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Supplementary Information

**Mn-mediated Oxidative Radical Cyclization of 2-(azidomethyl)phenyl isocyanides with Carbazate:
Access to Quinazoline-2-Carboxylate**

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1. Experimental Information.

A. Genaral Experimental Procedure to Prepare N-formyl Derivatives¹⁶

To the stirred solution of (2-aminophenyl)methanol (1.0 g, 6.53 mmol) in dry tetrahydrofuran (10 mL) was added ethyl formate (4 mL, 52.28 mmol, 8.0 eq) at room temperature, and the mixture was stirred for 5 min. NaH (0.65 g, 16.33 mmol, 2.5 eq) was added in portions at same temperature. After 1 h, the resulting mixture was slowly poured in to ice water. The aqueous phase was extracted with ethyl acetate (3 x 20 mL), the combined organic layers were washed with brine, and dried over anhydrous Na₂SO₄, and evaporated under reduced pressure. The crude product could not be isolated as pure product due to the same R_f of starting material and products in most of the common solvent combinations. Hence, the impure products was used for next step without further purification.

B. Genaral Experiimental Procedure to Prepare O-methanesulfonate Derivatives¹⁷

To the stirred solution of N-(2-(hydroxymethyl)phenyl)formamide (1.1 g, 6.508 mmol) in dichloromethane (30 mL) at 0 °C was added triethylamine (1.87 mL, 13.01 mmol, 2 eq), and methane sulphonyl chloride (0.75 mL, 9.761 mmol, 1.5 eq) was added drop wise at same temperature. The resulting solution was stirred for 2 h at room temperature. After the completion of reaction (monitored by TLC). The reaction mixture was quenched with cold water. The aqueous phase was extracted with dichloromethane (3 x 20 mL), the combined organic layers were washed with brine, and dried over anhydrous Na₂SO₄, and evaporated under reduced pressure. The crude products could not be isolated as pure product due to the same R_f of starting material and products in most of the common solvent combinations. Hence, the impure products was used for next step without further purification and ¹³C NMR were not recorded.

C. Genaral Experiimental Procedure to Prepare Azide Derivatives¹⁷

To the stirred solution of 2-formamido-5-methoxybenzyl methanesulfonate (1.0 g, 3.862 mmol) in DMF (10 mL) at 0 °C was added sodium azide (0.49 g, 7.722 mmol, 2 eq). The resulting solution was stirred for 2 h at room temperature. After the completion of reaction (monitored by TLC).

The reaction mixture was quenched with cold water. The aqueous phase was extracted with ethyl acetate (3 x 20 mL), the combined organic layers were washed with brine, and dried over anhydrous Na₂SO₄, and evaporated under reduced pressure. The crude was purified by flash column chromatography on silica gel using ethyl acetate: n-hexane (40: 60) as an eluent. The products were not very pure, the impure products was taken for next step.

D. Genaral Experiimental Procedure to Prepare Isocyanide Derivatives^{11, 16}

To the stirred solution of N-(2-(azidomethyl)phenyl)formamide (0.7 g, 3.97 mmol) in tetrahydrofuron (10 mL) at 0 °C was added triethyl amine (1.72 mL, 11.93 mmol, 3 eq), the mixture was stirred for 5 min. phosphorus oxychloride (POCl₃) (0.58 mL, 5.96 mmol, 1.5 eq) was added drop wise at same temperature. The resulting solution was stirred for 2 h at room temperature. After the completion of reaction (monitored by TLC). The mixture was quenched with saturated NaHCO₃ solution. The aqueous phase was extracted with ethyl acetate (3 x 20 mL), the combined organic layers were washed with brine, and dried over anhydrous Na₂SO₄, and evaporated under reduced pressure. The crude was purified by flash column chromatography on silica gel using ethyl acetate: n-hexane (10: 90) as an eluent

2. Crystal structural data for compound 3g (CCDC 1911289)

Bond precision: C-C = 0.0030 Å Wavelength: 0.71073

Cell: a= 10.8098 (10) b= 3.9798 (4) c= 24.25 (2)

alpha= 90 beta= 92.803 (9) gamma= 90

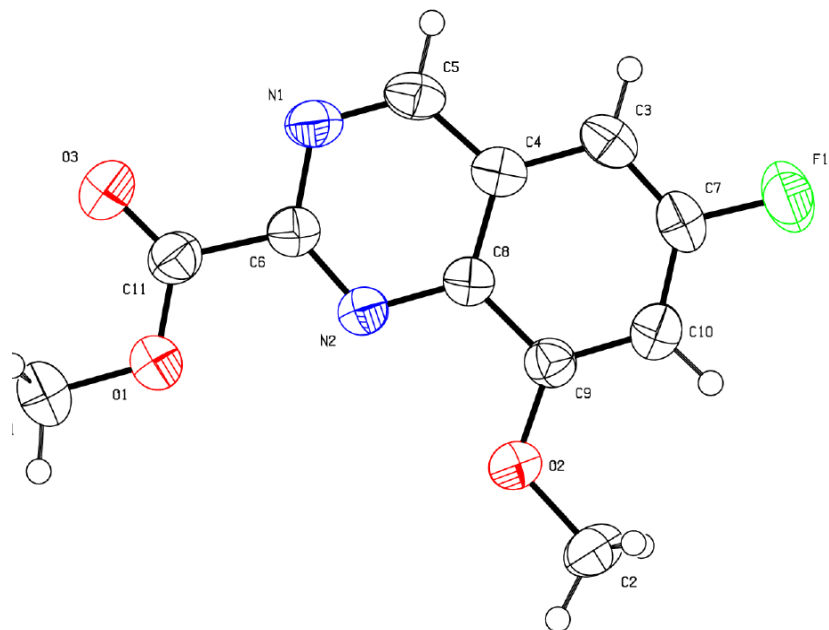
Temperature: 296

	Calculated
Volume	1041.77(17)
Space group	P 21/n
Hall group	-P 2yn
Moiety formula	C11 H9 F N2 O3

Sum formula	C11 H9 F N2 O3
Mr	236.20
Dx, g cm-3	1.506
Z	4
Mu (mm-1)	0.123
F000	488.0
F000'	488.30
h, k, lmax	14, 5, 31
Nref	2380

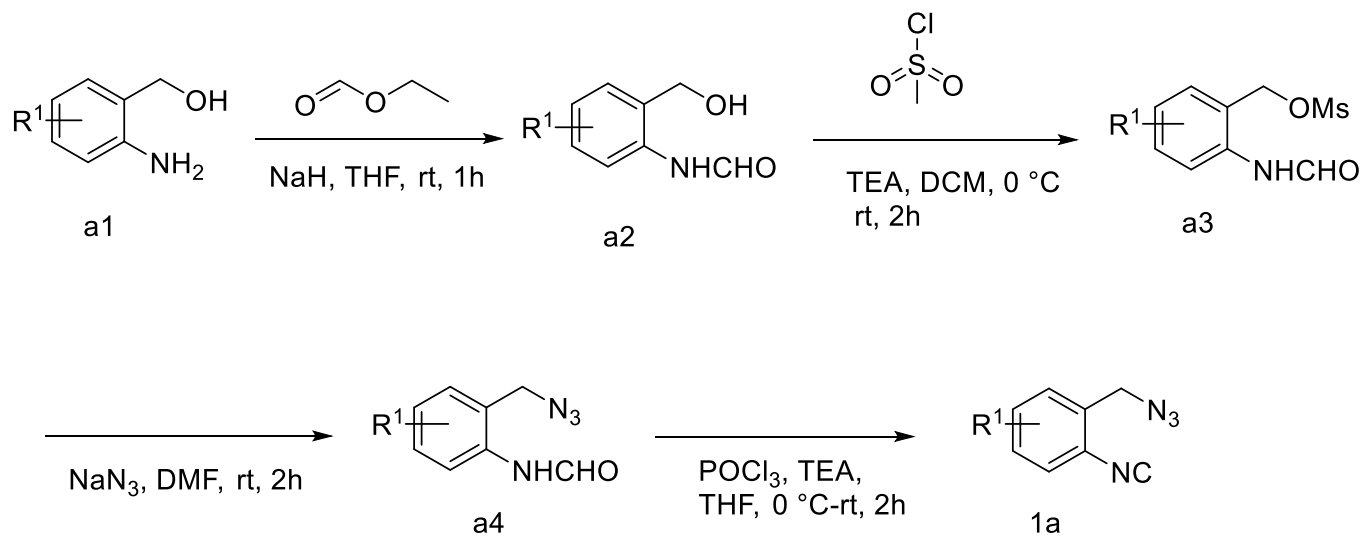
Data completeness= 0.997 Theta (max)= 27.482
 R (reflections) = 0.0597 (1575) wR2 (reflections) = 0.1449 (2374)
 S = 1.070 Npar = 154

ORTEP diagram for compound 3g (50% ellipsoid probability)



3. Reaction Schemes for Preparation of Substrates and Products

Scheme 1. General Synthetic route for the Preparation of Starting Materials



4. Characterization data for all isolated products

N-(2-(hydroxymethyl)-4-methoxyphenyl) formamide (b2): Following the general procedure A. Pale-yellow solid (1.1 g crude) R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.32 (s, 1H), 8.25 - 8.20 (m, 1H), 7.50 (d, J = 8.8 Hz, 1H), 6.99 - 6.96 (m, 1H), 6.78 - 6.76 (m, 1H), 5.23 (s, 1H), 4.46 - 4.42 (m, 2H), 3.71 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{11}\text{NO}_3$ $[\text{M} + \text{H}]^+$ 181.07 found 182.1

N-(2-(hydroxymethyl)-3-methoxyphenyl) formamide (c2): Following the general procedure A. Pale-yellow solid (1.02 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.32 (s, 1H), 8.25 - 8.20 (m, 1H), 7.50 (d, J = 8.8 Hz, 1H), 6.99 - 6.96 (m, 1H), 6.78 - 6.76 (m, 1H), 5.23 (s, 1H), 4.46 - 4.42 (m, 2H), 3.71 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{11}\text{NO}_3$ $[\text{M} + \text{H}]^+$ 181.07 found 182.1

N-(2-(hydroxymethyl)-6-methylphenyl) formamide (d2): Following the general procedure A. Yellow solid (1.1 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.35 (s, 1H), 8.21 (s, 1H), 7.28 (d, J = 7.2 Hz, 1H), 7.18 - 7.12 (m, 2H), 5.05 - 5.04 (m, 1H), 4.40 - 4.38 (m, 2H), 2.13 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{11}\text{NO}_2$ $[\text{M} + \text{H}]^+$ 165.07 found 166.1.

N-(2-(hydroxymethyl)-3-methylphenyl) formamide (e2): Following the general procedure A. Yellow solid (1.0 g, crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): 8.41 (s, 1H), 7.96 (d, J = 8.0 Hz, 1H), 7.15 - 7.02 (m, 3H), 4.69 (s, 2H), 2.32 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{11}\text{NO}_2$ $[\text{M} + \text{H}]^+$ 165.07 found 166.1.

N-(3-fluoro-2-(hydroxymethyl)phenyl)formamide (f2): Following the general procedure A. Pale-yellow solid (0.98 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.58 (s, 1H), 8.25 (s, 1H), 7.30 (2, 1H), 7.14 – 7.12 (m, 1H), 5.24 (s, 1H), 4.42 – 4.41 (m, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_8\text{FNO}_2$ $[\text{M} + \text{H}]^+$ 169.05 found 170.0.

N-(4-fluoro-2-(hydroxymethyl) phenyl) formamide (g2): Following the general procedure A. Pale-yellow solid (1.0 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): 8.46 (s, 1H), 7.96 (bs, 1H), 7.17 – 7.11 (m, 3H), 5.20 (s, 1H), 4.74 (s, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_8\text{FNO}_2$ $[\text{M} + \text{H}]^+$ 169.05 found 170.0.

N-(3-chloro-2-(hydroxymethyl)phenyl)formamide (h2): Following the general procedure A. Pale-yellow solid (1.0 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): δ 9.70 (s, 1H), 8.24 (s, 1H), 7.46 (d, J = 7.6 Hz, 1H), 7.39 (d, J = 7.6 Hz, 1H), 7.31 (t, J = 7.6 Hz, 2H). 5.26 (t, J = 5.6 Hz, 1H), 4.40 (d, J = 5.6 Hz, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_8\text{ClNO}_2$ $[\text{M} + \text{H}]^+$ 185.0 found 185.9.

N-(5-chloro-2-(hydroxymethyl)phenyl)formamide (i2): Following the general procedure A. Yellow solid (1.1 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): δ 9.61 (s, 1H), 8.31 (s, 1H), 7.96 (s, 1H), 7.38 (d, J = 8.4 Hz, 1H), 7.20 - 7.24 (m, 1H), 5.36 (brs, 1H), 4.47 (s, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_8\text{ClNO}_2$ $[\text{M} + \text{H}]^+$ 185.0 found 185.9.

N-(3-bromo-2-(hydroxymethyl)phenyl)formamide (j2): Following the general procedure A. Yellow solid (0.9 g crude), 78%). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): 8.46 (s, 1H), 8.09 (d, $J = 8.0$ Hz, 1H), 7.41 - 7.18 (m, 4H), 4.99 (s, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_8\text{BrNO}_2$ $[\text{M} + \text{H}]^+$ 228.97 found 230.0.

N-(2-bromo-6-(hydroxymethyl)phenyl)formamide (k2): Following the general procedure A. Yellow solid (0.95 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ ($\text{DMSO}-d_6$, 400 MHz): 9.38 (s, 1H), 8.23 (s, 1H), 7.59 (d, $J = 8.0$ Hz, 1H), 7.19 - 6.99 (m, 3H), 5.22 (s, 1H), 4.43 - 4.42 (m, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_8\text{BrNO}_2$ $[\text{M} + \text{H}]^+$ 228.97 found 231.8.

N-(4-fluoro-2-(hydroxymethyl)-6-methoxyphenyl)formamide (l2): Following the general procedure A. White solid (0.9 g crude). R_f (70% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ ($\text{DMSO}-d_6$, 400 MHz): 9.23 (s, 1H), 8.13 (s, 1H), 6.90 - 6.80 (m, 2H), 5.21 (s, 1H), 4.31 (s, 2H), 3.75 (d, $J = 7.2$ Hz, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{FNO}_3$ $[\text{M} + \text{H}]^+$ 199.06 found 200.0.

2-Formamido-5-methoxybenzyl methanesulfonate (b3): Following the general procedure B. Yellow solid (0.98 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ ($\text{DMSO}-d_6$, 400 MHz): 9.60 (s, 1H), 8.26 - 8.24 (m, 1H), 7.54 (d, $J = 8.45$ Hz, 1H), 7.06 - 7.03 (m, 1H), 6.91 - 6.89 (m, 1H), 4.76 - 4.71 (m, 2H), 3.73 (s, 4H). **LCMS** (ESI) m/z calcd for $\text{C}_{10}\text{H}_{13}\text{NO}_5\text{S}$ $[\text{M} + \text{H}]^+$ 259.05 found 200.1(demesylated product).

2-Formamido-6-methoxybenzyl methanesulfonate (c3): Following the general procedure B. Yellow solid (0.75 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ ($\text{DMSO}-d_6$, 400 MHz): 9.50 (s, 1H), 8.22 (s, 1H), 7.29 - 7.20 (m, 3H), 4.61 (s, 2H), 3.78 (s, 6H). **LCMS** (ESI) m/z calcd for $\text{C}_{10}\text{H}_{13}\text{NO}_5\text{S}$ $[\text{M} + \text{H}]^+$ 259.05 found 199.9 (demesylated product).

2-Formamido-3-methylbenzyl methanesulfonate (d3): Following the general procedure B. Yellow solid (0.85 g crude, 57%). R_f (30% ethyl acetate/ n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.69 (s, 1H), 8.27 (s, 1H), 7.63 (d, J = 8.0 Hz, 1H), 7.27 - 7.25 (m, 1H), 7.16 - 7.12 (m, 2H), 4.79 - 4.74 (m, 3H), 2.25 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_{10}\text{H}_{13}\text{NO}_4\text{S}$ $[\text{M} + \text{H}]^+$ 243.05 found 184.0 (demesylated product).

2-Formamido-6-methylbenzyl methanesulfonate (e3): Following the general procedure B. Yellow solid (0.75 g crude). R_f (30% ethyl acetate/ n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.69 (s, 1H), 8.27 (s, 1H), 7.63 (d, J = 8.0 Hz, 1H), 7.27 - 7.25 (m, 1H), 7.16 - 7.12 (m, 2H), 4.79 - 4.74 (m, 3H), 2.25 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_{10}\text{H}_{13}\text{NO}_4\text{S}$ $[\text{M} + \text{H}]^+$ 243.05 found 184.0 (demesylated product).

2-Fluoro-6-formamidobenzyl methanesulfonate (f3): Following the general procedure B. Yellow solid (0.75 g crude). R_f (30% ethyl acetate/ n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.84 (s, 1H), 8.30 (s, 2H), 7.34 - 7.26 (m, 4H), 4.80 (s, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{FNO}_4\text{S}$ $[\text{M} + \text{H}]^+$ 247.03 found 188.0, 152.0 (demesylated product).

5-Fluoro-2-formamidobenzyl methanesulfonate (g3): Following the general procedure B. Yellow solid (0.8 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): 8.47 (s, 1H), 7.85 - 7.82 (m, 2H), 7.43 (bs, 1H), 7.21 - 7.06 (m, 2H), 4.56 (s, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{FNO}_4\text{S}$ $[\text{M} + \text{H}]^+$ 247.03 found 188.0, 246.0 (demesylated product).

2-Chloro-6-formamidobenzyl methanesulfonate (h3): Following the general procedure B. Yellow solid (0.7 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.78 (s, 1H), 8.32 (s, 1H), 8.01 (s, 1H), 7.80 (d, J = 8.0 Hz, 1H), 7.45

(d, $J = 6.8$ Hz, 1H), 4.80 (s, 2H), 3.33 (s, 3H). LCMS (ESI) m/z calcd for $C_9H_{10}ClNO_4S$ $[M + H]^+$ 263.0 found 170.0, 204.0 (demesylated product).

4-Chloro-2-formamidobenzyl methanesulfonate (i3): Following the general procedure B. Yellow solid (0.8 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. 1H NMR (DMSO- d_6 , 400 MHz): 9.93 (s, 1H), 8.34 (s, 1H), 8.01 (s, 1H), 7.47 (d, $J = 8.4$ Hz, 1H), 7.25 - 7.20 (m, 1H), 4.84 – 4.80 (m, 3H). LCMS (ESI) m/z calcd for $C_9H_{10}ClNO_4S$ $[M + H]^+$ 263.0 found 204.0, 206.0 (demesylated product).

2-Bromo-6-formamidobenzyl methanesulfonate (j3): Following the general procedure B. Yellow solid (0.65 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. 1H NMR (DMSO- d_6 , 400 MHz): 9.99 (s, 1H), 8.34 - 8.32 (m, 1H), 7.84 – 7.82 (m, 1H), 7.54 – 7.48 (m, 1H), 7.44 – 7.27 (m, 1H), 7.52 (d, $J = 7.6$ Hz, 1H), 7.34 - 7.30 (m, 1H), 5.14 (s, 2H), 3.20 (s, 3H). LCMS (ESI) m/z calcd for $C_9H_{10}BrNO_4S$ $[M + H]^+$ 306.95 found 229.0 (demesylated product).

3-Bromo-2-formamidobenzyl methanesulfonate (k3): Following the general procedure B. Yellow solid (0.7 g crude). R_f (30% ethyl acetate/n-hexane) = 0.3. 1H NMR (DMSO- d_6 , 400 MHz): 9.99 (s, 1H), 8.34 – 8.32 (m, 1H), 7.84 – 7.79 (m, 1H), 7.54 – 7.44 (m, 1H), 7.36 - 7.30 (m, 1H), 4.94 (s, 2H), 4.89 – 4.80 (m, 3H). LCMS (ESI) m/z calcd for $C_9H_{10}BrNO_4S$ $[M + H]^+$ 306.95 found 229.1 (demesylated product).

N-(2-(azidomethyl)-4-methoxyphenyl) formamide (b4): Following the general procedure C. Pale-yellow solid (0.75 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.49 (s, 1H), 8.20 (s, 1H), 7.30 - 7.26 (m, 1H), 7.13 - 6.98 (m, 2H), 4.31 (s, 1H), 3.78 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{N}_4\text{O}_2$ $[\text{M} + \text{H}]^+$ 206.08 found 179.0 ($-\text{N}_2$).

N-(2-(azidomethyl)-3-methoxyphenyl) formamide (c4): Following the general procedure C. Pale-yellow solid (0.7 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.49 (s, 1H), 8.20 (s, 1H), 7.30 - 7.26 (m, 1H), 7.13 - 6.98 (m, 2H), 4.31 (s, 1H), 3.78 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{N}_4\text{O}_2$ $[\text{M} + \text{H}]^+$ 206.08 found 179.0 ($-\text{N}_2$).

N-(2-(azidomethyl)-6-methylphenyl)formamide (d4): Following the general procedure C. Pale-yellow solid (0.7 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.59 (s, 1H), 8.25 (s, 1H), 7.29 - 7.20 (m, 3H), 4.35 (s, 2H), 2.16 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{N}_4\text{O}$ $[\text{M} + \text{H}]^+$ 190.08 found 163.1 ($-\text{N}_2$).

N-(2-(azidomethyl)-3-methylphenyl) formamide (e4): Following the general procedure C. Pale-yellow solid. Isolated yield: (0.7 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.80 (s, 1H), 8.27 (s, 1H), 7.52 (d, $J = 8.0$ Hz, 1H), 7.27 - 7.20 (m, 1H), 7.14 - 7.06 (m, 1H), 4.48 (s, 2H), 2.34 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_{10}\text{N}_4\text{O}$ $[\text{M} + \text{H}]^+$ 190.08 found 163.1 ($-\text{N}_2$).

N-(2-(azidomethyl)-3-fluorophenyl) formamide (f4): Following the general procedure C. Pellow solid (0.6 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.83 (s, 1H), 8.28 (s, 1H), 7.36 - 7.26 (m, 3H), 4.42 (s, 2H). **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_7\text{FN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 194.06 found 167.1 ($-\text{N}_2$).

N-(2-(azidomethyl)-4-fluorophenyl)formamide (g4): Following the general procedure C. Yellow solid (0.62 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. ^1H NMR (DMSO- d_6 , 400 MHz): 9.82 – 9.76 (m, 1H), 8.26 (s, 1H), 7.71 – 7.70 (m, 1H), 7.34 – 7.16 (m, 2H), 4.47 (s, 2H). LCMS (ESI) m/z calcd for $\text{C}_8\text{H}_7\text{FN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 194.06 found 167.1 ($-\text{N}_2$).

N-(2-(azidomethyl)-3-chlorophenyl) formamide (h4): Following the general procedure C. Pale-yellow solid (0.7 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. ^1H NMR (DMSO- d_6 , 400 MHz): 9.83 (s, 1H), 8.28 (s, 1H), 7.36 – 7.26 (m, 3H), 4.42 (s, 2H). LCMS (ESI) m/z calcd for $\text{C}_8\text{H}_7\text{ClN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 210.03 found 183.1 ($-\text{N}_2$).

N-(2-(azidomethyl)-5-chlorophenyl) formamide (i4): Following the general procedure C. Pale-yellow solid (0.75 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. ^1H NMR (CDCl_3 , 400 MHz): 8.42 (s, 1H), 7.50 (d, $J = 8.0$ Hz, 1H), 7.37 – 7.33 (m, 1H), 7.31 – 7.25 (m, 2H), 4.40 (s, 2H). LCMS (ESI) m/z calcd for $\text{C}_8\text{H}_7\text{ClN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 210.03 found 183.1 ($-\text{N}_2$).

N-(2-(azidomethyl)-3-bromophenyl) formamide (j4): Following the general procedure C. Yellow solid (0.60 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. ^1H NMR (DMSO- d_6 , 400 MHz): 9.99 (s, 1H), 8.28 (s, 1H), 7.76 (d, $J = 8.0$ Hz, 1H), 7.61 – 7.28 (m, 2H), 4.62 (s, 2H). LCMS (ESI) m/z calcd for $\text{C}_8\text{H}_7\text{BrN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 253.98 found 229.0 ($-\text{N}_2$).

N-(2-(azidomethyl)-6-bromophenyl) formamide (k4): Following the general procedure C. Yellow solid (0.63 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. ^1H NMR (DMSO- d_6 , 400 MHz): 9.75 (s, 1H), 8.29 (s, 1H), 7.77 (d, $J = 7.6$ Hz, 1H), 7.40 – 7.17 (m, 2H), 4.48 (s, 2H). LCMS (ESI) m/z calcd for $\text{C}_8\text{H}_7\text{BrN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 253.98 found 229.0 ($-\text{N}_2$).

N-(2-(azidomethyl)-4-fluoro-6-methoxyphenyl)formamide (14): Following the general procedure C. White solid (0.6 g crude). R_f (40% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (DMSO- d_6 , 400 MHz): 9.44 (s, 1H), 8.19 (s, 1H), 7.07 - 6.83 (m, 2H), 4.32 (s, 2H), 3.79 (s, 3H). **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_9\text{FN}_4\text{O}_2$ $[\text{M} + \text{H}]^+$ 224.07 found 197.1, 225.1 ($-\text{N}_2$).

1-(Azidomethyl)-2-isocyanobenzene (1a).¹¹ Following the general procedure D. Yellow liquid (0.55 g, 87%). R_f (10% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): δ 7.46 - 7.38 (m, 4H), 4.55 (s, 2H). $^{13}\text{C } \{^1\text{H}\} \text{NMR}$ (CDCl_3 , 100 MHz): δ 168.19, 132.19, 129.82, 129.27, 129.25, 50.89. **LCMS** (ESI) m/z calcd for $\text{C}_8\text{H}_6\text{N}_4$ $[\text{M} + \text{H}]^+$ 158.05 found 131.1 ($-\text{N}_2$).

2-(Azidomethyl)-1-isocyano-4-methoxybenzene (1b): Following the general procedure D. Yellow liquid (0.56 g, 87%). R_f (10% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): δ 7.37 - 7.34 (m, 1H), 7.02 - 6.94 (m, 2H), 4.50 (s, 2H), 3.92 (s, 3H). $^{13}\text{C } \{^1\text{H}\} \text{NMR}$ (CDCl_3 , 100 MHz): δ 171.77, 154.44, 133.62, 130.18, 120.32, 112.45, 56.24, 50.90. **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_8\text{N}_4\text{O}$ $[\text{M} + \text{H}]^+$ 188.06 found 161.1 ($-\text{N}_2$).

2-(Azidomethyl)-1-isocyano-3-methoxybenzene (1c): Following the general procedure D. Yellow liquid (0.52 g, 81%). R_f (10% ethyl acetate/n-hexane) = 0.3. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): δ 7.37 (t, J = 8.0 Hz, 1H), 7.02 - 6.94 (m, 2H), 4.51 (s, 2H), 3.94 (s, 3H). $^{13}\text{C } \{^1\text{H}\} \text{NMR}$ (CDCl_3 , 100 MHz): δ 171.77, 155.44, 133.62, 130.18, 120.32, 111.45, 56.24, 50.90. **LCMS** (ESI) m/z calcd for $\text{C}_9\text{H}_8\text{N}_4\text{O}$ $[\text{M} + \text{H}]^+$ 188.06 found 161.1 ($-\text{N}_2$).

1-(Azidomethyl)-2-isocyano-3-methylbenzene (1d): Following the general procedure D. Yellow liquid (0.5g, 71%). R_f (10% ethyl acetate/n-hexane) = 0.2. $^1\text{H NMR}$ (CDCl_3 , 400 MHz): δ 7.28 - 7.25 (m, 3H), 4.55 (s, 2H), 2.43 (s, 3H). $^{13}\text{C } \{^1\text{H}\} \text{NMR}$ (CDCl_3 ,

100 MHz): δ 167.69, 139.39, 131.74, 130.00, 129.35, 124.99, 47.65, 19.41. **LCMS** (ESI) m/z calcd for $C_9H_8N_4$ $[M + H]^+$ 172.07 found 145.1 ($-N_2$).

2-(Azidomethyl)-1-isocyano-3-methylbenzene (1e): Following the general procedure D. Yellow liquid (0.5g, 78%). R_f (10% ethyl acetate/n-hexane) = 0.2. 1H NMR ($CDCl_3$, 400 MHz): δ 7.28 - 7.25 (m, 3H), 4.55 (s, 2H), 2.43 (s, 3H). ^{13}C $\{^1H\}$ NMR ($CDCl_3$, 100 MHz): δ 167.55, 139.39, 131.76, 129.99, 129.37, 125.01, 47.63, 19.45. **LCMS** (ESI) m/z calcd for $C_9H_8N_4$ $[M + H]^+$ 172.07 found 145.1 ($-N_2$).

2-(Azidomethyl)-1-fluoro-3-isocyanobenzene (1f): Following the general procedure D. Yellow liquid (0.48 g, 75%). R_f (10% ethyl acetate/n-hexane) = 0.2. 1H NMR ($CDCl_3$, 400 MHz): δ 7.45 - 7.39 (m, 1H), 7.26 - 7.17 (m, 2H), 4.55 (s, 2H). ^{13}C $\{^1H\}$ NMR ($CDCl_3$, 100 MHz): δ 174.31, 159.05, 156.48, 134.50, 130.76, 124.29, 116.42, 50.53. ^{19}F NMR (376 MHz, $CDCl_3$): -110.38 – -110.39 (d, 1F). **LCMS** (ESI) m/z calcd for $C_8H_5FN_4$ $[M + H]^+$ 176.04 found 149.1 ($-N_2$).

2-(Azidomethyl)-4-fluoro-1-isocyanobenzene (1g): Following the general procedure D. Yellow liquid (0.5 g, 78%). R_f (10% ethyl acetate/n-hexane) = 0.2. 1H NMR ($CDCl_3$, 400 MHz): δ 7.44 – 7.41 (m, 1H), 7.26 – 7.20 (s, 1H), 7.09 – 7.05 (m, 1H), 4.56 (s, 2H). ^{13}C $\{^1H\}$ NMR ($CDCl_3$, 100 MHz): δ 168.54, 163.66, 161.14, 135.10, 129.03, 116.09, 50.57. ^{19}F NMR (376 MHz, $DMSO-d_6$): -121.12 (t, 1F). **LCMS** (ESI) m/z calcd for $C_8H_5FN_4$ $[M + H]^+$ 176.04 found 149.1 ($-N_2$).

2-(Azidomethyl)-1-chloro-3-isocyanobenzene (1h): Following the general procedure D. Yellow liquid. Isolated yield: (0.49 g, 76%). R_f (10% ethyl acetate/n-hexane) = 0.3. 1H NMR ($CDCl_3$, 400 MHz): δ 7.48 (s, 1H), 7.38 (s, 2H), 4.57 (s, 2H). ^{13}C $\{^1H\}$ NMR

(CDCl₃, 100 MHz): δ 173.37, 134.40, 131.66, 130.07, 129.75, 127.11, 51.15. **LCMS** (ESI) m/z calcd for C₈H₅ClN₄ [M + H]⁺ 192.02 found 165.0 (-N₂).

1-(Azidomethyl)-4-chloro-2-isocyanobenzene (1i): Following the general procedure D. Yellow liquid (0.51 g, 80%). R_f (10% ethyl acetate/n-hexane) = 0.3. ¹H NMR (CDCl₃, 400 MHz): δ 7.45 – 7.40 (m, 1H), 7.27 – 7.17 (m, 2H), 4.56 (s, 2H). ¹³C{¹H} NMR (CDCl₃, 100 MHz): δ 174.41, 159.06, 156.49, 134.50, 130.67, 124.28, 116, 40, 50.52. **LCMS** (ESI) m/z calcd for C₈H₅ClN₄ [M + H]⁺ 192.02 found 165.0 (-N₂).

2-(Azidomethyl)-1-bromo-3-isocyanobenzene (1j): Following the general procedure D. Yellow liquid (0.48 g, 73%). R_f (10% ethyl acetate/n-hexane) = 0.2. ¹H NMR (CDCl₃, 400 MHz): δ 7.69 (d, *J* = 8.0 Hz, 1H), 7.42 (d, *J* = 9.2 Hz, 1H), 7.28 (d, *J* = 8.0 Hz, 1H), 4.64 (s, 2H). ¹³C{¹H} NMR (CDCl₃, 100 MHz): δ 169.66, 134.39, 132.08, 130.81, 129.81, 126.63, 125.97, 50.77. **LCMS** (ESI) m/z calcd for C₈H₅BrN₄ [M + H]⁺ 235.96 found 209.0 (-N₂).

1-(azidomethyl)-3-bromo-2-isocyanobenzene (1k): Following the general procedure D. Yellow liquid (0.46 g, 70%). R_f (10% ethyl acetate/n-hexane) = 0.2. ¹H NMR (CDCl₃, 400 MHz): δ 7.69 (d, *J* = 8.0 Hz, 1H), 7.42 (d, *J* = 9.6 Hz, 1H), 7.28 – 7.26 (m, 1H), 4.70 (s, 2H). ¹³C{¹H} NMR (CDCl₃, 100 MHz): δ 169.67, 134.39, 132.08, 130.59, 126.63, 125.97, 50.48. **LCMS** (ESI) m/z calcd for C₈H₅BrN₄ [M + H]⁺ 235.96 found 210.9, 208.9 (-N₂).

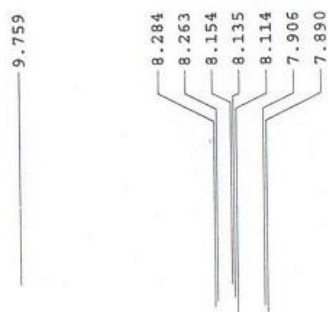
1-(Azidomethyl)-5-fluoro-2-isocyano-3-methoxybenzene (1l): Following the general procedure D. Yellow liquid (0.46, 70%). R_f (10% ethyl acetate/n-hexane) = 0.2. ¹H NMR (CDCl₃, 400 MHz): δ 6.76 (d, *J* = 8.0 Hz, 1H), 6.66 (d, *J* = 9.2 Hz, 1H), 4.52 (s, 2H),

3.93 (s, 3H). ^{13}C $\{^1\text{H}\}$ NMR (CDCl_3 , 100 MHz): δ 171.84, 164.22, 161.70, 156.94, 135.69, 107.11, 99.88, 56.58, 50.62. LCMS (ESI) m/z calcd for $\text{C}_9\text{H}_7\text{FN}_4\text{O}$ $[\text{M} + \text{H}]^+$ 206.06 found 179.1 ($-\text{N}_2$).

1-(1-Azidoethyl)-2-isocyanobenzene (1m).¹¹ following the general procedure D. Pale-green oil (0.42, 65%. R_f (10% ethyl acetate/n-hexane) = 0.2. ^1H NMR (CDCl_3 , 500MHz): δ 7.52 (d, J = 7.6 Hz, 1H), 7.46 (d, J = 6.15 Hz, 1H), 7.41 (d, J = 7.6 Hz, 1H), 7.35 (d, J = 7.6 Hz, 1H), 5.09 (q, J = 6.9 Hz, 1H), 1.57 (s, 3H). $^{13}\text{C}\{^1\text{H}\}$ NMR (CDCl_3 , 100 MHz): δ 169.66, 134.39, 132.08, 130.81, 129.81, 126.63, 125.97, 50.77. HRMS (ESI-TOF) (m/z): $[\text{M} + \text{Na}]^+$ Calcd for $\text{C}_9\text{H}_8\text{N}_4$ 173.0827; Found 173.0806.

5. Copies of ^1H and ^{13}C NMR for Final products

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmsc
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Apr 18 2018
 TIME : 18:19:18

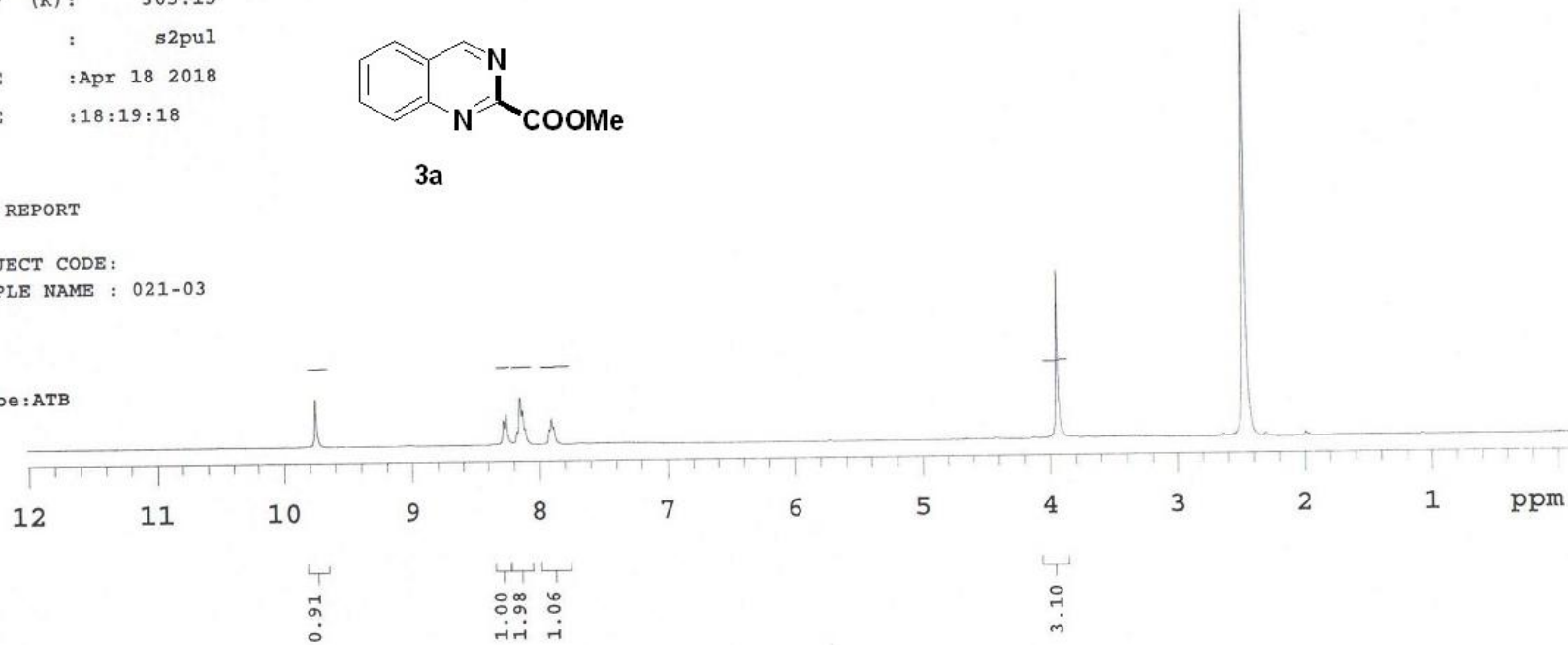


3a

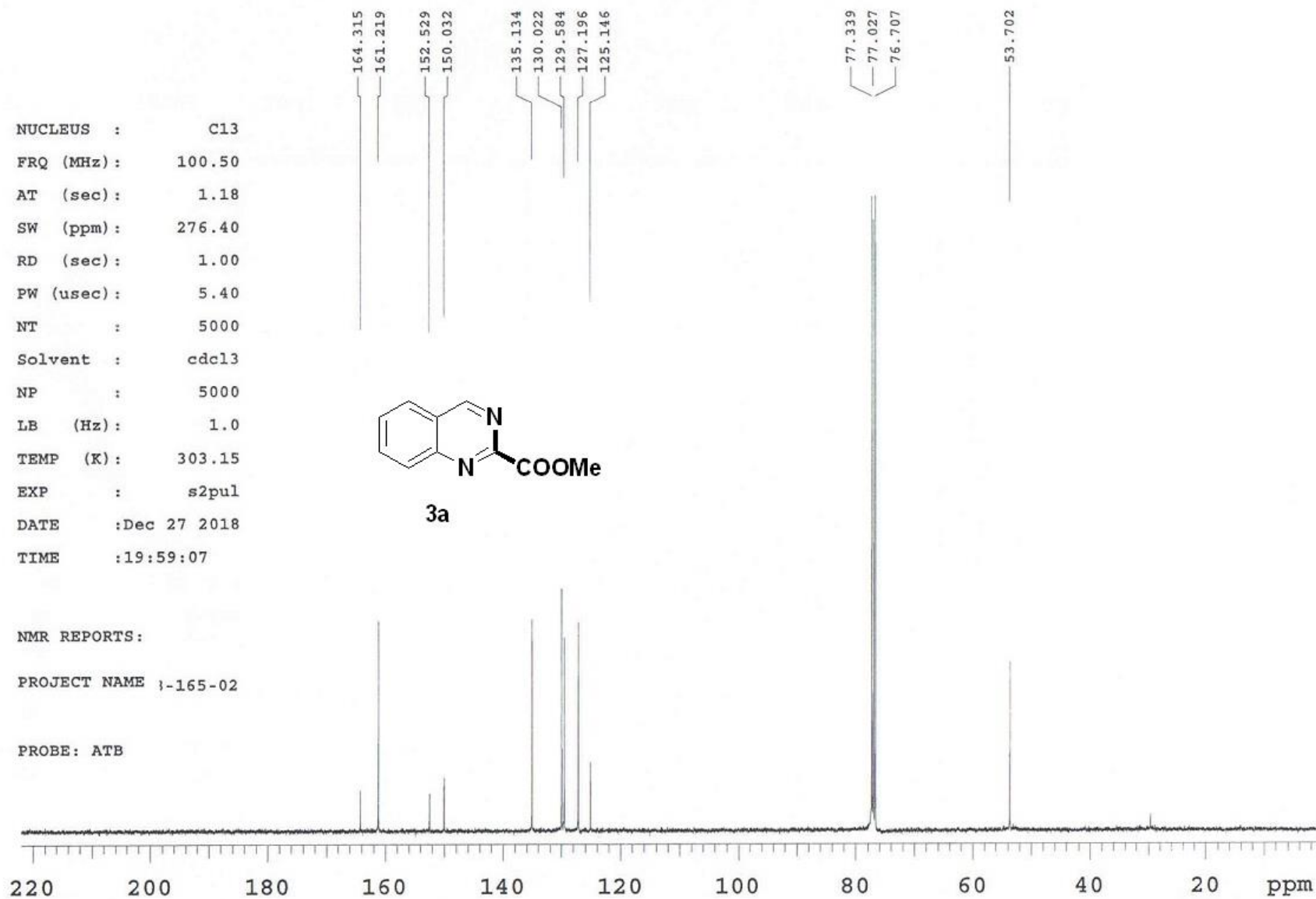
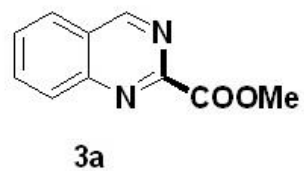
NMR REPORT

PROJECT CODE:
 SAMPLE NAME : 021-03

Probe: ATB



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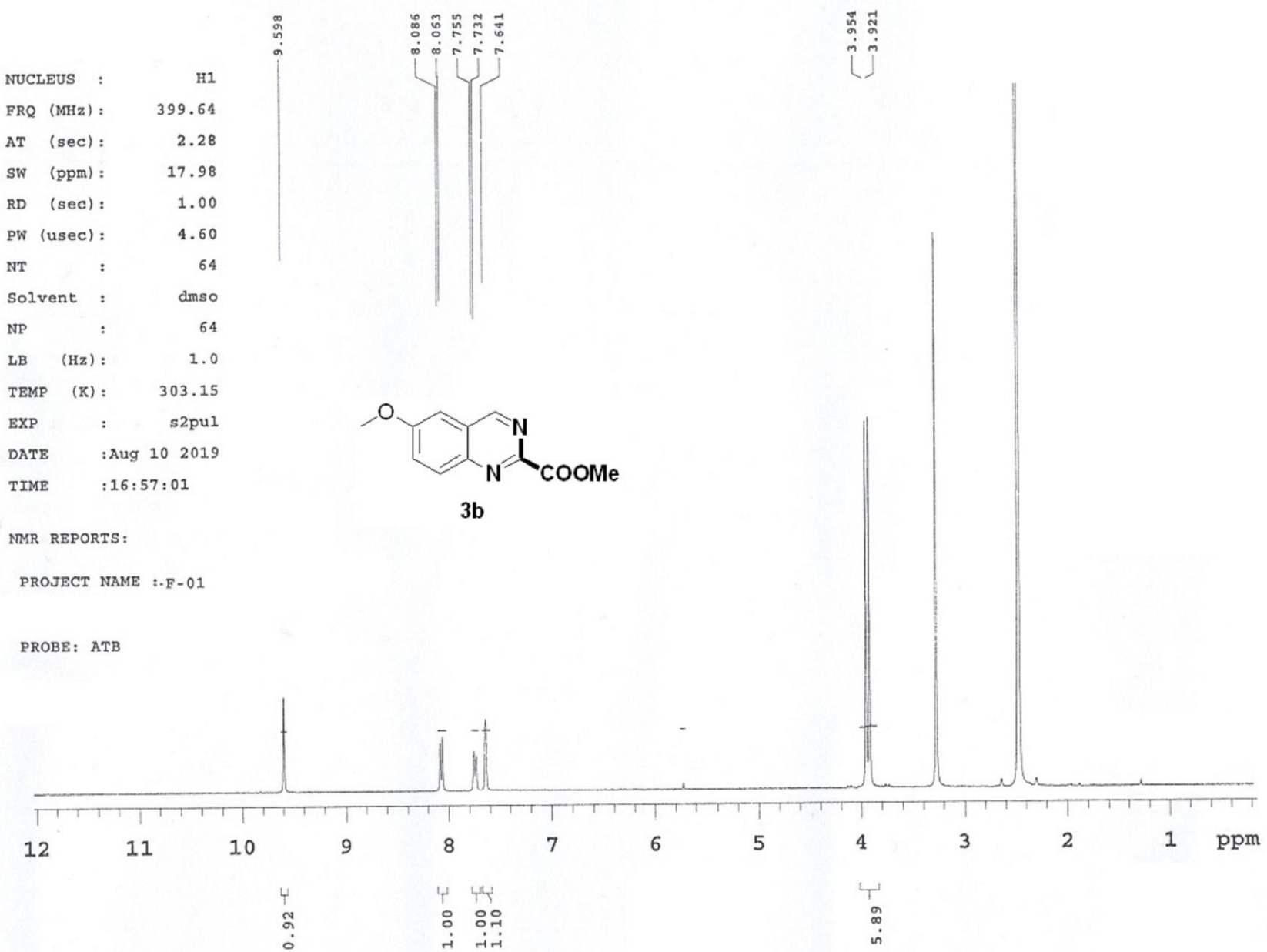
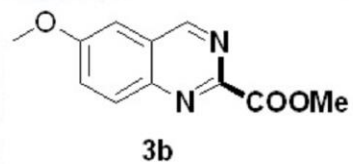


NMR REPORTS:

PROJECT NAME 3-165-02

PROBE: ATB

NUCLEUS : H1
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 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.60
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 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Aug 10 2019
 TIME : 16:57:01

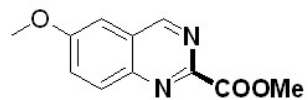


NMR REPORTS:

PROJECT NAME :-F-01

PROBE: ATB

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 SW (ppm) : 276.40
 RD (sec) : 1.00
 PW (usec) : 5.40
 Scans : 5000
 Solvent : cdcl3
 Data Points : 65536
 LB (Hz) : 1.00
 TEMP (K) : 303.15
 EXP : s2pul
 DATE : Sep 12 2018
 System : VNMRS_400



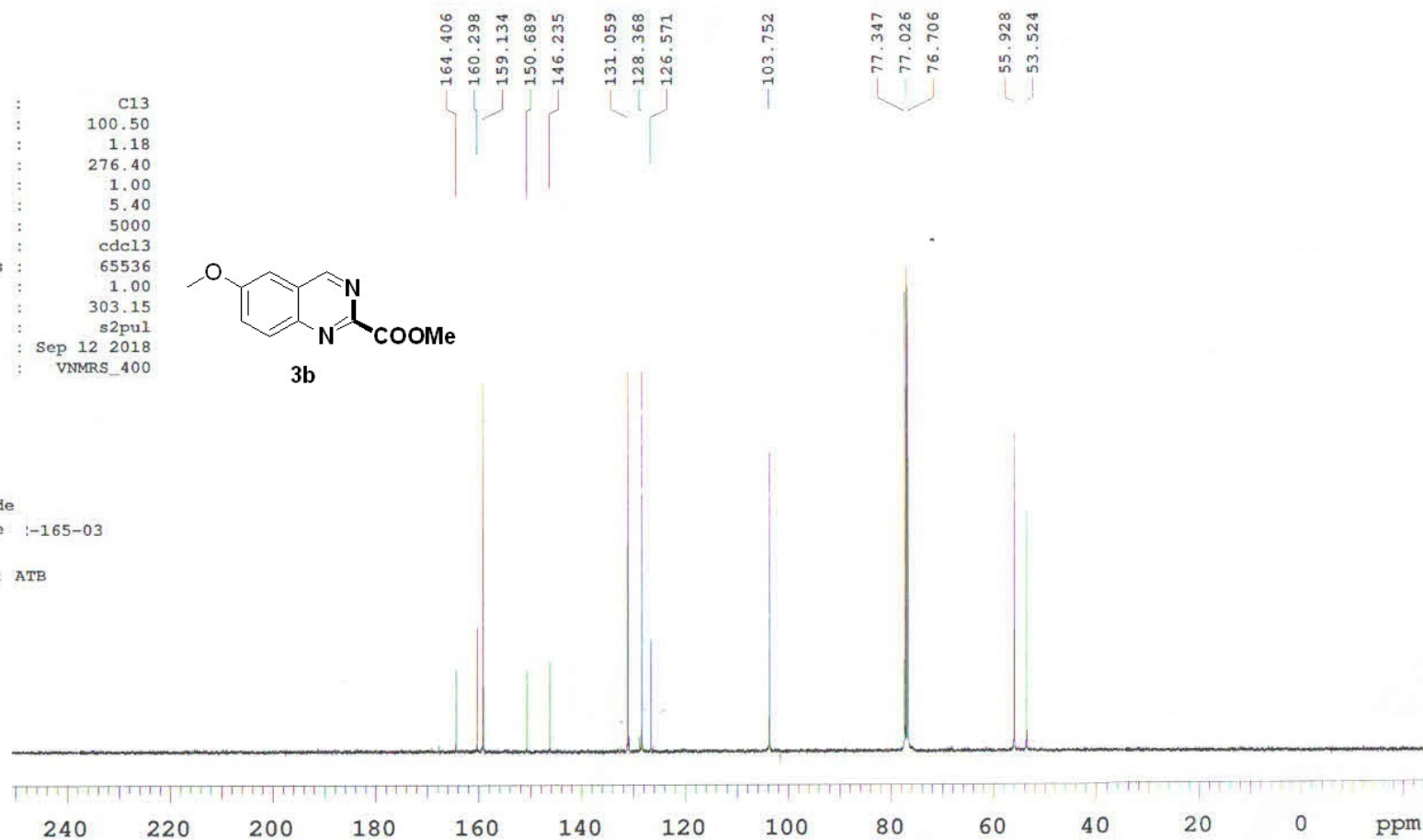
3b

NMR REPORT

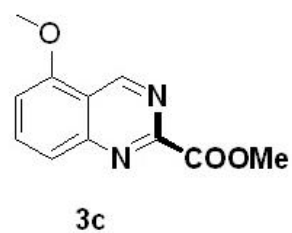
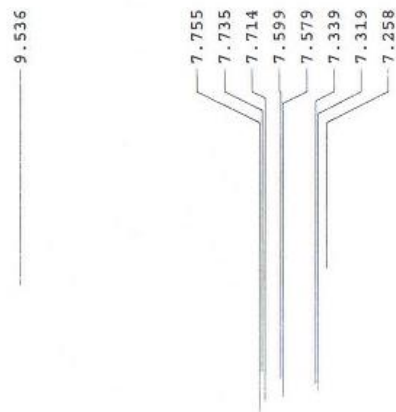
Project Code

Sample Name : -165-03

Probe Name: ATB



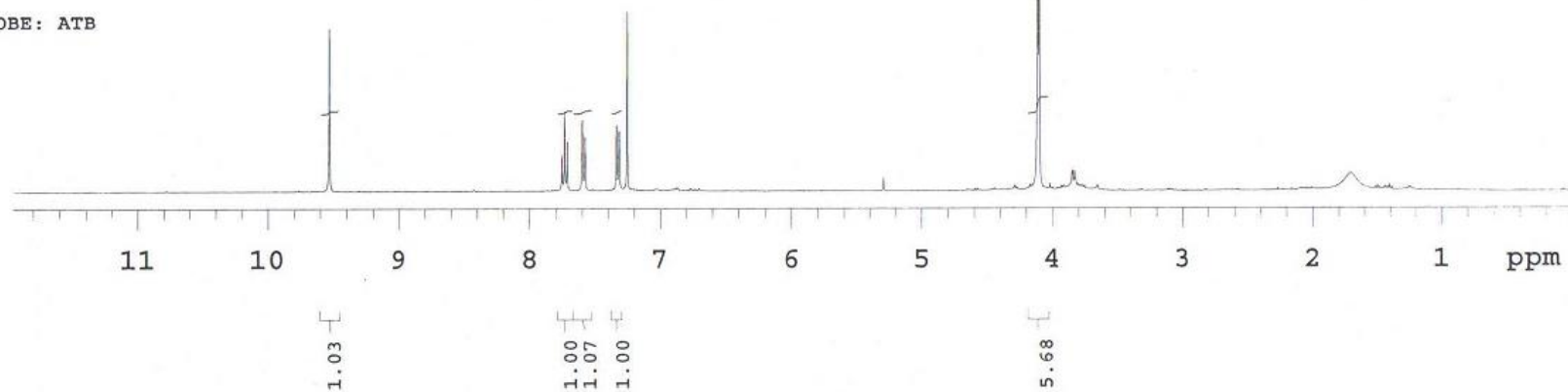
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 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 27 2018
 TIME : 18:30:58



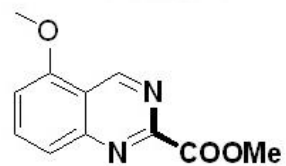
NMR REPORTS:

PROJECT NAME : 137-03

PROBE: ATB



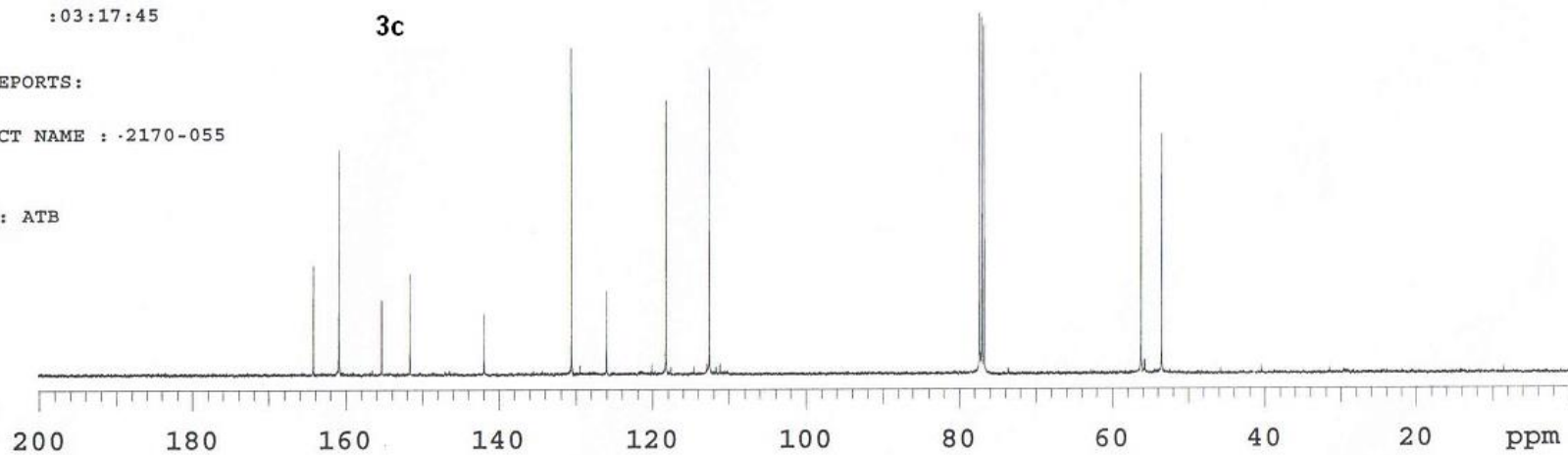
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 LB (Hz): 1.0
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 DATE : Nov 30 2018
 TIME : 03:17:45



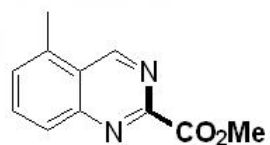
NMR REPORTS:

PROJECT NAME : -2170-055

PROBE: ATB



NUCLEUS : H1
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 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.85
 NT : 16
 Solvent : dmso
 NP : 16
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Feb 26 2020
 TIME : 11:49:04



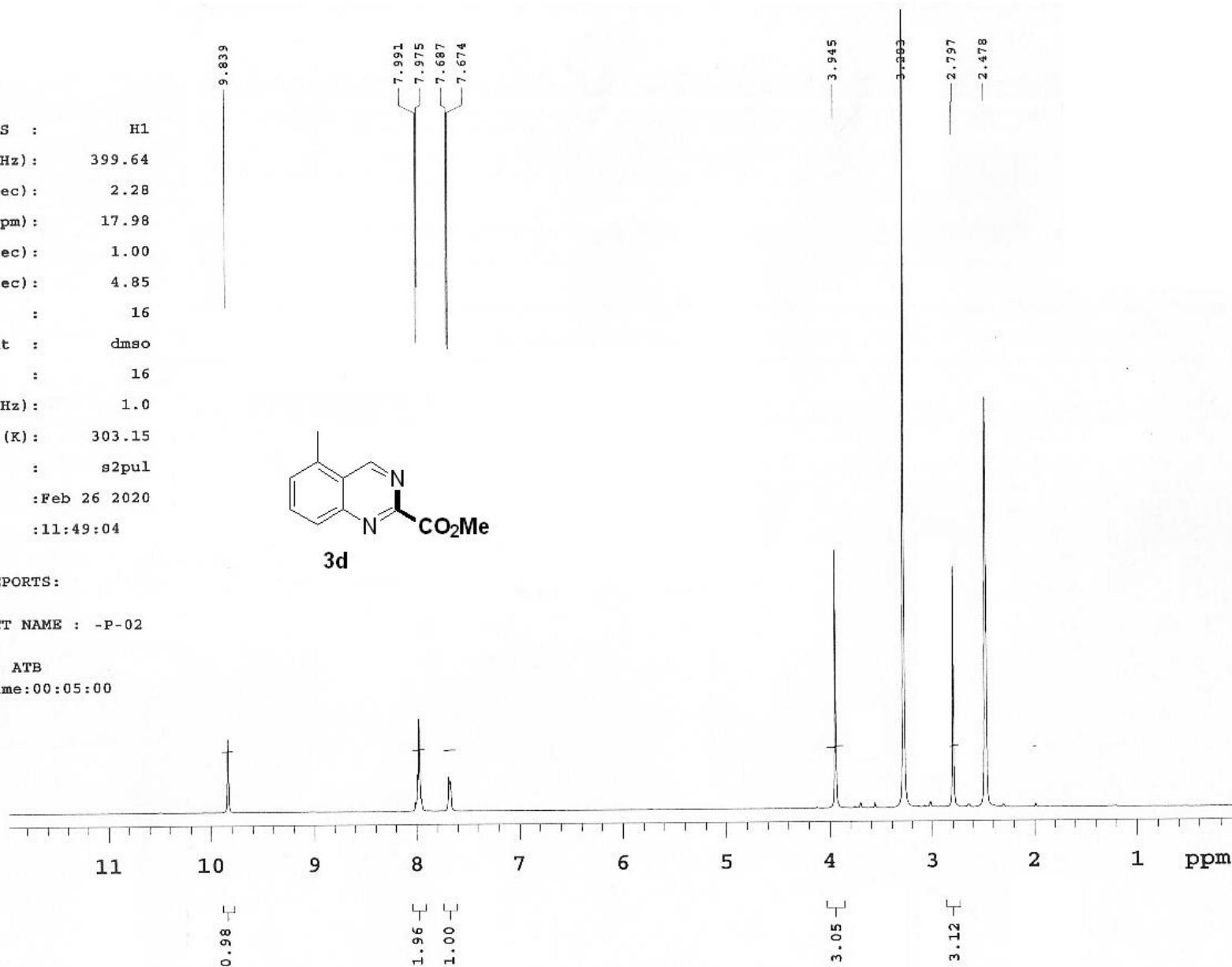
3d

NMR REPORTS:

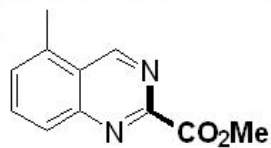
PROJECT NAME : -P-02

PROBE: ATB

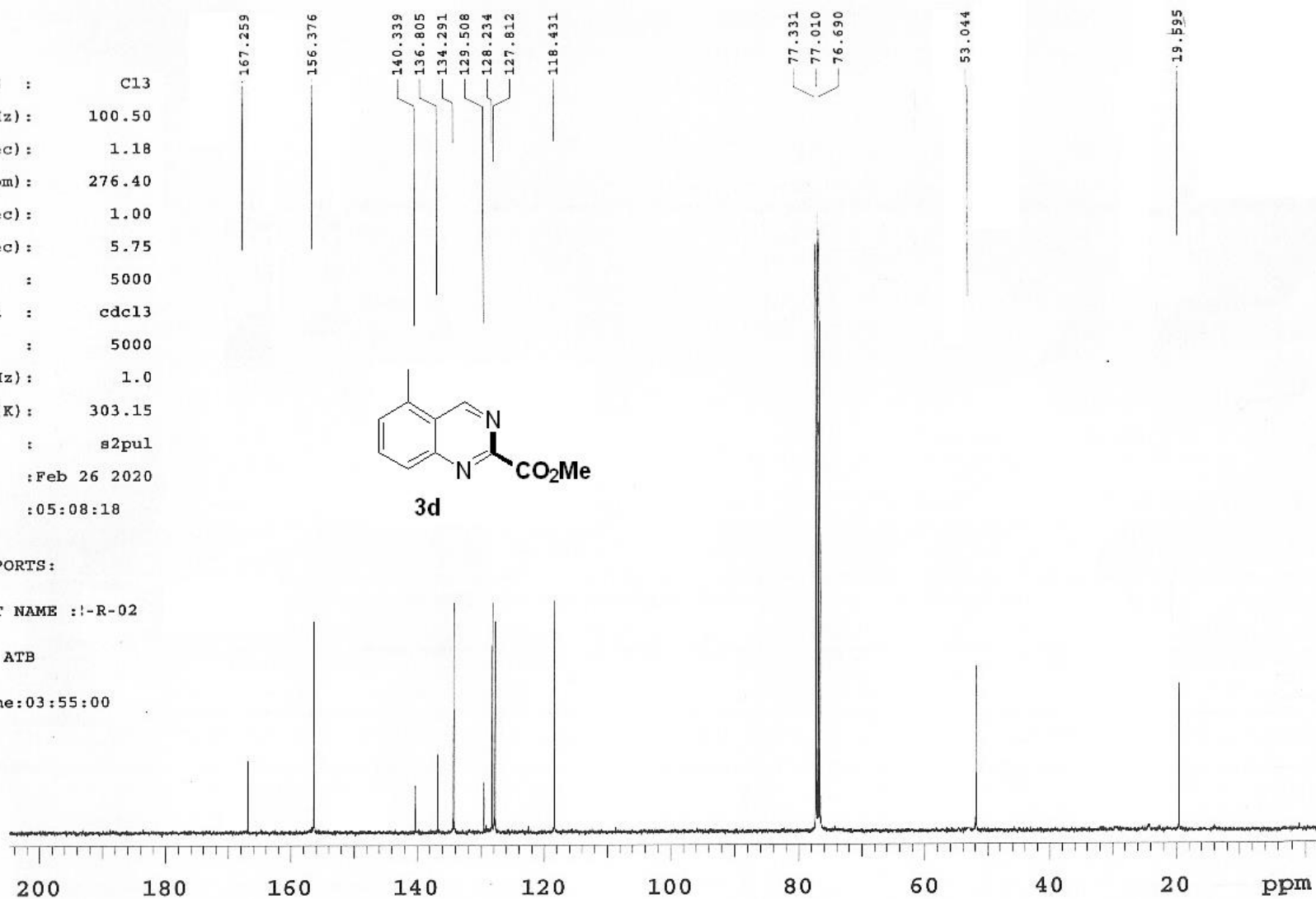
Run Time:00:05:00



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 LB (Hz): 1.0
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 DATE : Feb 26 2020
 TIME : 05:08:18



3d



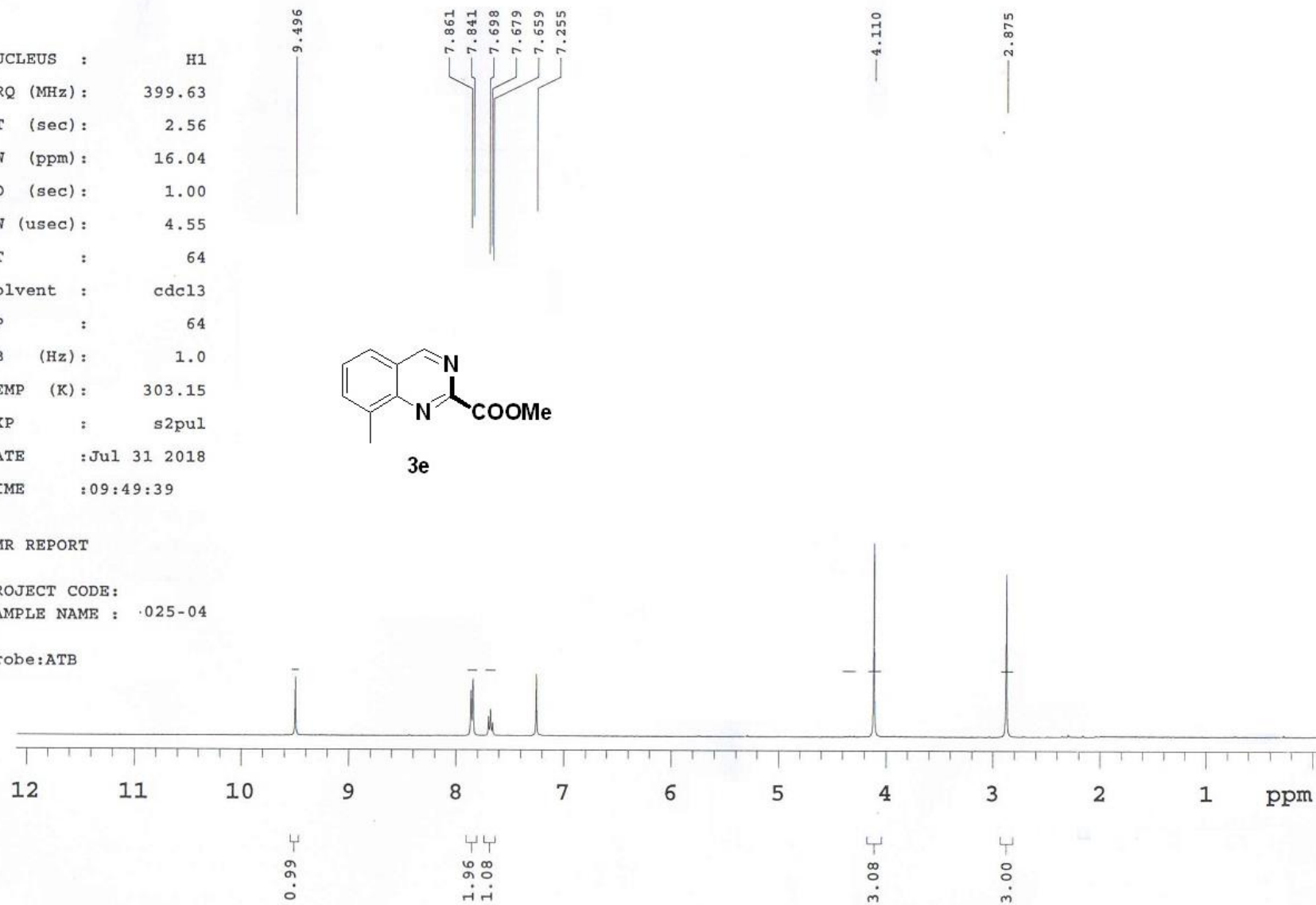
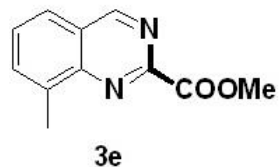
NMR REPORTS:

PROJECT NAME :-R-02

PROBE: ATB

Run Time:03:55:00

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 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jul 31 2018
 TIME : 09:49:39

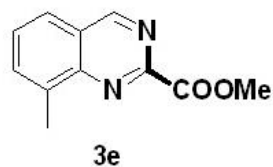
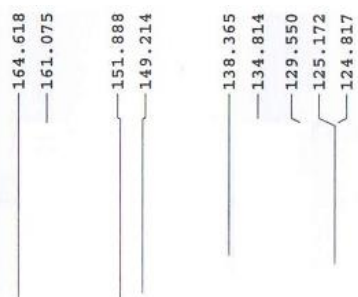


NMR REPORT

PROJECT CODE:
 SAMPLE NAME : 025-04

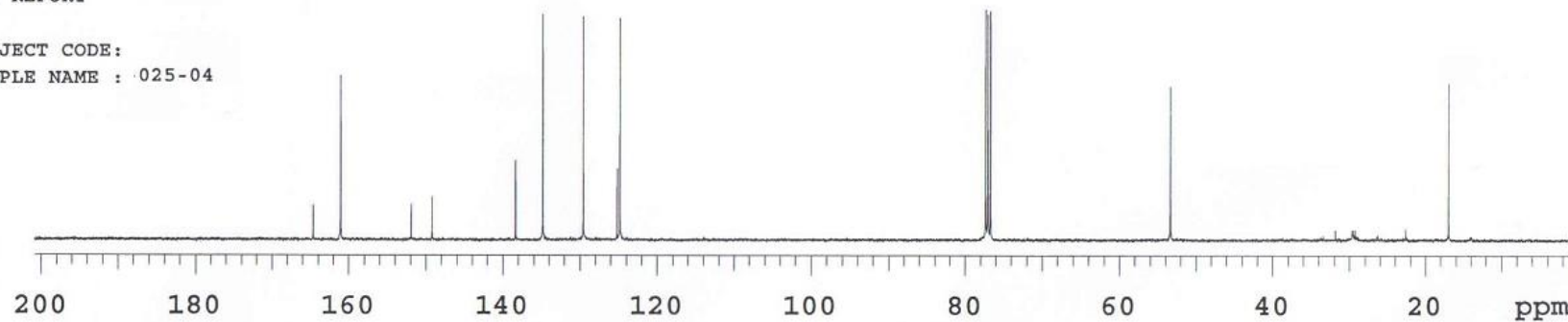
Probe:ATB

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 NP : 5000
 LB (Hz): 1.0
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 DATE : Aug 1 2018
 TIME : 05:17:06

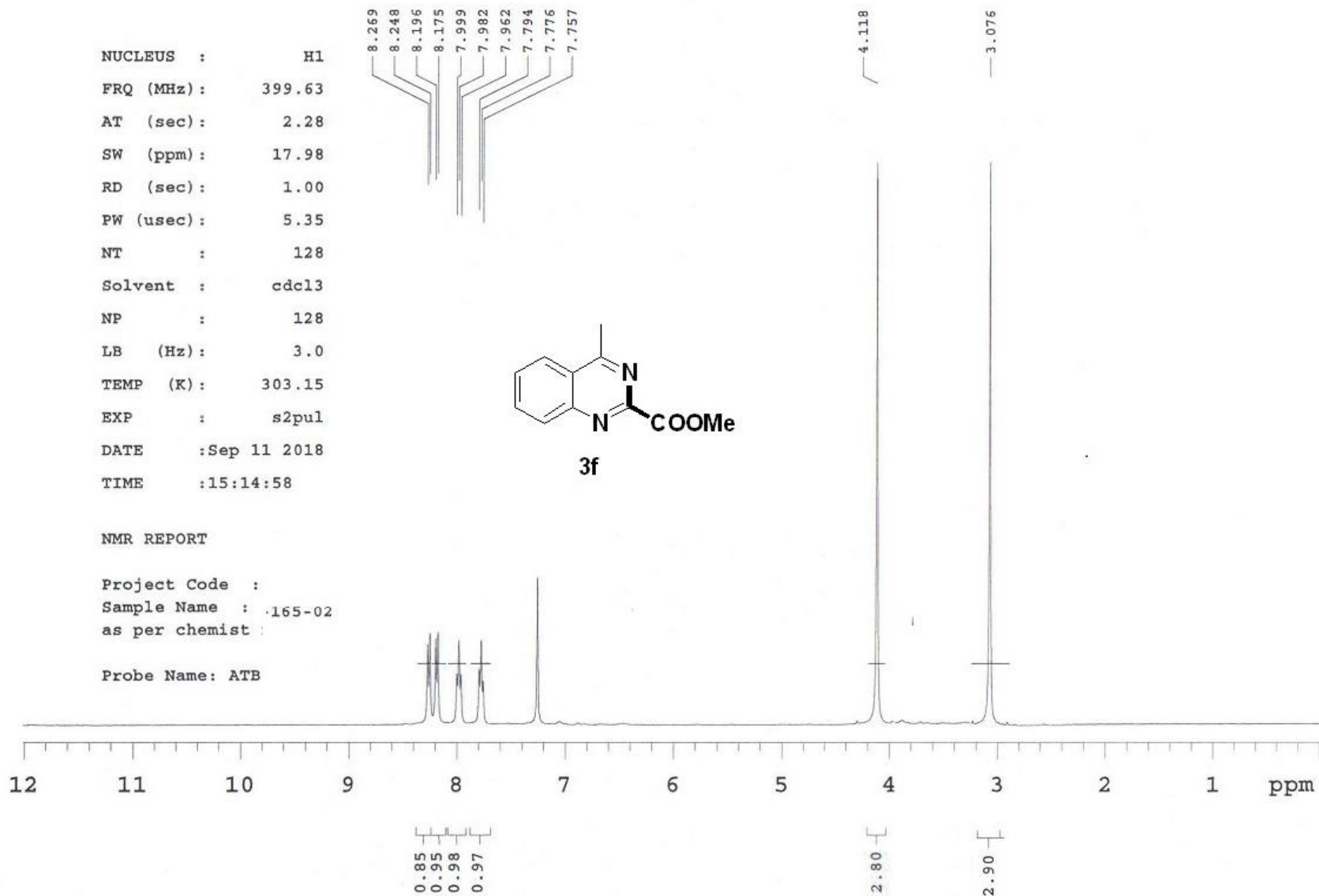
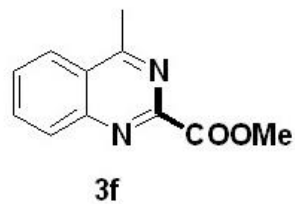


NMR REPORT

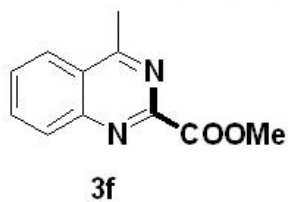
PROJECT CODE:
 SAMPLE NAME : 025-04



NUCLEUS : H1
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 PW (usec): 5.35
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 DATE : Sep 11 2018
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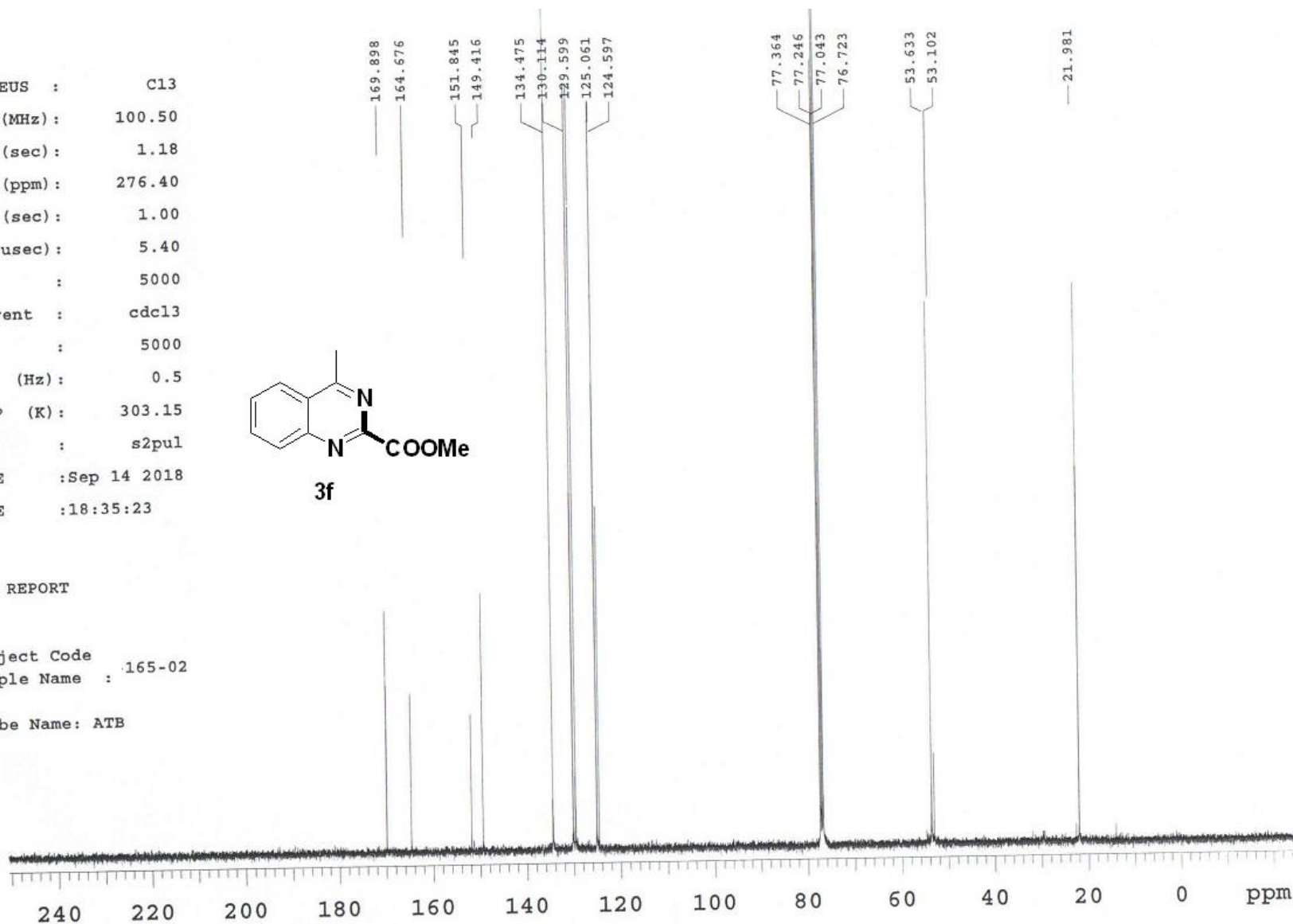


NUCLEUS : C13
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 Solvent : cdcl3
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 DATE : Sep 14 2018
 TIME : 18:35:23

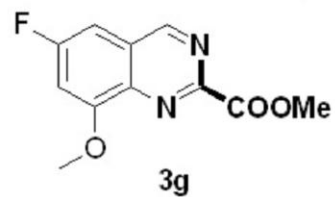


NMR REPORT

Project Code
 Sample Name : 165-02
 Probe Name: ATB

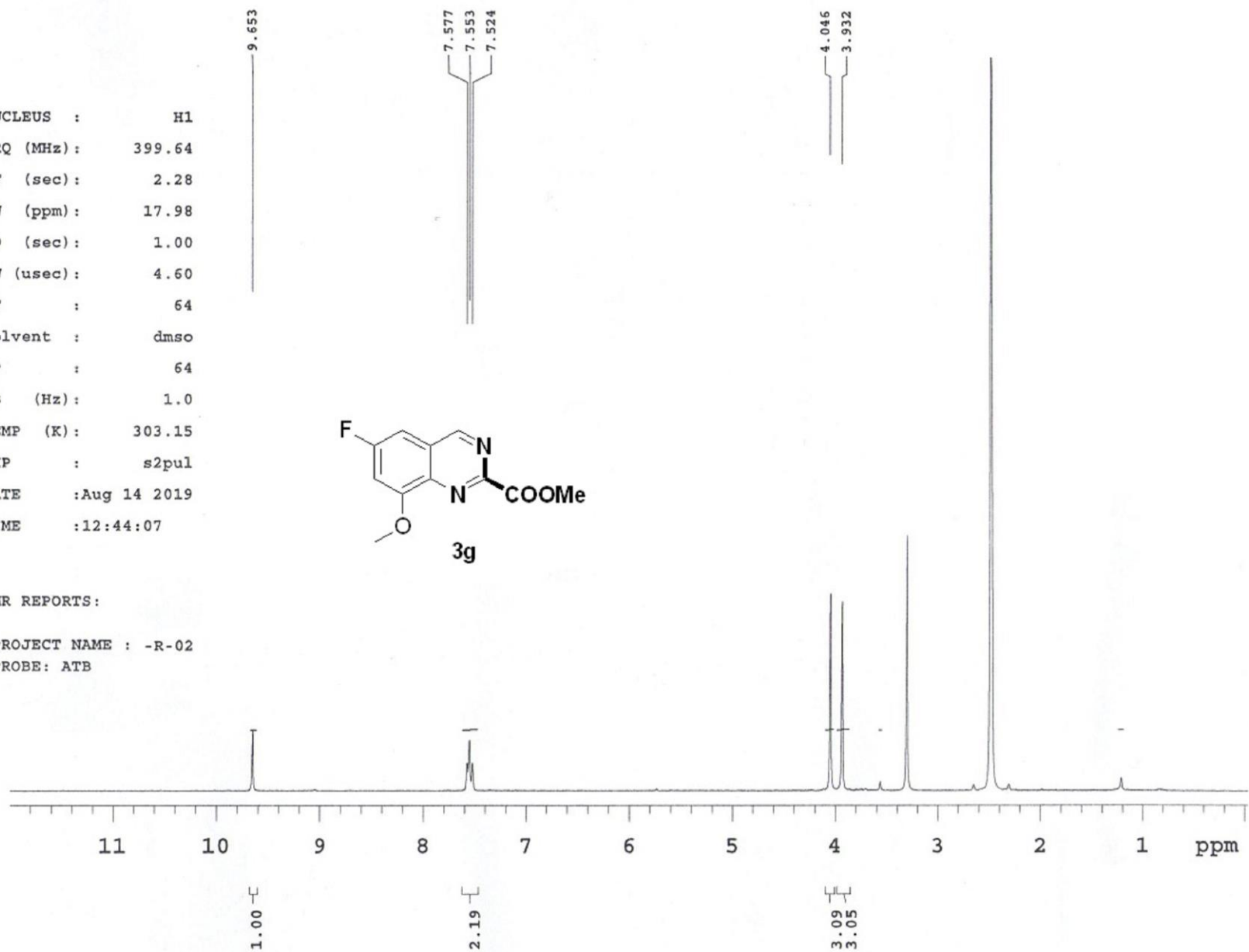


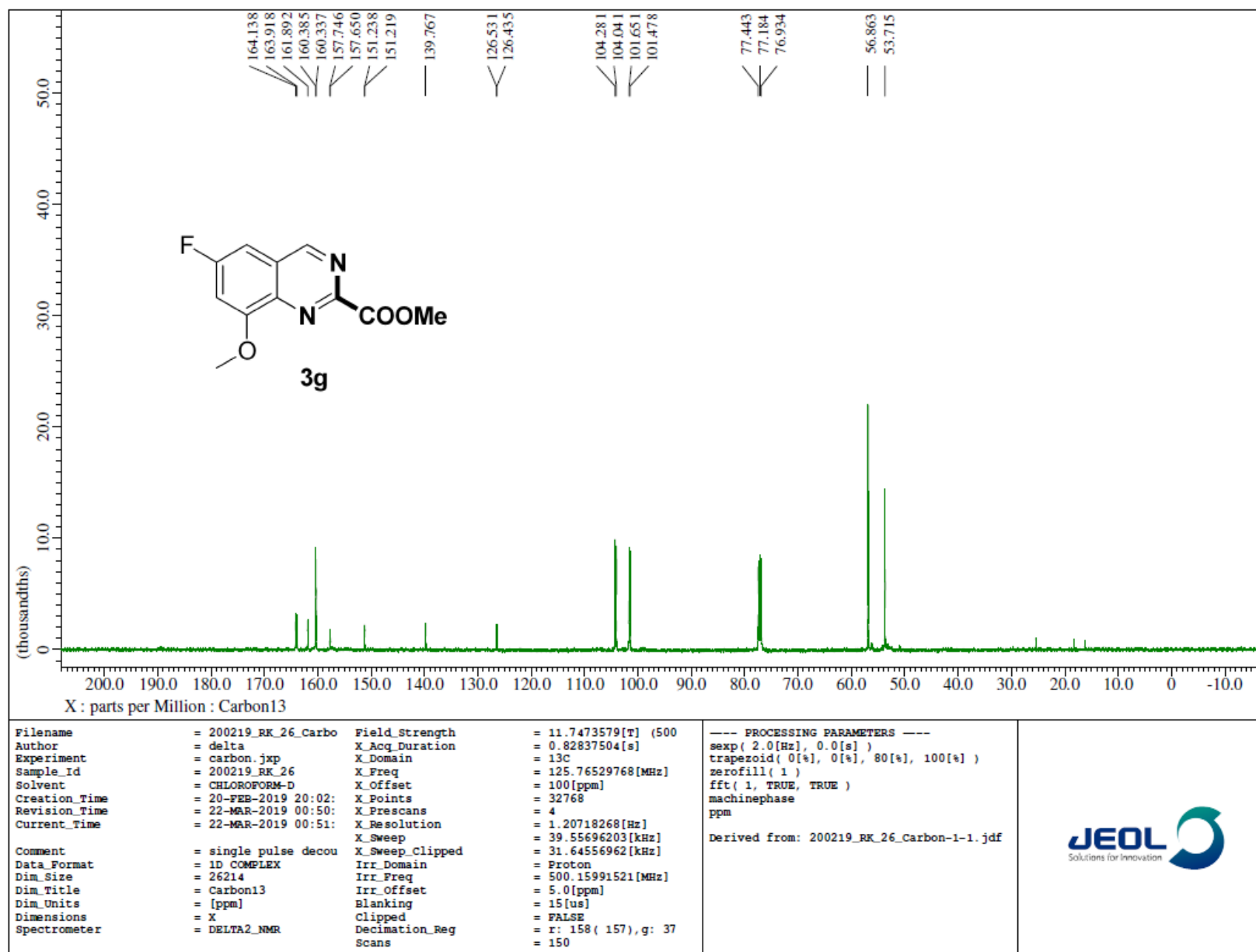
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 DATE : Aug 14 2019
 TIME : 12:44:07



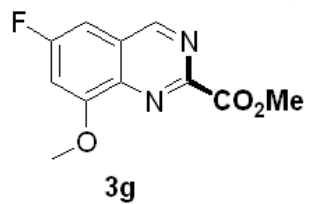
NMR REPORTS:

PROJECT NAME : -R-02
 PROBE: ATB





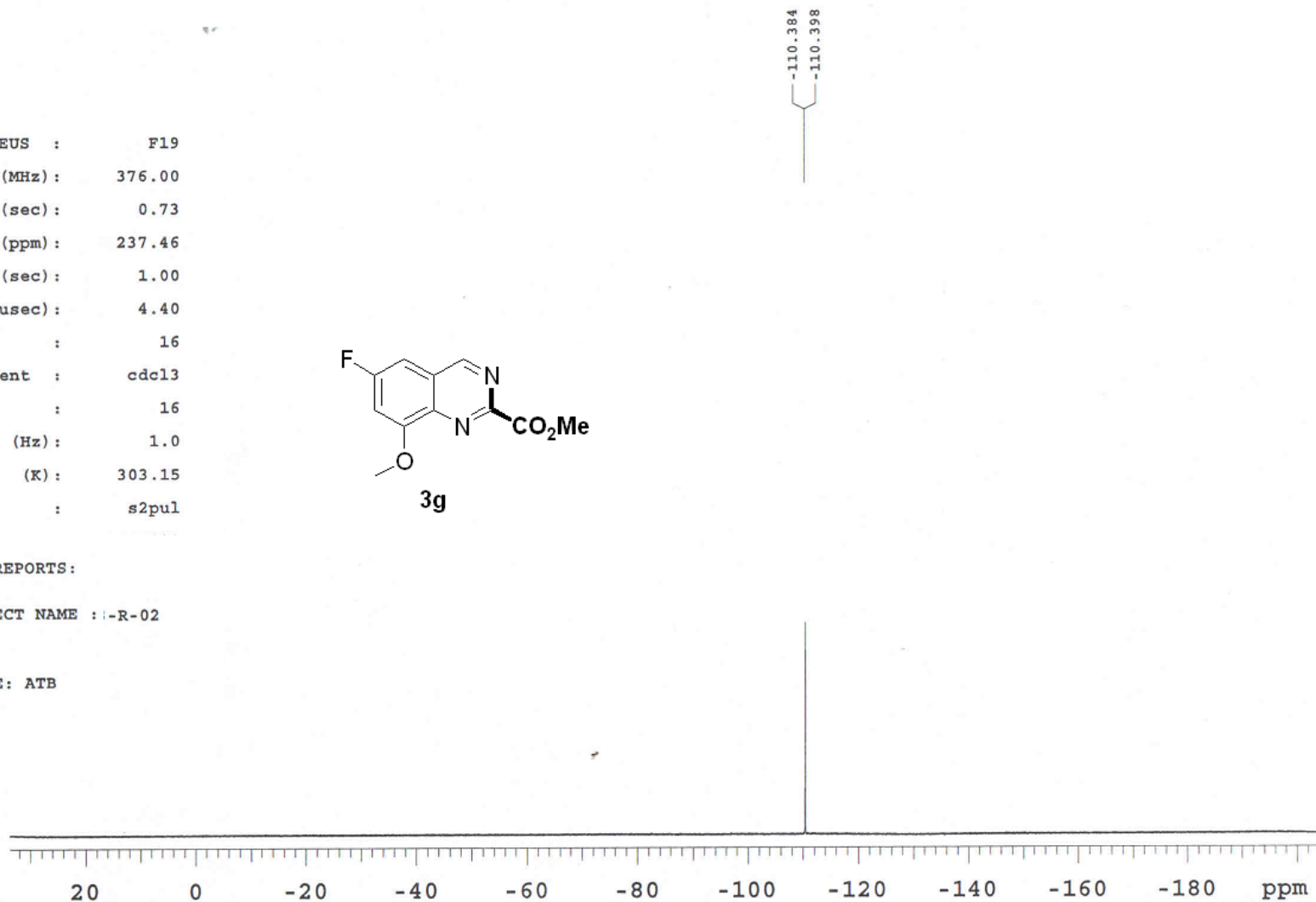
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TEMP (K): 303.15
EXP : s2pul



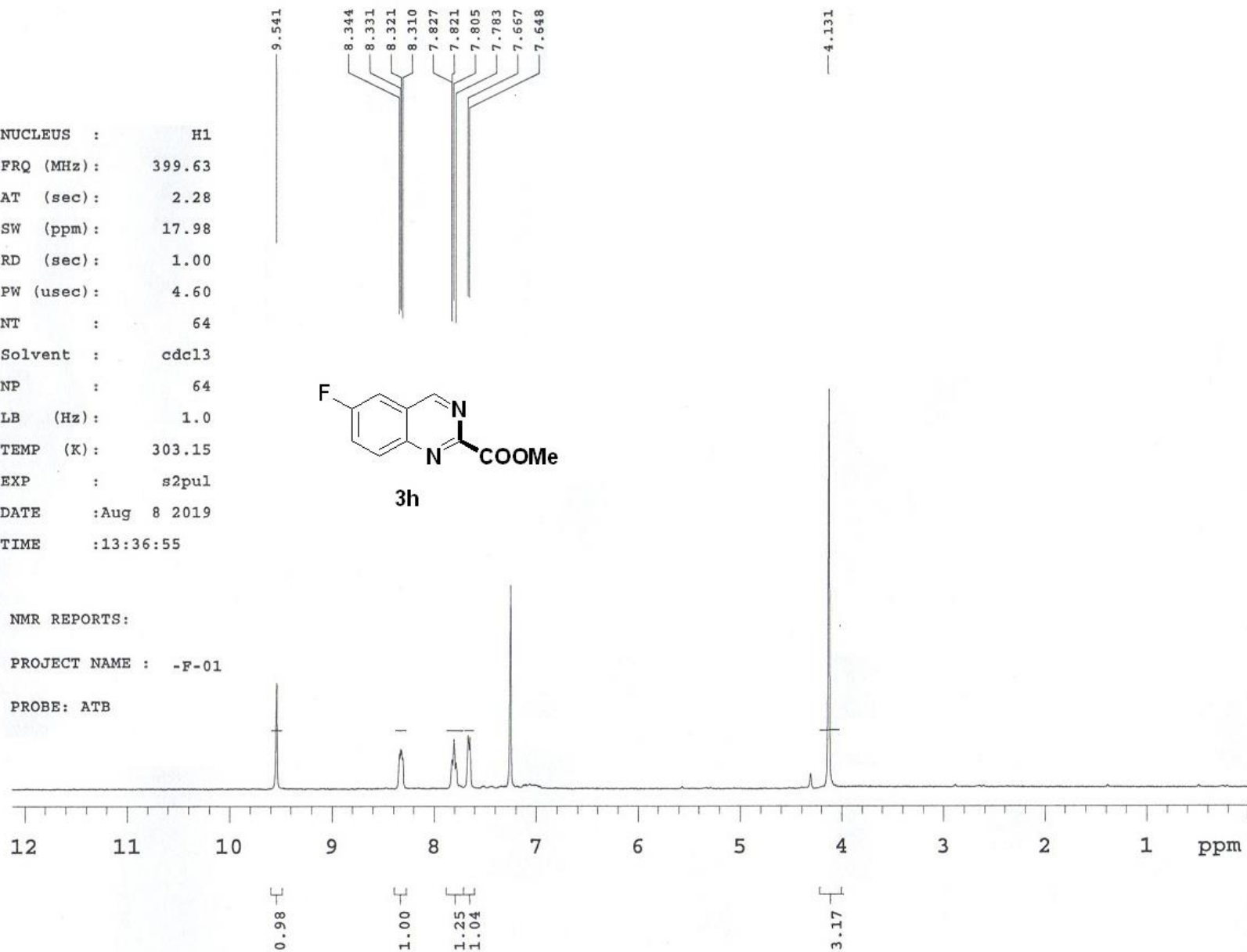
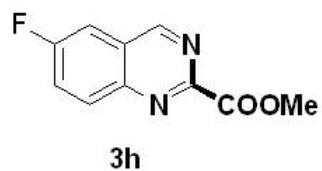
NMR REPORTS:

PROJECT NAME : I-R-02

PROBE: ATB



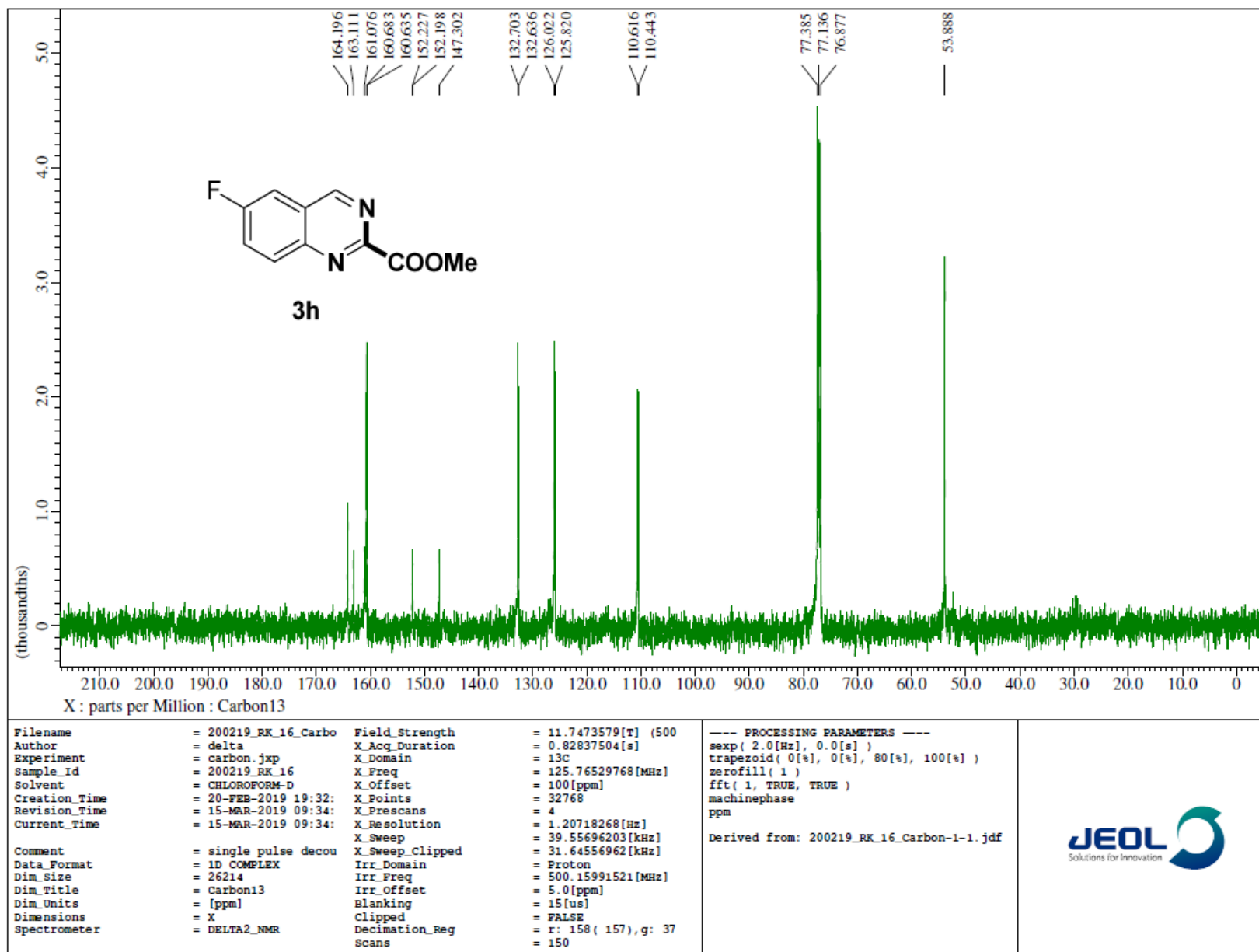
NUCLEUS : H1
 PRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.60
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Aug 8 2019
 TIME : 13:36:55



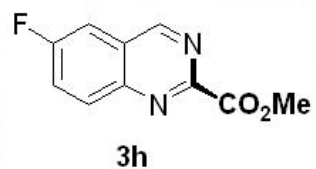
NMR REPORTS:

PROJECT NAME : -F-01

PROBE: ATB

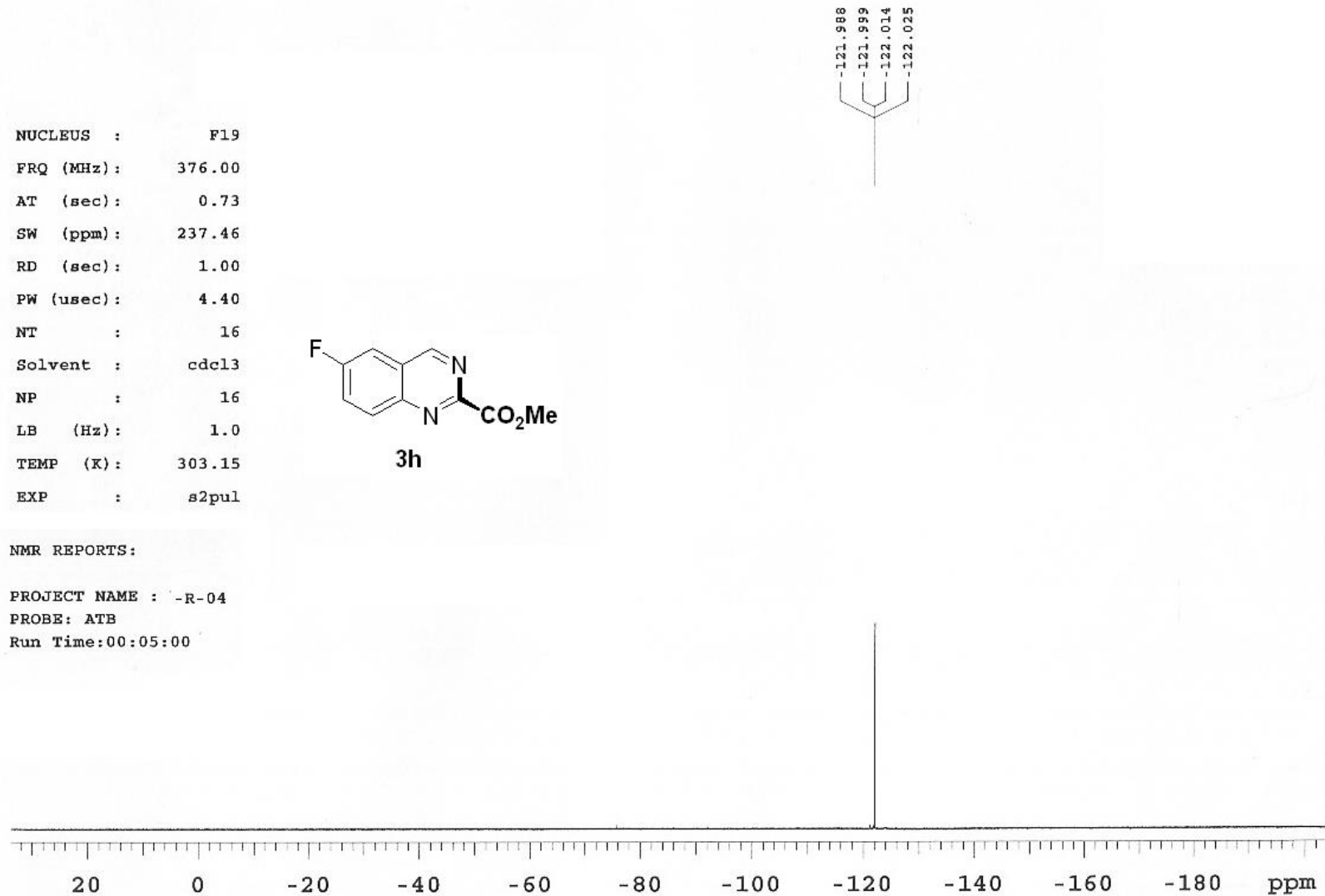


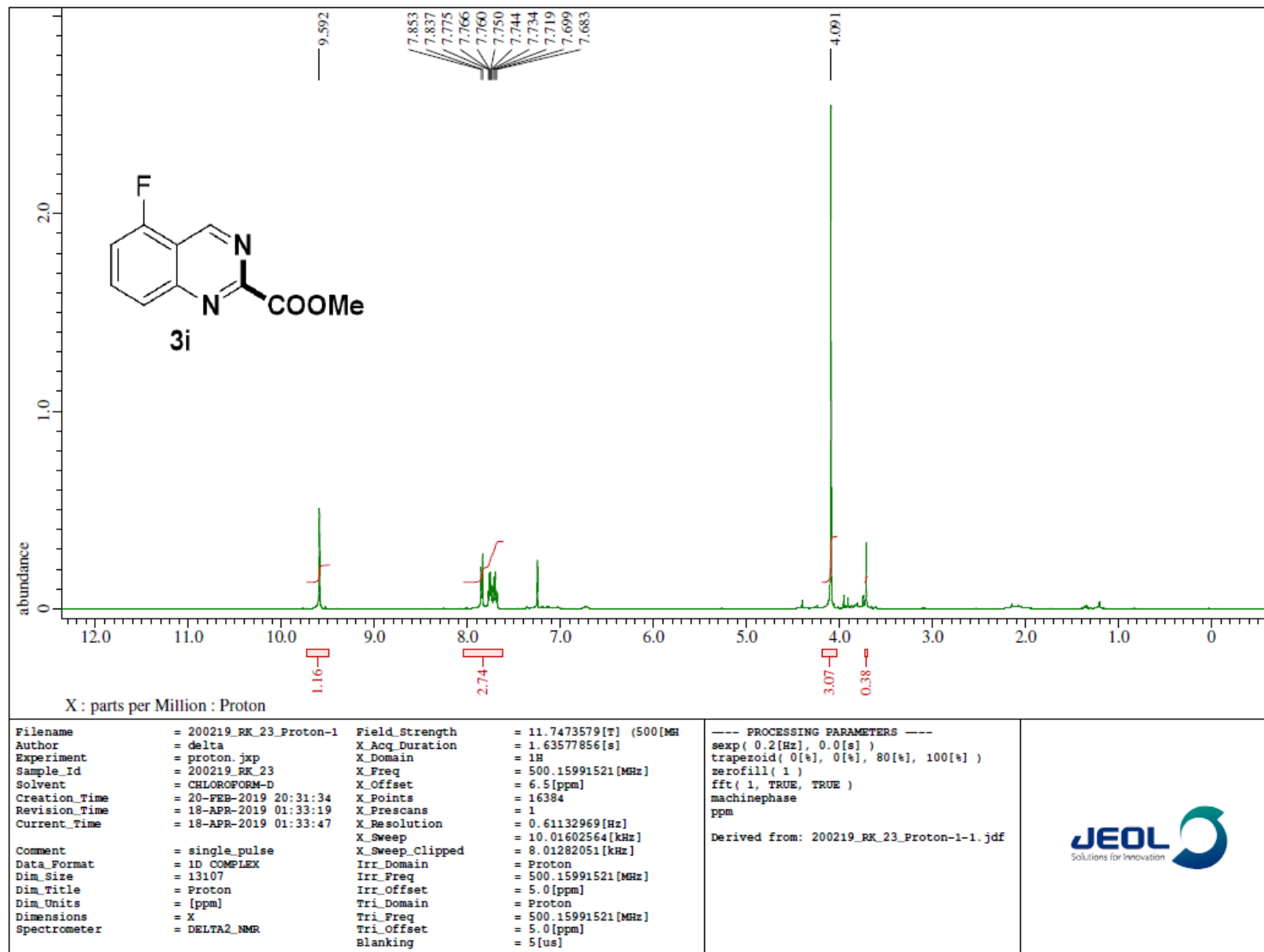
NUCLEUS : F19
 FRQ (MHz): 376.00
 AT (sec): 0.73
 SW (ppm): 237.46
 RD (sec): 1.00
 PW (usec): 4.40
 NT : 16
 Solvent : cdcl3
 NP : 16
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul

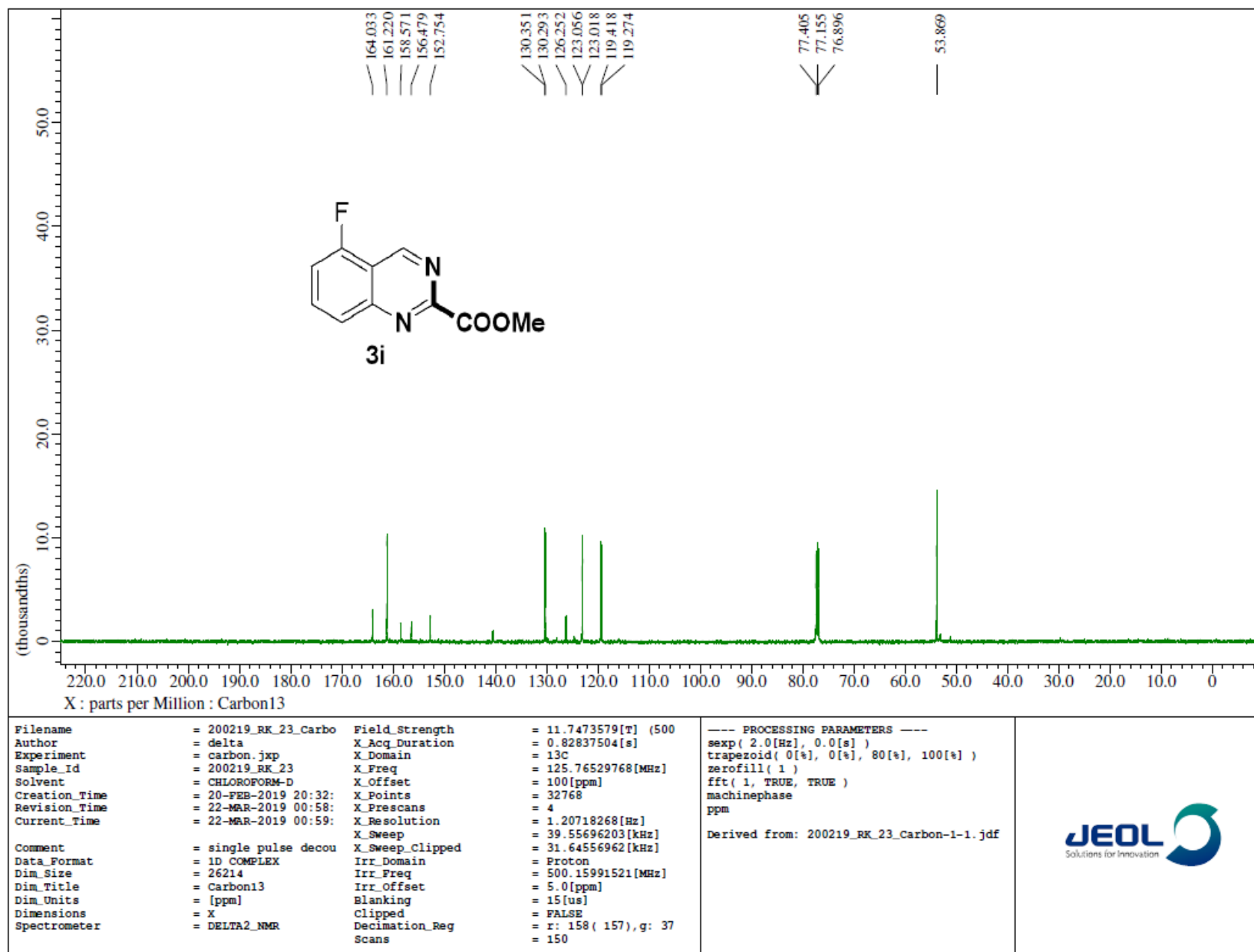


NMR REPORTS:

PROJECT NAME : -R-04
 PROBE: ATB
 Run Time:00:05:00



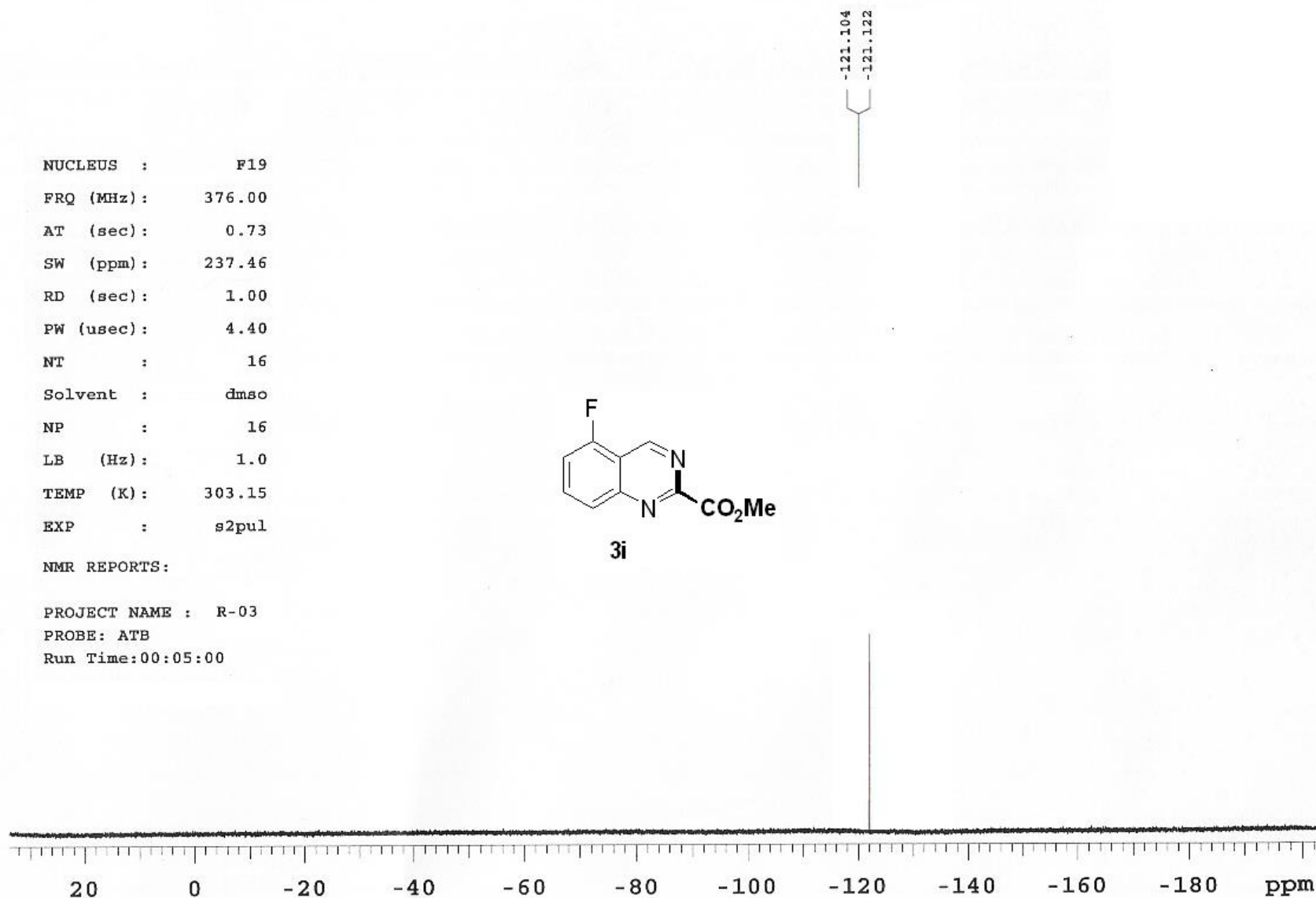
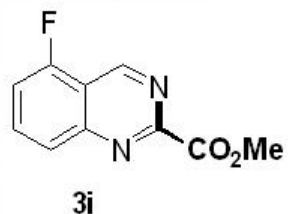




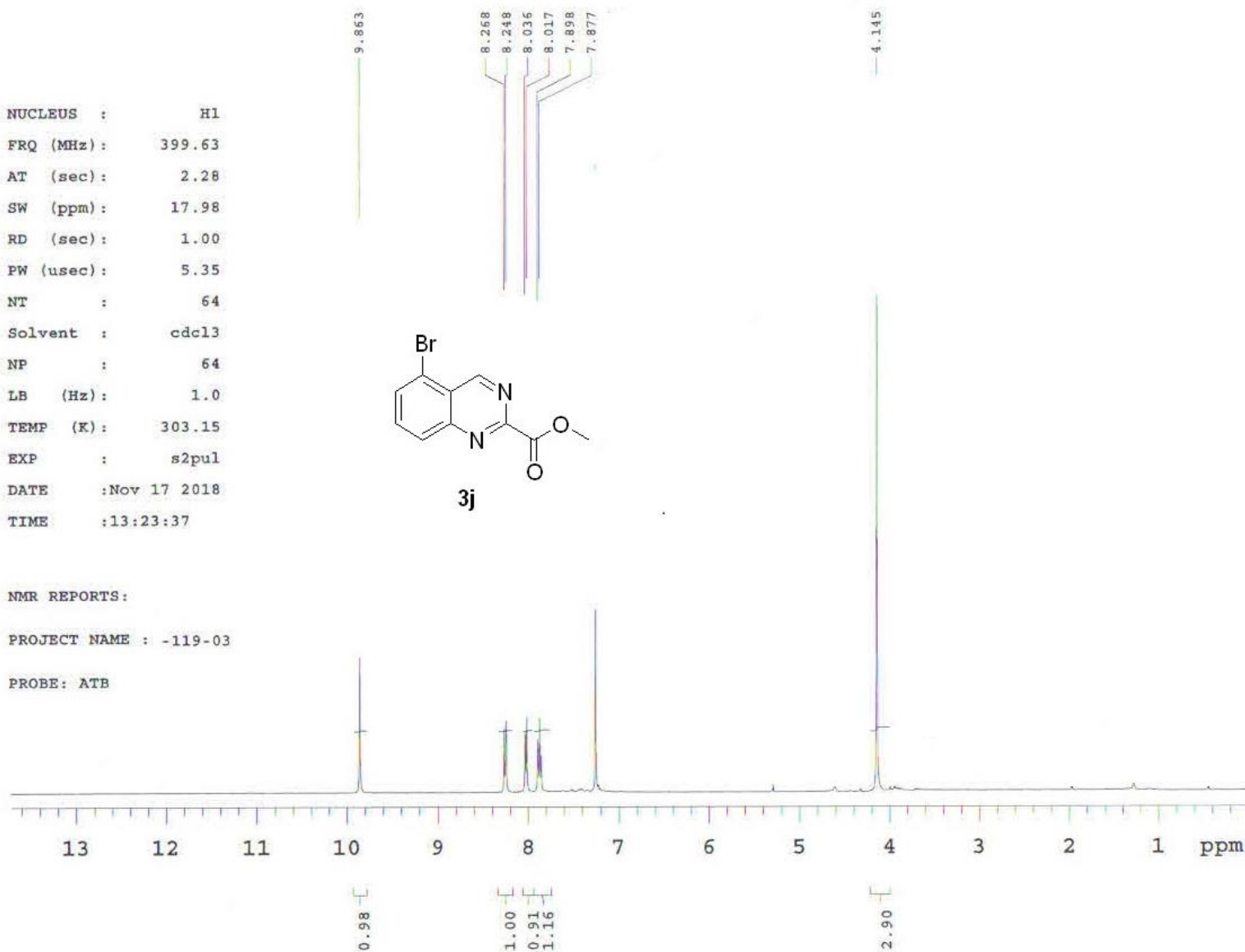
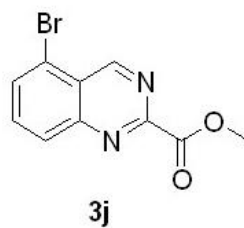
NUCLEUS : F19
FRQ (MHz): 376.00
AT (sec): 0.73
SW (ppm): 237.46
RD (sec): 1.00
PW (usec): 4.40
NT : 16
Solvent : dmsc
NP : 16
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul

NMR REPORTS:

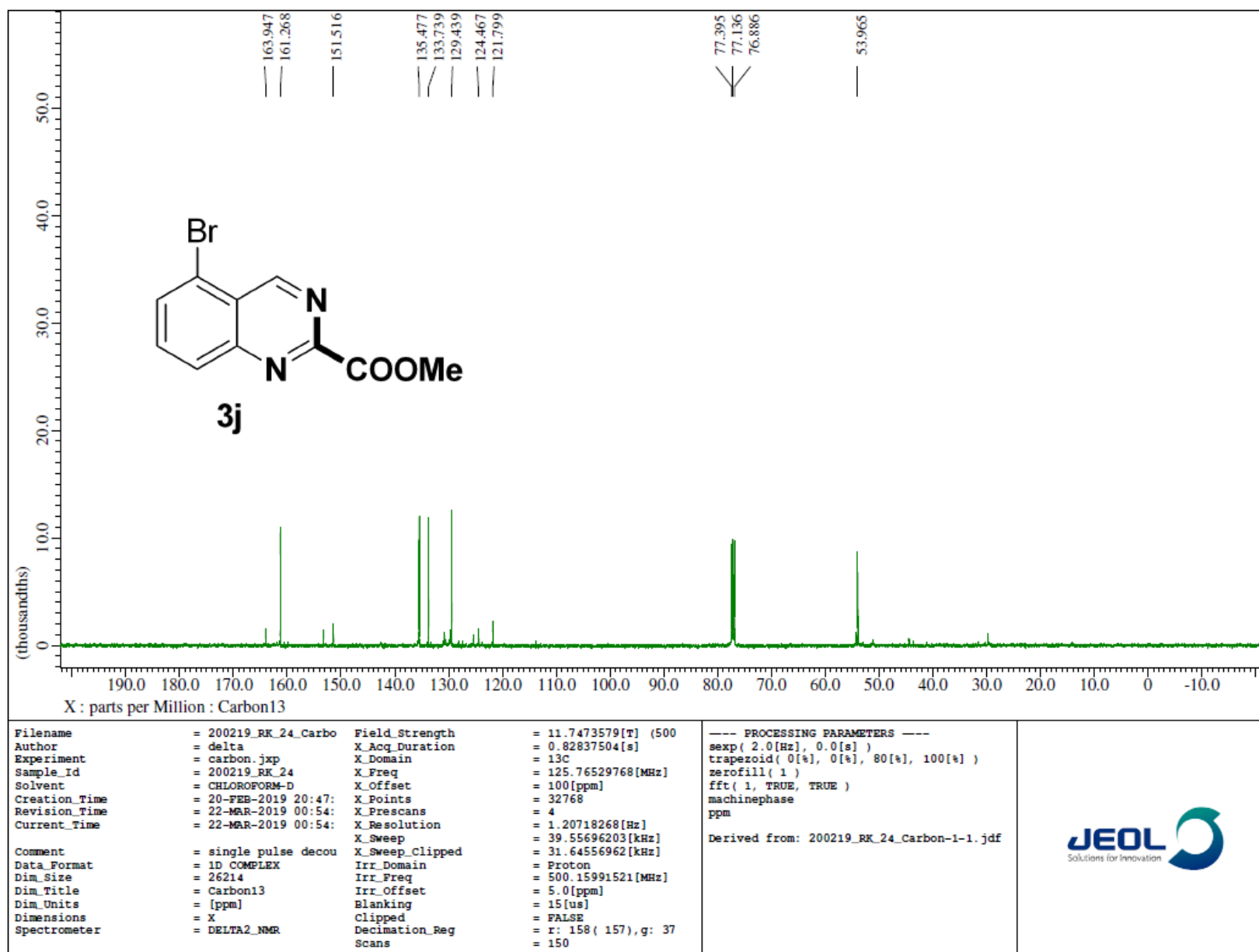
PROJECT NAME : R-03
PROBE: ATB
Run Time:00:05:00



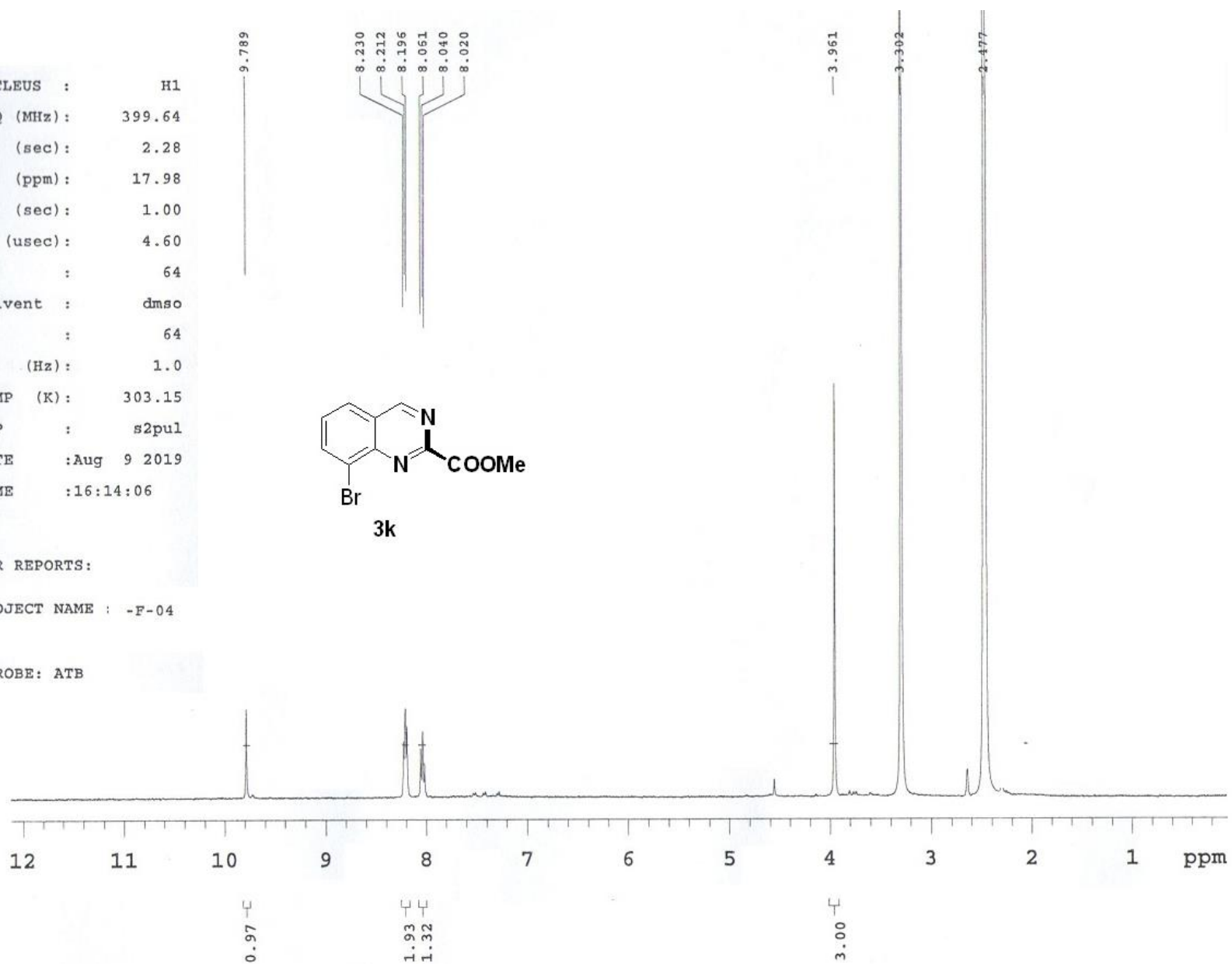
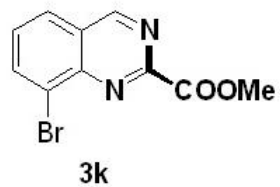
NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 17 2018
 TIME : 13:23:37



NMR REPORTS:
 PROJECT NAME : -119-03
 PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.60
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Aug 9 2019
 TIME : 16:14:06

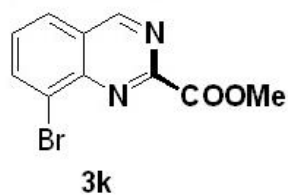


NMR REPORTS:

PROJECT NAME : -F-04

PROBE: ATB

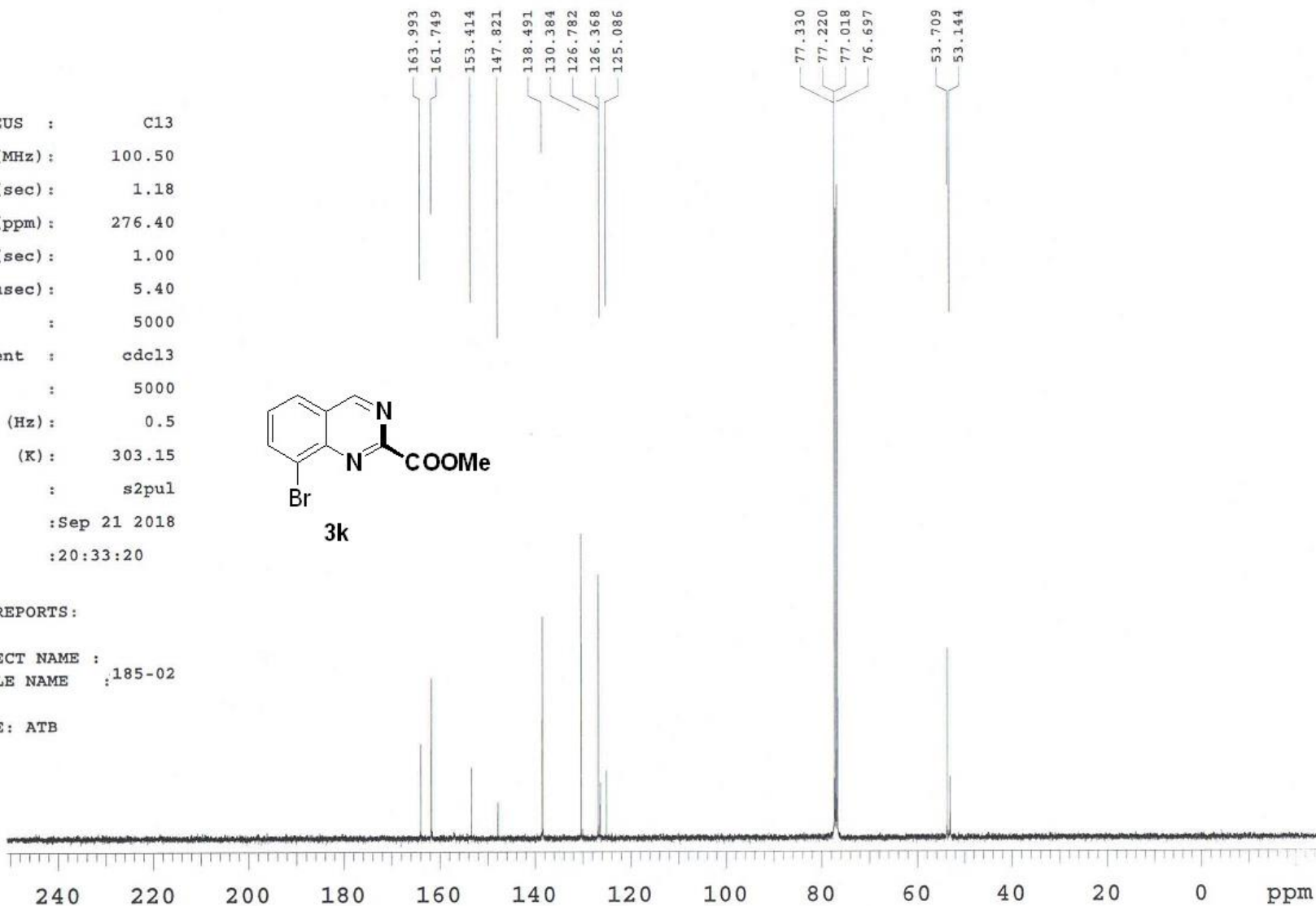
NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 0.5
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Sep 21 2018
 TIME : 20:33:20



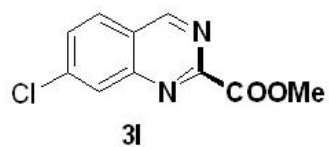
NMR REPORTS:

PROJECT NAME :
 SAMPLE NAME : 185-02

PROBE: ATB



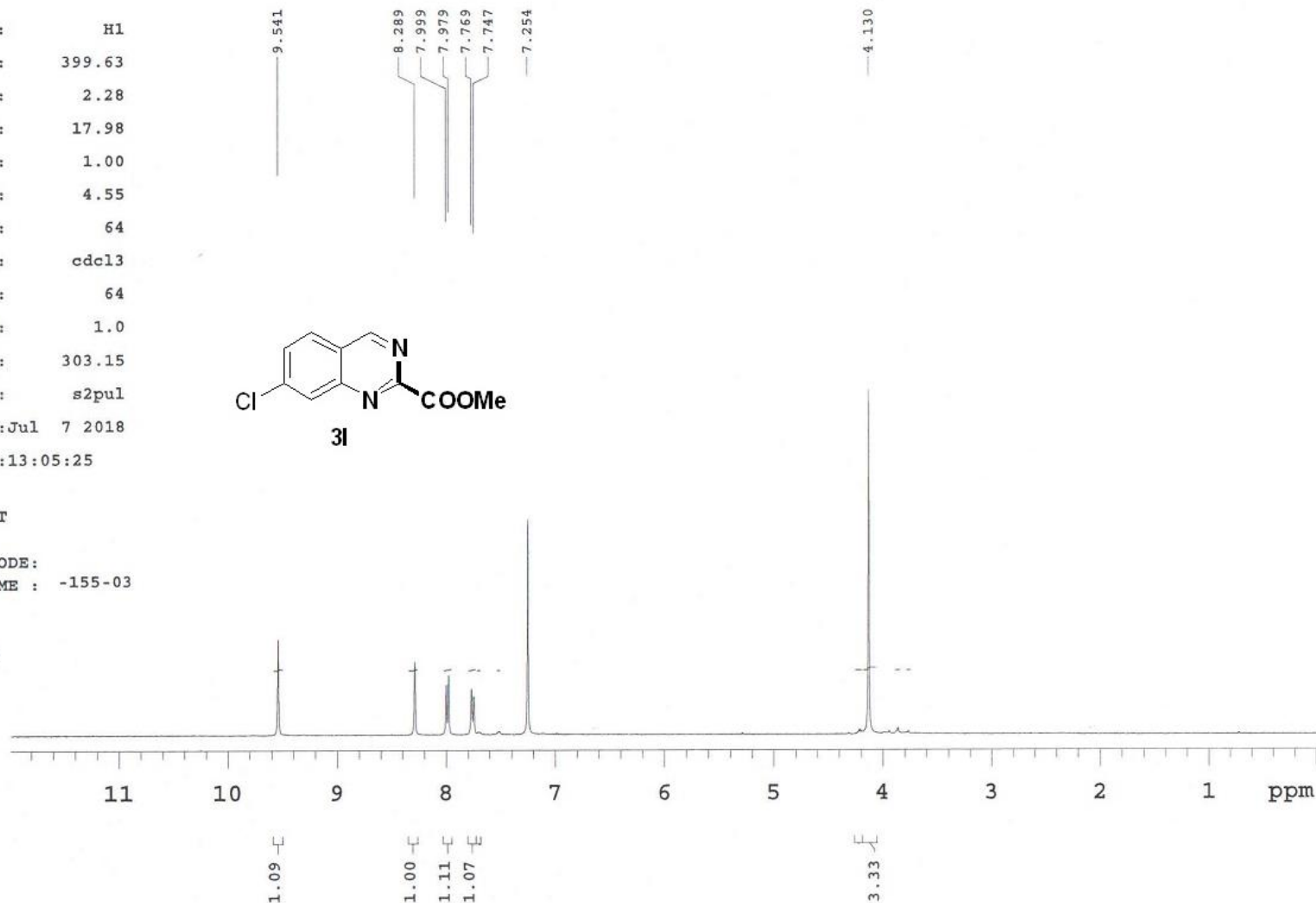
NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jul 7 2018
 TIME : 13:05:25



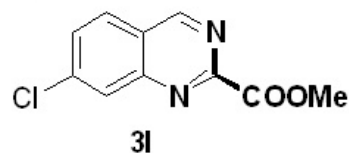
NMR REPORT

PROJECT CODE:
 SAMPLE NAME : -155-03

Probe:ATB



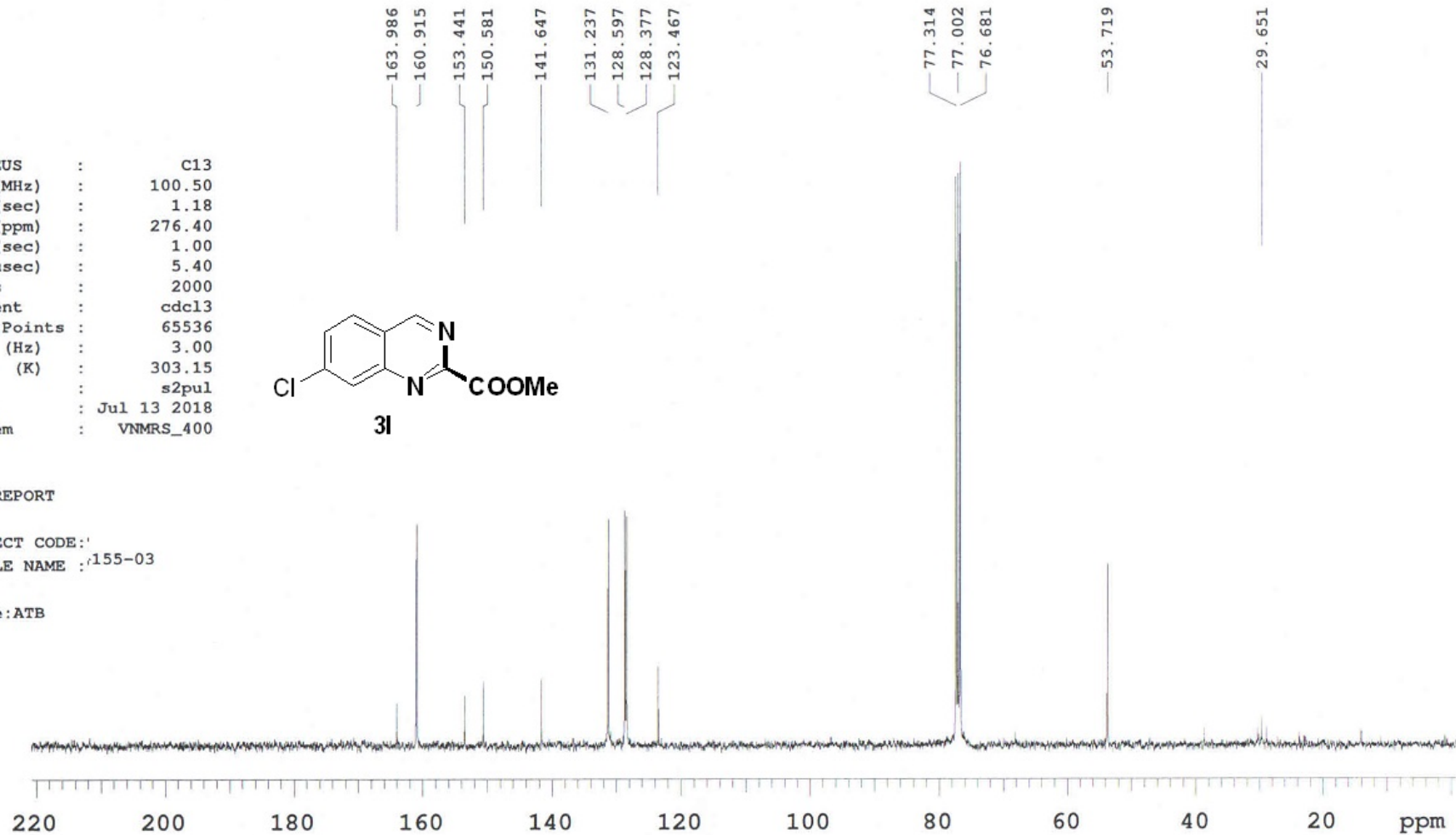
NUCLEUS : C13
 FRQ (MHz) : 100.50
 AT (sec) : 1.18
 SW (ppm) : 276.40
 RD (sec) : 1.00
 PW (usec) : 5.40
 Scans : 2000
 Solvent : cdcl3
 Data Points : 65536
 LB (Hz) : 3.00
 TEMP (K) : 303.15
 EXP : s2pul
 DATE : Jul 13 2018
 System : VNMRS_400



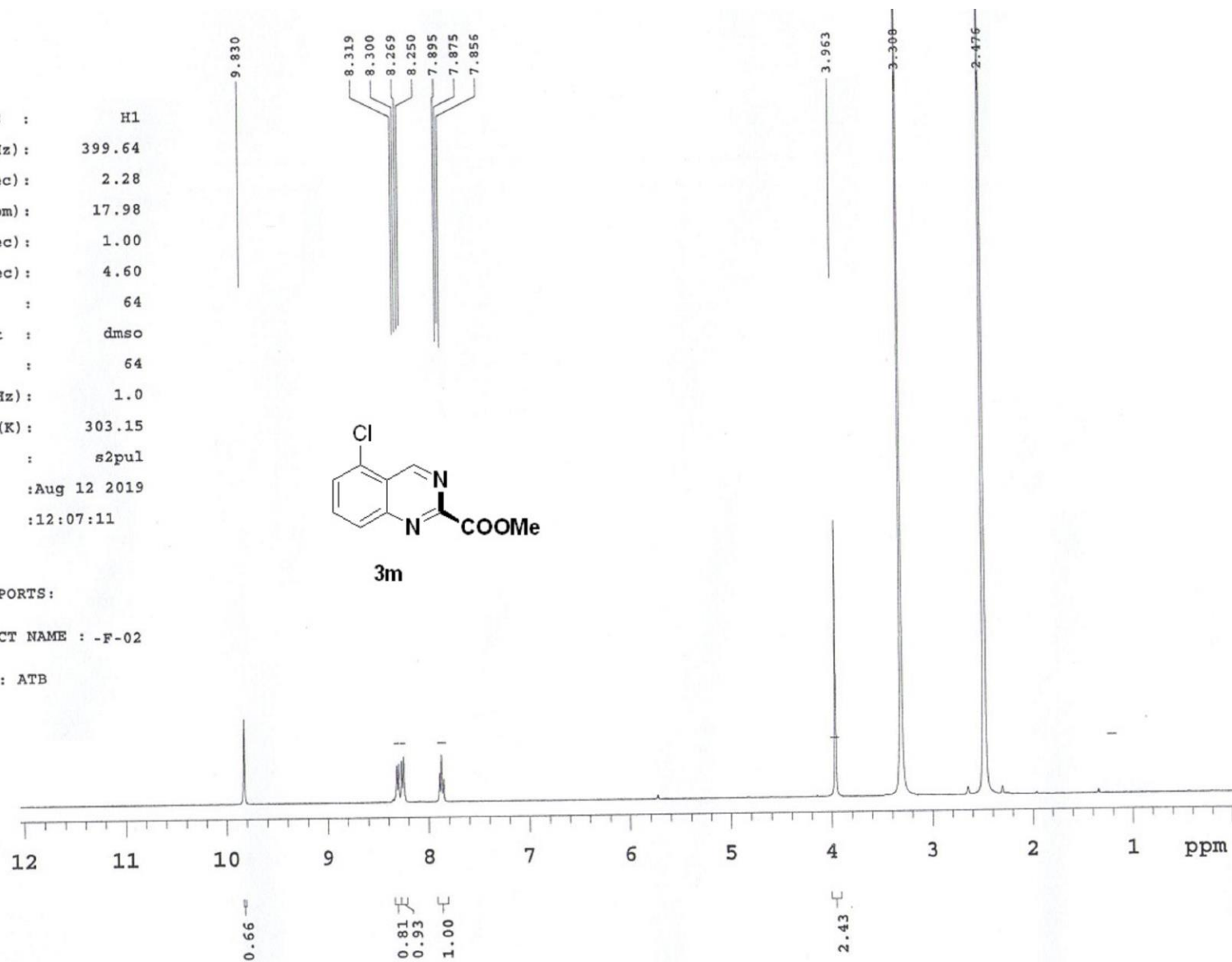
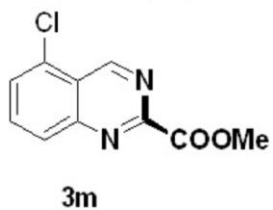
NMR REPORT

PROJECT CODE: '
 SAMPLE NAME : 155-03

Probe: ATB



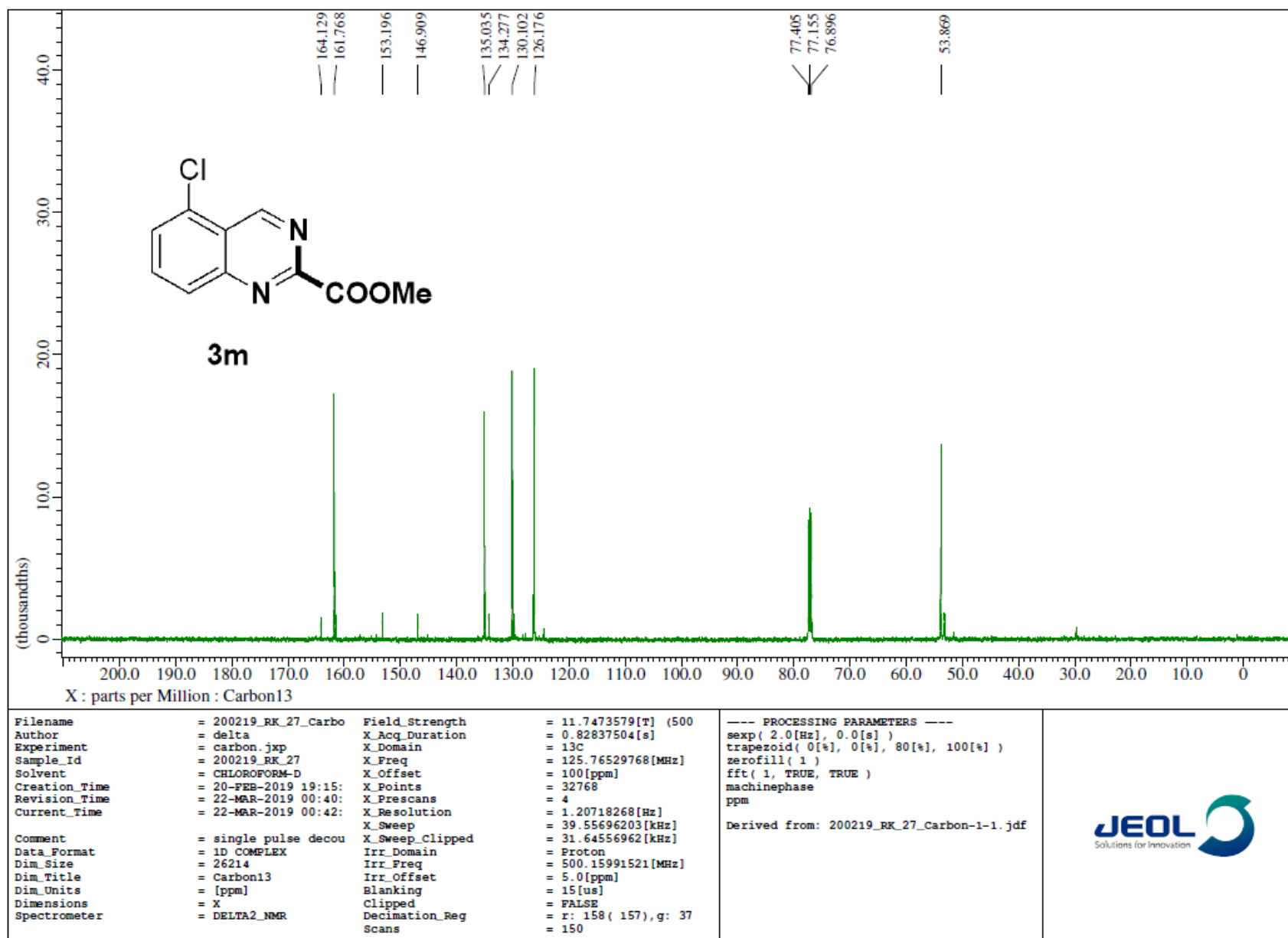
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.60
 NT : 64
 Solvent : dmsc
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Aug 12 2019
 TIME : 12:07:11



NMR REPORTS:

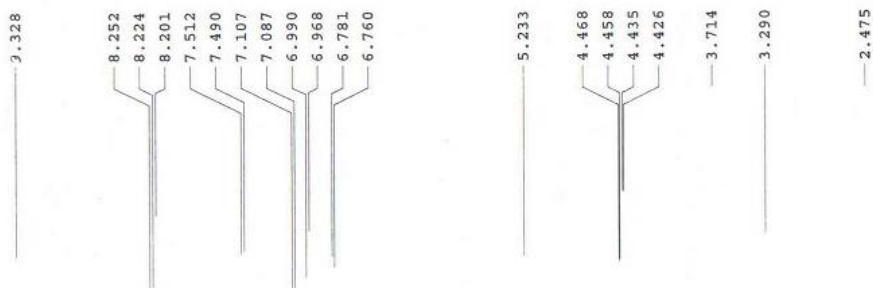
PROJECT NAME : -F-02

PROBE: ATB



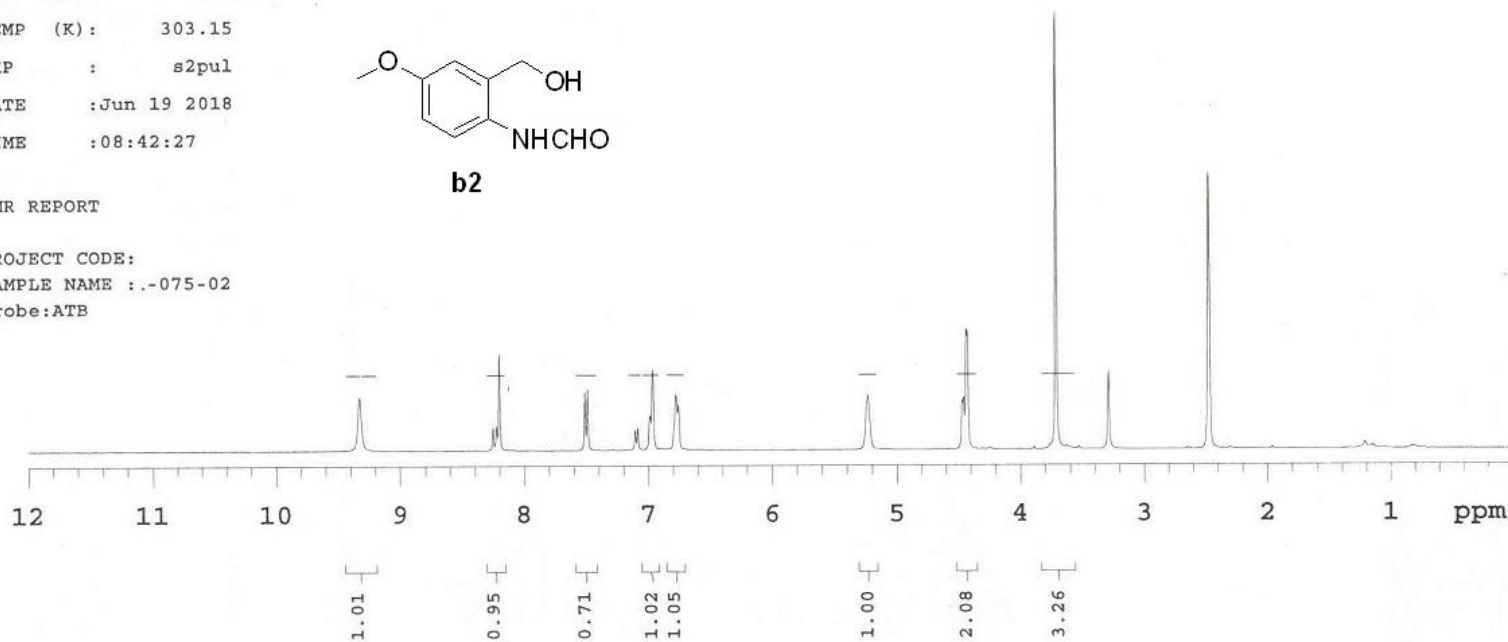
7. Copies of ^1H and ^{13}C NMR for Intermediates

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmsc
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jun 19 2018
 TIME : 08:42:27

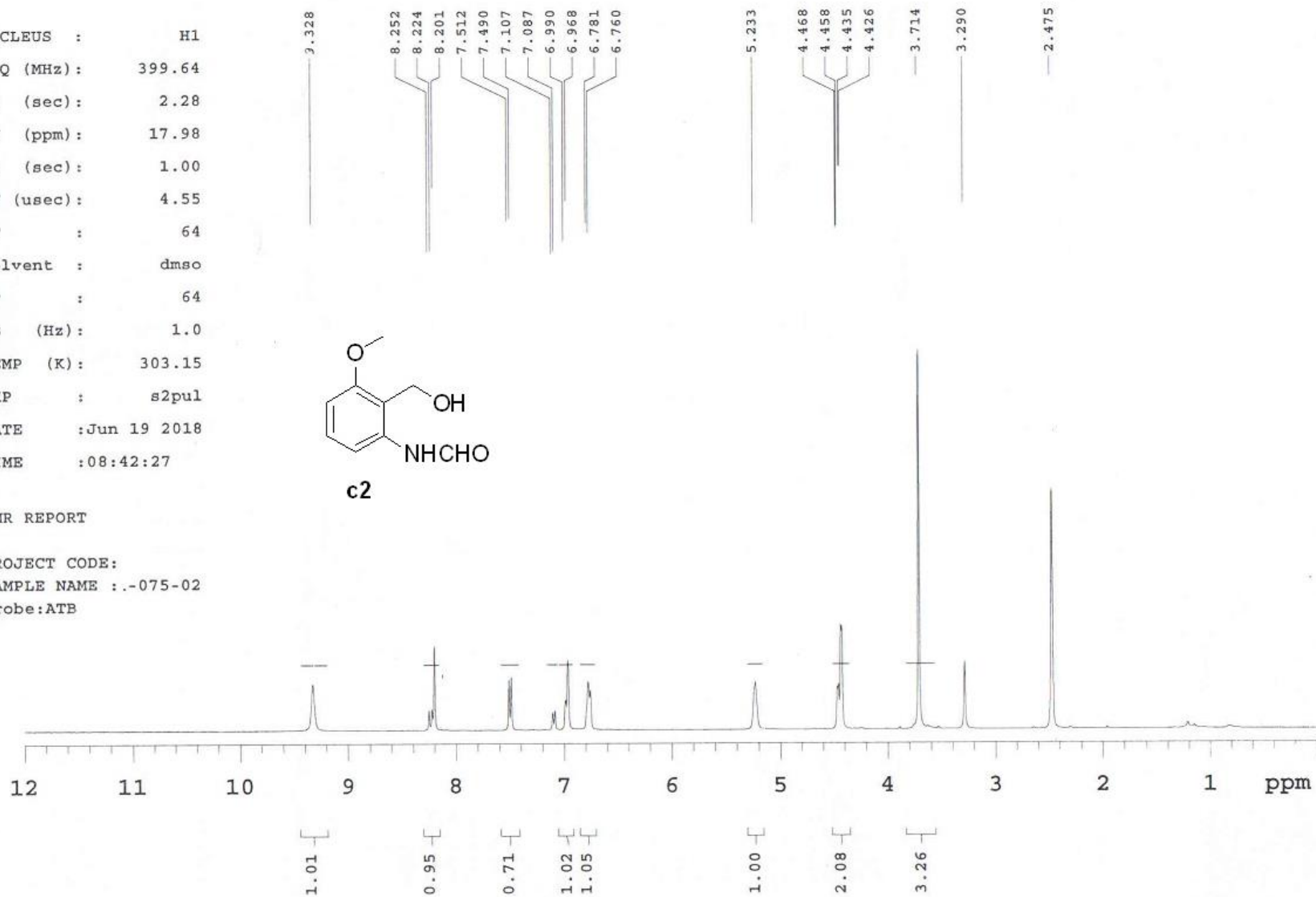


NMR REPORT

PROJECT CODE:
 SAMPLE NAME : .-075-02
 Probe:ATB



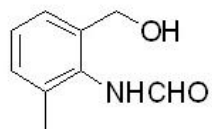
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jun 19 2018
 TIME : 08:42:27



NMR REPORT

PROJECT CODE:
 SAMPLE NAME :.-075-02
 Probe:ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.56
 SW (ppm): 16.04
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jul 19 2018
 TIME : 14:54:13

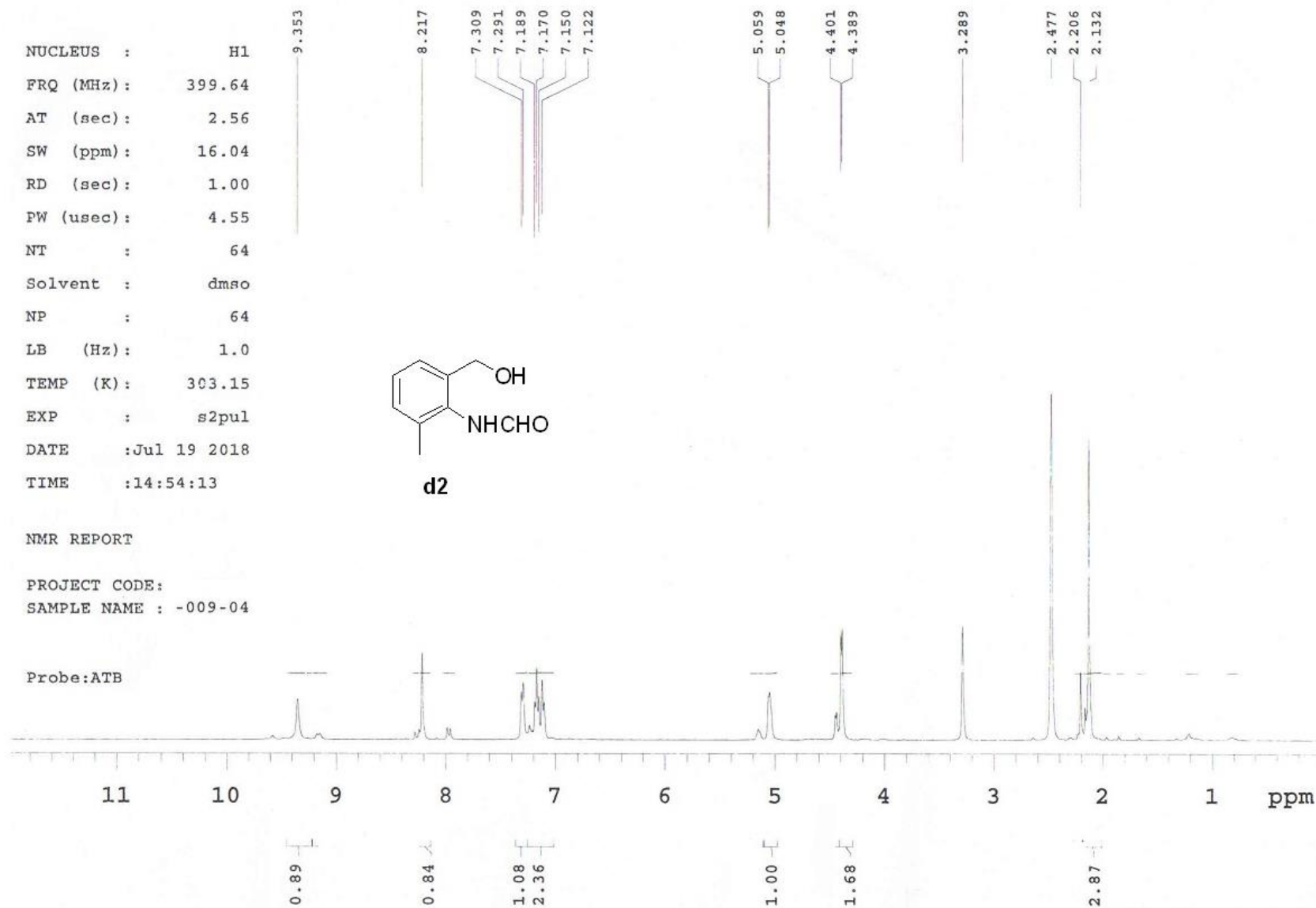


d2

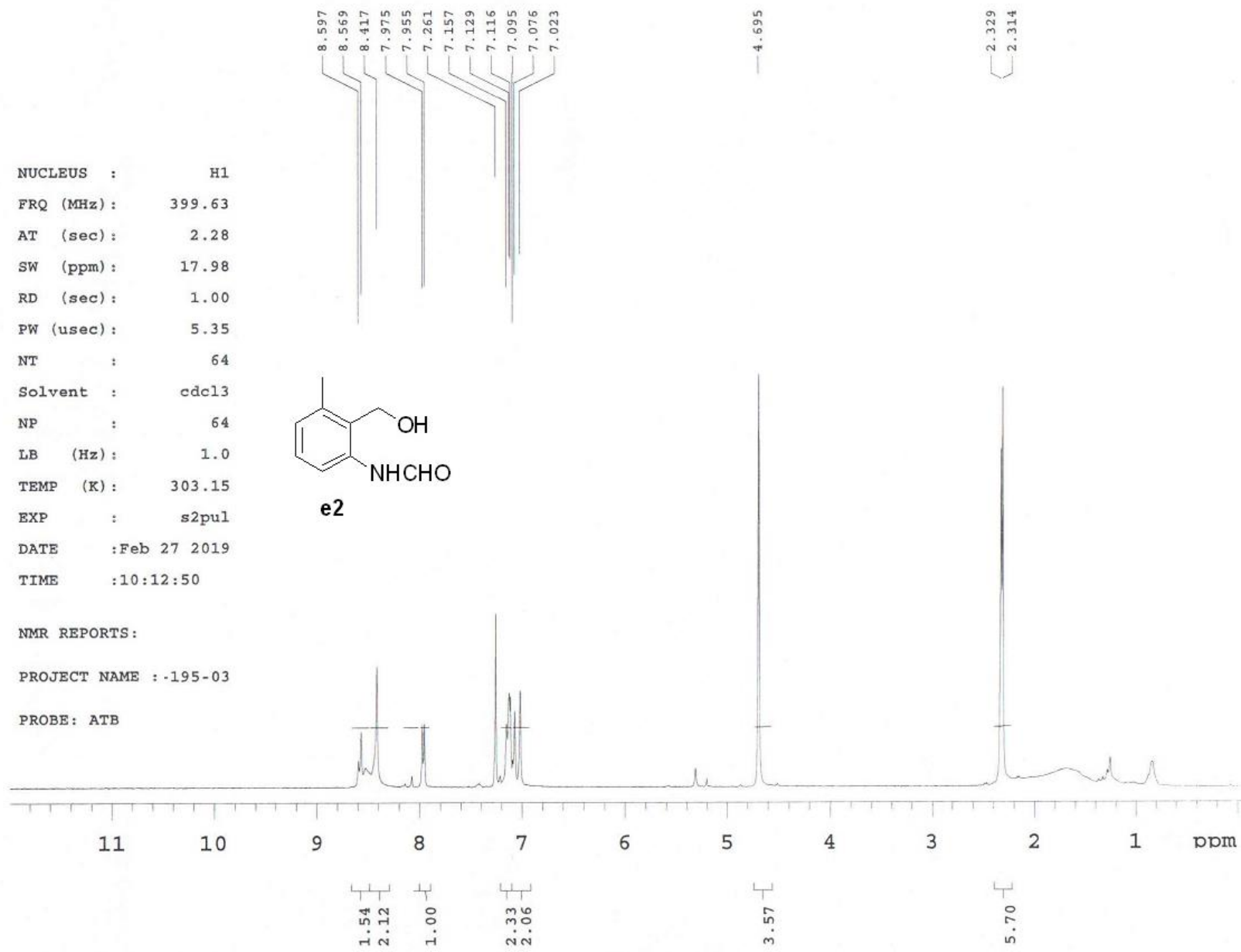
NMR REPORT

PROJECT CODE:
 SAMPLE NAME : -009-04

Probe:ATB

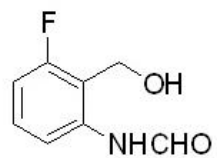


NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Feb 27 2019
 TIME : 10:12:50



NMR REPORTS:
 PROJECT NAME : -195-03
 PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 5 2019
 TIME : 15:39:11

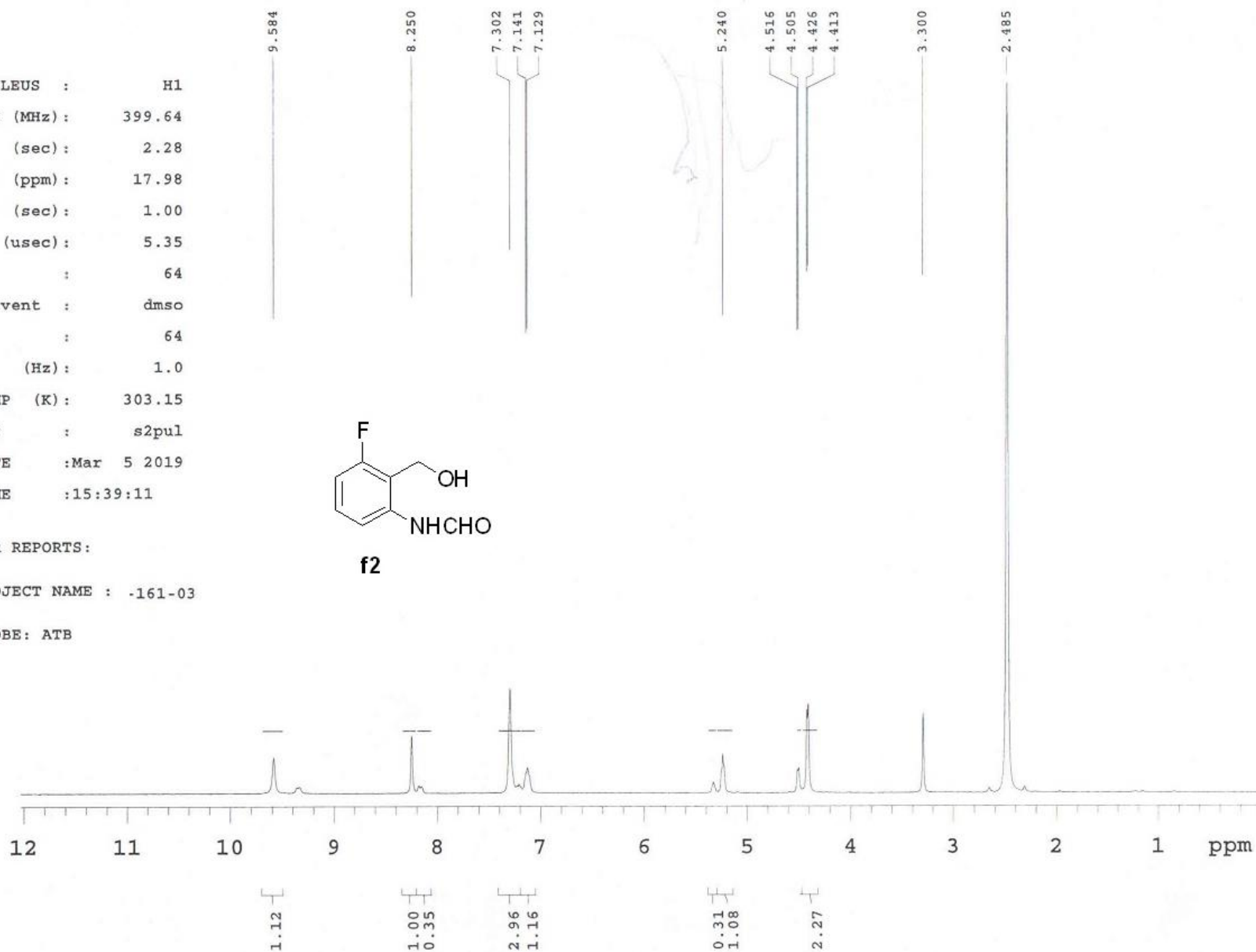


f2

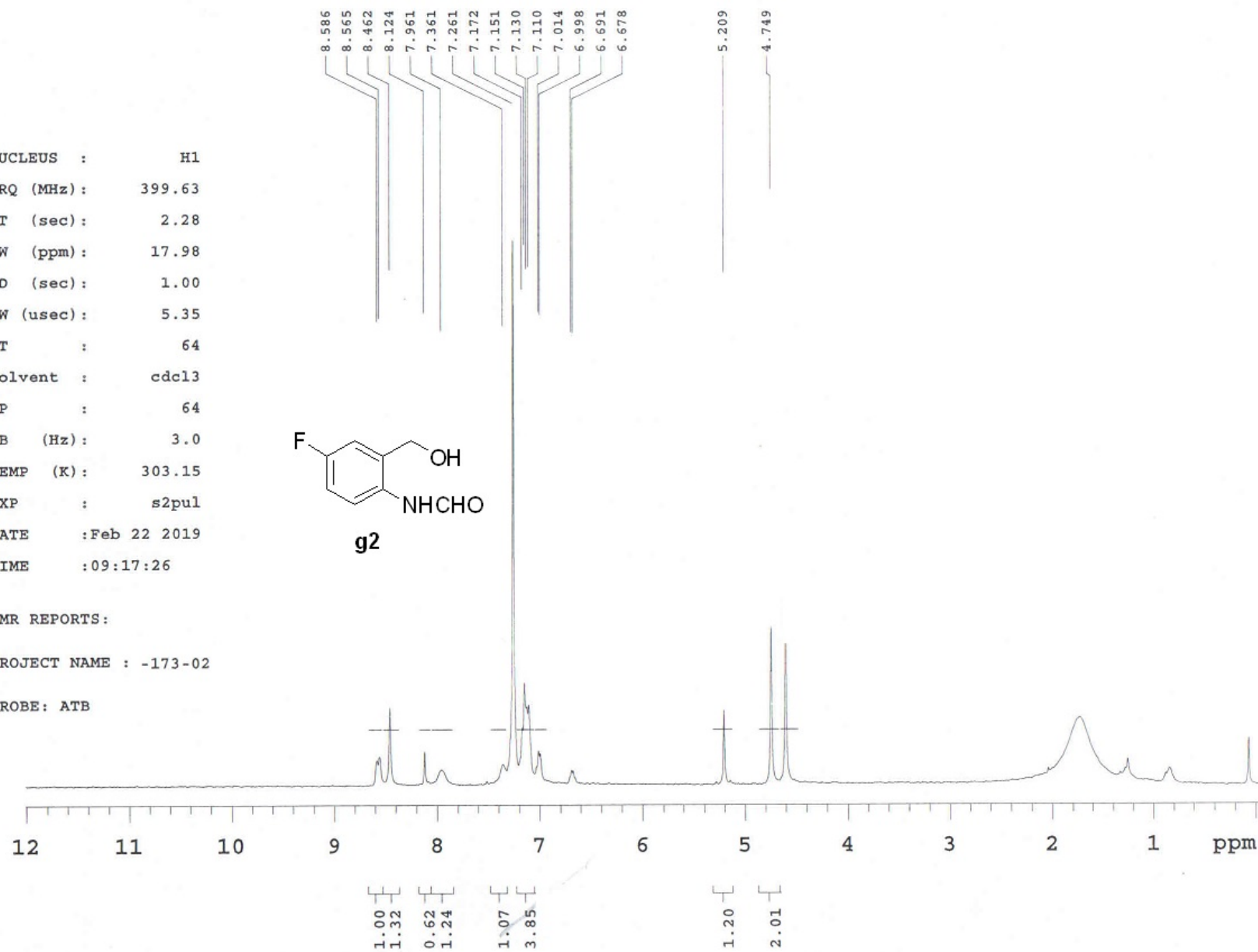
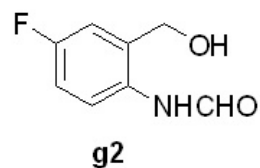
NMR REPORTS:

PROJECT NAME : -161-03

PROBE: ATB

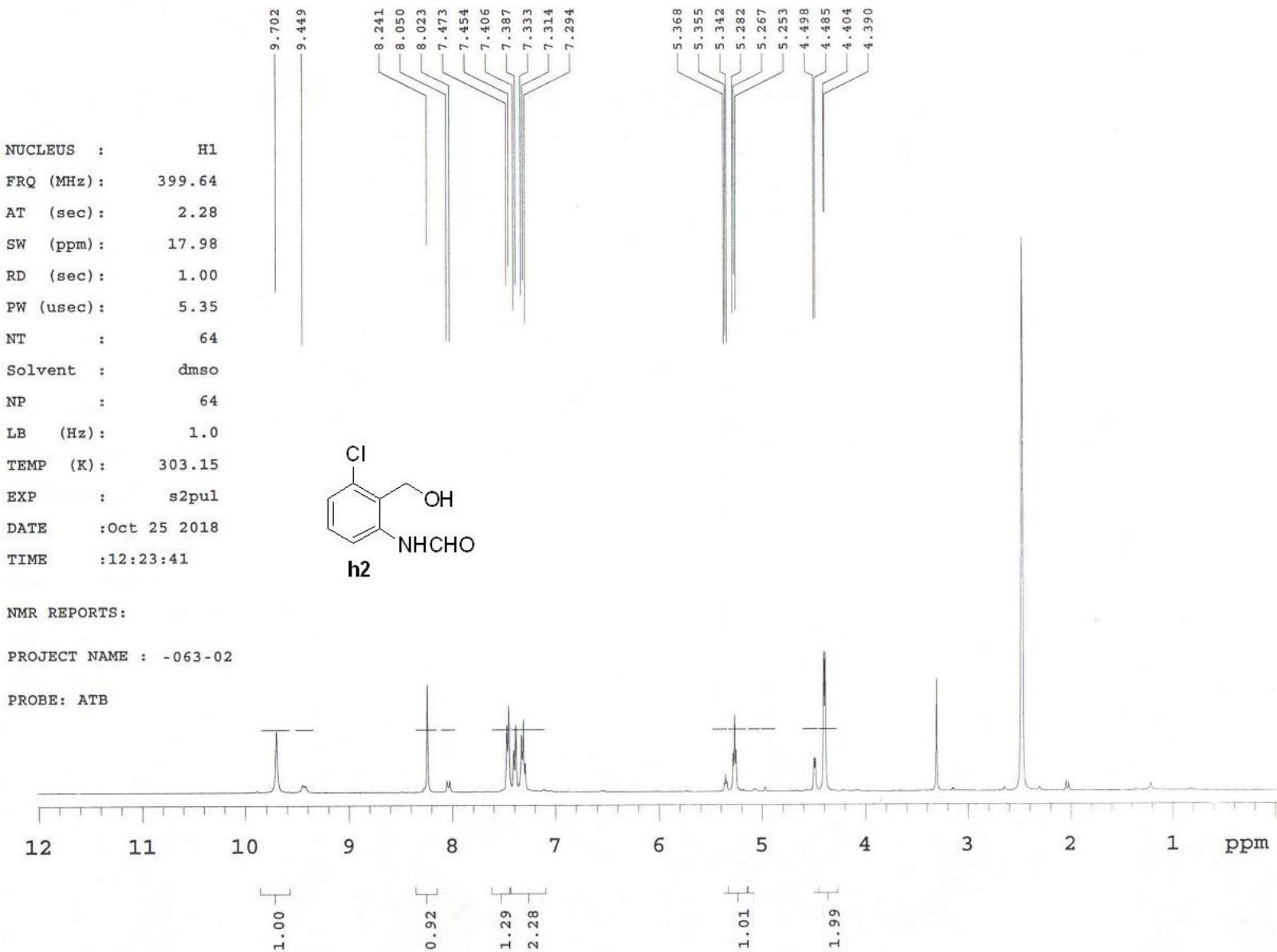


NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Feb 22 2019
 TIME : 09:17:26



NMR REPORTS:
 PROJECT NAME : -173-02
 PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Oct 25 2018
 TIME : 12:23:41

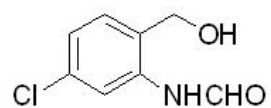
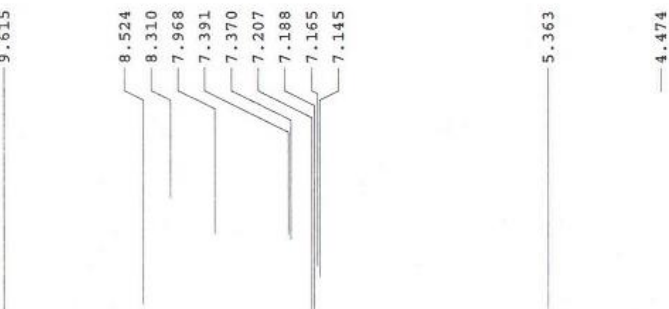


NMR REPORTS:

PROJECT NAME : -063-02

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jun 21 2018
 TIME : 09:06:00

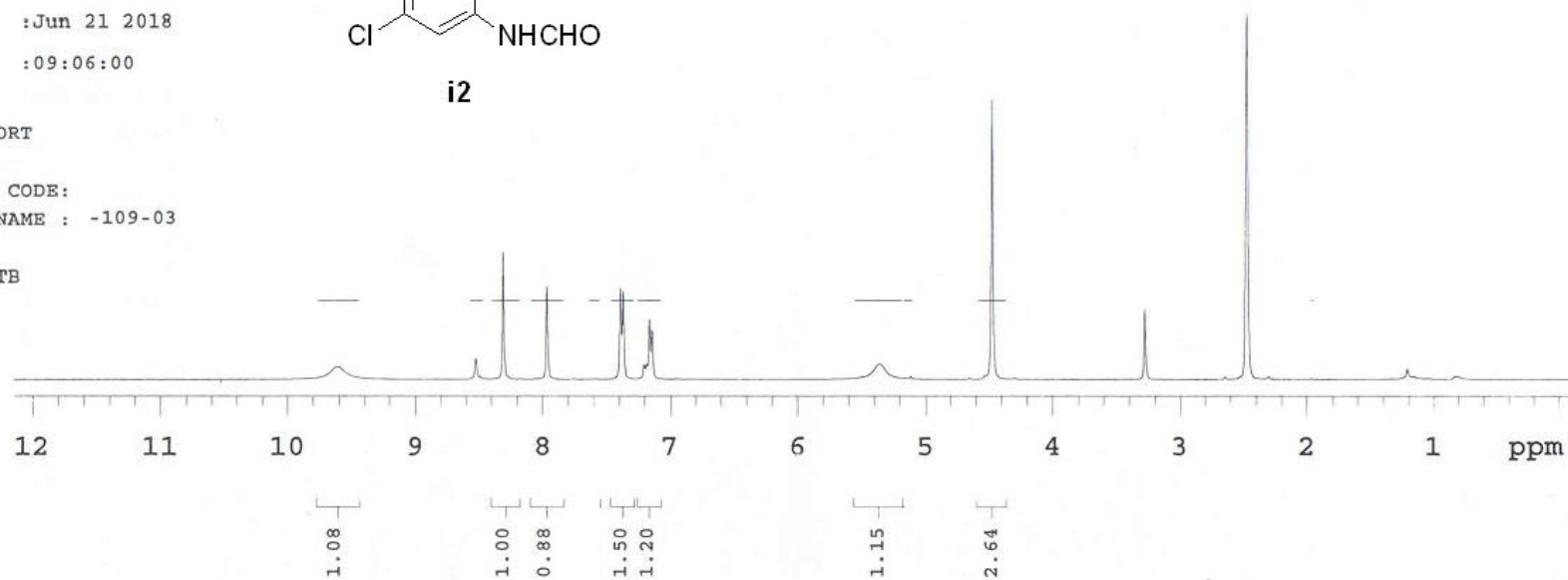


i2

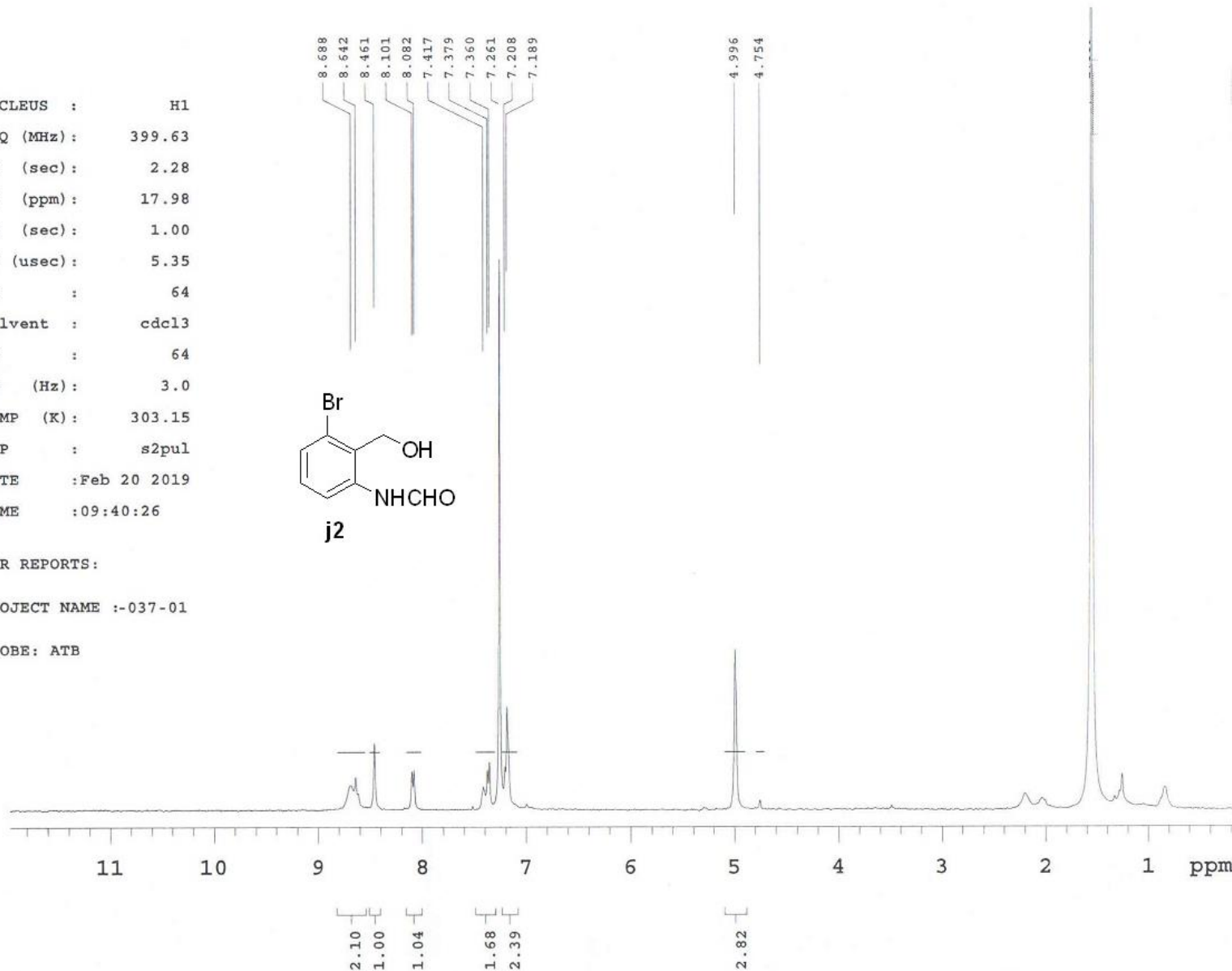
NMR REPORT

PROJECT CODE:
 SAMPLE NAME : -109-03

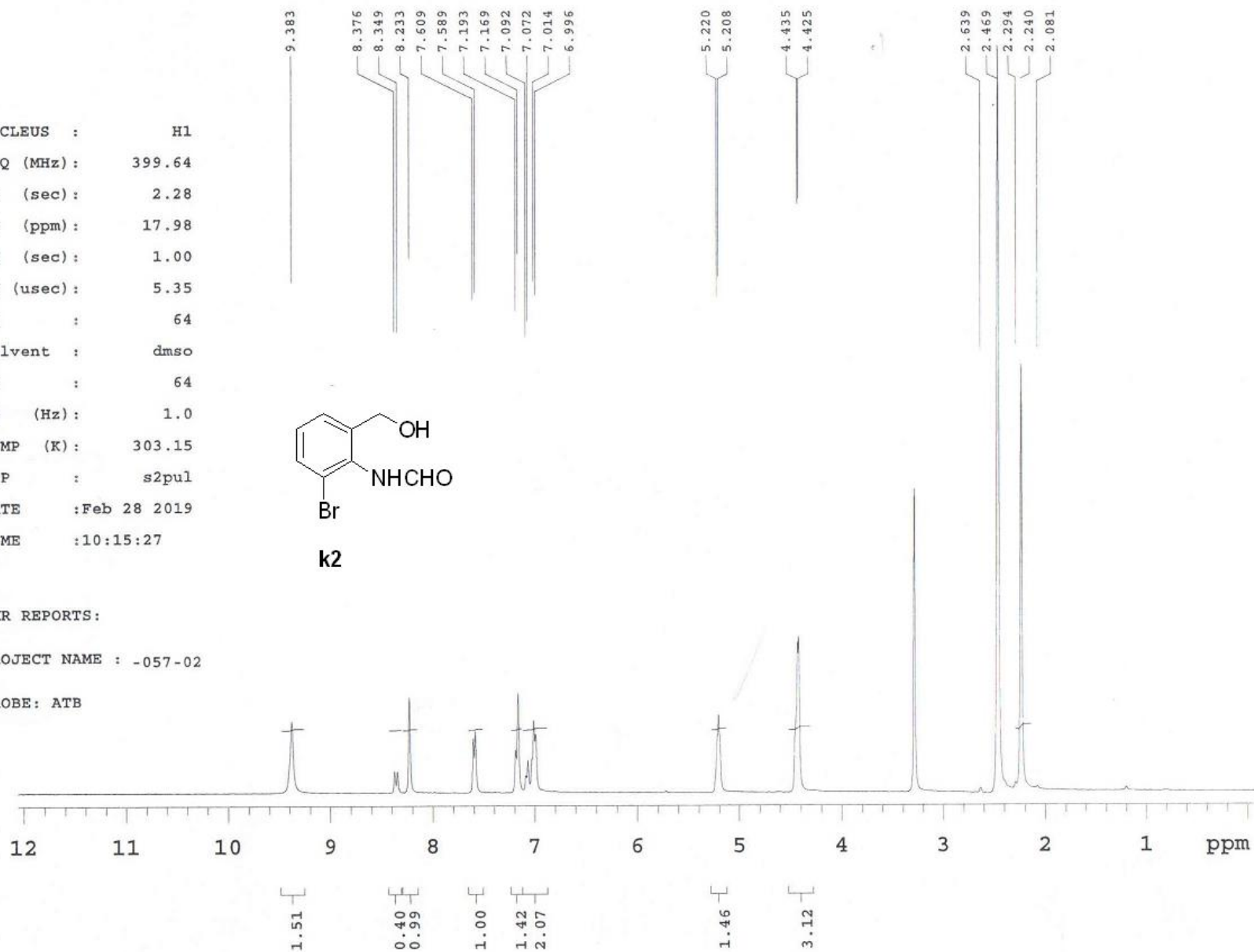
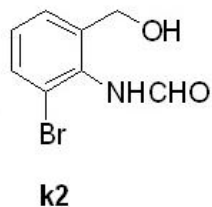
Probe:ATB



NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Feb 20 2019
 TIME : 09:40:26



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Feb 28 2019
 TIME : 10:15:27

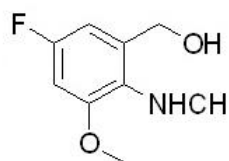


NMR REPORTS:

PROJECT NAME : -057-02

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Feb 28 2019
 TIME : 10:12:28

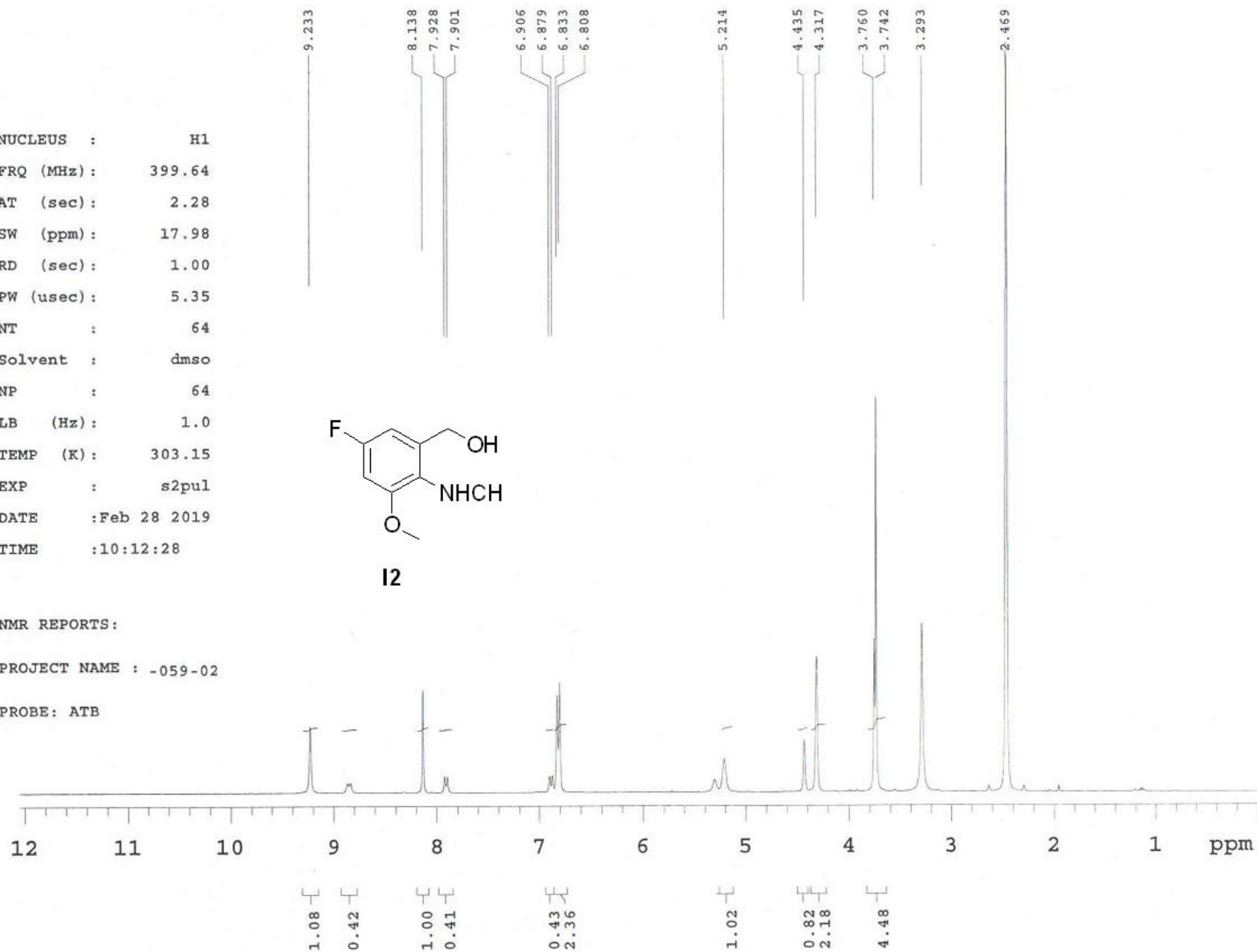


I2

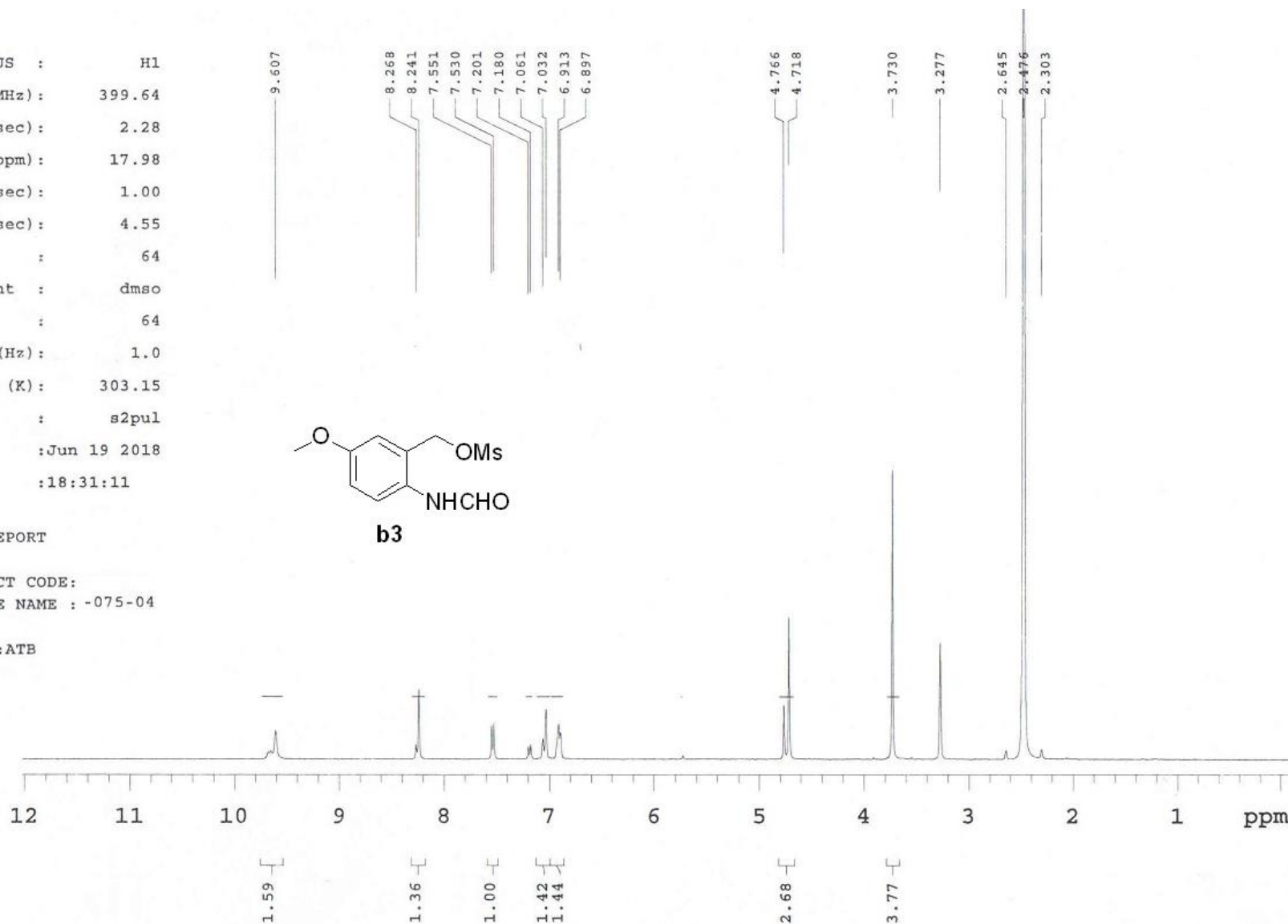
NMR REPORTS:

PROJECT NAME : -059-02

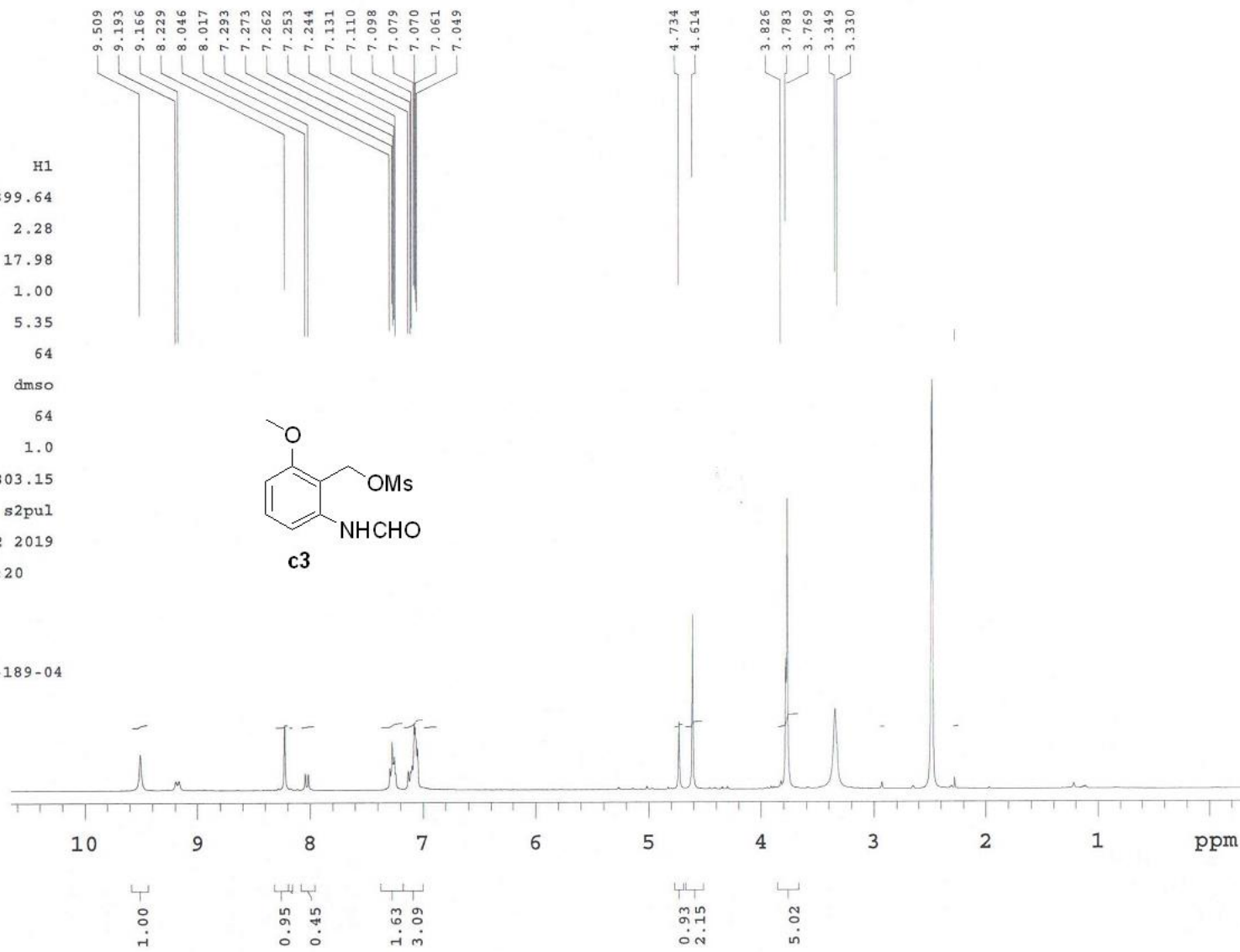
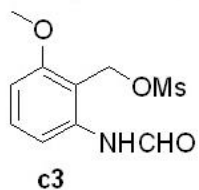
PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jun 19 2018
 TIME : 18:31:11



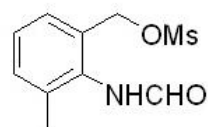
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 2 2019
 TIME : 16:12:20



NMR REPORTS:

PROJECT NAME : -189-04
 PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 1 2019
 TIME : 09:49:18

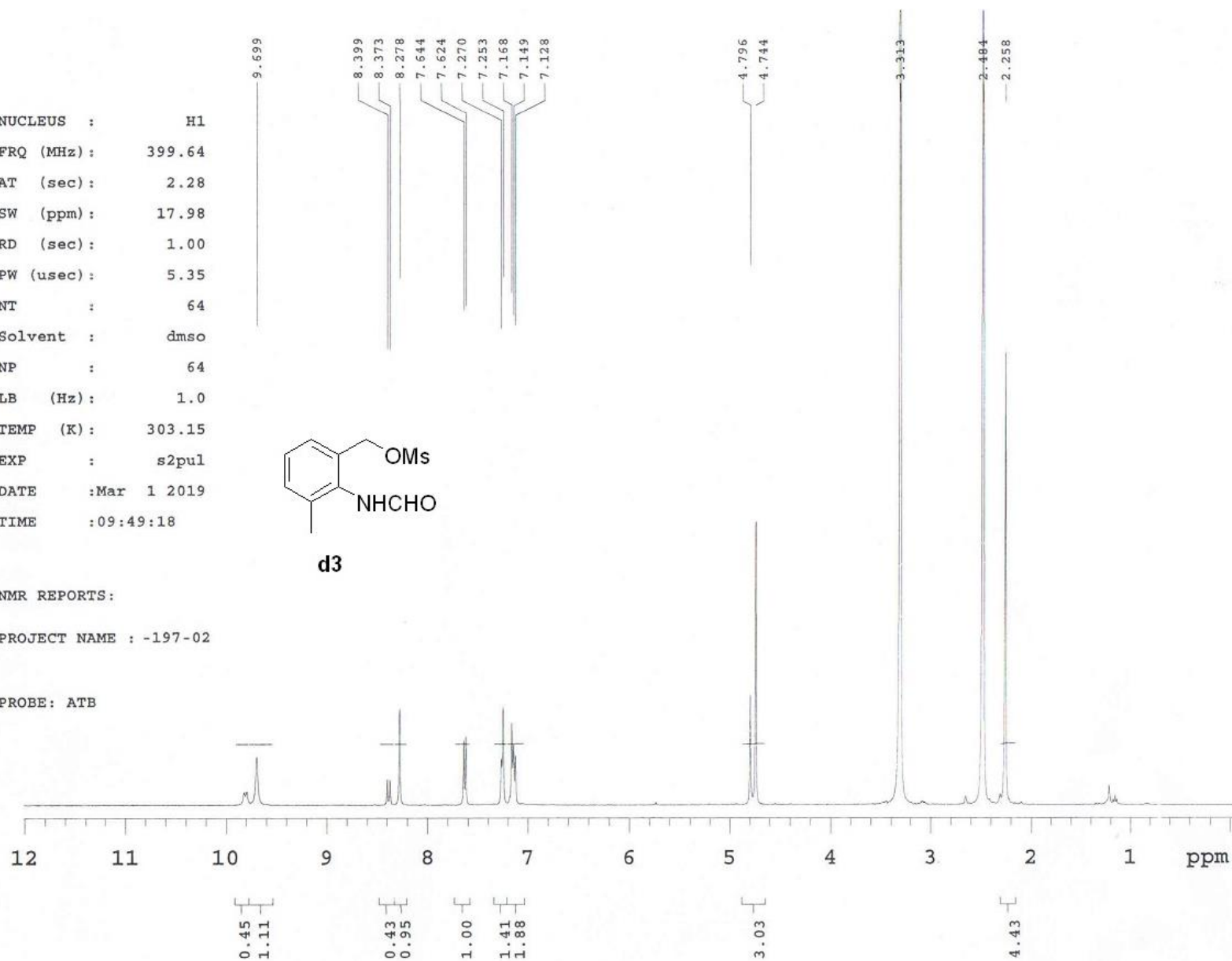


d3

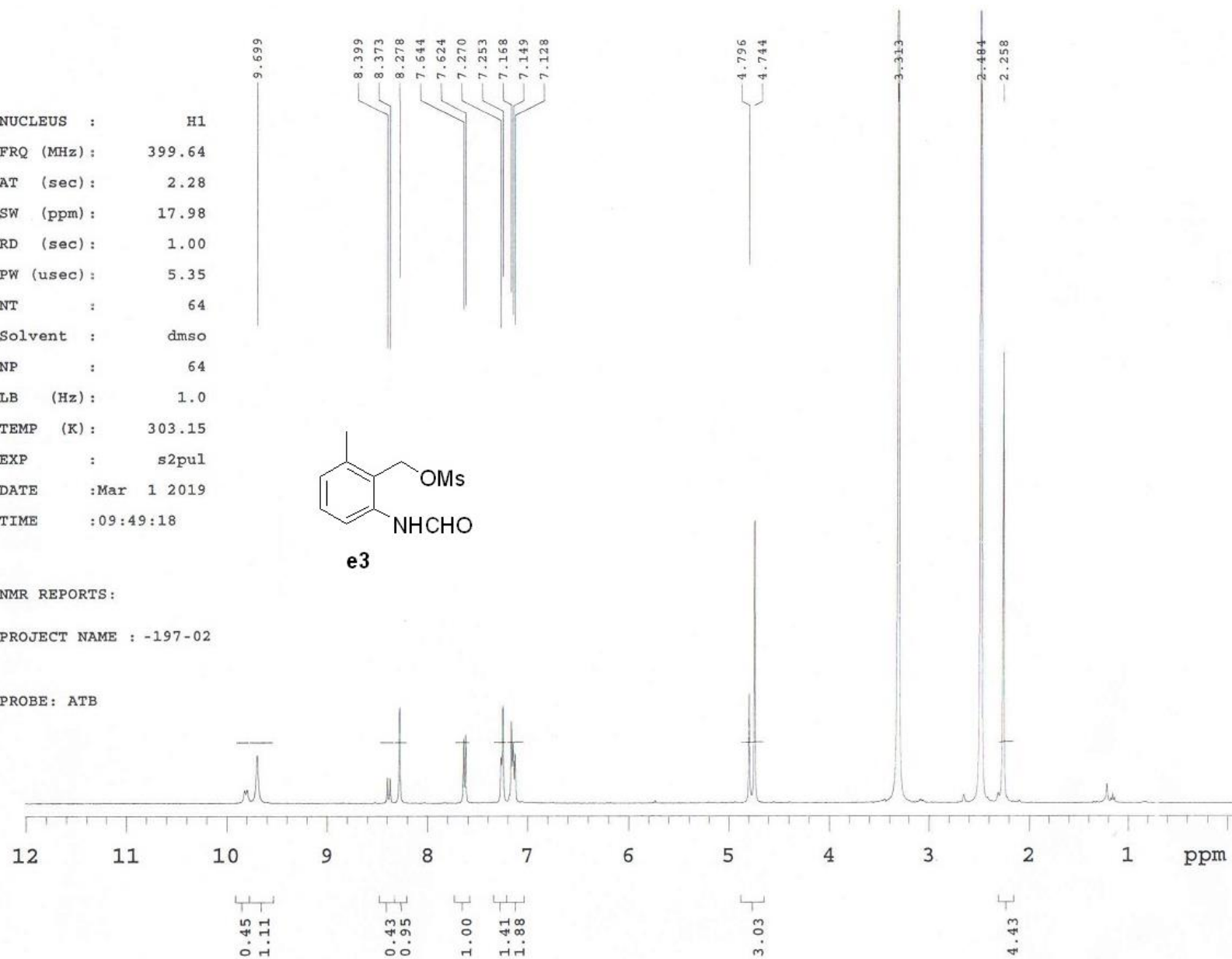
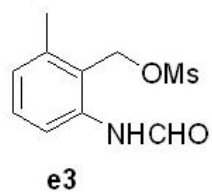
NMR REPORTS:

PROJECT NAME : -197-02

PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 1 2019
 TIME : 09:49:18

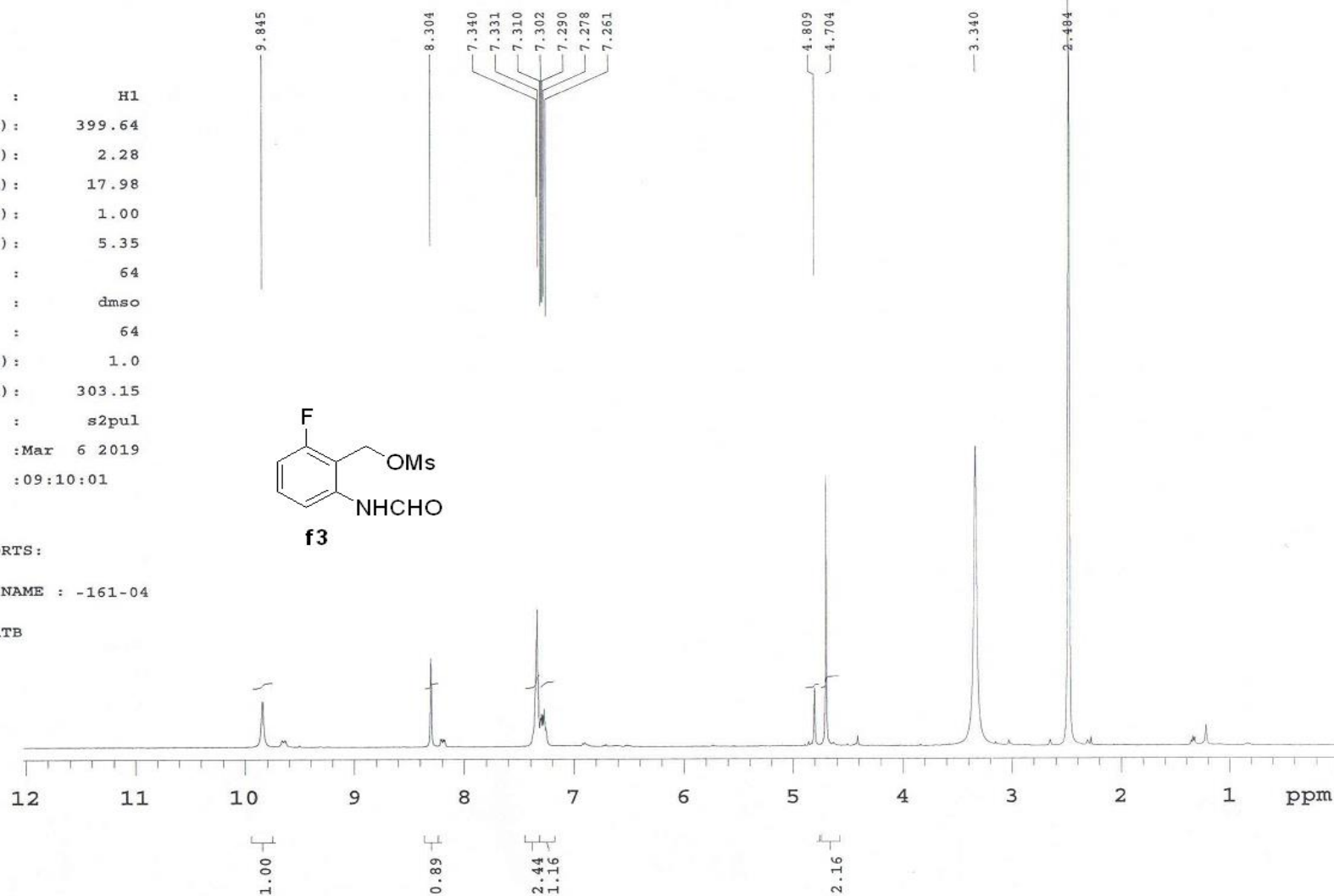
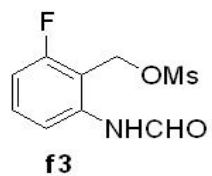


NMR REPORTS:

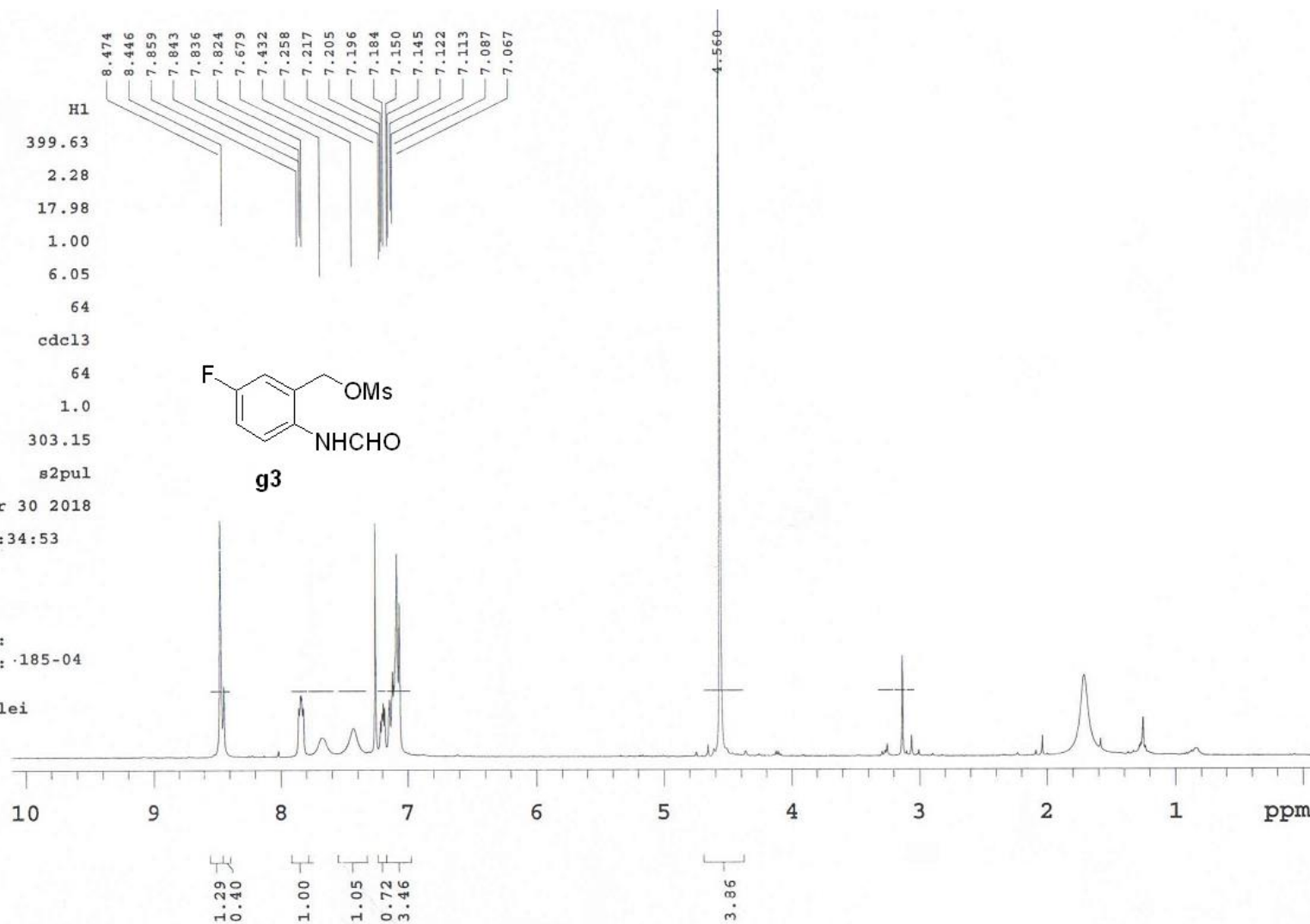
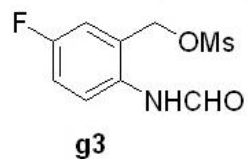
PROJECT NAME : -197-02

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 6 2019
 TIME : 09:10:01



NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 6.05
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 30 2018
 TIME : 08:34:53

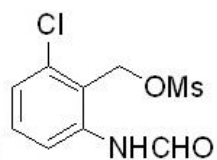
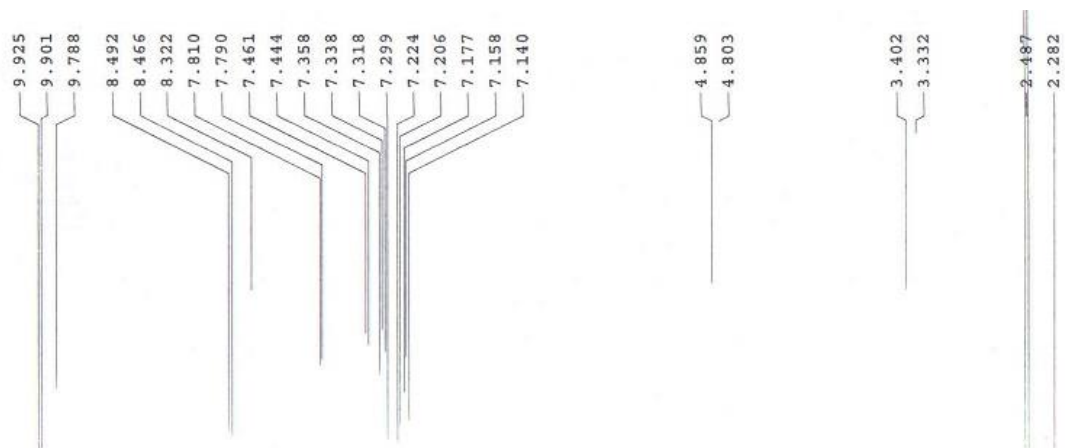


NMR REPORT

PROJECT CODE:
 SAMPLE NAME : 185-04

Probe: ASW4Nclei

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 7 2019
 TIME : 08:47:00

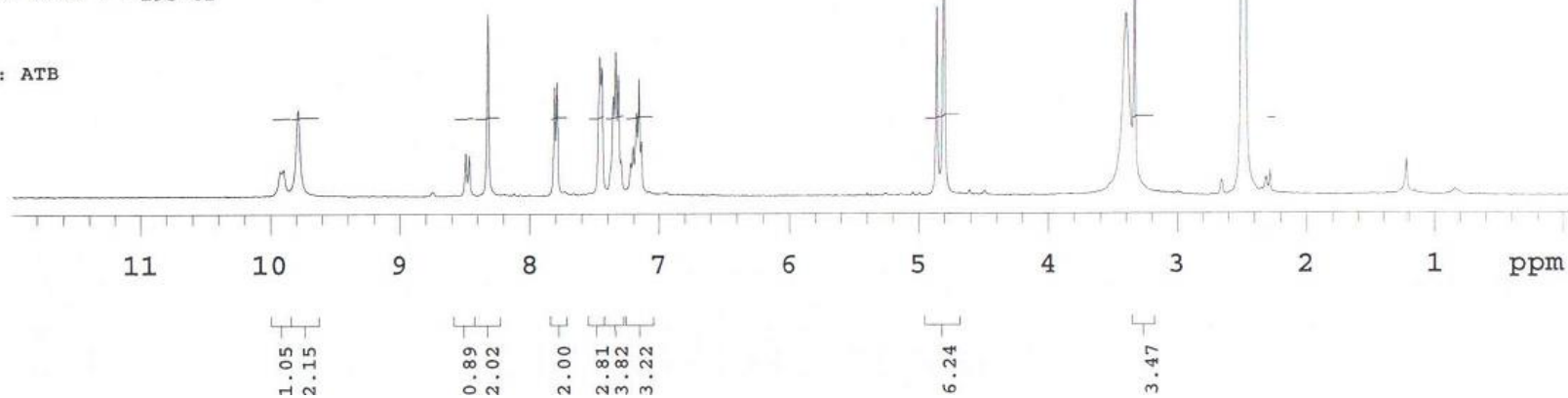


h3

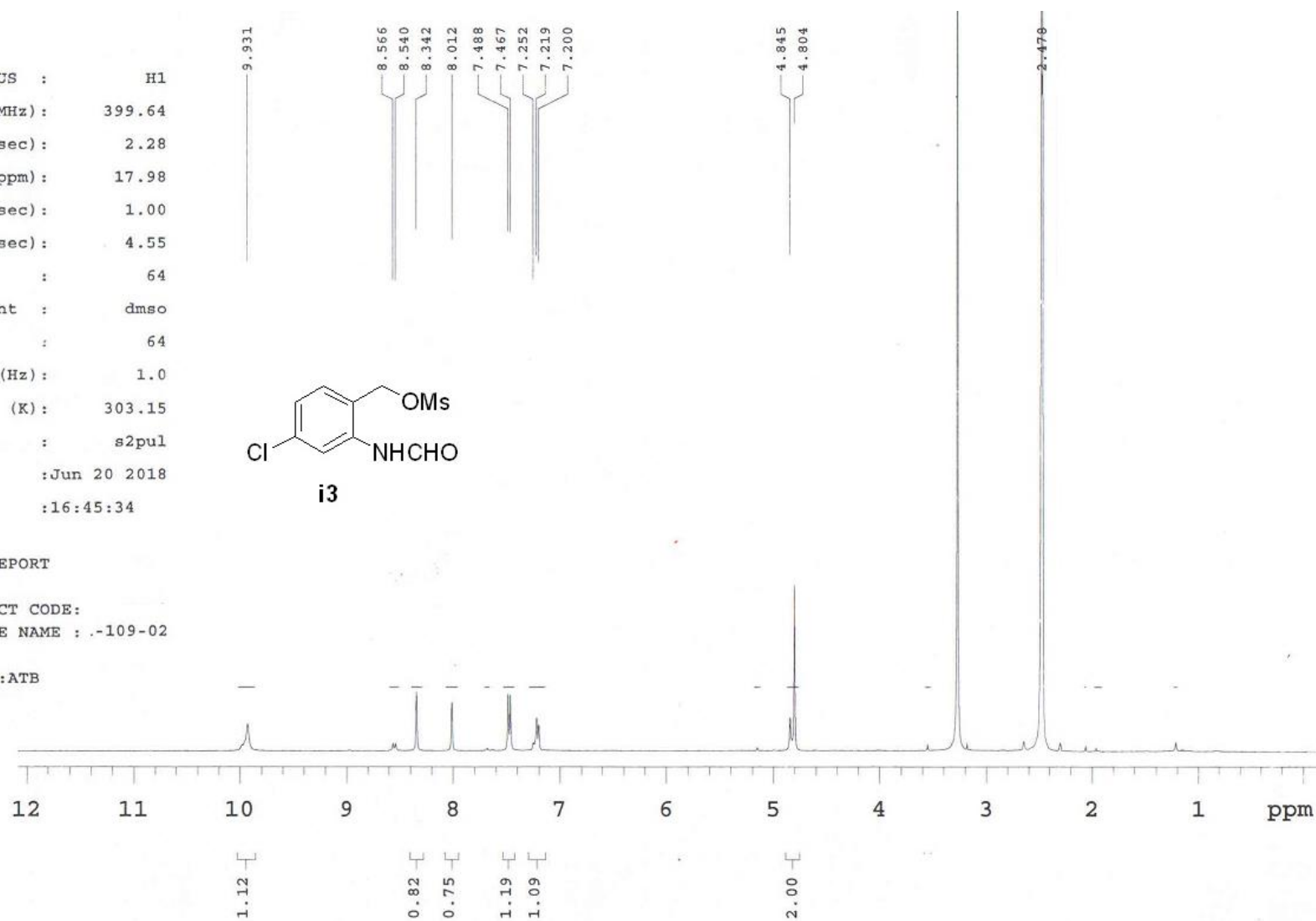
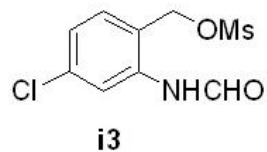
NMR REPORTS:

PROJECT NAME : 1-195-02

PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jun 20 2018
 TIME : 16:45:34

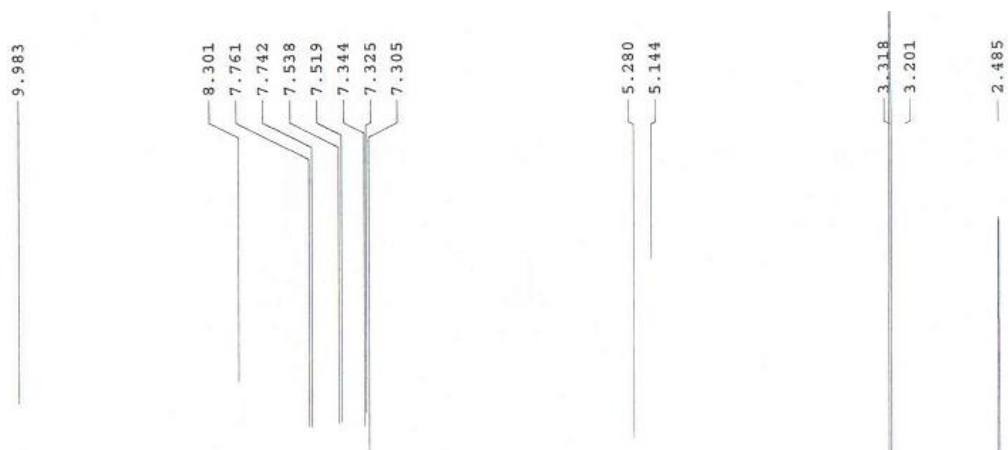


NMR REPORT

PROJECT CODE:
 SAMPLE NAME : -109-02

Probe:ATB

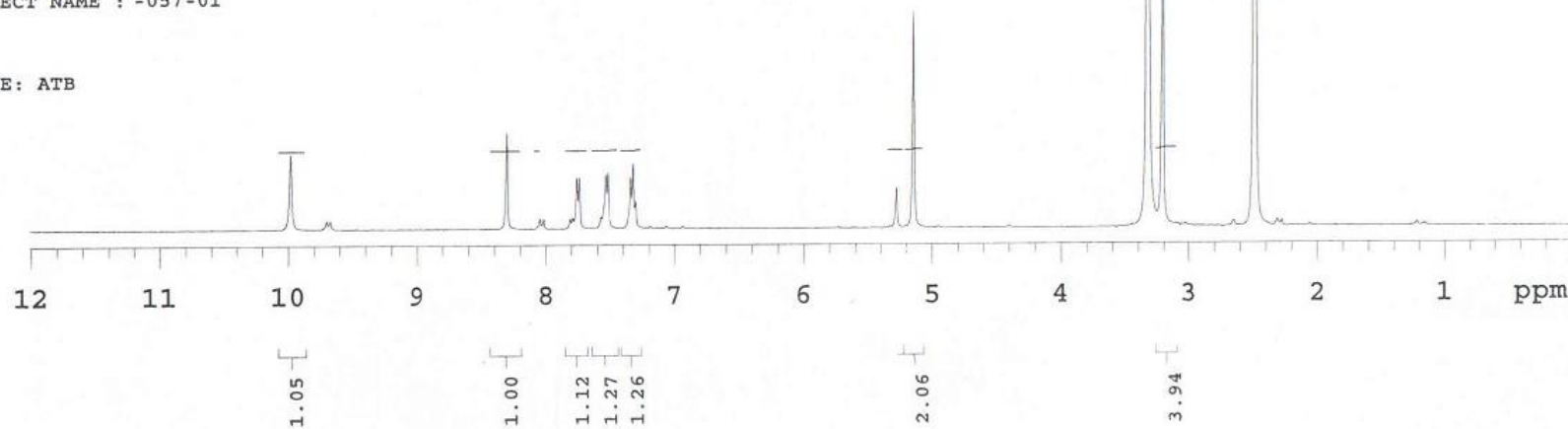
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 1 2019
 TIME : 09:47:45



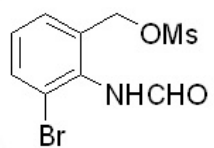
NMR REPORTS:

PROJECT NAME : -057-01

PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dms0
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 8 2019
 TIME : 08:43:23

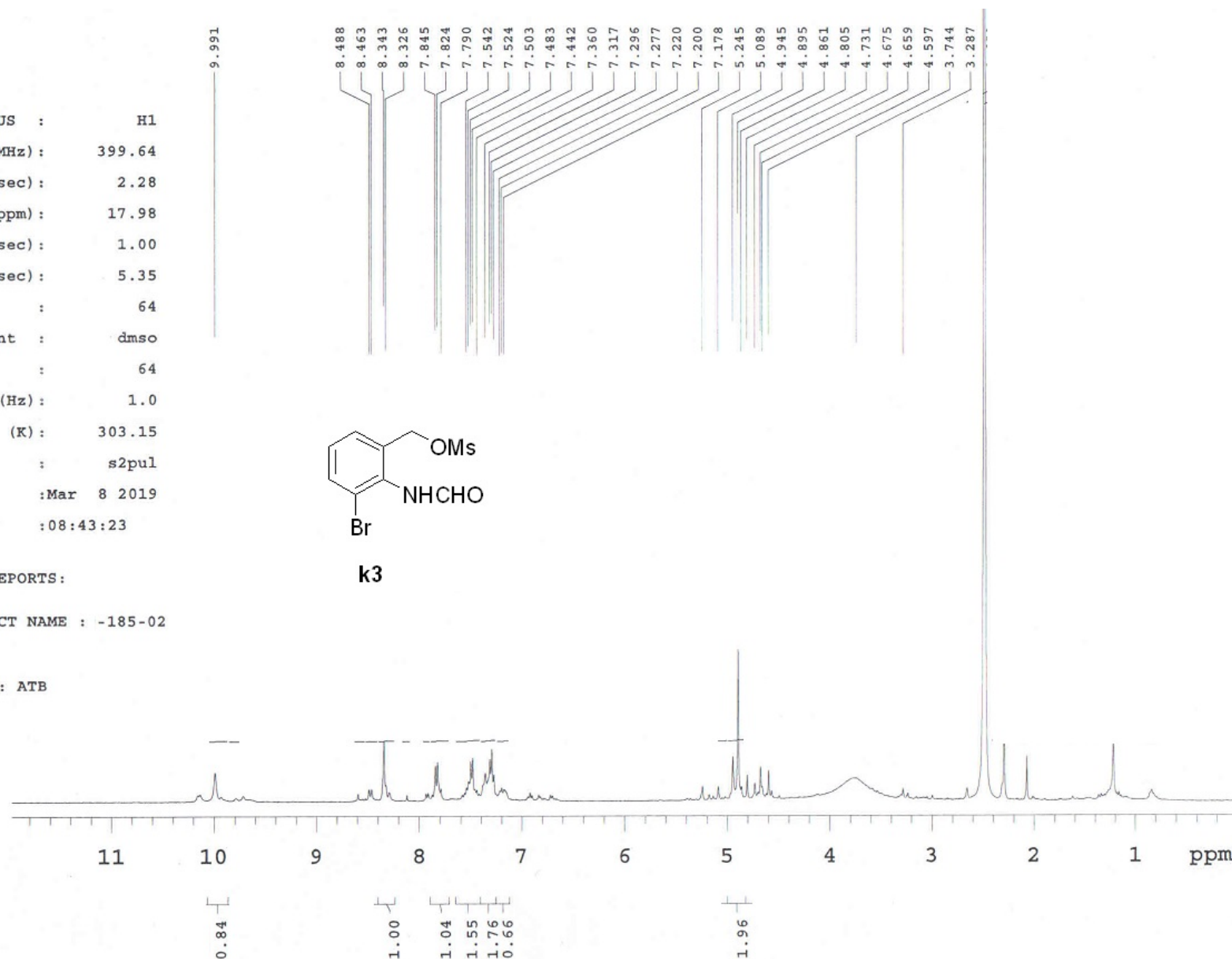


k3

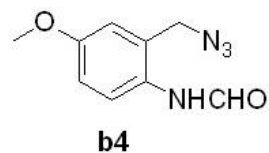
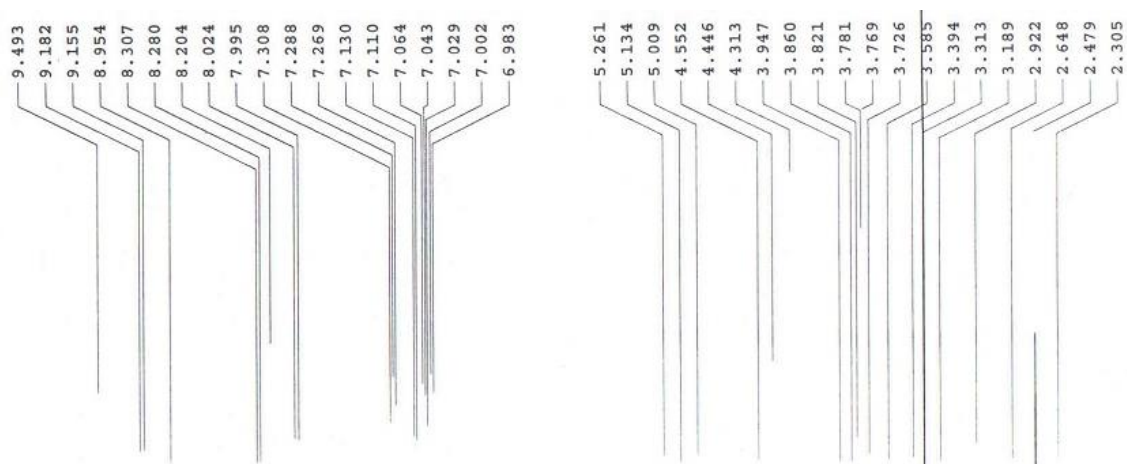
NMR REPORTS:

PROJECT NAME : -185-02

PROBE: ATB



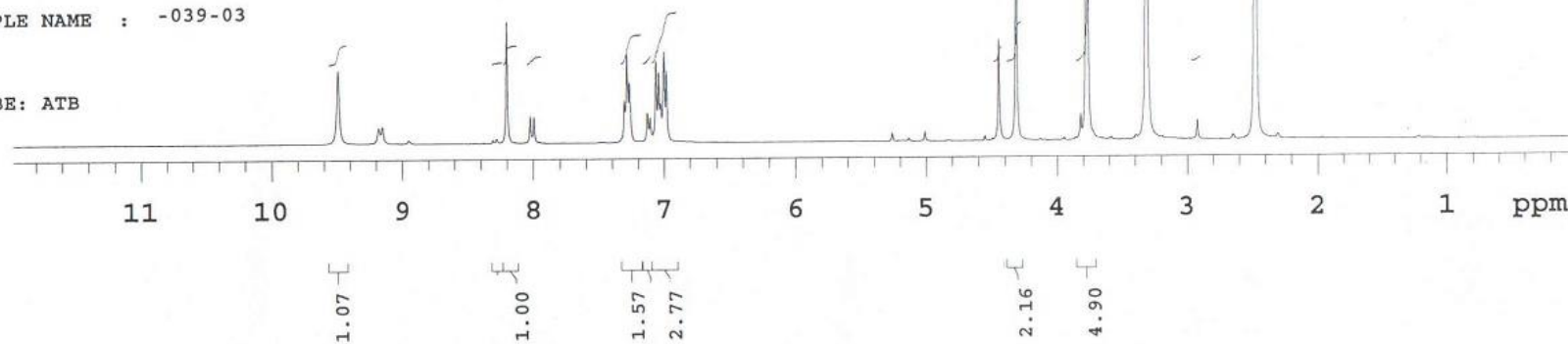
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 298.15
 EXP : s2pul
 DATE : Oct 11 2018
 TIME : 10:17:42



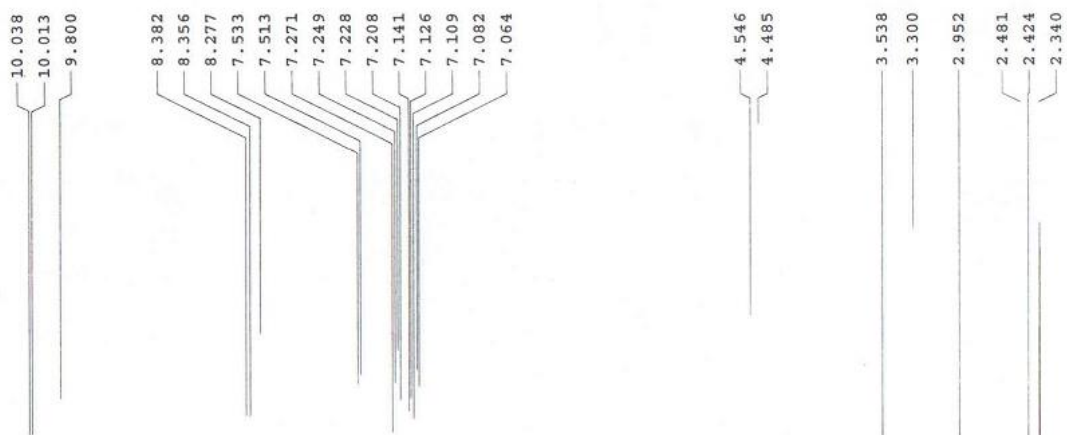
NMR REPORTS:

SAMPLE NAME : -039-03

PROBE: ATB

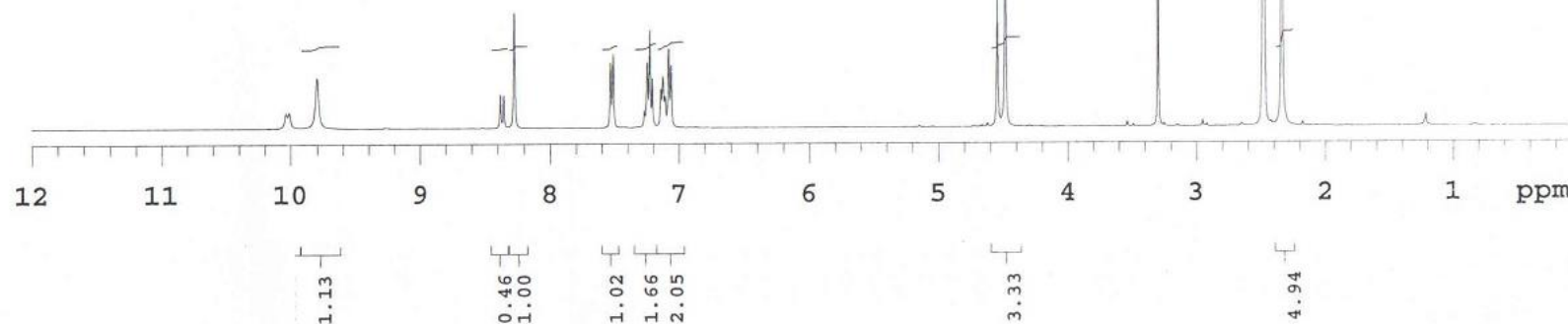


NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dms0
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Oct 16 2018
 TIME : 00:48:22

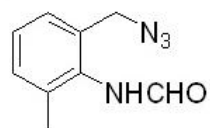


NMR REPORTS:

SAMPLE NAME : -051-02
 PROBE: ATB



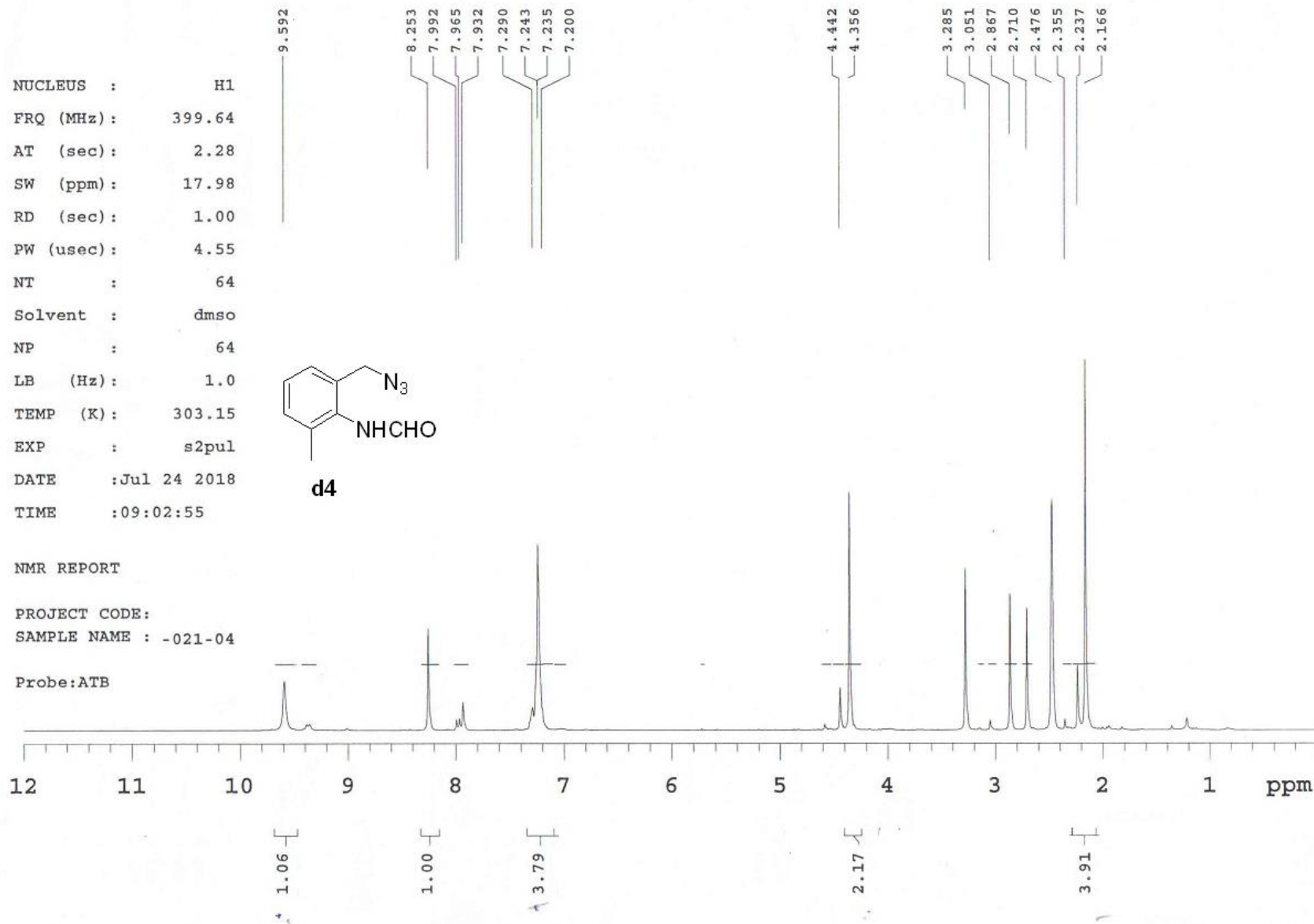
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.55
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jul 24 2018
 TIME : 09:02:55



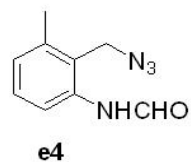
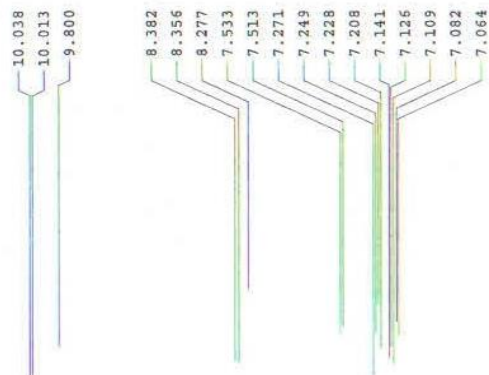
NMR REPORT

PROJECT CODE:
 SAMPLE NAME : -021-04

Probe:ATB

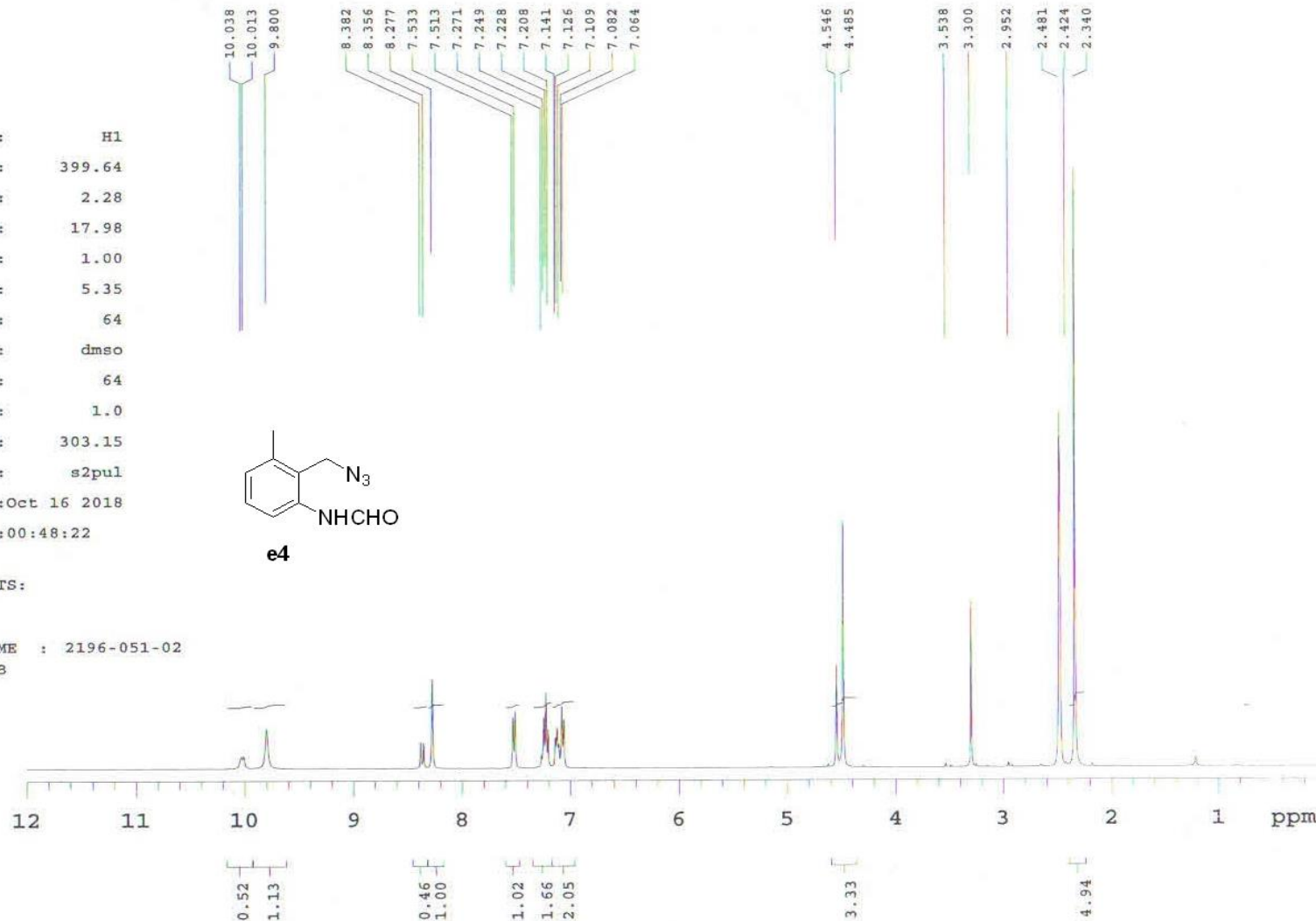


NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmso
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Oct 16 2018
 TIME : 00:48:22

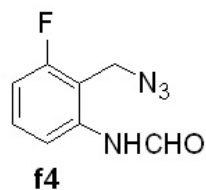
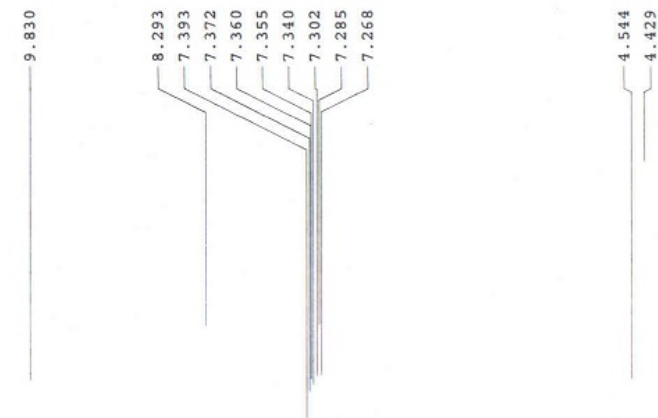


NMR REPORTS:

SAMPLE NAME : 2196-051-02
 PROBE: ATB



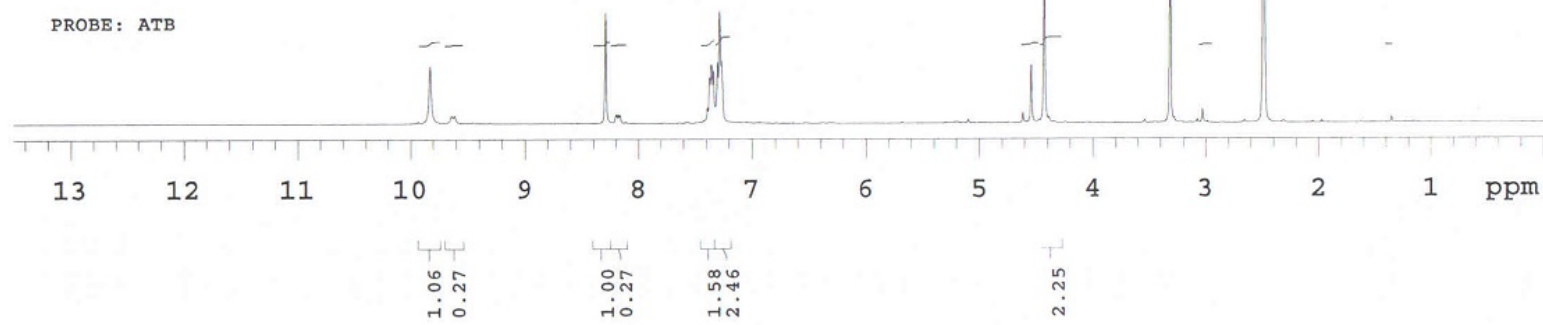
NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 8 2019
 TIME : 15:20:45



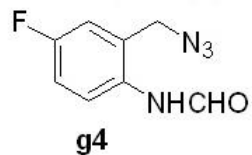
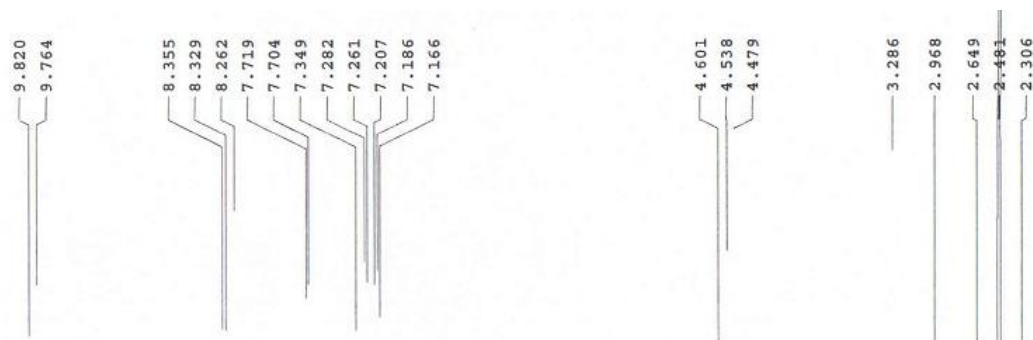
NMR REPORTS:

PROJECT NAME : -189-02

PROBE: ATB

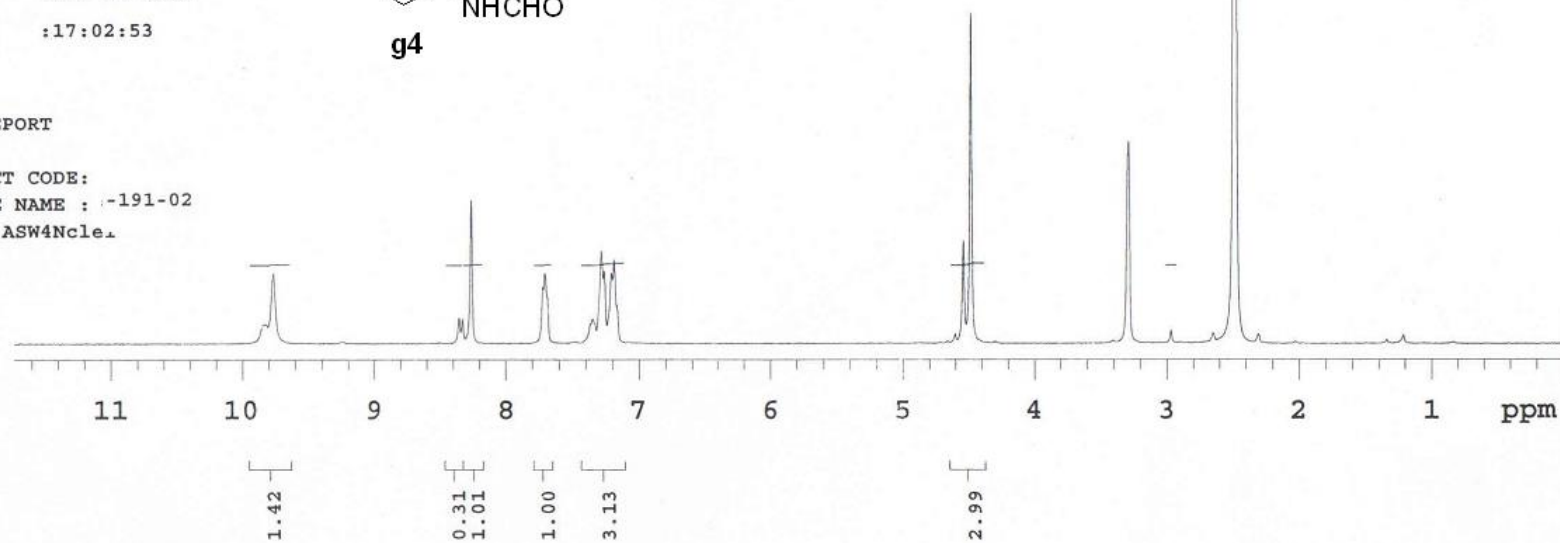


NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 6.05
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 30 2018
 TIME : 17:02:53



NMR REPORT

PROJECT CODE:
 SAMPLE NAME : -191-02
 Probe: ASW4Ncle



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 6.20
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 298.15
 EXP : s2pul
 DATE : Oct 5 2018
 TIME : 17:33:30

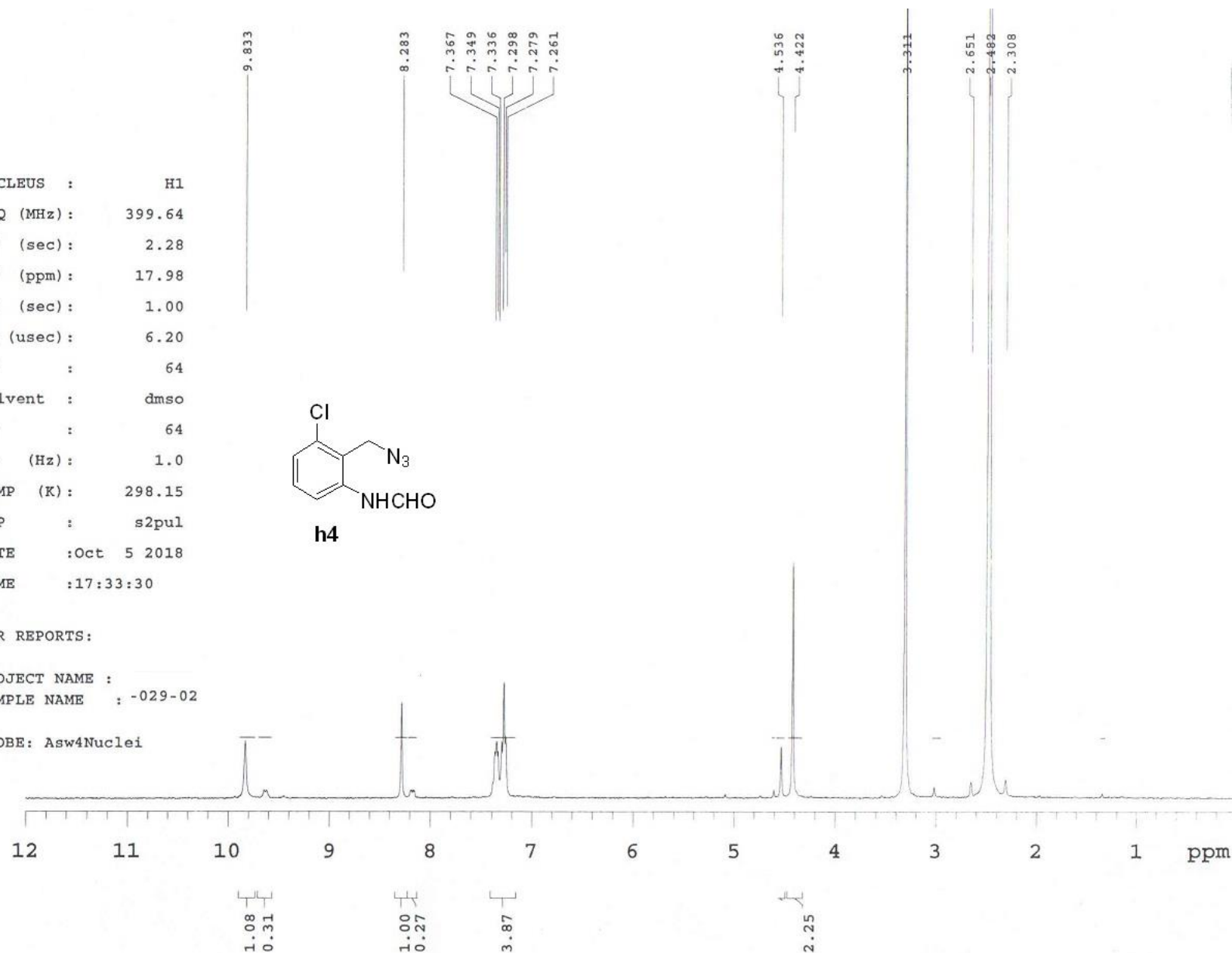


h4

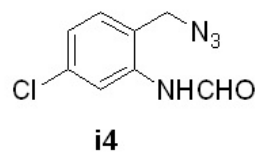
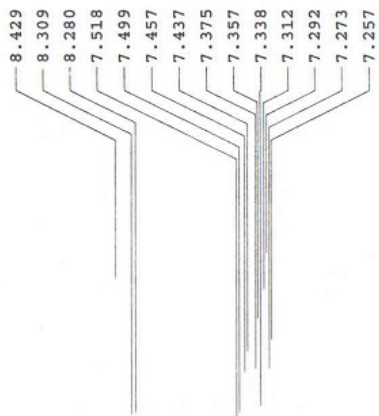
NMR REPORTS:

PROJECT NAME :
 SAMPLE NAME : -029-02

PROBE: Asw4Nuclei



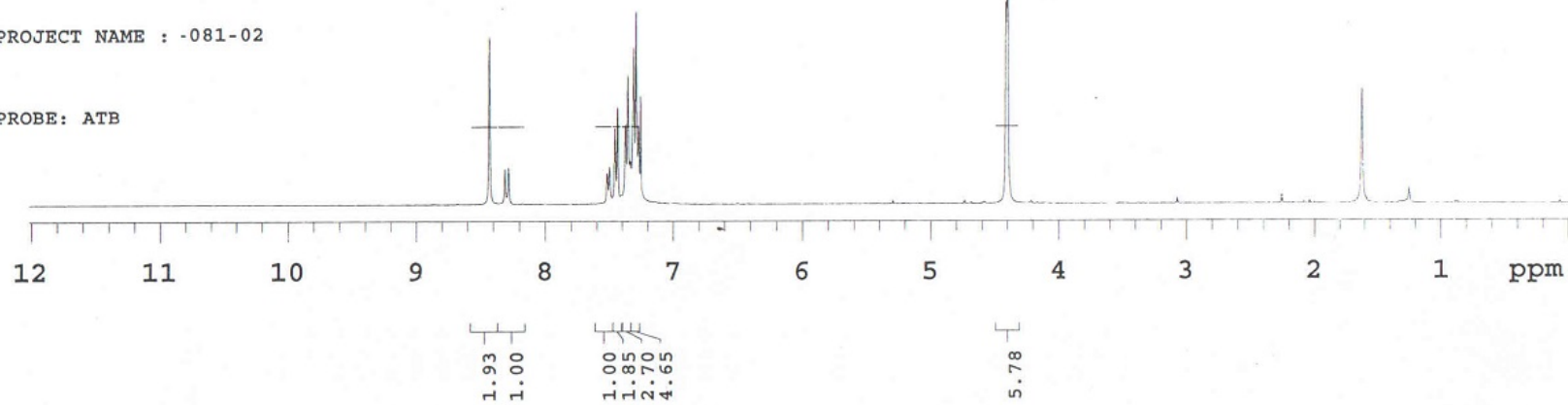
NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Oct 30 2018
 TIME : 02:19:12



NMR REPORTS:

PROJECT NAME : -081-02

PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64

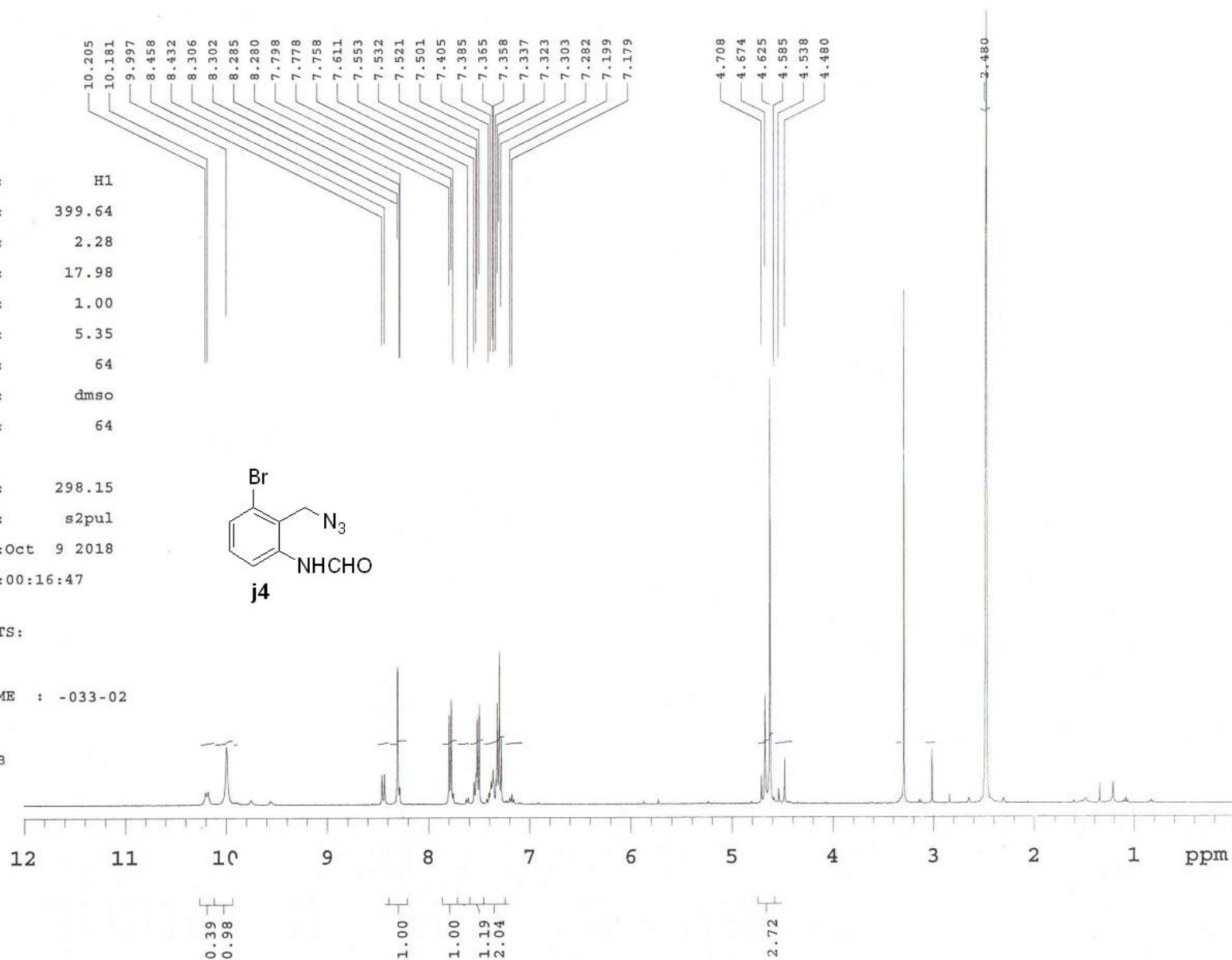
TEMP (K): 298.15
 EXP : s2pul
 DATE : Oct 9 2018
 TIME : 00:16:47



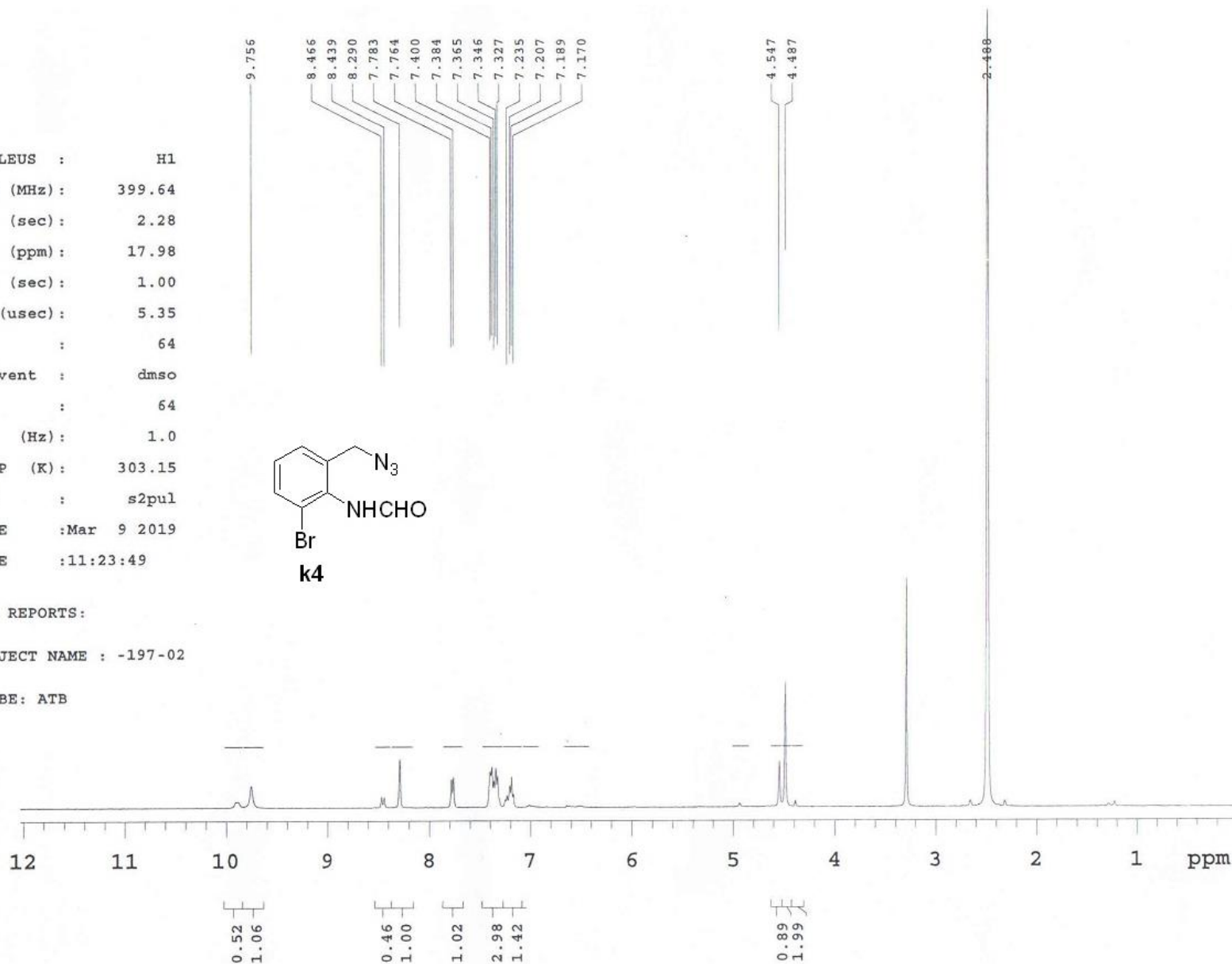
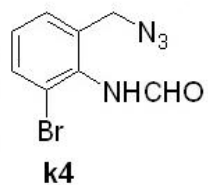
NMR REPORTS:

SAMPLE NAME : -033-02

PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 9 2019
 TIME : 11:23:49

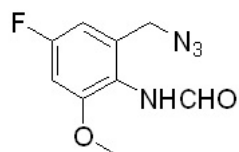


NMR REPORTS:

PROJECT NAME : -197-02

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.64
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : dmsd
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 7 2018
 TIME : 08:42:15

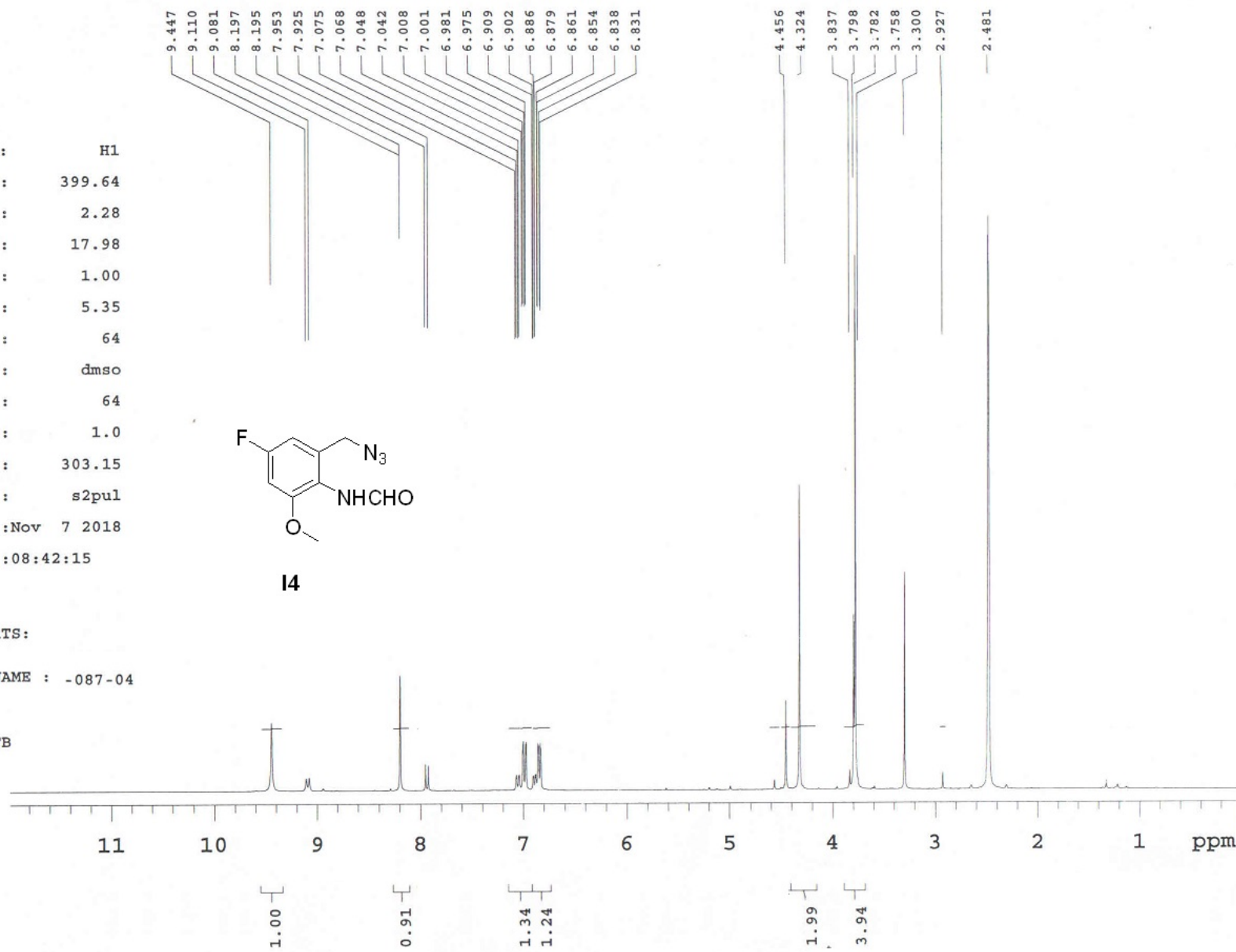


14

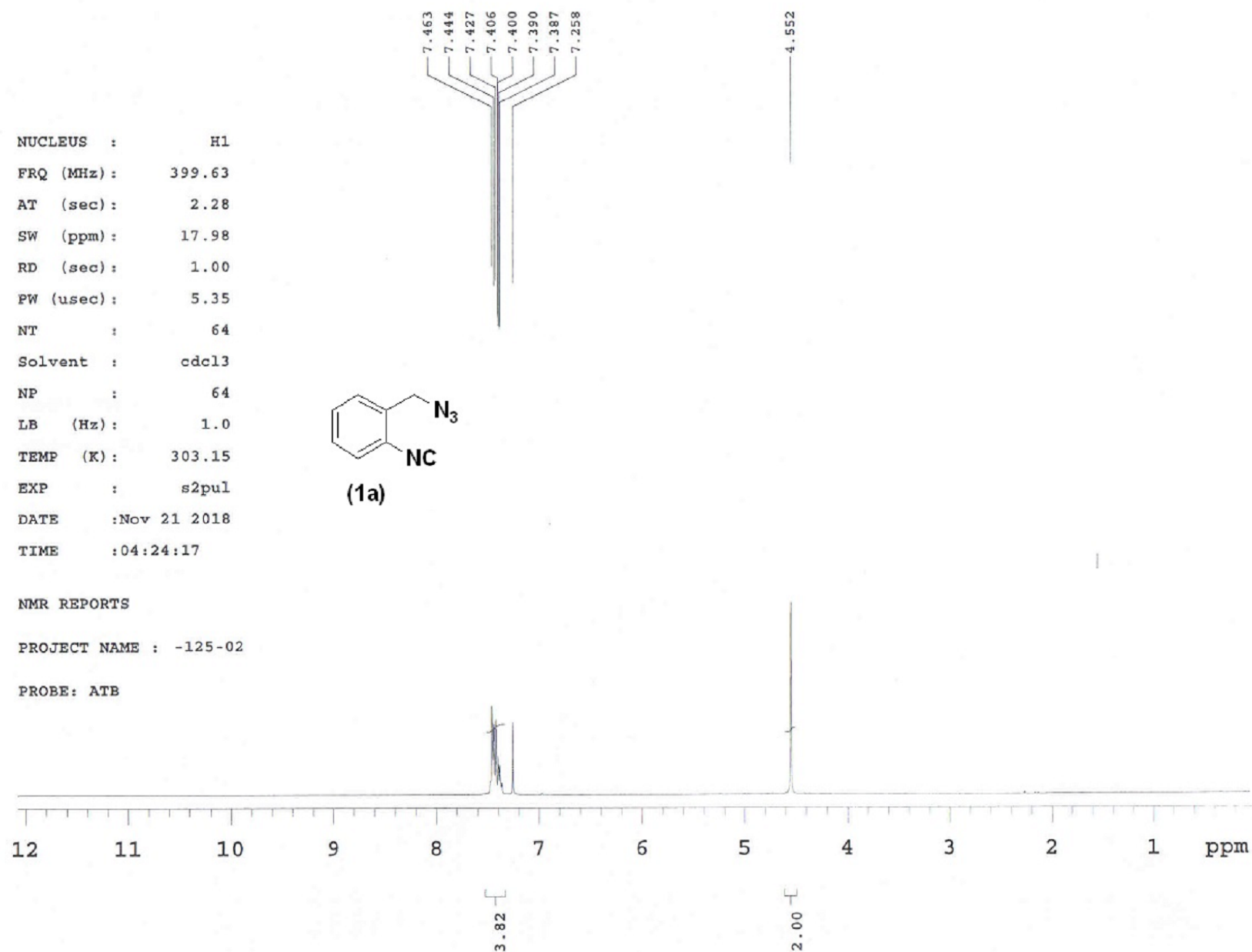
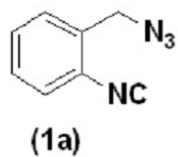
NMR REPORTS:

PROJECT NAME : -087-04

PROBE: ATB



NUCLEUS : H1
FRQ (MHz): 399.63
AT (sec): 2.28
SW (ppm): 17.98
RD (sec): 1.00
PW (usec): 5.35
NT : 64
Solvent : cdcl3
NP : 64
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul
DATE : Nov 21 2018
TIME : 04:24:17

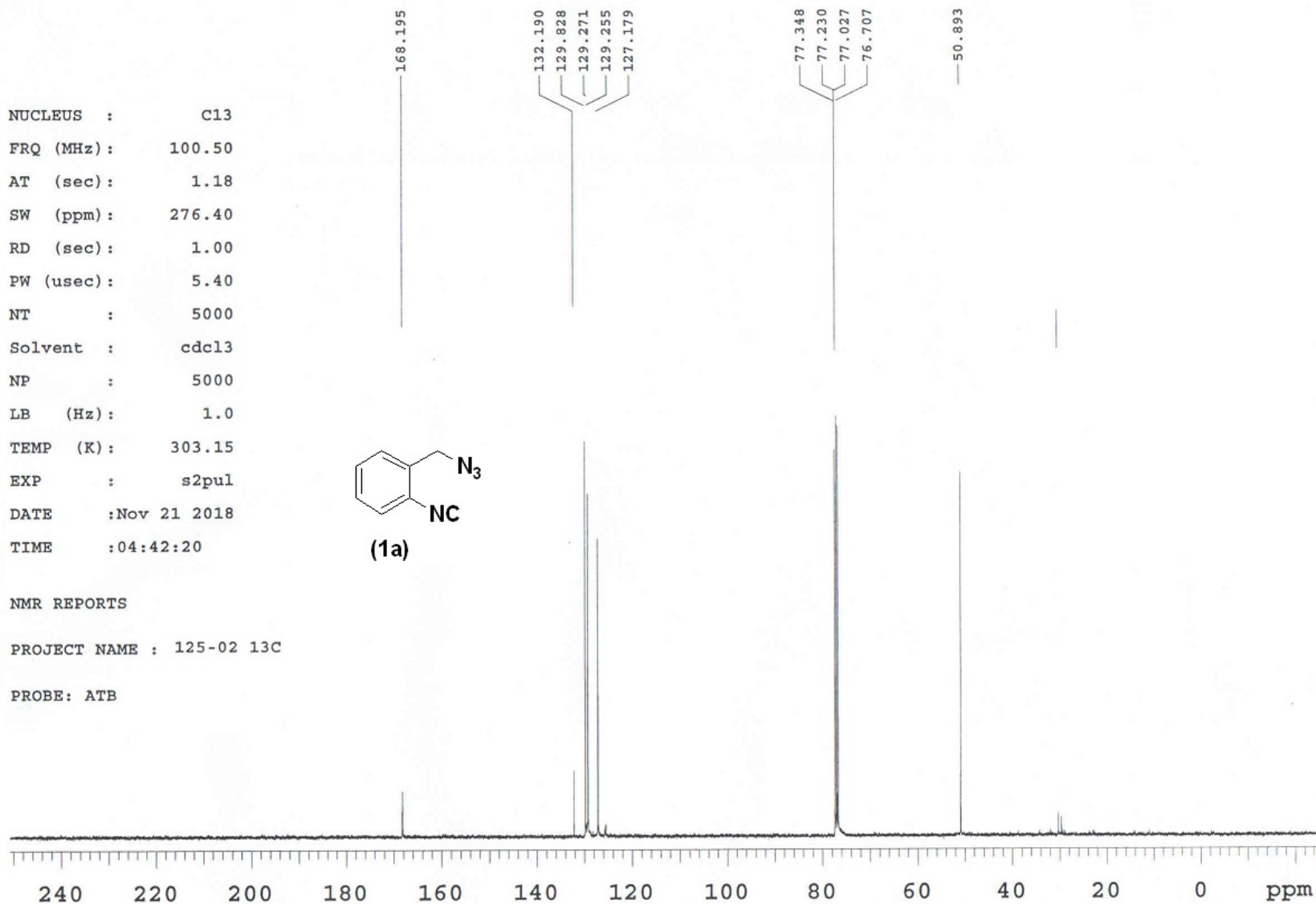
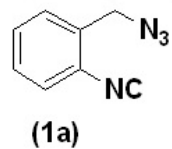


NMR REPORTS

PROJECT NAME : -125-02

PROBE: ATB

NUCLEUS : C13
FRQ (MHz): 100.50
AT (sec): 1.18
SW (ppm): 276.40
RD (sec): 1.00
PW (usec): 5.40
NT : 5000
Solvent : cdcl3
NP : 5000
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul
DATE : Nov 21 2018
TIME : 04:42:20

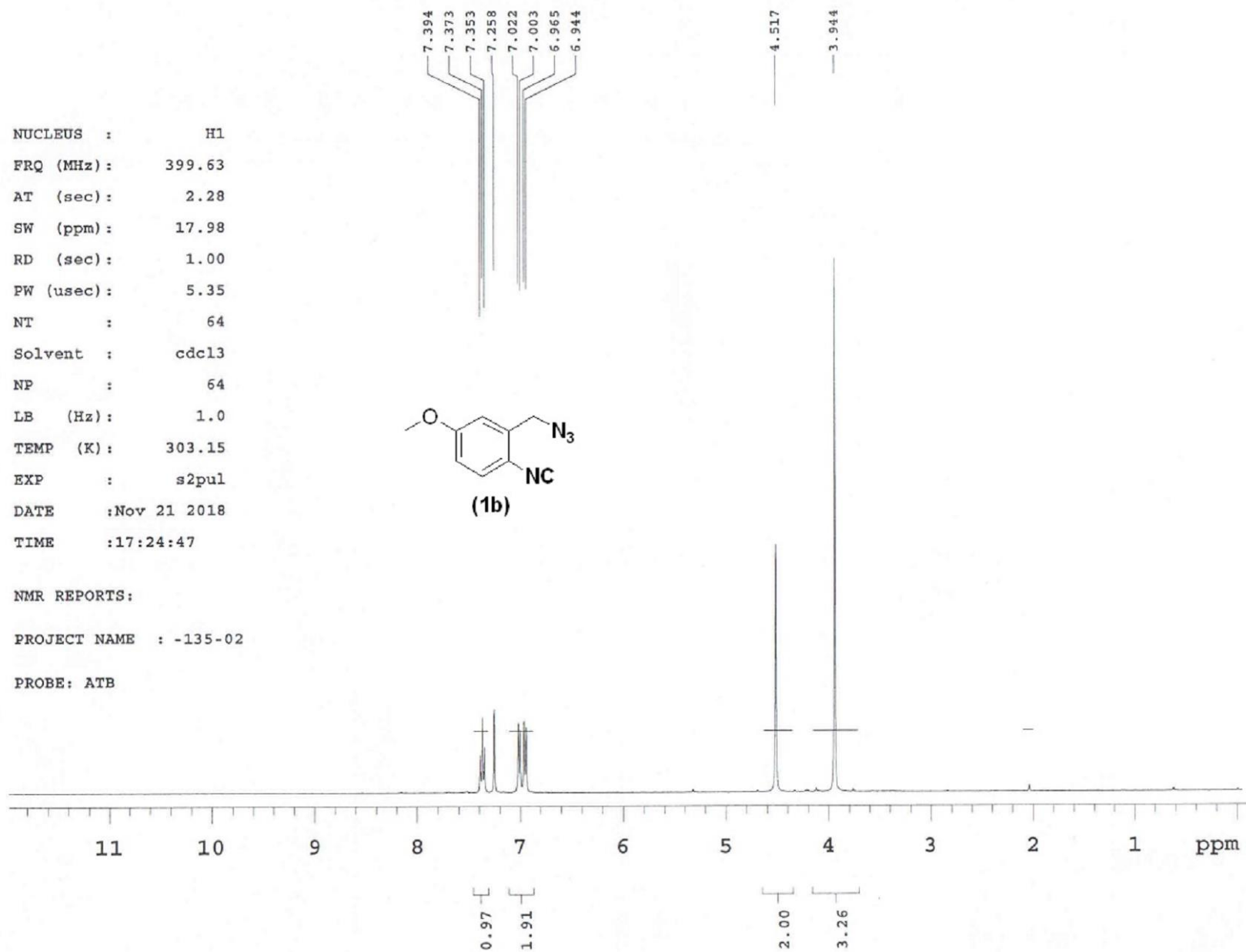
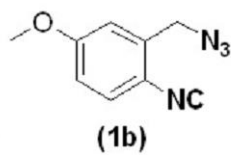


NMR REPORTS

PROJECT NAME : 125-02 13C

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 21 2018
 TIME : 17:24:47

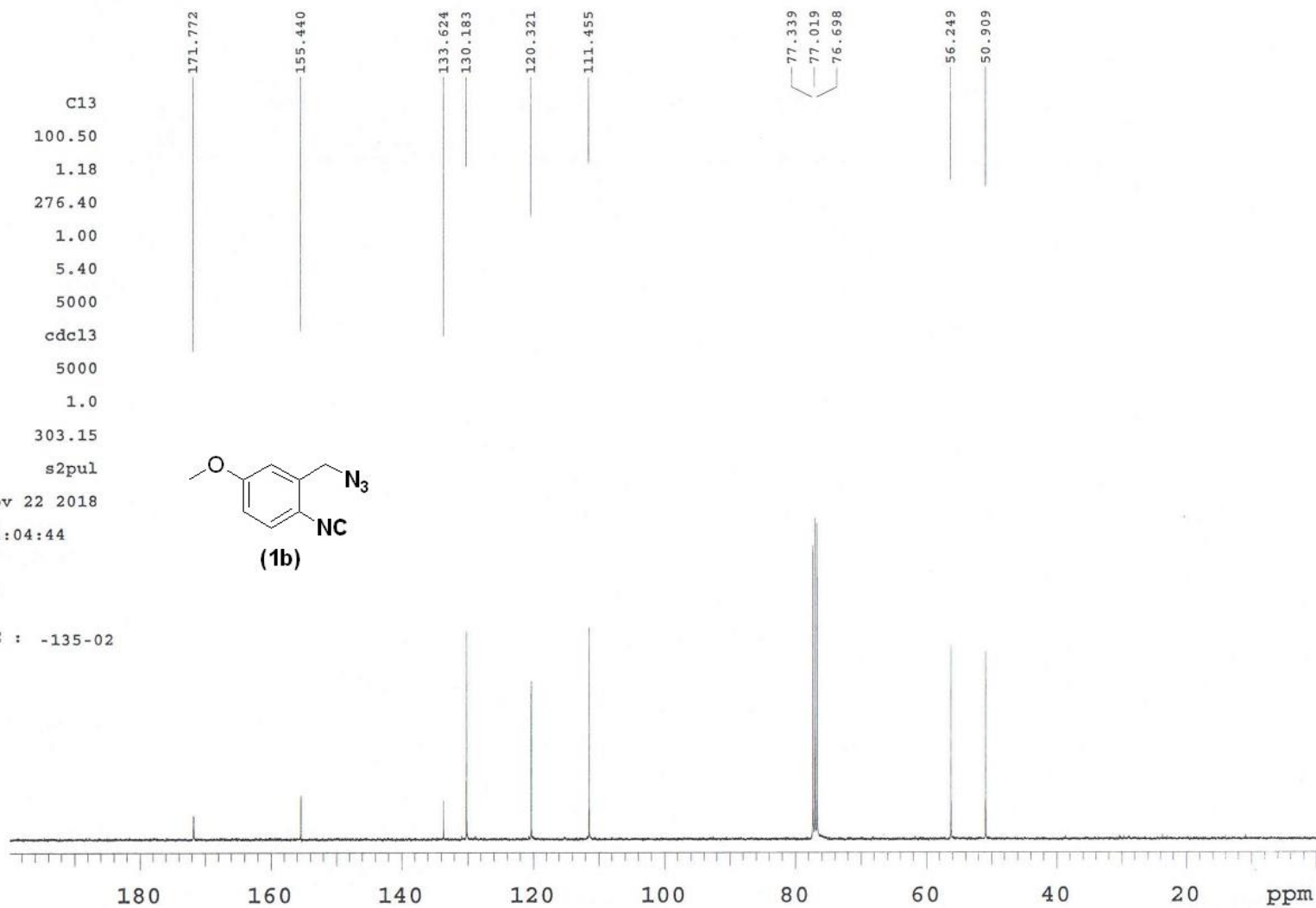
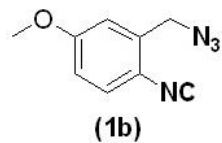


NMR REPORTS:

PROJECT NAME : -135-02

PROBE: ATB

NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 22 2018
 TIME : 04:04:44

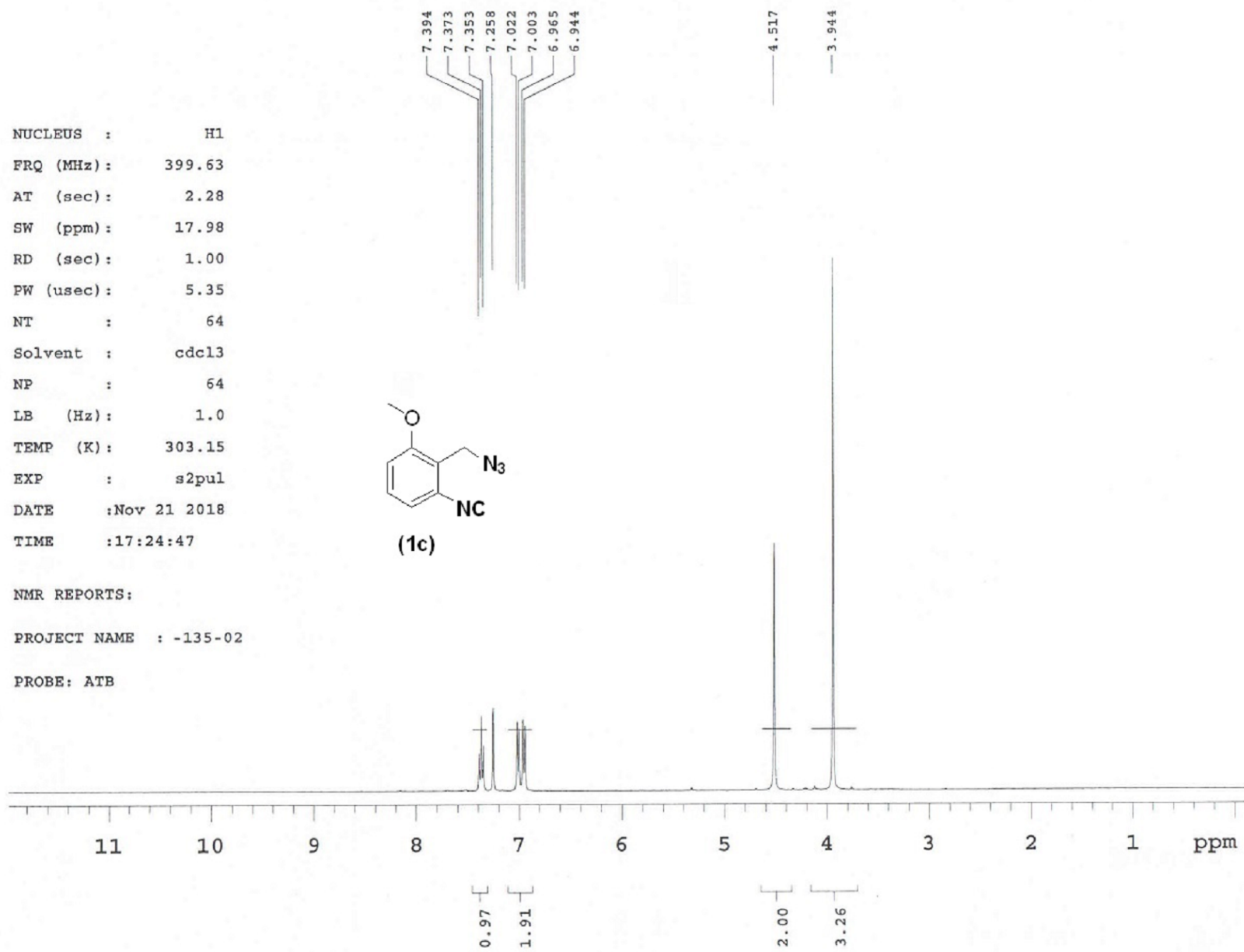
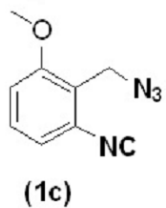


NMR REPORTS:

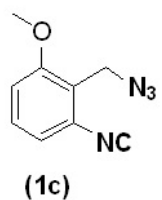
PROJECT NAME : -135-02

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 21 2018
 TIME : 17:24:47



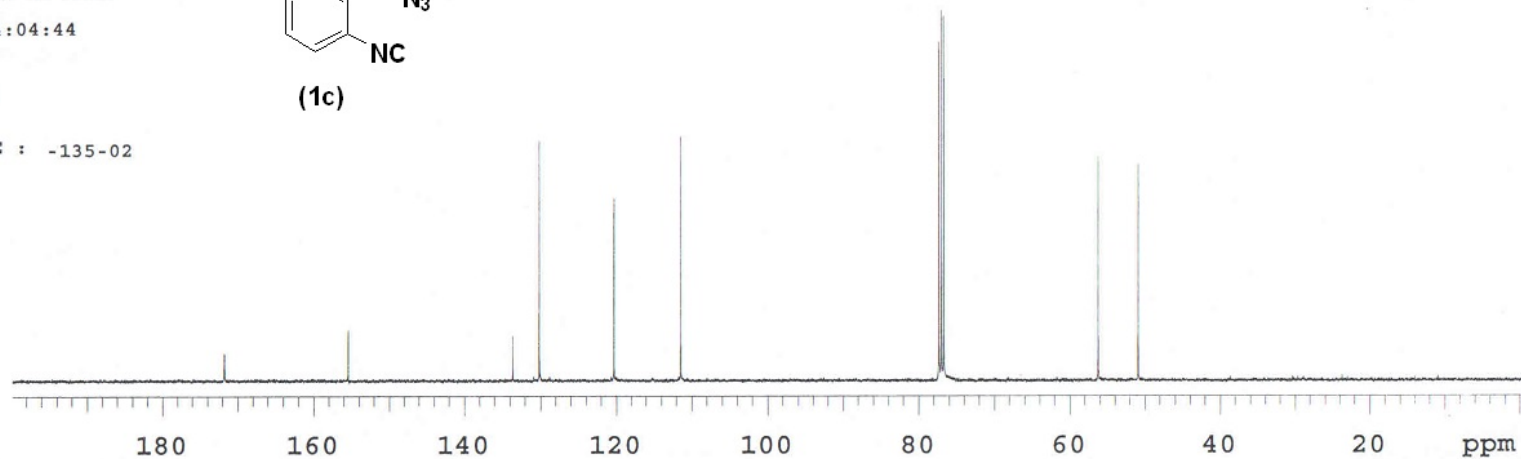
NUCLEUS : C13
FRQ (MHz): 100.50
AT (sec): 1.18
SW (ppm): 276.40
RD (sec): 1.00
PW (usec): 5.40
NT : 5000
Solvent : cdcl3
NP : 5000
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul
DATE : Nov 22 2018
TIME : 04:04:44



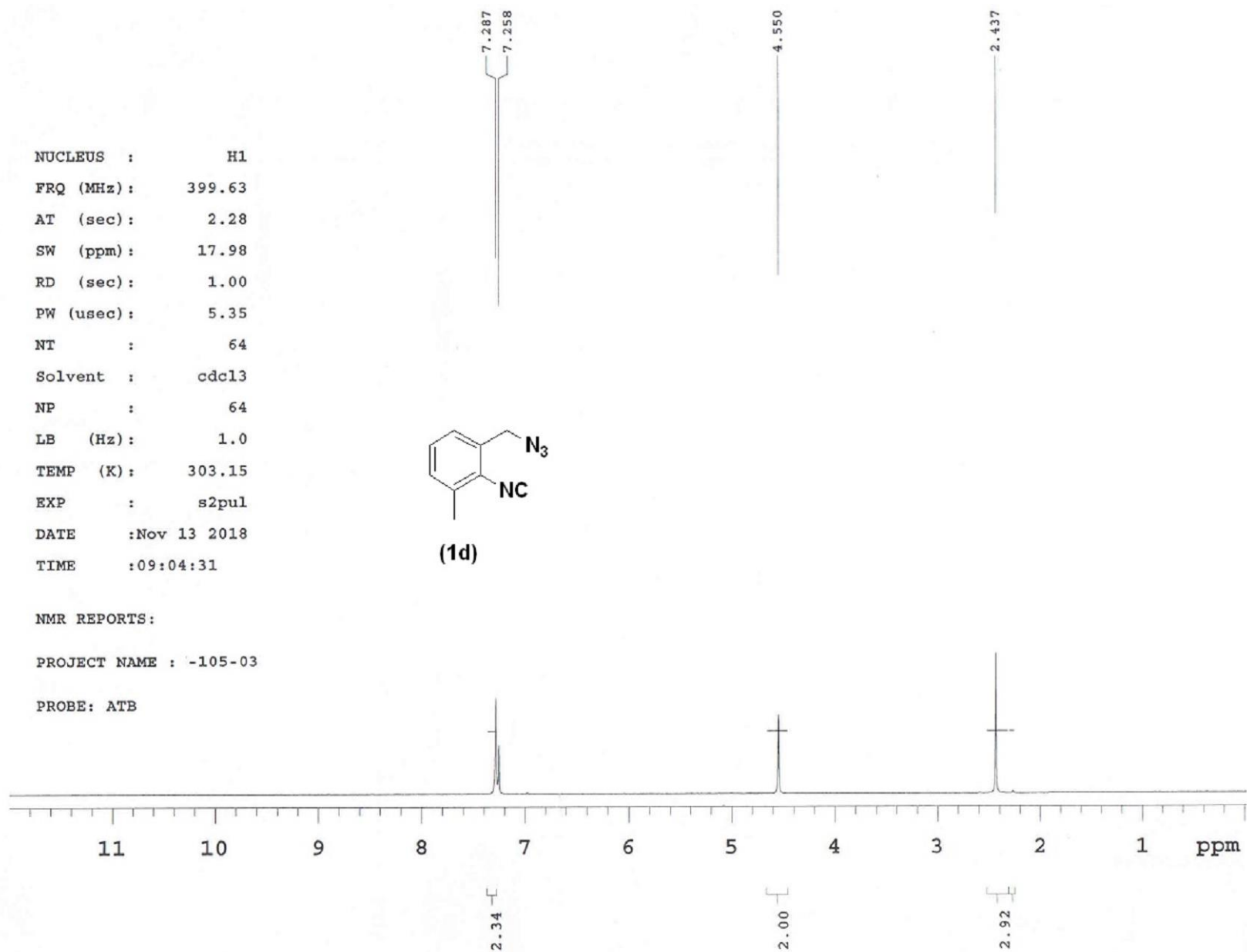
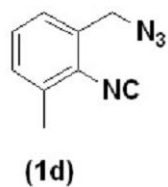
NMR REPORTS:

PROJECT NAME : -135-02

PROBE: ATB



NUCLEUS : H1
FRQ (MHz): 399.63
AT (sec): 2.28
SW (ppm): 17.98
RD (sec): 1.00
PW (usec): 5.35
NT : 64
Solvent : cdcl3
NP : 64
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul
DATE : Nov 13 2018
TIME : 09:04:31

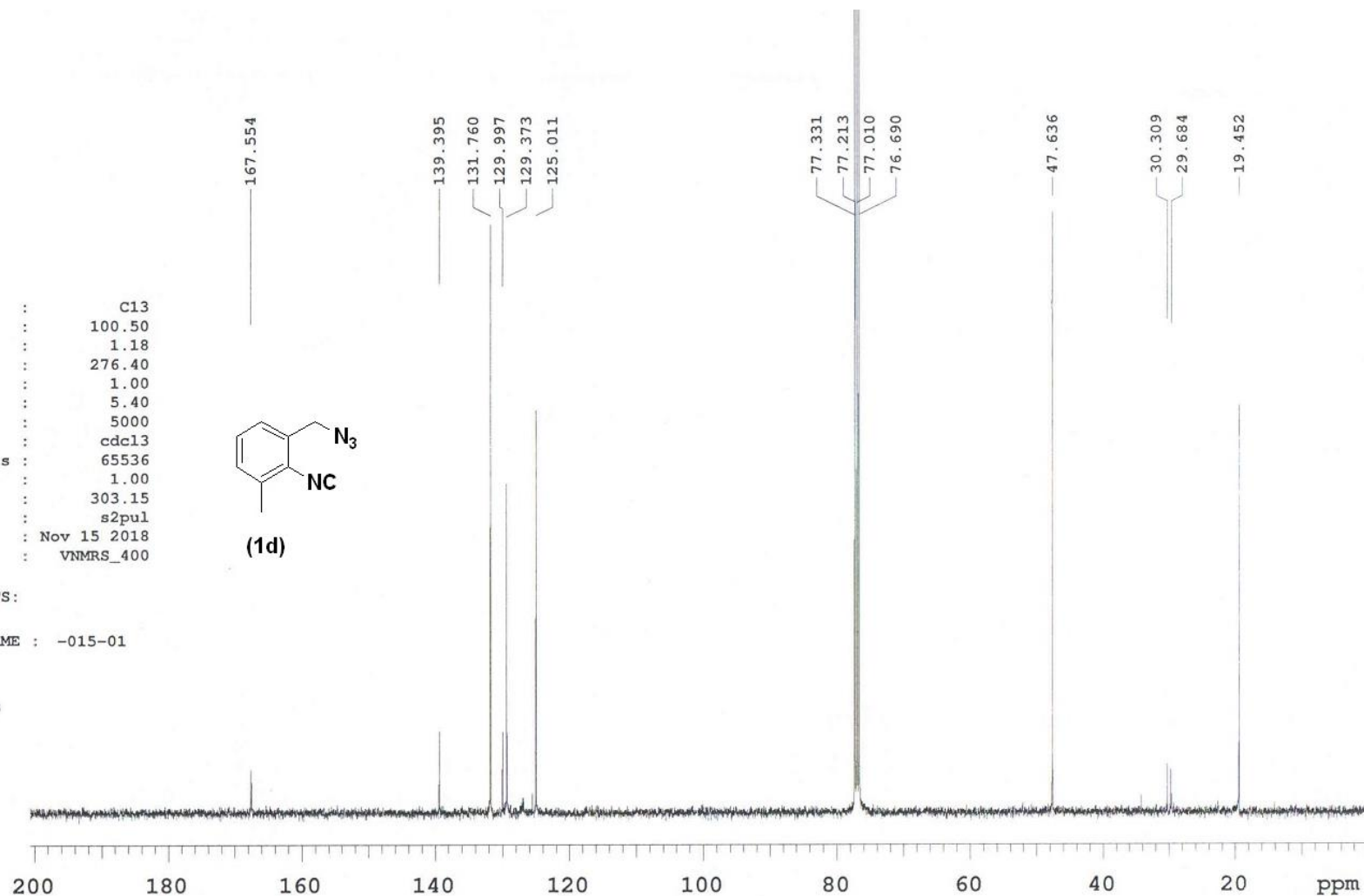
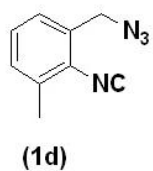


NMR REPORTS:

PROJECT NAME : -105-03

PROBE: ATB

NUCLEUS : C13
 FRQ (MHz) : 100.50
 AT (sec) : 1.18
 SW (ppm) : 276.40
 RD (sec) : 1.00
 PW (usec) : 5.40
 Scans : 5000
 Solvent : cdc13
 Data Points : 65536
 LB (Hz) : 1.00
 TEMP (K) : 303.15
 EXP : s2pul
 DATE : Nov 15 2018
 System : VNMRS_400

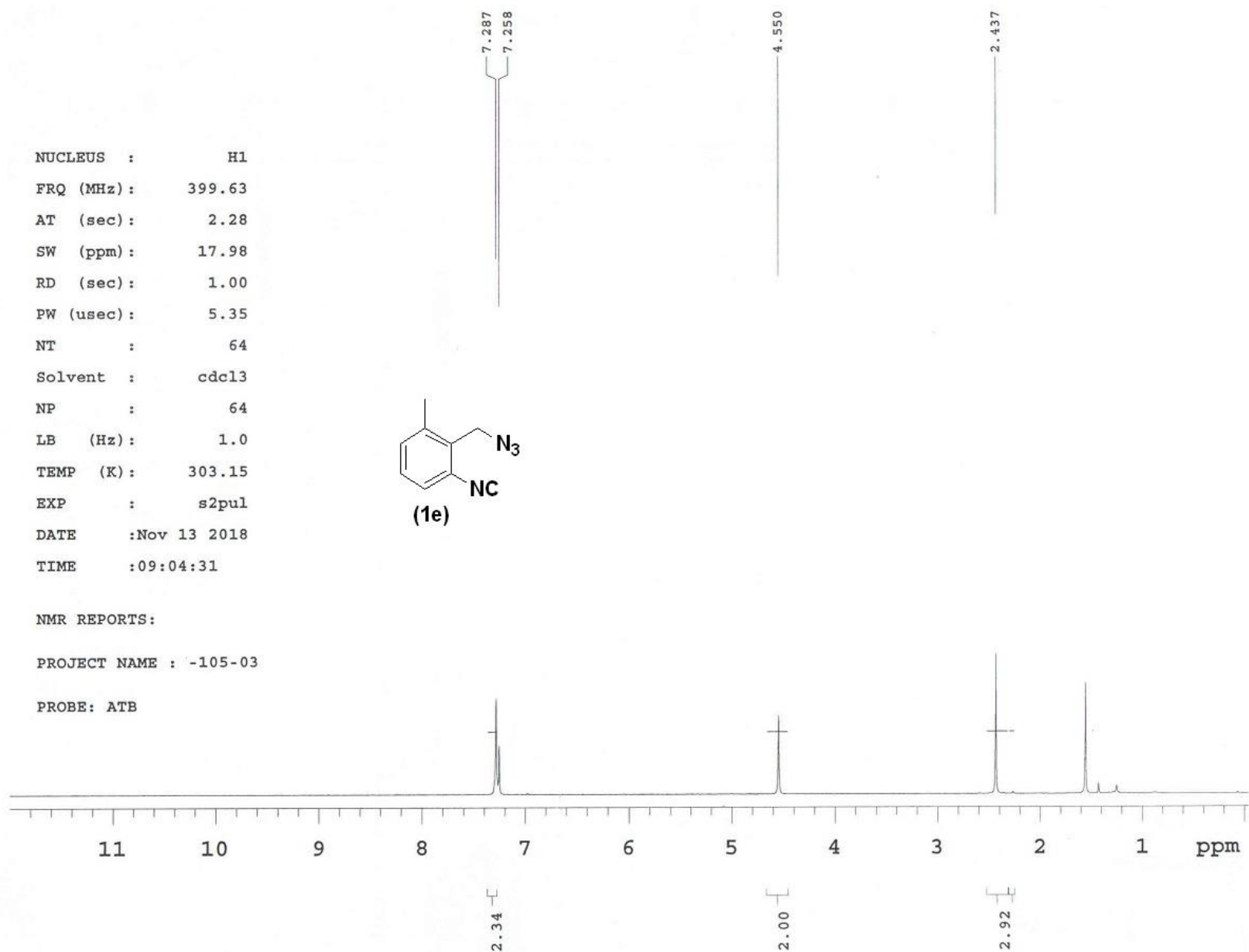
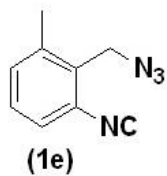


NMR REPORTS:

PROJECT NAME : -015-01

PROBE: ATB

NUCLEUS : H1
FRQ (MHz): 399.63
AT (sec): 2.28
SW (ppm): 17.98
RD (sec): 1.00
PW (usec): 5.35
NT : 64
Solvent : cdcl3
NP : 64
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul
DATE : Nov 13 2018
TIME : 09:04:31

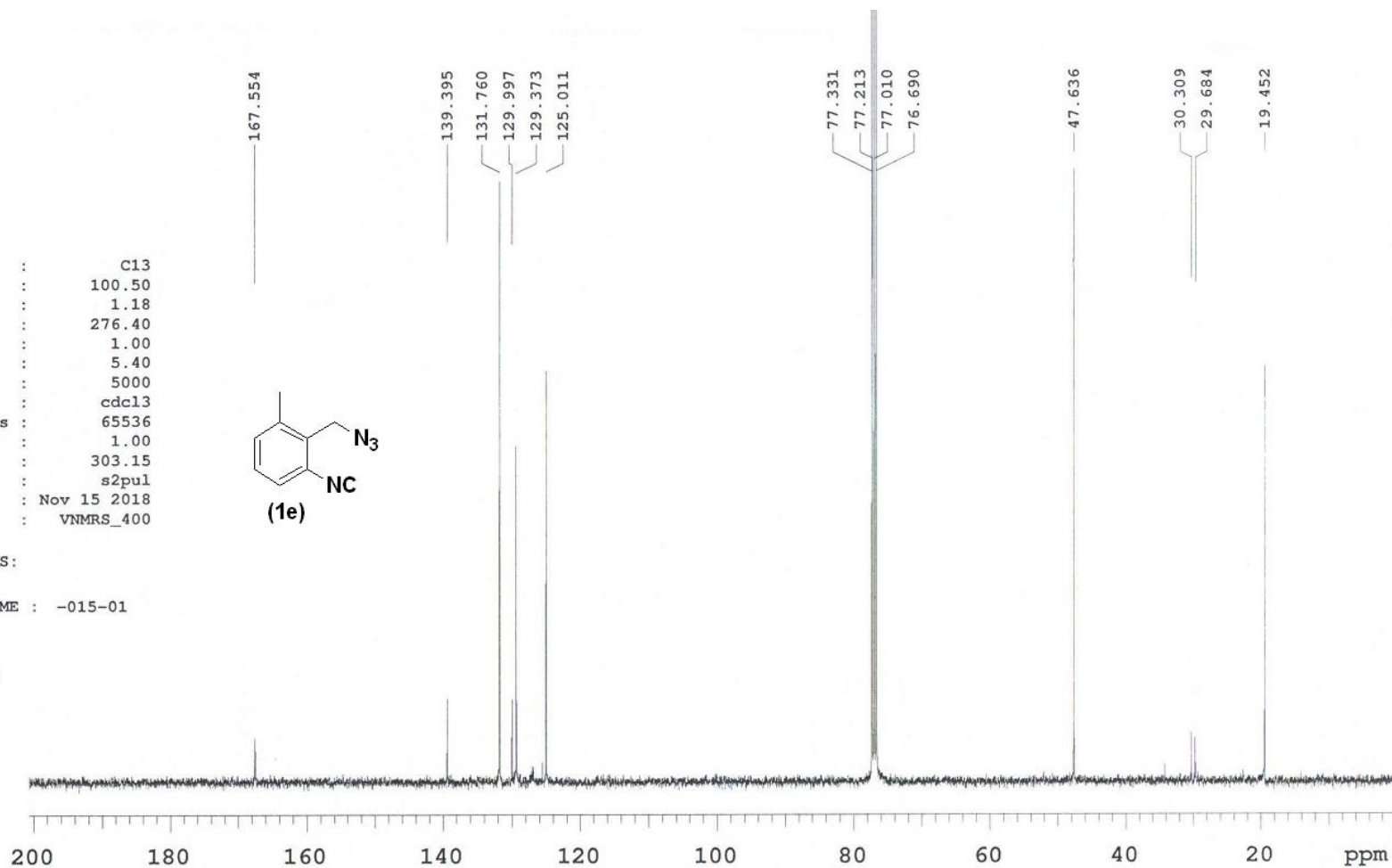
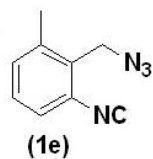


NMR REPORTS:

PROJECT NAME : -105-03

PROBE: ATB

NUCLEUS : C13
 FRQ (MHz) : 100.50
 AT (sec) : 1.18
 SW (ppm) : 276.40
 RD (sec) : 1.00
 PW (usec) : 5.40
 Scans : 5000
 Solvent : cdc13
 Data Points : 65536
 LB (Hz) : 1.00
 TEMP (K) : 303.15
 EXP : s2pul
 DATE : Nov 15 2018
 System : VNMRS_400

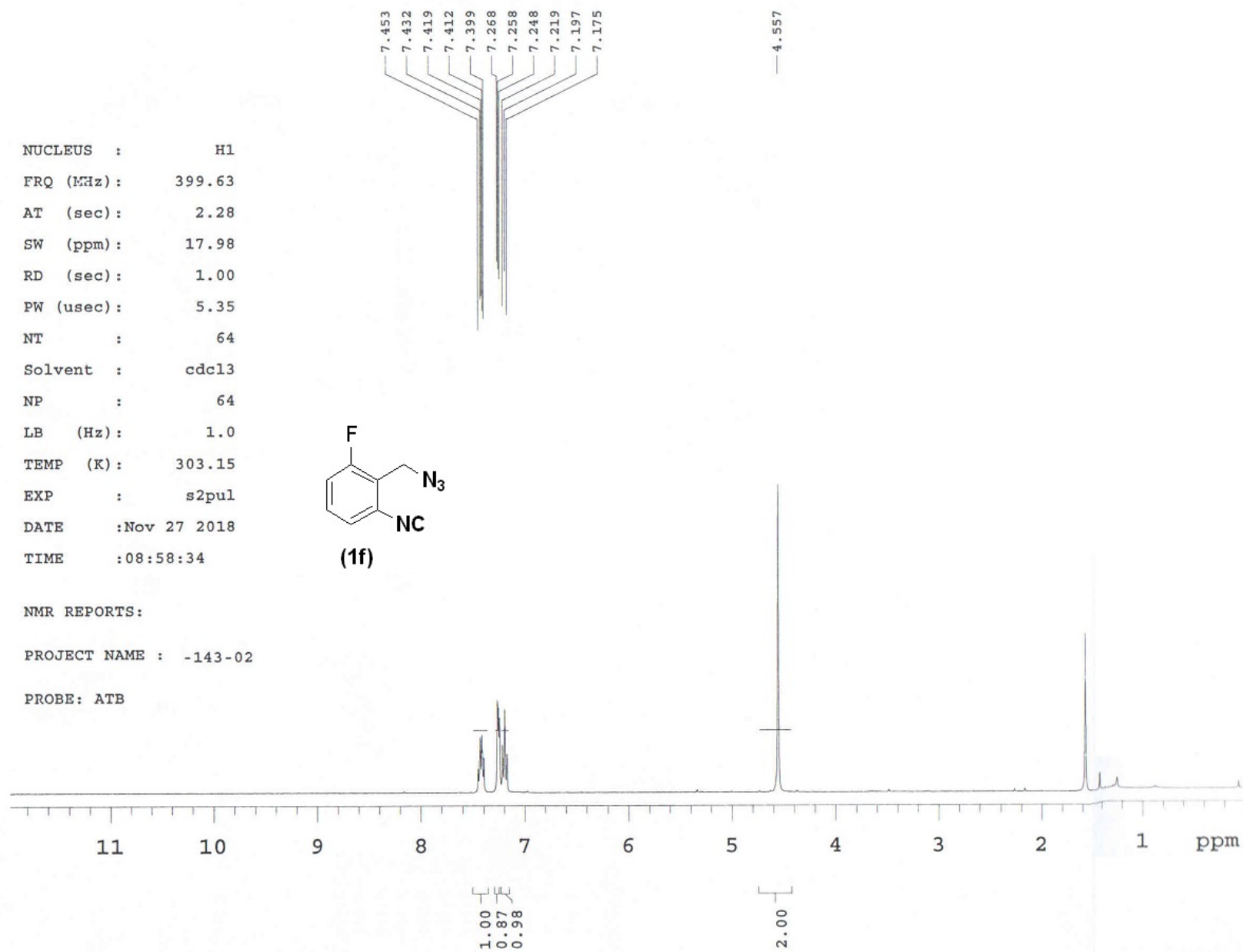
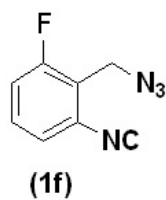


NMR REPORTS:

PROJECT NAME : -015-01

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 27 2018
 TIME : 08:58:34

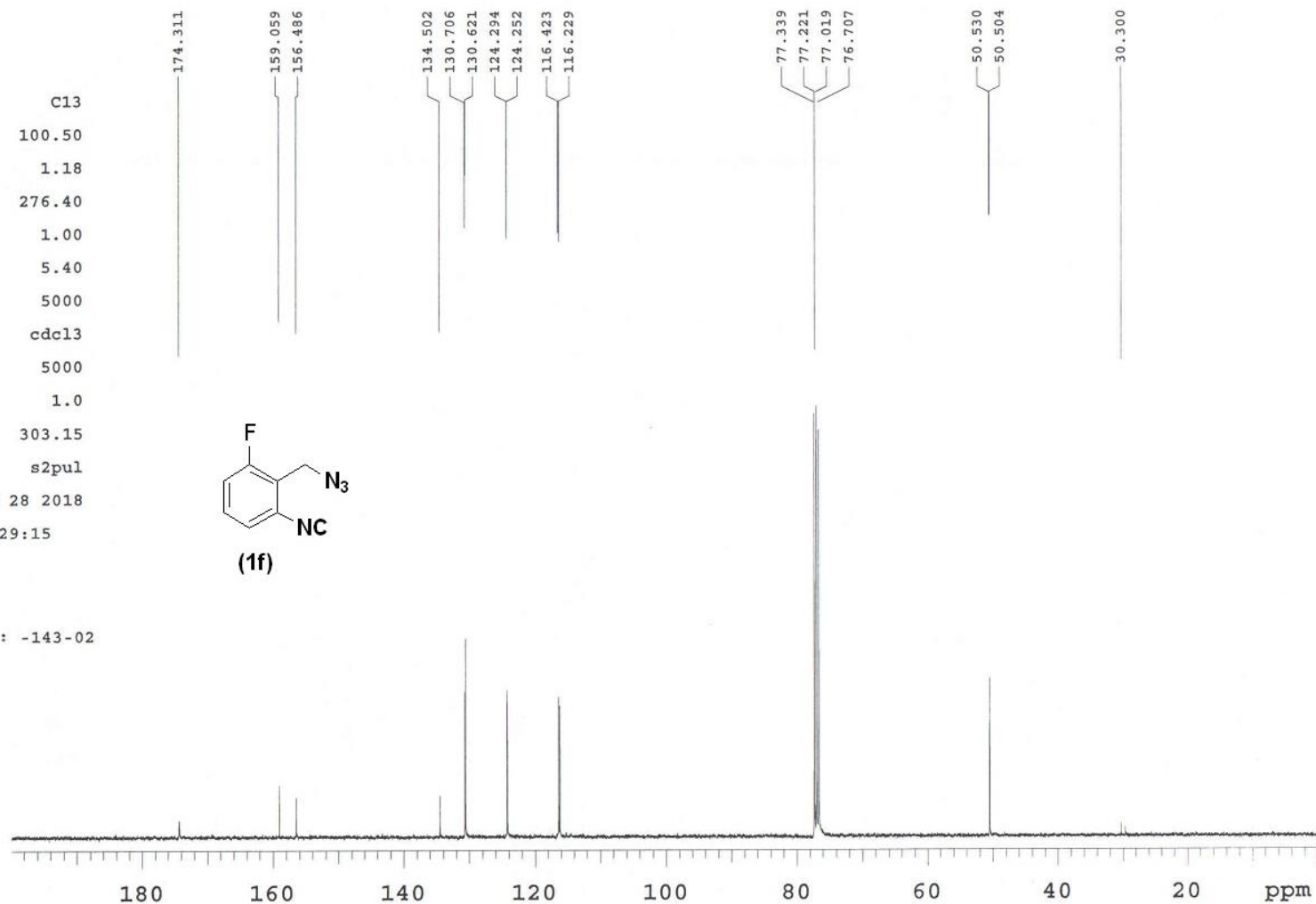


NMR REPORTS:

PROJECT NAME : -143-02

PROBE: ATB

NUCLEUS : C13
FRQ (MHz): 100.50
AT (sec): 1.18
SW (ppm): 276.40
RD (sec): 1.00
PW (usec): 5.40
NT : 5000
Solvent : cdcl3
NP : 5000
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul
DATE : Nov 28 2018
TIME : 02:29:15

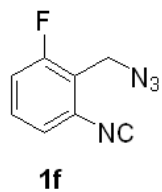


NMR REPORTS:

PROJECT NAME : -143-02

PROBE: ATB

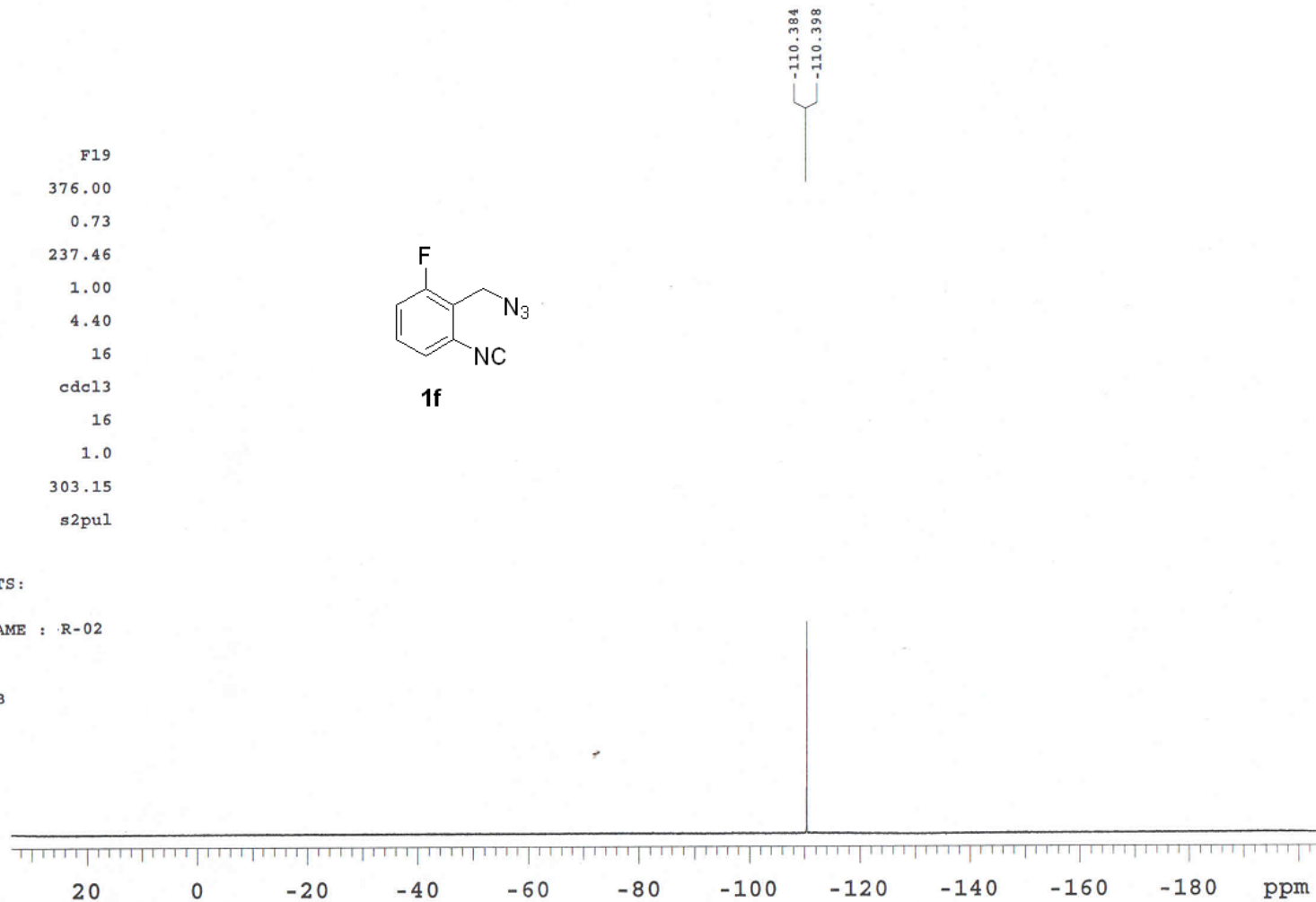
NUCLEUS : F19
FRQ (MHz): 376.00
AT (sec): 0.73
SW (ppm): 237.46
RD (sec): 1.00
PW (usec): 4.40
NT : 16
Solvent : cdcl3
NP : 16
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul



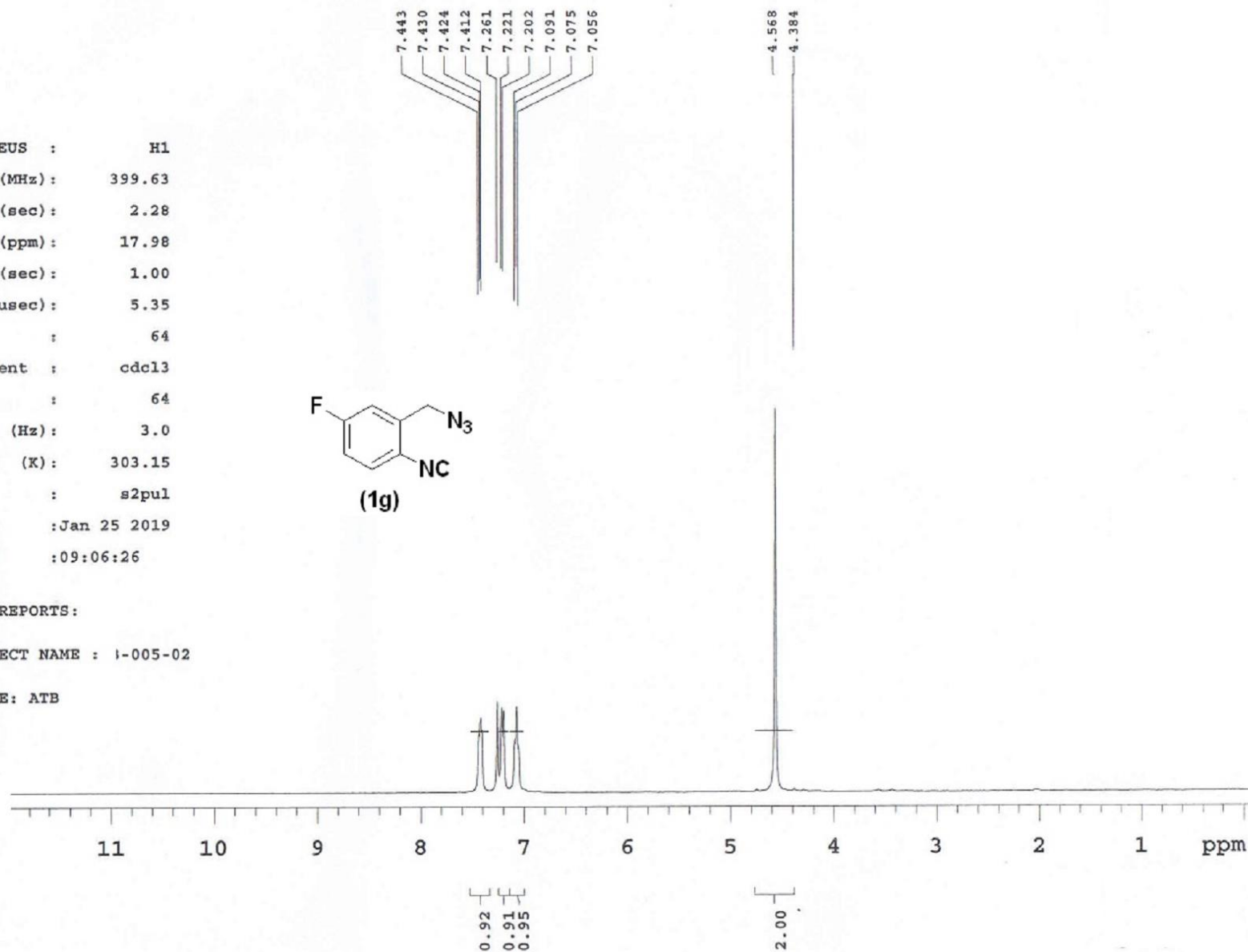
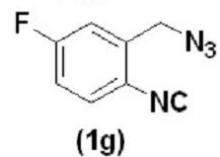
NMR REPORTS:

PROJECT NAME : R-02

PROBE: ATB

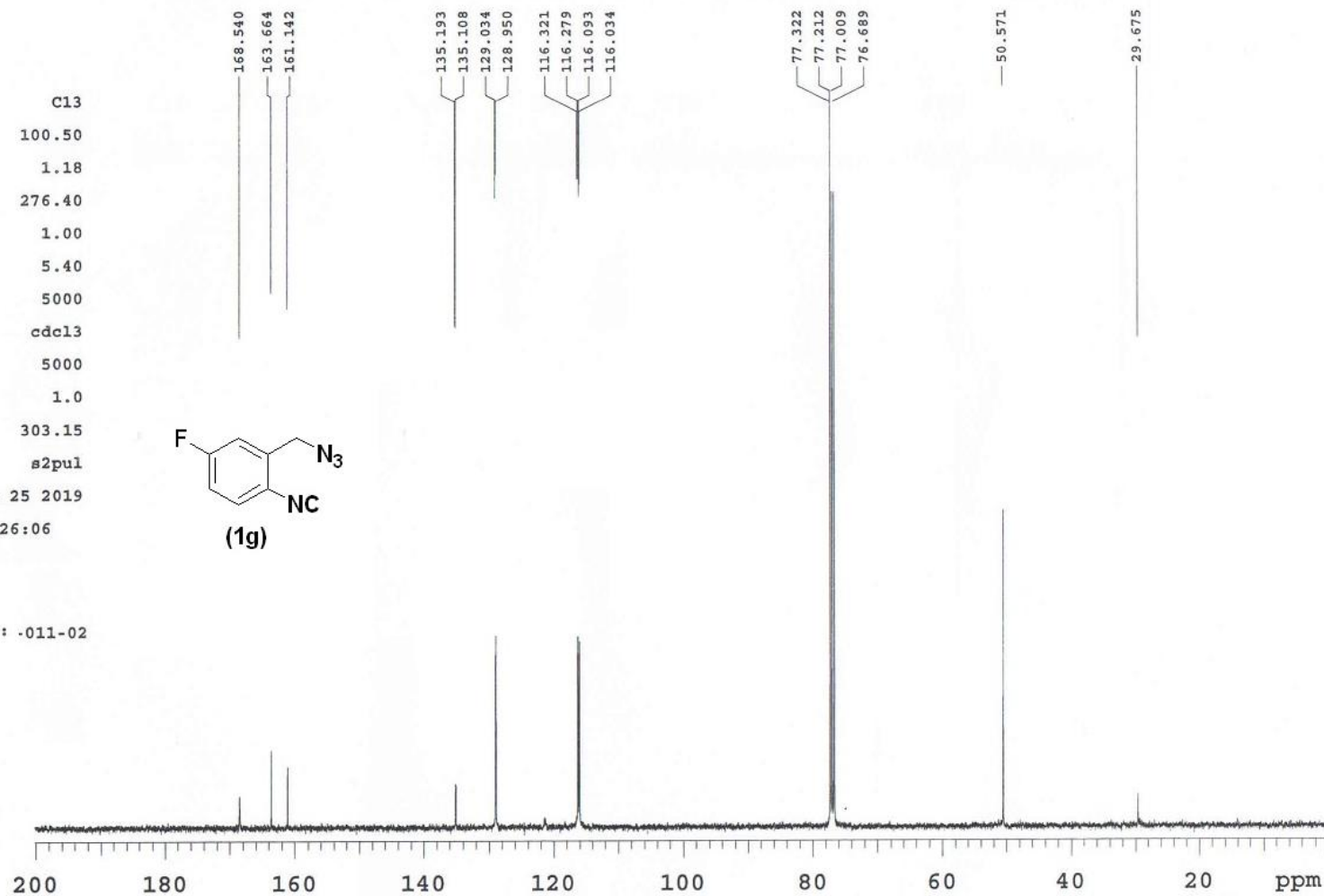
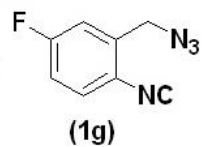


NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jan 25 2019
 TIME : 09:06:26



NMR REPORTS:
 PROJECT NAME : 1-005-02
 PROBE: ATB

NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jan 25 2019
 TIME : 19:26:06

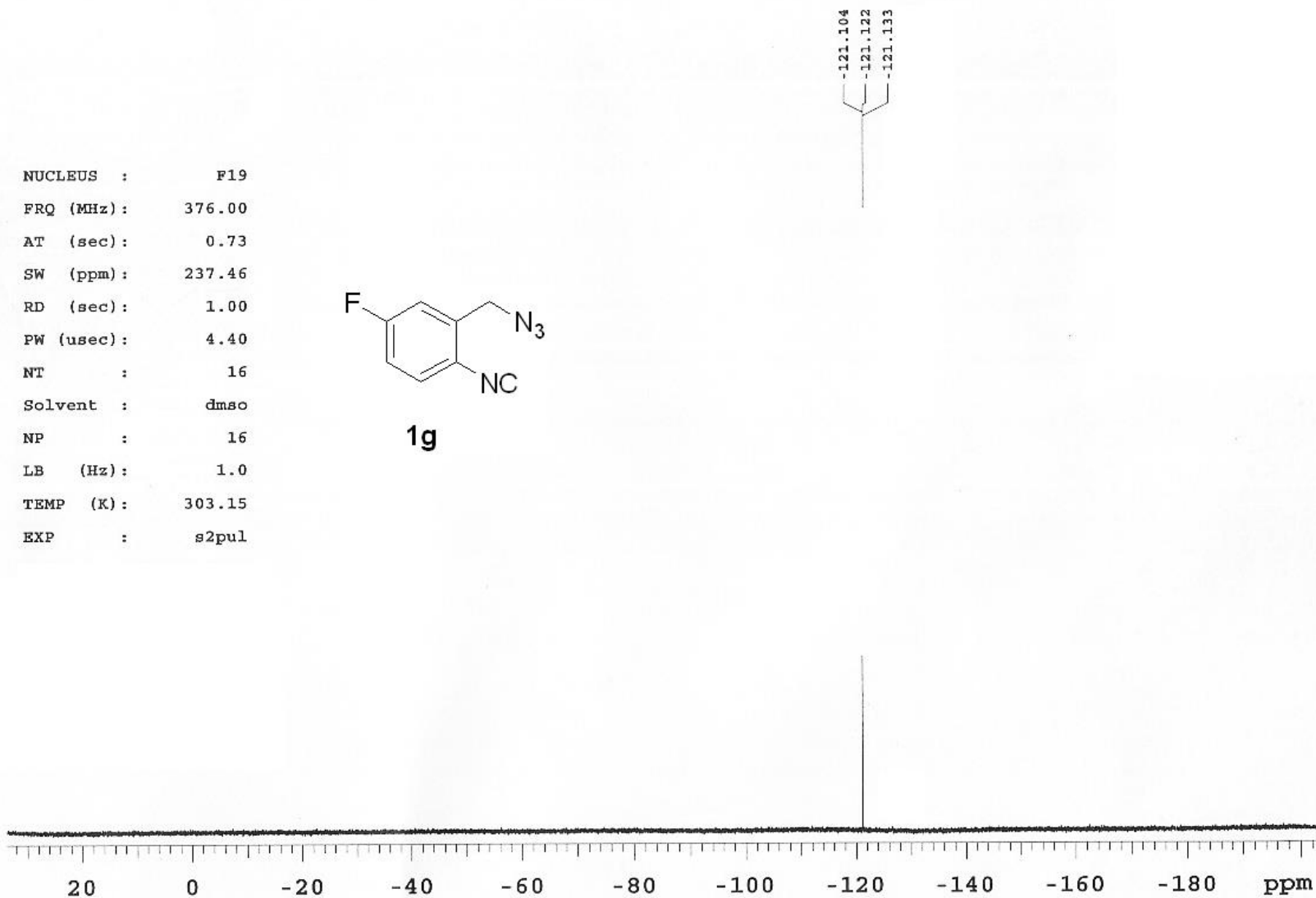
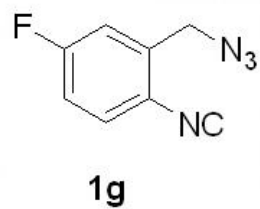


NMR REPORTS:

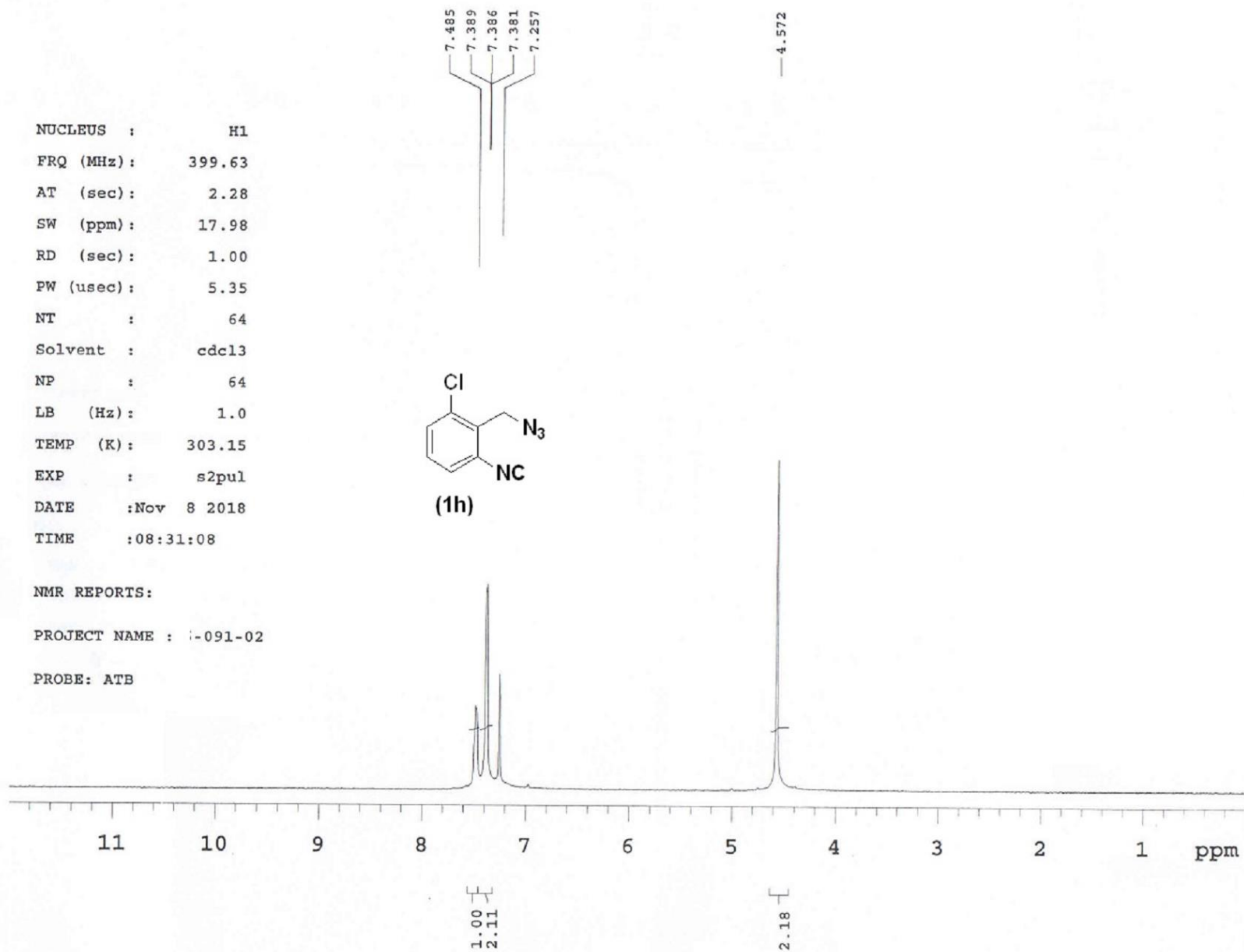
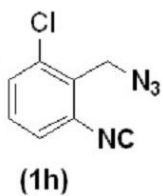
PROJECT NAME : .011-02

PROBE: ATB

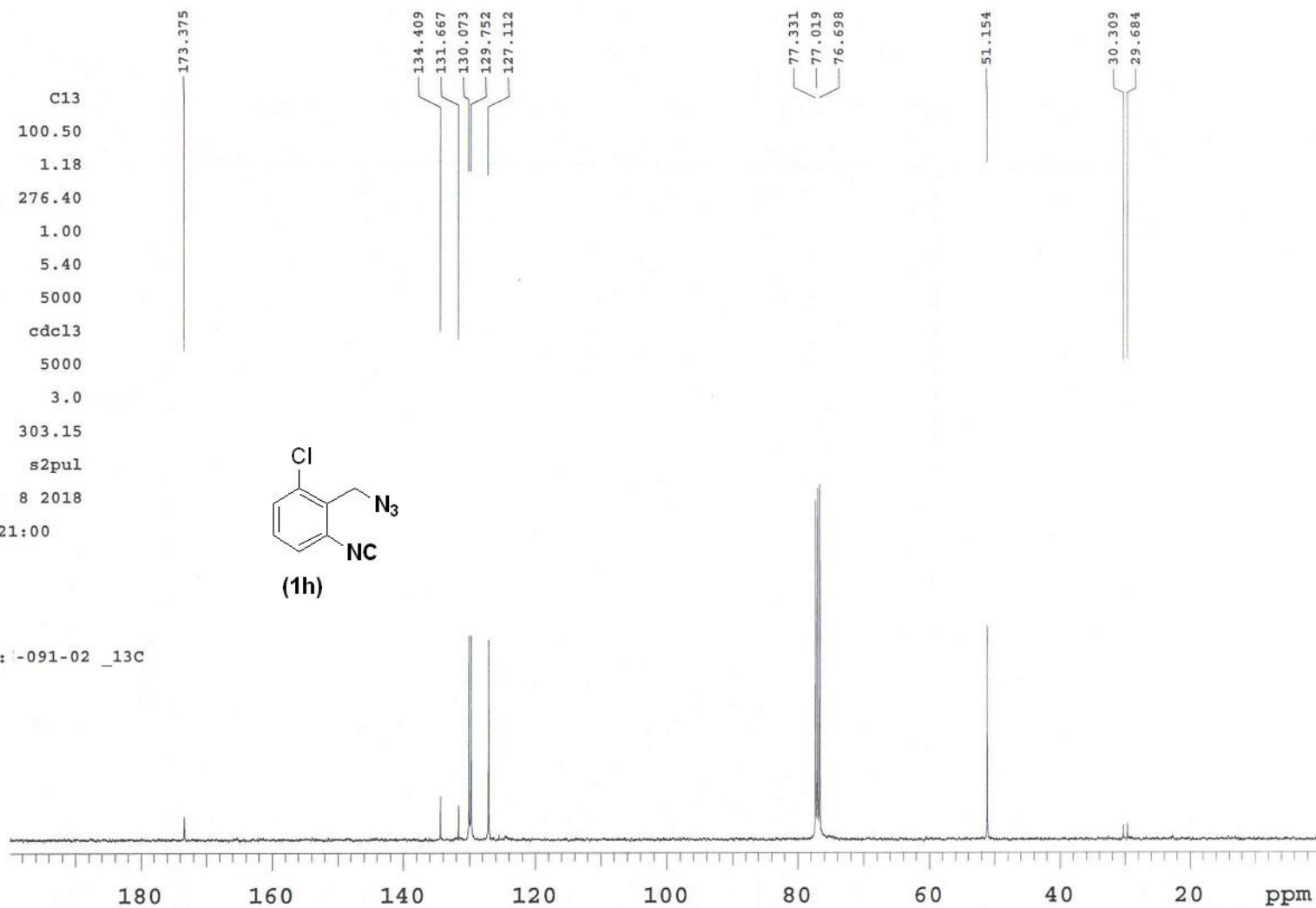
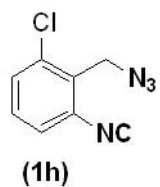
NUCLEUS : F19
FRQ (MHz): 376.00
AT (sec): 0.73
SW (ppm): 237.46
RD (sec): 1.00
PW (usec): 4.40
NT : 16
Solvent : dmsc
NP : 16
LB (Hz): 1.0
TEMP (K): 303.15
EXP : s2pul



NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 8 2018
 TIME : 08:31:08



NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 8 2018
 TIME : 22:21:00

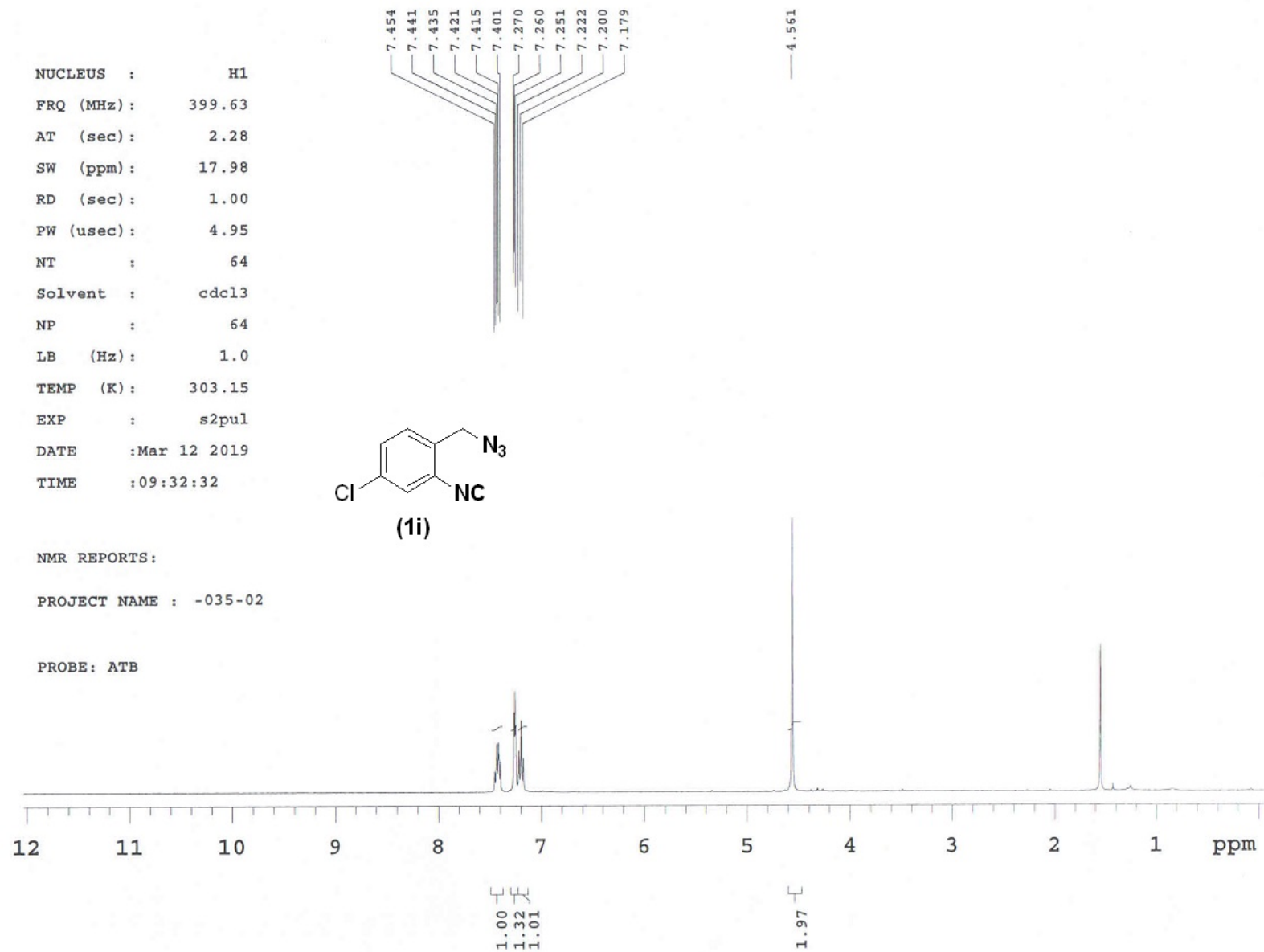
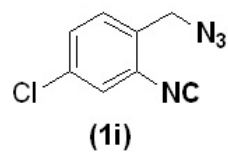


NMR REPORTS:

PROJECT NAME : -091-02 _13C

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 4.95
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 12 2019
 TIME : 09:32:32

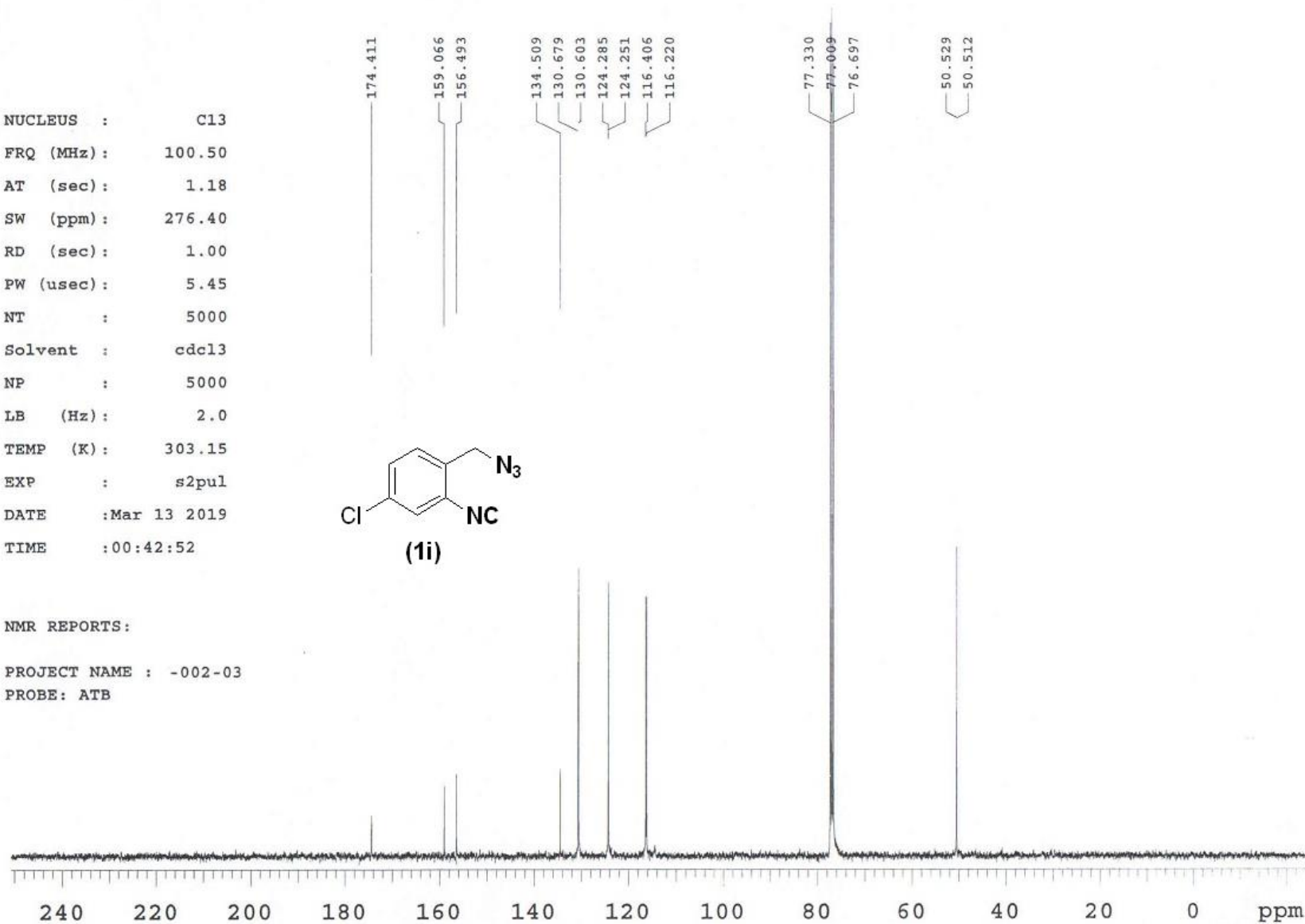
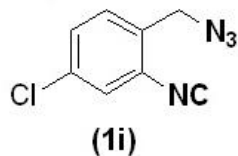


NMR REPORTS:

PROJECT NAME : -035-02

PROBE: ATB

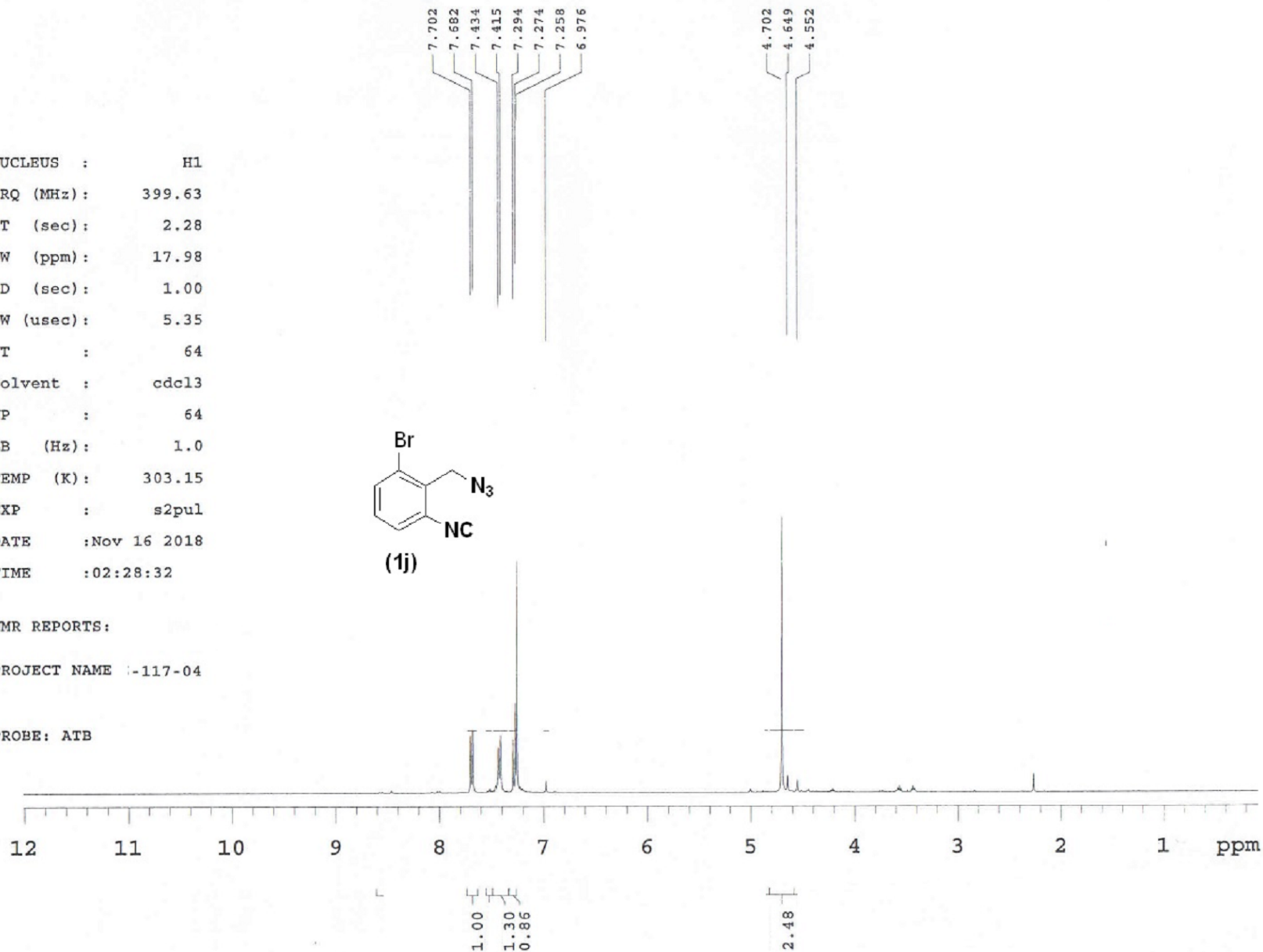
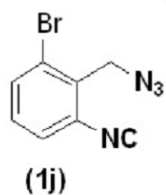
NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.45
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 2.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Mar 13 2019
 TIME : 00:42:52



NMR REPORTS:

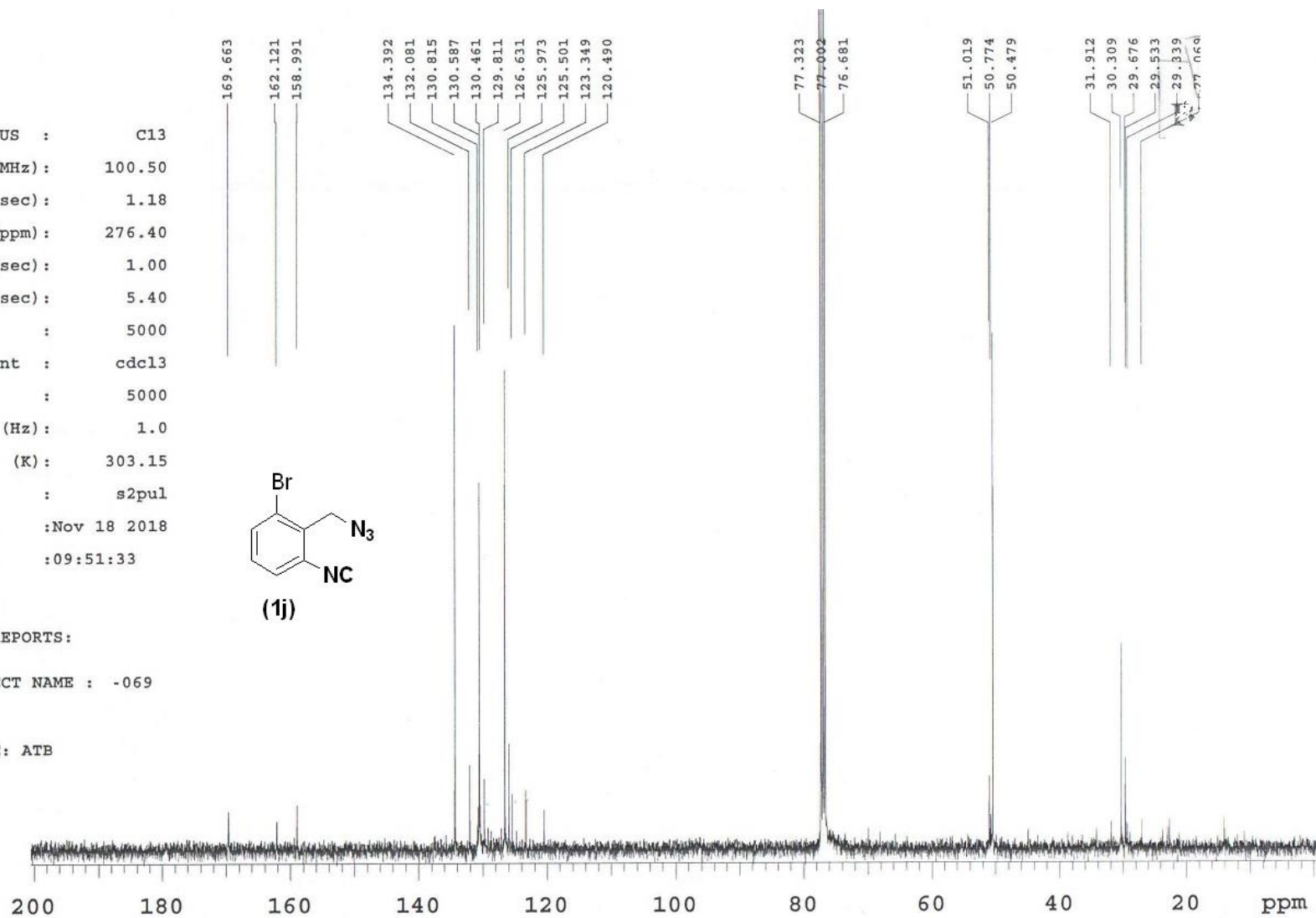
PROJECT NAME : -002-03
 PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 16 2018
 TIME : 02:28:32



NMR REPORTS:
 PROJECT NAME : -117-04
 PROBE: ATB

NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 18 2018
 TIME : 09:51:33

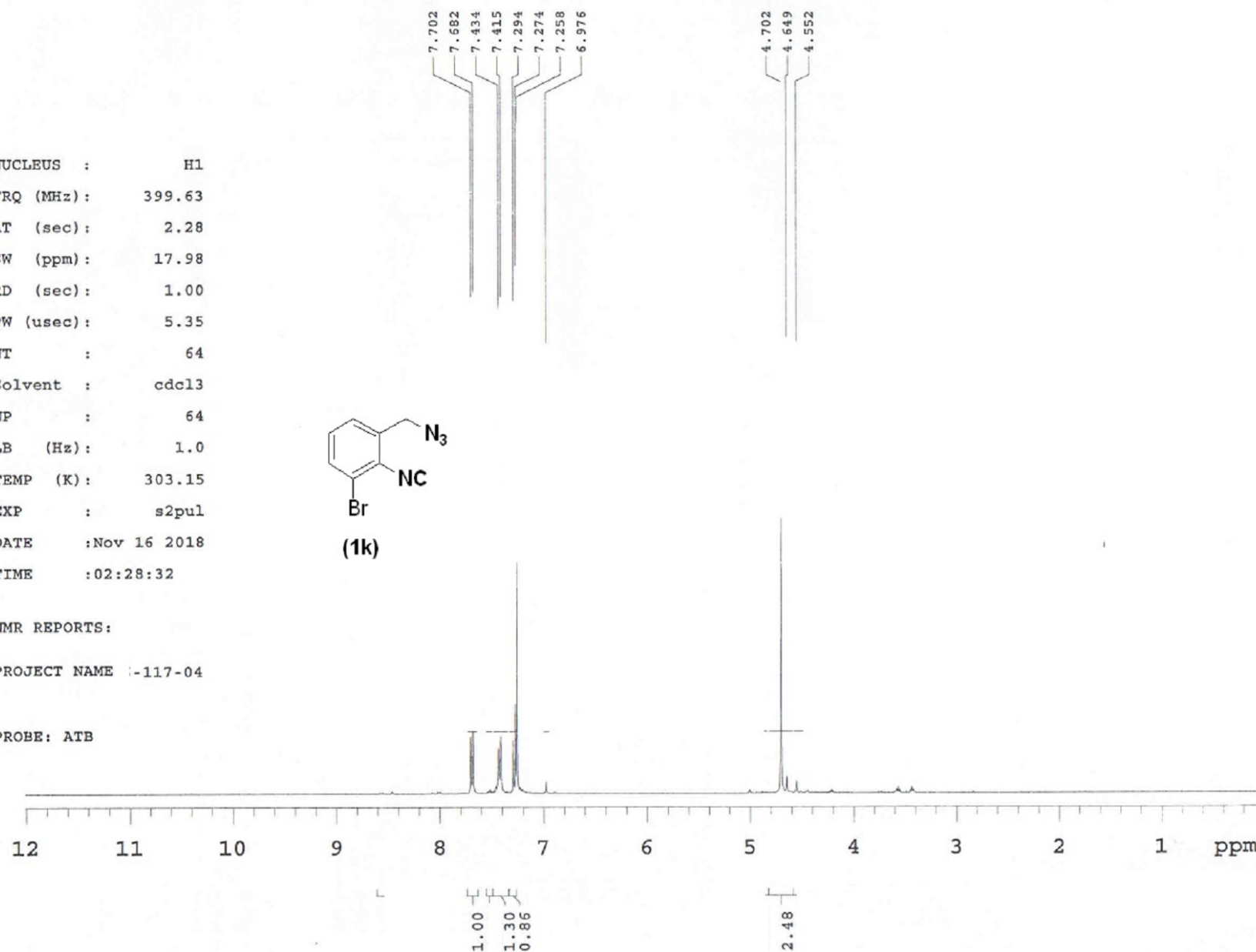
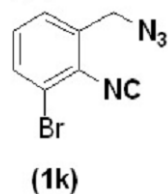


NMR REPORTS:

PROJECT NAME : -069

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 16 2018
 TIME : 02:28:32



NMR REPORTS:

PROJECT NAME : -117-04

PROBE: ATB

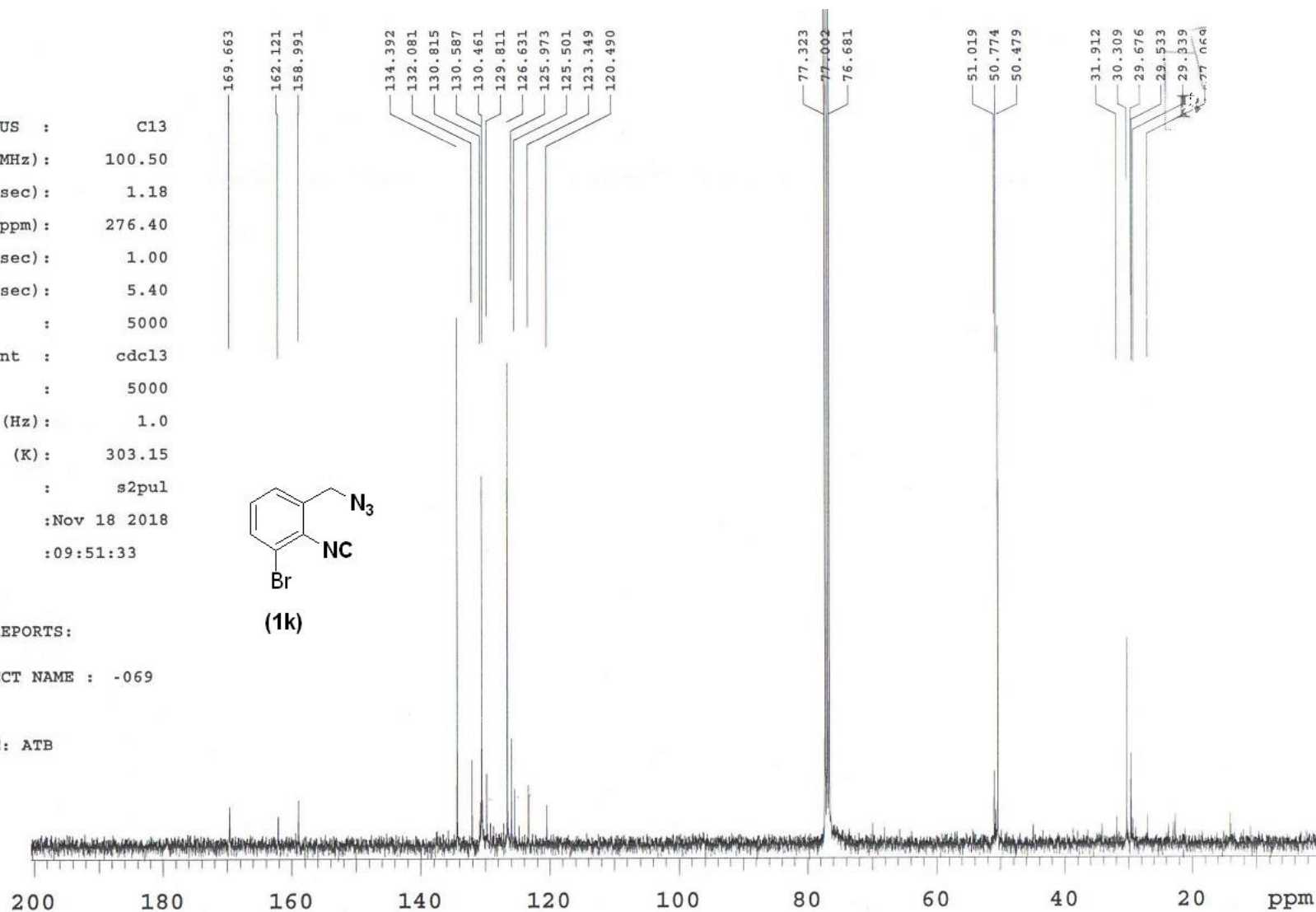
NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 1.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 18 2018
 TIME : 09:51:33



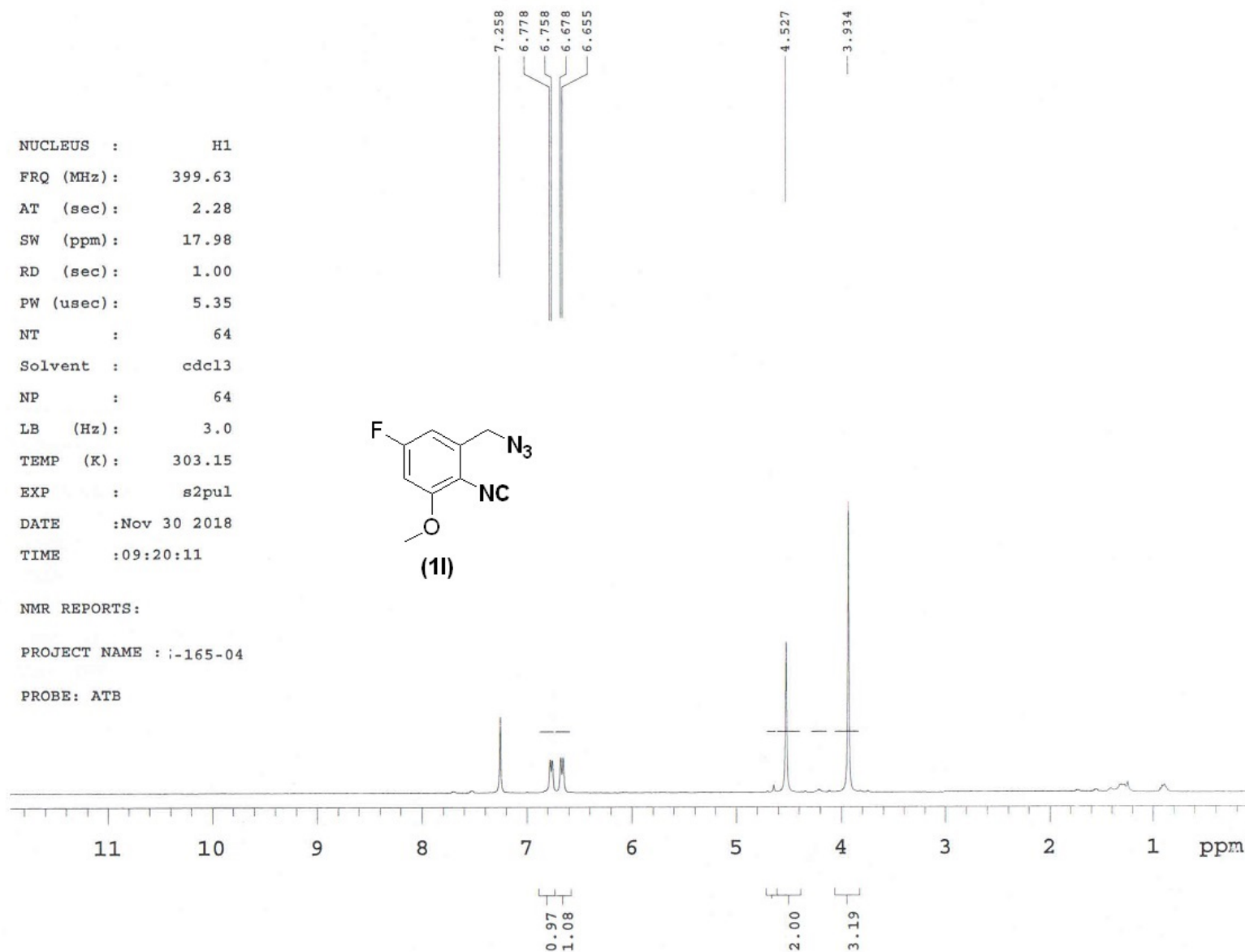
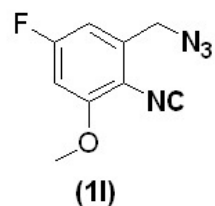
NMR REPORTS:

PROJECT NAME : -069

PROBE: ATB



NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 30 2018
 TIME : 09:20:11

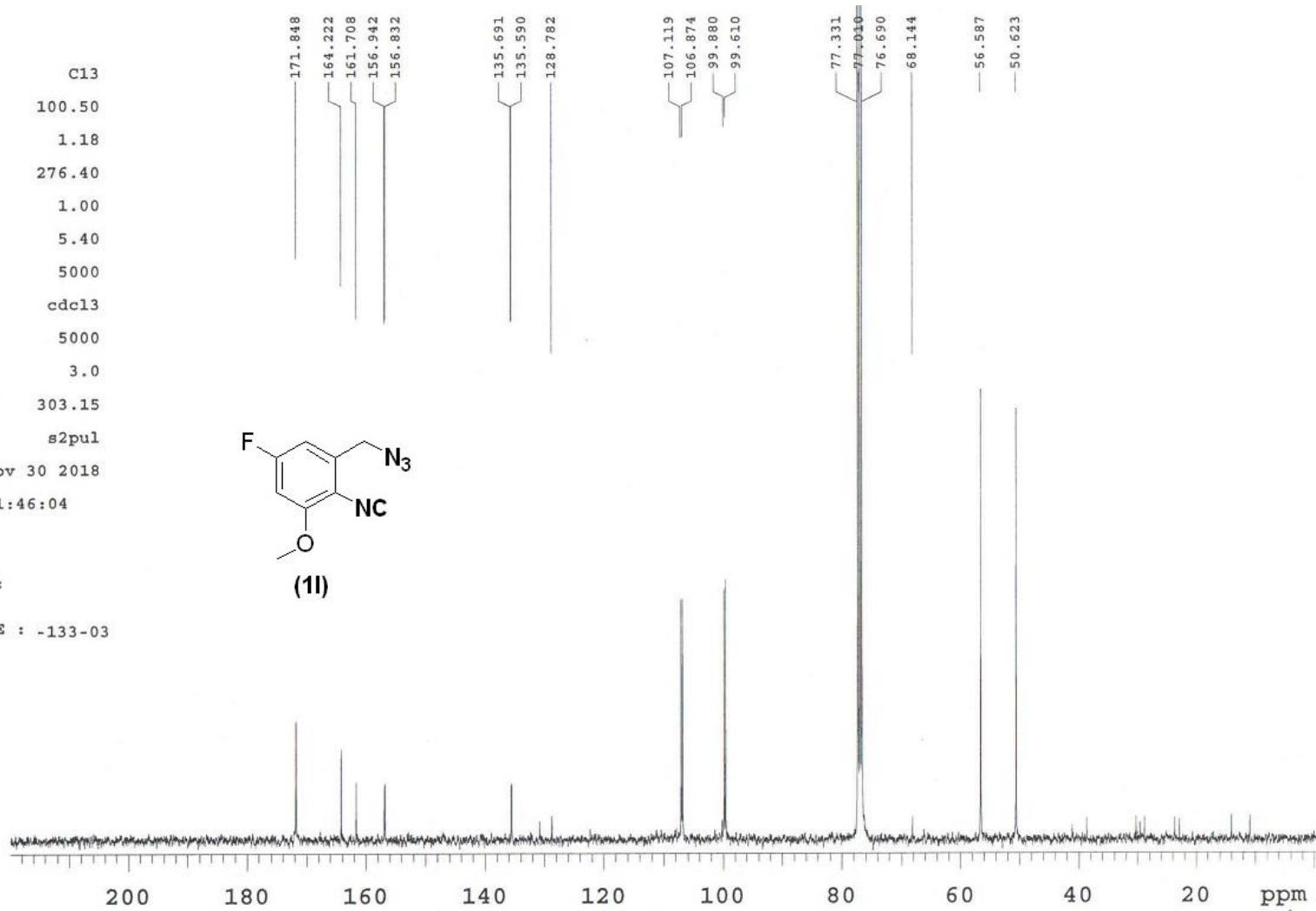
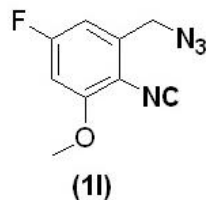


NMR REPORTS:

PROJECT NAME : i-165-04

PROBE: ATB

NUCLEUS : C13
 FRQ (MHz): 100.50
 AT (sec): 1.18
 SW (ppm): 276.40
 RD (sec): 1.00
 PW (usec): 5.40
 NT : 5000
 Solvent : cdcl3
 NP : 5000
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Nov 30 2018
 TIME : 21:46:04

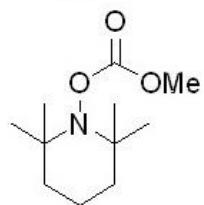


NMR REPORTS:

PROJECT NAME : -133-03

PROBE: ATB

NUCLEUS : H1
 FRQ (MHz): 399.63
 AT (sec): 2.28
 SW (ppm): 17.98
 RD (sec): 1.00
 PW (usec): 5.35
 NT : 64
 Solvent : cdcl3
 NP : 64
 LB (Hz): 3.0
 TEMP (K): 303.15
 EXP : s2pul
 DATE : Jan 31 2019
 TIME : 09:14:57



3aa

