Supporting Information for

Asymmetric Construction of Fluorinated Imidazolidines *via* Cu(I)-Catalyzed *exo'*-Selective 1,3-Dipolar Cycloaddition of Azomethine Ylides with Fluorinated Imines

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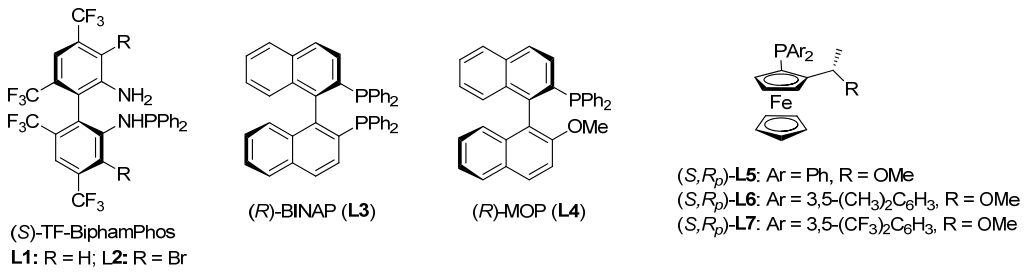
I. General Remarks

^{1}H NMR spectra were recorded on a VARIAN Mercury 300 MHz or Bruker 400 MHz spectrometer in $CDCl_3$. Chemical shifts are reported in ppm with the internal TMS signal at 0.0 ppm as a standard. The data are reported as (s = single, d = double, t = triple, q = quartet, m = multiple or unresolved, and brs = broad single). ^{13}C NMR spectra were recorded on a Bruker 100 MHz or 75 MHz spectrometer in $CDCl_3$ or DMSO-d_6. Chemical shifts are reported in ppm with the internal chloroform signal at 77.0 ppm as a standard. Commercially available reagents were used without further purification. All reactions were monitored by TLC with silica gel-coated plates. Diastereomeric ratios were determined from crude ^{1}H NMR or HPLC analysis. Enantiomeric ratios were determined by HPLC, using a chiralpak AD-H column, a chiralpak AS-H column or a chiralcel OD-H column with hexane and *i*-PrOH as solvents, or determined by GC using β-dex 325 column. Chiral ligand (S,R_p)-PPFOMe and Fluorinated imines was prepared according to the literature procedure.[1,2] The racemic adducts were obtained by using AgOAc/PPh_3 as the catalyst. The absolute configuration of (2*R*,4*R*,5*R*)-**3s** was determined unequivocally according to the X-ray diffraction analysis, and those of other adducts were deduced on the basis of these results.

II. Ligand Screening for Asymmetric 1,3-Dipolar Cycloaddition of Azomethine Ylides with Fluorinated Imines



(*S*)-TF-BiphamPhos
L1: R = H; **L2:** R = Br

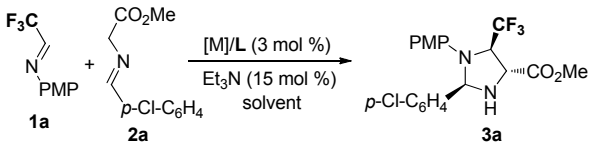
(*R*)-BINAP (**L3**)

(*R*)-MOP (**L4**)

(S,R_p)-**L5**: Ar = Ph, R = OMe
(S,R_p)-**L6**: Ar = 3,5-$(CH_3)_2C_6H_3$, R = OMe
(S,R_p)-**L7**: Ar = 3,5-$(CF_3)_2C_6H_3$, R = OMe

Figure 1. Screened chiral ligands.

Table 1. Optimization for catalytic asymmetric 1,3-dipolar cycloaddition of imino ester **2a** with trifluoromethylated imine **1a**[a]



Entry	L	[M][b]	Solvent	Temp. (°C)	Time (min)	yield[c] (%)	dr[d]	ee[e] (%)
1	**L1**	AgOAc	DCM	rt	10	85	93:7	23
2	**L1**	$CuBF_4$	DCM	rt	10	88	91:9	35
3	**L2**	AgOAc	DCM	rt	10	80	83:17	33
4	**L2**	$CuBF_4$	DCM	rt	10	82	62:38	71
5	**L3**	AgOAc	DCM	rt	60	75	86:14	16
6	**L3**	$CuBF_4$	DCM	rt	60	85	39:61	80
7	**L4**	AgOAc	DCM	rt	10	86	98:2	55
8	**L4**	$CuBF_4$	DCM	rt	10	88	98:2	55
9	**L5**	AgOAc	DCM	rt	10	90	98:2	77
10	**L5**	$CuBF_4$	DCM	rt	10	95	85:15	91
11[f]	**L5**	$CuBF_4$	DCM	rt	10	95	87:13	90
12	**L6**	$CuBF_4$	DCM	rt	10	92	83:17	93
13	**L7**	$CuBF_4$	DCM	rt	10	94	65:32	72
14	**L5**	$CuBF_4$	PhMe	rt	10	90	94:6	93
15	**L5**	$CuBF_4$	THF	rt	10	93	95:5	92
16	**L5**	$CuBF_4$	EtOAc	rt	10	93	95:5	93
17	**L5**	$CuBF_4$	MeOH	rt	10	90	88:12	86
18	**L5**	$CuBF_4$	ether	rt	10	94	96:4	94
19	**L5**	$CuBF_4$	MeOH	-20	60	92	98:2	95
20	**L5**	$CuBF_4$	ether	-20	60	93	98:2	97
21[g]	**L5**	$CuBF_4$	ether	-20	120	90	98:2	97

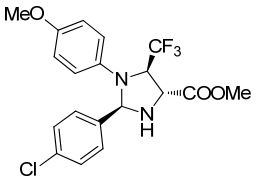
[a] All reactions were carried out with 0.35 mmol of **2a** and 0.23 mmol of **1a** in 2 mL of solvent. [b] $CuBF_4$ = $Cu(CH_3CN)_4BF_4$. [c] Isolated yield. [d] dr was determined by the crude ^1H NMR and HPLC analysis. [e] ee was determined by chiral HPLC analysis. [f] $CuBF_4$ is 3 mol % and **L5** is 6.6 mol %. [g] 1 mol % catalyst loading.

III. General Procedure for the Synthesis of Racemic Cycloadducts.

Under argon atmosphere, PPh_3 (6.6 mg, 0.025 mmol) and AgOAc (3.8 mg, 0.023 mmol) were dissolved in 2 mL of DCM, and stirred at room temperature for about 0.5 h. Then, imine substrate (0.35 mmol), Et_3N (0.03 mmol) and fluorinated imines (0.23 mmol) were added sequentially. Once starting material was consumed (monitored by TLC), the organic solvent was removed and the residue was purified by column chromatography to give the cycloaddition product, which was used as the racemic sample for the HPLC analysis.

IV. General Procedure for Asymmetric 1,3-Dipolar Cycloaddition of Azomethine Ylides with Fluorinated Imines.

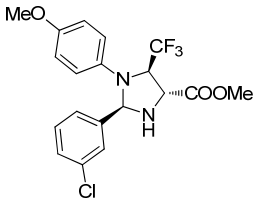
Under argon atmosphere, (S,R_p)-PPFOMe (**L5**) (3.3 mg, 0.0077 mmol) and $Cu(CH_3CN)_4BF_4$ (2.2 mg, 0.007 mmol) were dissolved in 2 mL of ether, and stirred at room temperature for about 0.5 h. After imine substrate (0.35 mmol) was added, the mixture was dropped to -20 ^oC. Then, fluorinated imines (0.23 mmol) and Et_3N (0.03 mmol) was added sequentially. Once starting material was consumed (monitored by TLC), the mixture was filtered through celite and the filtrate was concentrated to dryness. The residue was purified by column chromatography to give the corresponding cycloaddition product, which was then directly analyzed by HPLC analysis to determine the enantiomeric excess.



(3a)

(2*R*,4*R*,5*R*)-methyl 2-(4-chlorophenyl)-1-(4-methoxyphenyl)-5-(trifluoromethyl) imidazolidine-4-carboxylate

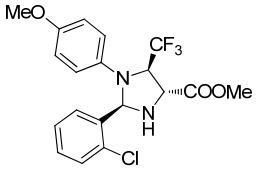
The title compound was prepared according to the general procedure as described above in 95% yield; $[\alpha]^{25}_D$ = -44.2 (*c* 0.97, $CHCl_3$); ^1H NMR ($CDCl_3$, TMS, 300 MHz) δ 7.49 (d, *J* = 8.1 Hz, 2H), 7.35 (d, *J* = 8.1 Hz, 2H), 6.76 (d, *J* = 8.4 Hz, 2H), 6.67(d, *J* = 8.4 Hz, 2H), 5.40 (s, 1H), 4.62 (q, *J* = 6.6 Hz, 1H), 4.32 (s, 1H), 3.79 (s, 3H), 3.72 (s, 3H), 2.66 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.4, 154.0, 139.5, 137.5, 134.7, 129.2, 128.1, 125.8 (q, *J* = 280.6 Hz), 117.2, 114.5, 81.2, 65.5 (q, *J* = 30.6 Hz), 60.5, 55.4, 53.0; IR (KBr) ν 3340, 2953, 2845, 1742, 1513, 1450, 1346, 1260, 1175, 1134, 1036, 931, 815, 680, 590 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AD-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 9.49 and 11.47 min.



(3b)

(2*R*,4*R*,5*R*)-methyl 2-(3-chlorophenyl)-1-(4-methoxyphenyl)-5-(trifluoromethyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 85% yield. $[\alpha]^{25}_{D}$ = -42.0 (*c* 0.29, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.54 (s, 1H), 7.44-7.42 (m, 1H), 7.32-7.31 (m, 2H), 6.77 (d, *J* = 9.2 Hz, 2H), 6.69 (d, *J* = 9.2 Hz, 2H), 5.40 (s, 1H), 4.61 (q, *J* = 6.8 Hz, 1H), 4.31 (s, 1H), 3.79 (s, 3H), 3.72 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.4, 154.1, 141.1, 139.5, 134.8, 130.3, 129.1, 126.9, 125.7 (q, *J* = 280.8 Hz), 124.8, 117.3, 114.6, 81.3, 65.6 (q, *J* = 30.6 Hz), 60.5, 55.4, 53.0; IR (KBr) ν 3318, 2948, 2920, 2815, 1750, 1517, 1395, 1251, 1138, 1036, 950, 759, 590 cm^{-1}. HRMS: calcd. for $C_{19}H_{18}ClF_3N_2O_3$ + H^+: 415.1031, found: 415.1037. The product was analyzed by HPLC to determine the enantiomeric excess: 94% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 7.81 and 11.19 min.

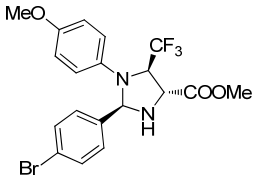


(3c)

(2*R*,4*R*,5*R*)-methyl 2-(2-chlorophenyl)-1-(4-methoxyphenyl)-5-(trifluoromethyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield. $[\alpha]^{25}_{D}$ = +15.1 (*c* 1.37, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 300 MHz) δ 7.62-7.60 (m, 1H), 7.45-7.42 (m, 1H), 7.31-7.23 (m, 2H), 6.76 (d, *J* = 9.0 Hz, 2H), 6.63 (d, *J* = 9.0 Hz, 2H), 5.85 (s, 1H), 4.60 (q, *J* = 6.9 Hz, 1H), 4.32 (s, 1H), 3.79 (s, 3H), 3.71 (s, 3H), 2.78 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.6, 153.8, 139.4, 136.3, 133.5, 130.0, 129.9, 127.7, 127.4, 125.7 (q, *J* = 280.9 Hz), 116.6, 114.6, 78.0, 65.4 (q, *J* = 30.9 Hz), 60.4, 55.4, 53.0; IR (KBr) ν 3319, 2910, 2834,

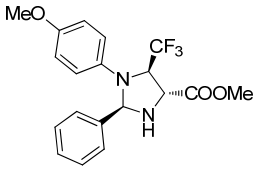
1744, 1510, 1390, 1252, 1157, 1143, 1030, 955, 750, 591 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 93% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 7.58 and 8.47 min.



(3d)

(2*R*,4*R*,5*R*)-methyl 2-(4-bromophenyl)-1-(4-methoxyphenyl)-5-(trifluoromethyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 94% yield. $[\alpha]^{25}_D$ = -56.2 (*c* 0.96, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.51 (d, *J* = 8.4 Hz, 2H), 7.42 (d, *J* = 8.4 Hz, 2H), 6.76 (d, *J* = 9.2 Hz, 2H), 6.67 (d, *J* = 9.2 Hz, 2H), 5.39 (s, 1H), 4.61 (q, *J* = 6.8 Hz, 1H), 4.31 (s, 1H), 3.79 (s, 3H), 3.72 (s, 3H), 2.66 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.4, 154.0, 139.5, 138.0, 132.1, 128.4, 125.7 (q, *J* = 280.7 Hz), 122.8, 117.2, 114.6, 81.2, 65.6 (q, *J* = 30.6 Hz), 60.5, 55.4, 53.0; IR (KBr) ν 3340, 2950, 2840, 1714, 1522, 1460, 1251, 1134, 1050, 928, 816, 746, 588 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 10.01 and 12.77 min.

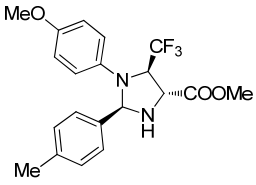


(3e)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-phenyl-5-(trifluoromethyl)imidazo-lidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 90% yield. $[\alpha]^{25}_D$ = -35.6 (*c* 1.35, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.54 (d, *J* = 7.2 Hz, 2H), 7.40-7.33 (m, 3H), 6.75 (d, *J* = 9.2 Hz, 2H), 6.69 (d, *J* =

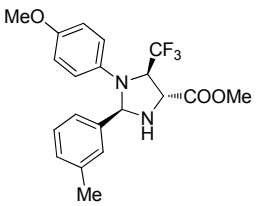
9.2 Hz, 2H), 5.43 (s, 1H), 4.63 (q, *J* = 7.2 Hz, 1H), 4.32 (s, 1H), 3.78 (s, 3H), 3.71 (s, 3H), 2.69 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 153.7, 139.8, 139.0, 129.0, 128.9, 126.6, 125.9 (q, *J* = 280.8 Hz), 116.9, 114.5, 81.8, 65.5 (q, *J* = 30.6 Hz), 60.6, 55.5, 53.0; IR (KBr) ν 3365, 2950, 2847, 1750, 1514, 1422, 1366, 1240, 1138, 1036, 930, 823, 701, 620 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 95% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 7.85 and 11.61 min.



(3f)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-(p-tolyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

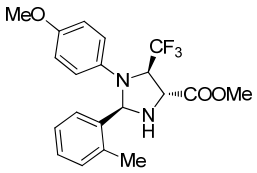
The title compound was prepared according to the general procedure as described above in 91% yield. $[\alpha]^{25}_D$ = -49.6 (*c* 1.37, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.43 (d, *J* = 7.6 Hz, 2H), 7.18 (d, *J* = 7.6 Hz, 2H), 6.75 (d, *J* = 9.2 Hz, 2H), 6.69 (d, *J* = 9.2 Hz, 2H), 5.40 (s, 1H), 4.63 (q, *J* = 6.8 Hz, 1H), 4.31 (s, 1H), 3.78 (s, 3H), 3.71 (s, 3H), 2.69 (brs, 1H), 2.34 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 153.6, 139.9, 138.7, 136.0, 129.6, 126.5, 125.9 (q, *J* = 280.9 Hz), 116.8, 114.5, 81.6, 65.4 (q, *J* = 30.5 Hz), 60.6, 55.4, 52.9, 21.1; IR (KBr) ν 3318, 2930, 2847, 1742, 1513, 1450, 1379, 1138, 1039, 960, 817, 755, 590 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 8.03 and 9.95 min.



(3g)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-(m-tolyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

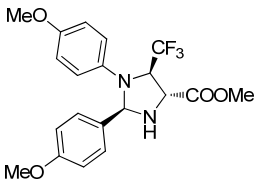
The title compound was prepared according to the general procedure as described above in 85% yield. $[\alpha]^{25}_{D}$ = -38.9 (*c* 0.85, $CHCl_3$); H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.35-7.33 (m, 2H), 7.28-7.24 (m, 1H), 7.16 (d, *J* = 7.6 Hz, 1H), 6.76 (d, *J* = 9.2 Hz, 2H), 6.69 (d, *J* = 9.2 Hz, 2H), 5.38 (s, 1H), 4.64 (q, *J* = 6.8 Hz, 1H), 4.31 (s, 1H), 3.78 (s, 3H), 3.71 (s, 3H), 2.35 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 153.6, 139.9, 138.9, 138.6, 129.6, 128.9, 127.3, 125.9 (q, *J* = 283.7 Hz), 123.5, 116.8, 114.5, 81.8, 65.4 (q, *J* = 30.5 Hz), 60.6, 55.4, 52.9, 21.4; IR (KBr) ν 3345, 2930, 2832, 1747, 1513, 1364, 1217, 1168, 1137, 1040, 961, 812, 756, 588 cm^{-1}. HRMS: calcd. for $C_{20}H_{21}F_3N_2O_3 + H^+$: 395.1577, found: 395.1579. The product was analyzed by HPLC to determine the enantiomeric excess: 92% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 7.00 and 10.68 min.



(3h)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-(o-tolyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

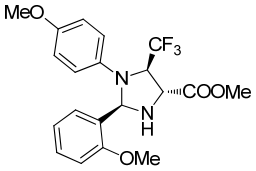
The title compound was prepared according to the general procedure as described above in 82% yield. $[\alpha]^{25}_{D}$ = -48.1 (*c* 1.35, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.54-7.52 (m, 1H), 7.33-7.23 (m, 2H), 7.18-7.17 (m, 1H), 6.75 (d, *J* = 9.2 Hz, 2H), 6.59 (d, *J* = 9.2 Hz, 2H), 5.59 (s, 1H), 4.59 (q, *J* = 6.8 Hz, 1H), 4.32 (s, 1H), 3.77 (s, 3H), 3.71 (s, 3H), 2.57 (s, 3H), 2.53 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 153.7, 139.9, 138.7, 136.0, 129.6, 126.5, 125.9 (q, *J* = 280.9 Hz), 116.8, 114.5, 81.6, 65.4 (q, *J* = 30.5 Hz), 60.6, 55.5, 53.0, 21.2; IR (KBr) ν 3319, 2948, 2926, 1742, 1513, 1449, 1381, 1208, 1165, 1135, 1039, 931, 817, 750, 589 cm^{-1}. HRMS: calcd. for $C_{20}H_{21}F_3N_2O_3 + H^+$: 395.1577, found: 395.1575. The product was analyzed by HPLC to determine the enantiomeric excess: 96% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 8.03 and 9.93 min.



(3i)

(2*R*,4*R*,5*R*)-methyl 1,2-bis(4-methoxyphenyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 88% yield. $[\alpha]^{25}_{D}$ = -50.6 (*c* 1.56, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.46 (d, *J* = 8.8 Hz, 2H), 6.90 (d, *J* = 8.8 Hz, 2H), 6.75 (d, *J* = 9.2 Hz, 2H), 6.69 (d, *J* = 9.2 Hz, 2H), 5.37 (s, 1H), 4.62 (q, *J* = 7.6 Hz, 1H), 4.31 (s, 1H), 3.80 (s, 3H), 3.78 (s, 3H), 3.71 (s, 3H), 2.65 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 159.9, 153.7, 139.9, 131.0, 127.9, 125.9 (q, *J* = 280.8 Hz), 117.0, 114.5, 114.2, 81.4, 65.4 (q, *J* = 30.5 Hz), 60.5, 55.4, 55.2, 52.9; IR (KBr) ν 3380, 2960, 2831, 1742, 1513, 1451, 1383, 1249, 1169, 1135, 1036, 931, 840, 690, 593 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 12.73 and 16.73 min.

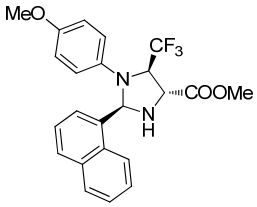


(3j)

(2*R*,4*R*,5*R*)-methyl 2-(2-methoxyphenyl)-1-(4-methoxyphenyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 76% yield. $[\alpha]^{25}_{D}$ = +4.7 (*c* 0.58, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.49 (d, *J* = 7.6 Hz, 1H), 7.33-7.31 (m, 1H), 6.95-6.93 (m, 2H), 6.75 (d, *J* = 8.8 Hz, 2H), 6.65 (d, *J* = 8.8 Hz, 2H), 5.84 (s, 1H), 4.59 (q, *J* = 6.8 Hz, 1H), 4.32 (s, 1H), 3.94 (s, 3H), 3.78 (s, 3H), 3.71 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.7, 157.2, 153.5, 139.9, 129.8, 126.8, 126.6, 125.8 (q, *J* = 280.9 Hz), 121.1, 116.5, 114.4, 110.5, 75.6, 65.2 (q, *J* = 30.7 Hz), 60.5, 55.6, 55.4, 52.9; IR (KBr) ν 3340, 2956, 2928, 1741,

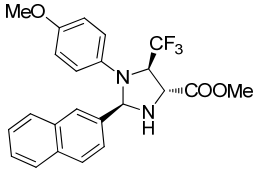
1513, 1446, 1388, 1252, 1202, 1176, 1134, 931, 1036, 817, 699, 585 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 96% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 10.27 and 15.63 min.



(3k)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-(naphthalen-1-yl)-5-(trifluoromethyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 85% yield. $[\alpha]^{25}_D$ = -58.4 (*c* 1.42, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 8.47 (d, *J* = 8.8 Hz, 1H), 7.91 (d, *J* = 8.0 Hz, 1H), 7.85 (d, *J* = 8.4 Hz, 1H), 7.74 (d, *J* = 7.6 Hz, 1H), 7.63-7.61 (m, 1H), 7.57-7.55 (m, 1H), 7.44-7.41 (m, 1H), 6.72 (d, *J* = 9.2 Hz, 2H), 6.62 (d, *J* = 9.2 Hz, 2H), 6.20 (s, 1H), 4.68 (q, *J* = 6.8 Hz, 1H), 4.38 (s, 1H), 3.83 (s, 3H), 3.69 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.6, 153.4, 139.8, 133.9, 133.5, 130.9, 129.2, 128.5, 126.6, 125.90, 125.86 (q, *J* = 281.0 Hz) ,125.8, 124.0, 123.3, 116.2, 114.5, 78.8, 65.3 (q, *J* = 30.7 Hz), 60.5, 55.4, 52.9; IR (KBr) ν 3328, 2956, 1743, 1515, 1425, 1250, 1134, 1037, 929, 817, 763, 669, 588 cm^{-1}. HRMS: calcd. for $C_{23}H_{21}F_3N_2O_3 + H^+$: 431.1577, found: 431.1576. The product was analyzed by HPLC to determine the enantiomeric excess: 92% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 7.29 and 8.59 min.

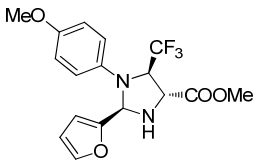


(3l)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-(naphthalen-2-yl)-5-(trifluoromethyl)

imidazolidine-4-carboxylate

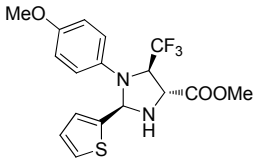
The title compound was prepared according to the general procedure as described above in 76% yield. $[\alpha]^{25}_{D}$ = -68.1 (*c* 1.03, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 8.00 (s, 1H), 7.89-7.83 (m, 3H), 7.68-7.66 (m, 1H), 7.50-7.48 (m, 2H), 6.74 (s, 4H), 5.59 (s, 1H), 4.70 (q, *J* = 6.8 Hz, 1H), 4.36 (s, 1H), 3.81 (s, 3H), 3.69 (s, 3H), 2.78 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 153.8, 139.8, 136.4, 133.6, 133.3, 128.9, 128.2, 127.7, 126.4, 126.3, 126.2, 125.9 (q, *J* = 280.9 Hz), 124.0, 117.1, 114.5, 82.0, 65.5 (q, *J* = 30.5 Hz), 60.6, 55.4, 53.0; IR (KBr) ν 3324, 2956, 1743, 1513, 1425, 1250, 1134, 1037, 953, 815, 765, 677, 588 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 95% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 10.63 and 16.58 min.



(3m)

(2*R*,4*R*,5*R*)-methyl 2-(furan-2-yl)-1-(4-methoxyphenyl)-5-(trifluoromethyl)imida zolidine-4-carboxylate

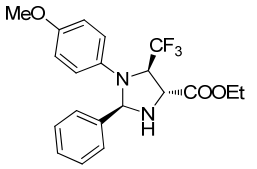
The title compound was prepared according to the general procedure as described above in 85% yield. $[\alpha]^{25}_{D}$ = +36.3 (*c* 1.29, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 300 MHz) δ 7.42 (s, 1H), 6.80 (s, 4H), 6.42 (d, *J* = 2.7 Hz, 1H), 6.34 (s, 1H), 5.49 (s, 1H), 4.51 (q, *J* = 6.6 Hz, 1H), 4.33 (s, 1H), 3.78 (s, 3H), 3.74 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.6, 154.5, 152.1, 142.9, 139.6, 125.5 (q, *J* = 280.5 Hz), 118.1, 114.6, 110.6, 108.5, 75.9, 65.1 (q, *J* = 30.8 Hz), 60.5, 55.5, 53.0; IR (KBr) ν 3318, 2956, 2840, 1745, 1513, 1455, 1250, 1134, 1037, 955, 815, 760, 650 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 96% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 10.17 and 21.37 min.



(3n)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-(thiophen-2-yl)-5-(trifluoromethyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield. $[\alpha]^{25}_{D}$ = -52.7 (*c* 0.87, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.29-7.27 (m, 1H), 7.22-7.21 (m, 1H), 6.99-6.97 (m, 1H), 6.84 (d, *J* = 9.2 Hz, 2H), 6.78 (d, *J* = 9.2 Hz, 2H), 5.69 (s, 1H), 4.52 (q, *J* = 6.8 Hz, 1H), 4.33 (s, 1H), 3.79 (s, 3H), 3.73 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 154.4, 143.5, 139.6, 127.0, 125.94, 125.90, 125.6 (q, *J* = 280.5 Hz), 118.1, 114.5, 77.9, 65.8 (q, *J* = 30.7 Hz), 60.5, 55.4, 52.9; IR (KBr) ν 3318, 2950, 2844, 1743, 1513, 1460, 1250, 1134, 1038, 935, 822, 721, 529 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 9.15 and 14.01 min.

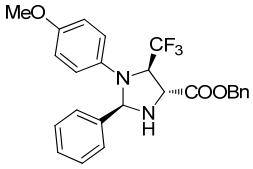


(3o)

(2*R*,4*R*,5*R*)-ethyl 1-(4-methoxyphenyl)-2-phenyl-5-(trifluoromethyl)imidazoli dine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield. $[\alpha]^{25}_{D}$ = -21.6 (*c* 1.52, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.55 (d, *J* = 6.4 Hz, 2H), 7.40-7.34 (m, 3H), 6.75 (d, *J* = 9.2 Hz, 2H), 6.69 (d, *J* = 9.2 Hz, 2H), 5.44 (s, 1H), 4.60 (q, *J* = 7.2 Hz, 1H), 4.29 (s, 1H), 4.23 (q, *J* = 7.2 Hz, 2H), 3.71 (s, 3H), 1.25 (t, *J* = 7.2 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.0, 153.8, 140.0, 139.1, 128.94, 128.86, 126.7, 125.9 (q, *J* = 280.8 Hz), 117.0, 114.5, 81.9, 65.6 (q, *J* = 30.5 Hz), 62.0, 60.8, 55.5, 14.0; IR (KBr) ν 3362, 2951, 2855, 1744, 1510, 1436, 1355, 1248, 1135, 1030, 934, 820, 711, 625 cm^{-1}. HRMS: calcd. for $C_{20}H_{21}F_3N_2O_3 + H^+$: 395.1577, found: 395.1569. The product was analyzed by HPLC

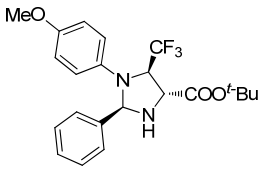
to determine the enantiomeric excess: 96% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 6.90 and 10.26 min.



(3p)

(2*R*,4*R*,5*R*)-benzyl 1-(4-methoxyphenyl)-2-phenyl-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 88% yield. $[\alpha]^{25}_D$ = -12.7 (*c* 0.93, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 300 MHz) δ 7.54-7.52 (m, 2H), 7.37-7.22 (m, 8H), 6.73 (d, *J* = 9.0 Hz, 2H), 6.64 (d, *J* = 9.0 Hz, 2H), 5.44 (s, 1H), 5.19 (s, 2H), 4.58 (q, *J* = 6.9 Hz, 1H), 4.34 (s, 1H), 3.72 (s, 3H), 2.68 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 169.8, 153.8, 139.9, 139.0, 134.9, 128.93, 128.87, 128.6, 128.4, 128.1, 126.7, 125.8 (q, *J* = 281.0 Hz), 117.0, 114.5, 82.0, 67.5, 65.6 (q, *J* = 30.5 Hz), 60.9, 55.5; IR (KBr) ν 3318, 2951, 2844, 1755, 1510, 1442, 1360, 1228, 1123, 1035, 933, 825, 690 cm^{-1}. HRMS: calcd. for $C_{25}H_{23}F_3N_2O_3 + H^+$: 457.1734, found: 457.1738. The product was analyzed by HPLC to determine the enantiomeric excess: 96% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 9.33 and 16.08 min.

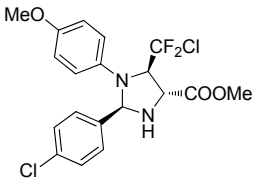


(3q)

(2*R*,4*R*,5*R*)-tert-butyl 1-(4-methoxyphenyl)-2-phenyl-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 84% yield. $[\alpha]^{25}_D$ = -22.3 (*c* 0.61, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.54 (d, *J* = 6.8 Hz, 2H), 7.39-7.33 (m, 3H), 6.75 (d, *J* = 8.8 Hz, 2H), 6.68 (d, *J* = 8.8 Hz, 2H), 5.46 (s, 1H), 4.50 (q, *J* = 6.8 Hz, 1H), 4.18 (s, 1H), 3.71 (s, 3H), 2.63

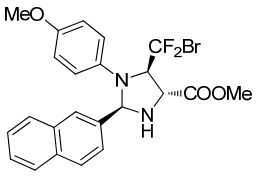
(brs, 3H), 1.40 (s, 9H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 169.2, 153.6, 140.3, 139.3, 128.9, 128.8, 126.7, 125.9 (q, J = 281.0 Hz), 116.7, 114.5, 82.7, 82.1, 65.8 (q, J = 30.4 Hz), 61.6, 55.5, 27.8; IR (KBr) ν 3320, 2955, 2844, 1755, 1510, 1442, 1360, 1228, 1123, 1035, 933, 825, 690 cm^{-1}. HRMS: calcd. for $C_{22}H_{25}F_3N_2O_3$ + H^+: 423.1890, found: 423.1905. The product was analyzed by HPLC to determine the enantiomeric excess: 92% ee (Chiralpak AD-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 5.56 and 6.30 min.



(3r)

(2*R*,4*R*,5*R*)-methyl 5-(chlorodifluoromethyl)-2-(4-chlorophenyl)-1-(4-methoxyphenyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 76% yield; $[\alpha]^{25}_D$ = -46.4 (*c* 0.80, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.50 (d, J = 8.4 Hz, 2H), 7.35 (d, J = 8.4 Hz, 2H), 6.76 (d, J = 9.2 Hz, 2H), 6.72 (d, J = 9.2 Hz, 2H), 5.40 (s, 1H), 4.72 (dd, J_1 = 5.2 Hz, J_2 = 13.6 Hz, 1H), 4.37 (s, 1H), 3.80 (s, 3H), 3.72 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.6, 154.4, 139.6, 137.4, 134.6, 129.9 (t, J = 295.7 Hz), 129.1, 128.3, 118.3, 114.5, 82.3, 71.2 (t, J = 24.2 Hz), 61.6, 55.4, 53.0; IR (KBr) ν 3340, 2951, 2927, 2844, 1744, 1710, 1595, 1513, 1445, 1360, 1160, 1131, 1040, 929, 815, 752, 669 cm^{-1}. HRMS: calcd. for $C_{19}H_{18}Cl_2F_2N_2O_3$ + H^+: 431.0735, found: 431.0743. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, = 220 nm); t_r = 9.47 and 12.17 min.

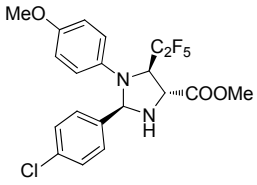


(3s)

(2*R*,4*R*,5*R*)-methyl 5-(bromodifluoromethyl)-1-(4-methoxyphenyl)-2-(naphtha-

alen-2-yl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 93% yield. $[\alpha]^{25}_{D}$ = -31.9 (*c* 1.81, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 8.02 (s, 1H), 7.88-7.81 (m, 3H), 7.71 (dd, J_1 = 1.2 Hz, J_2 = 8.4 Hz, 1H), 7.51-7.46 (m, 2H), 6.78 (d, *J* = 9.2 Hz, 2H), 6.73 (d, *J* = 9.2 Hz, 2H), 5.58 (s, 1H), 4.84 (dd, J_1 = 4.4 Hz, J_2 = 15.6 Hz, 1H), 4.44 (s, 1H), 3.83 (s, 3H), 3.69 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.6, 154.2, 139.8, 136.3, 133.6, 133.2, 128.8, 128.2, 127.7, 126.39, 126.36, 126.3, 124.5 (t, *J* = 309.8 Hz), 124.2, 118.2, 114.4, 83.3, 72.7 (t, *J* = 21.3 Hz), 62.0, 55.4, 53.0; IR (KBr) ν 3347, 2957, 2927, 2855, 1742, 1513, 1450, 1220, 1178, 1131, 1038, 929, 756, 669, 590 cm^{-1}. HRMS: calcd. for $C_{23}H_{21}BrF_2N_2O_3$ + H^+: 491.0776, found: 491.0769. The product was analyzed by HPLC to determine the enantiomeric excess: 95% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 13.75 and 17.03 min.

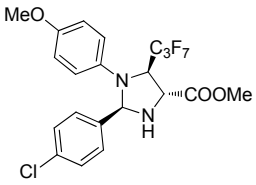


(3t)

(2*R*,4*R*,5*R*)-methyl 2-(4-chlorophenyl)-1-(4-methoxyphenyl)-5-(perfluoroethyl)-imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield; $[\alpha]^{25}_{D}$ = -63.2 (*c* 1.10, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.49 (d, *J* = 8.4 Hz, 2H), 7.35 (d, *J* = 8.4 Hz, 2H), 6.75 (d, *J* = 9.2 Hz, 2H), 6.66 (d, *J* = 9.2 Hz, 2H), 5.32 (s, 1H), 4.76 (dd, J_1 = 7.6 Hz, J_2 = 19.2 Hz, 1H), 4.41 (s, 1H), 3.80 (s, 3H), 3.71 (s, 3H), 2.65 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 154.4, 139.7, 137.7, 134.7, 129.2, 128.2, 118.4, 114.6, 82.0, 63.9 (m), 60.6, 55.4, 53.1; IR (KBr) ν 3347, 2953, 2940, 1744, 1711, 1595, 1513, 1424, 1361, 1176, 1132, 1040, 929, 815, 752, 669, 626 cm^{-1}. HRMS: calcd. for $C_{20}H_{18}ClF_5N_2O_3$ + H^+: 465.0999, found: 465.1008. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, =

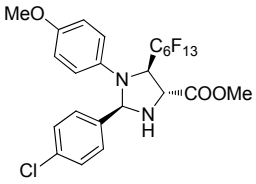
220 nm); t_r = 6.54 and 8.30 min.



(3u)

(2*R*,4*R*,5*R*)-methyl 2-(4-chlorophenyl)-1-(4-methoxyphenyl)-5-(perfluoropropyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield; $[\alpha]^{25}_D$ = -66.6 (*c* 1.30, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.49 (d, *J* = 8.4 Hz, 2H), 7.35 (d, *J* = 8.4 Hz, 2H), 6.76 (d, *J* = 8.8 Hz, 2H), 6.66 (d, *J* = 8.8 Hz, 2H), 5.34 (s, 1H), 4.86 (dd, J_1 = 4.4 Hz, J_2 = 21.6 Hz, 1H), 4.41 (s, 1H), 3.79 (s, 3H), 3.71 (s, 3H), 2.65 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5, 154.4, 139.8, 137.7, 134.7, 129.2, 128.2, 118.3, 117.6 (q, *J* = 283.7 Hz), 114.6, 81.5, 64.1 (m), 60.7, 55.4, 53.1; IR (KBr) ν 3341, 2940, 1740, 1513, 1476, 1425, 1377, 1262, 1175, 1015, 929, 783, 669 cm^{-1}. HRMS: calcd. for $C_{21}H_{18}ClF_7N_2O_3$ + H^+: 515.0967, found: 515.0968. The product was analyzed by HPLC to determine the enantiomeric excess: 96% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, = 220 nm); t_r = 5.72 and 6.75 min.

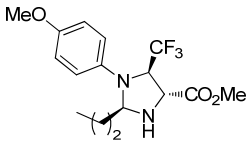


(3v)

(2*R*,4*R*,5*R*)-methyl 2-(4-chlorophenyl)-1-(4-methoxyphenyl)-5-(perfluorohexyl) imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 88% yield; $[\alpha]^{25}_D$ = -30.9 (*c* 1.02, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.49 (d, *J* = 8.4 Hz, 2H), 7.35 (d, *J* = 8.4 Hz, 2H), 6.76 (d, *J* = 8.8 Hz, 2H), 6.66 (d, *J* = 8.8 Hz, 2H), 5.35 (s, 1H), 4.88 (dd, J_1 = 4.0 Hz, J_2 = 22.4 Hz, 1H), 4.42 (s, 1H), 3.79 (s, 3H), 3.70 (s, 3H), 2.65 (brs, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 170.5,

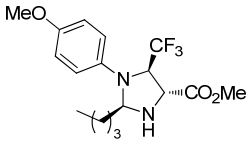
154.3, 139.8, 137.7, 134.7, 129.2, 128.2, 118.2, 114.6, 81.5, 64.3 (m), 60.8, 55.4, 53.0; IR (KBr) ν 3340, 2950, 2834, 1744, 1515, 1446, 1425, 1144, 1016, 929, 771, 669, cm^{-1}. HRMS: calcd. for $C_{24}H_{18}ClF_{13}N_2O_3$ + H^+: 665.0871, found: 665.0861. The product was analyzed by HPLC to determine the enantiomeric excess: 98% ee (Chiralcel OD-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, = 220 nm); t_r = 4.21 and 4.77 min.



(5a)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-propyl-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield. d.r. = 10:1; $[\alpha]^{25}_D$ = -26.1 (*c* 0.42, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 6.94 (d, *J* = 8.8 Hz, 2H), 6.86 (d, *J* = 8.8 Hz, 2H), 4.47-4.46 (m, 1H), 4.26 (q, *J* = 7.2 Hz, 1H), 3.78 (s, 3H), 3.76 (s, 3H), 1.85-1.82 (m, 1H), 1.44-1.40 (m, 3H), 0.94 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.2, 155.1, 140.5, 125.6 (q, *J* = 280.0 Hz), 120.9, 114.6, 79.8, 67.2 (q, *J* = 30.0 Hz), 60.5, 55.5, 52.9, 36.8, 18.1, 14.1; IR (KBr) ν 3336, 2957, 2927, 2855, 1742, 1513, 1450, 1220, 1038, 929, 756, 669 cm^{-1}. HRMS: calcd. for $C_{16}H_{21}F_3N_2O_3$ + H^+: 347.1577, found: 347.1584. The product was analyzed by HPLC to determine the enantiomeric excess: 89% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 5.14 and 6.13 min.

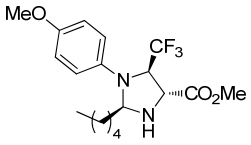


(5b)

(2*R*,4*R*,5*R*)-methyl 2-butyl-1-(4-methoxyphenyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described

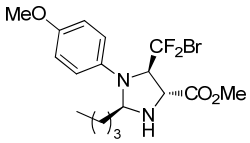
above in 76% yield. d.r. > 20:1; $[\alpha]^{25}_{D}$ = -14.3 (*c* 0.83, $CHCl_3$); ^1H NMR ($CDCl_3$, TMS, 400 MHz) δ 6.93 (d, *J* = 9.2 Hz, 2H), 6.85 (d, *J* = 9.2 Hz, 2H), 4.46-4.45 (m, 1H), 4.26 (q, *J* = 7.2 Hz, 1H), 4.21 (s, 1H), 3.78 (s, 3H), 3.76 (s, 3H), 1.90-1.85 (m, 1H), 1.51-1.29 (m, 5H), 0.88 (t, *J* = 7.2 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.2, 155.1, 140.4, 125.9 (q, *J* = 279.8 Hz), 120.8, 114.7, 80.0, 67.1 (q, *J* = 29.9 Hz), 60.5, 55.5, 52.9, 34.3, 26.9, 22.7, 14.0; IR (KBr) ν 3368, 1736, 1516, 1448, 1425, 1210, 1044, 929, 705, 656 cm^{-1}. HRMS: calcd. for $C_{17}H_{23}F_3N_2O_3 + H^+$: 361.1734, found: 361.1742. The product was analyzed by HPLC to determine the enantiomeric excess: 91% ee (Chiralpak AD-H, *i*-propanol/hexane = 5/95, flow rate 1.0 mL/min, λ = 220 nm); t_r = 6.34 and 7.30 min.



(5c)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-pentyl-5-(trifluoromethyl)imidazo lidine-4-carboxylate

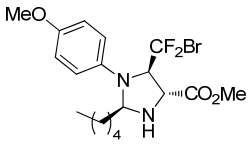
The title compound was prepared according to the general procedure as described above in 85% yield. d.r. = 17:1; $[\alpha]^{25}_{D}$ = -19.0 (*c* 0.55, $CHCl_3$); ^1H NMR ($CDCl_3$, TMS, 400 MHz) δ 6.93 (d, *J* = 8.8 Hz, 2H), 6.86 (d, *J* = 8.8 Hz, 2H), 4.46-4.45 (m, 1H), 4.26 (q, *J* = 7.2 Hz, 1H), 4.21 (s, 1H), 3.78 (s, 3H), 3.77 (s, 3H), 1.87-1.85 (m, 1H), 1.51-1.29 (m, 7H), 0.88 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.2, 155.1, 140.4, 125.6 (q, *J* = 281.6 Hz), 120.8, 114.7, 80.0, 67.1 (q, *J* = 30.1 Hz), 60.5, 55.5, 52.9, 34.6, 31.8, 24.5, 22.6, 14.0; IR (KBr) ν 3335, 1756, 1512, 1469, 1255, 1032, 917, 740, 669 cm^{-1}. HRMS: calcd. for $C_{18}H_{25}F_3N_2O_3 + H^+$: 375.1890, found: 375.1883. The product was analyzed by HPLC to determine the enantiomeric excess: 91% ee (Chiralpak AD-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 5.34 and 5.88 min.



(5d)

(2*R*,4*R*,5*R*)-methyl 5-(bromodifluoromethyl)-1-(4-methoxyphenyl)-2-propylimidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield. d.r. = 15:1; $[\alpha]^{25}_{D}$ = -12.6 (*c* 0.27, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.03 (d, *J* = 8.8 Hz, 2H), 6.86 (d, *J* = 8.8 Hz, 2H), 4.38-4.33 (m, 2H), 4.26 (s, 1H), 3.80 (s, 3H), 3.78 (s, 3H), 1.86-1.80 (m, 1H), 1.48-1.45 (m, 2H), 1.32-1.30 (m, 3H), 0.88 (t, *J* = 7.2 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.3, 156.0, 140.3, 125.3 (t, *J* = 309.0 Hz), 123.5, 114.6, 81.8, 74.5 (t, *J* = 20.3 Hz), 62.1, 55.5, 52.9, 34.1, 26.9, 22.8, 14.0; IR (KBr) ν 3317, 2957, 1740, 1515, 1477, 1425, 1250, 1023, 930, 755, 670 cm^{-1}. HRMS: calcd. for $C_{17}H_{23}BrF_2N_2O_3$ + H^+: 421.0933, found: 421.0935. The product was analyzed by HPLC to determine the enantiomeric excess: 92% ee (Chiralpak AD-H, *i*-propanol/hexane = 5/95, flow rate 1.0 mL/min, λ = 220 nm); t_r = 6.23 and 6.90 min.

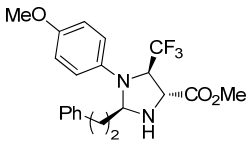


(5e)

(2*R*,4*R*,5*R*)-methyl 5-(bromodifluoromethyl)-2-ethyl-1-(4-methoxyphenyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 76% yield. d.r. = 10:1; $[\alpha]^{25}_{D}$ = -20.7 (*c* 0.15, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.03 (d, *J* = 8.8 Hz, 2H), 6.86 (d, *J* = 8.8 Hz, 2H), 4.37-4.33 (m, 1H), 4.26 (s, 1H), 3.80 (s, 3H), 3.78 (s, 3H), 1.86-1.79 (m, 1H), 1.47-1.26 (m, 7H), 0.87 (t, *J* = 6.8 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.4, 156.0, 140.3, 123.5, 114.6, 81.9, 74.5 (t, *J* = 20.6 Hz), 62.1, 55.5, 52.9, 34.4, 31.9, 24.5, 22.5, 14.0; IR (KBr) ν 2958, 2924, 1743, 1512, 1477, 1435, 1215, 1133, 1021, 935, 783, 670 cm^{-1}. HRMS: calcd. for $C_{18}H_{25}BrF_2N_2O_3$ + H^+: 435.1089, found: 435.1076. The

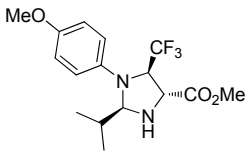
product was analyzed by HPLC to determine the enantiomeric excess: 91% ee (Chiralpak AD-H, *i*-propanol/hexane = 5/95, flow rate 1.0 mL/min, λ = 220 nm); t_r = 6.08 and 6.84 min.



(5f)

(2*R*,4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-phenethyl-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 80% yield. d.r. > 20:1; $[\alpha]^{25}_D$ = -34.5 (*c* 0.95, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.29-7.25 (m, 2H), 7.20-7.17 (m, 3H), 6.91 (d, *J* = 9.2 Hz, 2H), 6.83 (d, *J* = 9.2 Hz, 2H), 4.51-4.49 (m, 1H), 4.26 (q, *J* = 7.2 Hz, 1H), 4.23 (s, 1H), 3.78 (s, 3H), 3.77 (s, 3H), 2.84-2.71 (m, 1H), 2.72-2.69 (m, 1H), 2.18-2.15 (m, 1H), 1.80-1.74 (m, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.2, 155.4, 141.3, 140.3, 128.4, 128.3, 126.0, 125.6 (q, *J* = 279.9 Hz), 121.4, 114.7, 79.6, 67.3 (q, *J* = 30.1 Hz), 60.6, 55.5, 52.9, 36.1, 31.0; IR (KBr) ν 2956, 2840, 1743, 1603, 1512, 1480, 1439, 1214, 1133, 1036, 929, 783, 771, 669 cm^{-1}. HRMS: calcd. for $C_{21}H_{23}F_3N_2O_3 + Na^+$: 431.1553, found: 431.1568. The product was analyzed by HPLC to determine the enantiomeric excess: 92% ee (Chiralpak AD-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 7.77 and 8.76 min.

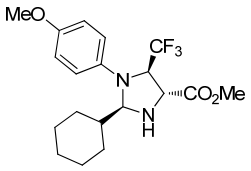


(5g)

(2*R*,4*R*,5*R*)-methyl 2-isopropyl-1-(4-methoxyphenyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 76% yield. d.r. > 20:1; $[\alpha]^{25}_D$ = -17.5 (*c* 0.61, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.06 (d, *J* = 9.2 Hz, 2H), 6.85 (d, *J* = 9.2 Hz, 2H), 4.35 (d, *J* = 3.6

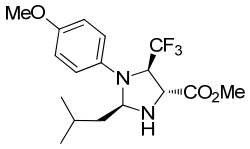
Hz, 1H), 4.18-4.13 (m, 2H), 3.80 (s, 3H), 3.78 (s, 3H), 1.94-1.89 (m, 1H), 0.99 (d, J = 6.8 Hz, 3H), 0.94 (d, J = 6.8 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.6, 156.1, 141.1, 125.7 (q, J = 280.1 Hz), 123.9, 114.6, 85.1, 68.6 (q, J = 29.7 Hz), 60.5, 55.5, 52.9, 29.7, 19.2, 14.6; IR (KBr) ν 3317, 2957, 2436, 1742, 1603, 1479, 1425, 1214, 1133, 1036, 929, 669 cm^{-1}. HRMS: calcd. for $C_{16}H_{21}F_3N_2O_3$ + H^+: 347.1577, found: 347.1585. The product was analyzed by HPLC to determine the enantiomeric excess: 91% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 4.79 and 5.33 min.



(5h)

(2*R*,4*R*,5*R*)-methyl 2-cyclohexyl-1-(4-methoxyphenyl)-5-(trifluoromethyl)imidazolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 76% yield. d.r. > 20:1; $[\alpha]^{25}_D$ = -32.3 (*c* 0.56, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 400 MHz) δ 7.03 (d, J = 8.8 Hz, 2H), 6.85 (d, J = 8.8 Hz, 2H), 4.35 (d, J = 4.0 Hz, 1H), 4.17-4.13 (m, 2H), 3.79 (s, 3H), 3.78 (s, 3H), 2.60 (brs, 1H), 1.92-1.89 (m, 1H), 1.79-1.65 (m, 5H), 1.19-1.12 (m, 4H), 0.95-0.92 (m, 1H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.5, 155.8, 141.3, 125.6 (q, J = 279.8 Hz), 123.2, 114.5, 84.5, 68.3 (q, J = 29.8 Hz), 60.5, 55.4, 52.8, 40.2, 30.0, 26.6, 26.5, 26.1, 25.7; IR (KBr) ν 3317, 2957, 2434, 1740, 1601, 1469, 1423, 1210, 1131, 1034, 929, 669 cm^{-1}. HRMS: calcd. for $C_{19}H_{25}F_3N_2O_3$ + H^+: 387.1890, found: 387.1894. The product was analyzed by HPLC to determine the enantiomeric excess: 90% ee (Chiralpak AD-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 5.43 and 6.32 min.



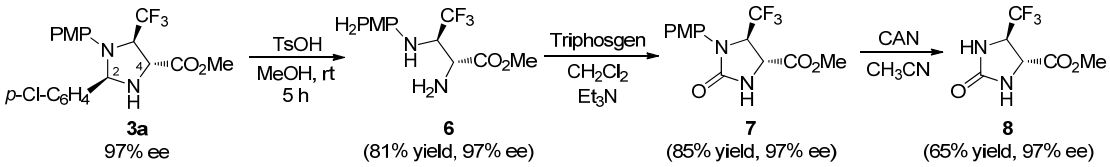
(5i)

(2*R*,4*R*,5*R*)-methyl 2-isobutyl-1-(4-methoxyphenyl)-5-(trifluoromethyl)imida zolidine-4-carboxylate

The title compound was prepared according to the general procedure as described above in 85% yield. d.r. = 15:1; $[\alpha]^{25}_{D}$ = -37.3 (*c* 1.12, $CHCl_3$); ^1H NMR ($CDCl_3$, TMS, 400 MHz) δ 6.92 (d, *J* = 9.2 Hz, 2H), 6.85 (d, *J* = 9.2 Hz, 2H), 4.56-4.54 (m, 1H), 4.24 (q, *J* = 7.2 Hz, 1H), 4.21 (s, 1H), 3.77 (s, 3H), 3.76 (s, 3H), 1.84-1.71 (m, 2H), 1.35-1.33 (m, 1H), 0.98 (d, *J* = 6.4 Hz, 3H), 0.93 (d, *J* = 6.8 Hz, 3H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.1, 154.9, 140.5, 125.6 (q, *J* = 279.9 Hz), 120.4, 114.6, 78.5, 67.0 (q, *J* = 30.0 Hz), 60.6, 55.5, 52.8, 44.3, 25.3, 23.7, 22.0; IR (KBr) ν 2955, 2434, 1741, 1608, 1468, 1421, 1210, 1135, 1037, 929, 668 cm^{-1}. HRMS: calcd. for $C_{17}H_{23}F_3N_2O_3 + H^+$: 361.1734, found: 361.1737. The product was analyzed by HPLC to determine the enantiomeric excess: 90% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 4.81 and 5.16 min.

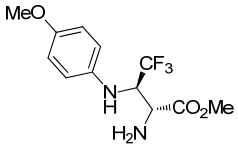
V. Synthetic Transformtions.

Due to high volatility of (2*R*,3*R*)-2,3-diamino-4,4,4-trifluoro-butanoate, oxidative cleavage of the PMP group could be performed as below: Firstly, diamine **6** was obtained by acidic hydrolysis of the corresponding cycloadduct **3a** in good yield. The diamine **6** was further transformed into cyclic urea **7** with triphosphgen, then treatment with $Ce(NH_4)_2(NO_3)_6$ gave the derived amide **8** without loss of the diastereo-/enantiomeric excess.



3a (207 mg, 0.5 mmol) was dissolved in 3 mL of methanol at room temperature followed by the addition of $TsOH{\cdot}H_2O$ (380 mg, 2 mmol). The reaction mixture was

stirred until starting material was consumed (monitored by TLC) and neutralized the mixture by Na_2CO_3. Then the mixture was partitioned between ethyl acetate and water, then the organic layer was washed with brine, dried over $MgSO_4$, and concentrated in vacuo then the organic solvent was removed and the residue was purified by column chromatography to give compound **6** in 81% yield.

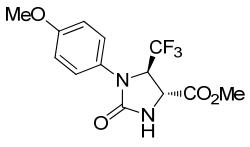


(6)

(2*R*,3*R*)-methyl 2-amino-4,4,4-trifluoro-3-((4-methoxyphenyl)amino)butanoate

$[\alpha]^{25}_D$ = -41.2 (*c* 0.73, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 300 MHz) δ 6.76 (d, *J* = 8.7 Hz, 2H), 6.66 (d, *J* = 8.7 Hz, 2H), 4.54-4.51 (m, 1H), 4.43-4.36 (m, 1H), 4.12 (s, 1H), 3.73 (s, 3H), 3.59 (s, 3H), 1.78 (brs, 2H); ^{13}C NMR ($CDCl_3$, TMS, 100 MHz) δ 171.7, 153.1, 139.9, 125.6 (q, *J* = 283.1 Hz), 116.0, 114.7, 58.4 (q, *J* = 27.9 Hz), 55.6, 52.7, 52.6; IR (KBr) ν 3368, 2951, 1746, 1516, 1453, 1218, 1035, 929, 669 cm^{-1}. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AS-H, *i*-propanol/hexane = 10/90, flow rate 1.0 mL/min, λ = 220 nm); t_r = 11.07 and 20.46 min.

To a solution of **6** (100 mg, 0.34 mmol) and triethylamine (141 μL, 1.02 mmol) in dry CH_2Cl_2(15.0 mL) under nitrogen at 0 °C was added a solution of triphosgene (100 mg, 0.34 mmol) in dry CH_2Cl_2 dropwise. The reaction mixture was warmed to room temperature and stirred until the starting material was consumed completely as indicated by TLC.Then the reaction was quenched and purified by column chromatography to give the cyclic urea **7**.



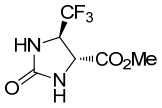
(7)

(4*R*,5*R*)-methyl 1-(4-methoxyphenyl)-2-oxo-5-(trifluoromethyl)imidazolidine-4-carboxylate

$[\alpha]^{25}_D$ = +18.8 (*c* 0.16, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 300 MHz) δ 7.24 (d, *J* = 9.0 Hz, 2H), 6.92 (d, *J* = 9.0 Hz, 2H), 5.85 (s, 1H), 4.91-4.88 (m, 1H), 4.33 (d, *J* = 2.4 Hz,

1H), 3.89 (s, 3H), 3.81 (s, 3H); ^{13}C NMR ($CDCl_3$, TMS, 75 MHz) δ 169.7, 158.9, 158.2, 129.3, 126.9, 123.8 (q, *J* = 281.5 Hz), 114.3, 61.1 (q, *J* = 32.4 Hz), 55.3, 53.3, 51.9; IR (KBr) ν 2917, 2846, 2335, 1722, 1515, 1423, 1241, 1166cm^{-1}. HRMS: calcd. for $C_{13}H_{13}F_3N_2O_4$ + H^+: 319.0897, found: 319.0900. The product was analyzed by HPLC to determine the enantiomeric excess: 97% ee (Chiralpak AD-H, *i*-propanol/hexane = 40/60, flow rate 1.0 mL/min, λ = 220 nm); t_r = 14.87 and 16.88 min.

To a solution of **7** (92 mg, 0.29 mmol) in dry acetonitrile (2.0 mL) was added dropwise a solution of CAN (477 mg, 0.87 mmol) in H_2O (1.0 mL) at 0 °C. The reaction was completed immediately and quenched by the addition of saturated NH_4Cl aqueous solution. The phases were separated and the aqueous phase was extracted with ethyl acetate. The combined organic phases were dried over sodium sulfate and concentrated under vacuum. The residue was purified by chromatography to give **8** as a white soild.

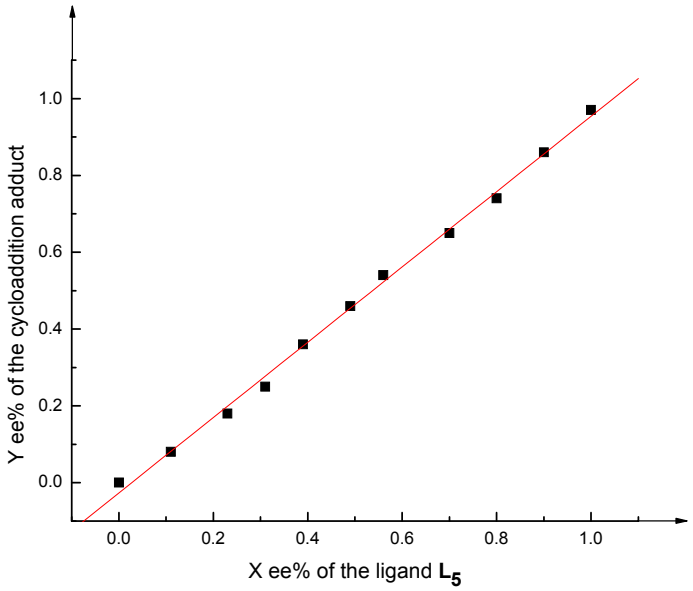


(8)

(4*R*,5*R*)-methyl 2-oxo-5-(trifluoromethyl)imidazolidine-4-carboxylate

$[\alpha]^{25}_D$ = -35.0 (*c* 0.20, $CHCl_3$); ^{1}H NMR ($CDCl_3$, TMS, 300 MHz) δ 6.92 (s, 1H), 6.41 (s, 1H), 4.46 (m, 1H), 4.33 (d, *J* = 3.2 Hz, 1H), 3.85 (s, 3H); ^{13}C NMR (DMSO-d_6, TMS, 100 MHz) δ 170.7, 161.1, 124.7 (q, *J* = 279.4 Hz), 55.2 (q, *J* = 32.2 Hz), 53.4, 52.9; IR (KBr) ν 3243, 2922, 2360, 2341, 1724, 1443, 1240, 1176, 1145cm^{-1}. HRMS: calcd. for $C_6H_7F_3N_2O_3$ + Na^+: 235.0296, found: 235.0301. The product was analyzed by GC to determine the enantiomeric excess: 97% ee (β-dex 325 column, 30 m x 0.25 mm x 0.25 μm, column temperature: 170 ^{o}C, carrier gas: N_2, 1 mL/min); t_r = 9.84 and 14.29 min.

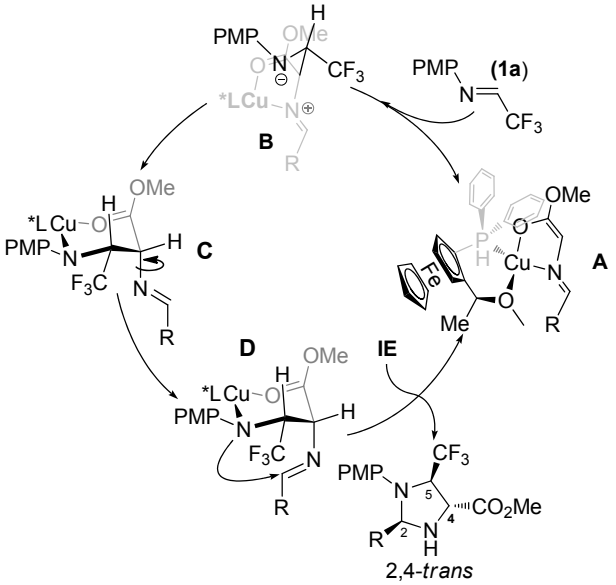
VI. Linear Effect for the 1,3-Dipolar Cycloaddition of Trifluoromethylated Imine 1a with Imino Ester 2a Catalyzed by $Cu(CH_3CN)_4BF_4$/(*S*,*R*$_p$)-PPFOMe Complex.



Ee of (S,R_p)-**L5** were determined by HPLC: Chiralpak AD-H, *i*-propanol/hexane = 1/99, flow rate 0.5 mL/min, λ = 254 nm; t_r = 16.01 and 21.18 min.

L5$_{ee}$ (%)	11	23	31	39	49	56	70	80	90	100
Prod$_{ee}$ (%)	8	18	25	36	46	54	65	74	86	97

VII. Proposed Transition States of the *exo*'-Selectivity for Asymmetric 1,3-Dipolar Cycloaddition of Imino Esters with Fluorinated Imines.



Scheme S1. Postulated catalytic cycle for Cu(I)-catalyzed asymmetric 1,3-DC of azomethine ylide with fluorinated imines.

Based on the relative and absolute configuration of (2*R*,4*R*,5*R*)-**3s** and previous studies,[3] a plausible stepwise mechanism was proposed to rationalize the observed *exo′*-selectivity for this 1,3-DC. The *in situ*-formed azomethine ylide is coordinated to the Cu complex leading to the catalytically active species (**A**) based on the linear correlation results. Initial Mannich addition of the metalloazomethine ylide (**A**) to the *Re* face (C=N) of the fluorinated imine **1a** through the gauche conformation generates the zwitterionic intermediate (**B**), which could be facilitated by the possible coordination interaction between the imino group of **1a** and the Cu(I) center. After the Mannich reaction, the copper atom spontaneously switches from imino ester to NPMP for forming the six-membered chair-like species (**C**).[3] Before the subsequent intramolecular cyclization, the C-N single bond must rotate into the species (**D**) hence the amino unit approaches the *Re* face of the imine moiety to give the *exo′*-diastereomer, in which the substituents at 2 and 4 position of imidazolidine ring are arranged at *trans* configuration. Nevertheless, the real catalytic mechanism still needs further investigation.

VIII. References.

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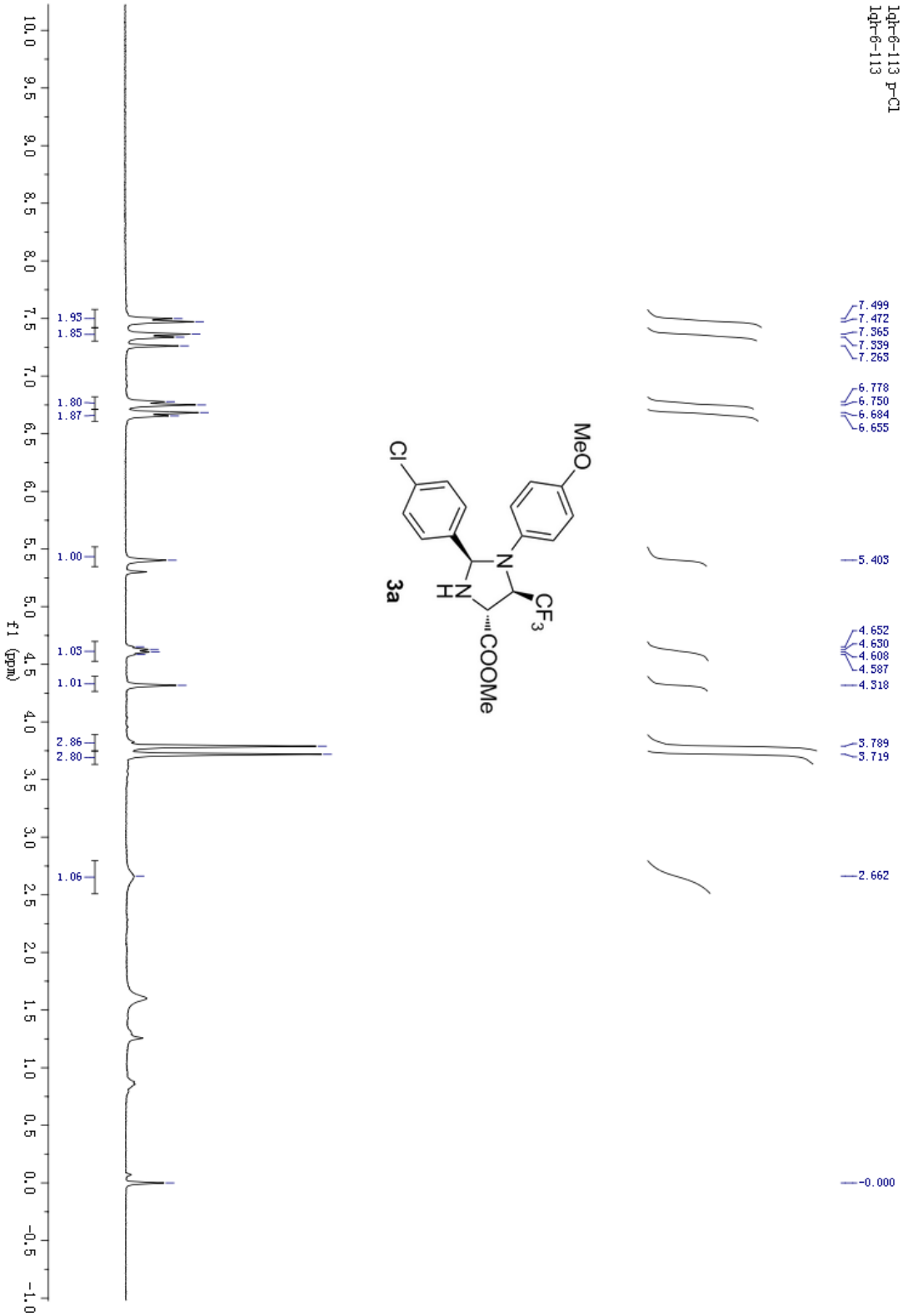
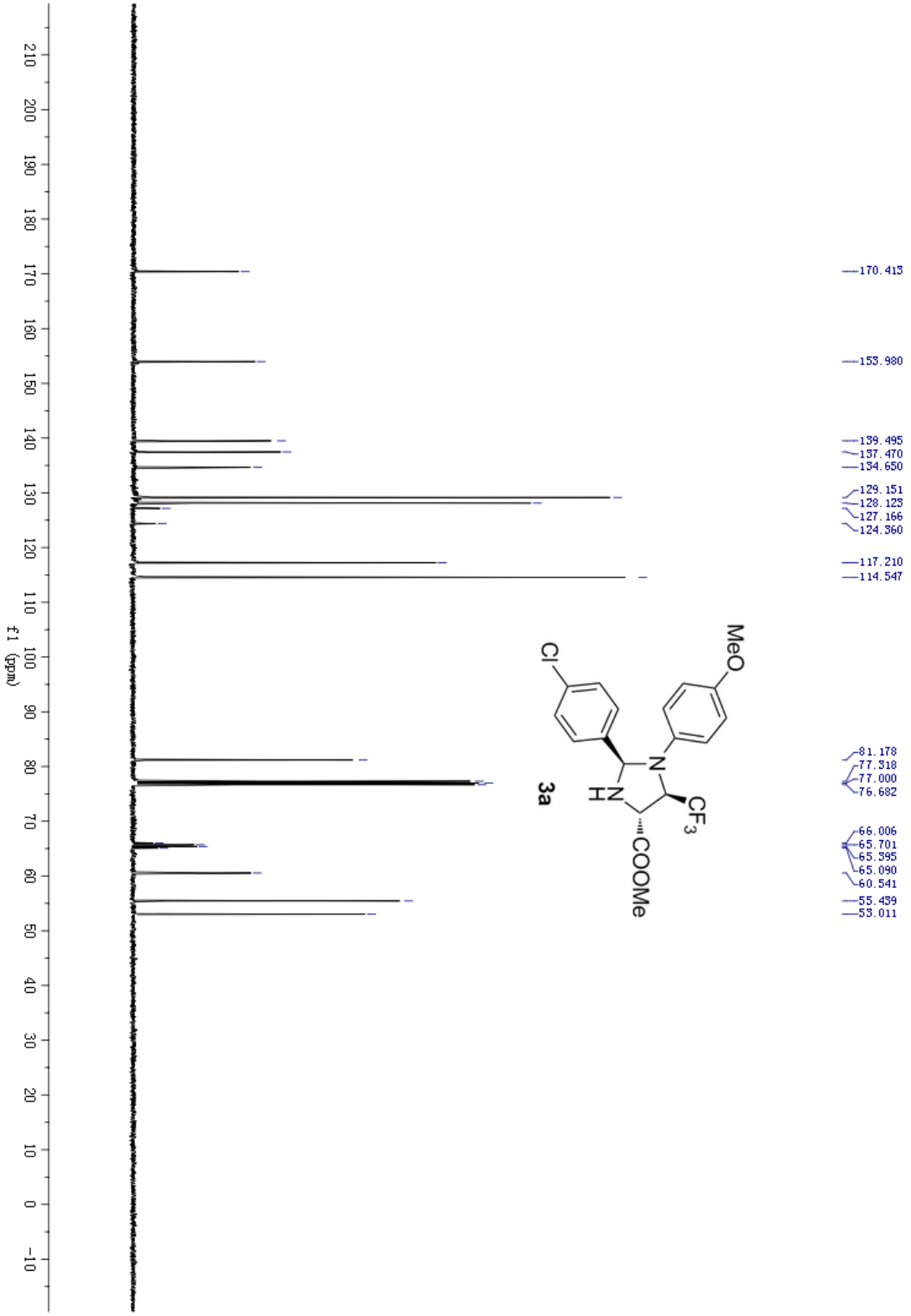
3. (*a*) T. Arai, N. Yokoyama, A. Mishiro and H. Sato, *Angew. Chem., Int. Ed*., **2010**, *49*, 7895; (*b*) A. Awata and T. Arai, *Chem. Eur. J.* **2012**, *18*, 8278.

IX. ^{1}H NMR and ^{13}C NMR Spectra.

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66.006
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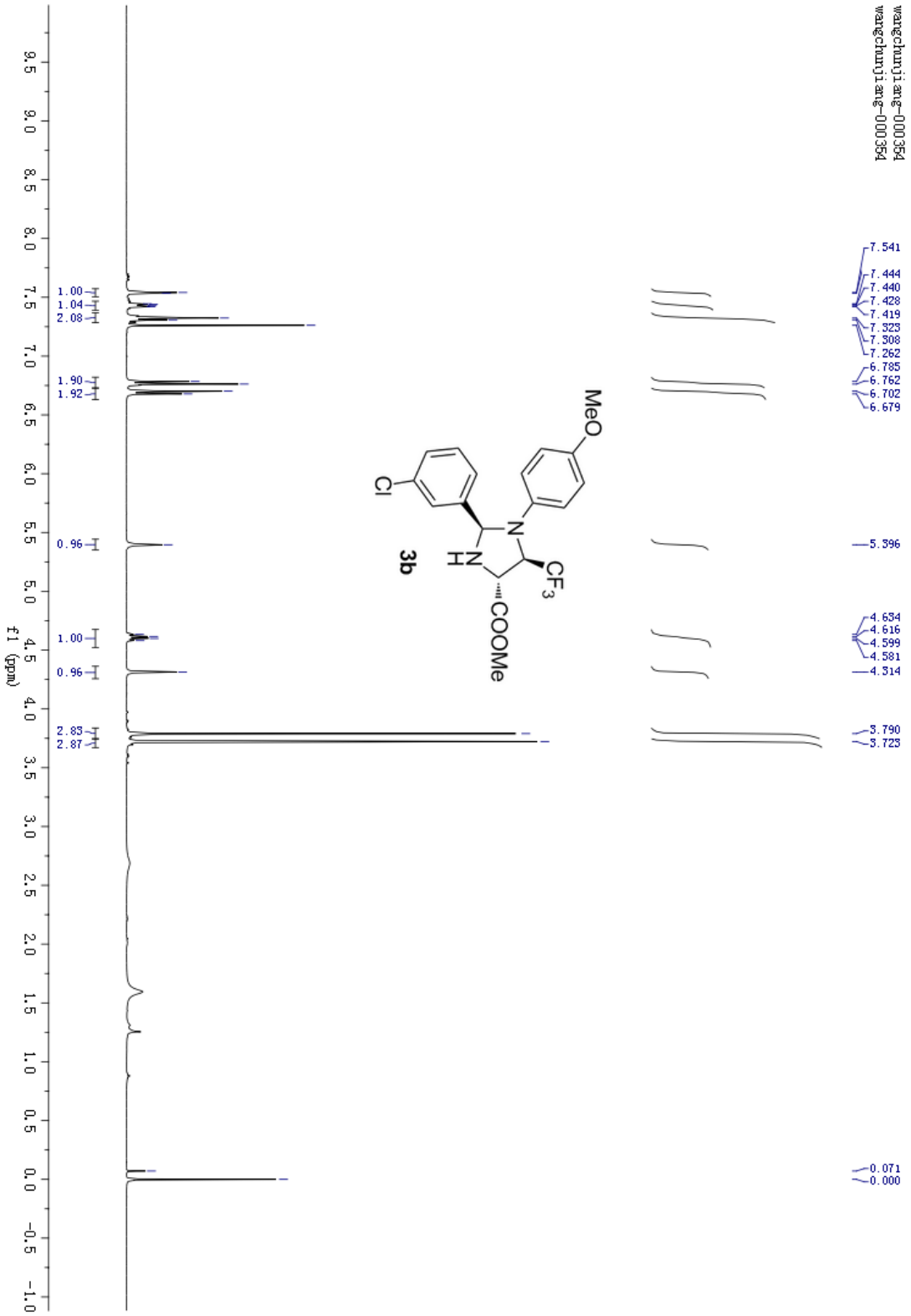
CF3
COOMe
3a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wangchunjiang-000354
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6.762
6.702
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4.616
4.599
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4.314
3.790
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COOMe
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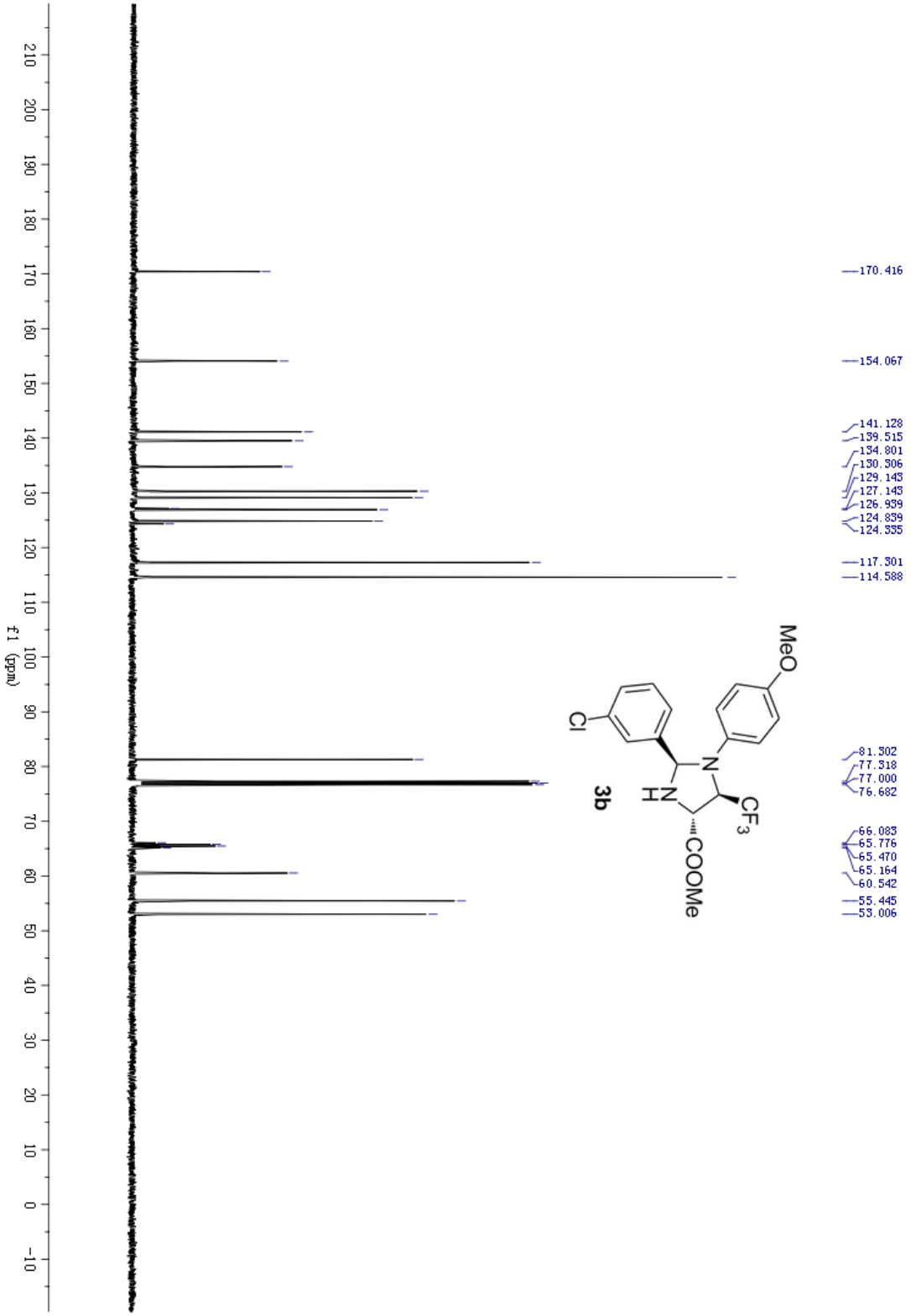
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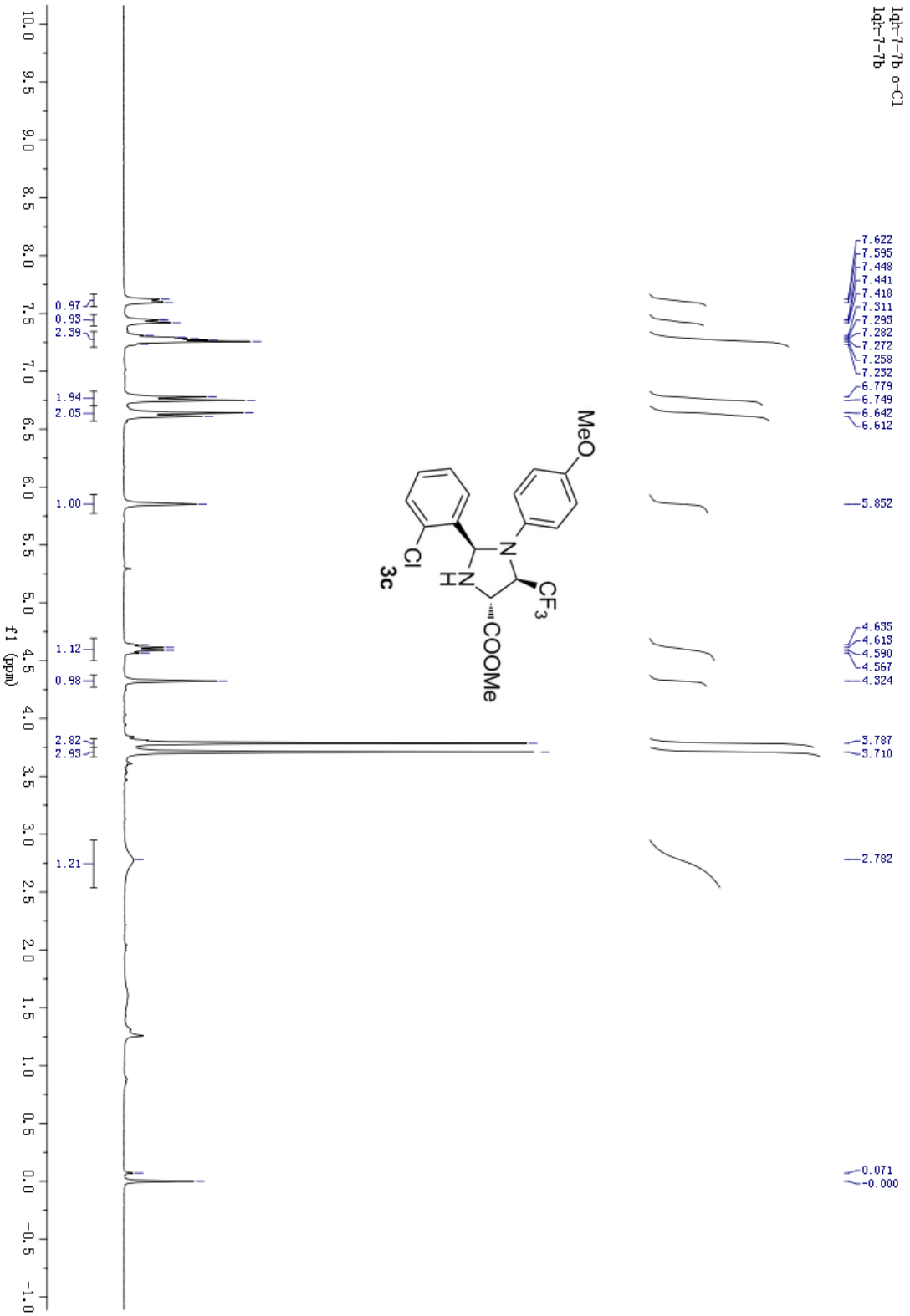
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2.05
1.00
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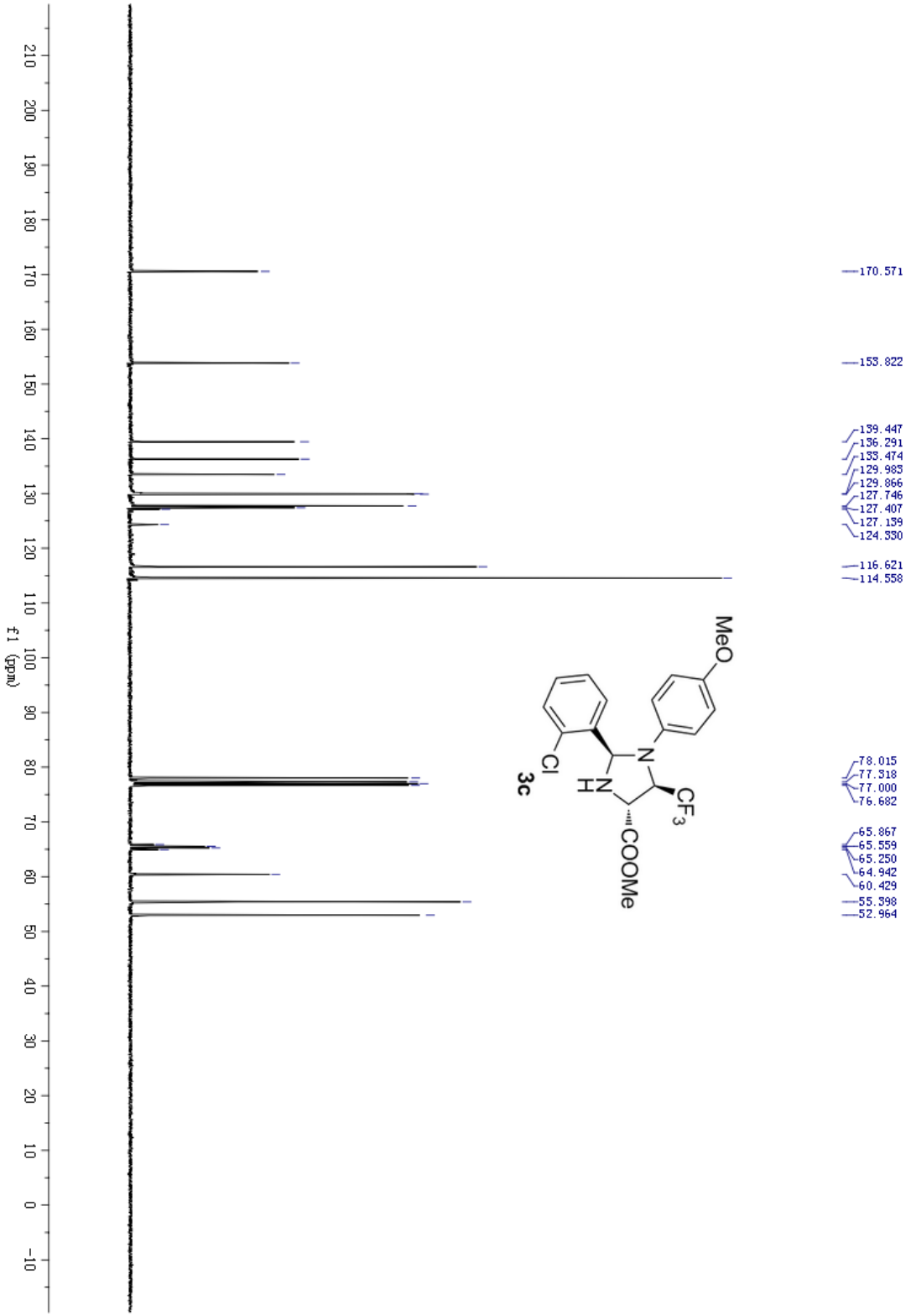
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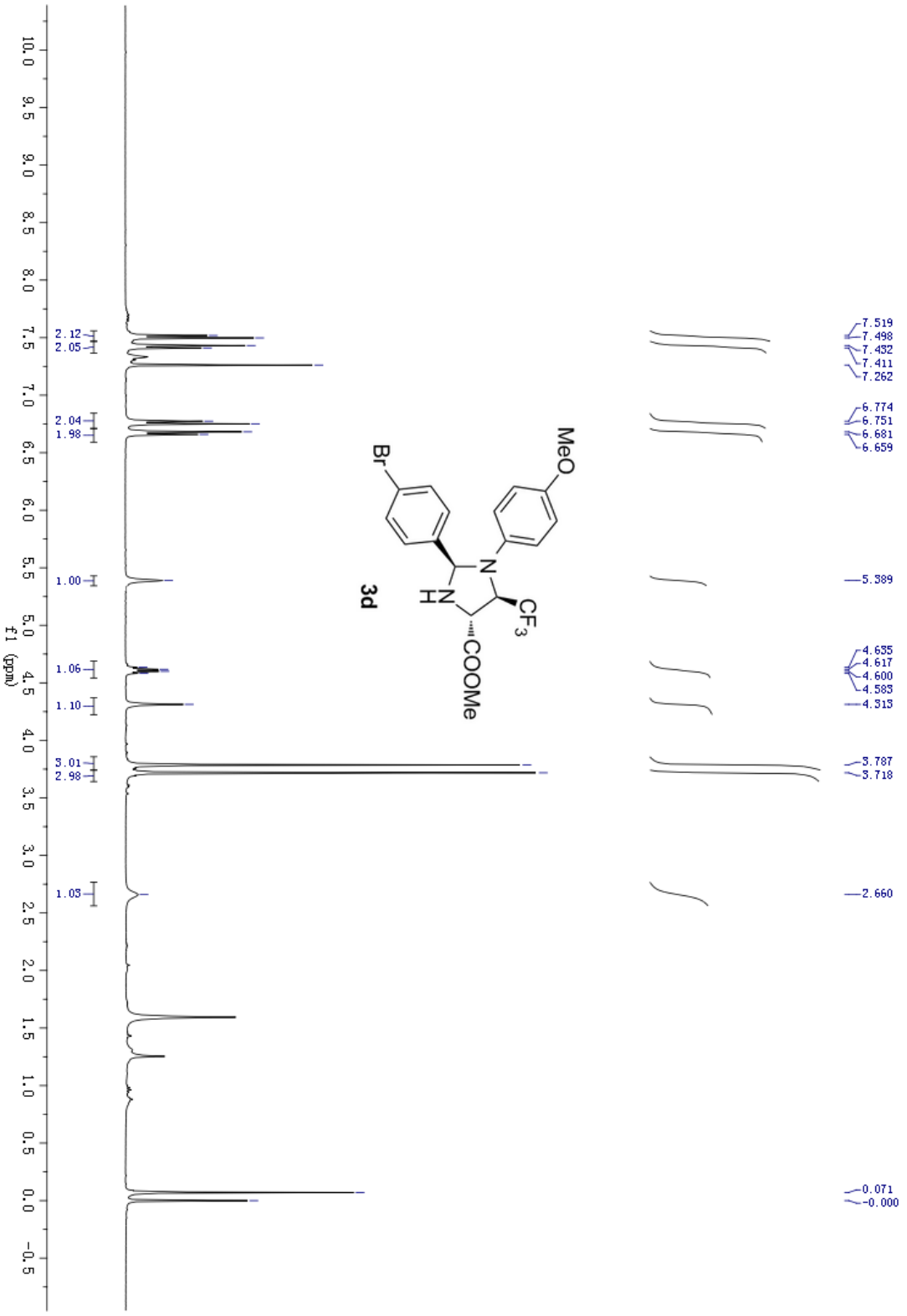
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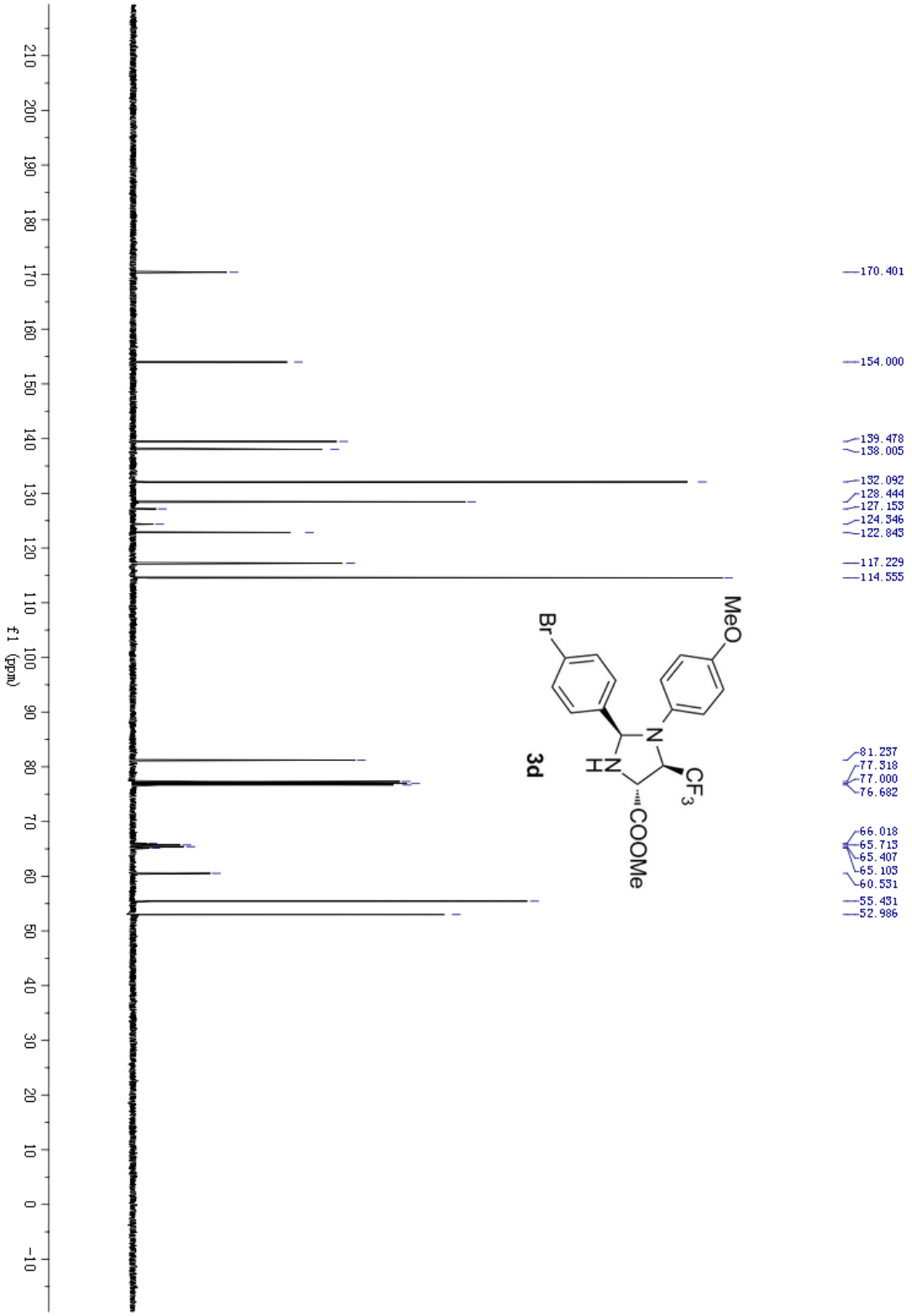
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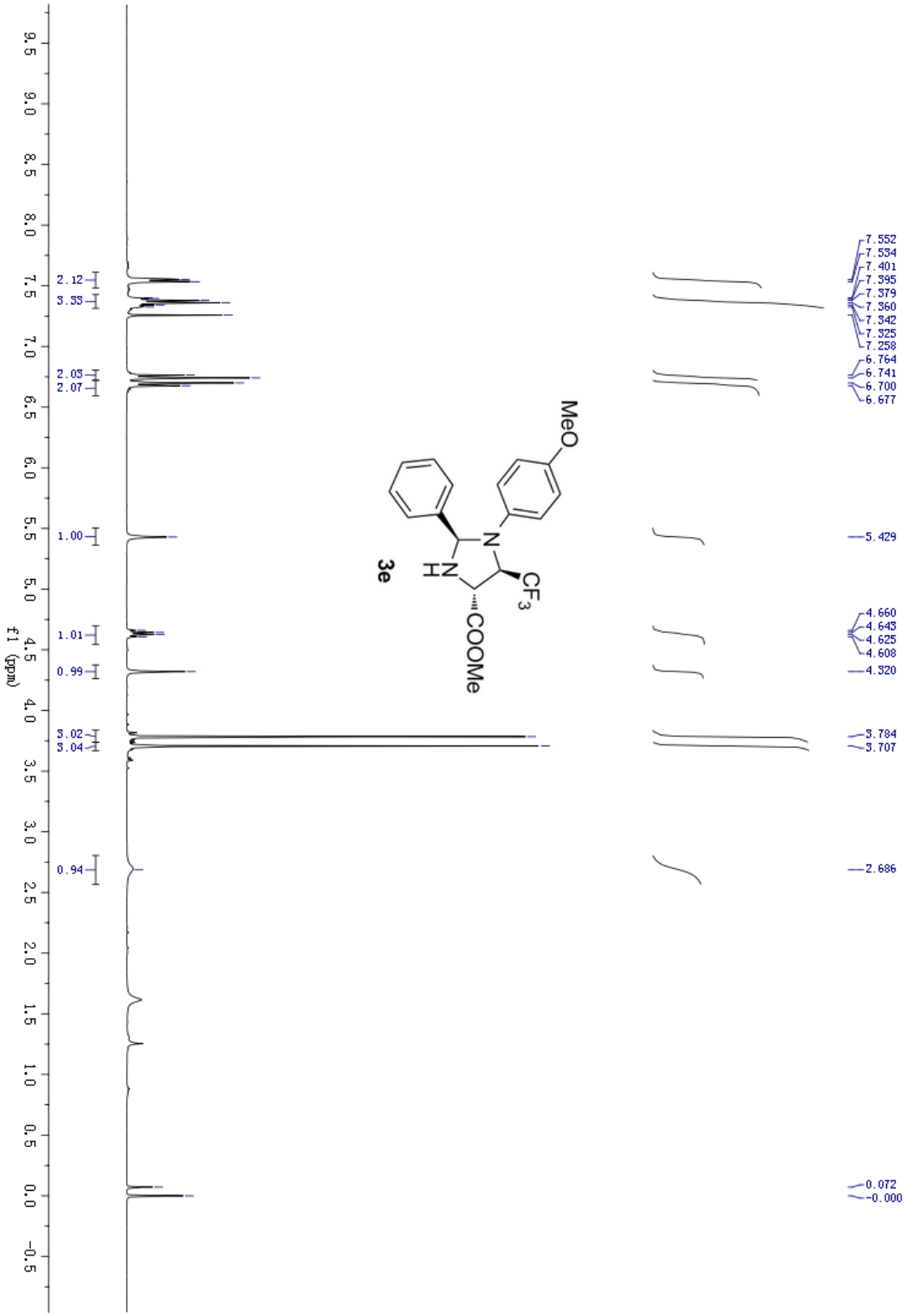
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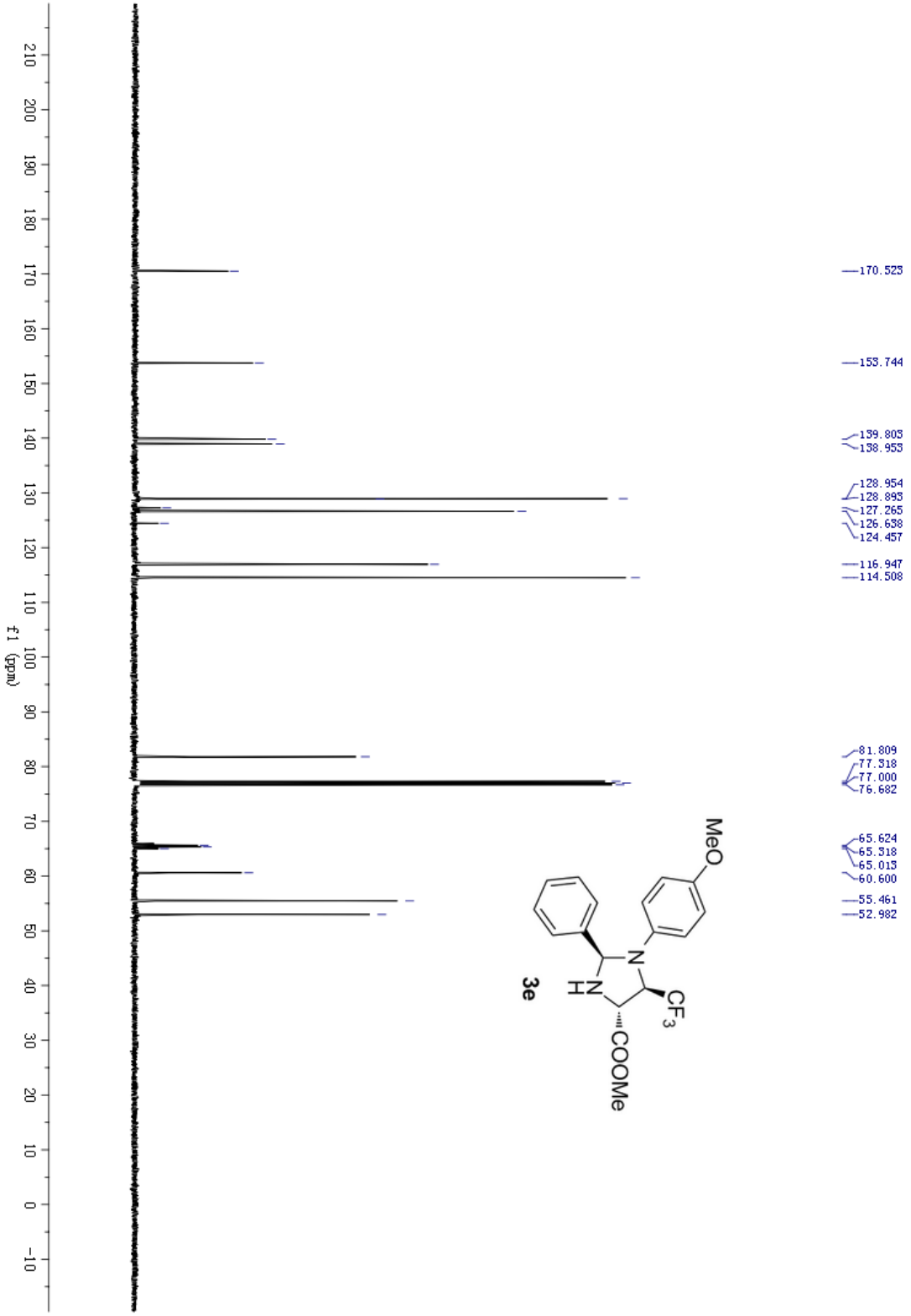
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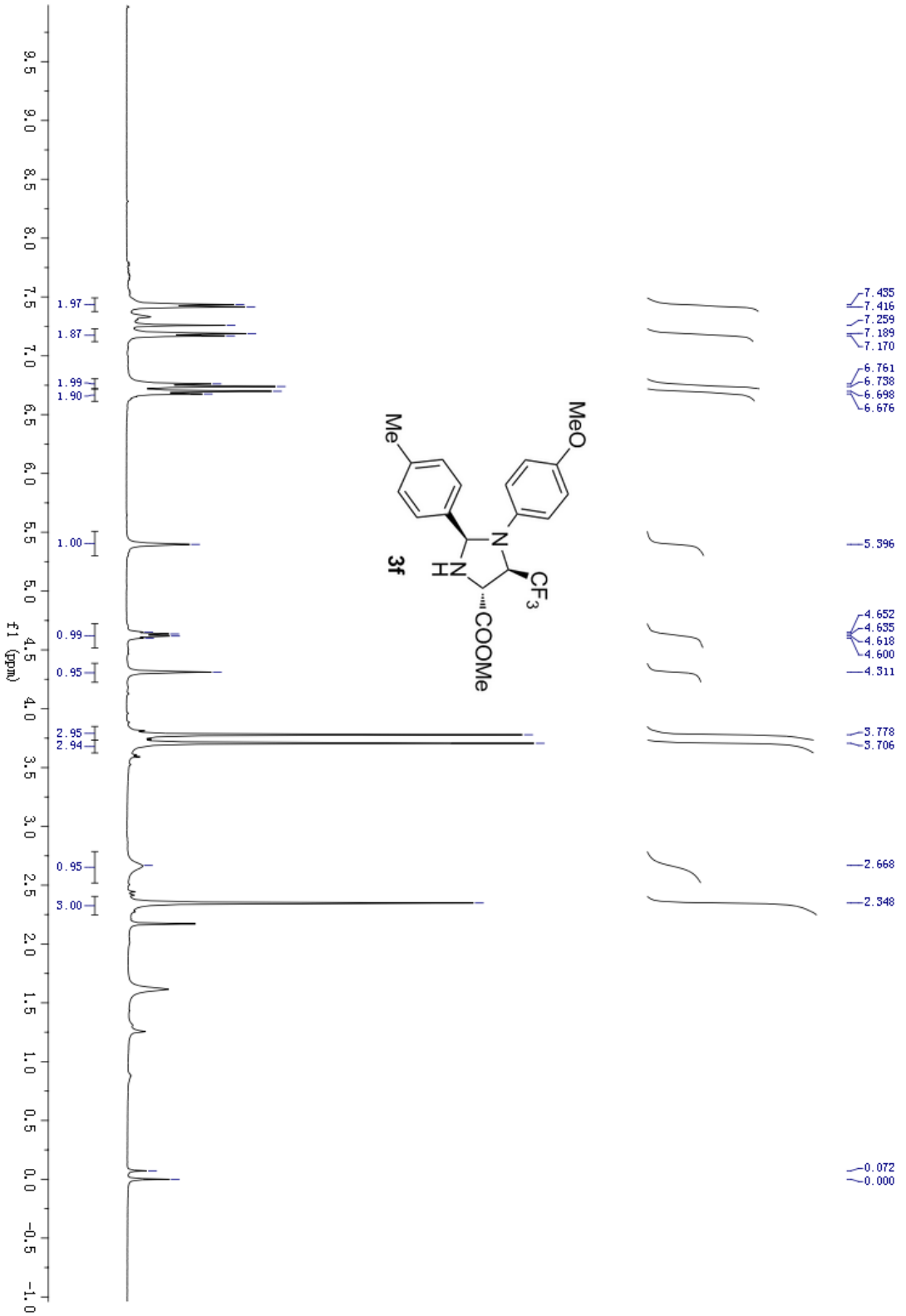
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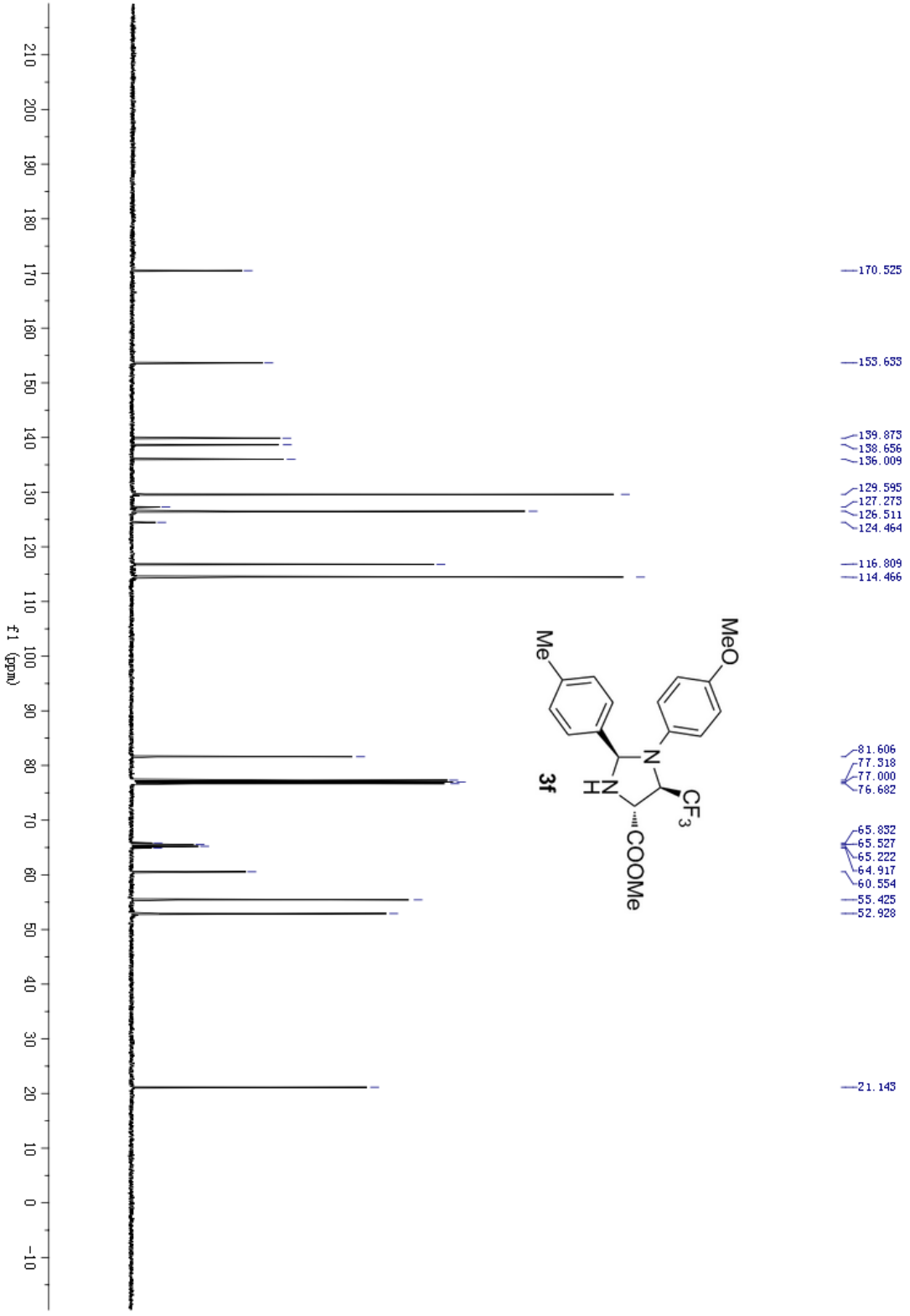
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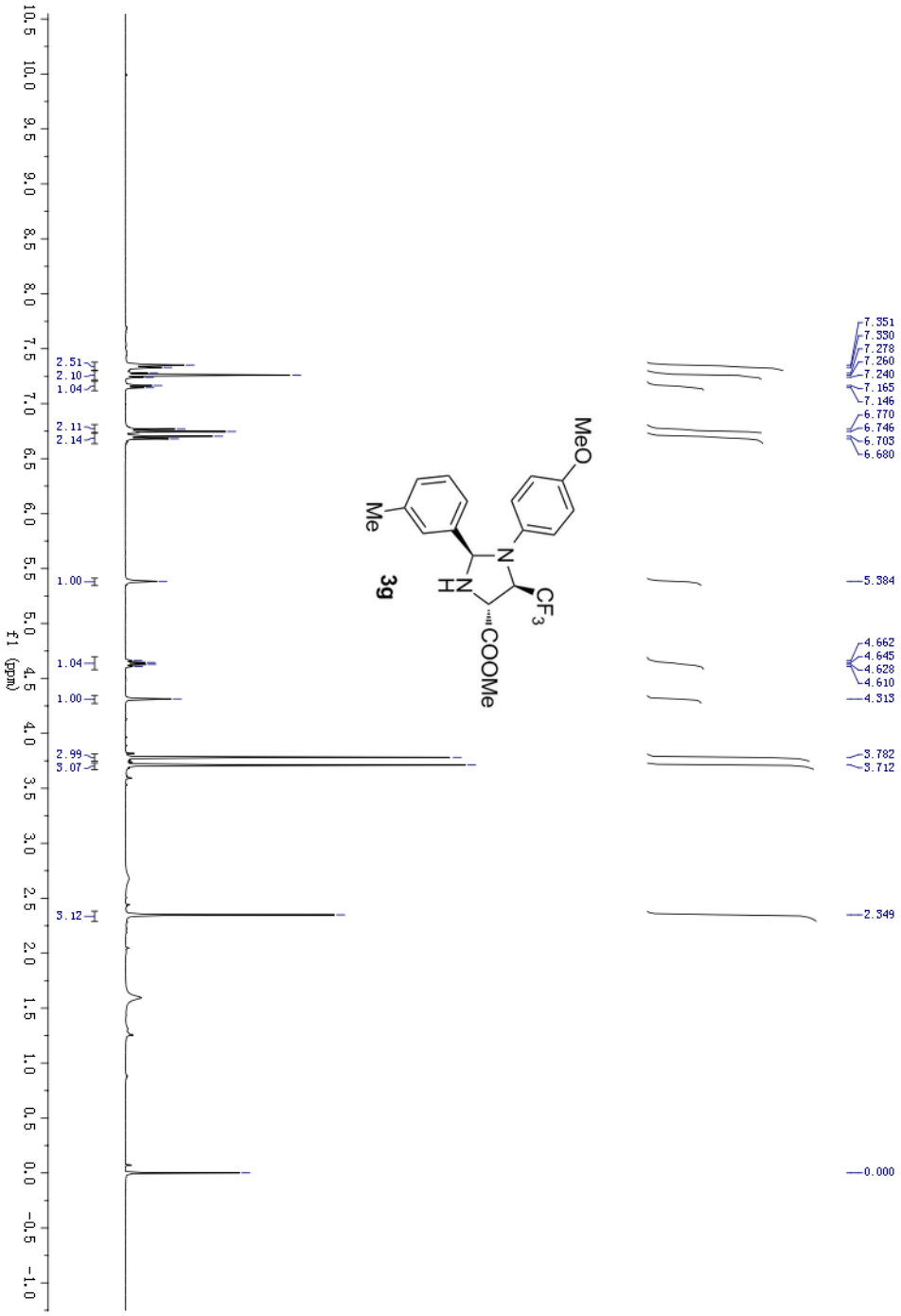
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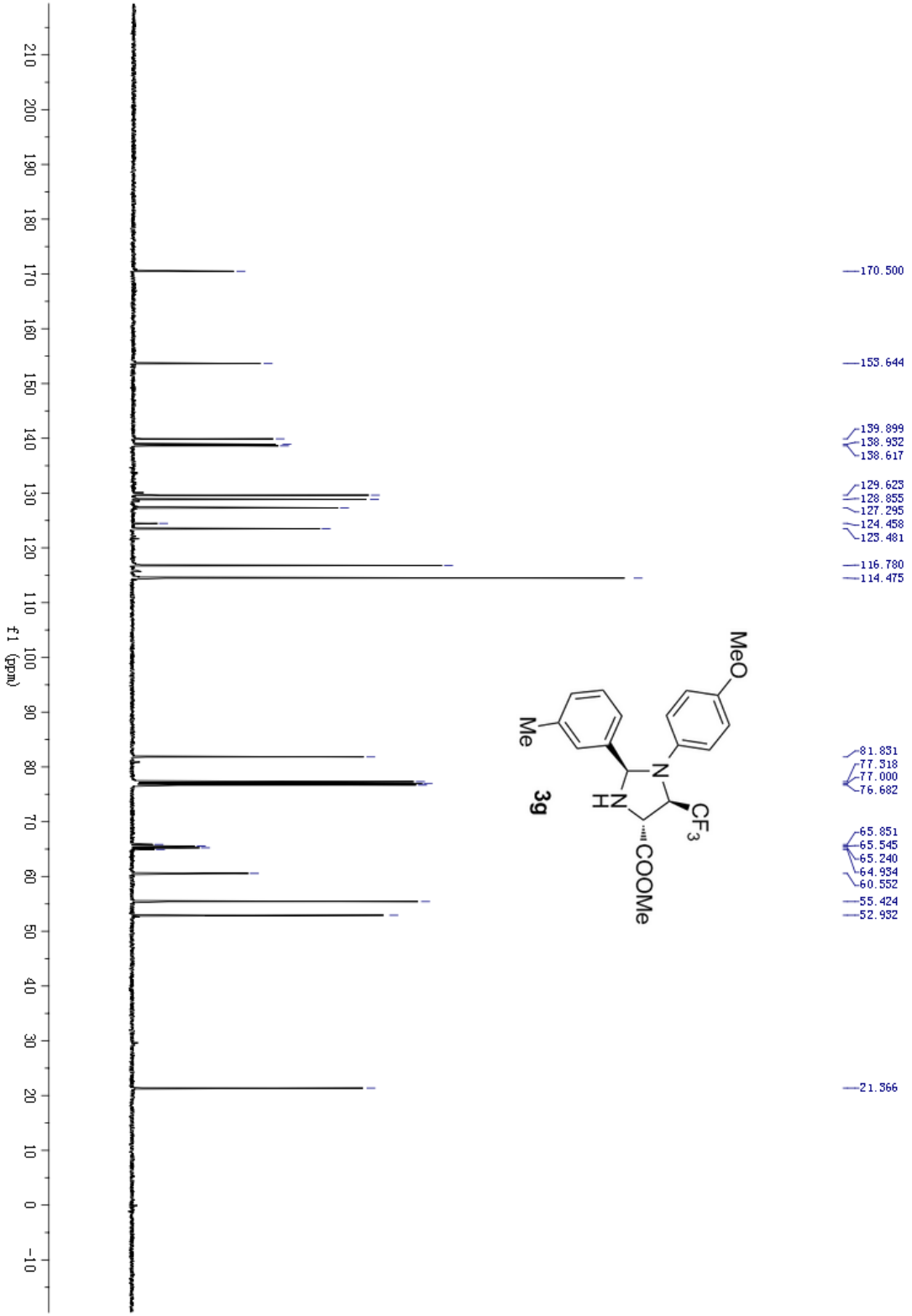
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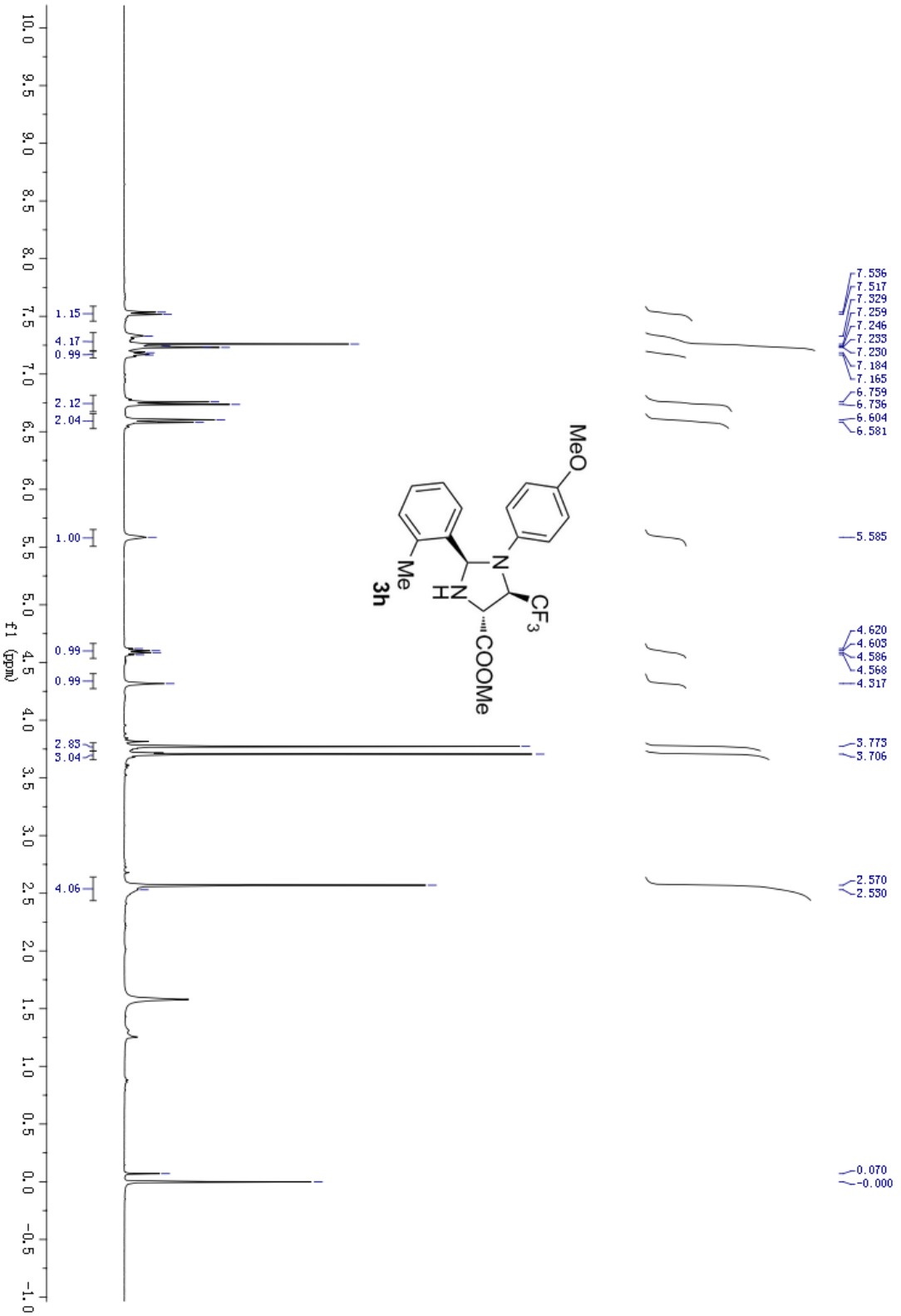
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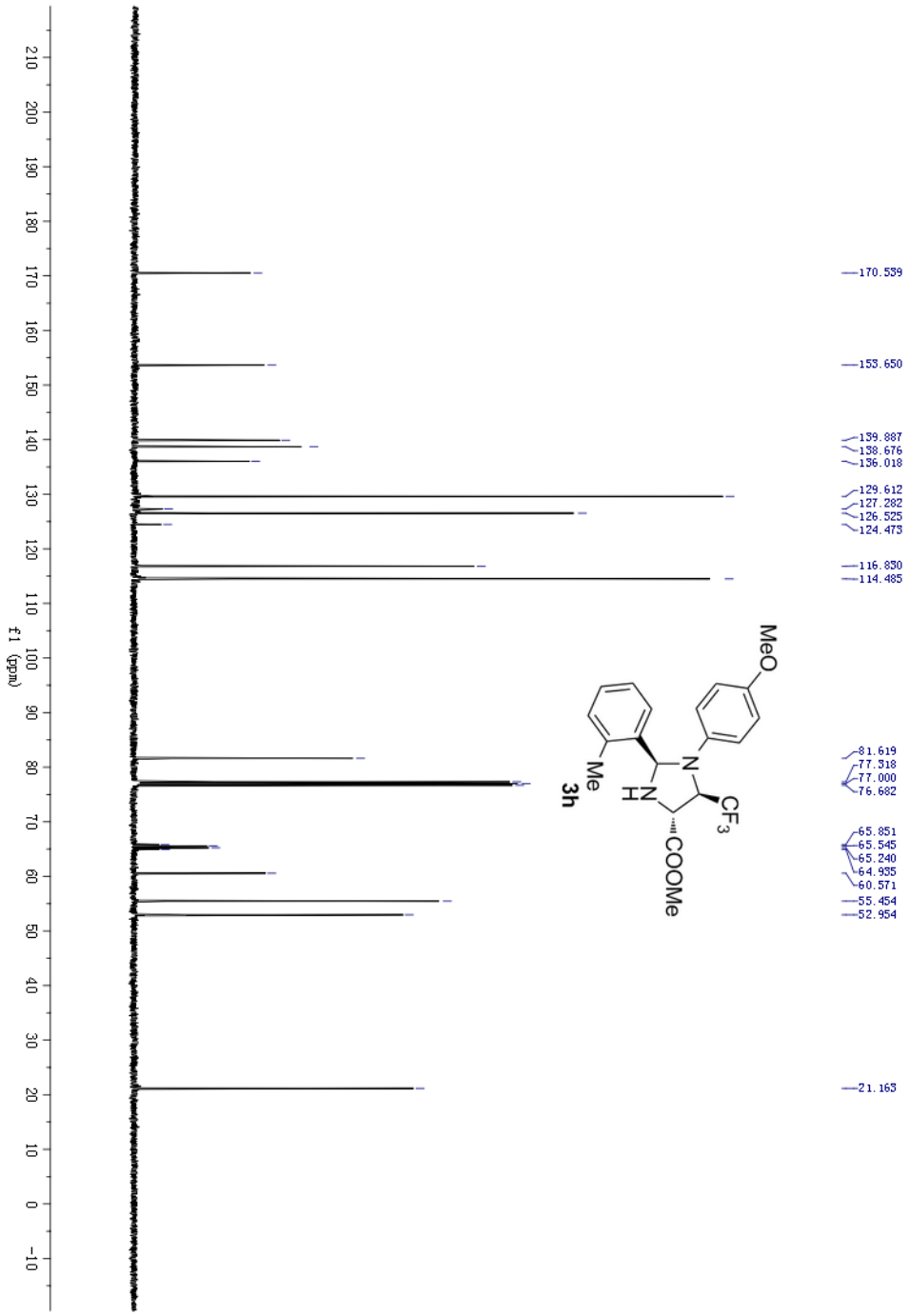
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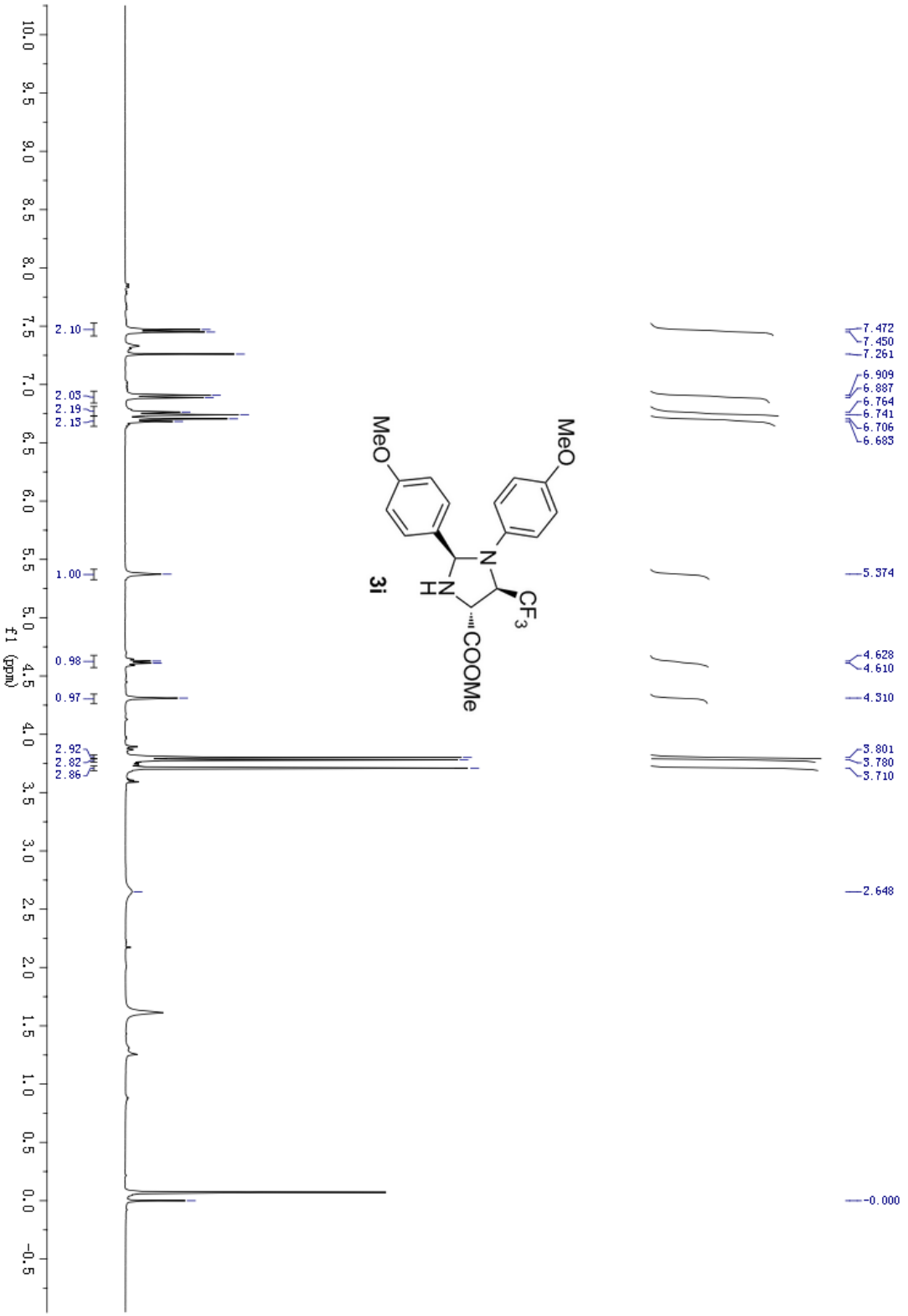
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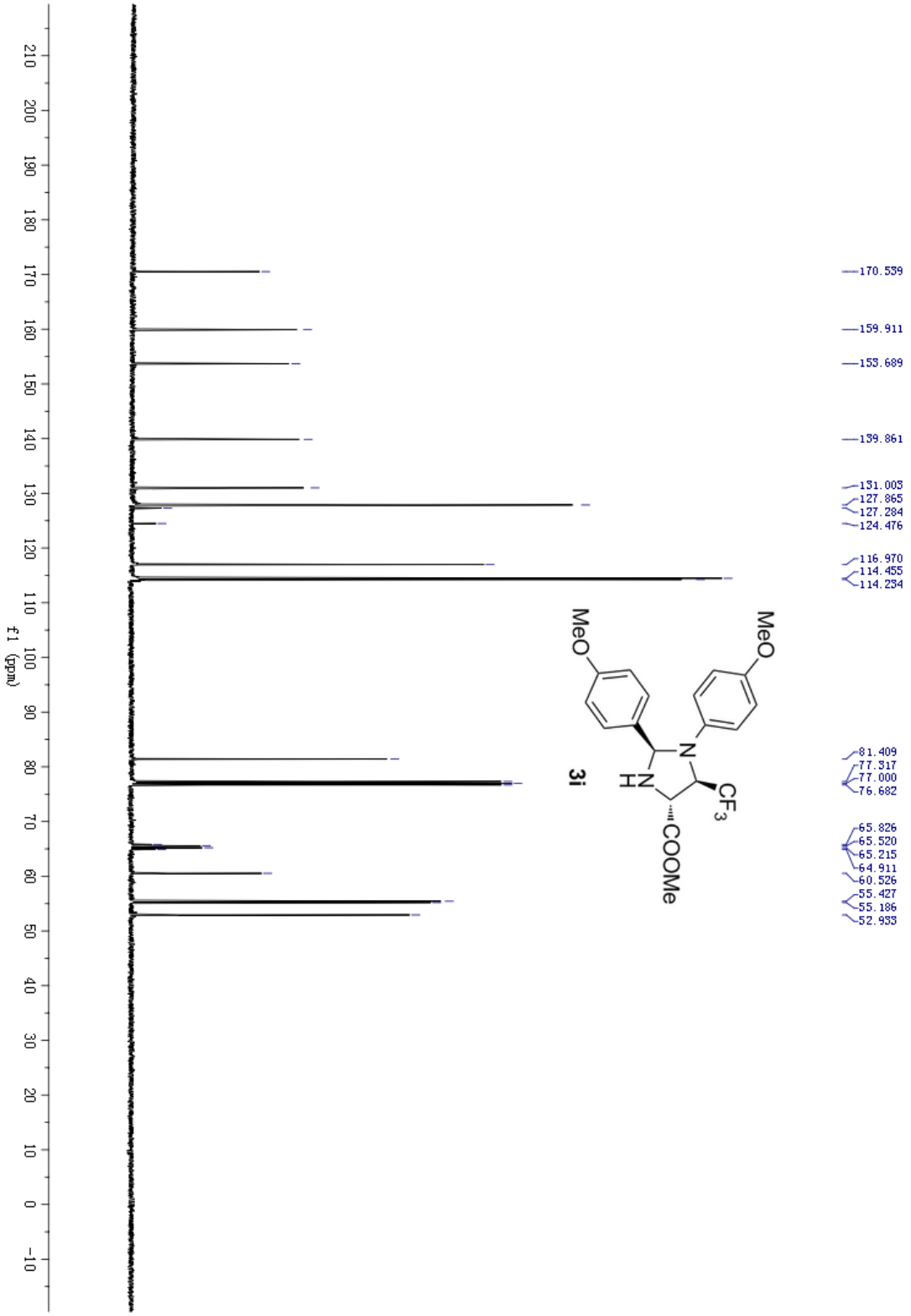
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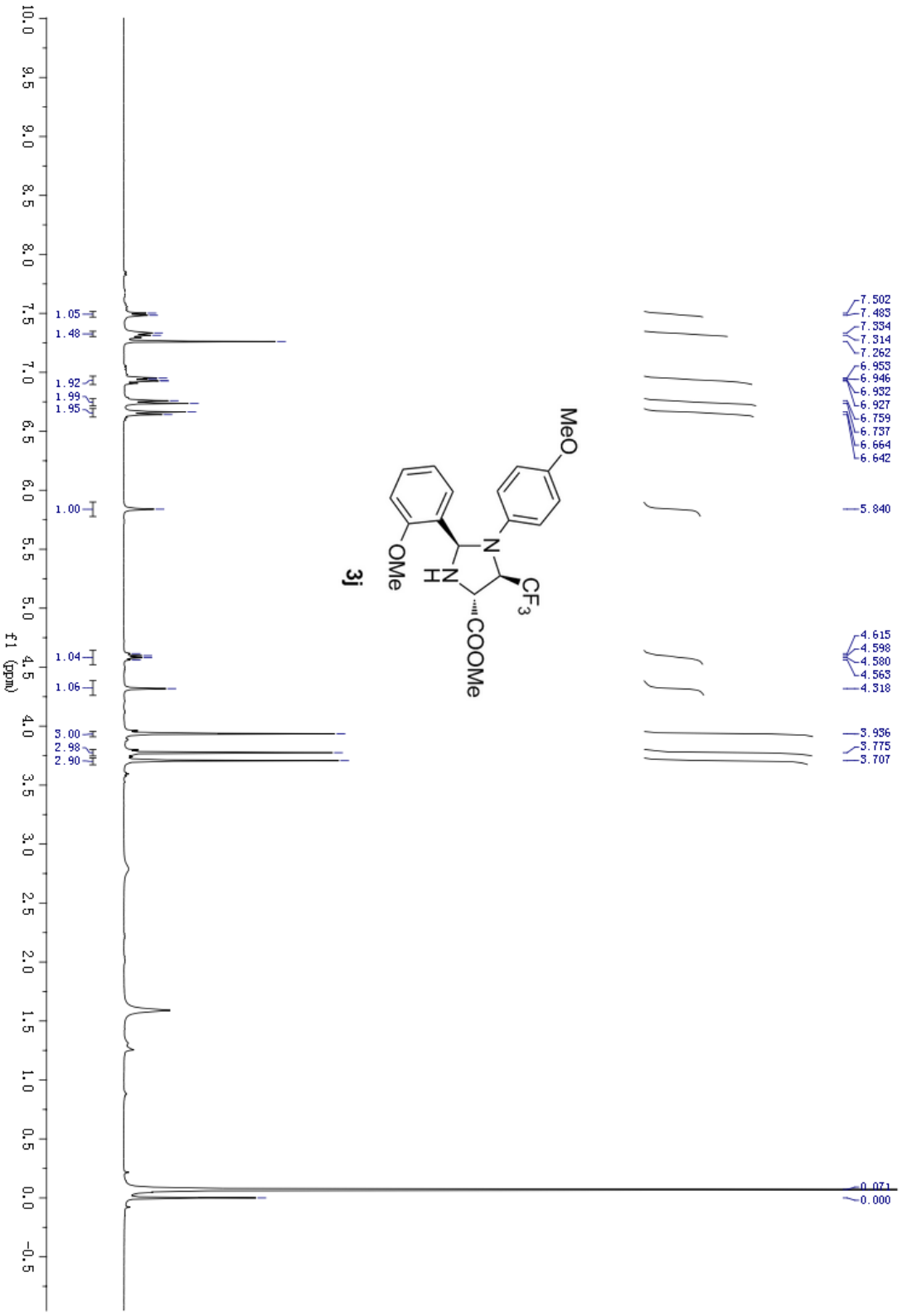
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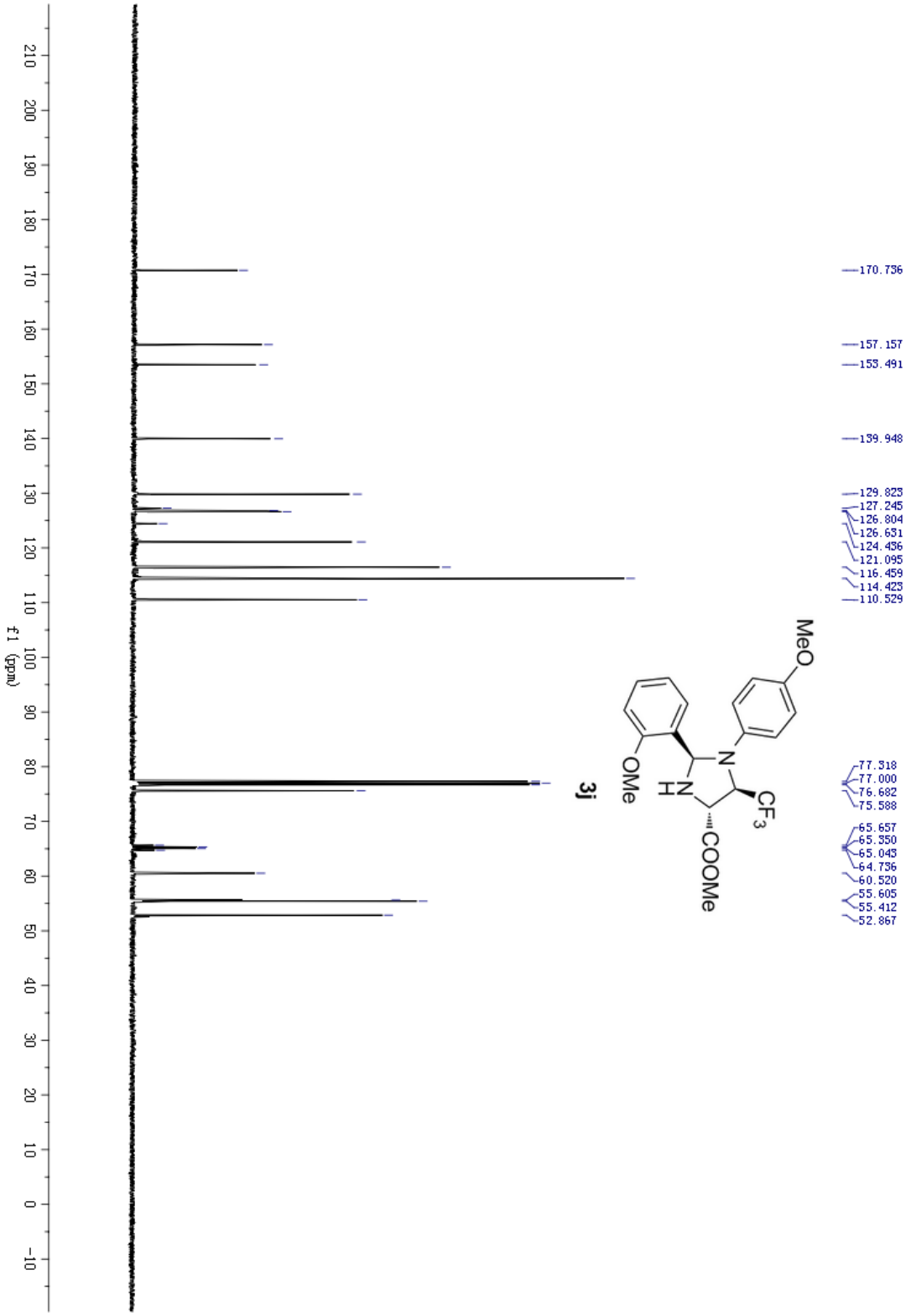
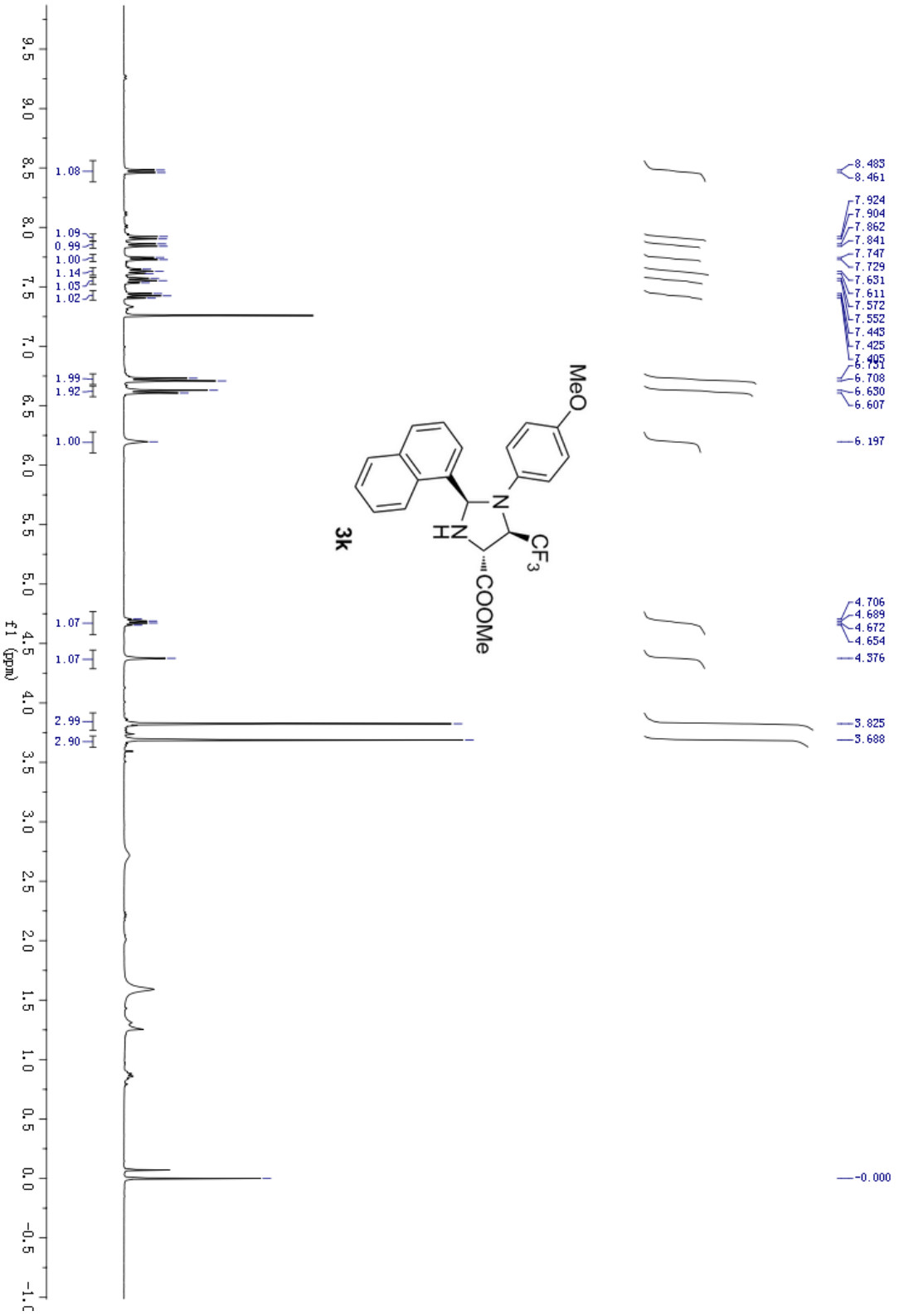
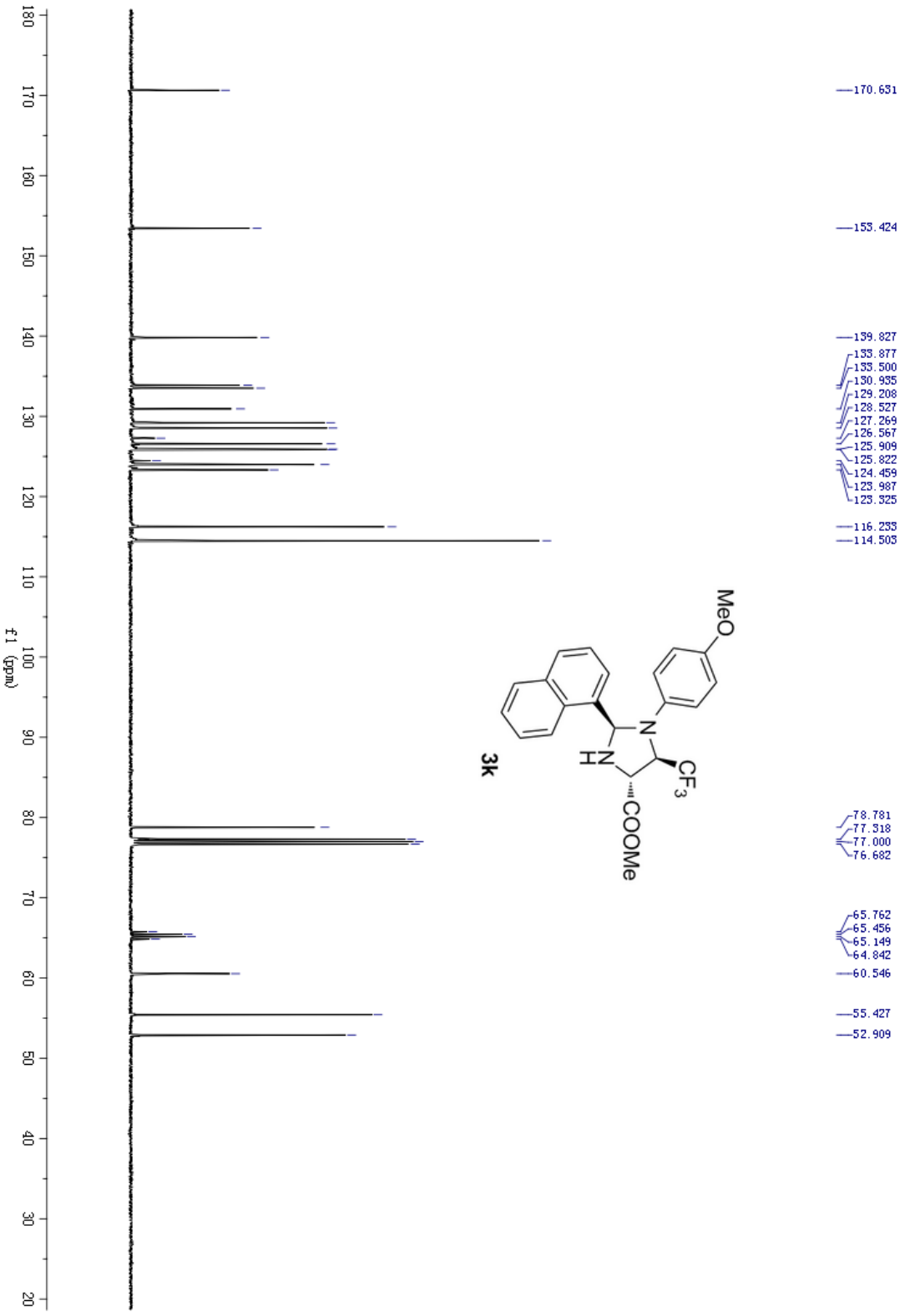
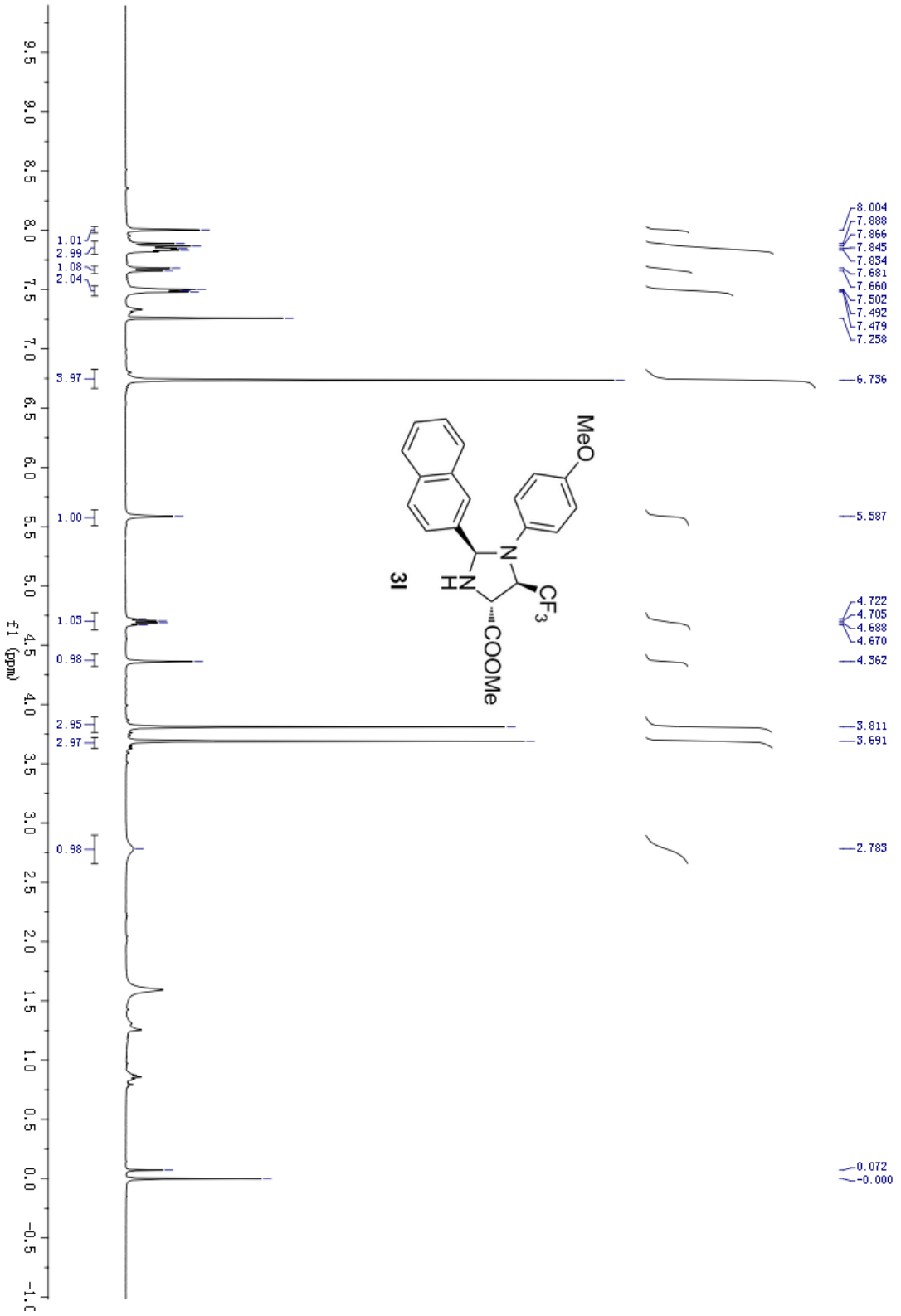
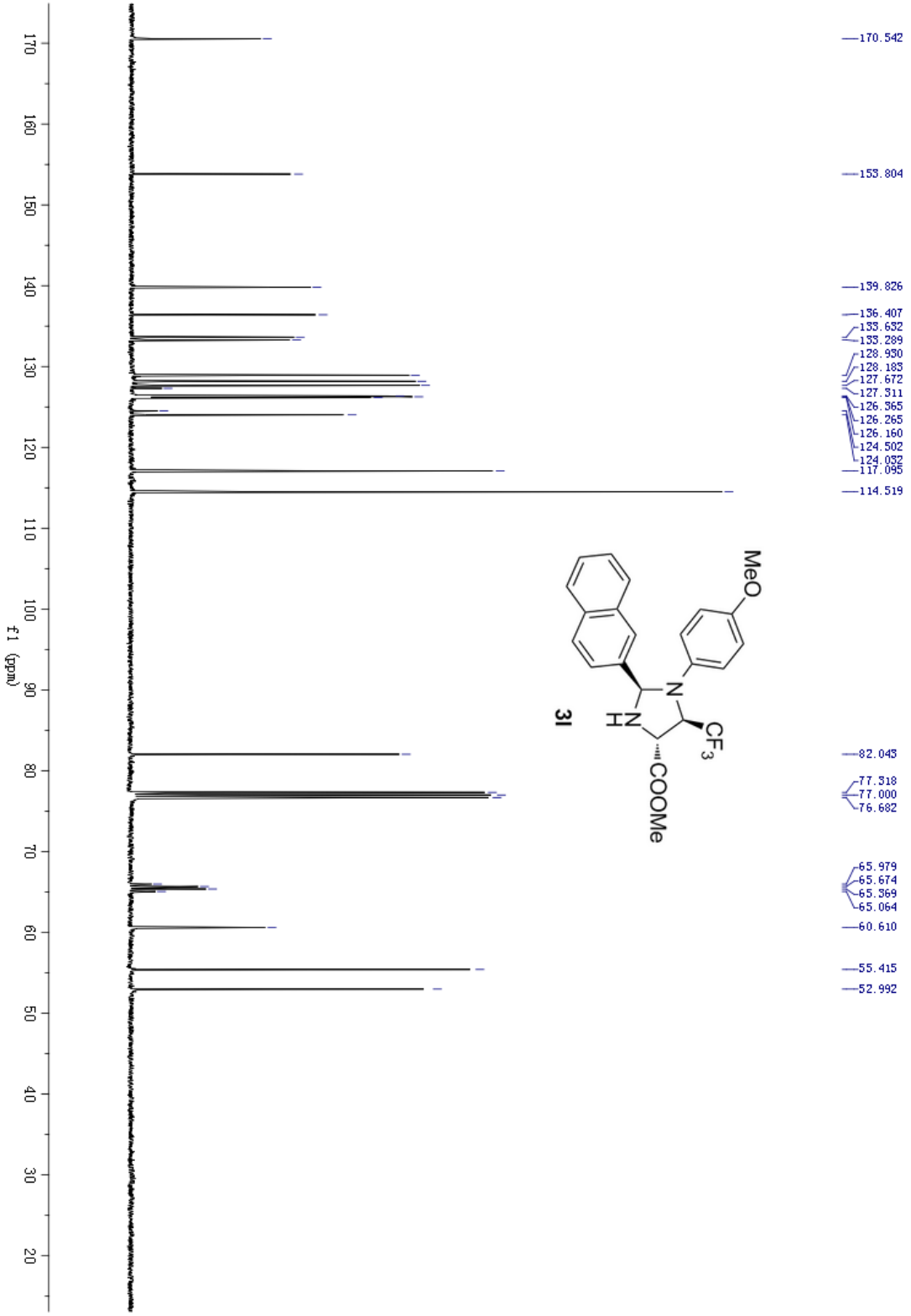
7.483
7.334
7.314
7.262
6.953
6.946
6.932
6.927
6.759
6.737
6.664
6.642
5.840
4.615
4.598
4.580
4.563
4.318
3.936
3.775
3.707
0.071
0.000

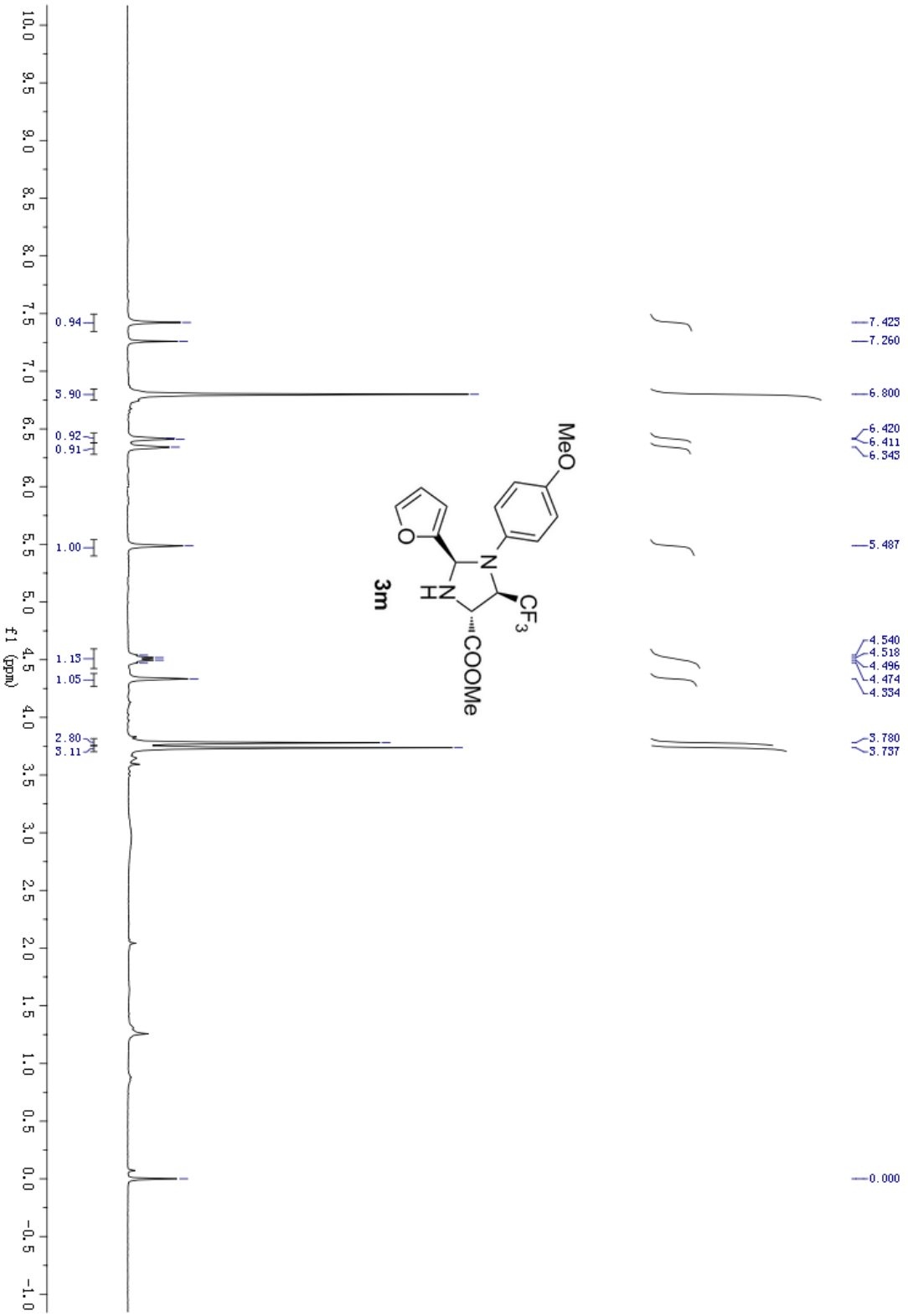

f1 (ppm)
170.736
157.157
153.491
139.948
129.823
127.245
126.804
126.631
124.436
121.095
116.459
114.423
110.529
77.318
77.000
76.682
75.588
65.657
65.350
65.043
64.736
60.520
55.605
55.412
52.867
MeO
OMe
N
H
N
CF3
COOMe
3j

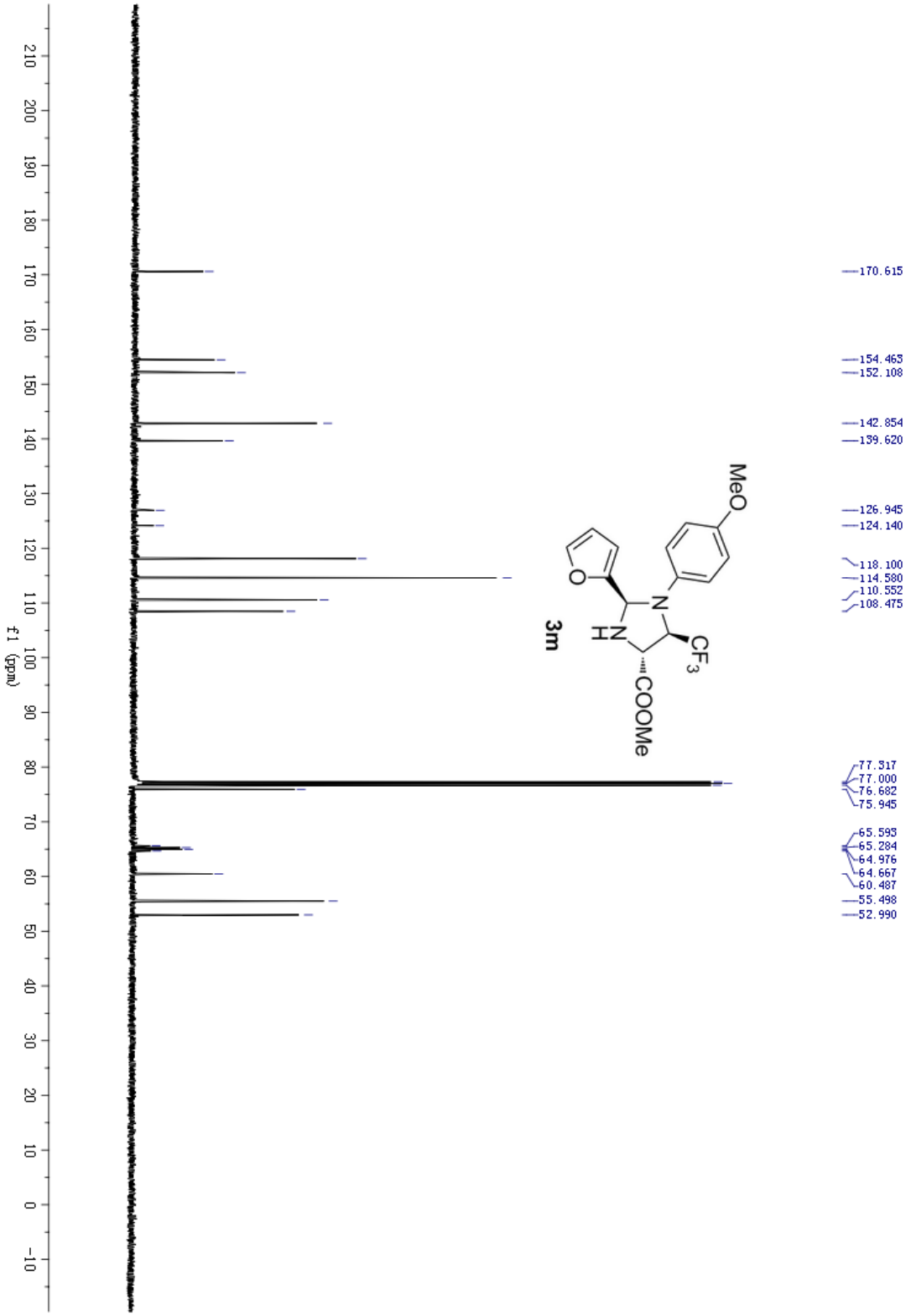

f1 (ppm)
1.08
1.09
0.99
1.00
1.14
1.03
1.02
1.99
1.92
1.00
1.07
1.07
2.99
2.90
8.483
8.461
7.924
7.904
7.862
7.841
7.747
7.729
7.631
7.611
7.572
7.552
7.443
7.425
6.708
6.630
6.607
6.197
4.706
4.689
4.672
4.654
4.376
3.825
3.688
-0.000
MeO
N
H
N
CF3
COOMe
3k

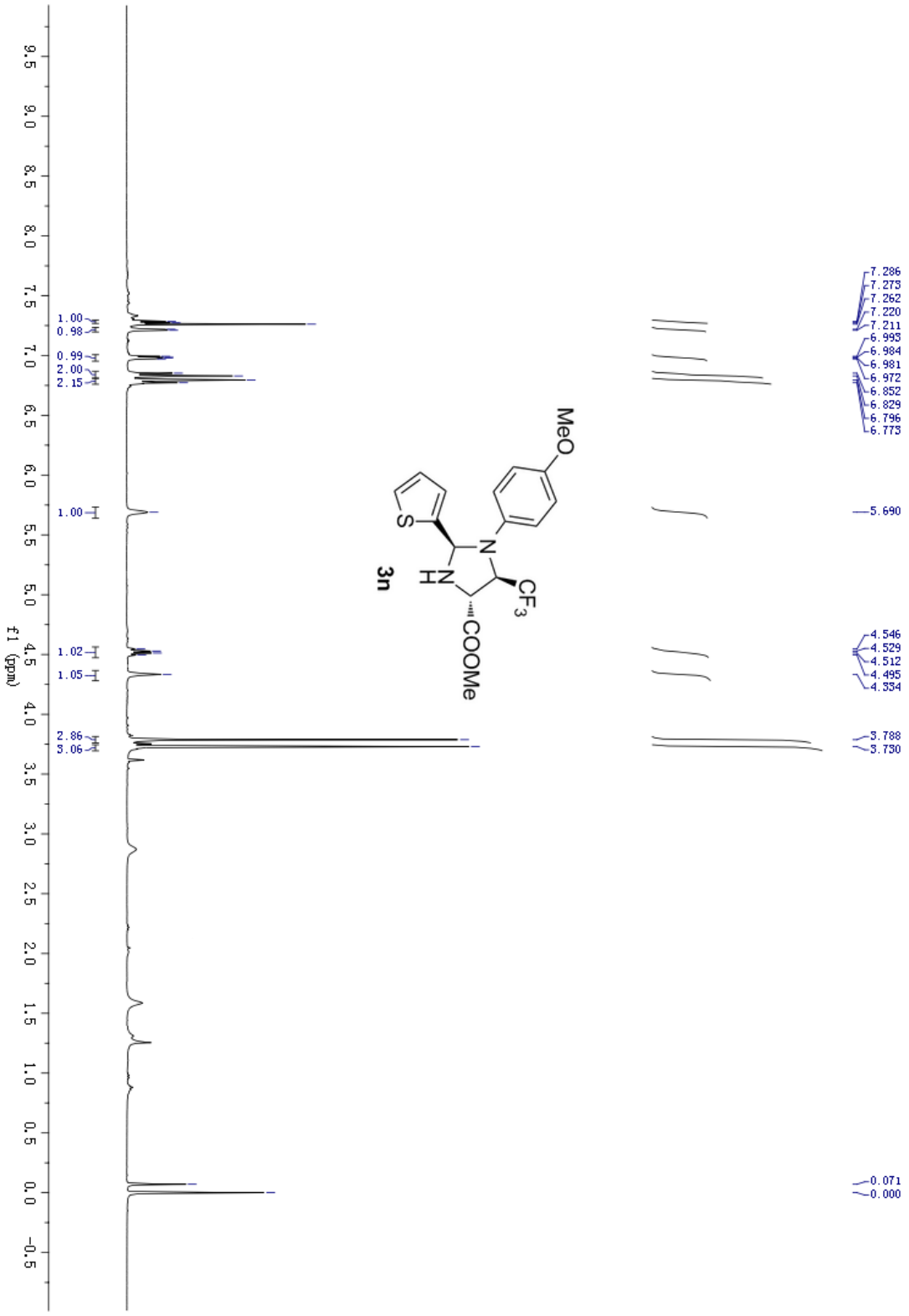

f1 (ppm)
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
170.631
153.424
139.827
133.877
133.500
130.935
129.208
128.527
127.269
126.567
125.909
125.822
124.459
123.987
123.325
116.233
114.503
78.781
77.318
77.000
76.682
65.762
65.456
65.149
64.842
60.546
55.427
52.909
MeO
N
H
N
CF3
COOMe
3k

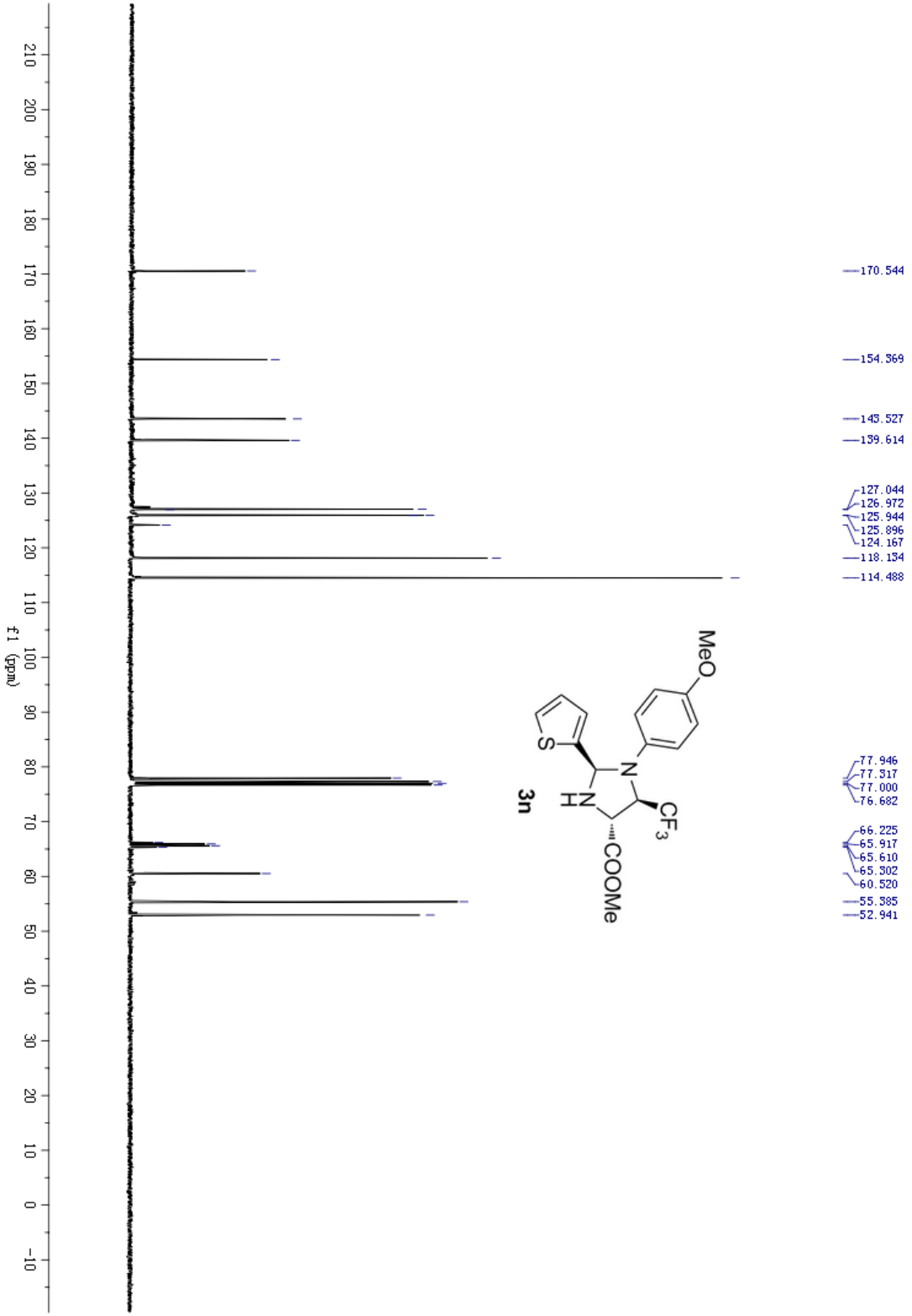

8.004
7.888
7.866
7.845
7.834
7.681
7.660
7.502
7.492
7.479
7.258
6.736
5.587
4.722
4.705
4.688
4.670
4.362
3.811
3.691
2.783
0.072
-0.000
1.01
2.99
1.08
2.04
3.97
1.00
1.03
0.98
2.95
2.97
0.98
f1 (ppm)
MeO
N
N
H
CF3
COOMe
3l

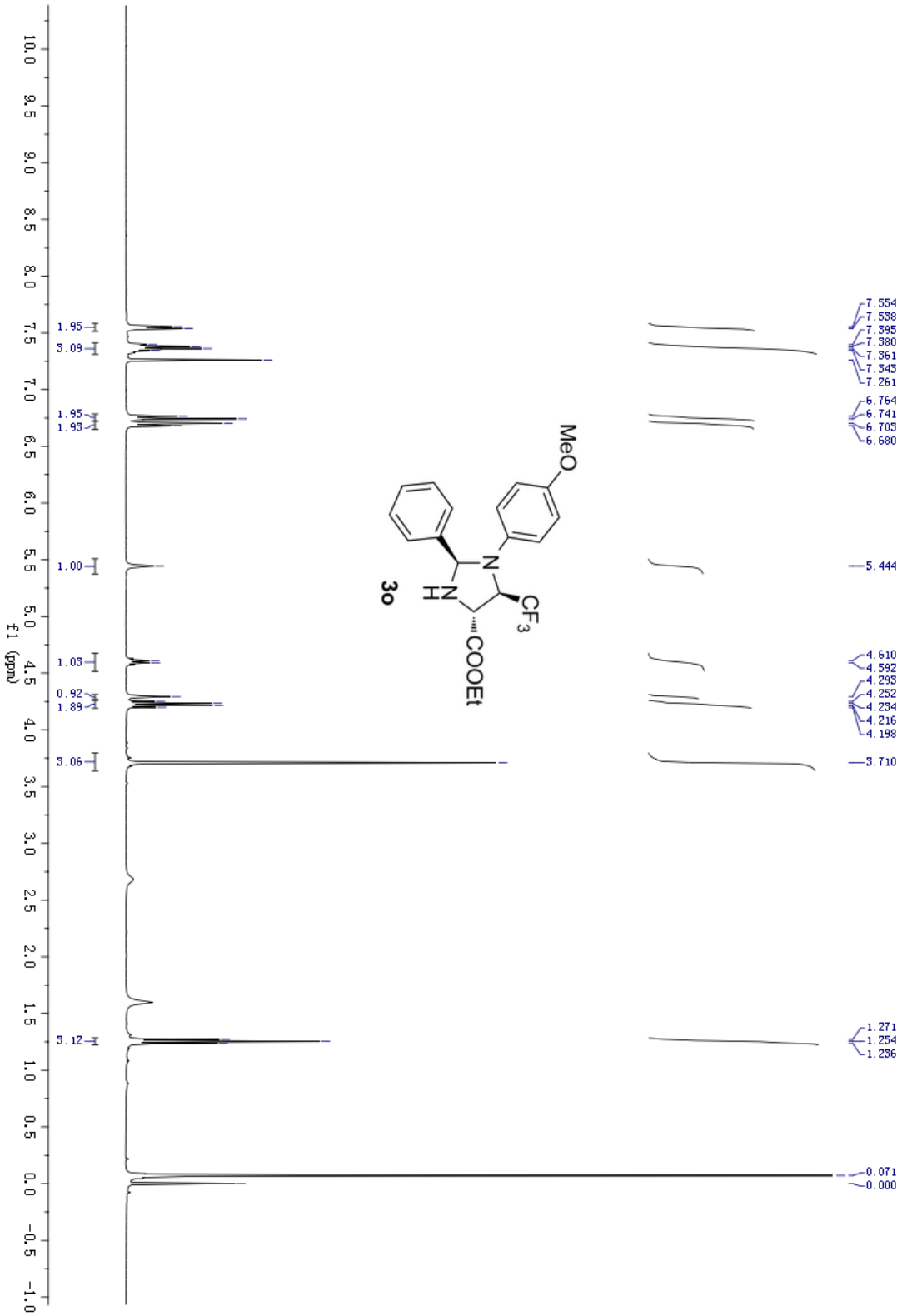

170.542
153.804
139.826
136.407
133.632
133.289
128.930
128.183
127.672
127.311
126.365
126.265
126.160
124.502
124.032
117.095
114.519
82.043
77.318
77.000
76.682
65.979
65.674
65.369
65.064
60.610
55.415
52.992
f1 (ppm)
MeO
CF3
COOMe
N
H
3l

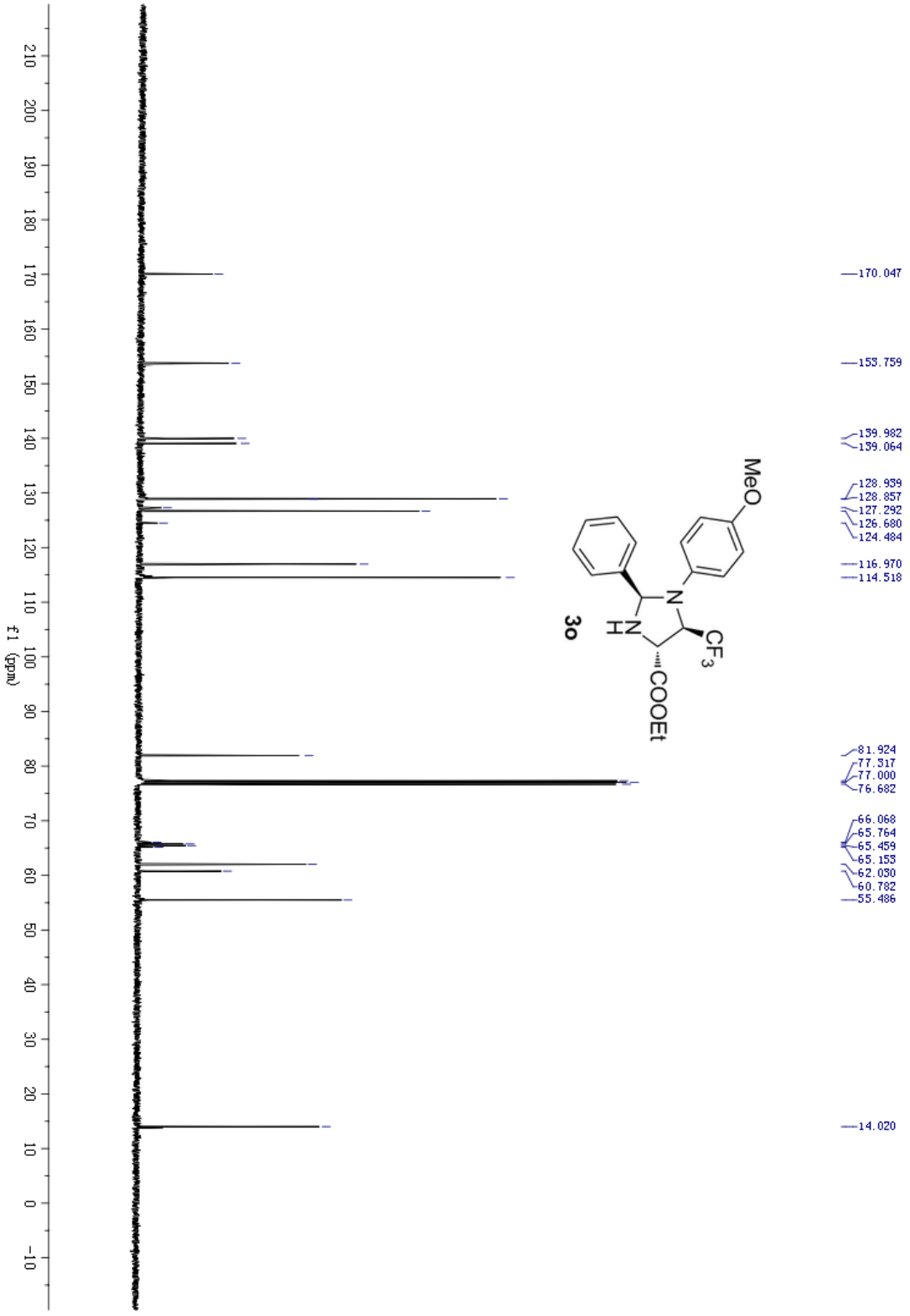

f1 (ppm)
0.94
3.90
0.92
0.91
1.00
1.13
1.05
2.80
3.11
7.423
7.260
6.800
6.420
6.411
6.343
5.487
4.540
4.518
4.496
4.474
4.334
3.780
3.737
0.000
MeO
CF3
COOMe
3m

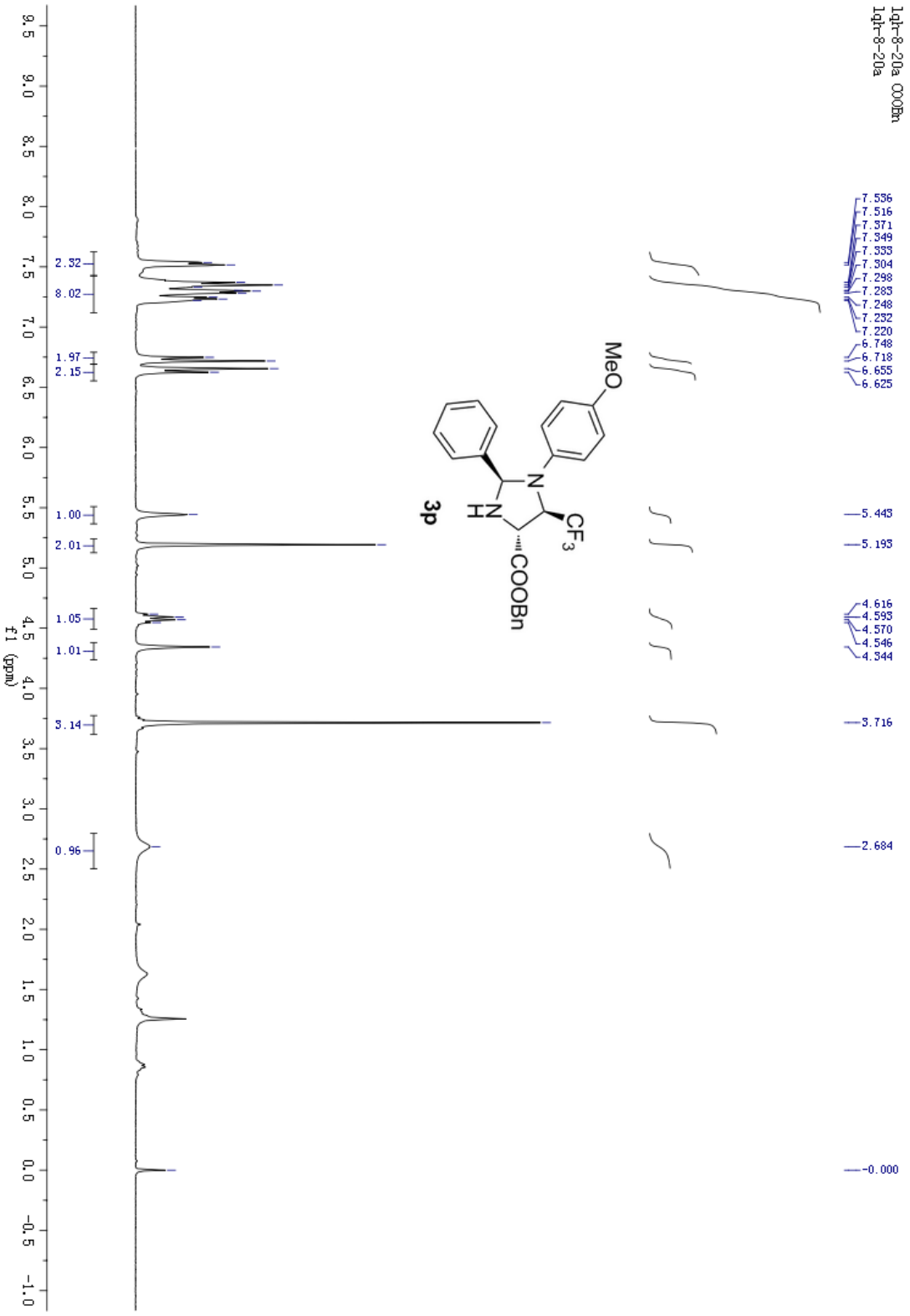

f1 (ppm)
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
170.615
154.463
152.108
142.854
139.620
126.945
124.140
118.100
114.580
110.552
108.475
77.317
77.000
76.682
75.945
65.593
65.284
64.976
64.667
60.487
55.498
52.990
MeO
O
N
H
N
CF3
COOMe
3m

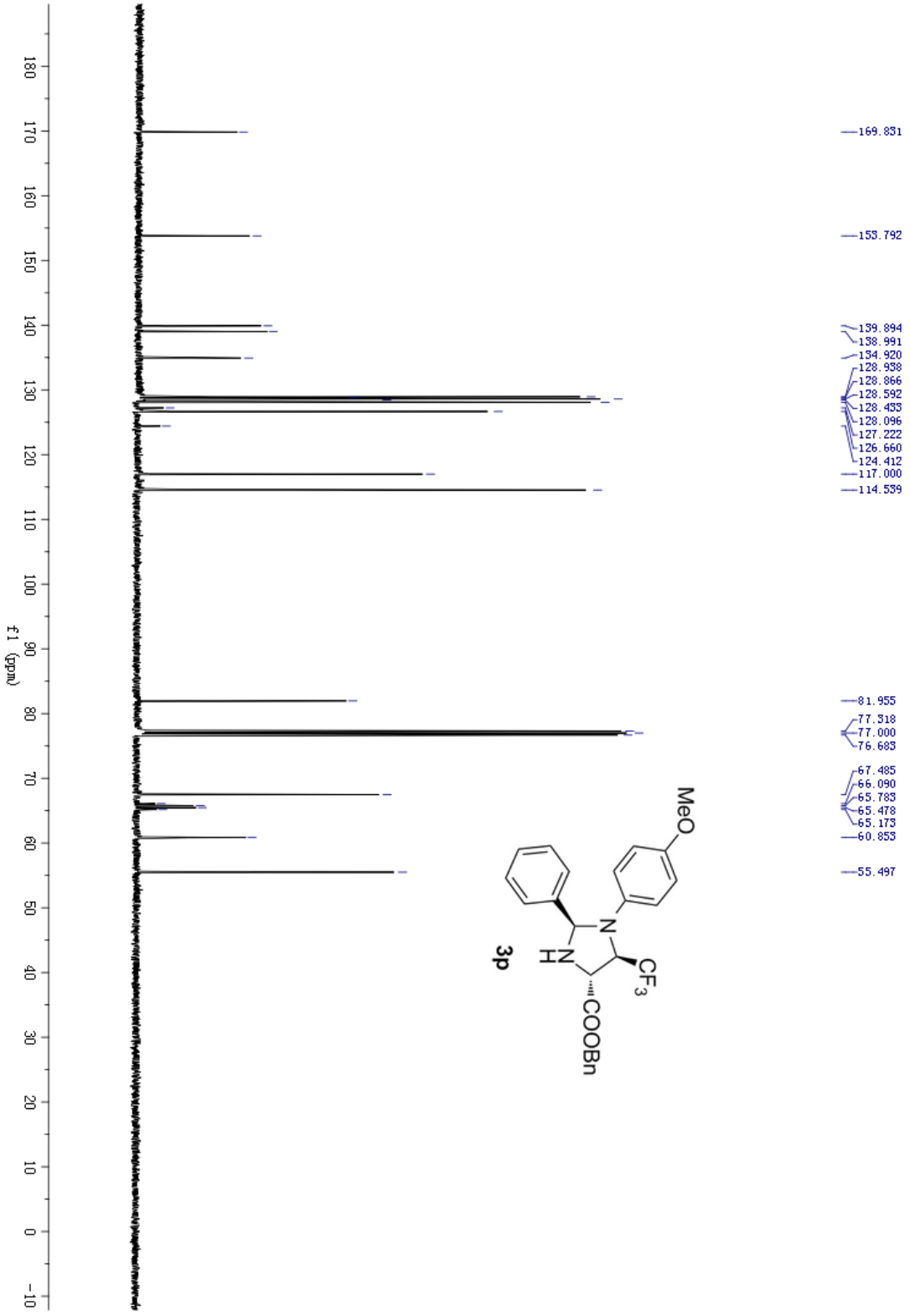

f1 (ppm)
1.00
0.98
0.99
2.00
2.15
1.00
1.02
1.05
2.86
3.06
7.286
7.273
7.262
7.220
7.211
6.993
6.984
6.981
6.972
6.852
6.829
6.796
6.773
5.690
4.546
4.529
4.512
4.495
4.334
3.788
3.730
0.071
0.000
MeO
S
N
H
N
CF3
COOMe
3n

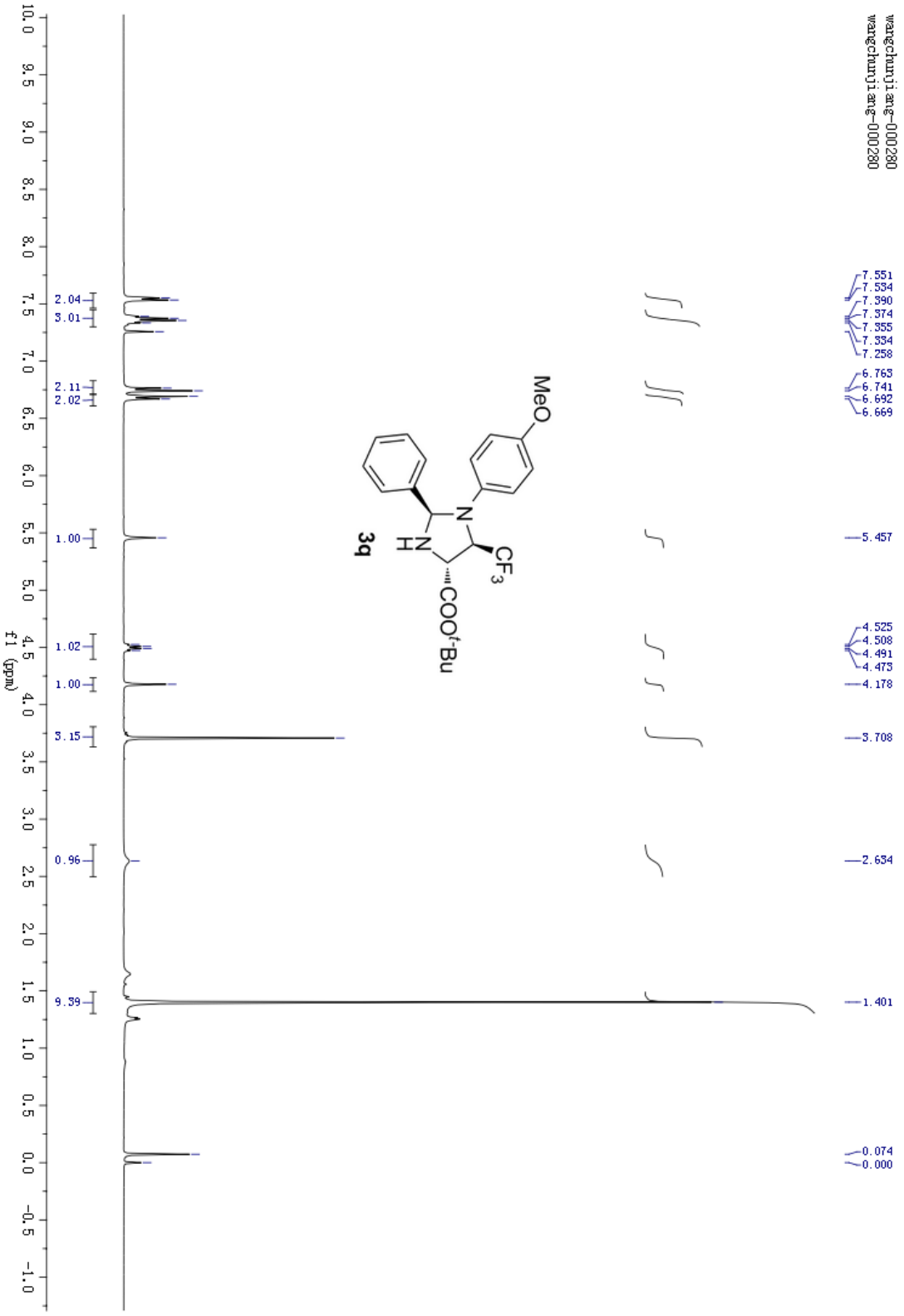

f1 (ppm)
170.544
154.369
143.527
139.614
127.044
126.972
125.944
125.896
124.167
118.134
114.488
77.946
77.317
77.000
76.682
66.225
65.917
65.610
65.302
60.520
55.385
52.941
MeO
S
N
H
N
CF3
COOMe
3n

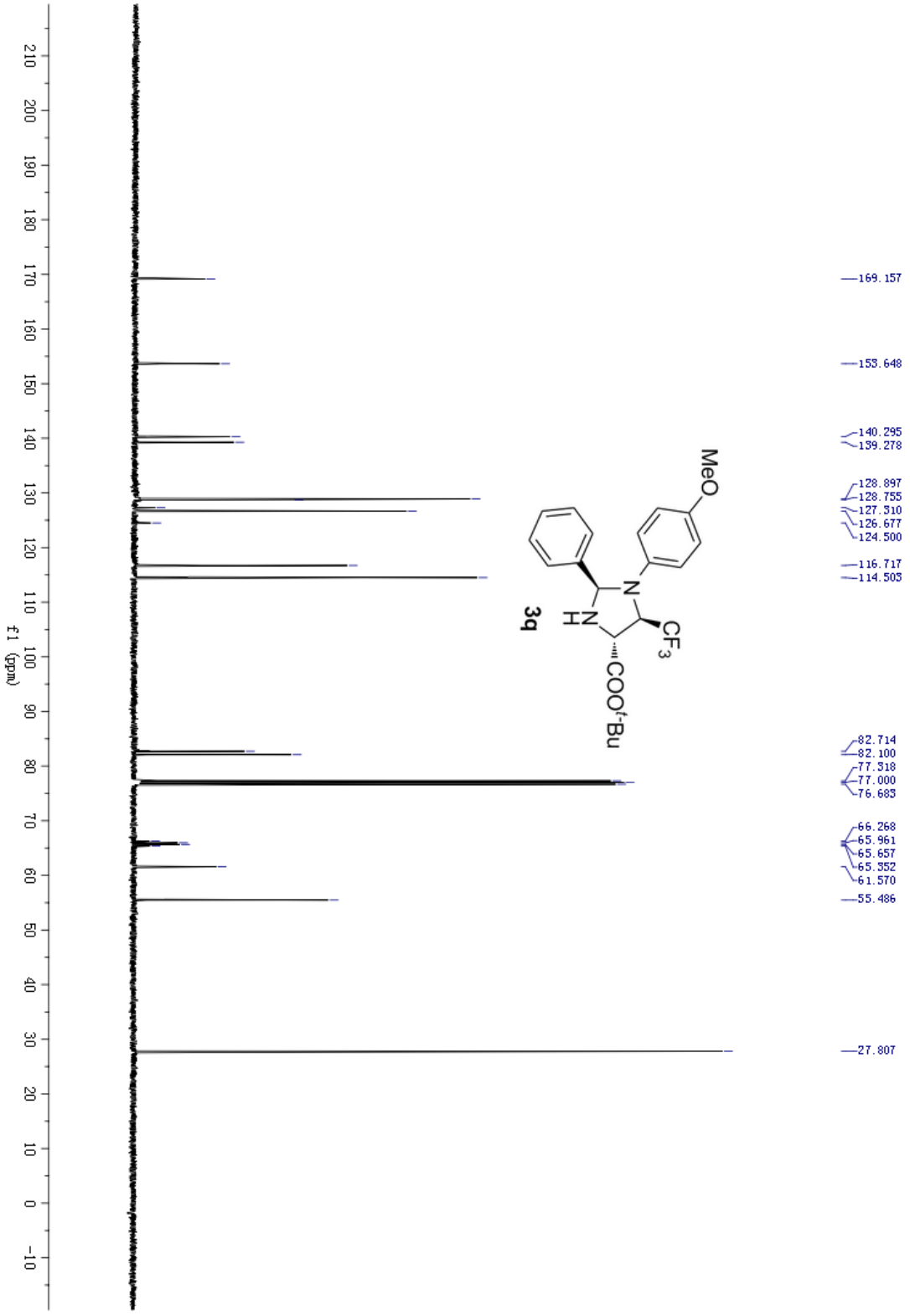

MeO
N
H
N
CF3
COOEt
3o
f1 (ppm)
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
1.95
3.09
1.95
1.93
1.00
1.03
0.92
1.89
3.06
3.12
7.554
7.538
7.395
7.380
7.361
7.343
7.261
6.764
6.741
6.703
6.680
5.444
4.610
4.592
4.293
4.252
4.234
4.216
4.198
3.710
1.271
1.254
1.236
0.071
0.000

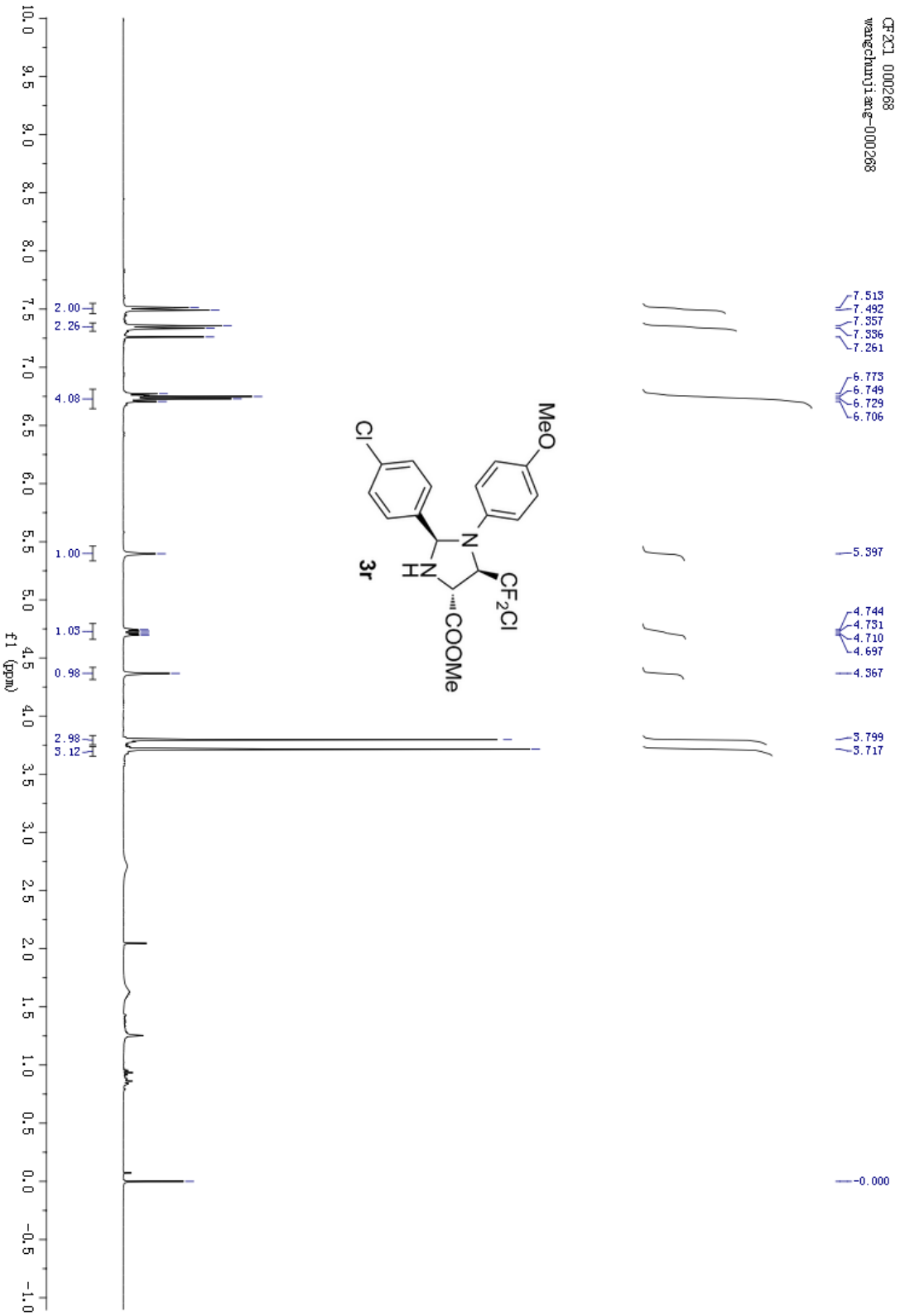

f1 (ppm)
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
170.047
153.759
139.982
139.064
128.939
128.857
127.292
126.680
124.484
116.970
114.518
81.924
77.317
77.000
76.682
66.068
65.764
65.459
65.153
62.050
60.782
55.486
14.020
MeO
N
H
N
CF3
COOEt
3o

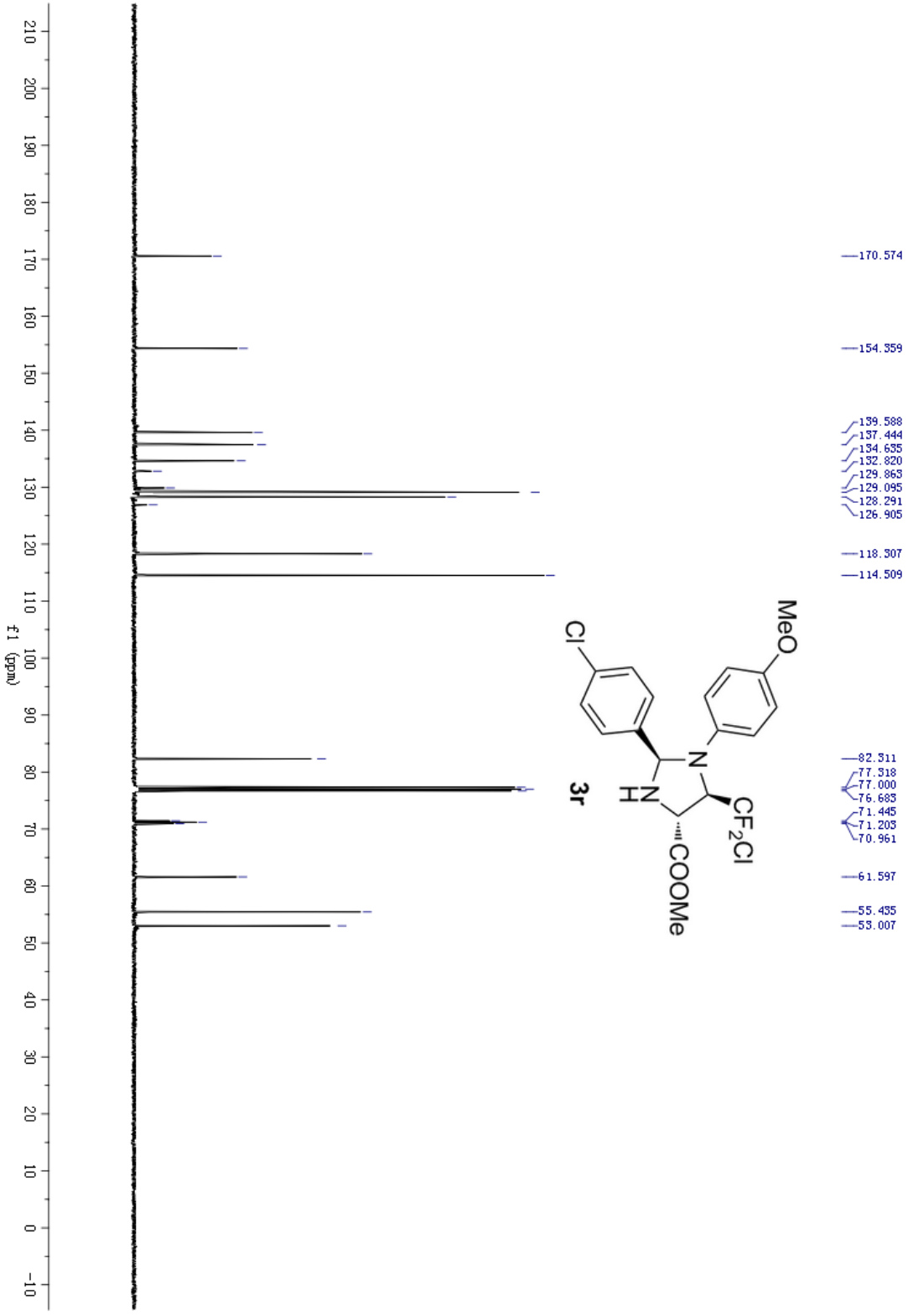

lqh-8-20a COOBn
lqh-8-20a
7.536
7.516
7.371
7.349
7.333
7.304
7.298
7.283
7.248
7.232
7.220
6.748
6.718
6.655
6.625
5.443
5.193
4.616
4.593
4.570
4.546
4.544
3.716
2.684
-0.000
2.32
8.02
1.97
2.15
1.00
2.01
1.05
1.01
3.14
0.96
MeO
N
H
N
CF3
COOBn
3p
f1 (ppm)

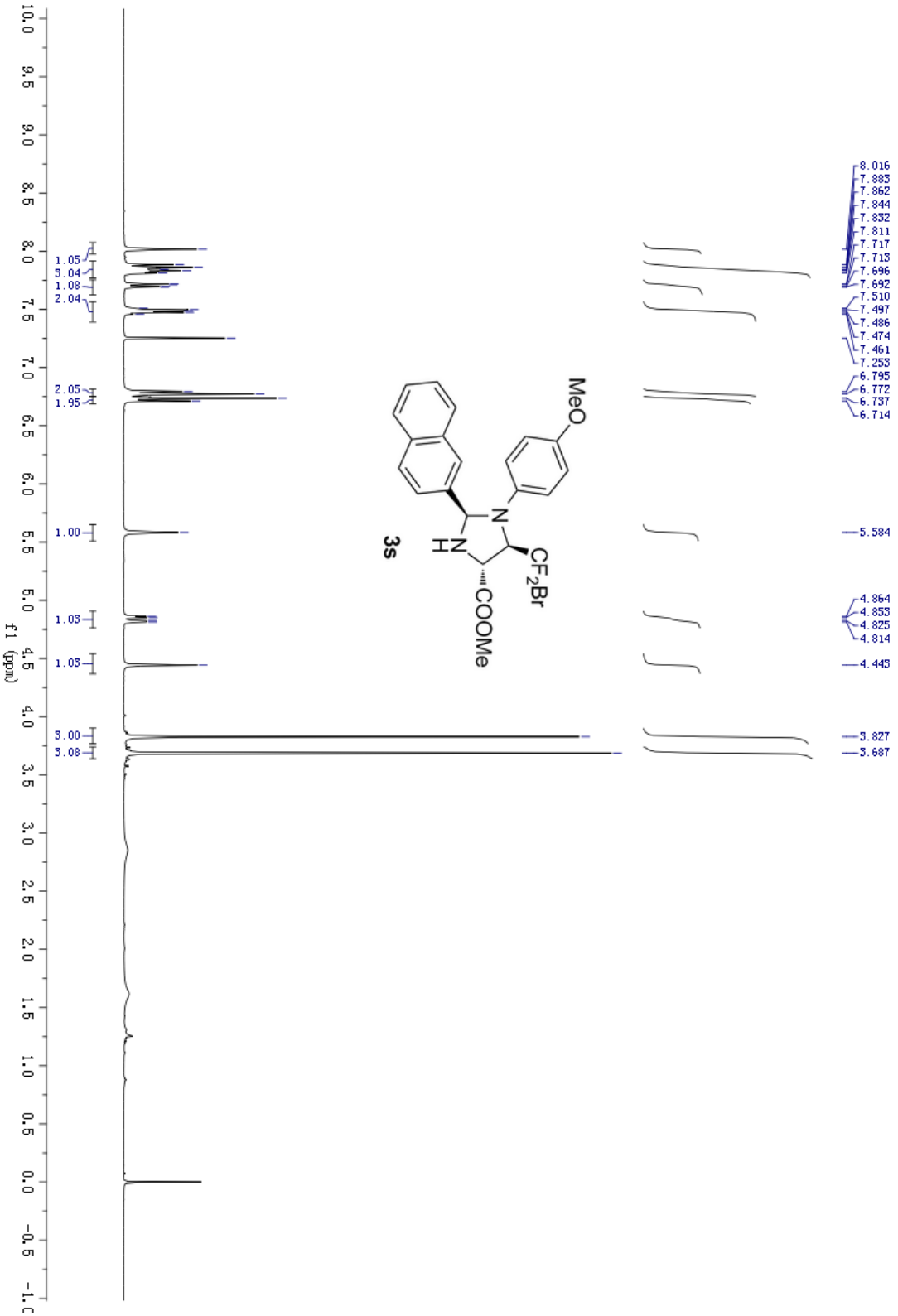

f1 (ppm)
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
169.831
153.792
139.894
138.991
134.920
128.938
128.866
128.592
128.433
128.096
127.222
126.660
124.412
117.000
114.539
81.955
77.518
77.000
76.683
67.485
66.090
65.783
65.478
65.173
60.853
55.497
MeO
N
H
N
CF3
COOBn
3p

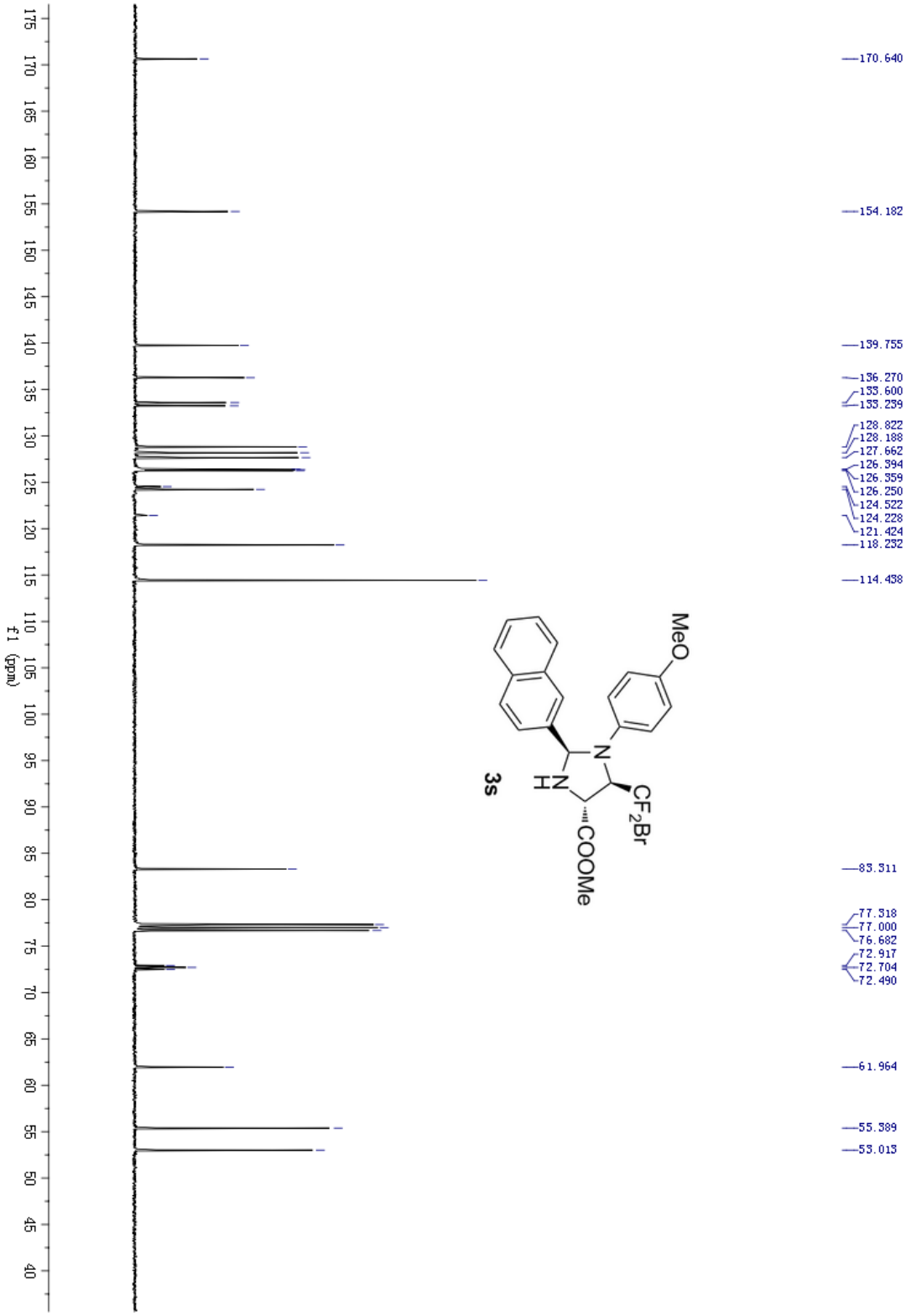

wangchunjiang-000280
wangchunjiang-000280
7.551
7.534
7.390
7.374
7.355
7.334
7.258
6.763
6.741
6.692
6.669
5.457
4.525
4.508
4.491
4.475
4.178
3.708
2.634
1.401
0.074
0.000
2.04
3.01
2.11
2.02
1.00
1.02
1.00
3.15
0.96
9.39
f1 (ppm)
MeO
N
N
H
CF3
COOtBu
3q

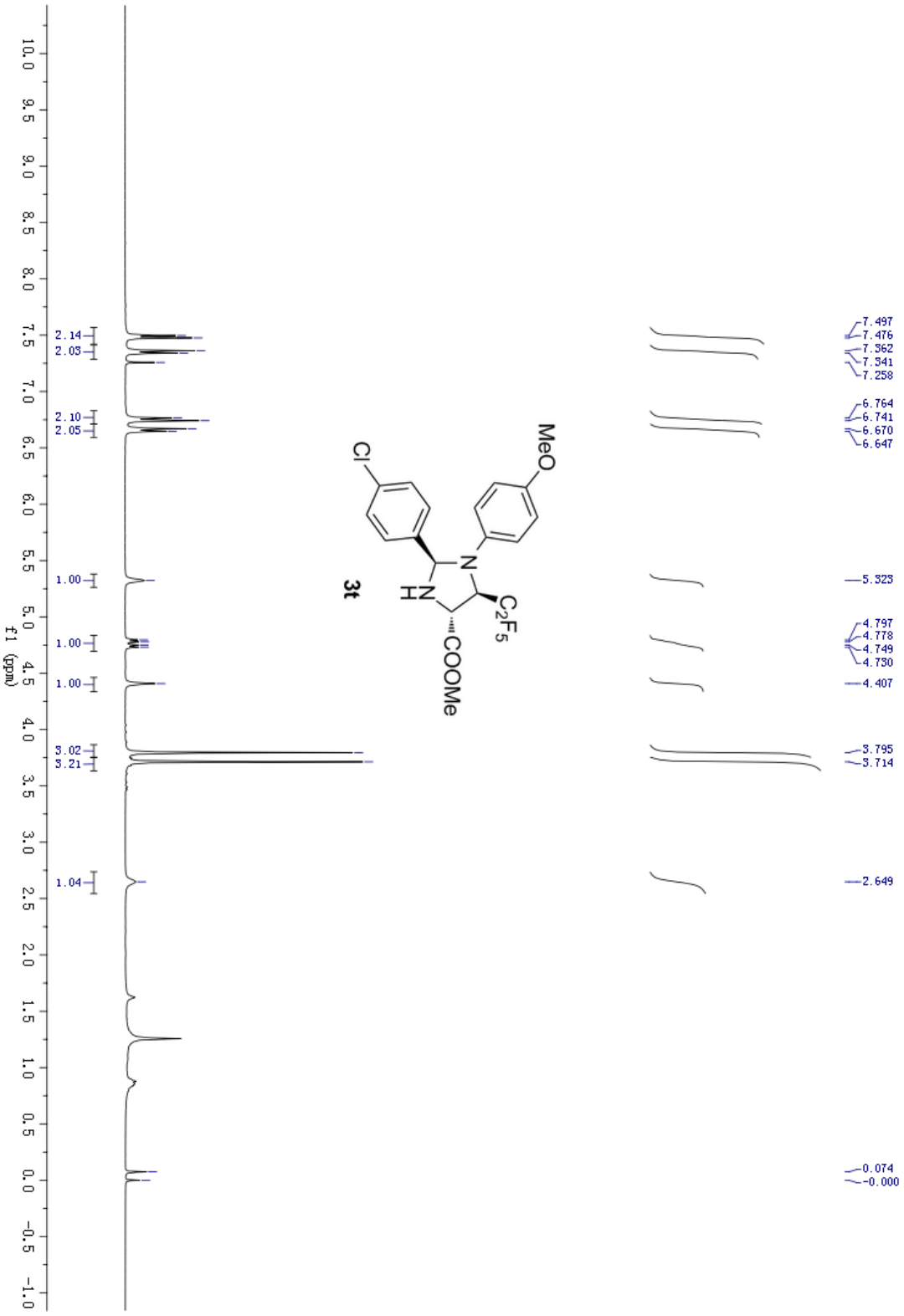

f1 (ppm)
169.157
153.648
140.295
139.278
128.897
128.755
127.310
126.677
124.500
116.717
114.503
82.714
82.100
77.318
77.000
76.683
66.268
65.961
65.657
65.352
61.570
55.486
27.807
MeO
N
H
N
CF3
COOtBu
3q

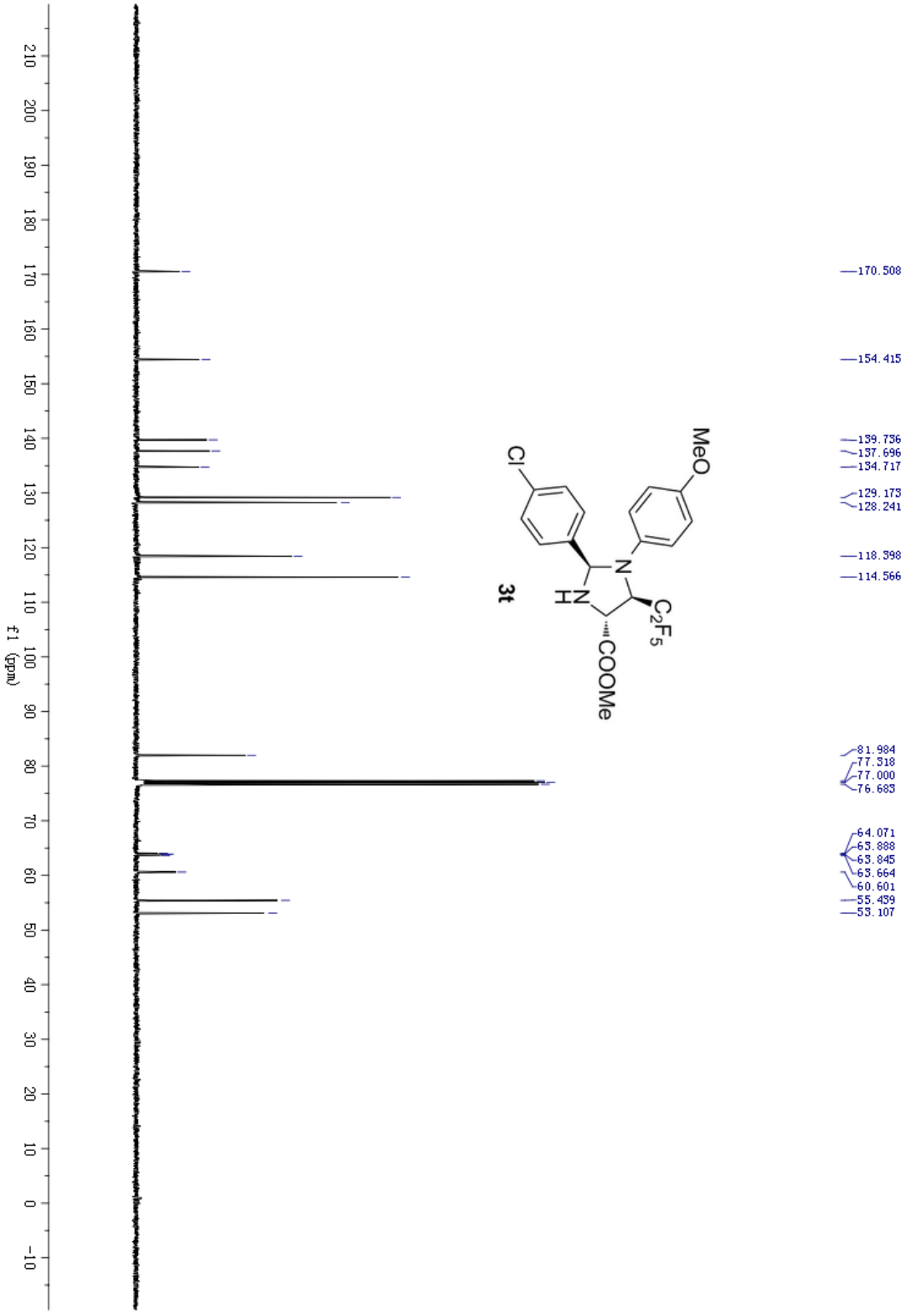

CF2Cl 000268
wangchunjiang-000268
7.513
7.492
7.357
7.336
7.261
6.773
6.749
6.729
6.706
5.397
4.744
4.731
4.710
4.697
4.367
3.799
3.717
-0.000
2.00
2.26
4.08
1.00
1.03
0.98
2.98
3.12
f1 (ppm)
MeO
Cl
N
H
N
CF2Cl
COOMe
3r

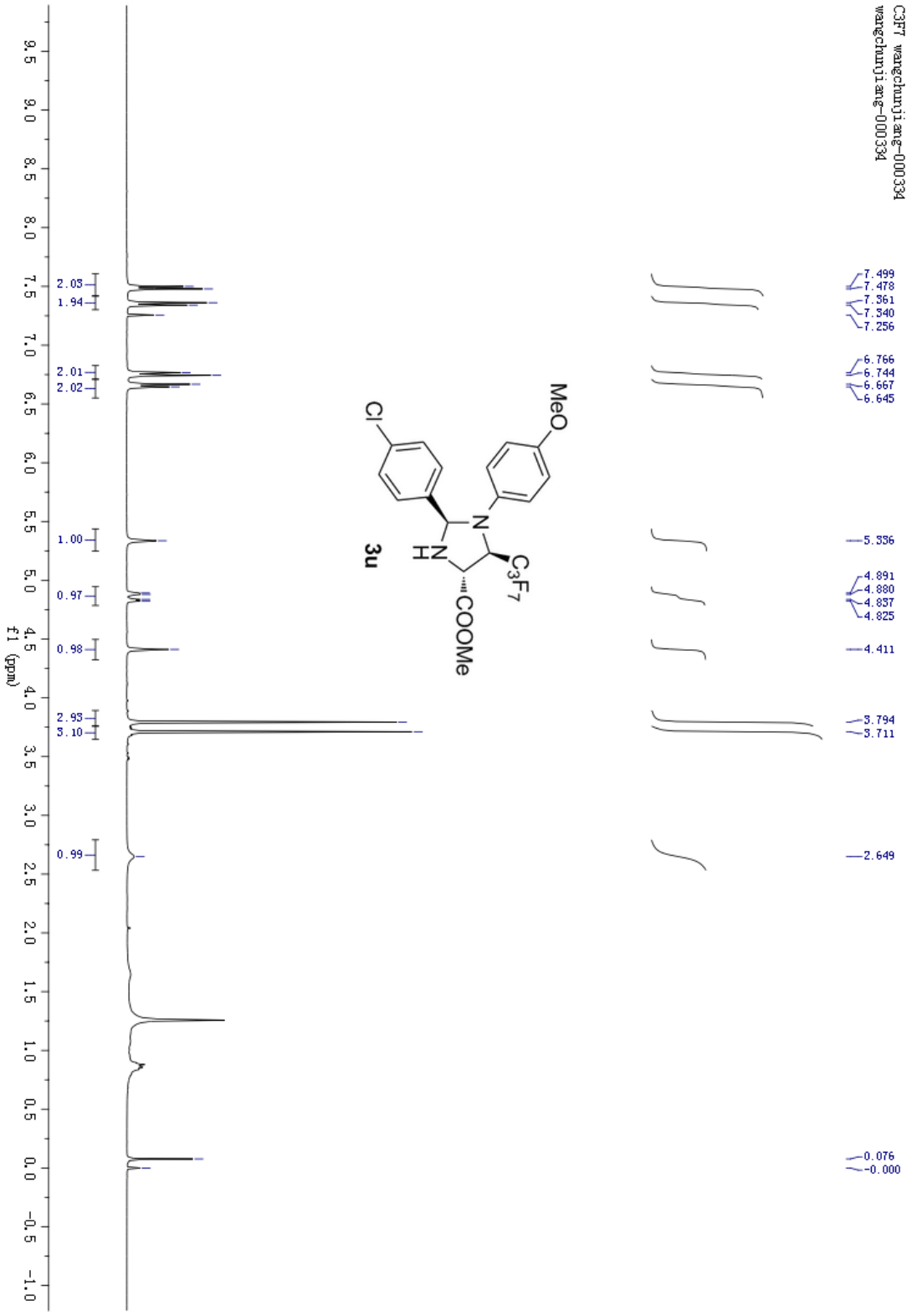

f1 (ppm)
170.574
154.359
139.588
137.444
134.635
132.820
129.863
129.095
128.291
126.905
118.307
114.509
82.311
77.318
77.000
76.683
71.445
71.203
70.961
61.597
55.435
53.007
MeO
Cl
N
H
N
CF2Cl
COOMe
3r

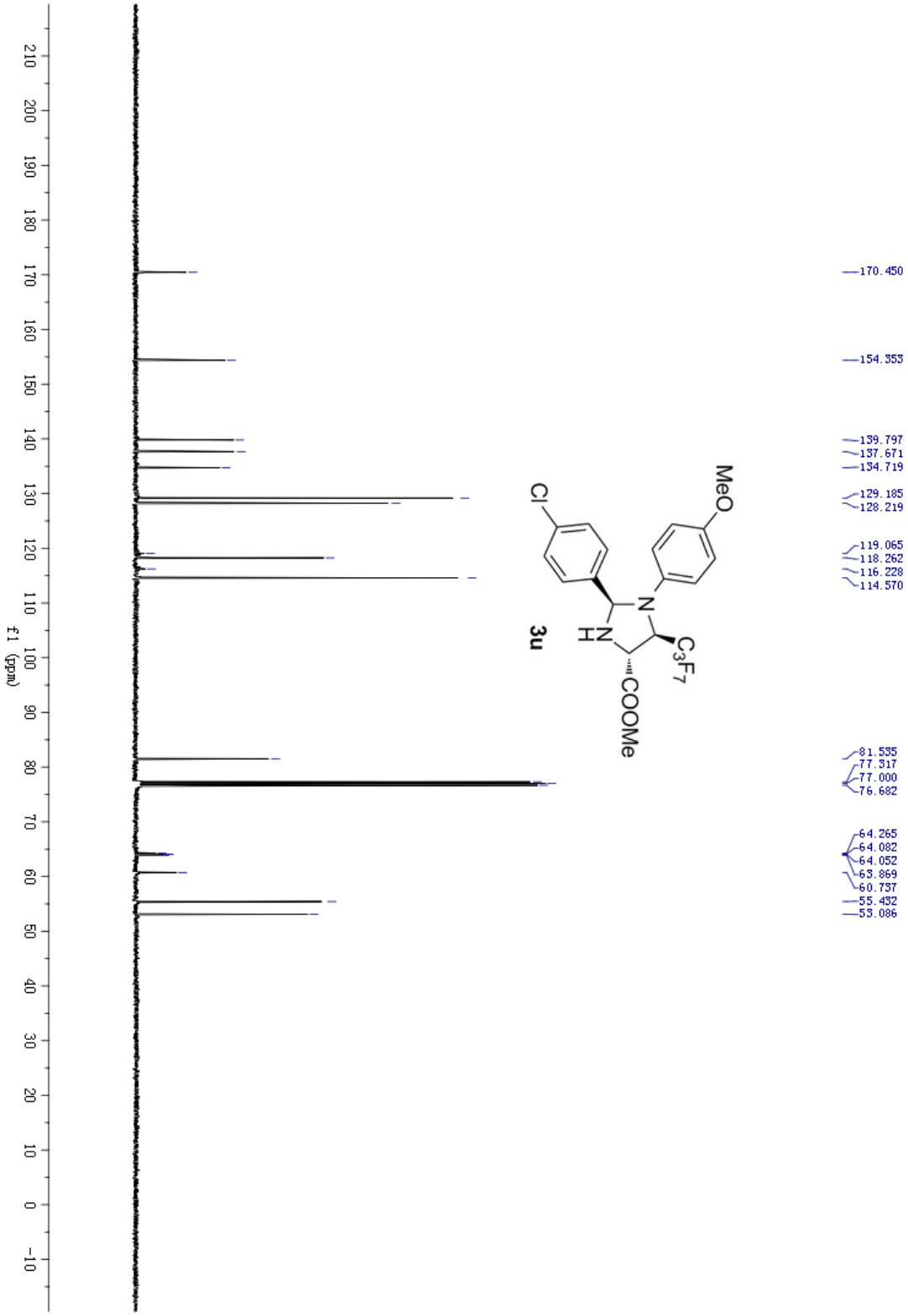

f1 (ppm)
1.05
3.04
1.08
2.04
2.05
1.95
1.00
1.03
1.03
3.00
3.08
8.016
7.883
7.862
7.844
7.832
7.811
7.717
7.713
7.696
7.692
7.510
7.497
7.486
7.474
7.461
7.253
6.795
6.772
6.737
6.714
5.584
4.864
4.853
4.825
4.814
4.443
3.827
3.687
MeO
N
N
H
CF2Br
COOMe
3s

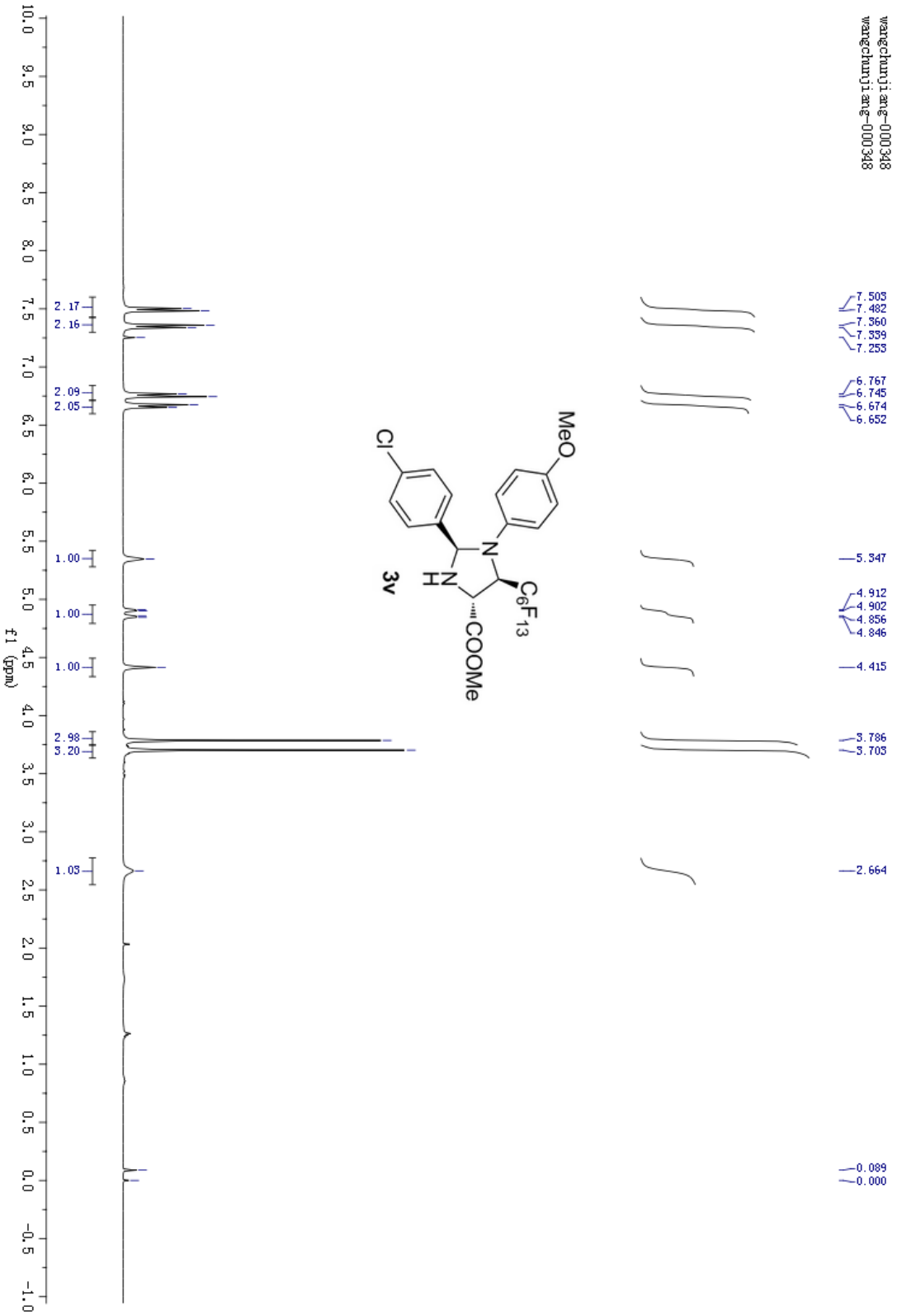

f1 (ppm)
170.640
154.182
139.755
136.270
133.600
133.239
128.822
128.188
127.662
126.394
126.359
126.250
124.522
124.228
121.424
118.232
114.438
83.311
77.318
77.000
76.682
72.917
72.704
72.490
61.964
55.389
53.013
MeO
N
H
N
CF2Br
COOMe
3s

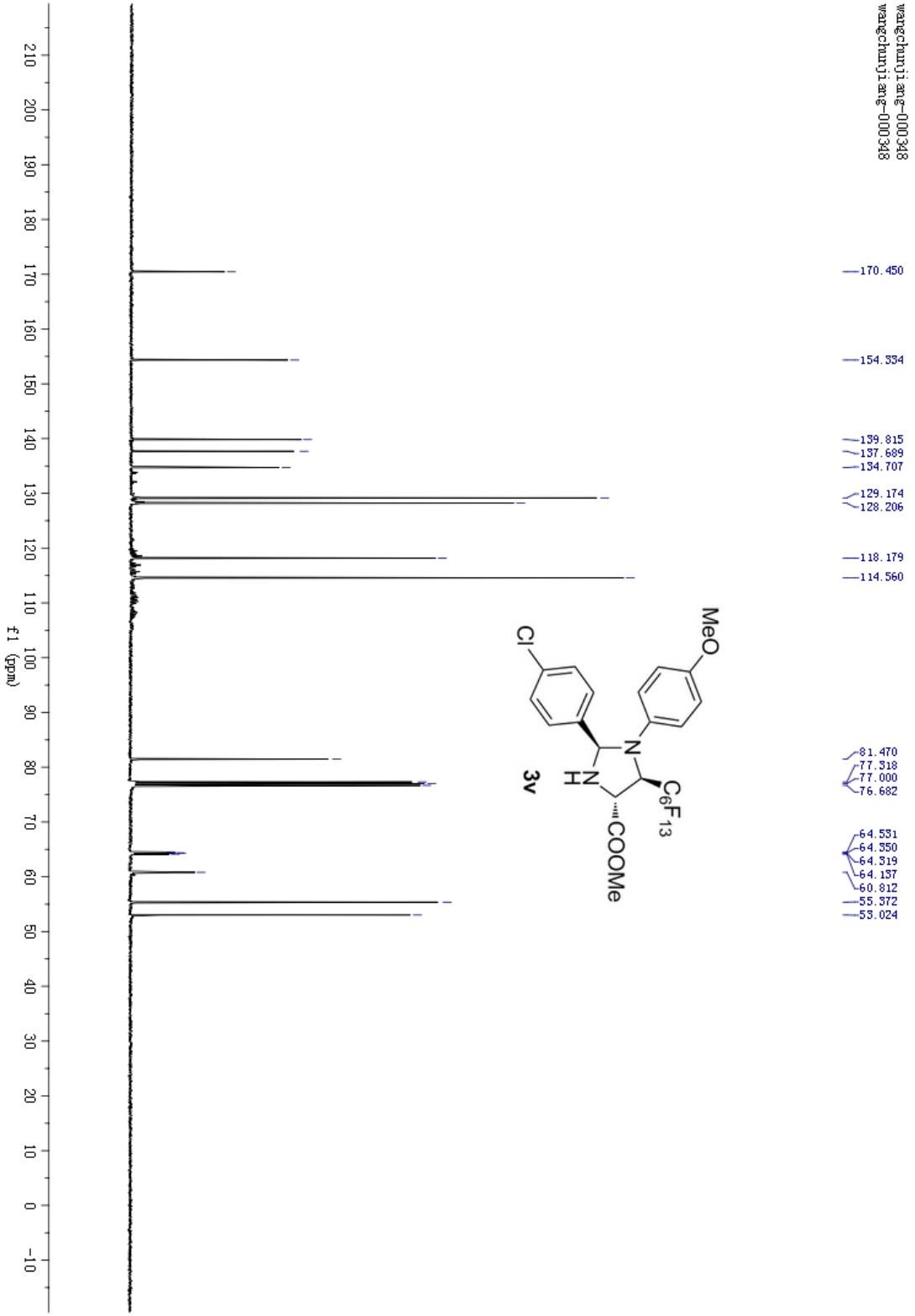

f1 (ppm)
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
2.14
2.03
2.10
2.05
1.00
1.00
1.00
3.02
3.21
1.04
7.497
7.476
7.362
7.341
7.258
6.764
6.741
6.670
6.647
5.323
4.797
4.778
4.749
4.730
4.407
3.795
3.714
2.649
0.074
-0.000
Cl
MeO
N
N
H
C2F5
COOMe
3t

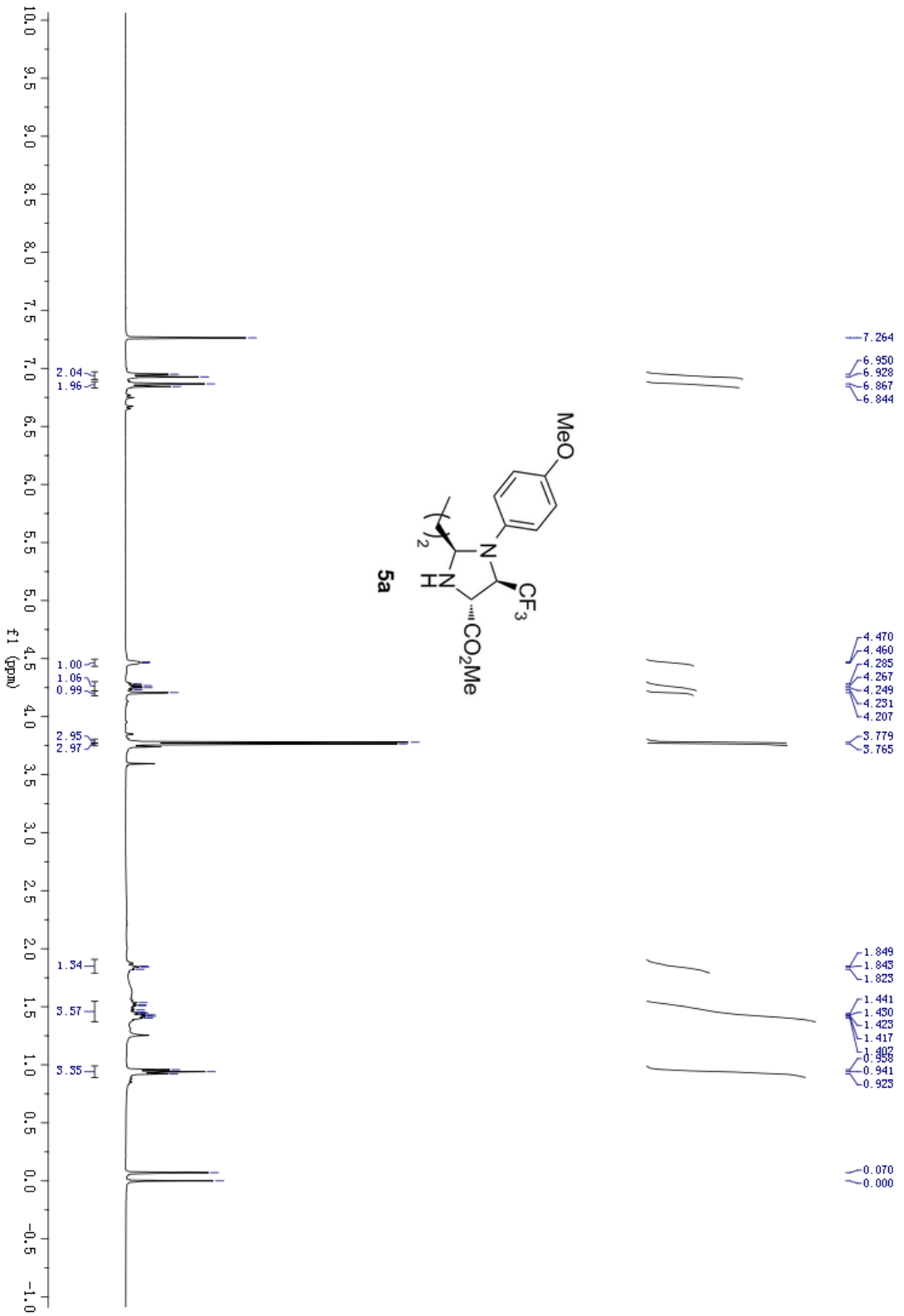

f1 (ppm)
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
170.508
154.415
139.736
137.696
134.717
129.173
128.241
118.398
114.566
81.984
77.318
77.000
76.683
64.071
63.888
63.845
63.664
60.601
55.439
53.107
MeO
Cl
N
H
N
C2F5
COOMe
3t

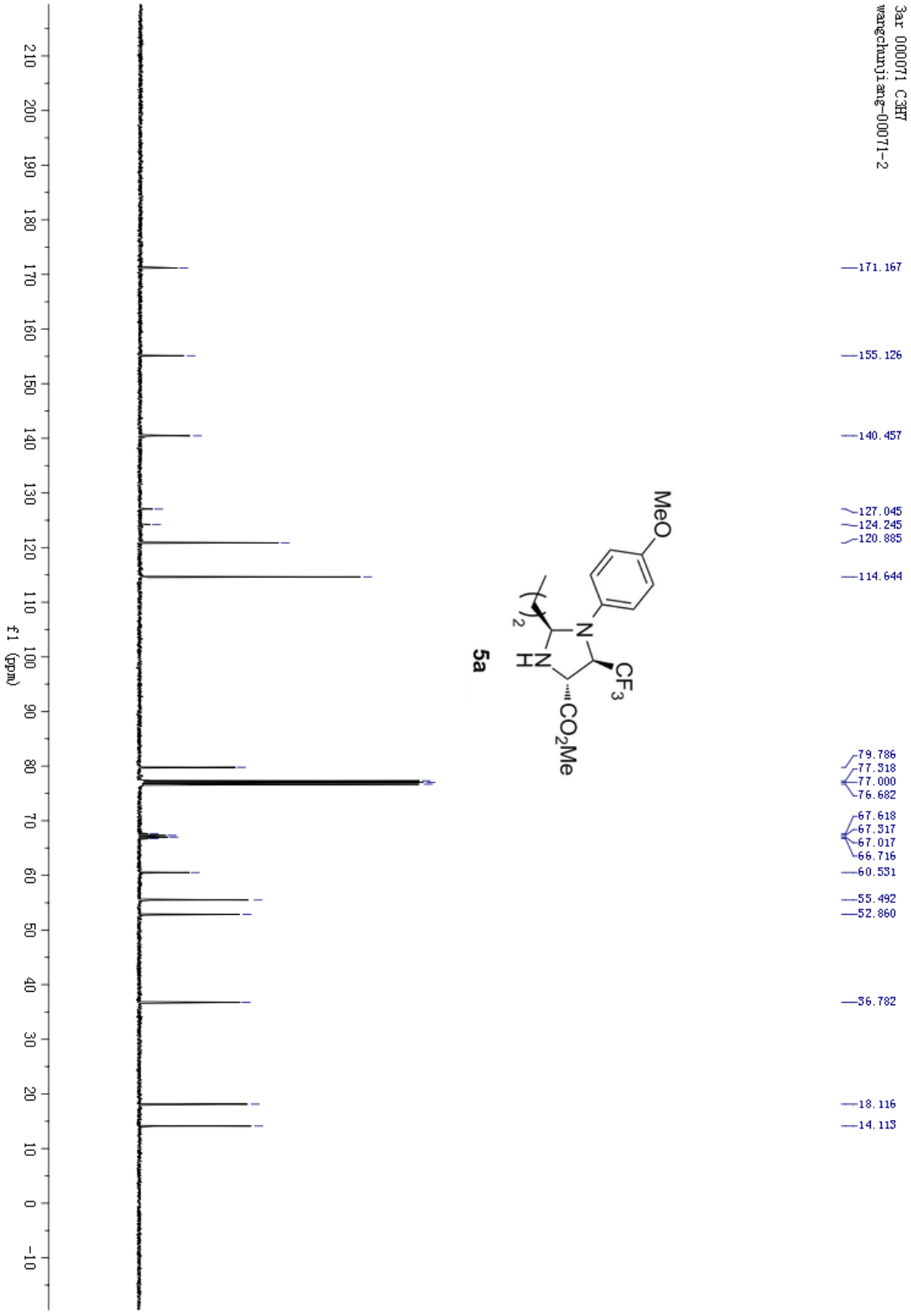

C3F7 wangchunjiang-000334
wangchunjiang-000334
MeO
Cl
N
H
N
C3F7
COOMe
3u
f1 (ppm)
2.03
1.94
2.01
2.02
1.00
0.97
0.98
2.93
3.10
0.99
7.499
7.478
7.361
7.340
7.256
6.766
6.744
6.667
6.645
5.336
4.891
4.880
4.837
4.825
4.411
3.794
3.711
2.649
0.076
-0.000

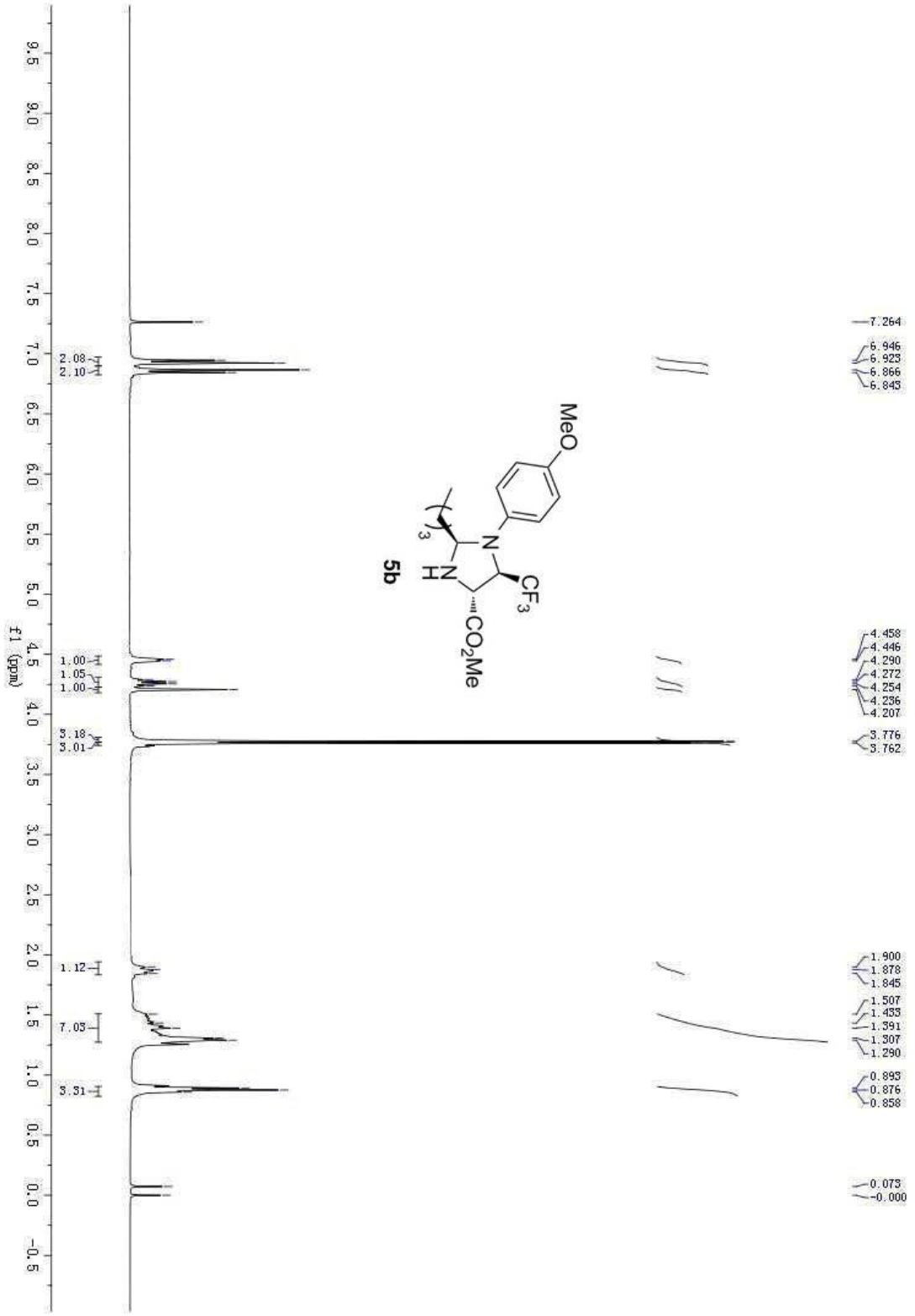

f1 (ppm)
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
170.450
154.353
139.797
137.671
134.719
129.185
128.219
119.065
118.262
116.228
114.570
81.535
77.317
77.000
76.682
64.265
64.082
64.052
63.869
60.737
55.432
53.086
Cl
MeO
N
H
N
C3F7
COOMe
3u

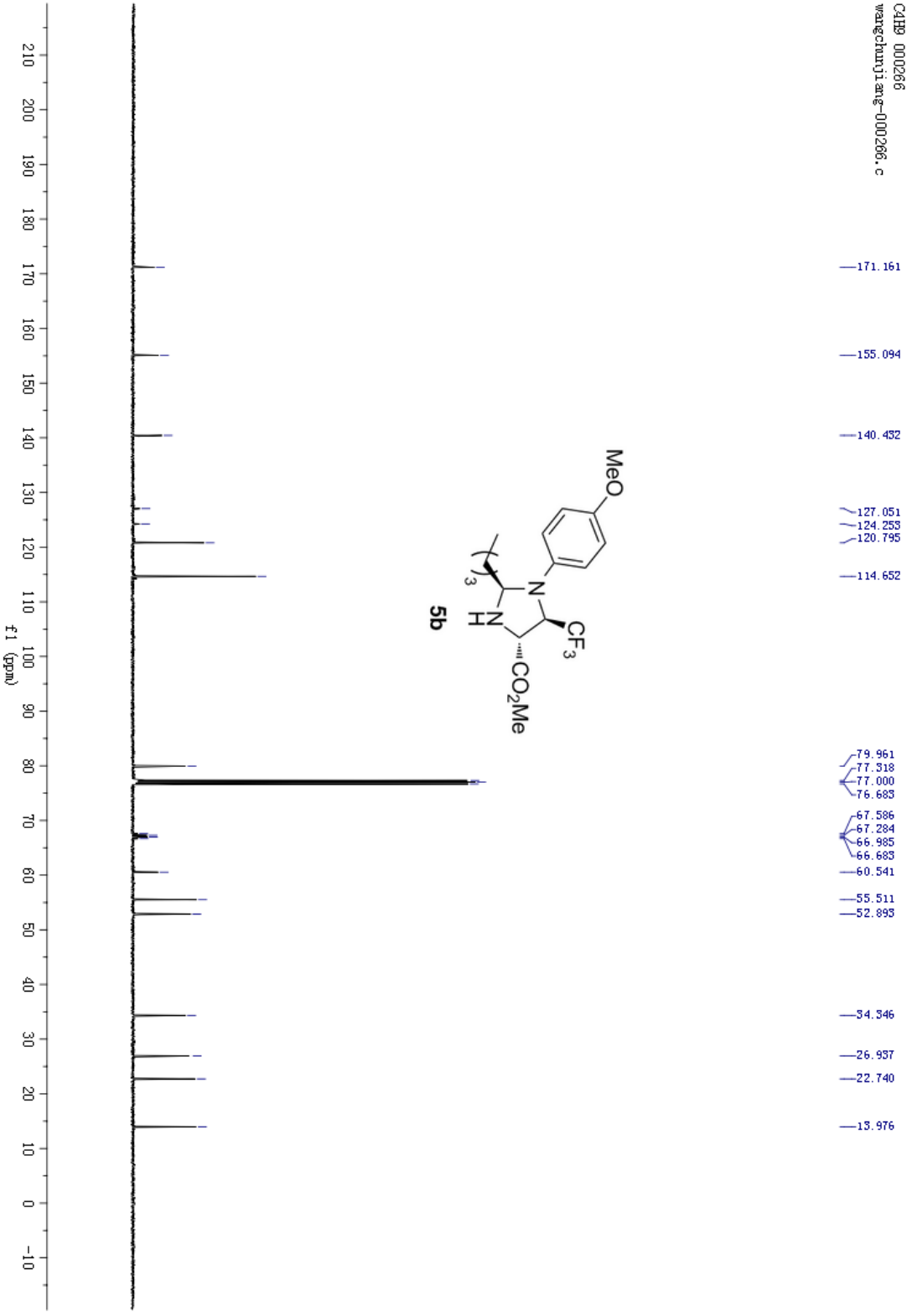

wangchunjiang-000348
wangchunjiang-000348
f1 (ppm)
2.17
2.16
2.09
2.05
1.00
1.00
1.00
2.98
3.20
1.03
7.503
7.482
7.360
7.339
7.253
6.767
6.745
6.674
6.652
5.347
4.912
4.902
4.856
4.846
4.415
3.786
3.703
2.664
0.089
0.000
MeO
Cl
N
H
N
C6F13
COOMe
3v

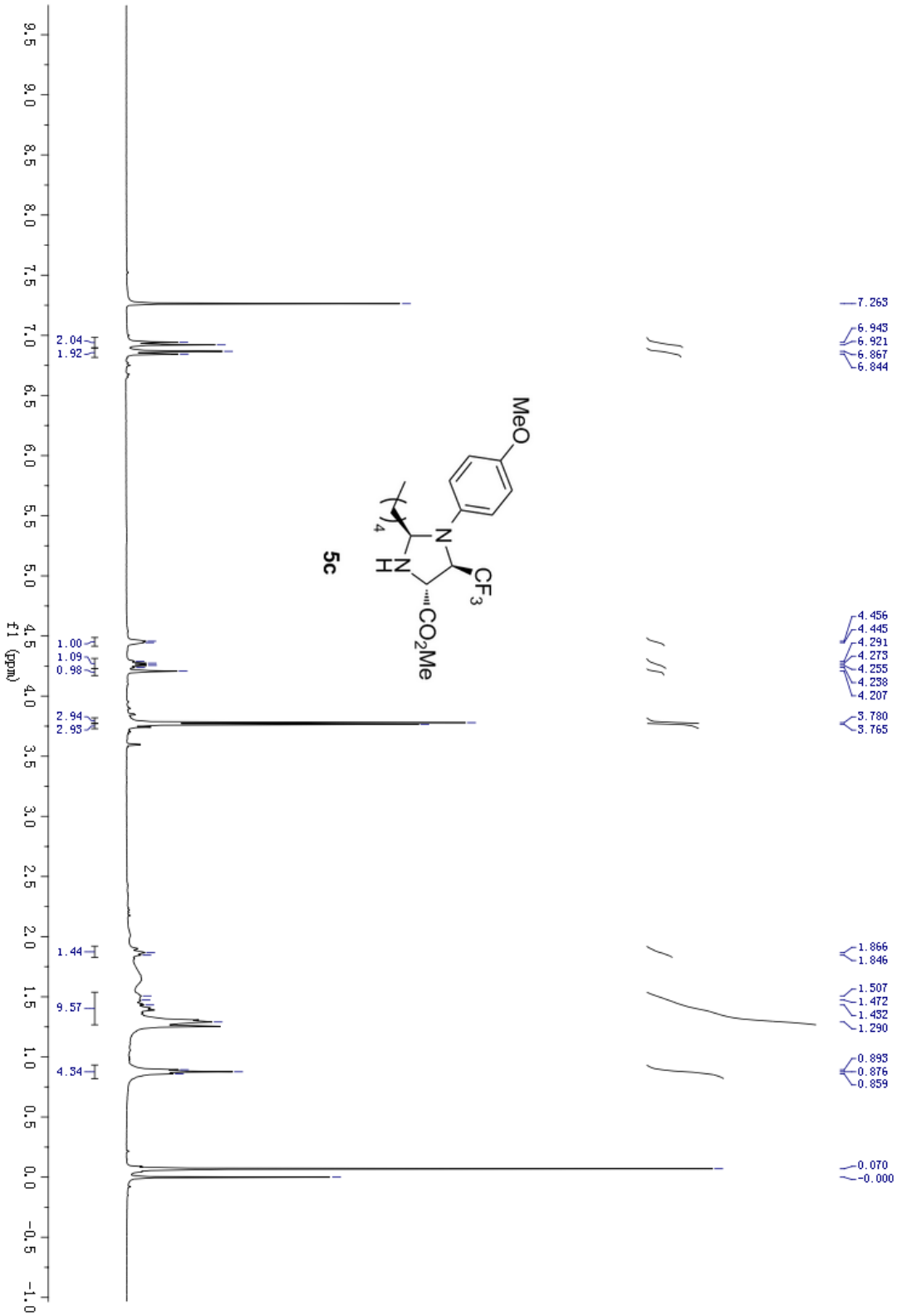

wangchunjiang-000348
wangchunjiang-000348
170.450
154.334
139.815
137.689
134.707
129.174
128.206
118.179
114.560
81.470
77.318
77.000
76.682
64.531
64.350
64.319
64.157
60.812
55.372
53.024
f1 (ppm)
MeO
Cl
N
H
N
C6F13
COOMe
3v

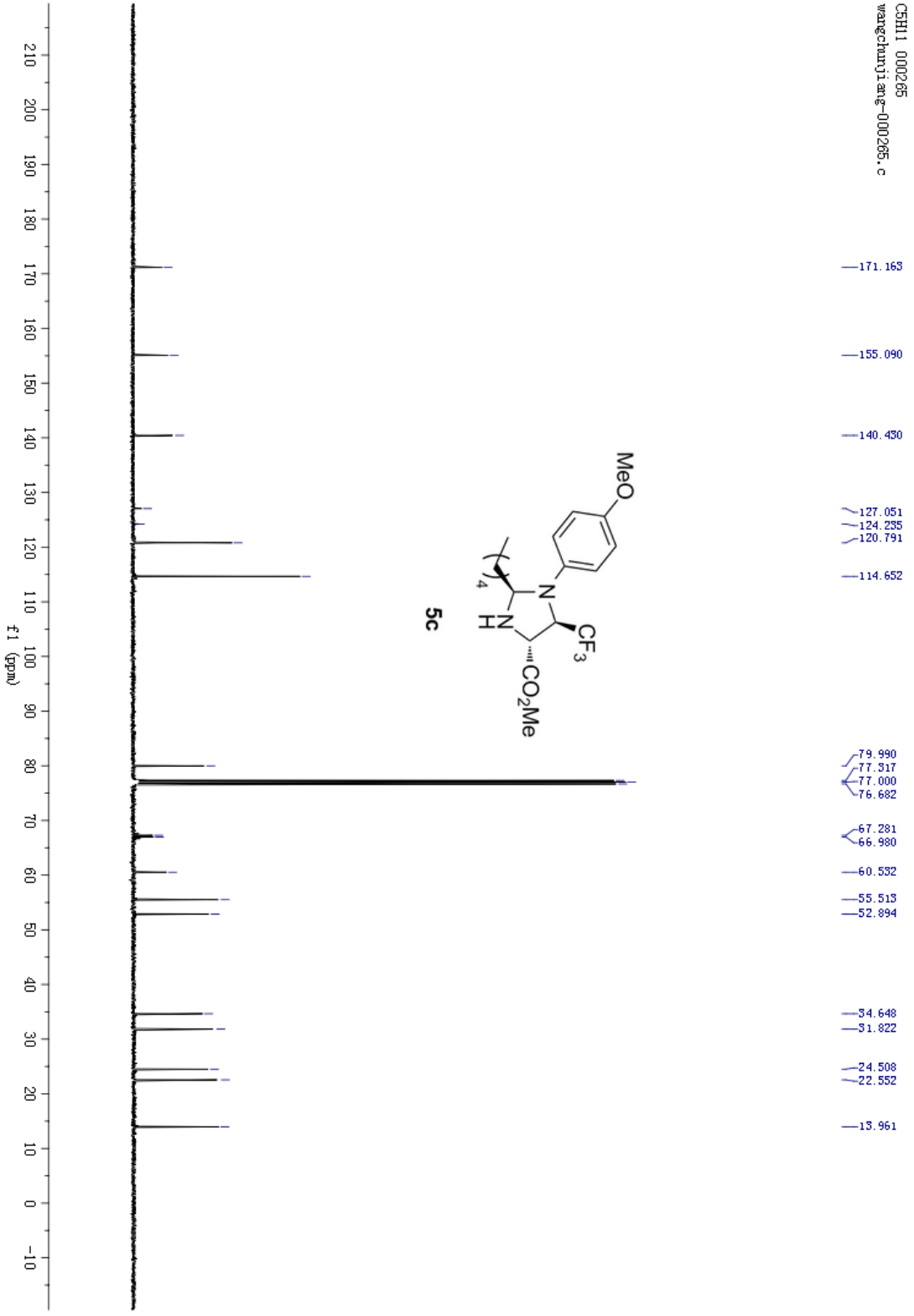

MeO
5a
CF3
CO2Me
f1 (ppm)
7.264
6.950
6.928
6.867
6.844
4.470
4.460
4.285
4.267
4.249
4.231
4.207
3.779
3.765
1.849
1.843
1.823
1.441
1.430
1.423
1.417
1.407
0.958
0.941
0.923
0.070
0.000
2.04
1.96
1.00
1.06
0.99
2.95
2.97
1.34
3.57
3.35

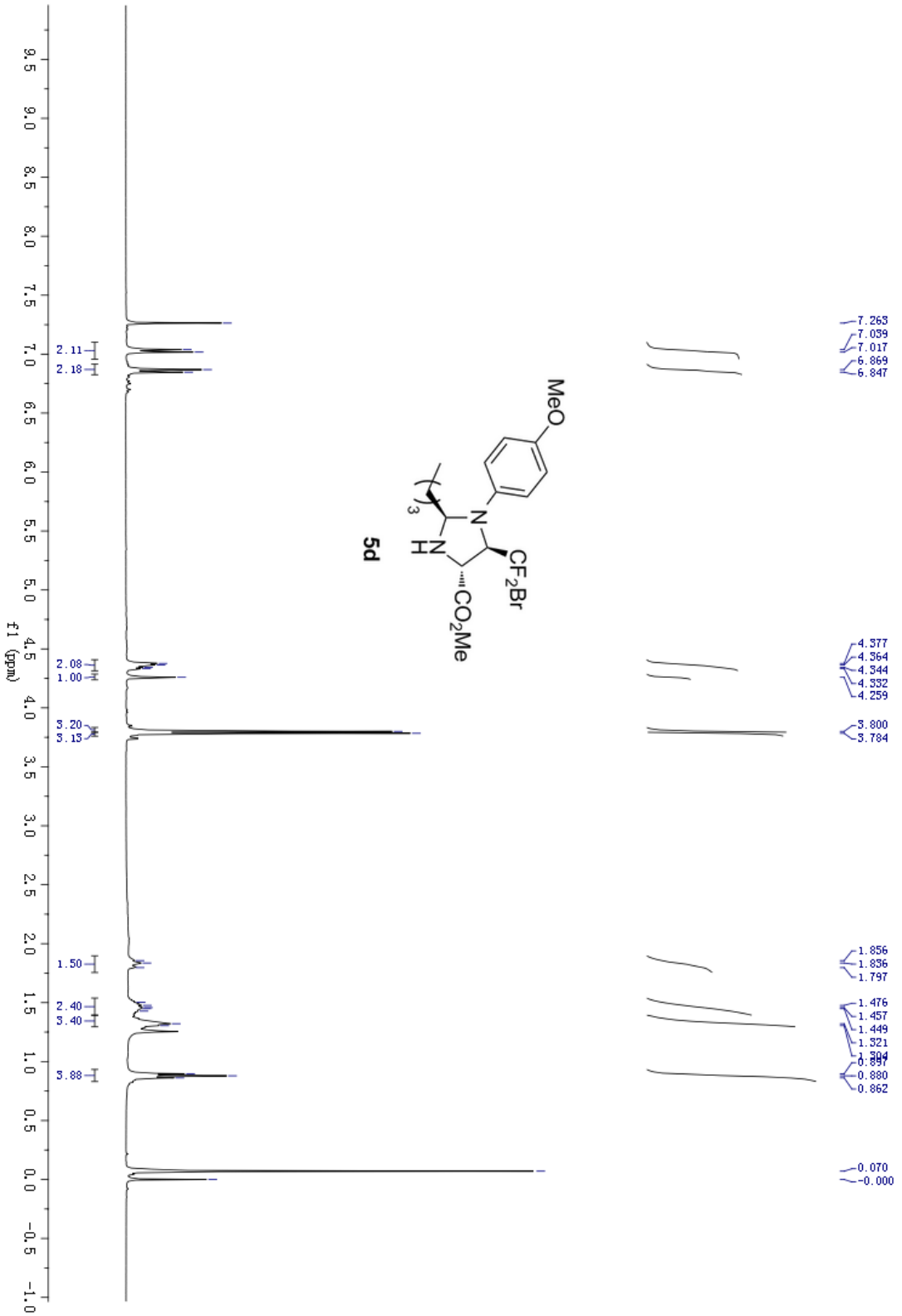

3ar 000071 C3HF
wangchunjiang-00071-2
171.167
155.126
140.457
127.045
124.245
120.885
114.644
79.786
77.318
77.000
76.682
67.618
67.317
67.017
66.716
60.531
55.492
52.860
36.782
18.116
14.113
f1 (ppm)
MeO
CF3
CO2Me
5a

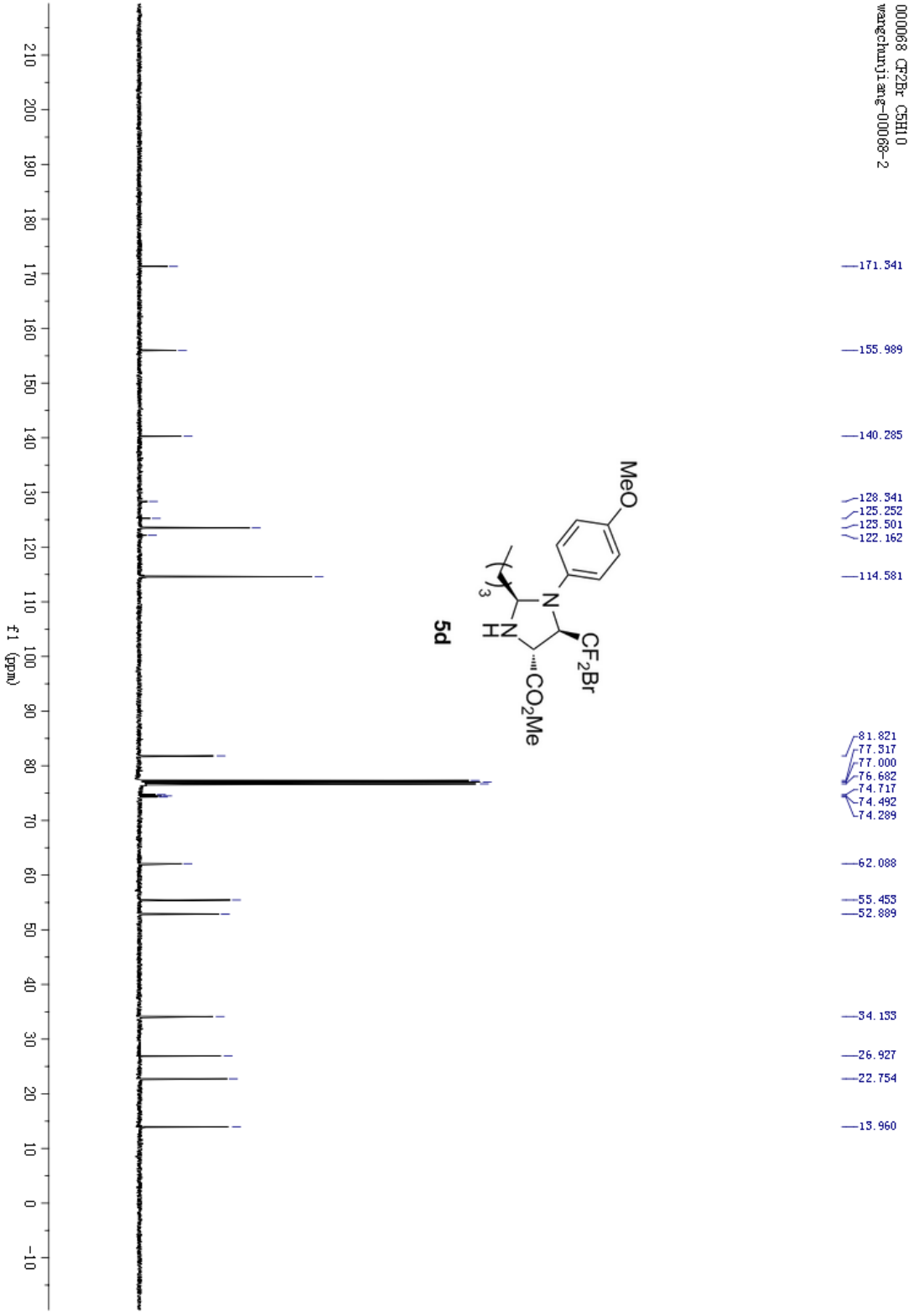

MeO
N
N
H
CF3
CO2Me
5b
f1 (ppm)
2.08
2.10
1.00
1.05
1.00
3.18
3.01
1.12
7.03
3.31
7.264
6.946
6.923
6.866
6.843
4.458
4.446
4.290
4.272
4.254
4.236
4.207
3.776
3.762
1.900
1.878
1.845
1.507
1.433
1.391
1.307
1.290
0.893
0.876
0.858
0.073
-0.000

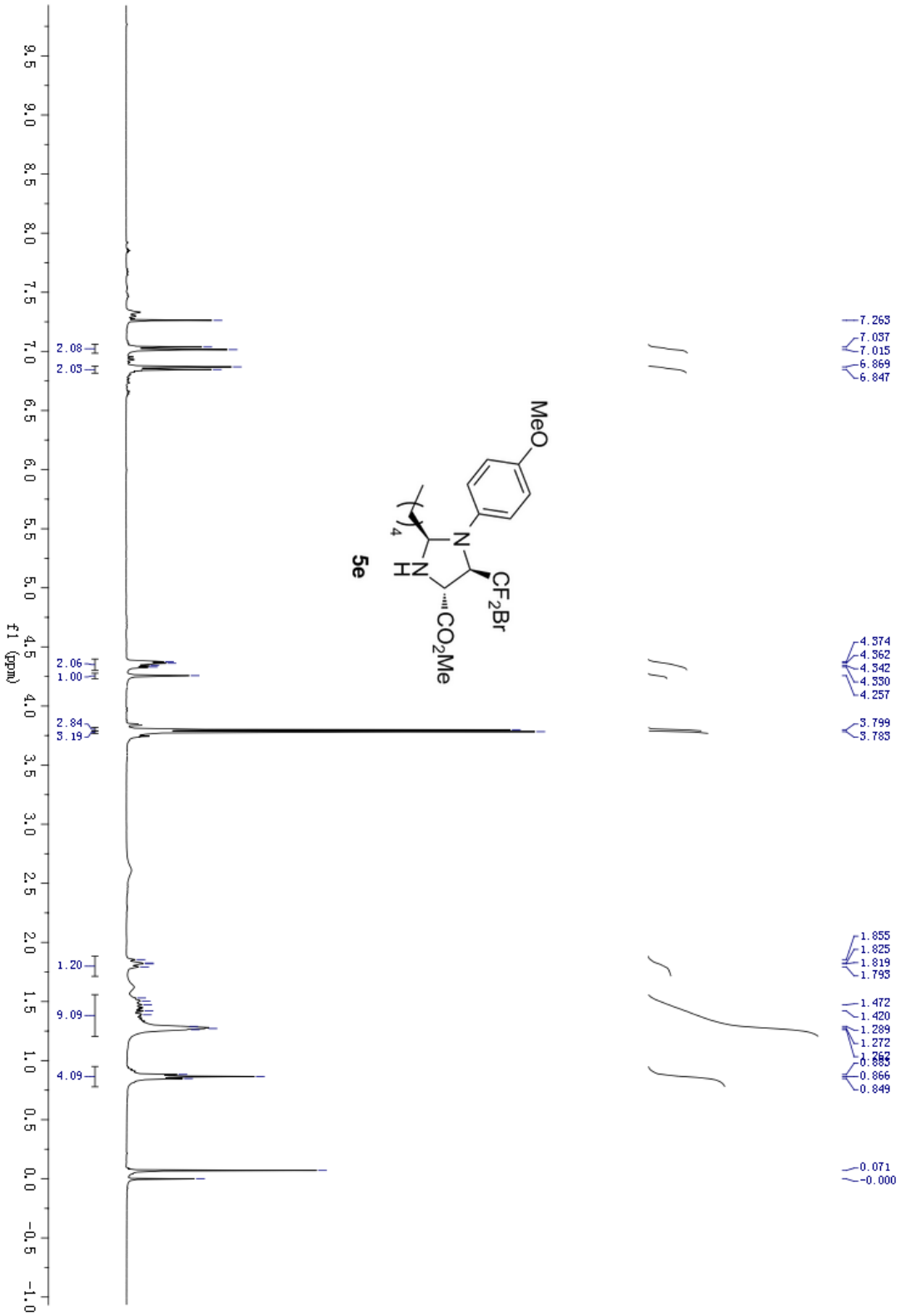

C4HB 000266
wangchunjiang-000266.c
171.161
155.094
140.432
127.051
124.253
120.795
114.652
79.961
77.318
77.000
76.683
67.586
67.284
66.985
66.683
60.541
55.511
52.893
34.346
26.937
22.740
13.976
f1 (ppm)
MeO
CF3
CO2Me
5b

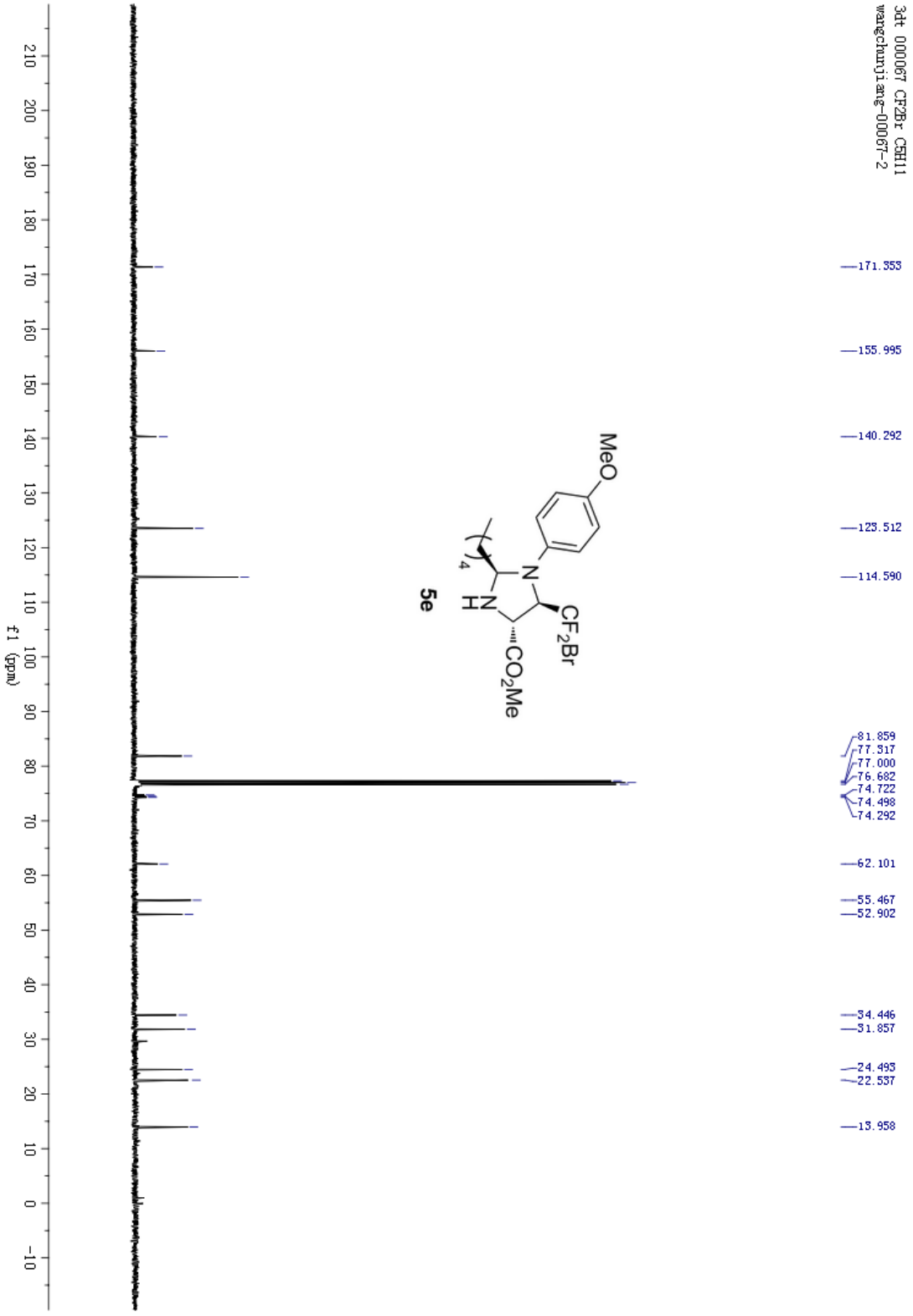

MeO
N
H
N
CF3
CO2Me
4
5c
f1 (ppm)
2.04
1.92
1.00
1.09
0.98
2.94
2.93
1.44
9.57
4.34
7.263
6.943
6.921
6.867
6.844
4.456
4.445
4.291
4.273
4.255
4.238
4.207
3.780
3.765
1.866
1.846
1.507
1.472
1.432
1.290
0.893
0.876
0.859
0.070
-0.000

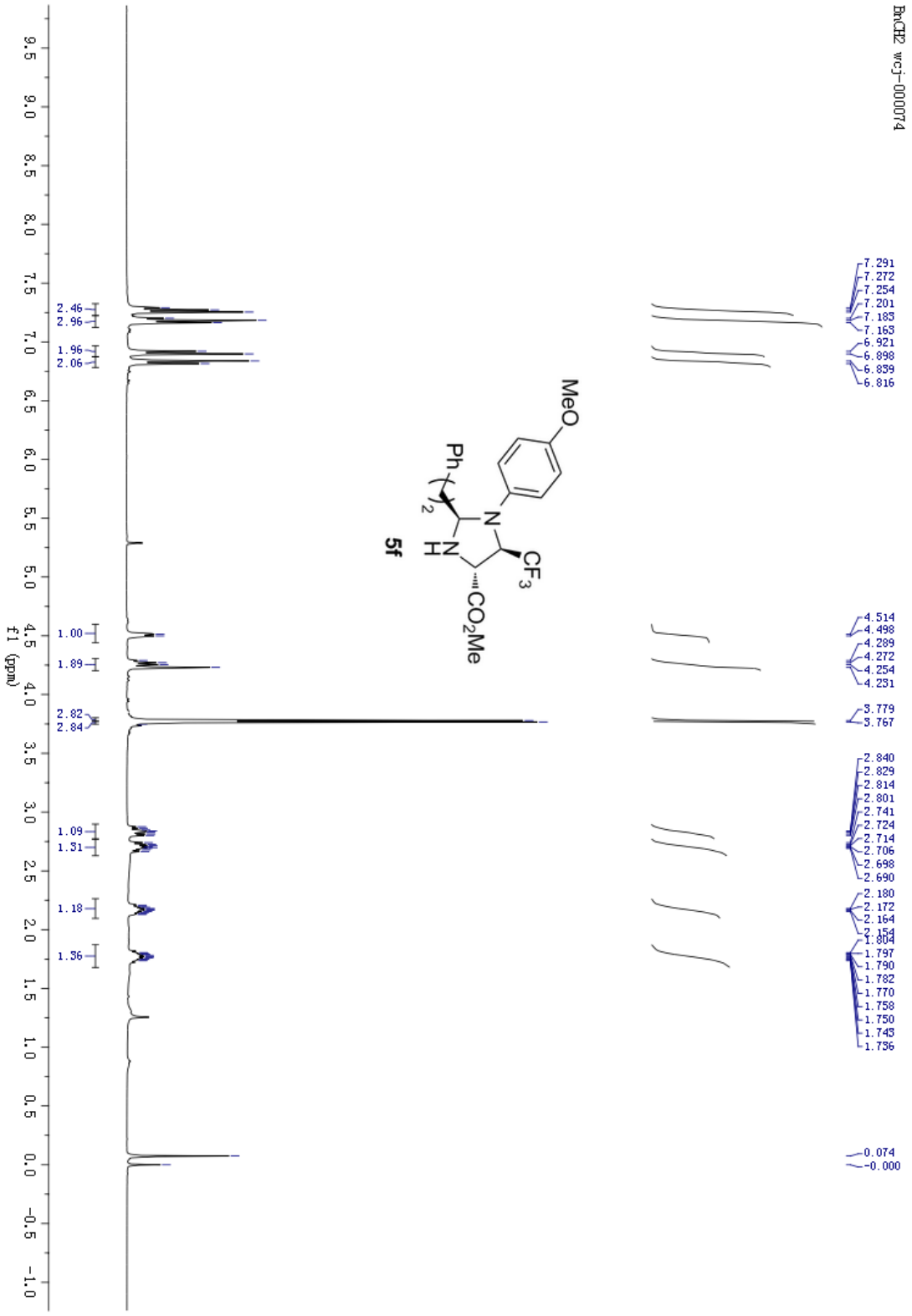

C5H11 000265
wangchunjiang-000265.c
171.163
155.090
140.430
127.051
124.235
120.791
114.652
79.990
77.317
77.000
76.682
67.281
66.980
60.532
55.513
52.894
34.648
31.822
24.508
22.552
13.961
MeO
CF3
CO2Me
5c
f1 (ppm)

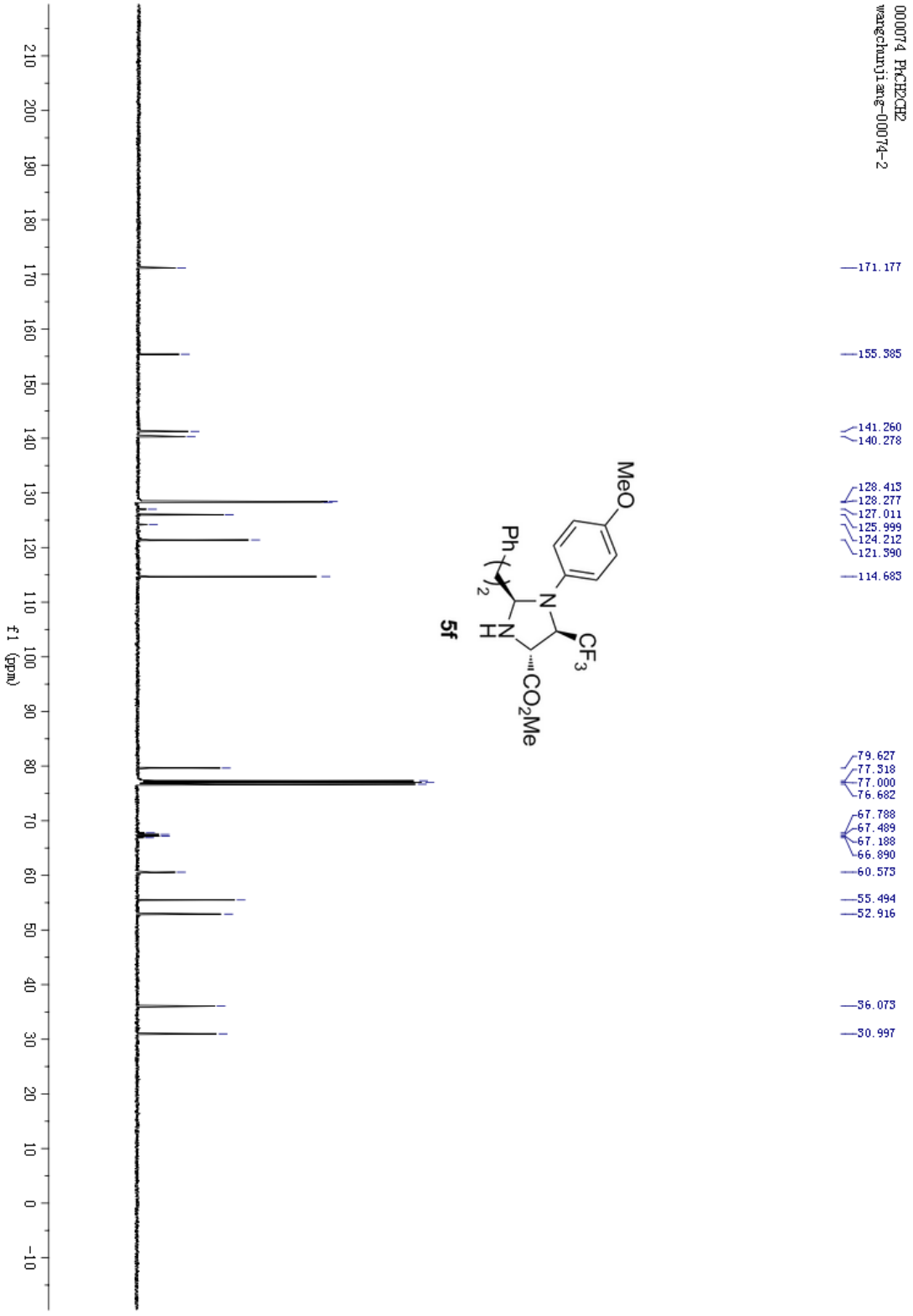

MeO
CF2Br
CO2Me
5d
f1 (ppm)
2.11
2.18
2.08
1.00
3.20
3.13
1.50
2.40
3.40
3.88
7.263
7.039
7.017
6.869
6.847
4.377
4.364
4.344
4.332
4.259
3.800
3.784
1.856
1.836
1.797
1.476
1.457
1.449
1.321
0.897
0.880
0.862
0.070
-0.000

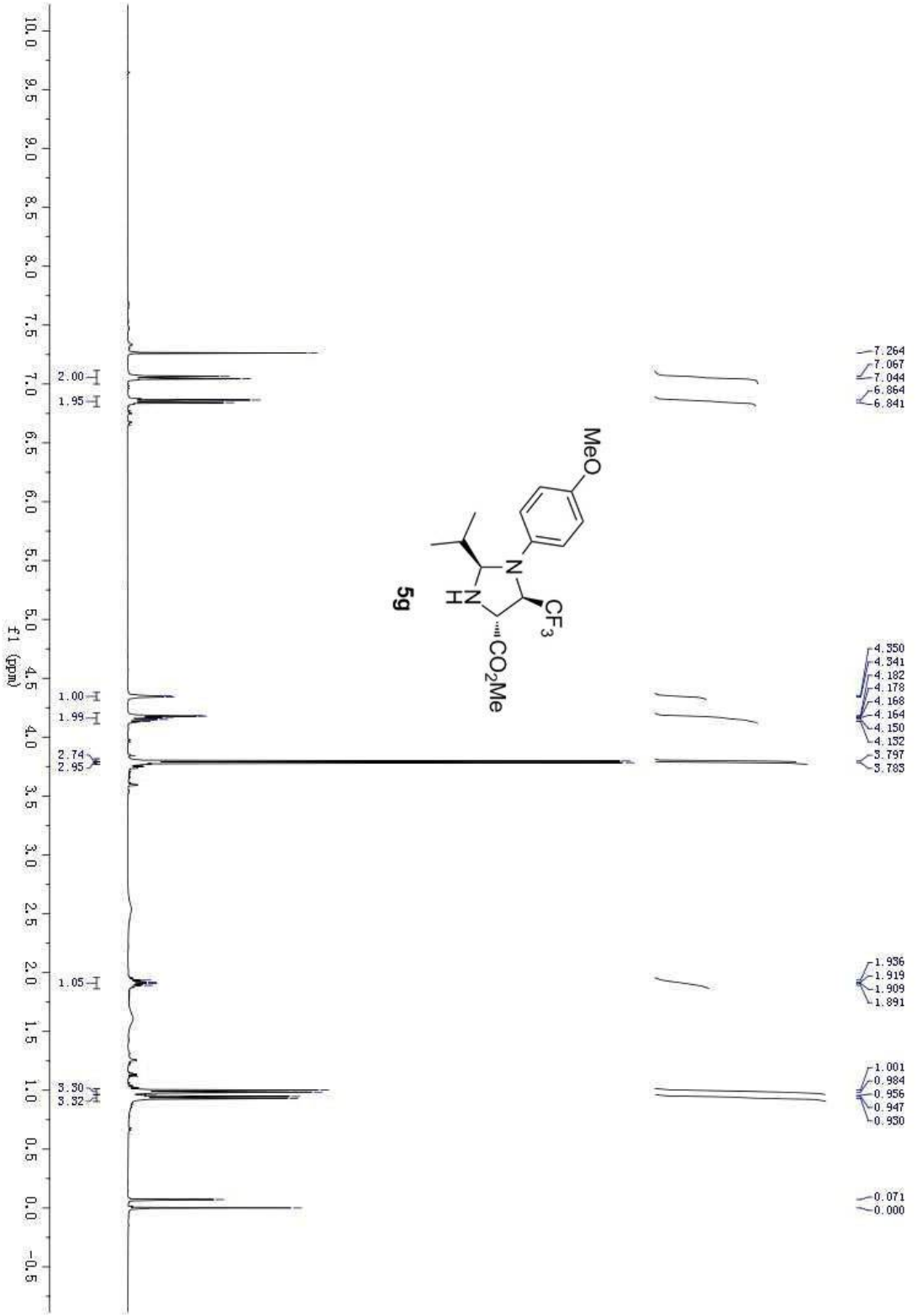

000068 CF2Br C5H10
wangchunjiang-000068-2
171.341
155.989
140.285
128.341
125.252
123.501
122.162
114.581
81.821
77.317
77.000
76.682
74.717
74.492
74.289
62.088
55.453
52.889
34.133
26.927
22.754
13.960
f1 (ppm)
MeO
CF2Br
CO2Me
5d

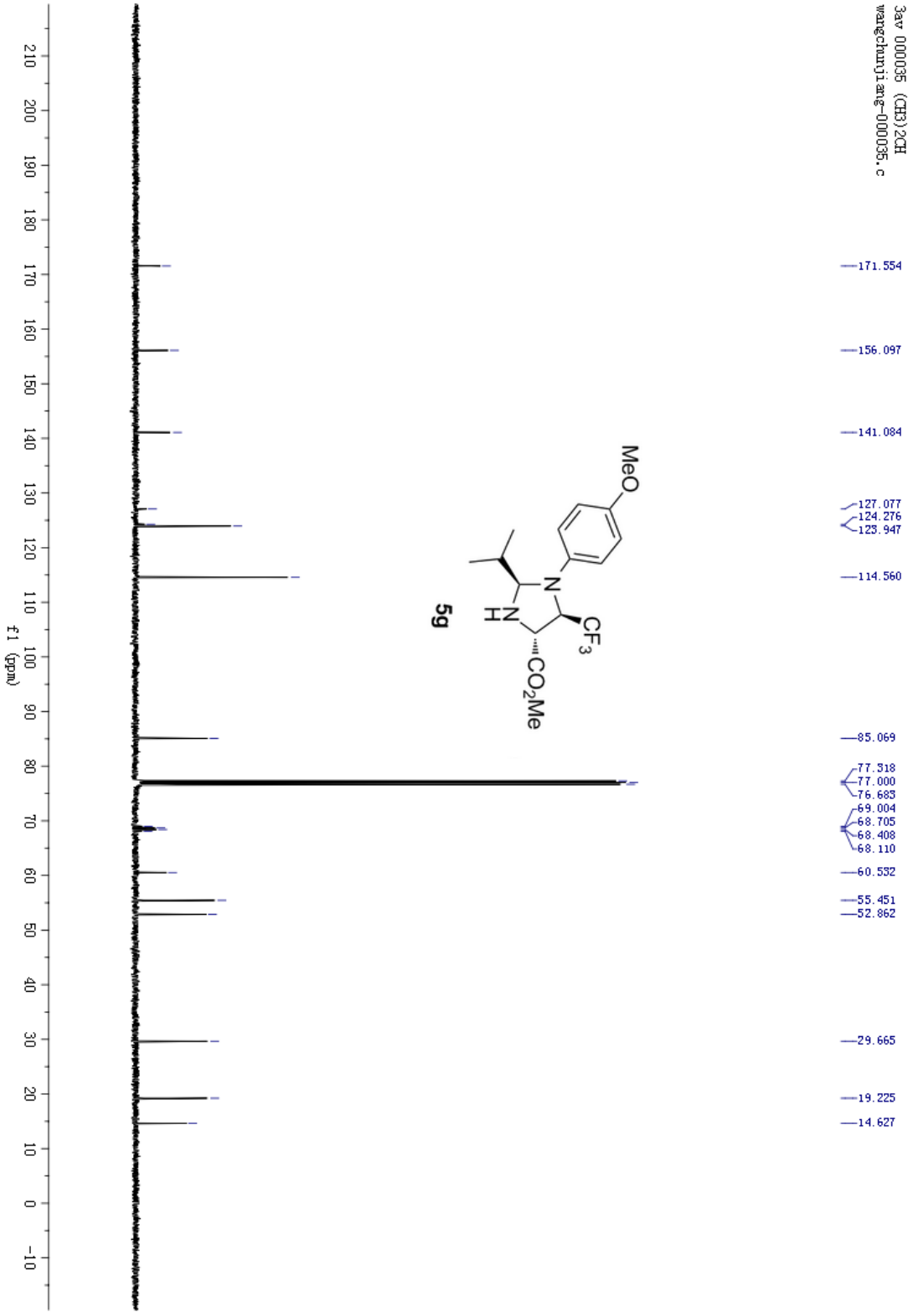

MeO
CF2Br
CO2Me
5e
f1 (ppm)
2.08
2.03
2.06
1.00
2.84
3.19
1.20
9.09
4.09
7.263
7.037
7.015
6.869
6.847
4.374
4.362
4.342
4.330
4.257
3.799
3.783
1.855
1.825
1.819
1.793
1.472
1.420
1.289
1.272
0.866
0.849
0.071
-0.000

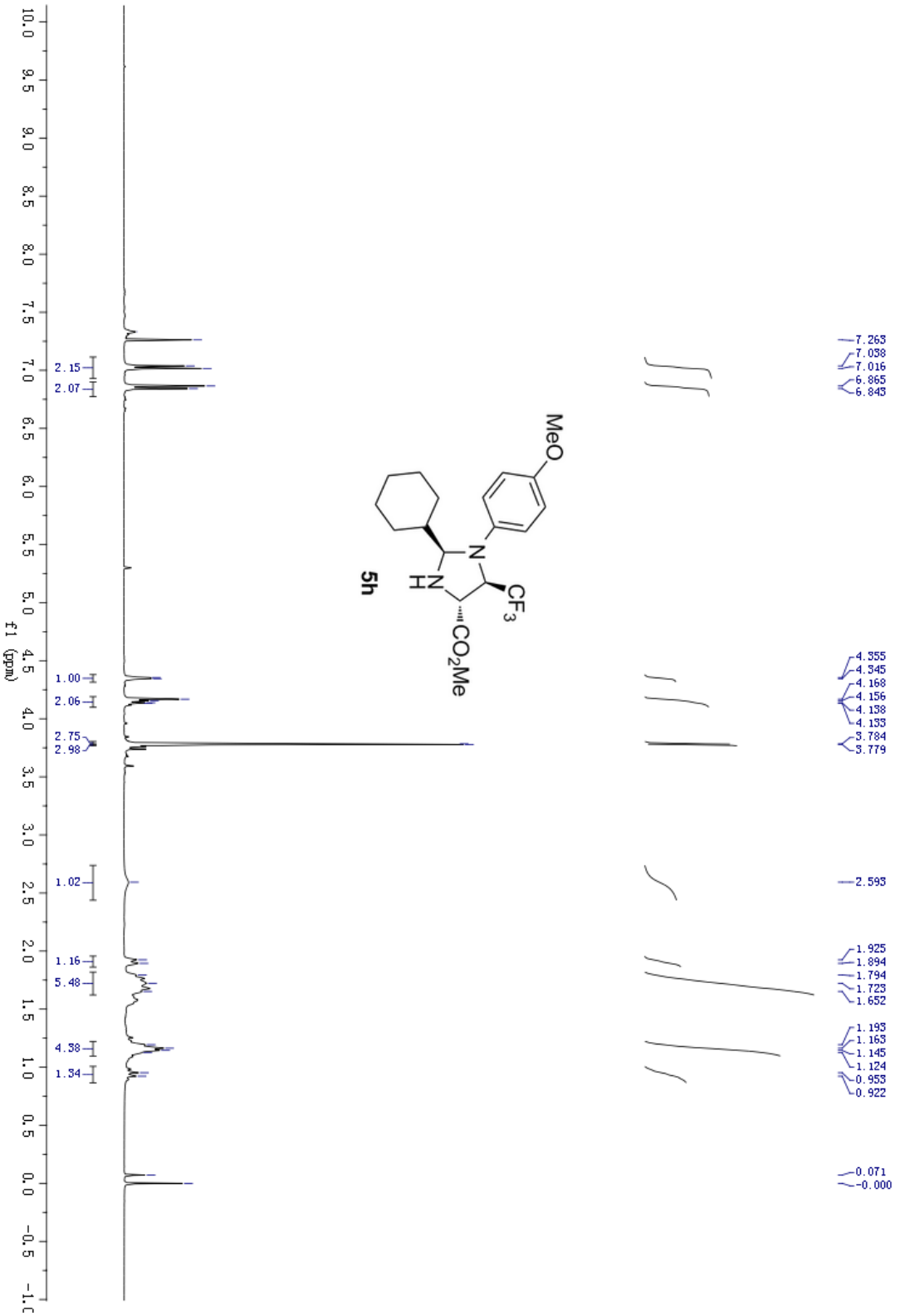

3dt 000067 CF2Br C6H11
wangchunjiang-000167-2
171.353
155.995
140.292
123.512
114.590
81.859
77.317
77.000
76.682
74.722
74.498
74.292
62.101
55.467
52.902
34.446
31.857
24.493
22.537
13.958
f1 (ppm)
MeO
CF2Br
CO2Me
5e

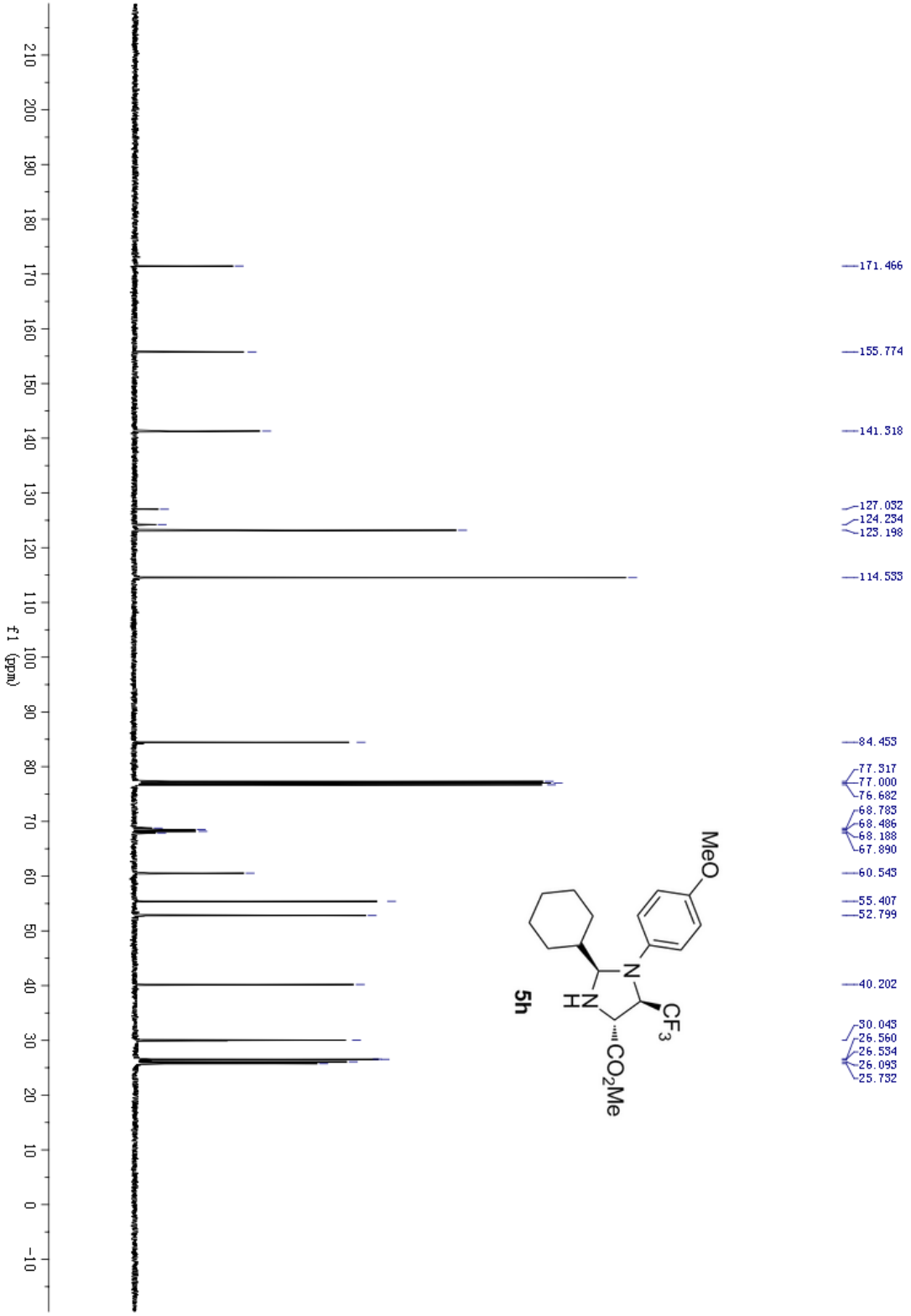

BrCH2 wcj-000074
MeO
Ph
N
H
CF3
CO2Me
5f
f1 (ppm)
2.46
2.96
1.96
2.06
1.00
1.89
2.82
2.84
1.09
1.31
1.18
1.36
7.291
7.272
7.254
7.201
7.183
7.163
6.921
6.898
6.859
6.816
4.514
4.498
4.289
4.272
4.254
4.231
3.779
3.767
2.840
2.829
2.814
2.801
2.741
2.724
2.714
2.706
2.698
2.690
2.180
2.172
2.164
1.797
1.790
1.782
1.770
1.758
1.750
1.743
1.736
0.074
-0.000

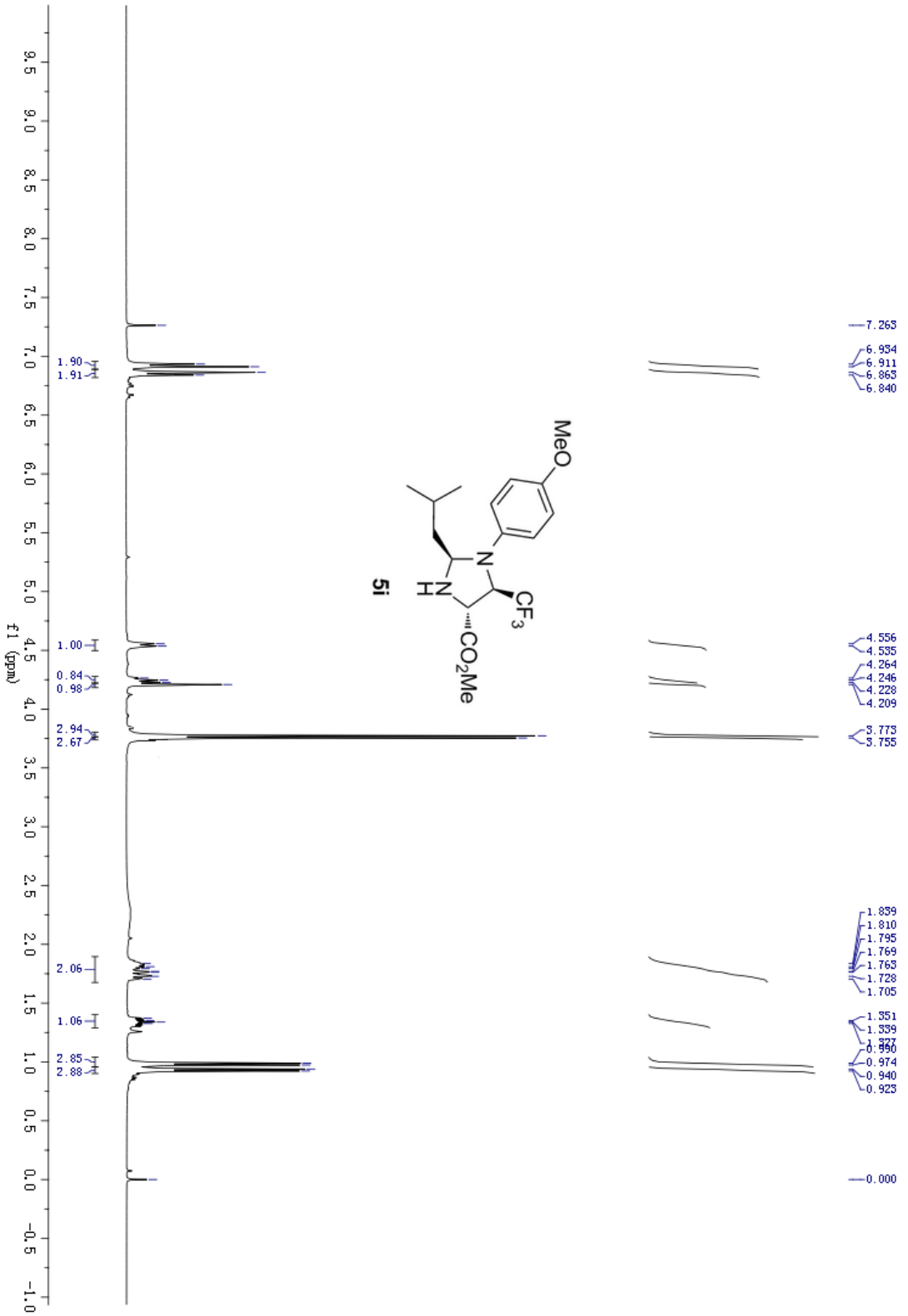

000074 PhCH2CH2
wangchunjiang-000074-2
171.177
155.385
141.260
140.278
128.413
128.277
127.011
125.999
124.212
121.390
114.683
79.627
77.318
77.000
76.682
67.788
67.489
67.188
66.890
60.573
55.494
52.916
36.073
30.997
MeO
Ph
CF3
CO2Me
5f
f1 (ppm)

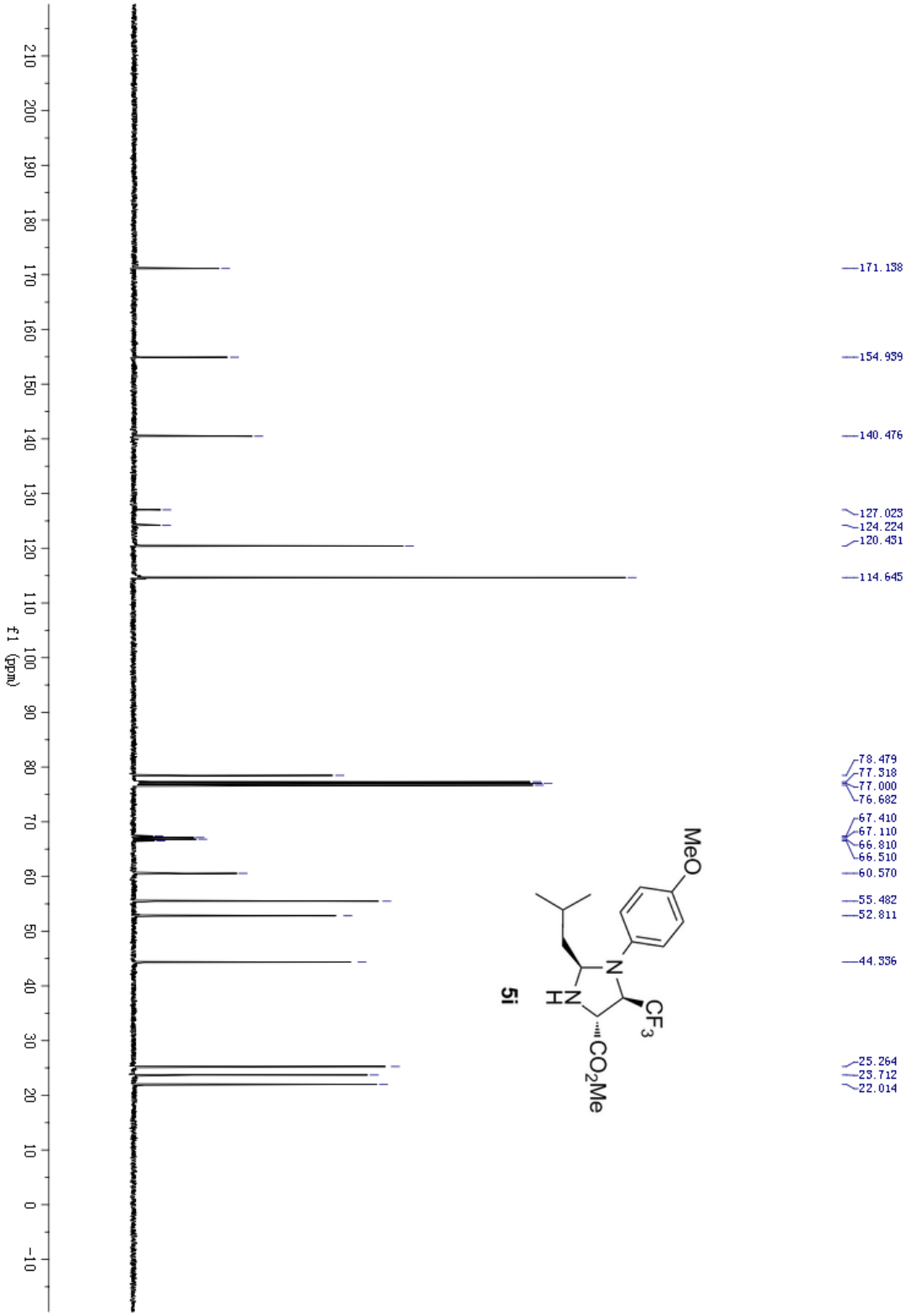

MeO
N
N
H
CF3
CO2Me
5g
f1 (ppm)
2.00
1.95
1.00
1.99
2.74
2.95
1.05
3.30
3.32
7.264
7.067
7.044
6.864
6.841
4.350
4.341
4.182
4.178
4.168
4.164
4.150
4.132
3.797
3.783
1.936
1.919
1.909
1.891
1.001
0.984
0.956
0.947
0.930
0.071
0.000

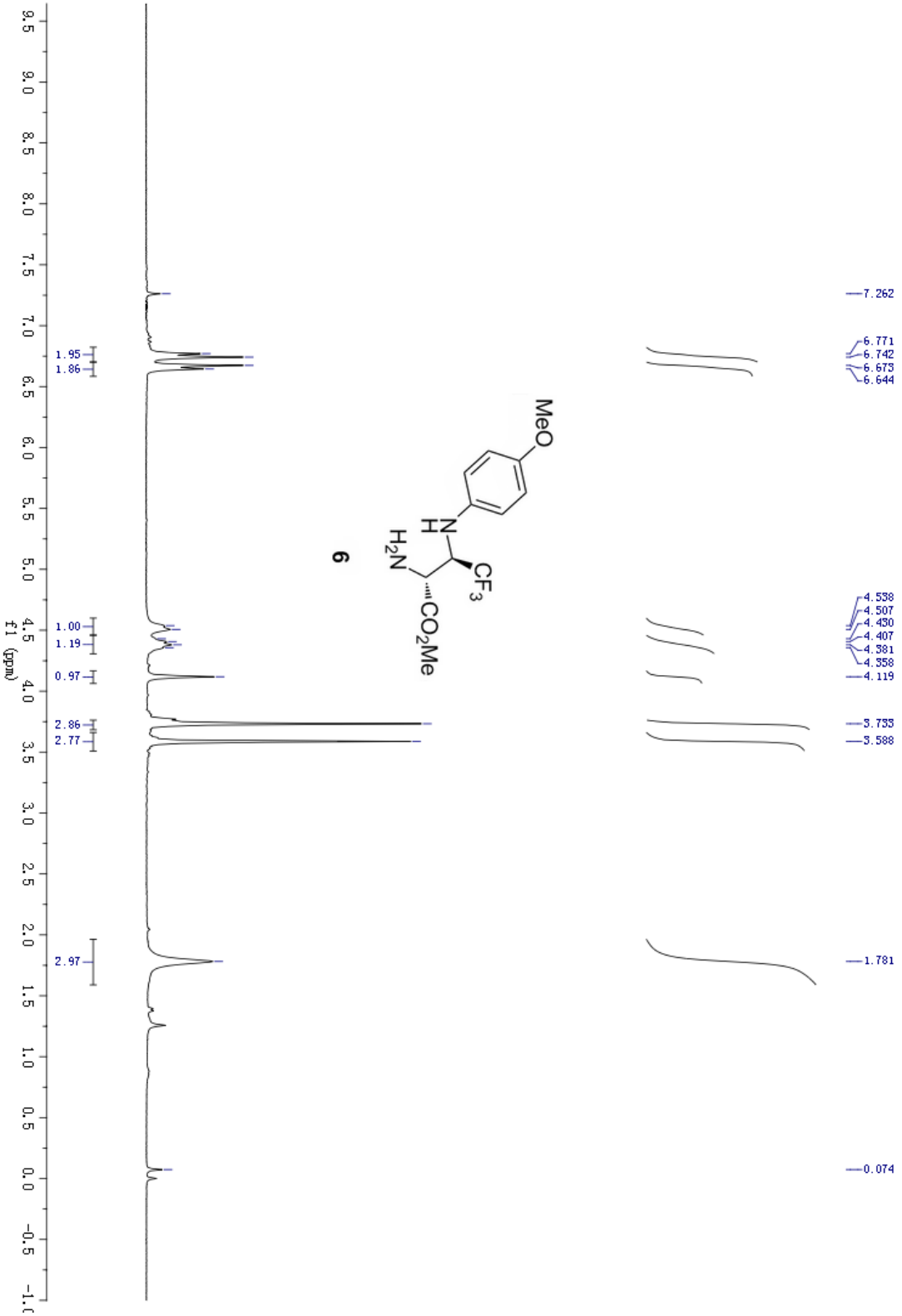

3av 000035 (CH3)2CH
wangchunjiang-000035.c
171.554
156.097
141.084
127.077
124.276
123.947
114.560
85.069
77.318
77.000
76.683
69.004
68.705
68.408
68.110
60.532
55.451
52.862
29.665
19.225
14.627
f1 (ppm)
MeO
CF3
CO2Me
5g

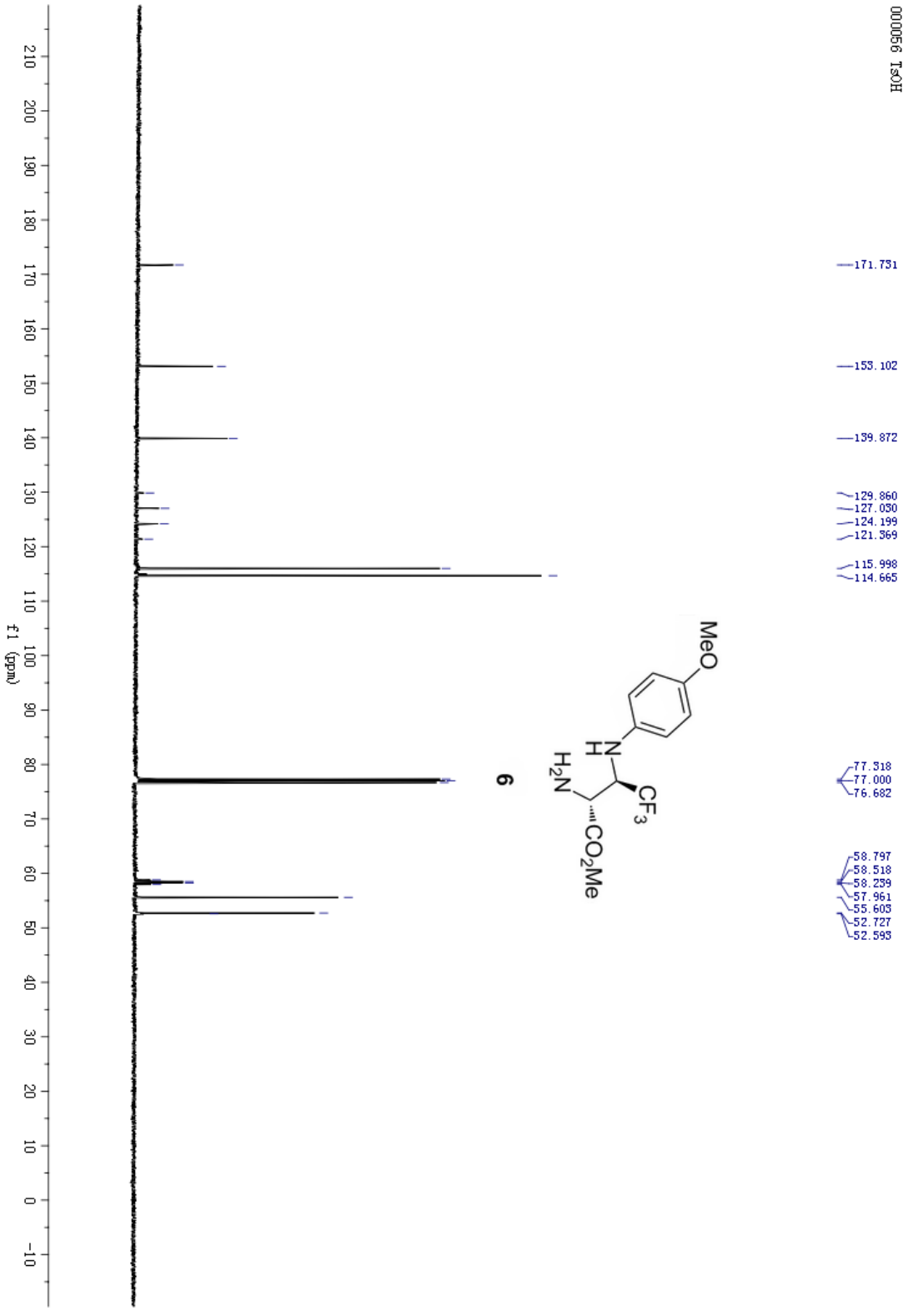

MeO
N
N
H
CF3
CO2Me
5h
f1 (ppm)
2.15
2.07
1.00
2.06
2.75
2.98
1.02
1.16
5.48
4.38
1.34
7.263
7.038
7.016
6.865
6.843
4.355
4.345
4.168
4.156
4.138
4.133
3.784
3.779
2.593
1.925
1.894
1.794
1.723
1.652
1.193
1.163
1.145
1.124
0.953
0.922
0.071
-0.000

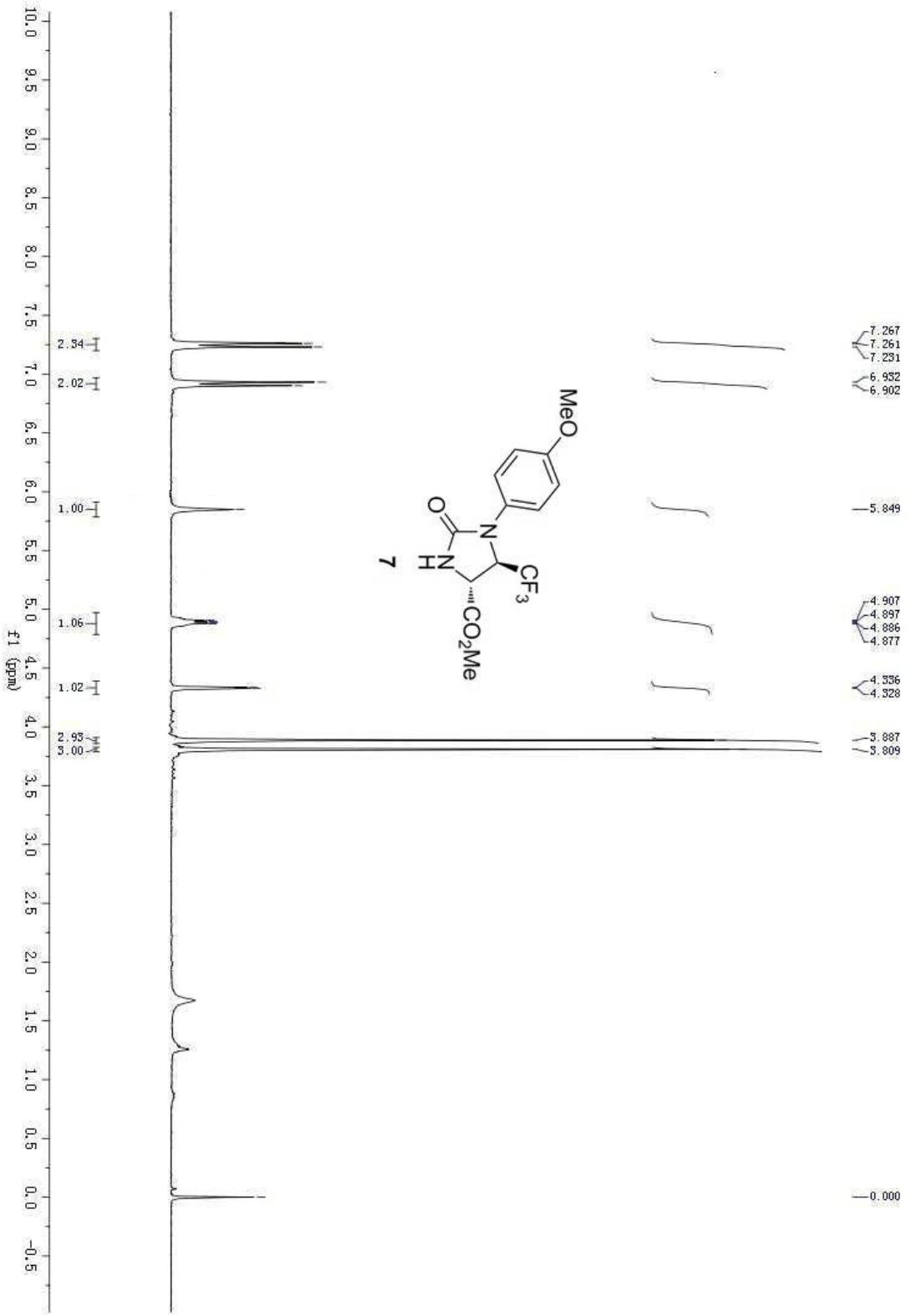

f1 (ppm)
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
171.466
155.774
141.318
127.032
124.234
123.198
114.533
84.453
77.317
77.000
76.682
68.783
68.486
68.188
67.890
60.543
55.407
52.799
40.202
30.043
26.560
26.534
26.093
25.732
MeO
N
H
N
CF3
CO2Me
5h

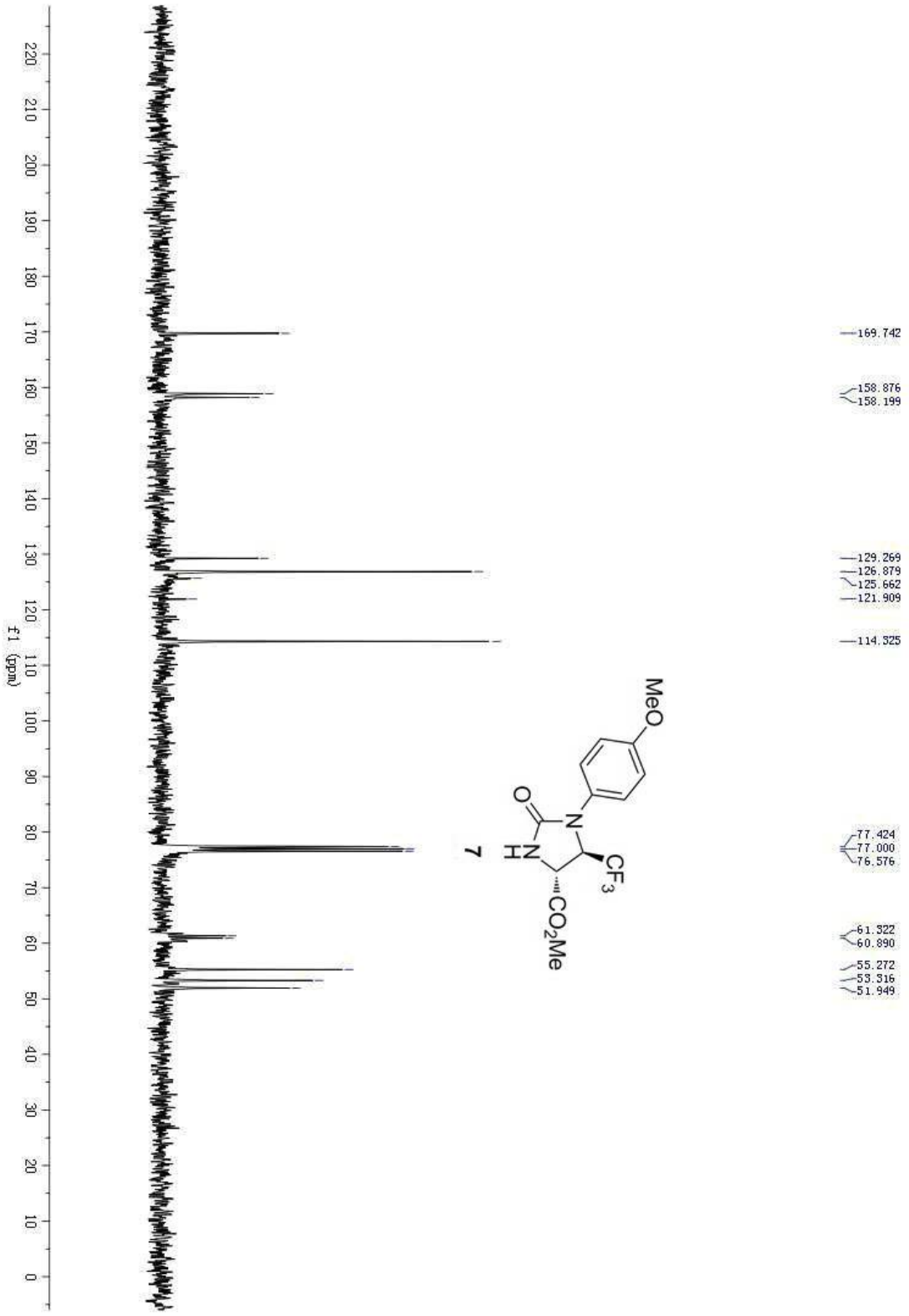

MeO
N
N
H
CF3
CO2Me
5i
f1 (ppm)
1.90
1.91
1.00
0.84
0.98
2.94
2.67
2.06
1.06
2.85
2.88
7.263
6.934
6.911
6.863
6.840
4.556
4.535
4.264
4.246
4.228
4.209
3.773
3.755
1.839
1.810
1.795
1.769
1.763
1.728
1.705
1.351
1.339
0.990
0.974
0.940
0.923
0.000

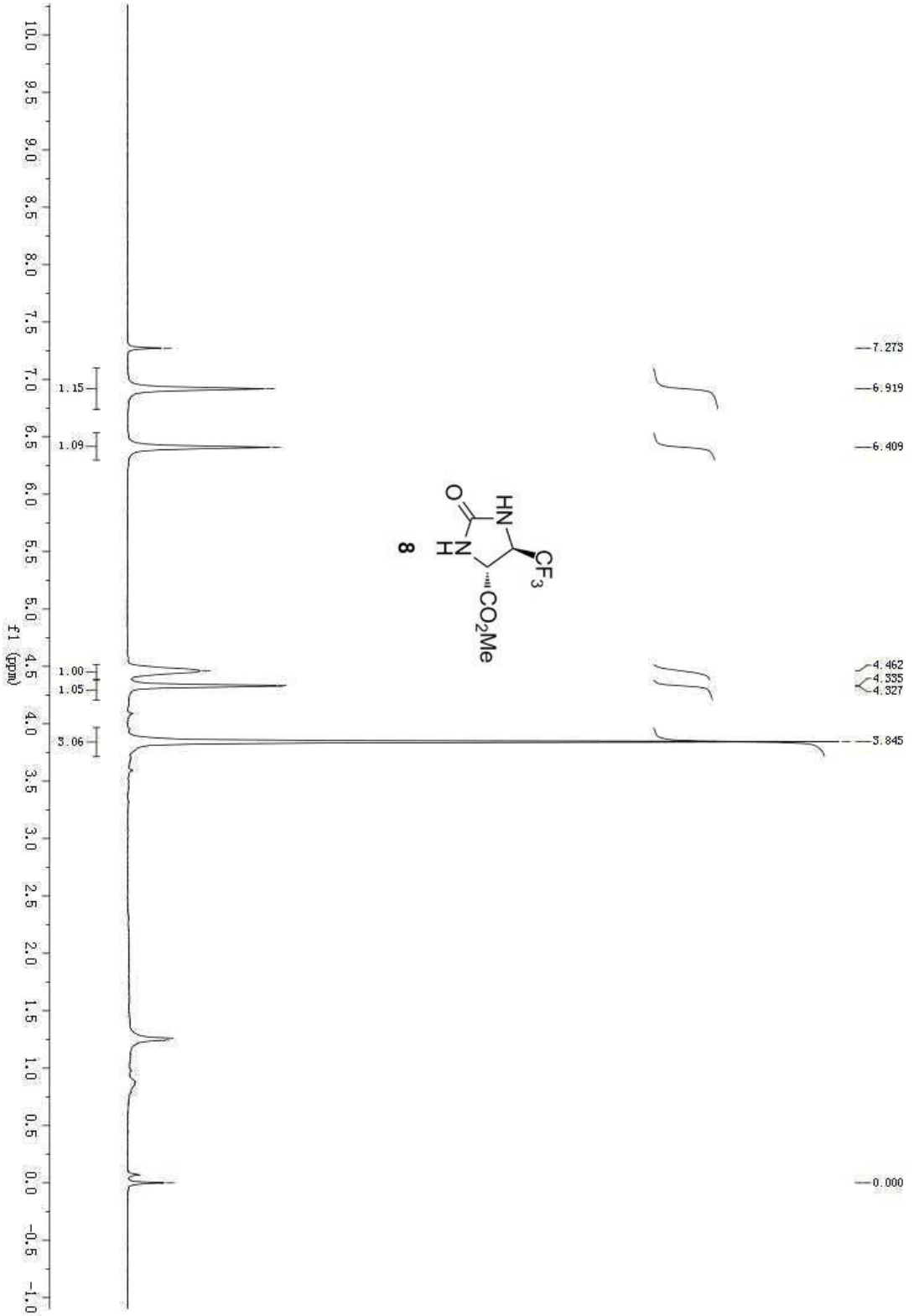

f1 (ppm)
171.138
154.939
140.476
127.023
124.224
120.431
114.645
78.479
77.318
77.000
76.682
67.410
67.110
66.810
66.510
60.570
55.482
52.811
44.336
25.264
23.712
22.014
MeO
CF3
CO2Me
N
H
5i

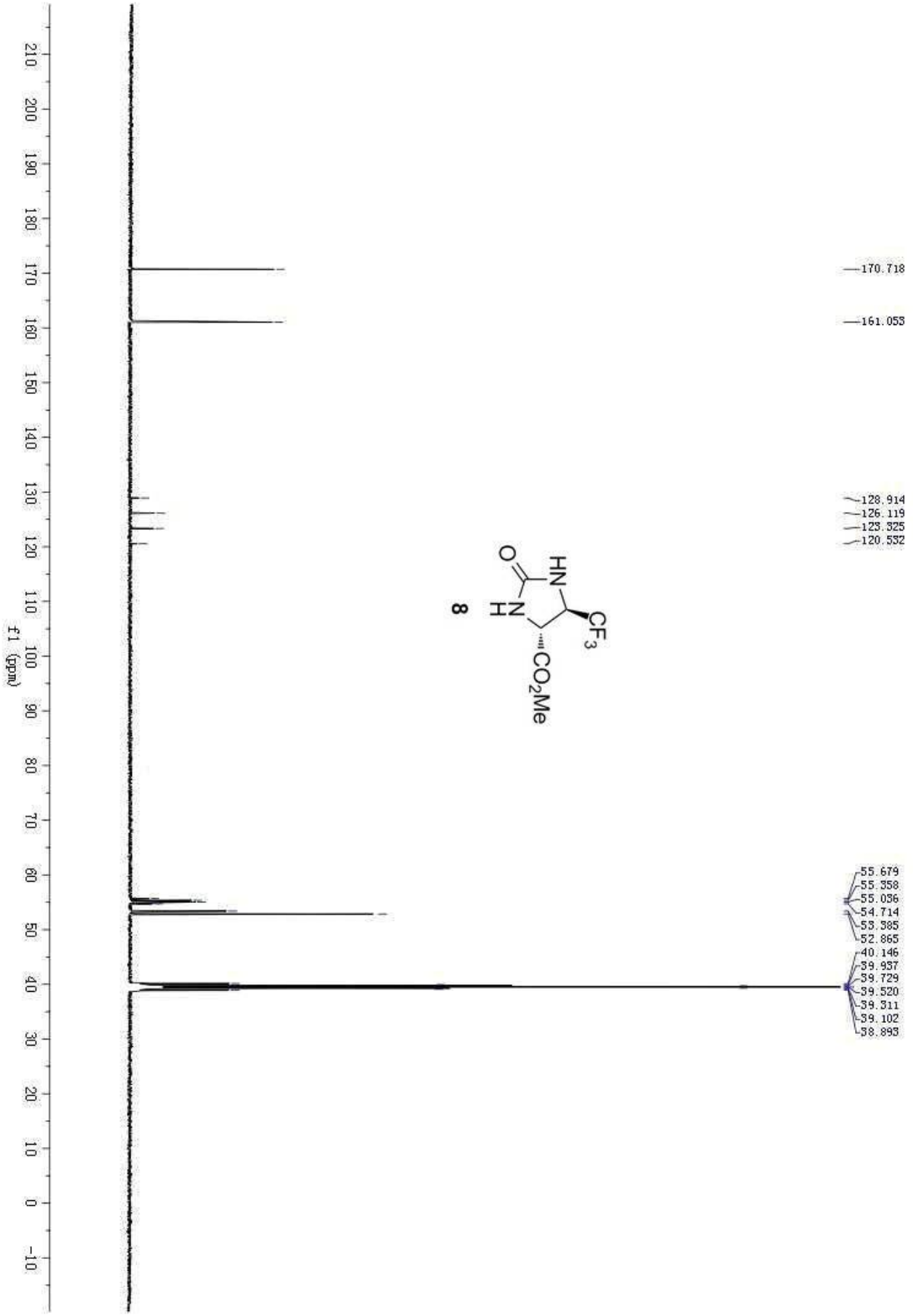

MeO
N
H
H2N
CF3
CO2Me
6
f1 (ppm)
1.95
1.86
1.00
1.19
0.97
2.86
2.77
2.97
7.262
6.771
6.742
6.673
6.644
4.538
4.507
4.430
4.407
4.381
4.358
4.119
3.733
3.588
1.781
0.074


000056 TsOH
171.731
153.102
139.872
129.860
127.030
124.199
121.369
115.998
114.665
77.318
77.000
76.682
58.797
58.518
58.239
57.961
55.603
52.727
52.593
f1 (ppm)
MeO
N
H
H2N
CF3
CO2Me
6


MeO
O
N
H
N
CF3
CO2Me
7
f1 (ppm)
2.34
2.02
1.00
1.06
1.02
2.93
3.00
7.267
7.261
7.231
6.932
6.902
5.849
4.907
4.897
4.886
4.877
4.336
4.328
3.887
3.809
0.000


f1 (ppm)
169.742
158.876
158.199
129.269
126.879
125.662
121.909
114.325
77.424
77.000
76.576
61.322
60.890
55.272
53.316
51.949
MeO
O
N
H
N
CF3
CO2Me
7


f1 (ppm)
1.15
1.09
1.00
1.05
3.06
7.273
6.919
6.409
4.462
4.335
4.327
3.845
0.000
HN
N
H
O
CF3
CO2Me
8


170.718
161.053
128.914
126.119
123.325
120.532
55.679
55.358
55.036
54.714
54.385
52.865
40.146
39.937
39.729
39.520
39.311
39.102
38.893
f1 (ppm)
HN
O
N
H
CF3
CO2Me
8

XII. HPLC Chromatograms

Data File D:\LC\DATA\LQH\LQH\LQH-6-118\LQH-6-118C-2 2012-04-10 19-09-24\023-0201.D
Sample Name: LQH-6-118C-2

```
=====================================================================
Acq. Operator   : LQH                          Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 23
Injection Date  : 4/10/2012 7:22:08 PM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\201201\LQH\LQH-6-118\LQH-6-118C-2 2012-04-10 19-09-24\ADH-10-90-
                  10ML-220NM-30MIN.M
Last changed    : 11/9/2011 12:13:31 PM by THL
Analysis Method : D:\LC\DATA\LQH\LQH\LQH-6-118\LQH-6-118C-2 2012-04-10 19-09-24\023-0201.D\
                  DA.M (ADH-10-90-10ML-220NM-30MIN.M)
Last changed    : 7/9/2012 8:40:44 PM by LJ
                  (modified after loading)
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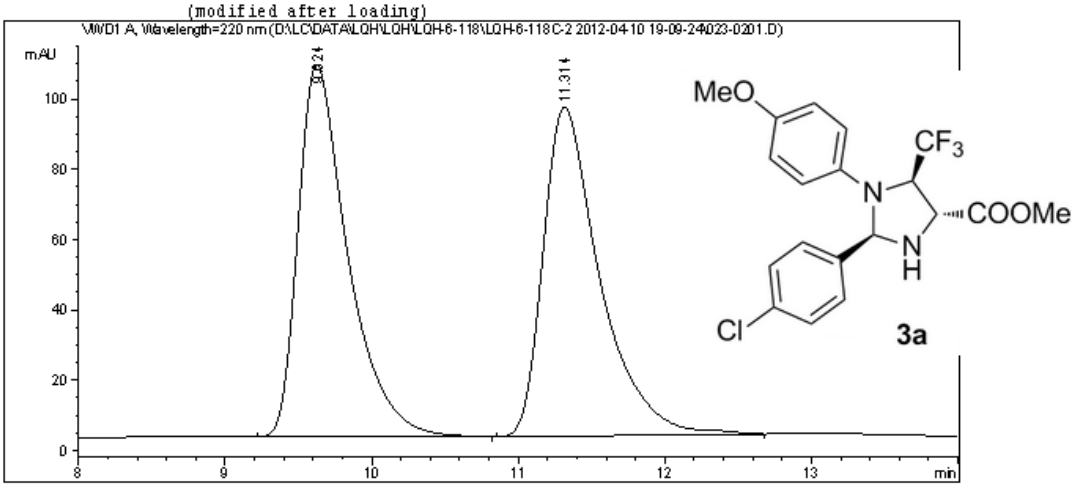



```
=====================================================================
                        Area Percent Report
=====================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
   1   9.624 BB    0.3499 2491.14551  105.98347  49.7242
   2  11.314 BB    0.3998 2518.77734   93.60684  50.2758

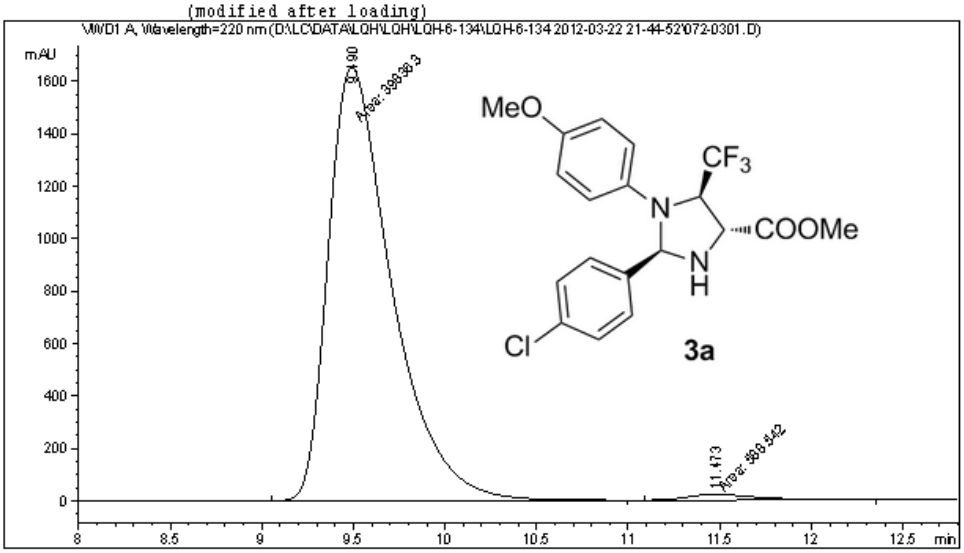
Totals :                  5009.92285  199.59032


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


Instrument 1 7/9/2012 8:40:50 PM LJ                    Page 1 of 1
```

Data File D:\LC\DATA\LQH\LQH\LQH-6-134\LQH-6-134 2012-03-22 21-44-52\072-0301.D
Sample Name: LQH-6-134B

Acq. Operator	: LQH	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 72
Injection Date	: 3/22/2012 10:28:41 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-6-134\LQH-6-134 2012-03-22 21-44-52\ADH-10-90-10ML-220NM-30MIN.M		
Last changed	: 11/9/2011 12:13:31 PM by THL		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-6-134\LQH-6-134 2012-03-22 21-44-52\072-0301.D\DA.M (ADH-10-90-10ML-220NM-30MIN.M)		
Last changed	: 4/19/2012 2:17:40 PM by THL (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

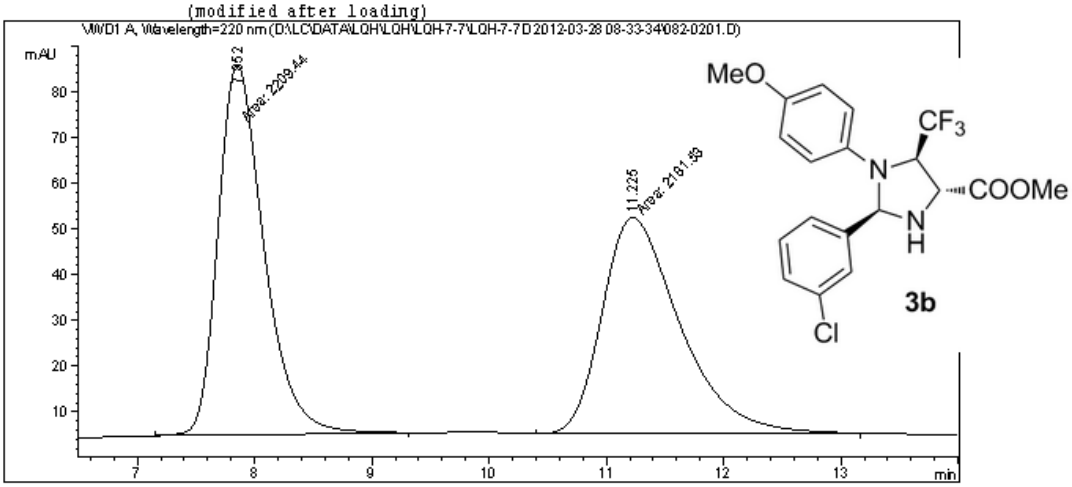
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.490	MM	0.4015	3.98363e4	1653.52295	98.5441
2	11.473	MM	0.4463	588.54236	21.97648	1.4559
Totals :				4.04248e4	1675.49943	

Instrument 1 4/19/2012 2:17:44 PM THL

Data File D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7D 2012-03-28 08-33-34\082-0201.D
Sample Name: LQH-7-7D

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 82
Injection Date	: 3/28/2012 8:45:31 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-7\LQH-7-7D 2012-03-28 08-33-34\ASH-10-90-10ML-220NM.M		
Last changed	: 3/28/2012 9:08:29 AM by LQH (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7D 2012-03-28 08-33-34\082-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 4/19/2012 2:31:57 PM by THL (modified after loading)		



Area Percent Report

Sorted By	:	Signal	
Multiplier	:	1.0000	
Dilution	:	1.0000	

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	7.852	MM	0.4543	2209.44287	81.05141	50.3179
2	11.225	MM	0.7695	2181.52905	47.24813	49.6821
Totals :				4390.97192	128.29954	

*** End of Report ***

Instrument 1 4/19/2012 2:32:02 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\095-0101.D
Sample Name: LQH-7-11D

```
==================================================================
Acq. Operator    : LQH                          Seq. Line :   1
Acq. Instrument  : Instrument 1                  Location : Vial 95
Injection Date   : 4/19/2012 7:34:56 PM               Inj :   1
                                                Inj Volume : 5 µl
Acq. Method      : D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\ASH-10-
                   90-1ML-220NM-25MIN.M
Last changed     : 9/10/2011 12:27:52 PM by LTL
Analysis Method  : D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\095-0101.
                   D\DA.M (ASH-10-90-1ML-220NM-25MIN.M)
Last changed     : 5/5/2012 4:11:35 PM by lqh
                   (modified after loading)
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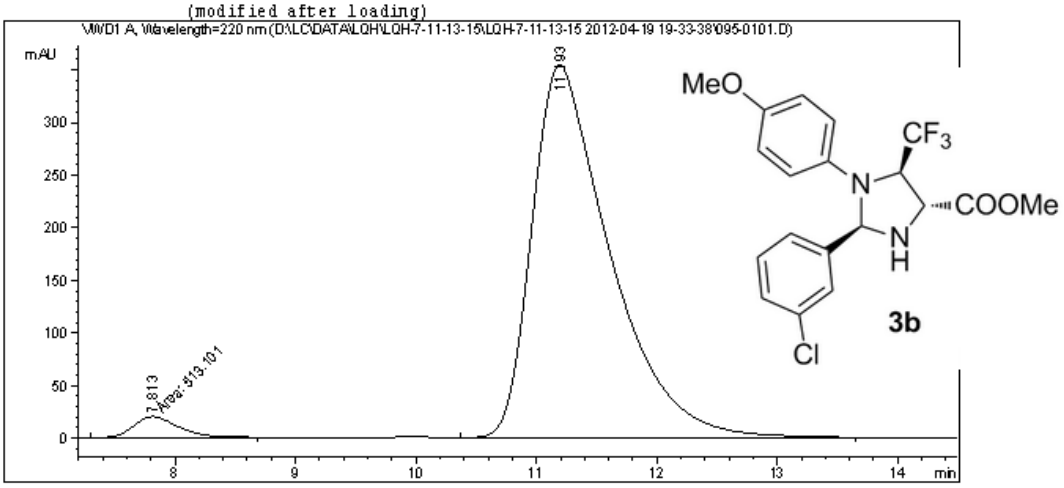



```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
   1   7.813 MM    0.4294  513.10126   19.91641   3.1250
   2  11.193 VB    0.6671 1.59063e4   354.82291  96.8750

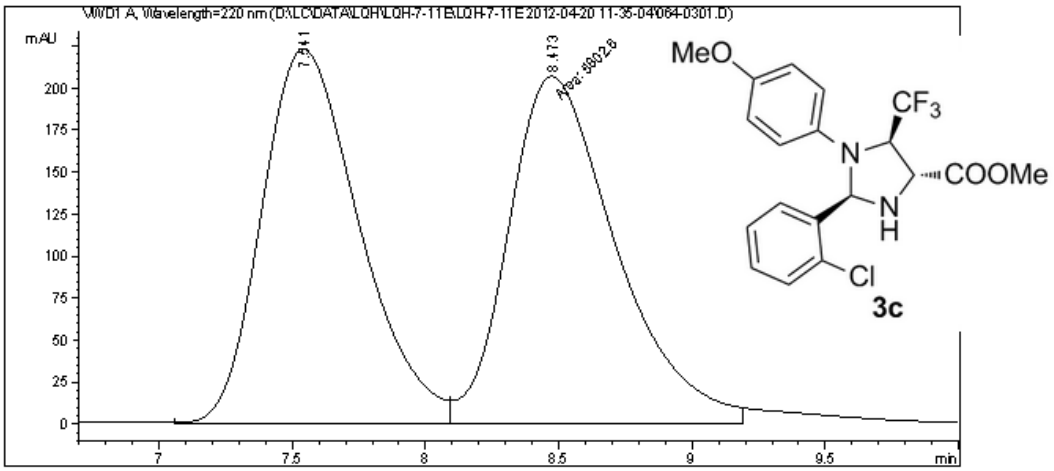
Totals :                  1.64194e4   374.73932


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

Instrument 1 5/5/2012 4:11:44 PM lqh Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-11E\LQH-7-11E 2012-04-20 11-35-04\064-0301.D
Sample Name: LQH-7-7B

Acq. Operator	: LQH	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 64
Injection Date	: 4/20/2012 12:19:18 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-11E\LQH-7-11E 2012-04-20 11-35-04\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-11E\LQH-7-11E 2012-04-20 11-35-04\064-0301.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 5/5/2012 4:01:52 PM by lqh (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

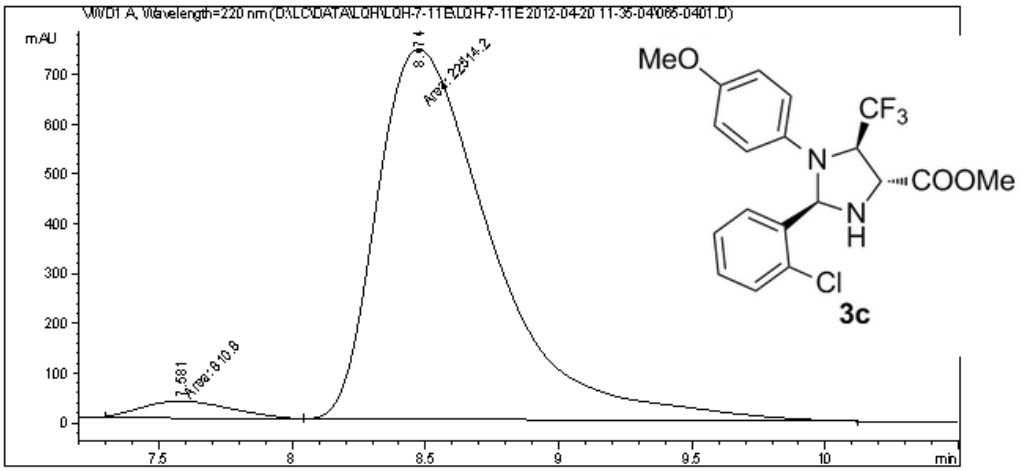
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	7.541	VV	0.3940	5673.96338	223.26845	49.4396
2	8.473	MF	0.4672	5802.59619	206.98094	50.5604
Totals :				1.14766e4	430.24939	

*** End of Report ***

Data File D:\LC\DATA\LQH\LQH-7-11E\LQH-7-11E 2012-04-20 11-35-04\065-0401.D
Sample Name: LQH-7-11B

Acq. Operator	: LQH	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 65
Injection Date	: 4/20/2012 12:40:59 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-11E\LQH-7-11E 2012-04-20 11-35-04\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-11E\LQH-7-11E 2012-04-20 11-35-04\065-0401.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 9/6/2012 10:14:27 AM by thl (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	7.581	FM	0.3914	810.80017	34.52506	3.4761
2	8.474	FM	0.5040	2.25142e4	744.54779	96.5239
Totals :				2.33250e4	779.07285	

*** End of Report ***

Instrument 1 9/6/2012 10:14:42 AM thl

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-14\LQH-7-14A 2012-03-30 18-49-25\065-0201.D
Sample Name: LQH-7-14A

```
==================================================================
Acq. Operator   : LQH                          Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 65
Injection Date  : 3/30/2012 7:01:25 PM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\201201\LQH\LQH-7-14\LQH-7-14A 2012-03-30 18-49-25\ASH-10-90-10ML-
                  220NM.M
Last changed    : 3/30/2012 7:23:42 PM by LQH
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH\LQH-7-14\LQH-7-14A 2012-03-30 18-49-25\065-0201.D\DA.M
                  (ASH-10-90-10ML-220NM.M)
Last changed    : 9/6/2012 10:53:24 AM by thl
                  (modified after loading)
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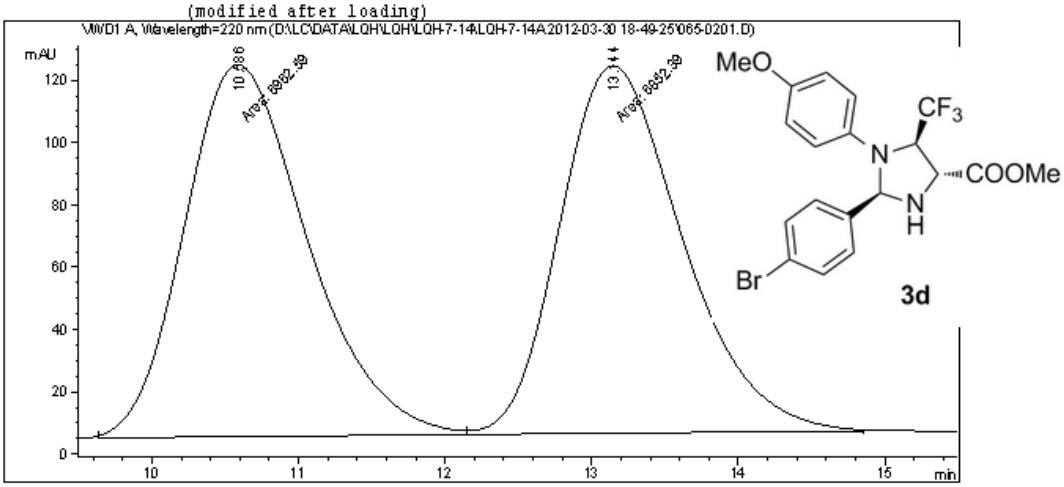



```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1  10.586 FM    0.9719 6962.59375  119.40109  50.3989
   2  13.144 MF    0.9682 6852.38574  117.95641  49.6011

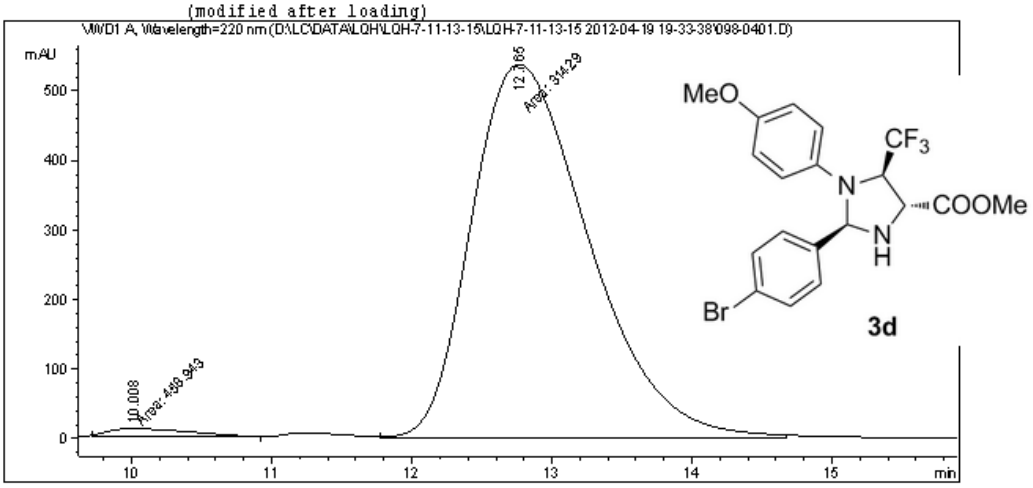
Totals :                  1.38150e4   237.35750


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

Instrument 1 9/6/2012 10:53:41 AM thl Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\098-0401.D
Sample Name: LQH-7-15A

Acq. Operator	: LQH	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 98
Injection Date	: 4/19/2012 8:54:52 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\ASH-10-90-1ML-220NM-25MIN.M		
Last changed	: 9/10/2011 12:27:52 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\098-0401.D\DA.M (ASH-10-90-1ML-220NM-25MIN.M)		
Last changed	: 9/6/2012 10:25:07 AM by thl (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

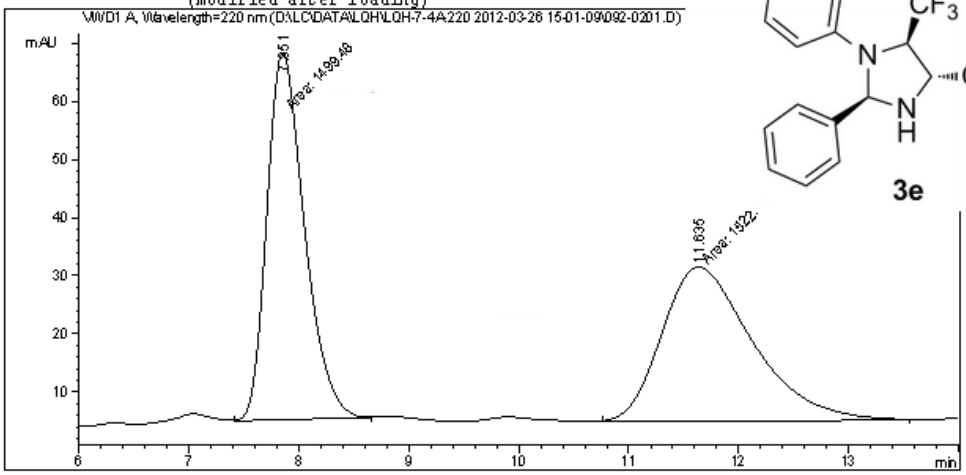
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	10.008	FM	0.6702	458.94275	11.41303	1.4392
2	12.765	MF	0.9743	3.14290e4	537.61847	98.5608
Totals :				3.18879e4	549.03150	

*** End of Report ***

Instrument 1 9/6/2012 10:25:26 AM thl

Data File D:\LC\DATA\LQH\LQH-7-4A-220 2012-03-26 15-01-09\092-0201.D
Sample Name: LQH-7-4A

Acq. Operator	: LQH
Seq. Line	: 2
Acq. Instrument	: Instrument 1
Location	: Vial 92
Injection Date	: 3/26/2012 3:12:59 PM
Inj	: 1
Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\FX\FX-5-95\LQH-7-4A-220 2012-03-26 15-01-09\ASH-10-90-10ML-220NM.M
Last changed	: 3/26/2012 3:30:57 PM by LQH (modified after loading)
Analysis Method	: D:\LC\DATA\LQH\LQH-7-4A-220 2012-03-26 15-01-09\092-0201.D\DA.M (ASH-10-90-10ML-220NM.M)
Last changed	: 4/19/2012 2:24:32 PM by THL (modified after loading)



3e

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	7.851	MM	0.3958	1499.48169	63.14190	49.6195
2	11.635	MM	0.9593	1522.47656	26.44999	50.3805
Totals :				3021.95825	89.59189	

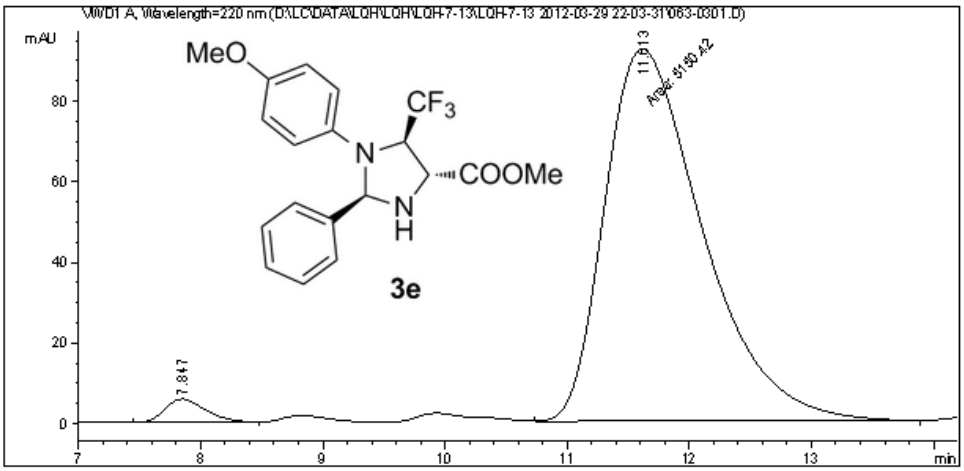
*** End of Report ***

Instrument 1 4/19/2012 2:24:36 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\063-0301.D
Sample Name: LQH-7-13B

Acq. Operator	: LQH	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 63
Injection Date	: 3/29/2012 10:37:33 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\063-0301.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 4/19/2012 2:39:10 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	7.847	BV	0.3574	136.32626	5.79601	2.5786
2	11.613	MM	0.9294	5150.42383	92.36421	97.4214
Totals :				5286.75009	98.16022	

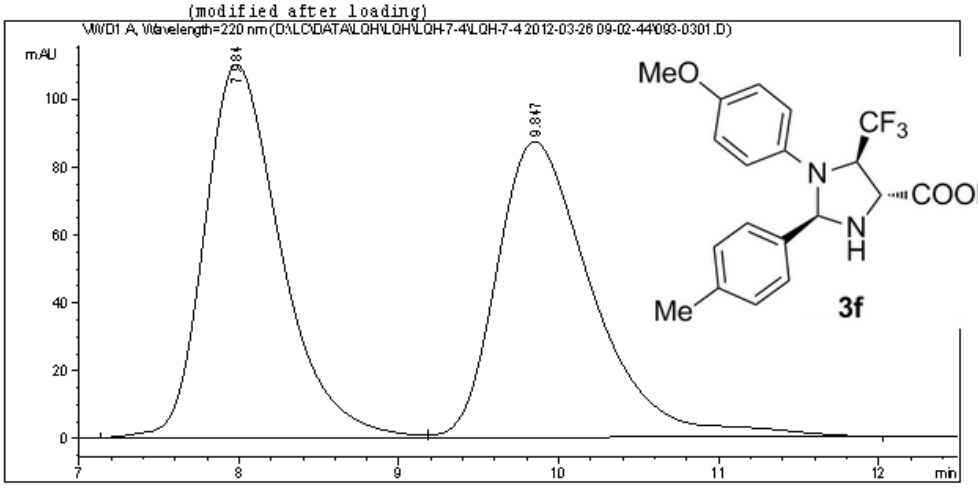
*** End of Report ***

Instrument 1 4/19/2012 2:39:14 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-4\LQH-7-4 2012-03-26 09-02-44\093-0301.D
Sample Name: LQH-7-4B

Acq. Operator	: LQH	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 93
Injection Date	: 3/26/2012 9:36:13 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-4\LQH-7-4 2012-03-26 09-02-44\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-4\LQH-7-4 2012-03-26 09-02-44\093-0301.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 4/19/2012 2:26:26 PM by THL (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	7.984	BB	0.5073	3642.17554	109.94495	50.0149
2	9.847	BB	0.6317	3640.00562	87.09703	49.9851
Totals :				7282.18115	197.04198	

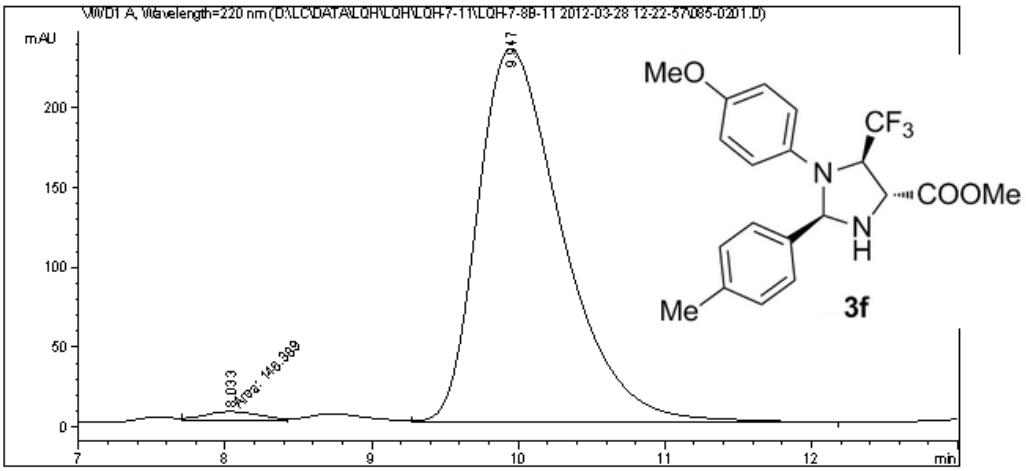
*** End of Report ***

Instrument 1 4/19/2012 2:26:30 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-11\LQH-7-8B-11 2012-03-28 12-22-57\085-0201.D
Sample Name: LQH-7-8B

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 85
Injection Date	: 3/28/2012 12:35:31 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-11\LQH-7-8B-11 2012-03-28 12-22-57\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-11\LQH-7-8B-11 2012-03-28 12-22-57\085-0201.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 4/19/2012 2:55:35 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	8.033	MM	0.4445	146.38934	5.48893	1.5330
2	9.947	VB	0.6130	9402.50781	233.95616	98.4670
Totals :				9548.89716	239.44509	

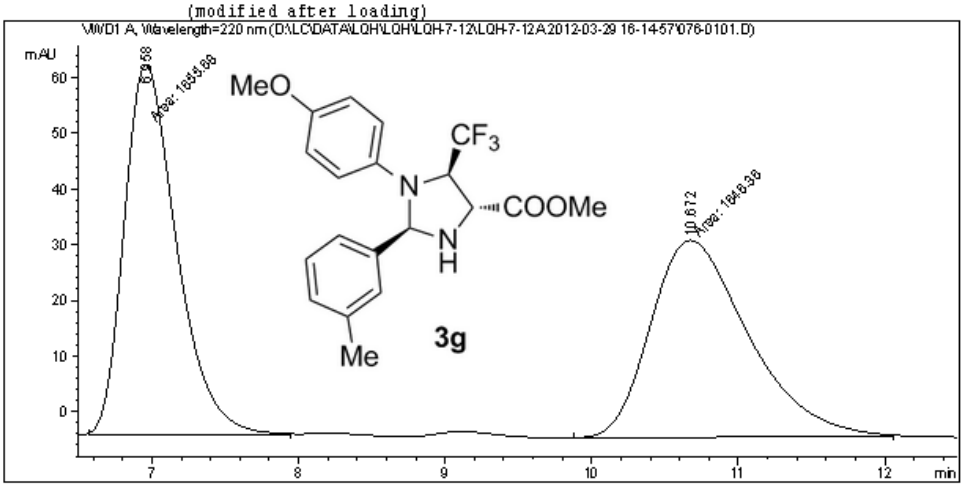
*** End of Report ***

Instrument 1 4/19/2012 2:55:40 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-12A 2012-03-29 16-14-57\076-0101.D
Sample Name: LQH-7-12A

Acq. Operator	: LQH	Seq. Line	: 1
Acq. Instrument	: Instrument 1	Location	: Vial 76
Injection Date	: 3/29/2012 4:15:46 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-12\LQH-7-12A 2012-03-29 16-14-57\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-12A 2012-03-29 16-14-57\076-0101.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 9/6/2012 10:40:00 AM by thl (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	6.958	FM	0.4141	1655.68408	66.64554	50.1412
2	10.672	MF	0.7748	1646.35986	35.41476	49.8588
Totals :				3302.04395	102.06030	

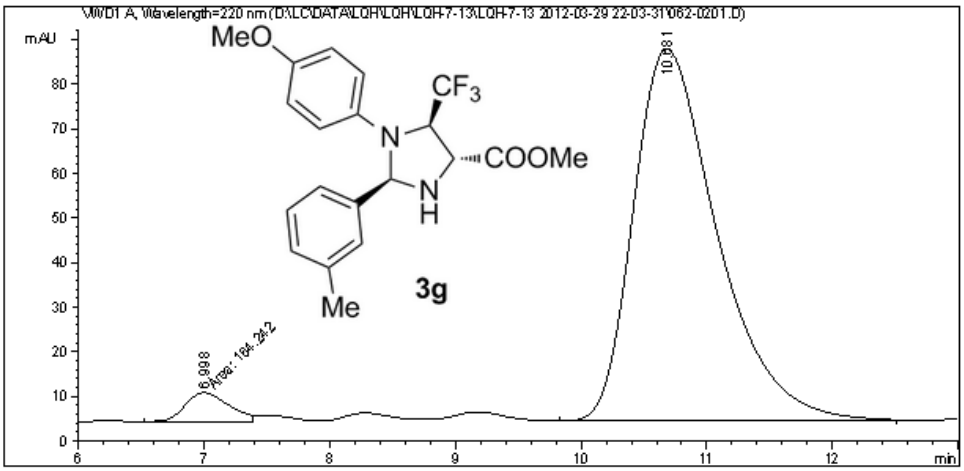
*** End of Report ***

Instrument 1 9/6/2012 10:40:18 AM thl

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\062-0201.D
Sample Name: LQH-7-13A

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 62
Injection Date	: 3/29/2012 10:16:11 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\062-0201.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 5/5/2012 4:19:16 PM by lqh (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

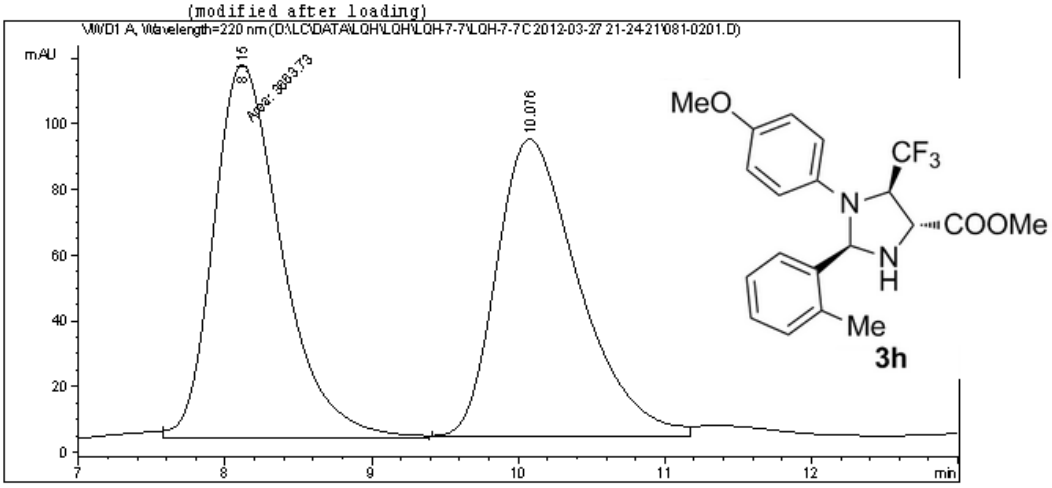
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	6.998	MF	0.4128	164.24181	6.63117	4.0823
2	10.681	VB	0.7027	3859.04077	83.42413	95.9177
Totals :				4023.28258	90.05529	

*** End of Report ***

Data File D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7C 2012-03-27 21-24-21\081-0201.D
Sample Name: LQH-7-7C

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 81
Injection Date	: 3/27/2012 9:36:23 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-7\LQH-7-7C 2012-03-27 21-24-21\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7C 2012-03-27 21-24-21\081-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 4/19/2012 2:30:22 PM by THL (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	8.115	PM	0.5368	3663.73267	113.75489	50.7353
2	10.076	BB	0.5973	3557.53125	90.72436	49.2647
Totals :				7221.26392	204.47925	

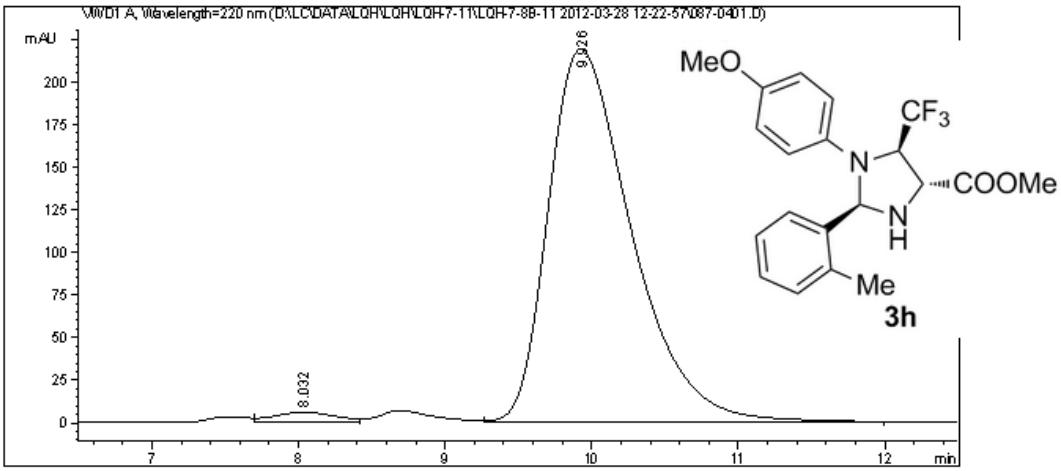
*** End of Report ***

Instrument 1 4/19/2012 2:30:27 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-11\LQH-7-8B-11 2012-03-28 12-22-57\087-0401.D
Sample Name: LQH-7-11C

Acq. Operator	: LQH	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 87
Injection Date	: 3/28/2012 1:28:38 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\20120l\LQH\LQH-7-11\LQH-7-8B-11 2012-03-28 12-22-57\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-11\LQH-7-8B-11 2012-03-28 12-22-57\087-0401.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 4/19/2012 3:02:51 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

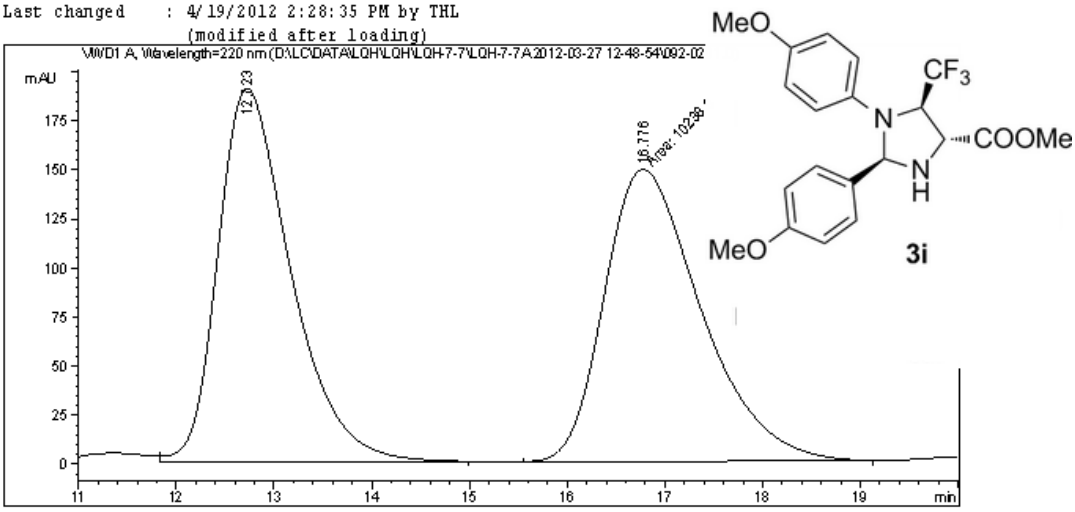
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	8.032	VV	0.4447	176.51337	5.93240	1.9989
2	9.926	VB	0.6039	8654.22363	218.90584	98.0011
Totals :				8830.73700	224.83824	

*** End of Report ***

Instrument 1 4/19/2012 3:02:57 PM THL

Data File D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7A 2012-03-27 12-48-54\092-0201.D
Sample Name: LQH-7-7A

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 92
Injection Date	: 3/27/2012 1:00:48 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-7\LQH-7-7A 2012-03-27 12-48-54\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7A 2012-03-27 12-48-54\092-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 4/19/2012 2:28:35 PM by THL (modified after loading)		



3i

Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	12.723	VB	0.7864	9865.04004	190.41615	49.0715
2	16.776	MM	1.1459	1.02383e4	148.91403	50.9285
Totals :				2.01034e4	339.33018	

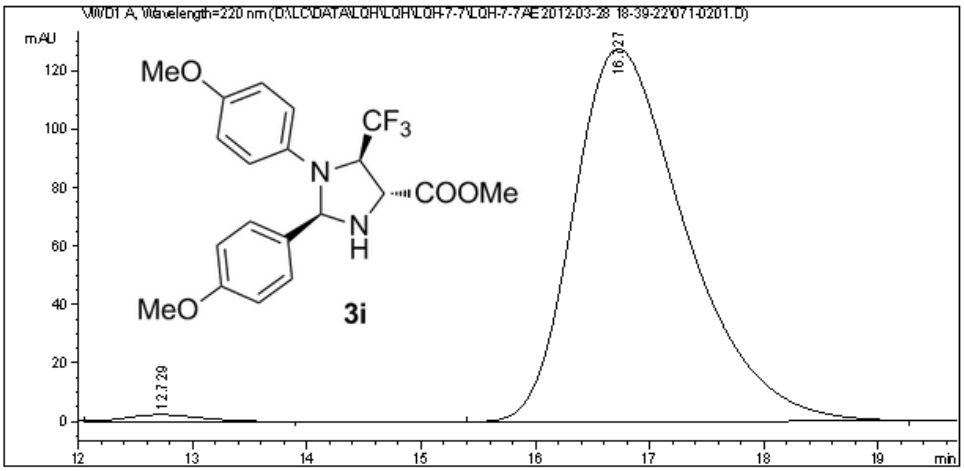
*** End of Report ***

Instrument 1 4/19/2012 2:28:40 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7AE 2012-03-28 18-39-22\071-0201.D
Sample Name: LQH-7-7A

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 71
Injection Date	: 3/28/2012 6:51:59 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-7\LQH-7-7AE 2012-03-28 18-39-22\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7AE 2012-03-28 18-39-22\071-0201.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 4/27/2012 11:39:14 AM by LQH (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

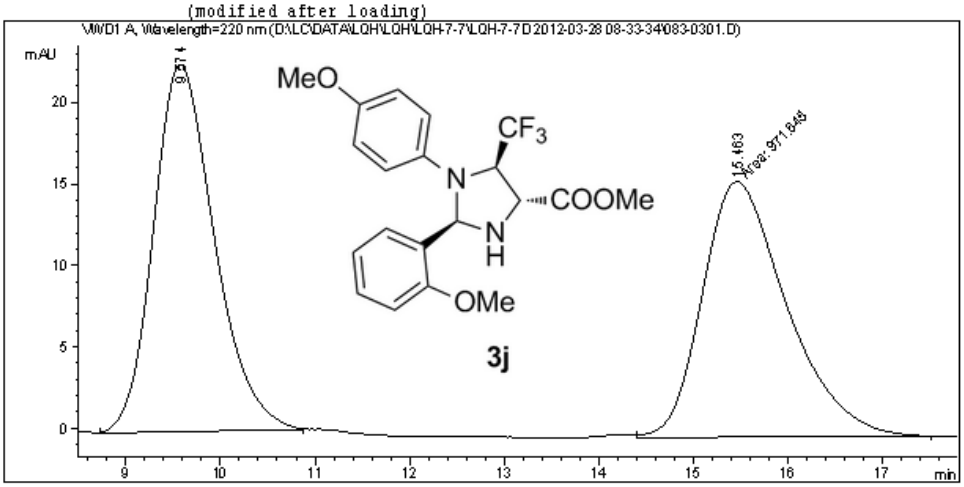
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	12.729	VB	0.6835	118.02040	2.44702	1.3372
2	16.727	BB	1.0437	8708.21582	127.37482	98.6628
Totals :				8826.23622	129.82184	

*** End of Report ***

Instrument 1 4/27/2012 11:39:20 AM LQH Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7D 2012-03-28 08-33-34\083-0301.D
Sample Name: LQH-7-7E

Acq. Operator	: LQH	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 3/28/2012 9:09:35 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-7\LQH-7-7D 2012-03-28 08-33-34\ASH-10-90-10ML-220NM.M		
Last changed	: 3/28/2012 9:33:47 AM by LQH (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-7\LQH-7-7D 2012-03-28 08-33-34\083-0301.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 9/6/2012 10:33:19 AM by thl (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

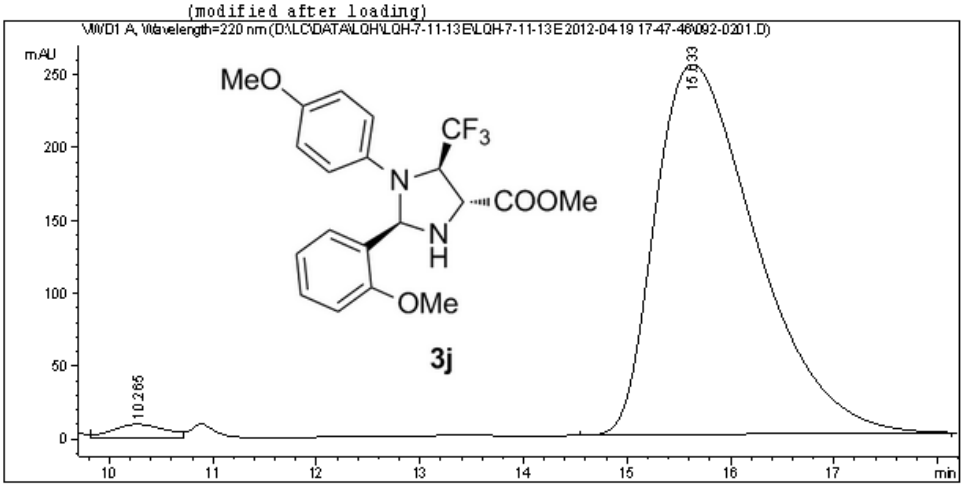
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.574	BB	0.6893	1011.26245	22.54501	50.9990
2	15.463	MM	1.0328	971.64526	15.67936	49.0010
Totals :				1982.90771	38.22437	

*** End of Report ***

Instrument 1 9/6/2012 10:33:25 AM thl

Data File D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\092-0201.D
Sample Name: LQH-7-11E

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 92
Injection Date	: 4/19/2012 6:00:18 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\ASH-10-90-1ML-220NM-25MIN.M		
Last changed	: 9/10/2011 12:27:52 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\092-0201.D\DA.M (ASH-10-90-1ML-220NM-25MIN.M)		
Last changed	: 7/26/2012 12:17:05 PM by LK (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	10.265	VV	0.5284	335.26221	9.39639	1.9075
2	15.633	BB	1.0555	1.72408e4	253.97147	98.0925
Totals :				1.7576le4	263.36786	

*** End of Report ***

Instrument 1 7/26/2012 12:17:12 PM LK

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\093-0301.D
Sample Name: LQH-7-12E

```
==================================================================
Acq. Operator   : LQH                          Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 93
Injection Date  : 4/19/2012 6:26:39 PM             Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\ASH-10-90-
                  1ML-220NM-25MIN.M
Last changed    : 9/10/2011 12:27:52 PM by LTL
Analysis Method : D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\093-0301.D\
                  DA.M (ASH-10-90-1ML-220NM-25MIN.M)
Last changed    : 4/19/2012 7:37:07 PM by THL
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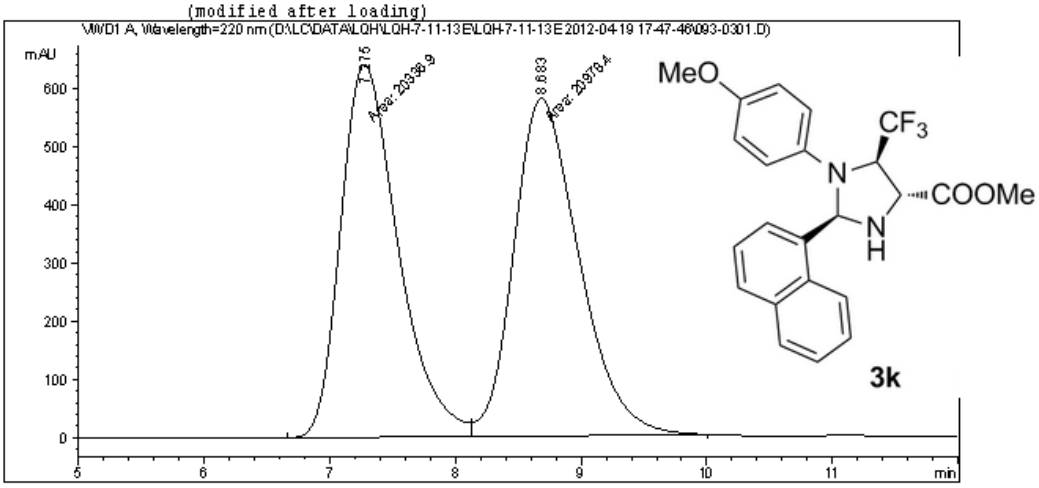



```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

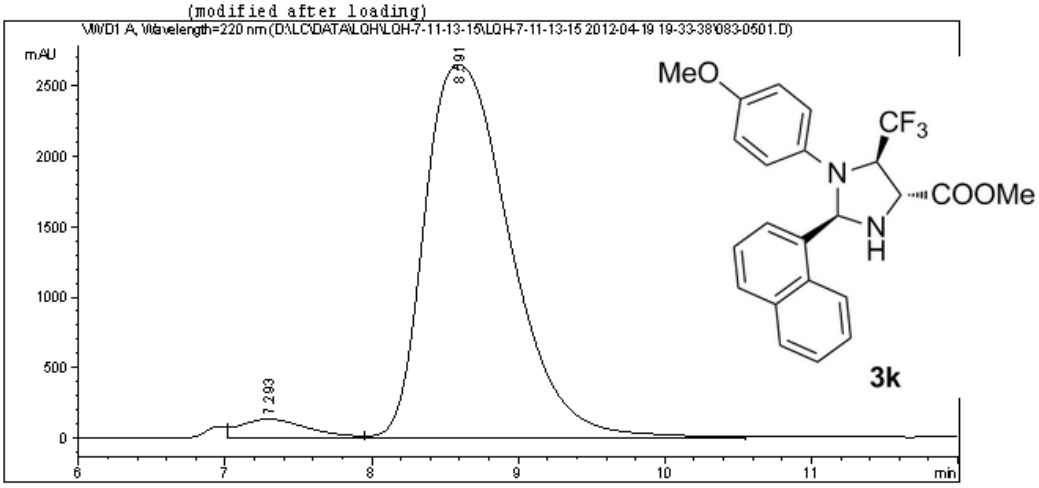
Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
   1   7.275 MF    0.5290 2.03369e4   640.75745  49.2237
   2   8.683 FM    0.6026 2.09784e4   580.25183  50.7763

Totals :                  4.13153e4  1221.00928


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

Data File D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\083-0501.D
Sample Name: LQH-7-25A

Acq. Operator	: LQH	Seq. Line	: 5
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 4/19/2012 9:21:06 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\ASH-10-90-10ML-220NM-35MIN.M		
Last changed	: 4/19/2012 8:03:47 PM by THL		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-11-13-15\LQH-7-11-13-15 2012-04-19 19-33-38\083-0501.D\DA.M (ASH-10-90-10ML-220NM-35MIN.M)		
Last changed	: 4/27/2012 12:49:29 PM by LQH (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	7.293	VV	0.4803	4319.06836	134.71240	3.8611
2	8.591	VV	0.6313	1.07543e5	2654.80542	96.1389
Totals :				1.11862e5	2789.51782	

*** End of Report ***

Data File D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-12C 2012-03-29 14-46-58\075-0301.D
Sample Name: LQH-7-12D

```
==================================================================
Acq. Operator   : LQH                          Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 75
Injection Date  : 3/29/2012 3:32:04 PM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\201201\LQH\LQH-7-12\LQH-7-12C 2012-03-29 14-46-58\ASH-10-90-10ML-
                  220NM.M
Last changed    : 3/29/2012 3:31:14 PM by LQH
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-12C 2012-03-29 14-46-58\075-0301.D\DA.M
                  (ASH-10-90-10ML-220NM.M)
Last changed    : 4/19/2012 3:08:06 PM by THL
                  (modified after loading)
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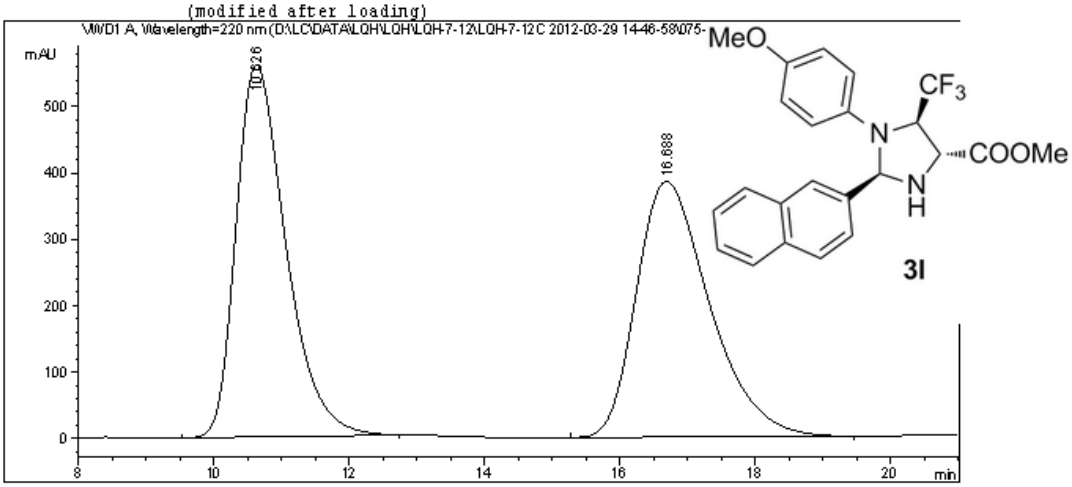


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==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1  10.626 BB    0.7859 2.87838e4   561.51678  49.8468
   2  16.688 BB    1.1513 2.89607e4   385.63513  50.1532

Totals :                  5.77445e4   947.15192


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

Data File D:\LC\DATA\LQH\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\064-0401.D
Sample Name: LQH-7-13D

```
==========================================================================
Acq. Operator   : LQH                          Seq. Line :   4
Acq. Instrument : Instrument 1                  Location : Vial 64
Injection Date  : 3/29/2012 10:59:21 PM              Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\201201\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\ASH-10-90-10ML-
                  220NM-30MIN.M
Last changed    : 3/28/2012 12:22:29 PM by FX
Analysis Method : D:\LC\DATA\LQH\LQH\LQH-7-13\LQH-7-13 2012-03-29 22-03-31\064-0401.D\DA.M (
                  ASH-10-90-10ML-220NM-30MIN.M)
Last changed    : 5/5/2012 4:24:56 PM by lqh
                  (modified after loading)
Method Info     : ASH-50-50-1ML-254NM-50MIN
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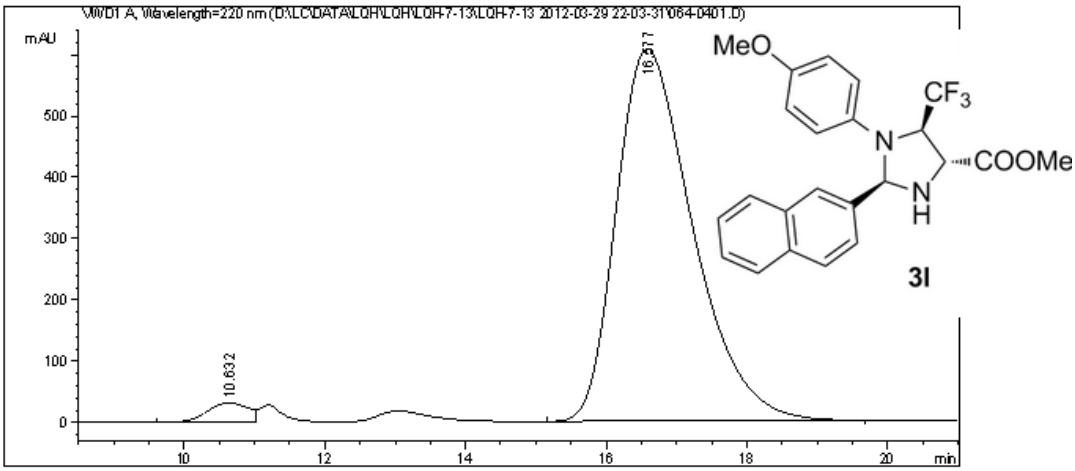



```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
   1  10.632 BV    0.6435 1289.39880   31.59750   2.7334
   2  16.577 BB    1.1651 4.58818e4   607.49487  97.2666

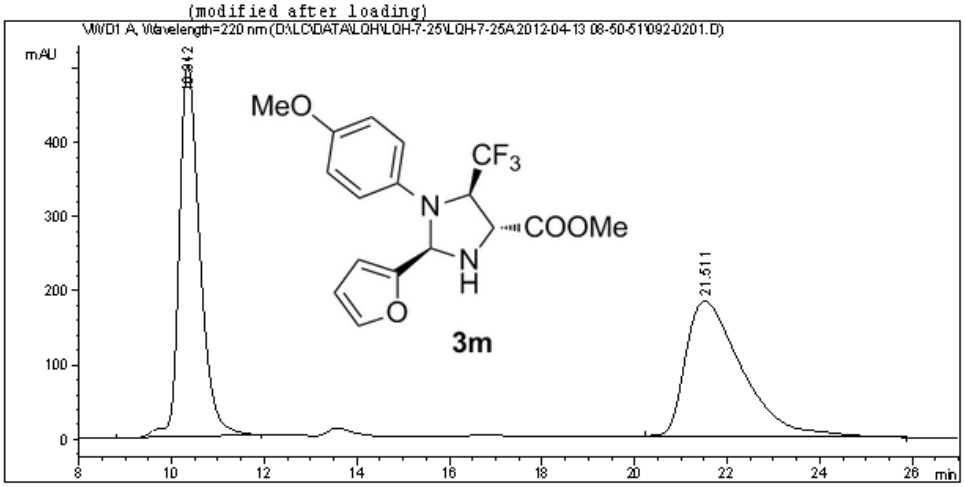
Totals :                  4.71712e4   639.09237


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

Instrument 1 5/5/2012 4:25:02 PM lqh Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-25\LQH-7-25A 2012-04-13 08-50-51\092-0201.D
Sample Name: LQH-7-25

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 92
Injection Date	: 4/13/2012 9:02:41 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-25\LQH-7-25A 2012-04-13 08-50-51\ASH-10-90-10ML-220NM.M		
Last changed	: 4/13/2012 9:30:22 AM by LQH (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-25\LQH-7-25A 2012-04-13 08-50-51\092-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 4/19/2012 7:45:28 PM by THL (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	10.342	BB	0.4698	1.54691e4	500.50961	50.0987
2	21.511	BB	1.2806	1.54081e4	181.94917	49.9013

Totals : 3.08772e4 682.45879

*** End of Report ***

Instrument 1 4/19/2012 7:45:35 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\094-0401.D
Sample Name: LQH-7-13E

```
==========================================================================
Acq. Operator   : LQH                          Seq. Line :   4
Acq. Instrument : Instrument 1                  Location : Vial 94
Injection Date  : 4/19/2012 6:53:14 PM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\ASH-10-90-
                  1ML-220NM-25MIN.M
Last changed    : 4/19/2012 7:10:02 PM by LQH
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-7-11-13E\LQH-7-11-13E 2012-04-19 17-47-46\094-0401.D\
                  DA.M (ASH-10-90-1ML-220NM-25MIN.M)
Last changed    : 4/27/2012 12:51:46 PM by LQH
                  (modified after loading)
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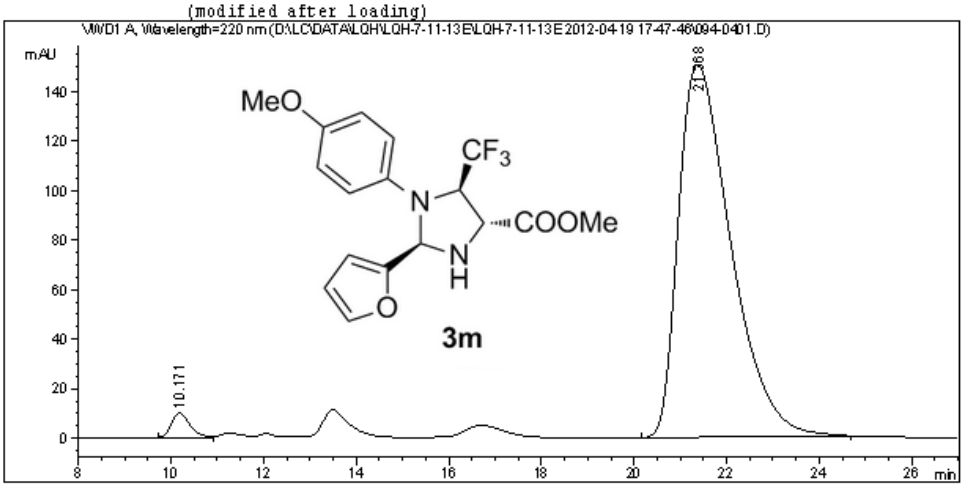


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==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1  10.171 BB    0.4240  273.79938    9.87255   2.2584
   2  21.368 BB    1.1820 1.18497e4   150.52609  97.7416

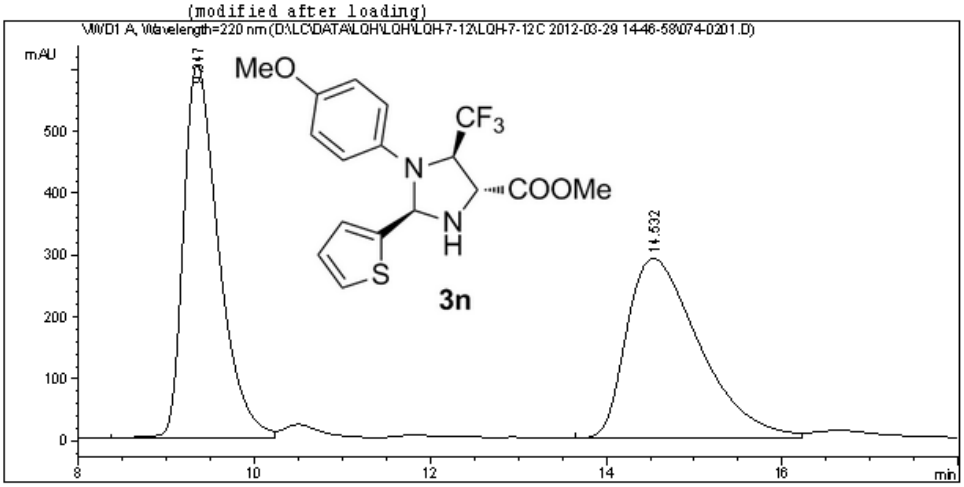
Totals :                  1.21235e4   160.39864


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

Instrument 1 4/27/2012 12:51:52 PM LQH Page 1 of 1

Data File D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-12C 2012-03-29 14-46-58\074-0201.D
Sample Name: LQH-7-12C

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 74
Injection Date	: 3/29/2012 2:59:00 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-12\LQH-7-12C 2012-03-29 14-46-58\ASH-10-90-10ML-220NM.M		
Last changed	: 3/29/2012 3:30:44 PM by LQH (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-12C 2012-03-29 14-46-58\074-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 4/19/2012 3:07:01 PM by THL (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

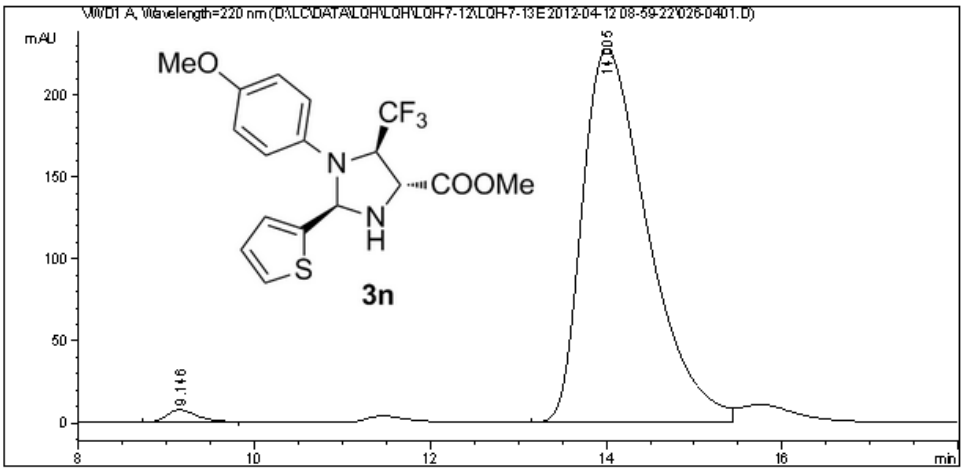
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.347	BV	0.4225	1.67283e4	603.26660	50.0645
2	14.532	BV	0.8867	1.66852e4	290.00006	49.9355
Totals :				3.34136e4	893.26666	

*** End of Report ***

Data File D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-13E 2012-04-12 08-59-22\026-0401.D
Sample Name: LQH-7-13C

Acq. Operator	: LQH	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 26
Injection Date	: 4/12/2012 9:44:38 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\201201\LQH\LQH-7-12\LQH-7-13E 2012-04-12 08-59-22\ASH-10-90-10ML-220NM-30MIN.M		
Last changed	: 3/28/2012 12:22:29 PM by FX		
Analysis Method	: D:\LC\DATA\LQH\LQH\LQH-7-12\LQH-7-13E 2012-04-12 08-59-22\026-0401.D\DA.M (ASH-10-90-10ML-220NM-30MIN.M)		
Last changed	: 4/19/2012 3:15:22 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.146	BB	0.3785	190.59898	7.56214	1.5996
2	14.005	BV	0.7935	1.17250e4	227.49529	98.4004
Totals :				1.19156e4	235.05743	

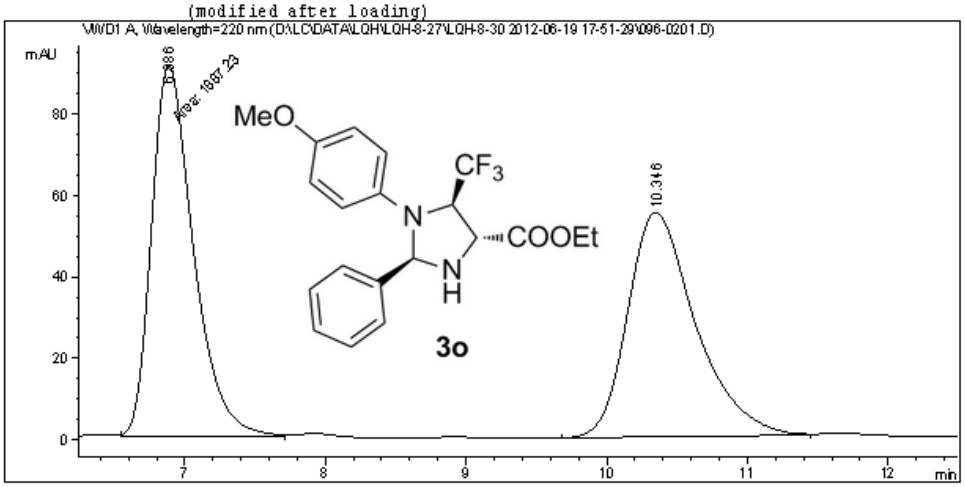
*** End of Report ***

Instrument 1 4/19/2012 3:15:27 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-27\LQH-8-30 2012-06-19 17-51-29\096-0201.D
Sample Name: LQH-8-30A

Acq. Operator	: HZL	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 96
Injection Date	: 6/19/2012 6:23:19 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-27\LQH-8-30 2012-06-19 17-51-29\ASH-10-90-10ML-220NM.M		
Last changed	: 6/19/2012 6:38:14 PM by HZL (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-27\LQH-8-30 2012-06-19 17-51-29\096-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 6/26/2012 4:55:43 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	6.886	MM	0.3444	1887.22559	91.33221	50.4853
2	10.346	BB	0.5101	1850.94141	55.05832	49.5147
Totals :				3738.16699	146.39053	

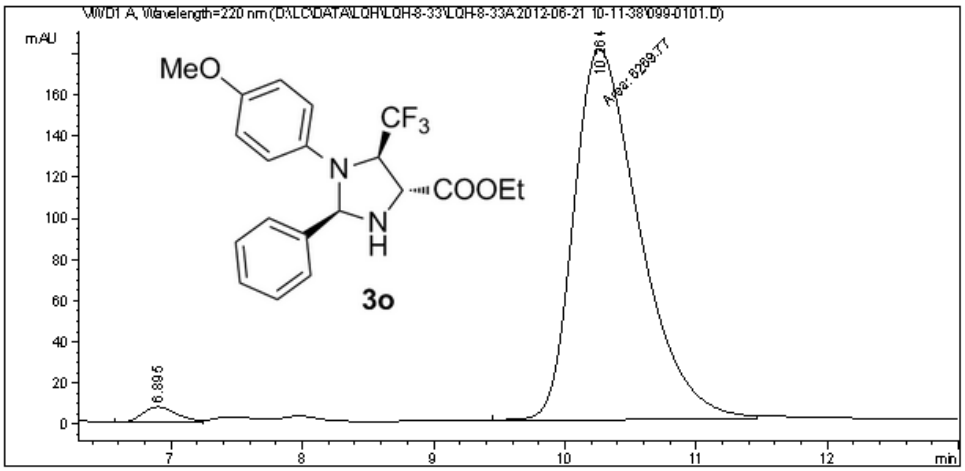
*** End of Report ***

Instrument 1 6/26/2012 4:55:52 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-33\LQH-8-33A 2012-06-21 10-11-38\099-0101.D
Sample Name: LQH-8-33A

Acq. Operator	: LQH	Seq. Line	: 1
Acq. Instrument	: Instrument 1	Location	: Vial 99
Injection Date	: 6/21/2012 10:13:17 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-33\LQH-8-33A 2012-06-21 10-11-38\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-33\LQH-8-33A 2012-06-21 10-11-38\099-0101.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 6/26/2012 5:02:45 PM by YDC (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	6.895	VV	0.2870	139.97893	7.52152	2.1838
2	10.264	MF	0.5801	6269.77197	180.12724	97.8162
Totals :				6409.75090	187.64876	

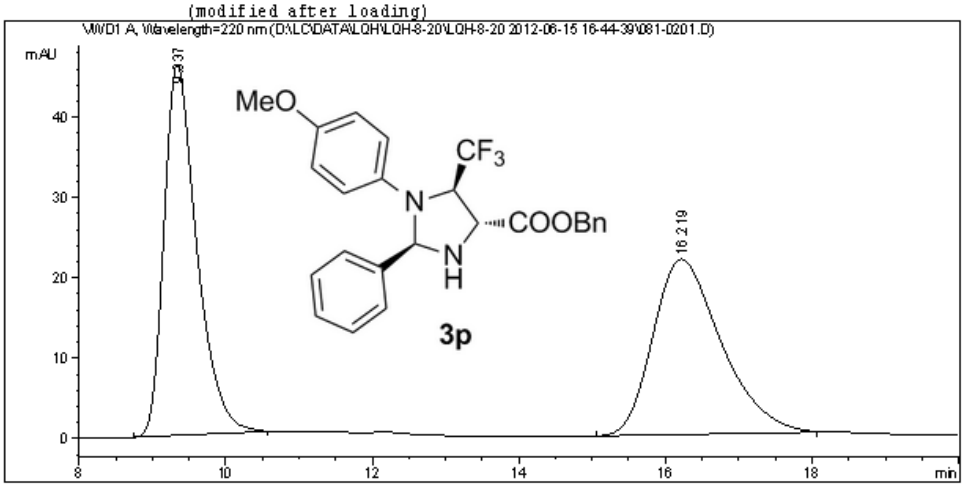
*** End of Report ***

Instrument 1 6/26/2012 5:02:52 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-20\LQH-8-20 2012-06-15 16-44-39\081-0201.D
Sample Name: LQH-8-20

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 81
Injection Date	: 6/15/2012 4:56:33 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-20\LQH-8-20 2012-06-15 16-44-39\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-20\LQH-8-20 2012-06-15 16-44-39\081-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 6/26/2012 4:47:04 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

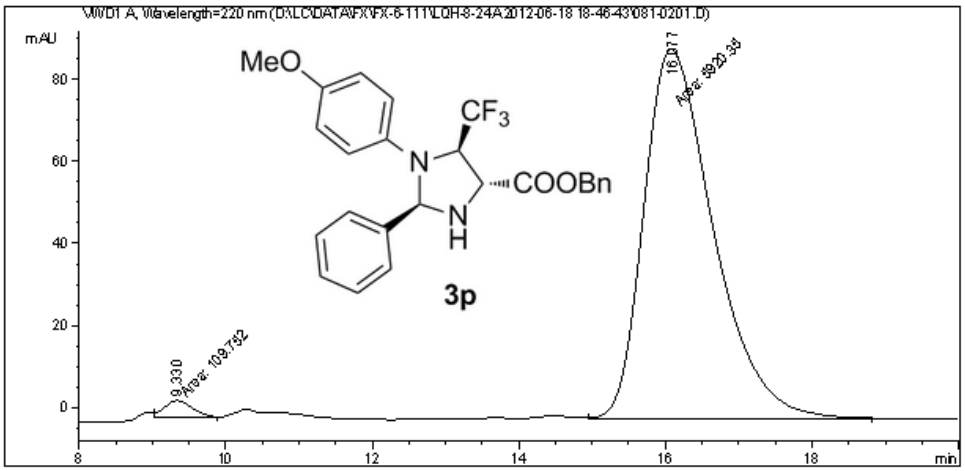
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	9.337	BB	0.4697	1438.75793	46.19259	50.4188
2	16.219	BB	0.9622	1414.85535	21.80758	49.5812
Totals :				2853.61328	68.00017	

*** End of Report ***

Data File D:\LC\DATA\FX\FX-6-111\LQH-8-24A 2012-06-18 18-46-43\081-0201.D
Sample Name: LQH-8-24A

Acq. Operator	: FX	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 81
Injection Date	: 6/18/2012 6:59:05 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\FX\FX-6-111\LQH-8-24A 2012-06-18 18-46-43\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\FX\FX-6-111\LQH-8-24A 2012-06-18 18-46-43\081-0201.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 6/26/2012 4:51:35 PM by YDC (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

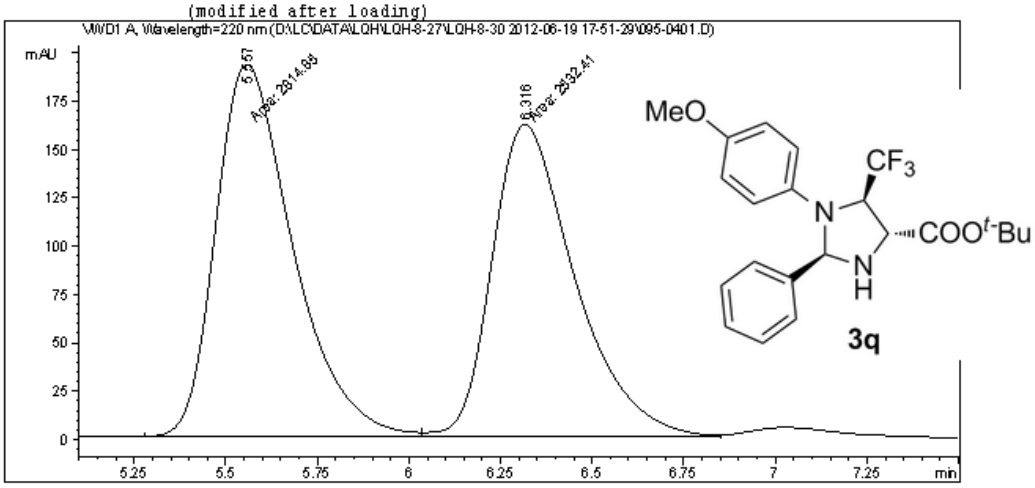
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.330	MM	0.4422	109.75229	4.13693	1.8201
2	16.077	MM	1.0947	5920.35059	90.13962	98.1799
Totals :				6030.10287	94.27655	

*** End of Report ***

Instrument 1 6/26/2012 4:51:41 PM YDC Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-27\LQH-8-30 2012-06-19 17-51-29\095-0401.D
Sample Name: LH-8-30B-ADH

Acq. Operator	: HZL	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 95
Injection Date	: 6/19/2012 6:50:27 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-27\LQH-8-30 2012-06-19 17-51-29\ADH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:22:22 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-27\LQH-8-30 2012-06-19 17-51-29\095-0401.D\DA.M (ADH-10-90-10ML-220NM.M)		
Last changed	: 6/26/2012 4:58:58 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	5.557	MM	0.2435	2814.84985	192.65303	52.6410
2	6.316	MM	0.2617	2532.41187	161.26326	47.3590
Totals :				5347.26172	353.91629	

*** End of Report ***

Instrument 1 6/26/2012 4:59:04 PM YDC Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-33\LQH-8-33A 2012-06-21 10-11-38\100-0301.D
Sample Name: LQ-8-33B

```
    ====================================================================
    Acq. Operator   : LQH                          Seq. Line :   3
    Acq. Instrument : Instrument 1                  Location : Vial 100
    Injection Date  : 6/21/2012 10:45:16 AM              Inj :   1
                                                   Inj Volume : 5 µl
    Acq. Method     : D:\LC\DATA\LQH\LQH-8-33\LQH-8-33A 2012-06-21 10-11-38\ADH-10-90-10ML-
                      220NM-10MIN.M
    Last changed    : 8/27/2011 9:21:42 AM by LQH
    Analysis Method : D:\LC\DATA\LQH\LQH-8-33\LQH-8-33A 2012-06-21 10-11-38\100-0301.D\DA.M (
                      ADH-10-90-10ML-220NM-10MIN.M)
    Last changed    : 6/26/2012 5:04:40 PM by YDC
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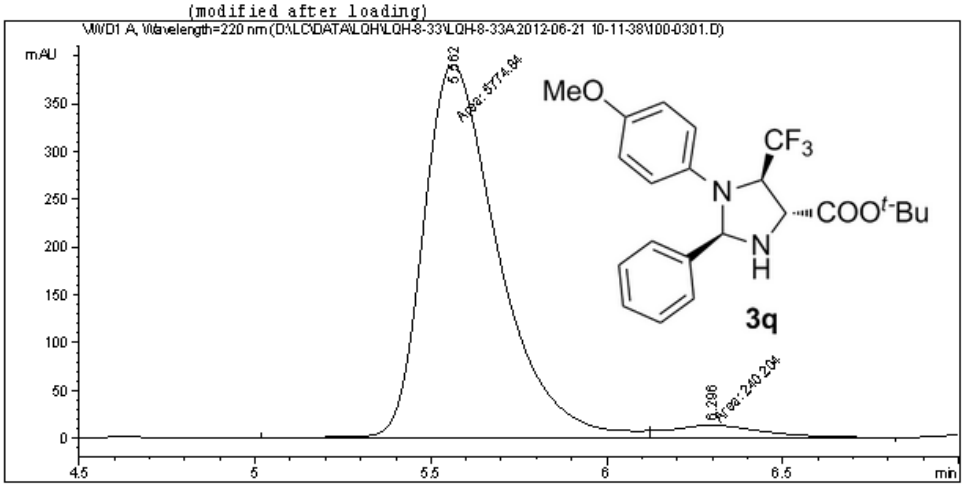


```
    ====================================================================
                              Area Percent Report
    ====================================================================

    Sorted By             :      Signal
    Multiplier            :      1.0000
    Dilution              :      1.0000
    Use Multiplier & Dilution Factor with ISTDs


    Signal 1: VWD1 A, Wavelength=220 nm

    Peak RetTime Type  Width     Area      Height     Area
      #   [min]        [min]  mAU   *s    [mAU   ]      %
    ----|-------|----|-------|----------|----------|--------|
       1   5.562 MF    0.2465 5774.83887  390.38461  96.0066
       2   6.296 FM    0.3033  240.20450   13.19875   3.9934

    Totals :                   6015.04337  403.58336


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

Data File D:\LC\DATA\LQH\LQH-8-91\LQH-8-81 2012-08-27 14-55-30\081-0201.D
Sample Name: LQH-8-91

```
    ====================================================================
    Acq. Operator   : lqh                          Seq. Line :   2
    Acq. Instrument : Instrument 1                  Location : Vial 81
    Injection Date  : 8/27/2012 3:07:21 PM               Inj :   1
                                                   Inj Volume : 5 µl
    Acq. Method     : D:\LC\DATA\LQH\LQH-8-91\LQH-8-81 2012-08-27 14-55-30\ASH-10-90-10ML-220NM.
                      M
    Last changed    : 8/27/2011 9:19:02 AM by LQH
    Analysis Method : D:\LC\DATA\LQH\LQH-8-91\LQH-8-81 2012-08-27 14-55-30\081-0201.D\DA.M (ASH-
                      10-90-10ML-220NM.M)
    Last changed    : 8/30/2012 7:25:31 PM by THL
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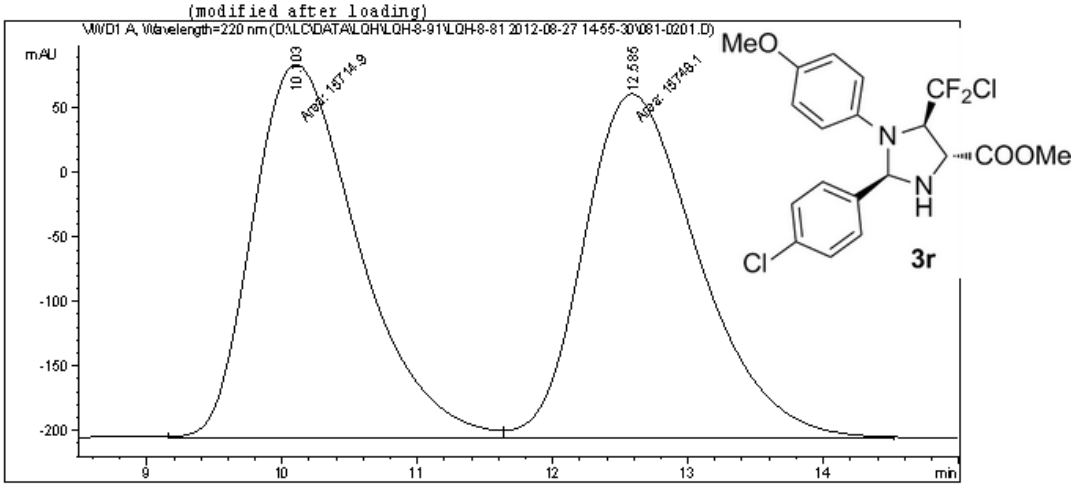



```
    ====================================================================
                              Area Percent Report
    ====================================================================

    Sorted By             :      Signal
    Multiplier            :      1.0000
    Dilution              :      1.0000
    Use Multiplier & Dilution Factor with ISTDs


    Signal 1: VWD1 A, Wavelength=220 nm

    Peak RetTime Type  Width     Area      Height     Area
      #   [min]        [min]  mAU   *s   [mAU   ]       %
    ----|-------|----|-------|----------|----------|--------|
       1  10.103 MF    0.9053 1.57149e4   289.31451  49.9472
       2  12.585 FM    0.9844 1.57481e4   266.63849  50.0528

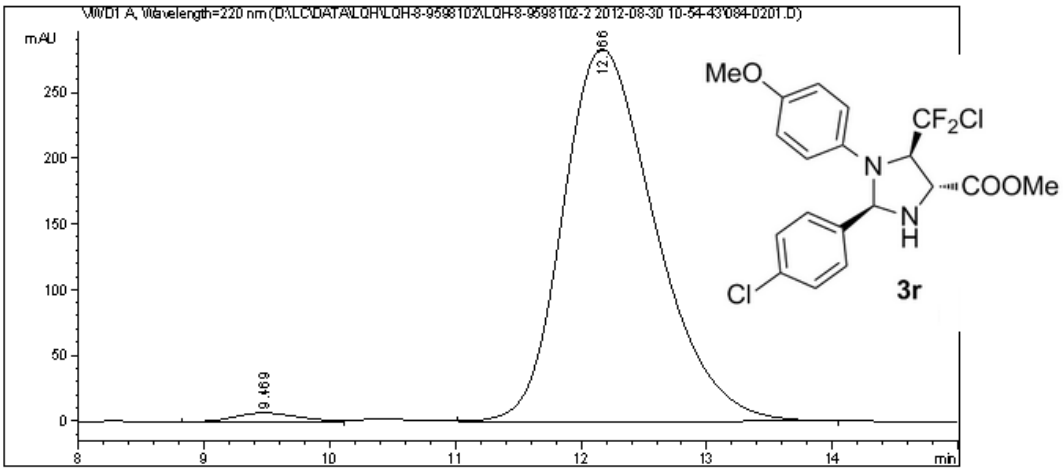
    Totals :                  3.14631e4   555.95300


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

Instrument 1 8/30/2012 7:25:36 PM THL Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-9598102\LQH-8-9598102-2 2012-08-30 10-54-43\084-0201.D
Sample Name: LQH-8-95

Acq. Operator	: THL	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 84
Injection Date	: 8/30/2012 11:07:01 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-9598102\LQH-8-9598102-2 2012-08-30 10-54-43\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-9598102\LQH-8-9598102-2 2012-08-30 10-54-43\084-0201.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 8/30/2012 7:27:59 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	9.469	BV	0.5502	244.45634	6.78117	1.6567
2	12.166	VB	0.7905	1.45110e4	283.63538	98.3433
Totals :				1.47555e4	290.41655	

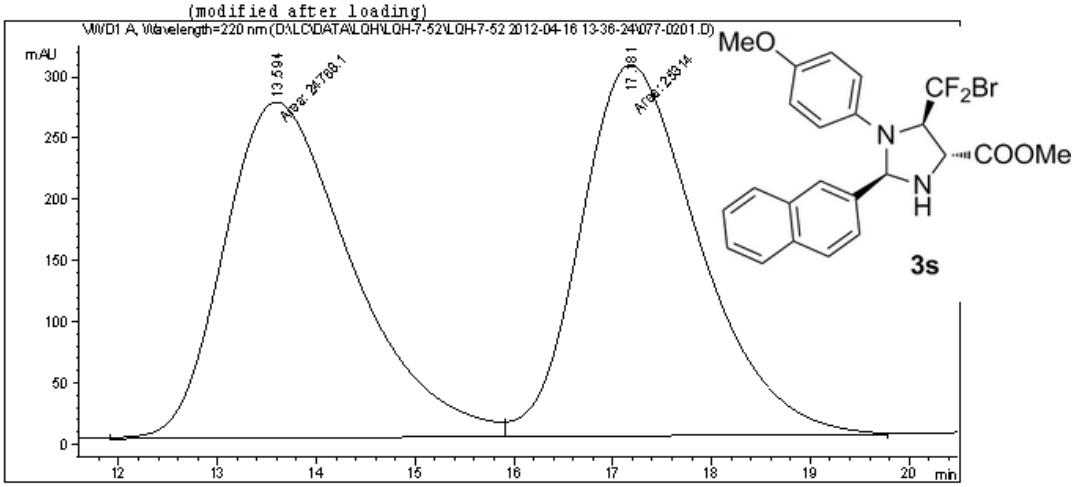
*** End of Report ***

Instrument 1 8/30/2012 7:28:06 PM THL

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-52\LQH-7-52 2012-04-16 13-36-24\077-0201.D
Sample Name: LQH-7-52A

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 77
Injection Date	: 4/16/2012 1:48:34 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-52\LQH-7-52 2012-04-16 13-36-24\ASH-10-90-10ML-220NM.M		
Last changed	: 4/16/2012 2:13:44 PM by LQH (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-52\LQH-7-52 2012-04-16 13-36-24\077-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 9/6/2012 10:42:52 AM by thl (modified after loading)		



Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	13.594	MF	1.5033	2.47681e4	274.60031	49.4550
2	17.181	FM	1.3902	2.53140e4	303.48828	50.5450
Totals :				5.00821e4	578.08859	

*** End of Report ***

Instrument 1 9/6/2012 10:42:57 AM thl

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-52\LQH-7-52 2012-04-16 13-36-24\078-0301.D
Sample Name: LQH-7-52B

```
    ====================================================================
    Acq. Operator   : LQH                          Seq. Line :   3
    Acq. Instrument : Instrument 1                  Location : Vial 78
    Injection Date  : 4/16/2012 2:15:44 PM               Inj :   1
                                                   Inj Volume : 5 µl
    Acq. Method     : D:\LC\DATA\LQH\LQH-7-52\LQH-7-52 2012-04-16 13-36-24\ASH-10-90-10ML-220NM.
                      M
    Last changed    : 4/16/2012 2:14:37 PM by LQH
                      (modified after loading)
    Analysis Method : D:\LC\DATA\LQH\LQH-7-52\LQH-7-52 2012-04-16 13-36-24\078-0301.D\DA.M (ASH-
                      10-90-10ML-220NM.M)
    Last changed    : 5/5/2012 4:38:02 PM by lqh
                      (modified after loading)
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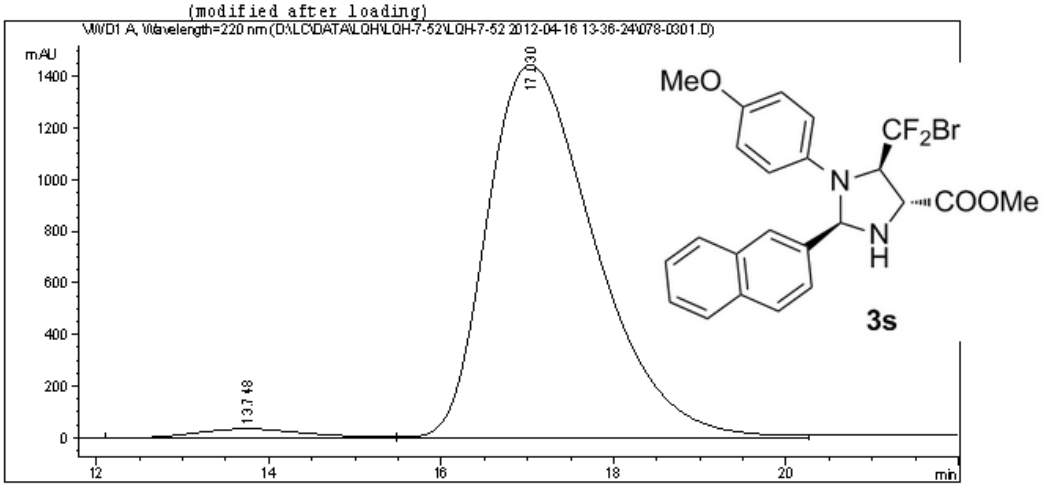



```
    ====================================================================
                            Area Percent Report
    ====================================================================

    Sorted By             :      Signal
    Multiplier            :      1.0000
    Dilution              :      1.0000
    Use Multiplier & Dilution Factor with ISTDs


    Signal 1: VWD1 A, Wavelength=220 nm

    Peak RetTime Type  Width     Area      Height     Area
      #   [min]        [min]  mAU   *s   [mAU   ]      %
    ----|-------|----|-------|----------|----------|-------|
       1  13.748 BV    1.3413 3222.45190   35.80244   2.4929
       2  17.030 VB    1.3514 1.26045e5  1446.62573  97.5071

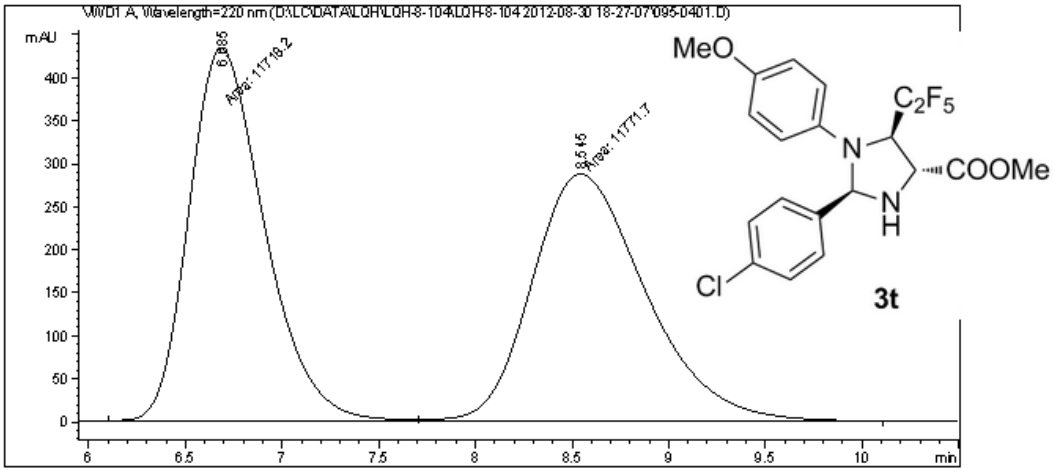
    Totals :                  1.29268e5  1482.42817


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

Instrument 1 5/5/2012 4:38:08 PM lqh Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\095-0401.D
Sample Name: LQH-8-100

Acq. Operator	: THL	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 95
Injection Date	: 8/30/2012 7:09:02 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/30/2012 7:10:47 PM by THL (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\095-0401.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 8/30/2012 7:30:59 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	6.685	MF	0.4514	1.17182e4	432.68066	49.8861
2	8.545	FM	0.6829	1.17717e4	287.31390	50.1139
Totals :				2.34899e4	719.99457	

Instrument 1 8/30/2012 7:31:06 PM THL

Data File D:\LC\DATA\LQH\LQH-8-9598102\LQH-8-9598102-2 2012-08-30 10-54-43\086-0301.D
Sample Name: LQH-8-102

```
    ====================================================================
    Acq. Operator    : THL                          Seq. Line :   3
    Acq. Instrument  : Instrument 1                  Location : Vial 86
    Injection Date   : 8/30/2012 11:28:41 AM               Inj :   1
                                                   Inj Volume : 5 µl
    Acq. Method      : D:\LC\DATA\LQH\LQH-8-9598102\LQH-8-9598102-2 2012-08-30 10-54-43\ASH-10-
                       90-10ML-220NM-20MIN.M
    Last changed     : 8/29/2011 8:17:27 PM by LTL
    Analysis Method  : D:\LC\DATA\LQH\LQH-8-9598102\LQH-8-9598102-2 2012-08-30 10-54-43\086-0301.
                       D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)
    Last changed     : 8/30/2012 7:35:21 PM by THL
                       (modified after loading)
    Method Info      : ASH-50-50-1ML-254NM-50MIN
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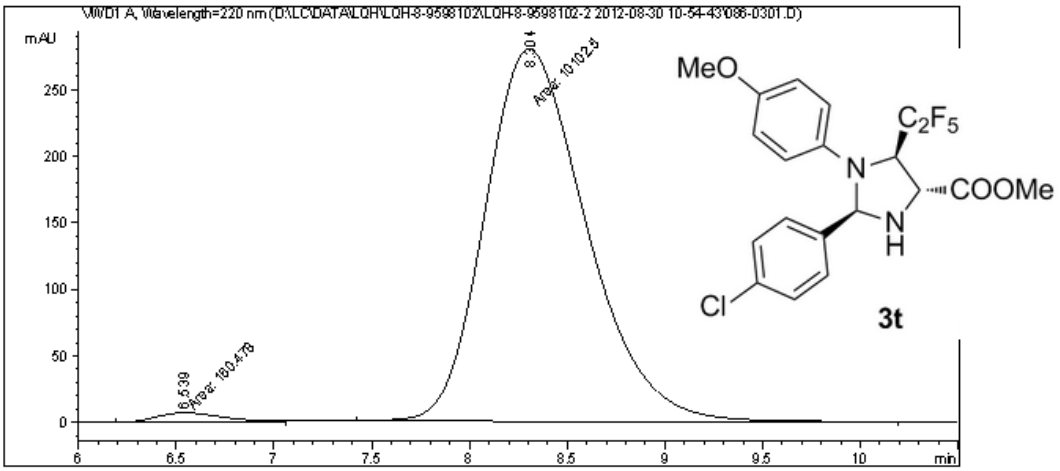


```
    ====================================================================
                              Area Percent Report
    ====================================================================

    Sorted By             :      Signal
    Multiplier            :      1.0000
    Dilution              :      1.0000
    Use Multiplier & Dilution Factor with ISTDs


    Signal 1: VWD1 A, Wavelength=220 nm

    Peak RetTime Type  Width     Area      Height     Area
      #   [min]        [min]  mAU   *s   [mAU   ]      %
    ----|-------|----|-------|----------|----------|--------|
       1   6.539 MM    0.3826  160.47826    6.99069   1.5637
       2   8.304 PM    0.6017 1.01025e4   279.85178  98.4363

    Totals :                   1.02630e4   286.84246


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

Instrument 1 8/30/2012 7:35:27 PM THL                          Page 1 of 1
```

Data File D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\087-0201.D
Sample Name: LQH-8-104

```
    ==================================================================
    Acq. Operator   : THL                          Seq. Line :   2
    Acq. Instrument : Instrument 1                  Location : Vial 87
    Injection Date  : 8/30/2012 6:39:07 PM               Inj :   1
                                                   Inj Volume : 5 µl
    Acq. Method     : D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\ASH-10-90-10ML-
                      220NM.M
    Last changed    : 8/30/2012 6:55:30 PM by THL
                      (modified after loading)
    Analysis Method : D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\087-0201.D\DA.M (
                      ASH-10-90-10ML-220NM.M)
    Last changed    : 8/30/2012 7:32:23 PM by THL
                      (modified after loading)
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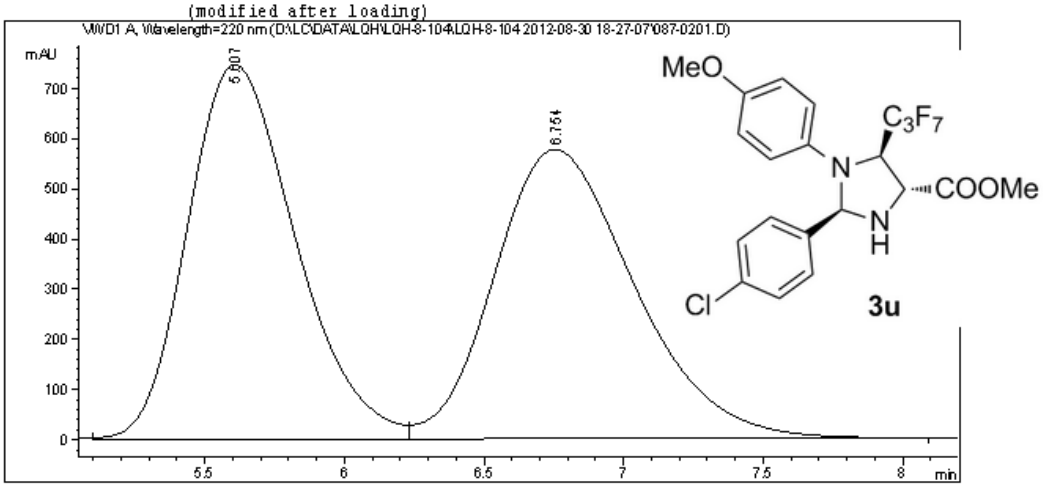



```
    ==================================================================
                            Area Percent Report
    ==================================================================

    Sorted By             :      Signal
    Multiplier            :      1.0000
    Dilution              :      1.0000
    Use Multiplier & Dilution Factor with ISTDs


    Signal 1: VWD1 A, Wavelength=220 nm

    Peak RetTime Type  Width     Area      Height     Area
      #   [min]        [min]  mAU   *s   [mAU   ]      %
    ----|-------|----|-------|----------|----------|--------|
       1   5.607 VV    0.4179 2.00135e4   745.77631  49.8831
       2   6.754 VB    0.5397 2.01073e4   576.04633  50.1169

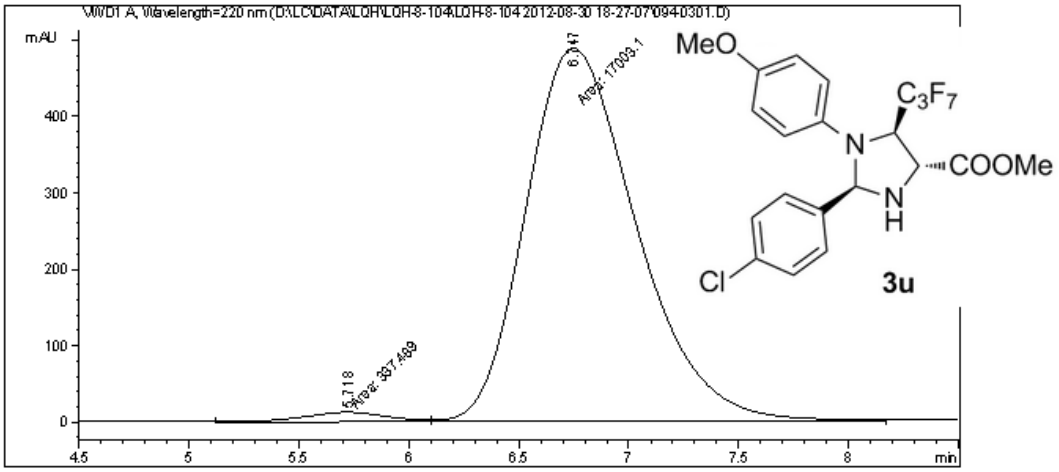
    Totals :                   4.01208e4  1321.82263


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

Instrument 1 8/30/2012 7:32:28 PM THL Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\094-0301.D
Sample Name: LQH-8-105

Acq. Operator	: THL	Seq. Line	: 3
Acq. Instrument	: Instrument 1	Location	: Vial 94
Injection Date	: 8/30/2012 6:57:09 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/30/2012 6:58:05 PM by THL (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-104\LQH-8-104 2012-08-30 18-27-07\094-0301.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 8/30/2012 7:33:52 PM by THL (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	5.718	MF	0.4447	337.48895	12.64949	1.9462
2	6.747	FM	0.5807	1.70031e4	487.97519	98.0538
Totals :				1.73406e4	500.62467	

Instrument 1 8/30/2012 7:33:57 PM THL

Data File D:\LC\DATA\LQH\LQH-8-107\LQH-8-107-ODH 2012-09-01 08-58-57\092-0201.D
Sample Name: LQH-8-107-ADH

```
==========================================================================
Acq. Operator   : LQH                          Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 92
Injection Date  : 9/1/2012 9:11:40 AM                Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-8-107\LQH-8-107-ODH 2012-09-01 08-58-57\ODH-10-90-10ML-
                  220NM.M
Last changed    : 9/1/2012 9:31:30 AM by LQH
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-8-107\LQH-8-107-ODH 2012-09-01 08-58-57\092-0201.D\DA.M
                  (ODH-10-90-10ML-220NM.M)
Last changed    : 9/4/2012 1:01:00 PM by FX
                  (modified after loading)
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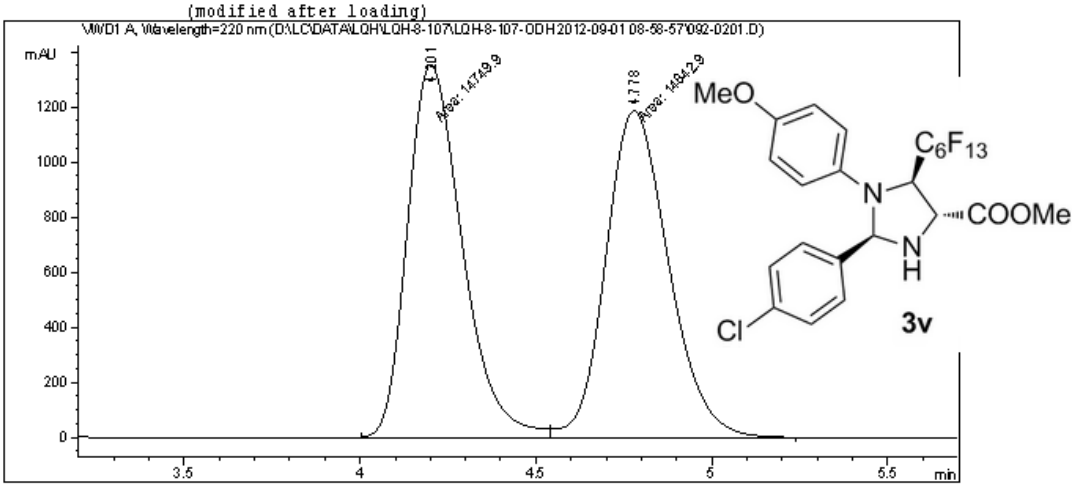


```
==========================================================================
                          Area Percent Report
==========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1   4.201 FM    0.1810 1.47499e4  1358.55847  49.8429
   2   4.778 MF    0.2078 1.48429e4  1190.38440  50.1571

Totals :                  2.95927e4  2548.94287


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

Instrument 1 9/4/2012 1:01:04 PM FX Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-107\LQH-8-107-ODH 2012-09-01 08-58-57\093-0301.D
Sample Name: LQH-8-107

```
==================================================================
Acq. Operator   : LQH                          Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 93
Injection Date  : 9/1/2012 9:33:04 AM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-8-107\LQH-8-107-ODH 2012-09-01 08-58-57\ODH-10-90-10ML-
                  220NM-10MIN.M
Last changed    : 9/1/2012 8:55:50 AM by LQH
Analysis Method : D:\LC\DATA\LQH\LQH-8-107\LQH-8-107-ODH 2012-09-01 08-58-57\093-0301.D\DA.M
                  (ODH-10-90-10ML-220NM-10MIN.M)
Last changed    : 9/4/2012 1:04:11 PM by FX
                  (modified after loading)
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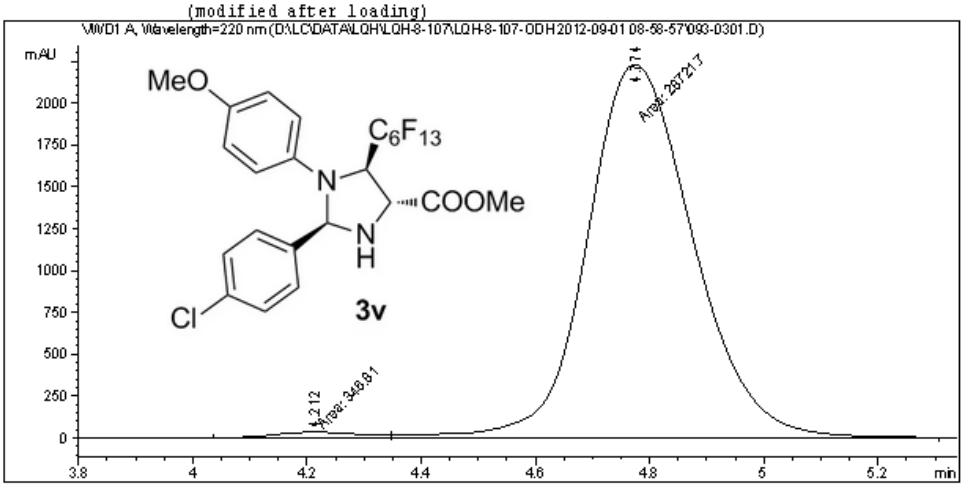


```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
   1   4.212 MF    0.1721  346.81021   33.58257   1.1931
   2   4.774 FM    0.2146 2.87217e4  2230.45142  98.8069

Totals :                  2.90686e4  2264.03399


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

Instrument 1 9/4/2012 1:04:18 PM FX Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-112\LQH-7-112-2 2012-05-28 08-59-23\092-0201.D
Sample Name: LQH-7-112

```
==================================================================
Acq. Operator   : lqh                          Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 92
Injection Date  : 5/28/2012 9:11:16 AM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-7-112\LQH-7-112-2 2012-05-28 08-59-23\ASH-10-90-10ML-
                  220NM.M
Last changed    : 5/28/2012 9:24:43 AM by lqh
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-7-112\LQH-7-112-2 2012-05-28 08-59-23\092-0201.D\DA.M (
                  ASH-10-90-10ML-220NM.M)
Last changed    : 6/26/2012 5:18:04 PM by YDC
                  (modified after loading)
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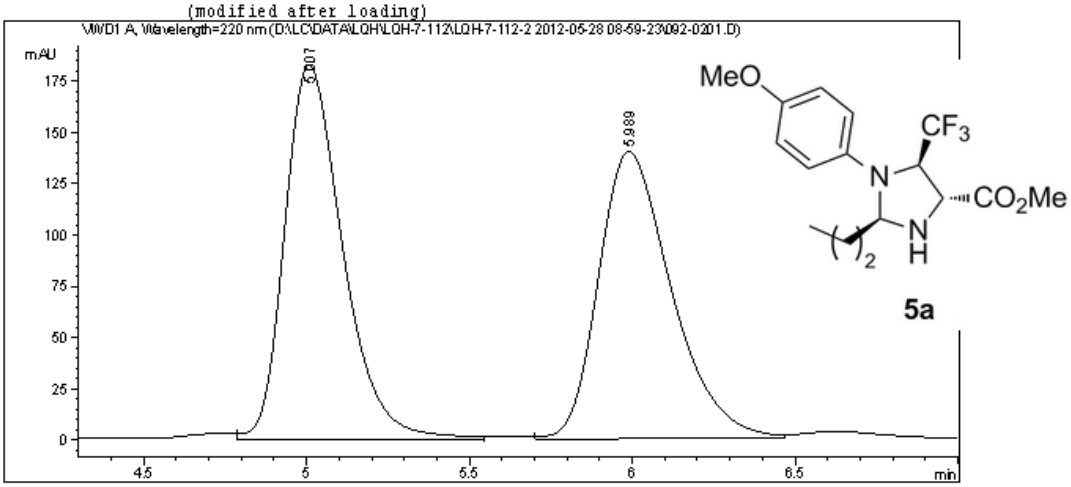


5a

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

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1   5.007 VV    0.1891 2251.54395  182.44080  50.7874
   2   5.989 VV    0.2387 2181.72974  139.89024  49.2126

Totals :                  4433.27368  322.33104

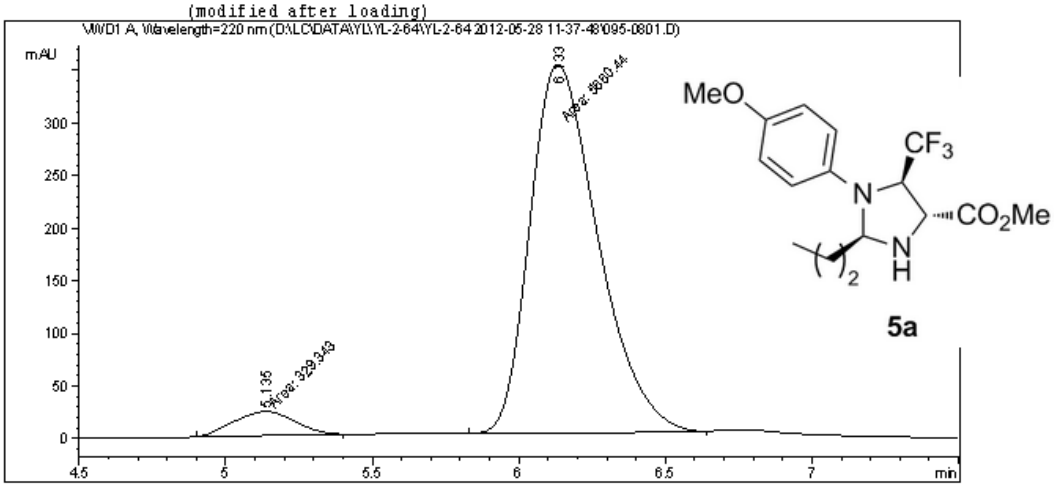

==================================================================
                        *** End of Report ***
```

Instrument 1 6/26/2012 5:18:11 PM YDC

Page 1 of 1

Data File D:\LC\DATA\YL\YL-2-64\YL-2-64 2012-05-28 11-37-48\095-0801.D
Sample Name: LQH-7-118

Acq. Operator	: HZL	Seq. Line	: 8
Acq. Instrument	: Instrument 1	Location	: Vial 95
Injection Date	: 5/28/2012 1:58:13 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\YL\YL-2-64\YL-2-64 2012-05-28 11-37-48\ASH-10-90-10ML-220NM-10MIN.M		
Last changed	: 8/27/2011 8:50:19 AM by hzl		
Analysis Method	: D:\LC\DATA\YL\YL-2-64\YL-2-64 2012-05-28 11-37-48\095-0801.D\DA.M (ASH-10-90-10ML-220NM-10MIN.M)		
Last changed	: 6/26/2012 5:57:51 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	5.135	MM	0.2402	329.34320	22.85277	5.4984
2	6.133	MM	0.2691	5660.43652	350.52914	94.5016
Totals :				5989.77972	373.38192	

*** End of Report ***

Instrument 1 6/26/2012 5:57:59 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\093-0301.D
Sample Name: LQH-8-35D

```
==================================================================
Acq. Operator   : lqh                          Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 93
Injection Date  : 6/25/2012 9:54:51 AM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\ADH-5-95-10ML-
                  220NM.M
Last changed    : 6/25/2012 10:04:51 AM by lqh
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\093-0301.D\DA.
                  M (ADH-5-95-10ML-220NM.M)
Last changed    : 6/26/2012 5:10:34 PM by YDC
                  (modified after loading)
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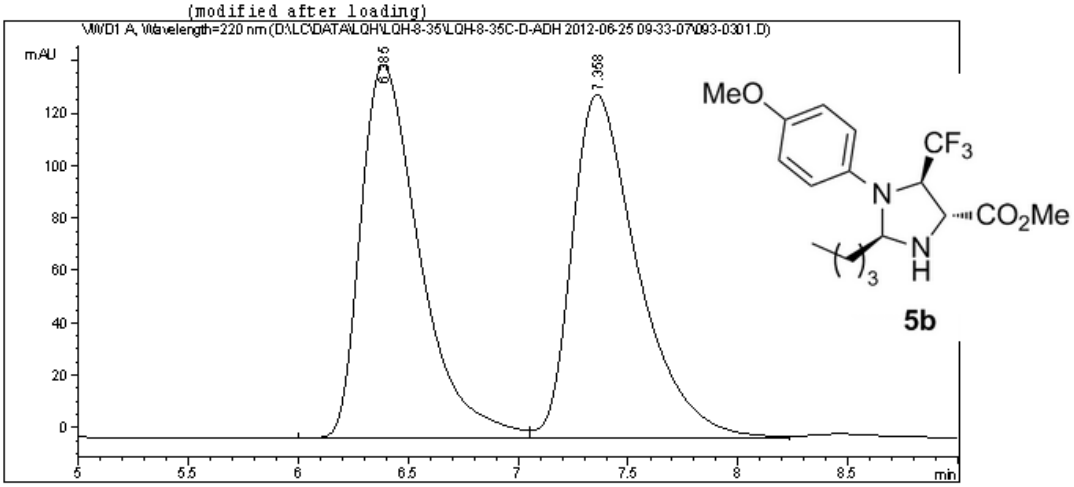


5b

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

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1   6.385 BV    0.2860 2655.89307  142.44585  49.3448
   2   7.358 VB    0.3128 2726.41968  130.92589  50.6552

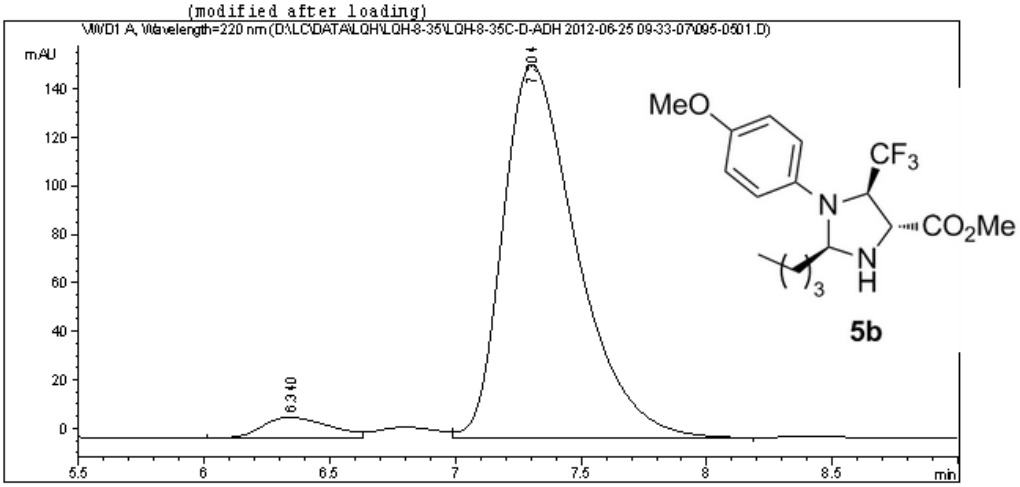
Totals :                  5382.31274  273.37173


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

Instrument 1 6/26/2012 5:10:39 PM YDC Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\095-0501.D
Sample Name: LQH-8-36D

Acq. Operator	: lqh	Seq. Line	: 5
Acq. Instrument	: Instrument 1	Location	: Vial 95
Injection Date	: 6/25/2012 10:17:05 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\ADH-5-95-10ML-220NM-30MIN.M		
Last changed	: 6/25/2012 10:23:26 AM by lqh (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\095-0501.D\DA.M (ADH-5-95-10ML-220NM-30MIN.M)		
Last changed	: 6/26/2012 5:14:42 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	6.340	BV	0.2879	156.38037	8.48234	4.7390
2	7.304	VB	0.3126	3143.47925	153.85841	95.2610
Totals :				3299.85962	162.34075	

*** End of Report ***

Instrument 1 6/26/2012 5:14:48 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-35\LQH-8-35A-ADH 2012-06-21 19-04-54\085-0201.D
Sample Name: LQH-8-35C

```
==================================================================
Acq. Operator   : LQH                          Seq. Line :   2
Acq. Instrument : Instrument 1                  Location : Vial 85
Injection Date  : 6/21/2012 7:26:12 PM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-8-35\LQH-8-35A-ADH 2012-06-21 19-04-54\ADH-10-90-10ML-
                  220NM.M
Last changed    : 6/21/2012 7:25:28 PM by LQH
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-8-35\LQH-8-35A-ADH 2012-06-21 19-04-54\085-0201.D\DA.M
                  (ADH-10-90-10ML-220NM.M)
Last changed    : 6/26/2012 5:08:26 PM by YDC
                  (modified after loading)
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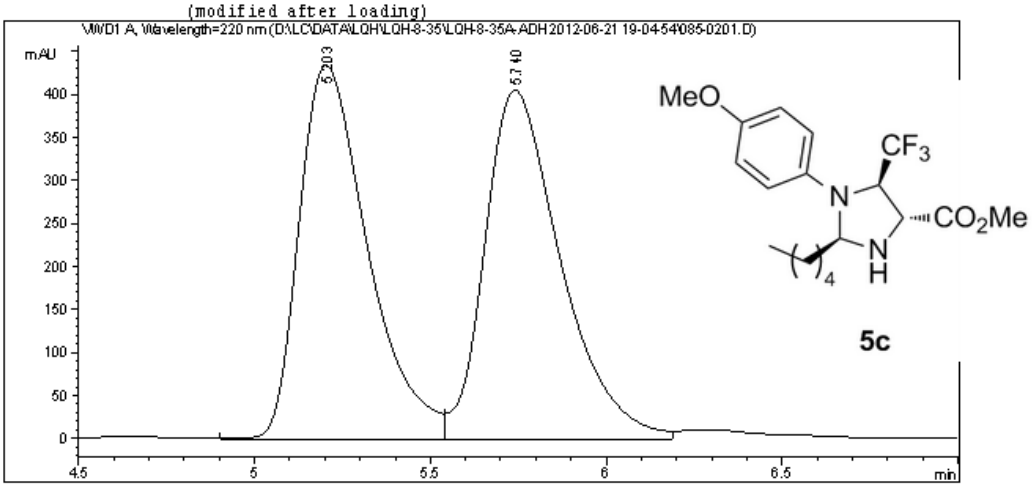


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==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1   5.203 VV    0.2074 5889.37598  435.15262  49.1682
   2   5.740 VV    0.2276 6088.63184  405.36990  50.8318

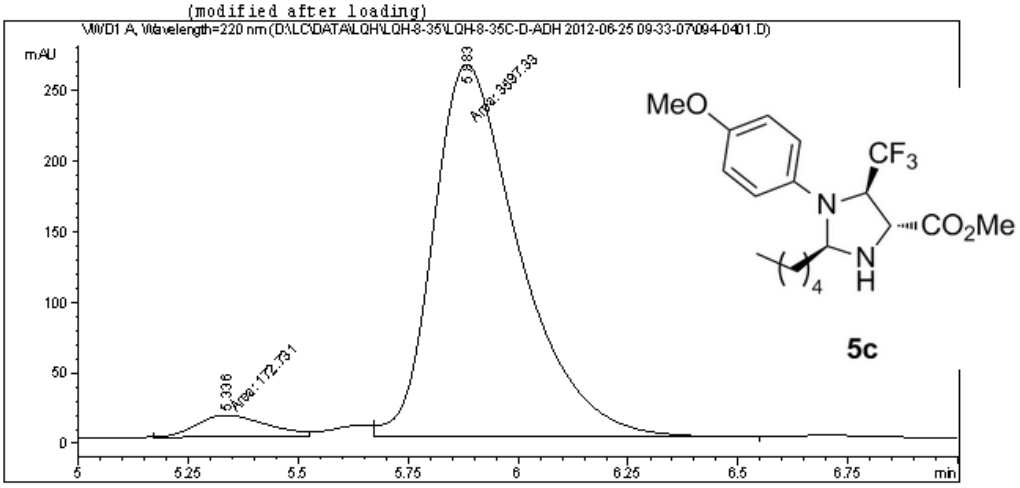
Totals :                  1.19780e4   840.52252


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

Instrument 1 6/26/2012 5:08:37 PM YDC

Data File D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\094-0401.D
Sample Name: LQH-8-36C

Acq. Operator	: lqh	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 94
Injection Date	: 6/25/2012 10:05:59 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\ADH-10-90-10ML-220NM-10MIN.M		
Last changed	: 8/27/2011 9:21:42 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-35\LQH-8-35C-D-ADH 2012-06-25 09-33-07\094-0401.D\DA.M (ADH-10-90-10ML-220NM-10MIN.M)		
Last changed	: 6/26/2012 5:12:41 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	5.336	MM	0.1869	172.73112	15.40249	4.5816
2	5.883	MM	0.2272	3597.33276	263.90302	95.4184
Totals :				3770.06389	279.30550	

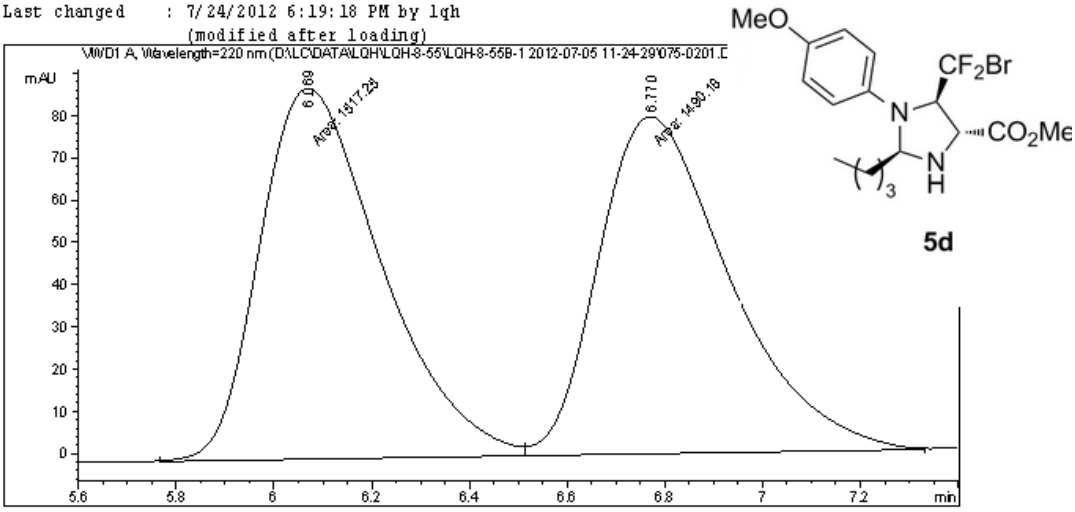
*** End of Report ***

Instrument 1 6/26/2012 5:12:50 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-55\LQH-8-55B-1 2012-07-05 11-24-29\075-0201.D
Sample Name: LQH-8-55B

Acq. Operator	: HZL	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 75
Injection Date	: 7/5/2012 11:37:11 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-55\LQH-8-55B-1 2012-07-05 11-24-29\ADH-5-95-10ML-220NM.M		
Last changed	: 9/8/2011 7:40:46 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-55\LQH-8-55B-1 2012-07-05 11-24-29\075-0201.D\DA.M (ADH-5-95-10ML-220NM.M)		
Last changed	: 7/24/2012 6:19:18 PM by lqh (modified after loading)		



5d

Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

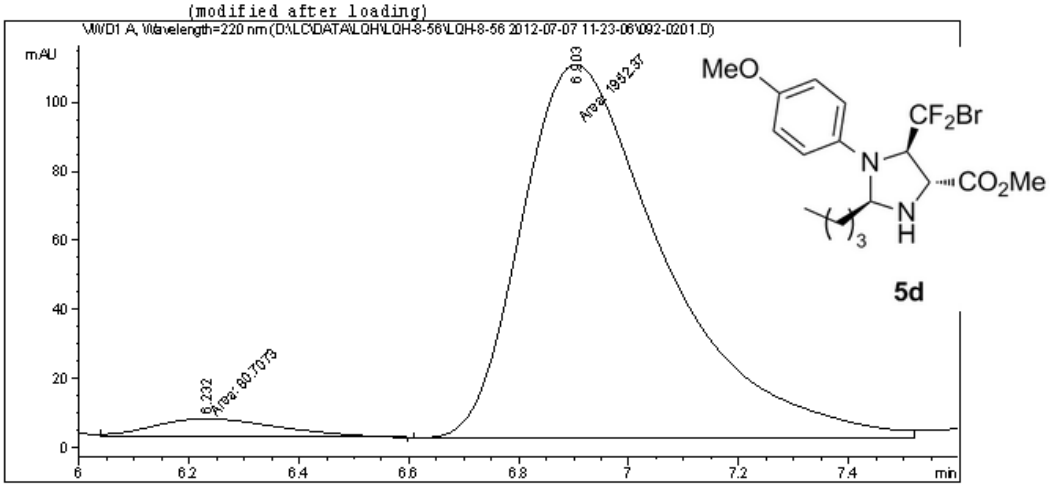
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	6.069	MF	0.2881	1517.25439	87.78556	50.4501
2	6.770	FM	0.3112	1490.18420	79.80413	49.5499
Totals :				3007.43860	167.58969	

*** End of Report ***

Instrument 1 7/24/2012 6:19:24 PM lqh

Data File D:\LC\DATA\LQH\LQH-8-56\LQH-8-56 2012-07-07 11-23-06\092-0201.D
Sample Name: LQH-8-56A

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 92
Injection Date	: 7/7/2012 11:35:23 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-56\LQH-8-56 2012-07-07 11-23-06\ADH-5-95-10ML-220NM-10MIN.M		
Last changed	: 9/8/2011 7:41:24 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-56\LQH-8-56 2012-07-07 11-23-06\092-0201.D\DA.M (ADH-5-95-10ML-220NM-10MIN.M)		
Last changed	: 7/24/2012 6:24:32 PM by lqh (modified after loading)		



Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

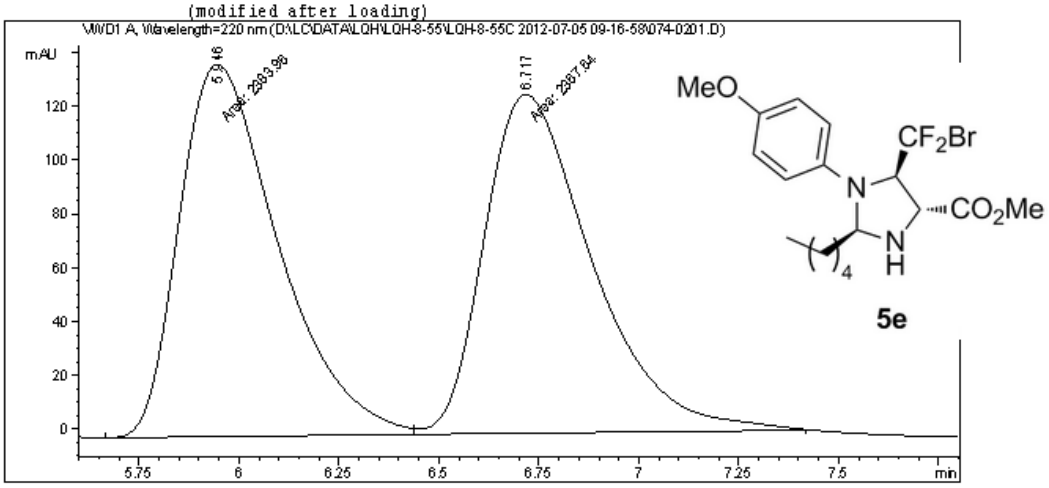
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	6.232	MM	0.2615	80.70725	5.14422	3.9697
2	6.903	MM	0.3013	1952.36633	108.01278	96.0303
Totals :				2033.07359	113.15700	

*** End of Report ***

Data File D:\LC\DATA\LQH\LQH-8-55\LQH-8-55C 2012-07-05 09-16-58\074-0201.D
Sample Name: LQH-8-55C

Acq. Operator	: lqh	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 74
Injection Date	: 7/5/2012 9:29:49 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-55\LQH-8-55C 2012-07-05 09-16-58\ADH-5-95-10ML-220NM.M		
Last changed	: 9/8/2011 7:40:46 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-55\LQH-8-55C 2012-07-05 09-16-58\074-0201.D\DA.M (ADH-5-95-10ML-220NM.M)		
Last changed	: 7/24/2012 6:21:14 PM by lqh (modified after loading)		



Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	5.946	MF	0.2869	2383.96265	138.47212	50.1718
2	6.717	FM	0.3131	2367.63867	126.03162	49.8282
Totals :				4751.60132	264.50374	

*** End of Report ***

Instrument 1 7/24/2012 6:21:18 PM lqh

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-56-7-73\LQH-8-56-7-73 2012-07-10 23-08-42\092-0201.D
Sample Name: LQH-8-56B

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 92
Injection Date	: 7/10/2012 11:21:05 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-56-7-73\LQH-8-56-7-73 2012-07-10 23-08-42\ADH-5-95-10ML-220NM-15MIN.M		
Last changed	: 7/10/2012 11:11:38 PM by lj		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-56-7-73\LQH-8-56-7-73 2012-07-10 23-08-42\092-0201.D\DA.M (ADH-5-95-10ML-220NM-15MIN.M)		
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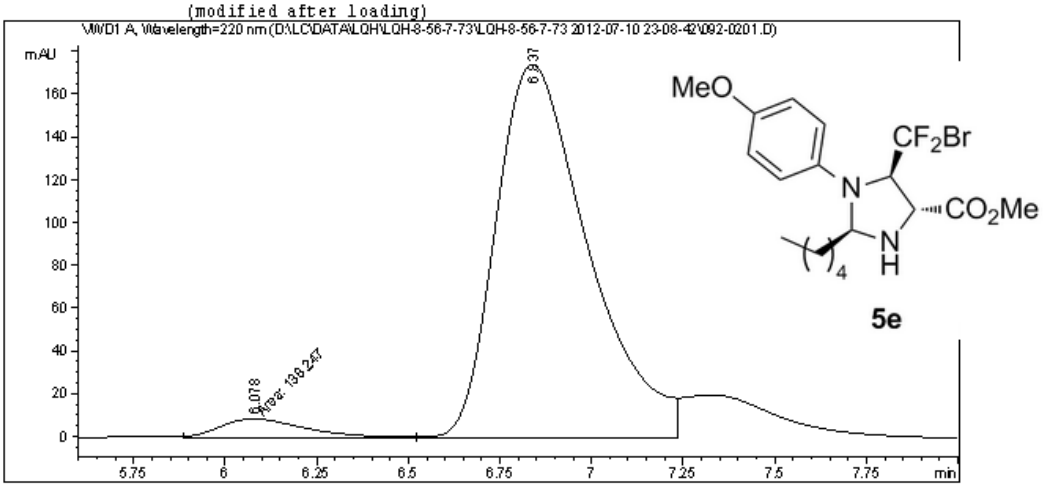


Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	6.078	PM	0.2667	138.24721	8.63885	4.3361
2	6.837	VV	0.2649	3050.05347	174.63786	95.6639
Totals :				3188.30067	183.27671	

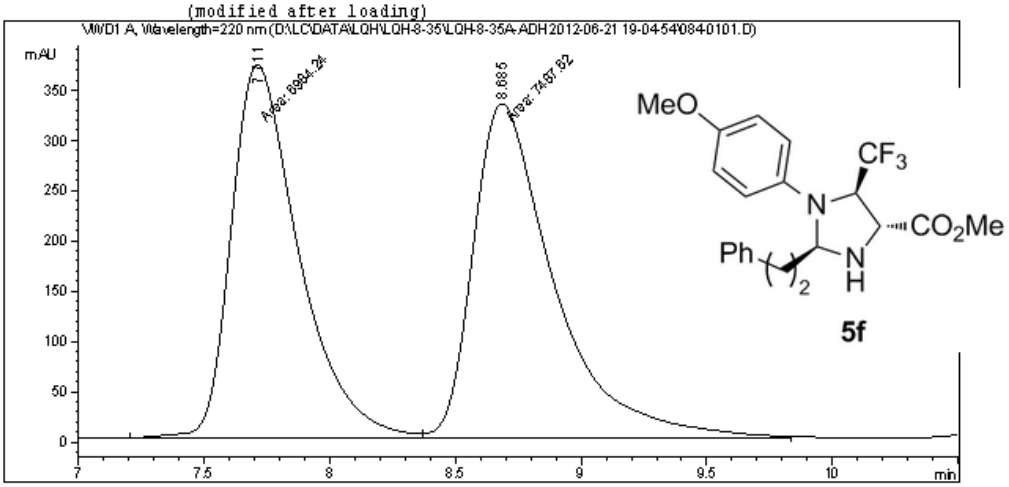
*** End of Report ***

Instrument 1 7/24/2012 6:27:08 PM lqh

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-35\LQH-8-35A-ADH 2012-06-21 19-04-54\084-0101.D
Sample Name: LQH-8-35A

Acq. Operator	: LQH	Seq. Line	: 1
Acq. Instrument	: Instrument 1	Location	: Vial 84
Injection Date	: 6/21/2012 7:05:40 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-35\LQH-8-35A-ADH 2012-06-21 19-04-54\ADH-10-90-10ML-220NM.M		
Last changed	: 6/21/2012 7:25:01 PM by LQH (modified after loading)		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-35\LQH-8-35A-ADH 2012-06-21 19-04-54\084-0101.D\DA.M (ADH-10-90-10ML-220NM.M)		
Last changed	: 6/26/2012 5:06:37 PM by YDC (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	7.711	MF	0.3130	6984.24365	371.86569	48.2608
2	8.685	FM	0.3749	7487.61865	332.88815	51.7392

Totals : 1.44719e4 704.75385

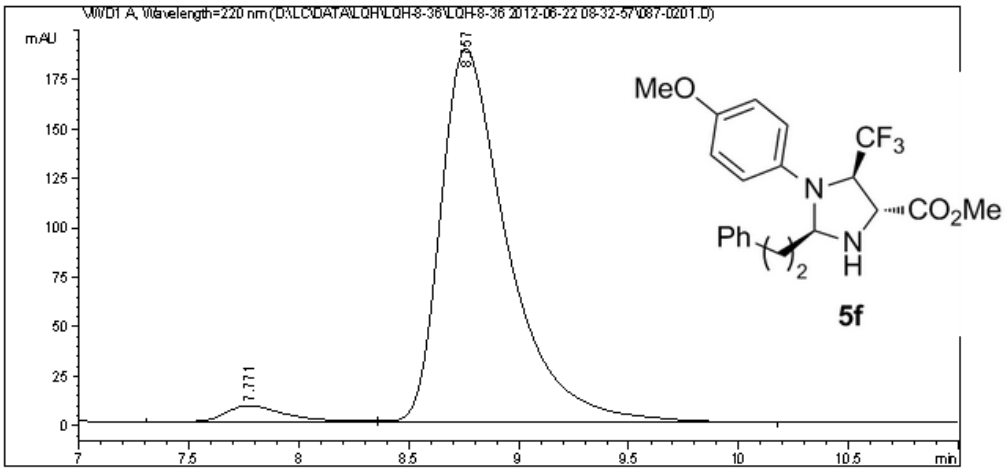
*** End of Report ***

Instrument 1 6/26/2012 5:06:43 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-8-36\LQH-8-36 2012-06-22 08-32-57\087-0201.D
Sample Name: LQH-8-36B

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 87
Injection Date	: 6/22/2012 8:45:38 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-8-36\LQH-8-36 2012-06-22 08-32-57\ADH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:14:57 PM by LTL		
Analysis Method	: D:\LC\DATA\LQH\LQH-8-36\LQH-8-36 2012-06-22 08-32-57\087-0201.D\DA.M (ADH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 6/26/2012 5:16:07 PM by YDC (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	7.771	BV	0.2959	170.97664	8.44586	4.0805
2	8.757	VB	0.3152	4019.11279	188.87428	95.9195
Totals :				4190.08943	197.32014	

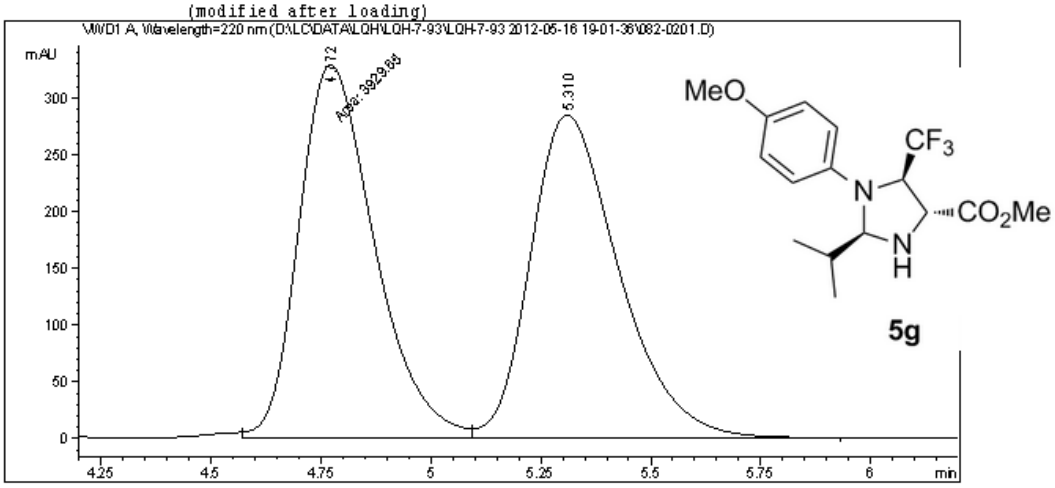
*** End of Report ***

Instrument 1 6/26/2012 5:16:19 PM YDC

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-93\LQH-7-93 2012-05-16 19-01-36\082-0201.D
Sample Name: LQH-7-93

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 82
Injection Date	: 5/16/2012 7:13:22 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-93\LQH-7-93 2012-05-16 19-01-36\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-93\LQH-7-93 2012-05-16 19-01-36\082-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 6/26/2012 6:03:01 PM by YDC (modified after loading)		



Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

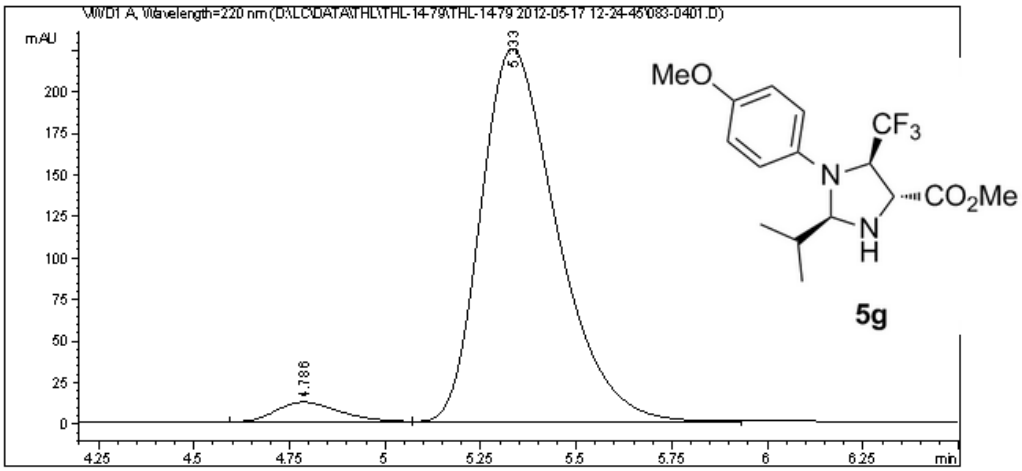
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	4.772	FM	0.1988	3929.65063	329.40140	49.6393
2	5.310	VB	0.2142	3986.76709	284.93958	50.3607
Totals :				7916.41772	614.34097	

*** End of Report ***

Data File D:\LC\DATA\THL\THL-14-79\THL-14-79 2012-05-17 12-24-45\083-0401.D
Sample Name: lqh-7-99

Acq. Operator	: thl	Seq. Line	: 4
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 5/17/2012 1:04:47 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\THL\THL-14-79\THL-14-79 2012-05-17 12-24-45\ASH-10-90-10ML-220NM-20MIN.M		
Last changed	: 8/29/2011 8:17:27 PM by LTL		
Analysis Method	: D:\LC\DATA\THL\THL-14-79\THL-14-79 2012-05-17 12-24-45\083-0401.D\DA.M (ASH-10-90-10ML-220NM-20MIN.M)		
Last changed	: 6/26/2012 6:09:09 PM by YDC (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

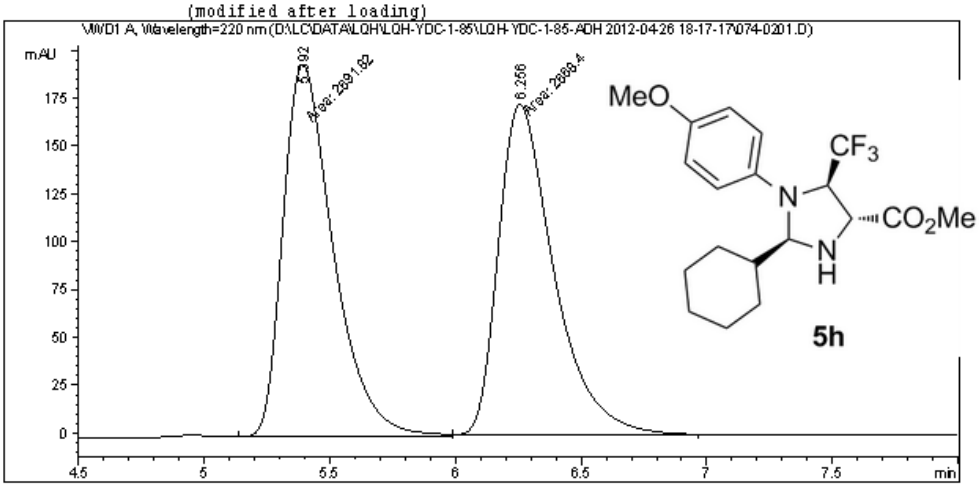
Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	4.786	VV	0.1861	149.88002	12.28080	4.5656
2	5.333	VB	0.2135	3132.95239	224.88040	95.4344
Totals :				3282.83241	237.16120	

*** End of Report ***

Instrument 1 6/26/2012 6:09:17 PM YDC

Data File D:\LC\DATA\LQH\LQH-YDC-1-85\LQH-YDC-1-85-ADH 2012-04-26 18-17-17\074-0201.D
Sample Name: LQH-YDC-1-85

Acq. Operator	: LQH	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 74
Injection Date	: 4/26/2012 6:29:11 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-YDC-1-85\LQH-YDC-1-85-ADH 2012-04-26 18-17-17\ADH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:22:22 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-YDC-1-85\LQH-YDC-1-85-ADH 2012-04-26 18-17-17\074-0201.D\DA.M (ADH-10-90-10ML-220NM.M)		
Last changed	: 4/27/2012 12:42:14 PM by LQH (modified after loading)		



Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

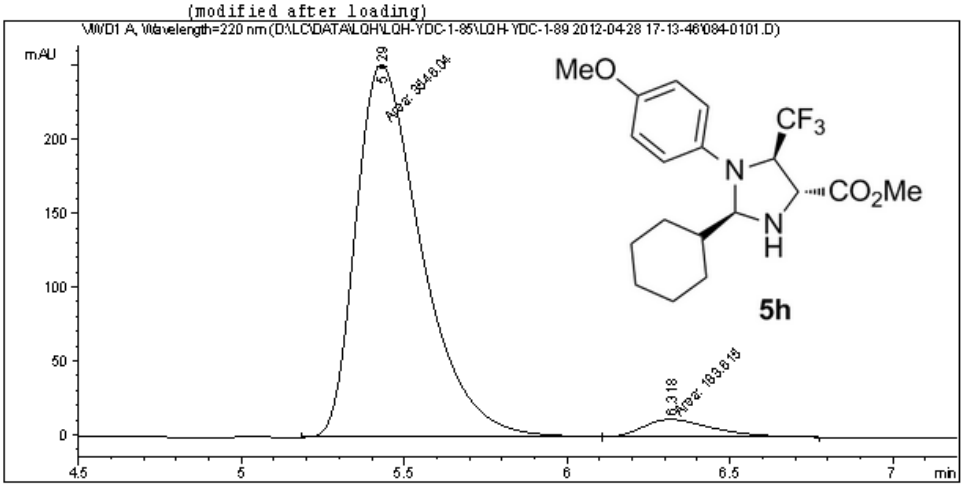
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	5.392	MF	0.2309	2691.82446	194.33124	50.2185
2	6.256	FM	0.2570	2668.40405	173.05252	49.7815
Totals :				5360.22852	367.38376	

*** End of Report ***

Instrument 1 4/27/2012 12:42:19 PM LQH Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-YDC-1-85\LQH-YDC-1-89 2012-04-28 17-13-46\084-0101.D
Sample Name: LQH-YDC-1-89

Acq. Operator	: LQH	Seq. Line	: 1
Acq. Instrument	: Instrument 1	Location	: Vial 84
Injection Date	: 4/28/2012 5:14:33 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-YDC-1-85\LQH-YDC-1-89 2012-04-28 17-13-46\ADH-10-90-10ML-220NM-10MIN.M		
Last changed	: 8/27/2011 9:21:42 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-YDC-1-85\LQH-YDC-1-89 2012-04-28 17-13-46\084-0101.D\DA.M (ADH-10-90-10ML-220NM-10MIN.M)		
Last changed	: 5/5/2012 4:50:23 PM by lqh (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	5.429	MF	0.2340	3546.03638	252.58884	95.0769
2	6.318	FM	0.2535	183.61534	12.07267	4.9231
Totals :				3729.65172	264.66151	

*** End of Report ***

Instrument 1 5/5/2012 4:50:28 PM lqh

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-7-112\LQH-7-112-2 2012-05-28 08-59-23\093-0301.D
Sample Name: LQH-7-117

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==================================================================
Acq. Operator   : lqh                          Seq. Line :   3
Acq. Instrument : Instrument 1                  Location : Vial 93
Injection Date  : 5/28/2012 9:25:47 AM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-7-112\LQH-7-112-2 2012-05-28 08-59-23\ASH-10-90-10ML-
                  220NM.M
Last changed    : 5/28/2012 9:25:07 AM by lqh
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-7-112\LQH-7-112-2 2012-05-28 08-59-23\093-0301.D\DA.M (
                  ASH-10-90-10ML-220NM.M)
Last changed    : 6/26/2012 5:21:07 PM by YDC
                  (modified after loading)
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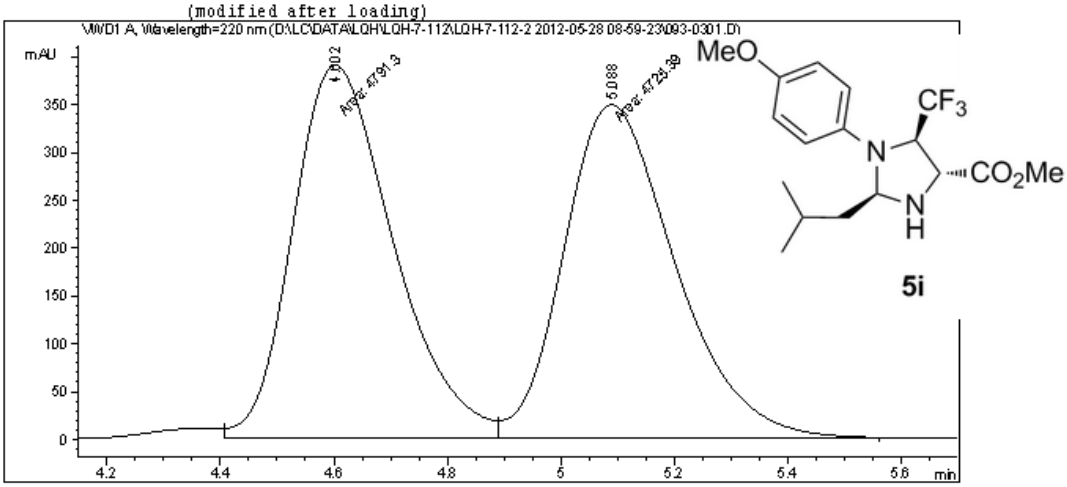



```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

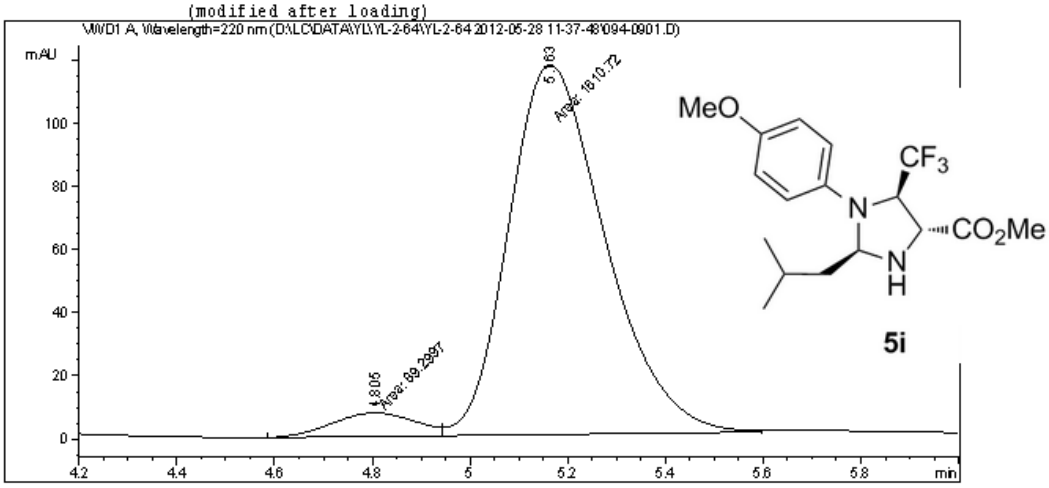
Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1   4.602 MF    0.2045 4791.29785  390.39377  50.3463
   2   5.088 FM    0.2261 4725.38867  348.27927  49.6537

Totals :                  9516.68652  738.67303


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

Data File D:\LC\DATA\YL\YL-2-64\YL-2-64 2012-05-28 11-37-48\094-0901.D
Sample Name: LQH-7-116

Acq. Operator	: HZL	Seq. Line	: 9
Acq. Instrument	: Instrument 1	Location	: Vial 94
Injection Date	: 5/28/2012 2:09:14 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\YL\YL-2-64\YL-2-64 2012-05-28 11-37-48\ASH-10-90-10ML-220NM-10MIN.M		
Last changed	: 8/27/2011 8:50:19 AM by hzl		
Analysis Method	: D:\LC\DATA\YL\YL-2-64\YL-2-64 2012-05-28 11-37-48\094-0901.D\DA.M (ASH-10-90-10ML-220NM-10MIN.M)		
Last changed	: 6/26/2012 5:33:43 PM by YDC (modified after loading)		



Area Percent Report

Sorted By	:	Signal
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

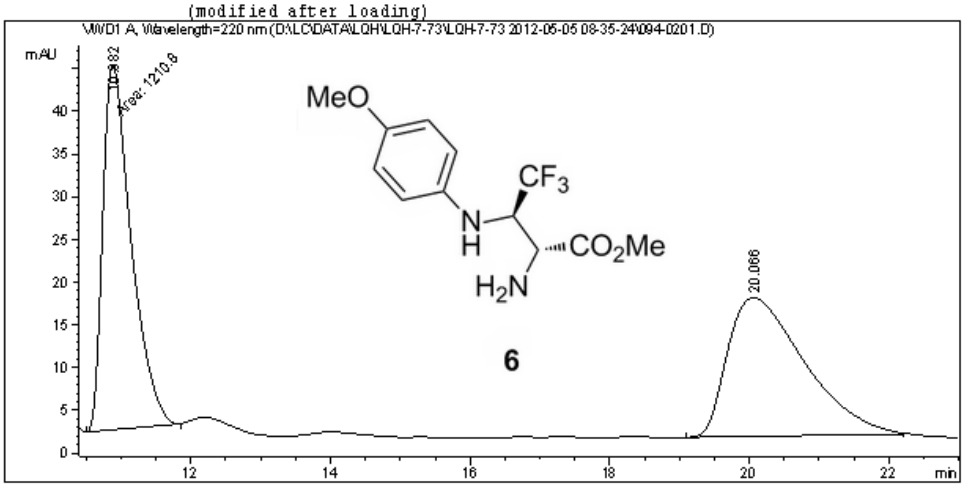
Peak #	RetTime [min]	Type	Width [min]	Area mAU*s	Height [mAU]	Area %
1	4.805	MF	0.1988	89.29974	7.48680	5.2529
2	5.163	FM	0.2288	1610.72363	117.31781	94.7471
Totals :				1700.02337	124.80461	

*** End of Report ***

Instrument 1 6/26/2012 5:33:49 PM YDC

Data File D:\LC\DATA\LQH\LQH-7-73\LQH-7-73 2012-05-05 08-35-24\094-0201.D
Sample Name: LQH-7-73

Acq. Operator	: lqh	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 94
Injection Date	: 5/5/2012 8:47:17 AM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-73\LQH-7-73 2012-05-05 08-35-24\ASH-10-90-10ML-220NM.M		
Last changed	: 8/27/2011 9:19:02 AM by LQH		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-73\LQH-7-73 2012-05-05 08-35-24\094-0201.D\DA.M (ASH-10-90-10ML-220NM.M)		
Last changed	: 7/9/2012 11:04:22 PM by FX (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

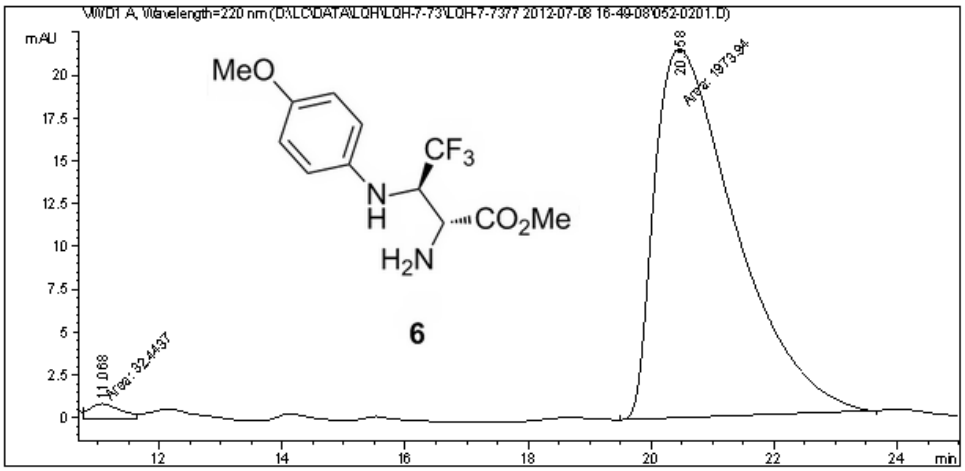
Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	10.882	MM	0.4716	1210.79785	42.79110	49.3992
2	20.066	BB	1.0730	1240.24780	16.21302	50.6008
Totals :				2451.04565	59.00412	

*** End of Report ***

Data File D:\LC\DATA\LQH\LQH-7-73\LQH-7-7377 2012-07-08 16-49-08\052-0201.D
Sample Name: LQH-7-77

Acq. Operator	: lqh	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 52
Injection Date	: 7/8/2012 5:21:59 PM	Inj	: 1
		Inj Volume	: 5 µl
Acq. Method	: D:\LC\DATA\LQH\LQH-7-73\LQH-7-7377 2012-07-08 16-49-08\ASH-10-90-10ML-220NM-30MIN.M		
Last changed	: 3/28/2012 12:22:29 PM by FX		
Analysis Method	: D:\LC\DATA\LQH\LQH-7-73\LQH-7-7377 2012-07-08 16-49-08\052-0201.D\DA.M (ASH-10-90-10ML-220NM-30MIN.M)		
Last changed	: 7/9/2012 11:10:50 PM by FX (modified after loading)		
Method Info	: ASH-50-50-1ML-254NM-50MIN		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	11.068	MM	0.6025	32.44374	8.97524e-1	1.6170
2	20.458	MM	1.5279	1973.93616	21.53221	98.3830
Totals :				2006.37989	22.42973	

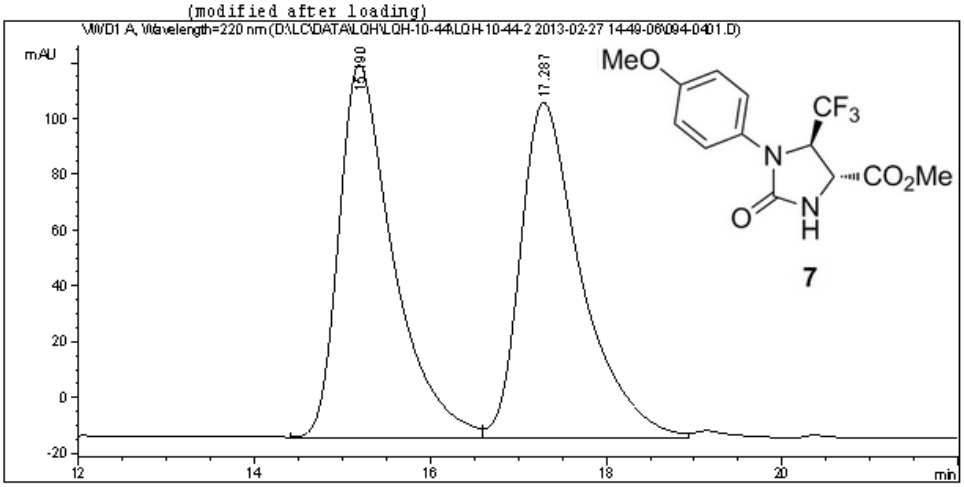
*** End of Report ***

Instrument 1 7/9/2012 11:10:58 PM FX

Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-10-44\LQH-10-44-2 2013-02-27 14-49-06\094-0401.D
Sample Name: LQH-10-42

```
==================================================================
Acq. Operator   : TL                          Seq. Line :   4
Acq. Instrument : Instrument 1                 Location : Vial 94
Injection Date  : 2/27/2013 4:20:02 PM              Inj :   1
                                              Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-10-44\LQH-10-44-2 2013-02-27 14-49-06\ADH-40-60-10ML-
                  220NM.M
Last changed    : 2/27/2013 4:39:52 PM by TL
                  (modified after loading)
Analysis Method : D:\LC\DATA\LQH\LQH-10-44\LQH-10-44-2 2013-02-27 14-49-06\094-0401.D\DA.M (
                  ADH-40-60-10ML-220NM.M)
Last changed    : 2/28/2013 5:38:13 PM by FX
                  (modified after loading)
```




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

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|------|----|-------|----------|----------|-------|
   1  15.190 BV    0.6289 5718.79346  133.62978  49.7633
   2  17.287 VB    0.7133 5773.20801  120.18544  50.2367

Totals :                  1.14920e4   253.81522


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

Instrument 1 2/28/2013 5:38:18 PM FX Page 1 of 1

Data File D:\LC\DATA\LQH\LQH-10-49\LQH-10-49 2013-02-28 15-35-38\095-0201.D
Sample Name: LQH-10-49

```
==================================================================
Acq. Operator   : FX                              Seq. Line :   2
Acq. Instrument : Instrument 1                     Location : Vial 95
Injection Date  : 2/28/2013 3:48:05 PM                 Inj :   1
                                                  Inj Volume : 5 µl
Acq. Method     : D:\LC\DATA\LQH\LQH-10-49\LQH-10-49 2013-02-28 15-35-38\ADH-40-60-10ML-
                  220NM-25MIN.M
Last changed    : 2/28/2013 3:33:41 PM by FX
Analysis Method : D:\LC\DATA\LQH\LQH-10-49\LQH-10-49 2013-02-28 15-35-38\095-0201.D\DA.M (
                  ADH-40-60-10ML-220NM-25MIN.M)
Last changed    : 2/28/2013 5:36:23 PM by FX
                  (modified after loading)
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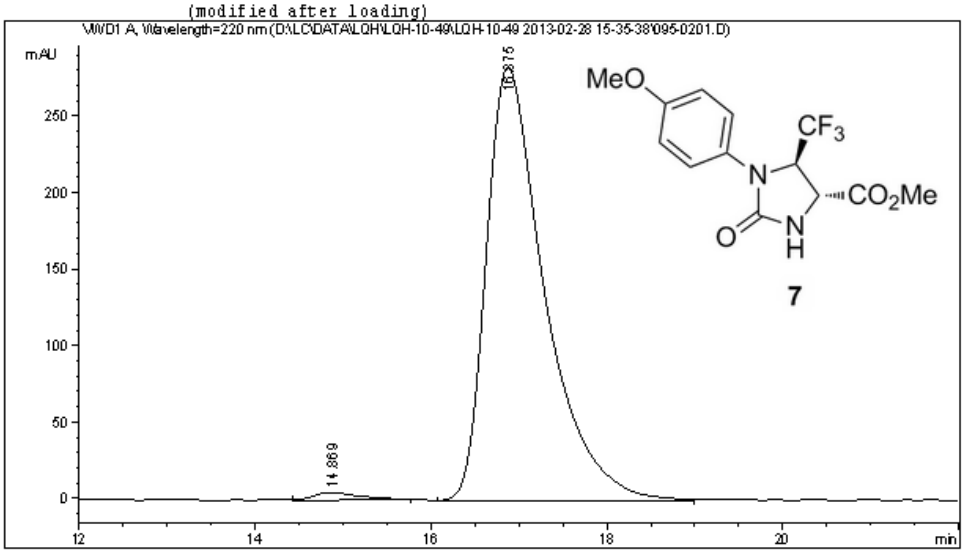



```
==================================================================
                        Area Percent Report
==================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=220 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]  mAU   *s   [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
   1  14.869 VB    0.5462  192.52173    5.10563   1.4555
   2  16.875 BV    0.6897 1.30349e4   283.27603  98.5445

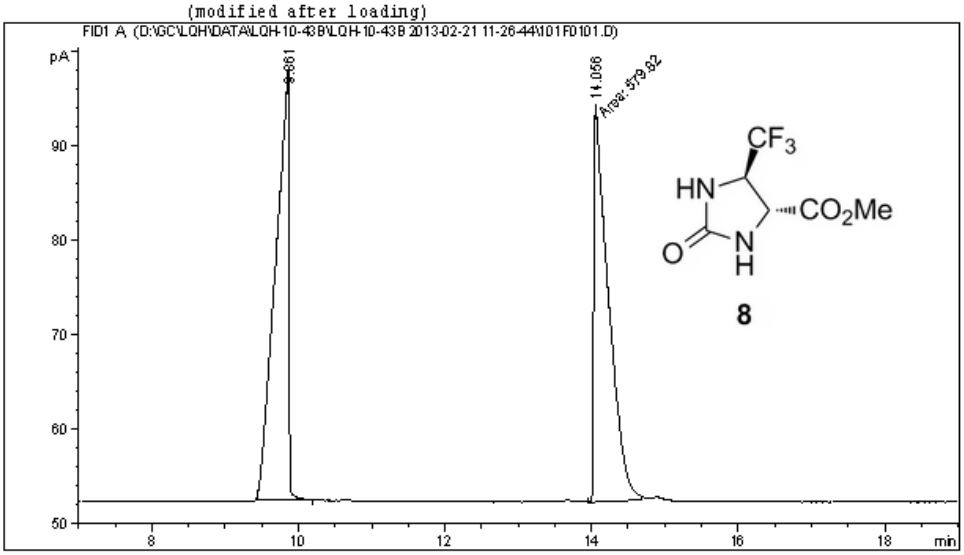
Totals :                  1.32274e4   288.38166


==================================================================
```

Instrument 1 2/28/2013 5:36:30 PM FX Page 1 of 1

Data File D:\GC\LQH\DATA\LQH-10-43B\LQH-10-43B 2013-02-21 11-26-44\101F0101.D
Sample Name: LQH-10-43B

Acq. Operator	: LQH	Seq. Line	: 1
Acq. Instrument	: Instrument 2	Location	: Vial 101
Injection Date	: 21-Feb-13, 11:28:27	Inj	: 1
		Inj Volume	: 2 µl
Acq. Method	: D:\GC\LQH\DATA\LQH-10-43B\LQH-10-43B 2013-02-21 11-26-44\BETA-DEX325-1700C.M		
Last changed	: 2/21/2013 11:25:40 AM by LQH		
Analysis Method	: D:\GC\DEF GC OFF.M		
Last changed	: 2/21/2013 12:04:24 PM by LQH (modified after loading)		



Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Height [pA]	Area %
1	9.861	BB	0.1546	581.82855	45.66846	50.08646
2	14.056	MM	0.2295	579.81989	42.10339	49.91354
Totals :				1161.64844	87.77185	

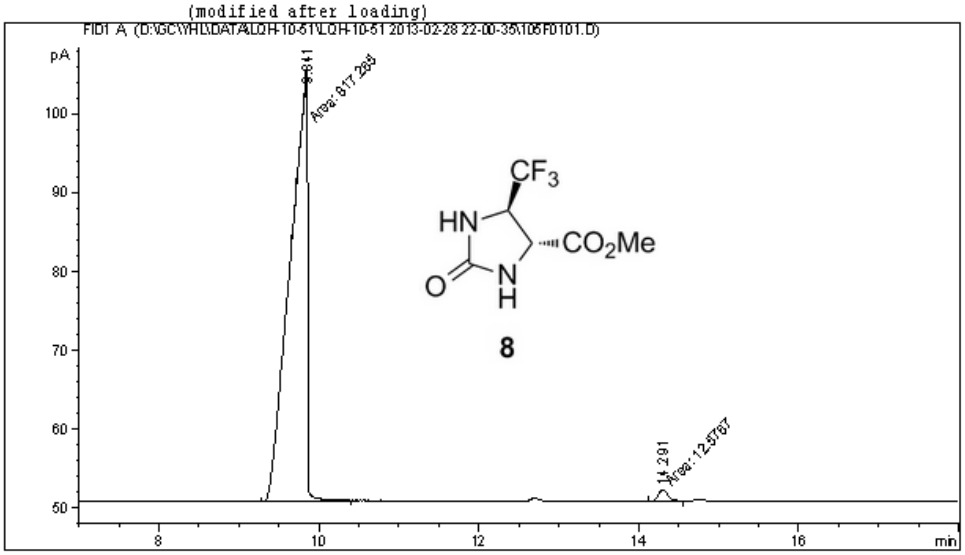
*** End of Report ***

Instrument 2 2/21/2013 12:04:37 PM LQH

Page 1 of 1

Data File D:\GC\YHL\DATA\LQH-10-51\LQH-10-51 2013-02-28 22-00-35\105F0101.D
Sample Name: LQH-10-51

```
====================================================================
Acq. Operator   : LQH                          Seq. Line :   1
Acq. Instrument : Instrument 2                  Location : Vial 105
Injection Date  : 28-Feb-13, 22:02:18               Inj :   1
                                               Inj Volume : 2 µl
Acq. Method     : D:\GC\yhl\DATA\LQH-10-51\LQH-10-51 2013-02-28 22-00-35\BETA-DEX325-1700C.M
Last changed    : 2/21/2013 11:25:40 AM by LQH
Analysis Method : D:\GC\DEF GC OFF.M
Last changed    : 2/28/2013 10:24:32 PM by LQH
                  (modified after loading)
```




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

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: FID1 A,

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   [pA*s]      [pA]        %
----|-------|----|-------|----------|----------|--------|
   1   9.841 MM    0.2480  817.26520   54.92947 98.48445
   2  14.291 MM    0.1375   12.57668    1.52396  1.51555

Totals :                   829.84188   56.45343


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

Instrument 2 2/28/2013 10:24:38 PM LQH Page 1 of 1