Antibacterial Studies of Cationic Polymers

with Alternating, Random and Uniform Backbones

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Materials and General Procedures. Coupling agents used were purchased from Advanced Chem Tech. or PerSeptive Biosystems. Solvents, chemical reagents, cyclohexene **18a**, and catalysts were obtained from Fisher Scientific, Inc. or Sigma-Aldrich. $(H_2IMes)(3\text{-}Brpyr)_2Cl_2Ru{=}CHPh$ **15** (*1*), 1-cyclobutenecarboxylic acid,(*2, 3*) 1-cyclobutenecarboxylic chloride (*4*), ester **17a** (*4*), **Intermediate-5** (*4*), and **Acopolymer-5** (*4*) were prepared according to the literature. MHBc was used for the culture of all bacteria. CH_2Cl_2, benzene, Et_2O, THF and CH_3OH were dried in a GlassContour solvent pushstill system; pentane was used without further purification. All reactions were carried out under an Ar atmosphere in oven-dried glassware unless otherwise specified. Analytical thin layer chromatography (TLC) was performed on precoated silica gel plates (60F254), flash chromatography on silica gel-60 (230–400 mesh) and Combi-Flash chromatography on RediSep normal phase silica columns (Teledyne Isco, silica gel-60, 230–400 mesh). TLC spots were detected by UV light and by staining with phosphomolybdic acid (PMA). The usual workup for ester or amide coupling reactions was three washes of the CH_2Cl_2 solution with 5% $NaHCO_3$, followed by three washes with 1 N HCl and drying of the CH_2Cl_2 over Na_2SO_4. After evaporation of solvent, the final product was purified by flash silica chromatography or Combi-Flash chromatography. Inova400, Inova500 and Inova600 MHz NMR Instruments were used to perform NMR analysis. ^{1}H-NMR spectra are reported as chemical shift in parts per million (multiplicity, coupling constant in Hz, integration) and were acquired in $CDCl_3$ unless otherwise noted. ^{1}H-NMR data are assumed to be first order. TEM images were acquired on a FEI BioTwinG^2 transmission electron microscope. High-resolution mass spectra were obtained on a Thermo Fisher Scientific LTQ Orbitrap XL ETD. For PDI (Polydispersity Index) determination, a Shimadzu HPLC and UV detector coupled to a Brookhaven Instruments RI detector (BI-DNDC) and a multiangle static light scattering detector (BI-MwA) were used.

CB-$CO_2C_4H_8$NHBoc, 17b. *t*-Butyl 4-hydroxybutylcarbamate (1.22 mmol, 232 mg) and pyridine (2.04 mmol, 164 µL) were dissolved in 1.0 mL dry CH_2Cl_2, and the solution was stirred at 0 ºC for 45 min before being added to a vial containing 1-cyclobutenecarboxylic chloride (1.02 mmol). The reaction mixture was stirred for 16 h at rt. The CH_2Cl_2 solution was concentrated by rotary evaporation, and then purified by flash column chromatography (acetone:CH_2Cl_2/5:95) to yield **17b** as a colorless oil (170 mg, 62%). ^{1}H NMR (400 MHz) δ 8.56 (s, 2H), 6.78 (s, 1H), 4.20 (t, J= 8Hz, 2H), 3.67 (m, 2H), 2.69 (m, 2H), 2.42 (m, 2H), 1.44 (m, 2H). ^{13}C NMR (100 MHz) δ 163.6, 161.9, 153.3, 147.5, 138.4, 83.4, 83.3, 79.5, 79.5, 77.5, 77.2, 76.9, 53.6, 39.8, 39.5, 37.3, 31.0, 29.2, 28.4. HRMS (ESI) calcd for $C_{14}H_{24}NO_4$ $[M+H]^+$ 270.1705; found 270.1693.

CB-$CO_2C_2H_4N{=}C(NHBoc)_2$, 17c. $HOC_2H_4N{=}C(NHBoc)_2$ (0.51 mmol, 155 mg) and pyridine (2.04 mmol, 164 µL) were dissolved in 1.0 mL dry CH_2Cl_2, and the solution was stirred at 0 ºC for 45 min before being added to a vial containing 1-cyclobutenecarboxylic chloride (1.02 mmol). The reaction mixture was stirred for 16 h at rt. The CH_2Cl_2 solution was concentrated by rotary evaporation, and then purified by flash column chromatography (acetone:CH_2Cl_2/1:9) to yield **17c** as a colorless oil (90 mg, 46%). ^{1}H NMR (600 MHz) δ 6.76 (s, 1H), 4.13 (t, J= 6 Hz, 2H), 3.15 (m, 2H), 2.71 (m, 2H), 2.46 (m, 2H), 1.68 (m, 2H), 1.55 (m, 2H), 1.43 (s, 9H). ^{13}C NMR (100 MHz) δ

162.3, 156.2, 146.7, 138.9, 64.2, 53.7, 40.5, 31.1, 29.3, 28.6, 27.3, 26.2. HRMS (ESI) calcd for $C_{18}H_{30}N_3O_6$ $[M+H]^+$ 384.2129; found 384.2128.

N-propyl 3-cyclohexenecarboxamide, 18c. 3-Cyclohexenecarboxylic acid (0.71 mmol, 90 mg), $NH_2CH_2CH_2CH_3$ (0.86 mmol, 70 µL) and EDC·HCl (0.86 mmol, 164 mg) were dissolved in CH_2Cl_2 (3 mL). DIEA (1.43 mmol, 252 µL) was added at 0 ºC, and the reaction was stirred for 16 h at rt. The usual workup and chromatography (acetone/CH_2Cl_2/10:90) yielded N-propylcyclohex-3-enecarboxamide **18c** as a white powder (65 mg, 55%). ^{1}H NMR (400 MHz) δ 5.64 (m, 3H), 3.17 (dd, J= 8 Hz, J=8 Hz, 2H), 2.30-1.93 (m, 5H), 1.87-1.81 (m, 1H), 1.72-1.59 (m, 1H), 1.43 (m, 2H), 0.87 (t, J= 8 Hz, 3H). ^{13}C NMR (100 MHz) δ 175.9, 126.9, 125.6, 41.5, 41.2, 28.4, 26.0, 24.8, 23.1, 11.5. HRMS (ESI) calcd for $C_{10}H_{18}NO$ $[M+H]^+$ 168.1383; found 168.1379.

N-octyl 3-cyclohexenecarboxamide, 18d. 3-Cyclohexenecarboxylic acid (1.11 mmol, 140 mg), octylamine (1.33 mmol, 220 µL) and EDC·HCl (1.33 mmol, 255 mg) were dissolved in CH_2Cl_2 (3mL). DIEA (2.22 mmol, 393 µL) was added at 0 ºC, and the reaction was stirred for 16 h at rt. The usual workup and chromatography (acetone/CH_2Cl_2/10:90) yielded N-octylcyclohex-3-enecarboxamide **18d** as a white powder (215 mg, 82%). ^{1}H NMR (400 MHz) δ 5.77 (s, 1H), 5.63 (s, 2H), 3.18 (dd, J= 8 Hz, J=8 Hz, 2H), 2.33-2.00 (m, 5H), 1.86-1.82 (s, 1H), 1.70-1.60 (m, 1H), 1.43 (m, 2H), 1.22 (m, 10H), 0.82 (t, J= 8 Hz, 3H). ^{13}C NMR (100 MHz) δ 175.9, 126.9, 125.6, 41.46, 39.6, 31.9, 29.8, 29.4, 29.3, 28.3, 27.1, 25.9, 24.8, 22.8, 14.2. HRMS (ESI) calcd for $C_{15}H_{28}NO$ $[M+H]^+$ 238.2165; found 238.2160.

CB-CONHC$_4$H$_8$Cl, 19. The chloramine hydrochloride was prepared according to Sommen et al. (*5*). $H_2NCH_2CH_2CH_2CH_2OH$ (2.24 mmol, 200 mg) was dissolved in benzene (2 mL). $SOCl_2$ (500 µL) was added slowly to the solution and a white precipitate formed. The mixture was stirred at rt for 2 h. The precipitate was filtered, washed with benzene, and dried under vacuum to provide $H_2NCH_2CH_2CH_2CH_2Cl$·HCl (320 mg, 99%) which was combined with 1-cyclobutenecarboxylic acid (1.12 mmol, 110 mg) and EDC·HCl (1.35 mmol, 258 mg) and dissolved in CH_2Cl_2 (10 mL). Pyridine (4.49 mmol, 362 µL) was added at 0 ºC, and the reaction was stirred for 16 h at rt. The workup (washed with 1N HCl twice, and then washed with brine twice) and chromatography (acetone:CH_2Cl_2/10:90) yielded **19** as a viscous oil (98 mg, 47%). ^{1}H NMR (400 MHz) δ 6.56 (s, 1H), 5.79 (s, 1H), 3.52 (t, J= 8 Hz, 2H), 3.28 (m, 2H), 2.63 (m, 2H), 2.41 (m, 2H), 1.75 (m, 2H), 1.65 (m, 2H). ^{13}C NMR (100 MHz) δ 163.0, 141.6, 140.5, 44.8, 38.4, 30.0, 28.6, 27.2, 26.3. HRMS (ESI) calcd for $C_9H_{15}ClNO$ $[M+H]^+$ 188.0837; found 188.0835.

(Z)-5-Bromocyclooctene, 21. Cyclooctene **21** was prepared according to the literature (*6*). ^{1}H NMR (500 MHz) δ 5.65 (m, 2H), 4.33 (m, 1H), 2.47-1.54 (m, 11H).

(Z)-4-Cyclooctenecarboxylic acid, 22. (Z)-4-Cyclooctenecarboxylic acid **22** was prepared according to the literature (*7*). ^{1}H NMR (500 MHz) δ 11.67 (s, 1H), 5.69 (m, 2H), 2.51-1.41 (m, 11H). ^{13}C NMR (125 MHz) δ 184.6, 130.8, 129.5, 43.4, 31.6, 29.4, 27.9, 26.2, 24.2.

(Z)-4-Chlorobutyl 4-cyclooctenecarboxylate, 20. 4-Cyclooctenecarboxylic acid (1.04 mmol, 160 mg) was dissolved in 6 mL dry CH_2Cl_2. The solution was cooled to 0 ºC and oxalyl dichloride (4.16 mmol, 356 µL) was added. The temperature of the solution was raised to rt, and the mixture was allowed to react for 1 h. The solvent was evaporated to generate 4-cyclooctenecarboxylic chloride as a viscous oil. 4-Chlorobutanol (1.04 mmol, 113 mg) and triethylamine (2.07 mmol, 287 µL) were dissolved in 6 mL dry CH_2Cl_2, and the solution was stirred at 0 ºC for 45 min before being added to a vial containing 4-cyclooctenecarboxylic chloride. The reaction mixture was stirred for 16 h at rt. The CH_2Cl_2 solution was concentrated by rotary evaporation, and then purified by flash column chromatography (CH_2Cl_2) to yield **20** as a colorless oil (200 mg, 79%). ^{1}H NMR (500 MHz) δ 5.64 (m, 2H), 4.03 (m, 2H), 3.51 (t, J = 15 Hz, 2H), 2.43-1.36 (m, 15H). ^{13}C NMR (125 MHz) δ 177.5, 130.4, 129.6, 63.6, 44.6, 43.5, 31.6, 29.4, 27.8, 25.9, 24.0. HRMS (ESI) calcd for $C_{13}H_{22}ClO_2$ $[M+H]^+$ 245.1303; found 245.1298.

Intermediate-1 and Acopolymer-1. Cyclobutene **17a** (0.15 mmol), cyclohexene **18a** (0.30 mmol) and catalyst **15** (0.006 mmol) were allowed to react for 5 h at rt to reach 90% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/5:95) to provide **Intermediate-1** (21 mg, 51%). ^{1}H NMR (500 MHz, CD_2Cl_2) δ 7.40-7.21 (m, 5H), 6.78 (b, 25H), 6.43 (m, 1H), 6.27 (m, 1H), 5.85(m, 1H), 5.44 (b, 42H), 4.17 (b, 50H), 3.63 (b, 50H), 2.44-2.02 (m, 188H), 1.88 (m, 100H), 1.52-1.44 (b, 88H). ^{13}C NMR (125 MHz) δ 168.0, 143.3, 131.9, 131.0, 130.9, 130.7, 130.5, 130.4, 130.1, 129.9, 129.7, 129.3, 128.7, 128.5, 125.5, 63.7, 44.8, 32.6, 32.4, 31.9, 29.6, 29.4, 29.2, 29.1, 29.0, 28.8-27.3, 26.4. **Intermediate-1** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Acopolymer-1** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.50-7.27 (m, 5H), 6.91 (b, 25H), 6.39 (b, 1H), 6.28 (b, 1H), 5.89 (b, 1H), 5.45 (b, 44H), 4.25 (b, 50H), 3.44 (b, 50H), 3.19 (s, 225H), 2.40-2.04 (m, 188H), 1.94 (m, 50H), 1.84 (m, 50H), 1.47 (m, 88H).

Intermediate-2 and Acopolymer-2. Cyclobutene **17a** (0.15 mmol), cyclohexene **18b** (0.30 mmol) and catalyst **15** (0.006 mmol) were allowed to react for 3 h at 50 °C to reach 94% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/10:90) to provide **Intermediate-2** (35 mg, 81%). ^{1}H NMR (600 MHz, CD_2Cl_2) δ 7.38-7.21 (m, 5H), 6.75 (b, 25H), 6.39 (b, 1H), 6.22 (b, 1H), 5.81 (b, 1H), 5.42 (b, 34H), 4.14 (b, 50H), 3.61 (b, 50H), 2.36-2.01 (m, 172H), 1.84 (m, 100H), 1.57-1.36 (m, 108H). **Intermediate-2** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solventwas evaporated to provide **Acopolymer-2** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.36-7.15 (m, 5H), 6.75 (b, 17H), 5.27 (b, 13H), 4.08 (b, 34H), 3.26 (b, 34H), 3.02 (b, 153H), 2.40-1.97 (m, 124H), 1.76-1.66 (b, 68H), 1.37-1.08 (m, 84H).

Intermediate-3 and Acopolymer-3. Cyclobutene **17a** (0.15 mmol), cyclohexene **18c** (0.30 mmol) and catalyst **15** (0.006 mmol) were mixed in $CDCl_3$ and allowed to react for 3 h at 50 °C to reach 92% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/10:90) to provide **Intermediate-3** (28 mg, 53%). ^{1}H NMR (600 MHz, CD_2Cl_2) δ 7.43-7.21 (m,

5H), 6.73 (s, 31H), 6.36 (b, 1H), 6.21 (b, 1H), 5.83 (b, 1H), 5.56-5.40 (b, 44H), 4.15 (b, 62H), 3.60 (b, 62H), 3.17 (b, 46H), 2.44-2.08 (m, 216H), 1.85-1.82 (m, 124H), 1.61-1.51 (m, 115H), 0.92 (m, 69H). **Intermediate-3** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated, the residue dissolve in water and washed with Et_2O to provide **Acopolymer-3** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.53-7.31 (m, 5H), 6.86 (m, 30H), 5.47 (b, 48H), 4.28 (b, 60H), 3.41 (b, 60H), 3.17 (b, 270H), 2.57-2.18 (m, 220H), 1.93-1.56 (m, 195H), 0.94 (b, 75H).

Intermediate-4 and Acopolymer-4. Cyclobutene **17a** (0.15 mmol), cyclohexene **18d** (0.30 mmol) and catalyst **15** (0.006 mmol) were mixed in $CDCl_3$ and allowed to react for 5 h at 50 °C to reach 96% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/10:90) to provide **Intermediate-4** (39 mg, 61%). ^{1}H NMR (500 MHz, CD_2Cl_2) δ 7.41-7.23 (m, 5H), 6.76 (b, 22H), 6.42 (b, 1H), 6.23 (b, 1H), 5.94 (b, 1H), 5.41 (b, 38H), 4.17 (b, 44H), 3.61 (b, 44H), 3.22 (40H), 2.53-2.11 (m, 168H), 1.86 (m, 88H), 1.62-1.50 (m, 60H), 1.32 (m, 240H), 0.91 (m, 60H). **Intermediate-4** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated, diluted with water and washed by Et_2O to provide **Acopolymer-4** as a brown powder. ^{1}H-NMR (600 MHz, D_2O) δ 7.46-7.30 (m, 5H), 6.88 (b, 25H), 5.48 (b, 48H), 4.26 (b, 50H), 3.42 (b, 50H), 3.18 (b, 225H), 2.40-1.31 (m, 650H).

Intermediate-6 and Acopolymer-6. Cyclobutene **17b** (0.15 mmol), cyclohexene **18a** (0.30 mmol) and catalyst **15** (0.006 mmol) were mixed in $CDCl_3$ and allowed to react for 80 min at 50 °C to reach 97% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/10:90) to provide **Intermediate-6** (26 mg, 49%). ^{1}H NMR (600 MHz, CD_2Cl_2) δ 7.40-7.20 (m, 5H), 6.75 (b, 25H), 6.36 (m, 1H), 6.22 (b, 1H), 5.79 (b, 1H), 5.39 (b, 38H), 4.67 (b, 25H), 4.12 (b, 50H), 3.13 (b, 50H), 2.44-2.02 (m, 180H), 1.69-1.28 (m, 405H). **Intermediate-6** and trifluoro acetic acid (TFA) (2 mL) were mixed in CH_2Cl_2 (2 mL). The solution was stirred at rt for 2 h. The crude solution was purged with Ar to remove solvent and to provide **Acopolymer-6** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.34-7.06 (m, 5H), 6.70 (b, 18H), 5.24 (b, 22H), 4.04 (m, 36H), 2.94 (b, 36H), 2.34-1.84 (m, 120H), 1.66-1.09 (m, 282H).

Intermediate-7 and Acopolymer-7. Cyclobutene **17c** (0.15 mmol), cyclohexene **18a** (0.30 mmol) and catalyst **15** (0.006 mmol) were mixed in $CDCl_3$ and allowed to react for 80 min at 50 °C to reach 97% completion. Thesolvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/10:90) to provide **Intermediate-7** (51 mg, 73%). ^{1}H-NMR (500 MHz, CD_2Cl_2) δ 8.59 (b, 50H), 7.56-7.21 (m, 5H), 6.84 (b, 25H), 5.41 (b, 48H), 4.28 (m, 50H), 3.68 (m, 50H), 2.49-1.61 (m, 300H), 1.49 (b, 450H). **Intermediate-7** and TFA (2 mL) were mixed in CH_2Cl_2 (2 mL). The solution was stirred at rt for 2 h. The crude solution was purged with Ar to remove solvent and to provide **Acopolymer-7** as a brown powder. ^{1}H-NMR (600 MHz, D_2O) δ 7.38-7.18 (m, 5H), 6.85 (b, 25H), 5.35 (b, 48H), 4.27 (b, 50H), 3.55 (b, 50H), 2.35-2.00 (m, 200H), 1.38 (m, 100H).

Intermediate-8 and Rcopolymer-8. Cyclobutene **19** (0.048 mmol), cyclooctene (0.048 mmol) and catalyst **15** (0.012 mmol) were allowed to react for 1 h at rt to reach > 99% completion. The solvent was evaporated to remove solvent, and was purified by flash column chromatography (acetone:CH_2Cl_2/5:95) to provide **Intermediate-8** (10 mg, 66%). ^{1}H NMR (500 MHz, acetone-D_6) δ 7.38-7.18 (m, 5H), 6.30-6.09 (m, 4H), 5.42 (b, 10H), 3.62 (b, 8H), 3.32 (b, 8H), 2.54-1.66 (m, 52H), 1.33 (m, 40H). **Intermediate-8** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Rcopolymer-8** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.35-6.96 (m, 11H), 6.29-6.09 (m, 6H), 5.24 (b, 16H), 3.25-3.16 (m, 24H), 3.00 (b, 54H), 2.36-1.45 (m, 84H), 1.19 (b, 72H).

Intermediate-9 and Rcopolymer-9. Cyclobutene **19** (0.064 mmol), cyclooctene (0.064 mmol) and catalyst **15** (0.008 mmol) were allowed to react for 1 h at rt to reach > 99% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/5:95) to provide **Intermediate-9** (14 mg, 74%). ^{1}H NMR (500 MHz, CD_2Cl_2) δ 7.37-7.19 (m, 5H), 6.12 (b, 11H), 5.85 (b, 11H), 5.42 (b, 28H), 3.60 (b, 22H), 3.31 (b, 22H), 2.41-1.70 (m, 148H), 1.35 (b, 120H). **Intermediate-9** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Rcopolymer-9** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.28-6.98 (m, 5H), 6.21 (b, 9H), 5.25 (b, 24H), 3.24 (m, 36H), 3.00 (b, 81H), 2.33-1.20 (m, 228H).

Intermediate-10 and Rcopolymer-10. Cyclobutene **19** (0.20 mmol), cyclooctene (0.20 mmol) and catalyst **15** (0.008 mmol) were allowed to react for 1 h at rt to reach > 99% completion. The solvent was evaporated, and the residue was purified by flash column chromatography (acetone:CH_2Cl_2/5:95) to provide **Intermediate-10** (40 mg, 68%). ^{1}H NMR (500 MHz, CD_2Cl_2) δ 7.39-7.22 (m, 5H), 6.13 (b, 25H), 5.42 (b, 62H), 3.61 (b, 50H), 3.32 (b, 50H), 2.44-1.71 (m, 328H), 1.35 (b, 256H). ^{13}C NMR (125 MHz) δ 170.1, 136.6, 135.4, 131.6, 130.5, 130.3, 129.2, 126.1, 44.8, 39.0, 32.8, 32.2, 30.1, 29.2, 27.3. **Intermediate-10** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Rcopolymer-10** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.20-7.01 (m, 5H), 6.23 (b, 25H), 5.28 (b, 60H), 3.28 (m, 100H), 3.02 (b, 225H), 2.43-1.50 (m, 324H) 1.21 (b, 248H).

Intermediate-11 and Homopolymer-11. Cyclobutene **19** (0.048 mmol) and catalyst **15** (0.012 mmol) were allowed to react for 4 h to reach 93% completion before the addition of ethylvinyl ether (300 µL). After 30 min, the solvent was evaporated and the residue was purified by silica column chromatography with 2% MeOH/ CH_2Cl_2 to afford the product **Intermediate-11** (7.7 mg, 75% yield). ^{1}H-NMR (500 MHz, CD_2Cl_2) δ 7.43-7.04 (m, 9H), 6.35 (b, 4H), 3.59 (b, 8H), 3.28 (b, 8H), 2.39-1.51 (m, 32H). **Intermediate-11** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Homopolymer-11** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.51-7.19 (m, 5H), 6.17 (b, 4H), 3.42 (b, 8H), 3.31 (b, 8H), 3.18 (b, 36H), 2.42-2.26 (m, 16H), 1.87-1.63 (m, 16H).

Intermediate-12 and Homopolymer-12. Cyclobutene **19** (0.096 mmol) and catalyst **15** (0.012 mmol) were allowed to react for 4 h to reach 92% completion before the addition of ethylvinyl ether (300 µL). After 30 min, the solvent was evaporated and the residue was purified by silica column chromatography with 2% MeOH/ CH_2Cl_2 to afford the product **Intermediate-12** (14 mg, 74% yield). ^{1}H-NMR (600 MHz, CD_2Cl_2) δ 7.42-6.98 (m, 13H), 6.18 (b, 8H), 3.58 (b, 16H) 3.25 (b, 16H), 2.38-1.65 (m, 128H). ^{13}C-NMR (125 MHz) δ 170.8, 136.1, 134.7, 134.4, 130.3, 129.0, 128.8, 128.3, 44.9, 39.4, 30.1, 27.9, 27.2, 26.8. **Intermediate-12** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Homopolymer-12** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.51-7.20 (m, 5H), 6.18 (b, 8H), 3.42 (b, 16H), 3.31 (b, 16H), 3.19 (b, 72H), 2.43-2.18 (m, 32H), 1.87-1.64 (m, 32H).

Intermediate-13 and Homopolymer-13. Cyclooctene **20** (0.048 mmol) and catalyst **15** (0.012 mmol) were allowed to react for 4 h to reach 93% completion before the addition of ethylvinyl ether (300 µL). After 30 min, the solvent was evaporated and the residue was purified by silica column chromatography with 5% acetone/CH_2Cl_2 to afford the product **Intermediate-13** (9.9 mg, 76% yield). ^{1}H NMR (500 MHz, CD_2Cl_2) δ 7.36-7.20 (m, 5H), 6.43 (m, 1H), 6.23 (m, 1H), 5.81 (m, 1H), 5.41 (b, 8H), 5.03 (m, 1H), 4.12 (m, 8H), 3.61 (m, 8H), 2.37-1.27 (m, 60H). **Intermediate-13** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Homopolymer-13** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.37 (b, 5H), 6.41 (b, 1H), 6.26 (b, 1H), 5.88 (b, 1H), 5.45 (b, 8H), 5.06 (b, 1H), 4.21 (b, 8H), 3.42 (b, 8H), 3.18 (b, 36H), 2.54-1.38 (m, 60H).

Intermediate-14 and Homopolymer-14. Cyclobutene **20** (0.096 mmol) and catalyst **15** (0.012 mmol) were allowed to react for 4 h to reach 92% completion before the addition of ethylvinyl ether (300 µL). After 30 min, the solvent was evaporated and the residue was purified by silica column chromatography with 2% MeOH/CH_2Cl_2 to afford the product **Intermediate-14** (19.5 mg, 78% yield). ^{1}H NMR (500 MHz, CD_2Cl_2) δ 7.36-7.15 (m, 5H), 6.43 (m, 1H), 6.24 (m, 1H), 5.81 (m, 1H), 5.41 (b, 16H), 5.02 (m, 1H), 4.11 (m, 16H), 3.60 (m, 16H), 2.37-1.26 (m, 120H). ^{13}C NMR (125 MHz) δ 176.4, 130.8, 130.4, 129.9, 129.4, 129.0, 126.2, 63.7, 45.4, 33.0, 32.2, 30.8, 29.6, 26.7. **Intermediate-14** and aqueous trimethylamine (45% wt, 1 mL) were mixed in acetonitrile (2 mL). The solution was heated to 70 °C for 4 h. The solvent was evaporated to provide **Homopolymer-14** as a brown powder. ^{1}H NMR (600 MHz, D_2O) δ 7.39 (b, 5H), 6.41 (b, 1H), 6.27 (b, 1H), 5.90 (b, 1H), 5.47 (b, 16H), 5.07 (b, 1H), 4.23 (b, 16H), 3.41 (b, 16H), 3.18 (b, 72H), 2.47-1.40 (m, 120H).

Polydispersity Index (PDI) determination. Polymers (before flash column chromatography purification) were dissolved in THF (0.5 mg mL^{-1}). An aliquot (100 μL) of each polymer solution was injected and analyzed by gel permeation chromatography using a Phenogel column (300 x 7.80 mm, 5 μm, linear mixed bed, 0-40K MW range). Elution was performed at 0.7 mL/min with THF and detection at 220 nm and 254 nm at 30 °C. Narrowly dispersed polystyrene standards from Aldrich were used as molecular weight calibrants. The number average and weighted average molecular weights were calculated from the chromatogram (WinGPC, Brookhaven Inst.).

ClogP calculation. CLogP's of quaternary ammonium polymers were calculated according to Crippen's fragmentation (*30*) using ChemDraw Ultra 12.0 for the ring-opened AB dyads (copolymers) or A monomers (homopolymer). The ClogP calculations are relative ($CLogP_{rel}$) to **Acopolymer-1** that was arbitrarily set to 0. The quaternary ammonium fragment, which was present in all the polymers, was not included in the calculation. A more positive CLogP is more hydrophobic than **Acopolymer-1** and conversely, a more negative CLogP is less hydrophobic. The standard deviation of the calculation is ± 0.5.

MIC and Hemolysis Assays. The minimal inhibitory concentration (MIC) for the polymers towards six bacterial species were determined using the broth microdilution method as described by protocol M7-A7 of the Clinical and Laboratory Standards Institute (*59*). Two-fold serial dilutions of test polymers were made using cation-adjusted Mueller Hinton broth (MHBC) from a concentration of 512 µg per mL to 1 µg per mL. Each dilution (50 μL) was placed into a well of a 96-well microtiter plate (Becton Dickinson and Company, Franklin Lakes, NJ; catalog #353077). Test bacterial species were obtained from the American Type Culture Collection (ATCC) and consisted of *Pseudomonas aeruginosa* ATCC 27853, *Escherichia coli* ATCC 25922, *Bacillus cereus* ATCC 10987, *Staphylococcus aureus* ATCC 25923, *Enterococcus faecium* ATCC 19434, and *Enterococcus faecalis* ATCC 19433. Three to four isolated bacterial colonies, grown overnight on Mueller Hinton II agar plates at 37°C, were suspended into pre-warmed cation-adjusted Mueller Hinton broth (10 mL) and incubated at 37°C until the optical density reached approximately 1.0 McFarland standard. The cultures were then adjusted to a 0.5 McFarland standard (equivalent to approximately 1 - 2 x 10^8 cells per mL) then diluted 1/10 twice, in cation-adjusted Mueller Hinton broth, to produce 1 x 10^6 cells per mL. This dilution (50 μL) was added to microtiter wells containing the test polymers. This resulted in a final cell concentration of 5 x 10^5 per mL and one-half concentration of the polymer in a final volume of 0.1 mL. A control well containing no polymer was used as a positive growth control. The microtiter plates were incubated at 37°C for 16 – 20 h. The MIC was defined as the lowest concentration of polymer to completely inhibit bacterial growth. Statistical significance of differences was determined by ANOVA.

Hemolysis assays were conducted using 0.1 M phosphate buffer (pH 7.4) as described by Murthy et al.(*60*) except washed sheep RBC were used. Washed sheep red blood cells (RBCs), containing approximately 10^8 RBCs per 200 μL in 100 mM phosphate buffer (PB, pH 7.4), was added to PB (800 μL), containing a known amount of polymer, in 1.5 mL microcentrifuge tubes. The final concentration of polymer in the assay tubes varied as a series of two-fold dilutions from 1024 µg mL^{-1} to 0.125 µg mL^{-1}. The contents of the microcentrifuge tubes were mixed by inversion and the tubes placed in a water bath at 37 °C for 1 h. After 30 min incubation, the tubes were again mixed by inversion. The positive control consisted of RBCs (200 μL) mixed with distilled deionized water (800 μL) while the negative control consisted of RBCs (200 μL) mixed with PB (800 μL) alone. After incubation, the tubes were centrifuged at 16,000 xg for 5 min, then the supernatants were measured for absorbance at 541 nm with negative control serving as the blank. Percent hemolysis was determined by dividing the absorbance of the sample by the absorbance of the positive control then multiplying by 100.

Thin-section TEM of Bacteria. *E. coli* (ATCC 25922) and *S. aureus* (ATCC 25923) were grown to logarithmic phase in MHBc (OD600 = 1.0). The bacterial suspension was washed with PBS buffer (pH 7.0) twice, and was resuspended in the same amount of PBS buffer. An aqueous solution of **Acopolymer-1** was added to the bacterial suspension, and the mixture was incubated at 37 ºC for 30 min. The bacterial suspension was washed with PBS buffer, and was resuspended in the same amount of 2.5% glutaraldehyde in sodium cacodylate buffer (pH = 7). After fixing, samples were then placed in 2% osmium tetroxide in PBS buffer (pH = 7.0), dehydrated in a graded series of ethyl alcohol and embedded in Epon resin. Ultrathin sections of 80 nm were cut with a Reichert-Jung Ultracut E ultramicrotome and placed on formvar coated slot copper grids. Sections were then counterstained with uranyl acetate and lead citrate and viewed with a FEI Tecnai12 BioTwinG^2 electron microscope. Digital images were acquired with an AMT XR-60 CCD Digital Camera system.

***Lipid Vesicle Preparation* (*11, 12*).** Two stock buffer solutions were used: buffer A (20 mM calcein, 10 mM Na_2HPO_4, pH 7.0) and buffer B (10 mM Na_2HPO_4, 90 mM NaCl, pH 7.0). Appropriate amounts of each lipid mixture (DOPC 25 mg; POPE/POPG 20 mg/15.6 mg; 1, 1', 2, 2'-tetraoleoyl cardiolipin (CL) (sodium salt) 47.8 mg) were dissolved in buffer A (1 mL), followed by stirring for 1 h. The suspension was subjected to five freeze-thaw cycles, and was extruded five times through a polycarbonate membrane (Whatman, pore size 100 nm). The external calcein was removed by gel filtration (Sephadex G-25 resin) in buffer B. After gel filtration, the solution was typically diluted 7-fold to yield a final lipid concentration of around 4.5 mM in buffer B. The above vesicle solution (100 μL) was diluted in buffer B (9.9 mL) to make the stock vesicle solution (45 μM).

***Dye Leakage Experiments of Lipid Vesicles* (*11, 12*).** The stock vesicle solution (100 μL) and buffer B (900 μL) were mixed in a fluorimeter cuvette. The fluorescence signal was allowed to stabilize ($\lambda_{excitation}$ = 490 nm, $\lambda_{emission}$ = 510 nm) for 100 s at 37 °C before addition of polymer solution (1 μg mL^{-1} or 4 μg mL^{-1}). The change in fluorescence over 5 min was recorded followed by the addition of 20% Trition X-100 (50 μL) to determine the maximum fluorescence of the dye. The dye leakage percentage was calculated according to equation (1):

$$\text{dye leakage percentage} = 100[(I_t - I_0)/(I_\infty - I_0)] \qquad (1)$$

Where I_0 is the fluorescence intensity before the addition of samples, and I_∞ is the fluorescence intensity after the addition of 20% Triton X-100.

***Potassium Release Assay* (*13*).** Potassium ion release assays were performed by following the method of Silverman et al. (*13*). *E. coli* (ATCC 25922) and *S. aureus* (ATCC 25923) were grown to late logarithmic phase in MHBc (OD600 = 1.0). The bacterial suspension was washed twice with 10 mM HEPES (pH 7.2) and 0.5% glucose, and was resuspended in the same amount of 10 mM HEPES (pH 7.2) and 0.5% glucose. The bacterial suspension (2 mL) was placed in a fluorimeter cuvette containing a stir bar. The fluorescence of the bacterial suspension was allowed to stabilize for 60 s at 37 °C ($\lambda_{excitation}$ = 346 nm, $\lambda_{emission}$ = 505 nm) before the addition of PBFI-AM (potassium indicator, 1 μM). Data were collected for an additional 2 min to establish a baseline signal before the addition of polymers (32 μg mL^{-1}). The fluorescence signals were collected for each sample over

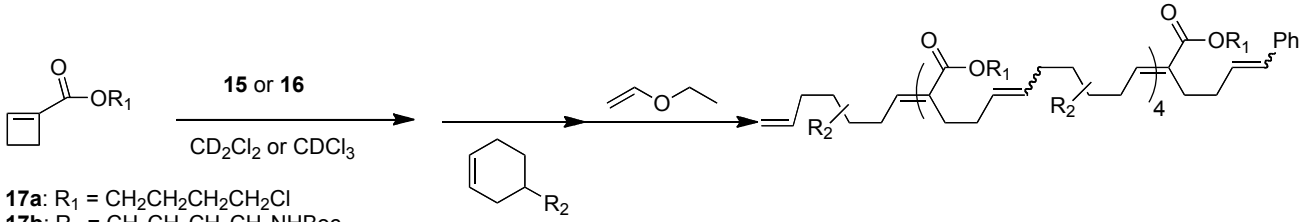
1000 s. For the control sample, valinomycin (10 μg mL^{-1}) was added to the sample solution and stirred for 1000 s, followed by the addition of KCl (1 mM) to demonstrate continued indicator responsiveness. Data were normalized relative to the fluorescent signal change in 1000 s after the addition of valinomycin according to equation (2).

Potassium release percentage = $100[(I_t - I_0)/(I_\infty - I_1)]$ (2)

Where I_0 is I_t before the addition of polymers, I_1 is the fluorescence intensity before the addition of valinomycin, and I_∞ is the fluorescence intensity at 1000 s after the addition of valinomycin.

Membrane Depolarization Assay. Both *E. coli* (ATCC 25922) and *S. aureus* (ATCC 25923) were grown to logarithmic phase in MHBc (OD600 = 0.05). The bacterial suspension was washed with HEPES buffer (5 mM, pH 7.4) twice, and was resuspended in the same amount of HEPES buffer (5 mM, pH 7.4). A final concentration of 0.2 mM EDTA (pH 7.4) was added to the bacterial suspension. The bacterial suspension (2 mL) was transferred to a fluorescence cuvette, $diSC_35$ was added at a final concentration of 0.4 μM and the mixture equilibrated at 37 °C. The fluorescence was allowed to quench for 20-30 min before the addition of 100 mM KCl. The fluorescence was allowed to stabilize for 60 s before the addition of valinomycin, Acopolymer-1, Rcopolymer-8, Homopolymer-11 or Homopolymer-13. The fluorescence change thereafter was recorded for 1 h.

The residual cell viability of the bacteria in the membrane depolarization assay was assessed. At regular intervals (0, 5, 15, 45 and 60 min) an aliquot of the bacterial suspension was plated on MH agar plates and incubated at 37 ºC for 24 h (*E. coli*) or 48 h (*S. aureus*), and residual colony forming units (CFU) were determined.

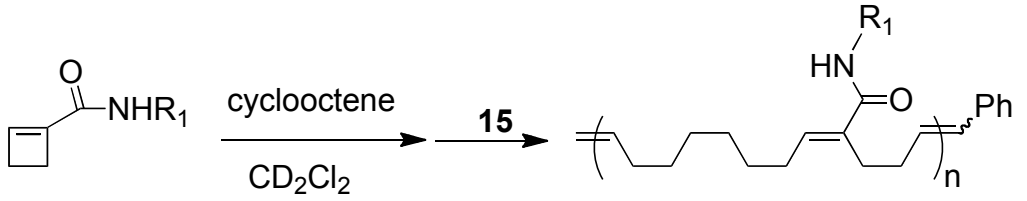


17a: $R_1 = CH_2CH_2CH_2CH_2Cl$
17b: $R_1 = CH_2CH_2CH_2CH_2NHBoc$
17c: $R_1 = CH_2CH_2N{=}C(NHBoc)_2$

18a: $R_2 = H$
18b: $R_2 = CH_3$
18c: $R_2 = CONHCH_2CH_2CH_3$
18d: $R_2 = CONH(CH_2)_7CH_3$

A	**B**	Cat.	[Ru] (M)	[A]:[B]:[Ru]	Rxn time (h)	Product	% conv[a]
17a	**18a**	**15**	0.01	25:50:1	5	**Intermediate-1**	90 [b]
17a	**18b**	**15**	0.01	25:50:1	2	**Intermediate-2**	92[c]
17a	**18c**	**15**	0.01	25:50:1	3	**Intermediate-3**	92 [c]
17a	**18d**	**15**	0.01	25:50:1	5	**Intermediate-4**	96 [c]
17a	**18a**	**16**	0.01	25:50:1	4	**Intermediate-5** *(4)*	92 [c]
17b	**18a**	**15**	0.01	25:50:1	2	**Intermediate-6**	97 [c]
17c	**18a**	**15**	0.01	25:50:1	2	**Intermediate-7**	95 [c]

Table S1. AROMP of 1-substituted cyclobutene esters with cyclohexenes. All AROMP reactions were monitored by ^{1}H-NMR spectroscopy. [a]Percent conversion determined by integration of ^{1}H-NMR spectra unless specified otherwise. [b]Reaction was performed in CD_2Cl_2 at rt. [c]Reaction was performed in $CDCl_3$ at 50 ºC.



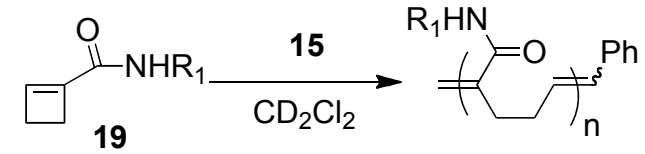
19

R_1: $CH_2CH_2CH_2CH_2Cl$

Intermediate-8: n = 4
Intermediate-9: n = 8
Intermediate-10: n = 25

A	**B**	Cat.	[Ru] (M)	[A]:[B]:[Ru]	Rxn time (h)	Product	% conv[a]
19	cyclooctene	**15**	0.01	4:4:1	2	**Intermediate-8**	>99
19	cyclooctene	**15**	0.01	8:8:1	2	**Intermediate-9**	>99
19	cyclooctene	**15**	0.01	25:25:1	2	**Intermediate-10**	>99

Table S2. Synthesis of random copolymers. All ROMP reactions were performed in CD_2Cl_2 and monitored by ^{1}H-NMR spectroscopy at rt. [a]Percent conversion determined by integration of ^{1}H-NMR spectra unless specified otherwise.

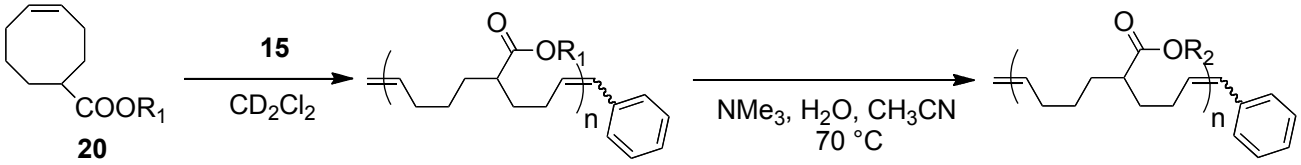


R_1: $CH_2CH_2CH_2CH_2Cl$

Intermediate-11: n = 4
Intermediate-12: n = 8

[Ru] (M)	[A]:[Ru]	Rxn time (h)	Product	% conv[a]
0.01	4:1	4	**Intermediate-11**	93
0.01	8:1	3	**Intermediate-12**	92

Table S3. Synthesis of Homopolymers. All ROMP reactions were performed in CD_2Cl_2 and monitored by ^{1}H-NMR spectroscopy. [a]Percent conversion determined by integration of ^{1}H-NMR spectra unless specified otherwise. [b]Calculated M_n was calculated based on conversion yields of monomers. [c]Molecular weight and PDI were determined by GPC using polystyrene standards.



R_1: $CH_2CH_2CH_2CH_2Cl$
R_2: $CH_2CH_2CH_2CH_2NMe_3Cl$

Intermediate-13: n = 4
Intermediate-14: n = 8

Homopolymer-13: n = 4
Homopolymer-14: n = 8

[Ru] (M)	[A]:[Ru]	Rxn time (h)	Product	% conv[a]	Calcd. M_n[b]	PSS M_n[c]	PDI
0.01	4:1	1	**Intermediate-13**	99	1083	1265	1.33
0.01	8:1	1	**Intermediate-14**	99	2062	2256	1.23

Table S4. Synthesis of **Homopolymer-13** and **Homopolymer-14**. All ROMP reactions were performed in CD_2Cl_2 and monitored by ^{1}H-NMR spectroscopy. [a]Percent conversion determined by integration of ^{1}H-NMR spectra unless specified otherwise. [b]Calculated M_n was calculated based on conversion yields of monomers. [c]Molecular weight and PDI were determined by GPC using polystyrene standards.

Polymer	Calcd. M_n	PSS M_n[a]	PDI
Acopolymer-1	6874	2154	1.8
Acopolymer-2	7225	1265	2.4
Acopolymer-3	9002	1436	1.6
Acopolymer-4	10755	1443	1.6
Acopolymer-5 *(4)*	6874	1327	2.1
Acopolymer-6	8891	2141	1.3
Acopolymer-7	11744	2235	1.6
Rcopolymer-8	1295	830	1.4
Rcopolymer-9	2495	2800	2.5
Rcopolymer-10	7575	9363	2.1
Homopolymer-11	855	589	3.5
Homopolymer-12	1606	2052	1.3
Homopolymer-13	1083	1265	1.3
Homopolymer-14	2062	2256	1.2

Table S5. GPC characterization of polymers. [a]Molecular weight and PDI were determined by GPC using polystyrene standards.

Polymer (MW)[1] $CLogP_{rel}$[2]	MIC, μg mL^{-1} (μM)						HC_{50} μg/mL (μM)
	P. aeruginosa ATCC27853	*E. coli* ATCC 25922	*B. cereus* ATCC 10987	*S. aureus* ATCC 25923	*E. faecalis* ATCC 19433	*E. faecium* ATCC 19434	
Acopolymer-1 (2154) 0	160 (74)	40 (19)	12 (6)	6 (3)	10 (5)	10 (5)	256 (119)
Acopolymer-2 (1265) 0.3	>256 (>202)	160 (126)	40 (32)	12 (9)	24 (19)	24 (19)	768 (607)
Acopolymer-3 (1436) 0	>256 (>178)	>256 (>178)	64 (45)	32 (22)	128 (89)	64 (45)	>1024 (>713)
Acopolymer-4 (1443) 1.6	>256 (>179)	256 (179)	24 (17)	24 (17)	24 (17)	24 (17)	192 (134)
Acopolymer-5 (1327) 0	256 (193)	64 (48)	40 (30)	12 (9)	20 (15)	20 (15)	1024 (772)
Acopolymer-6 (2141) n.d.[3]	192 (90)	64 (30)	96 (45)	48 (22)	64 (30)	32 (15)	1024 (478)
Acopolymer-7 (2235) n.d.	32 (14)	12 (5)	12 (5)	6 (3)	12 (5)	12 (5)	512 (229)
Rcopolymer-8 (830) 0	>256 (>308)	>256 (>308)	32 (39)	16 (19)	16 (19)	16 (19)	512 (617)
Rcopolymer-9 (2800) 0	>256 (>91)	256 (91)	32 (11)	16 (6)	16 (6)	16 (6)	>1024 (>366)
Rcopolymer-10 (9363) 0	>256 (>27)	>256 (>27)	48 (5)	24 (3)	24 (3)	24 (3)	>1024 (>109)
Homopolymer-11 (589) -2.9	>512 (>869)	>512 (>869)	>512 (>869)	384 (652)	>512 (>869)	>512 (>869)	>2048 (>3477)
Homopolymer-12 (2052) -2.9	>512 (>250)	>512 (>250)	320 (156)	288 (140)	320 (156)	320 (156)	>2048 (>998)
Homopolymer-13 (1265) -0.3	128 (101)	32 (25)	12 (9)	8 (6)	8 (6)	8 (6)	379 (300)
Homopolymer-14 (2256) -0.3	>256 (>113)	64 (28)	16 (7)	8 (4)	8 (4)	8 (4)	443 (196)

Table S6. Antibacterial and hemolytic activities of **Acopolymer-1** to **Homopolymer-14**. The data shown are the average of triplicate measurements for two independent replicates.

[1]The MW is the experimentally determined number-average molecular weight (Table S5). [2]The CLogP's were calculated according to Crippen's fragmentation (*8*) using ChemDraw Ultra 12.0 for the ring-opened AB dyads (copolymers) or A monomers (homopolymer). The $CLogP_{rel}$ is relative to **Acopolymer-1** that was arbitrarily set to 0. A more positive CLogP is more hydrophobic than **Acopolymer-1** and conversely, a more negative CLogP is less hydrophobic. The standard deviation of the calculation is ± 0.5. [3]n.d., not determined.

Polymer	%Dye leakage ([vesicle] = 4.5 μM) [a]		
	POPE/POPG (3/1) ([Polymer] = 4 μg mL^{-1})	Cardiolipin ([Polymer] = 4 μg mL^{-1})	DOPC ([Polymer] = 1 μg mL^{-1})
Acopolymer-1	76 ± 5	65 ± 2	83 ± 3
Acopolymer-2	62 ± 2	75 ± 1	37 ± 3
Acopolymer-3	37 ± 3	20 ± 1	9 ± 9
Acopolymer-4	71 ± 3	37 ± 2	50 ± 1
Acopolymer-5	82 ± 1	49 ± 1	37 ± 4
Acopolymer-6	85 ± 4	45 ± 1	58 ± 4
Acopolymer-7	98 ± 1	69 ± 4	85 ± 4
Rcopolymer-8	23 ± 7	50 ± 1	28 ± 2
Rcopolymer-9	47 ± 1	34 ± 3	41 ± 2
Rcopolymer-10	50 ± 1	49 ± 1	50 ± 4
Homopolymer-11	19 ± 1	13 ± 2	2 ± 1
Homopolymer-12	22 ± 9	11 ± 1	2 ± 1
Homopolymer-13	92 ± 5	59 ± 2	77 ± 6
Homopolymer-14	80 ± 2	51 ± 1	65 ± 7

Table S7. Dye leakage percentages of **Acopolymer-1** to **Homopolymer-14** in 5 min. [a]Percent dye release was calculated as the ratio of fluorescence observed upon polymer addition to the fluorescence observed after adding Triton X-100.

Polymer	%Potassium release[a]	
	E. coli	*S. aureus*
Acopolymer-1	47 ± 5	77 ± 6
Acopolymer-2	21 ± 16	37 ± 7
Acopolymer-3	18 ± 10	19 ± 2
Acopolymer-4	36 ± 7	33 ± 5
Acopolymer-5	35 ± 7	70 ± 10
Acopolymer-6	49 ± 19	73 ± 17
Acopolymer-7	41 ± 17	42 ± 4
Rcopolymer-8	27 ± 14	18 ± 5
Rcopolymer-9	21 ± 7	24 ± 5
Rcopolymer-10	19 ± 9	30 ± 17
Homopolymer-11	8 ± 1	7 ± 1
Homopolymer-12	8 ± 2	10 ± 3
Homopolymer-13	55 ± 8	69 ± 13
Homopolymer-14	40 ± 10	65 ± 5

Table S8. Potassium release percentages of **Acopolymer-1** to **Homopolymer-14** in 16 min. [a]Percent potassium release was calculated as the ratio of fluorescence observed upon polymer addition to the fluorescence observed after adding valinomycin.

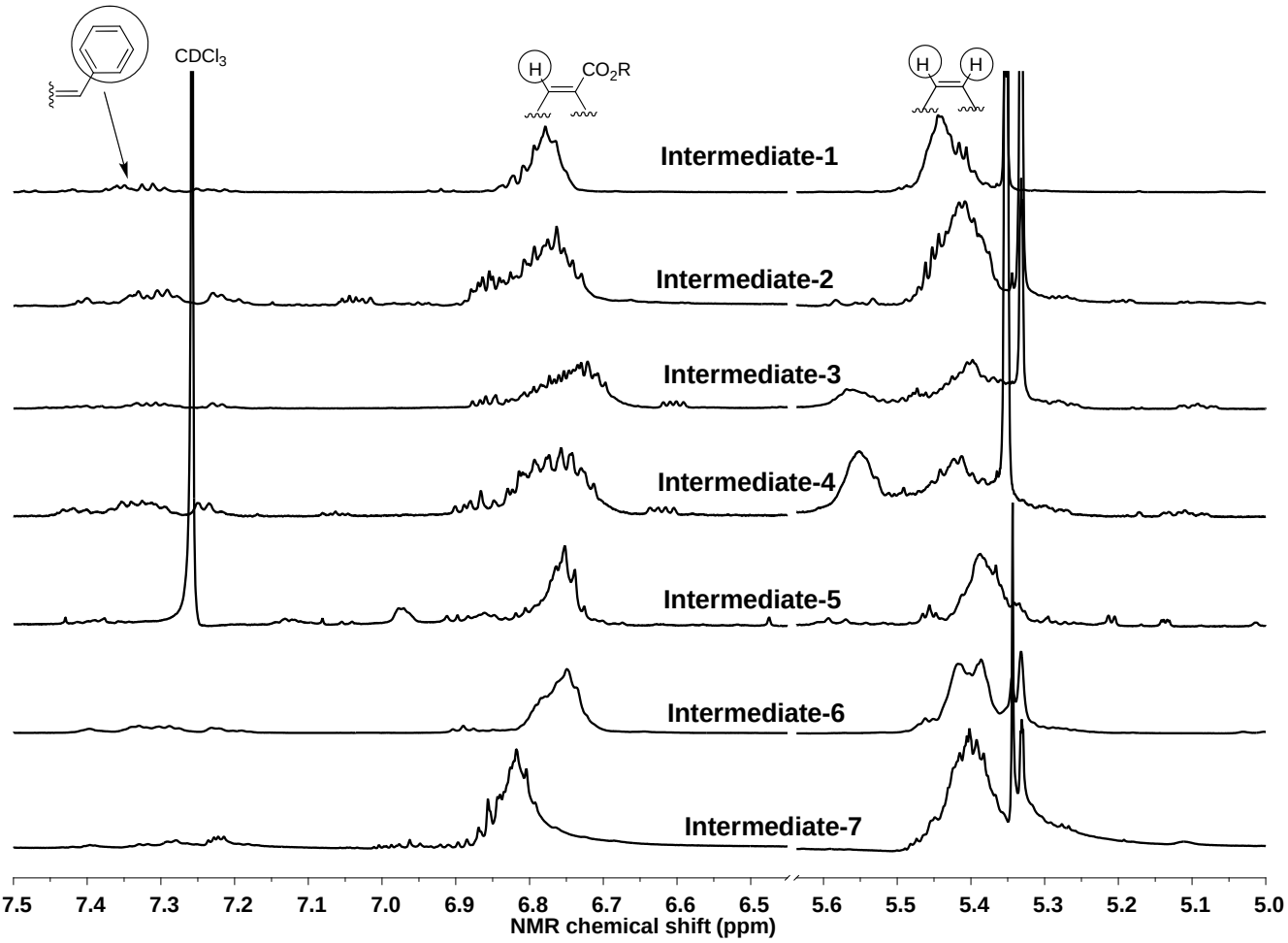


Figure S1. ^{1}H-NMR spectra of **Intermediate-1** to **Intermediate-7**.

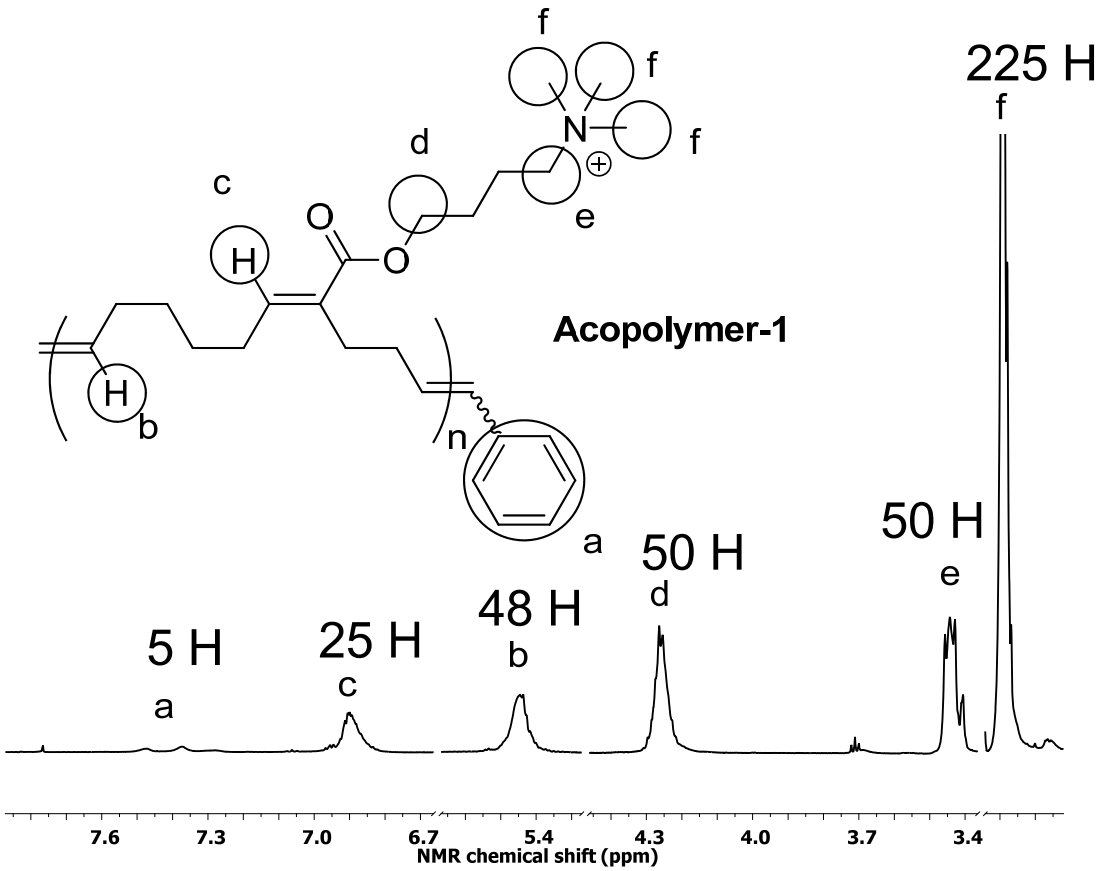


Figure S2. ^{1}H-NMR spectrum of **Acopolymer-1**.

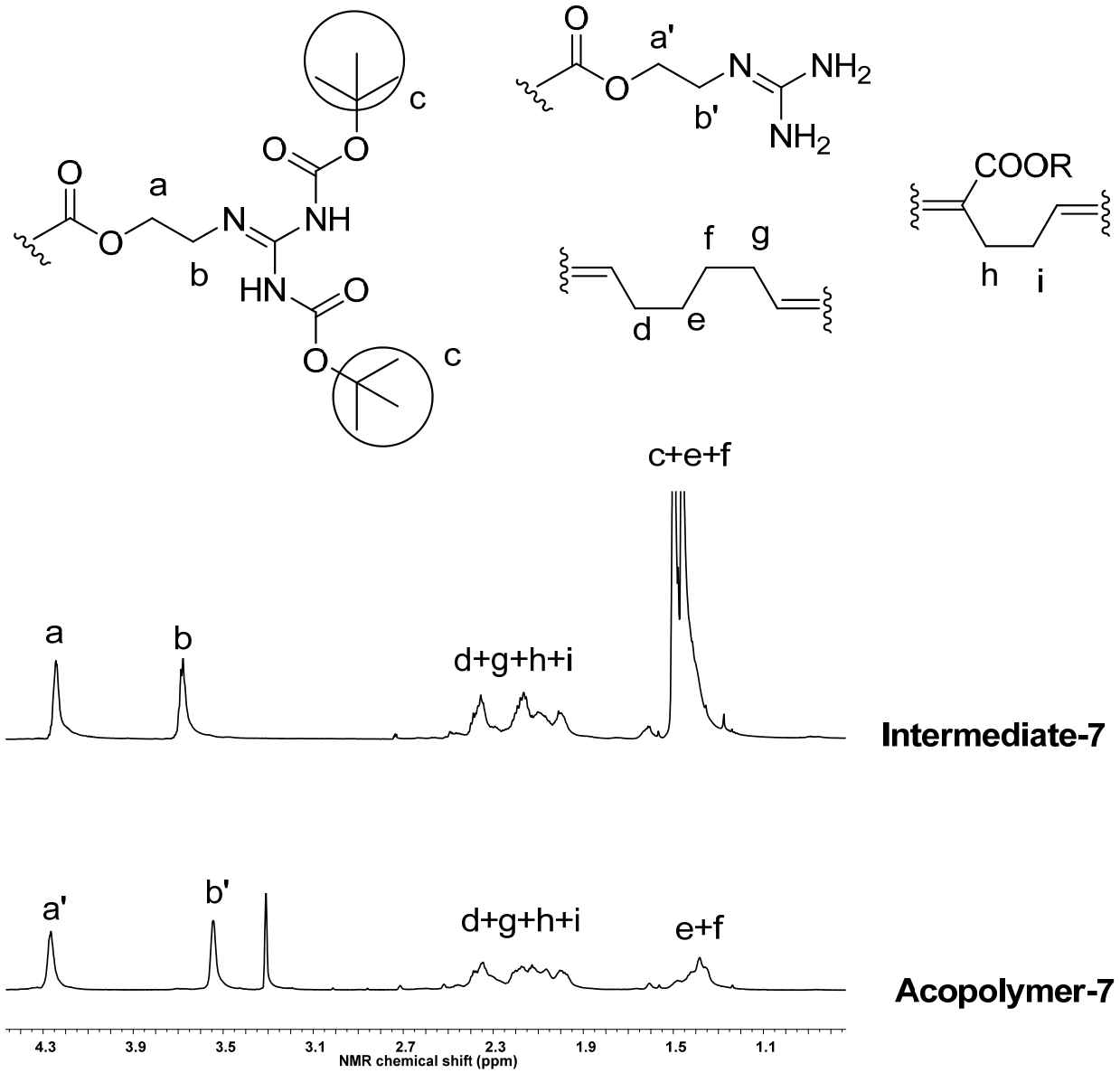


Figure S3. ^{1}H-NMR spectra of **Intermediate-7** and **Acopolymer-7**.

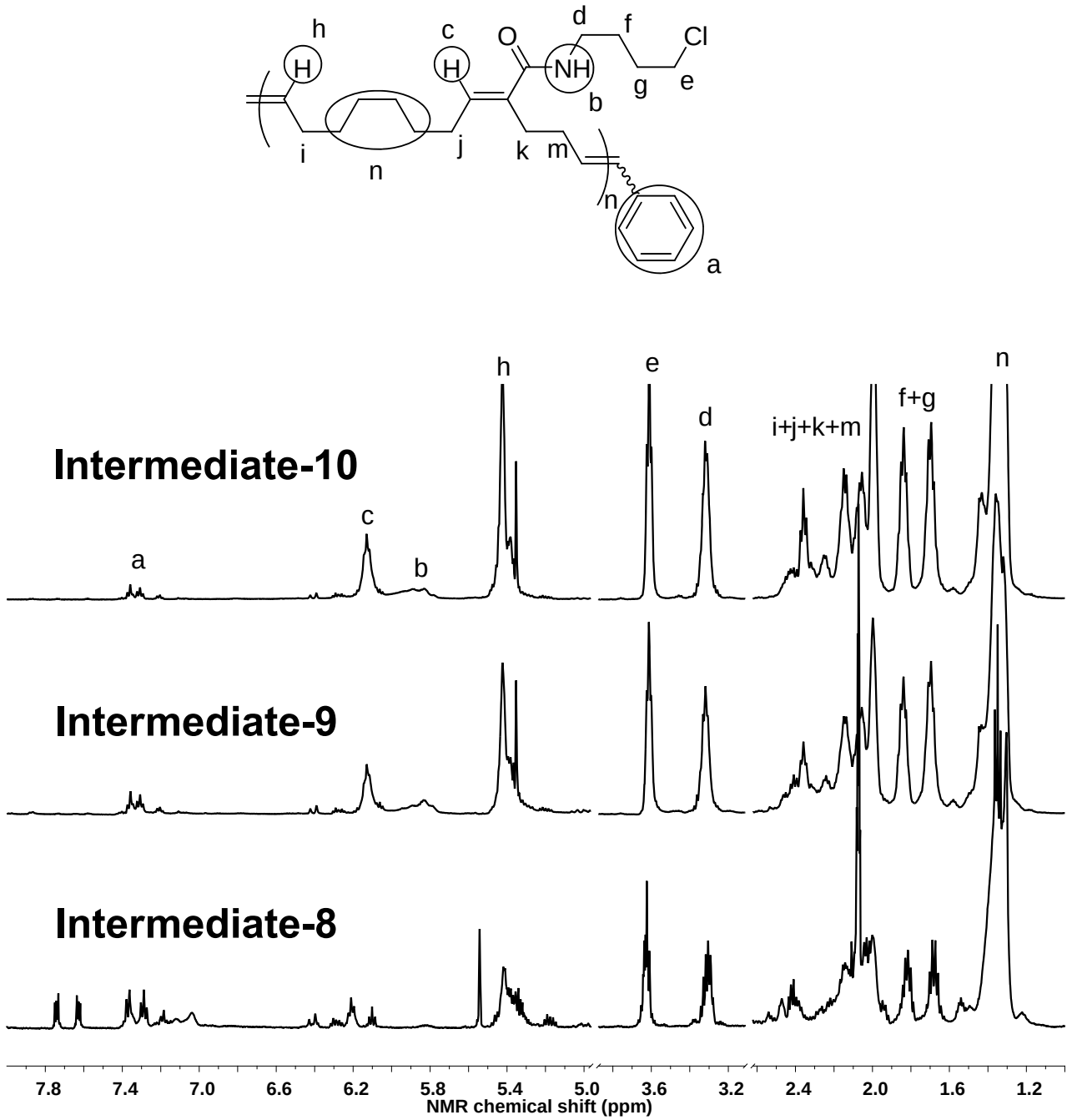


Figure S4. ^{1}H-NMR spectra of **Intermediate-8** to **Intermediate-10**.

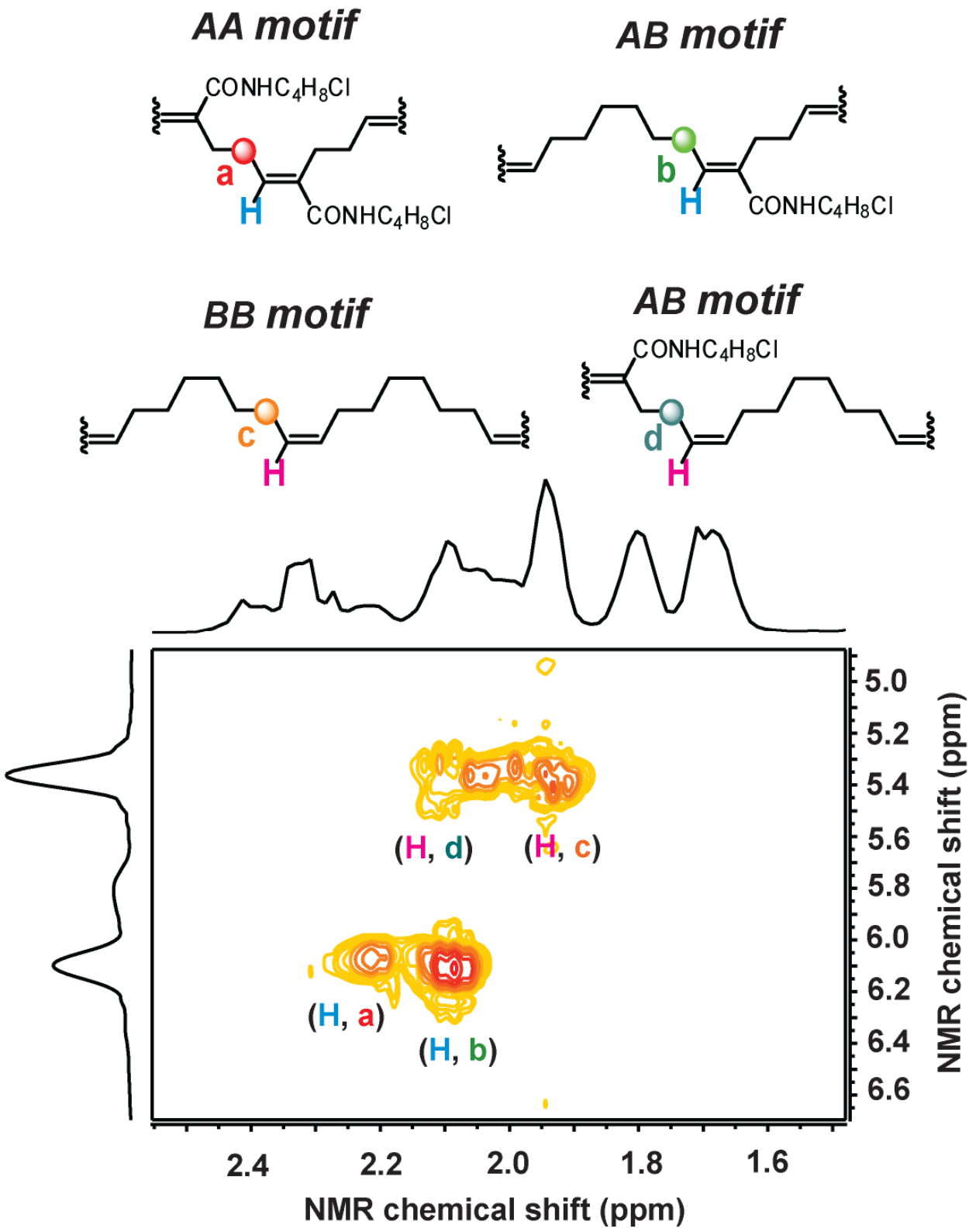


Figure S5. ^{1}H-^{1}H gCOSY NMR spectrum of **Intermediate-10**.

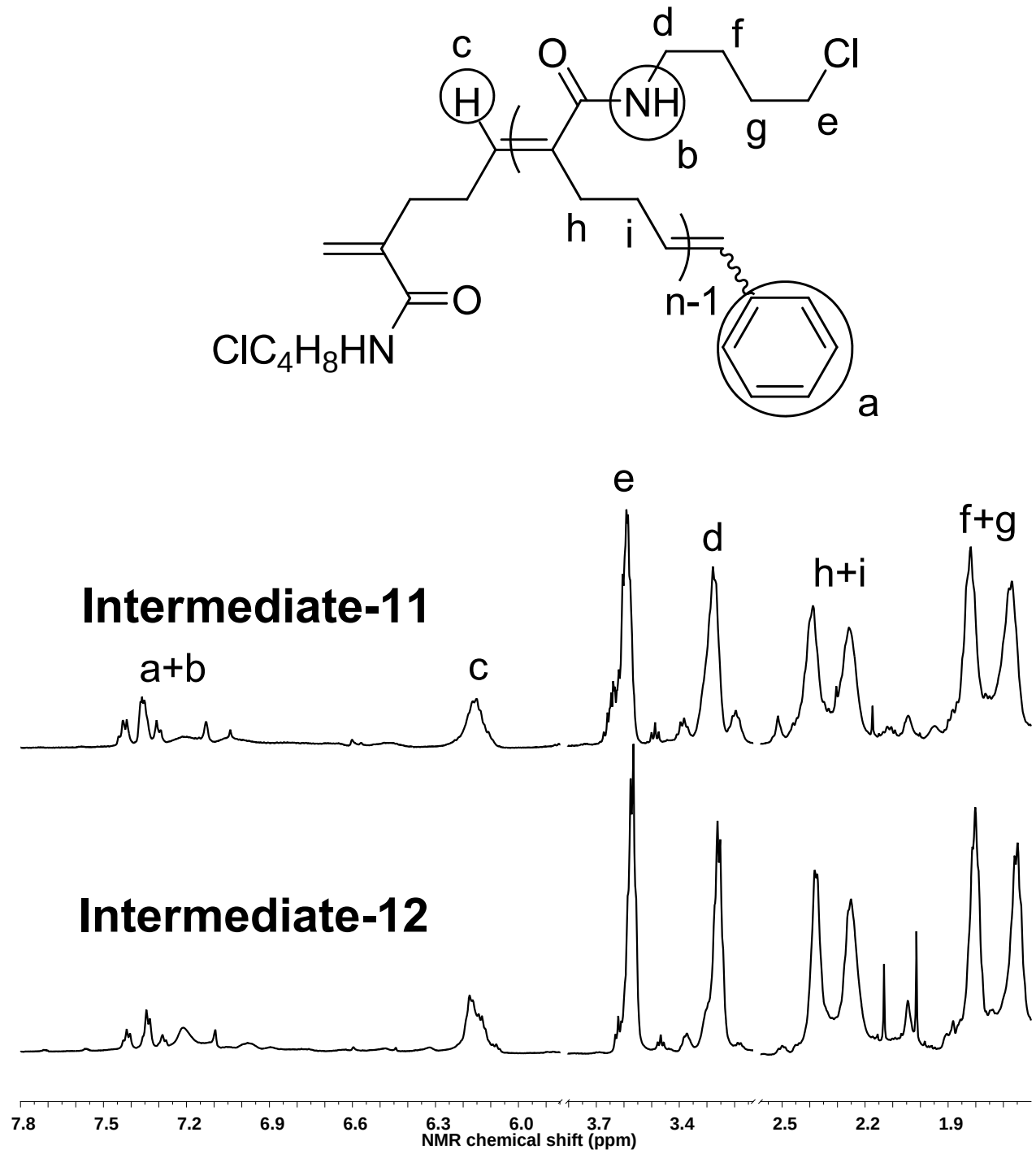


Figure S6. ^{1}H-NMR spectra of **Intermediate-11** and **Intermediate-12**.

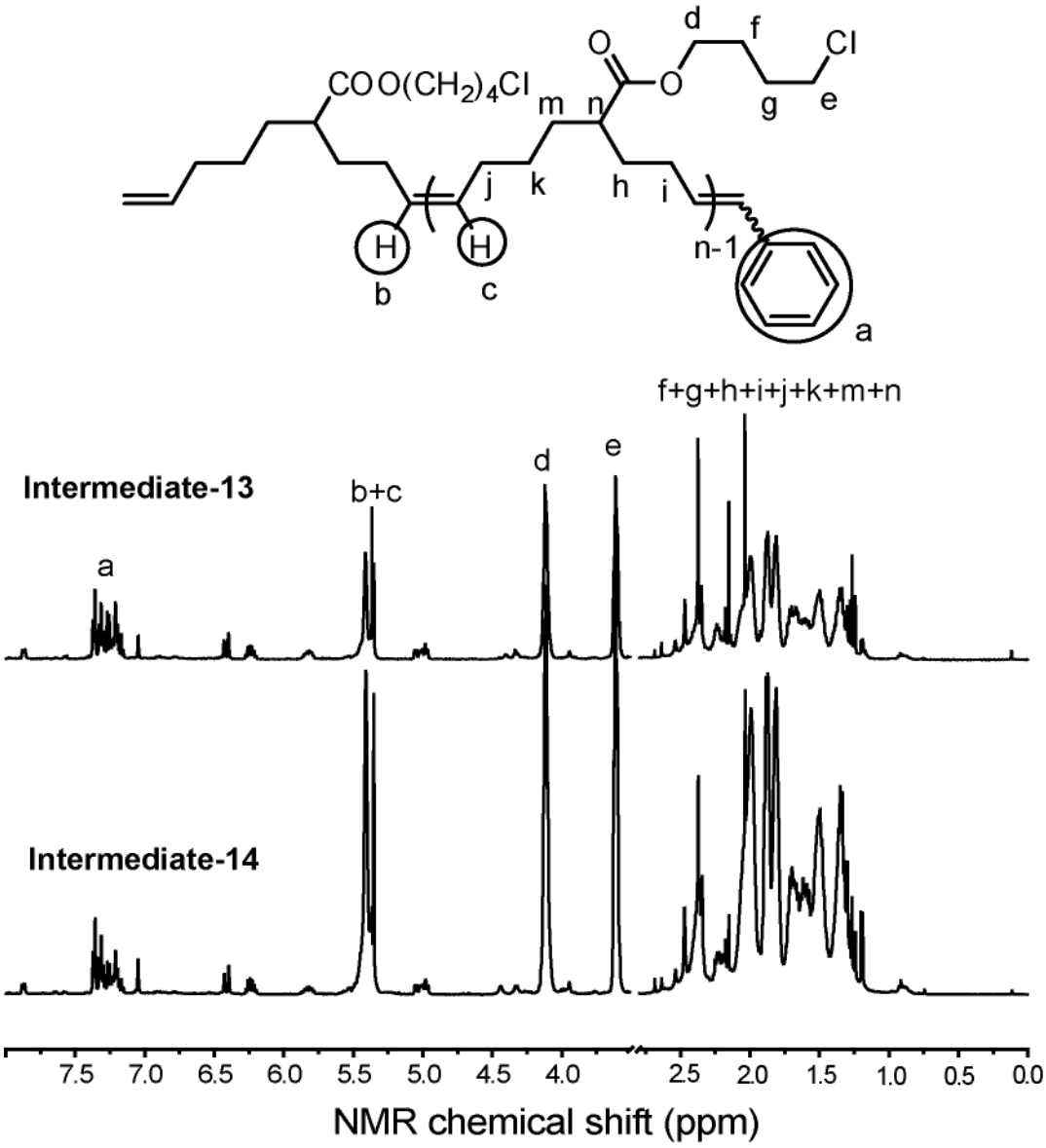


Figure S7. ^{1}H-NMR spectra of **Intermediate-13** and **Intermediate-14**.

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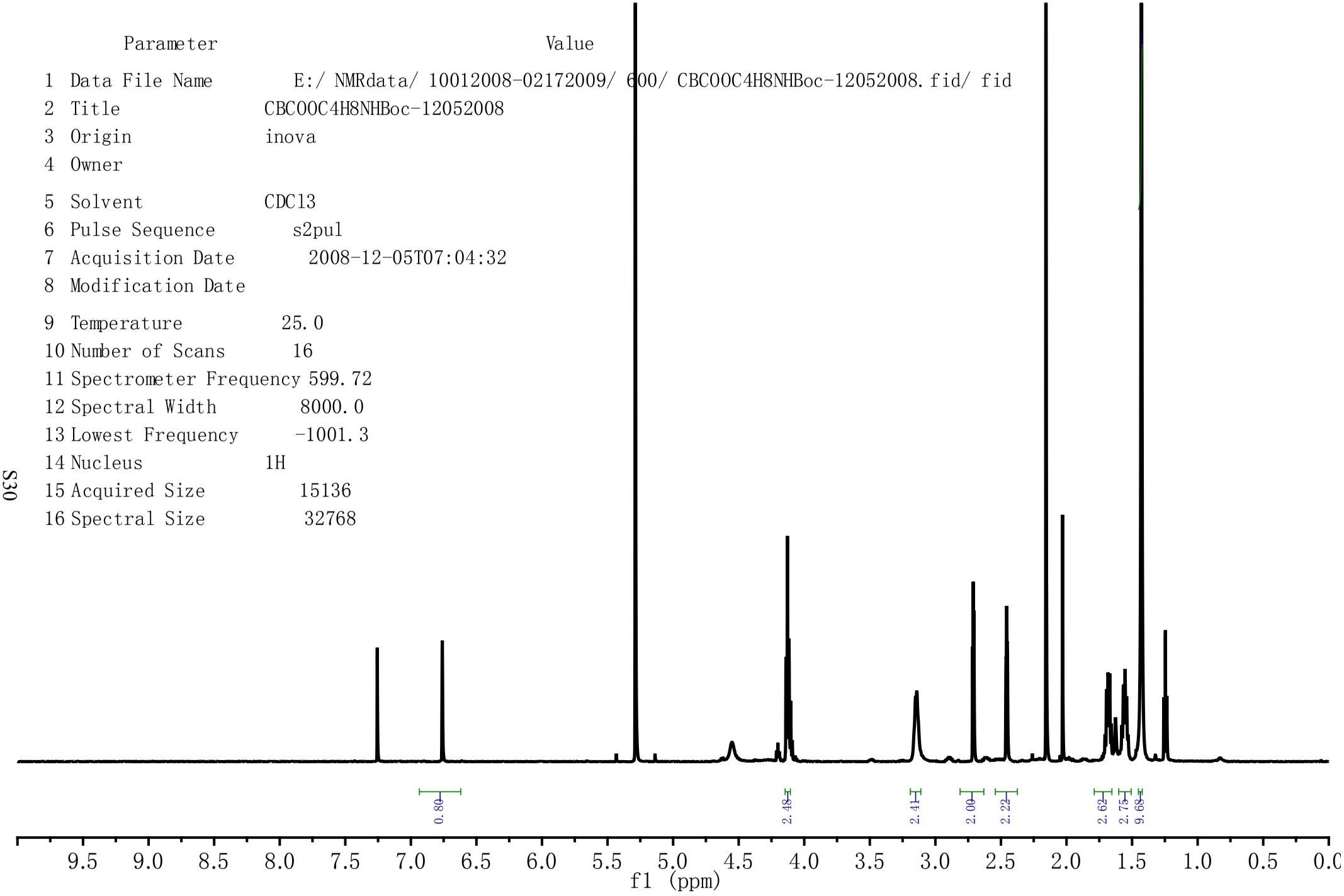
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-12-05T07:04:32
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	16
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of 17b

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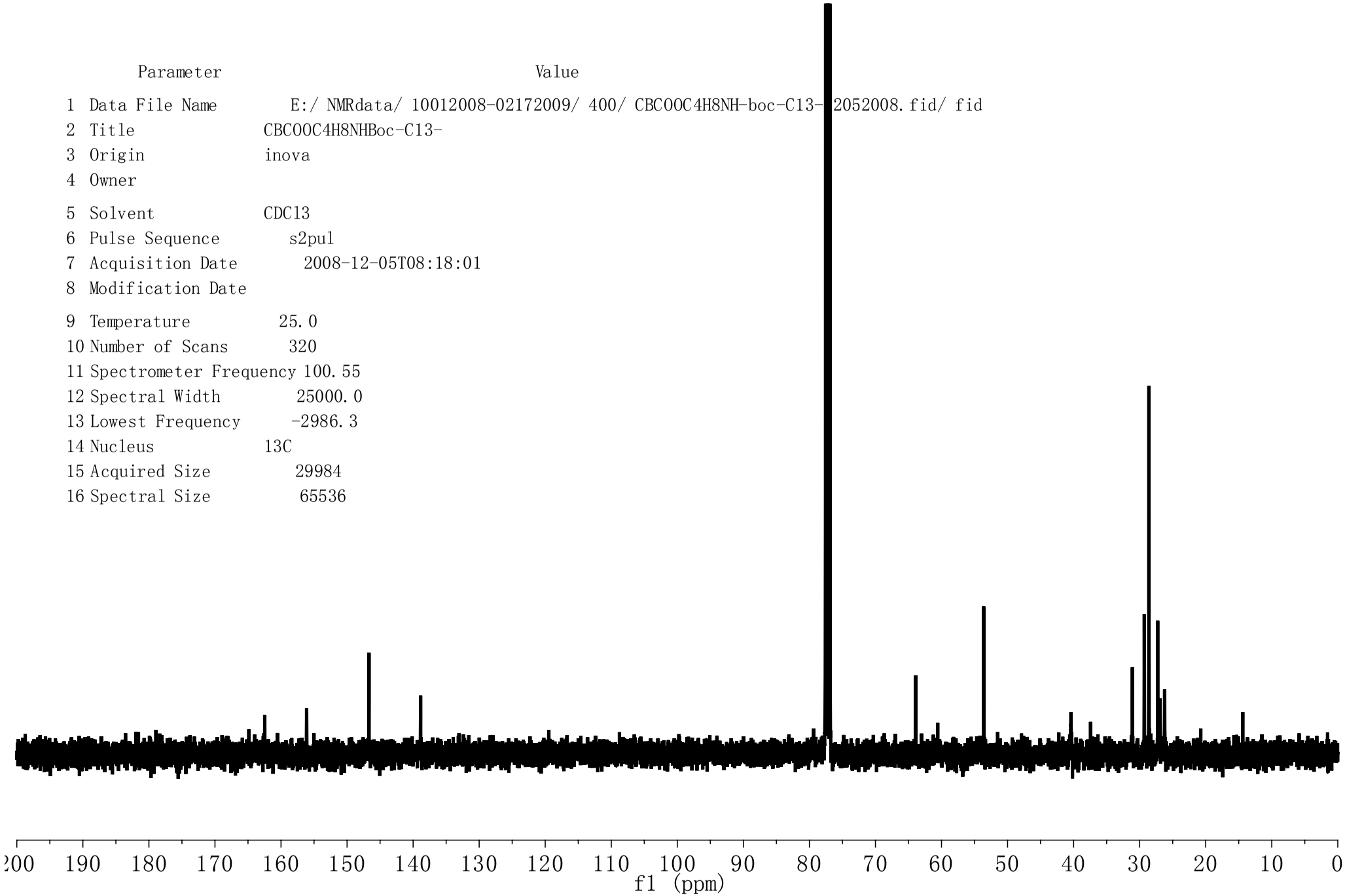
3 Origin	inova
4 Owner	
5 Solvent	CDCl3
6 Pulse Sequence	s2pul
7 Acquisition Date	2008-12-05T08:18:01
8 Modification Date	
9 Temperature	25.0
10 Number of Scans	320
11 Spectrometer Frequency	100.55
12 Spectral Width	25000.0
13 Lowest Frequency	-2986.3
14 Nucleus	13C
15 Acquired Size	29984
16 Spectral Size	65536



^{13}C-NMR spectrum of 17b

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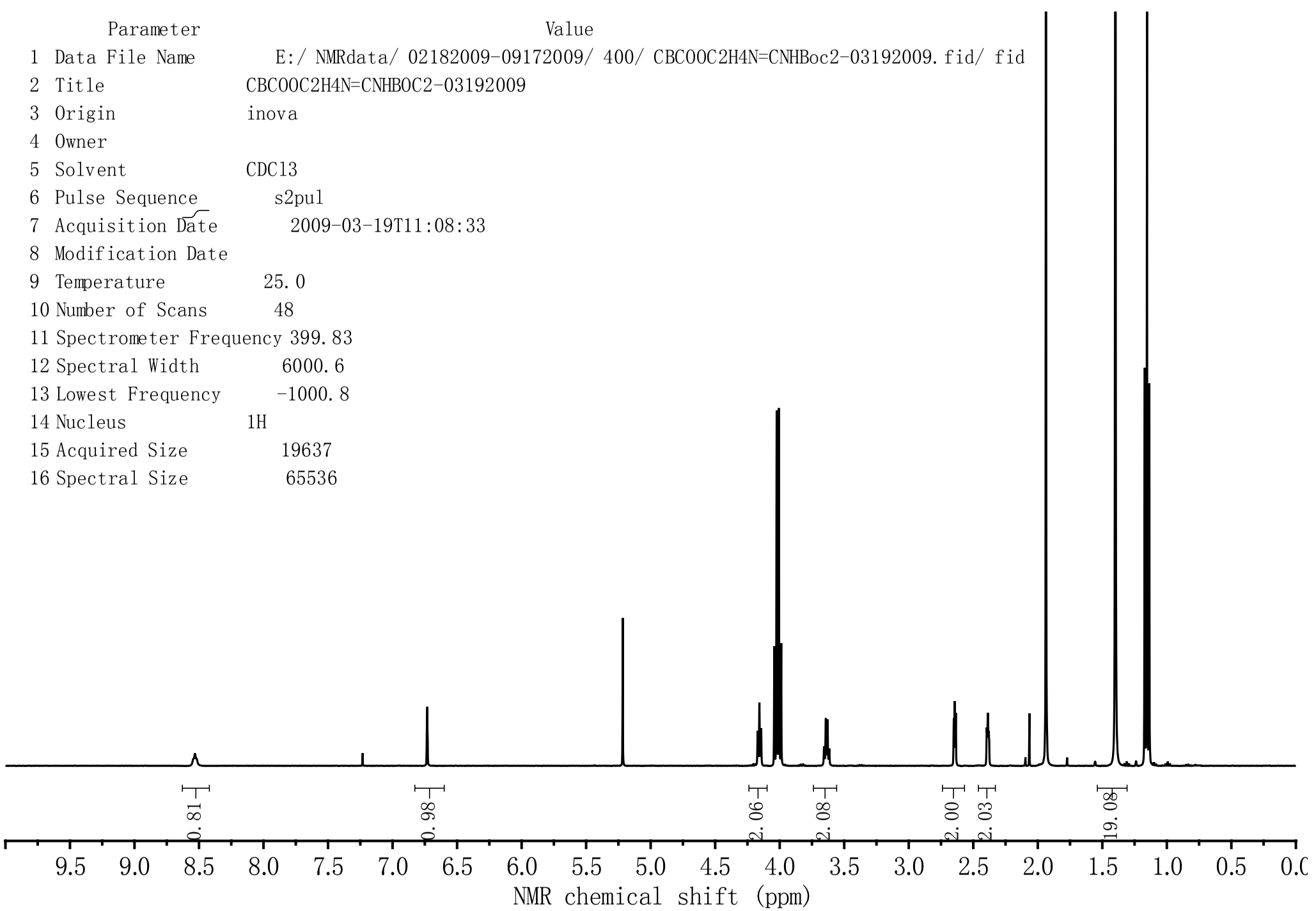
4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2009-03-19T11:08:33
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	48
11	Spectrometer Frequency	399.83
12	Spectral Width	6000.6
13	Lowest Frequency	-1000.8
14	Nucleus	1H
15	Acquired Size	19637
16	Spectral Size	65536



^{1}H-NMR spectrum of 17c

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9	Temperature	25.0
10	Number of Scans	256
11	Spectrometer Frequency	100.55
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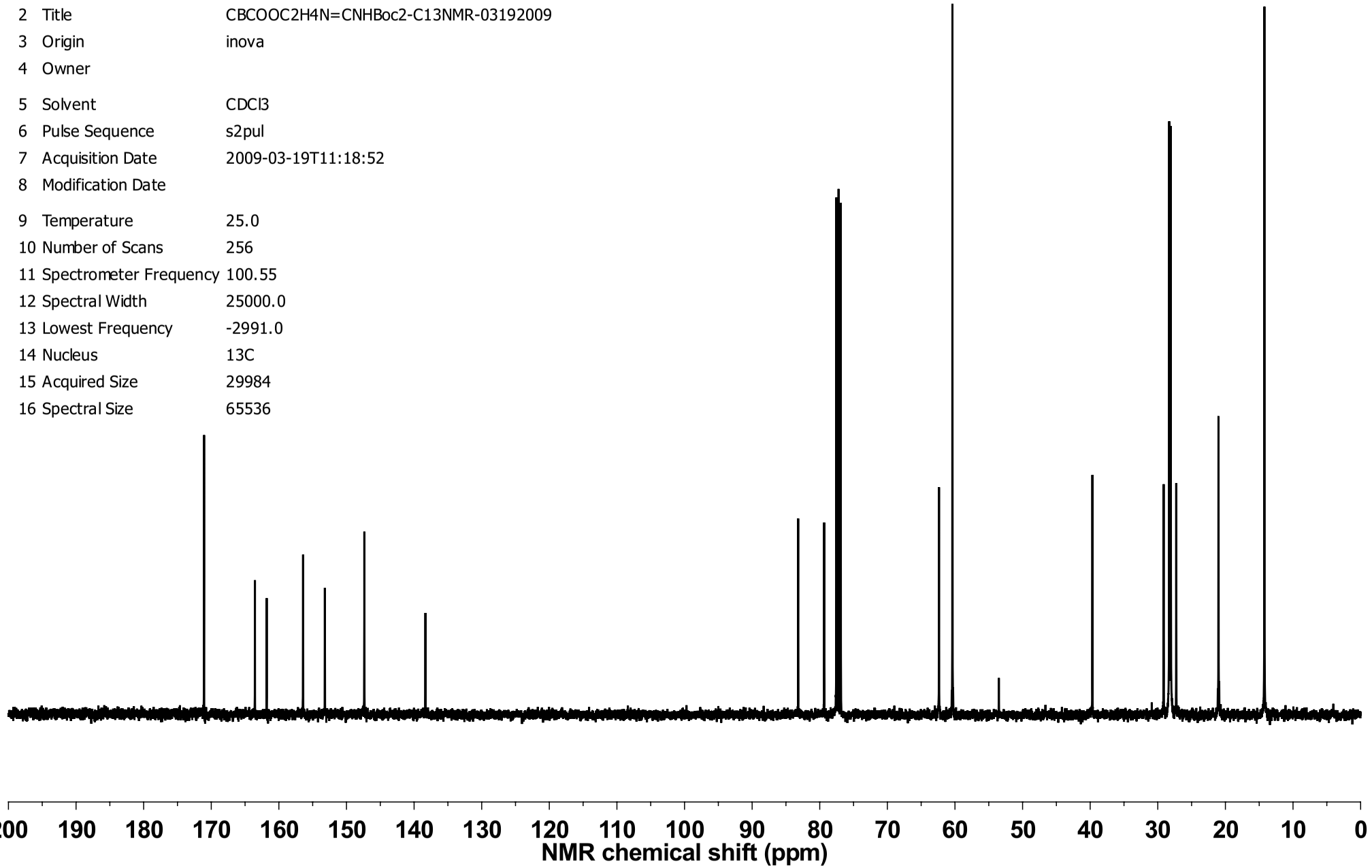
13	Lowest Frequency	-2991.0
14	Nucleus	13C
15	Acquired Size	29984
16	Spectral Size	65536



^{13}C-NMR spectrum of 17c

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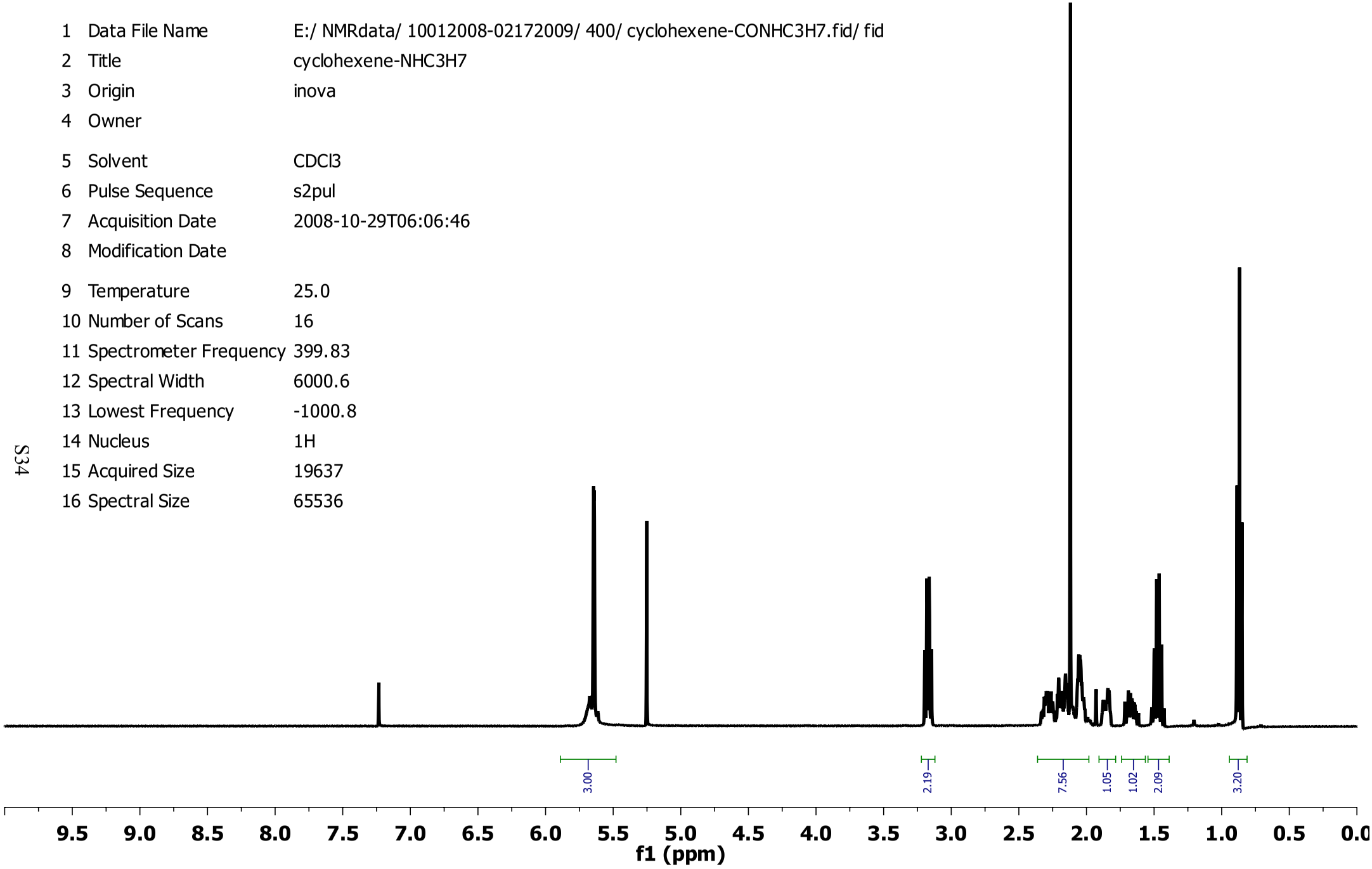
13	Lowest Frequency	-1000.8
14	Nucleus	1H
15	Acquired Size	19637
16	Spectral Size	65536



^{1}H-NMR spectrum of 18c

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14	Nucleus	13C
15	Acquired Size	29984
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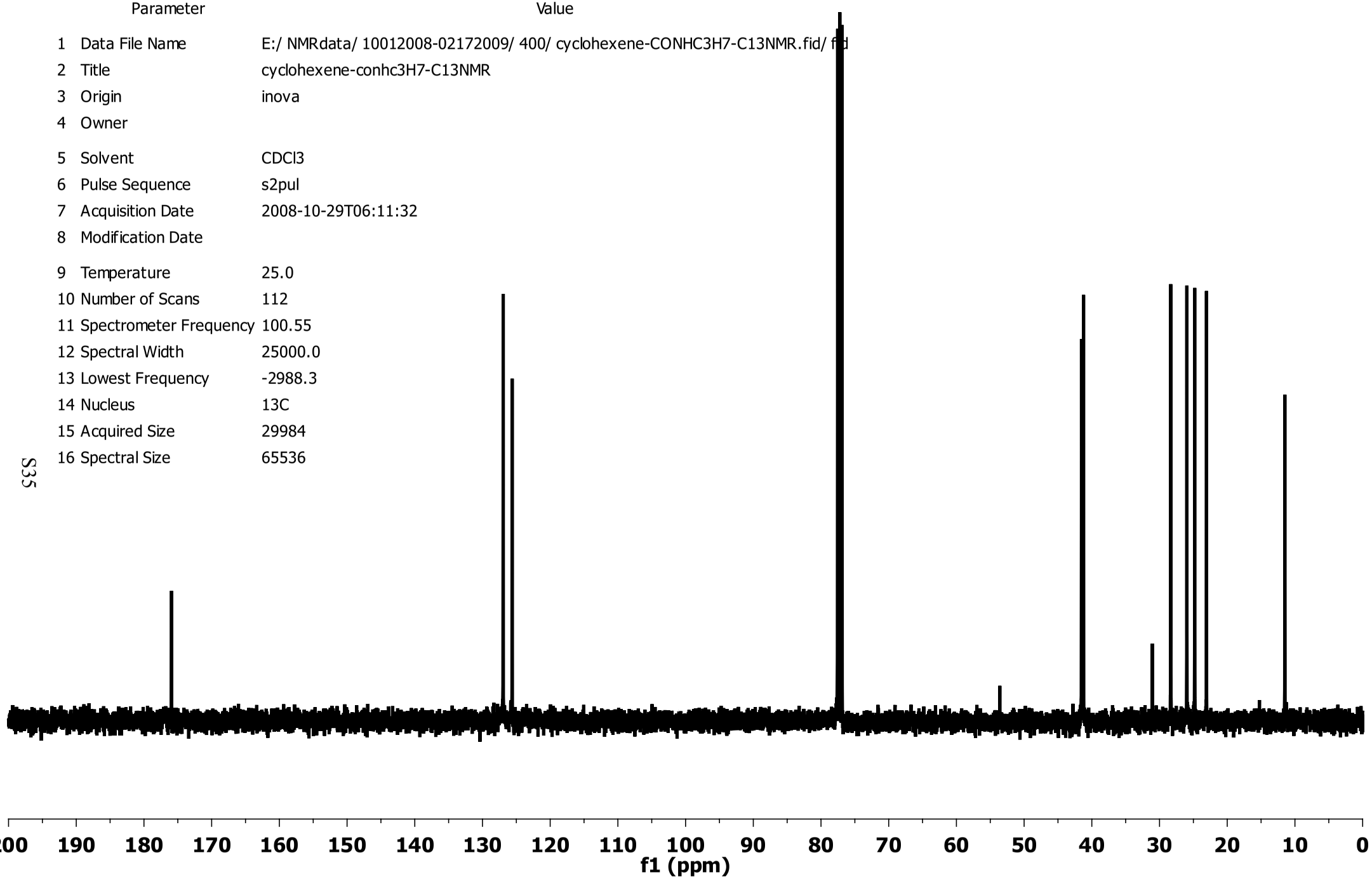

^{13}C-NMR spectrum of 18c

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11	Spectrometer Frequency	399.83
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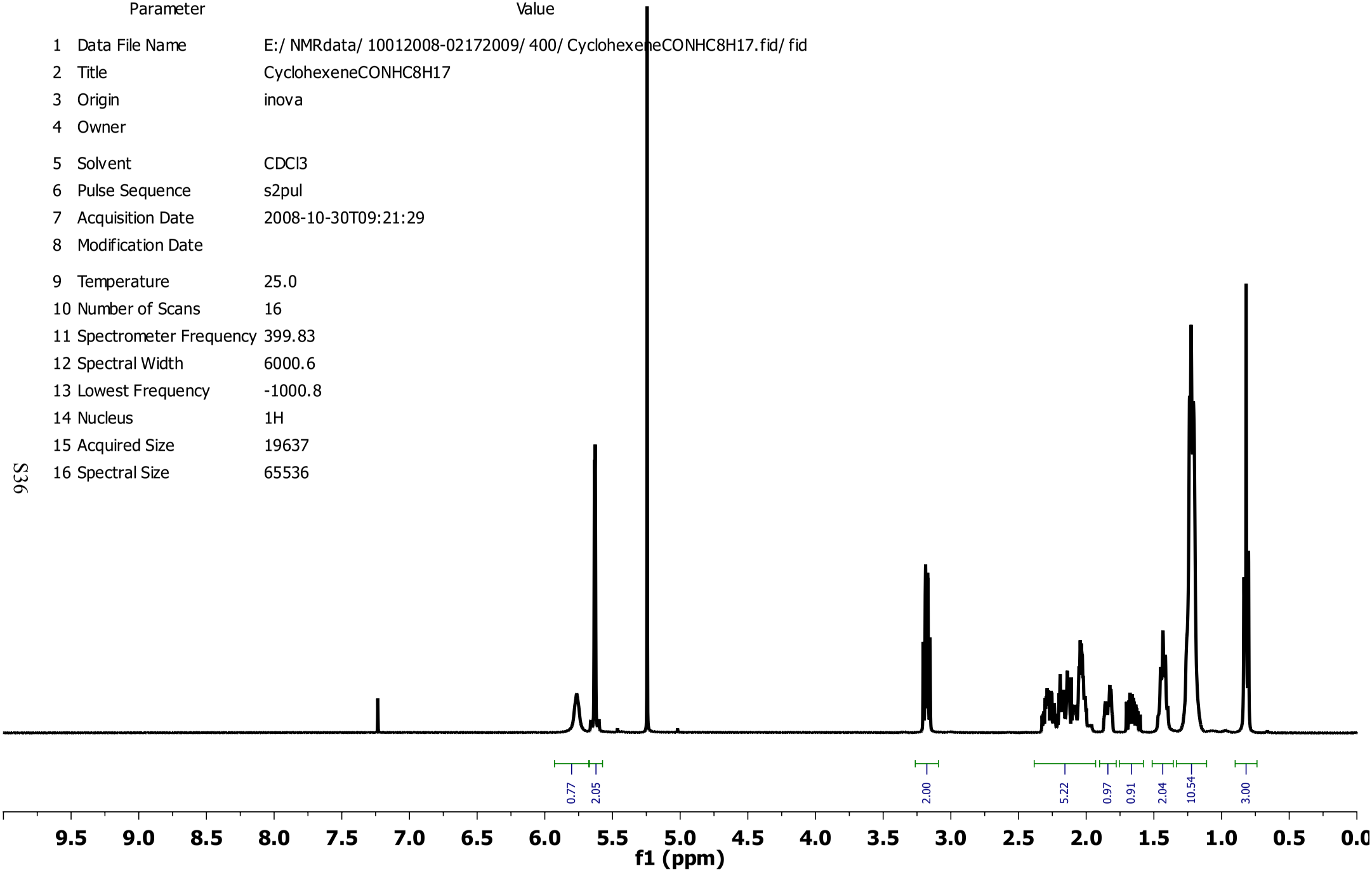
14	Nucleus	1H
15	Acquired Size	19637
16	Spectral Size	65536



^{1}H-NMR spectrum of 18d

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5	Solvent	CDCl3
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9	Temperature	25.0
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11	Spectrometer Frequency	100.55
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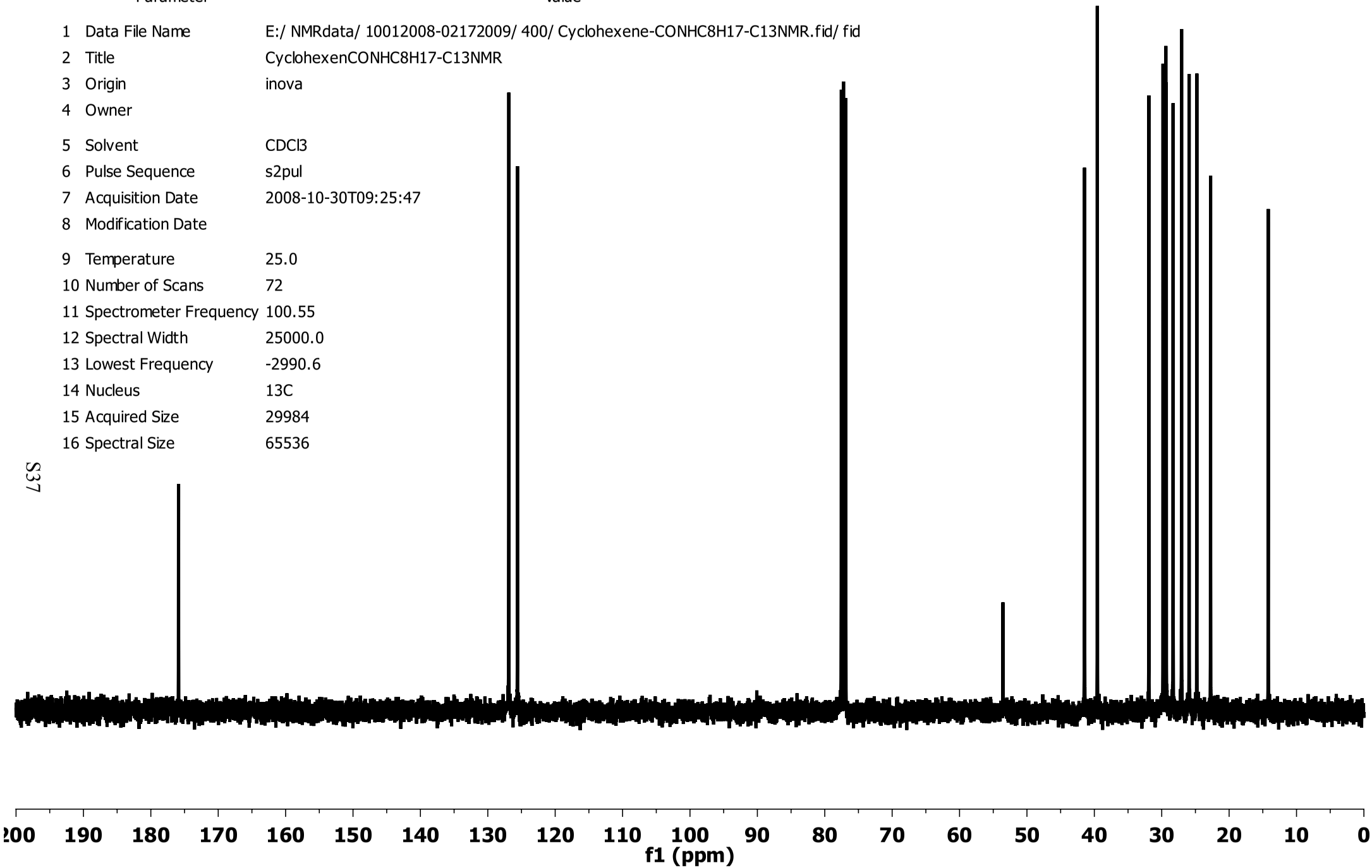
14	Nucleus	13C
15	Acquired Size	29984
16	Spectral Size	65536



^{13}C-NMR spectrum of 18d

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11	Spectrometer Frequency	399.83
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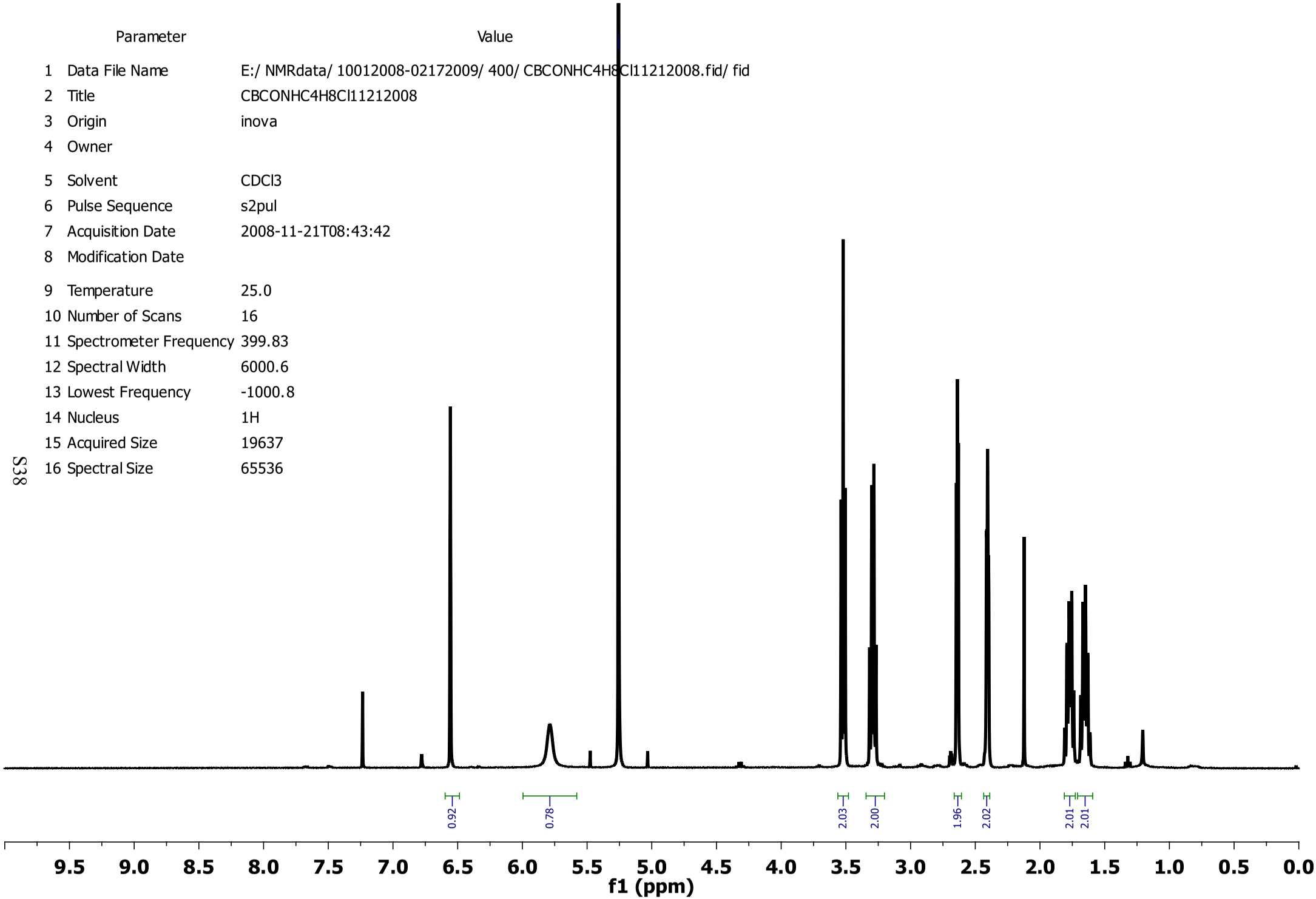
14	Nucleus	1H
15	Acquired Size	19637
16	Spectral Size	65536



^{1}H-NMR spectrum of 19

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9	Temperature	25.0
10	Number of Scans	136
11	Spectrometer Frequency	100.55
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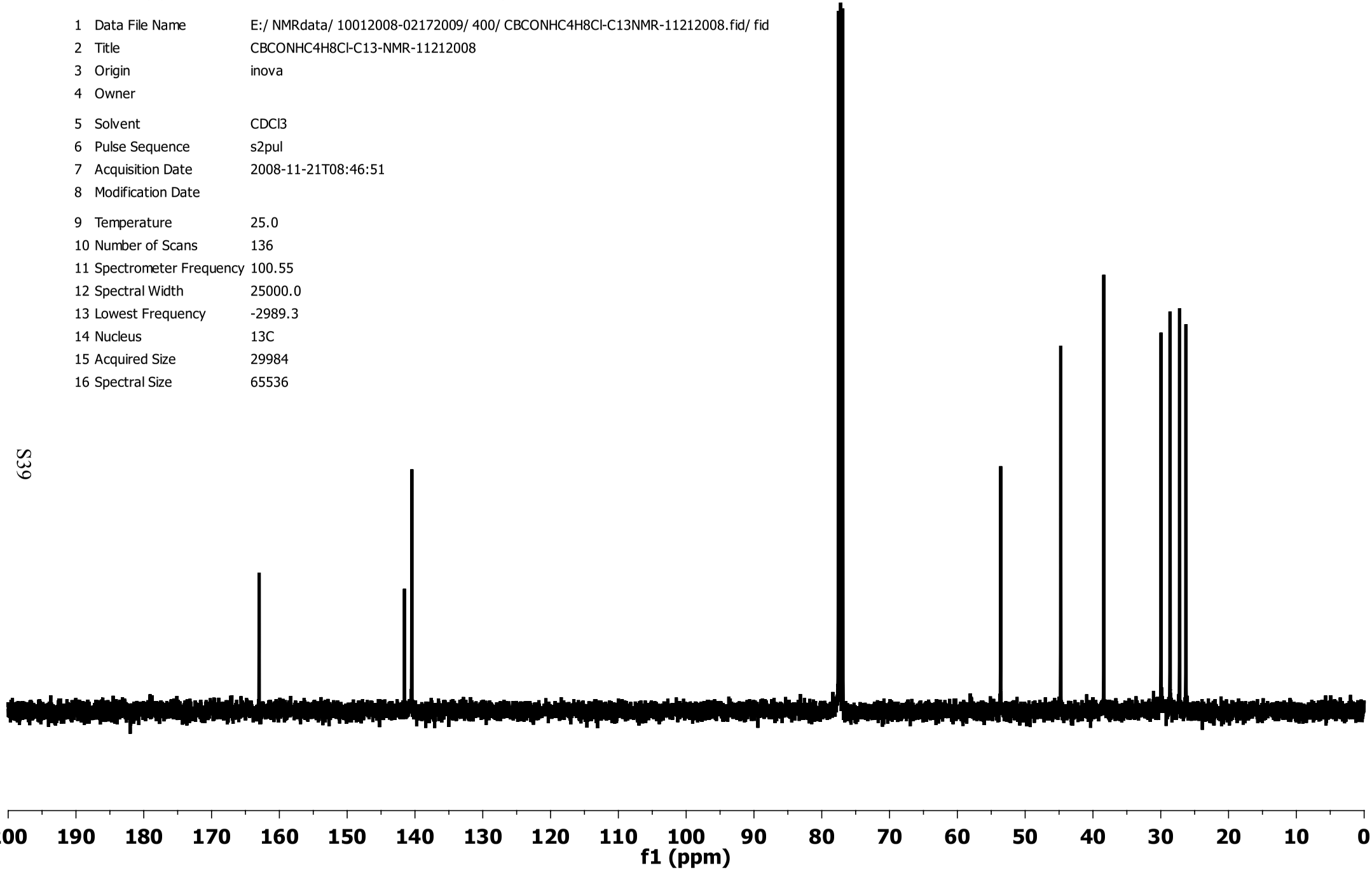
13	Lowest Frequency	-2989.3
14	Nucleus	13C
15	Acquired Size	29984
16	Spectral Size	65536



^{13}C-NMR spectrum of 19

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4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
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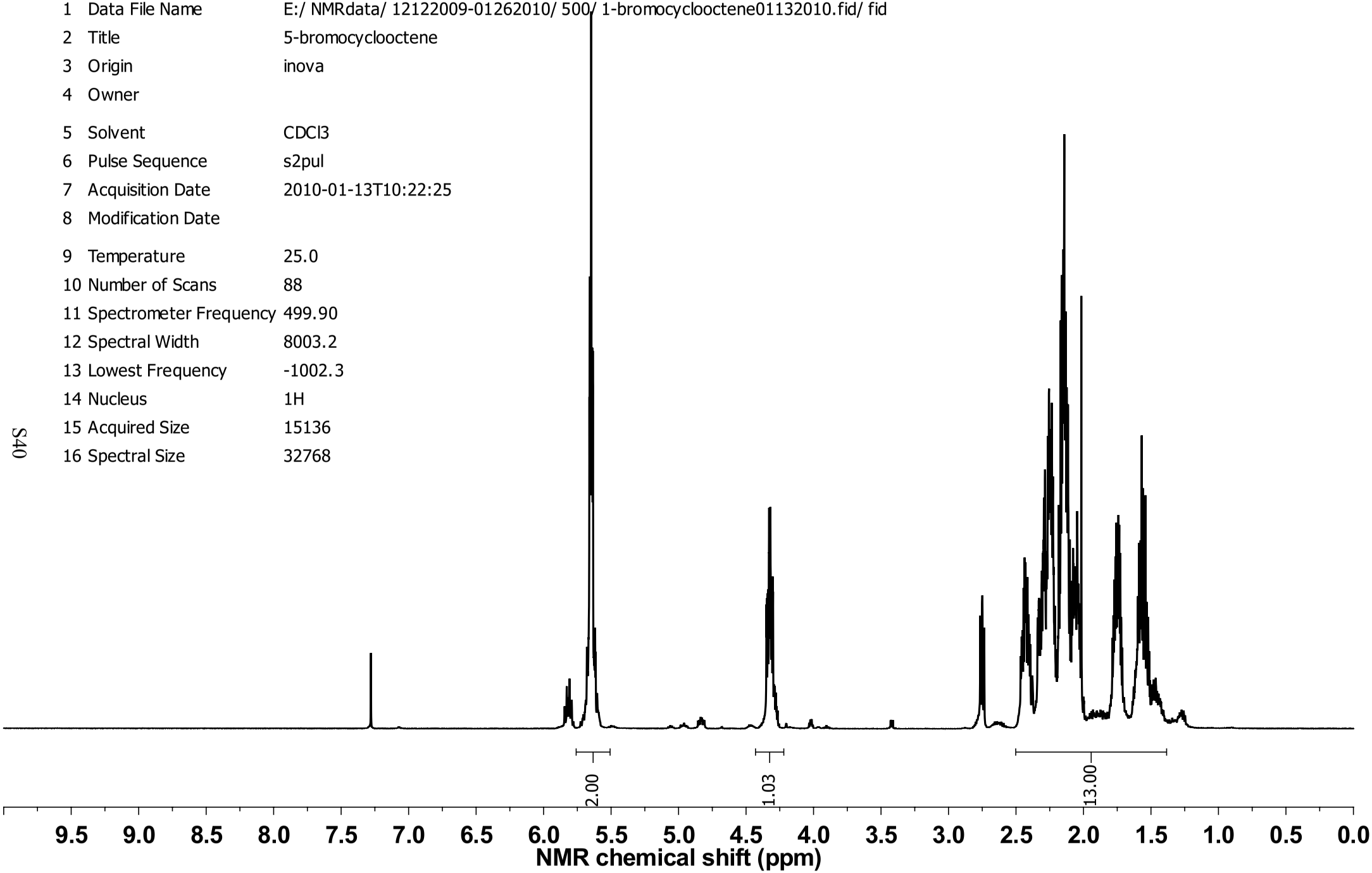
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	88
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of 21

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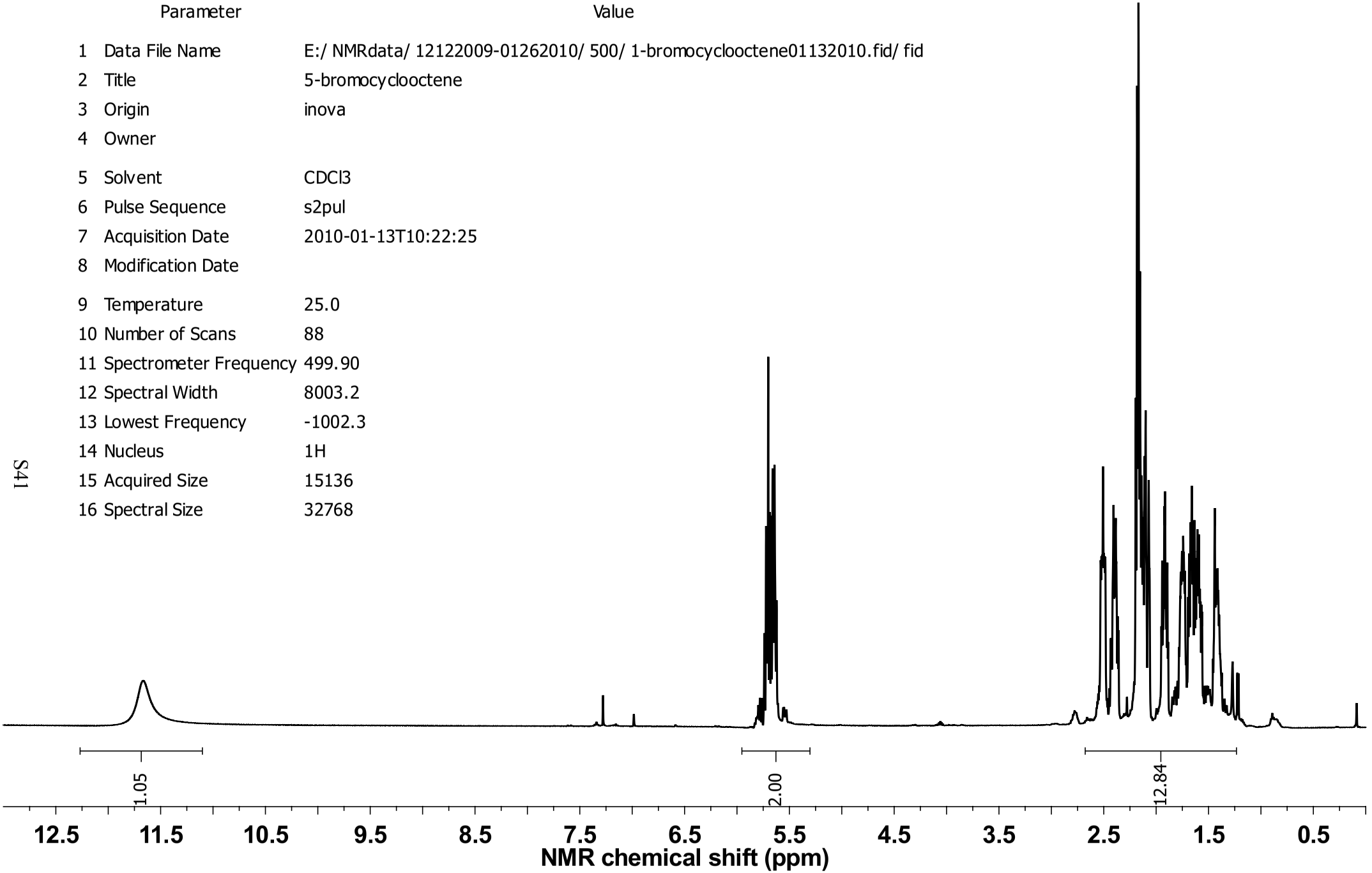
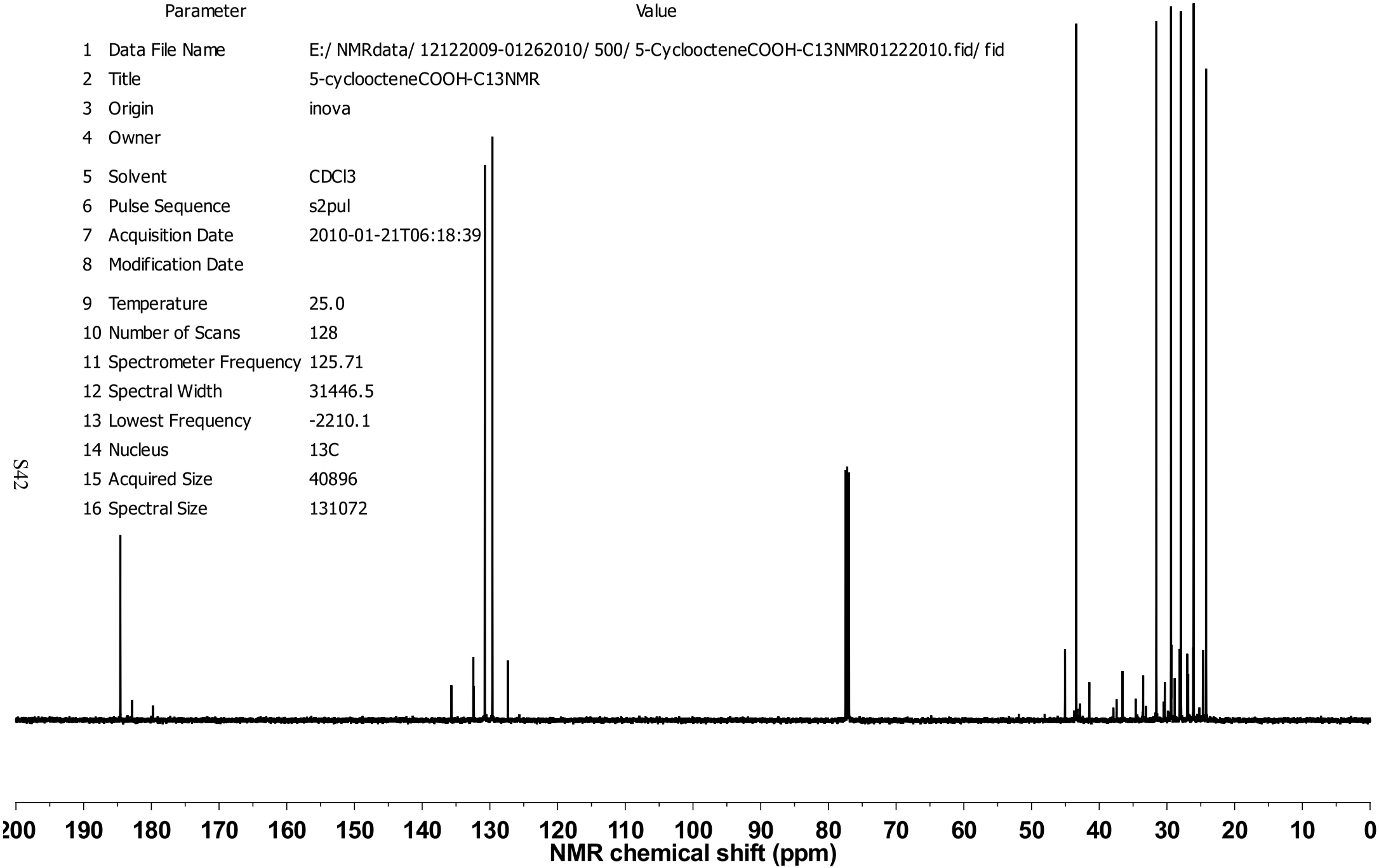
4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-13T10:22:25
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	88
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of 22



^{13}C-NMR spectrum of 22

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4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-22T06:29:42
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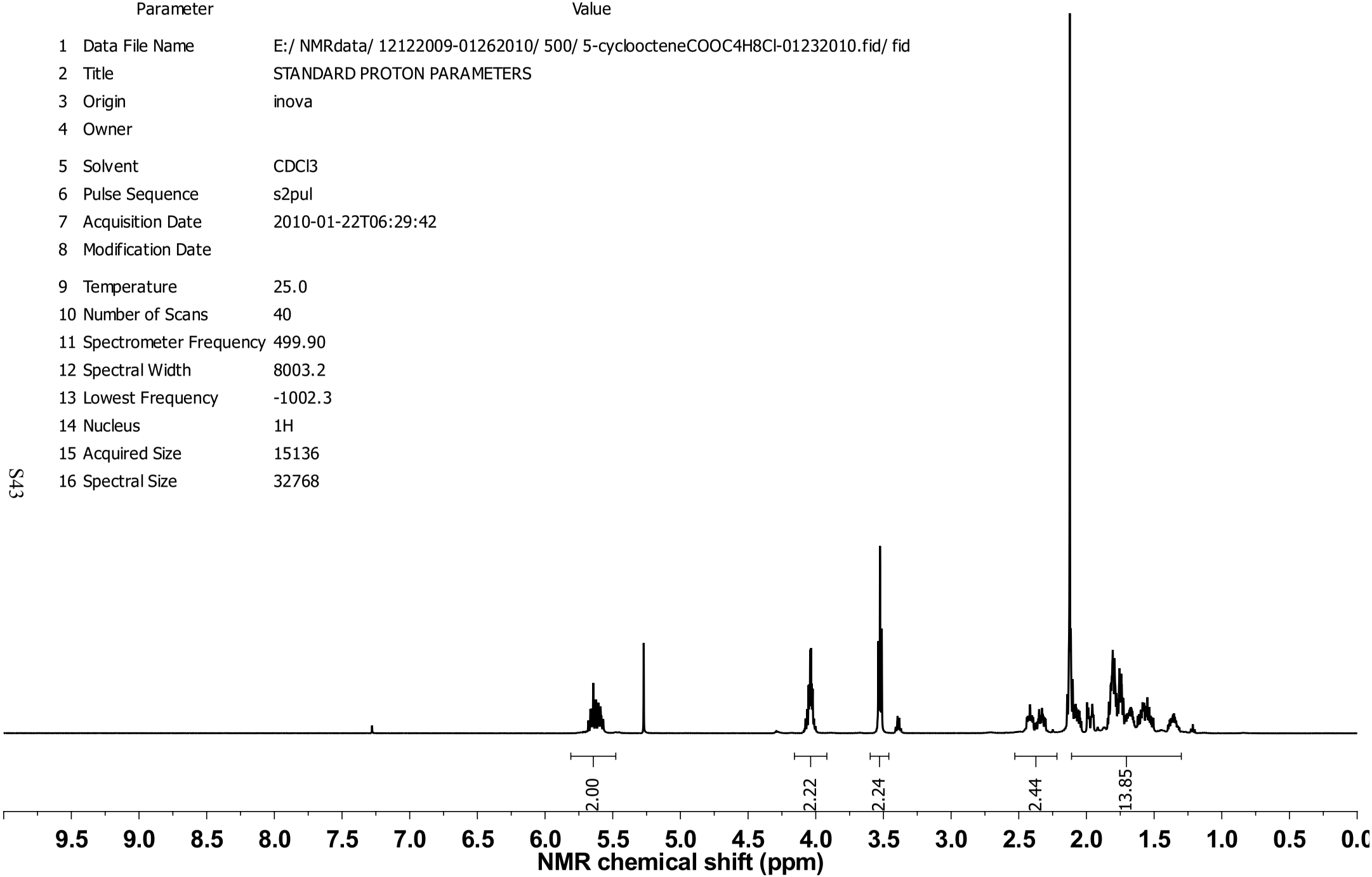
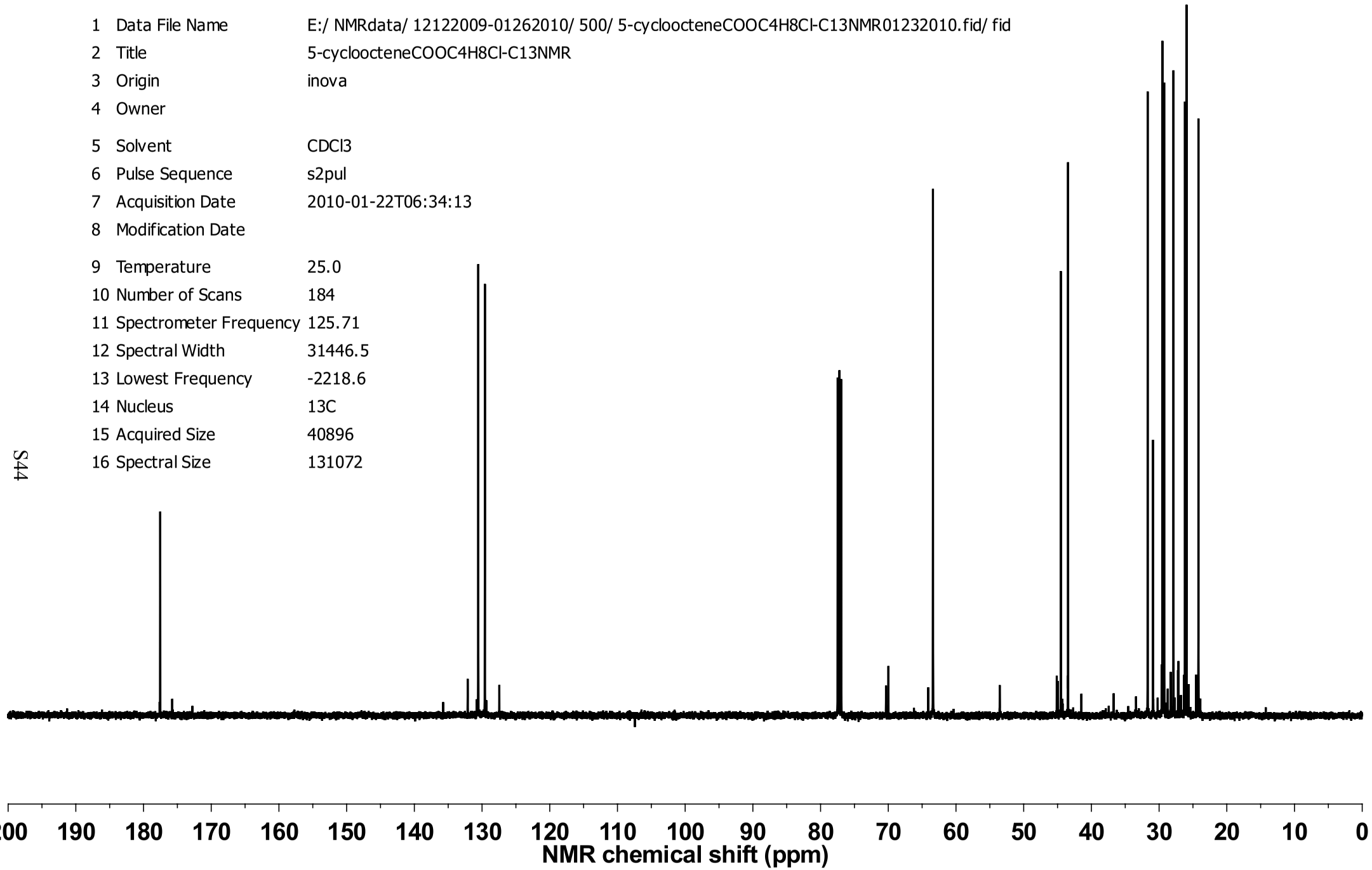
9	Temperature	25.0
10	Number of Scans	40
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of 20



^{13}C-NMR spectrum of 20

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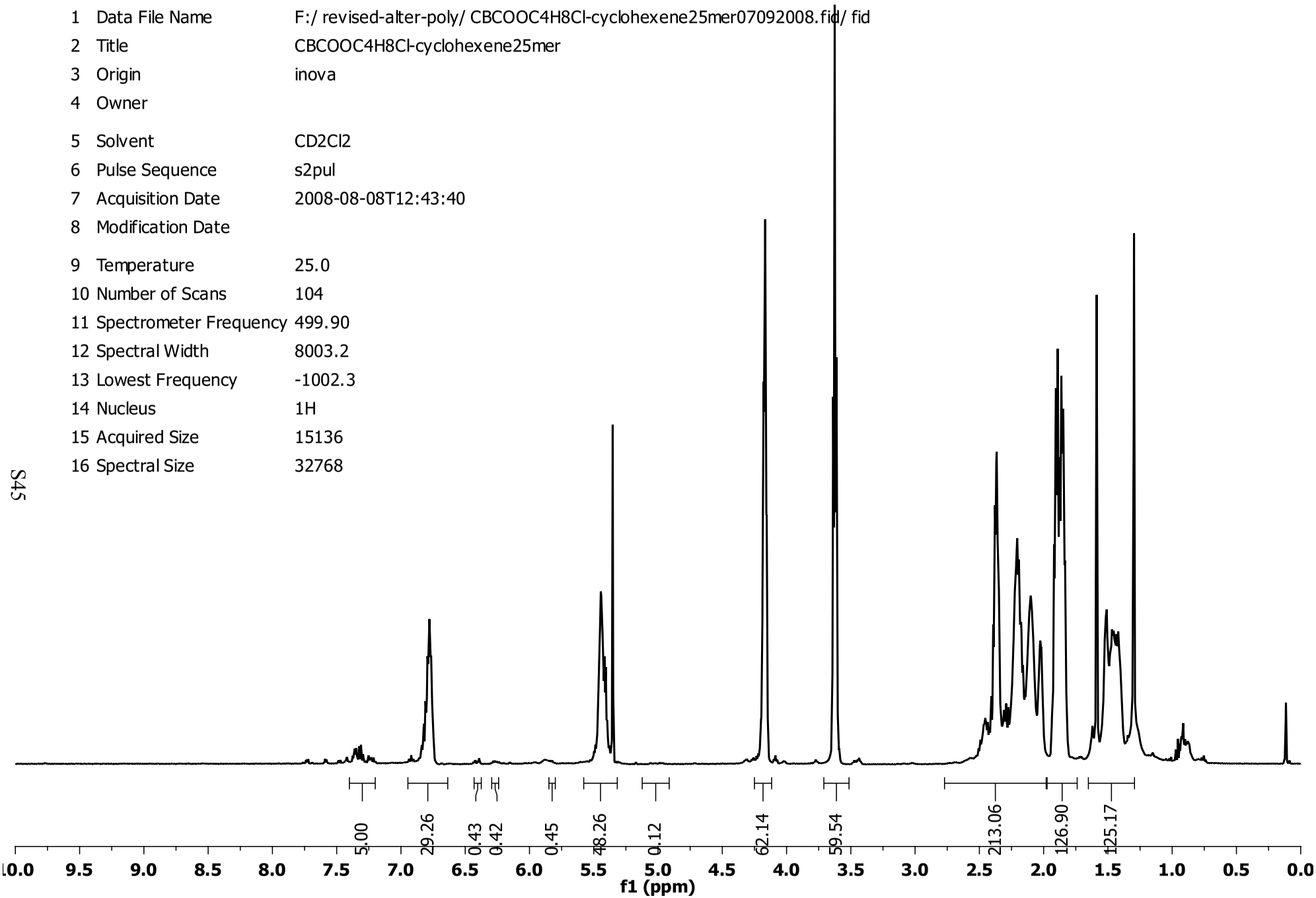
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-08-08T12:43:40
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	104
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768

S45



^{1}H-NMR spectrum of Intermediate-1

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4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-24T09:31:56
8	Modification Date	
9	Temperature	25.0
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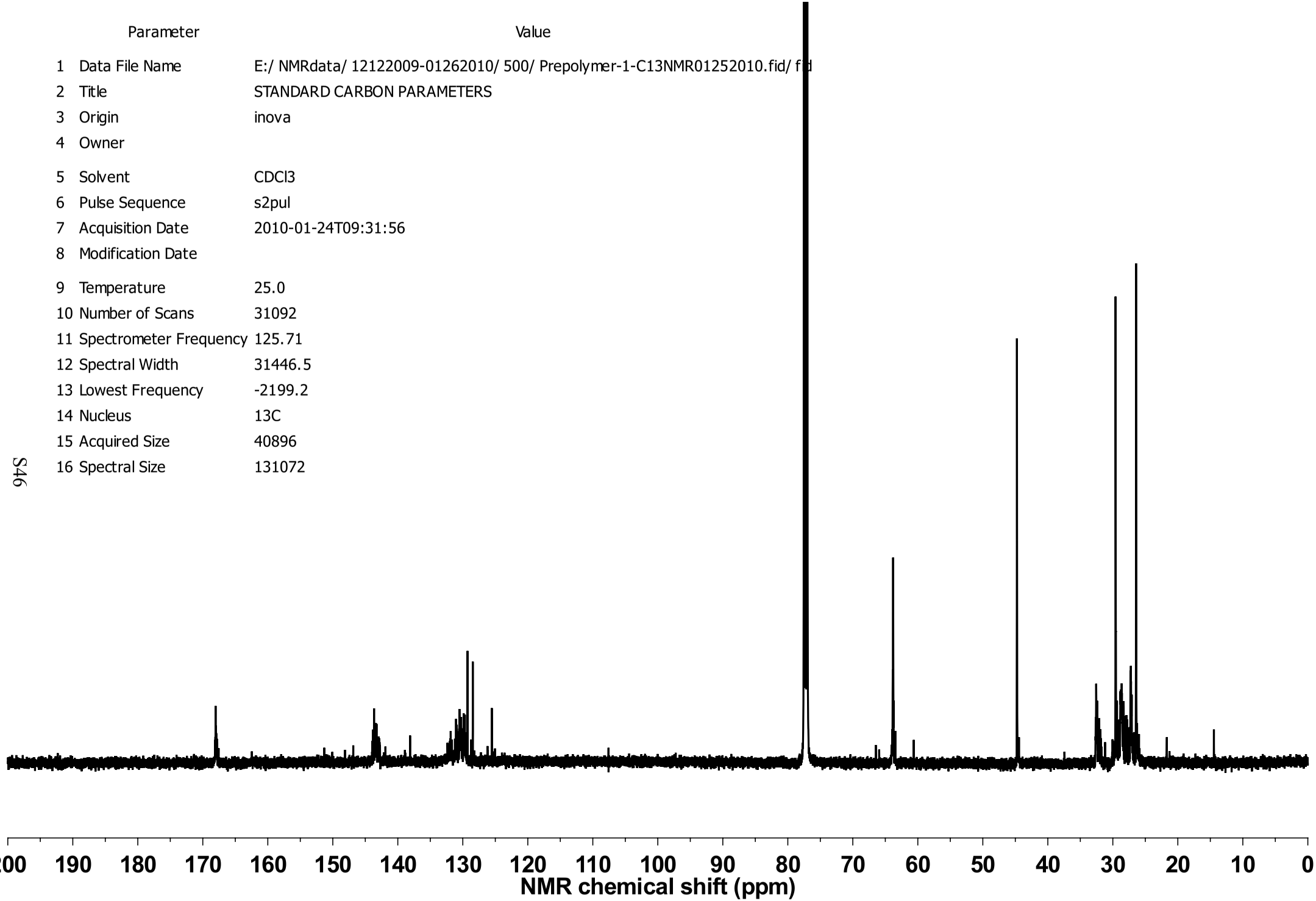

^{13}C-NMR spectrum of Intermediate-1

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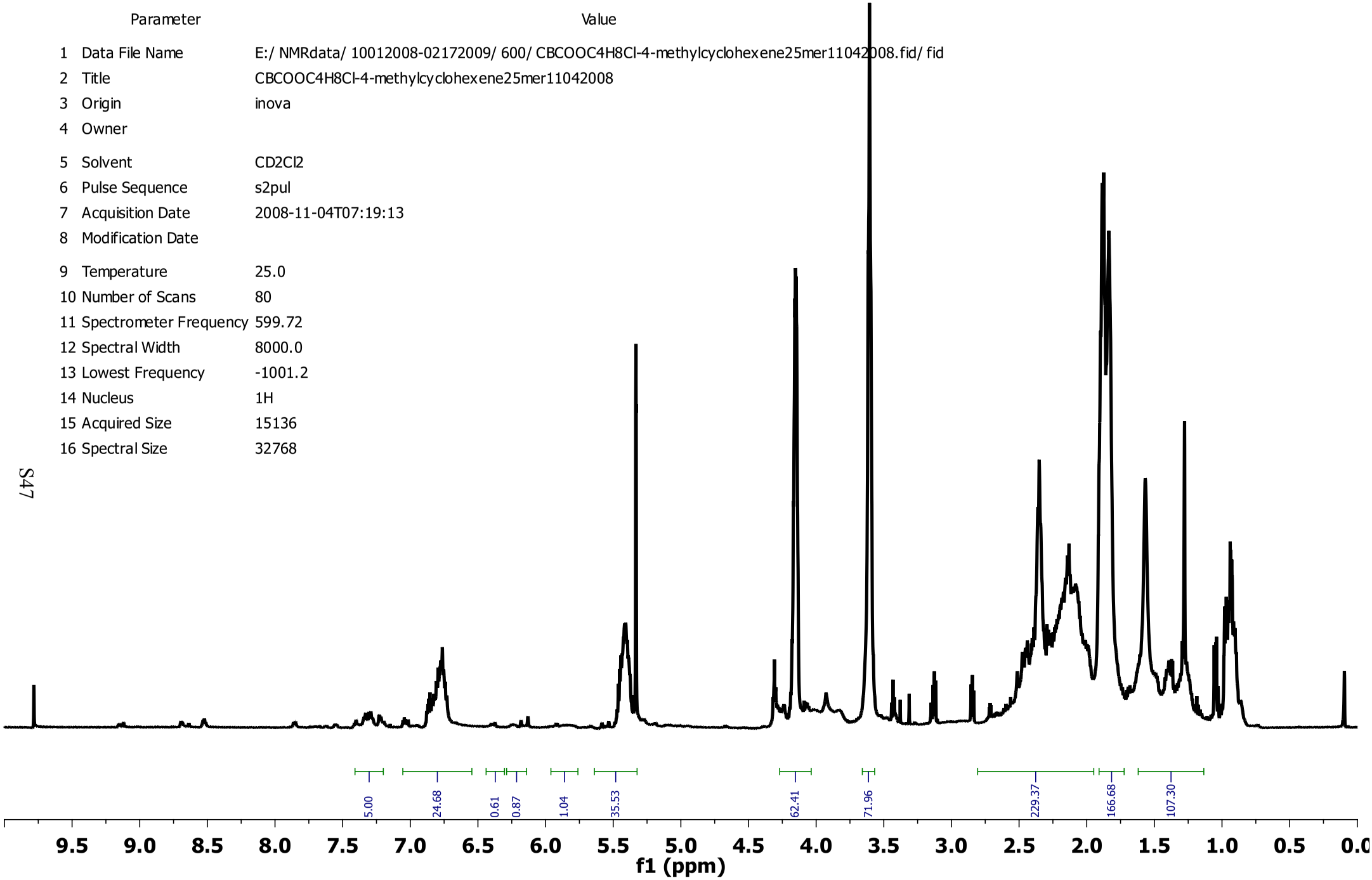
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-11-04T07:19:13
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	80
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.2
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of Intermediate-2

	Parameter	Value
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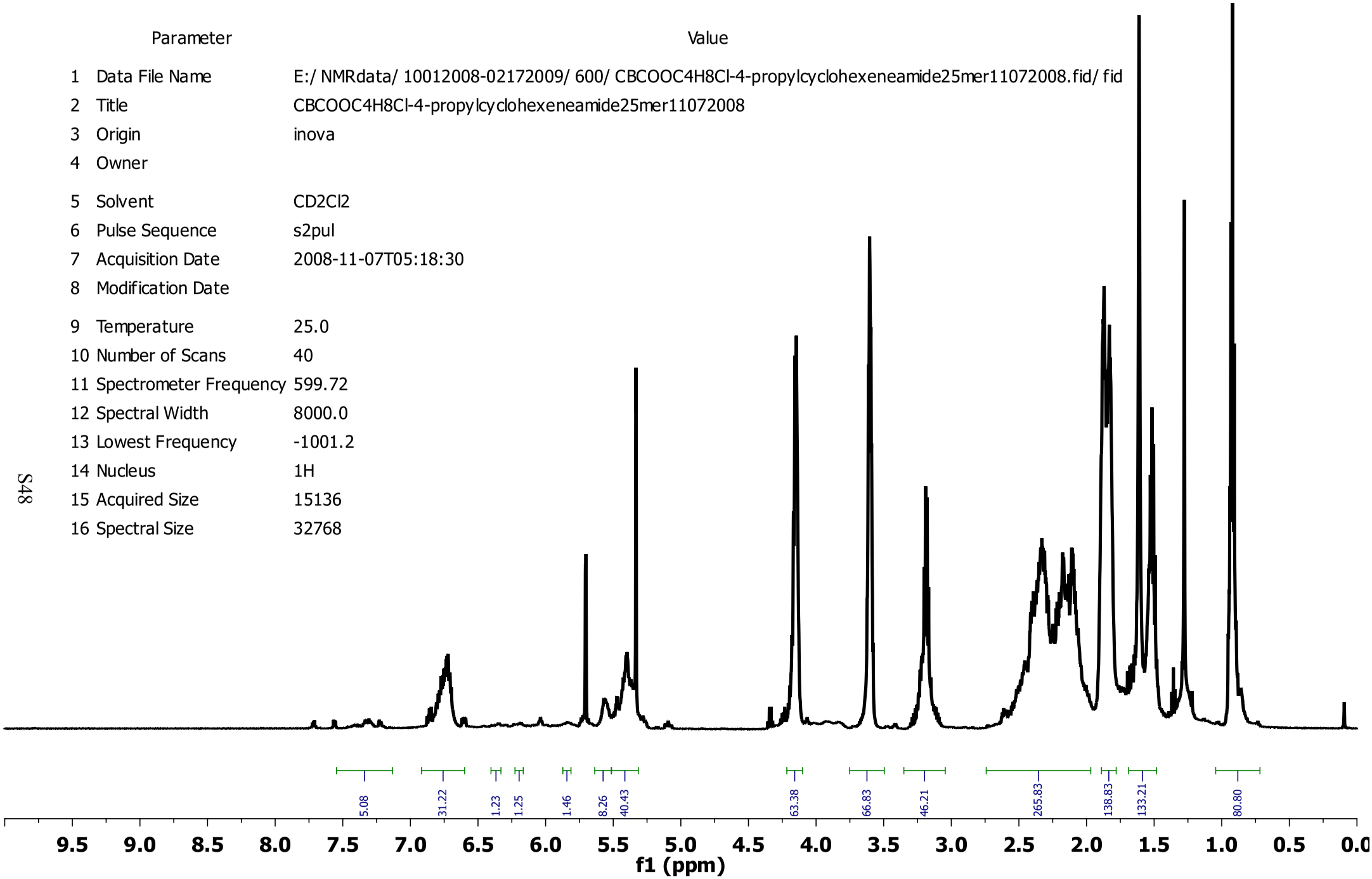
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-11-07T05:18:30
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	40
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.2
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of Intermediate-3

	Parameter	Value
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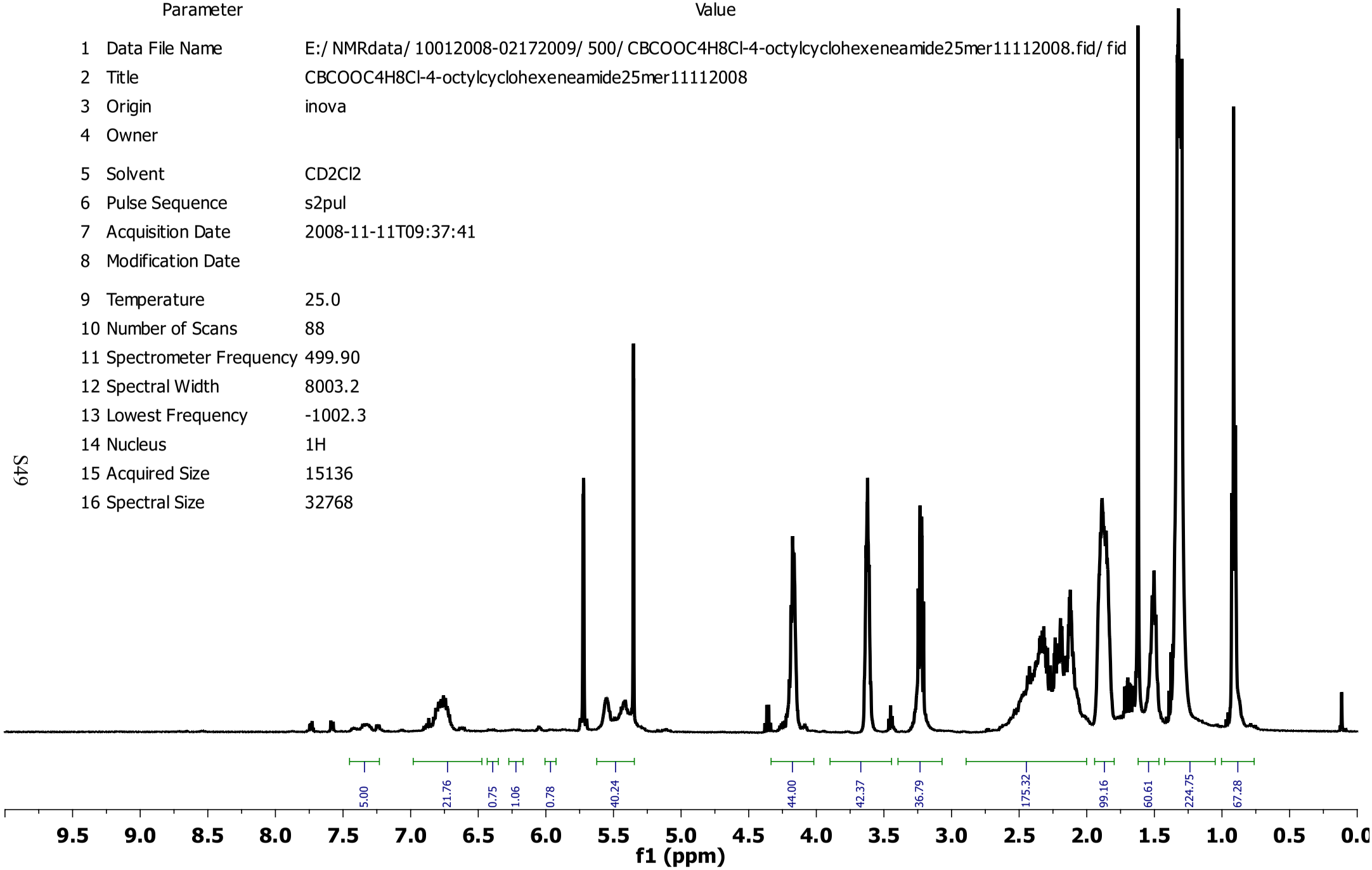
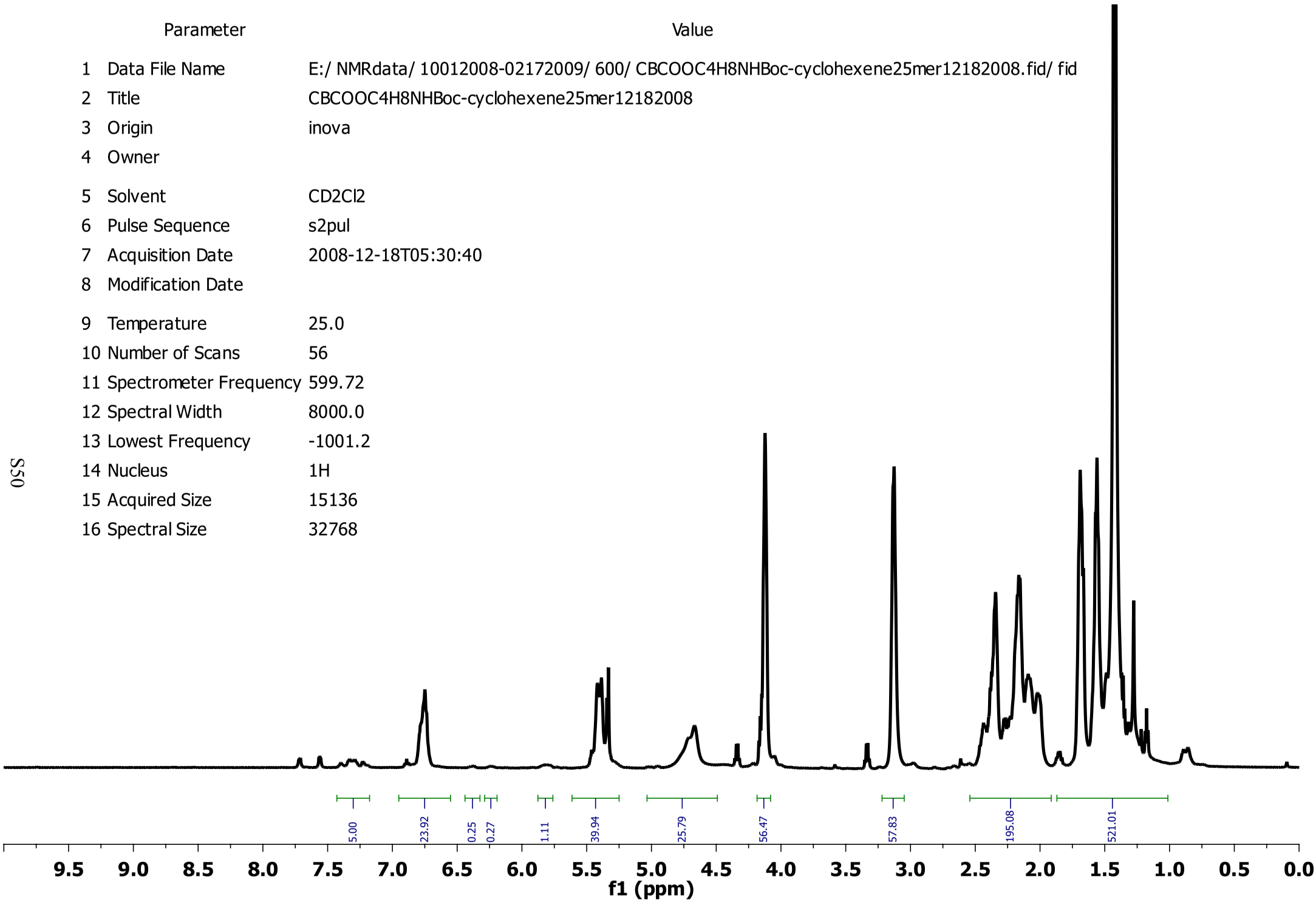
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-11-11T09:37:41
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	88
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



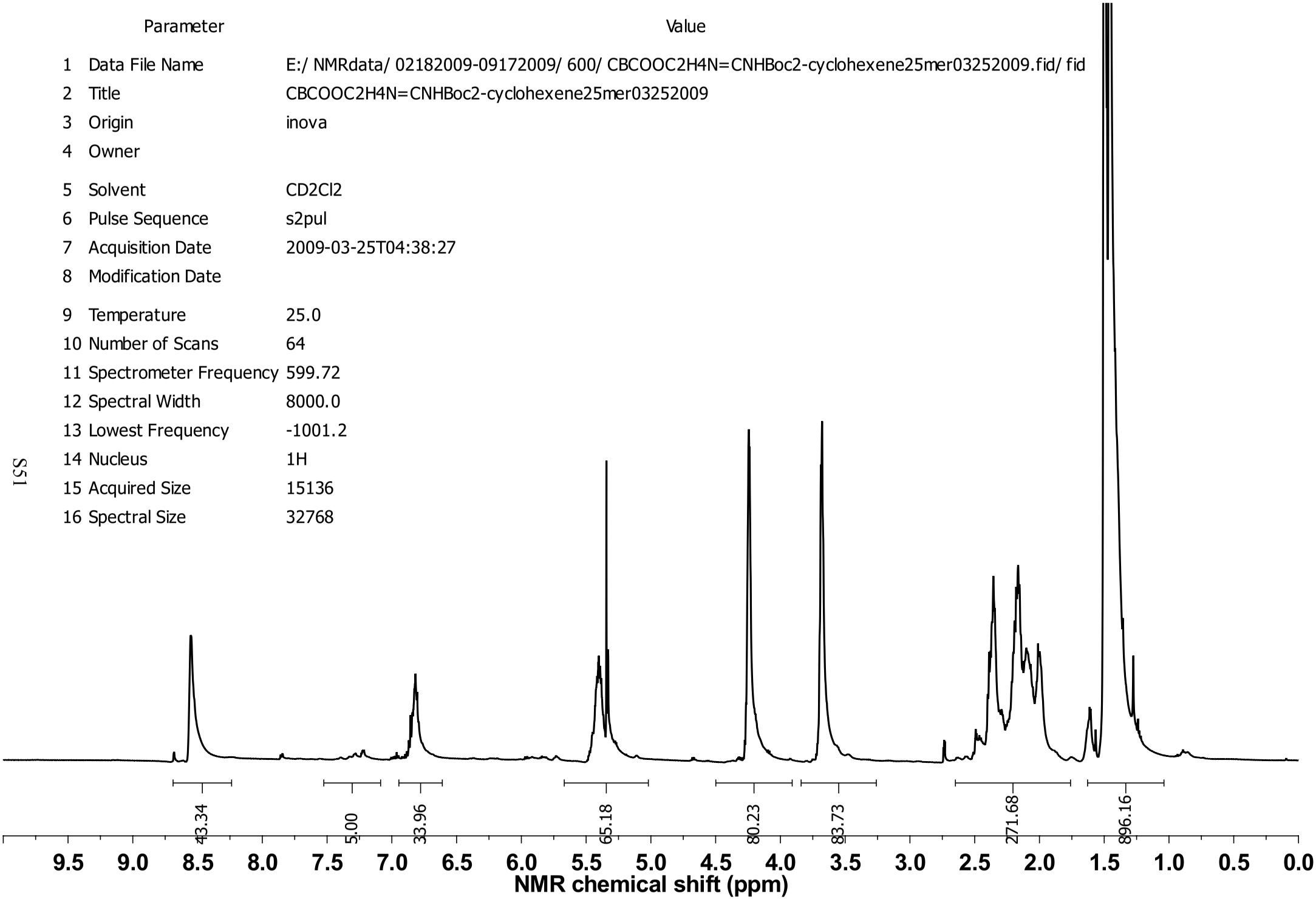
^{1}H-NMR spectrum of Intermediate-4

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 10012008-02172009/ 600/ CBCOOC4H8NHBoc-cyclohexene25mer12182008.fid/ fid
2	Title	CBCOOC4H8NHBoc-cyclohexene25mer12182008
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-12-18T05:30:40
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	56
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.2
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



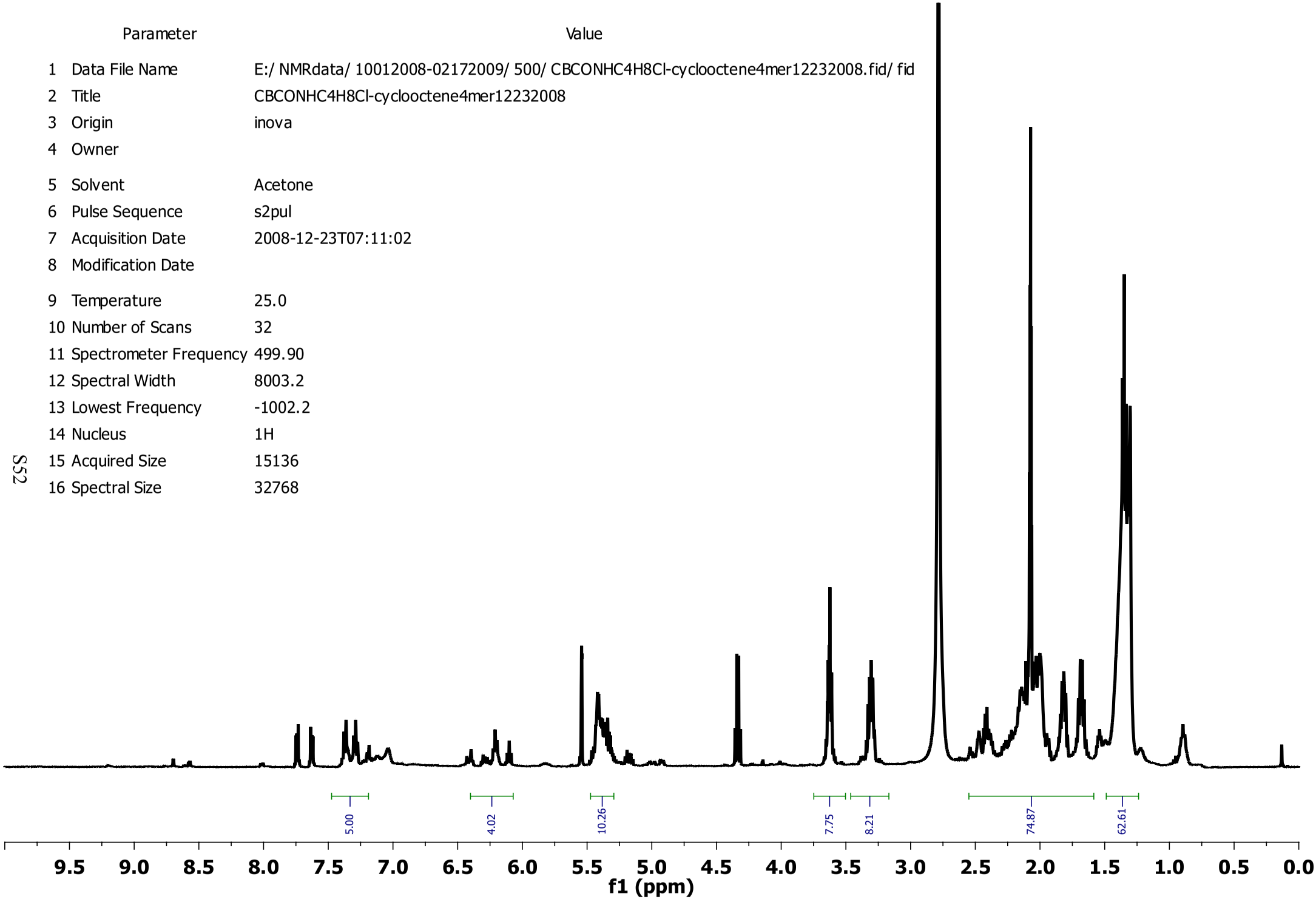
^{1}H-NMR spectrum of Intermediate-6

Parameter		Value
1	Data File Name	E:/ NMRdata/ 02182009-09172009/ 600/ CBCOOC2H4N=CNHBoc2-cyclohexene25mer03252009.fid/ fid
2	Title	CBCOOC2H4N=CNHBoc2-cyclohexene25mer03252009
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2009-03-25T04:38:27
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	64
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.2
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



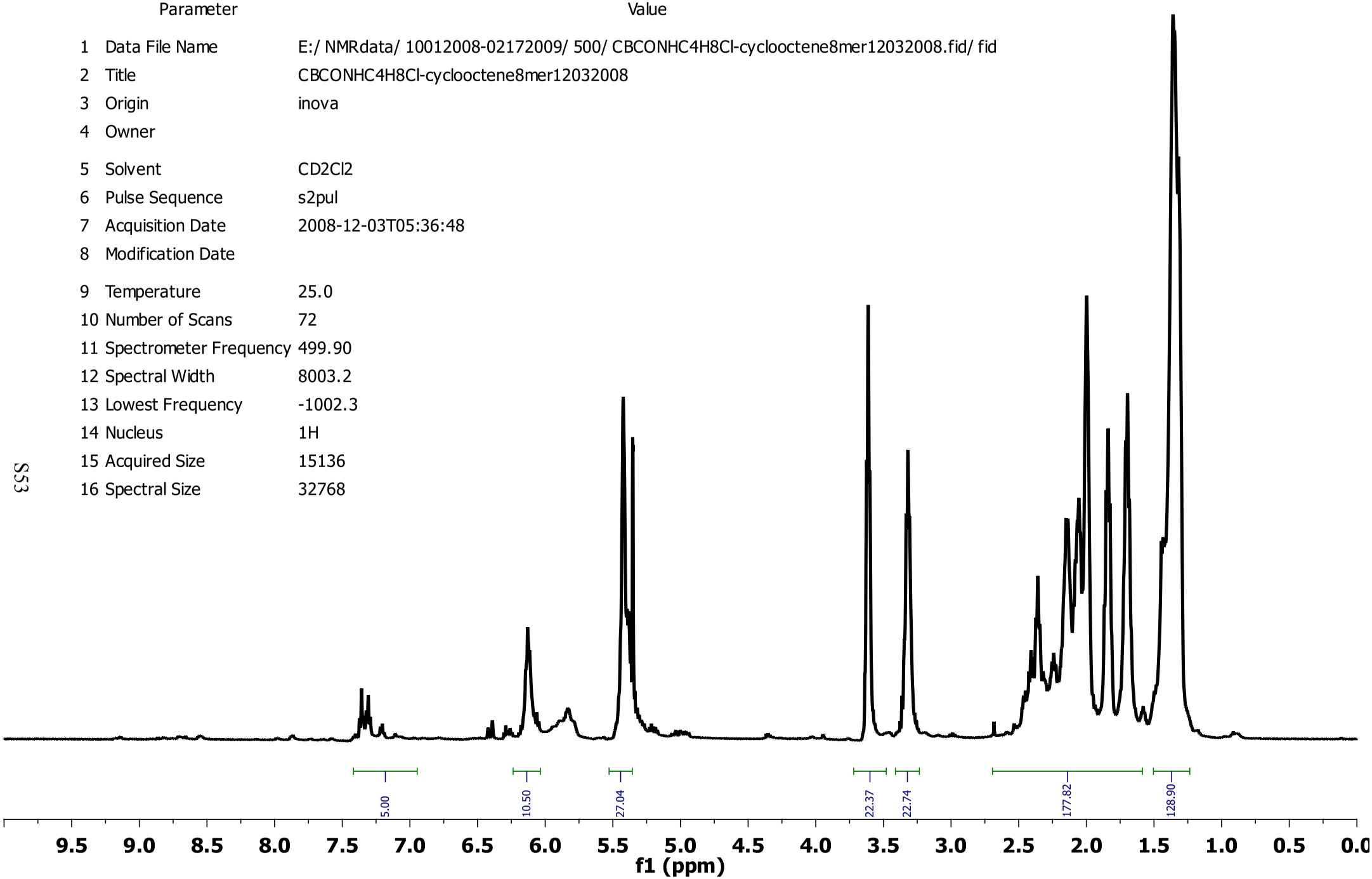
^{1}H-NMR spectrum of Intermediate-7

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 10012008-02172009/ 500/ CBCONHC4H8Cl-cyclooctene4mer12232008.fid/ fid
2	Title	CBCONHC4H8Cl-cyclooctene4mer12232008
3	Origin	inova
4	Owner	
5	Solvent	Acetone
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-12-23T07:11:02
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	32
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.2
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



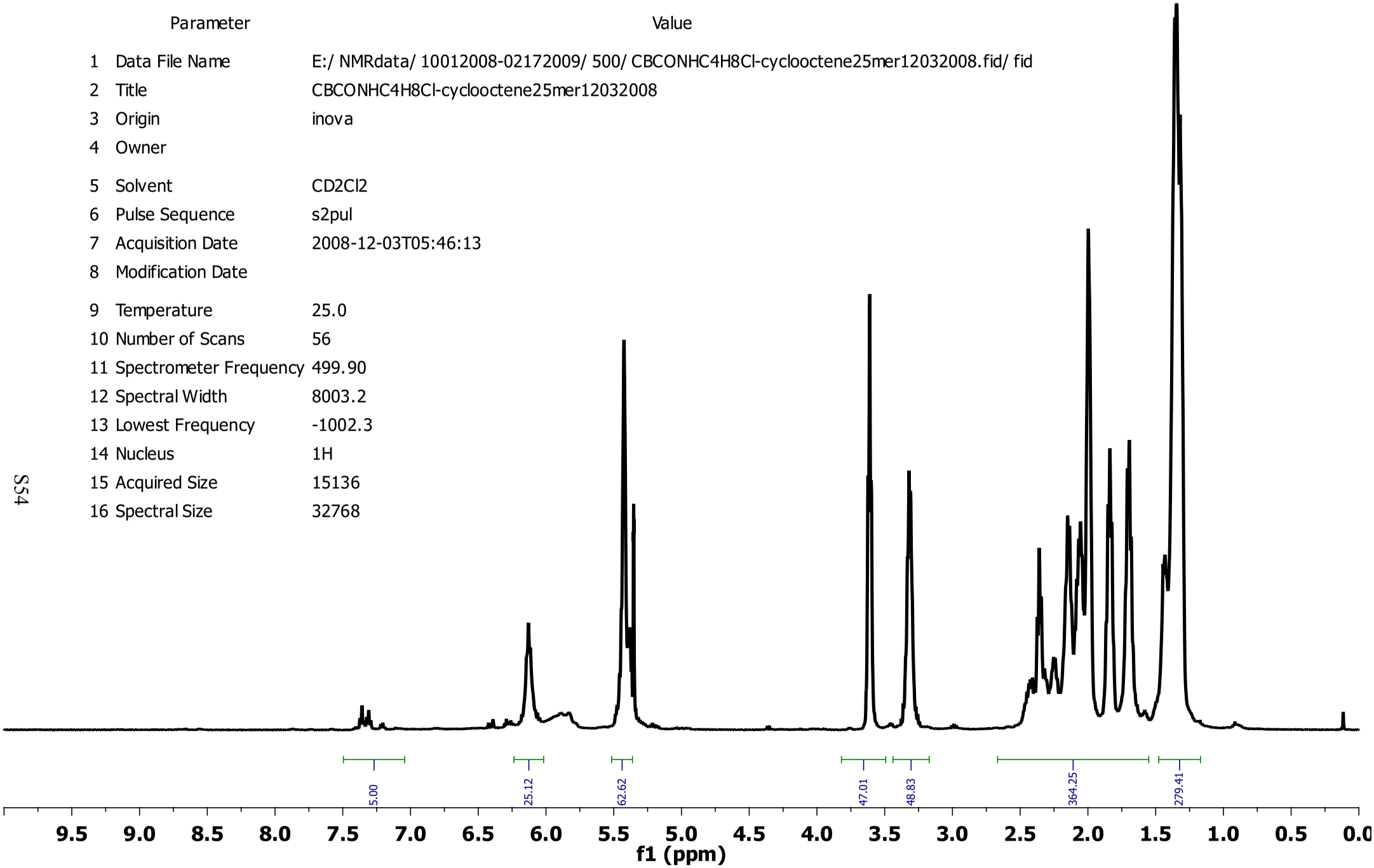
^{1}H-NMR spectrum of Intermediate-8

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 10012008-02172009/ 500/ CBCONHC4H8Cl-cyclooctene8mer12032008.fid/ fid
2	Title	CBCONHC4H8Cl-cyclooctene8mer12032008
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-12-03T05:36:48
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	72
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768

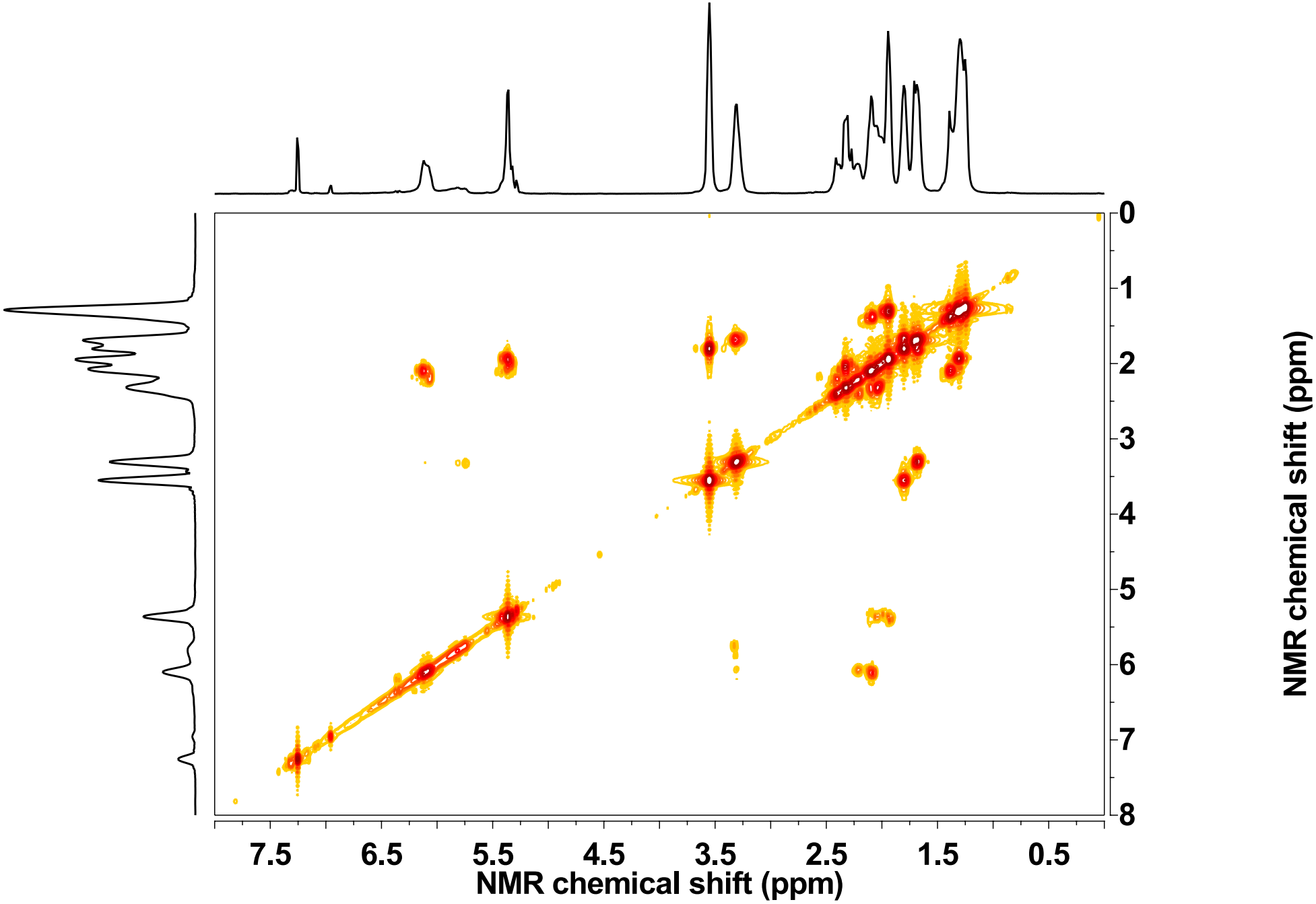


^{1}H-NMR spectrum of Intermediate-9

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 10012008-02172009/ 500/ CBCONHC4H8Cl-cyclooctene25mer12032008.fid/ fid
2	Title	CBCONHC4H8Cl-cyclooctene25mer12032008
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-12-03T05:46:13
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	56
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768

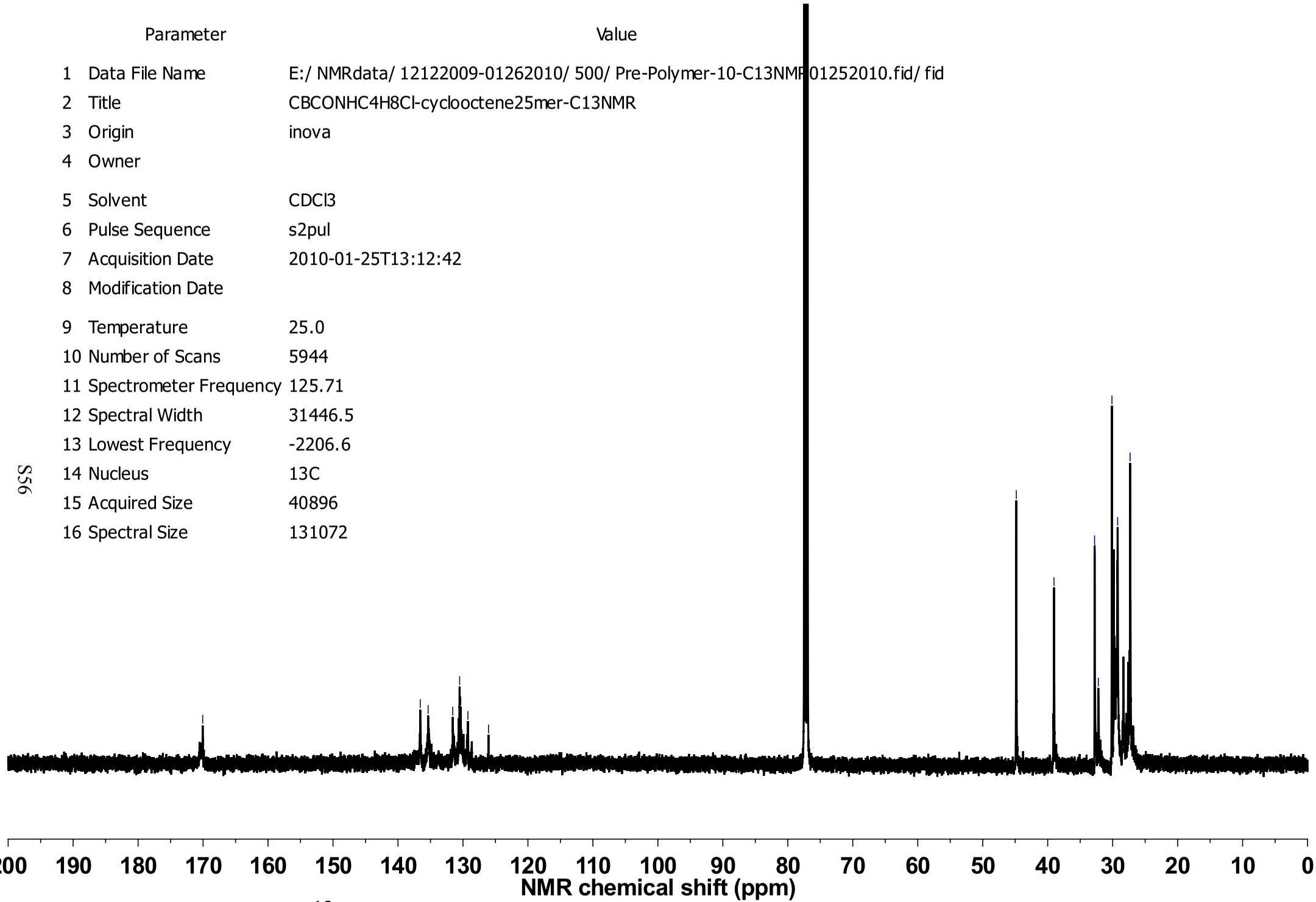


^{1}H-NMR spectrum of Intermediate-10



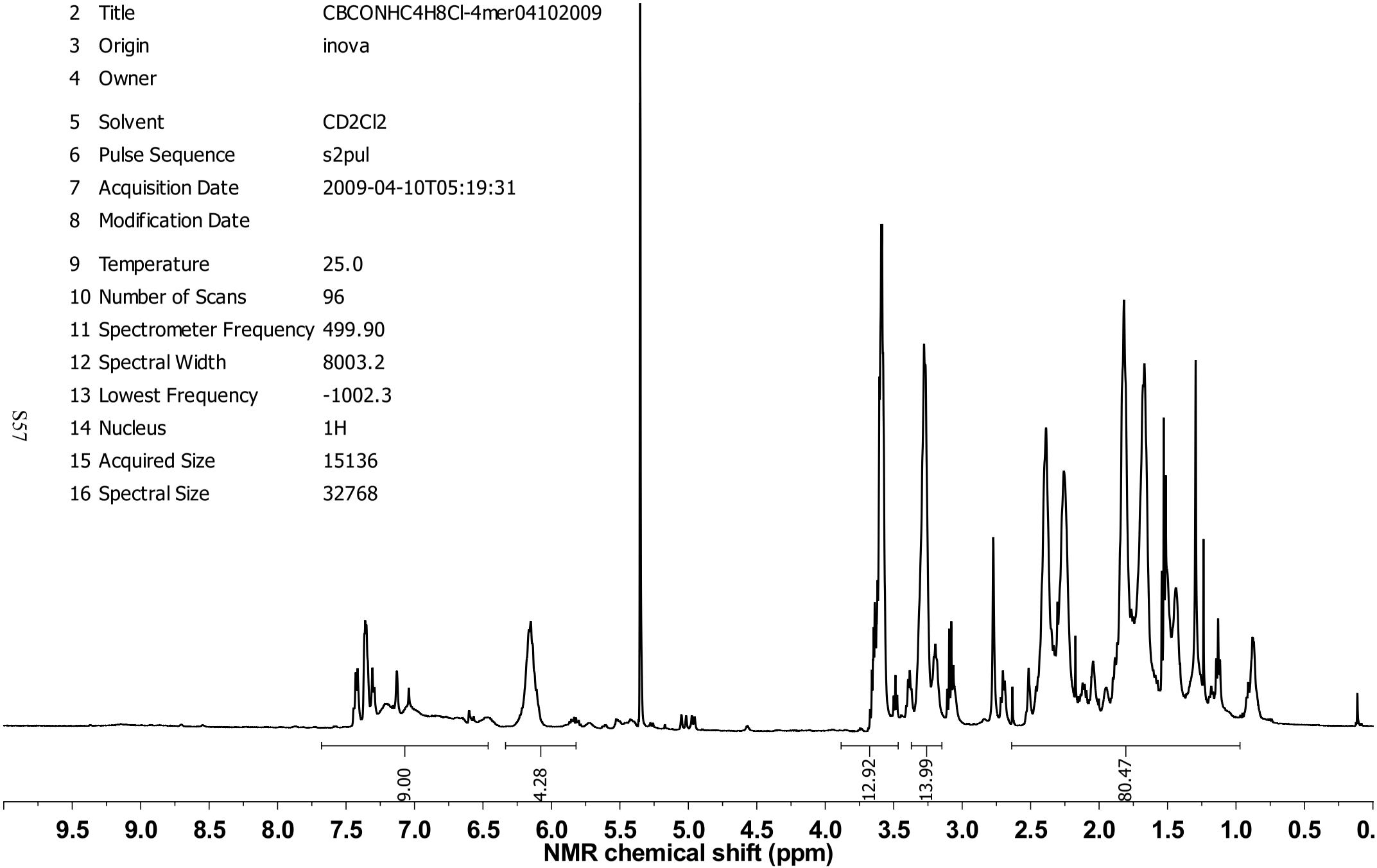
^{1}H-^{1}H-gCOSY-NMR spectrum of Intermediate-10

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 12122009-01262010/ 500/ Pre-Polymer-10-C13NMR01252010.fid/ fid
2	Title	CBCONHC4H8Cl-cyclooctene25mer-C13NMR
3	Origin	inova
4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-25T13:12:42
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	5944
11	Spectrometer Frequency	125.71
12	Spectral Width	31446.5
13	Lowest Frequency	-2206.6
14	Nucleus	13C
15	Acquired Size	40896
16	Spectral Size	131072

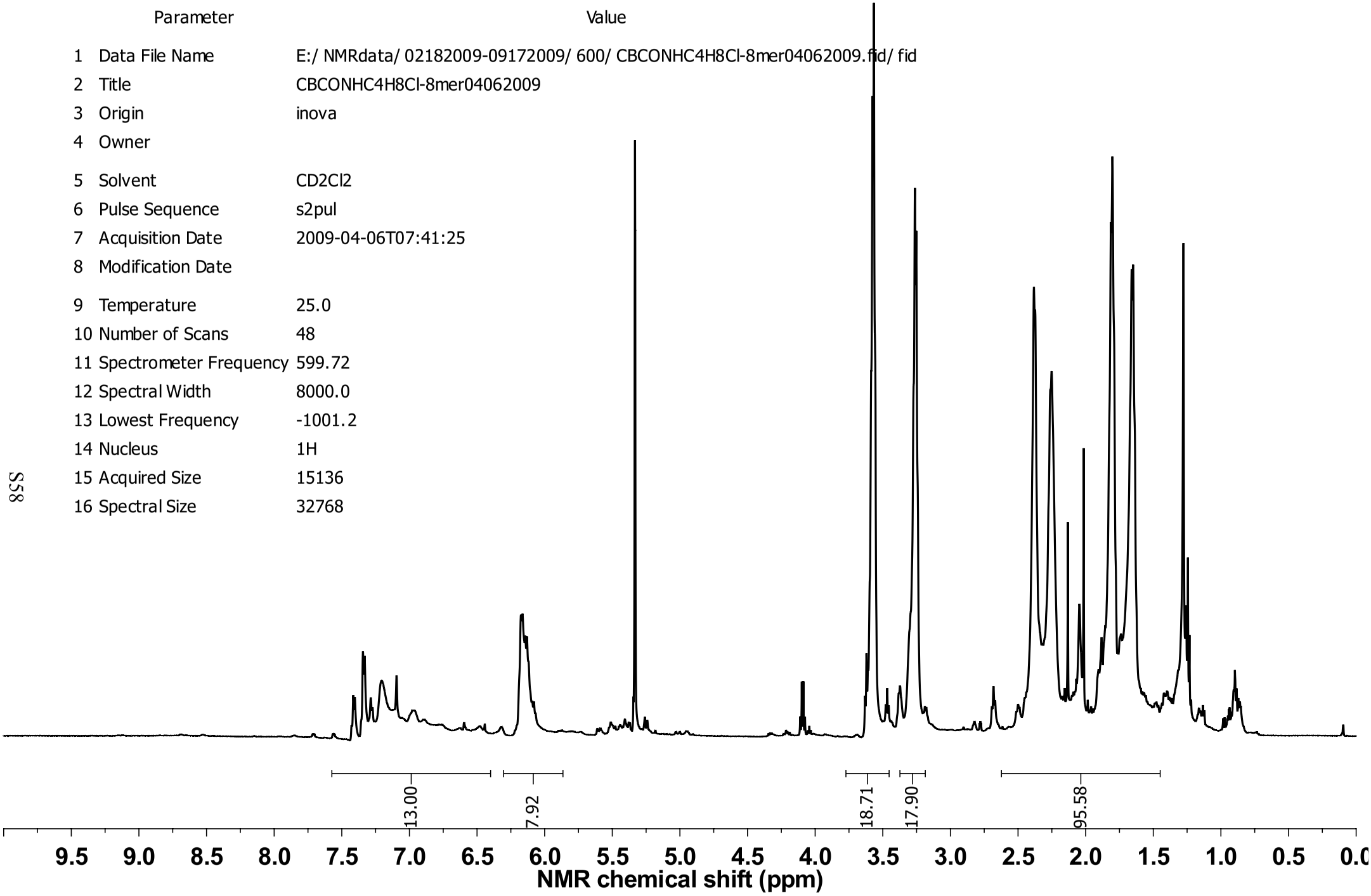


^{13}C-NMR spectrum of Intermediate-10

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 02182009-09172009/ 500/ CBCONHC4H8Cl-4mer04102009.fid/ fid
2	Title	CBCONHC4H8Cl-4mer04102009
3	Origin	inova
4	Owner	
5	Solvent	CD2Cl2
6	Pulse Sequence	s2pul
7	Acquisition Date	2009-04-10T05:19:31
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	96
11	Spectrometer Frequency	499.90
12	Spectral Width	8003.2
13	Lowest Frequency	-1002.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768

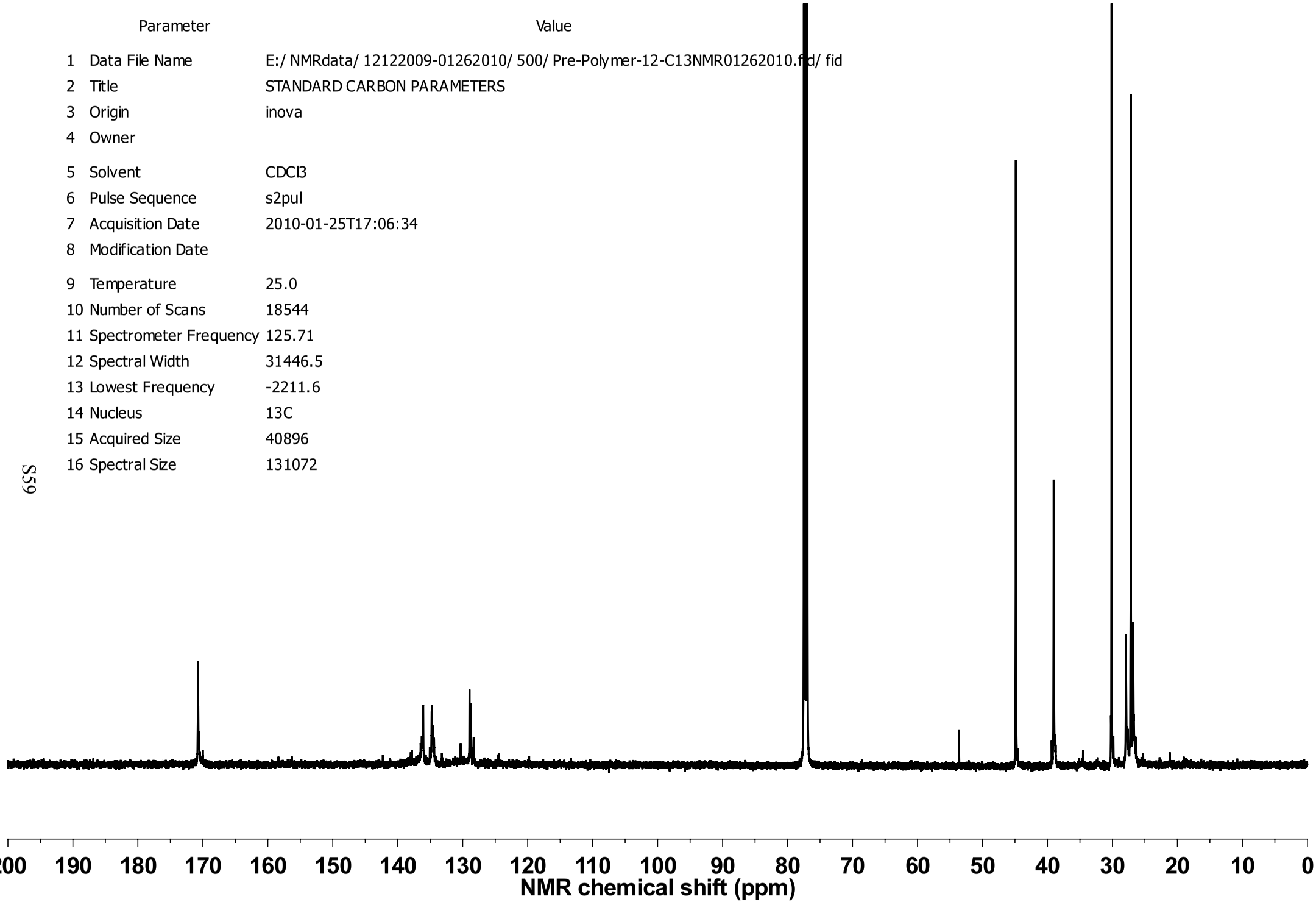


^{1}H-NMR spectrum of Intermediate-11

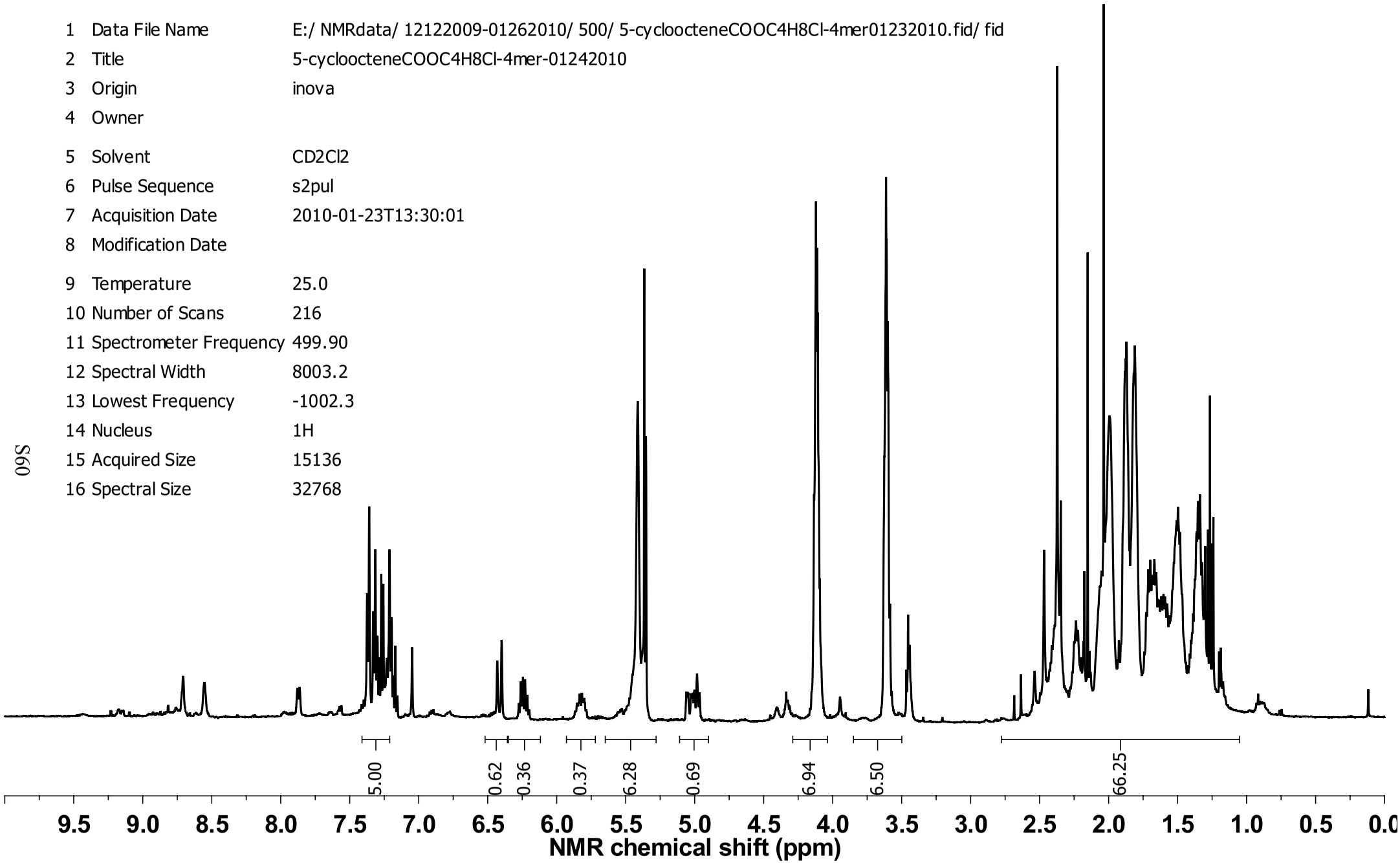


^{1}H-NMR spectrum of Intermediate-12

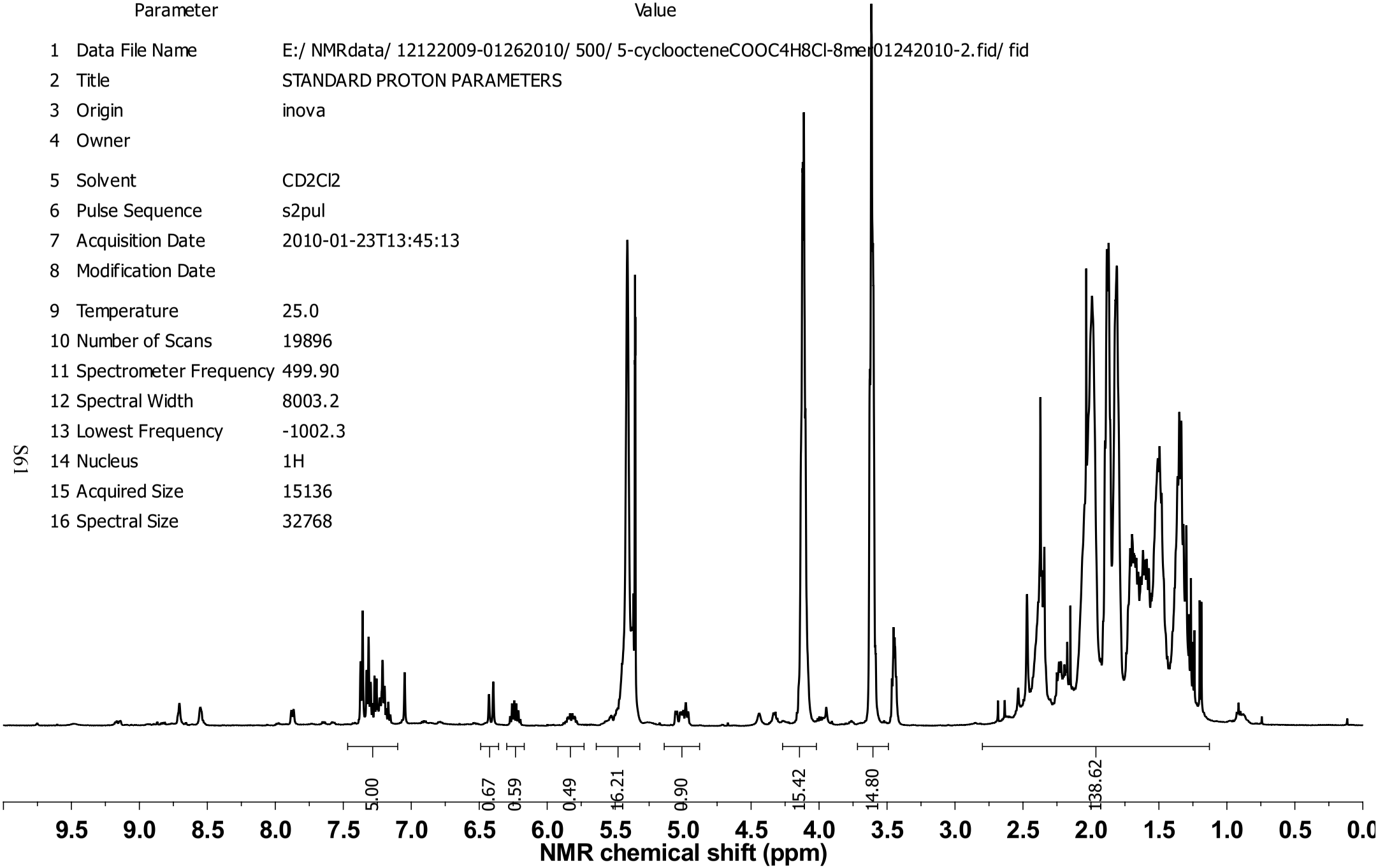
	Parameter	Value
1	Data File Name	E:/ NMRdata/ 12122009-01262010/ 500/ Pre-Polymer-12-C13NMR01262010.fid/ fid
2	Title	STANDARD CARBON PARAMETERS
3	Origin	inova
4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-25T17:06:34
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	18544
11	Spectrometer Frequency	125.71
12	Spectral Width	31446.5
13	Lowest Frequency	-2211.6
14	Nucleus	13C
15	Acquired Size	40896
16	Spectral Size	131072



^{13}C-NMR spectrum of Intermediate-12

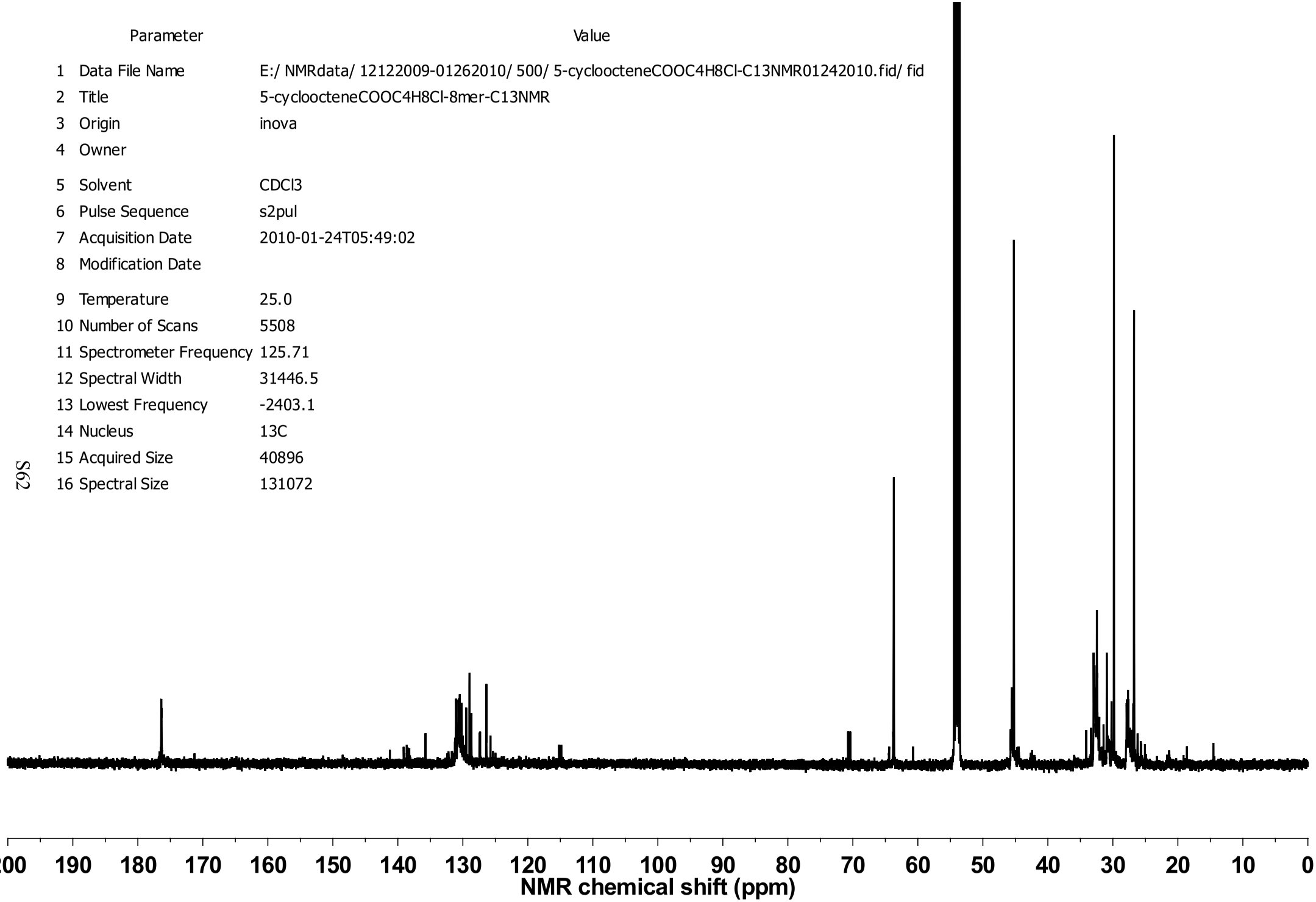


^{1}H-NMR spectrum of Intermediate-13



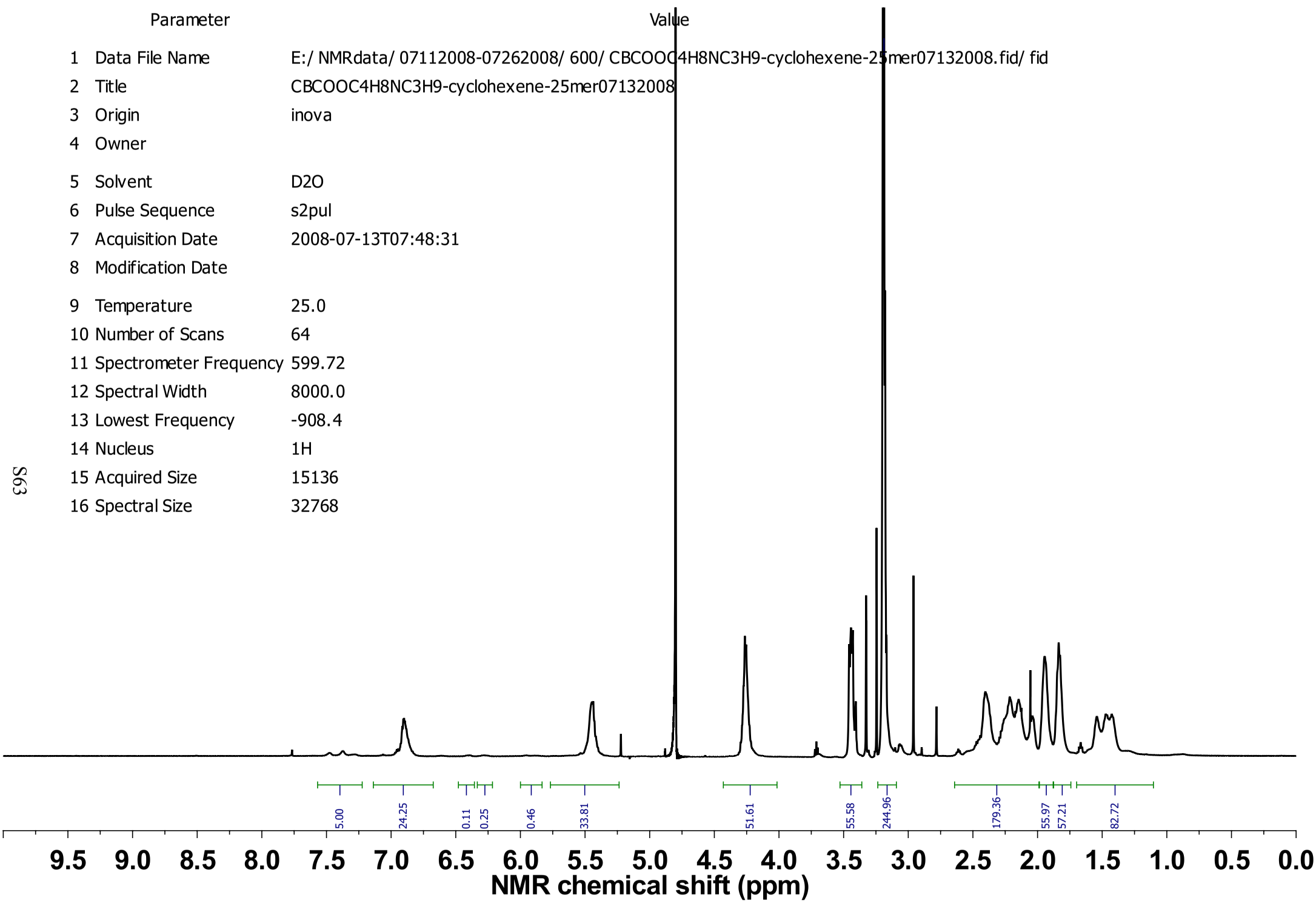
^{1}H-NMR spectrum of Intermediate-14

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 12122009-01262010/ 500/ 5-cyclooctenеCOOC4H8Cl-C13NMR01242010.fid/ fid
2	Title	5-cyclooctenеCOOC4H8Cl-8mer-C13NMR
3	Origin	inova
4	Owner	
5	Solvent	CDCl3
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-24T05:49:02
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	5508
11	Spectrometer Frequency	125.71
12	Spectral Width	31446.5
13	Lowest Frequency	-2403.1
14	Nucleus	13C
15	Acquired Size	40896
16	Spectral Size	131072



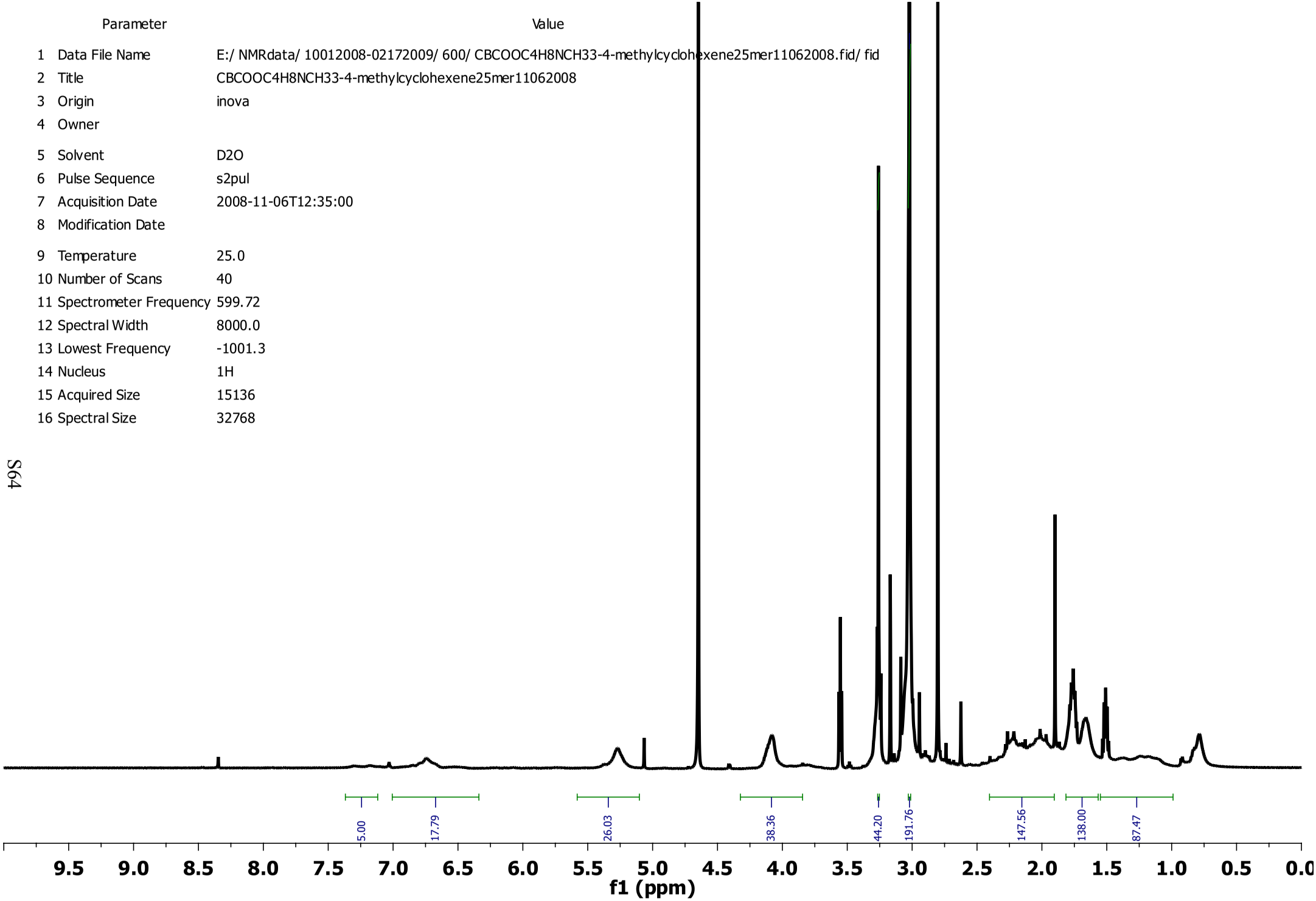
^{13}C-NMR spectrum of Intermediate-14

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 07112008-07262008/ 600/ CBCOOC4H8NC3H9-cyclohexene-25mer07132008.fid/ fid
2	Title	CBCOOC4H8NC3H9-cyclohexene-25mer07132008
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-07-13T07:48:31
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	64
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-908.4
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



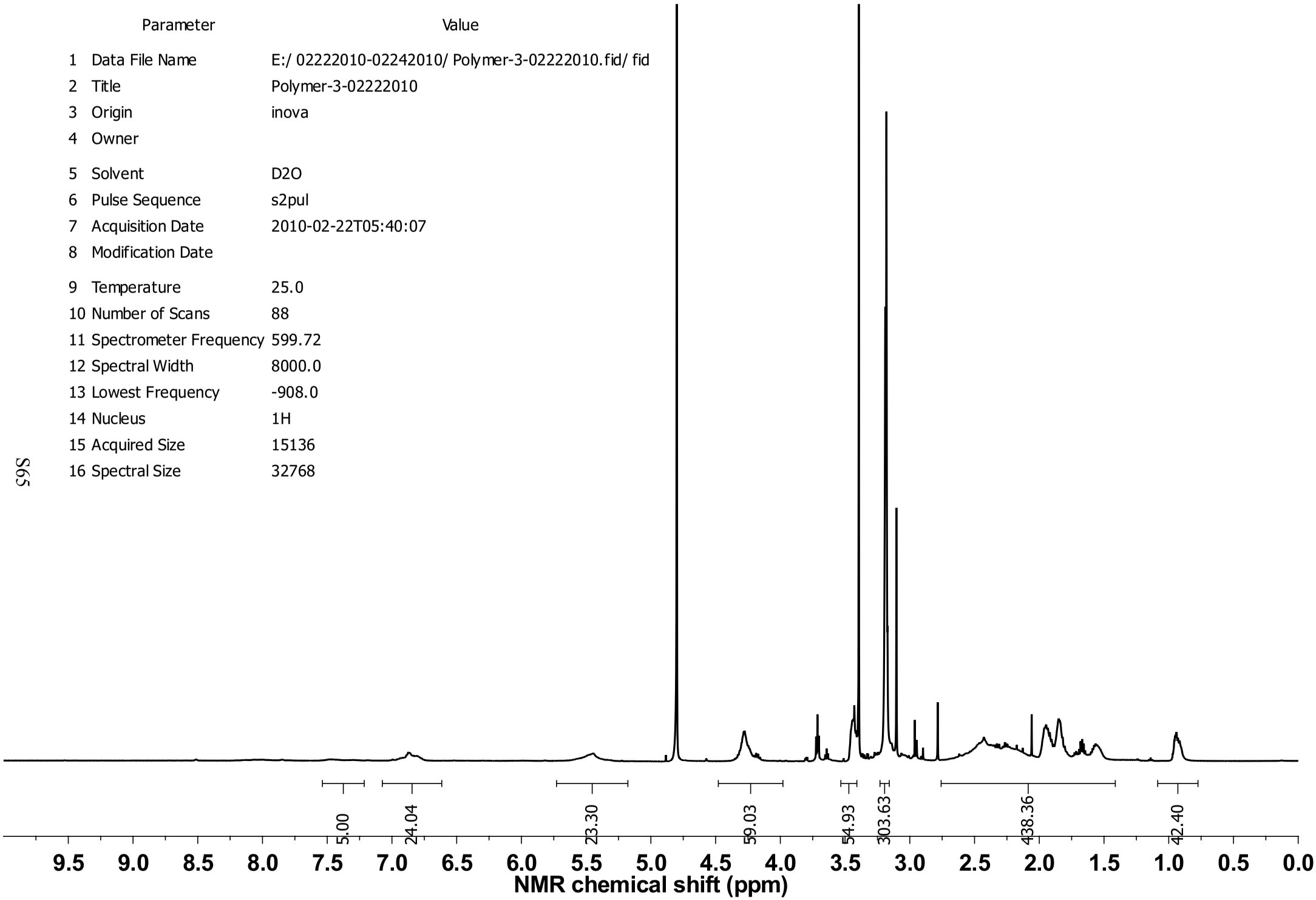
^{1}H-NMR spectrum of Acopolymer-1

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 10012008-02172009/ 600/ CBCOOC4H8NCH33-4-methylcyclohexene25mer11062008.fid/ fid
2	Title	CBCOOC4H8NCH33-4-methylcyclohexene25mer11062008
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2008-11-06T12:35:00
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	40
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



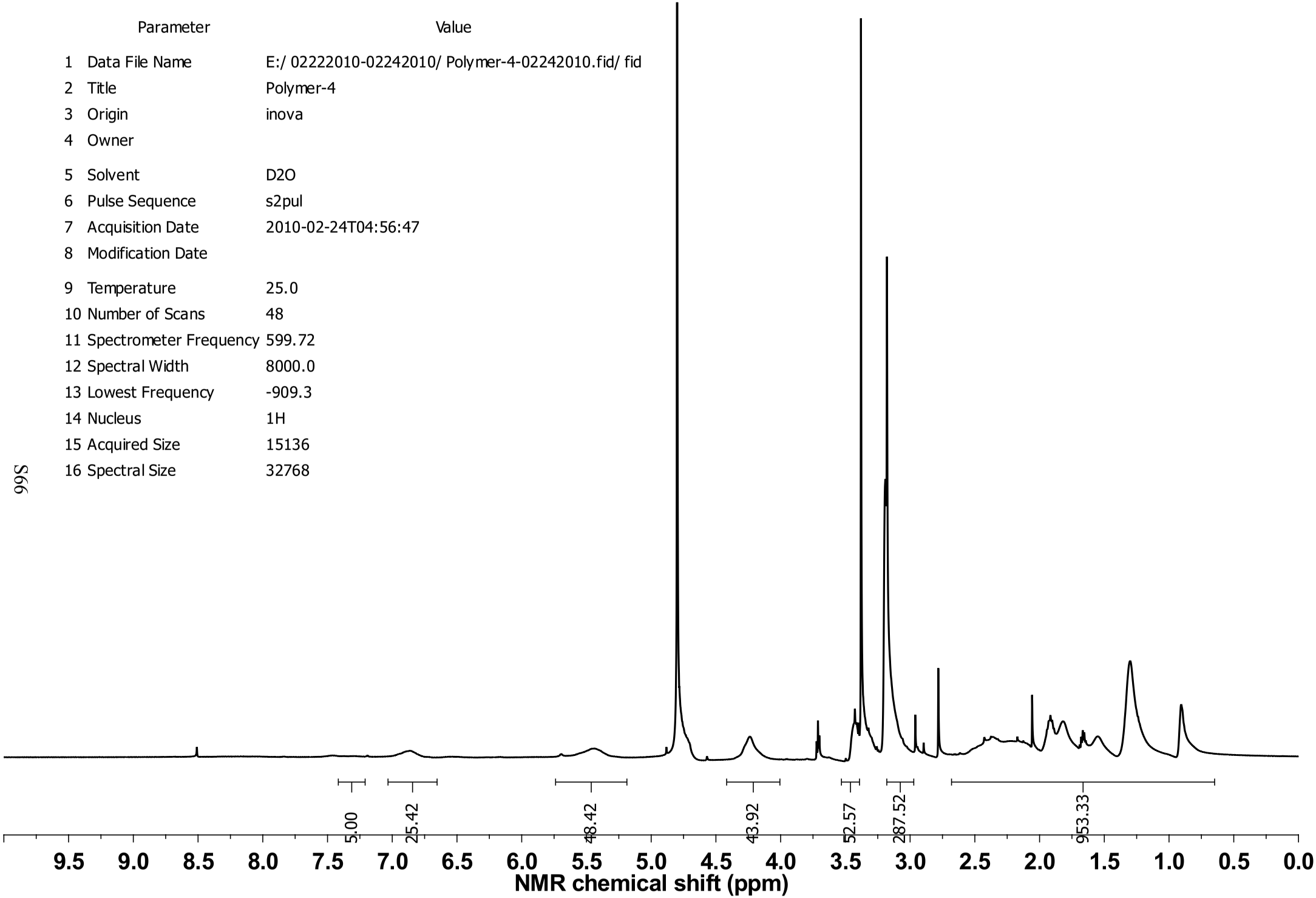
^{1}H-NMR spectrum of Acopolymer-2

	Parameter	Value
1	Data File Name	E:/ 02222010-02242010/ Polymer-3-02222010.fid/ fid
2	Title	Polymer-3-02222010
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-22T05:40:07
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	88
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-908.0
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



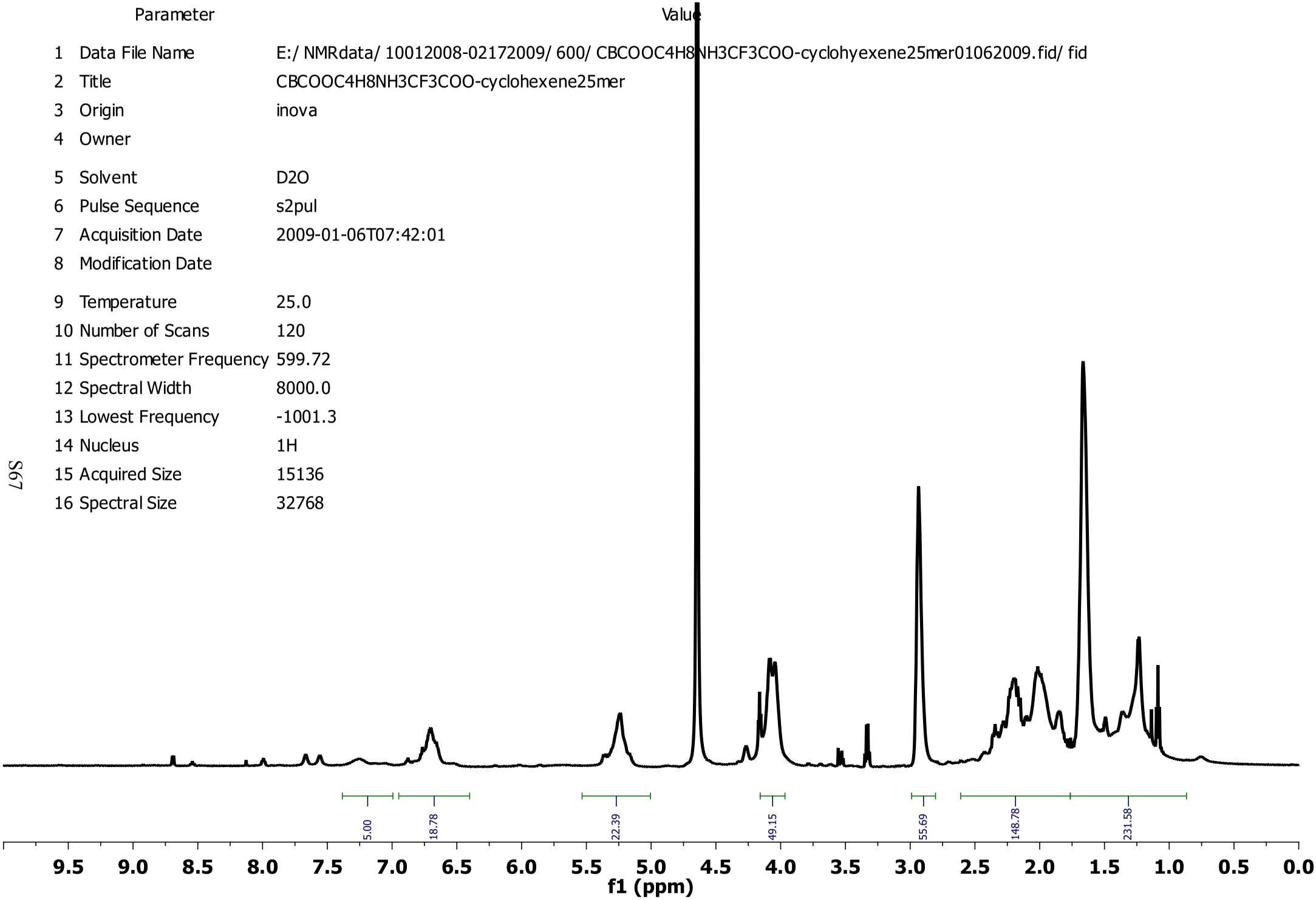
^{1}H-NMR spectrum of Acopolymer-3

	Parameter	Value
1	Data File Name	E:/ 02222010-02242010/ Polymer-4-02242010.fid/ fid
2	Title	Polymer-4
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-24T04:56:47
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	48
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-909.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



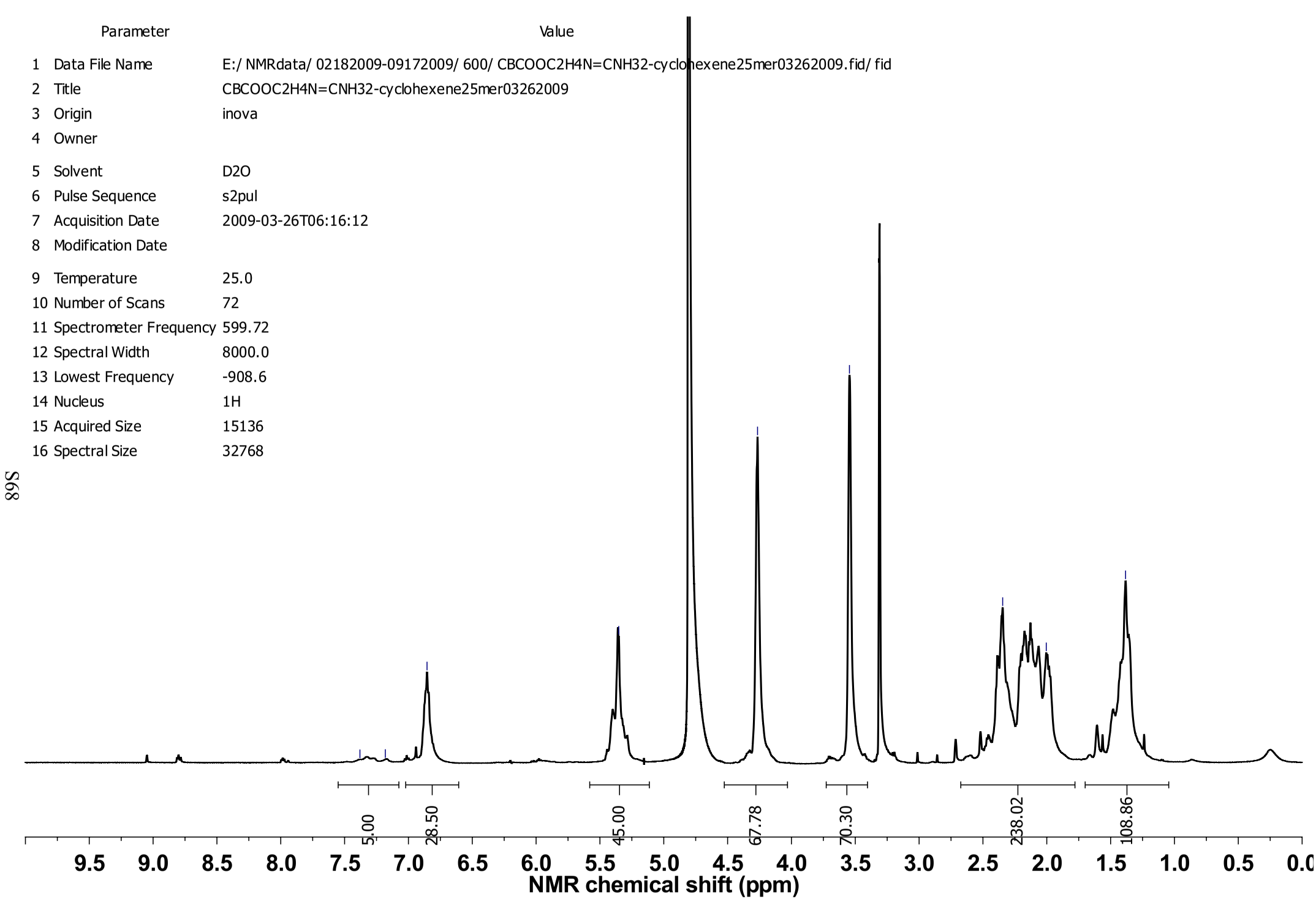
^{1}H-NMR spectrum of Acopolymer-4

Parameter		Value
1	Data File Name	E:/ NMRdata/ 10012008-02172009/ 600/ CBCOOC4H8NH3CF3COO-cyclohyexene25mer01062009.fid/ fid
2	Title	CBCOOC4H8NH3CF3COO-cyclohexene25mer
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2009-01-06T07:42:01
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	120
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-1001.3
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



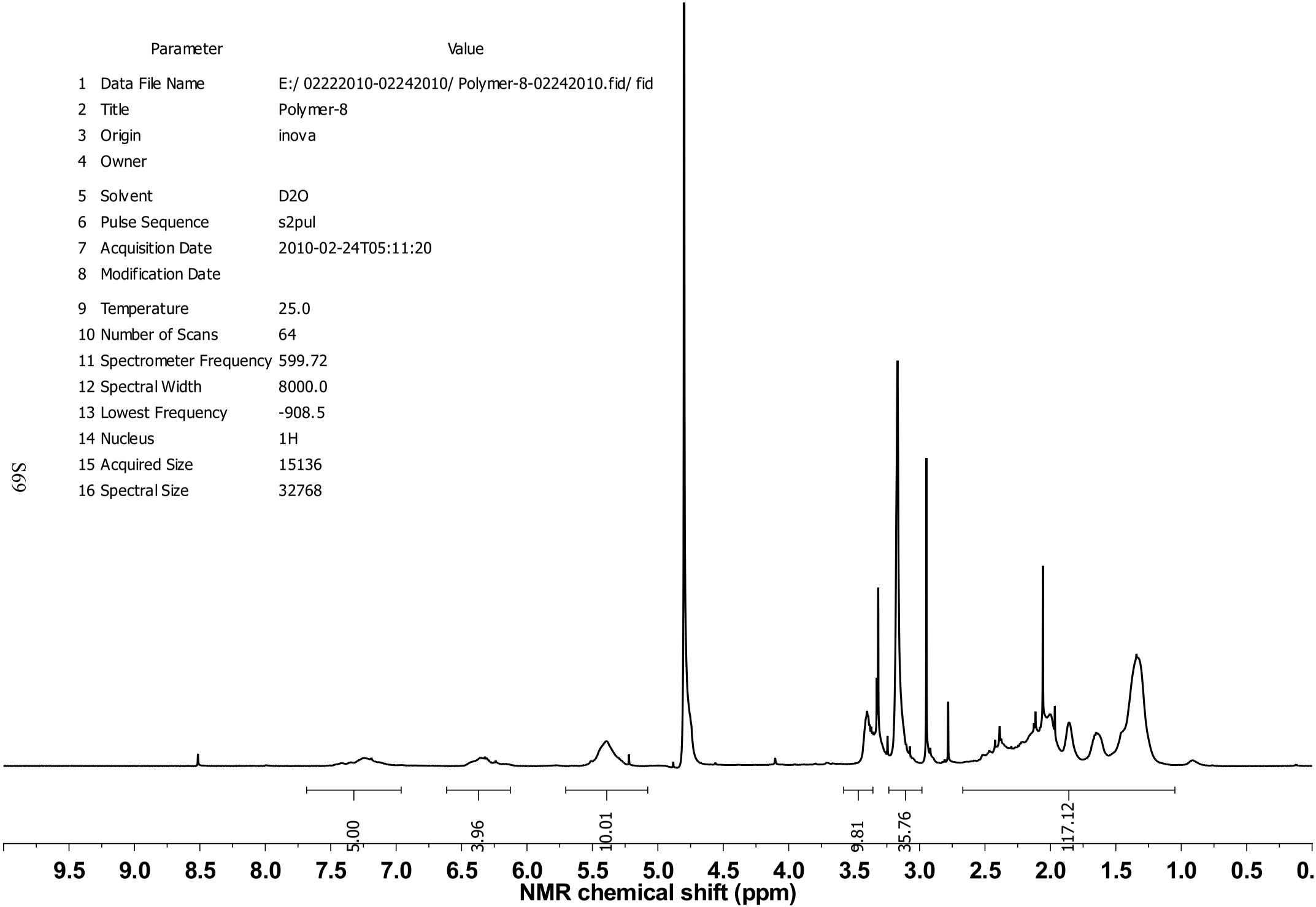
^{1}H-NMR spectrum of Acopolymer-6

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 02182009-09172009/ 600/ CBCOOC2H4N=CNH32-cyclohexene25mer03262009.fid/ fid
2	Title	CBCOOC2H4N=CNH32-cyclohexene25mer03262009
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2009-03-26T06:16:12
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	72
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-908.6
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



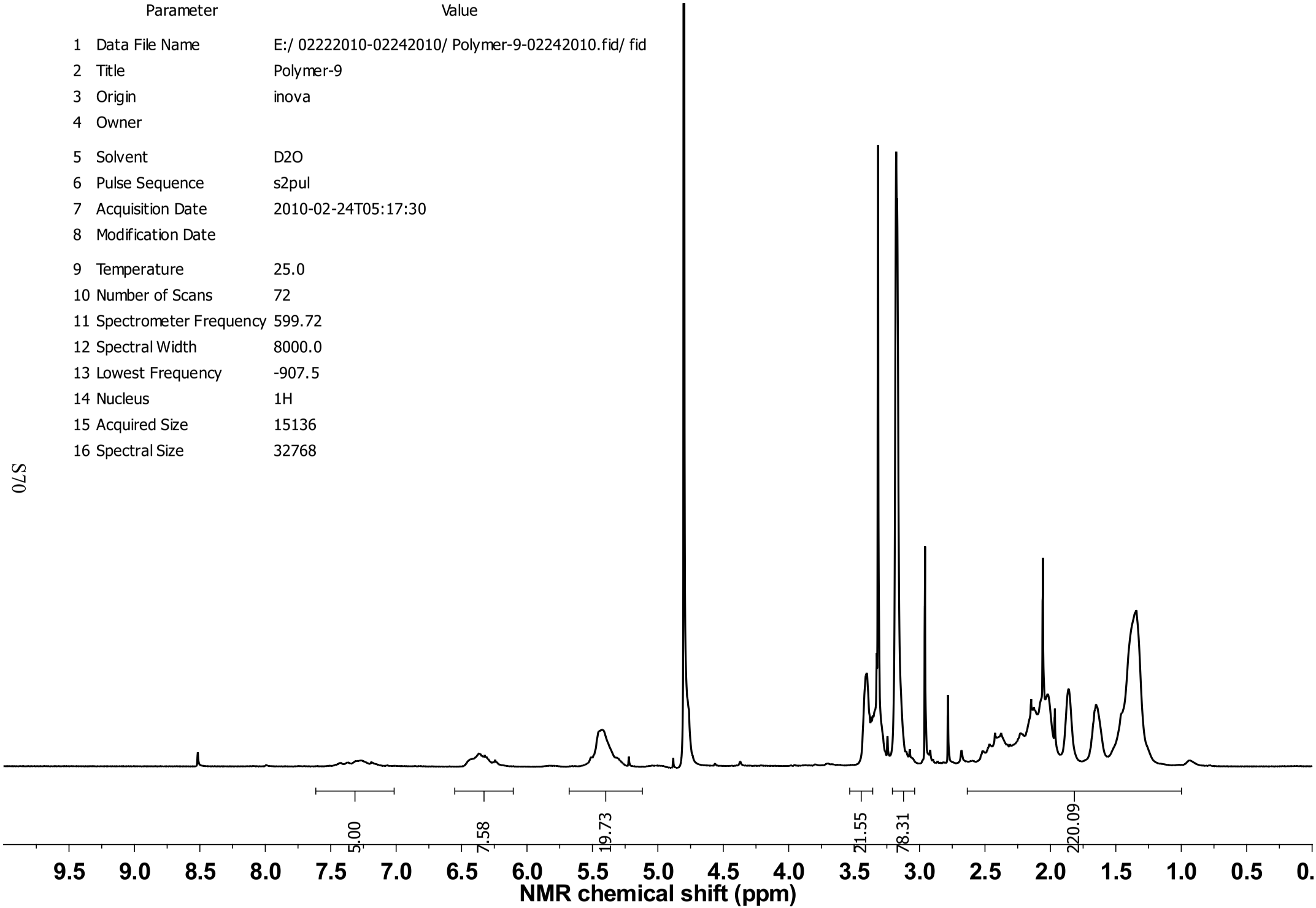
^{1}H-NMR spectrum of Acopolymer-7

	Parameter	Value
1	Data File Name	E:/ 02222010-02242010/ Polymer-8-02242010.fid/ fid
2	Title	Polymer-8
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-24T05:11:20
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	64
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-908.5
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



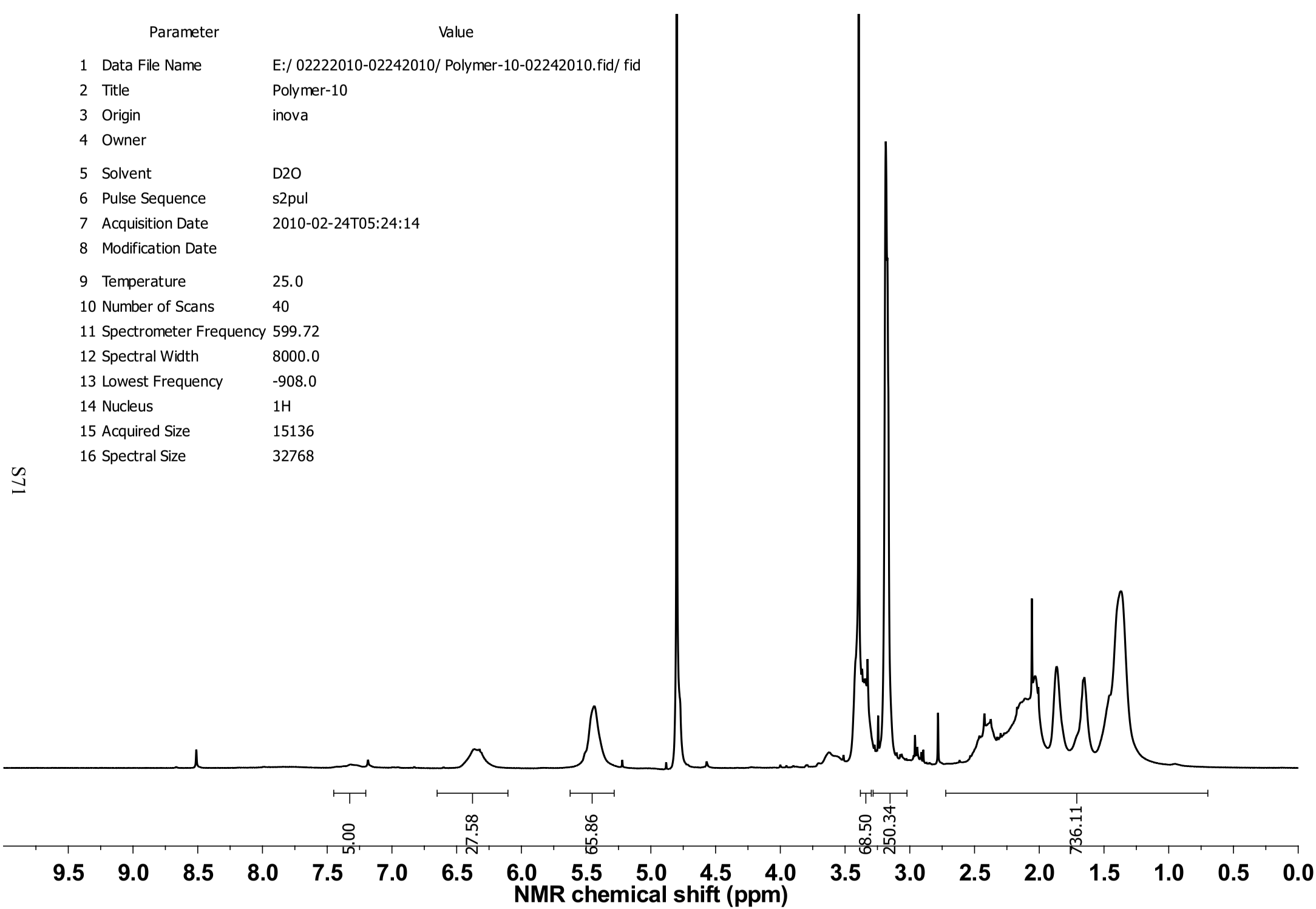
A-110: ^{1}H-NMR spectrum of Rcopolymer-8

	Parameter	Value
1	Data File Name	E:/ 02222010-02242010/ Polymer-9-02242010.fid/ fid
2	Title	Polymer-9
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-24T05:17:30
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	72
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-907.5
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



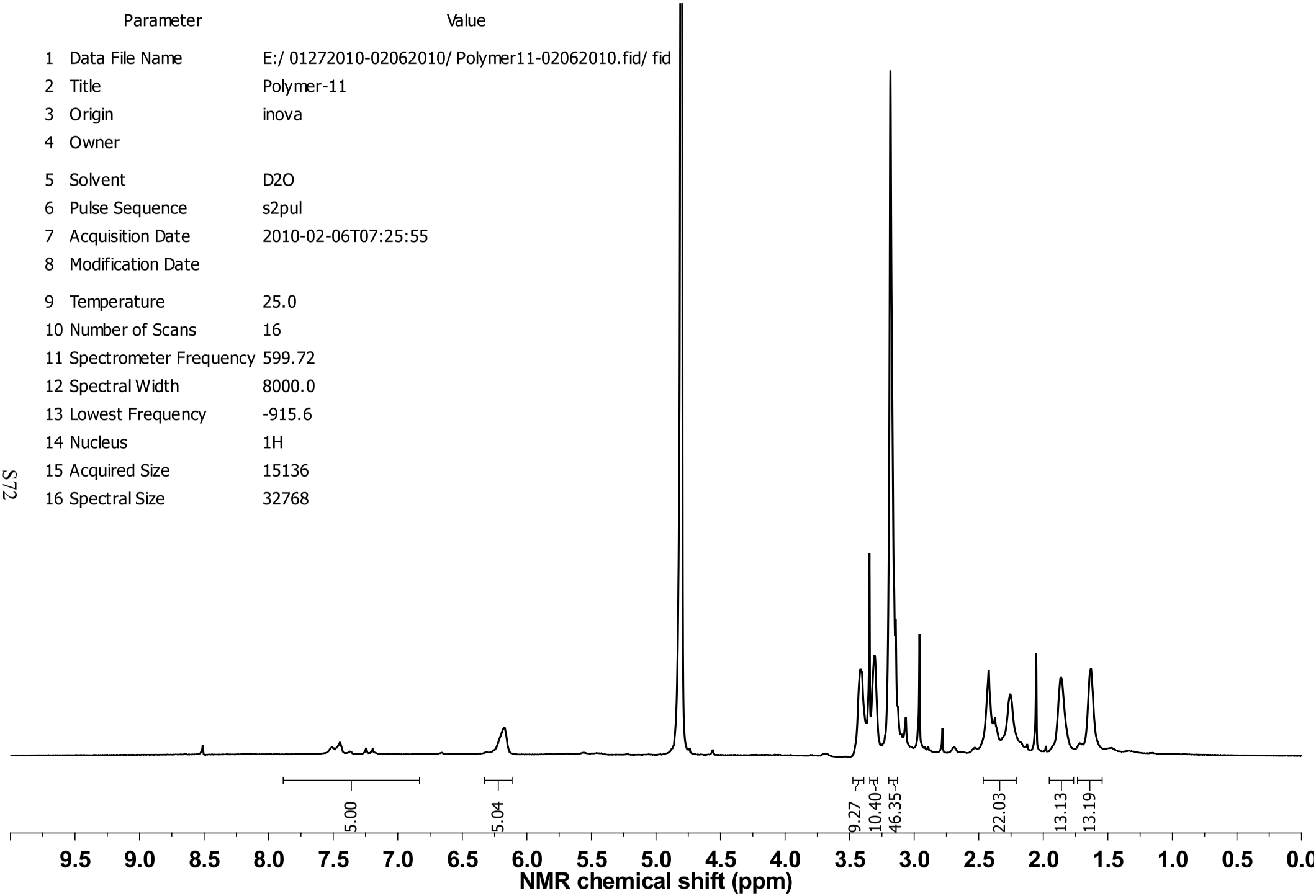
^{1}H-NMR spectrum of Rcopolymer-9

	Parameter	Value
1	Data File Name	E:/ 02222010-02242010/ Polymer-10-02242010.fid/ fid
2	Title	Polymer-10
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-24T05:24:14
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	40
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-908.0
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



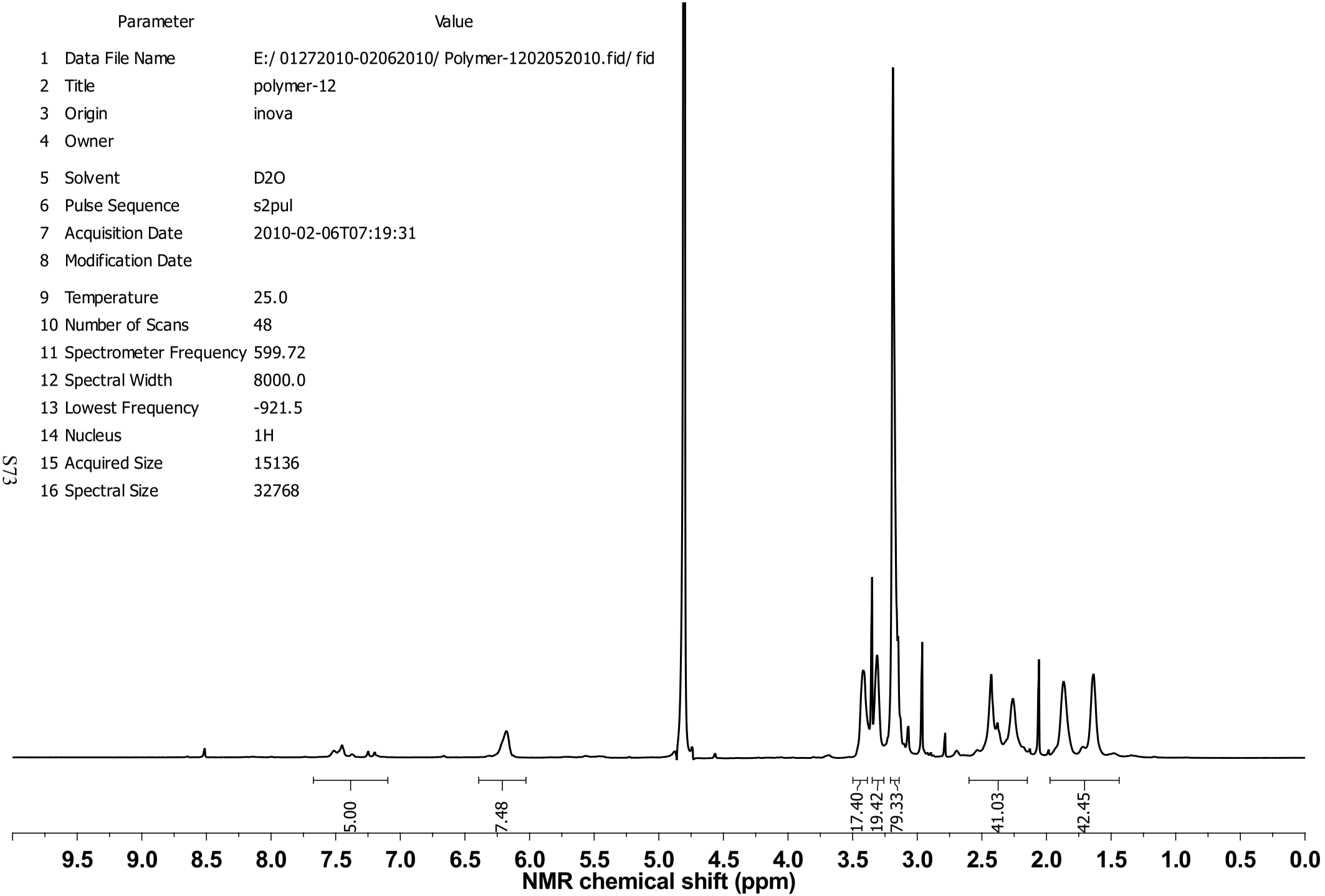
^{1}H-NMR spectrum of Rcopolymer-10

	Parameter	Value
1	Data File Name	E:/ 01272010-02062010/ Polymer11-02062010.fid/ fid
2	Title	Polymer-11
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-06T07:25:55
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	16
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-915.6
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



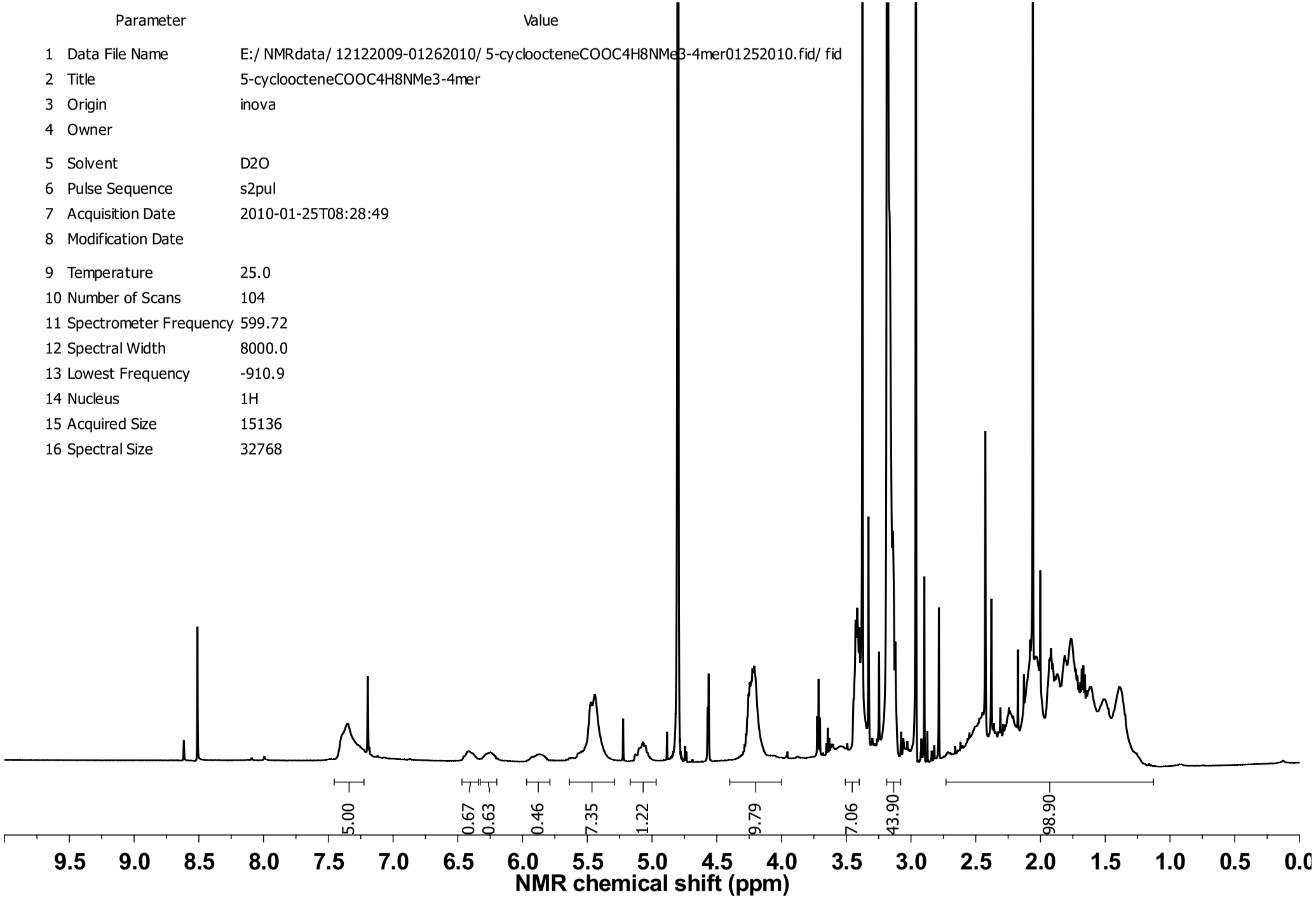
^{1}H-NMR spectrum of Homopolymer-11

	Parameter	Value
1	Data File Name	E:/ 01272010-02062010/ Polymer-1202052010.fid/ fid
2	Title	polymer-12
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-02-06T07:19:31
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	48
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-921.5
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



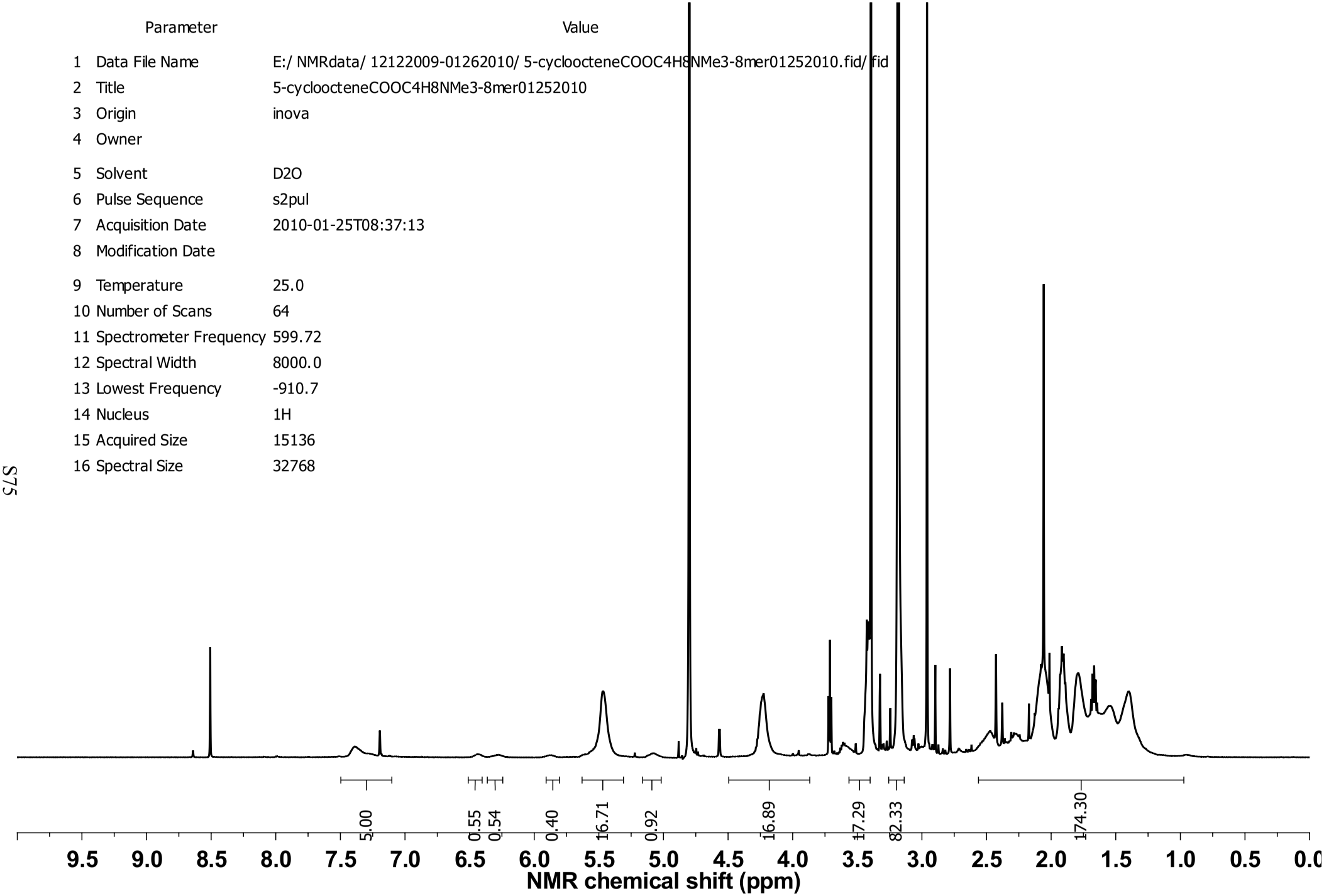
^{1}H-NMR spectrum of Homopolymer-12

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 12122009-01262010/ 5-cyclooctenеCOOC4H8NMe3-4mer01252010.fid/ fid
2	Title	5-cyclooctenеCOOC4H8NMe3-4mer
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-25T08:28:49
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	104
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-910.9
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of Homopolymer-13

	Parameter	Value
1	Data File Name	E:/ NMRdata/ 12122009-01262010/ 5-cyclooctenecOOC4H8NMe3-8mer01252010.fid/ fid
2	Title	5-cyclooctenecOOC4H8NMe3-8mer01252010
3	Origin	inova
4	Owner	
5	Solvent	D2O
6	Pulse Sequence	s2pul
7	Acquisition Date	2010-01-25T08:37:13
8	Modification Date	
9	Temperature	25.0
10	Number of Scans	64
11	Spectrometer Frequency	599.72
12	Spectral Width	8000.0
13	Lowest Frequency	-910.7
14	Nucleus	1H
15	Acquired Size	15136
16	Spectral Size	32768



^{1}H-NMR spectrum of Homopolymer-14