

Supporting Information

**Palladium-Catalyzed Asymmetric Intermolecular Mizoroki-Heck Reaction for
Construction of Chiral Quaternary Carbon Center**

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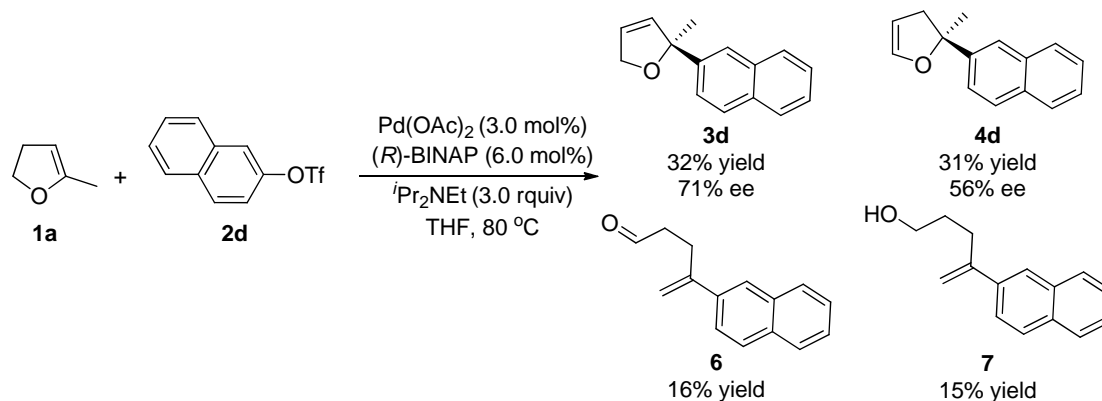
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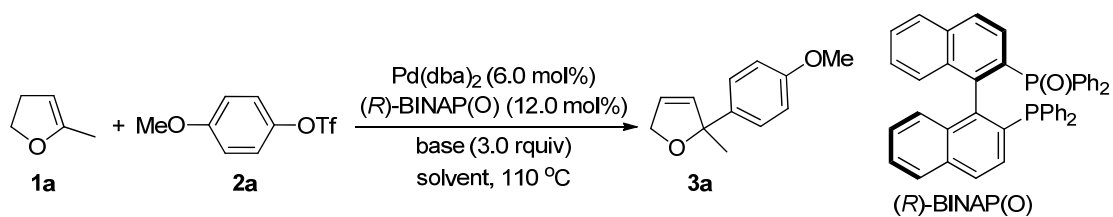
1. General Methods

The reactions were carried out in flame-dried glassware under a dry argon atmosphere. All solvents were purified and dried by using standard methods prior to use. Commercially available reagents were used without further purification. ^1H NMR spectra were recorded on a NMR instrument operated at 400 MHz. Chemical shifts are reported in ppm from tetramethylsilane with the solvent resonance as the internal standard (CDCl_3 : δ 7.26 ppm). Data are reported as follows: chemical shift, multiplicity (s = singlet, d = doublet, t = triplet, q = quartet, br = broad, m = multiplet or unresolved), coupling constants (Hz), and integration. ^{13}C NMR spectra were recorded on a NMR instrument operated at 101 MHz with complete proton decoupling. Chemical shifts are reported in ppm from tetramethylsilane with the solvent resonance as the internal standard (CDCl_3 : δ 77.1 ppm). Infrared spectra were recorded from thin films of pure samples. Mass and HRMS spectra were measured in EI or ESI mode and the mass analyzer type used for the HRMS was TOF. Thin layer chromatography was performed on pre-coated glassback plates and visualized with UV light at 254 nm. Flash column chromatography was performed on silica gel. Enantiomer ratios were determined by chiral HPLC analysis in comparison with authentic racemic materials.

2. $\text{Pd}(\text{OAc})_2/(\text{R})\text{-BINAP}$ -catalyzed Heck Reaction of 2,3-dihydrofuran 1a and Triflate 2d



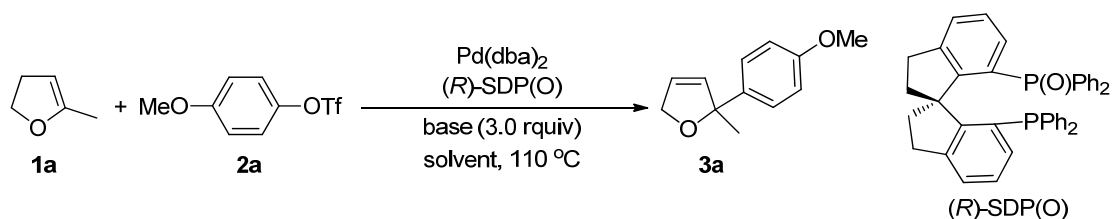
3. Table 1. Optimization of Reaction Condition with (*R*)-BINAP(O)^a



entry	Base	solvent	yield (%) ^b	ee (%) ^c
1	<i>i</i> Pr ₂ NEt	toluene	59	87
2	<i>i</i> Pr ₂ NEt	DMF	63	87
3	<i>i</i> Pr ₂ NEt	DMSO	4	68
4	<i>i</i> Pr ₂ NEt	anisole	68	87
5 ^d	<i>i</i> Pr ₂ NEt	DME	75	88
6 ^d	<i>i</i> Pr ₂ NEt	MTBE	75	87
7 ^d	<i>i</i> Pr ₂ NEt	2-MeTHF	74	88
8	<i>i</i> Pr ₂ NEt	(ⁿ Bu) ₂ O	75	87
9	Et ₃ N	1,4-dioxane	58	87
10	DABCO	1,4-dioxane	53	12
11	Li ₂ CO ₃	1,4-dioxane	13	81
12	Na ₂ CO ₃	1,4-dioxane	26	87
13	NaOAc	1,4-dioxane	45	87
14	KOAc	1,4-dioxane	48	83
15	Cy ₂ NMe	1,4-dioxane	74	87
16	PS	1,4-dioxane	66	88

^aConditions: molar ratio of **1a/2a/Pd(dba)₂/L/base** = 500:100:6:12:300. ^bIsolated yield. ^cDetermined by chiral HPLC. ^dPerformed in sealed tube.

4. Table 2. Optimization of Reaction Condition with (*R*)-SDP(O)^a



entry	[Pd]/[L] (mol%)	base	Solvent	yield (%) ^b	ee (%) ^c
1 ^d	3/6	<i>i</i> Pr ₂ NEt	THF	44	93
2 ^d	6/6.6	<i>i</i> Pr ₂ NEt	THF	46	92
3	6/6.6	<i>i</i> Pr ₂ NEt	(ⁿ Bu) ₂ O	24	95
4 ^d	6/12	<i>i</i> Pr ₂ NEt	THF	47	94
5 ^d	6/6.6	Cy ₂ NMe	THF	51	89
6 ^d	5/10	Cy ₂ NMe	THF	81	94
7	6/12	Cy ₂ NMe	toluene	74	90
8	6/12	Cy ₂ NMe	DMF	39	94
9 ^d	6/12	Cy ₂ NMe	2-MeTHF	82	95
10	6/12	Cy ₂ NMe	(ⁿ Bu) ₂ O	83	94

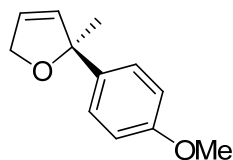
^aConditions: molar ratio of **1a**/**2a**/base = 500/100/300. ^bIsolated yield. ^cDetermined by chiral HPLC. ^dPerformed in sealed tube.

5. General experimental procedure for Pd-catalyzed Heck reaction of 5-substituted-2,3-dihydrofuran **1** and triflate **2**

To a flame dried sealed tube were added Pd(dba)₂ (6.9 mg, 0.012 mmol), (*R*)-SDP(O) (14.5 mg, 0.024 mmol), freshly distilled anhydrous THF (0.2 mL). The resulting mixture was allowed to stir for 30 mins. The 2,3-dihydrofuran **1** (1.0 mmol) and triflate **2** (0.2 mmol) were added subsequently, then dicyclohexylmethylamine (117.0 mg, 0.6 mmol) was added. The resulting reaction mixture was stirred at 110 °C for 24 h. After the reaction mixture was filtered through a celite, the ratio of **3** and **4** was determined by GC. After the volatile was removed in vacuo, the resulting residue was

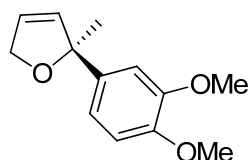
purified by flash chromatography (FC) on silica gel with petroleum ether and ethyl acetate as eluent to give the product **3**.

(*S*)-2-(4-methoxyphenyl)-2-methyl-2,5-dihydrofuran (**3a**)¹



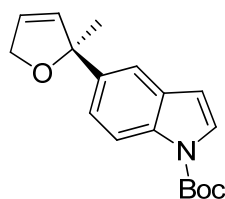
Colorless oil, 31.9 mg, yield: 84%, ee: 95%, $[\alpha]_D^{25} = -122.4$ (*c* 1.0, CHCl₃); HPLC (Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 99.5/0.5, 1.0 mL/min, 214 nm), $t_R = 10.27$ min (major), 15.05 min (minor); ¹H NMR (400 MHz, CDCl₃) δ 7.33 (d, *J* = 8.4 Hz, 2H), 6.87 (d, *J* = 8.4 Hz, 2H), 5.98-5.97 (m, 1H), 5.86 (d, *J* = 6 Hz, 1H), 4.78 (dd, *J* = 13.2, 24.8 Hz, 2H), 3.80 (s, 3H), 1.64 (s, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 158.4, 138.5, 134.4, 125.9, 124.8, 113.6, 90.3, 74.6, 55.2, 27.9; IR (film) 2837, 1610, 1509, 1240, 1076, 1016, 829, 704 cm⁻¹; MS (EI) *m/z*: 77 (17), 91 (33), 115 (26), 132 (12), 147 (44), 160 (40), 175 (100), 190 (M⁺, 9); HRMS (EI) Calcd for C₁₂H₁₄O₂: 190.0994, found: 190.0991.

(*S*)-2-(3,4-dimethoxyphenyl)-2-methyl-2,5-dihydrofuran (**3b**)



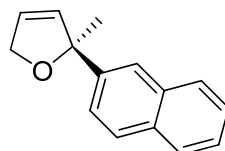
Colorless oil, 42.2 mg, yield: 96%, ee: 94%, $[\alpha]_D^{25} = -100.9$ (*c* 1.0, CHCl₃); HPLC (Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 95/5, 1.0 mL/min, 214 nm), $t_R = 10.37$ min (minor), 11.09 min (major); ¹H NMR (400 MHz, CDCl₃) δ 6.97 (d, *J* = 2.0 Hz, 1H), 6.91-6.81 (m, 2H), 6.00-5.97 (m, 1H), 5.88-5.85 (m, 1H), 4.81-4.71 (m, 2H), 3.88 (s, 3H), 3.85 (s, 3H), 1.63 (s, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 148.7, 147.8, 139.1, 134.3, 124.9, 116.8, 110.8, 108.4, 90.4, 74.6, 55.9, 55.8, 28.1; IR (film) 2836, 1512, 1259, 1018, 752, 712 cm⁻¹; MS (EI) *m/z*: 77 (11), 91 (12), 115 (11), 143 (1), 174 (11), 205 (100), 220 (M⁺, 14); HRMS (EI) Calcd for C₁₃H₁₆O₃: 220.1099, found: 220.1096.

(*S*)-*tert*-butyl 5-(2-methyl-2,5-dihydrofuran-2-yl)-1*H*-indole-1-carboxylate (**3c**)



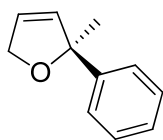
Colorless oil, 44.3 mg, yield: 74%, ee: 92%, $[\alpha]_D^{25} = -106.4$ (c 1.0, CHCl_3); HPLC (Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 99.5/0.5, 1.0 mL/min, 214 nm), $t_R = 7.66$ min (major), 9.26 min (minor); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.25 (s, 1H), 7.59 (s, 1H), 7.52 (d, $J = 8.0$ Hz, 1H), 7.32 (d, $J = 8.0$ Hz, 1H), 6.54 (d, $J = 2.8$ Hz, 1H), 6.09-6.08 (m, 1H), 5.89 (d, $J = 6.0$ Hz, 1H), 4.81 (dd, $J = 12.4, 20.4$ Hz, 2H), 1.74 (s, 3H), 1.69 (s, 9H); $^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 149.8, 142.8, 135.2, 134.8, 129.4, 126.1, 124.8, 120.7, 119.9, 111.6, 107.0, 91.0, 83.5, 74.7, 28.3, 28.2; IR (film) 2975, 1728, 1334, 1152, 1080, 1018, 713 cm^{-1} ; MS (EI) m/z : 57 (100), 115 (8), 129 (26), 156 (38), 183 (9), 228 (74), 284 (22), 299 (M^+ , 8); HRMS (EI) Calcd for $\text{C}_{18}\text{H}_{21}\text{NO}_3$: 299.1521, found: 299.1524.

(*S*)-2-methyl-2-(naphthalen-2-yl)-2,5-dihydrofuran (**3d**)



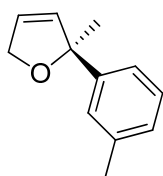
Colorless oil, 23.9 mg, yield: 57%, ee: 84%, $[\alpha]_D^{25} = -144.1$ (c 1.0, CHCl_3); HPLC (Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 99.5/0.5, 1.0 mL/min, 214 nm), $t_R = 8.52$ min (major), 14.28 min (minor); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.89-7.82 (m, 4H), 7.54-7.43 (m, 3H), 6.13-6.10 (m, 1H), 5.93-5.91 (m, 1H), 4.91-4.81 (m, 2H), 1.76 (s, 3H); $^{13}\text{C NMR}$ (101 MHz, CDCl_3) δ 143.8, 134.2, 133.3, 132.4, 128.1, 127.9, 127.5, 126.0, 125.7, 125.2, 123.7, 122.8, 90.8, 74.8, 28.1; IR (film) 2843, 1080, 1017, 816, 745, 710 cm^{-1} ; MS (EI) m/z : 83 (24), 115 (8), 127 (16), 152 (27), 167 (61), 177 (23), 195 (100), 210 (M^+ , 23); HRMS (EI) Calcd for $\text{C}_{15}\text{H}_{14}\text{O}$: 210.1045, found: 210.1046.

(*S*)-2-methyl-2-phenyl-2,5-dihydrofuran (**3e**)²



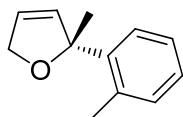
Colorless oil, 20.2 mg, yield: 63%, ee: 94%, $[\alpha]_D^{25} = -165.2$ (c 1.0, CHCl_3); Agilent 1260 SSC (Chiralpak IC, 4.6×250 mm, CO_2/i -Propanol = 95/5, 1.3 mL/min, 214 nm), $t_R = 4.80$ min (minor), 6.15 min (major); ^1H NMR (400 MHz, CDCl_3) δ 7.41 (d, $J = 4$ Hz, 2H), 7.36-7.32 (m, 2H), 7.24-7.21 (m, 1H), 6.03-6.00 (m, 1H), 5.88-5.86 (m, 1H), 4.84-4.73 (m, 2H), 1.65 (s, 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 146.4, 134.2, 128.2, 126.8, 124.9, 124.7, 90.6, 74.7, 28.1; MS (EI) m/z : 75 (8), 77 (11), 89 (6), 109 (29), 119 (10), 140 (8), 159 (100), 160 (M^+ , 10).

(*S*)-2-methyl-2-(*m*-tolyl)-2,5-dihydrofuran (**3f**)



Colorless oil, 27.3 mg, yield: 78%, ee: 90%, $[\alpha]_D^{25} = -290.1$ (c 1.0, CHCl_3); Agilent 1260 SSC (Chiralpak OJ-H, 4.6×250 mm, CO_2/i -Propanol = 95/5, 1.0 mL/min, 214 nm), $t_R = 6.16$ min (major), 6.97 min (minor); ^1H NMR (400 MHz, CHCl_3) δ 7.26-7.20 (m, 3H), 7.07 (d, $J = 7.2$ Hz, 1H), 6.03-6.01 (m, 1H), 5.87 (d, $J = 6.4$ Hz, 1H), 4.84-4.74 (m, 2H), 2.37 (s, 3H), 1.65 (s, 3H); ^{13}C NMR (101 MHz, CHCl_3) δ 146.3, 137.9, 134.3, 128.2, 127.6, 125.4, 124.9, 121.7, 90.6, 74.7, 28.2, 21.6; IR (film) 2844, 1073, 1018, 784, 715, 697 cm^{-1} ; MS (EI) m/z : 77 (8), 83 (20), 91 (38), 115 (25), 131 (61), 144 (12), 159 (100), 174 (M^+ , 0.4); HRMS (EI) Calcd for $\text{C}_{12}\text{H}_{14}\text{O}$: 174.1045, found: 174.1050.

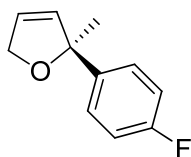
(*R*)-2-methyl-2-(*o*-tolyl)-2,5-dihydrofuran (**3g**)



Colorless oil, 15.7 mg, yield: 45%, ee: 96% [(*R*)-BINAP(O) used as the ligand],

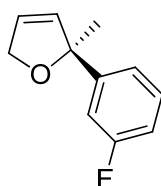
$[\alpha]_D^{25} = 65.9$ (c 1.0, CHCl_3); Agilent 1260 SSC(Chiralpak OJ-H, 4.6×250 mm, CO_2/i -Propanol = 95/5, 1.3 mL/min, 214 nm), $t_R = 6.33$ min (major), 7.53 min (minor); ^1H NMR (400 MHz, CHCl_3) δ 7.52-7.50 (m, 1H), 7.19-7.15 (m, 3H), 6.27-6.24 (m, 1H), 5.92 (d, $J = 6.0$ Hz, 1H), 4.79-4.63 (m, 2H), 2.51 (s, 3H), 1.68 (s, 3H); ^{13}C NMR (101 MHz, CHCl_3) δ 143.8, 134.6, 133.0, 132.1, 127.0, 125.9, 125.7, 125.4, 91.2, 73.6, 28.0, 21.5; IR (film) 2841, 1079, 1018, 757, 727, 702 cm^{-1} ; MS (EI) m/z : 77 (10), 83 (30), 91 (41), 115 (29), 131 (63), 144 (14), 159 (100), 174 (M^+ , 0.3); HRMS (EI) Calcd for $\text{C}_{12}\text{H}_{14}\text{O}$: 174.1045, found: 174.1047.

(*S*)-2-(4-fluorophenyl)-2-methyl-2,5-dihydrofuran (**3h**)



Colorless oil, 22.8 mg, yield: 64%, ee: 95%, $[\alpha]_D^{25} = -140.8$ (c 1.0, CHCl_3); Agilent 1260 SSC(Chiralpak OJ-H, 4.6×250 mm, CO_2/i -Propanol = 95/5, 1.3 mL/min, 214 nm), $t_R = 5.94$ min (minor), 6.28 min (major); ^1H NMR (400 MHz, CDCl_3) δ 7.38-7.35 (m, 2H), 7.04-6.98 (m, 2H), 5.98-5.96 (m, 1H), 5.88 (d, $J = 6.0$ Hz, 1H), 4.82-4.71 (m, 2H), 1.63 (s, 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 161.7 (d, $J_{\text{C-F}} = 246.1$ Hz), 142.2, 134.1, 126.4 (d, $J_{\text{C-F}} = 7.7$ Hz), 125.1, 115.0 (d, $J_{\text{C-F}} = 21.5$ Hz), 90.2, 74.7, 28.1; ^{19}F NMR (376 MHz, CDCl_3) δ -116.39 (m); IR (film) 2847, 1228, 1077, 1015, 796, 701 cm^{-1} ; MS (EI) m/z : 77 (4), 85 (72), 109 (30), 115 (27), 135 (51), 145 (25), 163 (100), 168 (3), 178 (M^+ , 0.2); HRMS (EI) Calcd for $\text{C}_{11}\text{H}_{11}\text{OF}$: 178.0794, found: 178.0792.

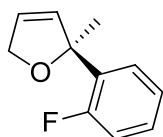
(*S*)-2-(3-fluorophenyl)-2-methyl-2,5-dihydrofuran (**3i**)



Colorless oil, 11.0 mg, yield: 31%, ee: 90%, $[\alpha]_D^{25} = -111.3$ (c 1.0, CHCl_3); Agilent 1260 SSC(Chiralpak OJ-H, 4.6×250 mm, CO_2/i -Propanol = 9/1, 1.3 mL/min, 214 nm),

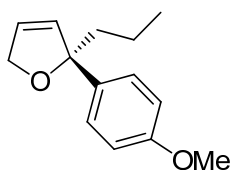
$t_R = 4.21$ min (major), 4.55 min (minor); ^1H NMR (400 MHz, CDCl_3) δ 7.31-7.27 (m, 1H), 7.16-7.11 (m, 2H), 6.94-6.89 (m, 1H), 5.98-5.95 (m, 1H), 5.88 (d, $J = 6.0$ Hz, 1H), 4.83-4.72 (m, 2H), 1.63 (s, 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 162.9 (d, $J_{\text{C-F}} = 246.3$ Hz), 149.2 (d, $J_{\text{C-F}} = 5.9$ Hz), 133.7, 129.7 (d, $J_{\text{C-F}} = 8.2$ Hz), 125.4, 120.2 (d, $J_{\text{C-F}} = 2.2$ Hz), 113.5 (d, $J_{\text{C-F}} = 21.7$ Hz), 111.9 (d, $J_{\text{C-F}} = 22.5$ Hz), 90.3, 74.8, 28.0; ^{19}F NMR (376 MHz, CDCl_3) δ -113.07 (m); IR (film) 2850, 1588, 1261, 1080, 1018, 753, 691 cm^{-1} ; MS (EI) m/z : 77 (4), 85 (100), 109 (20), 115 (18), 135 (37), 145 (12), 163 (65), 177 (0.2); HRMS (EI) Calcd for $\text{C}_{11}\text{H}_{11}\text{OF}$: 178.0794, found: 178.0798.

(*S*)-2-(2-fluorophenyl)-2-methyl-2,5-dihydrofuran (**3j**)



Colorless oil, 7.3 mg, yield: 21%, ee: 90%, $[\alpha]_D^{25} = -160.4$ (c 1.0, CHCl_3); Agilent 1260 SSC (Chiralpak IC, 4.6×250 mm, CO_2/i -Propanol = 95/5, 1.3 mL/min, 214 nm), $t_R = 3.53$ min (minor), 3.71 min (major); ^1H NMR (400 MHz, CDCl_3) δ 7.63-7.58 (m, 1H), 7.24-7.18 (m, 1H), 7.13-7.09 (m, 1H), 7.03-6.98 (m, 1H), 6.27-6.24 (m, 1H), 5.83 (d, $J = 6.0$ Hz, 1H), 4.82-4.66 (m, 2H), 1.66 (s, 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 158.6 (d, $J_{\text{C-F}} = 245.3$ Hz), 132.8 (d, $J_{\text{C-F}} = 4.6$ Hz), 128.5 (d, $J_{\text{C-F}} = 7.6$ Hz), 126.3 (d, $J_{\text{C-F}} = 5.4$ Hz), 125.2, 124.1 (2C), 115.7 (d, $J_{\text{C-F}} = 2.3$ Hz), 88.9 (d, $J_{\text{C-F}} = 3.0$ Hz), 74.2, 27.8 (d, $J_{\text{C-F}} = 3.0$ Hz); ^{19}F NMR (376 MHz, CDCl_3) δ -114.80 (m); IR (film) 2850, 1480, 1141, 1019, 756, 705 cm^{-1} ; MS (EI) m/z : 77 (3), 83 (17), 109 (28), 115 (28), 135 (47), 145 (25), 163 (100), 177 (0.2); HRMS (EI) Calcd for $\text{C}_{11}\text{H}_{11}\text{OF}$: 178.0794, found: 178.0791.

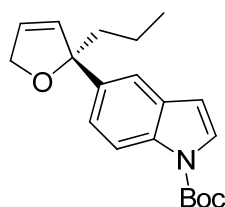
(*S*)-2-(4-methoxyphenyl)-2-propyl-2,5-dihydrofuran (**3k**)



Colorless oil, 24.8 mg, yield: 57%, ee: 95%, $[\alpha]_D^{25} = -107.5$ (c 1.0, CHCl_3); HPLC

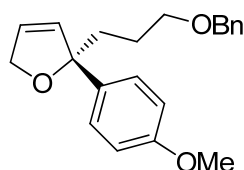
(Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 99/1, 1.0 mL/min, 214 nm), t_R = 8.05 min (major), 10.94 min (minor); ^1H NMR (400 MHz, CDCl_3) δ 7.30 (d, J = 8.8 Hz, 2H), 6.87 (d, J = 8.4 Hz, 2H), 5.98-5.95 (m, 1H), 5.87 (d, J = 6.0 Hz, 1H), 4.78-4.68 (m, 2H), 3.80 (s, 3H), 1.91-1.83 (m, 2H), 1.37-1.27 (m, 2H), 0.94 (t, J = 7.2 Hz, 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 158.2, 138.4, 132.8, 125.9, 125.4, 113.5, 93.3, 75.0, 55.2, 43.8, 17.5, 14.4; IR (film) 2849, 1730, 1336, 1248, 1042, 732 cm^{-1} ; MS (EI) m/z : 77 (9), 115 (15), 132 (7), 147 (24), 160 (24), 175 (100), 218 (M^+ , 0.2); HRMS (EI) Calcd for $\text{C}_{14}\text{H}_{18}\text{O}_2$: 218.1307, found: 218.1308.

(*S*)-*tert*-butyl 5-(2-propyl-2,5-dihydrofuran-2-yl)-1*H*-indole-1-carboxylate (**3l**)



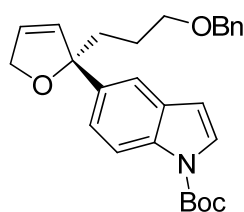
Colorless oil, 51.0 mg, yield: 78%, ee: 94%, $[\alpha]_D^{25}$ = -83.3 (c 1.0, CHCl_3); Agilent 1260 SSC(Chiralpak OD-H, 4.6×250 mm, CO_2 /*i*-Propanol = 95/5, 1.3 mL/min, 214 nm), t_R = 10.21 min (minor), 11.19 min (major); ^1H NMR (400 MHz, CDCl_3) δ 8.21 (s, 1H), 7.58 (d, J = 3.2 Hz, 1H), 7.52 (d, J = 8.0 Hz, 1H), 7.29 (d, J = 4.4 Hz, 1H), 6.53 (d, J = 1.8 Hz, 1H), 6.08-6.06 (m, 1H), 5.89 (d, J = 6 Hz, 1H), 4.83-4.74 (m, 2H), 2.0-1.93 (m, 2H), 1.69 (s, 9H), 1.42-1.27 (m, 2H), 0.92 (t, J = 7.2 Hz 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 149.8, 142.6, 135.2, 133.1, 129.2, 125.9, 125.4, 120.6, 119.9, 111.6, 107.0, 94.0, 83.4, 75.1, 44.1, 28.2, 17.5, 14.4; IR (film) 2958, 1730, 1335, 1249, 1151, 713 cm^{-1} ; MS (EI) m/z : 77 (12), 116 (9), 129 (36), 156 (44), 184 (100), 227 (4), 327 (M^+ , 0.2); HRMS (EI) Calcd for $\text{C}_{15}\text{H}_{17}\text{NO}$ ($\text{M} - \text{C}_5\text{H}_8\text{O}_2$) $^+$: 227.1310, found: 227.1311.

(*S*)-2-(3-(benzyloxy)propyl)-2-(4-methoxyphenyl)-2,5-dihydrofuran (**3m**)



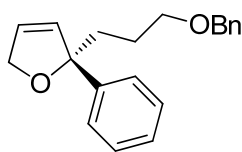
Colorless oil, 53.8 mg, yield: 83%, ee: 97%, $[\alpha]_D^{25} = -62.4$ (c 1.0, CHCl_3); HPLC (Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 98/2, 1.0 mL/min, 214 nm), $t_R = 13.69$ min (major), 16.17 min (minor); ^1H NMR (400 MHz, CDCl_3) δ 7.37-7.30 (m, 7H), 6.87 (d, $J = 8.8$ Hz, 2H), 5.97-5.95 (m, 1H), 5.88 (d, $J = 6.0$ Hz, 1H), 4.78-4.70 (m, 2H), 4.49 (s, 2H), 3.80 (s, 3H), 3.51-3.44 (m, 2H), 2.00-1.96 (m, 2H), 1.70-1.63 (m, 2H); ^{13}C NMR (101 MHz, CDCl_3) δ 158.3, 138.6, 138.2, 132.6, 128.3, 127.6, 127.5, 125.9, 125.6, 113.6, 93.0, 75.2, 72.8, 70.6, 55.2, 37.9, 24.6; IR (film) 2842, 1609, 1509, 1245, 1078, 1032, 829, 735, 697 cm^{-1} ; MS (EI) m/z : 77 (9), 115 (10), 144 (4), 147 (17), 160 (14), 175 (100), 233 (3), 324 (M^+ , 2); HRMS (EI) Calcd for $\text{C}_{21}\text{H}_{24}\text{O}_3$: 324.1725, found: 324.1721.

(*S*)-*tert*-butyl5-(2-(3-(benzyloxy)propyl)-2,5-dihydrofuran-2-yl)-1*H*-indole-1-carboxylate (**3n**)



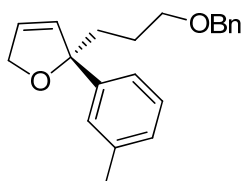
Colorless oil, 73.6 mg, yield: 85%, ee: 96%, $[\alpha]_D^{25} = -62.8$ (c 1.0, CHCl_3); Agilent 1260 SSC (Chiralpak AD-H, 4.6×250 mm, CO_2 /*i*-Propanol = 9/1, 1.3 mL/min, 214 nm), $t_R = 14.54$ min (minor), 15.37 min (major); ^1H NMR (400 MHz, CDCl_3) δ 8.24 (s, 1H), 7.59 (d, $J = 2.4$ Hz 1H), 7.52 (d, $J = 8$ Hz, 1H), 7.37-7.29 (m, 6H), 6.55 (d, $J = 3.6$ Hz, 1H), 6.09-6.07 (m, 1H), 5.91 (d, $J = 6.0$ Hz, 1H), 4.83-4.76 (m, 2H), 4.49 (s, 2H), 3.53-3.46 (m, 2H), 2.10-2.07 (m, 2H), 1.77-1.66 (m, 2H), 1.70 (s, 9H); ^{13}C NMR (101 MHz, CDCl_3) δ 149.8, 142.4, 138.6, 135.2, 132.9, 129.3, 128.3, 127.6, 127.4, 125.9, 125.7, 120.6, 119.9, 111.7, 107.0, 93.8, 83.5, 75.2, 72.8, 70.6, 38.3, 28.2, 24.7; IR (film) 2950, 1730, 1336, 1248, 1042, 732 cm^{-1} ; MS (EI) m/z : 57 (13), 91 (20), 154 (15), 156 (12), 184 (28), 228 (100), 229 (15), 284 (48), 433 (M^+ , 0.4); HRMS (EI) Calcd for $\text{C}_{27}\text{H}_{31}\text{NO}_4$: 433.2253, found: 433.2249.

(*S*)-2-(3-(benzyloxy)propyl)-2-phenyl-2,5-dihydrofuran (**3o**)



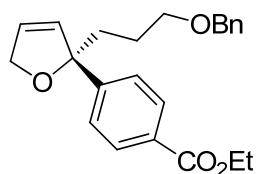
Colorless oil, 32.4 mg, yield: 55%, ee: 93%, $[\alpha]_D^{25} = -61.4$ (*c* 1.0, CHCl₃); HPLC (Chiralpak OD-H, 4.6×250 mm, Hexane/*i*-Propanol = 99/1, 1.0 mL/min, 214 nm), $t_R = 10.52$ min (minor), 14.09 min (major); ¹H NMR (400 MHz, CDCl₃) δ 7.39-7.36 (m, 2H), 7.34-7.31 (m, 6H), 7.29-7.20 (m, 2H), 5.99-5.96 (m, 1H), 5.88 (d, *J* = 6.0 Hz, 1H), 4.79-4.70 (m, 2H), 4.47 (s, 2H), 3.50-3.41 (m, 2H), 2.01-1.96 (m, 2H), 1.70-1.60 (m, 2H); ¹³C NMR (101 MHz, CDCl₃) δ 145.9, 138.6, 132.4, 128.3, 128.2, 127.6, 127.5, 126.6, 125.8, 124.7, 93.4, 75.2, 72.8, 70.5, 38.0, 24.5; IR (film) 2849, 1449, 1086, 1028, 696 cm⁻¹; MS (EI) *m/z*: 65 (7), 77 (7), 91 (35), 117 (24), 145 (100), 203 (1), 294 (M⁺, 0.1); HRMS (EI) Calcd for C₂₀H₂₂O₂: 294.1620, found: 294.1626.

(*S*)-2-(3-(benzyloxy)propyl)-2-(*m*-tolyl)-2,5-dihydrofuran (**3p**)



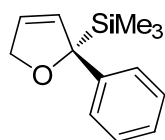
Colorless oil, 39.0 mg, yield: 63%, ee: 95%, $[\alpha]_D^{25} = -59.7$ (*c* 1.0, CHCl₃); Agilent 1260 SSC (Chiralpak AD-H, 4.6×250 mm, CO₂/*i*-Propanol = 99/1, 1.3 mL/min, 214 nm), $t_R = 8.65$ min (major), 9.24 min (minor); ¹H NMR (400 MHz, CDCl₃) δ 7.36-7.27 (m, 5H), 7.24-7.16 (m, 3H), 7.04 (d, *J* = 7.2 Hz, 1H), 5.99-5.97 (m, 1H), 5.88 (d, *J* = 6.4 Hz, 1H), 4.79-4.70 (m, 2H), 4.48 (s, 2H), 3.52-3.42 (m, 2H), 2.35 (s, 3H), 2.0-1.95 (m, 2H), 1.70-1.61 (m, 2H); ¹³C NMR (101 MHz, CDCl₃) δ 145.9, 138.6, 137.8, 132.5, 128.3, 128.2, 127.6, 127.4, 127.4, 125.7, 125.4, 121.8, 93.4, 75.2, 72.8, 70.6, 38.1, 24.5, 21.6; IR (film) 2949, 1079, 1031, 734, 717, 696 cm⁻¹; MS (EI) *m/z*: 65 (8), 91 (42), 115 (9), 144 (6), 159 (100), 160 (12), 217 (1), 308 (M⁺, 0.1); HRMS (EI) Calcd for C₂₁H₂₄O₂: 308.1776, found: 308.1775.

(*S*)-ethyl 4-(2-(3-(benzyloxy)propyl)-2,5-dihydrofuran-2-yl)benzoate (**3q**)



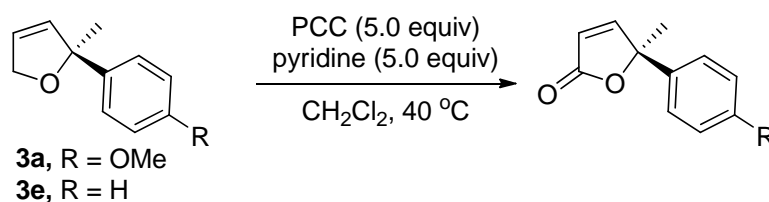
Colorless oil, 22.1 mg, yield: 30%, ee: 70%, $[\alpha]_D^{25} = -35.5$ (c 1.0, CHCl_3); Agilent 1260 SSC (Chiralpak AD-H, 4.6×250 mm, CO_2/i -Propanol = 9/1, 1.3 mL/min, 214 nm), $t_R = 23.32$ min (minor), 25.56 min (major); ^1H NMR (400 MHz, CDCl_3) δ 8.01-7.98 (m, 2H), 7.48-7.42 (m, 2H), 7.35-7.28 (m, 5H), 5.97-5.94 (m, 1H), 5.90 (d, $J = 6.0$ Hz, 1H), 4.80-4.70 (m, 2H), 4.46 (s, 2H), 4.39-4.34 (m, 2H), 3.50-3.40 (m, 2H), 2.00-1.95 (m, 2H), 1.71-1.57 (m, 2H), 1.38 (t, $J = 7.2$ Hz, 3H); ^{13}C NMR (101 MHz, CDCl_3) δ 166.5, 150.9, 138.5, 131.9, 129.6, 128.8, 128.3, 127.6, 127.5, 126.3, 124.8, 93.3, 75.3, 72.8, 70.3, 60.8, 37.9, 24.4, 14.3; IR (film) 2851, 1712, 1271, 1100, 1081, 697 cm^{-1} ; MS (EI) m/z : 65 (10), 91 (56), 115 (21), 145 (8), 191 (4), 207 (38), 217 (100), 366 (M^+ , 0.5); HRMS (EI) Calcd for $\text{C}_{23}\text{H}_{26}\text{O}_4$: 366.1831, found: 366.1825.

(*R*)-trimethyl(2-phenyl-2,5-dihydrofuran-2-yl)silane (**3r**)



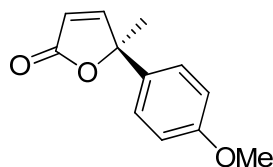
Colorless oil, 20.0 mg, yield: 46%, ee: 93%, $[\alpha]_D^{25} = -27.9$ (c 1.0, CHCl_3); Agilent 1260 SSC(Chiralpak OJ-H, 4.6×250 mm, CO_2/i -Propanol = 95/5, 1.3 mL/min, 214 nm), $t_R = 6.69$ min (major), 8.43 min (minor); ^1H NMR (400 MHz, CDCl_3) δ 7.33-7.29 (m, 2H), 7.26-7.24 (m, 2H), 7.16 (t, $J = 7.2$ Hz 1H), 6.23-6.20 (m, 1H), 5.82-5.80 (m, 1H), 4.85-4.71 (m, 2H), 0.01 (s, 9H); ^{13}C NMR (101 MHz, CDCl_3) δ 144.9, 130.6, 128.0, 125.3, 124.1, 123.6, 90.6, 75.7, -4.1; IR (film) 2840, 1246, 1107, 832, 741, 696 cm^{-1} ; MS (EI) m/z : 56 (11), 73 (100), 115 (34), 127 (21), 145 (38), 159 (2), 217 (39), 218.0 (M^+ , 18); HRMS (EI) Calcd for $\text{C}_{13}\text{H}_{17}\text{OSi}$ ($\text{M} - \text{H}$) $^+$: 217.1049, found: 217.1044.

6. Transformation of products **3a** and **3e**



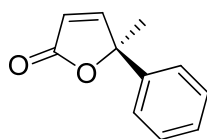
General experimental procedure for **3a** and **3e**: To a flame dried sealed tube were added **3a** (or **3e**) (0.2 mmol), pyridine (5.0 equiv), PCC (5.0 equiv), dichloromethane (1.0 mL). The resulting mixture was heated at 40 °C for 24 h. The reaction mixture was filtered through celite/silica gel = 1/1. After the volatile was removed in vacuo, the residue was purified by column chromatography with petroleum ether and ethyl acetate as eluent to furnish the products.

(*S*)-5-(4-methoxyphenyl)-5-methylfuran-2(*5H*)-one (**5a**)



White solid, 33.8 mg, yield: 83%, ee: 94%, mp: 43-44 °C, $[\alpha]_D^{25} = -255.5$ (*c* 1.0, CHCl₃); Agilent 1260 SSC (Chiralpak AD-H, 4.6×250 mm, CO₂/*i*-Propanol = 9/1, 1.3 mL/min, 214 nm), *t_R* = 7.69 min (minor), 8.34 min (major); ¹H NMR (400 MHz, CDCl₃) δ 7.60 (d, *J* = 5.6 Hz, 1H), 7.28 (d, *J* = 8.8 Hz, 2H), 6.88 (d, *J* = 8.8 Hz, 2H), 6.04 (d, *J* = 5.2 Hz, 2H), 3.79 (s, 3H), 1.80 (s, 3H); ¹³C NMR (101M, CDCl₃) δ 172.5, 160.6, 159.5, 131.0, 126.2, 119.1, 114.1, 88.8, 55.3, 26.1; IR (film) 3099, 1745, 1509, 1250, 829 cm⁻¹; MS (EI) *m/z*: 63 (25), 77 (42), 92 (25), 115 (23), 133 (51), 161 (100), 189 (83), 204 (M⁺, 29); HRMS (EI) Calcd for C₁₂H₁₂O₃: 204.0786, found: 204.0784.

(*S*)-5-methyl-5-phenylfuran-2(*5H*)-one (**5b**)³



Colorless oil, 28.3 mg, yield: 87%, ee: 94%, $[\alpha]_D^{25} = -245.4$ (*c* 1.0, CHCl₃); Agilent

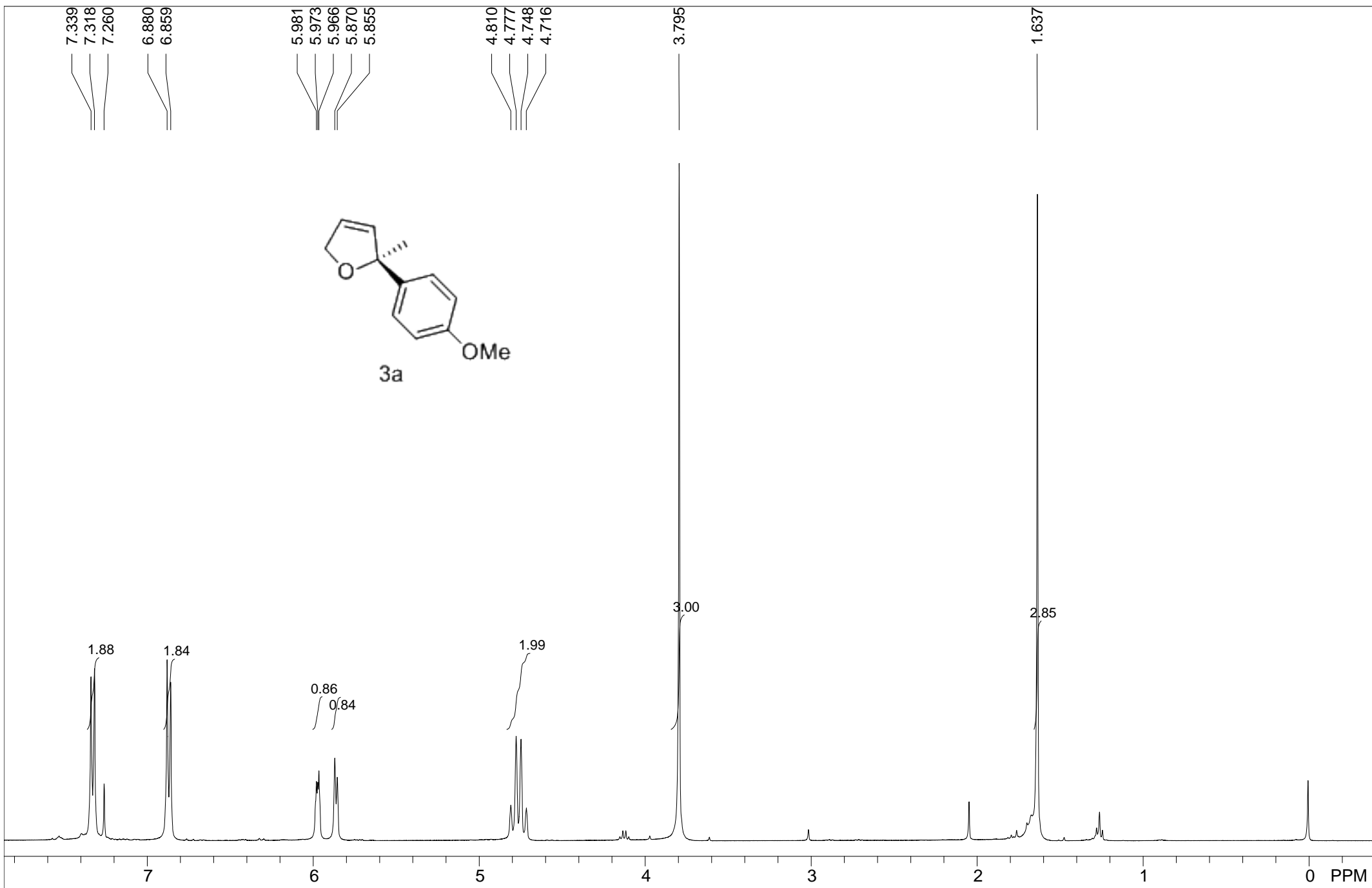
1260 SSC (Chiralpak OD-H, 4.6×250 mm, CO₂/*i*-Propanol = 99/1, 1.3 mL/min, 214 nm), t_R = 6.30 min (major), 7.18 min (minor); ¹H NMR (400 MHz, CDCl₃) δ 7.64 (d, *J* = 6.0 Hz, 1H), 7.38-7.30 (m, 4H), 6.04 (d, *J* = 5.6 Hz, 1H), 1.82 (s, 3H); ¹³C NMR (101 MHz, CDCl₃) δ 172.4, 160.5, 139.2, 128.8, 128.4, 124.8, 119.3, 88.9, 26.3; MS (EI) *m/z*: 77 (41), 103 (39), 115 (10), 131 (100), 145 (1), 159 (54), 174 (M⁺, 20).

7. Pd-catalyzed Asymmetric Heck reaction of 5-methyl-2,3-dihydrofuran (**1a**) and triflate **2a** on 2.0 mmol scale

To a flame dried sealed tube were added Pd(dba)₂ (69.0 mg, 0.12 mmol), (*R*)-SDP(O) (145.1 mg, 0.24 mmol), freshly distilled anhydrous THF (2.0 mL). The resulting mixture was allowed to stir for 30 mins. The 5-methyl-2,3-dihydrofuran (**1a**) (672 mg, 8.0 mmol) and triflate **2a** (512 mg, 2.0 mmol) were added subsequently, then dicyclohexylmethylamine (1.17 g, 6.0 mmol) was added. The resulting reaction mixture was stirred at 110 °C for 24 h. The reaction mixture was filtered through a celite, the ratio of **3a** and **4a** was determined to be >99/1 by GC. After the volatile was removed in vacuo, the resulting residue was purified by flash chromatography (FC) on silica gel with petroleum ether and ethyl acetate as eluent to give the product **3a** in 88% yield (334.3 mg) with 95% ee.

8. Reference

- [1] T. D. Lee and G. D. Daves, *J. Org. Chem.*, 1983, **48**, 399.
- [2] Y. Wang, K. Zheng and R. Hong, *J. Am. Chem. Soc.*, 2012, **134**, 4096.
- [3] (a) K. Suzuki and K. Inomata, *Tetrahedron Letters*, 2003, **44**, 745; (b) C. Gaul, K. Schäfer and D. Seebach, *J. Org. Chem.*, 2001, **66**, 3059.

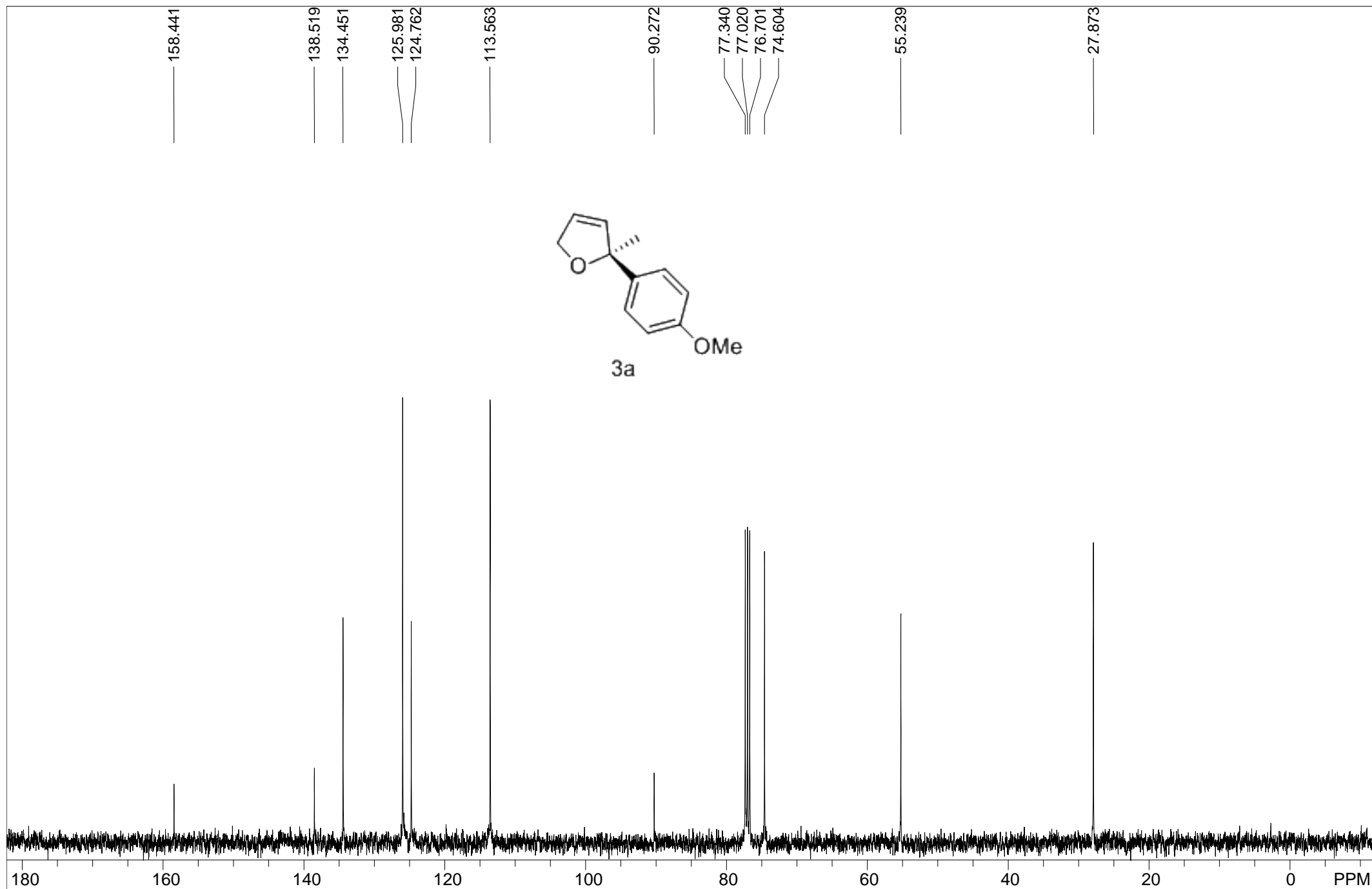


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Nuts - \$4-19-01-HNMR.fid



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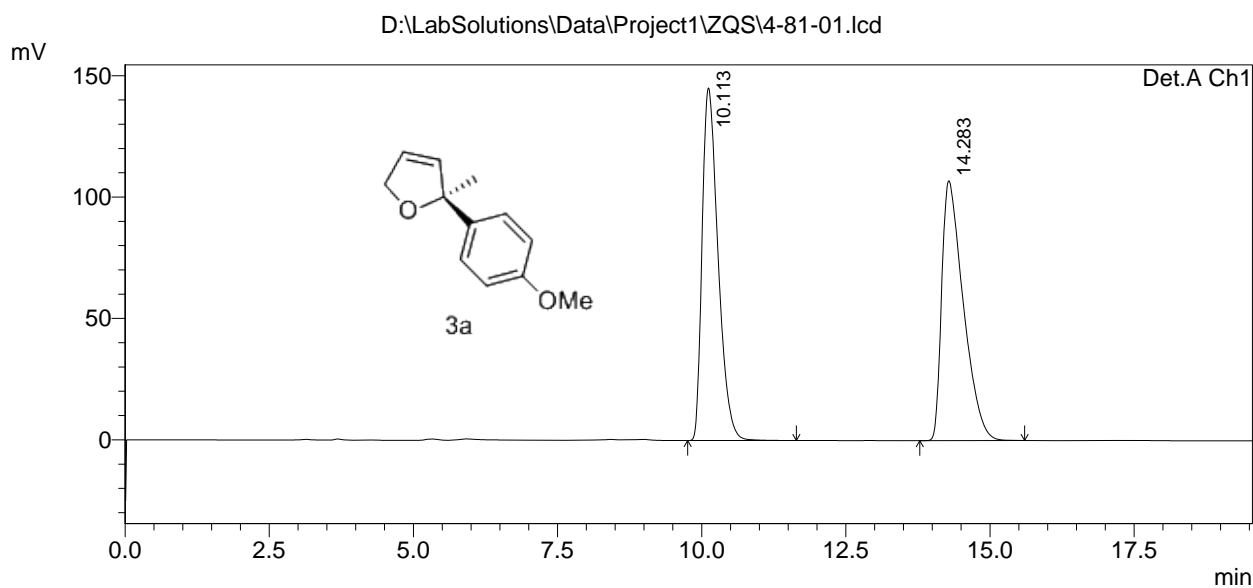
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==== Shimadzu LCsolution Analysis Report ====

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 Sample ID : OD-H,99.5/0.5,1.0,214
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 Injection Volume : 10 uL
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 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
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 Data Processed : 2013-12-8 22:21:53

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1 Det.A Ch1/214nm

PeakTable

Detector A Ch1 214nm

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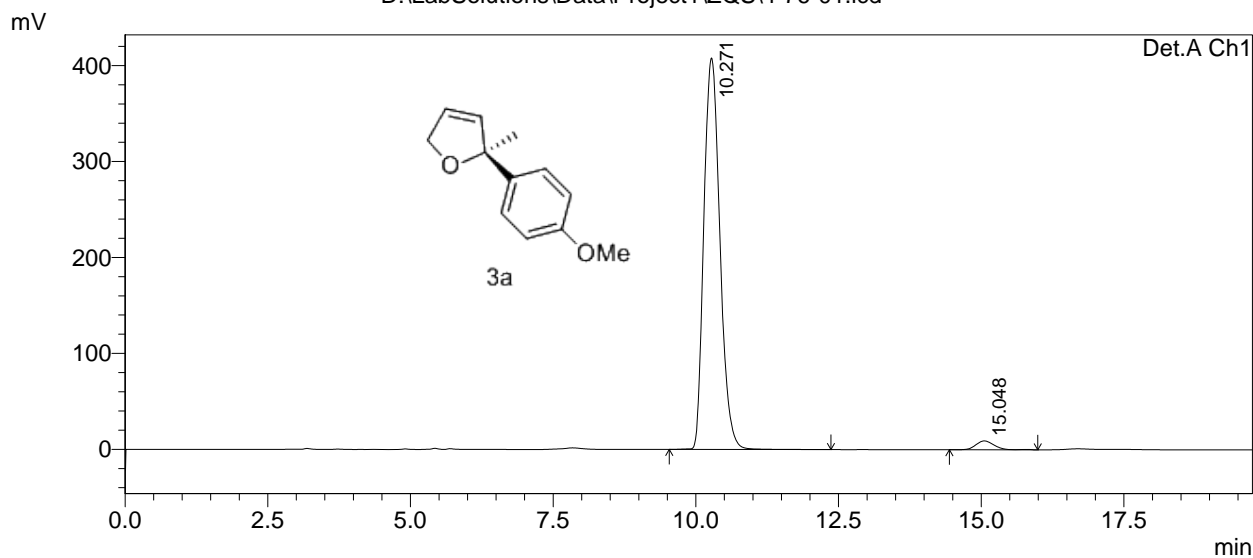
==== Shimadzu LCsolution Analysis Report ====

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 Vial # : 0
 Injection Volume : 10 uL
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 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
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 Data Processed : 2014-11-18 20:45:47

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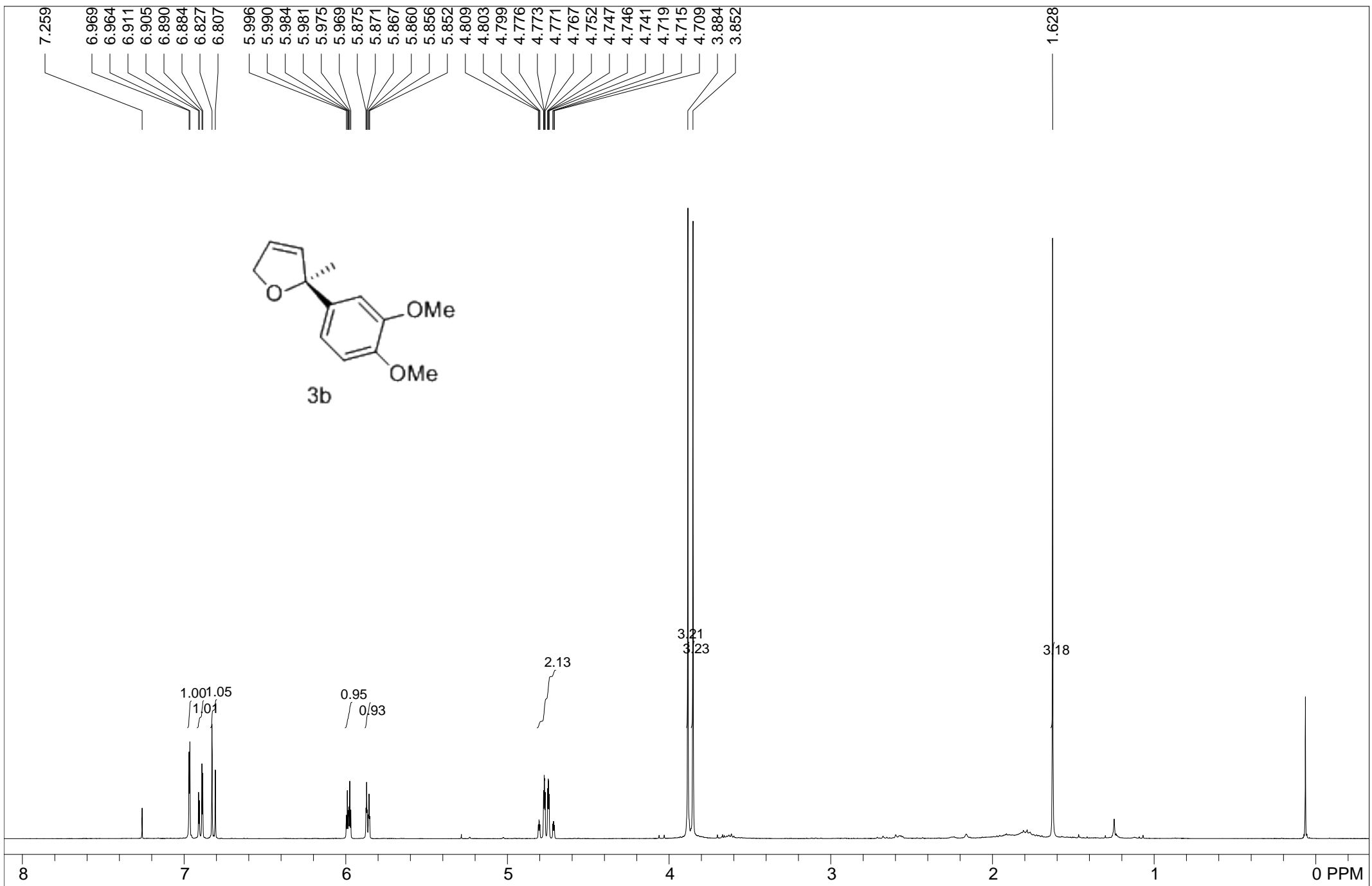
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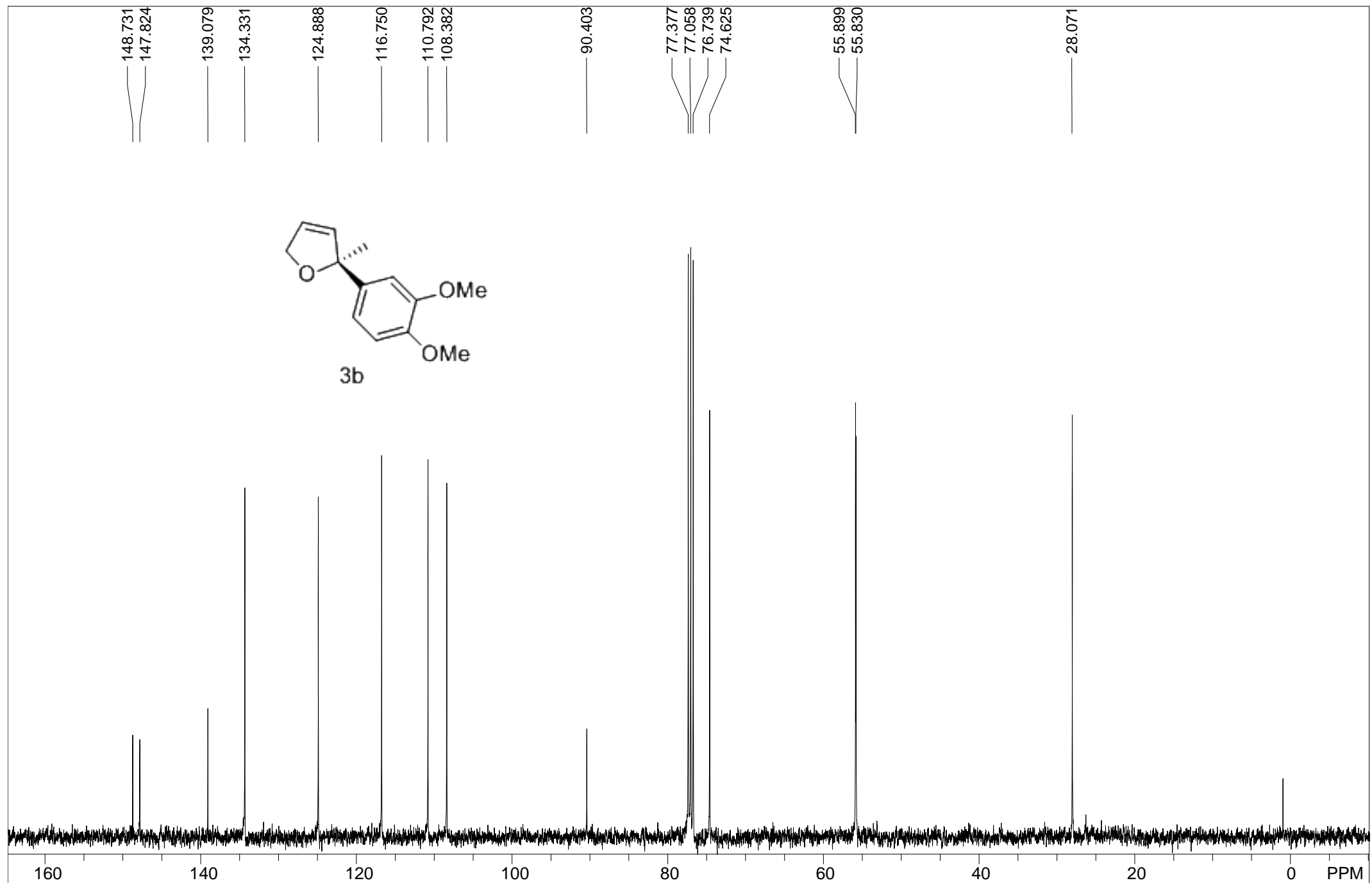
PeakTable

Detector A Ch1 214nm

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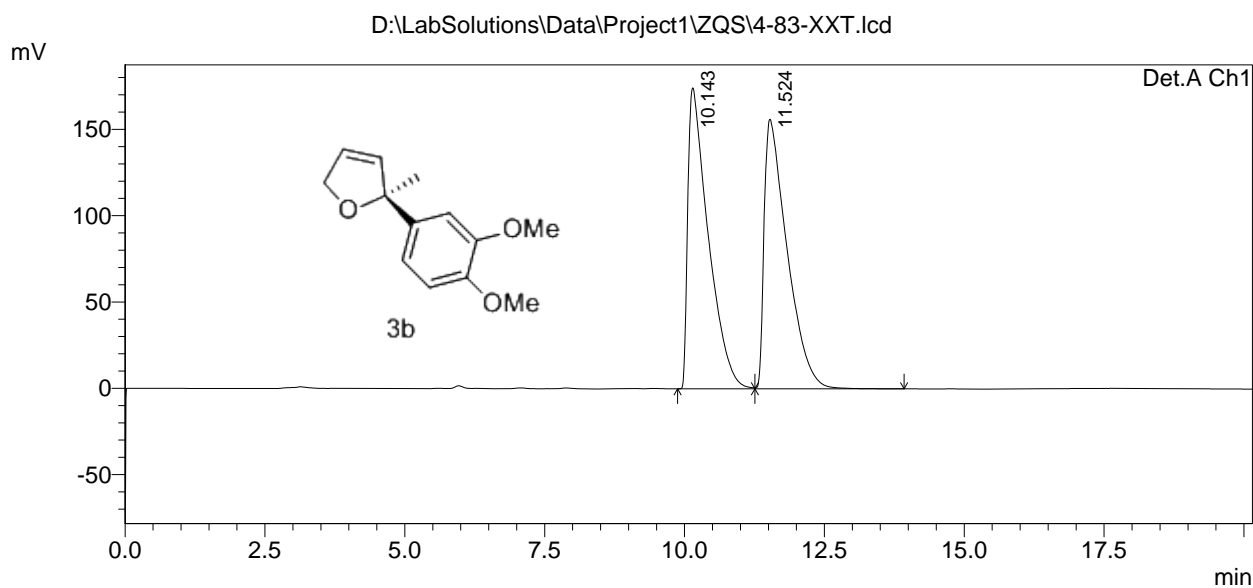
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==== Shimadzu LcSolution Analysis Report ====

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 Vial # : 0
 Injection Volume : 10 uL
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 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
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<Chromatogram>



PeakTable

Detector A Ch1 214nm

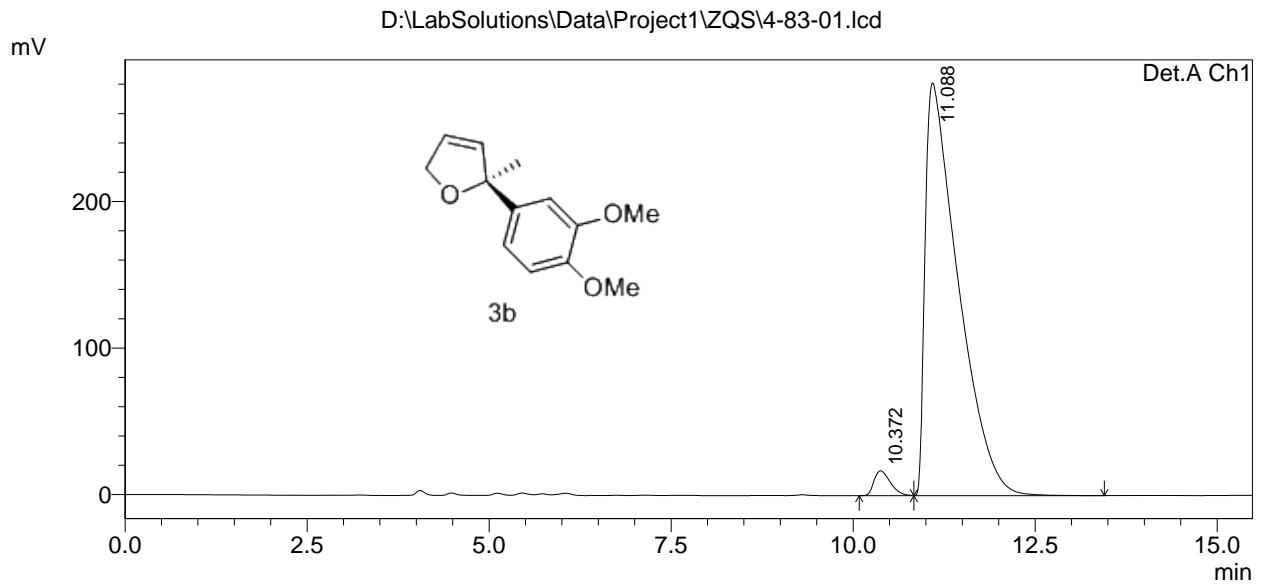
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==== Shimadzu LCsolution Analysis Report ====

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 Injection Volume : 10 uL
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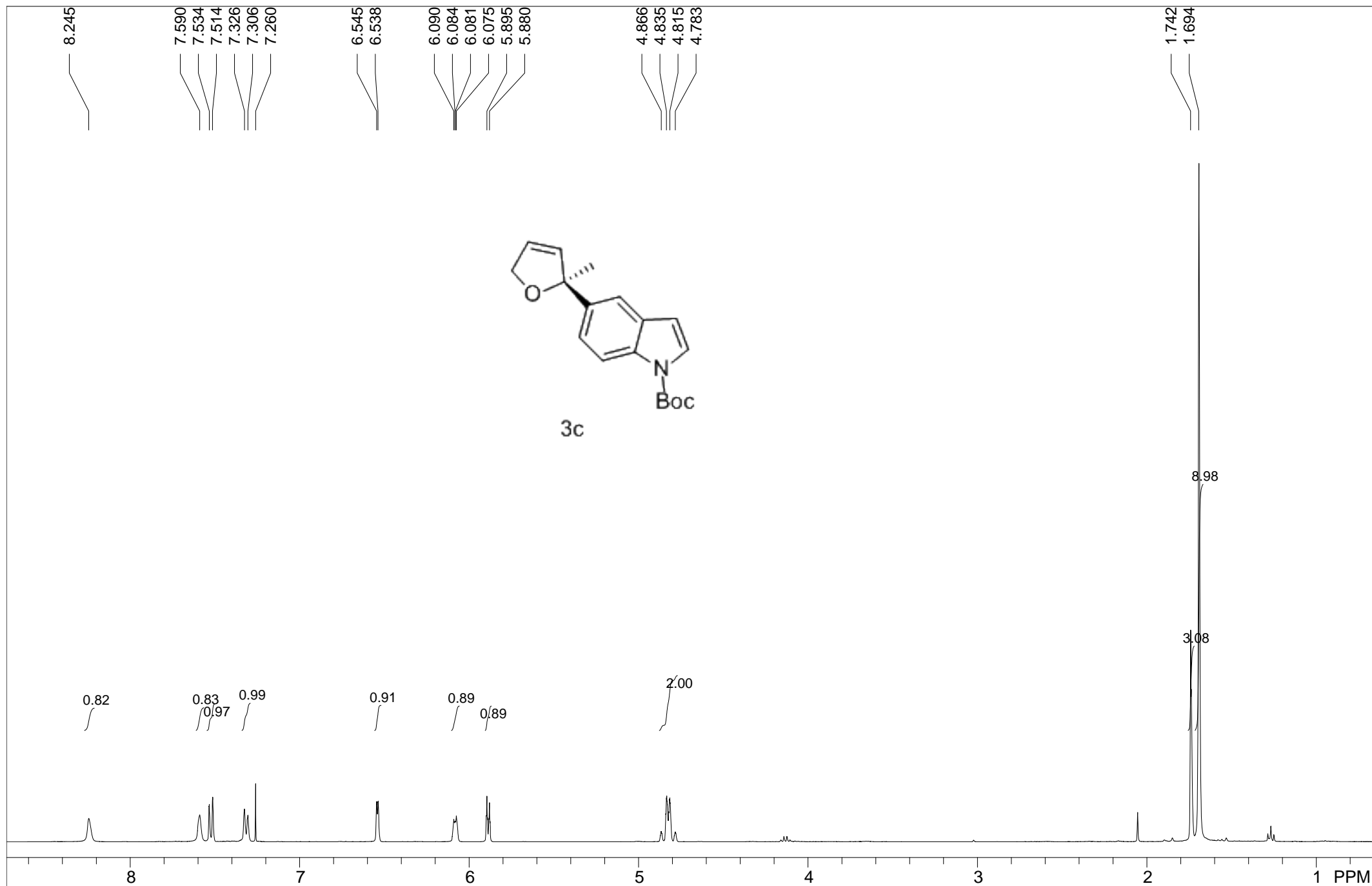


1 Det.A Ch1/214nm

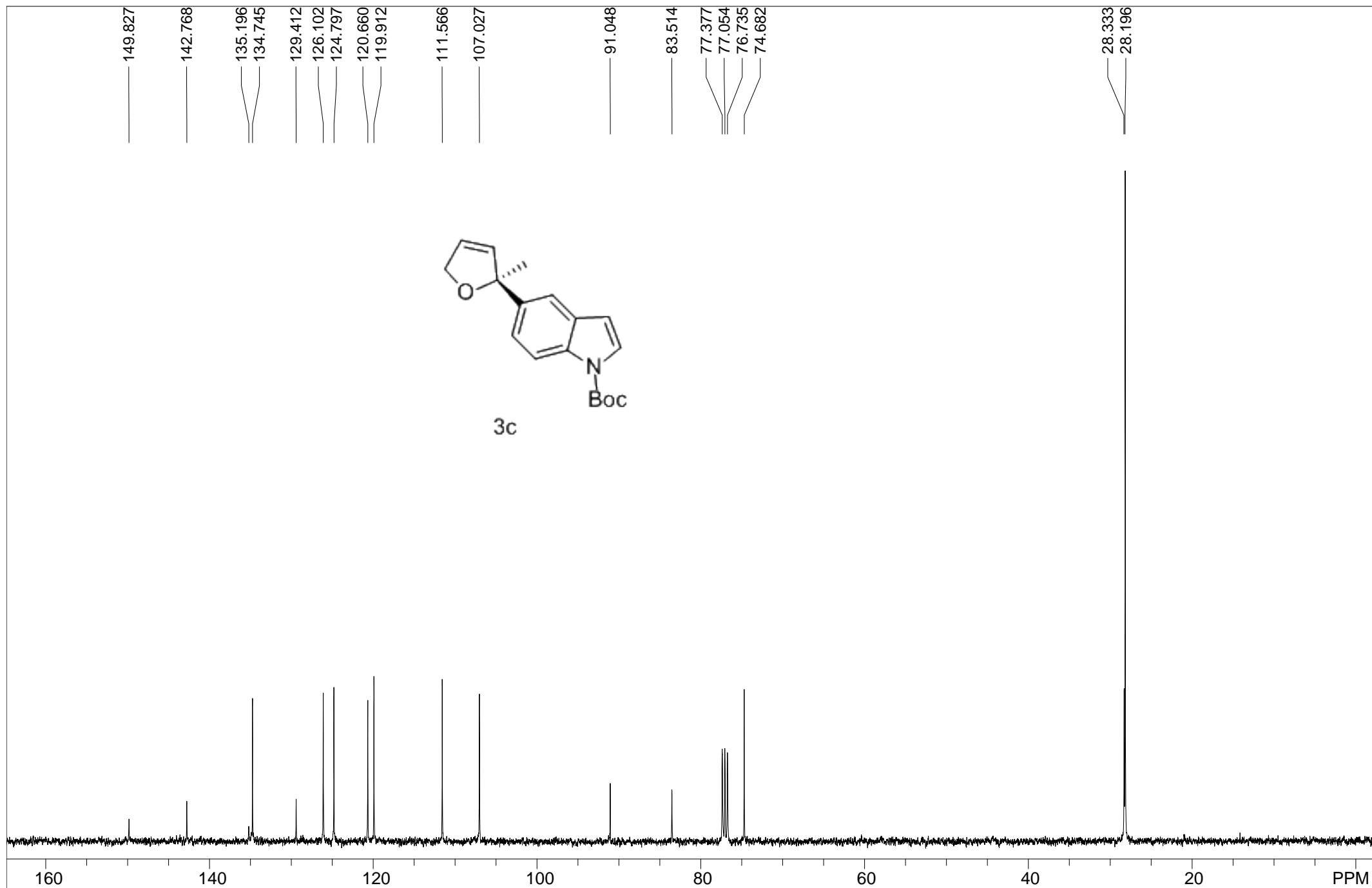
PeakTable

Detector A Ch1 214nm

Peak#	Ret. Time	Area	Height	Area %
1	10.372	264235	17056	2.888
2	11.088	8884760	281643	97.112
Total		9148995	298699	100.000



:blank line				USER: -- DATE: Nov 28 2014			
F1: 399.722	F2: 100.519	SW1: 6410		OF1: 2398.9		PTS1d: 19231 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 12	LB: 0.0	Nuts - \$4-90-01-HNMR.fid	



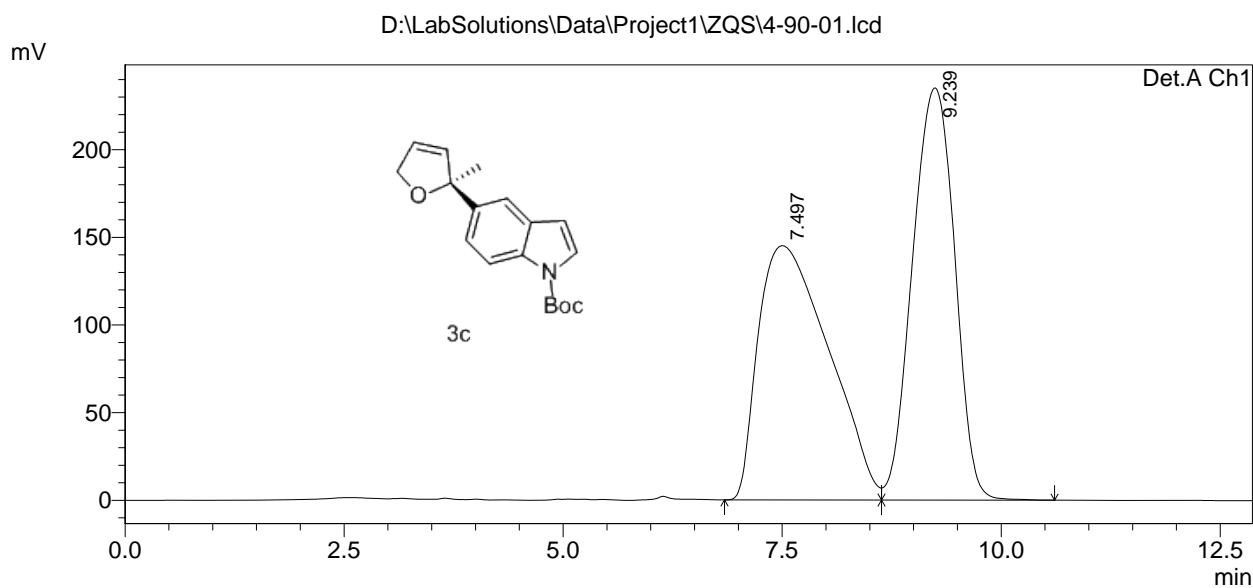
:blank line				USER: -- DATE: Nov 28 2014			
F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 37500 , 65536	
EX: s2pul		PW: 4.9 us	PD: 1.0 sec	NA: 120	LB: 2.0	Nuts - \$4-90-01-CNMR.fid	

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-90-01.lcd

Acquired by : Admin
 Sample Name : 4-90-01
 Sample ID : OD-H,99.5/0.5,1.0,214
 Vial # : 0
 Injection Volume : 10 uL
 Data File Name : 4-90-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-29 21:57:25
 Data Processed : 2013-11-29 22:10:19

<Chromatogram>



PeakTable

Detector A Ch1 214nm

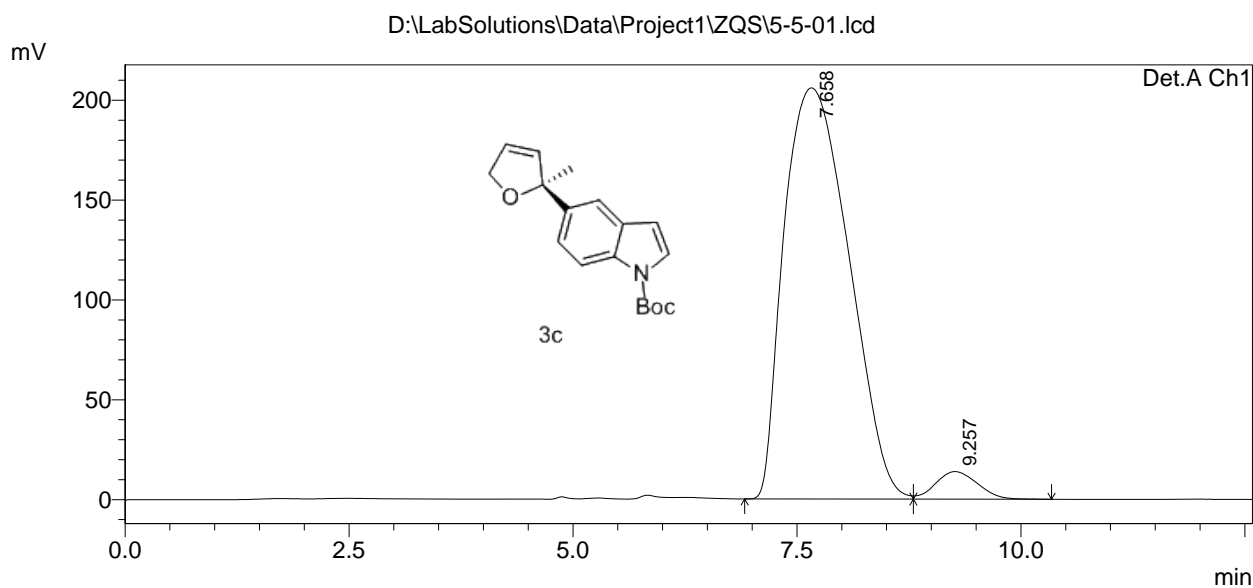
Peak#	Ret. Time	Area	Height	Area %
1	7.497	8119131	145099	50.661
2	9.239	7907272	235144	49.339
Total		16026403	380243	100.000

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\5-5-01.lcd

Acquired by : Admin
 Sample Name : 5-5-01
 Sample ID : OD-H,99.5/0.5,1.0,214
 Vail # : 0
 Injection Volume : 10 uL
 Data File Name : 5-5-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-29 21:43:48
 Data Processed : 2013-11-29 21:56:24

<Chromatogram>

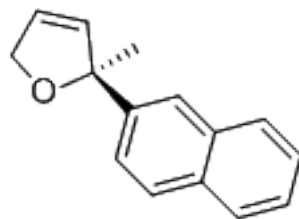


PeakTable

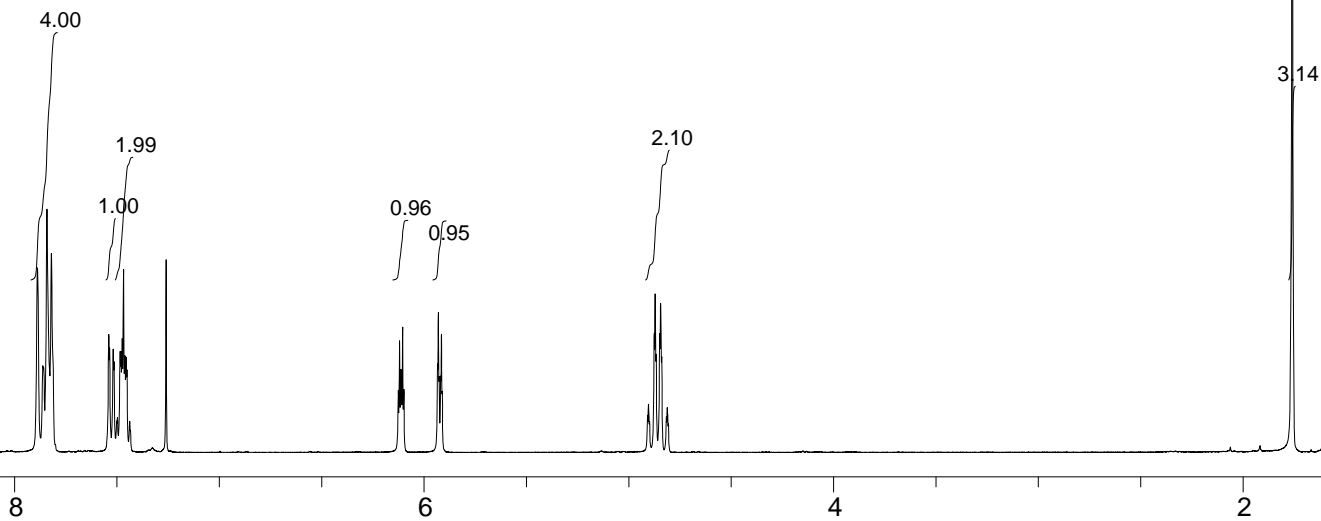
Detector A Ch1 214nm

Peak#	Ret. Time	Area	Height	Area %
1	7.658	10372978	205877	95.857
2	9.257	448284	13765	4.143
Total		10821262	219642	100.000

7.888 7.862 7.858 7.842 7.820 7.540 7.536 7.518 7.514 7.501 7.498 7.485 7.480 7.474 7.468 7.461 7.455 7.451 7.438 7.434 7.260 6.126 6.120 6.113 6.111 6.104 6.099 5.934 5.930 5.926 5.919 5.915 5.912 4.908 4.904 4.899 4.876 4.871 4.866 4.849 4.845 4.839 4.816 4.812 4.810 4.807 1.758



3d



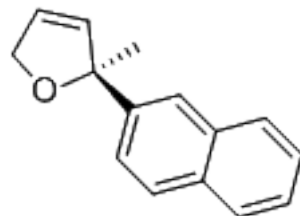
:blank line				USER: -- DATE: Nov 28 2014			
F1: 399.722	F2: 100.519	SW1: 6410		OF1: 2398.9		PTS1d: 19231 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 4	LB: 0.0	Nuts - \$4-95-1-HNMR.fid	

143.770
134.187
133.287
132.437
128.129
127.992
127.526
126.007
125.658
125.248
123.730
122.808

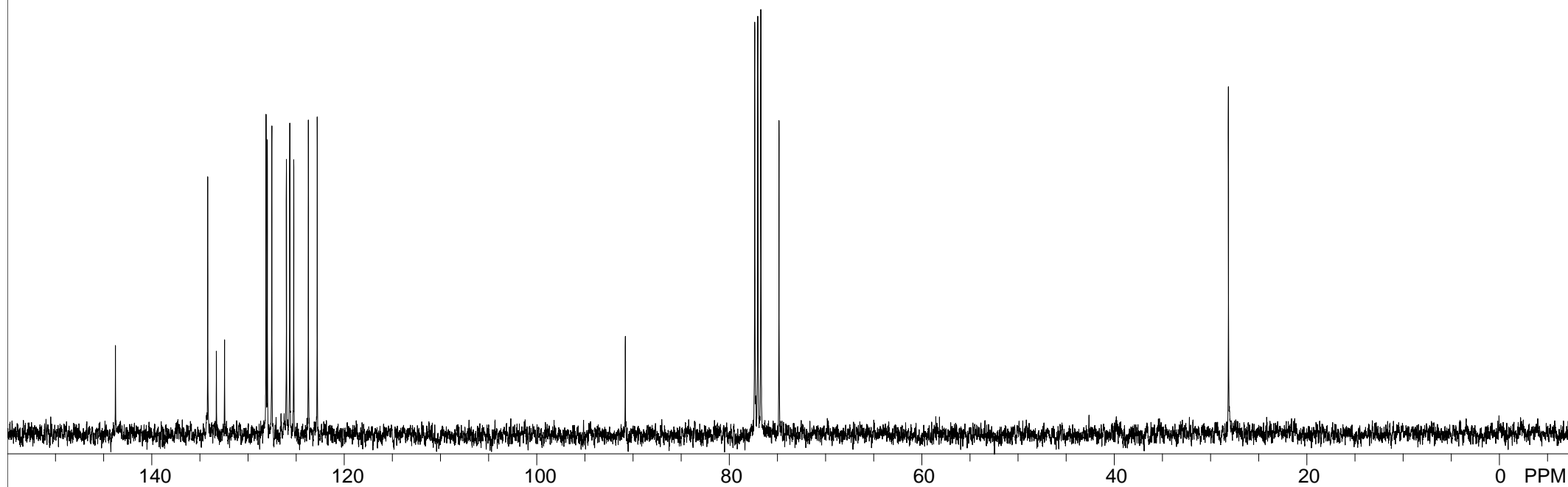
90.794

77.347
77.028
76.709
74.823

28.124



3d



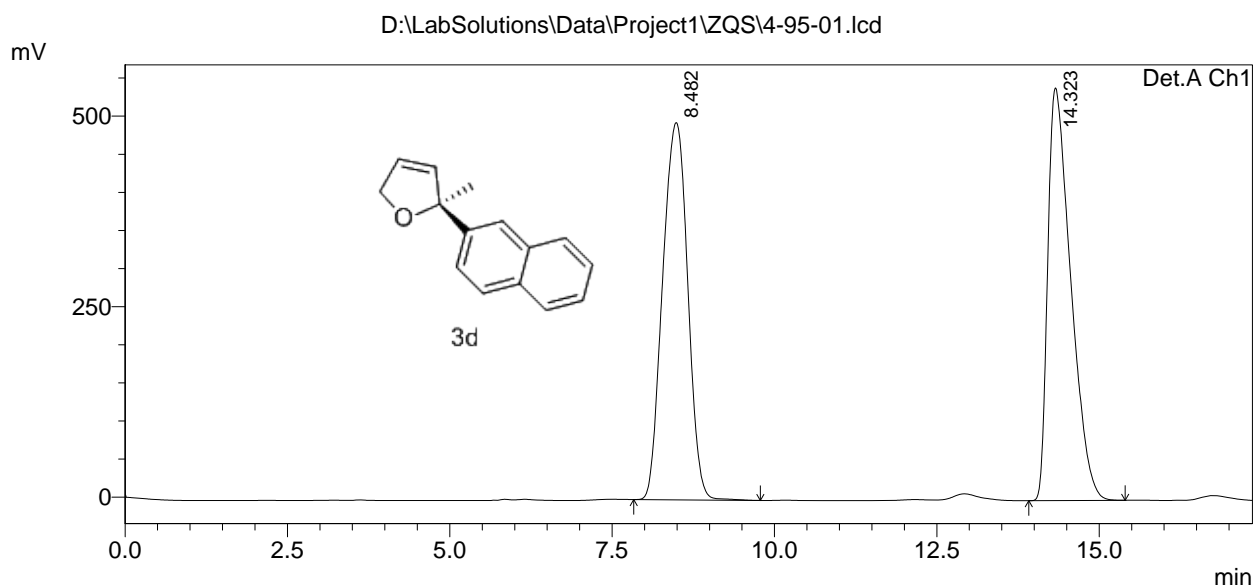
:blank line				USER: -- DATE: Nov 28 2014			
F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 37500 , 65536	
EX: s2pul	PW: 4.9 us	PD: 1.0 sec		NA: 88	LB: 2.0	Nuts - \$4-95-1-CNMR.fid	

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-95-01.lcd

Acquired by : Admin
 Sample Name : 4-95-01
 Sample ID : OD-H,99.5/0.5,1.0,214
 Vail # : 0
 Injection Volume : 10 uL
 Data File Name : 4-95-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-29 22:55:51
 Data Processed : 2013-11-29 23:13:13

<Chromatogram>



1 Det.A Ch1/214nm

PeakTable

Detector A Ch1 214nm

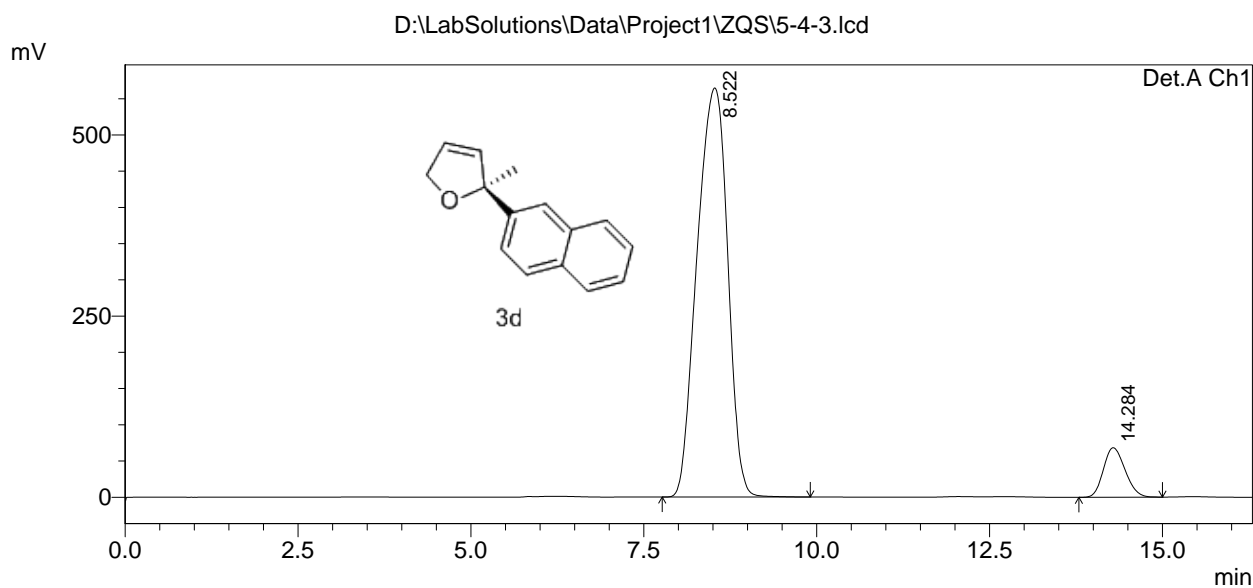
Peak#	Ret. Time	Area	Height	Area %
1	8.482	13295460	494929	49.981
2	14.323	13305352	541496	50.019
Total		26600812	1036425	100.000

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\5-4-3.lcd

Acquired by : Admin
 Sample Name : 5-4-3
 Sample ID : OD-H,99.5/0.5,1.0,214
 Vail # : 0
 Injection Volume : 10 uL
 Data File Name : 5-4-3.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-29 23:14:16
 Data Processed : 2013-11-29 23:35:47

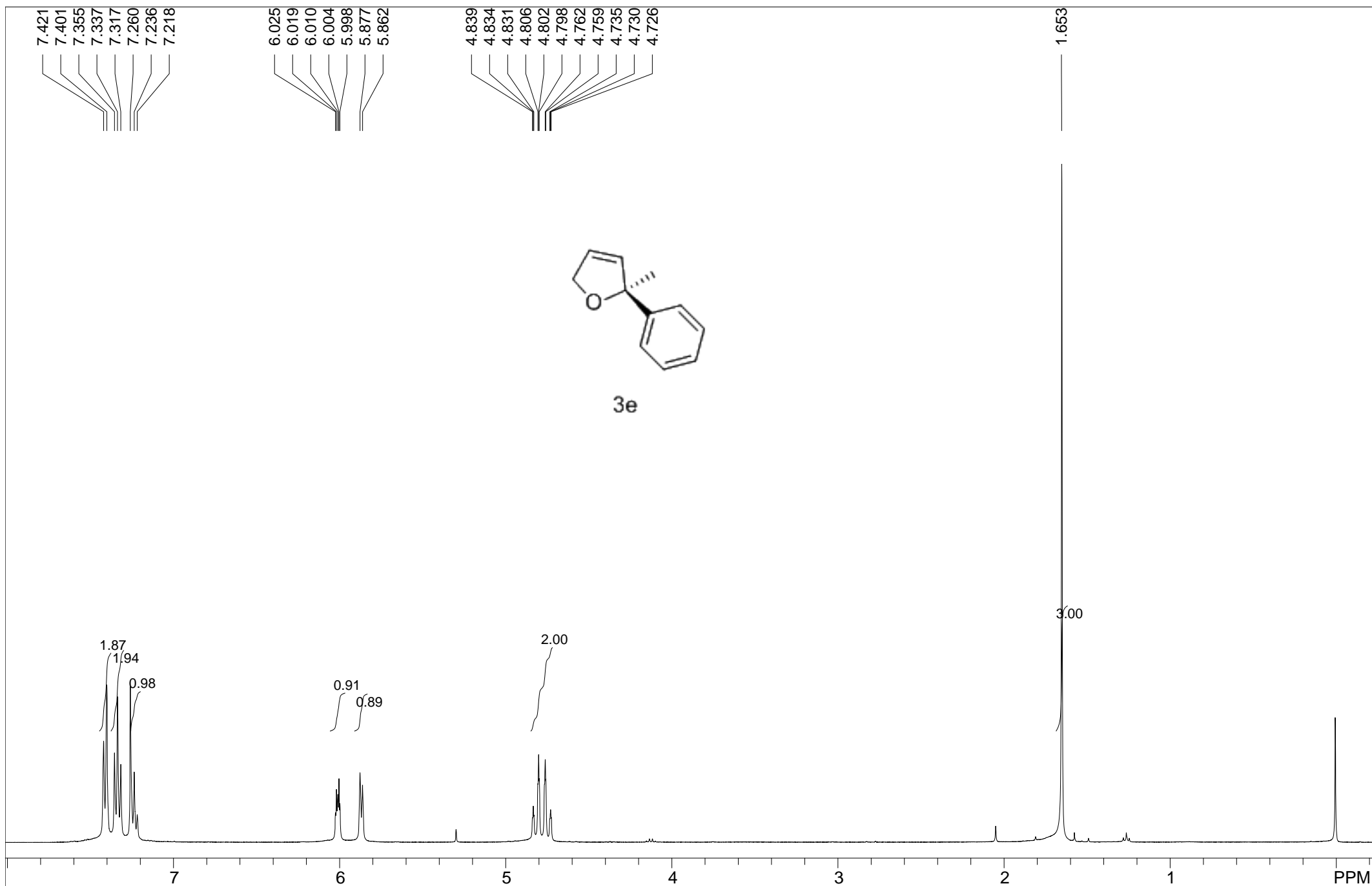
<Chromatogram>



PeakTable

Detector A Ch1 214nm

Peak#	Ret. Time	Area	Height	Area %
1	8.522	17374411	564736	92.112
2	14.284	1487917	68421	7.888
Total		18862328	633157	100.000

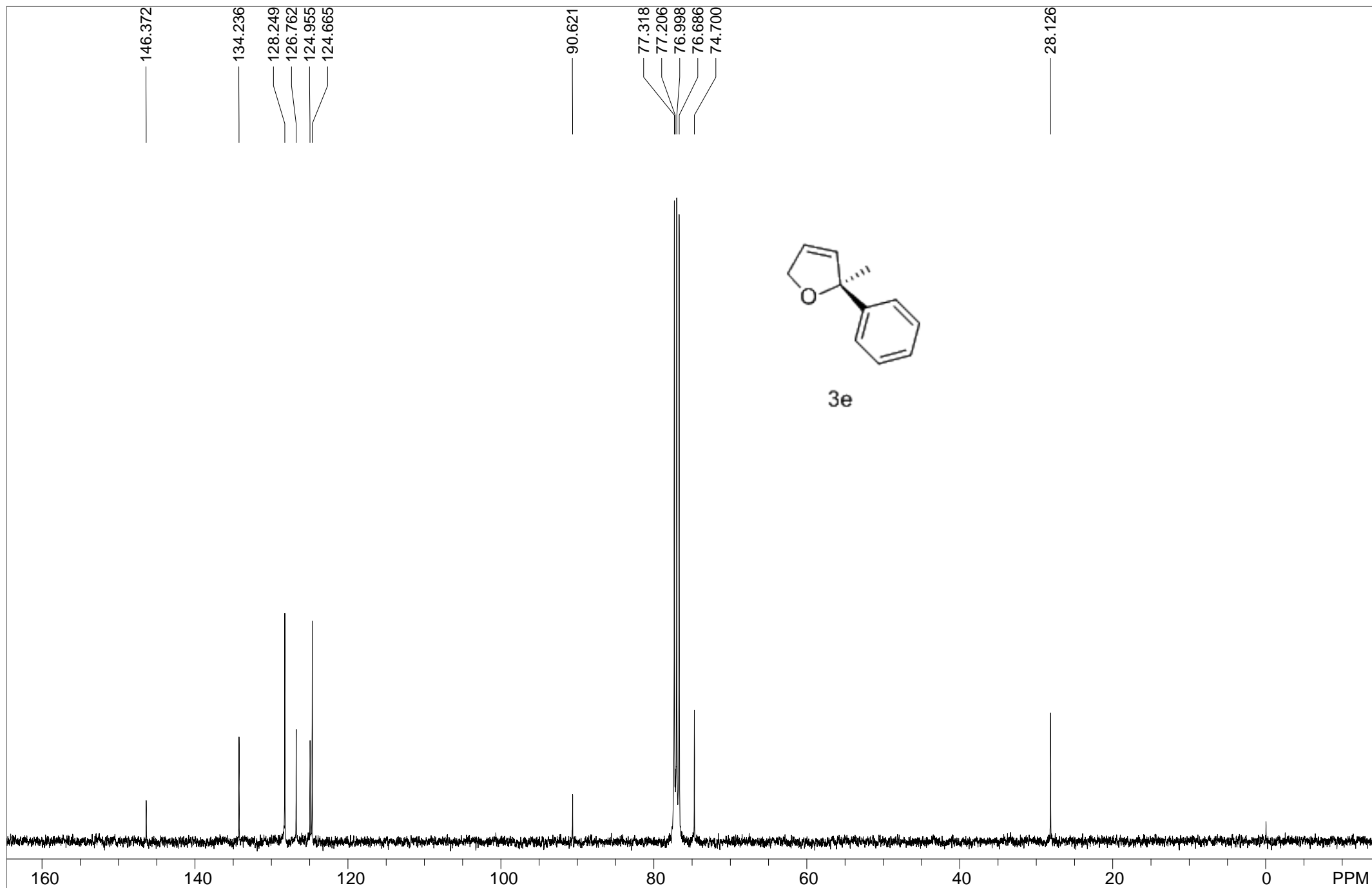


Std proton;blank line

USER: -- DATE: Jan 7 2015

F1: 400.032	F2: 100.597	SW1: 8013	OF1: 3207.3	PTS1d: 24038 , 32768
EX: s2pul	PW: 10.6 us	PD: 1.0 sec	NA: 24	LB: 0.0

Nuts - \$5-75-01-HNMR.fid

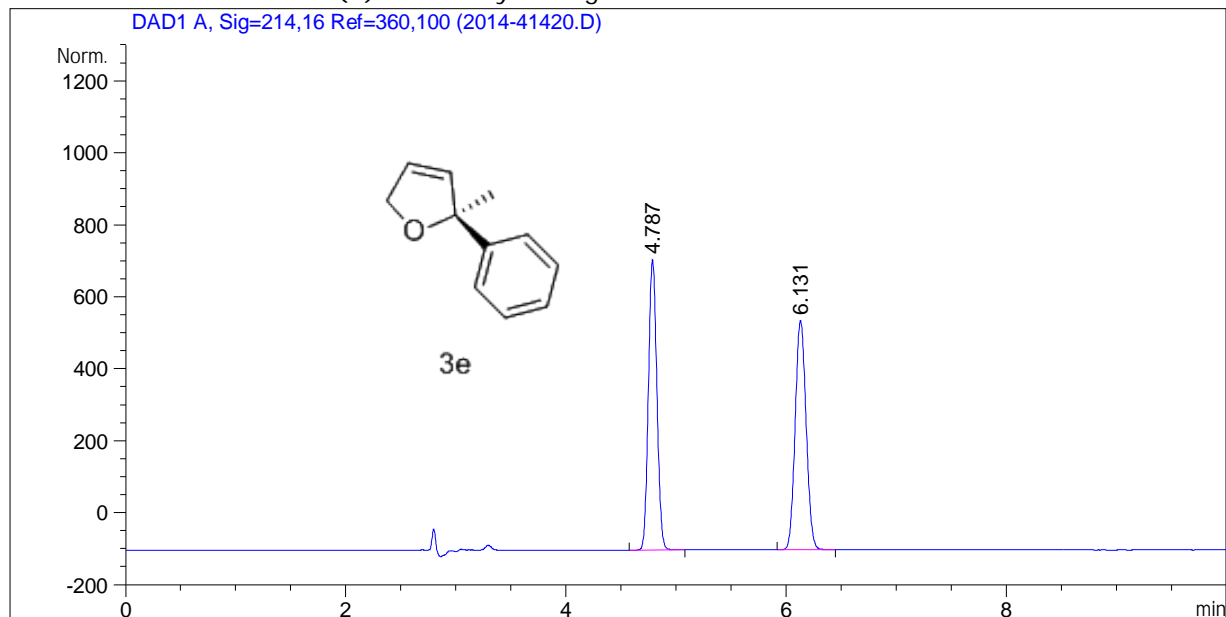


Std carbon;blank line

USER: -- DATE: Jan 7 2015

F1: 100.598	F2: 400.031	SW1: 24510		OF1: 10561.6		PTS1d: 31875 , 32768
EX: s2pul		PW: 4.1 us	PD: 1.0 sec	NA: 600	LB: 2.0	Nuts - \$5-75-01-CNMR-5.fid

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 53
Injection Date : 1/12/2015 2:58:41 PM
Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/12/2015 2:48:16 PM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/12/2015 4:40:49 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	4.787	BB	0.0845	3187.76489	594.76520	49.5463
2	6.131	BB	0.1087	3246.14063	469.56680	50.4537

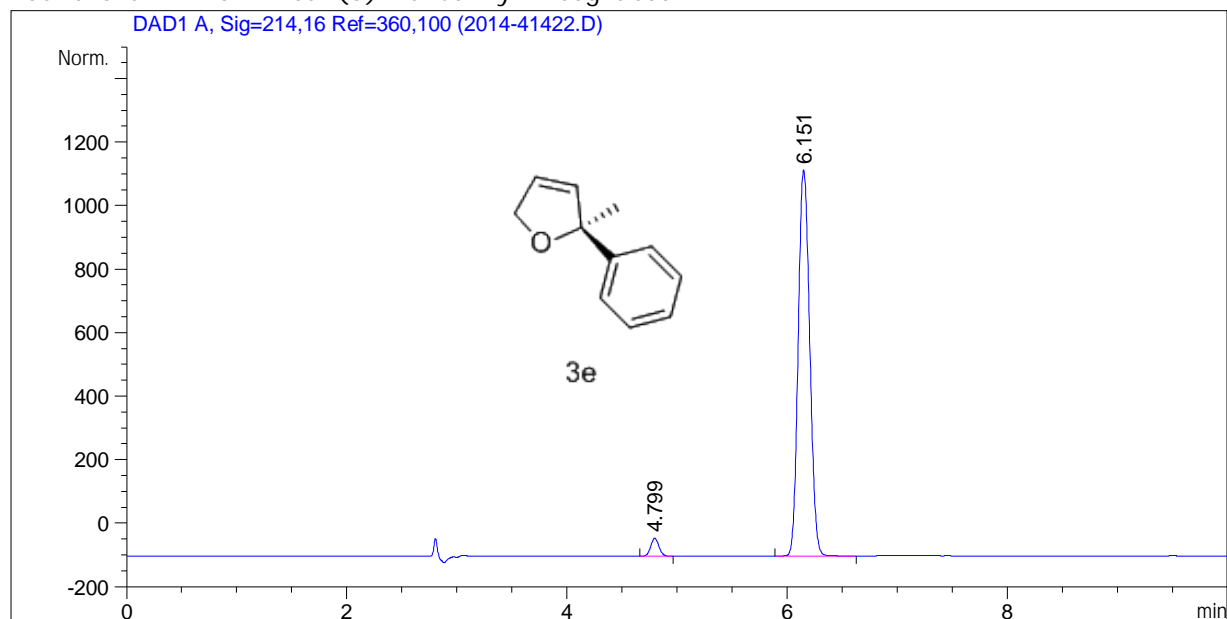
Totals : 6433.90552 1064.33200

=====
*** End of Report ***

Sample Name: 5-75-01-02

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 55
Injection Date  : 1/12/2015 3:28:13 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/12/2015 2:48:16 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/12/2015 4:43:08 PM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

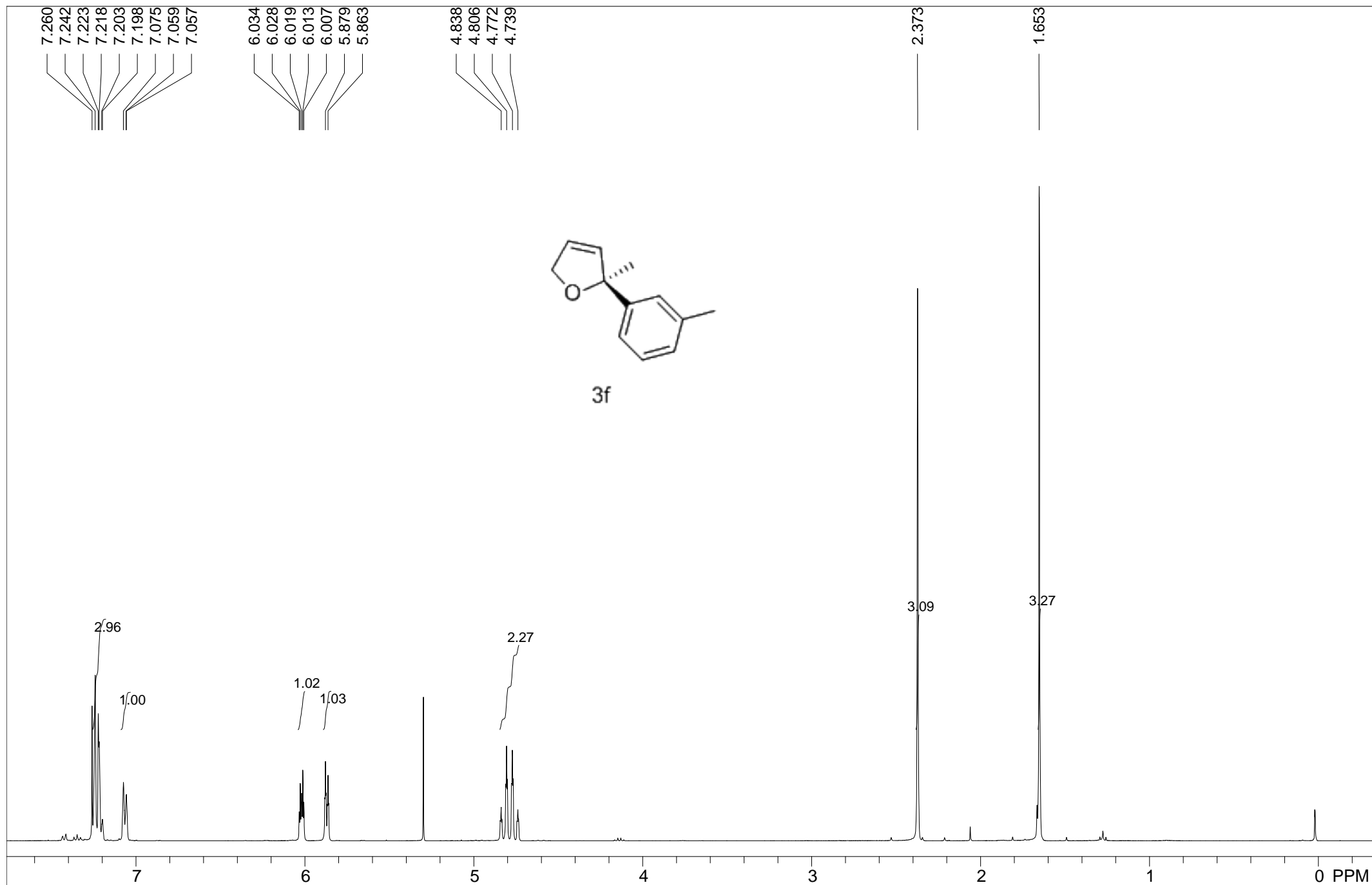
Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	4.799	BB	0.0810	243.76845	46.65076	3.2306
2	6.151	VB	0.1148	7301.77490	1004.32043	96.7694

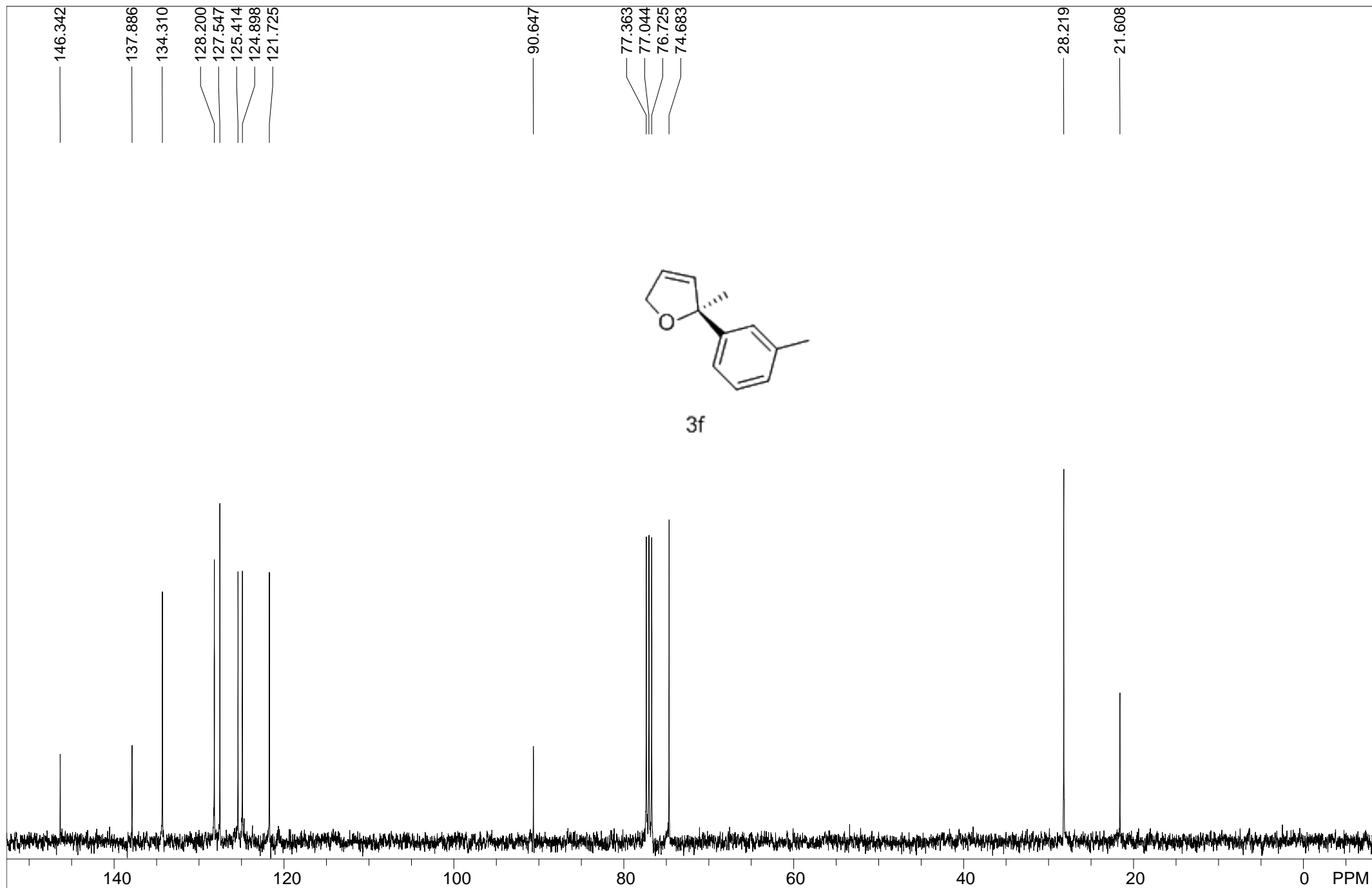
```
Totals :                7545.54335 1050.97120
```

```

=====
*** End of Report ***
  
```



:blank line				USER: -- DATE: Jan 20 2015			
F1: 399.723	F2: 100.519	SW1: 7143		OF1: 2778.5		PTS1d: 21429 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 12	LB: 0.0	Nuts - \$5-96-01-HNMR-2.fid	



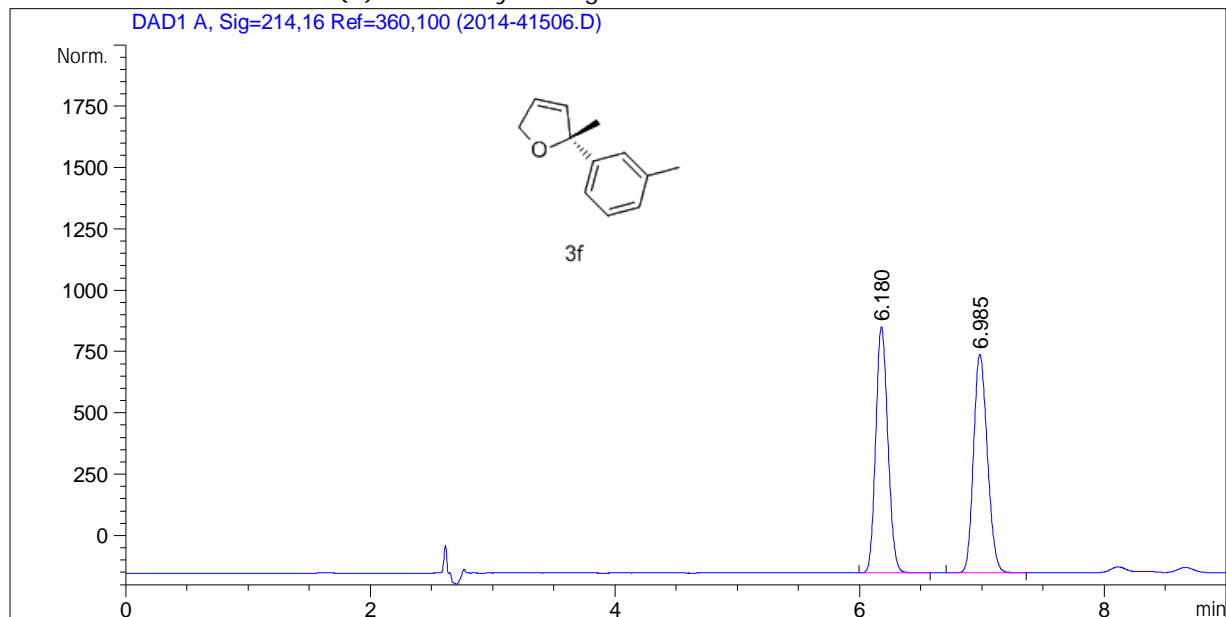
new experiment					USER: -- DATE: Jan 20 2015		
F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 32768 , 32768	
EX: s2pul	PW: 4.9 us	PD: 1.0 sec		NA: 80	LB: 2.0	Nuts - \$5-96-01-CNMR-2.fid	

Sample Name: 5-96-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 60
Injection Date  : 1/30/2015 1:59:20 PM
                                           Inj Volume : 5.000 µl

Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/30/2015 9:40:41 AM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/30/2015 4:23:37 PM by
                  (modified after loading)
Additional Info  : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.180	BB	0.1074	4714.29248	683.82098	49.8088
2	6.985	BB	0.1225	4750.49365	606.02698	50.1912

```
Totals :                9464.78613 1289.84796
```

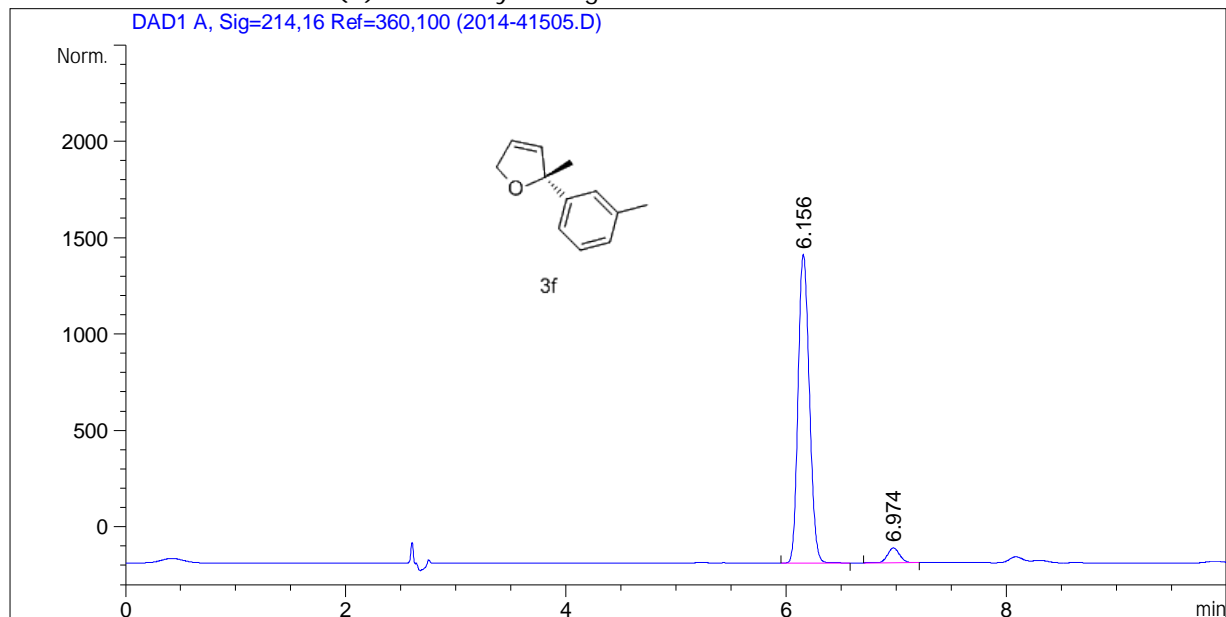
```

=====
*** End of Report ***
  
```

Sample Name: 6-13-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 59
Injection Date  : 1/30/2015 1:45:51 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/30/2015 9:40:41 AM by :
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/30/2015 2:10:52 PM by :
                  (modified after loading)
Additional Info  : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.156	BB	0.1121	8650.59766	1214.98315	95.1315
2	6.974	BB	0.1176	442.70697	58.27919	4.8685

```
Totals :                9093.30463 1273.26235
```

```

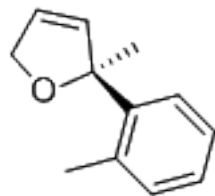
=====
*** End of Report ***
  
```

7.519
7.516
7.509
7.498
7.495
7.260
7.186
7.180
7.172
7.163
7.157
7.150
6.270
6.264
6.258
6.254
6.248
6.242
5.923
5.908

4.785
4.780
4.775
4.752
4.747
4.742
4.676
4.672
4.670
4.666
4.643
4.640
4.637
4.633

2.507

1.679



3g

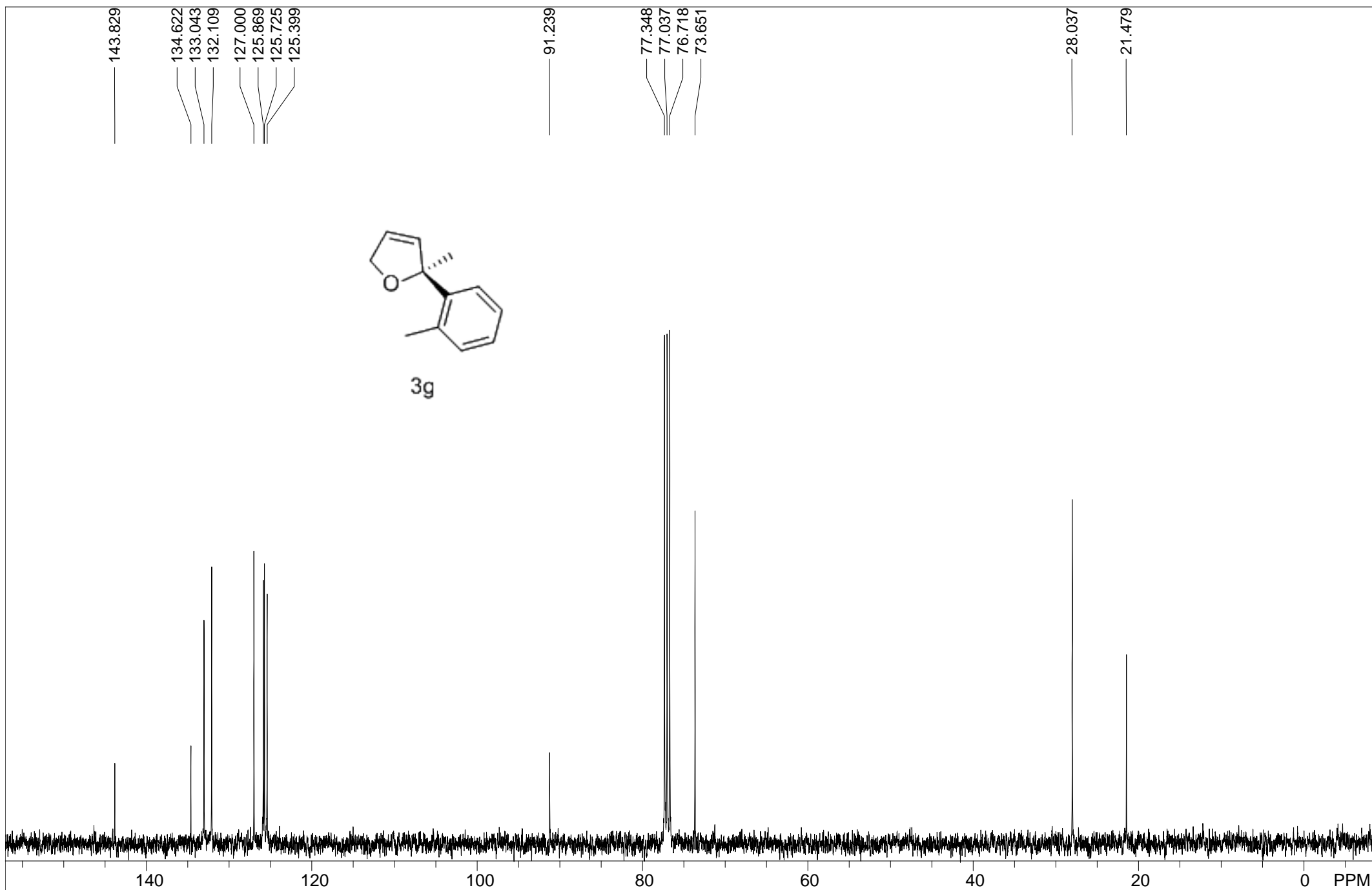
1.00
3.05
1.01
0.98
1.10
1.08

3.10

3.20

8 7 6 5 4 3 2 1 0 PPM

:blank line				USER: -- DATE: Jan 20 2015			
F1: 399.723	F2: 100.519	SW1: 7143		OF1: 2778.5		PTS1d: 21429 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 8	LB: 0.0	Nuts - \$5-95-01-HNMR.fid	

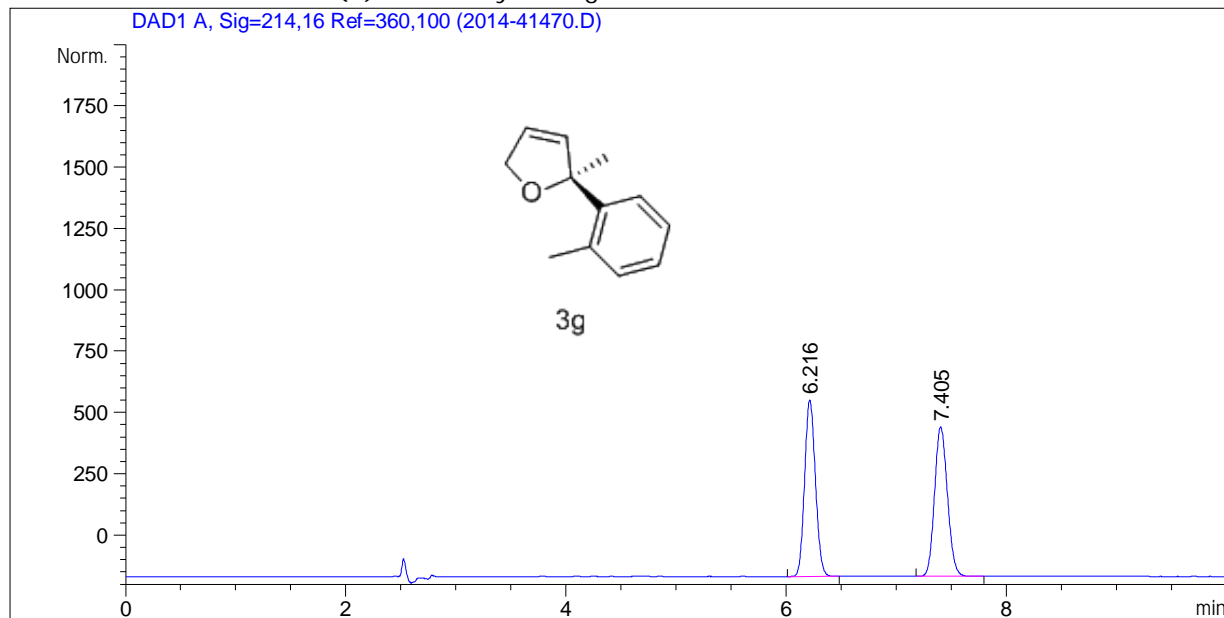


new experiment

USER: -- DATE: Jan 20 2015

F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 32768 , 32768
EX: s2pul	PW: 4.9 us	PD: 1.0 sec		NA: 80	LB: 2.0	Nuts - \$5-95-01-CNMR-2.fid

=====
Acq. Operator :
Location : Vial 13
Injection Date : 1/23/2015 1:25:39 PM
Acq. Method : AGILENT_SFC6.M
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/23/2015 3:32:52 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.216	BB	0.1070	2518.53979	367.18314	49.8036
2	7.405	BB	0.1283	2538.40430	310.88080	50.1964

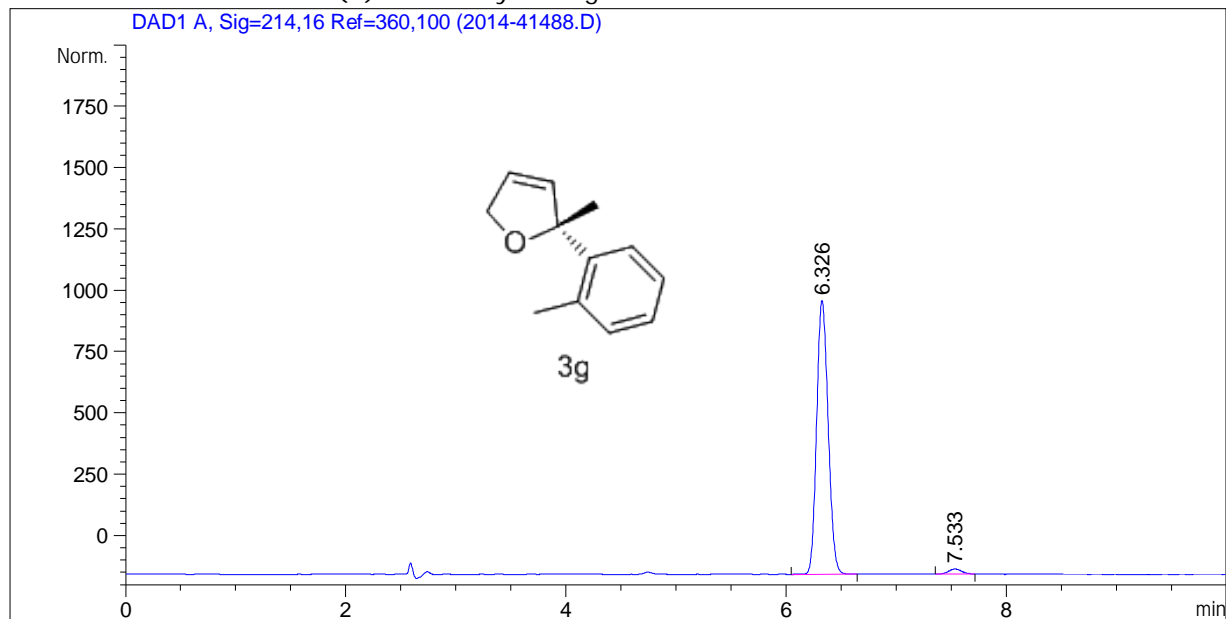
Totals : 5056.94409 678.06393

=====
*** End of Report ***

Sample Name: 6-7-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 13
Injection Date  : 1/28/2015 2:39:47 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/28/2015 2:10:58 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/28/2015 3:22:28 PM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

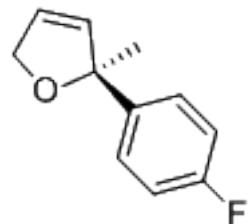
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.326	BB	0.1123	5735.41943	793.55505	97.9374
2	7.533	MM R	0.1302	120.78796	14.61711	2.0626

```
Totals :                5856.20739  808.17216
```

```

=====
*** End of Report ***
  
```

7.384
7.379
7.371
7.367
7.363
7.354
7.349
7.260
7.036
7.028
7.023
7.011
7.006
7.001
6.989
6.984
6.976
5.984
5.978
5.971
5.969
5.963
5.957
5.884
5.869
4.824
4.820
4.815
4.791
4.787
4.782
4.751
4.746
4.741
4.718
4.714
4.708



3h

1.631

1.85

1.88

0.90
0.93

2.11

3.00

8

7

6

5

4

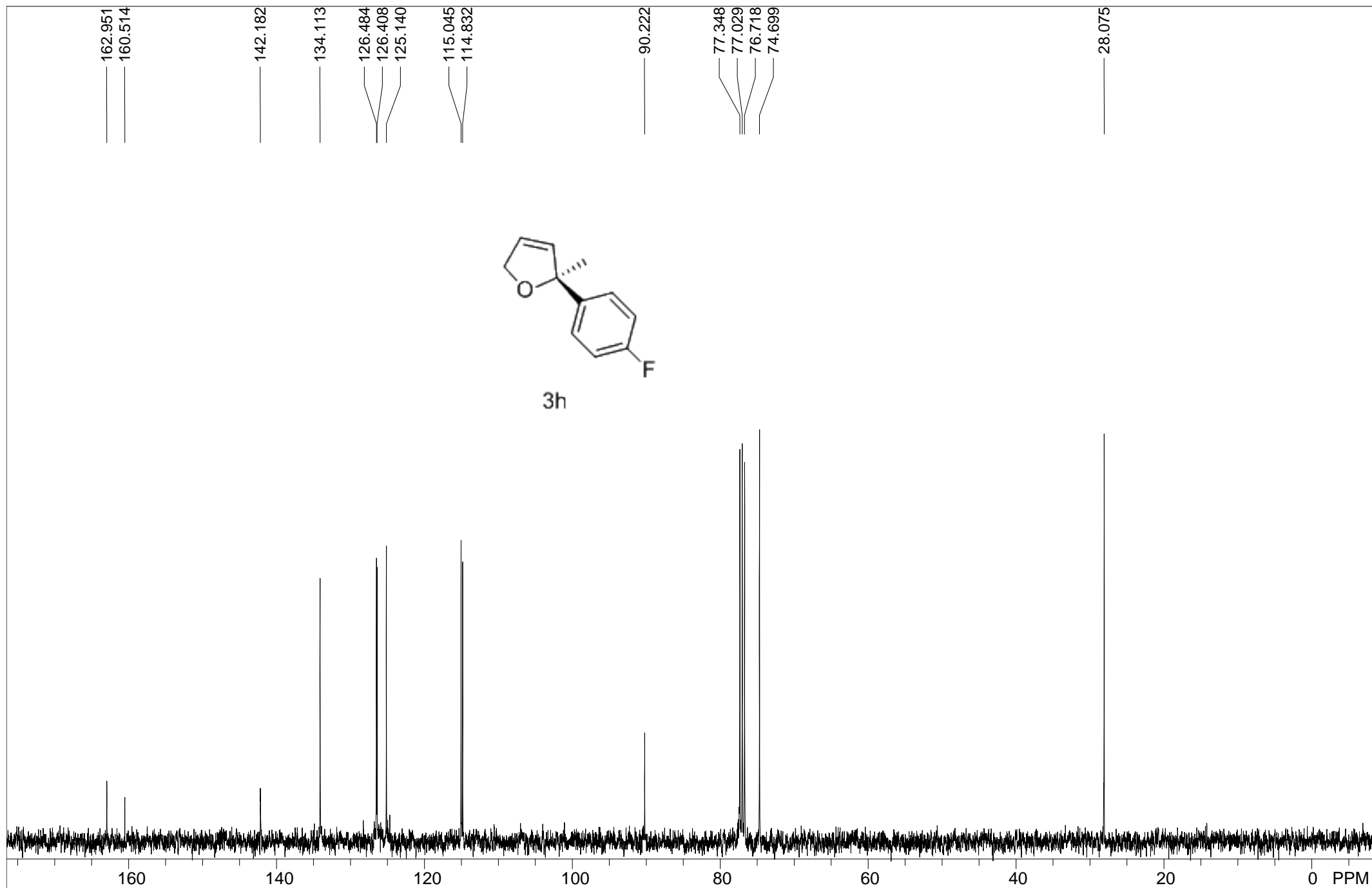
3

2

1

0 PPM

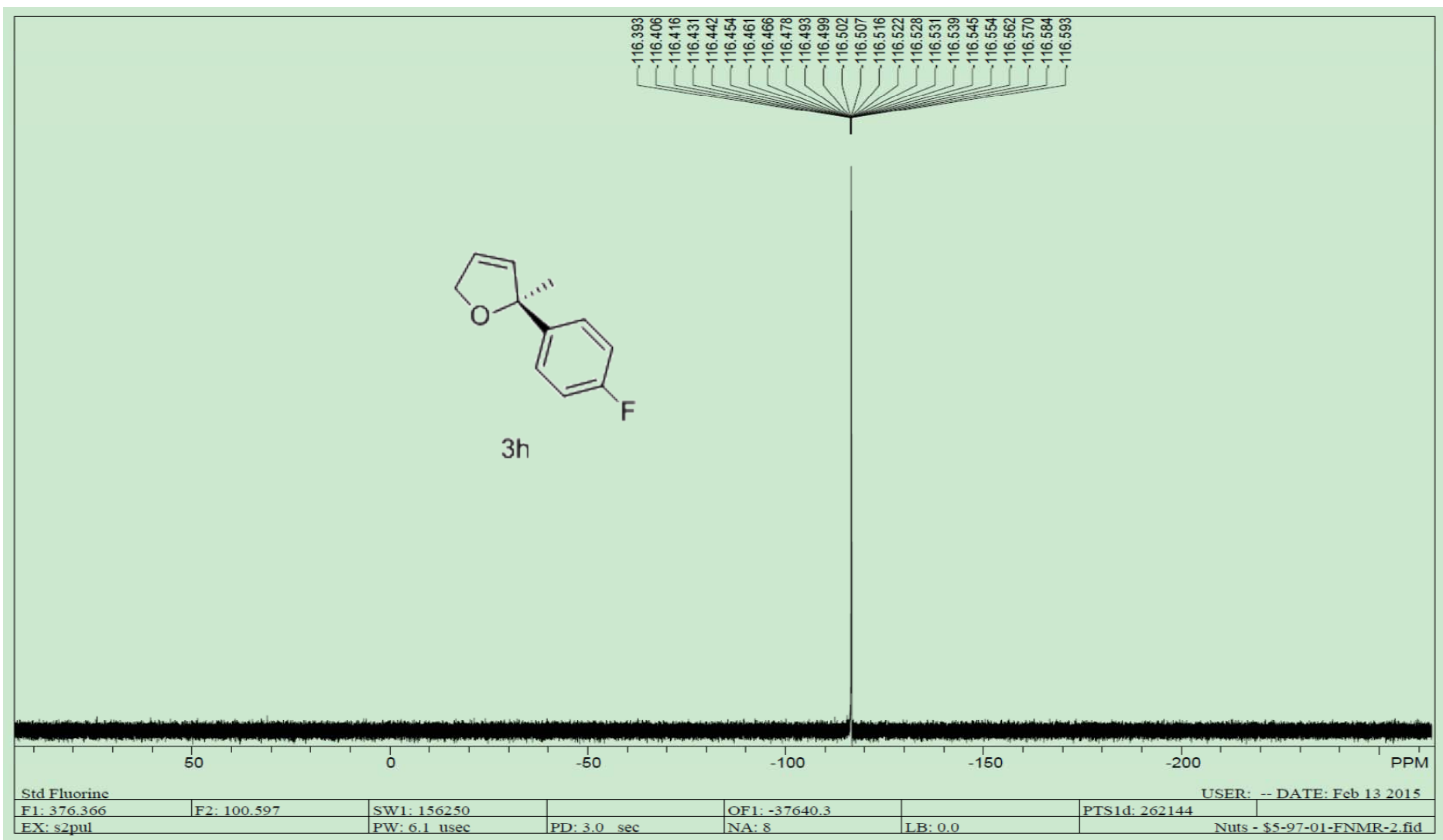
:blank line				USER: -- DATE: Jan 20 2015			
F1: 399.723	F2: 100.519	SW1: 7143		OF1: 2778.5		PTS1d: 21429 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 8	LB: 0.0	Nuts - \$5-97-01-HNMR.fid	



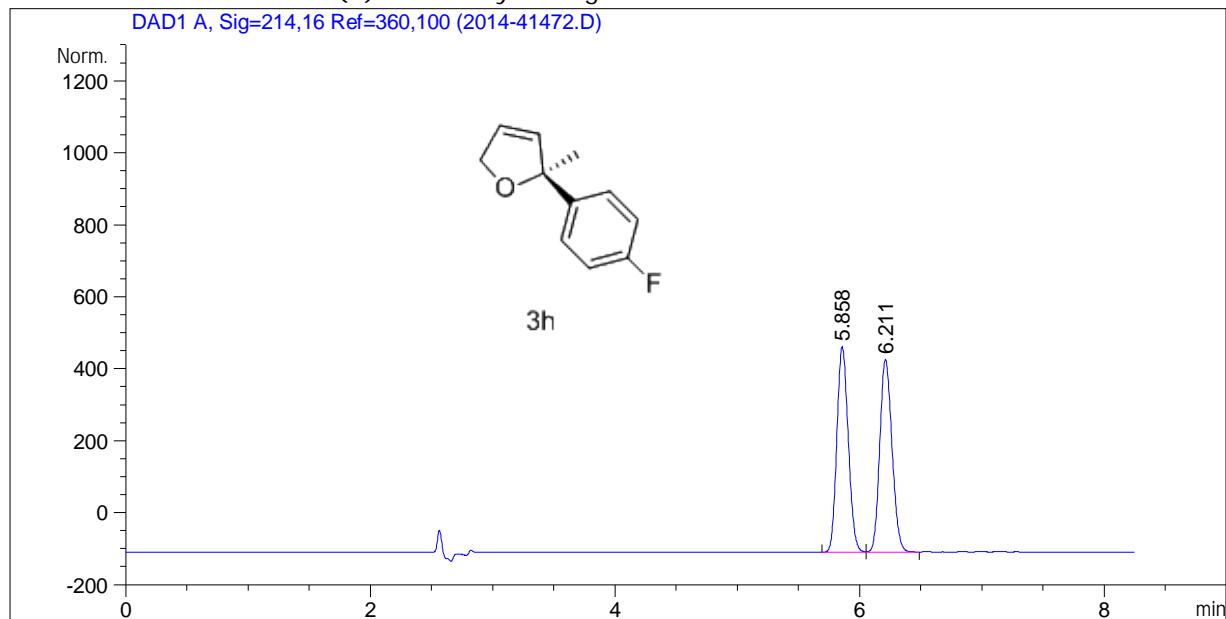
new experiment

USER: -- DATE: Jan 20 2015

F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 32768 , 32768
EX: s2pul	PW: 4.9 us	PD: 1.0 sec		NA: 48	LB: 2.0	Nuts - \$5-97-01-CNMR.fid



=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 15
Injection Date : 1/23/2015 2:01:11 PM
Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/23/2015 1:11:54 PM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/23/2015 3:26:28 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.858	BV	0.1019	2214.18286	340.27560	49.8936
2	6.211	VB	0.1093	2223.62427	318.89984	50.1064

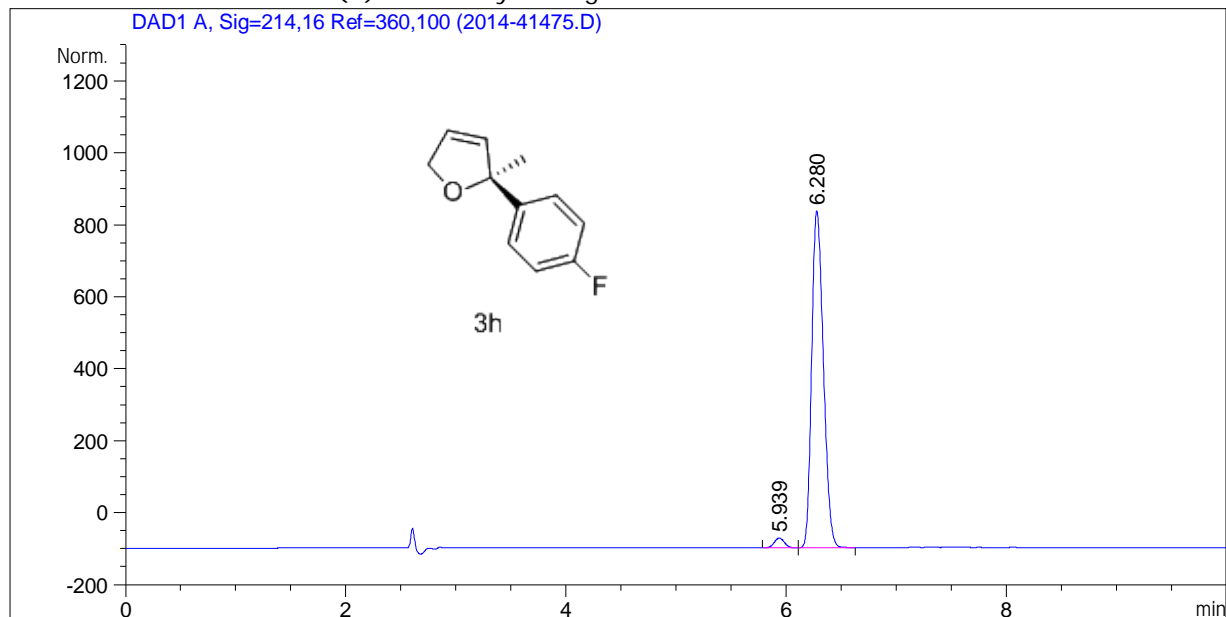
Totals : 4437.80713 659.17545

=====
*** End of Report ***

Sample Name: 6-4-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 20
Injection Date  : 1/23/2015 2:53:03 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/23/2015 1:11:54 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/23/2015 3:08:56 PM by
                  (modified after loading)
Additional Info  : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By           :      Signal
Multiplier          :      1.0000
Dilution            :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

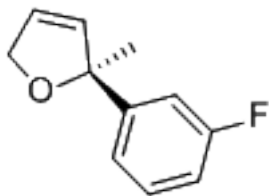
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.939	BB	0.1001	137.86436	21.70544	2.4723
2	6.280	BB	0.1163	5438.50146	734.92725	97.5277

```
Totals :                5576.36583  756.63269
```

```

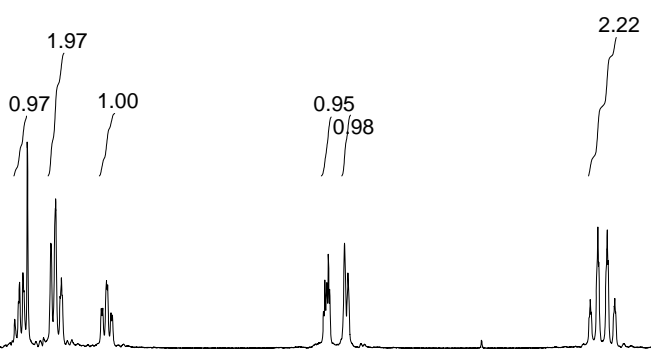
=====
*** End of Report ***
  
```


7.314
7.297
7.293
7.278
7.274
7.260
7.158
7.156
7.137
7.118
7.112
6.940
6.934
6.918
6.913
6.898
6.895
6.892
5.980
5.975
5.966
5.960
5.954
5.890
5.875
4.828
4.824
4.795
4.792
4.755
4.751
4.724
4.722
4.718



3i

1.629



8 7 6 5 4 3 2 1 0 PPM

Std proton;blank line

USER: -- DATE: Feb 2 2015

F1: 400.032

F2: 100.597

SW1: 7225

OF1: 2807.1

PTS1d: 21676 , 32768

EX: s2pul

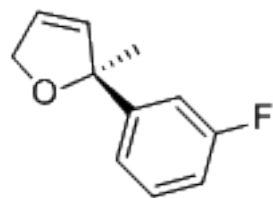
PW: 10.6 us

PD: 1.0 sec

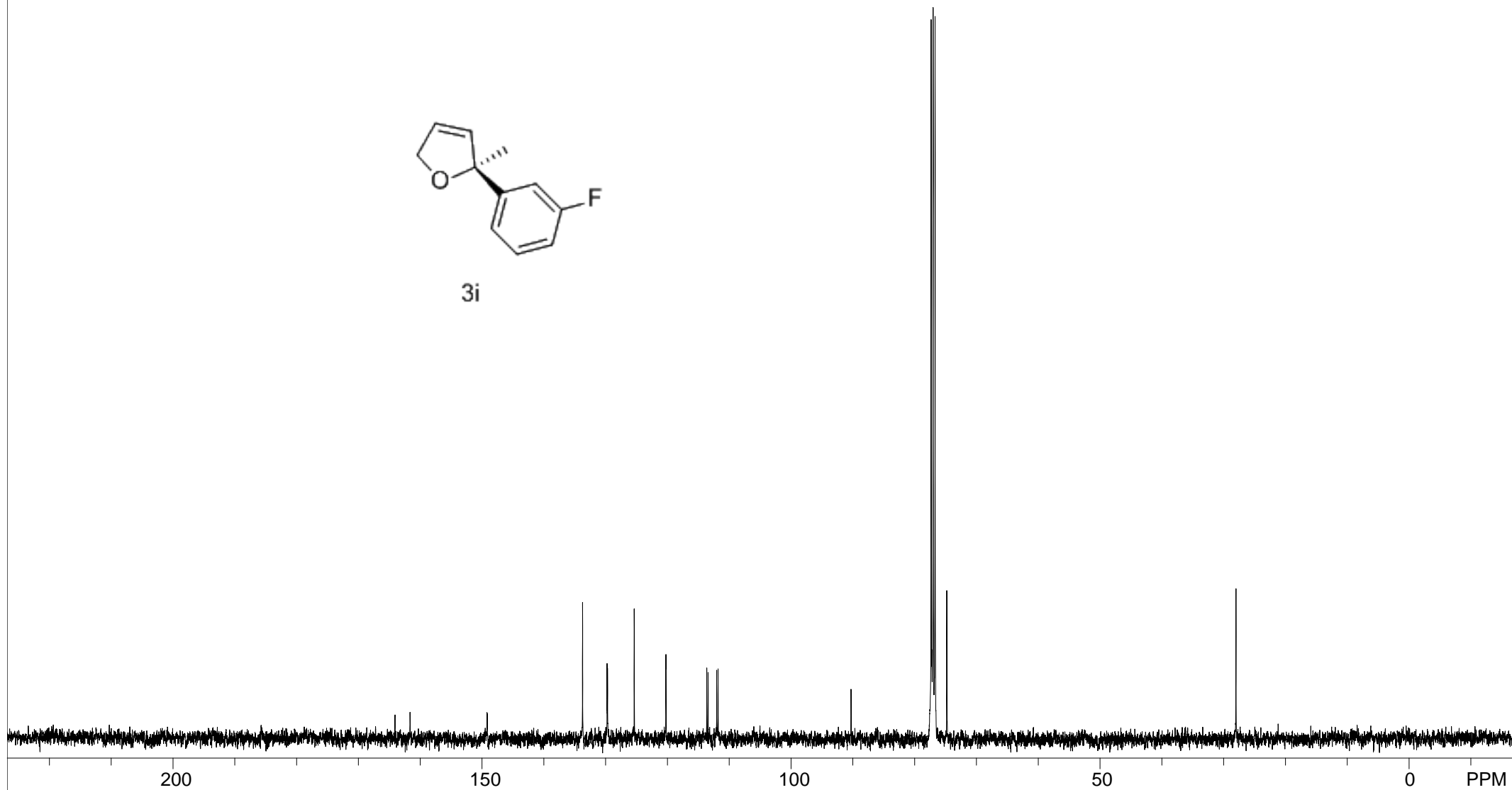
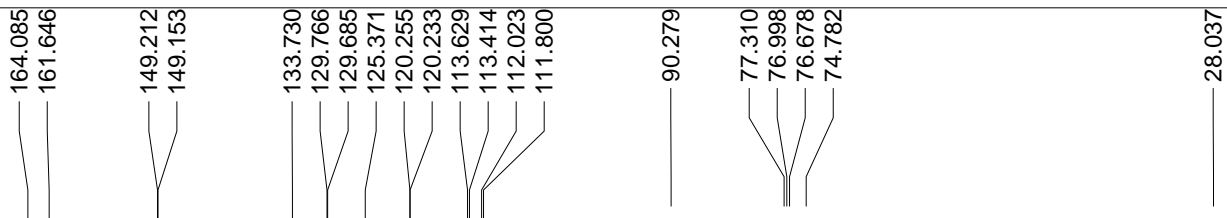
NA: 8

LB: 0.0

Nuts - \$6-15-01-HNMR.fid



3i



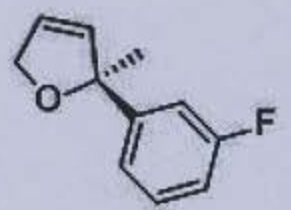
Std carbon:blank line

USER: -- DATE: Feb 2 2015

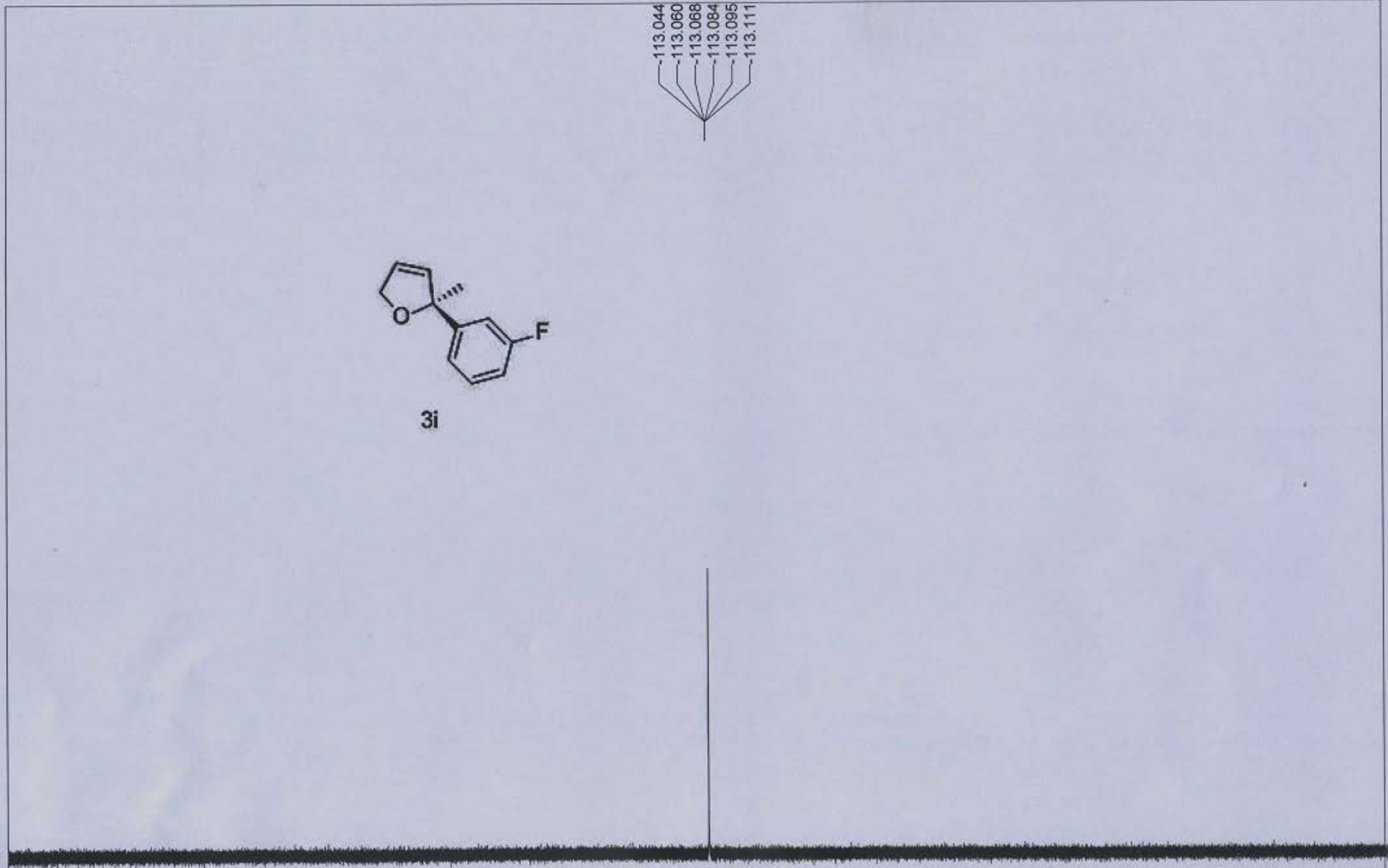
F1: 100.598	F2: 400.031	SW1: 24510	OF1: 10561.6	PTS1d: 31875 , 32768
EX: s2pul	PW: 4.1 us	PD: 1.0 sec	NA: 396	LB: 2.0

Nuts - \$6-15-01-CNMR-1.fid

113.044
113.060
113.068
113.084
113.095
113.111

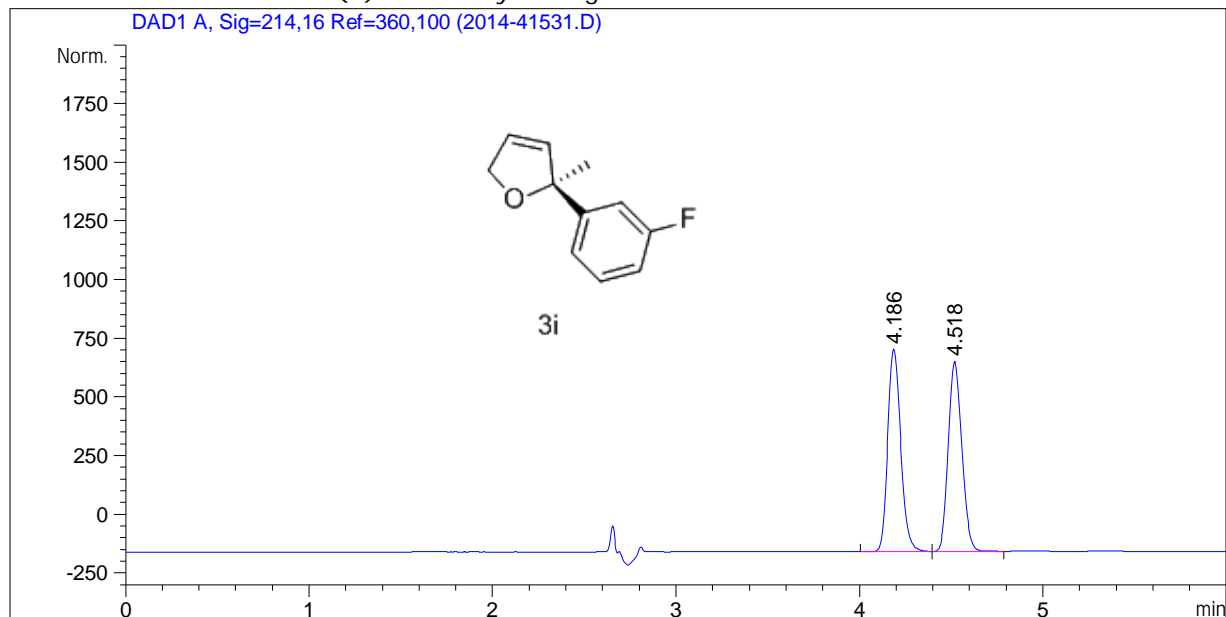


3i



50 0 -50 -100 -150 -200 -250 PPM

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 7
Injection Date : 2/4/2015 11:42:53 AM
Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 2/4/2015 11:32:28 AM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 2/4/2015 4:32:29 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	4.186	BB	0.0766	2550.87671	516.44244	50.2979
2	4.518	BB	0.0805	2520.65601	485.82999	49.7021

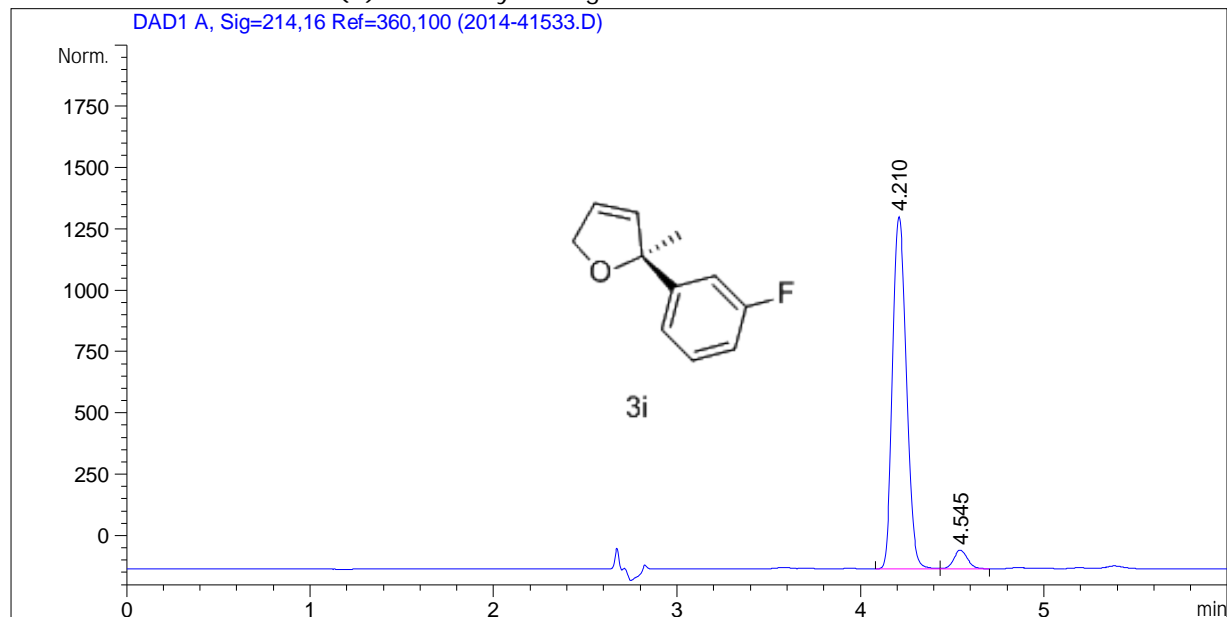
Totals : 5071.53271 1002.27243

=====
*** End of Report ***

Sample Name: 6-16

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 9
Injection Date  : 2/4/2015 12:36:35 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 2/4/2015 11:32:28 AM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 2/4/2015 4:29:25 PM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	4.210	BV	0.0834	6065.49072	1151.68140	95.1083
2	4.545	VB	0.0788	311.96765	60.86369	4.8917

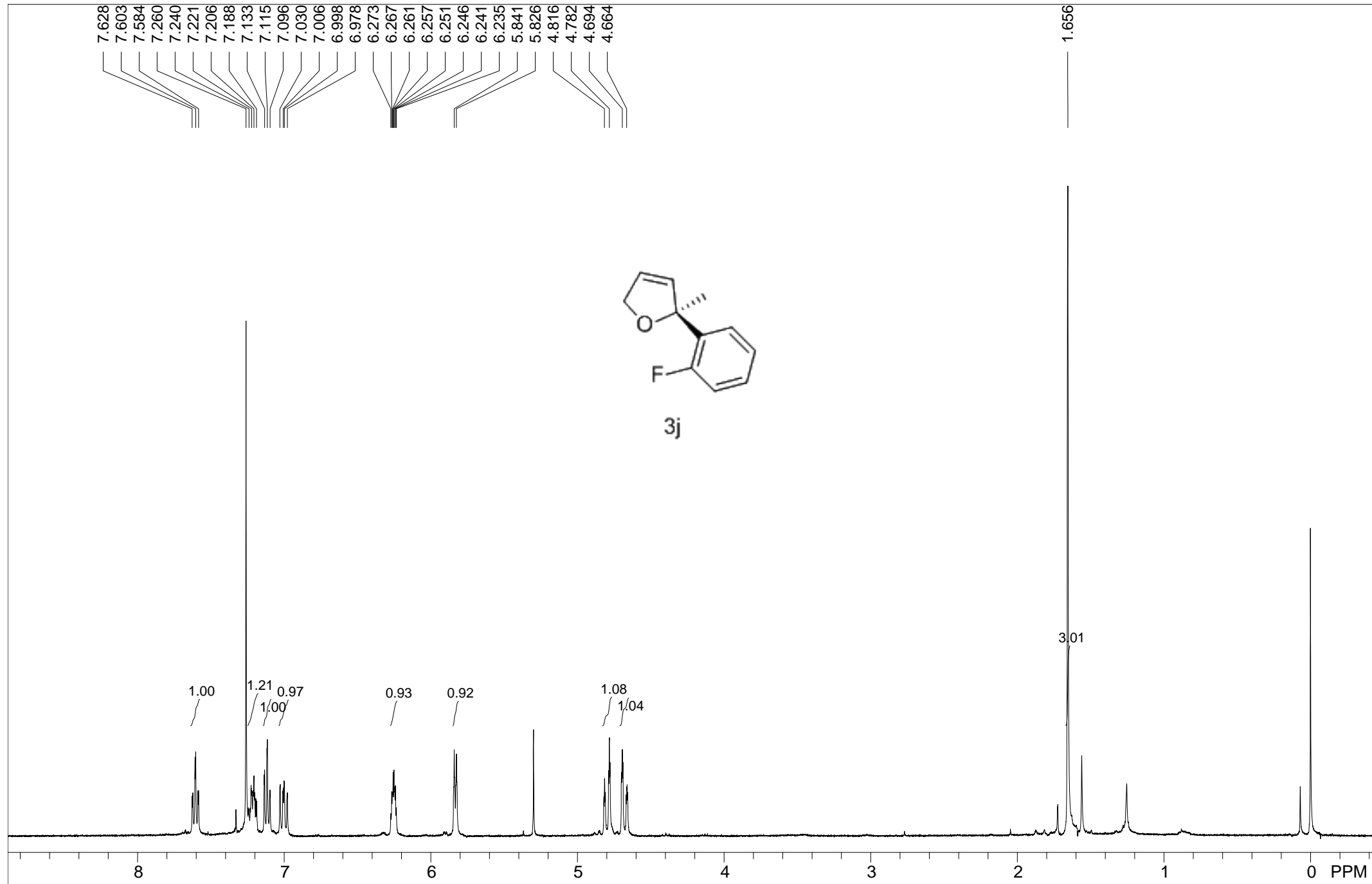
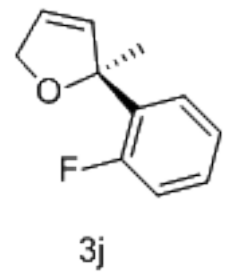
```
Totals :                6377.45837 1212.54509
```

```

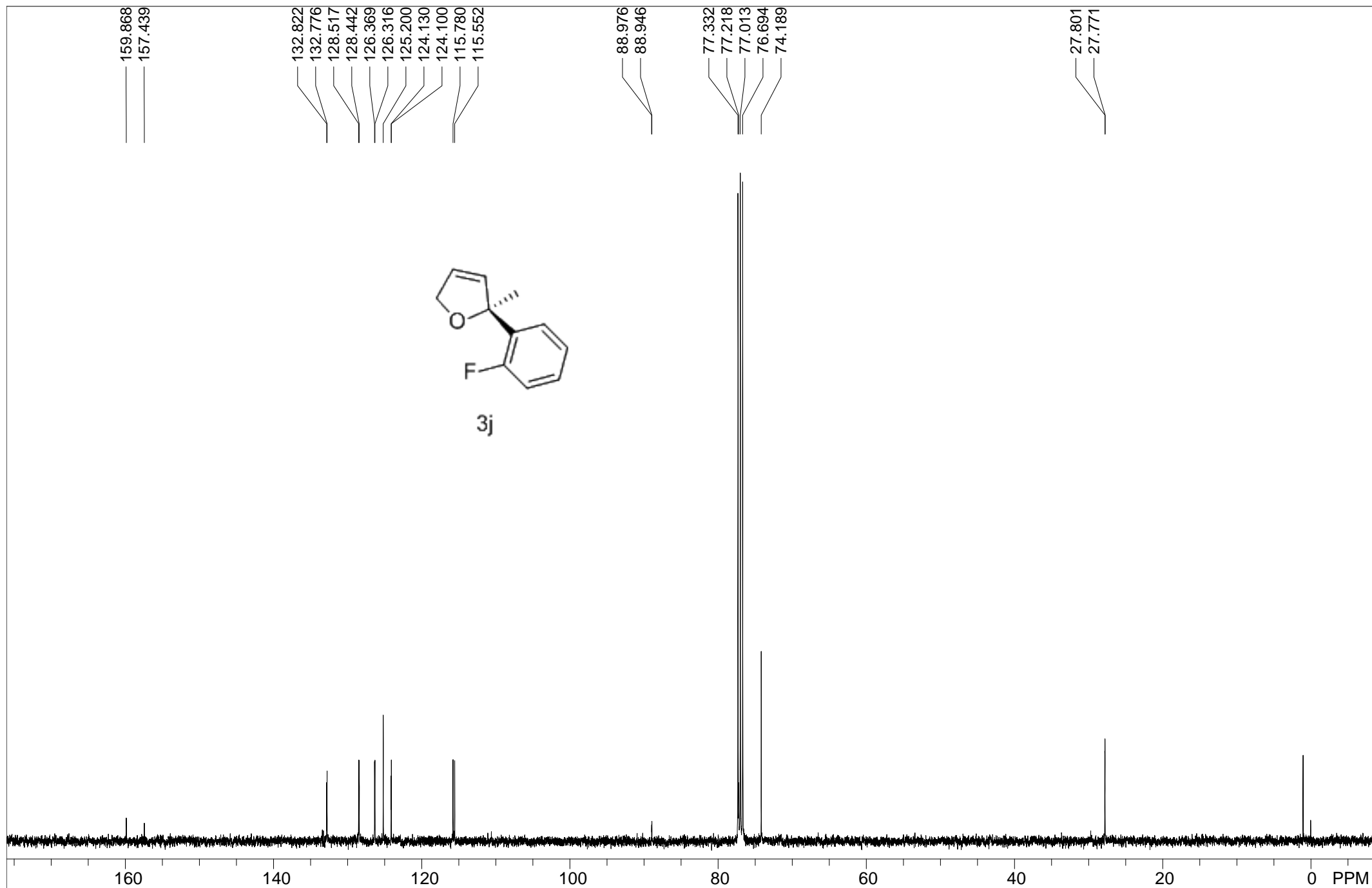
=====
*** End of Report ***
  
```

7.628
7.603
7.584
7.260
7.240
7.221
7.206
7.188
7.133
7.115
7.096
7.030
7.006
6.998
6.978
6.273
6.267
6.261
6.257
6.251
6.246
6.241
6.235
5.841
5.826
4.816
4.782
4.694
4.664

1.656



Std proton;blank line				USER: -- DATE: Feb 2 2015			
F1: 400.032	F2: 100.597	SW1: 7225		OF1: 2807.3		PTS1d: 21676 , 32768	
EX: s2pul	PW: 10.6 us	PD: 1.0 sec		NA: 8	LB: 0.0	Nuts - \$6-14-01-HNMR.fid	



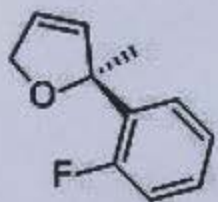
new experiment

USER: -- DATE: Feb 6 2015

F1: 100.521	F2: 399.722	SW1: 25000	OF1: 11056.0	PTS1d: 32768 , 32768
EX: s2pul	PW: 4.9 us	PD: 1.0 sec	NA: 908	LB: 1.0

Nuts - \$6-18-01-CNMR-7.fid

-114.776
-114.796
-114.806
-114.827



3j

50 0 -50 -100 -150 -200 PPM

STANDARD PROTON PARAMETERS

S-56

USER: -- DATE: Feb 8 2015

F1: 376.064

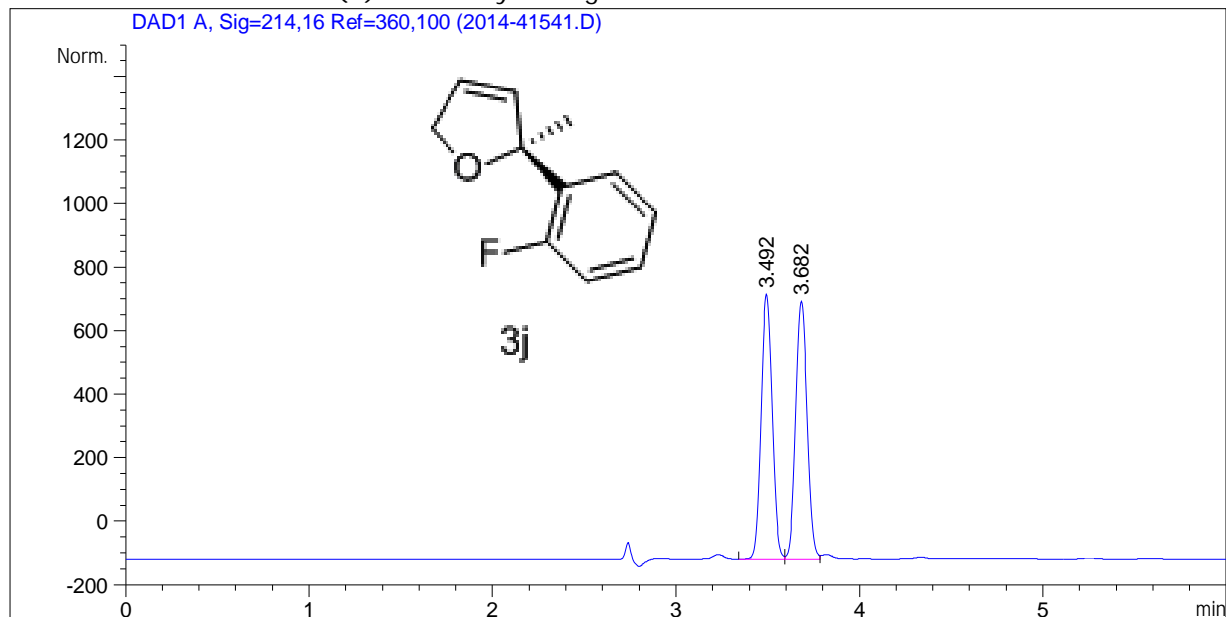
F2: 100.519

SW1: 166667

OF1: -48255.3

PTS1d: 166667 , 262144

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 44
Injection Date : 2/5/2015 3:21:23 PM Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 2/5/2015 3:13:07 PM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 2/5/2015 4:04:34 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	3.492	BV	0.0662	2473.24927	586.46735	49.8405
2	3.682	VV	0.0678	2489.08276	571.31604	50.1595

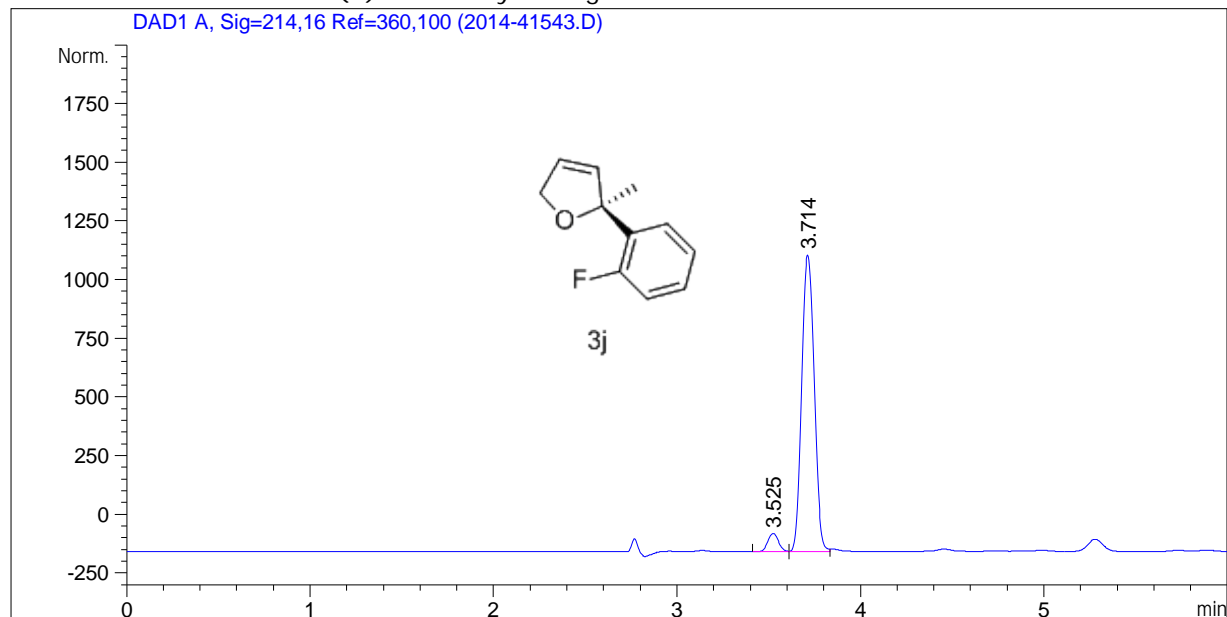
Totals : 4962.33203 1157.78339

=====
*** End of Report ***

Sample Name: 6-18

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 43
Injection Date  : 2/5/2015 3:54:45 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 2/5/2015 3:13:07 PM by :
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 2/5/2015 4:06:38 PM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By           :      Signal
Multiplier          :      1.0000
Dilution            :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

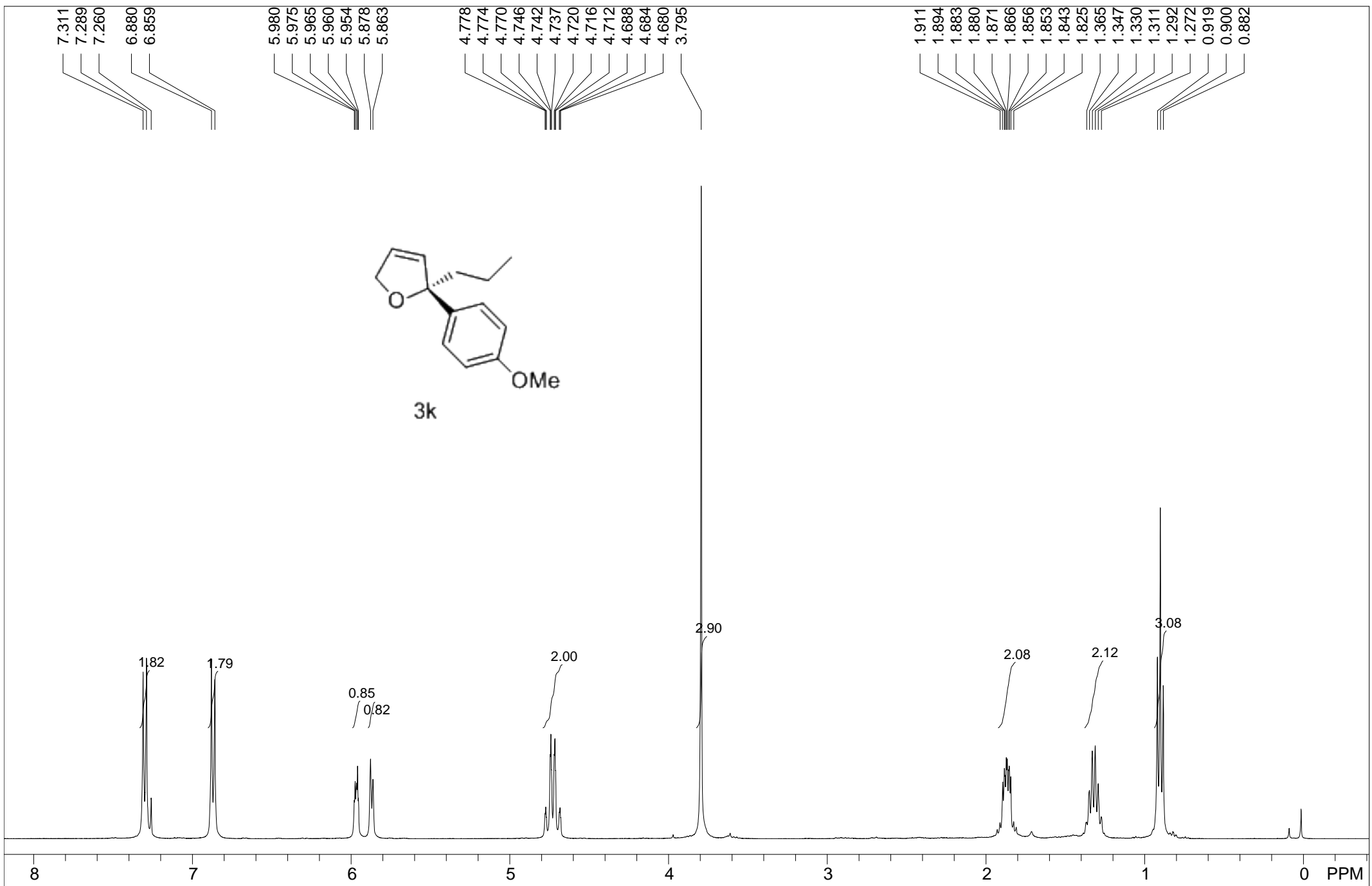
Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	3.525	BV	0.0632	233.16054	57.68032	4.9614
2	3.714	VV	0.0765	4466.35303	938.75061	95.0386

```
Totals :                4699.51357  996.43093
```

```

=====
*** End of Report ***
  
```

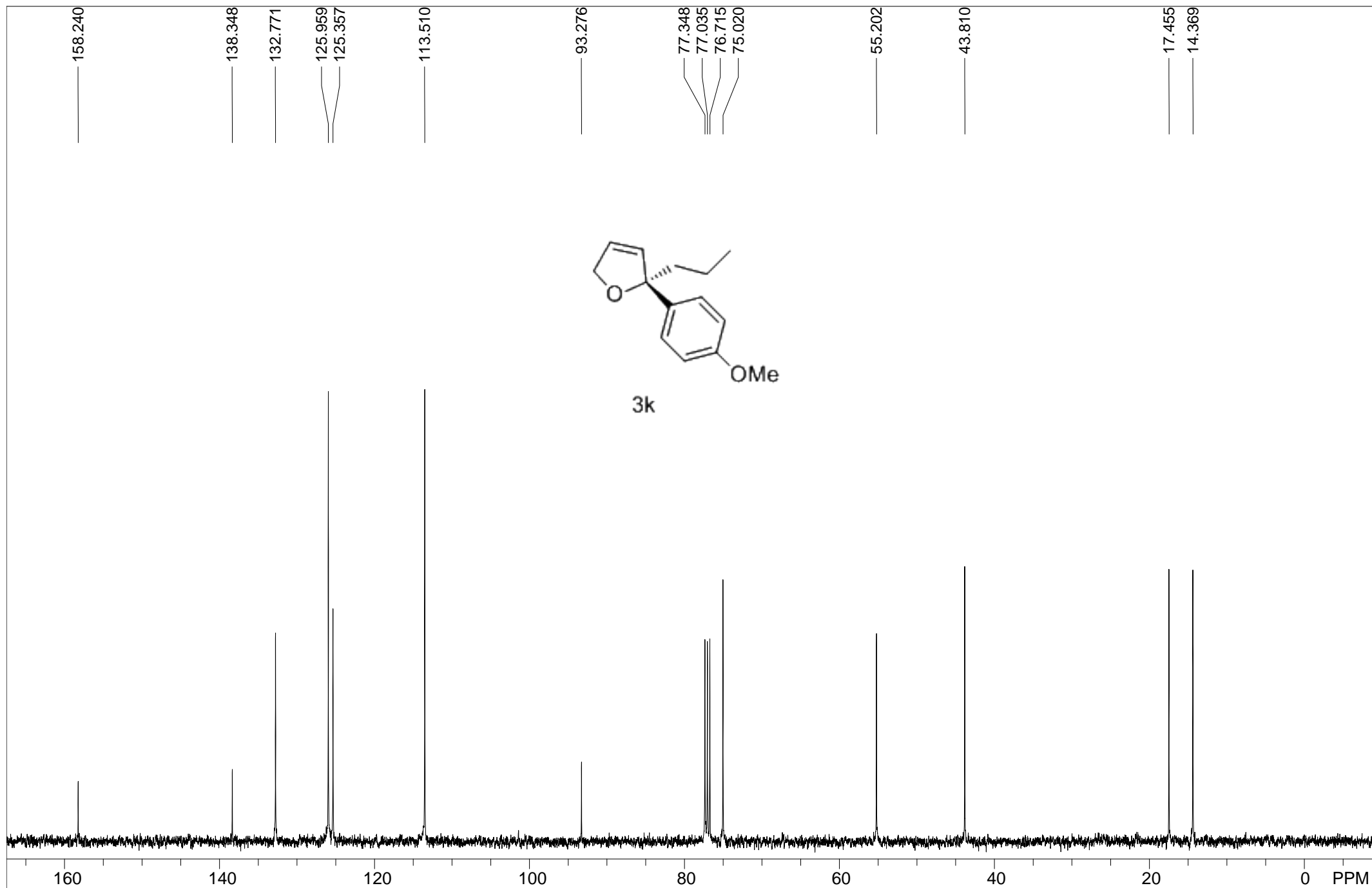


Std proton:blank line

USER: -- DATE: Dec 2 2014

F1: 400.031	F2: 100.597	SW1: 6510	OF1: 2407.4	PTS1d: 19531 , 32768
EX: s2pul	PW: 10.6 us	PD: 1.0 sec	NA: 12	LB: 0.0

Nuts - \$4-53-01-HNMR.fid



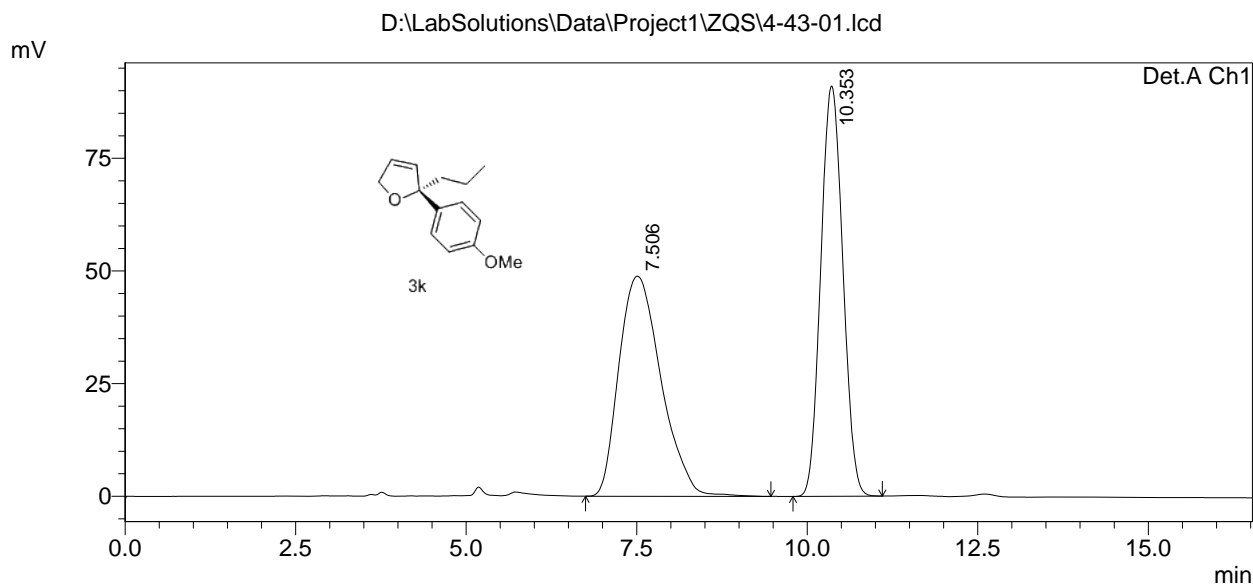
Std carbon;blank line				USER: -- DATE: Dec 2 2014			
F1: 100.598	F2: 400.031	SW1: 24510		OF1: 10561.6		PTS1d: 31875 , 32768	
EX: s2pul	PW: 4.1 us	PD: 1.0 sec		NA: 84	LB: 2.0	Nuts - \$4-53-01-CNMR-2.fid	

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-43-01.lcd

Acquired by : Admin
 Sample Name : 4-43-01
 Sample ID : OD-H,99.0/1.0,1.0,214
 Vial # : 0
 Injection Volume : 10 uL
 Data File Name : 4-43-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-4 12:16:57
 Data Processed : 2013-12-9 0:11:26

<Chromatogram>



PeakTable

Detector A Ch1 214nm

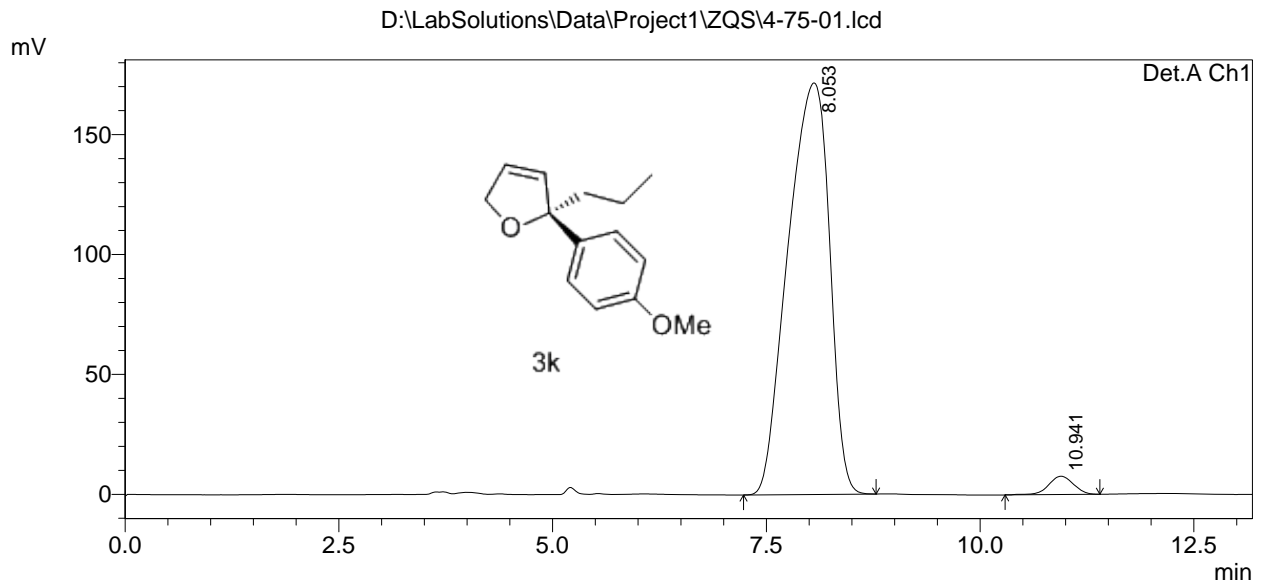
Peak#	Ret. Time	Area	Height	Area %
1	7.506	2096726	48861	50.541
2	10.353	2051832	91080	49.459
Total		4148557	139940	100.000

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-75-01.lcd

Acquired by : Admin
 Sample Name : 4-75-01
 Sample ID : OD-H,99.0/1.0,1.0,254
 Vail # : 0
 Injection Volume : 10 uL
 Data File Name : 4-75-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-18 20:47:12
 Data Processed : 2013-11-18 21:01:36

<Chromatogram>

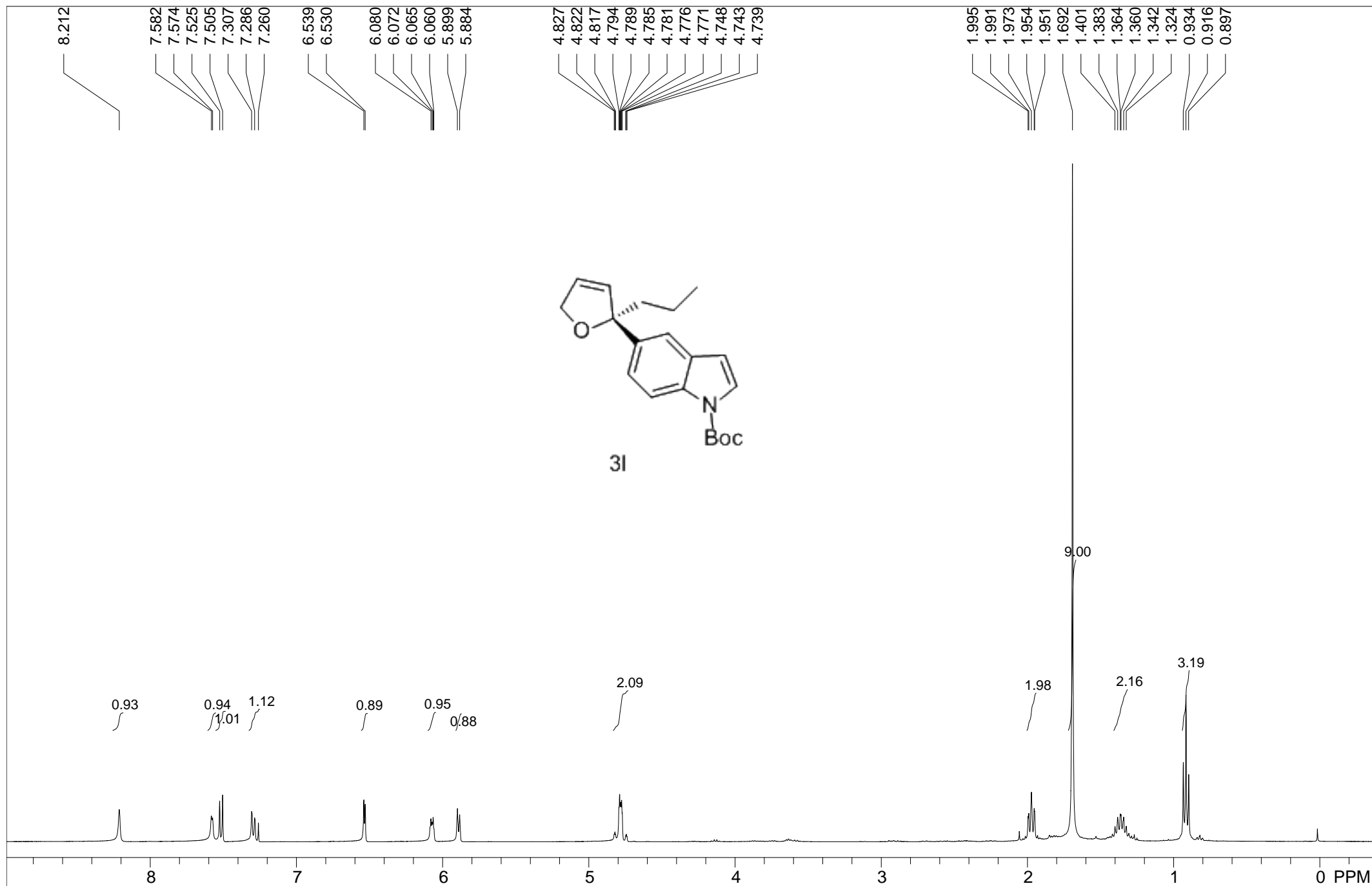


1 Det.A Ch1/214nm

PeakTable

Detector A Ch1 214nm

Peak#	Ret. Time	Area	Height	Area %
1	8.053	5806209	171635	97.403
2	10.941	154838	7652	2.597
Total		5961047	179287	100.000



Std proton;blank line

USER: -- DATE: Dec 30 2014

F1: 400.032

F2: 100.597

SW1: 7310

OF1: 2807.8

PTS1d: 21930 , 32768

EX: s2pul

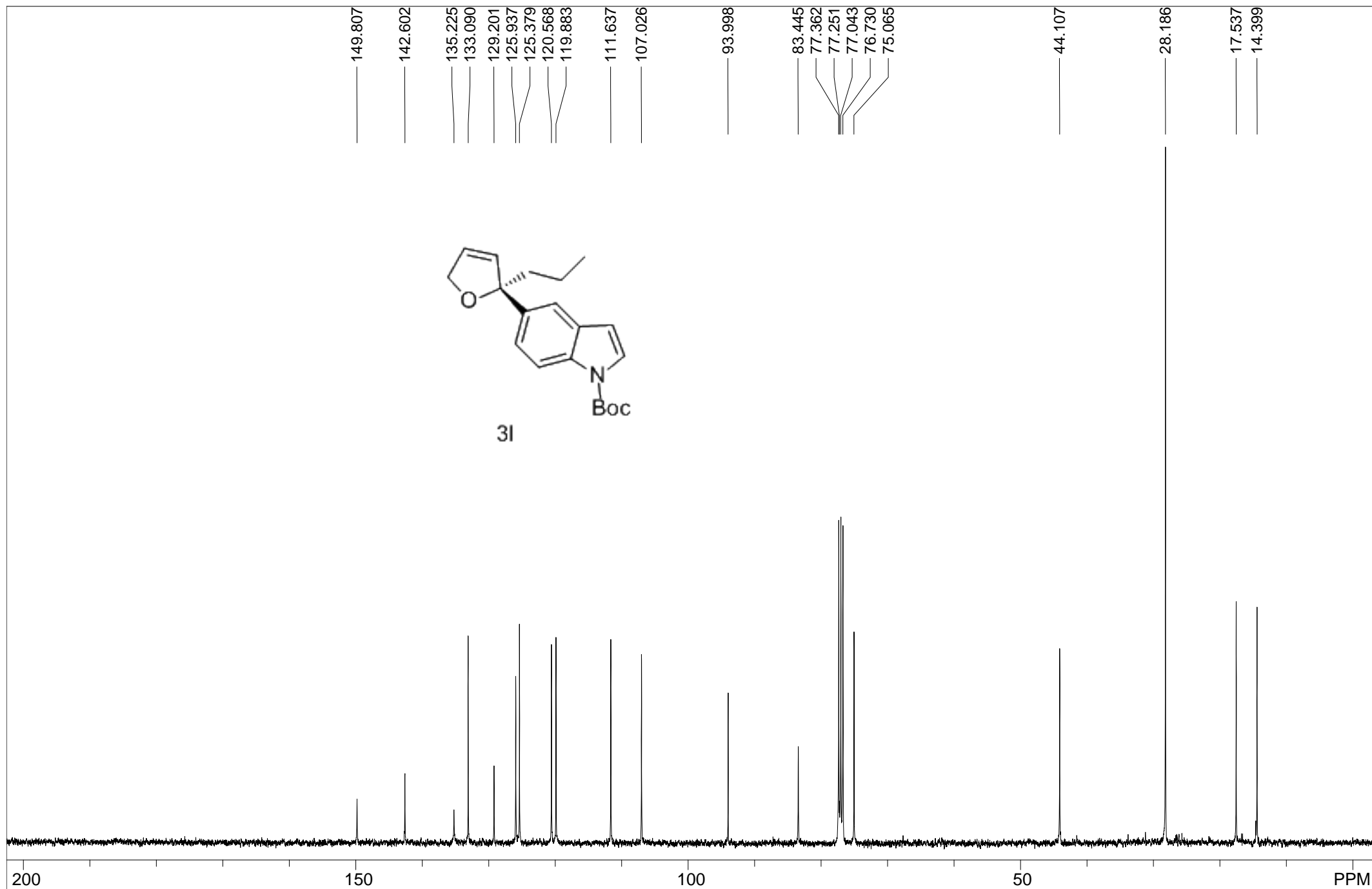
PW: 10.6 us

PD: 1.0 sec

NA: 8

LB: 0.0

Nuts - \$5-54-01-HNMR.fid



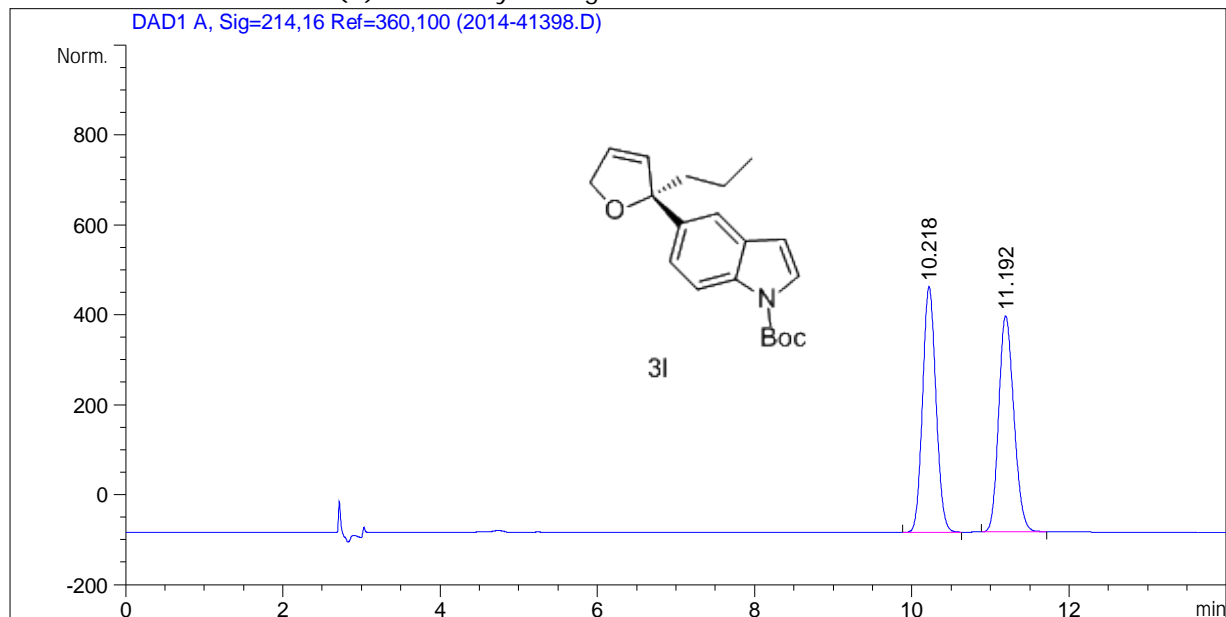
Std carbon:blank line

USER: -- DATE: Dec 31 2014

F1: 100.598	F2: 400.031	SW1: 24510	OF1: 10561.6	PTS1d: 31875 , 32768
EX: s2pul	PW: 4.1 us	PD: 1.0 sec	NA: 600	LB: 2.0

Nuts - \$5-54-01-CNMR-3.fid

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 22
Injection Date : 1/4/2015 2:13:51 PM Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/4/2015 2:11:47 PM by
(modified after loading,
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/5/2015 3:02:46 PM by
(modified after loading,
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.218	BB	0.1851	4385.17725	370.44376	50.0874
2	11.192	BB	0.2067	4369.86865	325.38489	49.9126

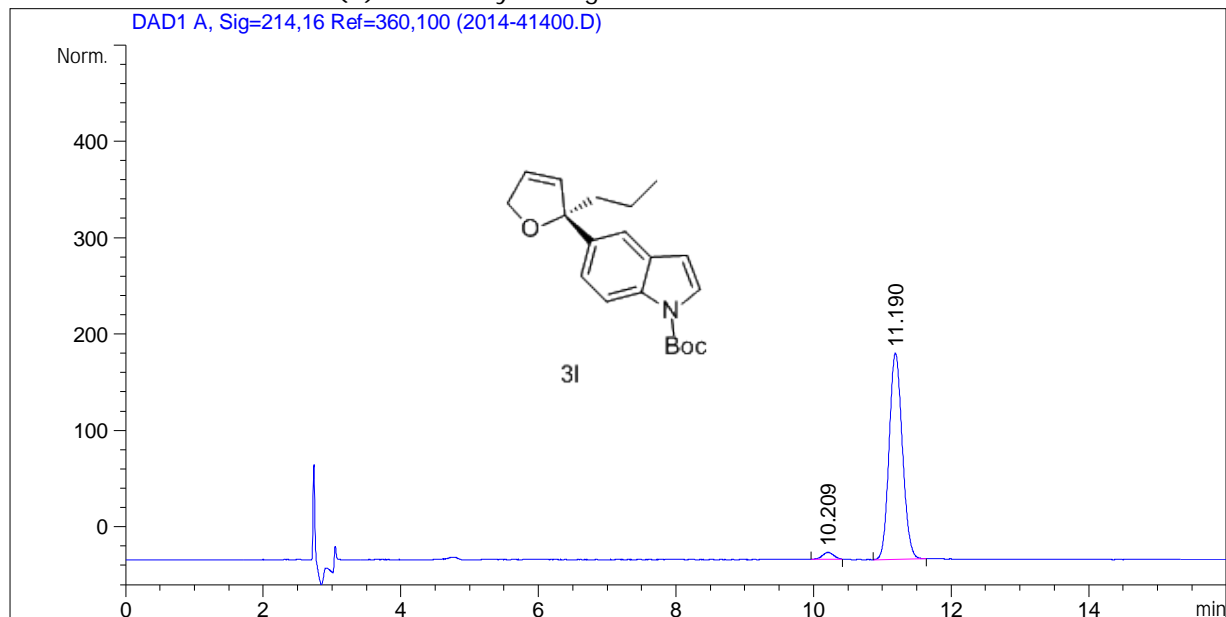
Totals : 8755.04590 695.82864

=====
*** End of Report ***

Sample Name: 5-62-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 23
Injection Date  : 1/4/2015 2:47:21 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/4/2015 2:44:52 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/5/2015 3:05:27 PM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

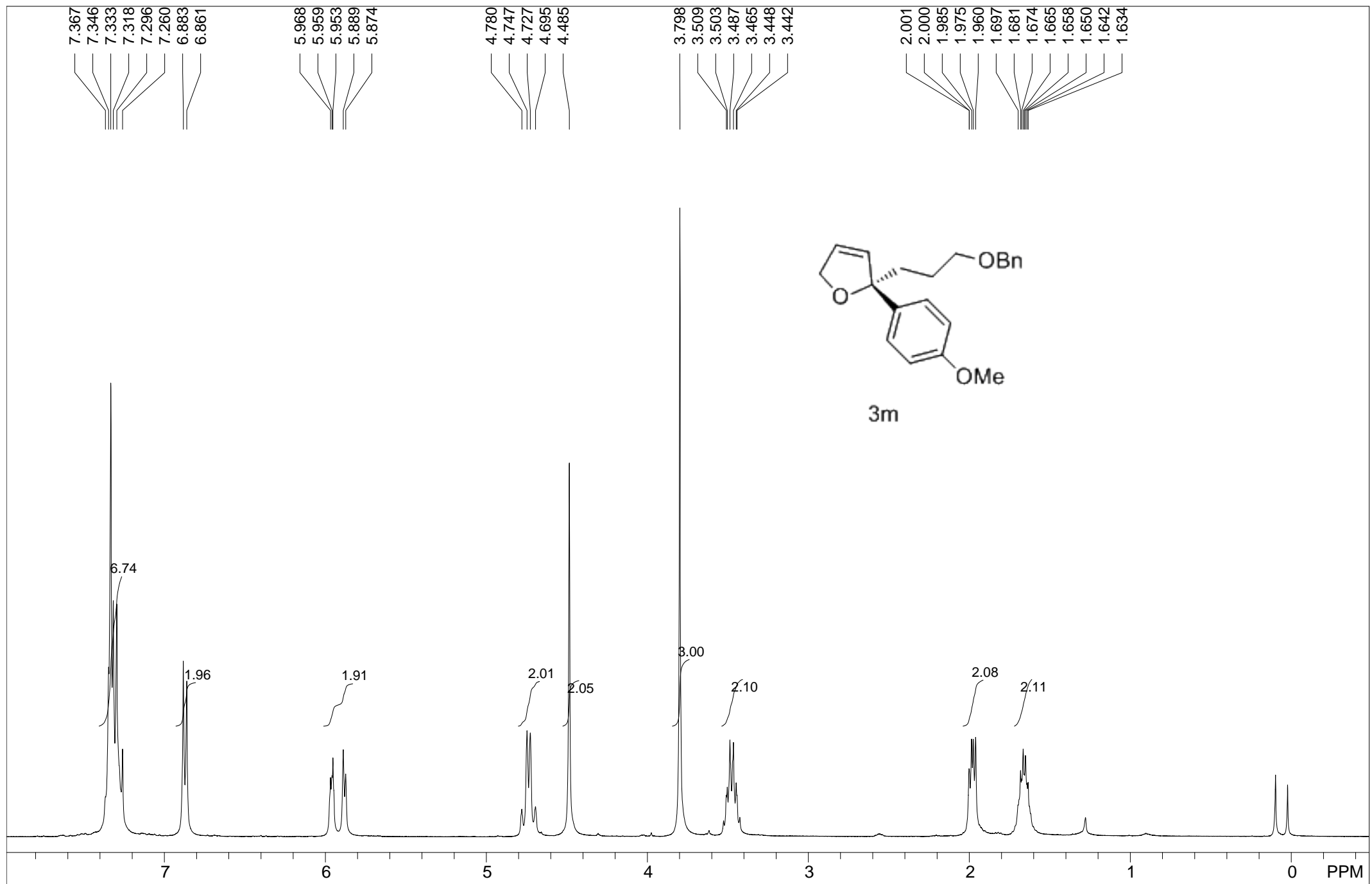
Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	10.209	BB	0.1546	52.28853	4.53341	2.7988
2	11.190	BB	0.2049	1815.94043	135.91817	97.2012

```
Totals :                1868.22896  140.45157
```

```

=====
*** End of Report ***
  
```

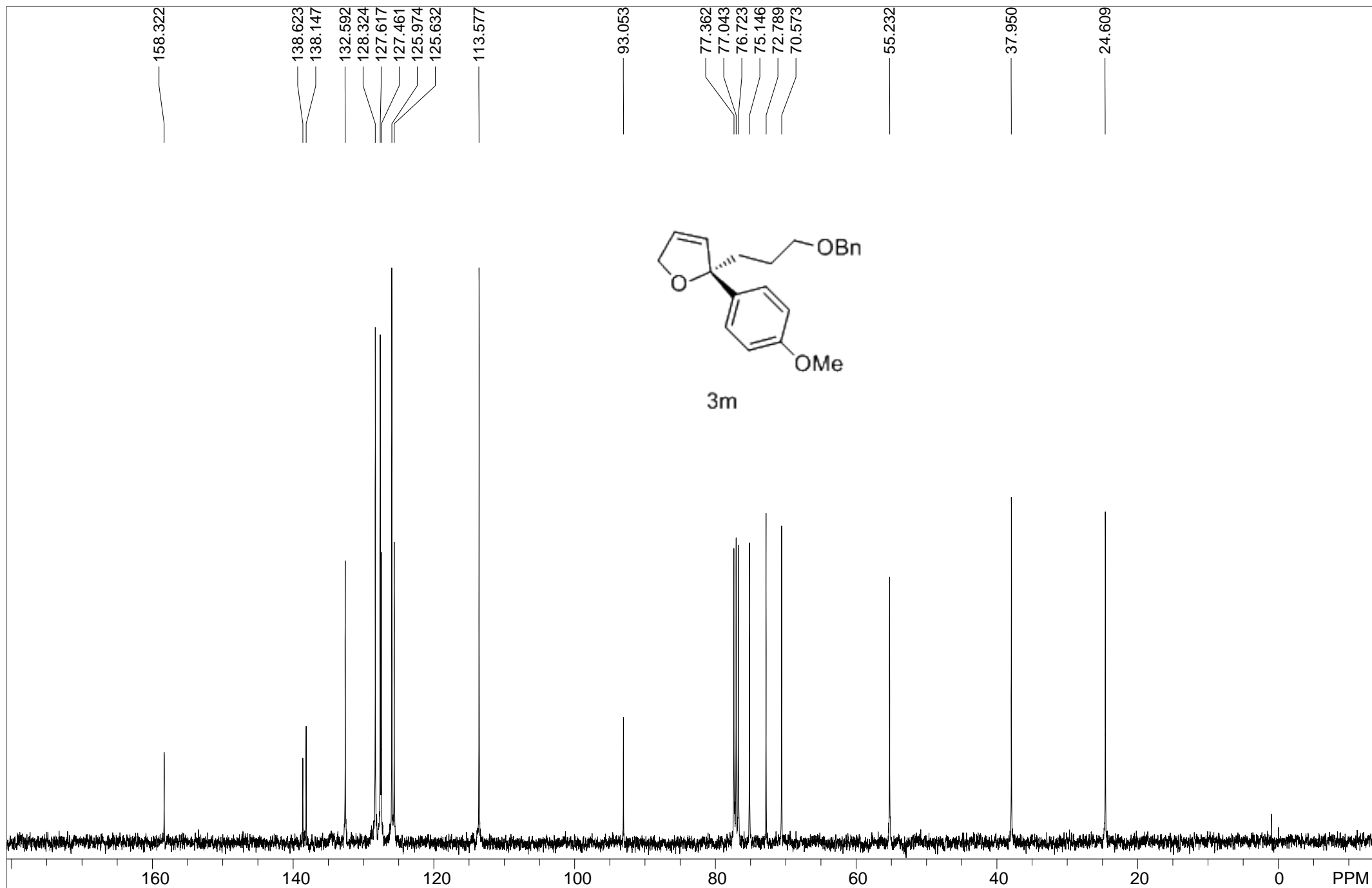


Std proton:blank line

USER: -- DATE: Dec 2 2014

F1: 400.031	F2: 100.597	SW1: 6510	OF1: 2407.4	PTS1d: 19531 , 32768
EX: s2pul	PW: 10.6 us	PD: 1.0 sec	NA: 8	LB: 0.0

Nuts - \$4-66-01-HNMR.fid



Std carbon:blank line

USER: -- DATE: Dec 2 2014

F1: 100.598	F2: 400.031	SW1: 24510		OF1: 10561.6		PTS1d: 31875 , 32768
EX: s2pul		PW: 4.1 us	PD: 1.0 sec	NA: 188	LB: 2.0	Nuts - \$4-66-01-CNMR-3.fid

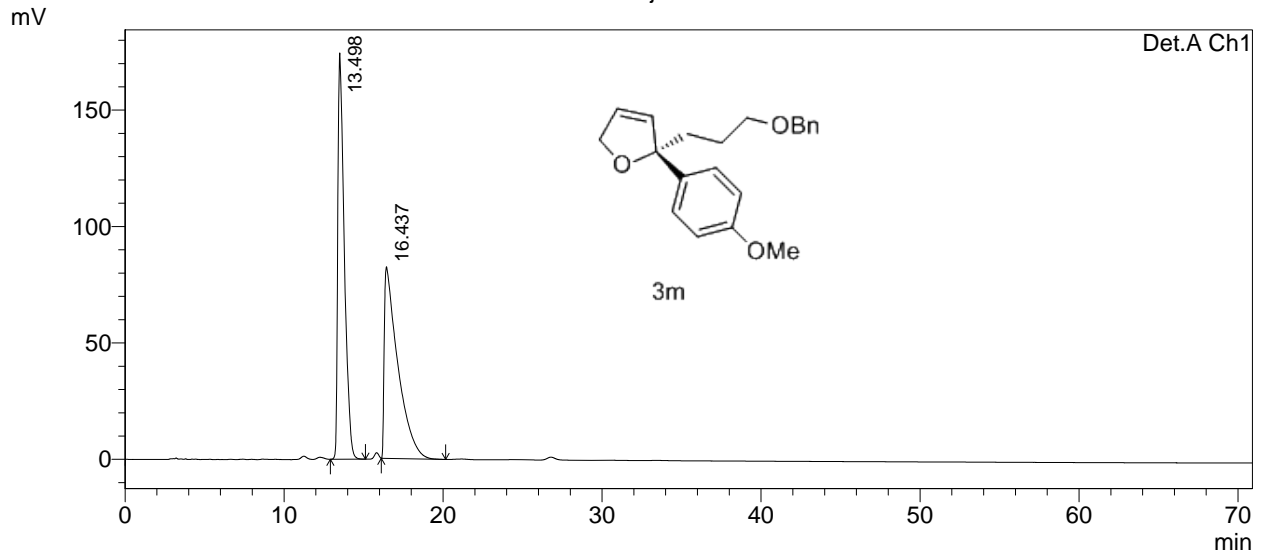
==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-66-01.lcd

Acquired by : Admin
 Sample Name : 4-66-01
 Sample ID : OD-H,98.0/2.0,1.0,214
 Vial # : 0
 Injection Volume : 10 uL
 Data File Name : 4-66-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-17 10:26:15
 Data Processed : 2013-11-17 11:37:45

<Chromatogram>

D:\LabSolutions\Data\Project1\ZQS\4-66-01.lcd



1 Det.A Ch1/214nm

PeakTable

Detector A Ch1 214nm

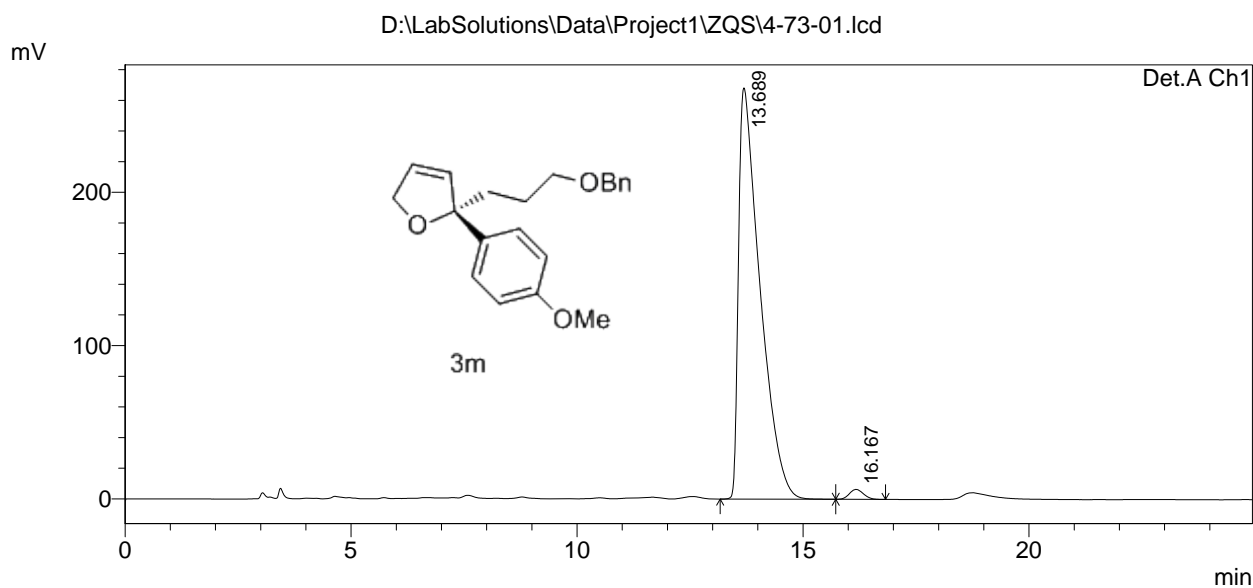
Peak#	Ret. Time	Area	Height	Area %
1	13.498	4961267	174542	50.403
2	16.437	4881834	82321	49.597
Total		9843101	256863	100.000

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-73-01.lcd

Acquired by : Admin
 Sample Name : 4-73-01
 Sample ID : OD-H,98.0/2.0,1.0,214
 Vial # : 0
 Injection Volume : 10 uL
 Data File Name : 4-73-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-17 11:39:20
 Data Processed : 2013-11-17 12:07:08

<Chromatogram>

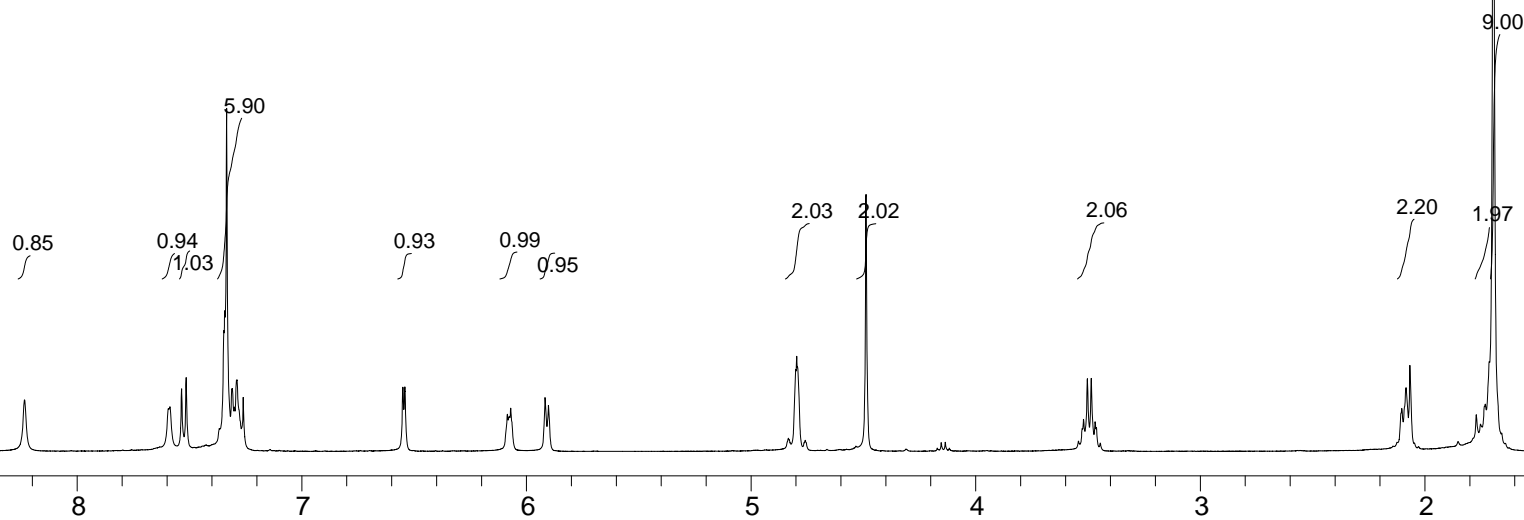
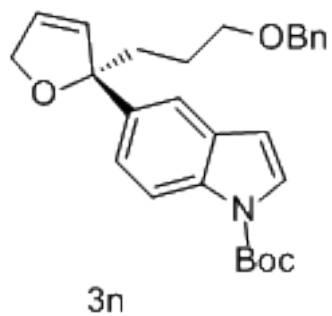


PeakTable

Detector A Ch1 214nm

Peak#	Ret. Time	Area	Height	Area %
1	13.689	8856763	268363	98.433
2	16.167	140965	6508	1.567
Total		8997728	274870	100.000

8.235
 7.594
 7.588
 7.535
 7.515
 7.367
 7.347
 7.343
 7.335
 7.312
 7.309
 7.300
 7.291
 7.289
 7.261
 6.550
 6.541
 6.085
 6.077
 6.070
 5.917
 5.902
 4.834
 4.830
 4.801
 4.797
 4.793
 4.759
 4.489
 3.526
 3.520
 3.503
 3.486
 3.469
 3.463
 2.103
 2.084
 2.067
 1.771
 1.752
 1.735
 1.731
 1.713
 1.695
 1.658

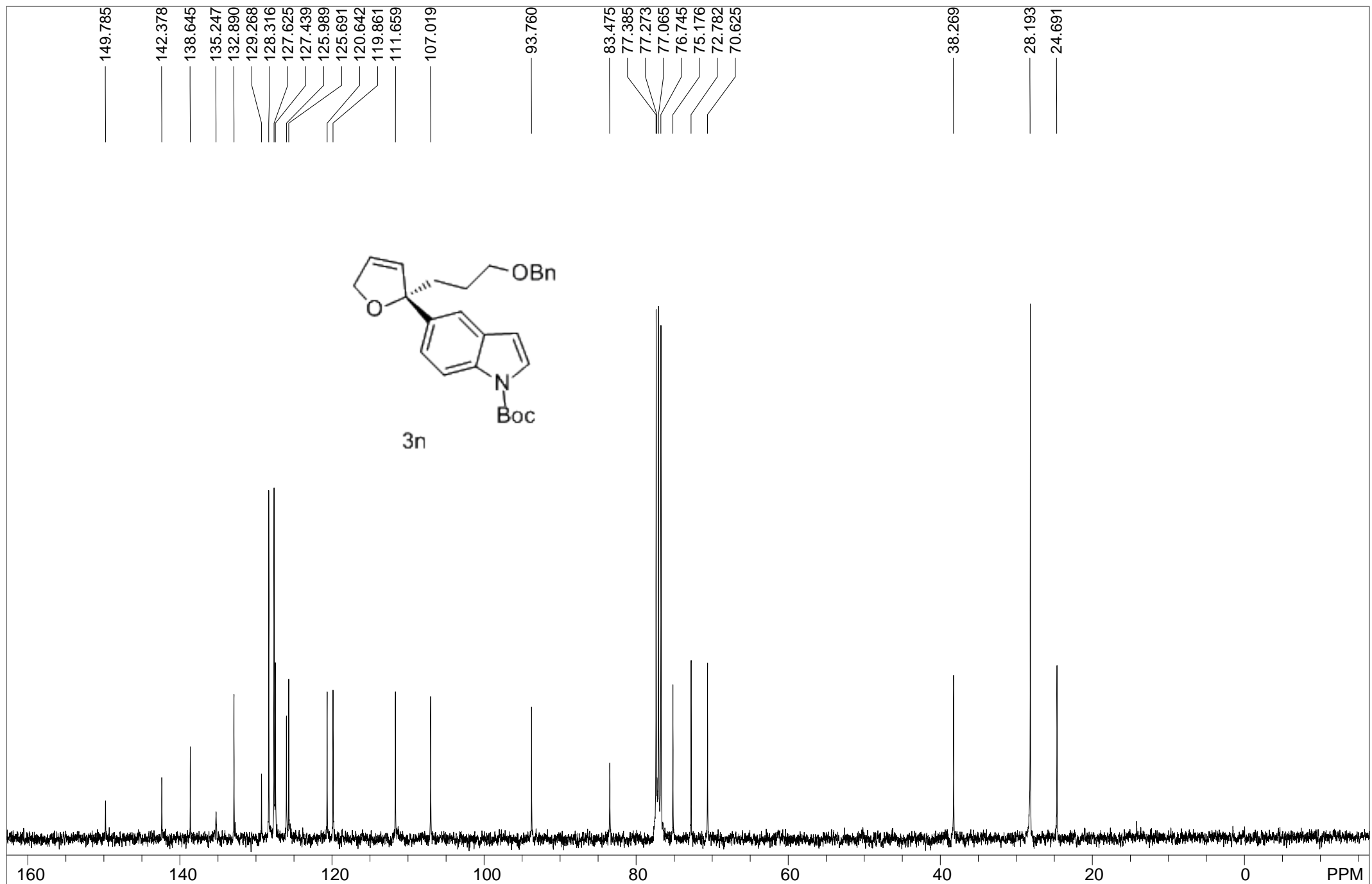


Std proton:blank line

USER: -- DATE: Dec 30 2014

F1: 400.032	F2: 100.597	SW1: 7310	OF1: 2807.8	PTS1d: 21930 , 32768
EX: s2pul	PW: 10.6 us	PD: 1.0 sec	NA: 4	LB: 0.0

Nuts - \$5-53-02-HNMR.fid

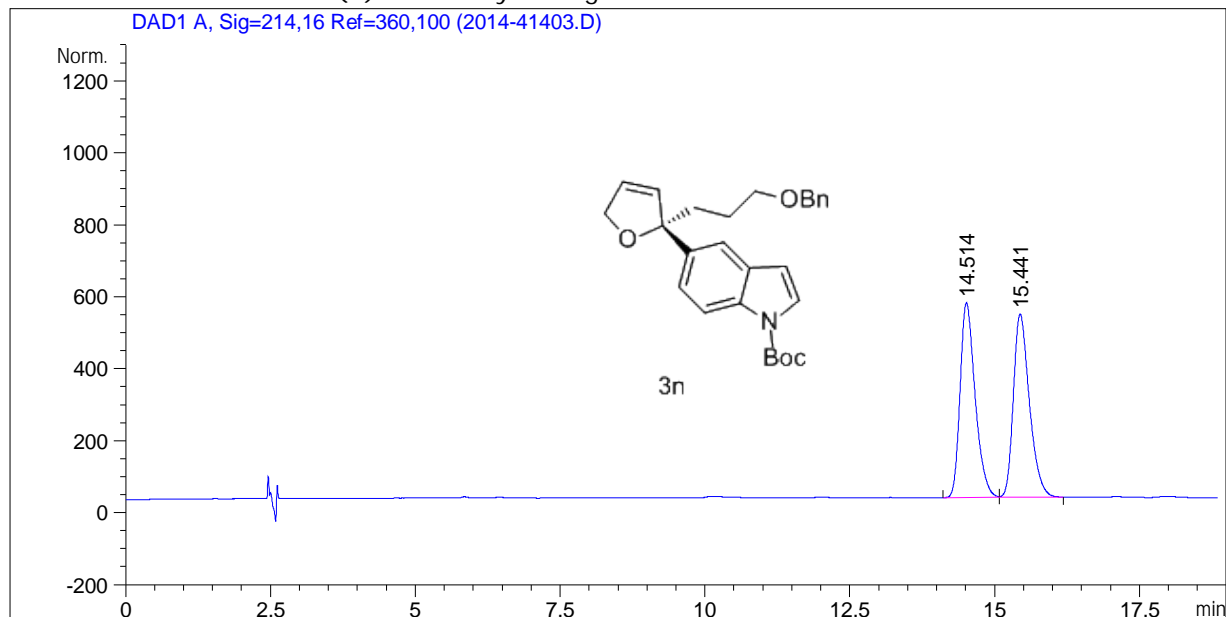


Std carbon:blank line

USER: -- DATE: Dec 30 2014

F1: 100.598	F2: 400.031	SW1: 24510		OF1: 10561.6		PTS1d: 31875 , 32768
EX: s2pul	PW: 4.1 us	PD: 1.0 sec		NA: 204	LB: 2.0	Nuts - \$5-53-02-CNMR.fid

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 21
Injection Date : 1/5/2015 9:01:42 AM Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/5/2015 8:57:33 AM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/5/2015 3:00:40 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	14.514	BV	0.2749	5927.44238	327.93542	49.9760
2	15.441	VB	0.2894	5933.13770	308.42700	50.0240

Totals : 1.18606e4 636.36243

=====
*** End of Report ***

Sample Name: 5-61-02

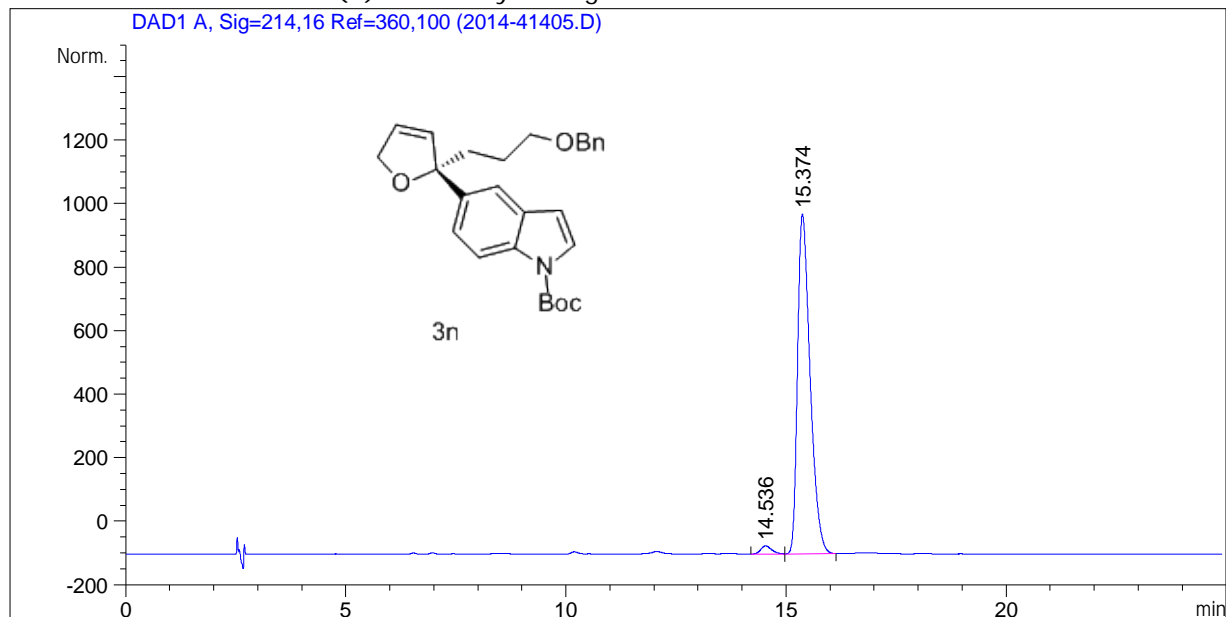
```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 24
Injection Date  : 1/5/2015 9:45:56 AM
                                           Inj Volume : 5.000 µl

Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/5/2015 8:57:33 AM by
                  (modified after loading)

Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/5/2015 2:58:48 PM by
                  (modified after loading)

Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	14.536	BB	0.2571	346.54358	20.20112	2.0181
2	15.374	BB	0.2995	1.68252e4	851.69269	97.9819

```
Totals :                1.71718e4  871.89381
```

```

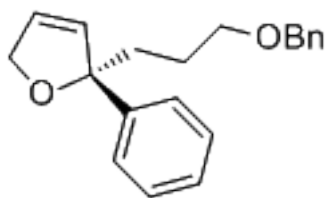
=====
*** End of Report ***
  
```

7.389 7.369 7.342 7.337 7.321 7.305 7.291 7.271 7.260 7.240 7.222 7.204 5.991 5.986 5.977 5.971 5.965 5.891 5.876

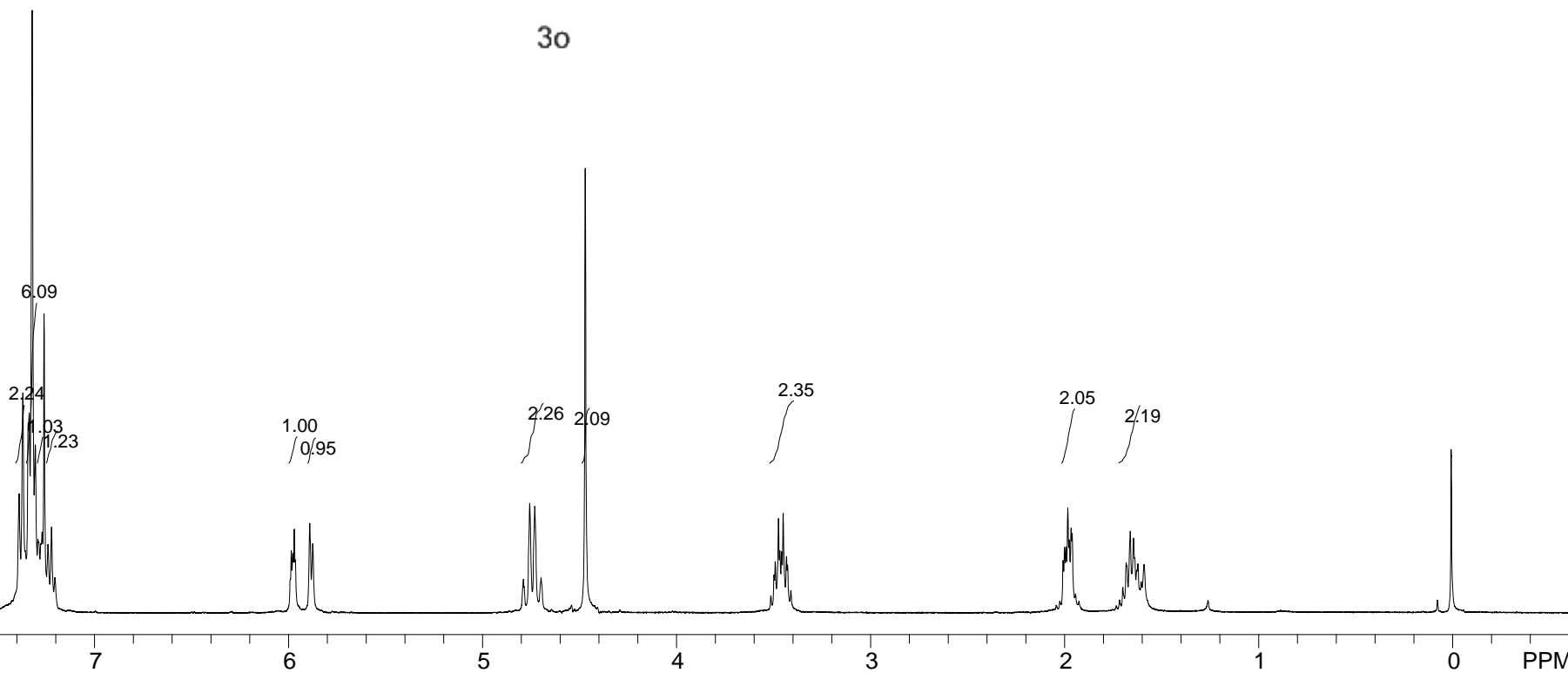
4.789 4.757 4.731 4.699 4.470

3.497 3.491 3.474 3.468 3.458 3.450 3.433 3.428 3.411

2.007 2.000 1.992 1.983 1.975 1.966 1.960 1.699 1.682 1.678 1.661 1.644 1.639 1.628 1.621 1.604



30

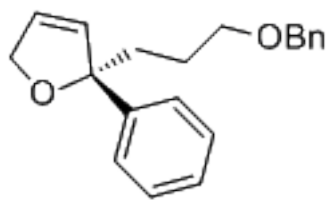


Std proton:blank line

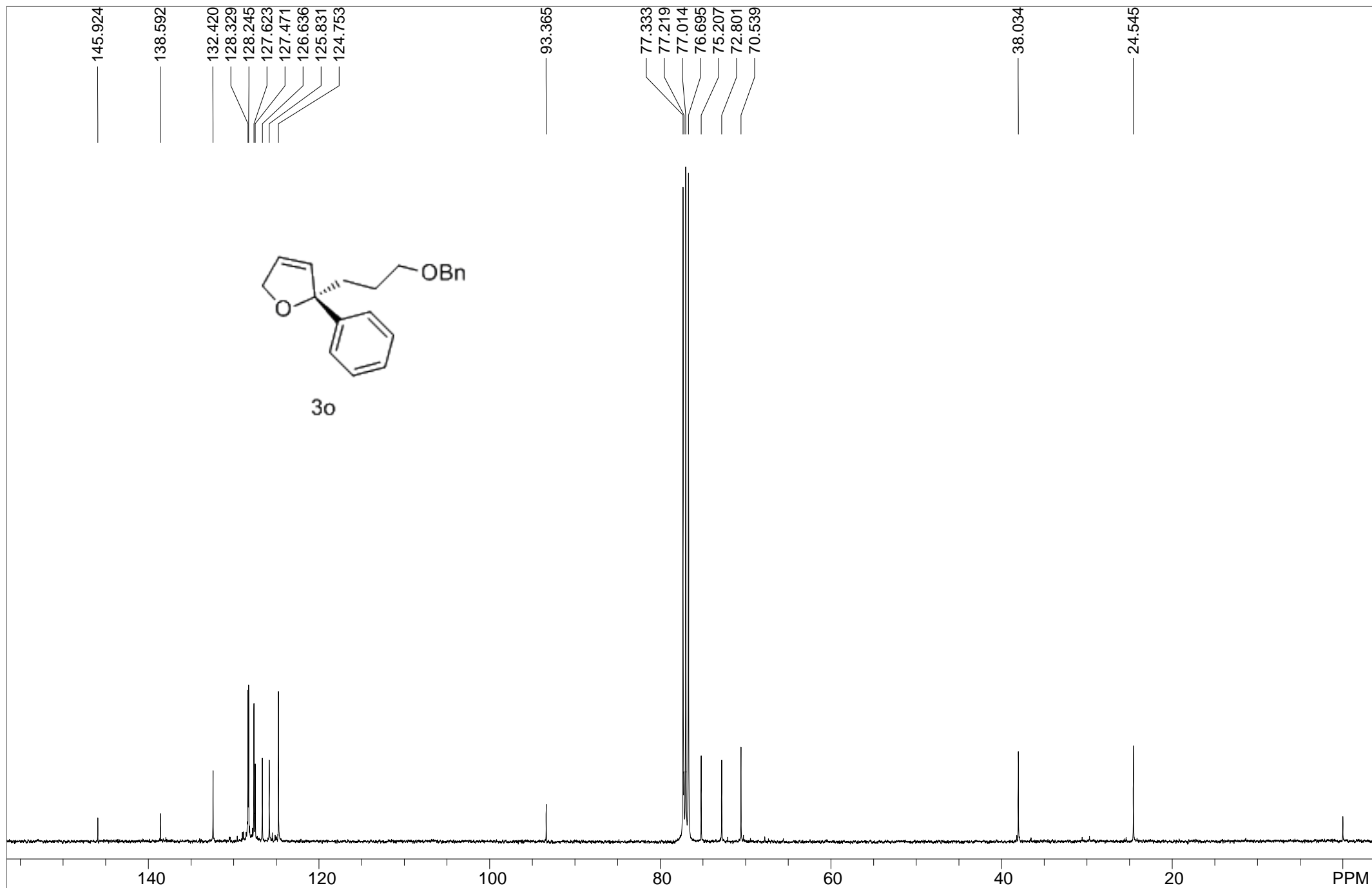
USER: -- DATE: Jan 29 2015

F1: 400.032	F2: 100.597	SW1: 7310	OF1: 2807.3	PTS1d: 21930 , 32768
EX: s2pul	PW: 10.6 us	PD: 1.0 sec	NA: 8	LB: 0.0

Nuts - \$5-98-01-HNMR.fid



3o



new experiment

USER: -- DATE: Dec 29 2014

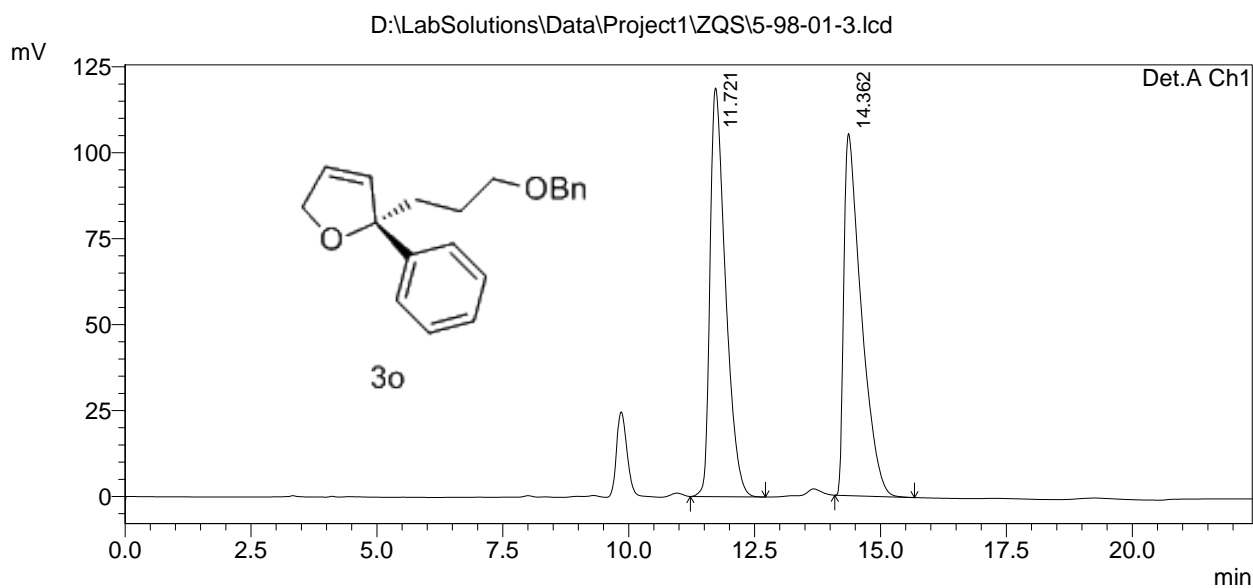
F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 32768 , 32768
EX: s2pul	PW: 4.9 us	PD: 1.0 sec		NA: 11860	LB: 2.0	Nuts - \$ZQS-4-94-01-cnmr400m.fid

==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\5-98-01-3.lcd

Acquired by : Admin
 Sample Name : 5-98-01
 Sample ID : OD-H,99/1,1.0,214
 Vial # : 0
 Injection Volume : 10 uL
 Data File Name : 5-98-01-3.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2014-1-26 19:40:31
 Data Processed : 2014-1-26 20:02:54

<Chromatogram>



PeakTable

Detector A Ch1 214nm

Peak#	Ret. Time	Area	Height	Area %
1	11.721	2545478	118915	49.988
2	14.362	2546719	105319	50.012
Total		5092197	224233	100.000

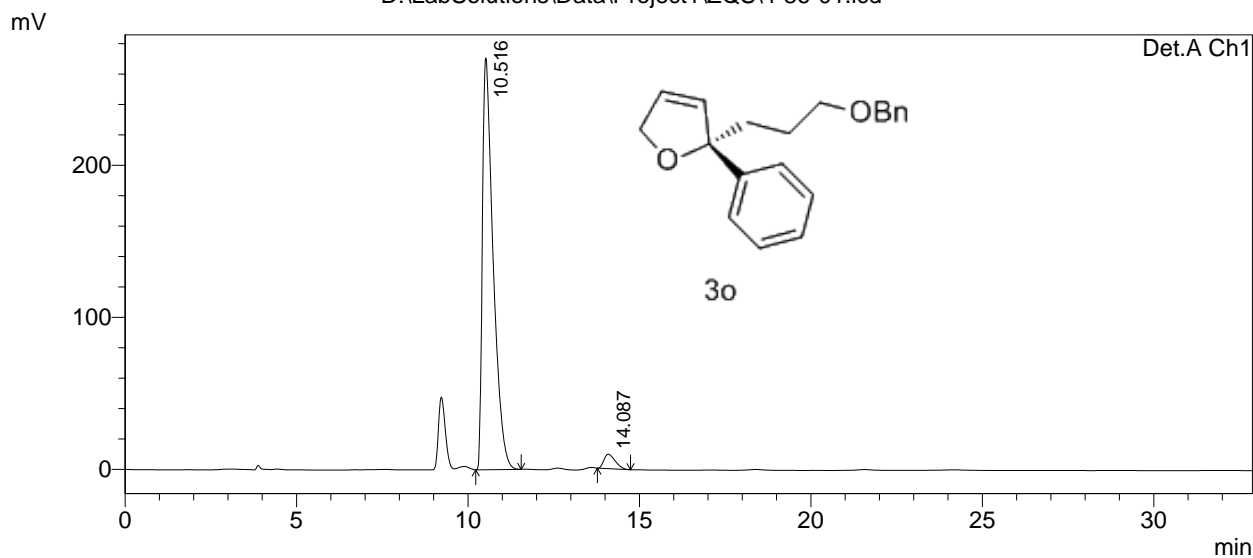
==== Shimadzu LCsolution Analysis Report ====

D:\LabSolutions\Data\Project1\ZQS\4-86-01.lcd

Acquired by : Admin
 Sample Name : 4-86-01
 Sample ID : OD-H,99.0/1.0,1.0,214
 Vial # : 0
 Injection Volume : 10 uL
 Data File Name : 4-86-01.lcd
 Method File Name : 1234.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2013-11-27 18:12:29
 Data Processed : 2013-12-3 19:50:10

<Chromatogram>

D:\LabSolutions\Data\Project1\ZQS\4-86-01.lcd

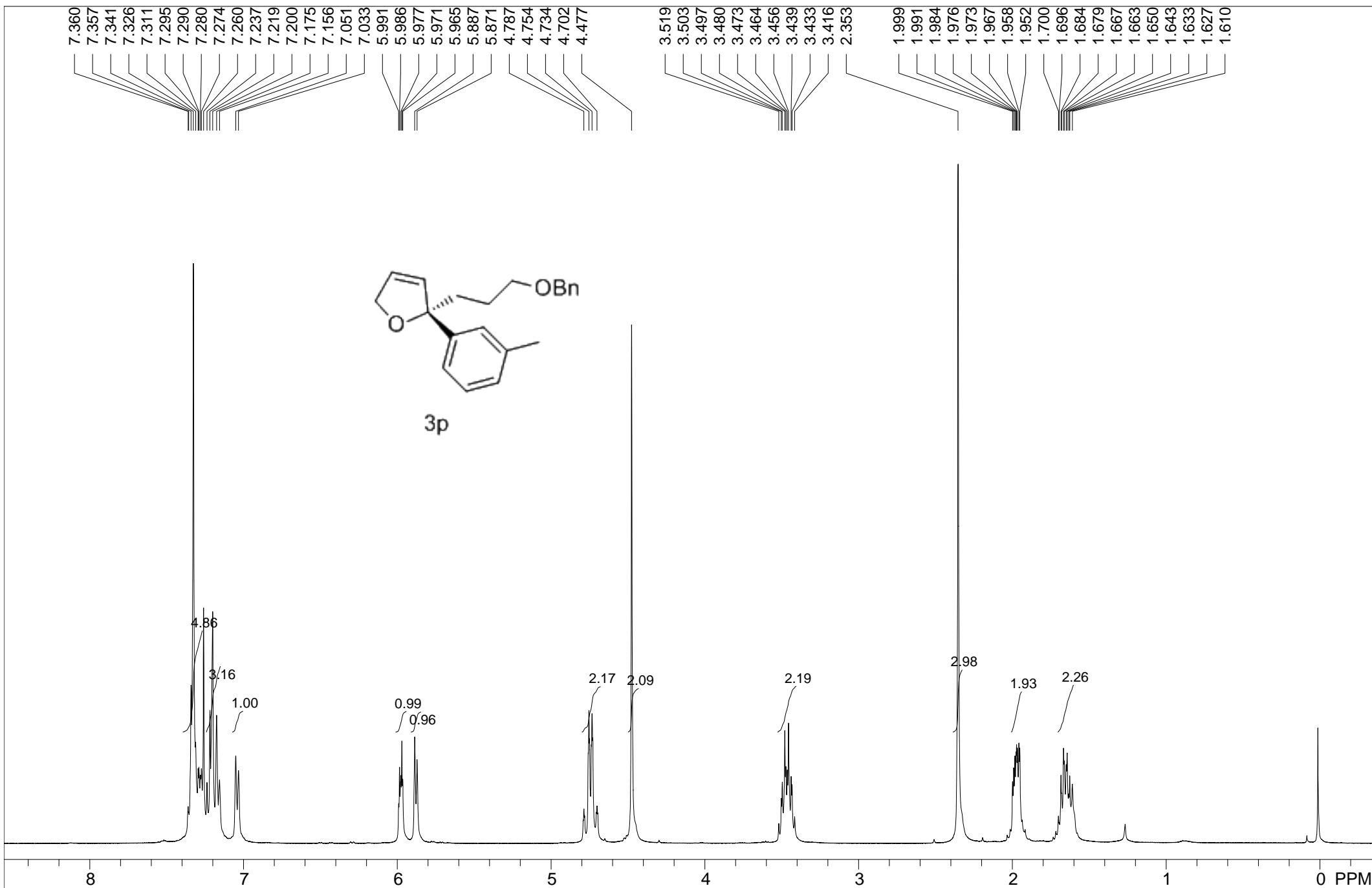


1 Det.A Ch1/214nm

PeakTable

Detector A Ch1 214nm

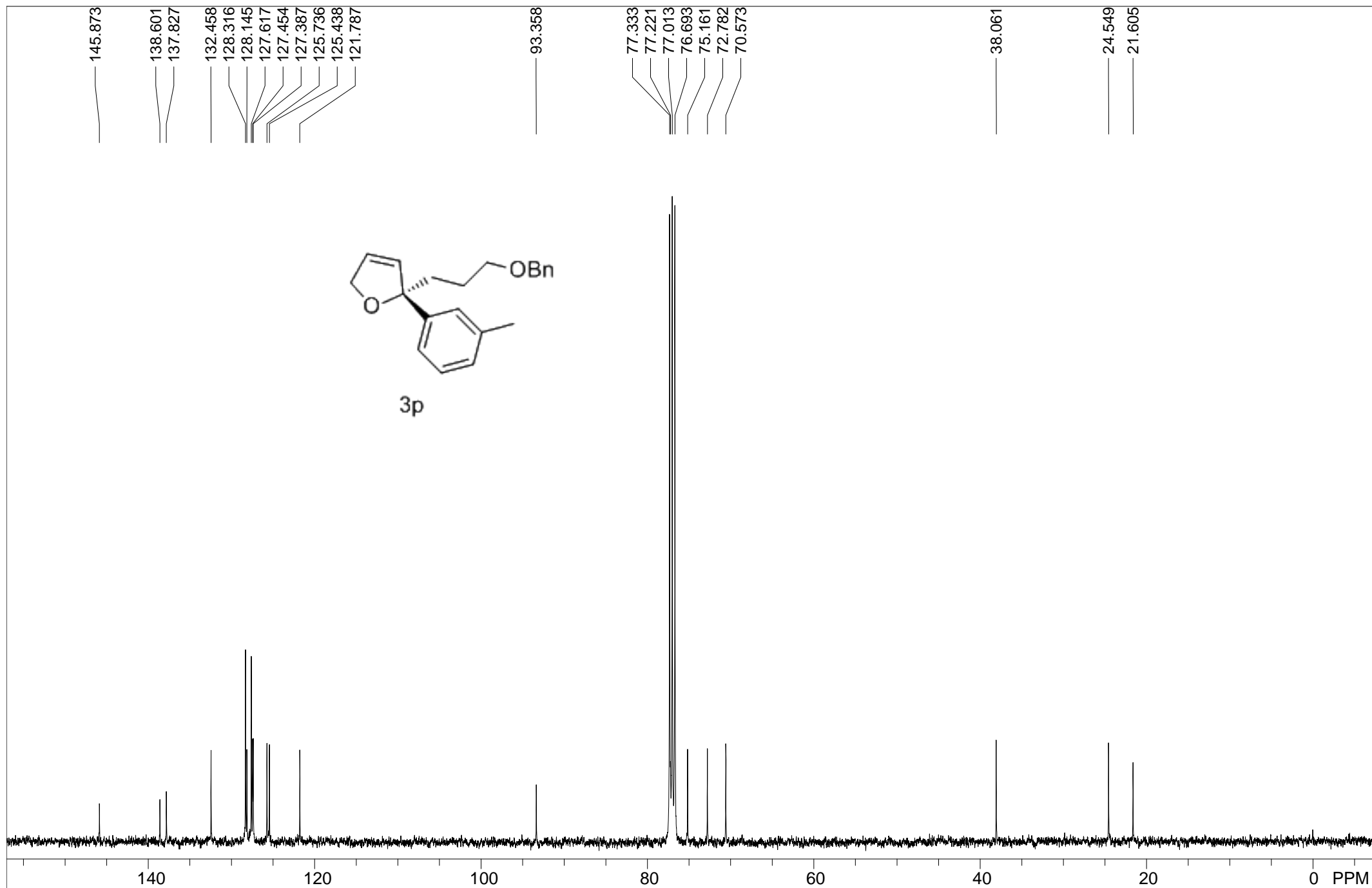
Peak#	Ret. Time	Area	Height	Area %
1	10.516	5924028	270864	96.448
2	14.087	218171	9550	3.552
Total		6142199	280414	100.000



Std proton:blank line

USER: -- DATE: Jan 18 2015

F1: 400.032	F2: 100.597	SW1: 7225		OF1: 2807.3		PTS1d: 21676 , 32768
EX: s2pul	PW: 10.6 us	PD: 1.0 sec		NA: 28	LB: 0.0	Nuts - \$5-94-01-HNMR.fid



Std carbon;blank line

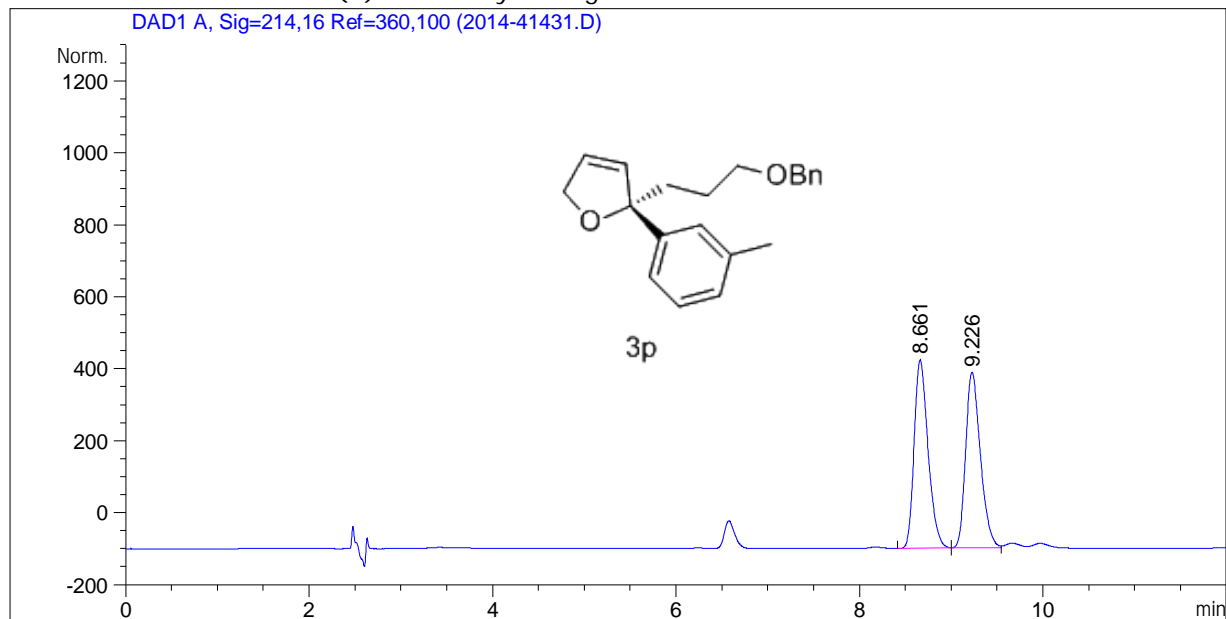
USER: -- DATE: Jan 18 2015

F1: 100.598	F2: 400.031	SW1: 24510		OF1: 10561.6		PTS1d: 31875 , 32768
EX: s2pul	PW: 4.1 us	PD: 1.0 sec		NA: 800	LB: 2.0	Nuts - \$5-94-01-CNMR.fid

Sample Name: 4-96-01-rac-ad-h-9-1

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 53
Injection Date  : 1/15/2015 12:55:42 PM           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/15/2015 12:15:57 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/16/2015 9:23:18 AM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	8.661	BB	0.1607	3182.23950	302.59860	50.2051
2	9.226	BV	0.1716	3156.24194	282.02170	49.7949

```
Totals :                6338.48145  584.62030
```

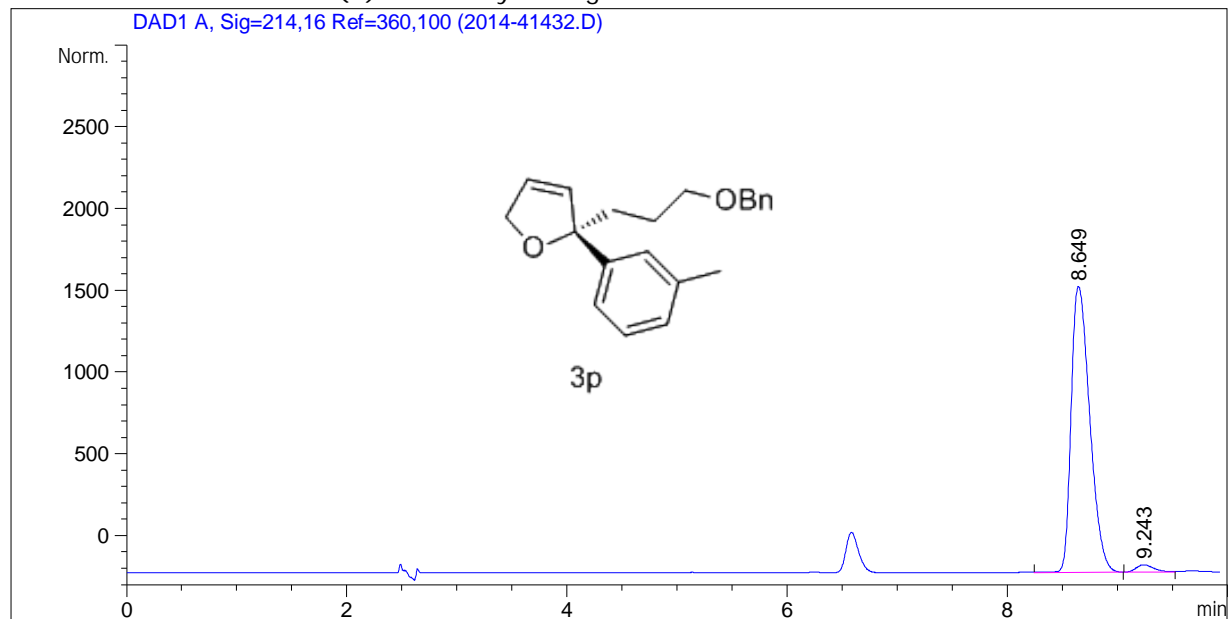
```

=====
*** End of Report ***
  
```

Sample Name: 5-6-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 54
Injection Date  : 1/15/2015 1:11:00 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/15/2015 12:15:57 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/16/2015 9:26:27 AM by
                  (modified after loading)
Additional Info  : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

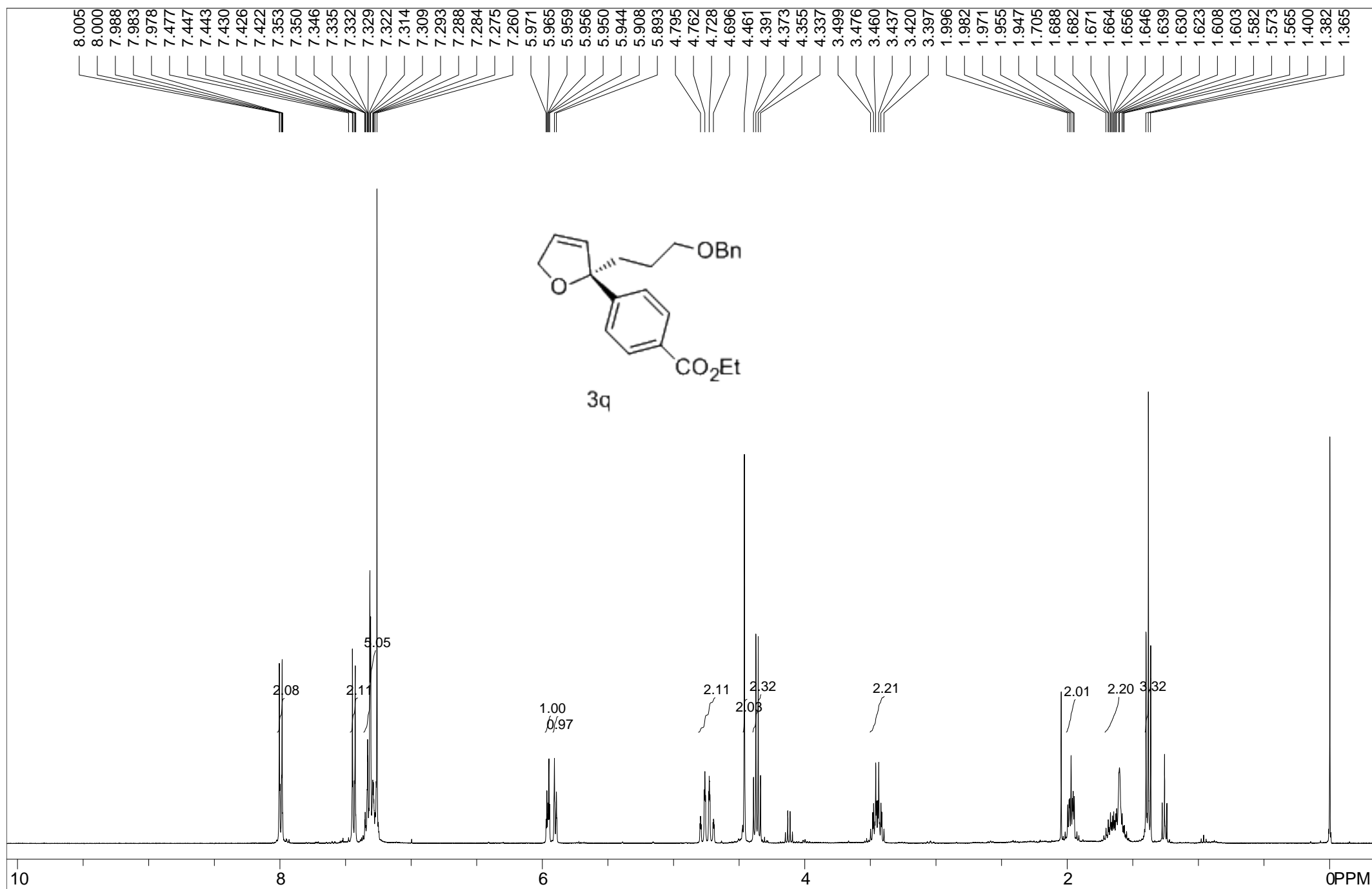
Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	8.649	VB	0.1804	1.49737e4	1280.93835	97.6366
2	9.243	BV	0.1683	362.45813	32.94715	2.3634

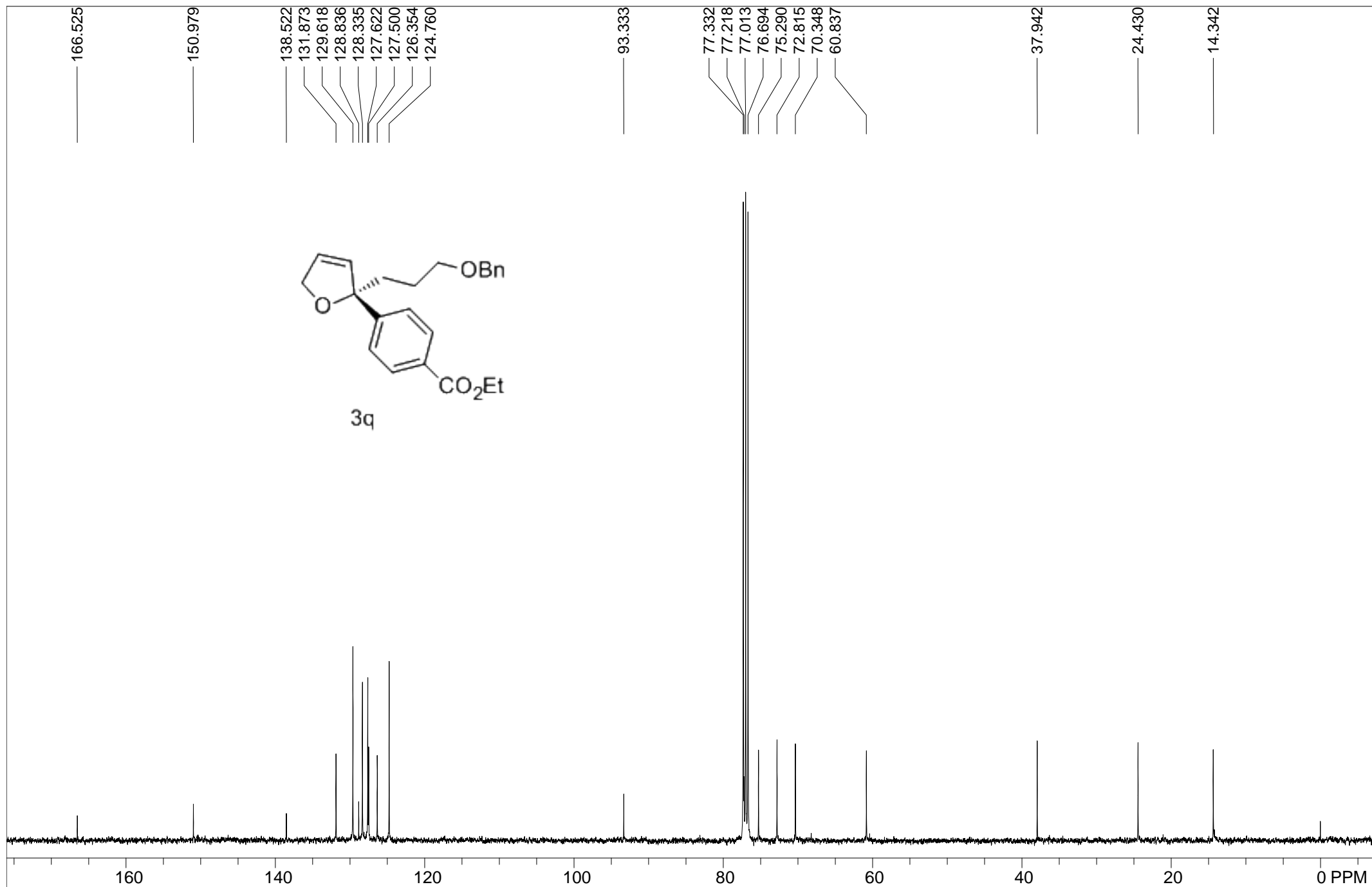
```
Totals :                1.53362e4  1313.88551
```

```

=====
*** End of Report ***
  
```

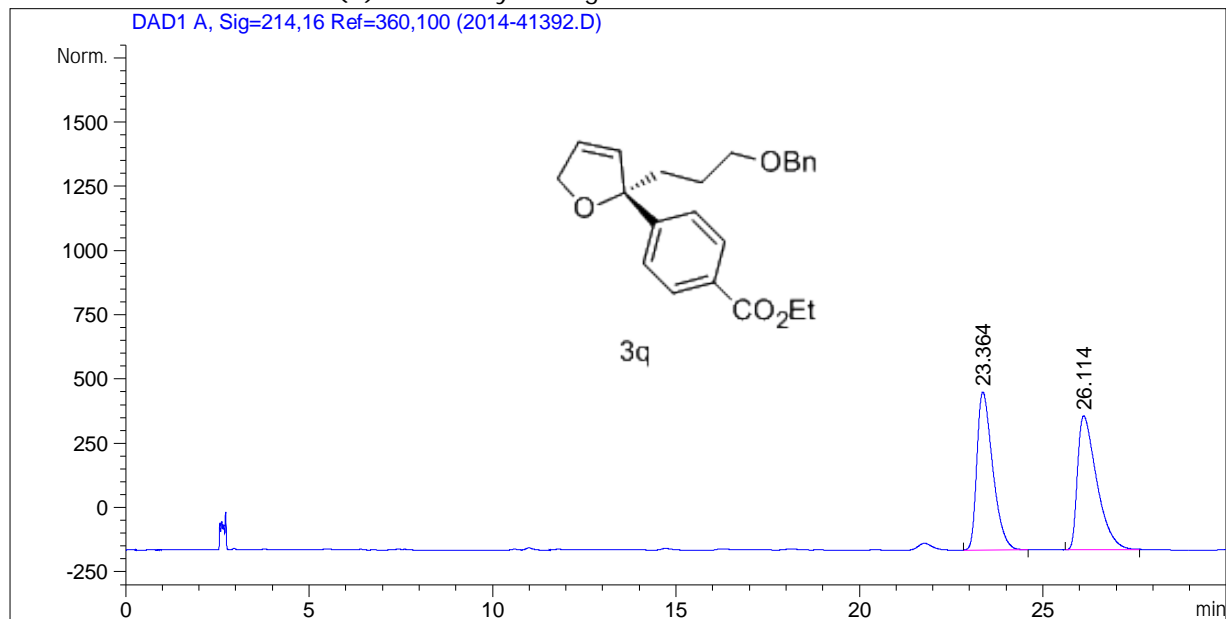


:blank line				USER: -- DATE: Dec 25 2014			
F1: 399.723	F2: 100.519	SW1: 7184		OF1: 2798.5		PTS1d: 21552 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 16	LB: 0.0	Nuts - \$5-38-01-HNMR-2.fid	



new experiment				USER: -- DATE: Dec 25 2014			
F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.0		PTS1d: 32768 , 32768	
EX: s2pul		PW: 4.9 us	PD: 1.0 sec	NA: 2012	LB: 2.0	Nuts - \$5-38-01-CNMR-C7.fid	

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 31
Injection Date : 12/30/2014 11:35:15 AM Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 12/30/2014 11:30:49 AM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 12/30/2014 4:34:28 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.364	BB	0.4497	7733.57275	258.76208	49.1585
2	26.114	BV	0.5266	7998.33496	219.25304	50.8415

Totals : 1.57319e4 478.01512

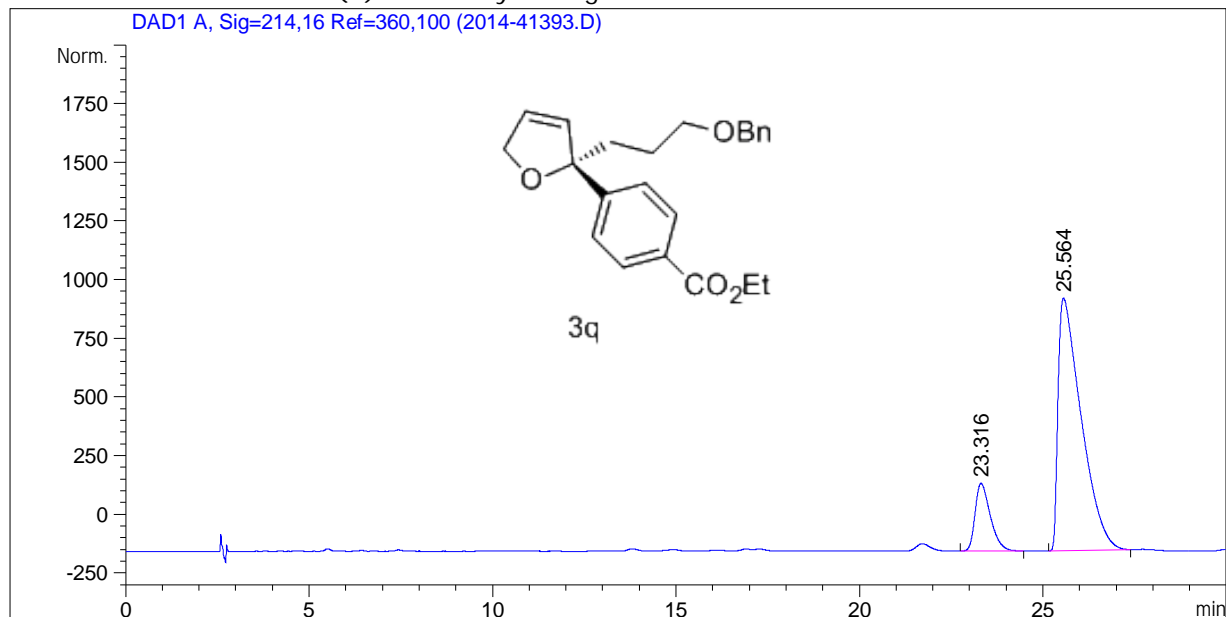
=====
*** End of Report ***

Sample Name: 5-39-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 32
Injection Date  : 12/30/2014 12:22:09 PM          Inj Volume : 5.000 µl

Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 12/30/2014 11:30:49 AM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 12/30/2014 4:31:33 PM by
                  (modified after loading)
Additional Info  : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By           :      Signal
Multiplier          :      1.0000
Dilution            :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

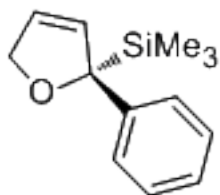
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	23.316	BB	0.4251	5740.46777	199.27560	14.9926
2	25.564	BB	0.6040	3.25482e4	744.50433	85.0074

```
Totals :                3.82886e4  943.77994
```

```

=====
*** End of Report ***
  
```

7.330
7.310
7.292
7.260
7.258
7.255
7.237
7.177
7.160
7.142
6.225
6.219
6.212
6.211
6.210
6.203
6.197
5.821
5.818
5.814
5.806
5.802
5.798
4.845
4.841
4.835
4.814
4.810
4.804
4.749
4.745
4.739
4.719
4.714
4.709



3r

2.02
1.82
0.95

0.97

0.95

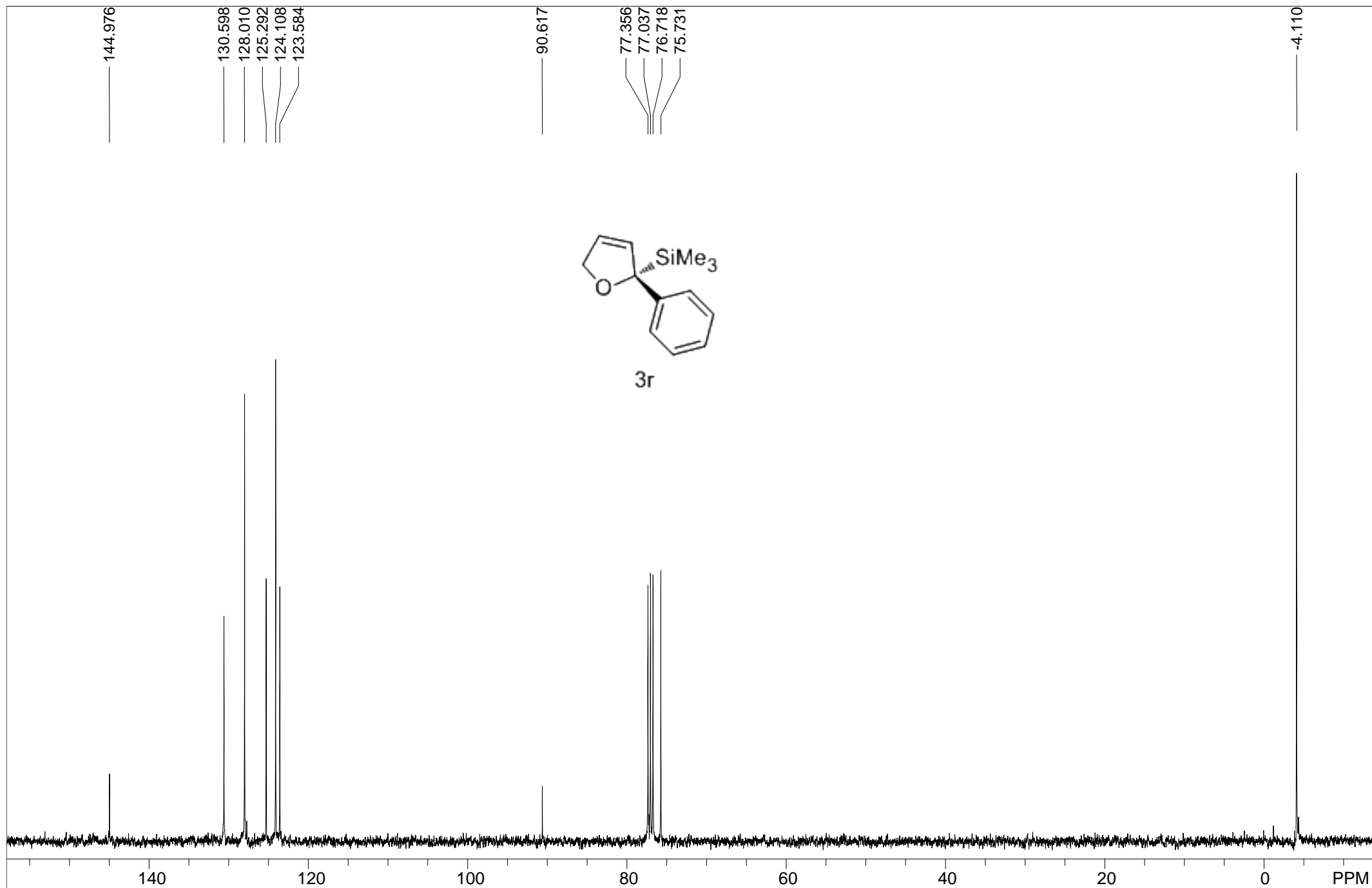
2.14

9.21

0.007

8 7 6 5 4 3 2 1 0 PPM

:blank line				USER: -- DATE: Jan 23 2015			
F1: 399.723	F2: 100.519	SW1: 7143		OF1: 2778.7		PTS1d: 21429 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 8	LB: 0.0	Nuts - \$5-99-01-HNMR-1.fid	



new experiment

USER: -- DATE: Jan 23 2015

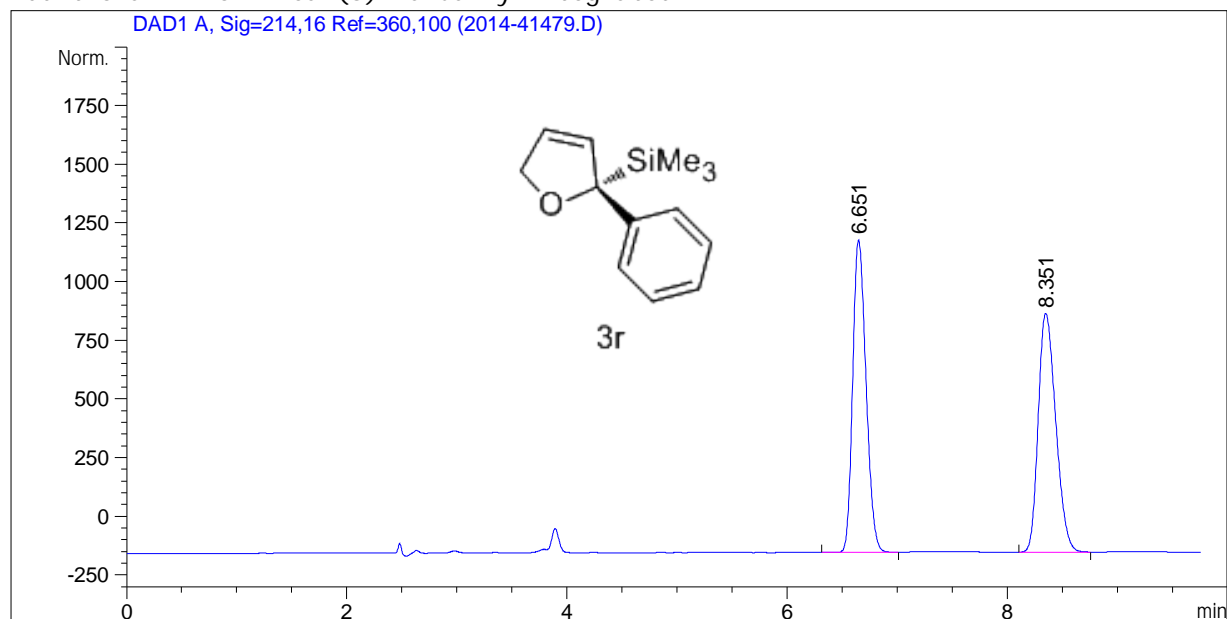
F1: 100.521	F2: 399.722	SW1: 25000	OF1: 11056.1	PTS1d: 32768 , 32768
EX: s2pul	PW: 4.9 us	PD: 1.0 sec	NA: 120	LB: 2.0

Nuts - \$5-99-01-CNMR-3.fid

Sample Name: 5-99-01-rac

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 11
Injection Date  : 1/26/2015 2:43:22 PM
                                           Inj Volume : 5.000 µl
Acq. Method    : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed   : 1/26/2015 2:34:57 PM by
                (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed   : 1/26/2015 2:58:38 PM by
                (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

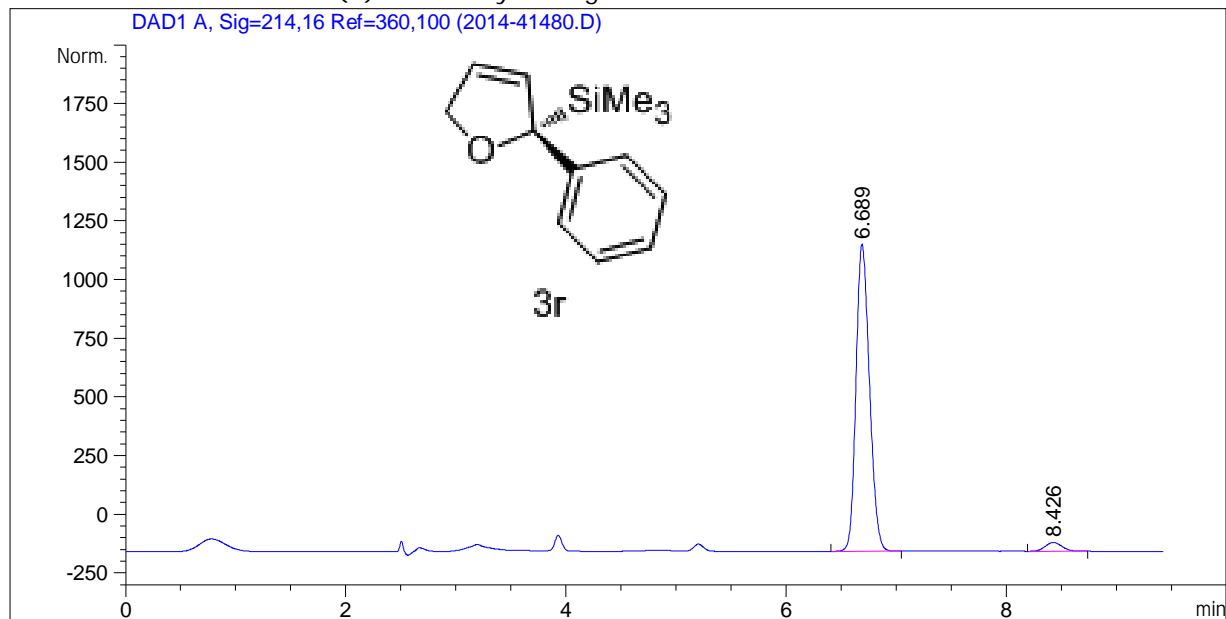
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.651	BB	0.1314	8516.81934	1010.27557	49.9638
2	8.351	VB	0.1728	8529.14941	772.28247	50.0362

```
Totals :                1.70460e4  1782.55804
```

```

=====
*** End of Report ***
  
```

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 12
Injection Date : 1/26/2015 2:56:07 PM Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/26/2015 2:34:57 PM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/26/2015 3:06:19 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

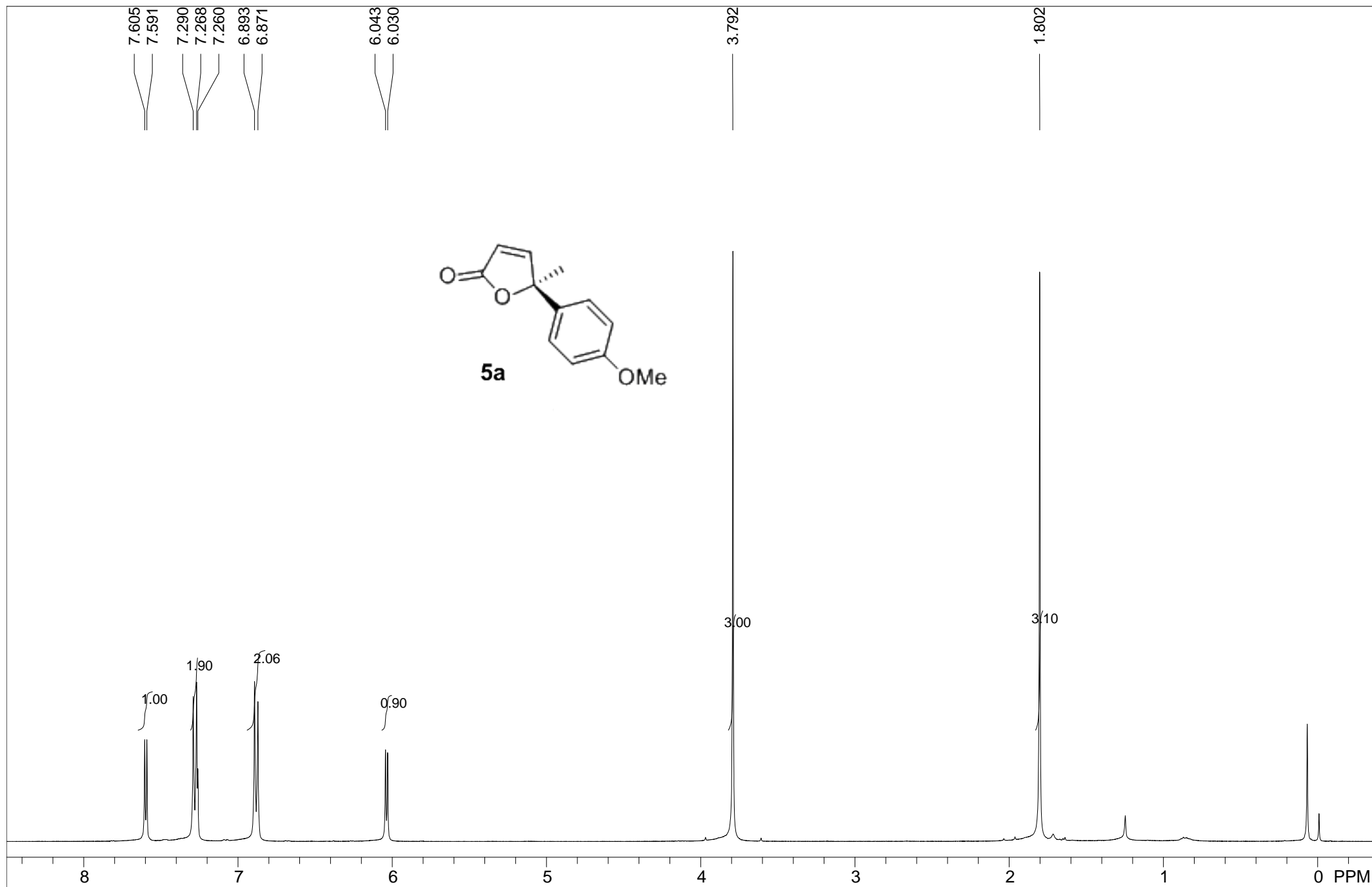
Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.689	BB	0.1321	8363.52344	984.79285	96.5345
2	8.426	BB	0.1657	300.24121	28.31061	3.4655

Totals : 8663.76465 1013.10346

=====
*** End of Report ***



Std proton;blank line

USER: -- DATE: Jan 12 2015

F1: 400.032

F2: 100.597

SW1: 7225

OF1: 2807.5

PTS1d: 21676 , 32768

EX: s2pul

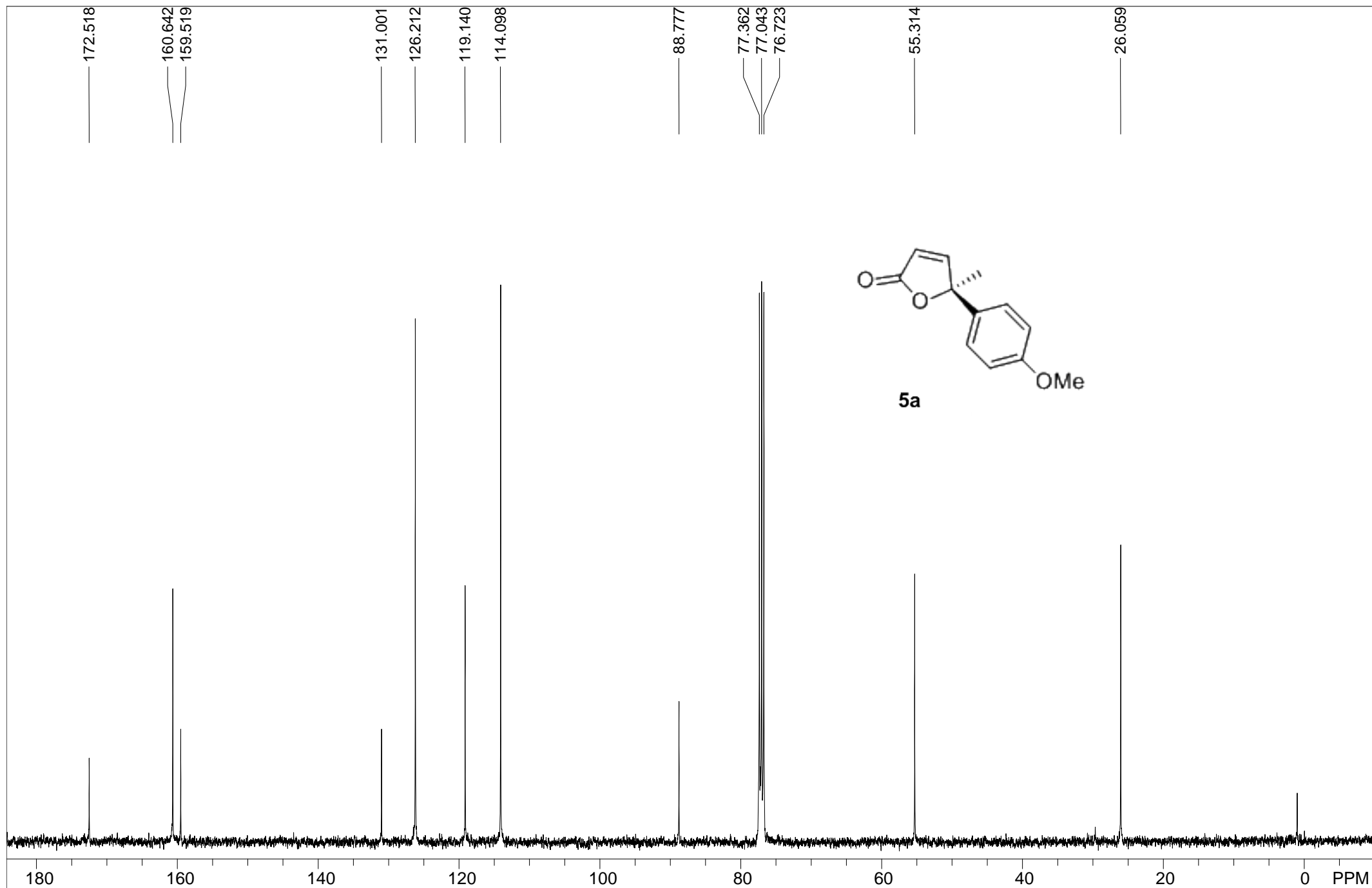
PW: 10.6 us

PD: 1.0 sec

NA: 8

LB: 0.0

Nuts - \$5-82-01-HNMR.fid



Std carbon:blank line

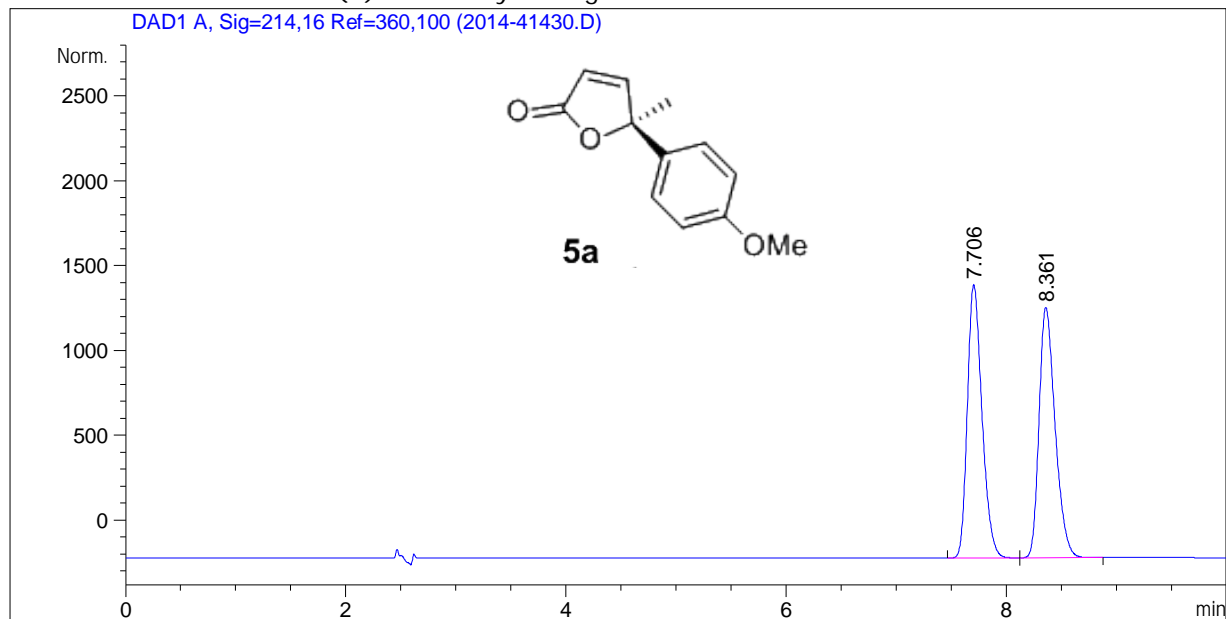
USER: -- DATE: Jan 12 2015

F1: 100.598	F2: 400.031	SW1: 24510		OF1: 10561.6		PTS1d: 31875 , 32768
EX: s2pul	PW: 4.1 us	PD: 1.0 sec		NA: 600	LB: 2.0	Nuts - \$5-82-01-CNMR-3.fid

Sample Name: 5-77-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 52
Injection Date  : 1/15/2015 12:42:33 PM           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/15/2015 12:15:57 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/16/2015 9:20:58 AM by
                  (modified after loading)
Additional Info  : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	7.706	BB	0.1420	1.06550e4	1151.22827	49.9148
2	8.361	BV	0.1553	1.06914e4	1053.94348	50.0852

```
Totals :                2.13464e4  2205.17175
```

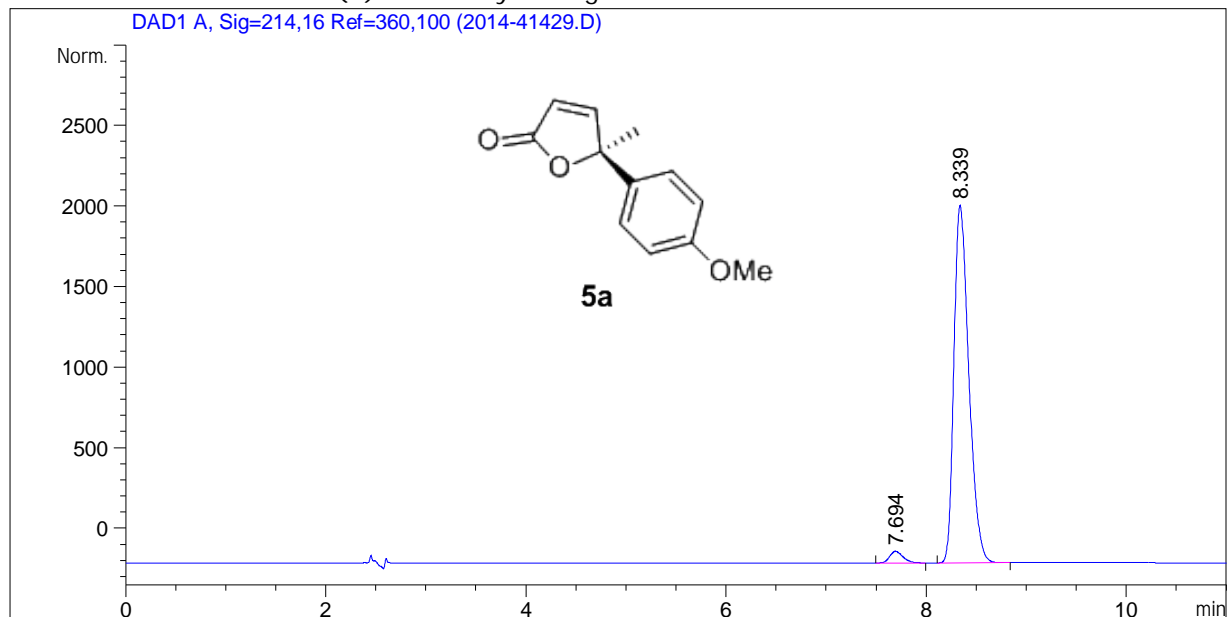
```

=====
*** End of Report ***
  
```

Sample Name: 5-83-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 51
Injection Date  : 1/15/2015 12:27:00 PM           Inj Volume : 5.000 µl
Acq. Method    : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed   : 1/15/2015 12:15:57 PM by
                (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed   : 1/16/2015 9:19:28 AM by
                (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	7.694	BB	0.1380	528.00000	58.09327	2.7862
2	8.339	BB	0.1587	1.84224e4	1780.41638	97.2138

```
Totals :                1.89504e4  1838.50965
```

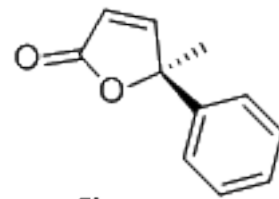
```

=====
*** End of Report ***
  
```

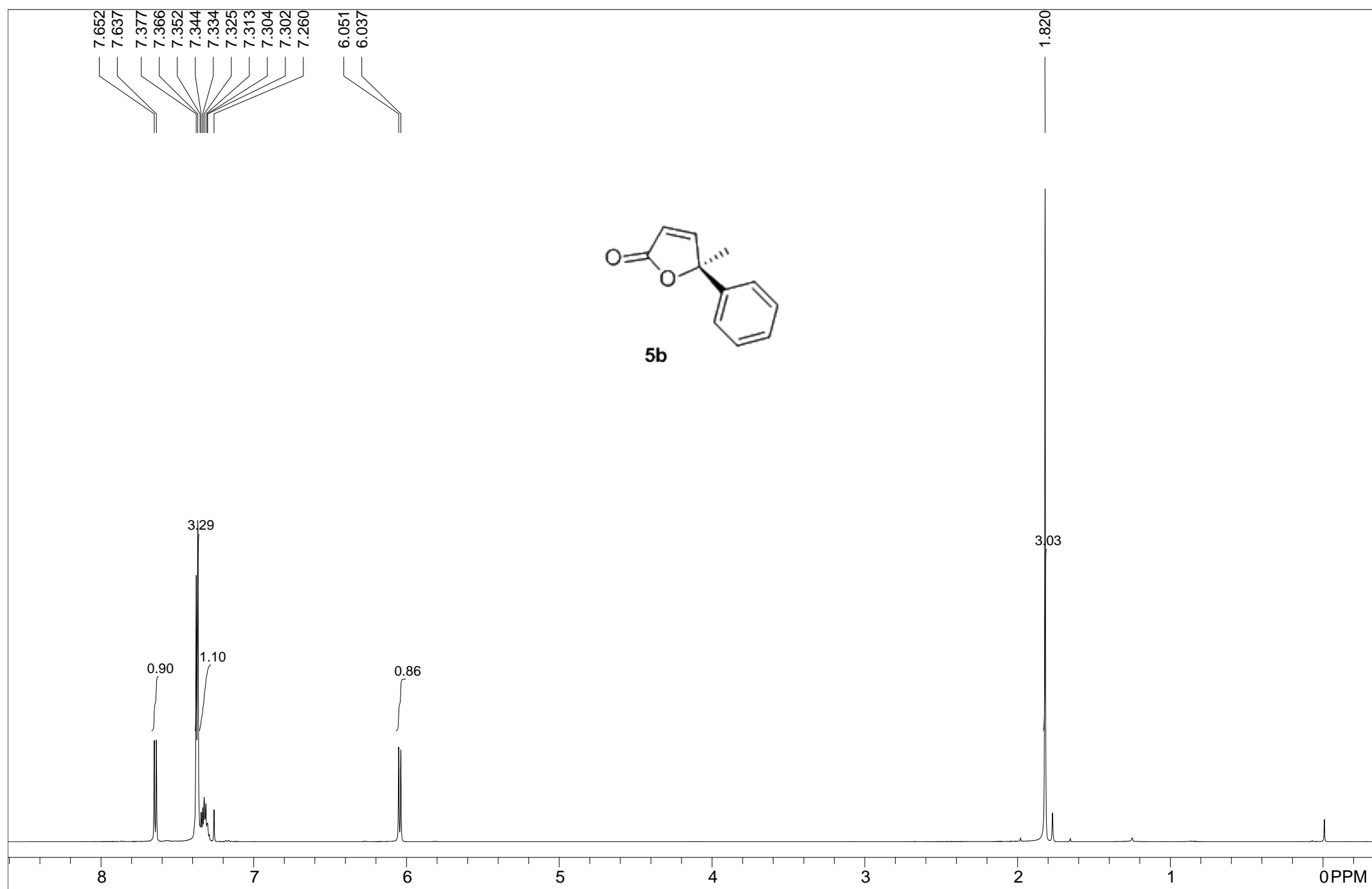
7.652
7.637
7.377
7.366
7.352
7.344
7.334
7.325
7.313
7.304
7.302
7.260

6.051
6.037

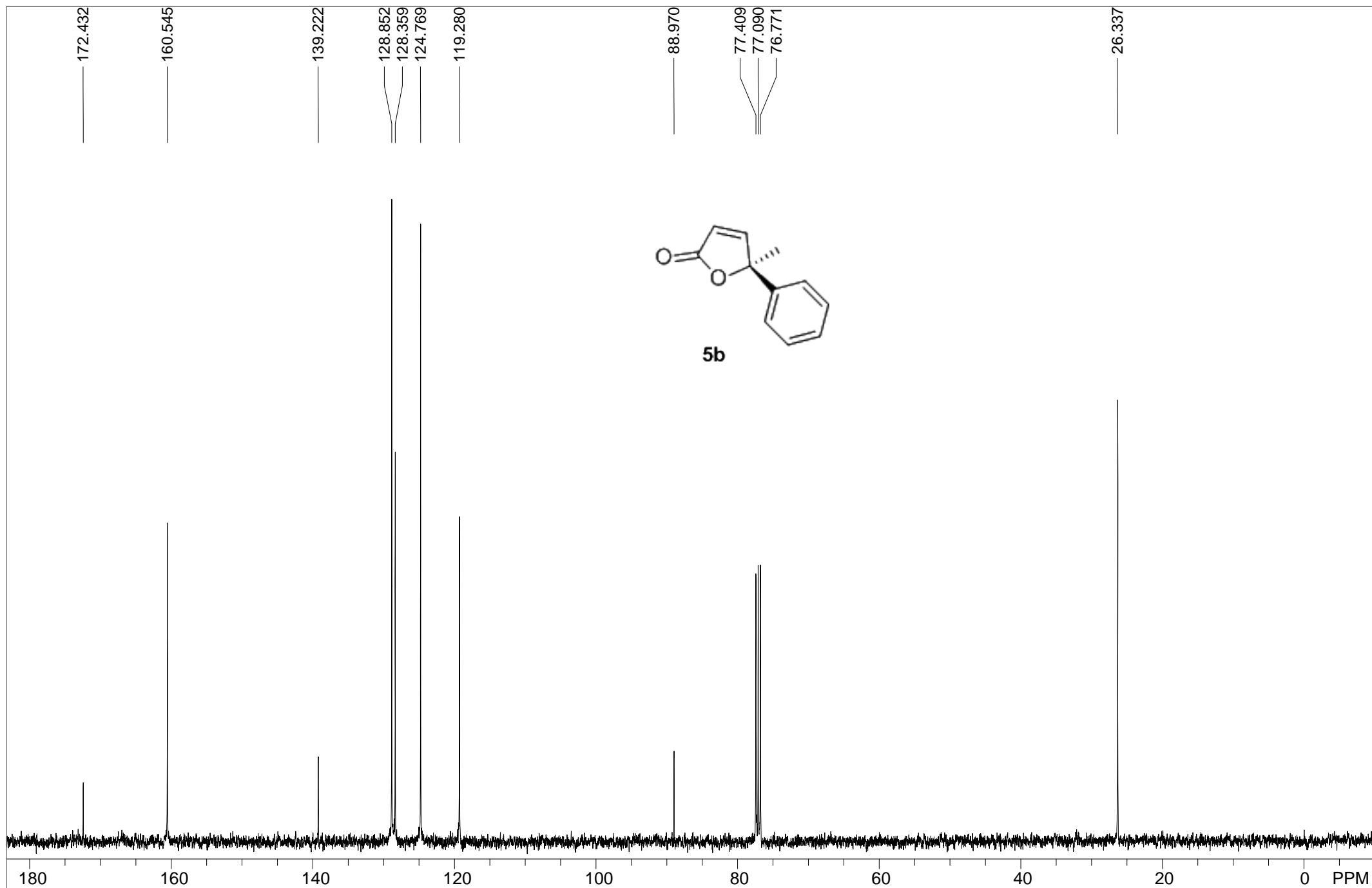
1.820



5b



:blank line				USER: -- DATE: Jan 19 2015			
F1: 399.723	F2: 100.519	SW1: 7225		OF1: 2778.6		PTS1d: 21676 , 32768	
EX: s2pul	PW: 4.4 us	PD: 1.0 sec		NA: 12	LB: 0.0	Nuts - \$5-90-01-HNMR.fid	

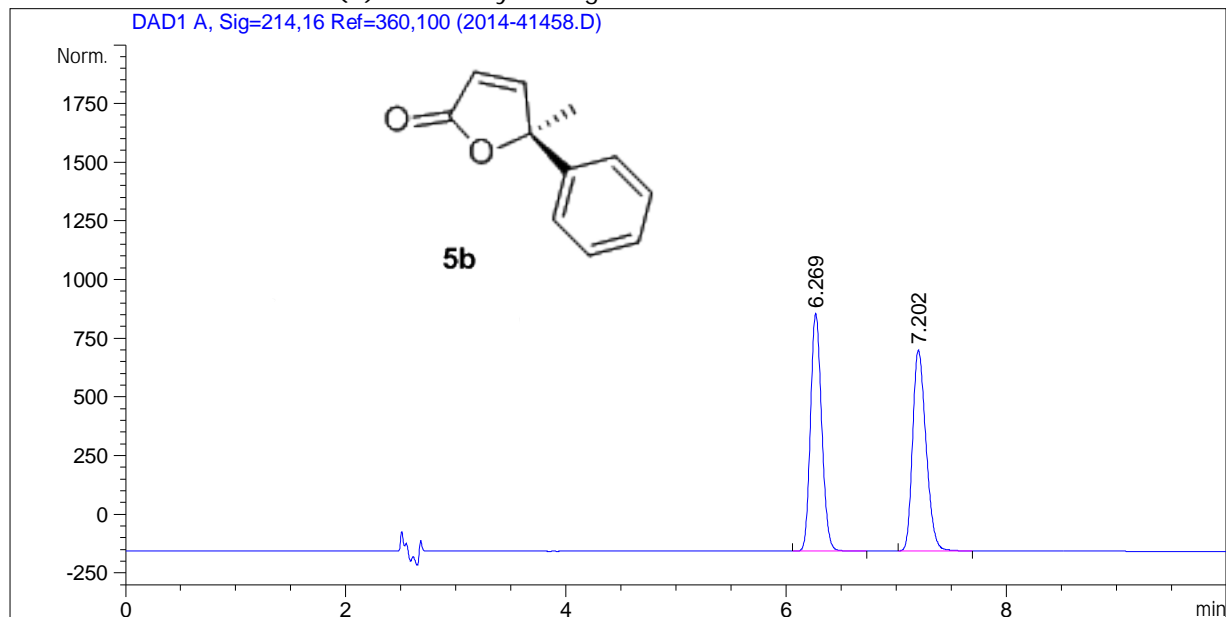


new experiment

USER: -- DATE: Jan 19 2015

F1: 100.521	F2: 399.722	SW1: 25000		OF1: 11056.1		PTS1d: 32768 , 32768
EX: s2pul	PW: 4.9 us	PD: 1.0 sec		NA: 80	LB: 2.0	Nuts - \$5-90-01-CNMR-2.fid

=====
Acq. Operator :
Sample Operator :
Acq. Instrument : SFC Location : Vial 51
Injection Date : 1/19/2015 2:16:55 PM Inj Volume : 5.000 µl
Acq. Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/19/2015 2:09:51 PM by
(modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed : 1/19/2015 3:35:48 PM by
(modified after loading)
Additional Info : Peak(s) manually integrated



=====
Area Percent Report
=====

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.269	BB	0.1106	4817.13818	680.27386	49.7266
2	7.202	VB	0.1319	4870.11279	574.23053	50.2734

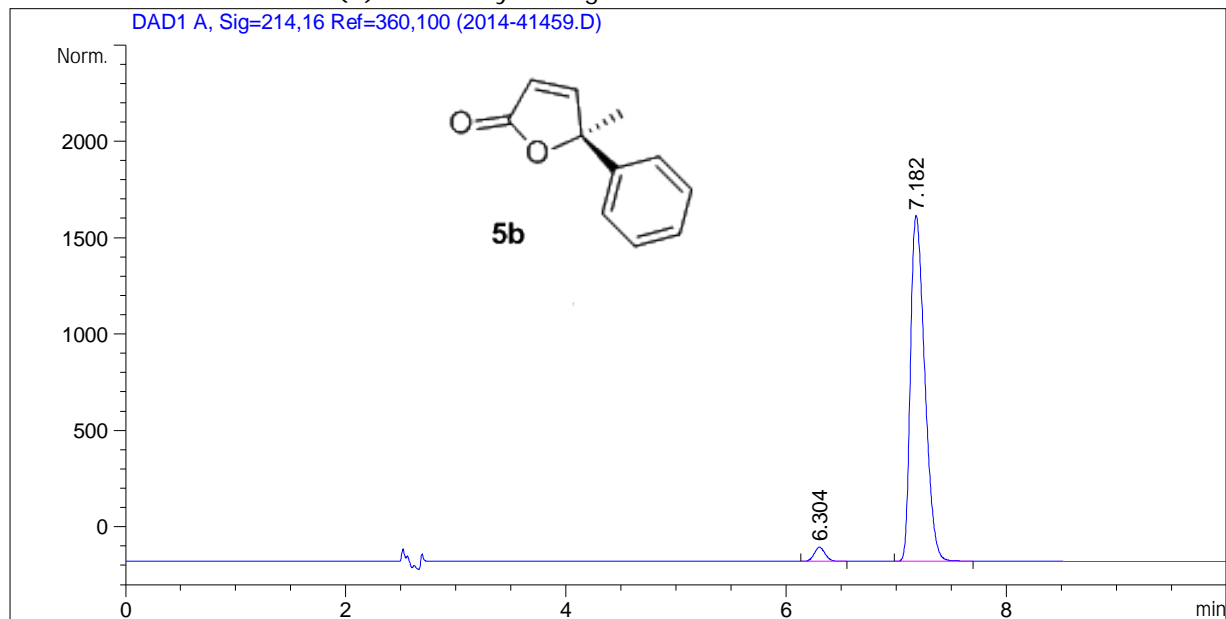
Totals : 9687.25098 1254.50439

=====
*** End of Report ***

Sample Name: 5-90-01

```

=====
Acq. Operator   :
Sample Operator :
Acq. Instrument : SFC                               Location : Vial 52
Injection Date  : 1/19/2015 2:33:01 PM
                                           Inj Volume : 5.000 µl
Acq. Method     : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/19/2015 2:09:51 PM by
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\AGILENT_SFC6.M
Last changed    : 1/19/2015 4:00:53 PM by
                  (modified after loading)
Additional Info : Peak(s) manually integrated
  
```



```

=====
                          Area Percent Report
=====
  
```

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=214,16 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.304	BB	0.1077	402.85880	58.21651	3.0450
2	7.182	BB	0.1399	1.28273e4	1426.82312	96.9550

```
Totals :                      1.32302e4  1485.03963
```

```

=====
*** End of Report ***
  
```