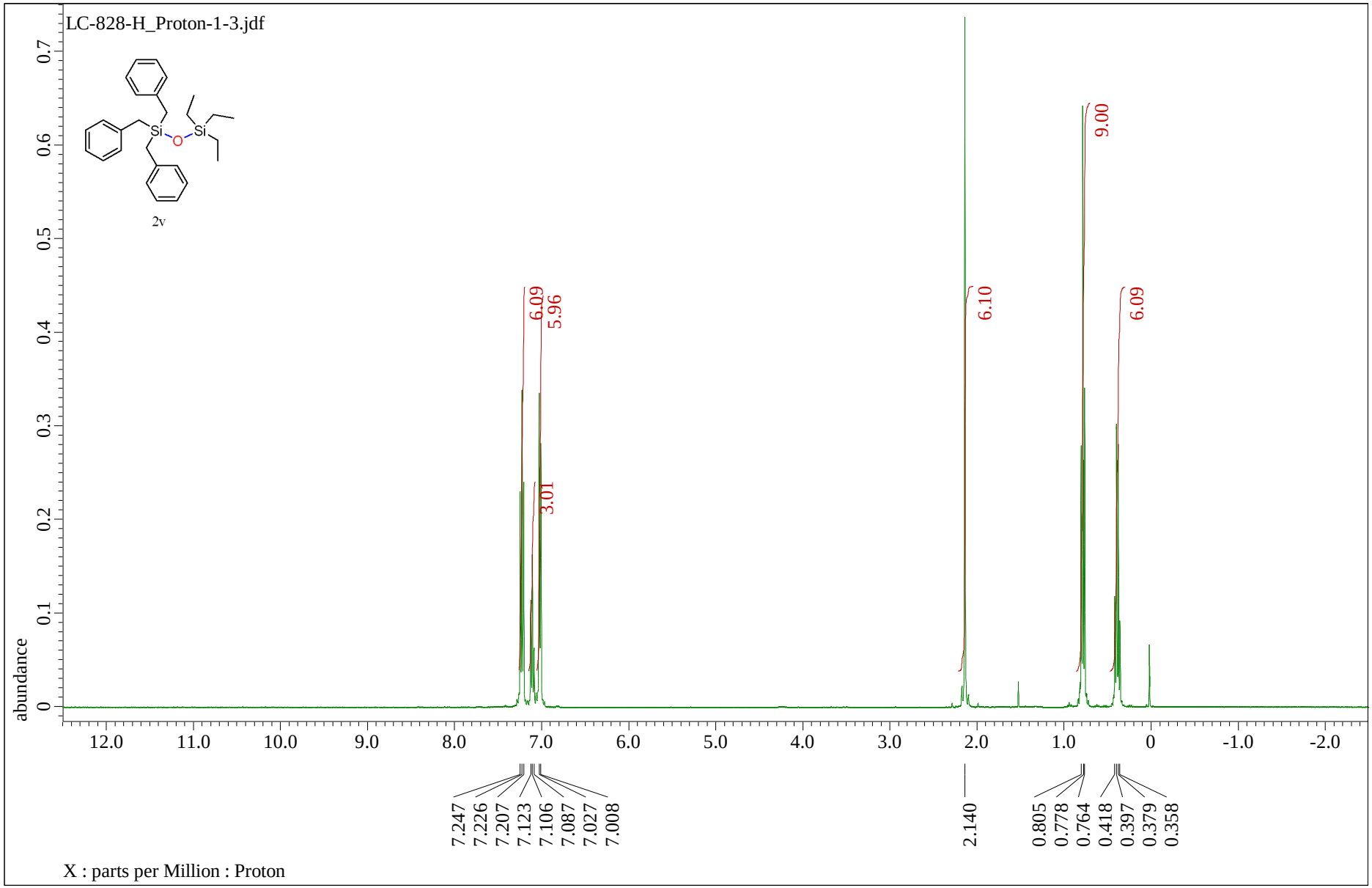

2s
(thousandths)
0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
138.972
135.867
134.956
129.743
128.421
128.172
127.693
124.070
77.000
28.531
0.031
X : parts per Million : Carbon13

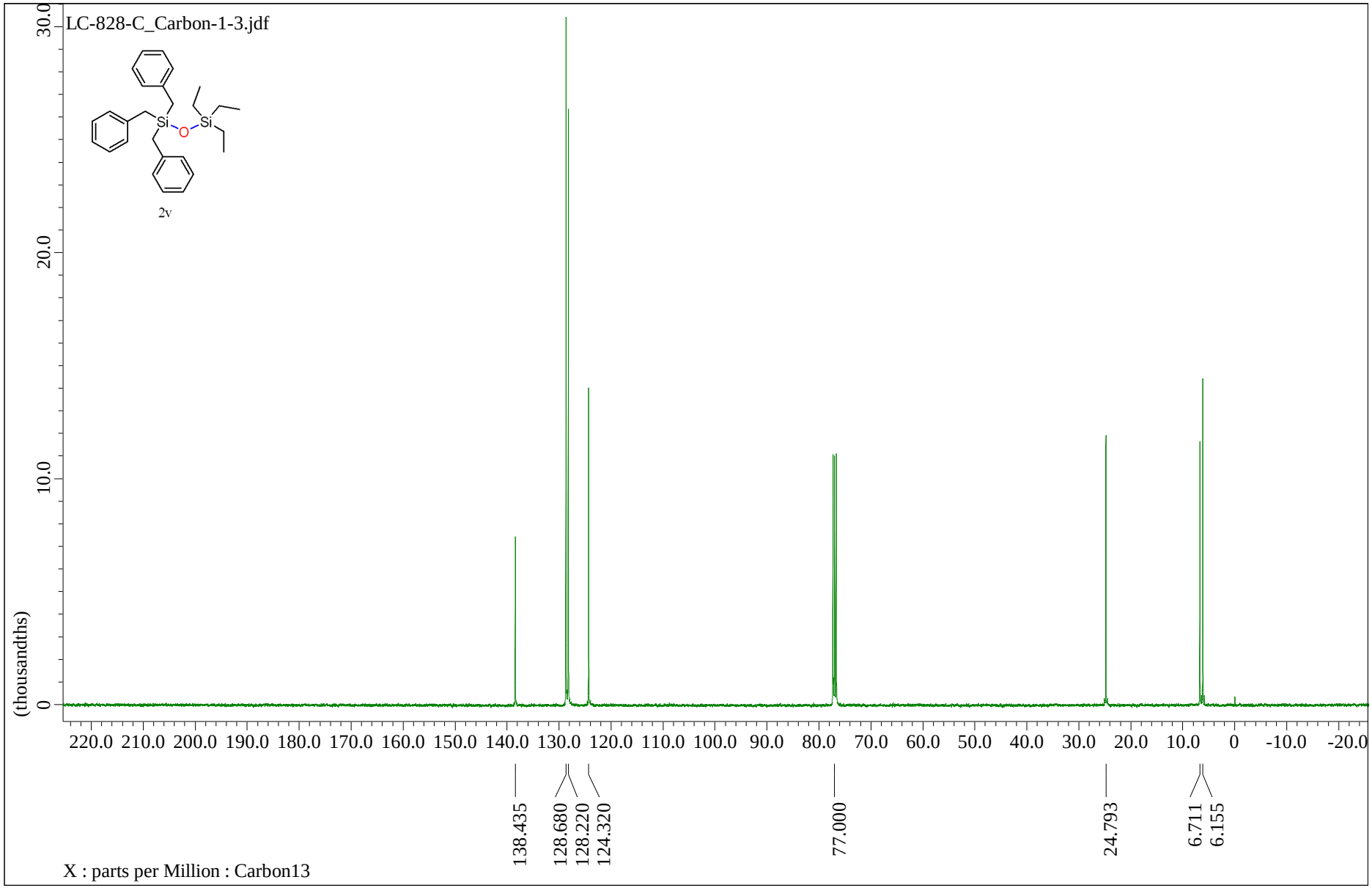

LC-819-H_Proton-1-3.jdf
Si
O
Si
2t
abundance
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
6.01
4.04
9.00
6.02
3.02
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.569
7.551
7.384
7.368
7.349
7.260
0.917
0.898
0.878
0.610
0.582
0.562
0.543
0.522
X : parts per Million : Proton

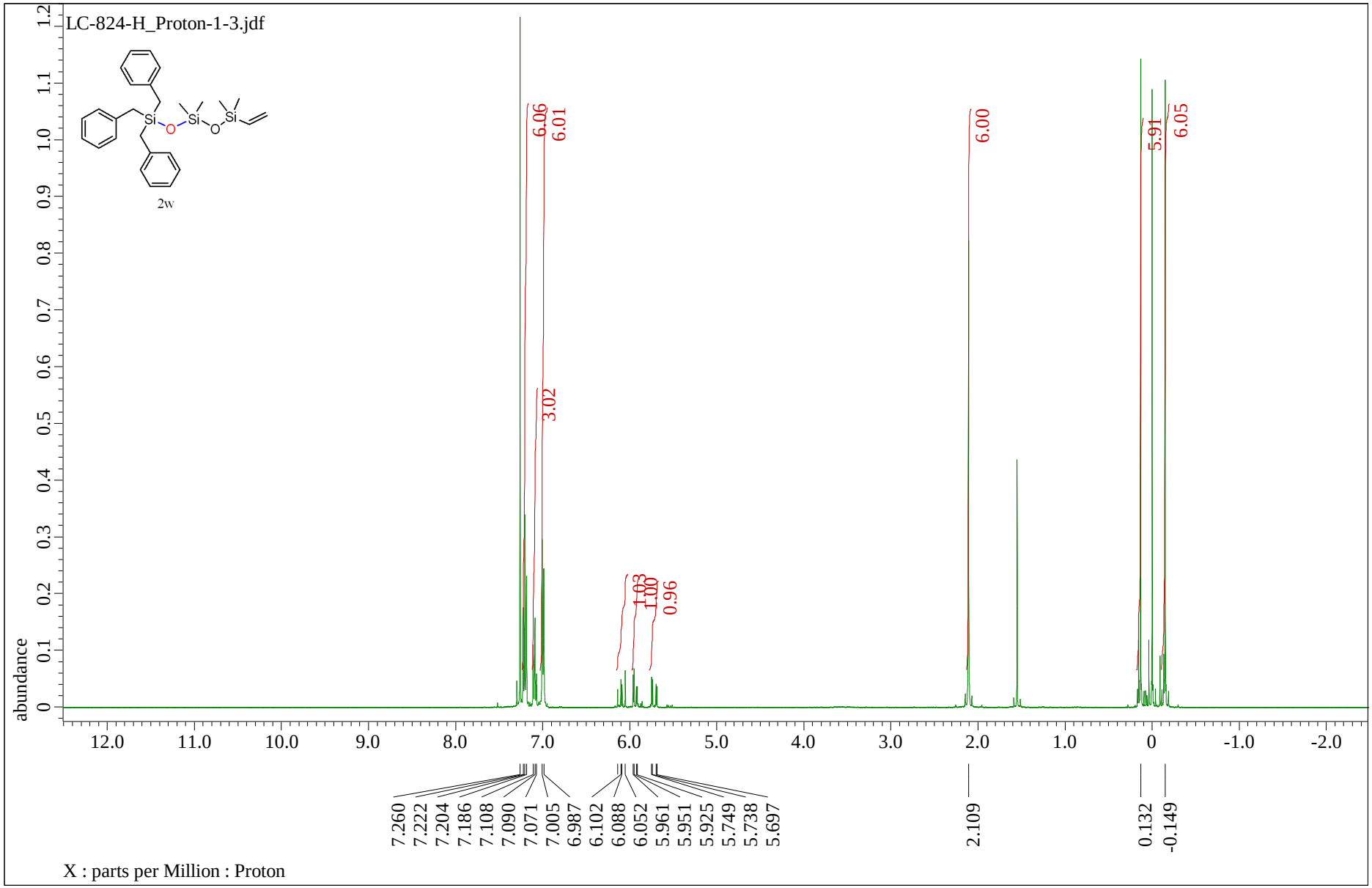

LC-819-C_Carbon-1-3.jdf
Si
O
Si
2t
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
138.329
133.806
129.379
127.635
77.000
6.759
6.270
-0.524
X : parts per Million : Carbon13

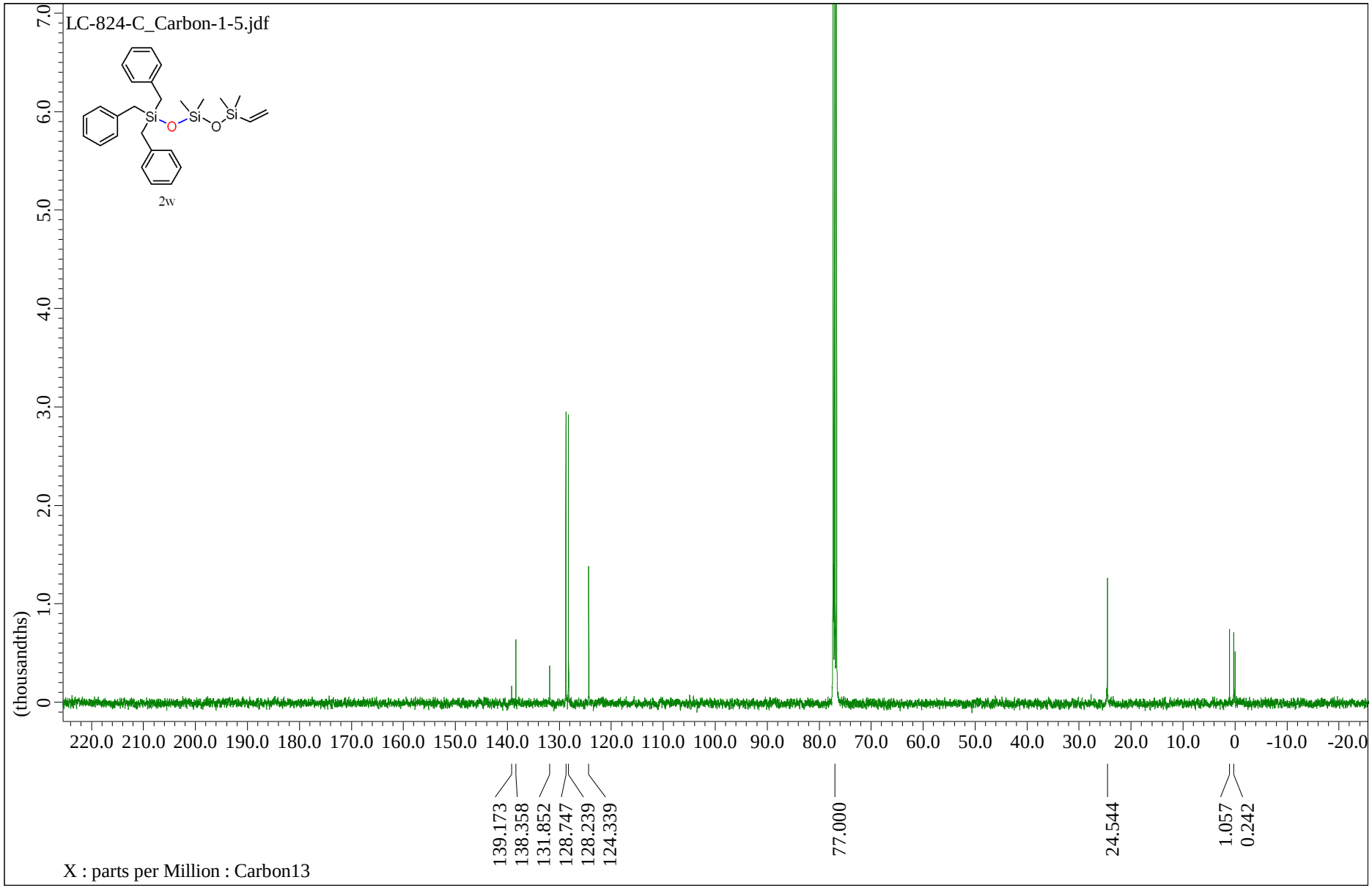

LC-827-H_Proton-1-3.jdf
Si
O
Si
2u
abundance
2.0
1.0
0
6.04
5.91
3.00
9.00
6.01
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.599
7.575
7.434
7.416
7.398
7.377
7.362
7.342
7.260
0.890
0.870
0.850
0.592
0.574
0.553
0.533
X : parts per Million : Proton

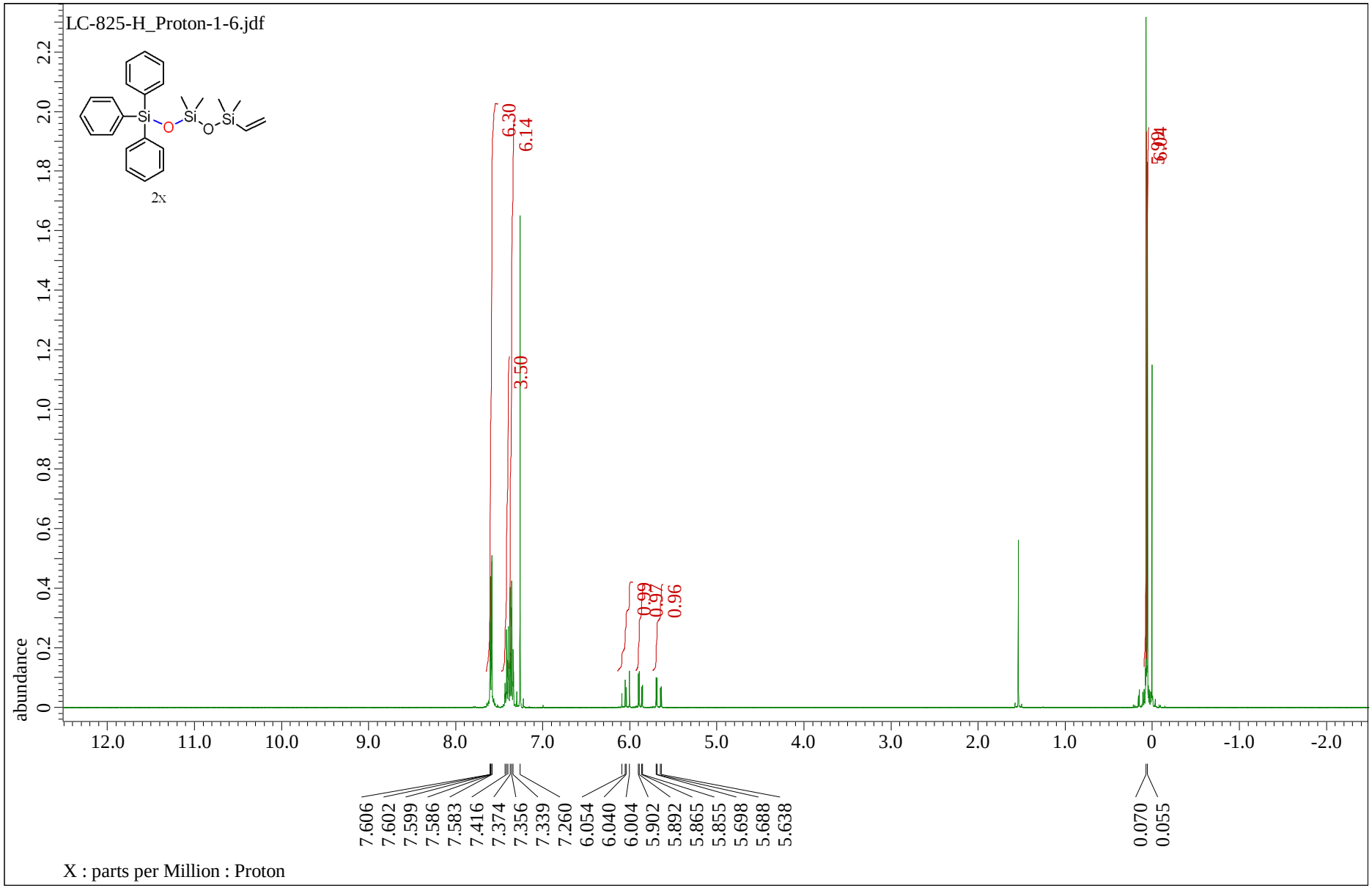

LC-827-C_Carbon-1-3.jdf
Si
O
Si
2u
(thousandths)
0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
136.279
134.947
129.667
127.645
77.000
6.759
6.346
X : parts per Million : Carbon13

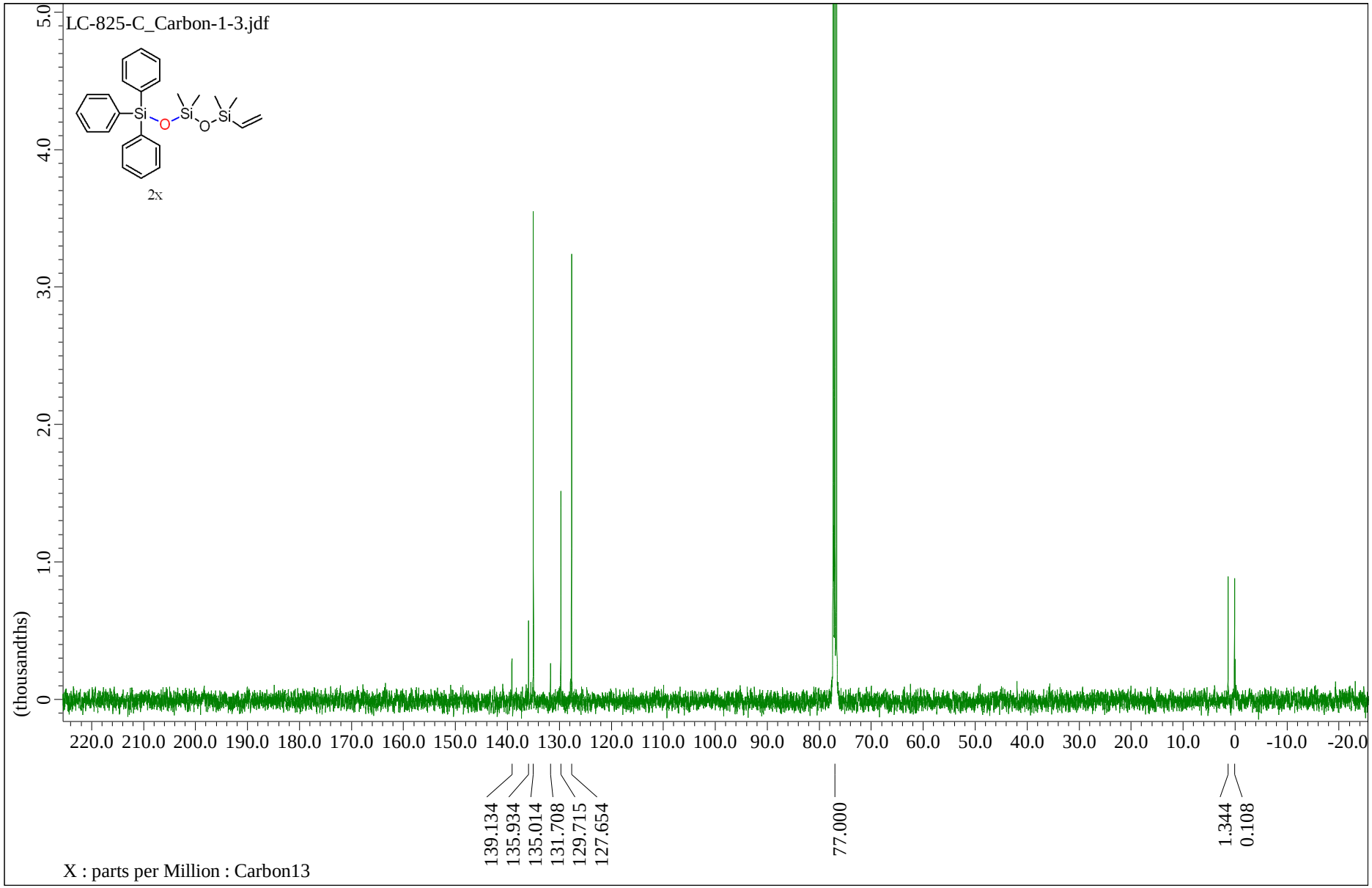

LC-828-H_Proton-1-3.jdf
2v
abundance
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
6.09
5.96
3.01
6.10
9.00
6.09
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.247
7.226
7.207
7.123
7.106
7.087
7.027
7.008
2.140
0.805
0.778
0.764
0.418
0.397
0.379
0.358
X : parts per Million : Proton


LC-828-C_Carbon-1-3.jdf
Si
O
Si
2v
30.0
20.0
10.0
0
(thousandths)
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
138.435
128.680
128.220
124.320
77.000
24.793
6.711
6.155
X : parts per Million : Carbon13


LC-824-H_Proton-1-3.jdf
2w
abundance
6.06
6.01
3.02
1.03
1.00
0.96
6.00
5.91
6.05
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.260
7.222
7.204
7.186
7.108
7.090
7.071
7.005
6.987
6.102
6.088
6.052
5.961
5.951
5.925
5.749
5.738
5.697
2.109
0.132
-0.149
X : parts per Million : Proton


LC-824-C_Carbon-1-5.jdf
2w
(thousandths)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.173
138.358
131.852
128.747
128.239
124.339
77.000
24.544
1.057
0.242
X : parts per Million : Carbon13


LC-825-H_Proton-1-6.jdf
2x
abundance
6.30
6.14
3.50
0.99
0.97
0.96
5.90
5.88
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
-1.0
-2.0
7.606
7.602
7.599
7.586
7.583
7.416
7.374
7.356
7.339
7.260
6.054
6.040
6.004
5.902
5.892
5.865
5.855
5.698
5.688
5.638
0.070
0.055
X : parts per Million : Proton


LC-825-C_Carbon-1-3.jdf
Si
O
Si
O
Si
2x
(thousandths)
5.0
4.0
3.0
2.0
1.0
0
220.0 210.0 200.0 190.0 180.0 170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0 0 -10.0 -20.0
139.134
135.934
135.014
131.708
129.715
127.654
77.000
1.344
0.108
X : parts per Million : Carbon13