Supplementary Information-2

Copies of ^{1}H-NMR, ^{13}C-NMR spectra and chiral HPLC chromatograms

Stereoselective Synthesis of 4-Substituted-Cyclic Sulfamidate-5-Carboxylates By Asymmetric Transfer Hydrogenation Accompanying Dynamic Kinetic Resolution and Its Use in Concise Stereoselective Synthesis of (-)-*epi*-Cytoxazone and Taxotere Side-Chain.

Jin-ah Kim,[a] Yeon Ji Seo,[a,b] Soyeong Kang,[a,b] Juae Han[a,b] and Hyeon-Kyu Lee[a,b]*

a) Korea Chemical Banl, Korea Research Institute of Chemical Technology, PO Box 107, Yuseong, Daejeon 305-600, KOREA; b) Department of Medicinal and Pharmaceutical Chemistry, University of Science and Technology, 113 Gwahango, Yuseong, Daejeon 305-333, KOREA.

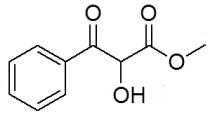
Tel: +82-42-860-7016; Fax: +82-42-860-7096
e-mail: leehk@krict.re.kr

Table of Contents

^{1}H-NMR and ^{13}C-NMR spectra

KJA-Ph-carbo-OH

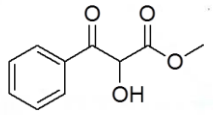
^{1}H NMR(500MHz, $CDCl_3$)



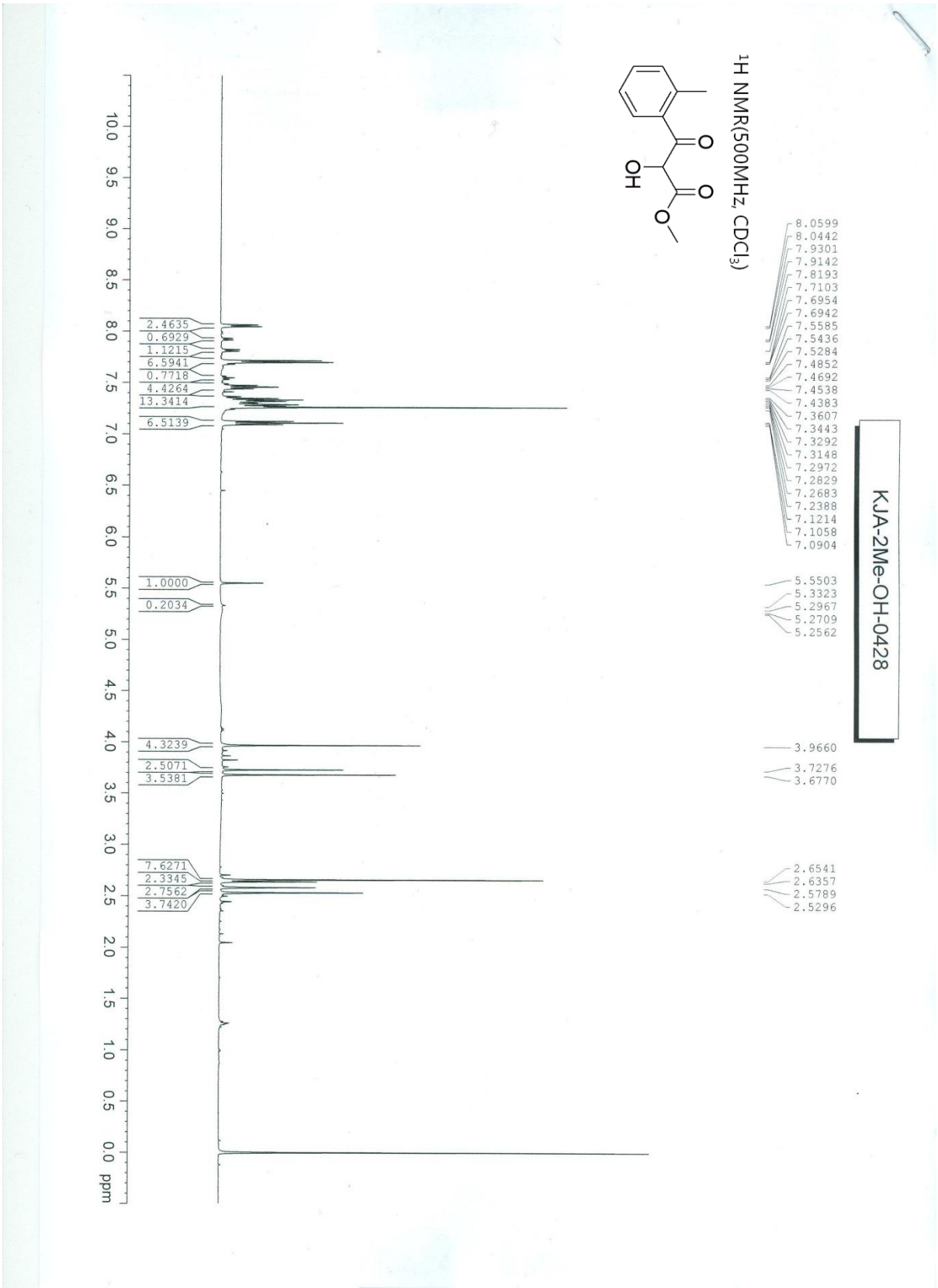
KJA_ph_carbo_OH

193.7614
170.8891
169.1351
158.5515
158.4762
134.7235
133.6582
132.9997
130.1619
129.4939
129.4738
128.8524
128.8136
128.4524
91.9066
77.3729
77.1179
76.8628
74.3493
60.4822
53.7824
53.0724
21.0158

^{13}C NMR(500MHz, $CDCl_3$)

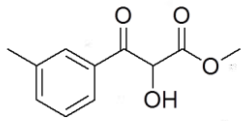


NAME	KJA_ph_carbo_OH	
EXPNO	1	
PROCNO	1	
Date_	20140226	
Time	4.06	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	32768	
SOLVENT	CDCl3	
NS	1000	
DS	2	
SWH	35211.270	Hz
FIDRES	1.074563	Hz
AQ	0.4653698	sec
RG	512	
DW	14.200	usec
DE	6.00	usec
TE	297.1	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
========	CHANNEL f1 ========	
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
========	CHANNEL f2 ========	
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	


KJA-2Me-OH-0428
^{1}H NMR(500MHz, CDCl$_3$)
OH
8.0599
8.0442
7.9301
7.9142
7.8193
7.7103
7.6954
7.6942
7.5585
7.5436
7.5284
7.4852
7.4692
7.4538
7.4383
7.3607
7.3443
7.3292
7.3148
7.2972
7.2829
7.2683
7.2388
7.1214
7.1058
7.0904
5.5503
5.3323
5.2967
5.2709
5.2562
3.9660
3.7276
3.6770
2.6541
2.6357
2.5789
2.5296
2.4635
0.6929
1.1215
6.5941
0.7718
4.4264
13.3414
6.5139
1.0000
0.2034
4.3239
2.5071
3.5381
7.6271
2.3345
2.7562
3.7420
ppm

KJA-3-Me-carbo-OH-1119-1

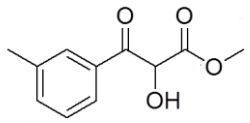
^{1}H NMR(500MHz, $CDCl_3$)

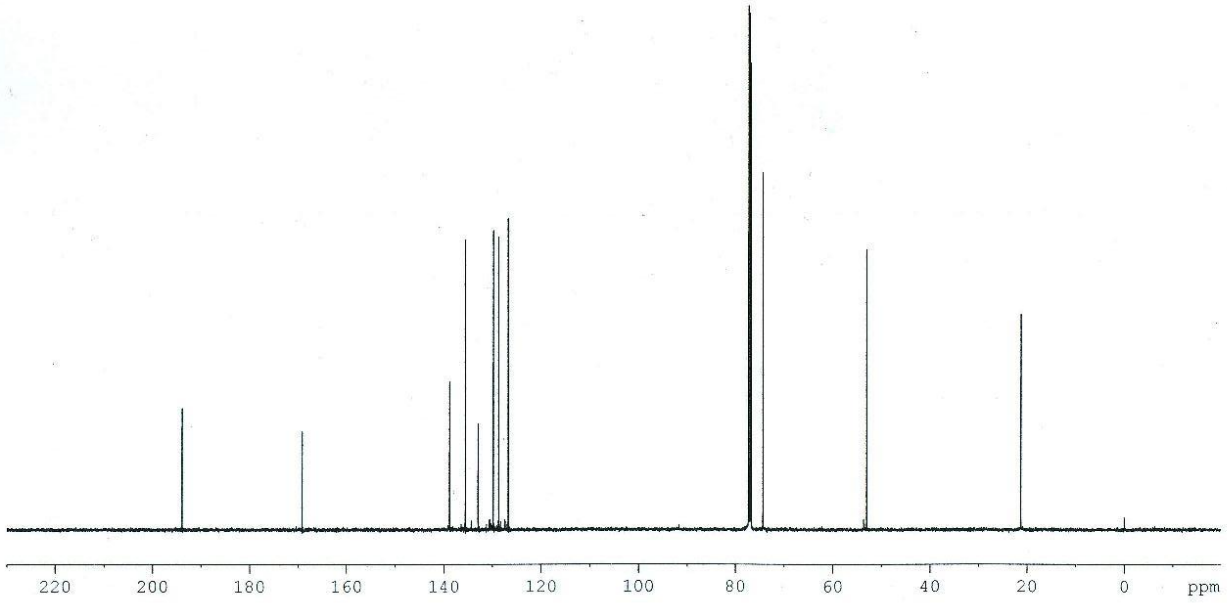


KJA_3_Me_carbo_OH_1119_1

193.8153
169.0981
138.8439
135.5929
132.9689
129.8245
128.7221
126.7443
77.3063
77.0516
76.7979
74.3498
53.0466
21.3206

^{13}C NMR(500MHz, $CDCl_3$)

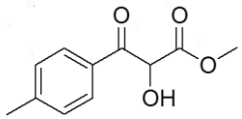


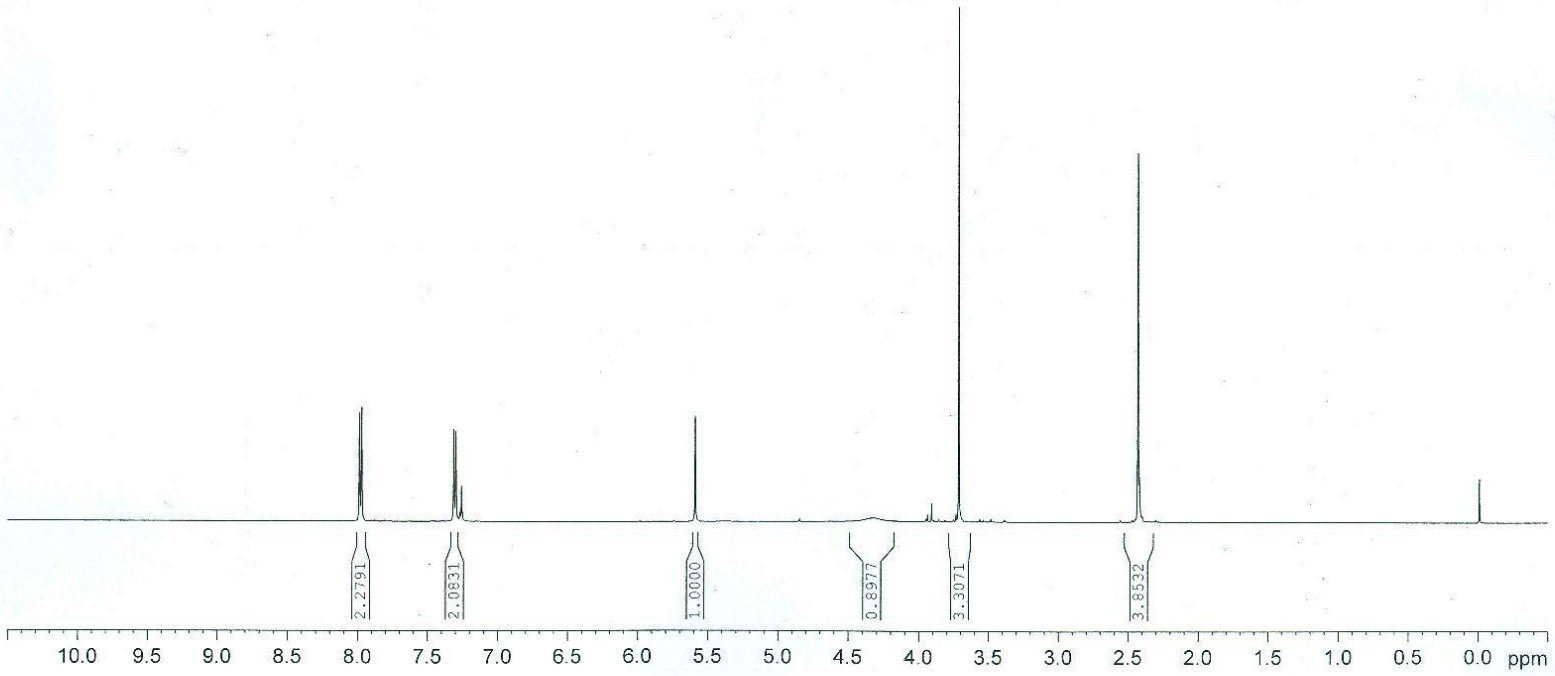


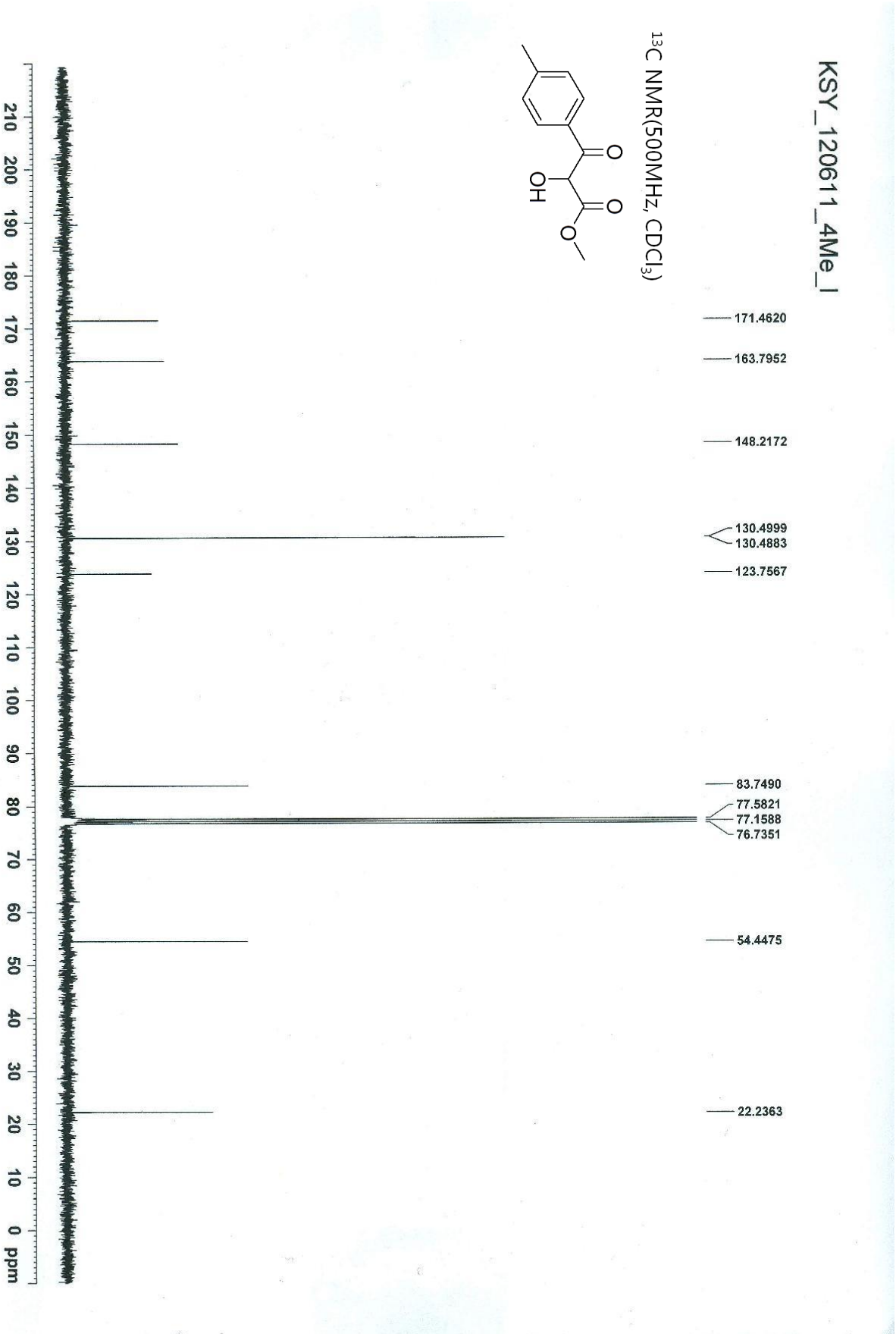
NAME	KJA_3_Me_carbo_OH_1119_1
EXPNO	1
PROCNO	1
Date_	20131119
Time	21.45
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	298.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
========	CHANNEL f1 ========
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
========	CHANNEL f2 ========
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-4-Me-OH-carboxylate

^{1}H NMR(500MHz, $CDCl_3$)

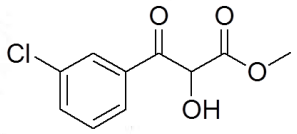





KSY_120611_4Me_I
^{13}C NMR(500MHz, CDCl$_3$)
OH
O
O
O
171.4620
163.7952
148.2172
130.4999
130.4883
123.7567
83.7490
77.5821
77.1588
76.7351
54.4475
22.2363
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

KJA-3-Cl-carbo-OH

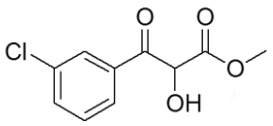
^{1}H NMR(500MHz, $CDCl_3$)



KJA_3_Cl_carbo_OH

192.7437
168.7779
135.3208
134.6171
134.5896
130.1695
129.3871
127.5919
77.2703
77.0158
76.7614
74.4698
53.2773
-0.0042

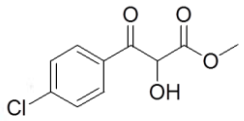
^{13}C NMR(500MHz, $CDCl_3$)



NAME	KJA_3_Cl_carbo_OH
EXPNO	1
PROCNO	1
Date_	20131121
Time	22.09
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	2000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	298.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KSY_120509_Cl_I

^{1}H NMR(500MHz, $CDCl_3$)

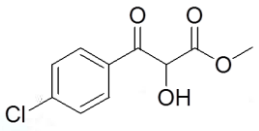


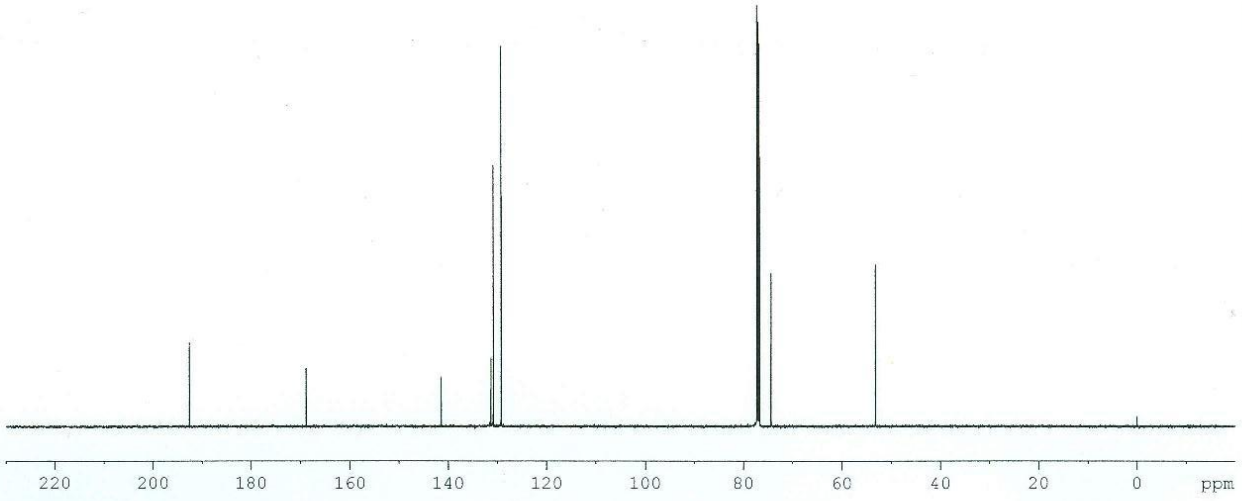

```
NAME      KSY_120509_Cl_I
EXPNO             1
PROCNO            1
Date_         20120509
Time            16.28
INSTRUM          spect
PROBHD   5 mm DUL 13C-1
PULPROG          zg30
TD             65536
SOLVENT         CDCl3
NS                4
DS                2
SWH          7507.507 Hz
FIDRES       0.114555 Hz
AQ          4.3648143 sec
RG              574.7
DW            66.600 usec
DE             6.00 usec
TE             300.2 K
D1          1.00000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1             9.80 usec
PL1            -1.90 dB
PL1W       27.23316002 W
SFO1       500.1332508 MHz
SI             32768
SF         500.1300136 MHz
WDW               EM
SSB               0
LB             0.30 Hz
GB                0
PC             1.00
```

KJA_4_Cl_carbo_OH

192.6172
168.8896
141.4397
131.3338
130.8676
129.2757
77.2895
77.0350
76.7819
74.4116
53.2104
-0.0067

^{13}C NMR(500MHz, $CDCl_3$)

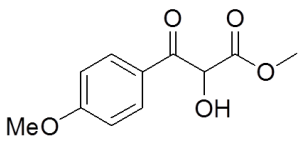





```
NAME          KJA_4_Cl_carbo_OH
EXPNO                         1
PROCNO                        1
Date_                  20131204
Time                      19.11
INSTRUM                   spect
PROBHD   5 mm DUL 13C-1
PULPROG                 zgpg30
TD                       65536
SOLVENT                  CDCl3
NS                        1000
DS                           2
SWH                35211.270 Hz
FIDRES              0.537281 Hz
AQ                  0.9306754 sec
RG                         512
DW                    14.200 usec
DE                     6.00 usec
TE                     298.7 K
D1                 2.00000000 sec
D11                0.03000000 sec
TD0                           1

======== CHANNEL f1 ========
NUC1                        13C
P1                     8.00 usec
PL1                    1.40 dB
PL1W              70.60439301 W
SFO1             125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                waltz16
NUC2                        1H
PCPD2                 100.00 usec
PL2                    -1.90 dB
PL12                   16.00 dB
PL13                   19.00 dB
PL2W              27.23316002 W
PL12W              0.44167015 W
PL13W              0.22135943 W
SFO2             500.1320005 MHz
SI                        32768
SF               125.7577890 MHz
WDW                         EM
SSB                          0
LB                     1.00 Hz
GB                           0
PC                     1.40
```

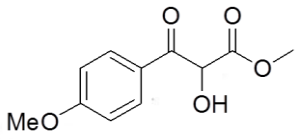
KJA-4-OMe-car-OH-1023

^{1}H NMR(500MHz, $CDCl_3$)



KJA_4_OMe_car_OH_1023

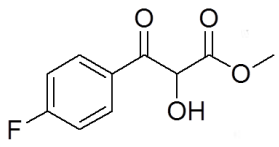
^{13}C NMR(500MHz, $CDCl_3$)



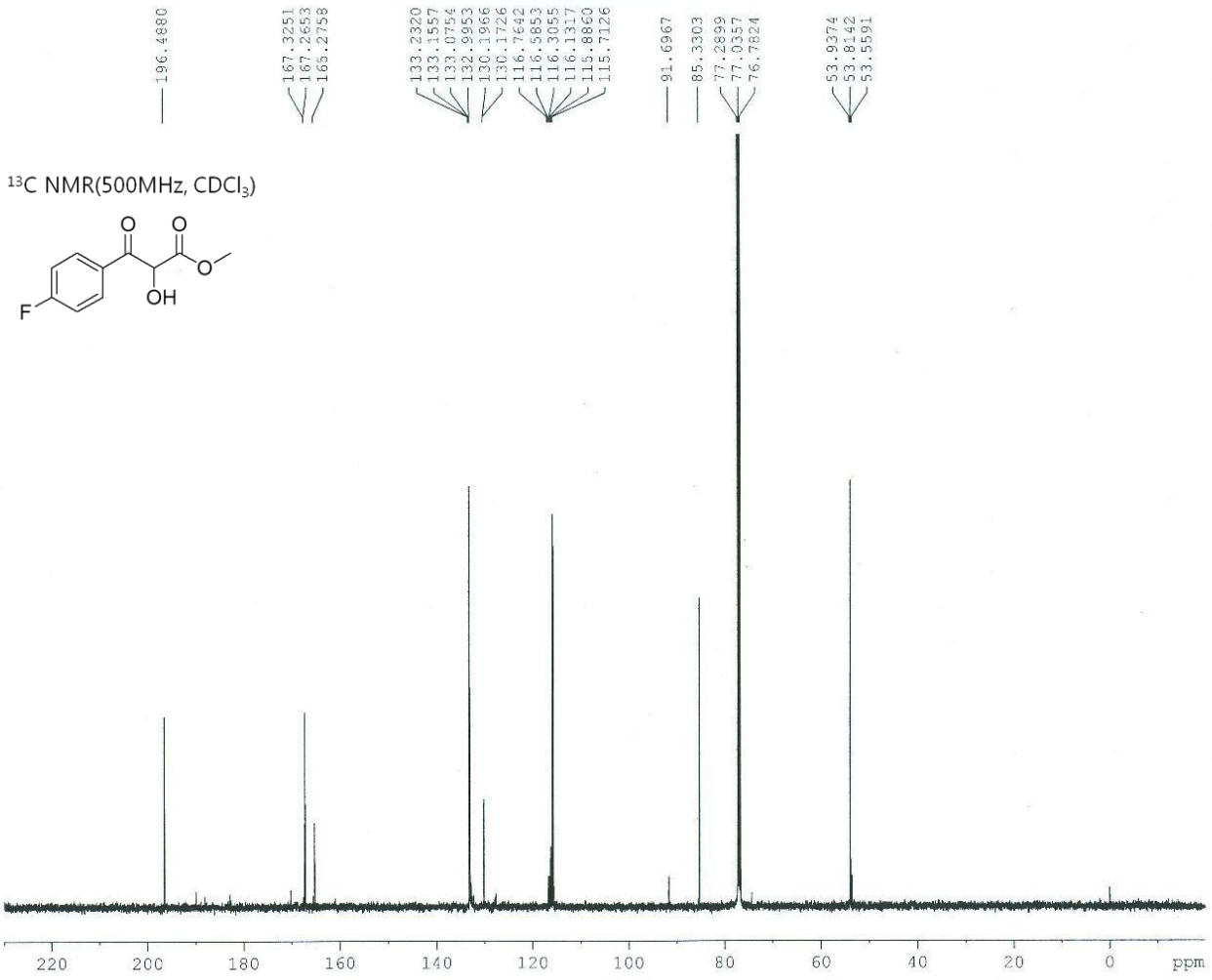
NAME	KJA_4_OMe_car_OH_1023
EXPNO	1
PROCNO	1
Date_	20131024
Time	4.21
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	4000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	296.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-4-F-carbo-OH-0103

^{1}H NMR(500MHz, $CDCl_3$)



KJA_4_F_carbo_0103

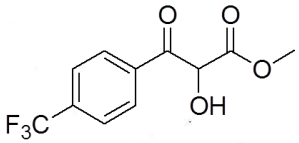


^{13}C NMR(500MHz, $CDCl_3$)

NAME	KJA_4_F_carbo_0103	
EXPNO	1	
PROCNO	1	
Date_	20140103	
Time	21.10	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	32768	
SOLVENT	CDCl3	
NS	1000	
DS	2	
SWH	35211.270	Hz
FIDRES	1.074563	Hz
AQ	0.4653698	sec
RG	128	
DW	14.200	usec
DE	6.00	usec
TE	297.0	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

KJA-4-CF3-car-OH

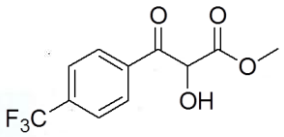
^{1}H NMR(500MHz, $CDCl_3$)

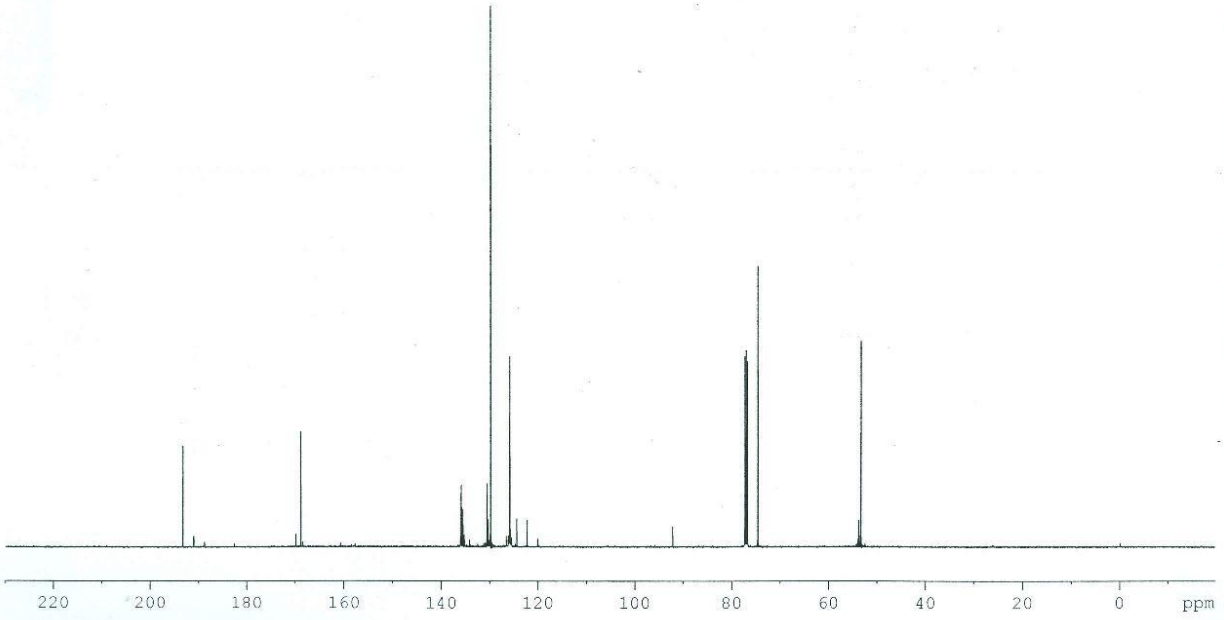


KJA_4_CF3_carbo_OH

193.2060
190.9759
169.8450
168.8522
168.8294
136.0120
135.8708
135.7515
135.4888
135.2282
134.1608
130.5400
130.3764
129.9563
129.9059
129.8883
129.8384
129.8171
129.7974
129.7795
126.5861
126.1667
126.1378
125.8833
125.8560
125.8259
125.7980
125.7724
125.4982
125.4696
124.4156
122.2456
120.0757
92.1301
77.2967
77.0418
76.7870
74.6828
74.6416
53.8895
53.7643
53.6299
53.3118
53.2757
53.2365

^{13}C NMR(500MHz, $CDCl_3$)

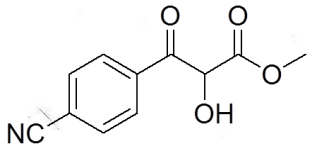




NAME	KJA_4_CF3_carbo_OH
EXPNO	1
PROCNO	1
Date_	20131120
Time	23.10
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	298.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
========	CHANNEL f1 ========
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
========	CHANNEL f2 ========
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-4-CN-OH-up-solid

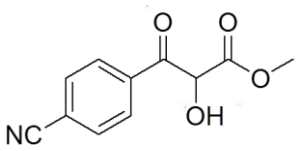
^{1}H NMR(500MHz, $CDCl_3$)

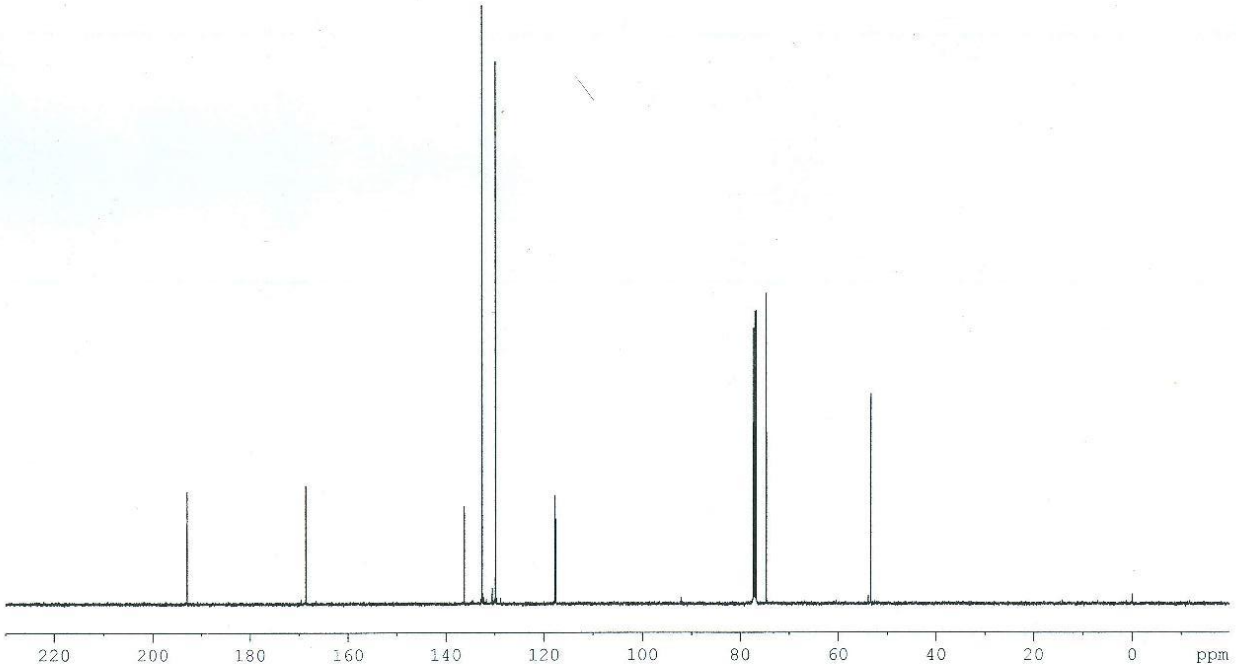


KJA_4_CN_carbo_OH

192.9496
168.6754
136.2366
132.5915
129.8500
117.6965
117.5560
77.3122
77.0578
76.8031
74.7013
53.3934

^{13}C NMR(500MHz, $CDCl_3$)

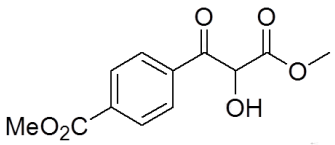




NAME	KJA_4_CN_carbo_OH
EXPNO	1
PROCNO	1
Date_	20130725
Time	20.51
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	300.4 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
========	CHANNEL f1 ========
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
========	CHANNEL f2 ========
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-4-CO2Me-carbo-OH

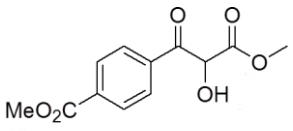
^{1}H NMR(500MHz, $CDCl_3$)

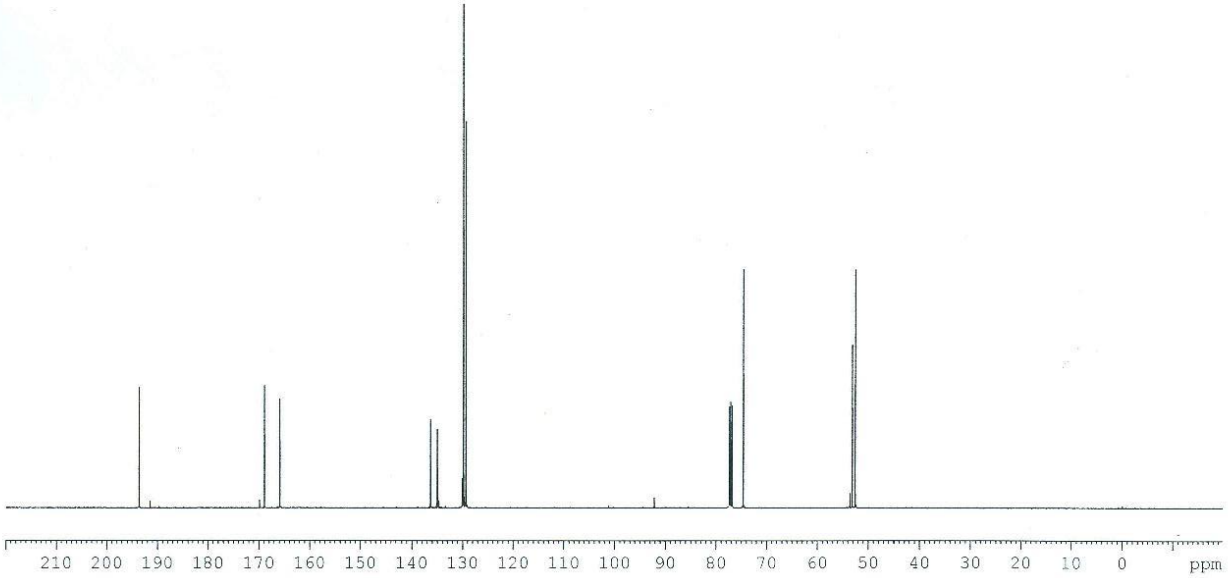


KJA_4_CO2Me_carbo_OH

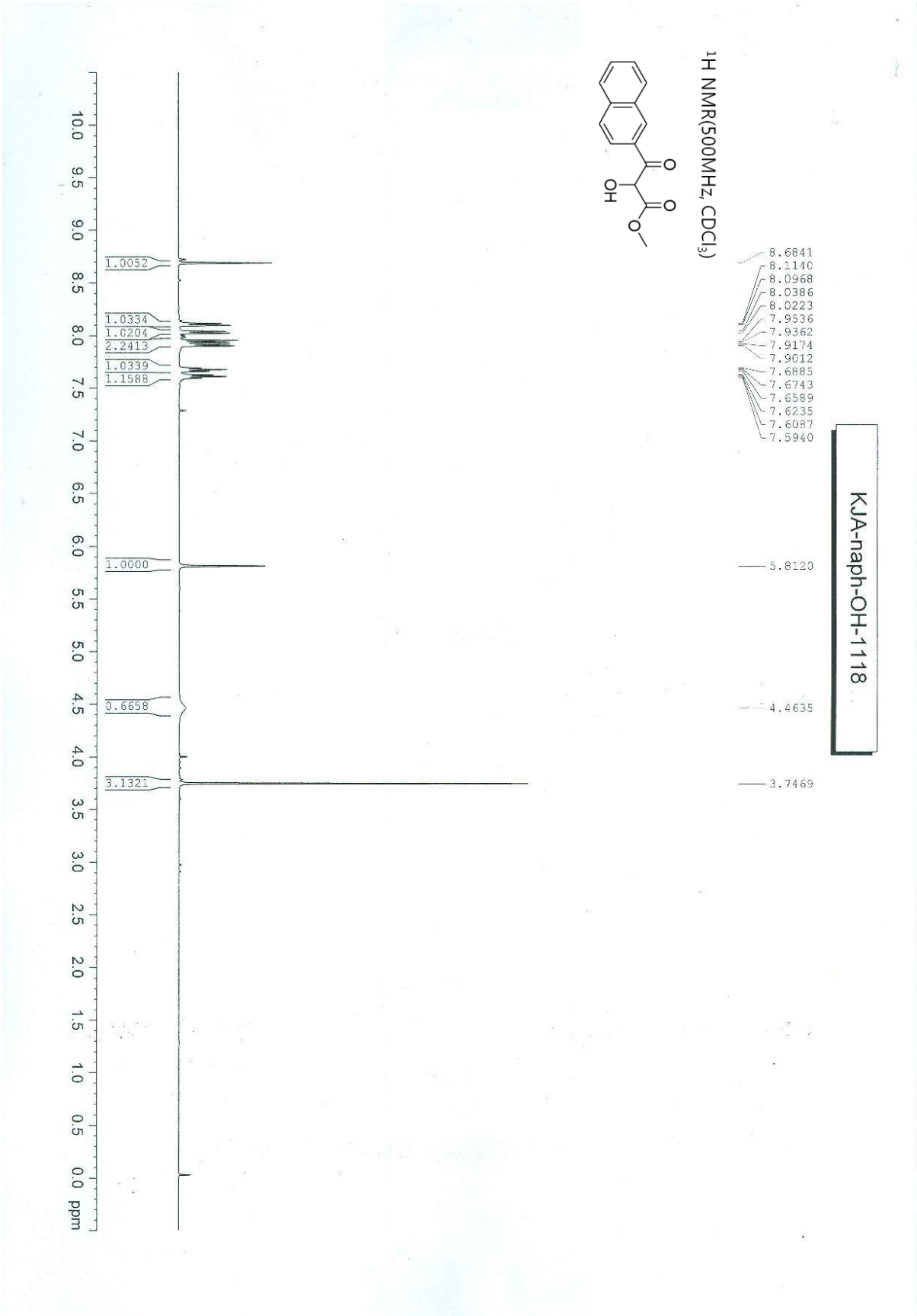
193.6079
191.4374
169.8630
168.8801
165.9065
136.3516
135.0399
134.9676
134.6841
130.1221
130.0596
129.9641
129.8562
129.7789
129.6941
129.3367
92.1887
77.3648
77.1095
76.8542
74.6231
53.5935
53.1561
52.5864

^{13}C NMR(500MHz, $CDCl_3$)





NAME	KJA_4_CO2Me_carbo_OH
EXPNO	1
PROCNO	1
Date_	20130704
Time	4.29
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	299.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

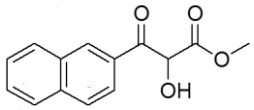

KJA-naph-OH-1118
^{1}H NMR(500MHz, CDCl$_3$)
8.6841
8.1140
8.0968
8.0386
8.0223
7.9536
7.9362
7.9174
7.9012
7.6885
7.6743
7.6589
7.6235
7.6087
7.5940
5.8120
4.4635
3.7469
1.0052
1.0334
1.0204
2.2413
1.0339
1.1588
1.0000
0.6658
3.1321
ppm

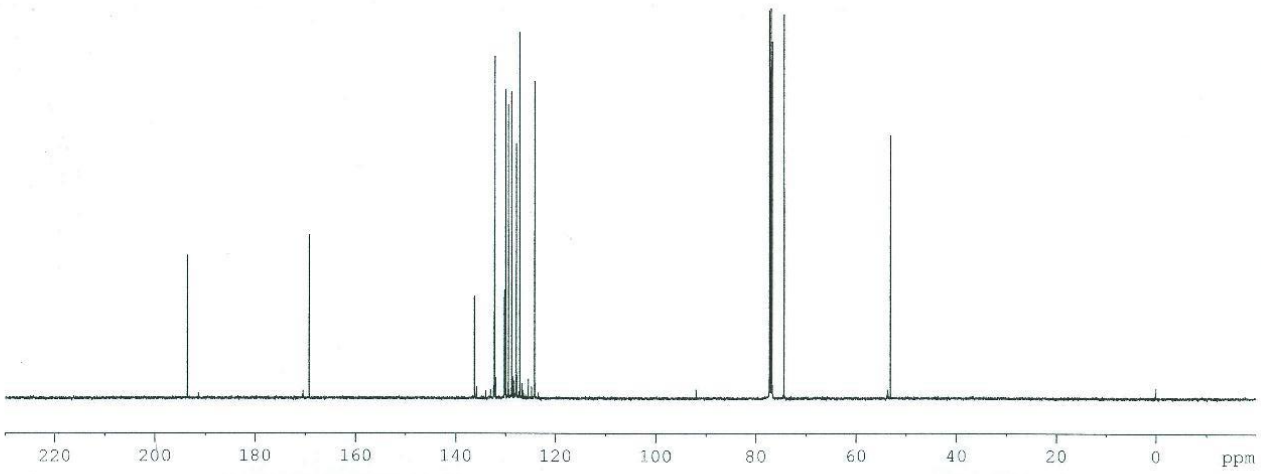
KJA_naph_OH_1118

193.5835
170.4617
169.2391
136.2859
136.1965
135.8714
134.0085
133.0756
132.4542
132.2396
132.1972
132.0358
130.2864
130.1900
130.1303
130.0174
129.5408
129.4875
129.4042
128.8321
128.7368
128.5847
128.2866
127.8793
127.8138
127.7991
127.1902
127.0877
126.7509
126.5400
125.4485
124.8045
124.1645
91.9681
77.3313
77.0764
76.8221
74.4435
53.7470
53.1321

0.0187

^{13}C NMR(500MHz, $CDCl_3$)

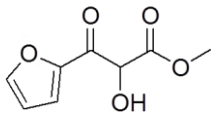




NAME	KJA_naph_OH_1118
EXPNO	1
PROCNO	1
Date_	20131118
Time	19.20
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	297.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

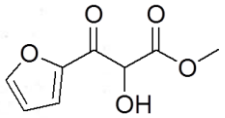
KSY_120626_Fu_OH

^{1}H NMR(500MHz, $CDCl_3$)



KSY_120626_Fu_OH

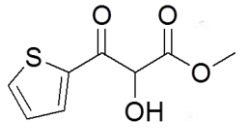
^{13}C NMR(500MHz, $CDCl_3$)

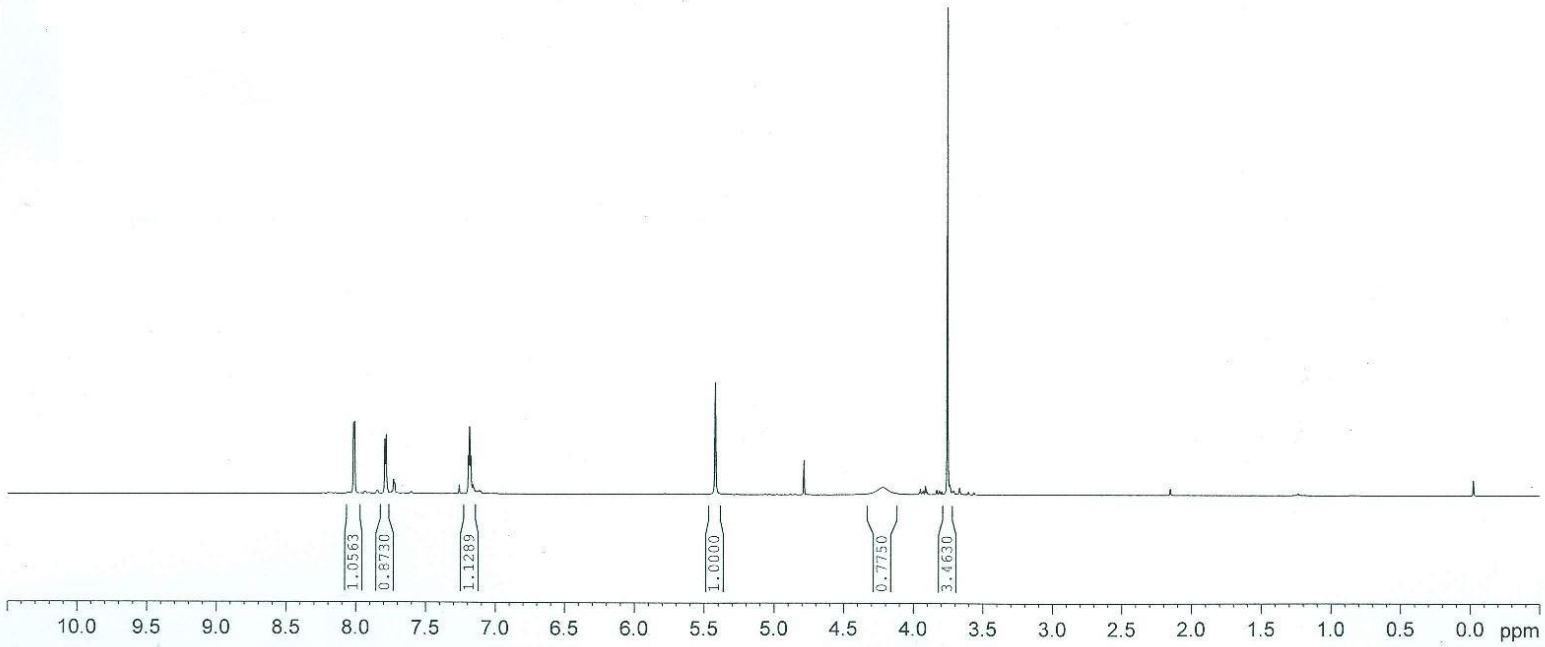


NAME	KSY_120626_Fu_OH
EXPNO	1
PROCNO	1
Date_	20120627
Time	10.01
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1024
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	5792.6
DW	14.200 usec
DE	6.00 usec
TE	300.3 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577701 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-2-Thio-carbo-OH

^{1}H NMR(500MHz, $CDCl_3$)

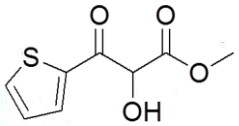


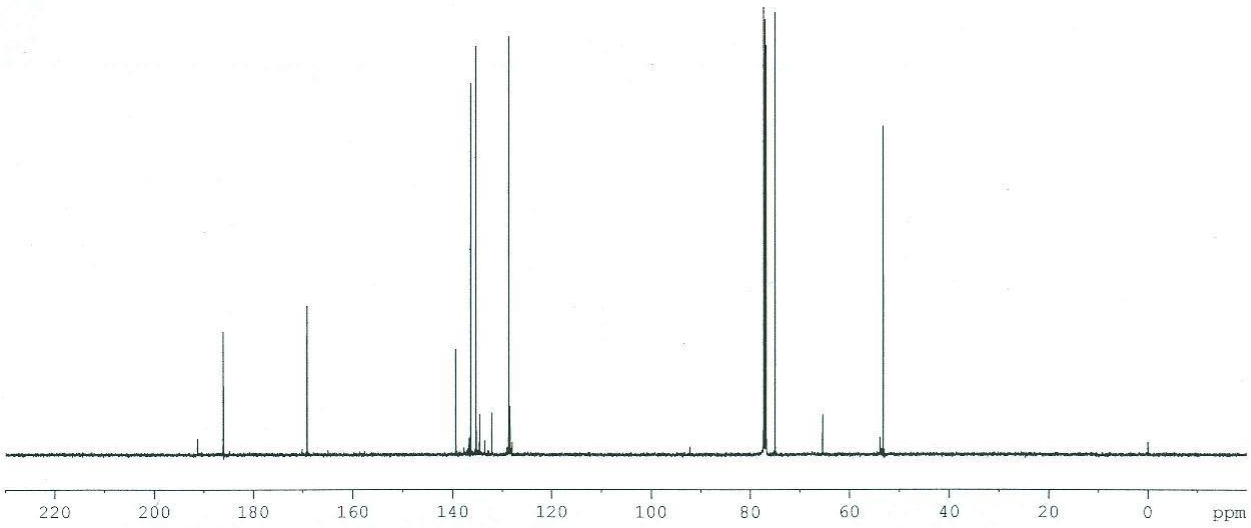


KJA_2_Thio_carbo_OH

191.2672
186.0971
186.0786
186.0582
186.0399
169.1861
169.1635
139.3893
136.3785
135.2982
134.5529
132.1109
128.6593
128.4295
92.2015
77.3325
77.0779
76.8242
75.0935
75.0755
75.0346
65.4245
53.9104
53.8849
53.3039
53.2866
53.2502
53.2301
53.2107
53.1933
-0.0058

^{13}C NMR(500MHz, $CDCl_3$)



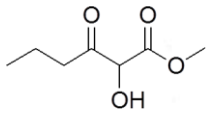


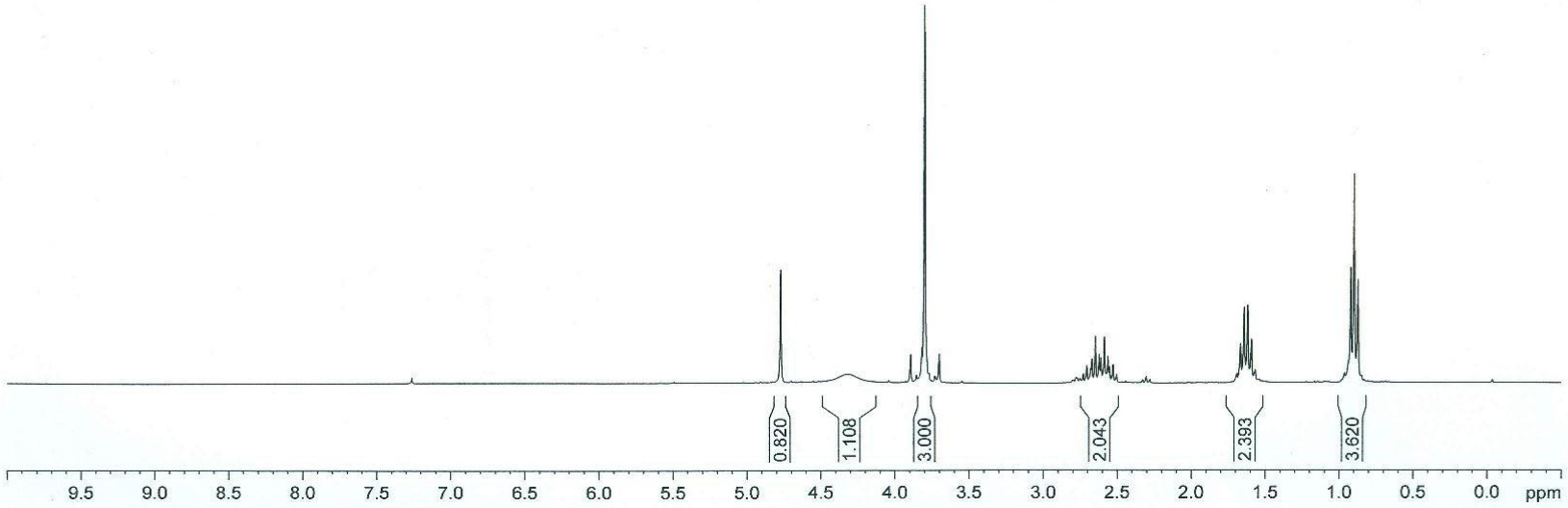
NAME	KJA_2_Thio_carbo_OH
EXPNO	1
PROCNO	1
Date_	20131129
Time	23.04
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	298.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KSY_prop_OH

7.2601
4.7706
4.3182
3.7955
2.7787
2.7714
2.7296
2.7052
2.6896
2.6801
2.6714
2.6469
2.6222
2.6101
2.5866
2.5741
2.5627
2.5515
2.5282
2.5045
1.6897
1.6656
1.6413
1.6168
1.5922
1.5672
0.9203
0.8955
0.8709

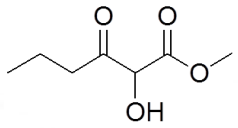
^{1}H NMR(500MHz, $CDCl_3$)

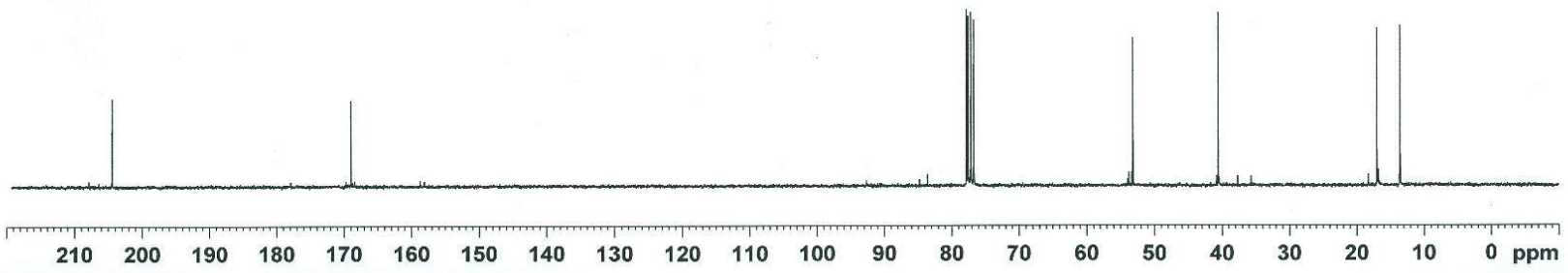




KSY_prop_OH

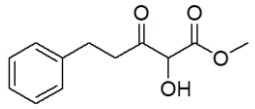
^{13}C NMR(500MHz, $CDCl_3$)

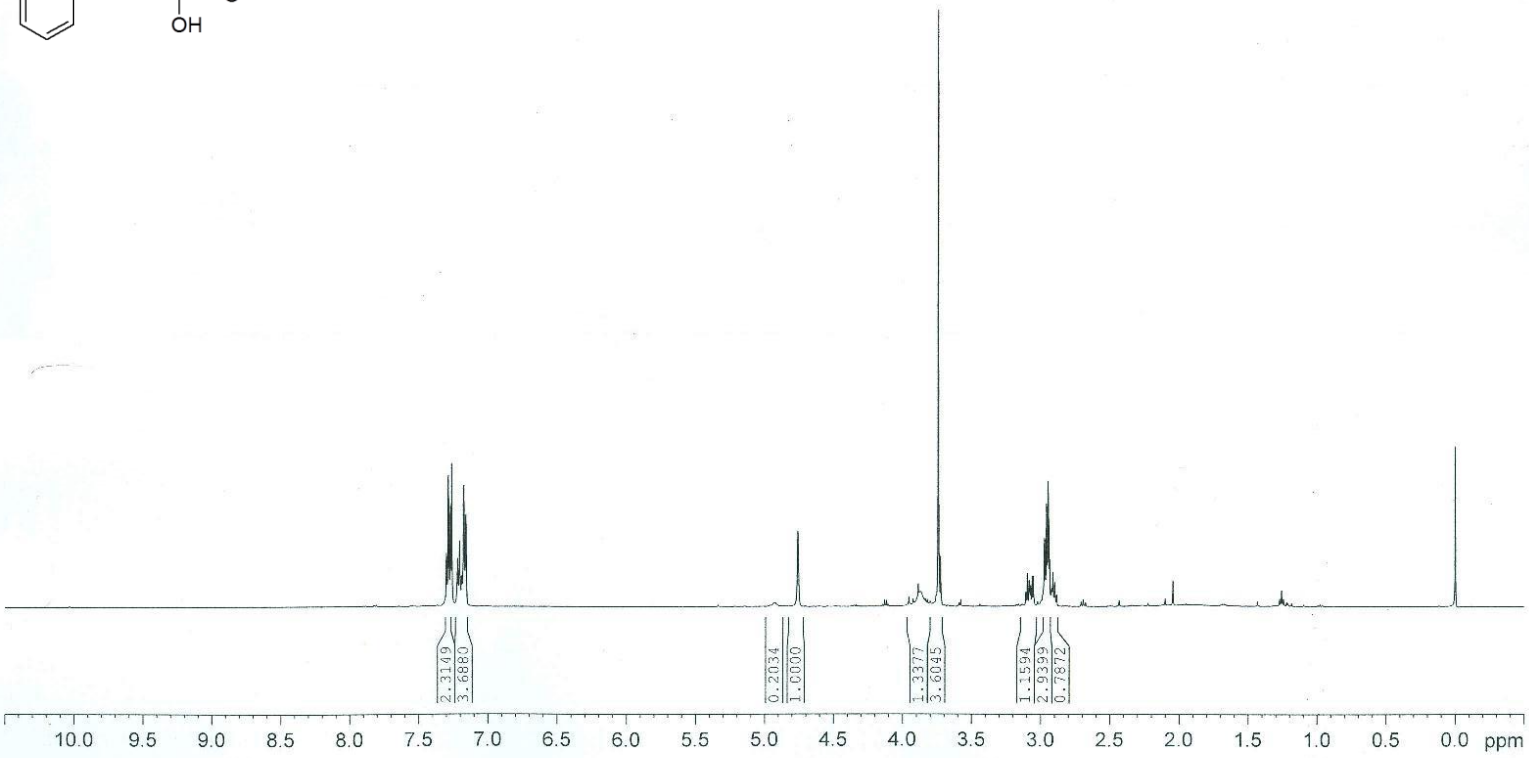




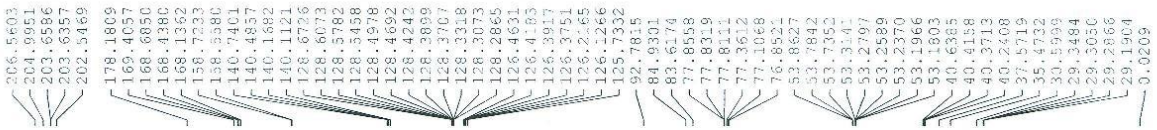
KJA-Phenethyl-OH-0428-cru

^{1}H NMR(500MHz, $CDCl_3$)

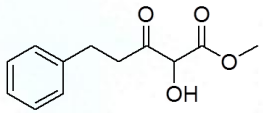




KJA_phene_car_OH_0516



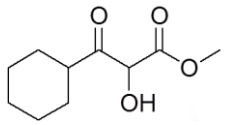
^{13}C NMR(500MHz, $CDCl_3$)



NAME	KJA_phene_car_OH_0516	
EXPNO	1	
PROCNO	1	
Date_	20140519	
Time	2.49	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	32768	
SOLVENT	CDCl3	
NS	1000	
DS	2	
SWH	37593.984	Hz
FIDRES	1.147277	Hz
AQ	0.4358777	sec
RG	3251	
DW	13.300	usec
DE	6.00	usec
TE	296.8	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

KJA-cyclo-OH-Wsolid

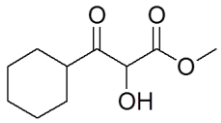
^{1}H NMR(500MHz, $CDCl_3$)

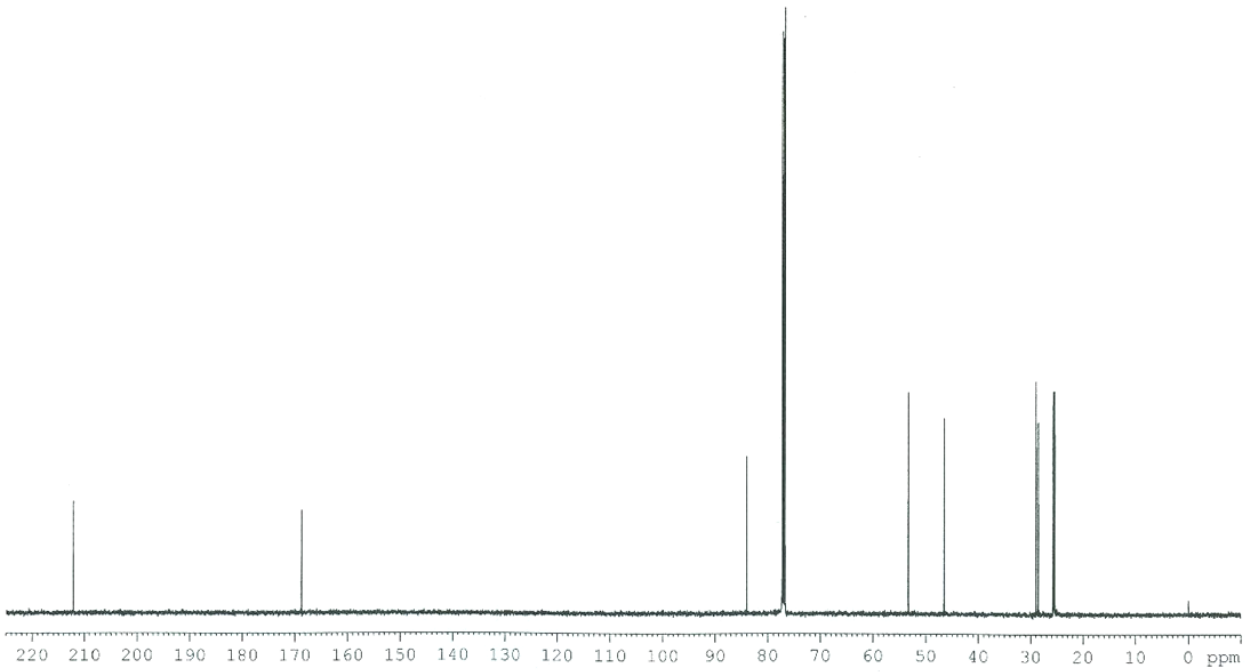


KJA_cyclo_OH_w_solid

212.0739
168.7256
84.0218
77.2745
77.0212
76.7671
53.3035
46.4991
28.9945
28.3804
25.7582
25.6691
25.4131

^{13}C NMR(500MHz, $CDCl_3$)

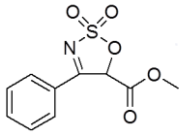




NAME	KJA_cyclo_OH_w_solid	
EXPNO	1	
PROCNO	1	
Date_	20140218	
Time	6.31	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	32768	
SOLVENT	CDCl3	
NS	1000	
DS	2	
SWH	35211.270	Hz
FIDRES	1.074563	Hz
AQ	0.4653698	sec
RG	5792.6	
DW	14.200	usec
DE	6.00	usec
TE	298.1	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

HJA_OMe_imine

^{1}H NMR(500MHz, $CDCl_3$)



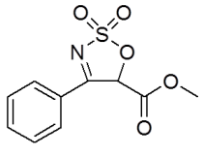
6a

NAME HJA_OMe_imine_1
EXPNO 1
PROCNO 1
Date_ 20110209
Time 15.28
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 128
DW 66.600 usec
DE 6.00 usec
TE 296.1 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

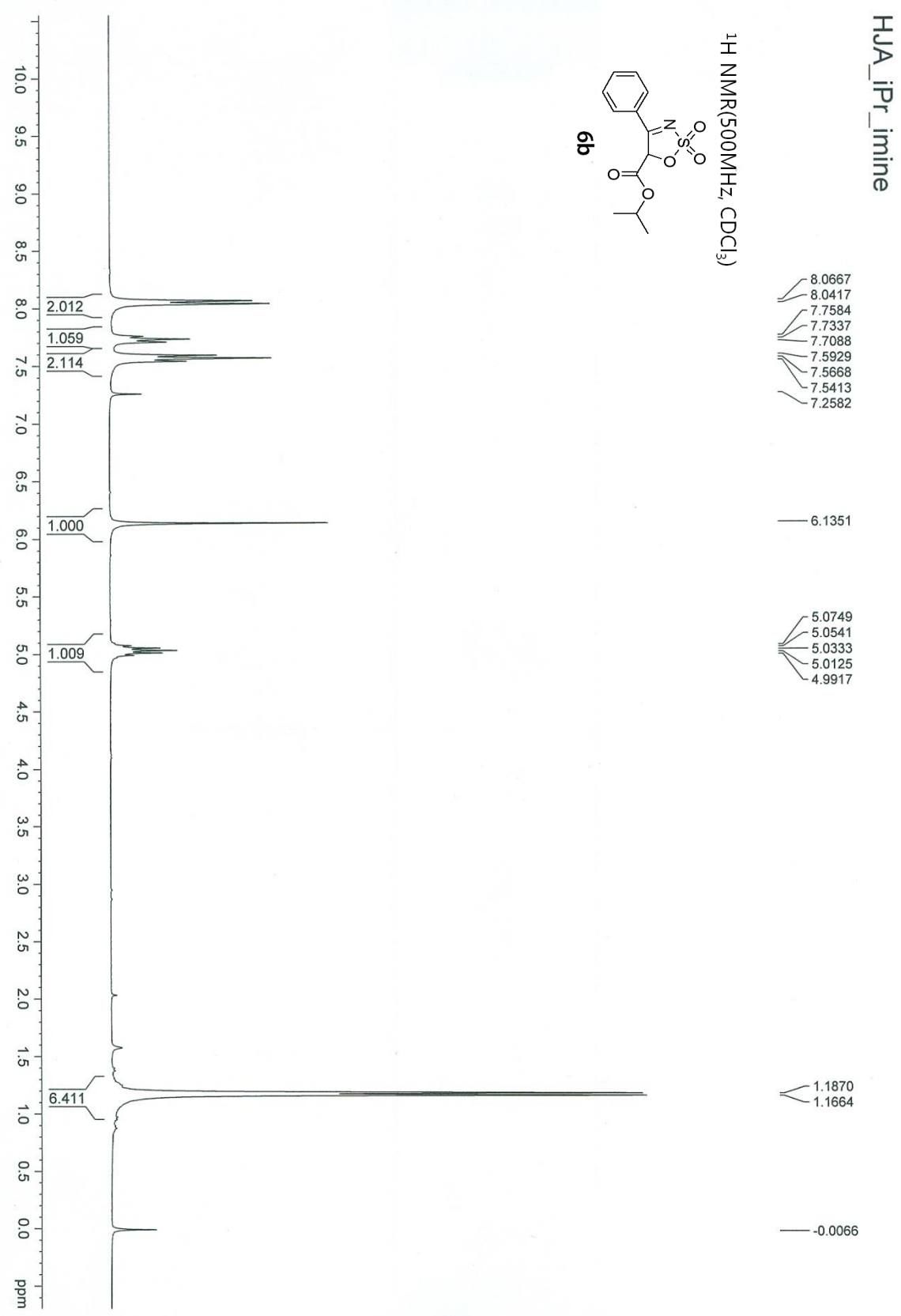
HJA_OMe_imine

^{13}C NMR(500MHz, $CDCl_3$)



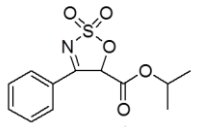
6a

NAME	HJA_OMe_imine	
EXPNO	1	
PROCNO	1	
Date_	20110209	
Time	14.46	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	65536	
SOLVENT	CDCl3	
NS	512	
DS	2	
SWH	35211.270	Hz
FIDRES	0.537281	Hz
AQ	0.9306754	sec
RG	512	
DW	14.200	usec
DE	6.00	usec
TE	296.6	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	


HJA_iPr_imine
^{1}H NMR(500MHz, CDCl$_3$)
6b
8.0667
8.0417
7.7584
7.7337
7.7088
7.5929
7.5668
7.5413
7.2582
6.1351
5.0749
5.0541
5.0333
5.0125
4.9917
1.1870
1.1664
-0.0066
2.012
1.059
2.114
1.000
1.009
6.411
ppm

HJA_iPr_imine

^{13}C NMR(500MHz, $CDCl_3$)



6b

NAME	HJA_iPr_imine
EXPNO	1
PROCNO	1
Date_	20110211
Time	14.55
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	512
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	296.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

HJA_OBn_cinnamate_imine

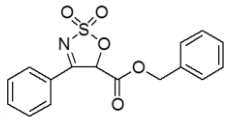
7.9976 7.9729 7.7229 7.6980 7.6728 7.5137 7.4877 7.4614 7.3093 7.2995 7.2940 7.2849 7.2756 7.2602 7.2117 7.2065 7.1886 7.1806 6.1725

5.2717 5.2314 5.1928 5.1525

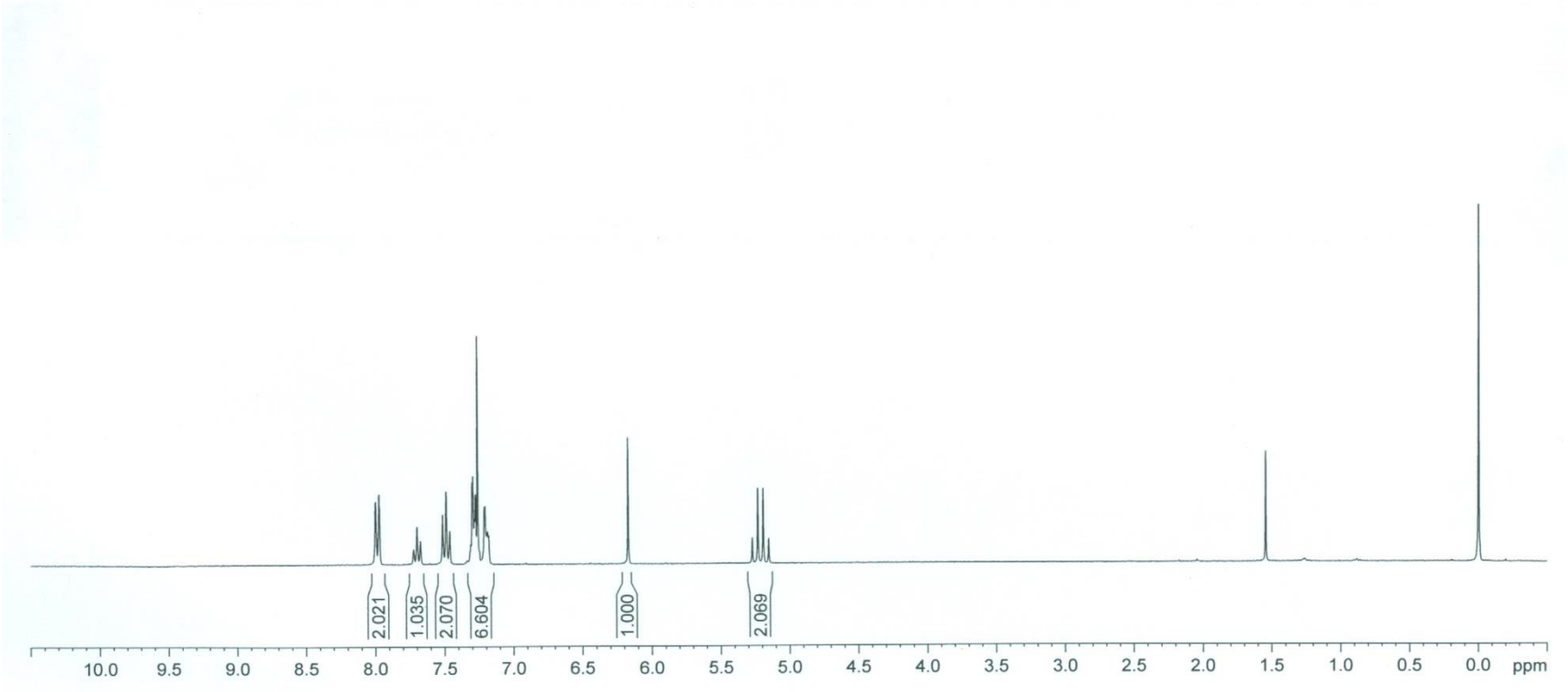
1.5453

-0.0002

^{1}H NMR(500MHz, $CDCl_3$)

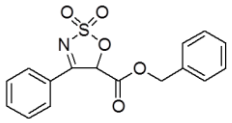


6c



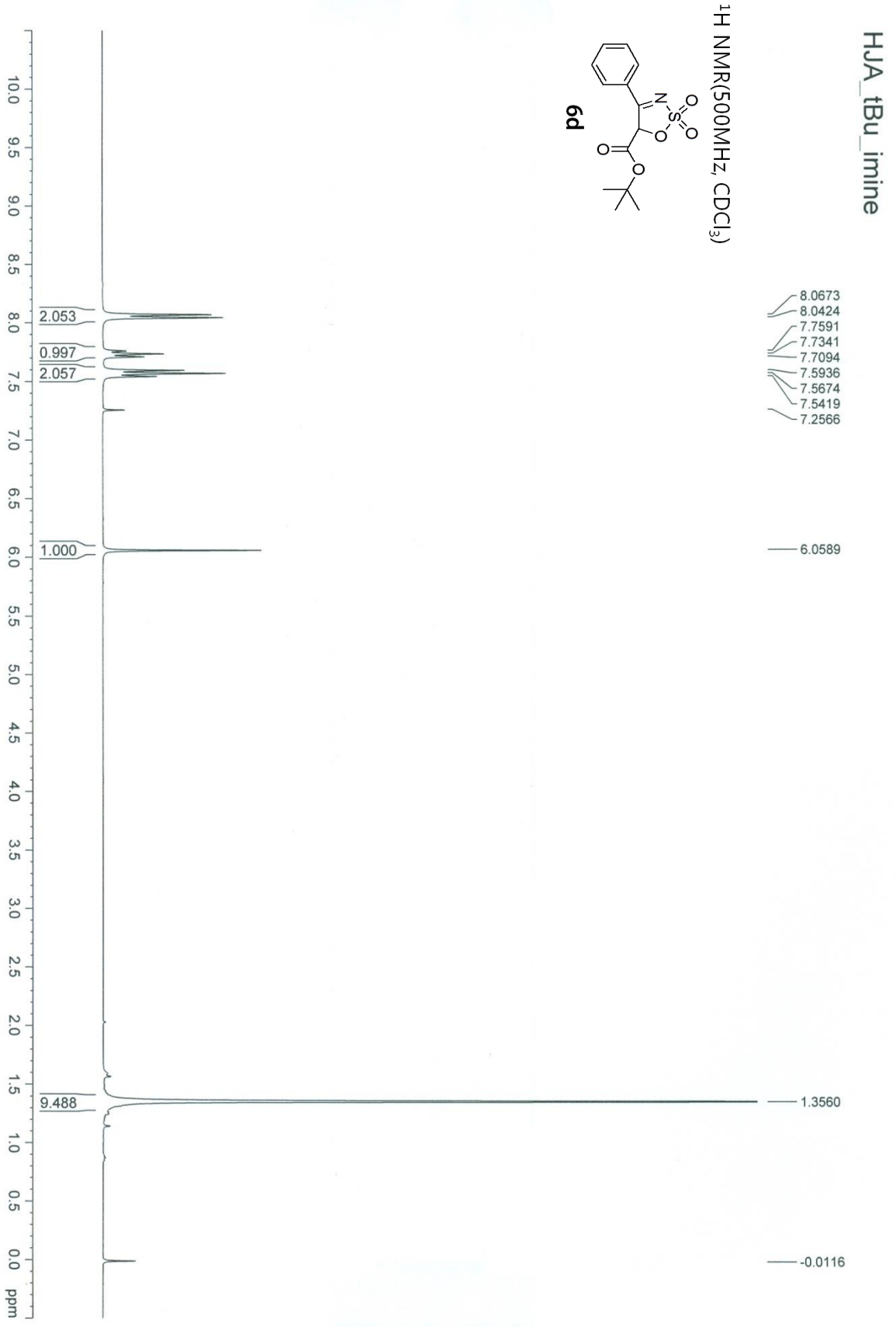
HJA_OBn_imine

^{13}C NMR(500MHz, $CDCl_3$)



6c

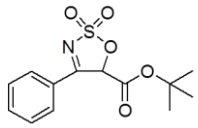
NAME	HJA_OBn_imine
EXPNO	2
PROCNO	1
Date_	20110208
Time	15.16
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	512
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	1290.2
DW	14.200 usec
DE	6.00 usec
TE	295.8 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


HJA_tBu_imine
^{1}H NMR(500MHz, CDCl$_3$)
6d
8.0673
8.0424
7.7591
7.7341
7.7094
7.5936
7.5674
7.5419
7.2566
6.0589
1.3560
-0.0116
2.053
0.997
2.057
1.000
9.488
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 ppm

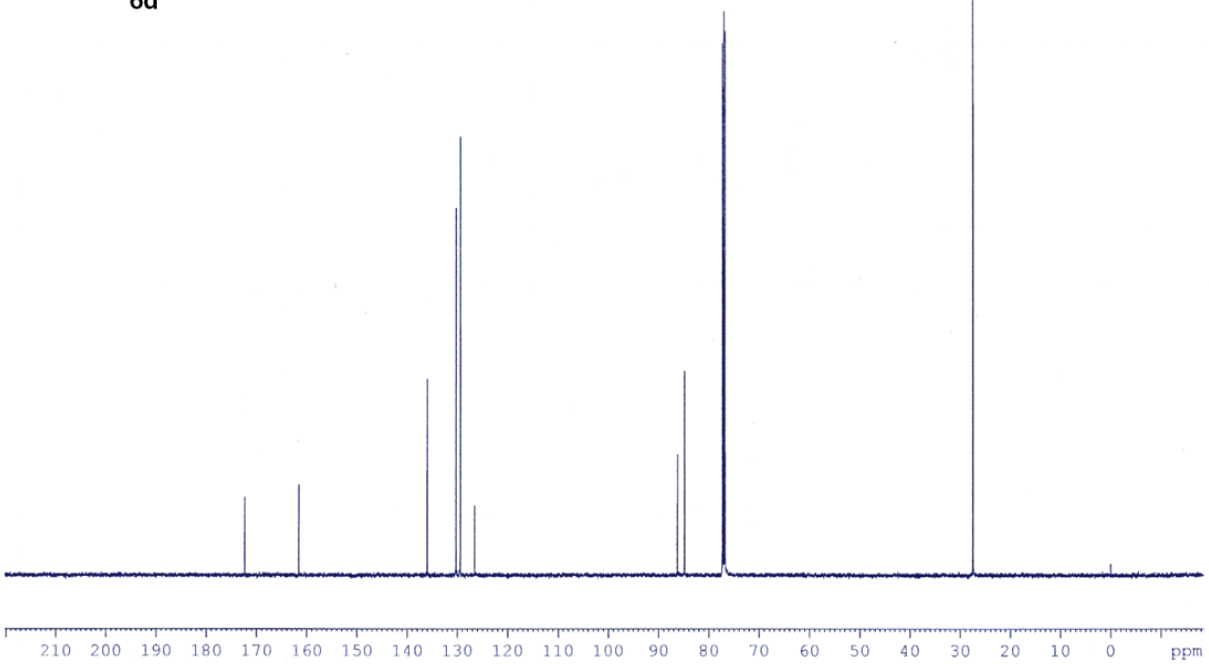
HJA_tBU

172.3399
161.6010
136.0079
130.2733
129.3861
126.5544
86.2380
84.8595
77.3128
77.0581
76.8033
27.4910
0.0107

^{13}C NMR(500MHz, $CDCl_3$)



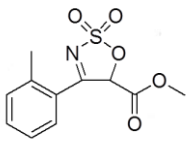
6d




```
NAME              HJA_tBU
EXPNO                   1
PROCNO                  1
Date_            20110208
Time                14.30
INSTRUM             spect
PROBHD   5 mm DUL 13C-1
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                   512
DS                     2
SWH            35211.270 Hz
FIDRES         0.537281 Hz
AQ             0.9306754 sec
RG                   114
DW                14.200 usec
DE                 6.00 usec
TE                295.7 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                  8.00 usec
PL1                 1.40 dB
PL1W         70.60439301 W
SFO1        125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2             100.00 usec
PL2                -1.90 dB
PL12               16.00 dB
PL13               19.00 dB
PL2W         27.23316002 W
PL12W         0.44167015 W
PL13W         0.22135943 W
SFO2        500.1320005 MHz
SI                 32768
SF          125.7577890 MHz
WDW                EM
SSB                 0
LB                1.00 Hz
GB                  0
PC                1.40
```

KJA-2-Me-carbo-Imine

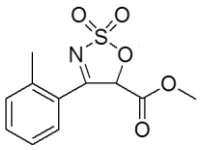
^{1}H NMR(500MHz, $CDCl_3$)



6e

KJA_2_Me_carbo_Imine

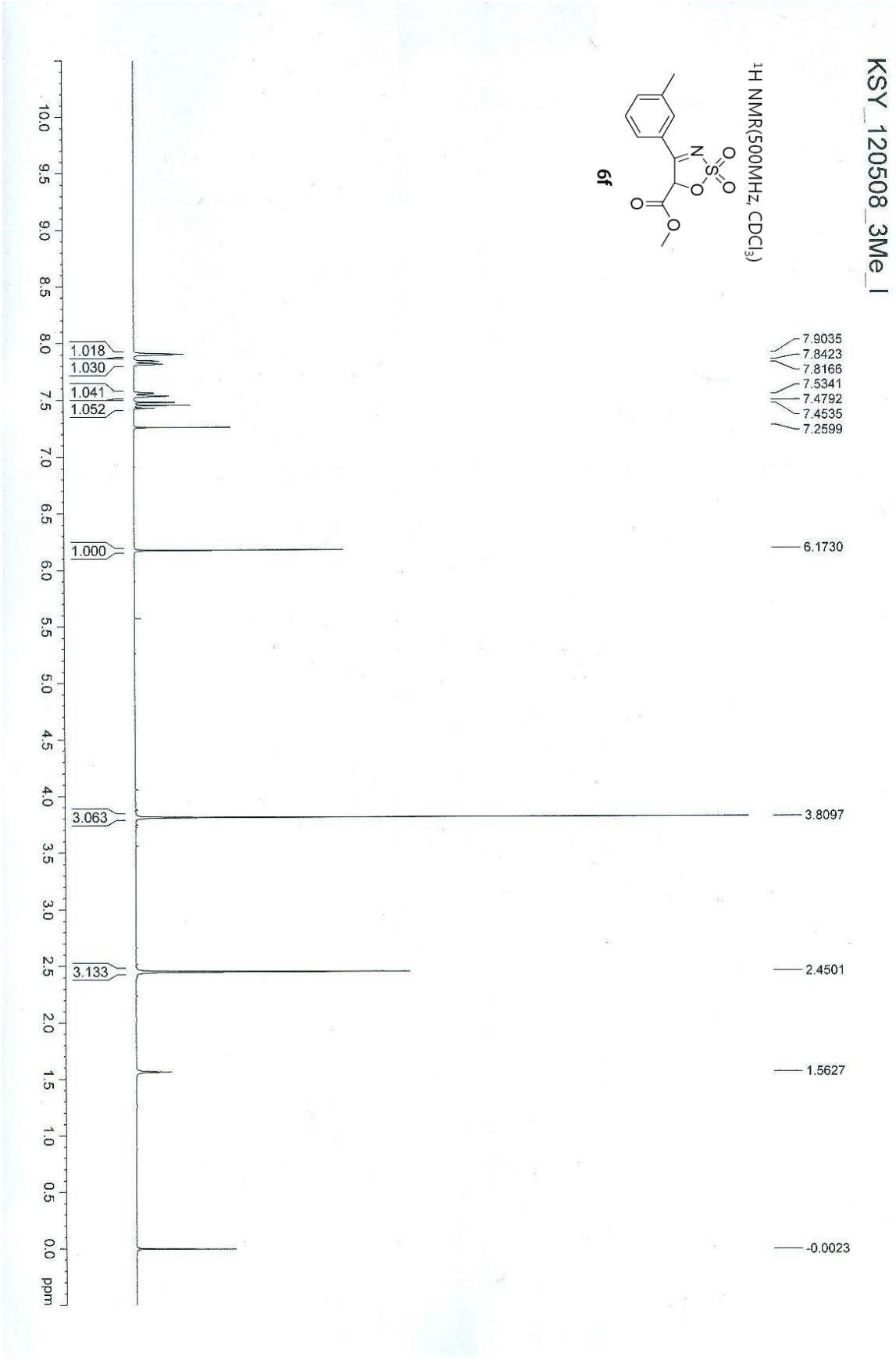
^{13}C NMR(500MHz, $CDCl_3$)

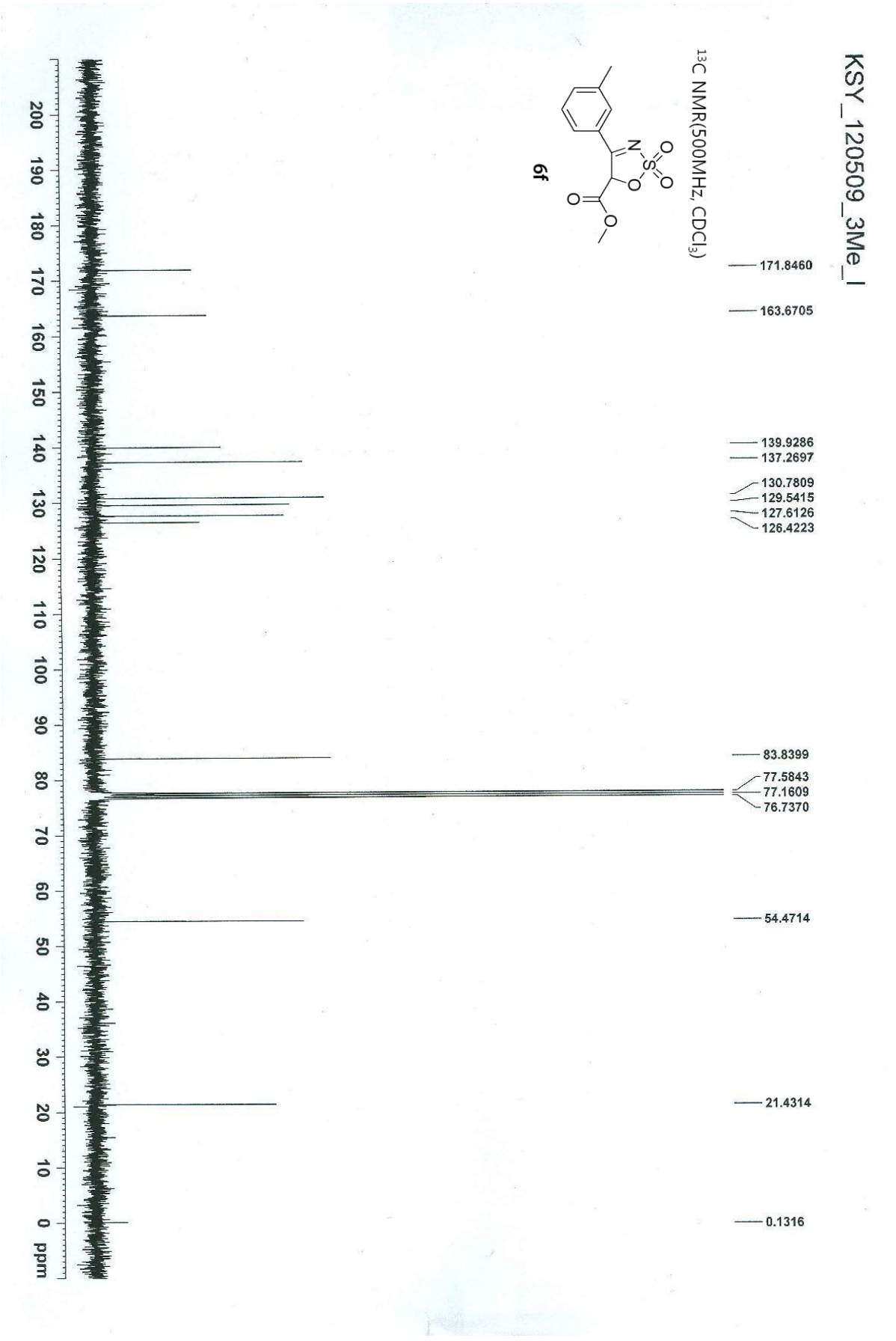


6e

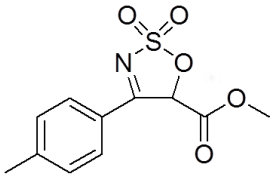
171.7252
163.4027
142.7674
134.7924
133.1306
130.8871
126.5314
125.1652
84.5772
77.3028
77.0488
76.7939
54.2237
22.9167
0.0021

NAME	KJA_2_Me_carbo_Imine
EXPNO	1
PROCNO	1
Date_	20130926
Time	1.01
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	812.7
DW	14.200 usec
DE	6.00 usec
TE	297.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


KSY_120508_3Me_I
^{1}H NMR(500MHz, CDCl$_3$)
6f
7.9035
7.8423
7.8166
7.5341
7.4792
7.4535
7.2599
6.1730
3.8097
2.4501
1.5627
-0.0023
1.018
1.030
1.041
1.052
1.000
3.063
3.133
ppm


KSY_120509_3Me_I
^{13}C NMR(500MHz, CDCl$_3$)
6f
171.8460
163.6705
139.9286
137.2697
130.7809
129.5415
127.6126
126.4223
83.8399
77.5843
77.1609
76.7370
54.4714
21.4314
0.1316
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

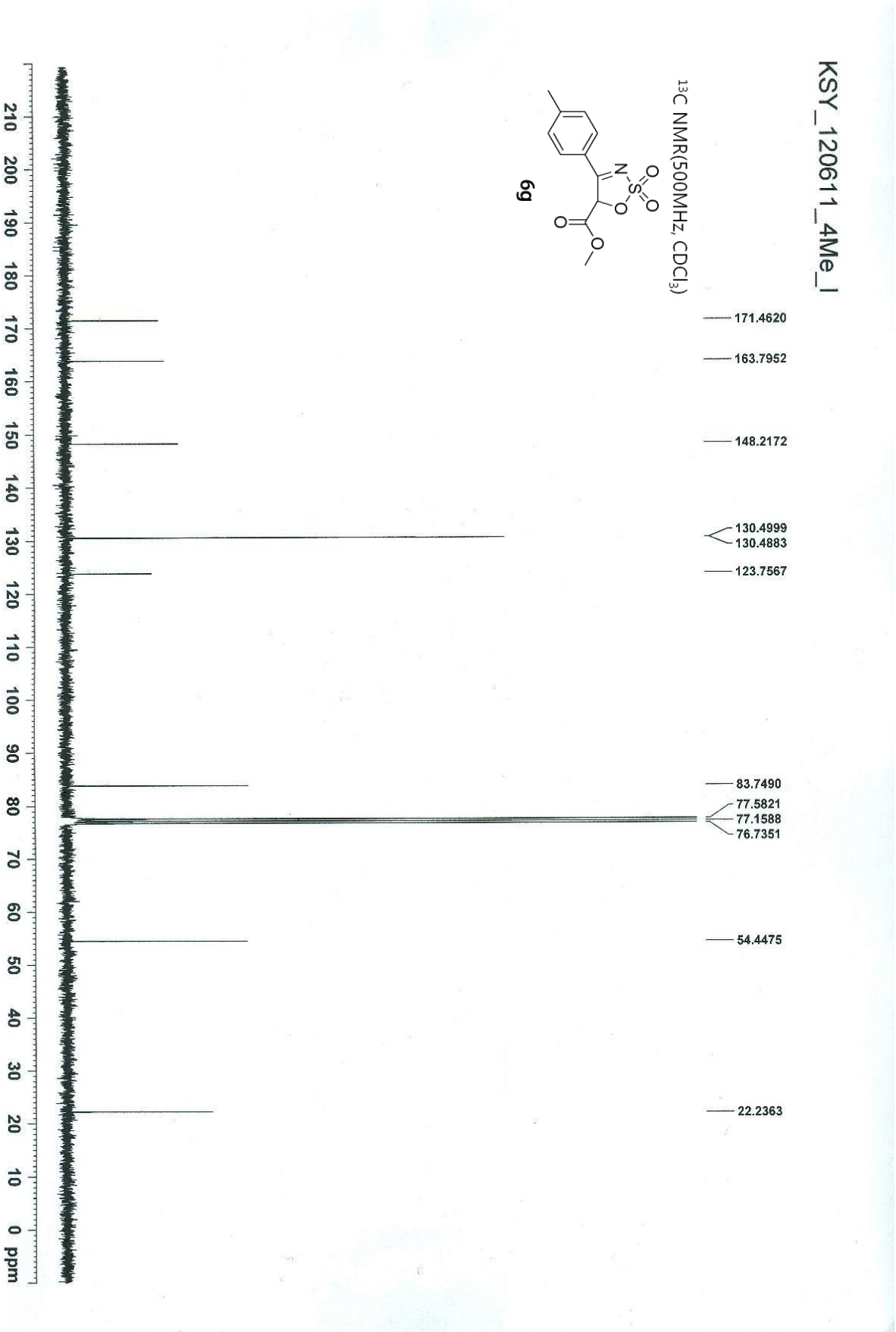
^{1}H NMR(500MHz, $CDCl_3$)



6g

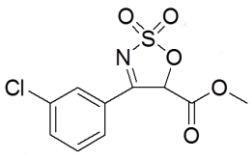
NAME LHK_120305_4Me_imine
EXPNO 1
PROCNO 1
Date_ 20120305
Time 15.53
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 574.7
DW 66.600 usec
DE 6.00 usec
TE 298.8 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300136 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00


KSY_120611_4Me_I
^{13}C NMR(500MHz, CDCl$_3$)
6g
171.4620
163.7952
148.2172
130.4999
130.4883
123.7567
83.7490
77.5821
77.1588
76.7351
54.4475
22.2363
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

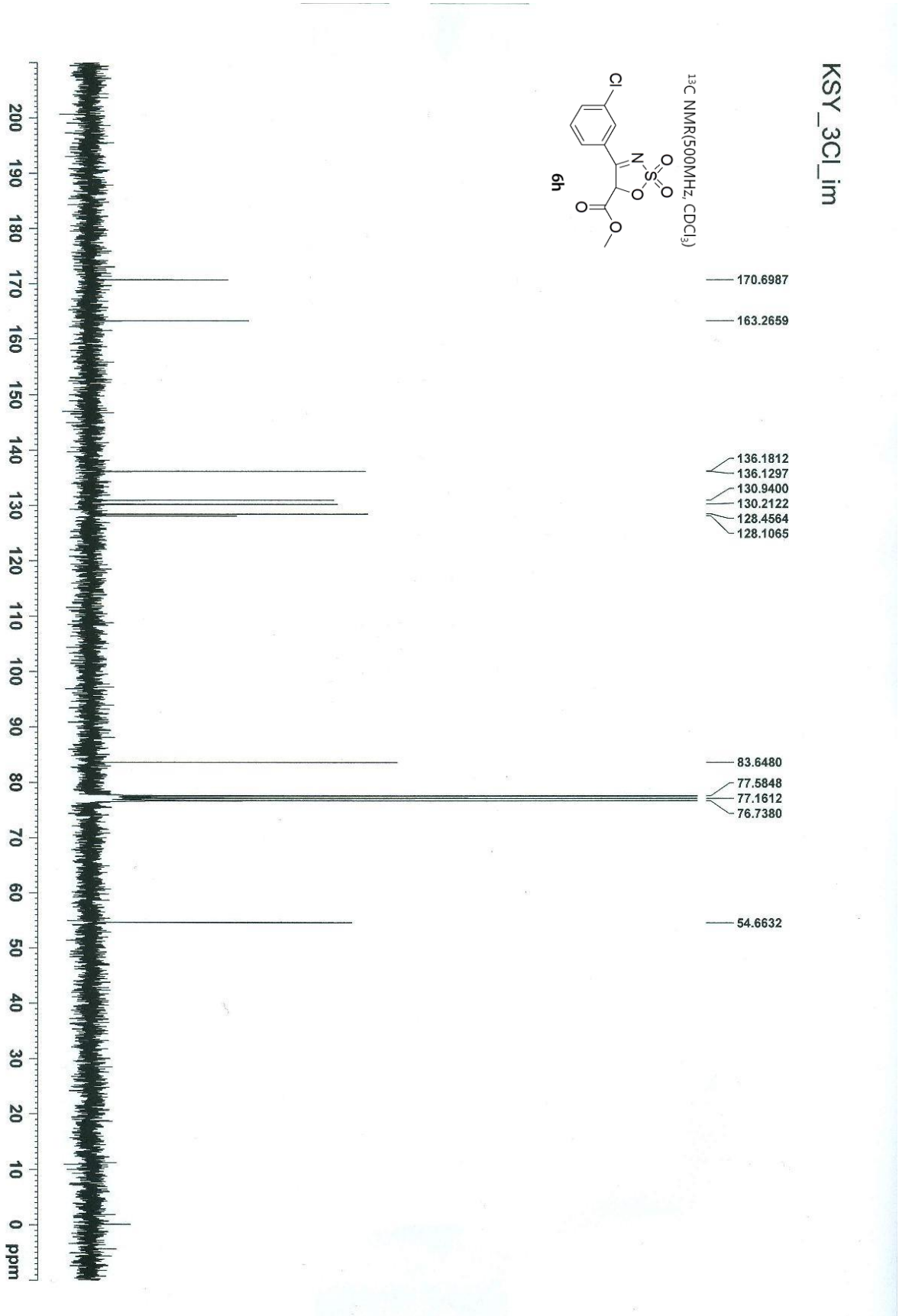
KSY_120509_Cl_I

^{1}H NMR(500MHz, $CDCl_3$)



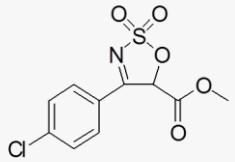
6h


```
NAME      KSY_120509_Cl_I
EXPNO             1
PROCNO            1
Date_         20120509
Time             16.28
INSTRUM          spect
PROBHD   5 mm DUL 13C-1
PULPROG          zg30
TD             65536
SOLVENT         CDCl3
NS                4
DS                2
SWH          7507.507 Hz
FIDRES       0.114555 Hz
AQ          4.3648143 sec
RG              574.7
DW           66.600 usec
DE            6.00 usec
TE            300.2 K
D1          1.00000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1             9.80 usec
PL1           -1.90 dB
PL1W       27.23316002 W
SFO1       500.1332508 MHz
SI            32768
SF         500.1300136 MHz
WDW               EM
SSB               0
LB             0.30 Hz
GB                0
PC             1.00
```


KSY_3Cl_im
^{13}C NMR(500MHz, CDCl$_3$)
6h
170.6987
163.2659
136.1812
136.1297
130.9400
130.2122
128.4564
128.1065
83.6480
77.5848
77.1612
76.7380
54.6632
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

LHK_120305_4Cl_imine

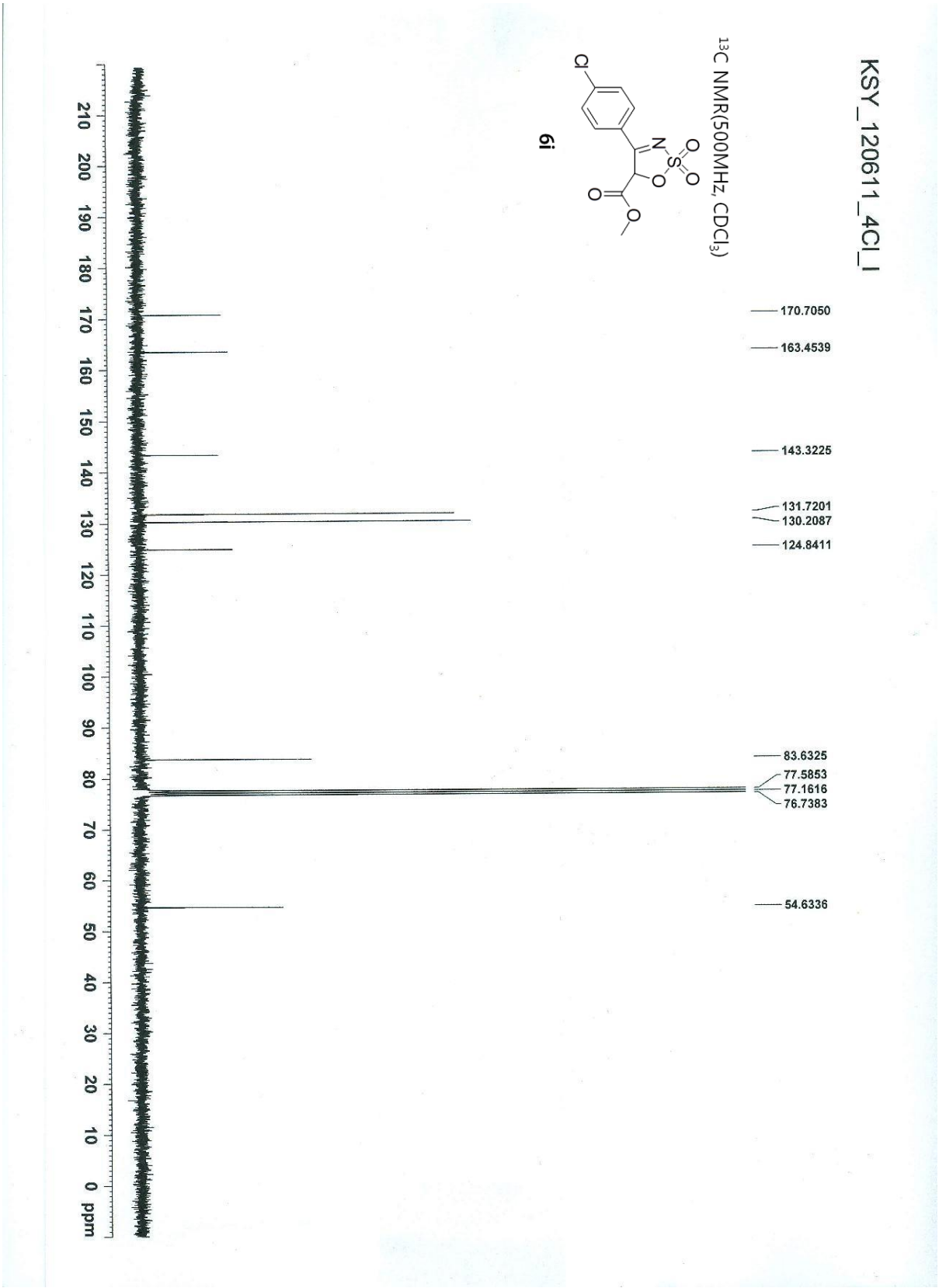
^{1}H NMR(500MHz, $CDCl_3$)



6i

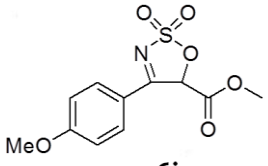
NAME LHK_120305_4Cl_imine
EXPNO 1
PROCNO 1
Date_ 20120305
Time 15.48
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 574.7
DW 66.600 usec
DE 6.00 usec
TE 298.8 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300136 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

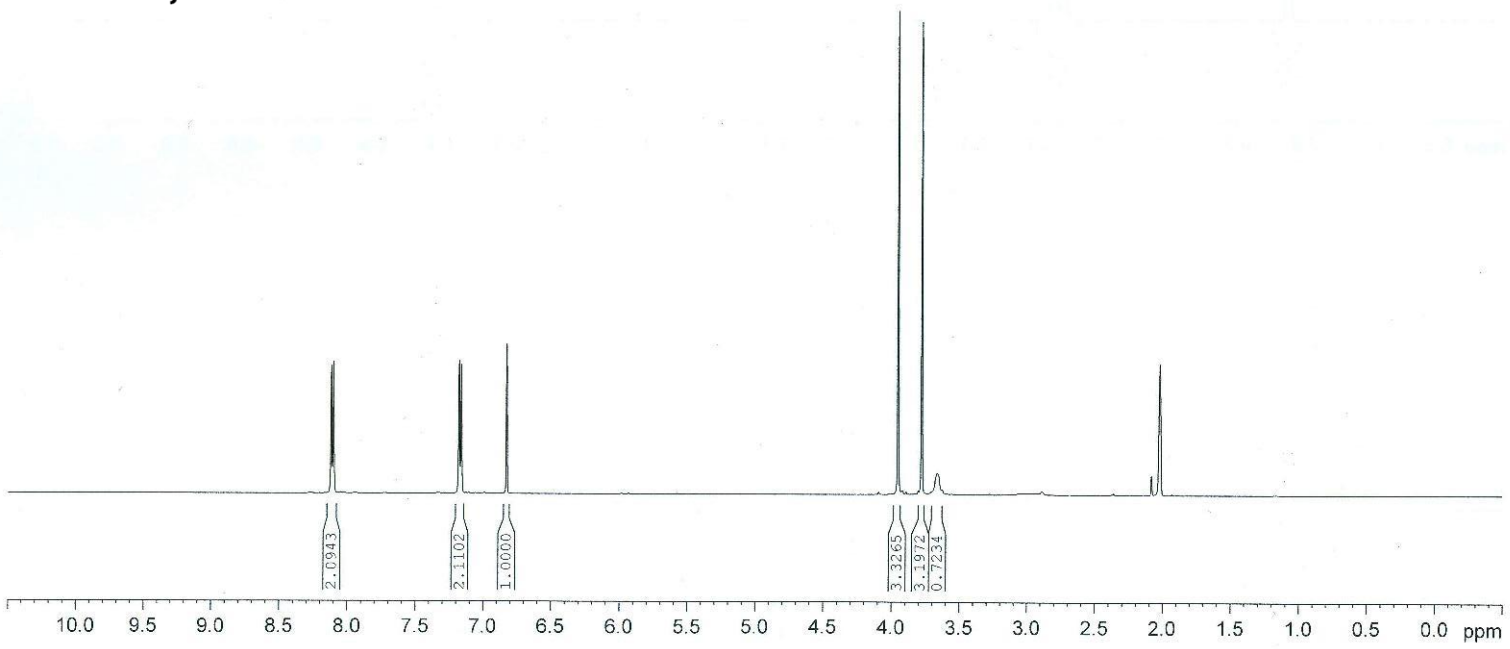

KSY_120611_4Cl_I
^{13}C NMR(500MHz, CDCl$_3$)
6i
Cl
O
O
O
N
S
O
O
O
170.7050
163.4539
143.3225
131.7201
130.2087
124.8411
83.6325
77.5853
77.1616
76.7383
54.6336
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

KJA-4-OMe-car-lm

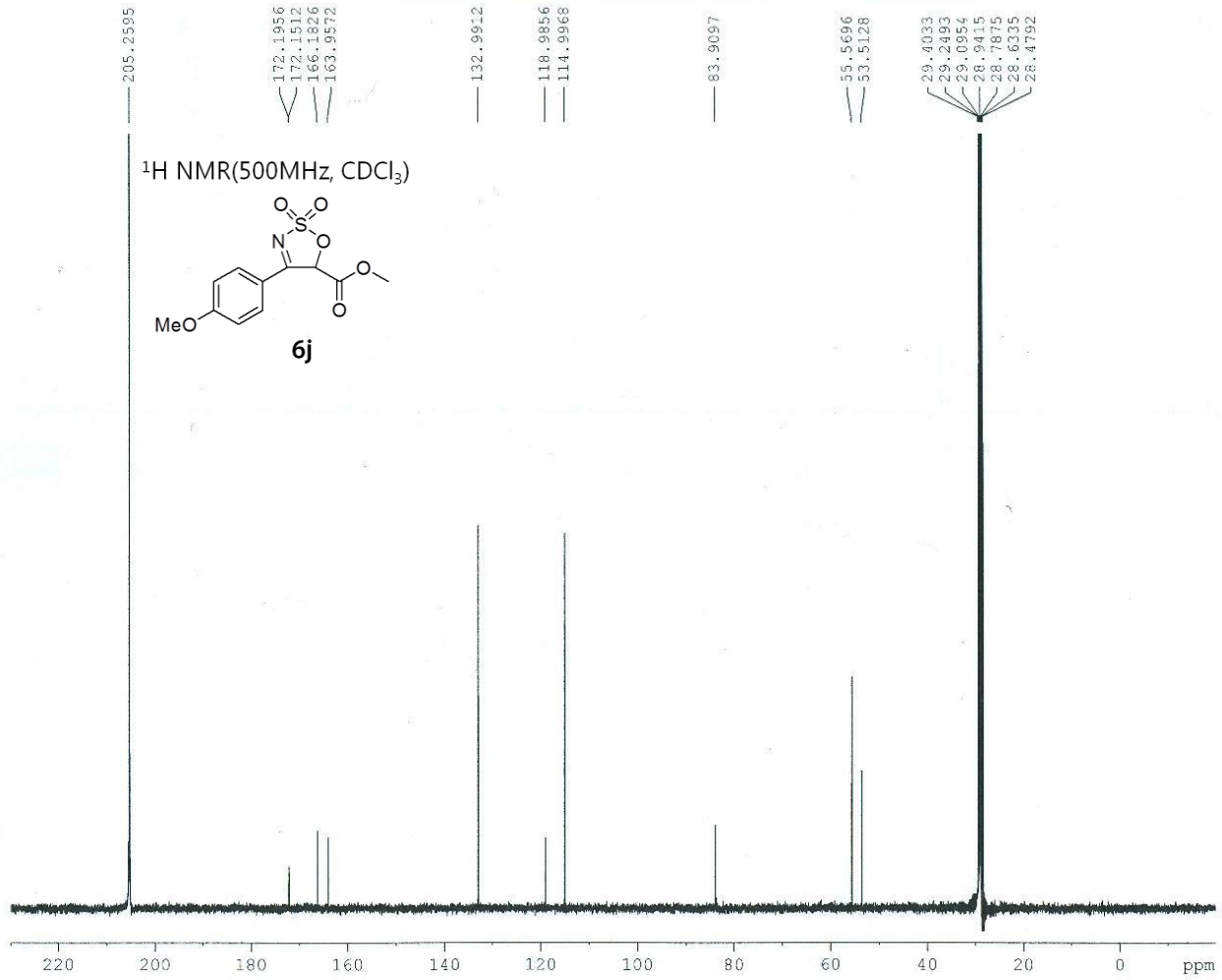
^{1}H NMR(500MHz, $CDCl_3$)



6j



KJA_4_OMe_car_im



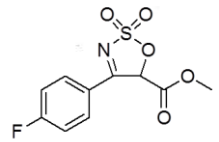
^{1}H NMR(500MHz, $CDCl_3$)

6j

```
NAME            KJA_4_OMe_car_im
EXPNO                          1
PROCNO                         1
Date_                   20131210
Time                        1.16
INSTRUM                     spect
PROBHD   5 mm DUL 13C-1
PULPROG                   zgpg30
TD                         32768
SOLVENT                  Acetone
NS                            1000
DS                               2
SWH                  35211.270 Hz
FIDRES                1.074563 Hz
AQ                   0.4653698 sec
RG                        1149.4
DW                        14.200 usec
DE                         6.00 usec
TE                        298.9 K
D1                   2.00000000 sec
D11                  0.03000000 sec
TD0                            1

======== CHANNEL f1 ========
NUC1                         13C
P1                        8.00 usec
PL1                       1.40 dB
PL1W                70.60439301 W
SFO1               125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                  waltz16
NUC2                         1H
PCPD2                   100.00 usec
PL2                      -1.90 dB
PL12                     16.00 dB
PL13                     19.00 dB
PL2W                27.23316002 W
PL12W                0.44167015 W
PL13W                0.22135943 W
SFO2               500.1320005 MHz
SI                        32768
SF                 125.7577890 MHz
WDW                          EM
SSB                           0
LB                         1.00 Hz
GB                            0
PC                         1.40
```

LHK_120221_4-F imine

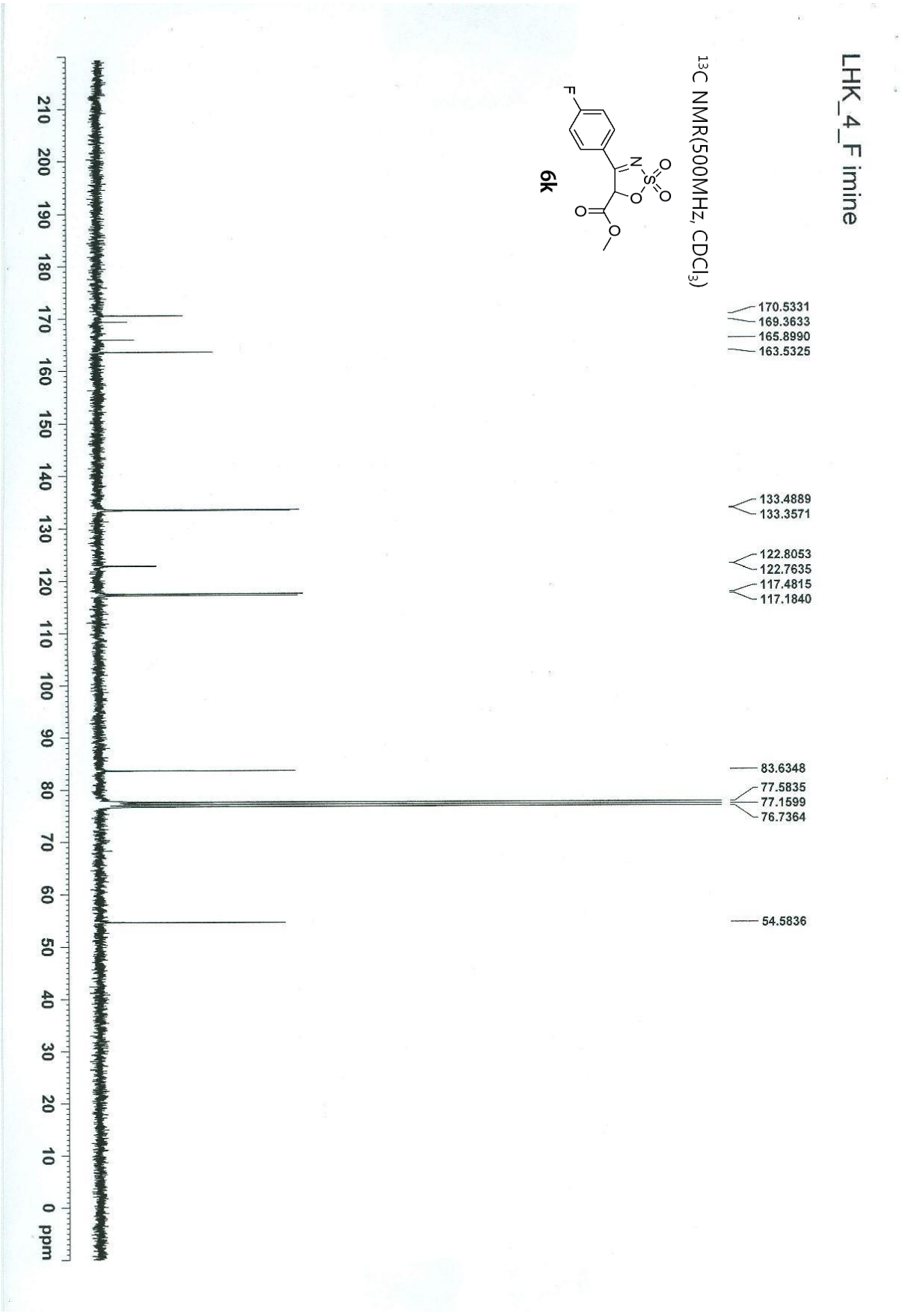
^{1}H NMR(500MHz, $CDCl_3$)



6k

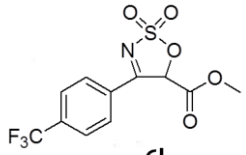
NAME LHK_120221_4-F imine
EXPNO 1
PROCNO 1
Date_ 20120222
Time 14.20
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 574.7
DW 66.600 usec
DE 6.00 usec
TE 298.7 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00


LHK_4_F imine
^{13}C NMR(500MHz, CDCl$_3$)
6k
170.5331
169.3633
165.8990
163.5325
133.4889
133.3571
122.8053
122.7635
117.4815
117.1840
83.6348
77.5835
77.1599
76.7364
54.5836
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

KJA-4-CF3-imine-1

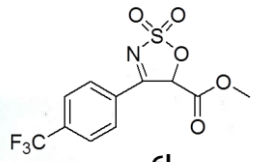
^{1}H NMR(500MHz, $CDCl_3$)



6l

KJA_4_CF3_imine

^{13}C NMR(500MHz, $CDCl_3$)

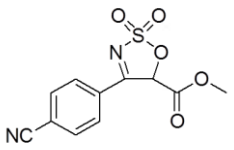


6l

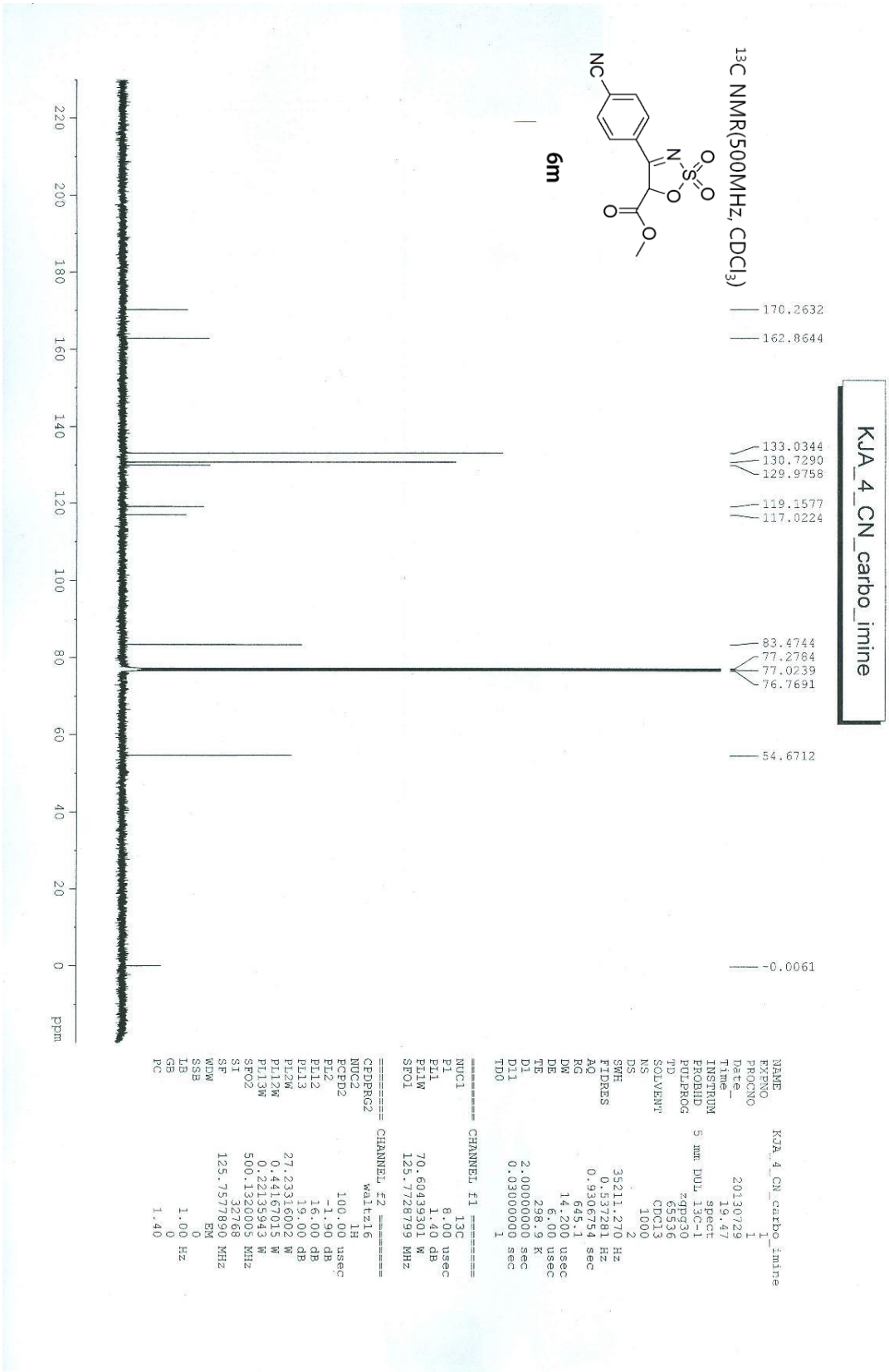

```
NAME          KJA_4_CF3_imine
EXPNO                       1
PROCNO                      1
Date_              20130912
Time                    3.09
INSTRUM                spect
PROBHD   5 mm DUL 13C-1
PULPROG             zgpg30
TD                   65536
SOLVENT              CDCl3
NS                    3000
DS                       2
SWH              35211.270 Hz
FIDRES           0.537281 Hz
AQ               0.9306754 sec
RG                     512
DW                14.200 usec
DE                 6.00 usec
TE                297.5 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                   13C
P1                  8.00 usec
PL1                 1.40 dB
PL1W         70.60439301 W
SFO1        125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                   1H
PCPD2             100.00 usec
PL2                -1.90 dB
PL12               16.00 dB
PL13               19.00 dB
PL2W         27.23316002 W
PL12W         0.44167015 W
PL13W         0.22135943 W
SFO2        500.1320005 MHz
SI                 32768
SF          125.7577890 MHz
WDW                   EM
SSB                    0
LB                1.00 Hz
GB                     0
PC                1.40
```

KJA-4-CN-carbo-imine

^{1}H NMR(500MHz, $CDCl_3$)

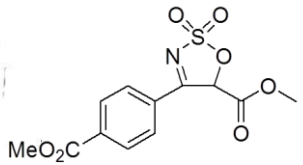


6m


KJA_4_CN_carbo_imine
13C NMR(500MHz, CDCl3)
6m
NC
170.2632
162.8644
133.0344
130.7290
129.9758
119.1577
117.0224
83.4744
77.2784
77.0239
76.7691
54.6712
-0.0061
ppm
220
200
180
160
140
120
100
80
60
40
20
0
NAME KJA_4_CN_carbo_imine
EXPNO 1
PROCNO 1
Date_ 20130729
Time_ 19.47
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1000
DS 2
SWH 35211.270 Hz
FIDRES 0.537281 Hz
AQ 0.9306754 sec
RG 645.1
DW 14.200 usec
DE 6.00 usec
TE 298.9 K
D1 2.00000000 sec
D11 0.03000000 sec
TD0 1
CHANNEL f1
NUC1 13C
P1 8.00 usec
PL1 1.40 dB
PL1W 70.60439301 W
SFO1 125.7728799 MHz
CHANNEL f2
CPDPRG2 waltz16
NUC2 1H
PCPD2 100.00 usec
PL2 -1.90 dB
PL12 16.00 dB
PL13 19.00 dB
PL2W 27.23316002 W
PL12W 0.44167015 W
PL13W 0.22135943 W
SFO2 500.1320005 MHz
SI 32768
SF 125.7577890 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

KJA-4-co2me-car-imine

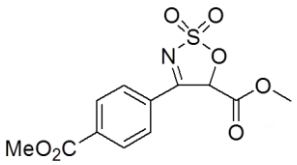
^{1}H NMR(500MHz, $CDCl_3$)



6n

KJA_4_CO2Me_carbo_Im

^{13}C NMR(500MHz, $CDCl_3$)

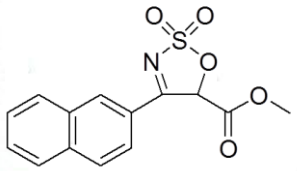


6n

NAME	KJA_4_CO2Me_carbo_Im
EXPNO	1
PROCNO	1
Date_	20131119
Time	22.32
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	298.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

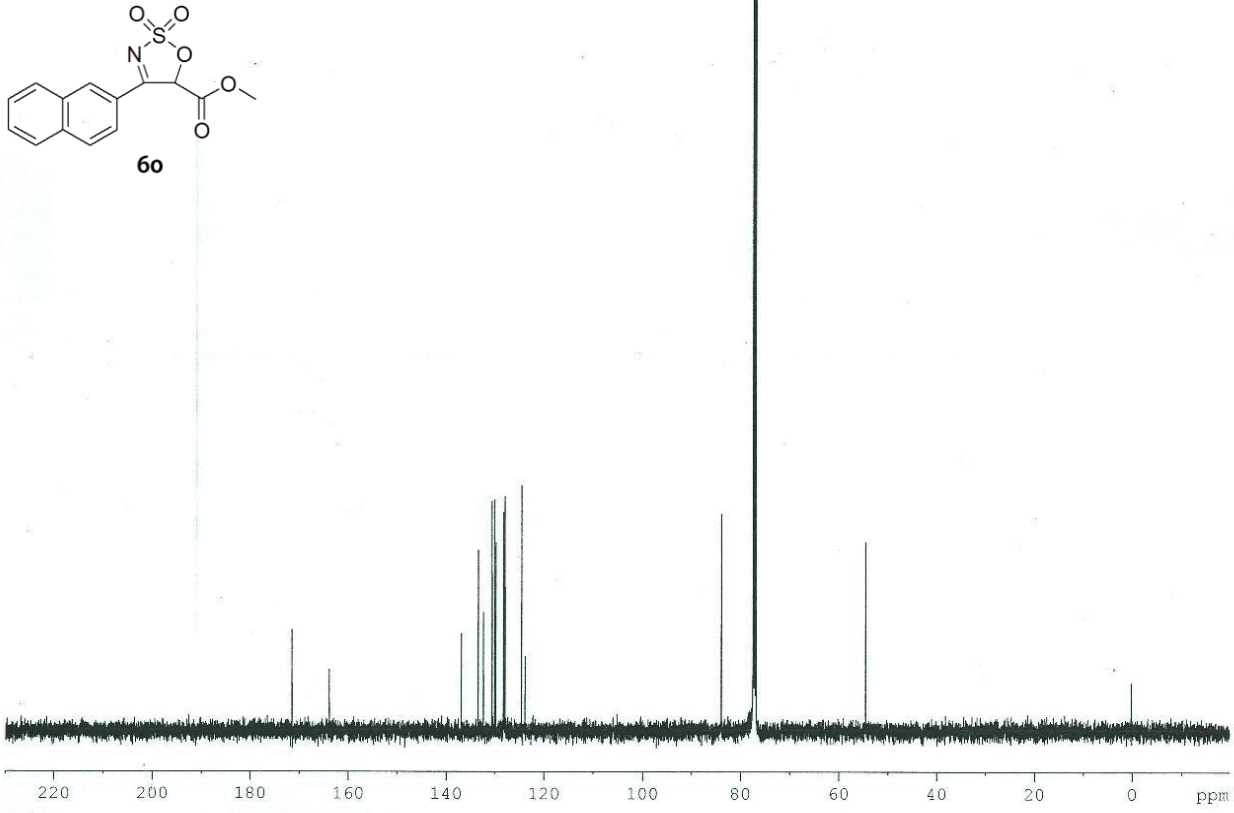
KJA-naphthon-imine

^{1}H NMR(500MHz, $CDCl_3$)



6o

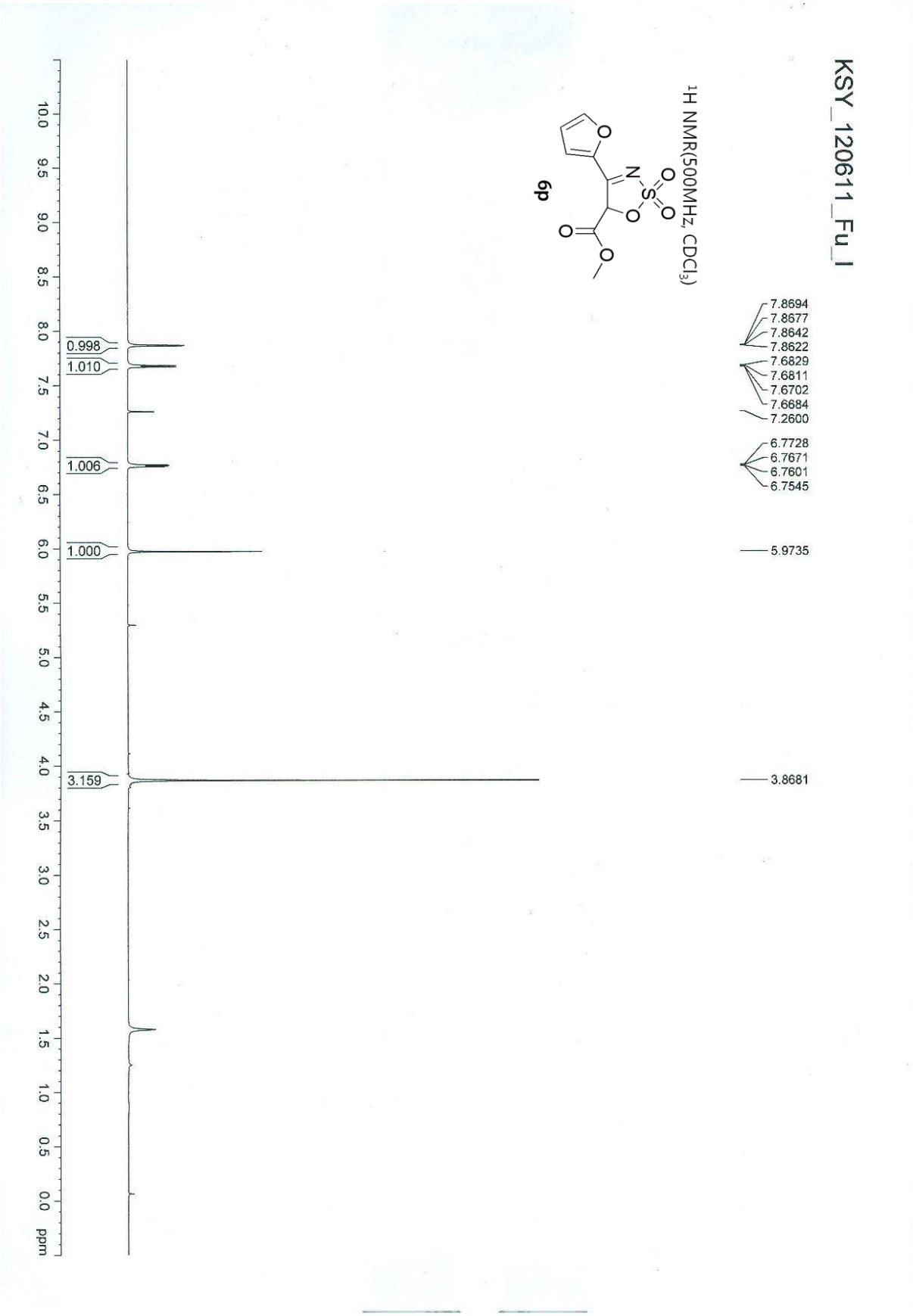
KJA_naphthon_imine

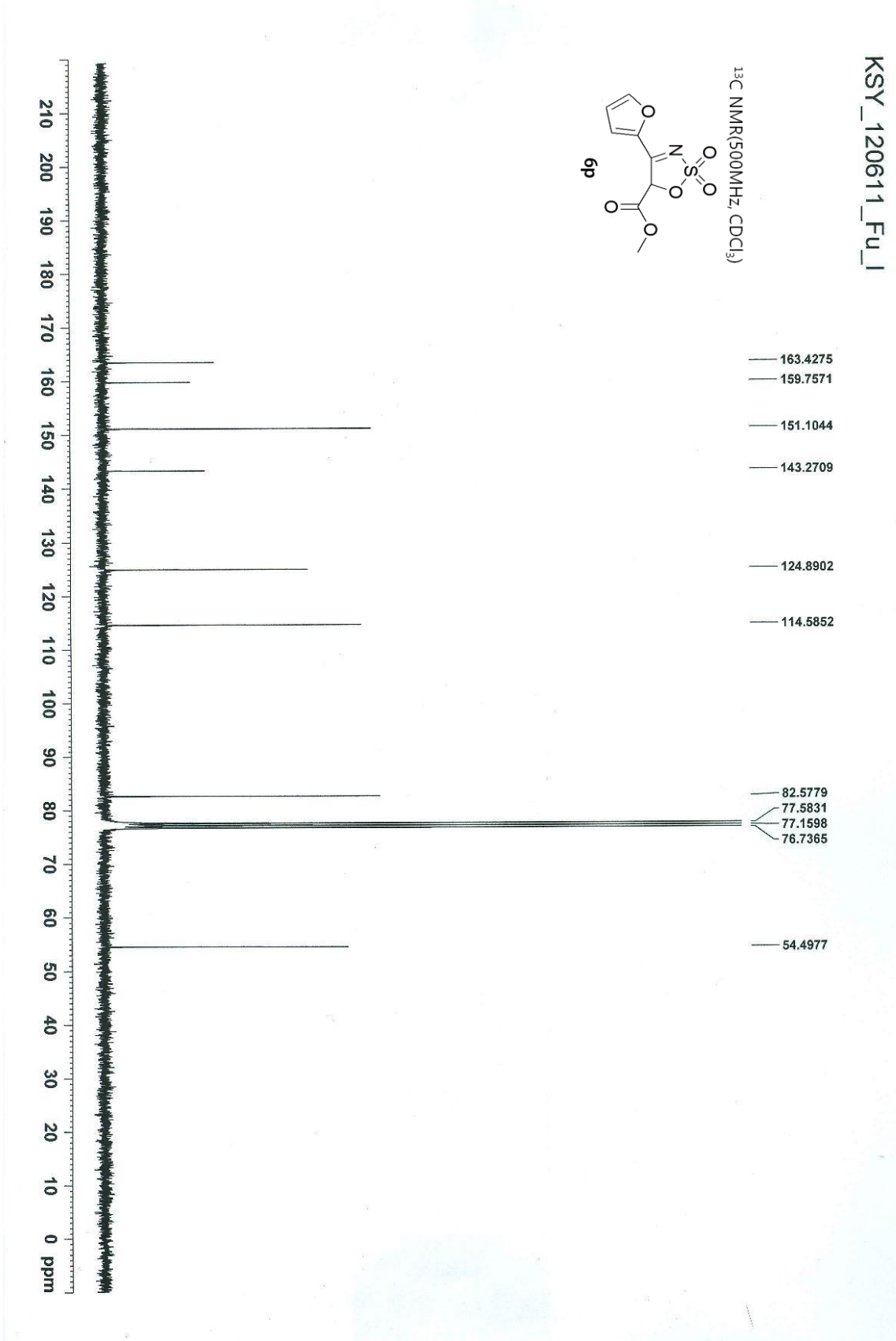


^{13}C NMR(500MHz, $CDCl_3$)

6o

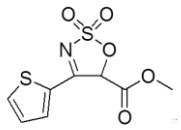
NAME	KJA_naphthon_imine
EXPNO	1
PROCNO	1
Date_	20130802
Time	1.07
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	299.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577712 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


KSY_120611_Fu_I
^{1}H NMR(500MHz, CDCl$_3$)
6p
7.8694
7.8677
7.8642
7.8622
7.6829
7.6811
7.6702
7.6684
7.2600
6.7728
6.7671
6.7601
6.7545
5.9735
3.8681
0.998
1.010
1.006
1.000
3.159
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 ppm


KSY_120611_Fu_I
^{13}C NMR(500MHz, CDCl$_3$)
6p
163.4275
159.7571
151.1044
143.2709
124.8902
114.5852
82.5779
77.5831
77.1598
76.7365
54.4977
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

KSY_Thi_Im

^{1}H NMR(500MHz, $CDCl_3$)

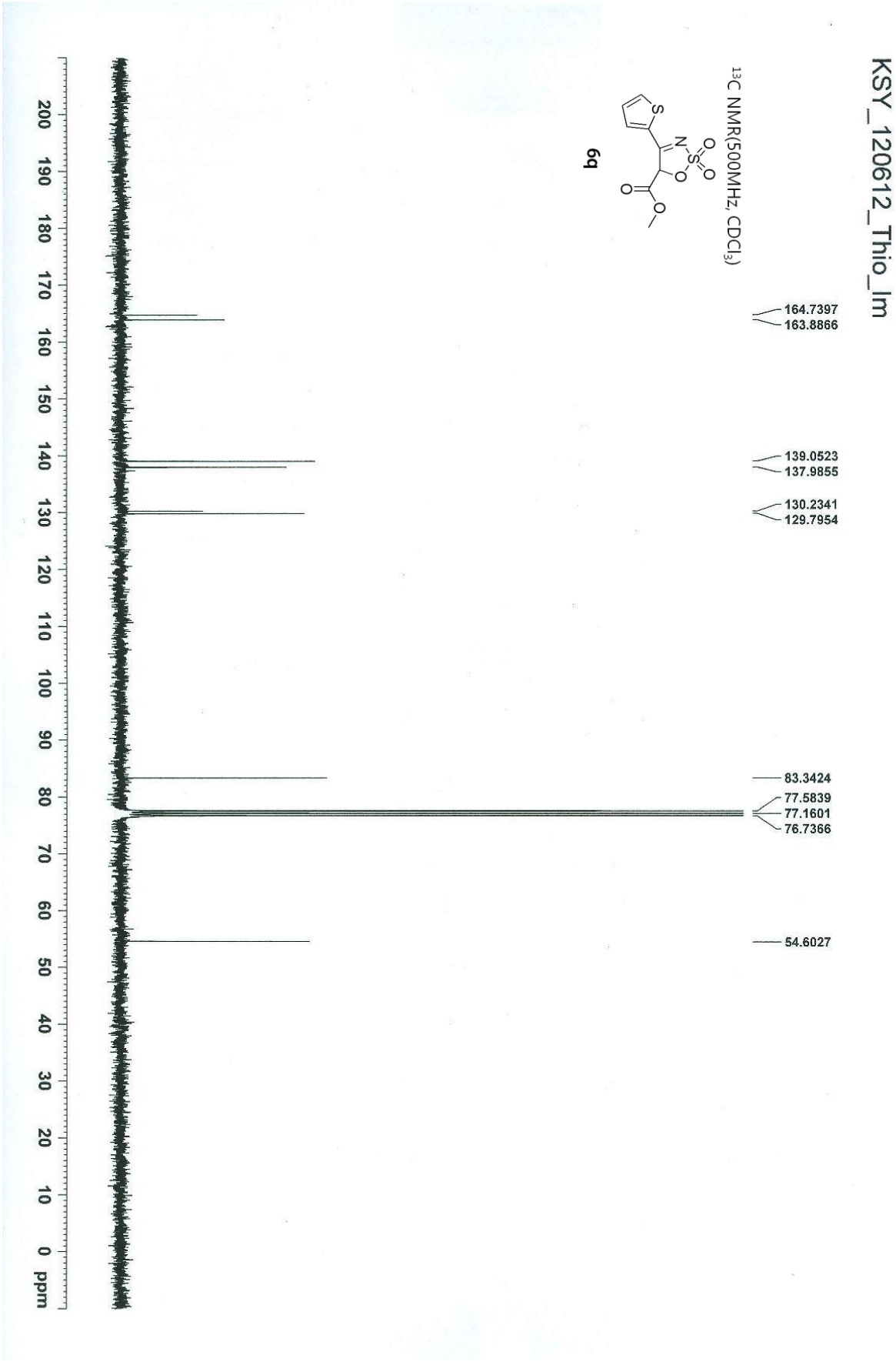


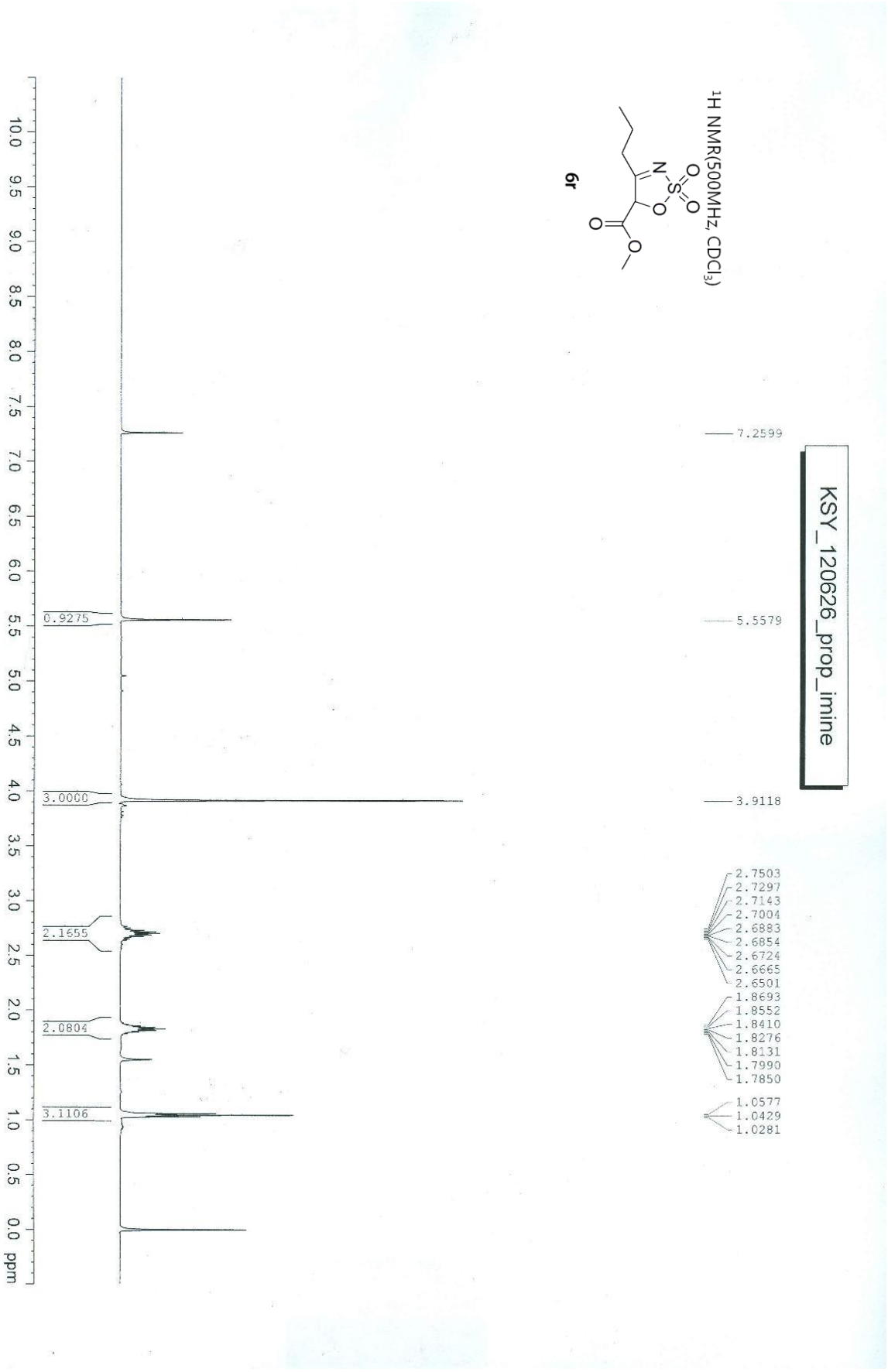
6q

NAME	KSY_Thi_Im
EXPNO	1
PROCNO	1
Date_	20120612
Time	14.34
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	4
DS	2
SWH	7507.507 Hz
FIDRES	0.114555 Hz
AQ	4.3648143 sec
RG	322.5
DW	66.600 usec
DE	6.00 usec
TE	300.6 K
D1	1.00000000 sec
TD0	1

======== CHANNEL f1 ========

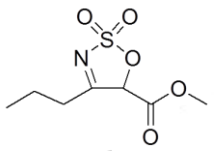
NUC1	1H
P1	9.80 usec
PL1	-1.90 dB
PL1W	27.23316002 W
SFO1	500.1332508 MHz
SI	32768
SF	500.1300000 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00


KSY_120612_Thio_Im
^{13}C NMR(500MHz, CDCl$_3$)
6q
164.7397
163.8866
139.0523
137.9855
130.2341
129.7954
83.3424
77.5839
77.1601
76.7366
54.6027
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm


KSY_120626_prop_imine
^{1}H NMR(500MHz, CDCl$_3$)
6r
7.2599
5.5579
3.9118
2.7503
2.7297
2.7143
2.7004
2.6883
2.6854
2.6724
2.6665
2.6501
1.8693
1.8552
1.8410
1.8276
1.8131
1.7990
1.7850
1.0577
1.0429
1.0281
0.9275
3.0000
2.1655
2.0804
3.1106
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 ppm

KSY_120626_prop_im

^{13}C NMR(500MHz, $CDCl_3$)

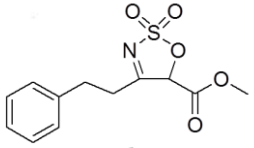


6r

NAME	KSY_120626_prop_im
EXPNO	1
PROCNO	1
Date_	20120627
Time	11.11
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1024
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	5792.6
DW	14.200 usec
DE	6.00 usec
TE	300.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577709 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

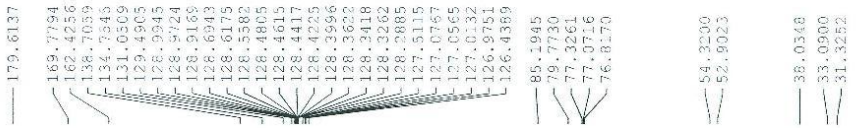
KJA-pro-carbo-imine-puri

^{1}H NMR(500MHz, $CDCl_3$)

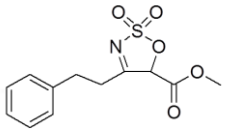


6s

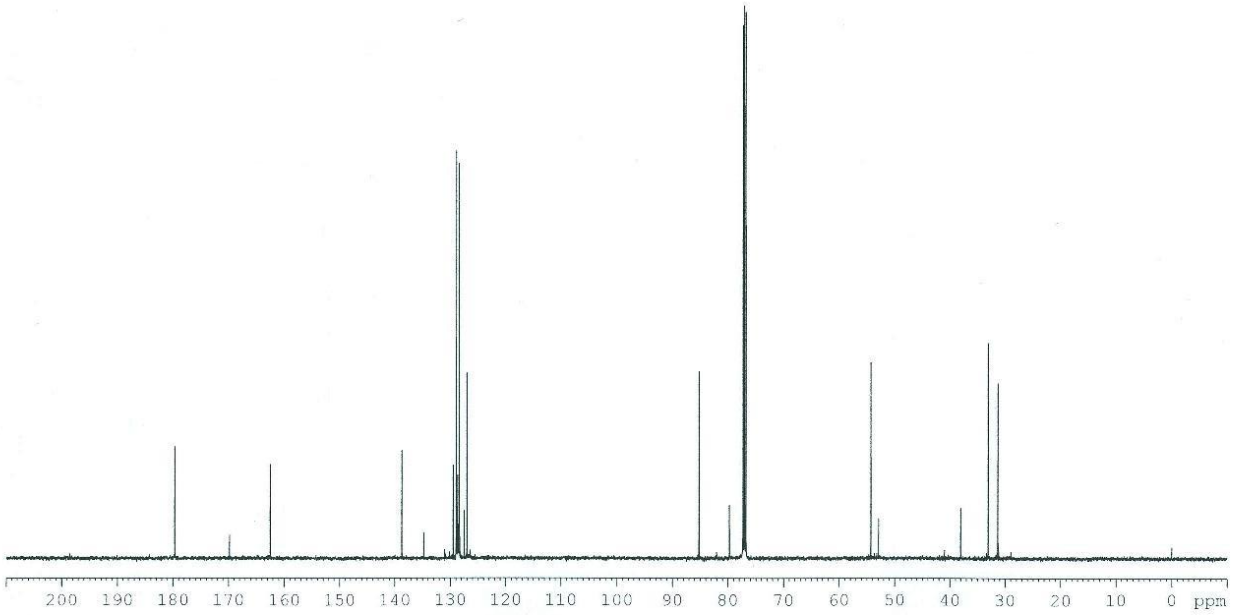
KJA_phene_imine_pu_0516



^{13}C NMR(500MHz, $CDCl_3$)



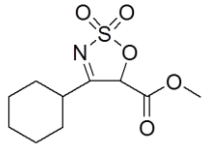
6s



NAME	KJA_phene_imine_pu_0516
EXPNO	1
PROCNO	1
Date_	20140519
Time	3.37
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	37593.984 Hz
FIDRES	1.147277 Hz
AQ	0.4358777 sec
RG	1625.5
DW	13.300 usec
DE	6.00 usec
TE	296.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

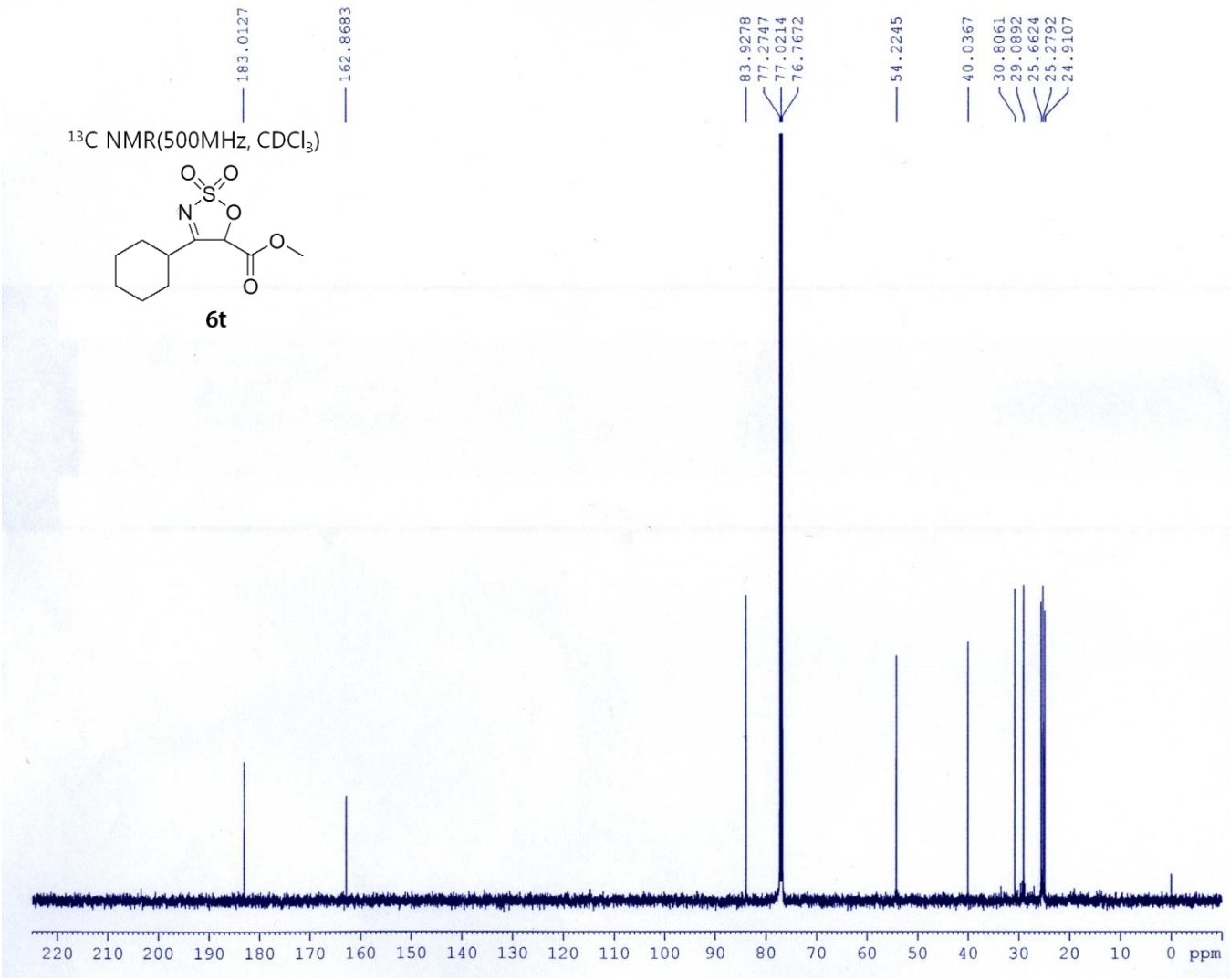
KJA-cyclo-imine(140311)

^{1}H NMR(500MHz, $CDCl_3$)



6t

KJA_cyclo_im_0327

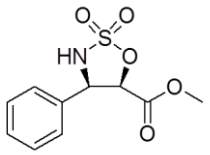


^{13}C NMR(500MHz, $CDCl_3$)

6t

NAME	KJA_cyclo_im_0327
EXPNO	2
PROCNO	1
Date_	20140329
Time	7.41
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	2896.3
DW	14.200 usec
DE	6.00 usec
TE	300.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

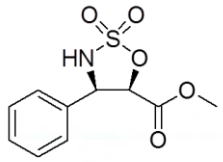
^{1}H NMR(500MHz, $CDCl_3$)



(*R,R*)-7a

KJA_ph_carbo_NH

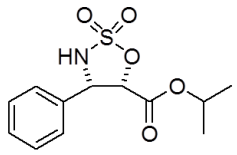
^{13}C NMR(500MHz, $CDCl_3$)



(*R,R*)-7a

NAME	KJA_ph_carbo_NH_S,S
EXPNO	1
PROCNO	1
Date_	20140306
Time	10.45
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDC13
NS	2000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	3251
DW	14.200 usec
DE	6.00 usec
TE	297.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

^{1}H NMR(500MHz, $CDCl_3$)



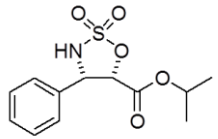
(*S,S*)-7b

NAME HJA_iPr_NH
EXPNO 2
PROCNO 1
Date_ 20110214
Time 13.53
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 114
DW 66.600 usec
DE 6.00 usec
TE 294.6 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300144 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

HJA_iPr_NH

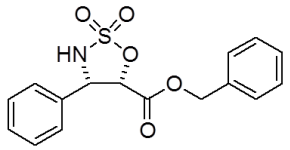
^{13}C NMR(500MHz, $CDCl_3$)



(*S,S*)-7b

NAME	HJA_iPr_NH_C	
EXPNO	2	
PROCNO	1	
Date_	20110214	
Time	14.25	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	65536	
SOLVENT	CDCl3	
NS	512	
DS	2	
SWH	35211.270	Hz
FIDRES	0.537281	Hz
AQ	0.9306754	sec
RG	512	
DW	14.200	usec
DE	6.00	usec
TE	295.4	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

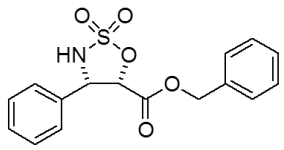
^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7c


```
NAME          HJA_OBn_R
EXPNO             1
PROCNO            1
Date_         20110211
Time             13.36
INSTRUM          spect
PROBHD   5 mm DUL 13C-1
PULPROG          zg30
TD             65536
SOLVENT          CDCl3
NS                8
DS                2
SWH          7507.507 Hz
FIDRES       0.114555 Hz
AQ           4.3648143 sec
RG               71.8
DW            66.600 usec
DE             6.00 usec
TE             295.7 K
D1          1.00000000 sec
TD0               1

======== CHANNEL f1 ========
NUC1              1H
P1             9.80 usec
PL1            -1.90 dB
PL1W       27.23316002 W
SFO1       500.1332508 MHz
SI             32768
SF         500.1300000 MHz
WDW               EM
SSB               0
LB             0.30 Hz
GB                0
PC             1.00
```

^{13}C NMR(500MHz, $CDCl_3$)

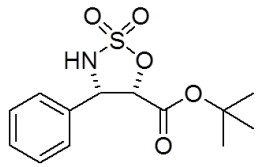


(*S,S*)-7c


```
NAME          HJA_OBn_R
EXPNO                 1
PROCNO                1
Date_          20110211
Time              14.07
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG         zgpg30
TD               65536
SOLVENT          CDCl3
NS                 512
DS                   2
SWH          35211.270 Hz
FIDRES        0.537281 Hz
AQ            0.9306754 sec
RG                 512
DW              14.200 usec
DE               6.00 usec
TE              296.5 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1               13C
P1               8.00 usec
PL1              1.40 dB
PL1W       70.60439301 W
SFO1      125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2        waltz16
NUC2               1H
PCPD2          100.00 usec
PL2             -1.90 dB
PL12            16.00 dB
PL13            19.00 dB
PL2W       27.23316002 W
PL12W       0.44167015 W
PL13W       0.22135943 W
SFO2      500.1320005 MHz
SI              32768
SF        125.7577890 MHz
WDW                EM
SSB                0
LB              1.00 Hz
GB                 0
PC              1.40
```

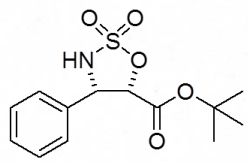
HJA_tBu

^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7d

^{13}C NMR(500MHz, $CDCl_3$)

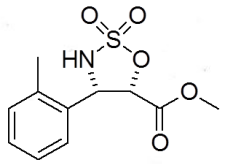


(*S*,*S*)-7d

NAME	HJA_OBn_imine
EXPNO	1
PROCNO	1
Date_	20110209
Time	15.20
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	512
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	1625.5
DW	14.200 usec
DE	6.00 usec
TE	296.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-2-Me-carbo

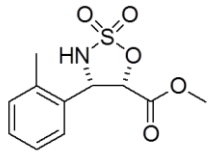
^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7e

KJA_2_Me_carbo

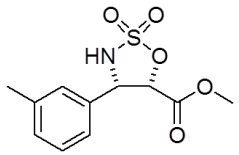
^{13}C NMR(500MHz, $CDCl_3$)



(*S,S*)-7e

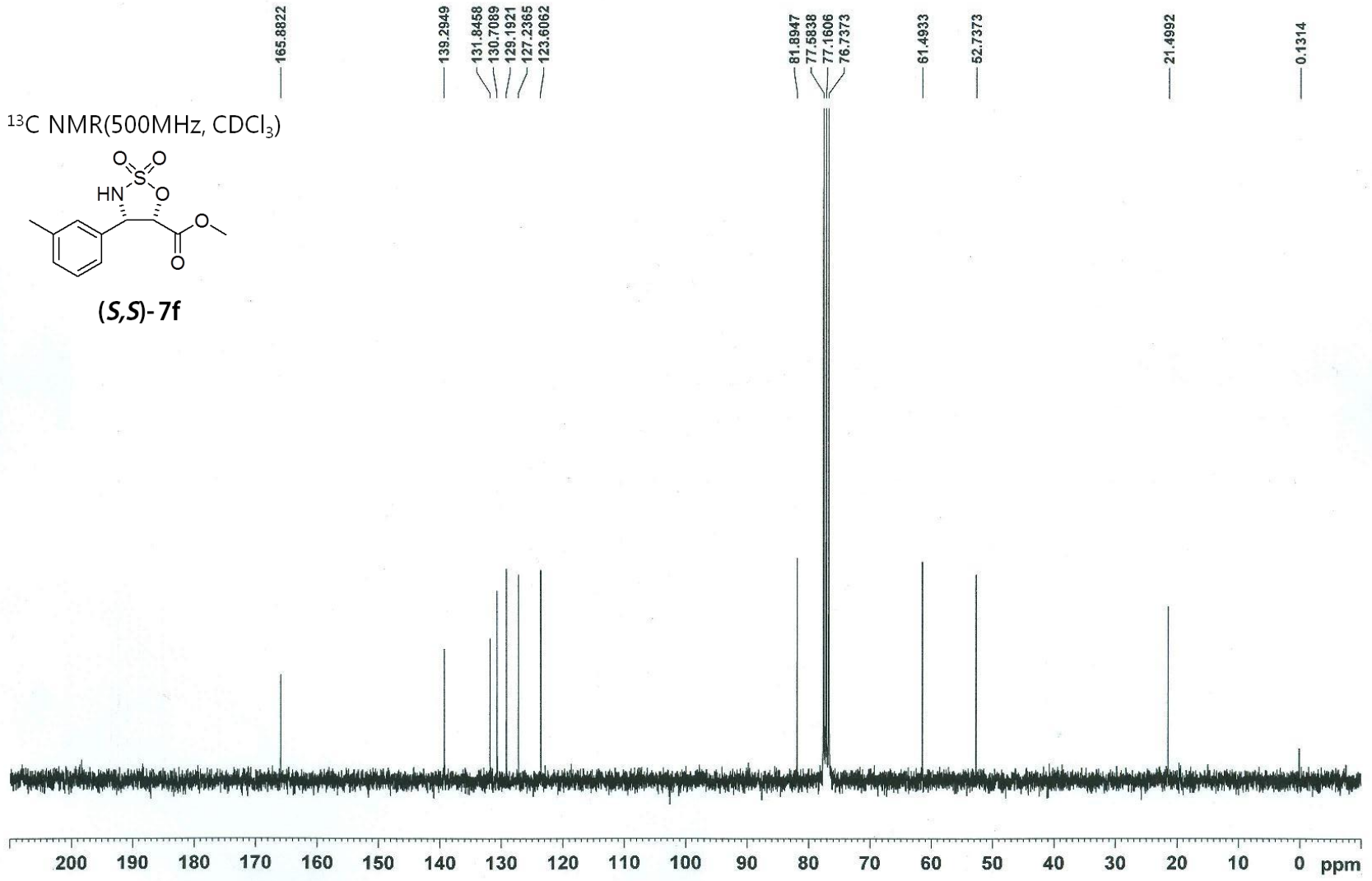
NAME	KJA_2_Me_carbo_R,R_1021
EXPNO	2
PROCNO	1
Date_	20131022
Time	0.55
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	5000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	296.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7f

KSY_3CH3_am

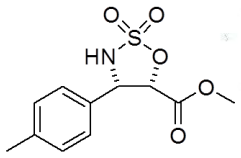


^{13}C NMR(500MHz, $CDCl_3$)

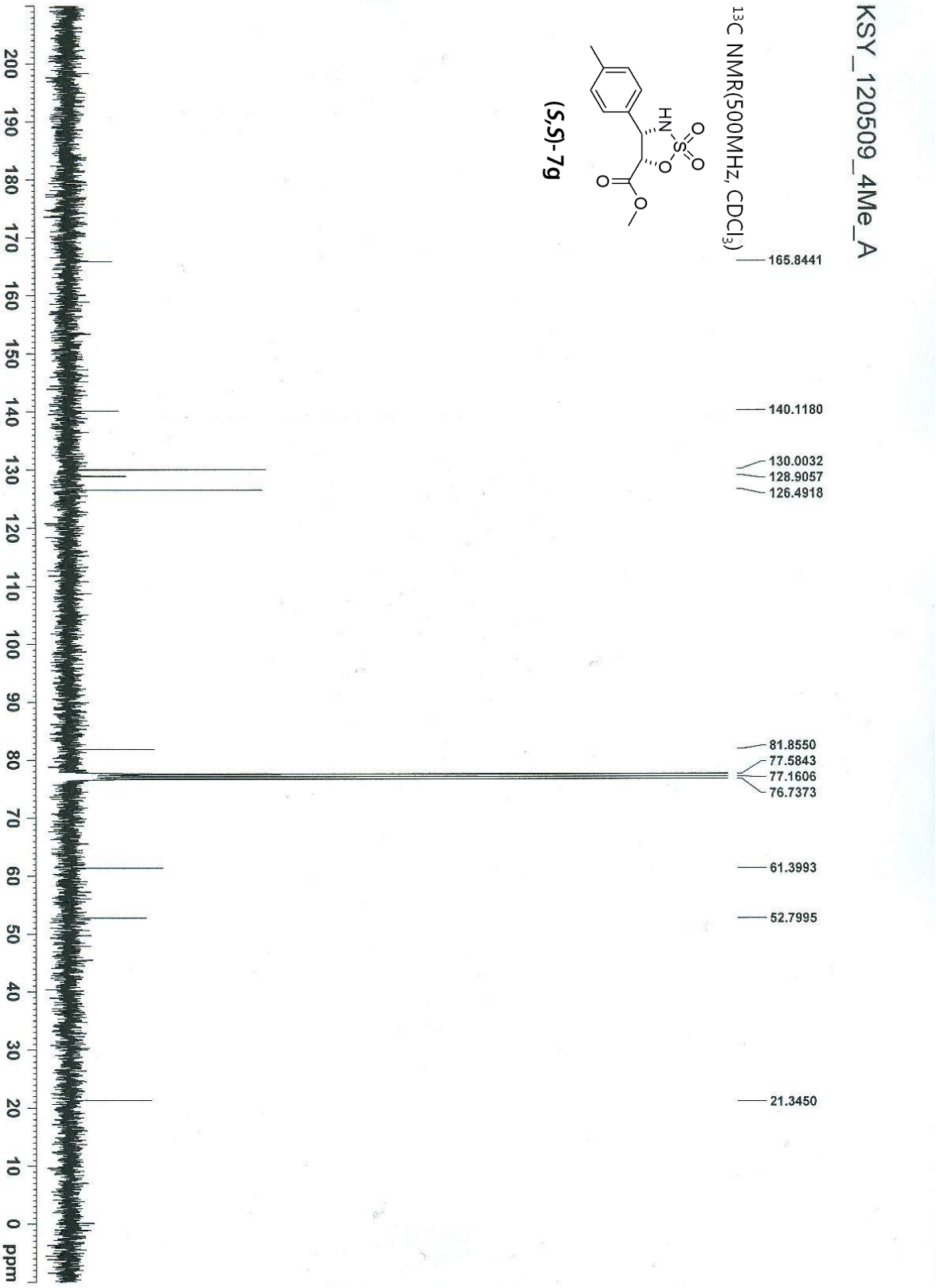
(*S,S*)-7f

KJA-4-Me-car-

^{1}H NMR(500MHz, $CDCl_3$)

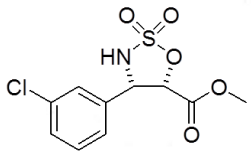


(*S,S*)-7g

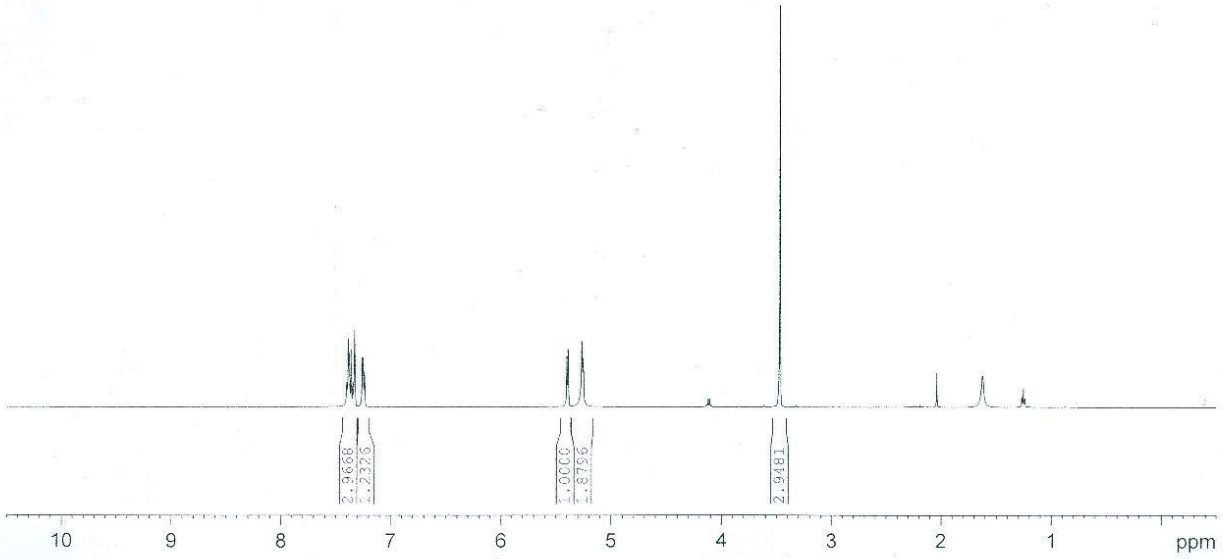

KSY_120509_4Me_A
13C NMR(500MHz, CDCl3)
(S,S)-7g
165.8441
140.1180
130.0032
128.9057
126.4918
81.8550
77.5843
77.1606
76.7373
61.3993
52.7995
21.3450
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm

KSY_120510_3Cl_A

^{1}H NMR(500MHz, $CDCl_3$)



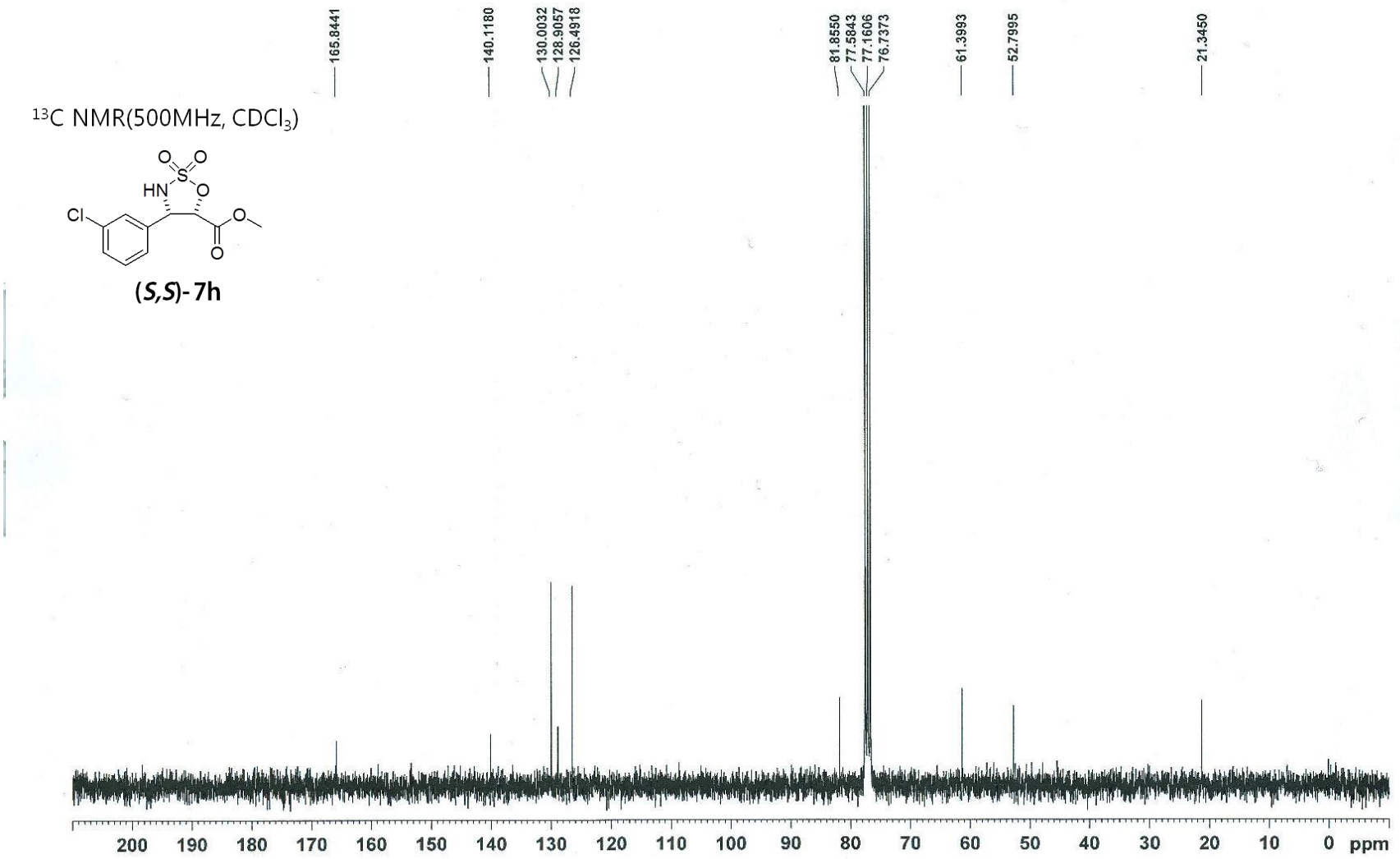
(*S,S*)-7h



NAME KSY_120510_3Cl_A
EXPNO 1
PROCNO 1
Date_ 20120510
Time 15.13
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 322.5
DW 66.600 usec
DE 6.00 usec
TE 299.9 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300136 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

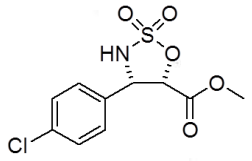
KSY_120509_4Me_A



^{13}C NMR(500MHz, $CDCl_3$)

(*S,S*)-7h

^{1}H NMR(500MHz, $CDCl_3$)



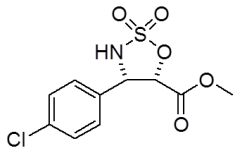
(*S,S*)-7i

NAME KSY_120607_4Cl_A
EXPNO 1
PROCNO 1
Date_ 20120608
Time 17.44
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 574.7
DW 66.600 usec
DE 6.00 usec
TE 300.7 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300137 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

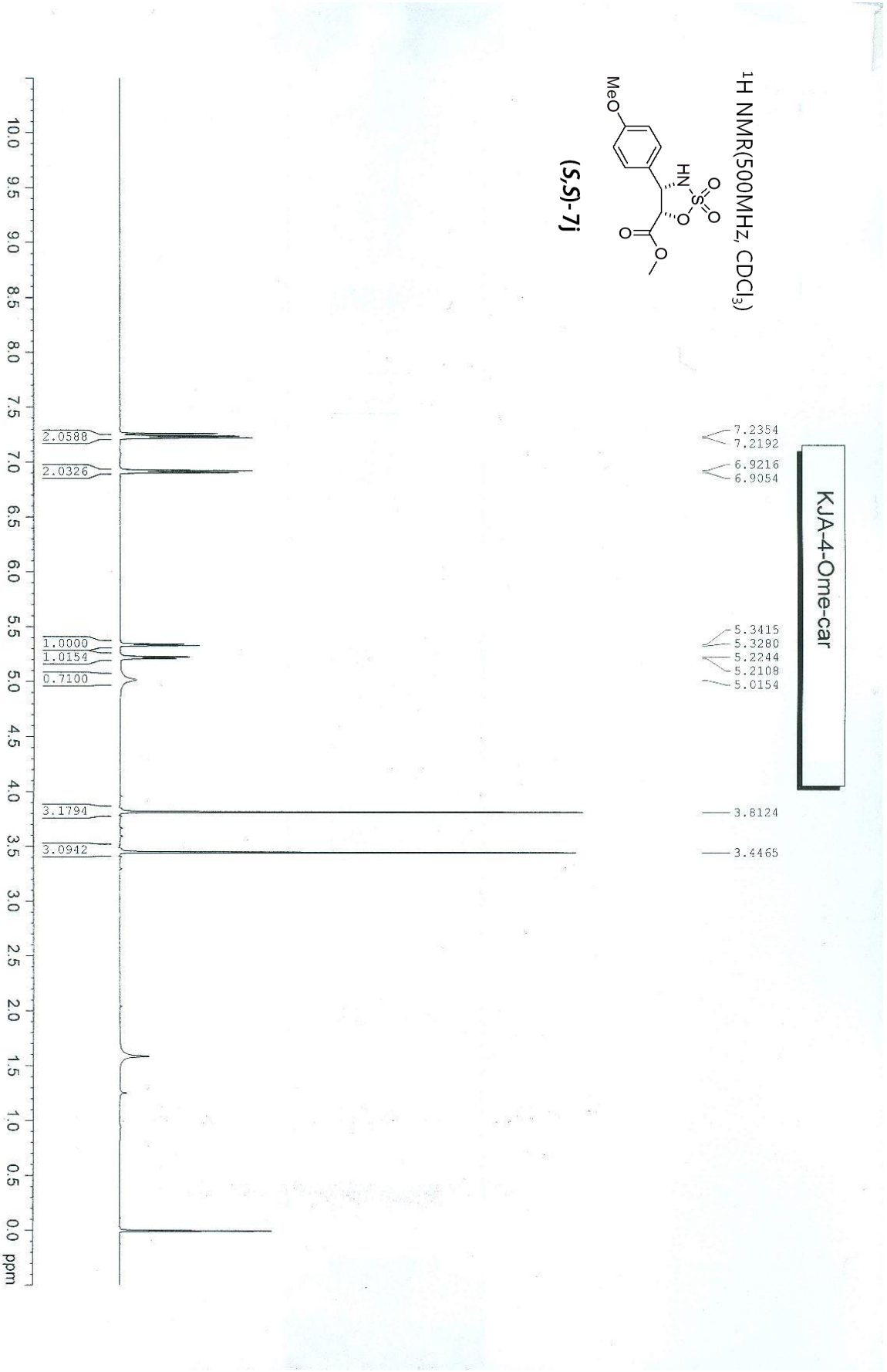
KSY_120607_4Cl_A

^{13}C NMR(500MHz, $CDCl_3$)

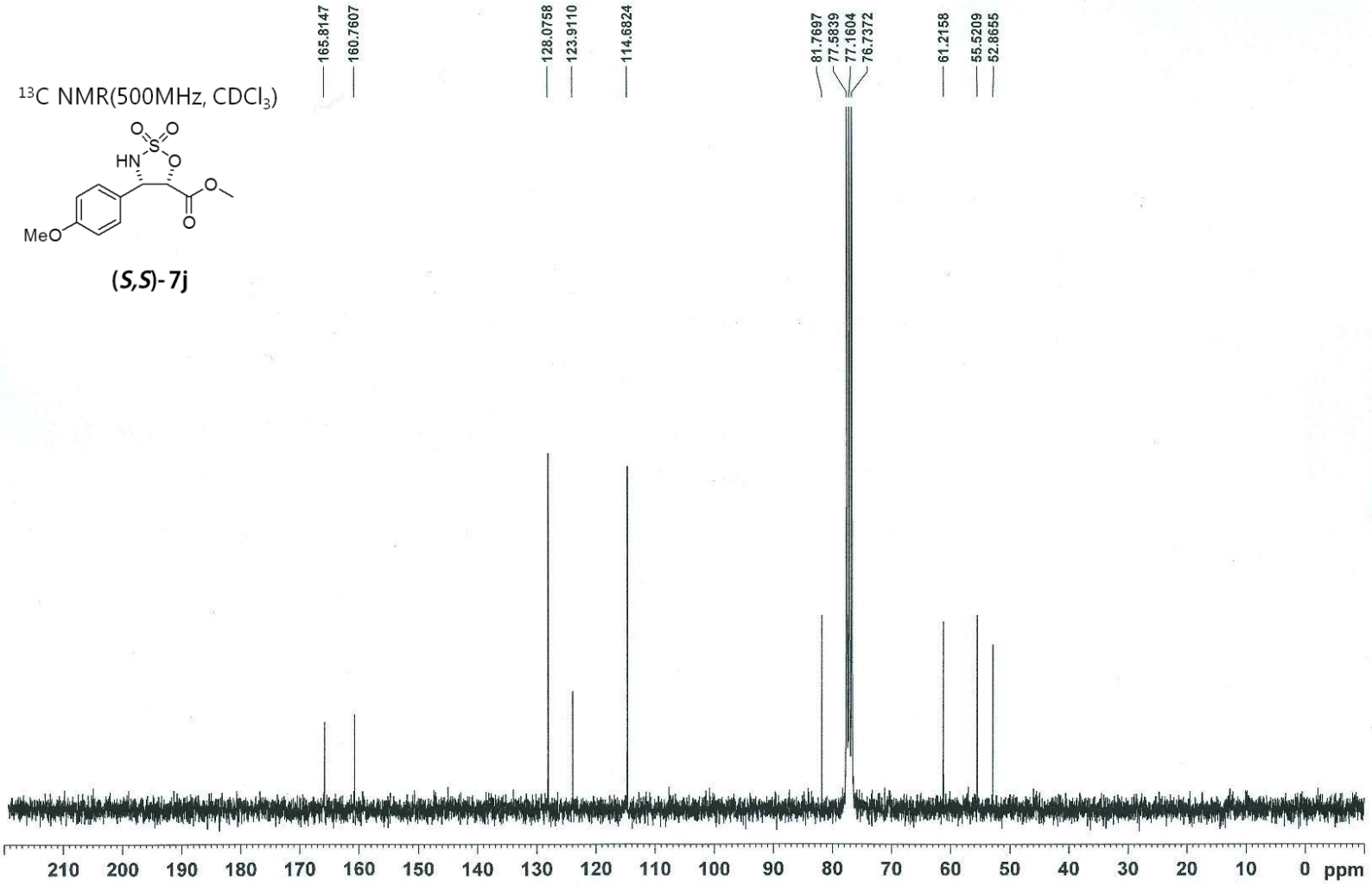


(*S,S*)-7i

NAME	KSY_120607_4Cl_A
EXPNO	2
PROCNO	1
Date_	20120611
Time	10.08
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1024
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	5160.6
DW	14.200 usec
DE	6.00 usec
TE	300.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577687 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


KJA-4-Ome-car
^{1}H NMR(500MHz, CDCl$_3$)
(S,S)-7j
MeO
HN
7.2354
7.2192
6.9216
6.9054
5.3415
5.3280
5.2244
5.2108
5.0154
3.8124
3.4465
2.0588
2.0326
1.0000
1.0154
0.7100
3.1794
3.0942
ppm

KSY_120510_40Me_A

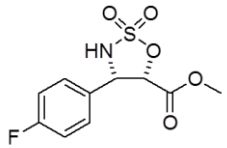


^{13}C NMR(500MHz, $CDCl_3$)

(*S,S*)-7j

KSY_120510_4F_A

^{1}H NMR(500MHz, $CDCl_3$)

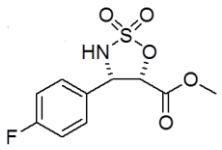


(*S,S*)-7k

NAME KSY_120510_4F_A
EXPNO 1
PROCNO 1
Date_ 20120510
Time 15.24
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 322.5
DW 66.600 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300135 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

^{13}C NMR(500MHz, $CDCl_3$)

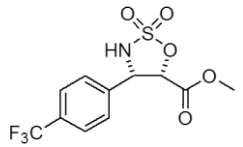


(*S,S*)-7k

NAME	KSY_120510_4F_A	
EXPNO	1	
PROCNO	1	
Date_	20120511	
Time	11.14	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	65536	
SOLVENT	CDCl3	
NS	512	
DS	2	
SWH	35211.270	Hz
FIDRES	0.537287	Hz
AQ	0.9306754	sec
RG	4597.6	
DW	14.200	usec
DE	6.00	usec
TE	300.3	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577622	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

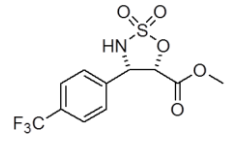
KJA-4-CF3-

^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7l

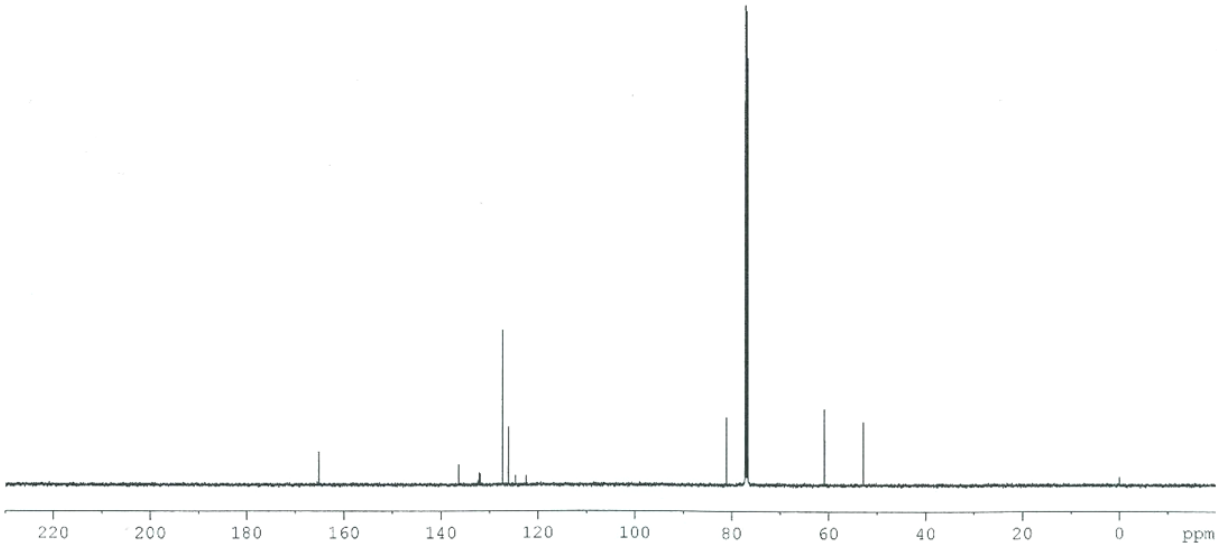
^{13}C NMR(500MHz, $CDCl_3$)



(*S,S*)-7l

KJA_4_CF3_

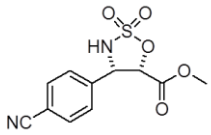
165.1537
136.3792
132.1718
131.9084
127.3364
126.0964
126.0666
126.0377
124.6021
122.4384
81.1497
77.2719
77.0172
76.7639
60.8743
52.8438
-0.0095



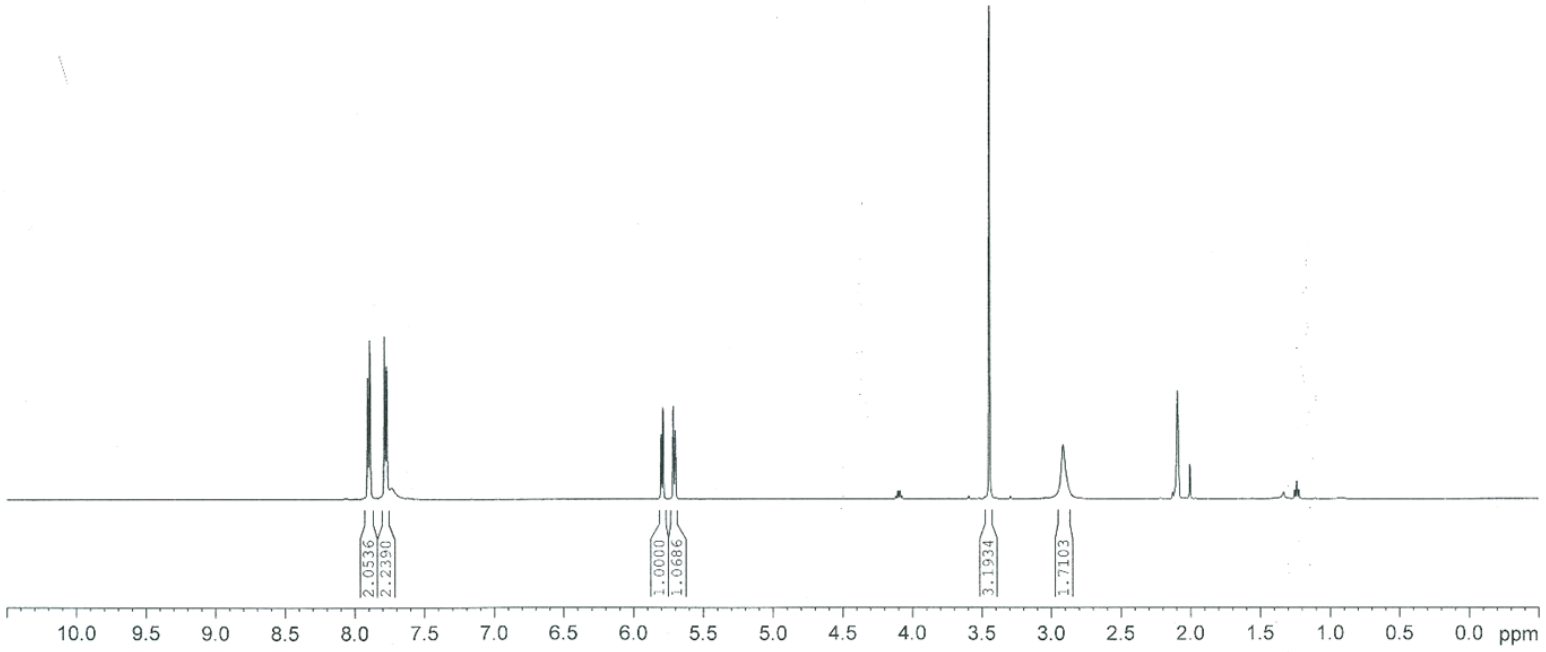

```
NAME          KJA_4_CF3_R,R_puri
EXPNO                          1
PROCNO                         1
Date_                   20130912
Time                       20.36
INSTRUM                    spect
PROBHD       5 mm DUL 13C-1
PULPROG                 zgpg30
TD                         65536
SOLVENT                    CDCl3
NS                          1000
DS                             2
SWH                    35211.270 Hz
FIDRES                 0.537281 Hz
AQ                     0.9306754 sec
RG                           512
DW                        14.200 usec
DE                         6.00 usec
TE                        297.7 K
D1                  2.00000000 sec
D11                 0.03000000 sec
TD0                            1

======== CHANNEL f1 ========
NUC1                         13C
P1                         8.00 usec
PL1                        1.40 dB
PL1W               70.60439301 W
SFO1              125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                 waltz16
NUC2                         1H
PCPD2                    100.00 usec
PL2                       -1.90 dB
PL12                      16.00 dB
PL13                      19.00 dB
PL2W               27.23316002 W
PL12W               0.44167015 W
PL13W               0.22135943 W
SFO2              500.1320005 MHz
SI                        32768
SF                125.7577890 MHz
WDW                          EM
SSB                           0
LB                         1.00 Hz
GB                            0
PC                         1.40
```

KJA-4-CN-carbo

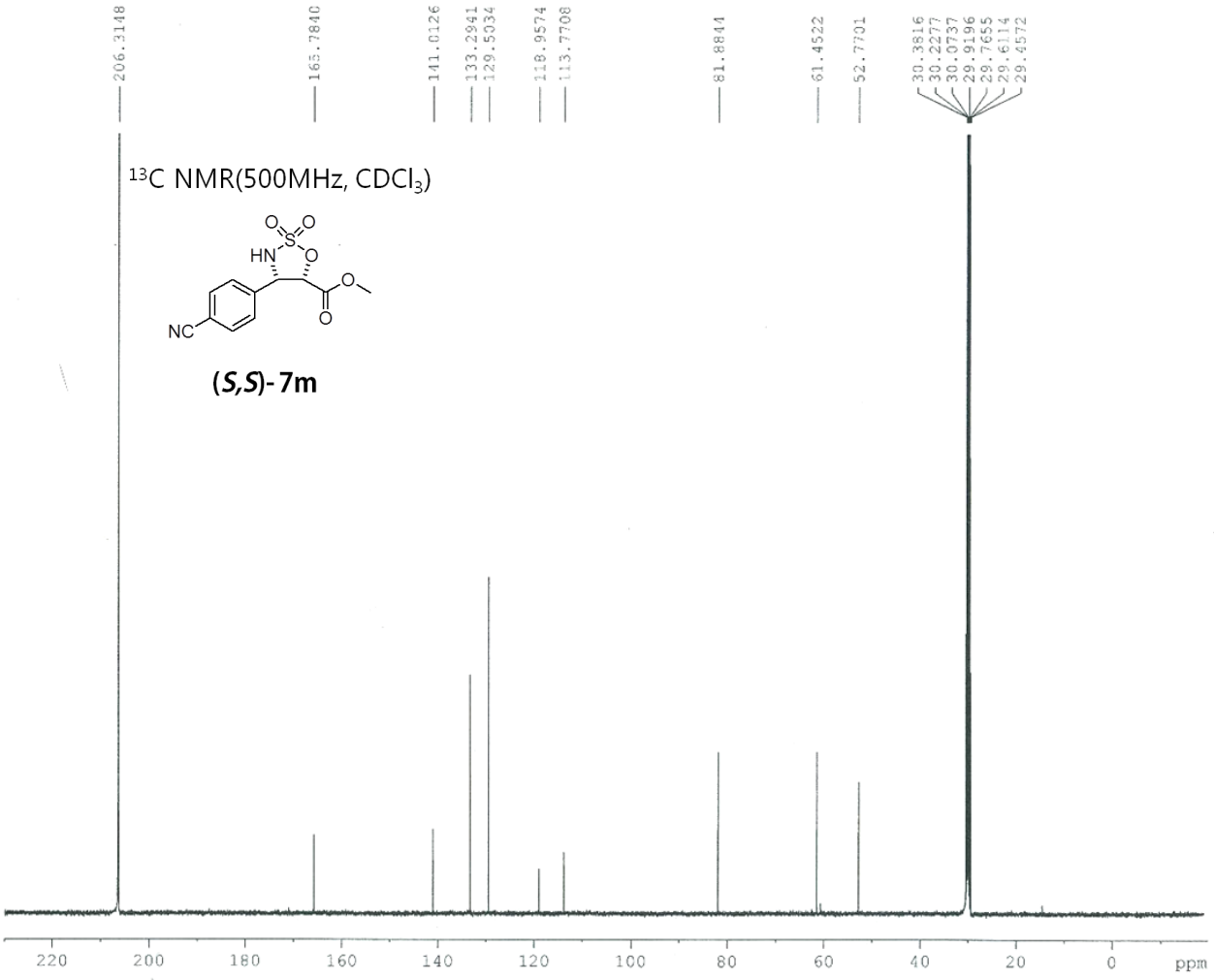
^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7m



KJA_4_CN_carbo



^{13}C NMR(500MHz, $CDCl_3$)

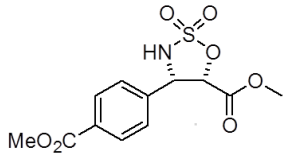
(*S*,*S*)-7m

```
NAME        KJA_4_CN_carbo_R,R_puri
EXPNO                             1
PROCNO                            1
Date_                      20130802
Time                           0.12
INSTRUM                       spect
PROBHD    5 mm DUL 13C-1
PULPROG                    zgpg30
TD                             65536
SOLVENT                    Acetone
NS                              1000
DS                                2
SWH                       35211.270 Hz
FIDRES                    0.537281 Hz
AQ                        0.9306754 sec
RG                            812.7
DW                           14.200 usec
DE                            6.00 usec
TE                           299.5 K
D1                     2.00000000 sec
D11                    0.03000000 sec
TD0                               1

======== CHANNEL f1 ========
NUC1                            13C
P1                            8.00 usec
PL1                           1.40 dB
PL1W                  70.60439301 W
SFO1                 125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                   waltz16
NUC2                            1H
PCPD2                       100.00 usec
PL2                          -1.90 dB
PL12                         16.00 dB
PL13                         19.00 dB
PL2W                  27.23316002 W
PL12W                  0.44167015 W
PL13W                  0.22135943 W
SFO2                 500.1320005 MHz
SI                            32768
SF                   125.7576669 MHz
WDW                             EM
SSB                              0
LB                            1.00 Hz
GB                               0
PC                            1.40
```

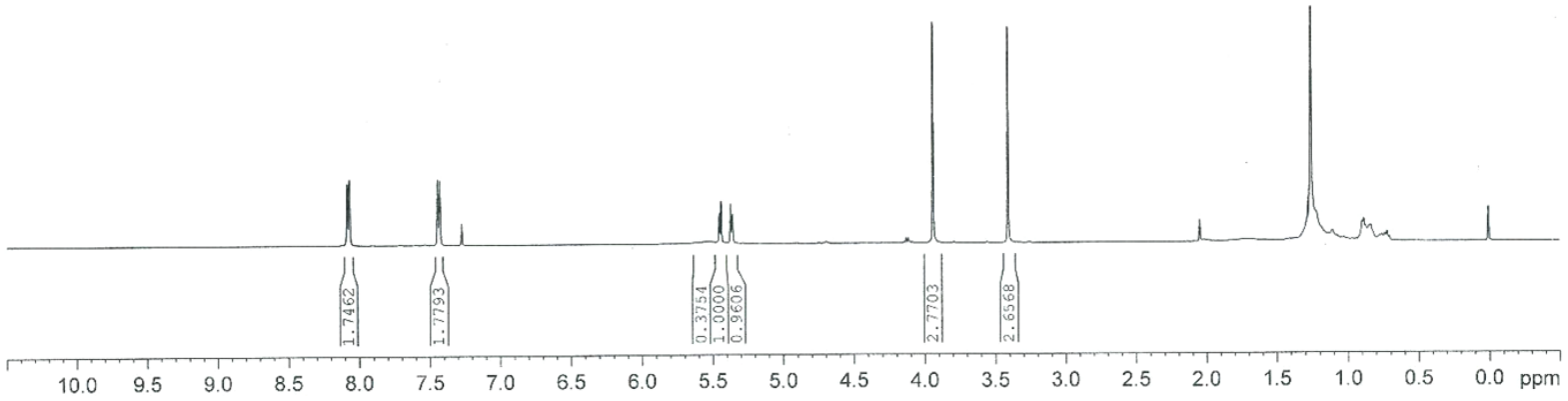
KJA-4-CO2Me-car

8.0829
8.0672
7.4440
7.4283
5.6097
5.5994
5.5427
5.5226
5.5082
5.4527
5.4391
5.3722
5.3584
3.9405
3.4096

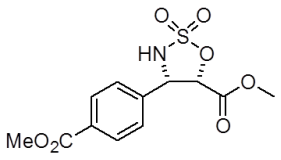
^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7n



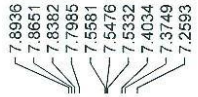
^{13}C NMR(500MHz, $CDCl_3$)



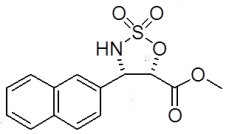
(*S*,*S*)-7n

NAME	KJA_4_CO2Me_car_R,R_puri
EXPNO	1
PROCNO	1
Date_	20130910
Time	18.58
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	812.7
DW	14.200 usec
DE	6.00 usec
TE	298.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-naphtyl-amine-



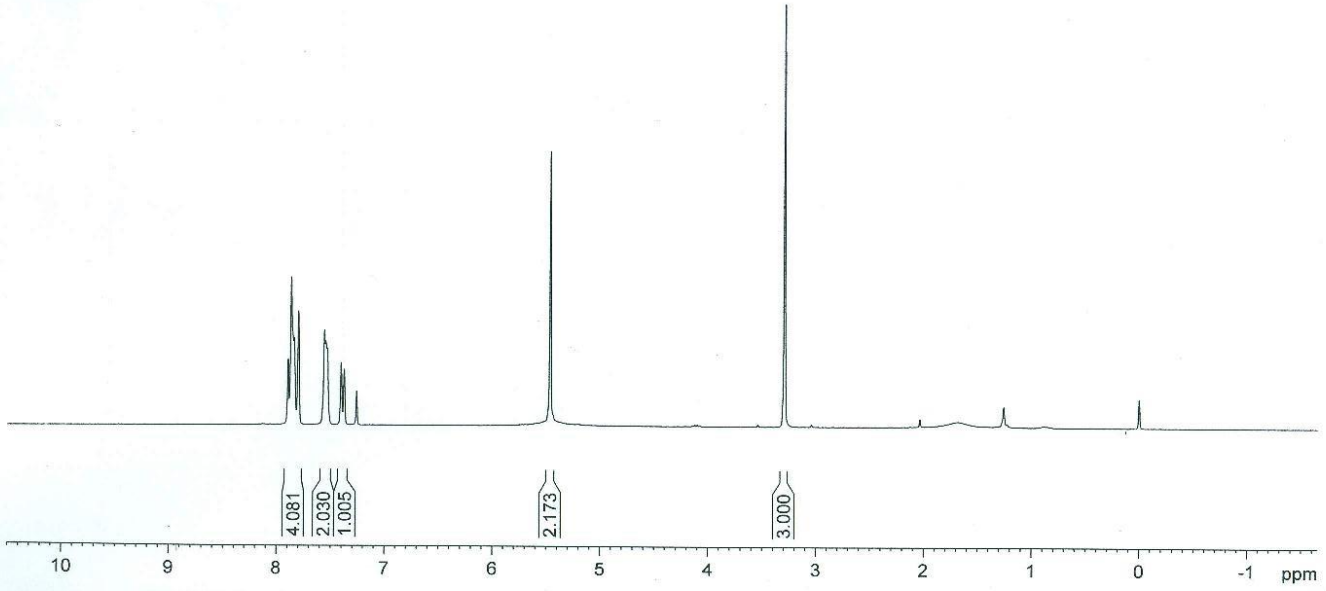
^{1}H NMR(500MHz, $CDCl_3$)



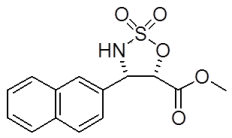
(*S,S*)-7o

NAME KJA-naphtyl-amine-R,R
EXPNO 1
PROCNO 1
Date_ 20130812
Time 14.15
INSTRUM spect
PROBHD 5 mm 5mm BB-1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 2
SWH 6172.839 Hz
FIDRES 0.188380 Hz
AQ 2.6542580 sec
RG 322.5
DW 81.000 usec
DE 6.50 usec
TE 301.1 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 10.00 usec
PL1 4.60 dB
SFO1 300.1318534 MHz
SI 16384
SF 300.1300067 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



^{13}C NMR(500MHz, $CDCl_3$)

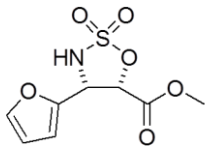


(*S,S*)-7o


```
NAME        KJA_naphtyl_amine_R,R
EXPNO                          2
PROCNO                         1
Date_                   20130823
Time                       18.30
INSTRUM                    spect
PROBHD     5 mm DUL 13C-1
PULPROG                 zgpg30
TD                         65536
SOLVENT                    CDCl3
NS                          1000
DS                             2
SWH                    35211.270 Hz
FIDRES                 0.537281 Hz
AQ                     0.9306754 sec
RG                           512
DW                        14.200 usec
DE                         6.00 usec
TE                        299.4 K
D1                    2.00000000 sec
D11                   0.03000000 sec
TD0                            1

======== CHANNEL f1 ========
NUC1                         13C
P1                        8.00 usec
PL1                       1.40 dB
PL1W                70.60439301 W
SFO1               125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                 waltz16
NUC2                         1H
PCPD2                   100.00 usec
PL2                       -1.90 dB
PL12                      16.00 dB
PL13                      19.00 dB
PL2W                27.23316002 W
PL12W                0.44167015 W
PL13W                0.22135943 W
SFO2               500.1320005 MHz
SI                         32768
SF                 125.7577890 MHz
WDW                           EM
SSB                            0
LB                        1.00 Hz
GB                             0
PC                        1.40
```

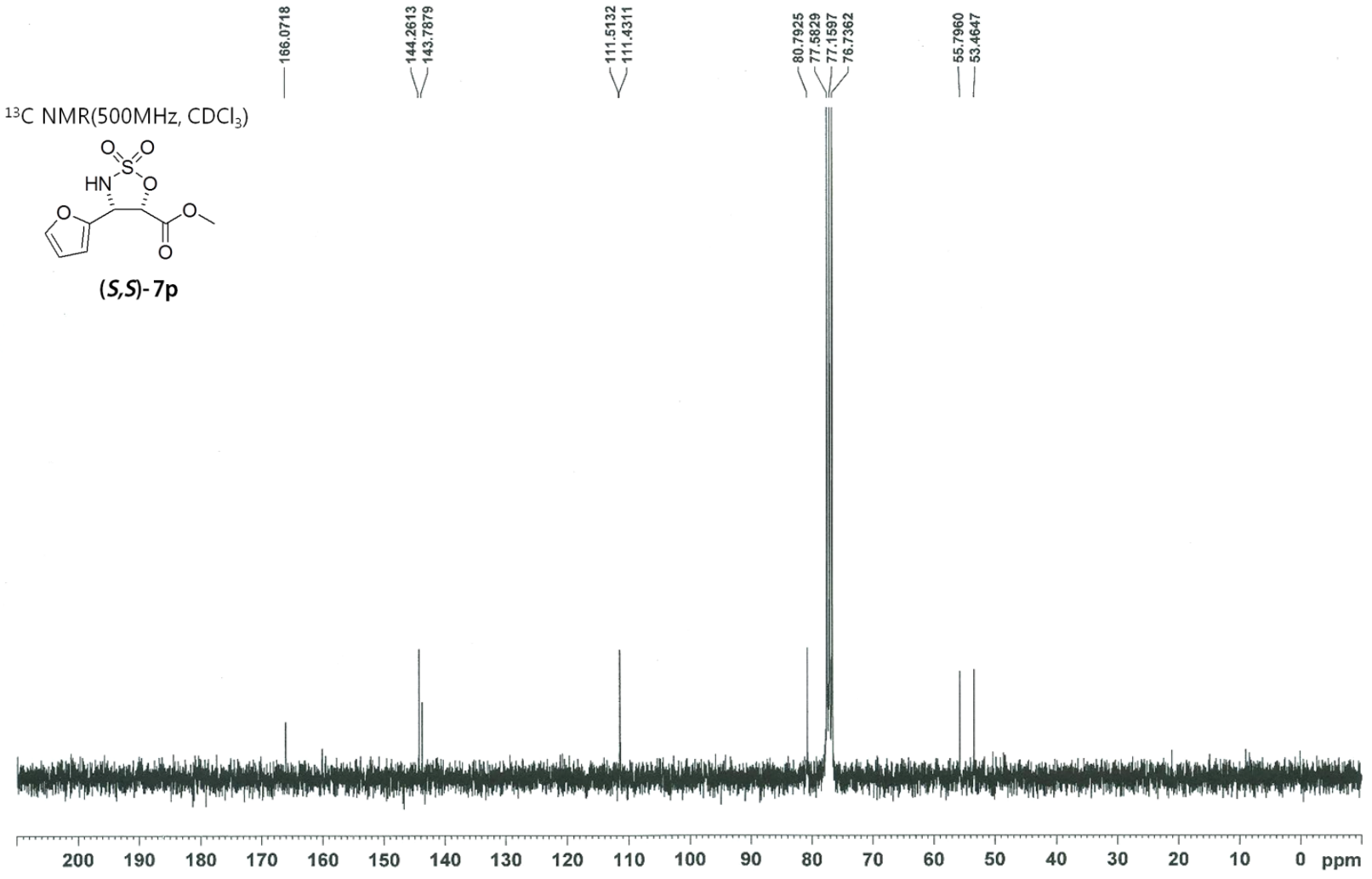
KSY_120719_Fu_am

^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7p

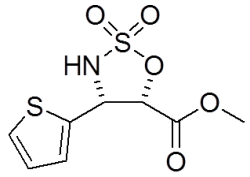
KSY_Fu_am



^{13}C NMR(500MHz, $CDCl_3$)

(*S,S*)-7p

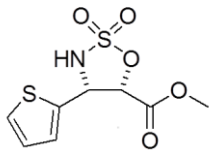
^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)-7q

KJA_2_thio_carbo_amine

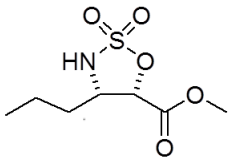
^{13}C NMR(500MHz, $CDCl_3$)



(*S*,*S*)-7q

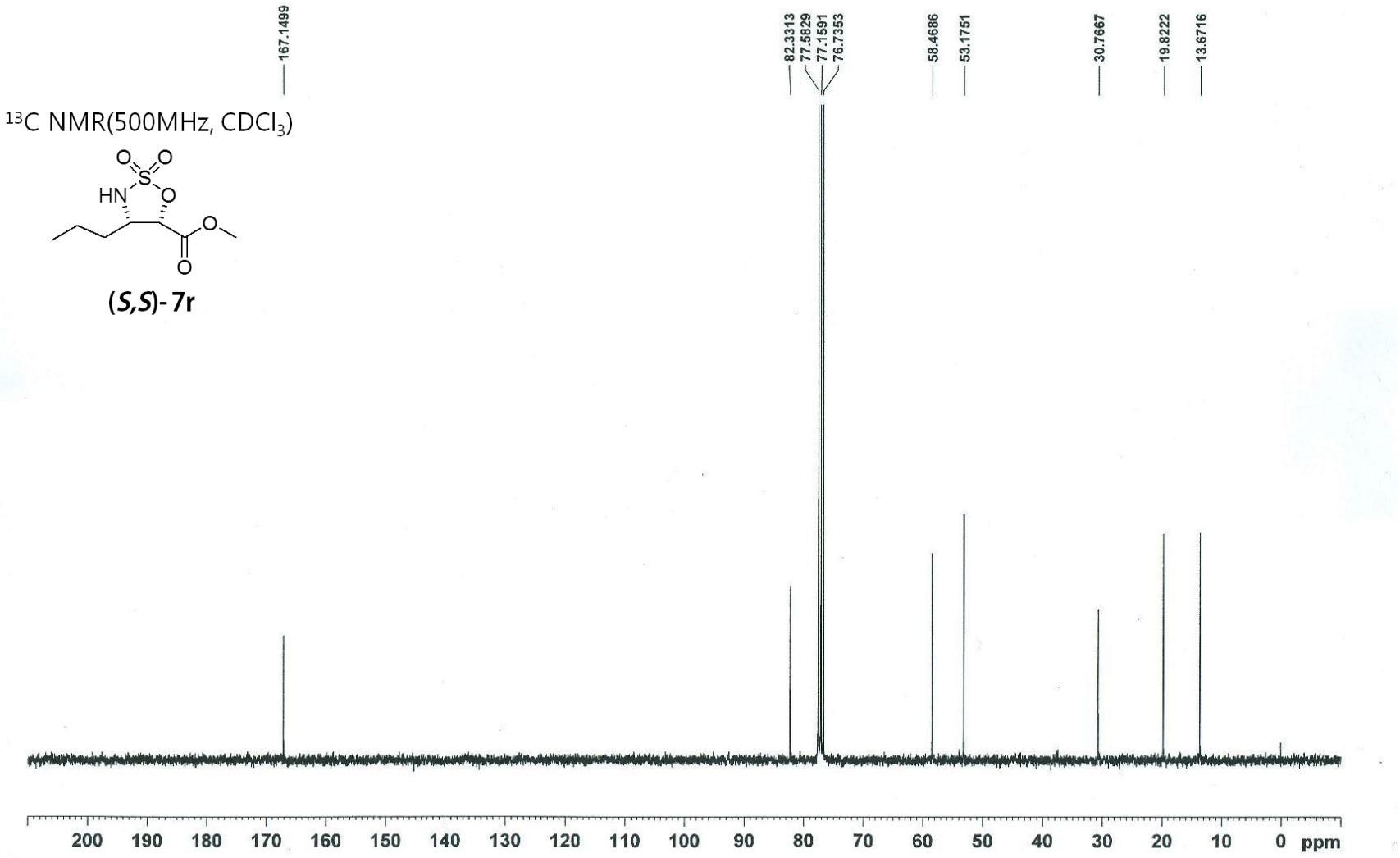
NAME	KJA_2_thio_carbo_amine
EXPNO	1
PROCNO	1
Date_	20131107
Time	5.41
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	3000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	299.7 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

^{1}H NMR(500MHz, $CDCl_3$)



(*S,S*)- 7r

KSY_pro_am

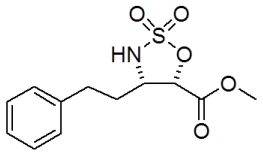


^{13}C NMR(500MHz, $CDCl_3$)

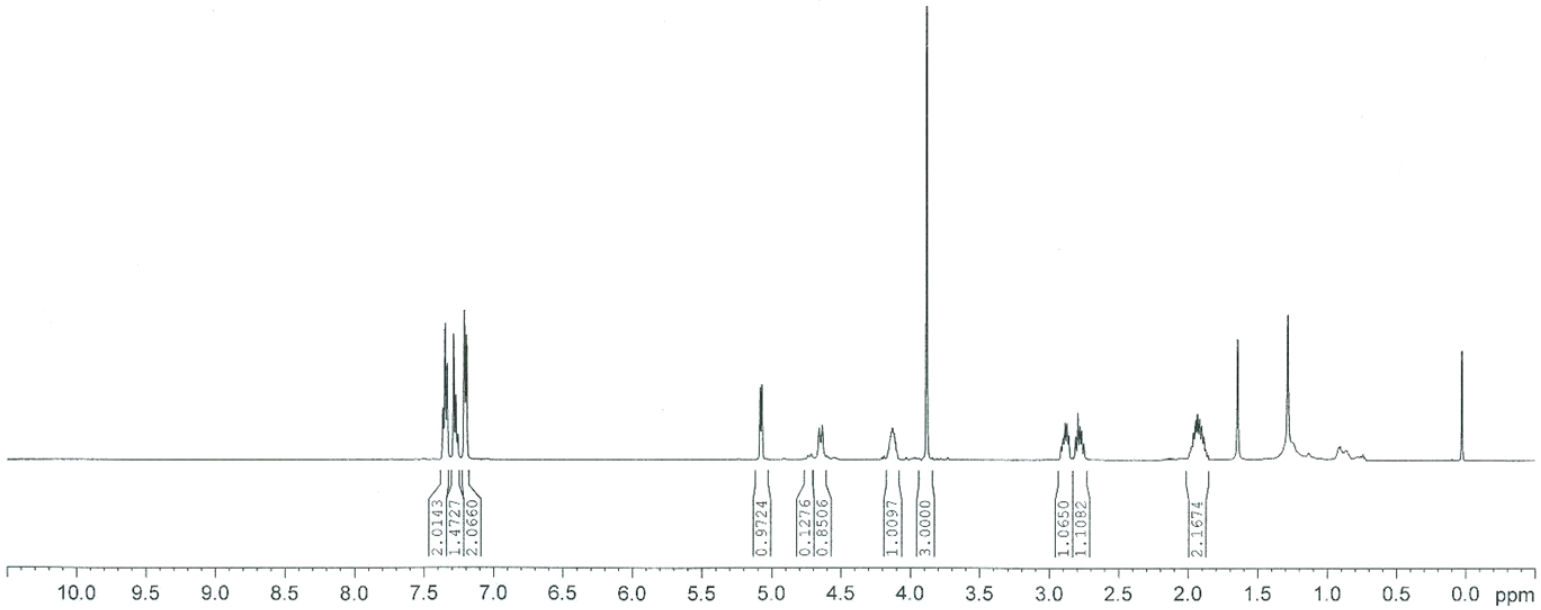
(*S,S*)-7r

KJA-pro

^{1}H NMR(500MHz, $CDCl_3$)

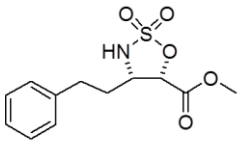


(*S,S*)-7s



KJA_propio carbo_puri

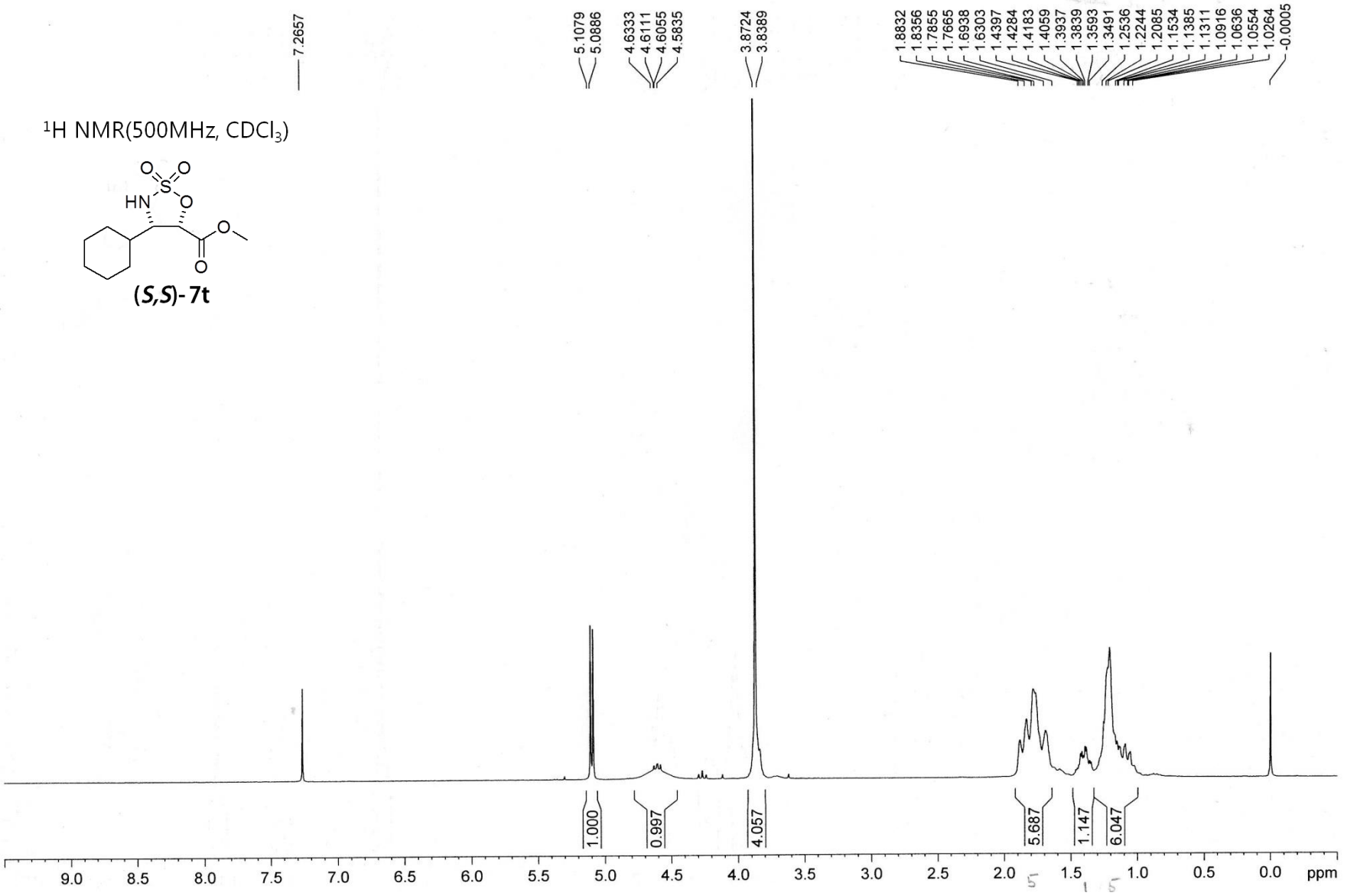
^{13}C NMR(500MHz, $CDCl_3$)



(*S,S*)-7s

NAME	KJA_propio_R,R_carbo_puri
EXPNO	1
PROCNO	1
Date_	20130926
Time	1.57
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	297.2 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

LR-151-main

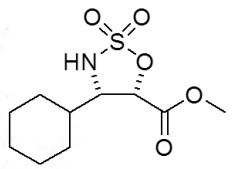


^{1}H NMR(500MHz, $CDCl_3$)

(*S,S*)-7t

lr-158-1_C13

^{13}C NMR(500MHz, $CDCl_3$)

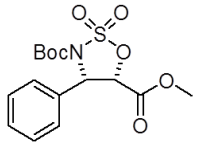


(*S,S*)-7t

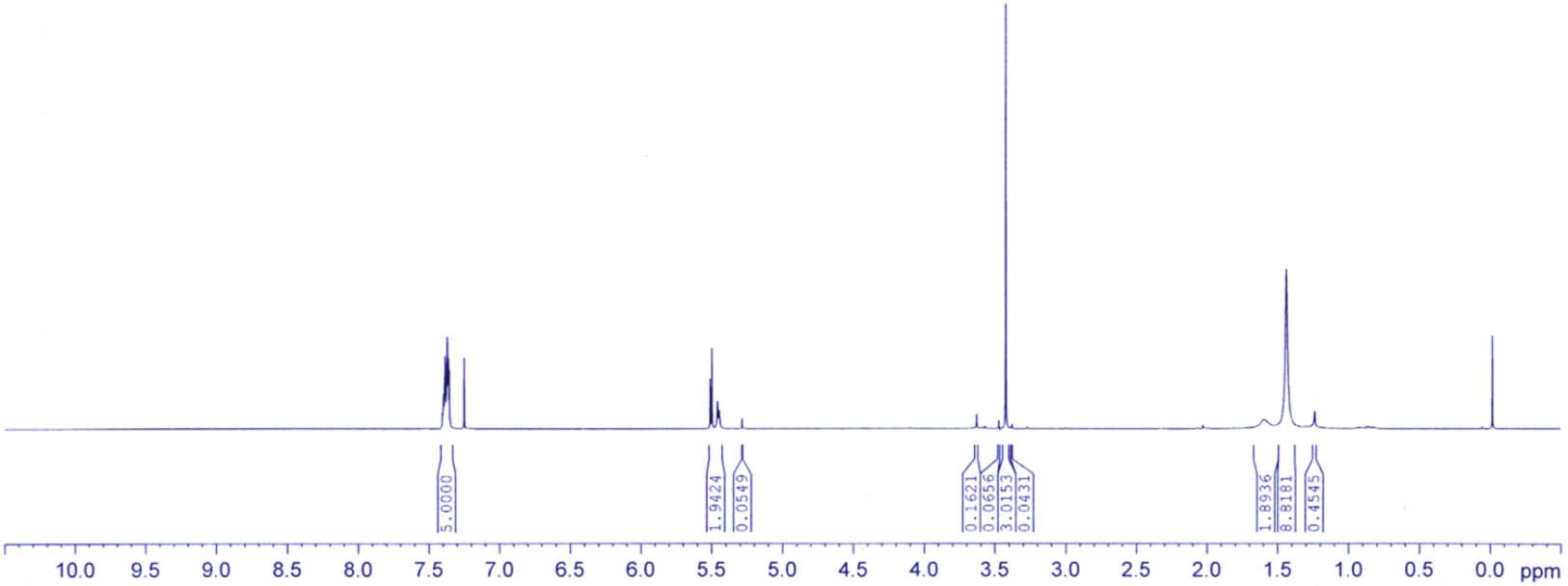
SYJ-S,S-ph-NBoc-PLC-0813

7.3942
7.3863
7.3827
7.3726
7.3676
7.3595
7.3539
5.5080
5.4953
5.4558
5.4432
5.2836
3.6286
3.4226
1.5932
1.4371
1.2379

^{1}H NMR(500MHz, $CDCl_3$)

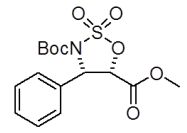


N-Boc-**(*S,S*)-7a**



SYJ_ph_NBoc_S,S_PLC

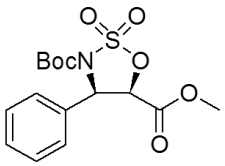
^{13}C NMR(500MHz, $CDCl_3$)



N-Boc-**(*S,S*)-7a**

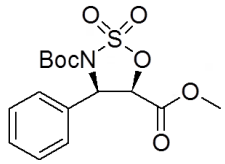
NAME	SYJ_ph_NBoc_S,S_PLC	
EXPNO	1	
PROCNO	1	
Date_	20140813	
Time	11.14	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	32768	
SOLVENT	CDCl3	
NS	1000	
DS	2	
SWH	30303.031	Hz
FIDRES	0.924775	Hz
AQ	0.5407385	sec
RG	256	
DW	16.500	usec
DE	6.00	usec
TE	297.7	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7703661	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577890	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

^{1}H NMR(500MHz, $CDCl_3$)



N-Boc-**(*R,R*)-7a**

^{13}C NMR(500MHz, $CDCl_3$)

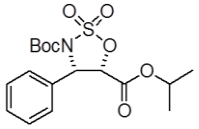


N-Boc-**(*R,R*)-7a**

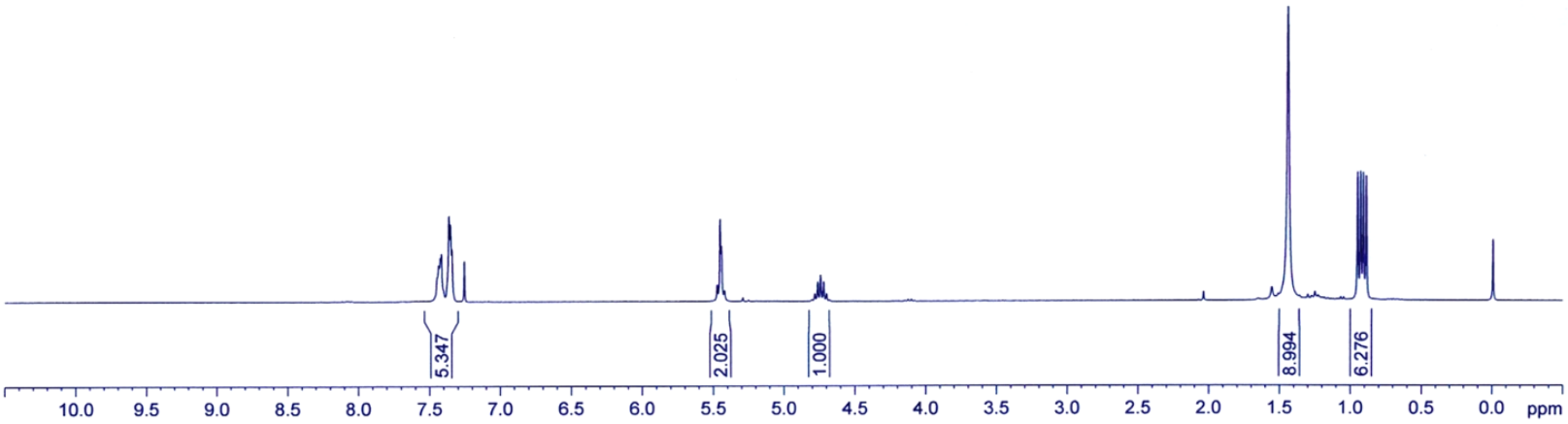
NAME	KJA_ph_carbo_N_Boc
EXPNO	1
PROCNO	1
Date_	20140306
Time	8.25
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	3251
DW	14.200 usec
DE	6.00 usec
TE	297.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
========	CHANNEL f1 ========
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
========	CHANNEL f2 ========
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

HJA_iPr_Boc

^{1}H NMR(500MHz, $CDCl_3$)

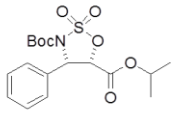


N-Boc-**(*S,S*)-7b**



HJA_iPr_Boc

^{13}C NMR(500MHz, $CDCl_3$)

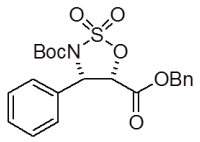


N-Boc-**(*S,S*)-7b**

NAME	HJA_iPr_Boc	
EXPNO	1	
PROCNO	1	
Date_	20110210	
Time	3.05	
INSTRUM	spect	
PROBHD	5 mm DUL 13C-1	
PULPROG	zgpg30	
TD	65536	
SOLVENT	CDCl3	
NS	2048	
DS	2	
SWH	35211.270	Hz
FIDRES	0.537281	Hz
AQ	0.9306754	sec
RG	512	
DW	14.200	usec
DE	6.00	usec
TE	295.6	K
D1	2.00000000	sec
D11	0.03000000	sec
TD0	1	
======== CHANNEL f1 ========		
NUC1	13C	
P1	8.00	usec
PL1	1.40	dB
PL1W	70.60439301	W
SFO1	125.7728799	MHz
======== CHANNEL f2 ========		
CPDPRG2	waltz16	
NUC2	1H	
PCPD2	100.00	usec
PL2	-1.90	dB
PL12	16.00	dB
PL13	19.00	dB
PL2W	27.23316002	W
PL12W	0.44167015	W
PL13W	0.22135943	W
SFO2	500.1320005	MHz
SI	32768	
SF	125.7577729	MHz
WDW	EM	
SSB	0	
LB	1.00	Hz
GB	0	
PC	1.40	

HJA_Bn_Boc

^{1}H NMR(500MHz, $CDCl_3$)

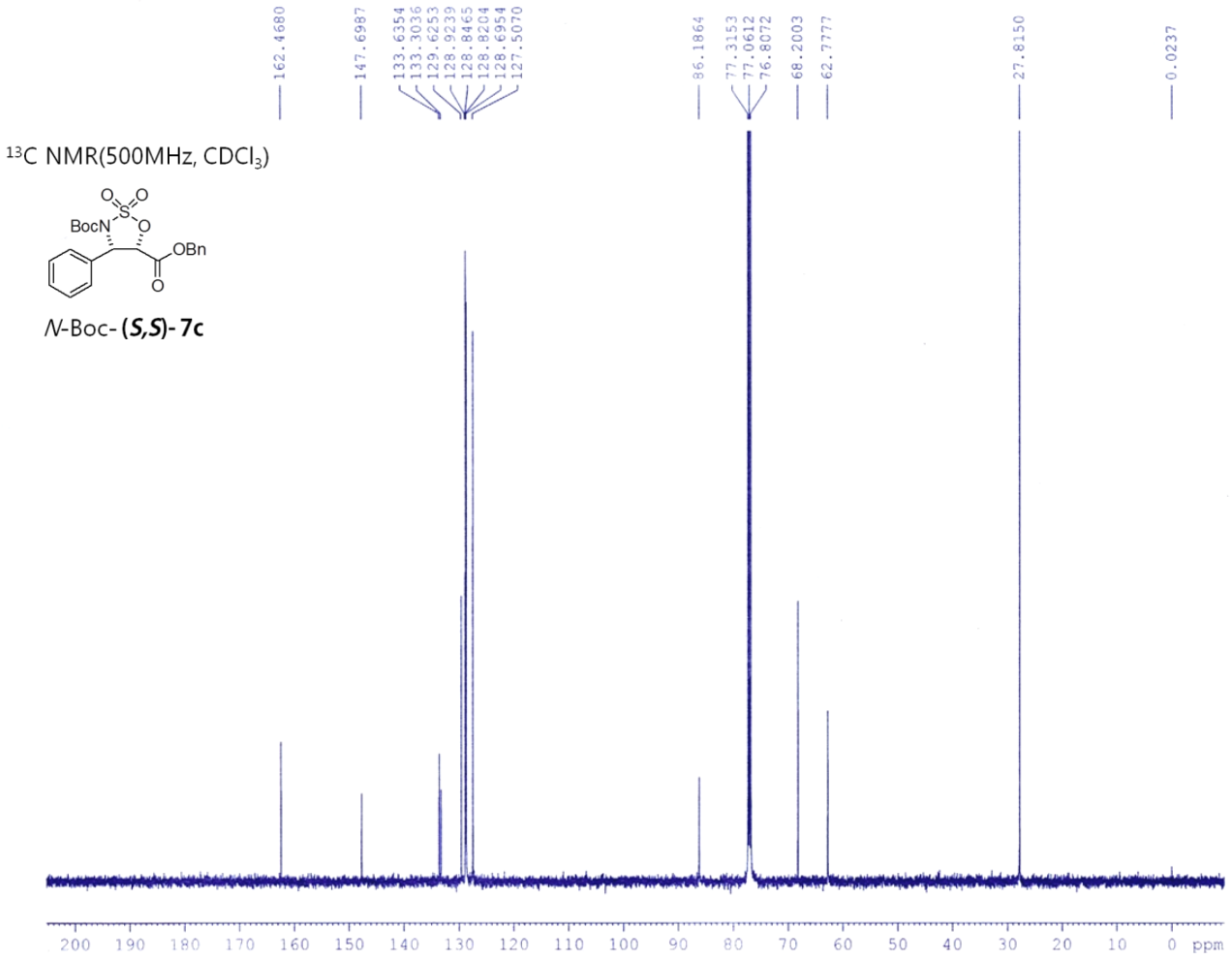


N-Boc-**(*S,S*)-7c**

NAME HJA_Bn_Boc
EXPNO 2
PROCNO 1
Date_ 20110214
Time 15.11
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3648143 sec
RG 71.8
DW 66.600 usec
DE 6.00 usec
TE 295.1 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 9.80 usec
PL1 -1.90 dB
PL1W 27.23316002 W
SFO1 500.1332508 MHz
SI 32768
SF 500.1300144 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

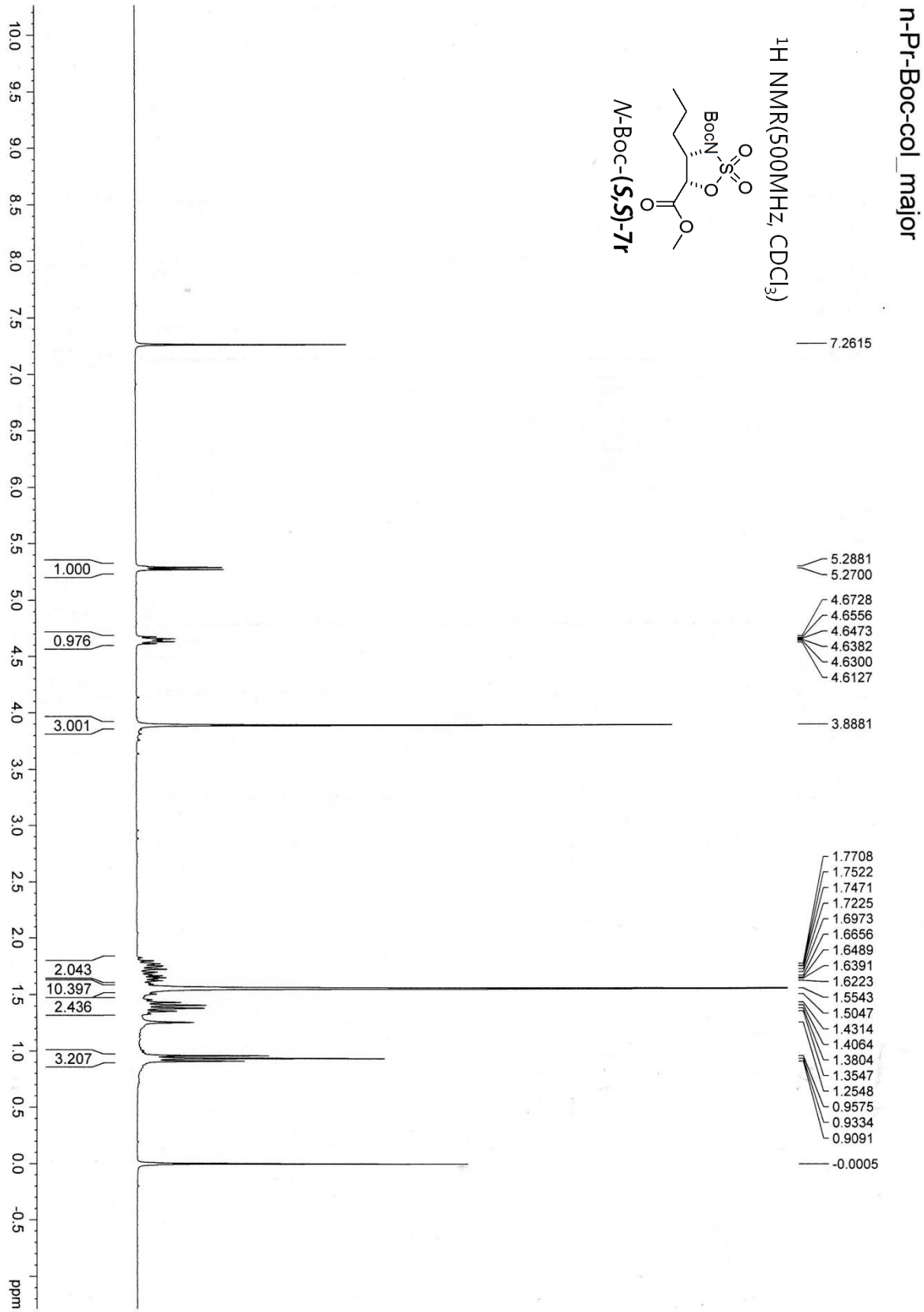
HJA_Bn_Boc



^{13}C NMR(500MHz, $CDCl_3$)

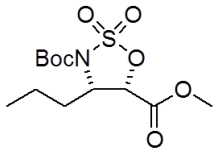
N-Boc-**(*S,S*)-7c**

NAME	HJA_Bn_Boc_C
EXPNO	2
PROCNO	1
Date_	20110214
Time	15.44
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	512
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	1625.5
DW	14.200 usec
DE	6.00 usec
TE	296.1 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


n-Pr-Boc-col_major
¹H NMR(500MHz, CDCl₃)
N-Boc-(S,S)-7r
BocN
7.2615
5.2881
5.2700
4.6728
4.6556
4.6473
4.6382
4.6300
4.6127
3.8881
1.7708
1.7522
1.7471
1.7225
1.6973
1.6656
1.6489
1.6391
1.6223
1.5543
1.5047
1.4314
1.4064
1.3804
1.3547
1.2548
0.9575
0.9334
0.9091
-0.0005
1.000
0.976
3.001
2.043
10.397
2.436
3.207
ppm

SYJ_propyl_NBoc_pure

^{13}C NMR(500MHz, $CDCl_3$)

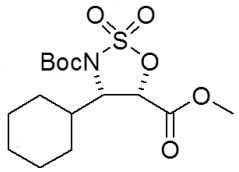


N-Boc-(***S,S***)-**7r**

NAME	SYJ_propyl_NBoc_pure
EXPNO	1
PROCNO	1
Date_	20140711
Time	3.04
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	30303.031 Hz
FIDRES	0.924775 Hz
AQ	0.5407385 sec
RG	161.3
DW	16.500 usec
DE	6.00 usec
TE	297.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7703661 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

LR-158-Boc

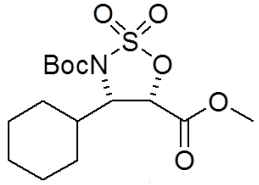
^{1}H NMR(500MHz, $CDCl_3$)



N-Boc-**(*S,S*)-7t**

LR_158_Boc

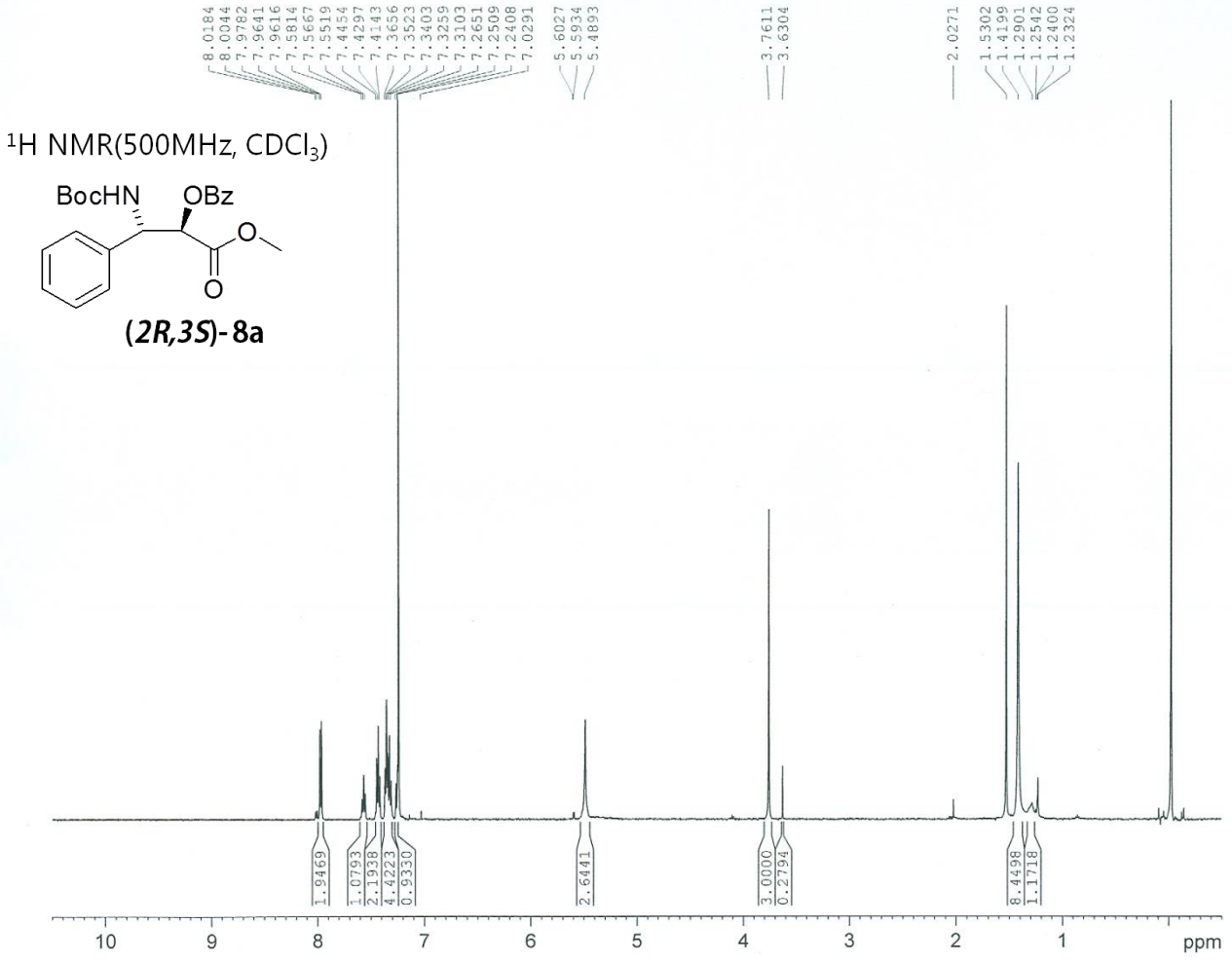
^{13}C NMR(500MHz, $CDCl_3$)



N-Boc-(***S,S***)-**7t**

NAME	LR_158_Boc
EXPNO	1
PROCNO	1
Date_	20140715
Time	21.17
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	30303.031 Hz
FIDRES	0.924775 Hz
AQ	0.5407385 sec
RG	456.1
DW	16.500 usec
DE	6.00 usec
TE	298.6 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7703661 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA-OBZ-0321



^{1}H NMR(500MHz, $CDCl_3$)

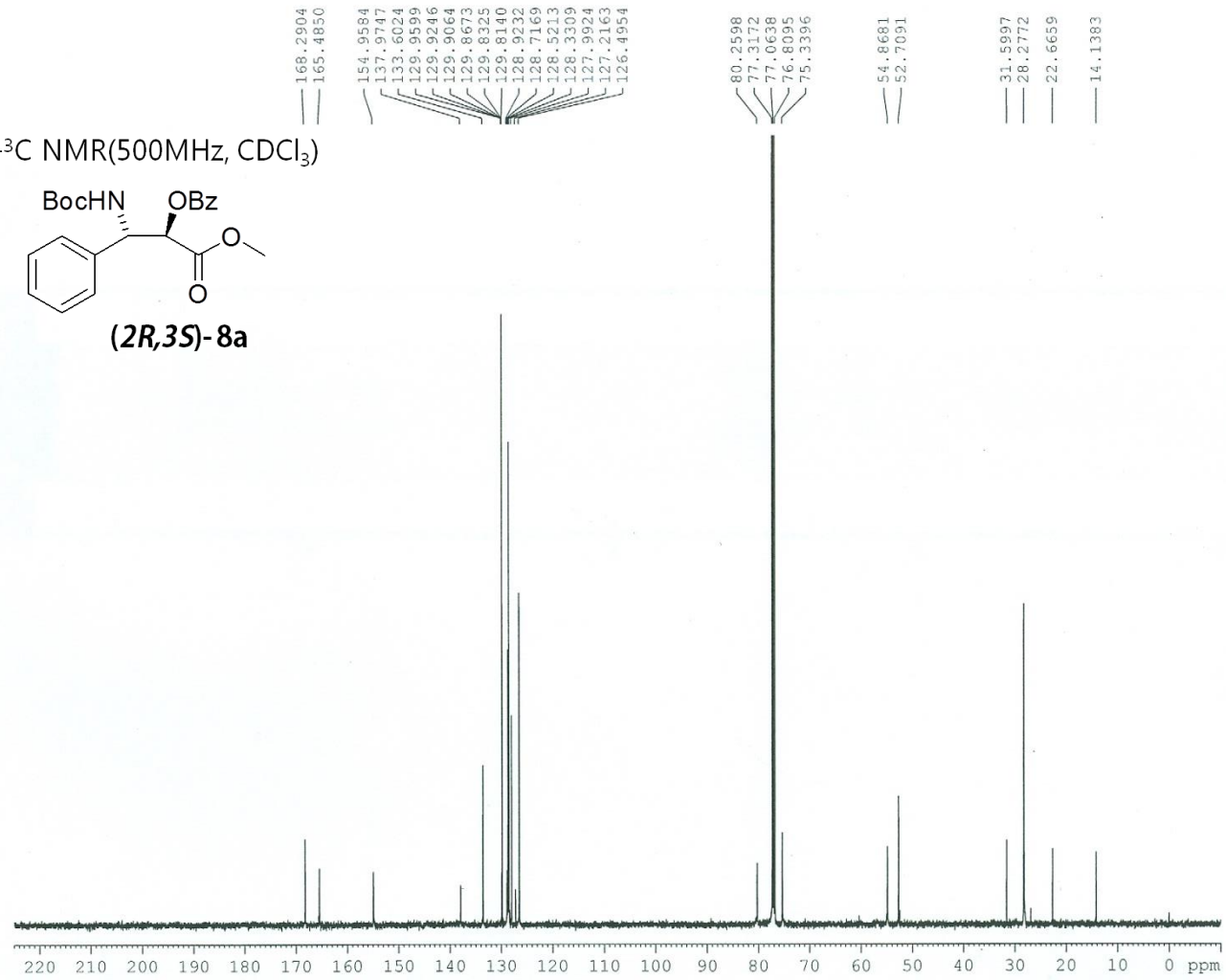
(*2R,3S*)-8a

NAME	KJA-OBZ-0321
EXPNO	1120
PROCNO	1
Date_	20140321
Time	14.39
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zg30
TD	32768
SOLVENT	CDCl3
NS	8
DS	2
SWH	7507.507 Hz
FIDRES	0.229111 Hz
AQ	2.1824653 sec
RG	574.7
DW	66.600 usec
DE	6.00 usec
TE	295.0 K
D1	1.00000000 sec
TD0	1

======== CHANNEL f1 ========

NUC1	1H
P1	9.80 usec
PL1	-1.90 dB
PL1W	27.23316002 W
SFO1	500.1332508 MHz
SI	16384
SF	500.1300231 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

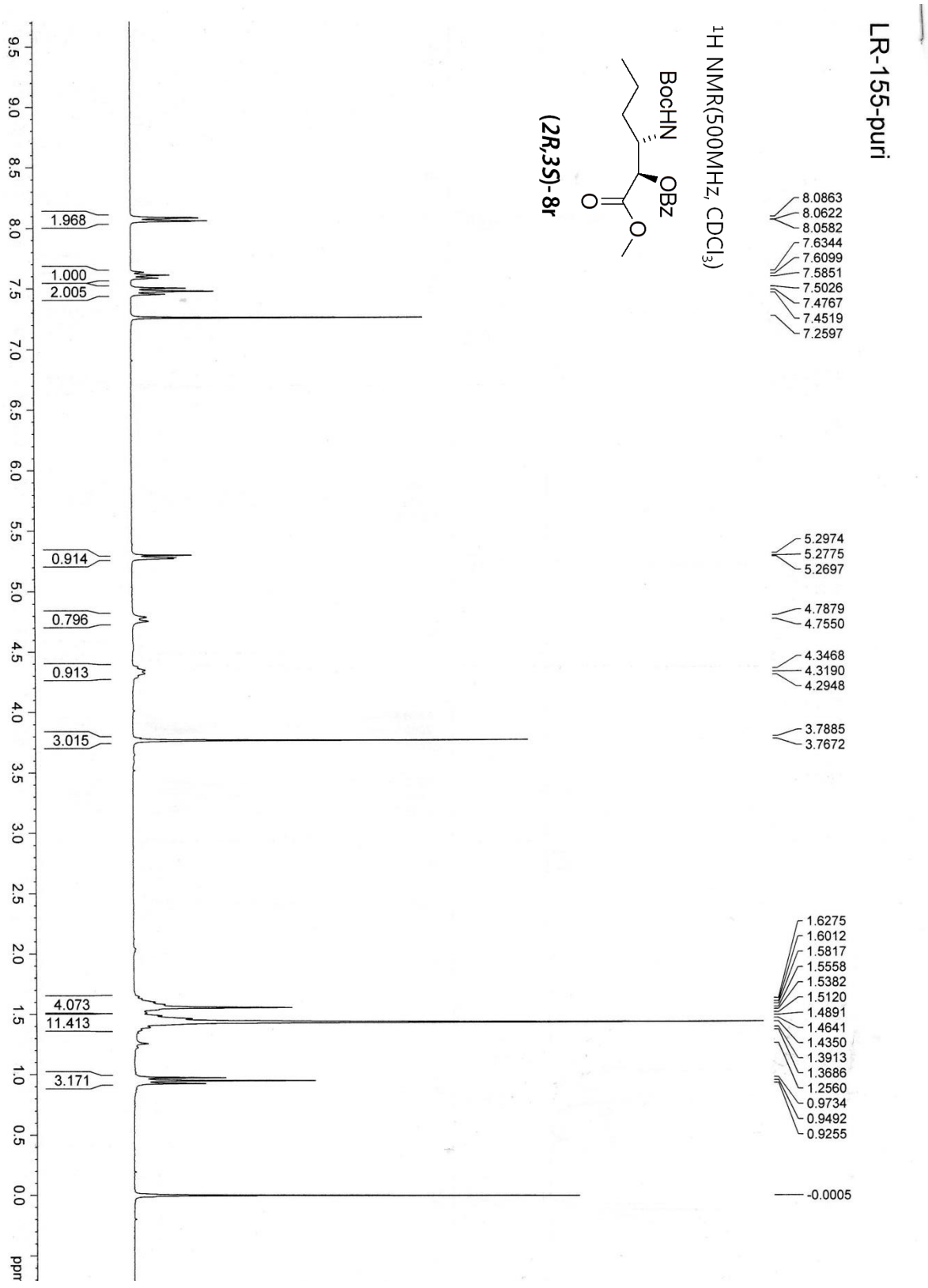
KJA_ph_carbo_OBz



^{13}C NMR(500MHz, $CDCl_3$)

***(2R,3S)*-8a**

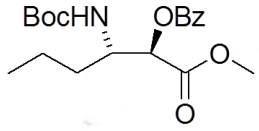
NAME	KJA_ph_carbo_OBz
EXPNO	1
PROCNO	1
Date_	20140306
Time	9.14
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	4096
DW	14.200 usec
DE	6.00 usec
TE	297.0 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
========	CHANNEL f1 ========
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
========	CHANNEL f2 ========
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


LR-155-puri
^{1}H NMR(500MHz, CDCl$_3$)
BocHN
OBz
O
O
(2R,3S)-8r
8.0863
8.0622
8.0582
7.6344
7.6099
7.5851
7.5026
7.4767
7.4519
7.2597
5.2974
5.2775
5.2697
4.7879
4.7550
4.3468
4.3190
4.2948
3.7885
3.7672
1.6275
1.6012
1.5817
1.5558
1.5382
1.5120
1.4891
1.4641
1.4350
1.3913
1.3686
1.2560
0.9734
0.9492
0.9255
-0.0005
1.968
1.000
2.005
0.914
0.796
0.913
3.015
4.073
11.413
3.171
ppm

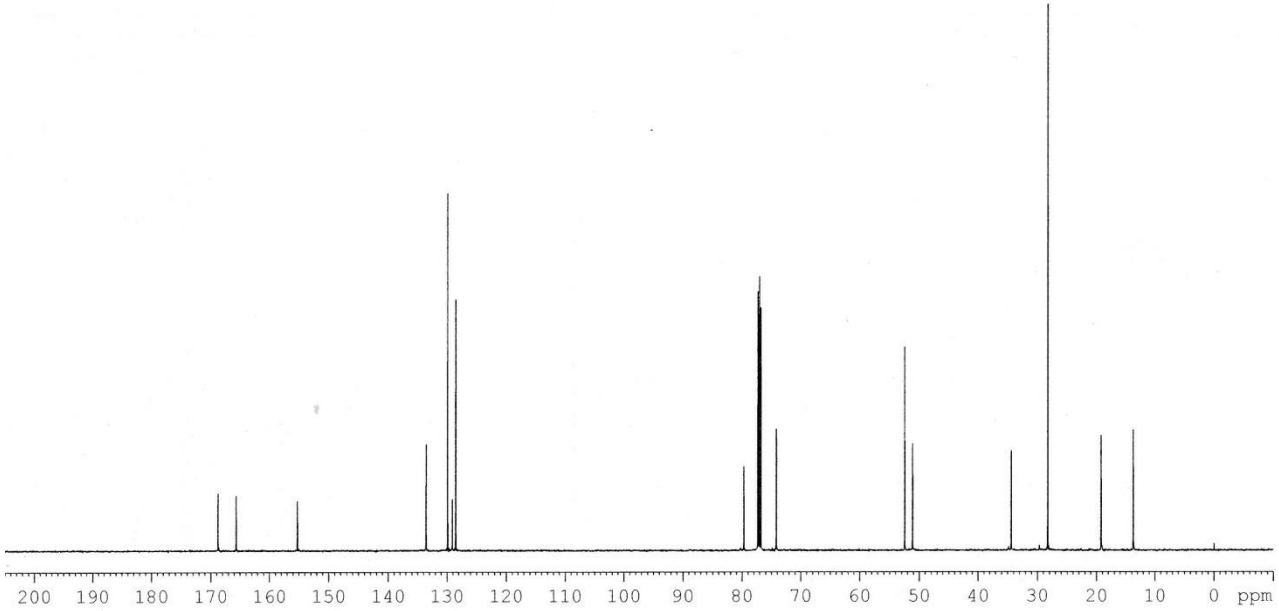
LR_155_puri

168.7918
165.6835
155.2579
133.5601
129.8903
129.1271
128.5143
79.7179
77.3186
77.0636
76.8095
74.1641
52.4724
51.1259
34.3789
28.2632
19.2255
13.7186

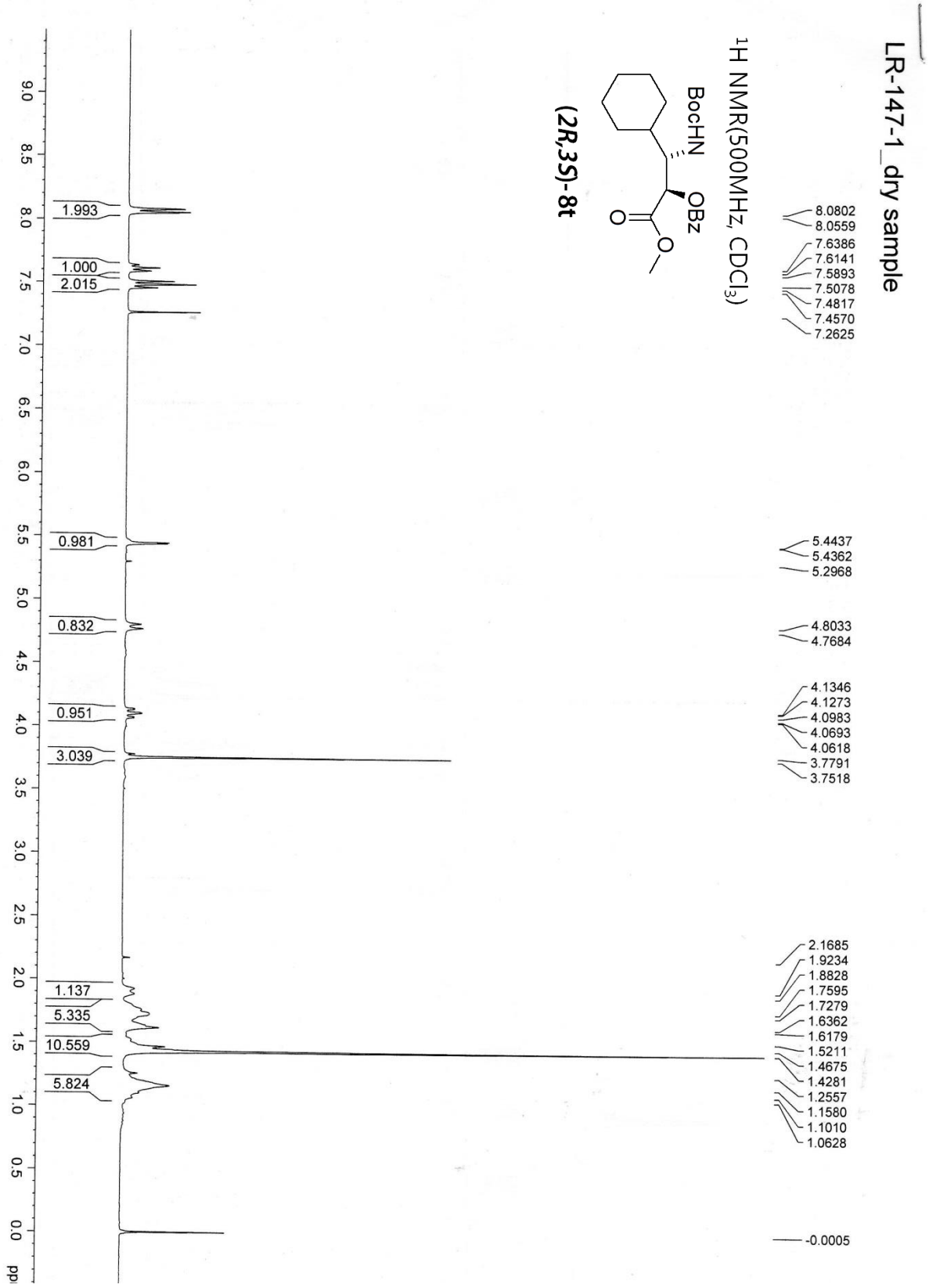
^{13}C NMR(500MHz, $CDCl_3$)



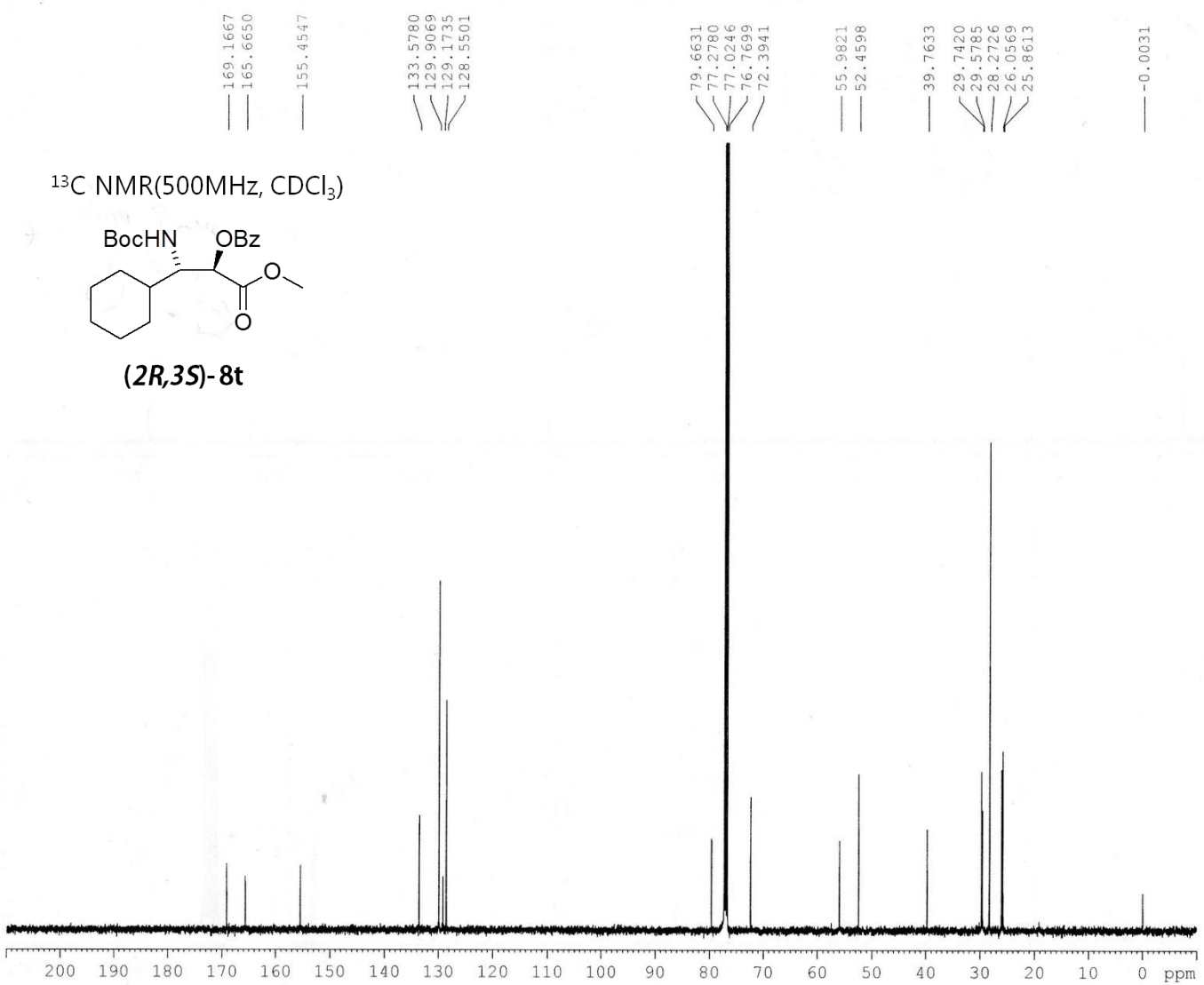
(*2R,3S*)-8r



NAME	LR_155_puri
EXPNO	1
PROCNO	1
Date_	20140707
Time	21.13
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	30303.031 Hz
FIDRES	0.924775 Hz
AQ	0.5407385 se
RG	574.7
DW	16.500 us
DE	6.00 us
TE	300.0 K
D1	2.00000000 se
D11	0.03000000 se
TD0	1
======== CHANNEL f1 ======	
NUC1	13C
P1	8.00 us
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7703661 MH
======== CHANNEL f2 ======	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 us
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MH
SI	32768
SF	125.7577890 MH
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


LR-147-1_dry sample
^{1}H NMR(500MHz, CDCl$_3$)
BocHN
OBz
(2R,3S)-8t
8.0802
8.0559
7.6386
7.6141
7.5893
7.5078
7.4817
7.4570
7.2625
5.4437
5.4362
5.2968
4.8033
4.7684
4.1346
4.1273
4.0983
4.0693
4.0618
3.7791
3.7518
2.1685
1.9234
1.8828
1.7595
1.7279
1.6362
1.6179
1.5211
1.4675
1.4281
1.2557
1.1580
1.1010
1.0628
-0.0005
1.993
1.000
2.015
0.981
0.832
0.951
3.039
1.137
5.335
10.559
5.824
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
ppm

LR_147_1



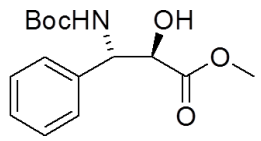
^{13}C NMR(500MHz, $CDCl_3$)

***(2R,3S)*-8t**

NAME	LR_147_1
EXPNO	1
PROCNO	1
Date_	20140619
Time	23.23
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	CDCl3
NS	1000
DS	2
SWH	30303.031 Hz
FIDRES	0.924775 Hz
AQ	0.5407385 se
RG	161.3
DW	16.500 us
DE	6.00 us
TE	297.8 K
D1	2.00000000 se
D11	0.03000000 se
TD0	1
======== CHANNEL f1 ======	
NUC1	13C
P1	8.00 us
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7703661 MH
======== CHANNEL f2 ======	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 us
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MH
SI	32768
SF	125.7577890 MH
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

KJA_ph_carbo_N_Boc_OH

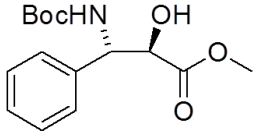
^{1}H NMR(500MHz, $CDCl_3$)



(*2R,3S*)-9a


```
NAME     KJA_ph_carbo_N_Boc_OH
EXPNO            1
PROCNO           1
Date_        20140307
Time           12.06
INSTRUM         spect
PROBHD   5 mm DUL 13C-1
PULPROG         zg30
TD             65536
SOLVENT         CDCl3
NS               16
DS               2
SWH          7507.507 Hz
FIDRES       0.114555 Hz
AQ           4.3648143 sec
RG             322.5
DW             66.600 usec
DE             6.00 usec
TE             298.3 K
D1           1.00000000 sec
TD0              1

======== CHANNEL f1 ========
NUC1             1H
P1             9.80 usec
PL1            -1.90 dB
PL1W       27.23316002 W
SFO1       500.1332508 MHz
SI           32768
SF         500.1300000 MHz
WDW              EM
SSB              0
LB             0.30 Hz
GB               0
PC             1.00
```

^{13}C NMR(500MHz, $CDCl_3$)

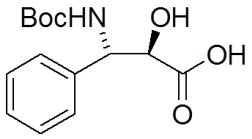


(*2R,3S*)-9a


```
NAME          KJA_ph_carbo_N_Boc_OH_0401
EXPNO                                  1
PROCNO                                 1
Date_                           20140401
Time                               20.19
INSTRUM                            spect
PROBHD     5 mm DUL 13C-1
PULPROG                         zgpg30
TD                                 32768
SOLVENT                            CDCl3
NS                                  2000
DS                                     2
SWH                           35211.270 Hz
FIDRES                        1.074563 Hz
AQ                            0.4653698 sec
RG                                5160.6
DW                                14.200 usec
DE                                 6.00 usec
TE                                299.5 K
D1                           2.00000000 sec
D11                          0.03000000 sec
TD0                                    1

======== CHANNEL f1 ========
NUC1                                13C
P1                                 8.00 usec
PL1                                1.40 dB
PL1W                        70.60439301 W
SFO1                       125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                        waltz16
NUC2                                1H
PCPD2                            100.00 usec
PL2                               -1.90 dB
PL12                              16.00 dB
PL13                              19.00 dB
PL2W                        27.23316002 W
PL12W                        0.44167015 W
PL13W                        0.22135943 W
SFO2                       500.1320005 MHz
SI                                 32768
SF                         125.7577890 MHz
WDW                                   EM
SSB                                    0
LB                                 1.00 Hz
GB                                     0
PC                                 1.40
```

KJA-Taxo-0402 DMSO

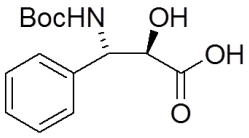
^{1}H NMR(500MHz, $CDCl_3$)



(*2R,3S*)-10a

KJA_Taxo_0402

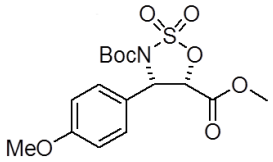
^{13}C NMR(500MHz, $CDCl_3$)



(*2R,3S*)-10a

NAME	KJA_Taxo_0402
EXPNO	2
PROCNO	1
Date_	20140402
Time	22.57
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	32768
SOLVENT	DMSO
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	1.074563 Hz
AQ	0.4653698 sec
RG	90.5
DW	14.200 usec
DE	6.00 usec
TE	296.5 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

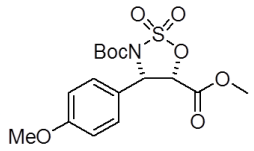
^{1}H NMR(500MHz, $CDCl_3$)



N-Boc-**(*S,S*)-7j**

KJA_4_OMe_car_N_BOC_1023

^{13}C NMR(500MHz, $CDCl_3$)



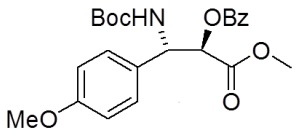
N-Boc-**(*S,S*)-7j**


```
NAME          KJA_4_OMe_car_N_BOC_1023
EXPNO                    1
PROCNO                   1
Date_             20131024
Time                  7.45
INSTRUM               spect
PROBHD     5 mm DUL 13C-1
PULPROG            zgpg30
TD                  65536
SOLVENT             CDCl3
NS                   4000
DS                      2
SWH              35211.270 Hz
FIDRES           0.537281 Hz
AQ               0.9306754 sec
RG                   812.7
DW                  14.200 usec
DE                   6.00 usec
TE                  296.5 K
D1               2.00000000 sec
D11              0.03000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                  13C
P1                   8.00 usec
PL1                  1.40 dB
PL1W          70.60439301 W
SFO1         125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                  1H
PCPD2              100.00 usec
PL2                 -1.90 dB
PL12                16.00 dB
PL13                19.00 dB
PL2W          27.23316002 W
PL12W          0.44167015 W
PL13W          0.22135943 W
SFO2         500.1320005 MHz
SI                  32768
SF           125.7577890 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

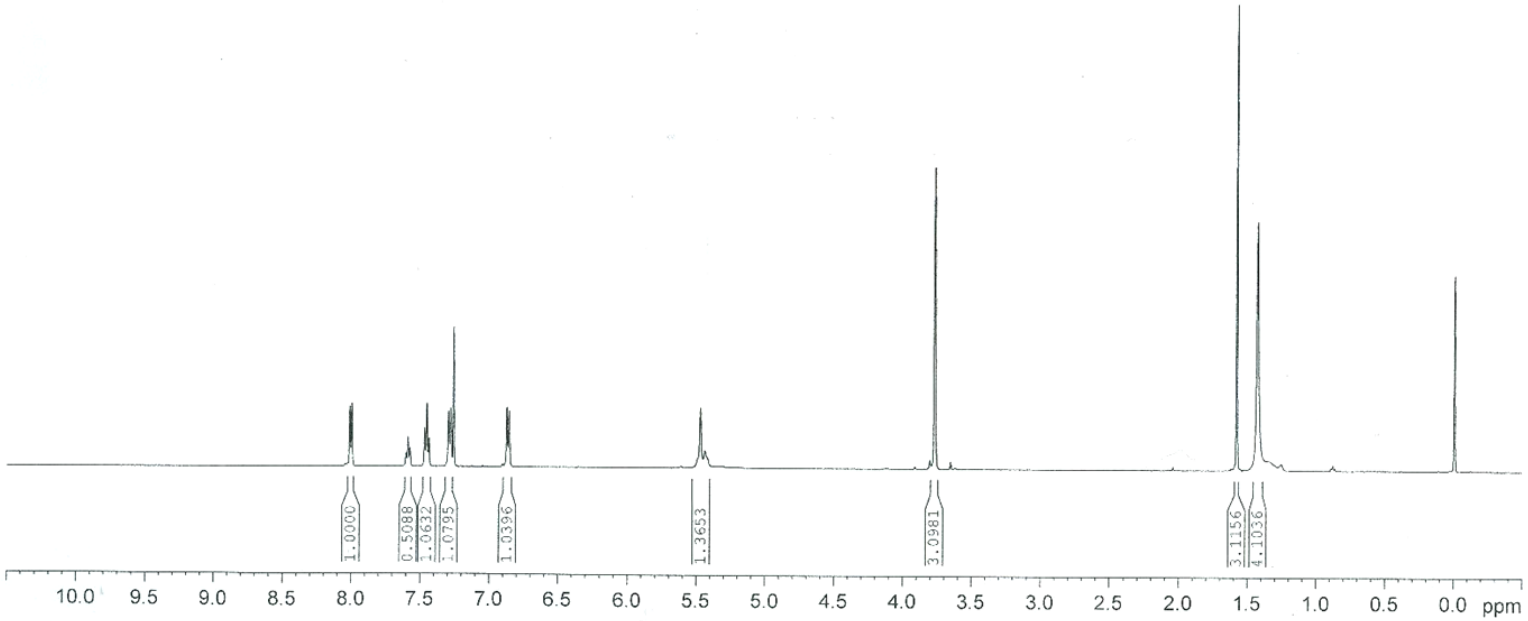
KJA-4-OMe-carbo-N-Boc-OBz-pur

8.0110
7.9958
7.5865
7.5716
7.4660
7.4511
7.4360
7.2935
7.2775
7.2578
6.8699
6.8536
5.4695
5.4377
3.7678
1.5788
1.4272

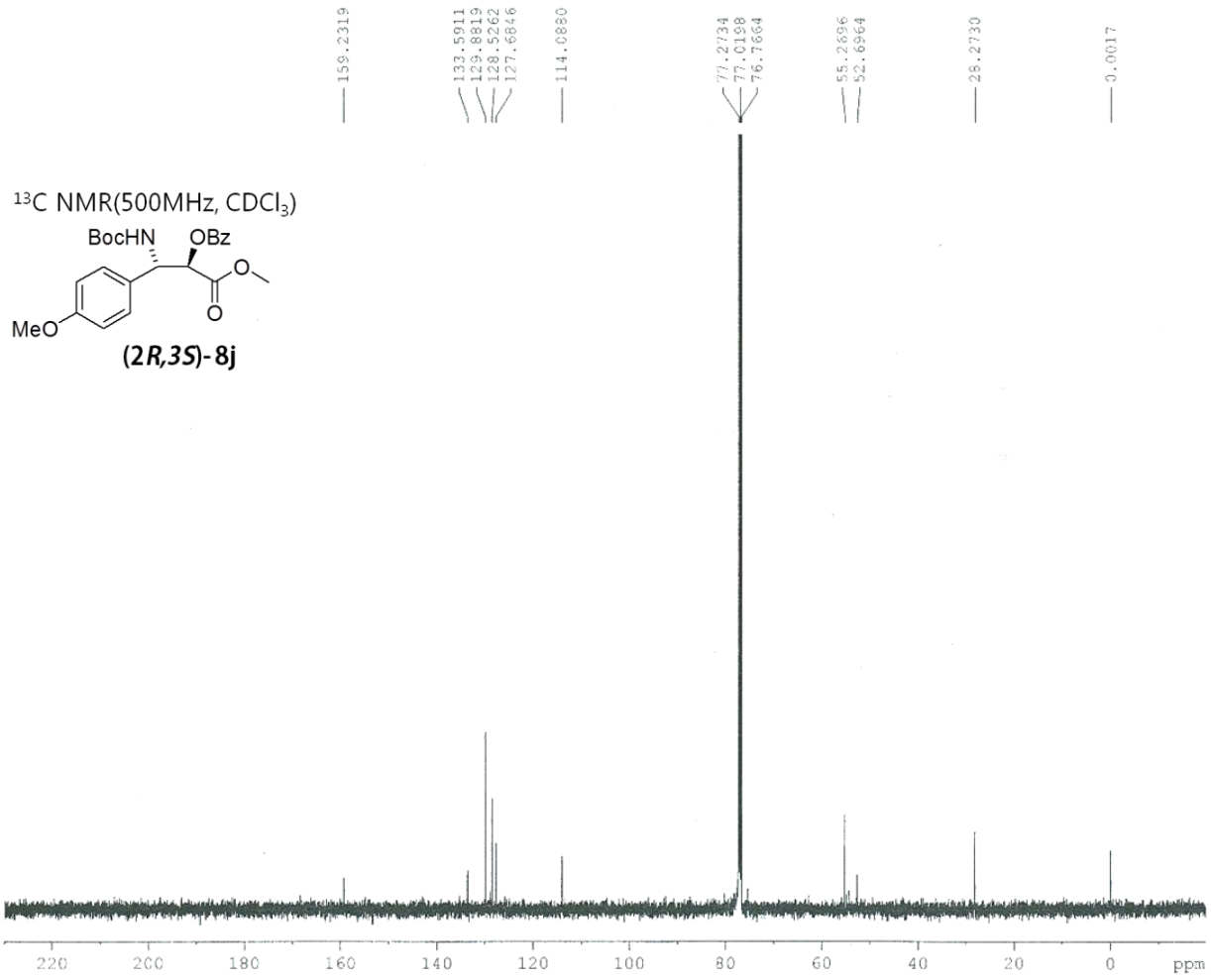
^{1}H NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-8j



KJA_4_OMe_carbo_N_Boc_OBz

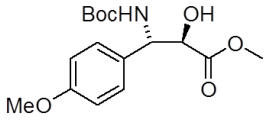


^{13}C NMR(500MHz, $CDCl_3$)

(2*R*,3*S*)-8j

```
NAME            KJA_4_OMe_carbo_N_Boc_OBz
EXPNO                                   1
PROCNO                                  1
Date_                        20131010
Time_                             22.27
INSTRUM                            spect
PROBHD     5 mm DUL 13C-1
PULPROG                         zgpg30
TD                               65536
SOLVENT                          CDCl3
NS                                1000
DS                                   2
SWH                          35211.270 Hz
FIDRES                        0.537281 Hz
AQ                            0.9306754 sec
RG                                 512
DW                              14.200 usec
DE                               6.00 usec
TE                              297.3 K
D1                           2.00000000 sec
D11                          0.03000000 sec
TD0                                  1

======== CHANNEL f1 ========
NUC1                              13C
P1                               8.00 usec
PL1                              1.40 dB
PL1W                    70.60439301 W
SFO1                   125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                       waltz16
NUC2                              1H
PCPD2                          100.00 usec
PL2                             -1.90 dB
PL12                             16.00 dB
PL13                             19.00 dB
PL2W                    27.23316002 W
PL12W                    0.44167015 W
PL13W                    0.22135943 W
SFO2                   500.1320005 MHz
SI                             32768
SF                     125.7577890 MHz
WDW                               EM
SSB                                0
LB                               1.00 Hz
GB                                 0
PC                              1.40
```

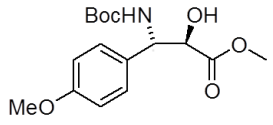
^{1}H NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-9j

KJA_4_OMe_carbo_N_Boc_OH

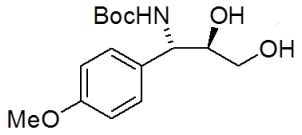
^{13}C NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-9j

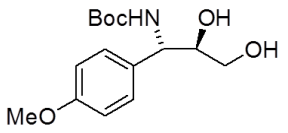
NAME	KJA_4_OMe_carbo_N_Boc_OH
EXPNO	1
PROCNO	1
Date_	20131011
Time	23.11
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	1000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	512
DW	14.200 usec
DE	6.00 usec
TE	296.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	29.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

^{1}H NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-11

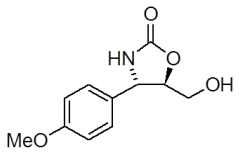
^{13}C NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-11

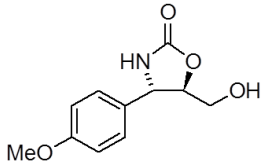

```
NAME          KJA_4_OMe_N_Boc_OH_reduct
EXPNO                                 2
PROCNO                                1
Date_                          20131113
Time                              11.19
INSTRUM                           spect
PROBHD     5 mm DUL 13C-1
PULPROG                        zgpg30
TD                                32768
SOLVENT                           CDCl3
NS                                 2000
DS                                    2
SWH                           35211.270 Hz
FIDRES                        1.074563 Hz
AQ                            0.4653698 sec
RG                                812.7
DW                               14.200 usec
DE                                6.00 usec
TE                               296.8 K
D1                           2.00000000 sec
D11                          0.03000000 sec
TD0                                   1

======== CHANNEL f1 ========
NUC1                               13C
P1                                8.00 usec
PL1                               1.40 dB
PL1W                     70.60439301 W
SFO1                    125.7728799 MHz

======== CHANNEL f2 ========
CPDPRG2                       waltz16
NUC2                               1H
PCPD2                           100.00 usec
PL2                              -1.90 dB
PL12                             16.00 dB
PL13                             19.00 dB
PL2W                     27.23316002 W
PL12W                     0.44167015 W
PL13W                     0.22135943 W
SFO2                    500.1320005 MHz
SI                                32768
SF                      125.7577890 MHz
WDW                               EM
SSB                                0
LB                             1.00 Hz
GB                                 0
PC                                1.40
```

^{1}H NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-12

^{13}C NMR(500MHz, $CDCl_3$)



(2*R*,3*S*)-12

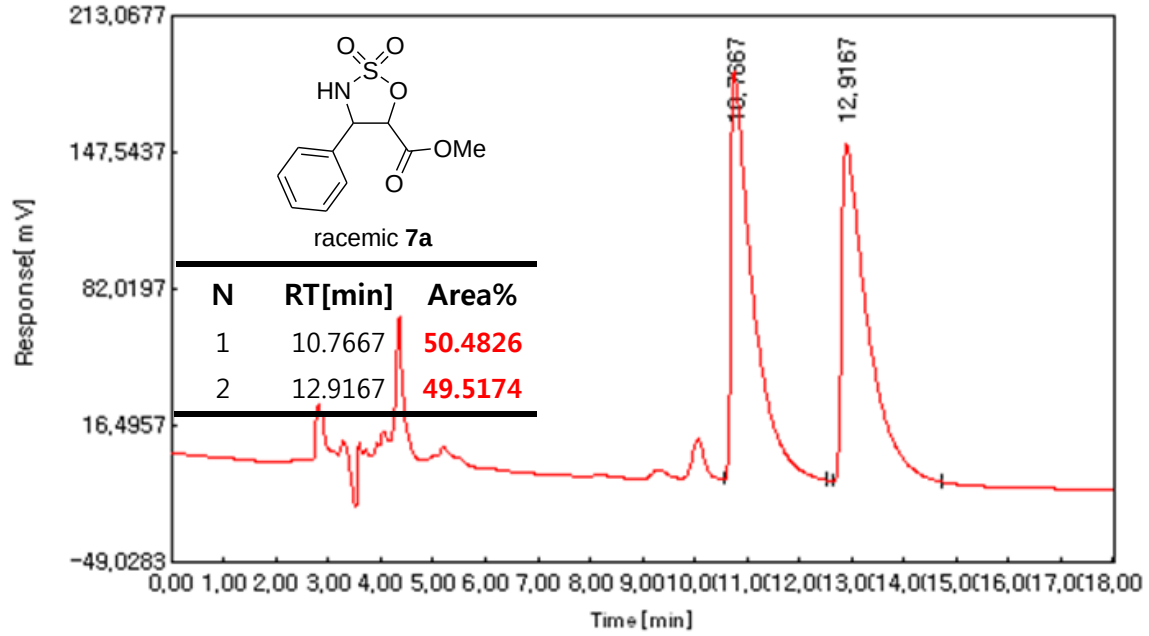
NAME	KJA_4_OMe_epi_cyto_re
EXPNO	1
PROCNO	1
Date_	20131105
Time	22.43
INSTRUM	spect
PROBHD	5 mm DUL 13C-1
PULPROG	zgpg30
TD	65536
SOLVENT	MeOD
NS	5000
DS	2
SWH	35211.270 Hz
FIDRES	0.537281 Hz
AQ	0.9306754 sec
RG	14596.5
DW	14.200 usec
DE	6.00 usec
TE	299.9 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1
======== CHANNEL f1 ========	
NUC1	13C
P1	8.00 usec
PL1	1.40 dB
PL1W	70.60439301 W
SFO1	125.7728799 MHz
======== CHANNEL f2 ========	
CPDPRG2	waltz16
NUC2	1H
PCPD2	100.00 usec
PL2	-1.90 dB
PL12	16.00 dB
PL13	19.00 dB
PL2W	27.23316002 W
PL12W	0.44167015 W
PL13W	0.22135943 W
SFO2	500.1320005 MHz
SI	32768
SF	125.7577890 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40

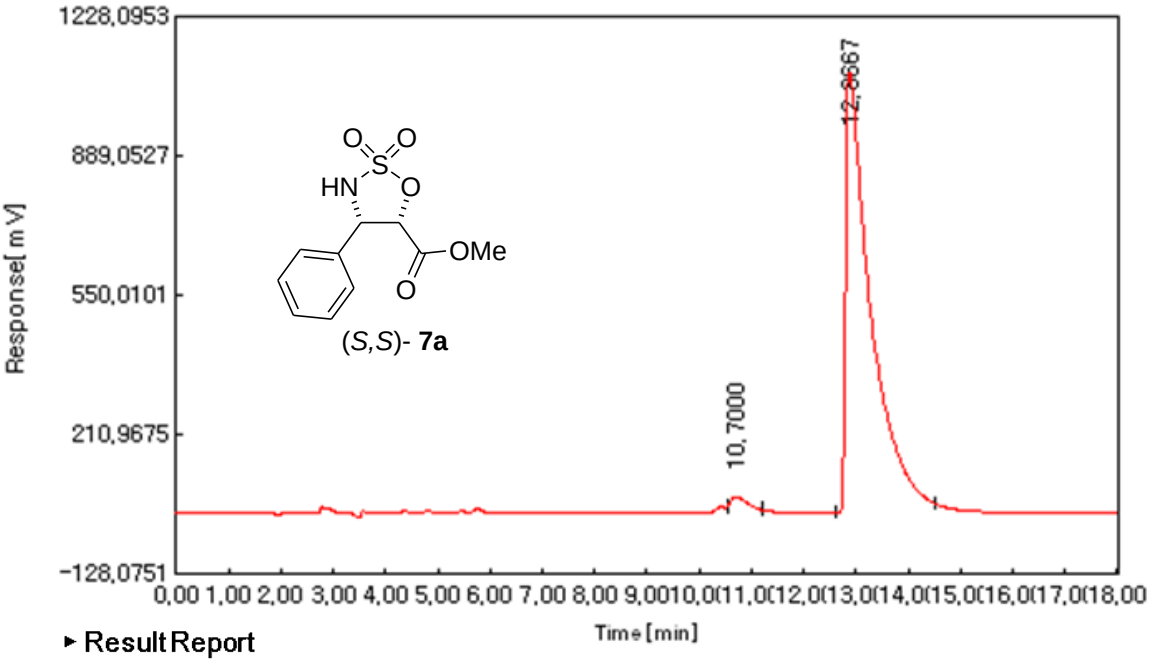
Chiral HPLC Chromatograms

Chiral HPLC Chromatograms of ATH-DKR products

▶ **Sample name:** (*S*,*S*)-**7a**

▶ **Analysis condition:** Chiralpak IB, 20% EtOH/n-hexane, 1.0 ml/min, 215nm





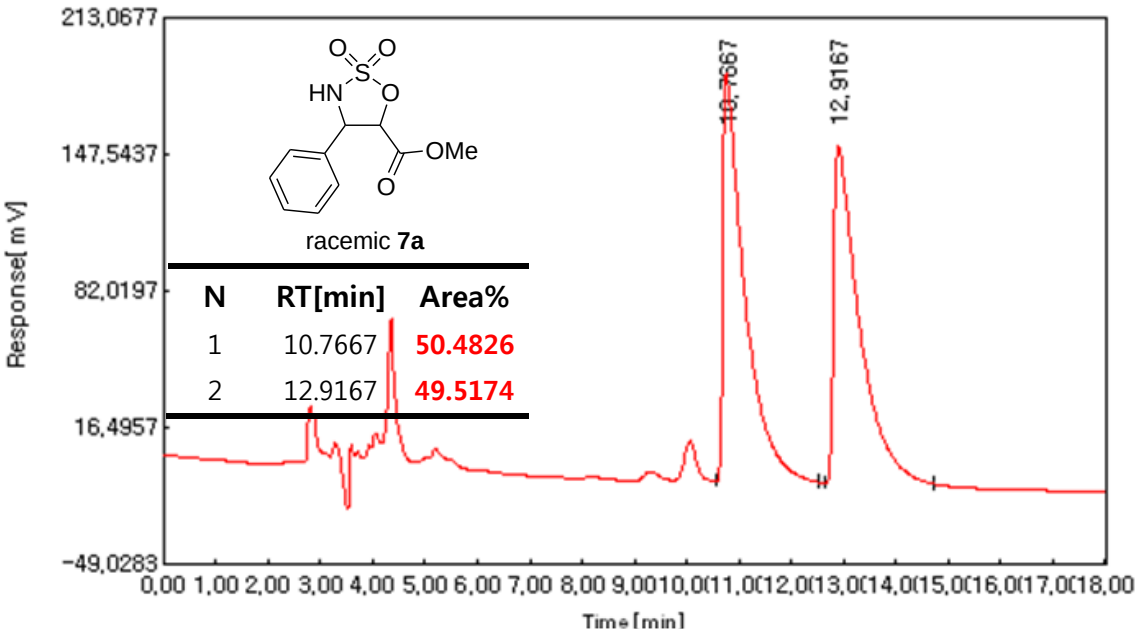
▸ Result Report

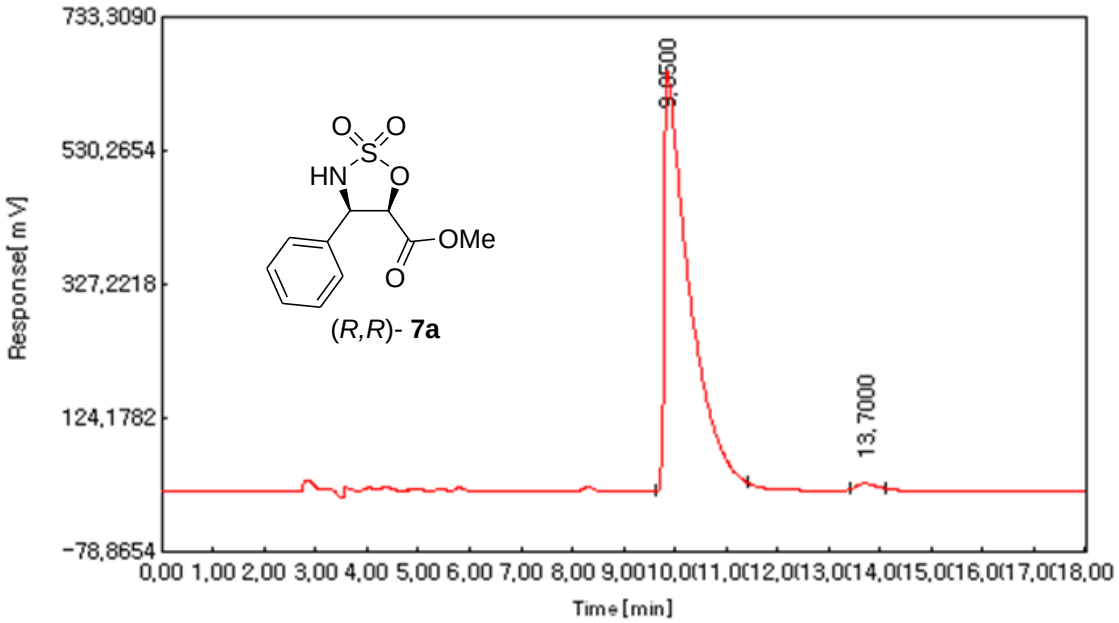
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	10.7000	550.3260	FF	40.0000	1.4940
2	12.8667	36285.7819	FF	114.0000	98.5060
합계		36836.1094			

ee=97%

▶ **Sample name:** (*R*,*R*)-**7a**

▶ **Analysis condition:** Chiralpak IB, 20% EtOH/n-hexane, 1.0 ml/min, 215nm





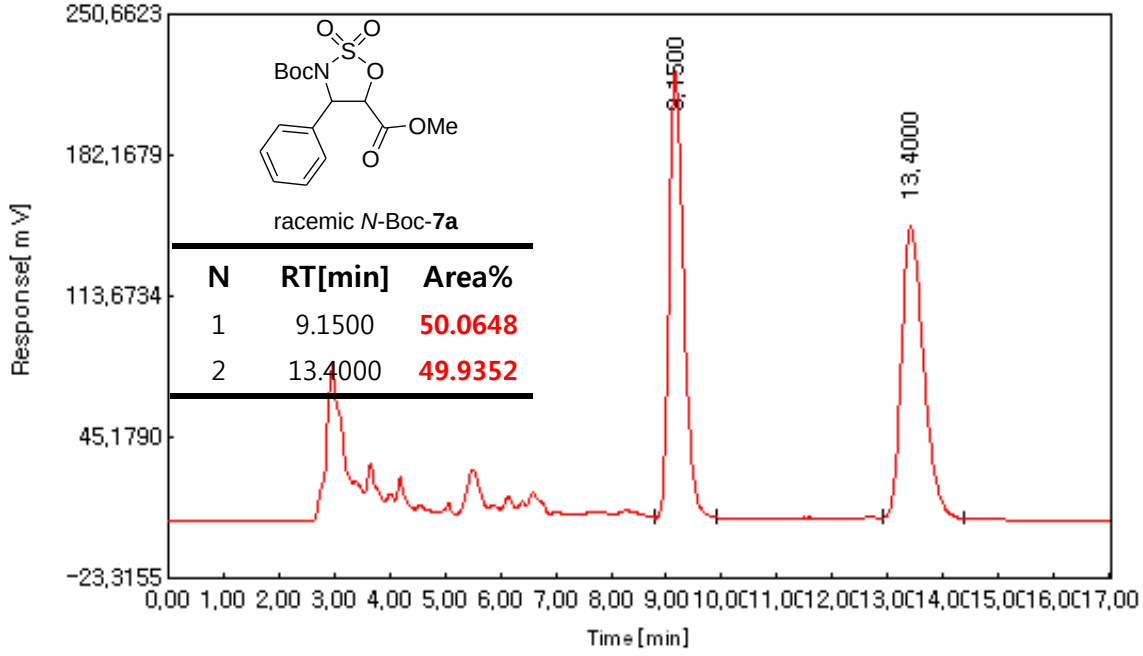
▸ Result Report

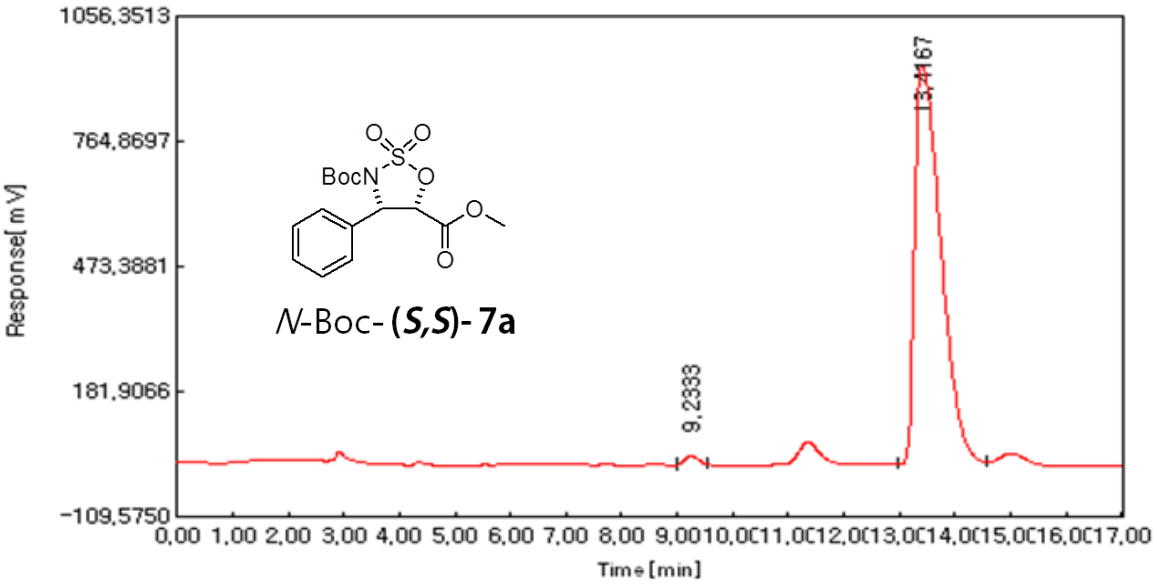
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.8500	22019.3878	FF	109.0000	99.0959
2	13.7000	200.8943	FF	42.0000	0.9041
합계		22220.2832			

ee=98%

▶ **Sample name:** (*S*,*S*)-*N*-Boc-**7a**

▶ **Analysis condition:** Chiralpak AD-H, 10% iPrOH/n-hexane, 1.0 ml/min, 215nm





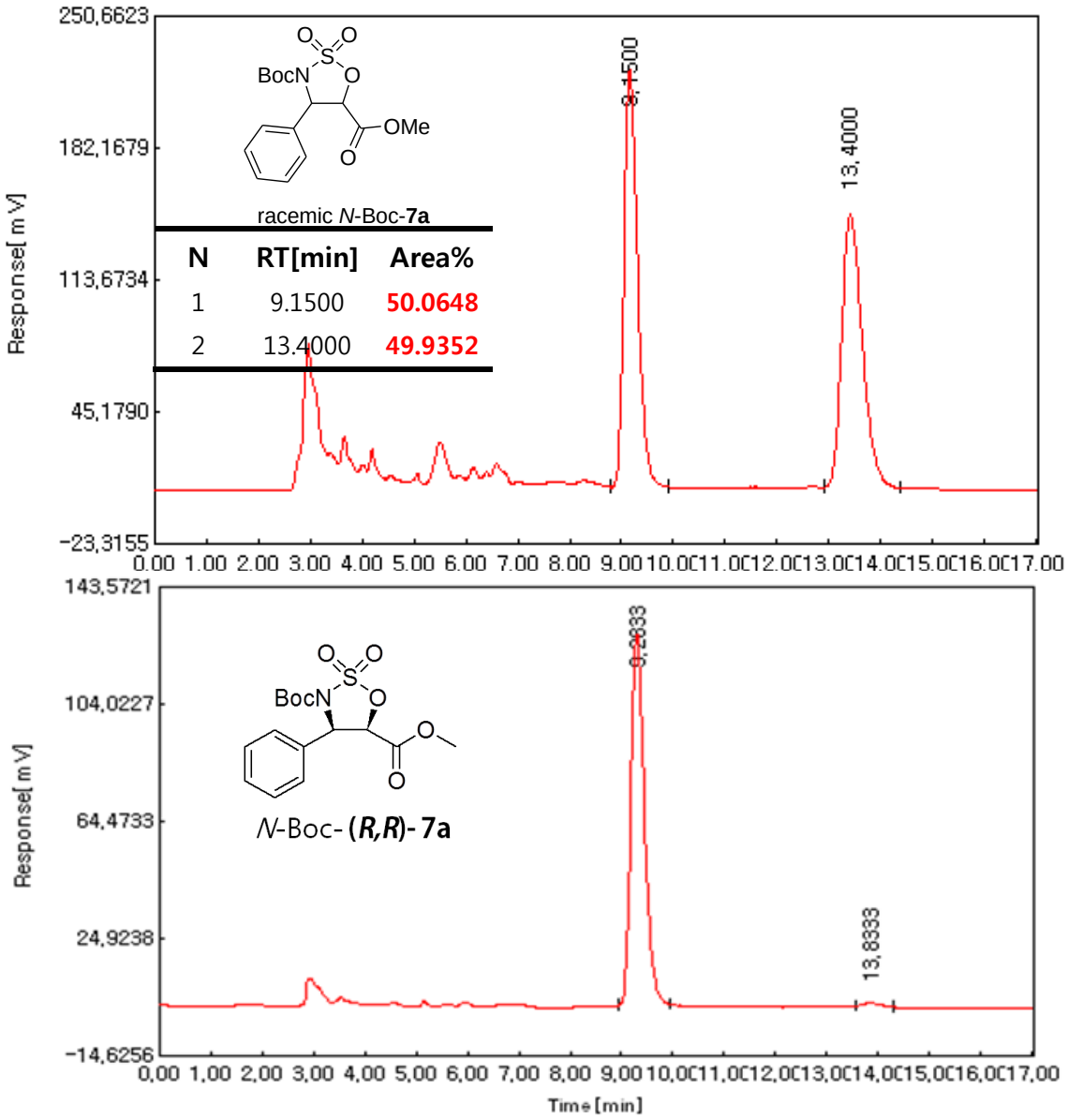
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.2333	347.1643	FF	32.0000	1.0986
2	13.4167	31252.2745	BB	96.0000	98.9014
Total		31599.4395			

ee=98%

▶ **Sample name:** (*R*,*R*)-*N*-Boc-**7a**

▶ **Analysis condition:** Chiralpak AD-H, 10% iPrOH/n-hexane, 1.0 ml/min, 215nm



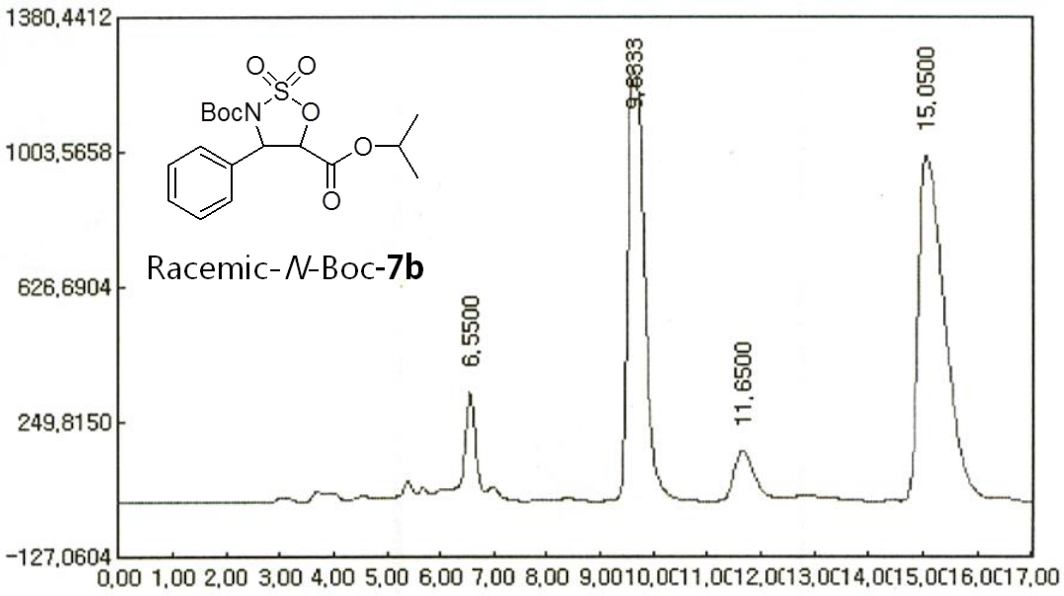
▶ Result Report

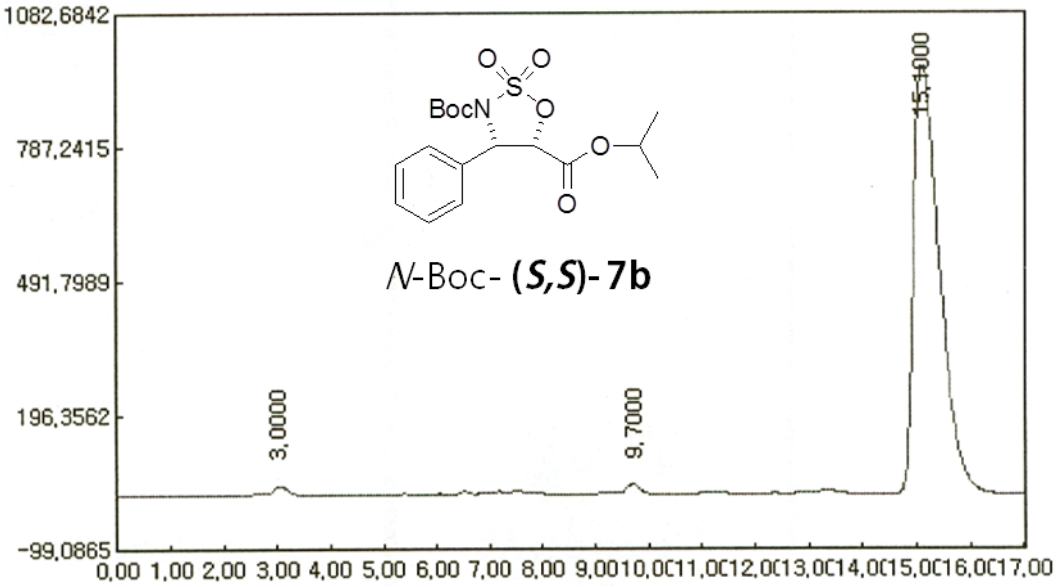
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.2833	2362.1962	BB	62.0000	98.8747
2	13.8333	26.8841	FF	43.0000	1.1253
Total		2389.0803			

ee=98%

▶ **Sample name:** (*S*,*S*)-*N*-Boc-**7b**

▶ **Analysis condition:** Chiralpak AD-H, 10% iPrOH/n-hexane, 1.0 ml/min, 215nm





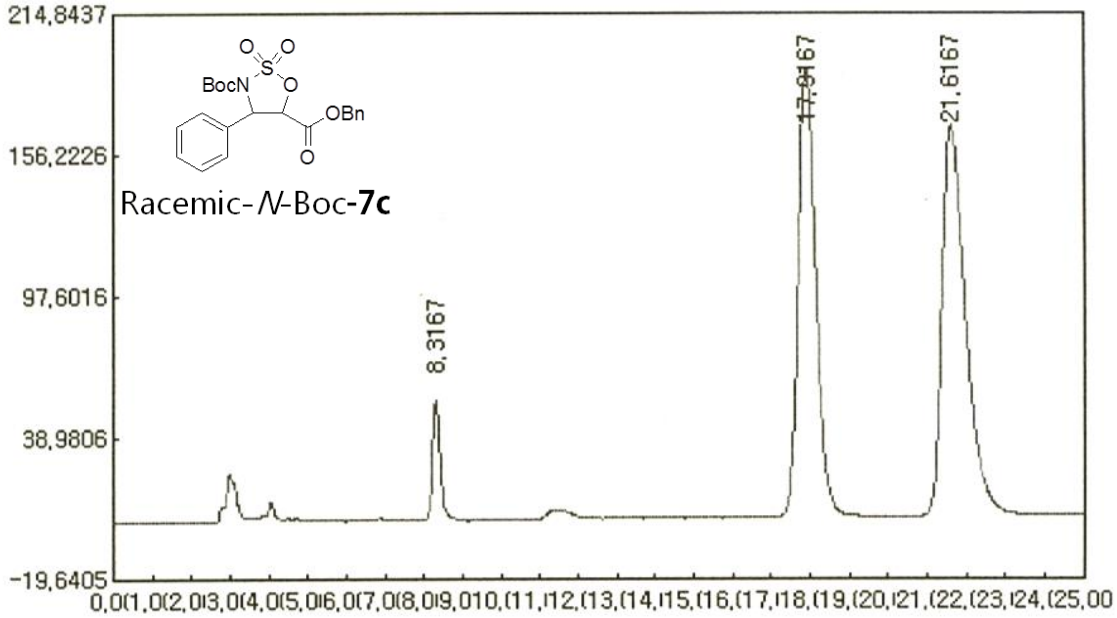
▸ **Result Report**

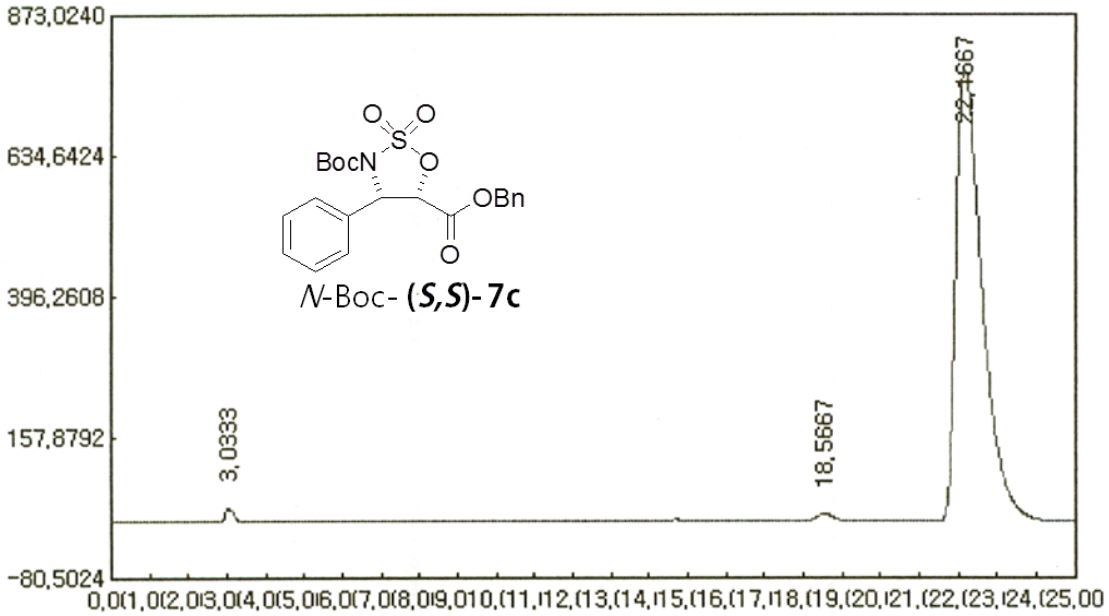
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.7000	351.3224	BB	43.0000	1.0484
2	14.2833	32805.7090	BB	118.0000	97.8995
Total		33510.9453			

ee=97.2%

▶ **Sample name:** (*S*,*S*)-*N*-Boc-**7c**

▶ **Analysis condition:** Chiralpak AD-H, 10% iPrOH/n-hexane, 1.0 ml/min, 215nm





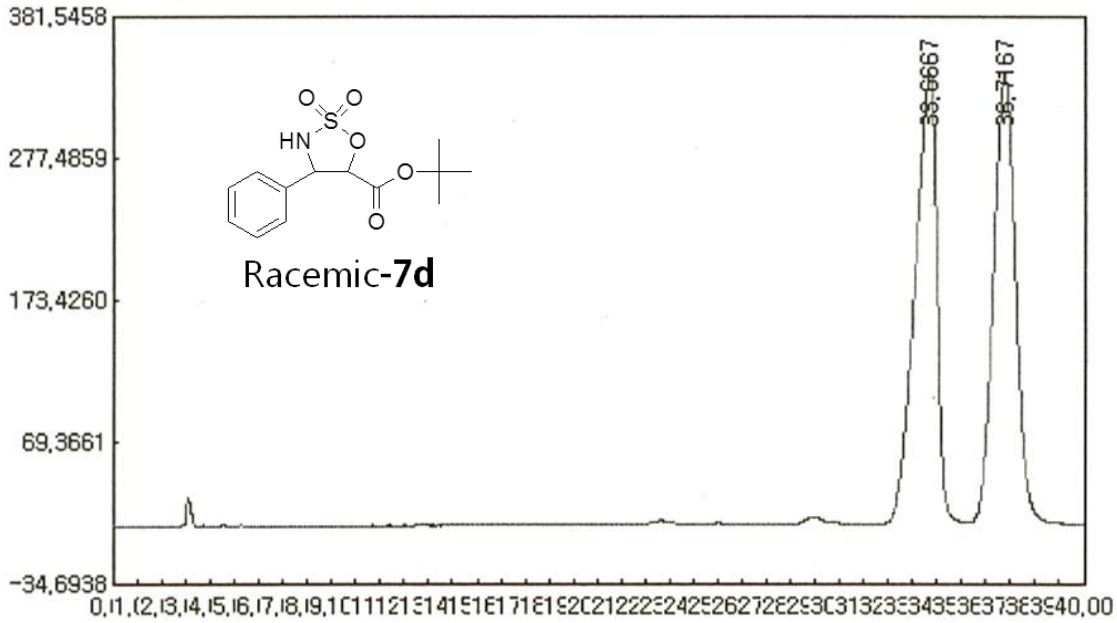
▸ **Result Report**

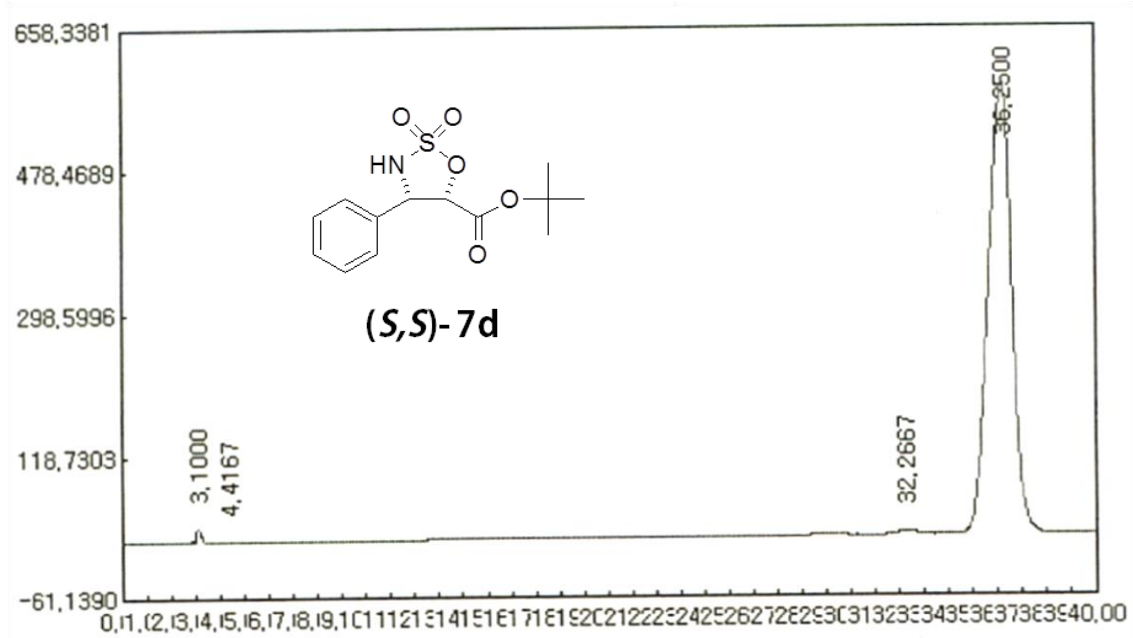
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	18.5667	387.5644	BB	68.0000	1.0268
2	22.1667	37040.3066	BB	168.0000	98.1286
Total		37746.6836			

ee=97.9%

▶ **Sample name:** (*S*,*S*)-**7d**

▶ **Analysis condition:** Chiralpak AD-H, 5% iPrOH/n-hexane, 1.0 ml/min, 215nm





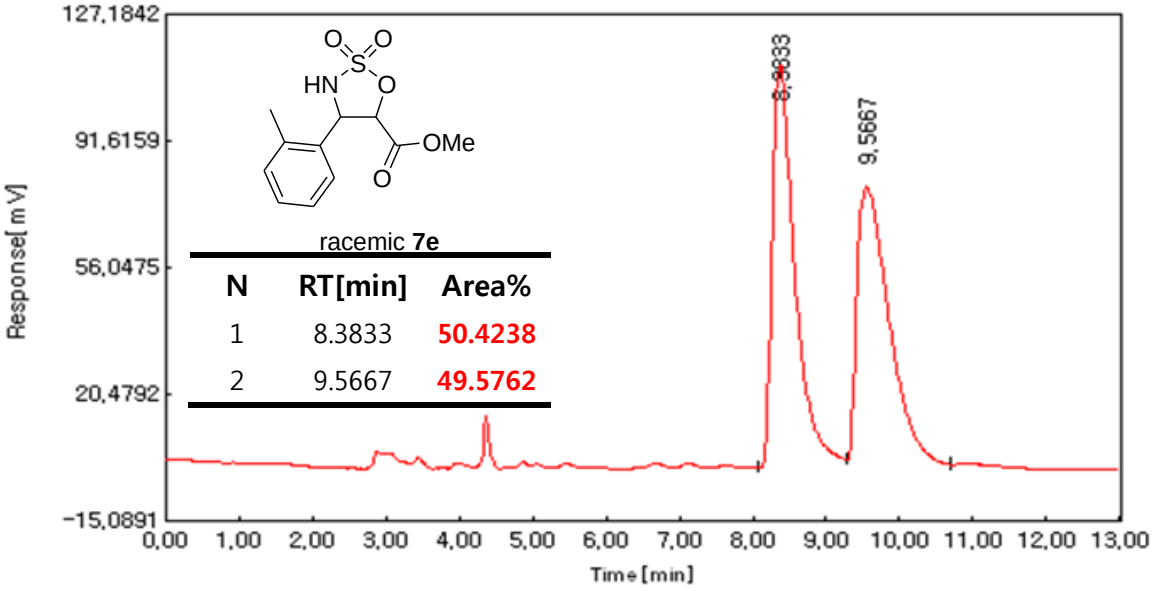
▸ **Result Report**

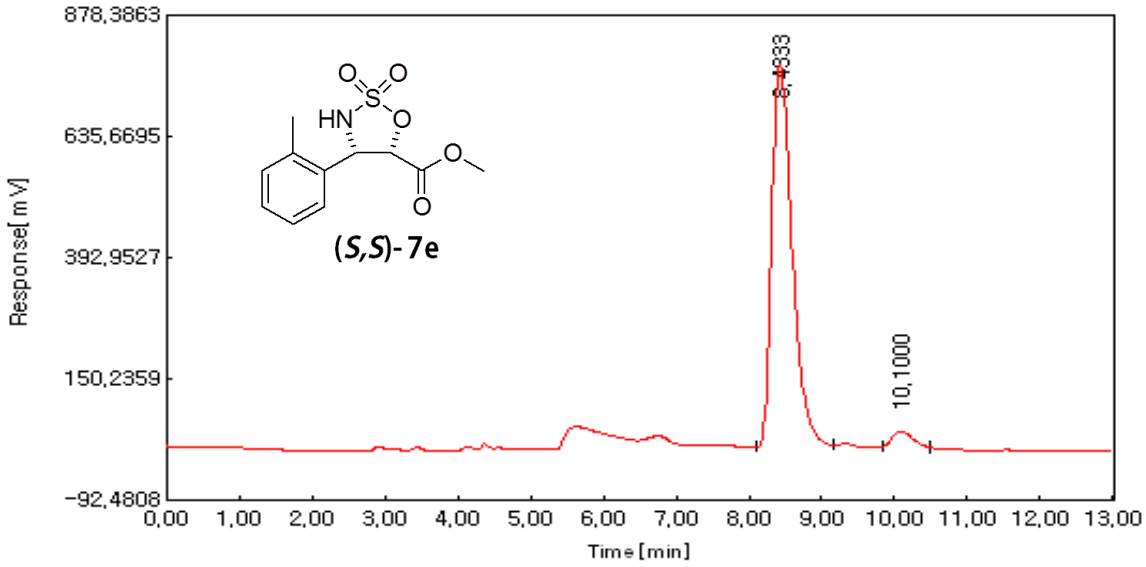
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	32.2667	28.7343	BB	42.0000	0.0730
2	36.2500	39153.5218	BB	208.0000	99.4094
Total		39182.2561			

ee=>99%

▶ **Sample name:** (*S*,*S*)-**7e**

▶ **Analysis condition:** Chiralpak AD-H, 20% iPrOH/n-hexane, 1.0 ml/min, 215nm





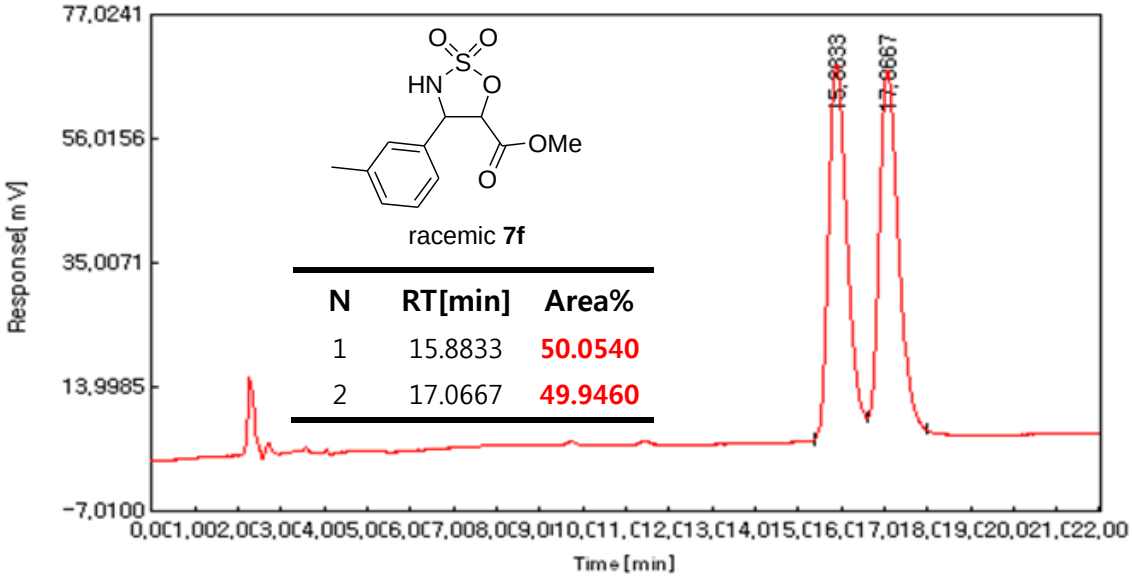
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	8.4333	15569.3232	BB	63.0000	96.0666
2	10.1000	637.4800	FF	40.0000	3.9334
Total		16206.8037			

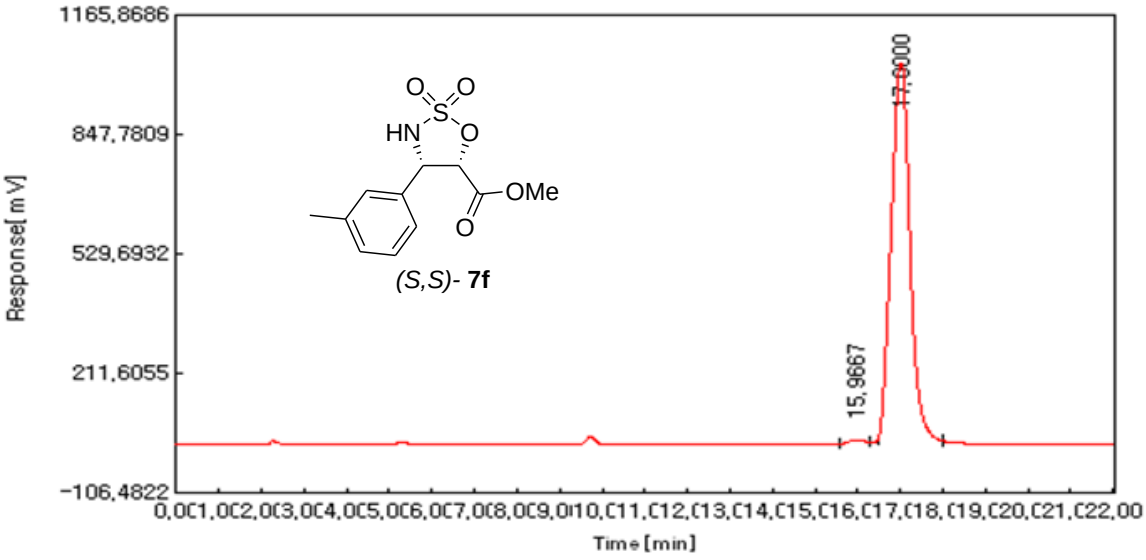
ee=92.1%

▶ **Sample name:** (*S*,*S*)-**7f**

▶ **Analysis condition:** Chiralpak AD-H, 10% iPrOH/n-hexane, 1.3 ml/min, 215nm



N	RT[min]	Area%
1	15.8833	**50.0540**
2	17.0667	**49.9460**



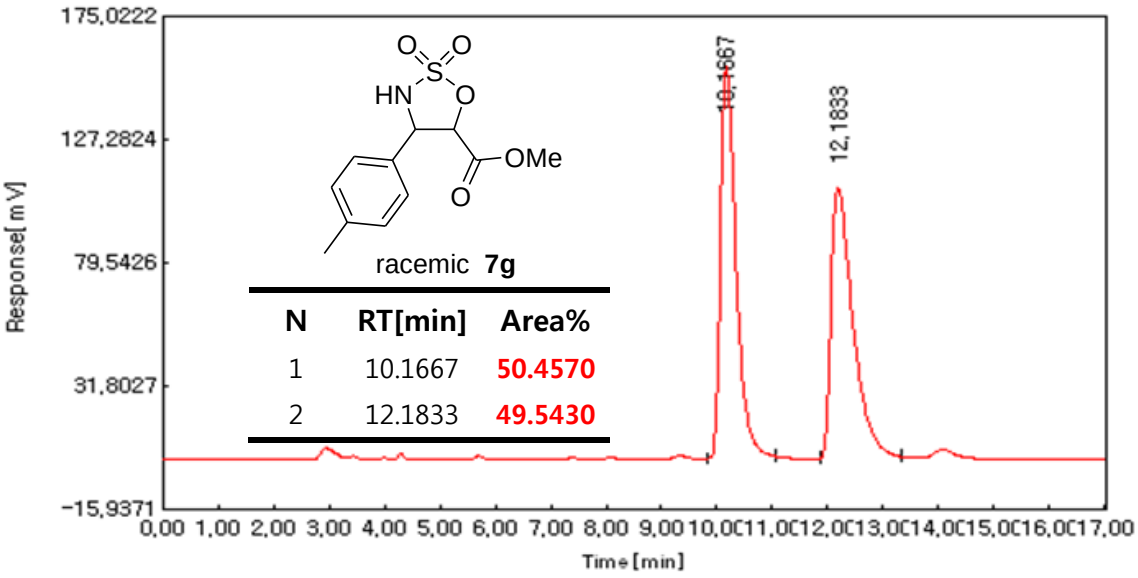
▸ **Result Report**

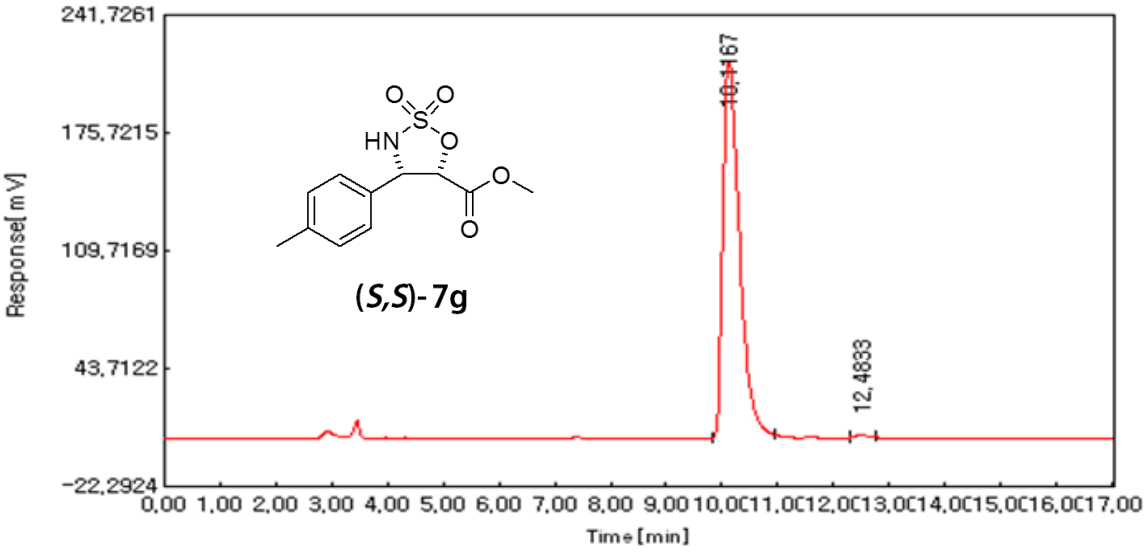
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	15.9667	196.3357	FF	43.0000	0.6009
2	17.0000	32476.0723	FF	93.0000	99.3991
Total		32672.4082			

ee=98.7%

▶ **Sample name:** (*S*,*S*) **-7g**

▶ **Analysis condition:** Chiralpak AD-H, 20% iPrOH/n-hexane, 1.0 ml/min, 215nm





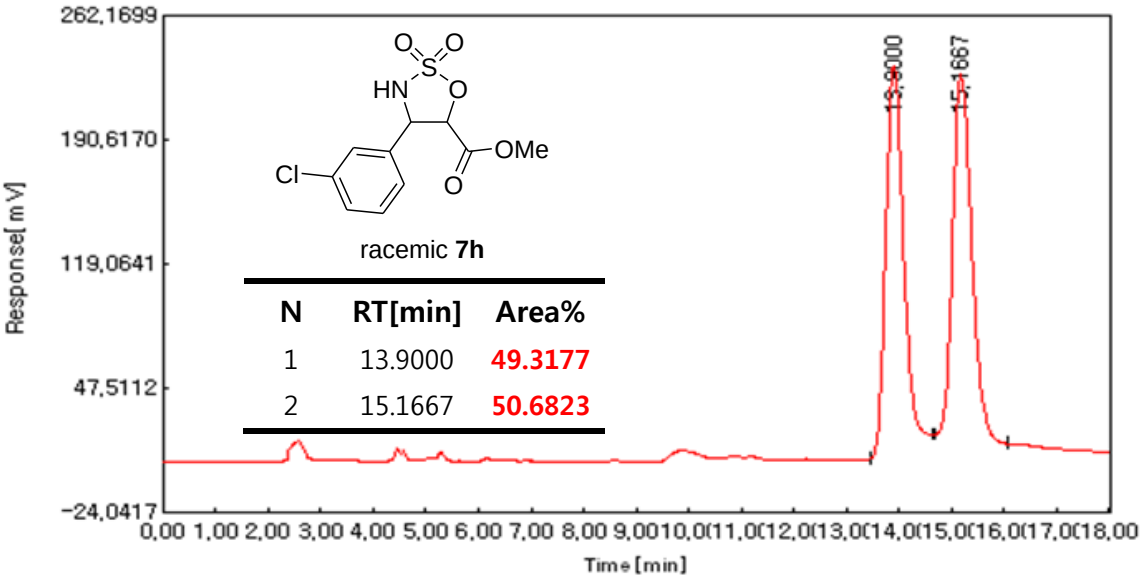
▸ Result Report

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	10.1167	4504.8323	FF	67.0000	99.5876
2	12.4833	18.6563	FF	27.0000	0.4124
Total		4523.4888			

ee=99.2%

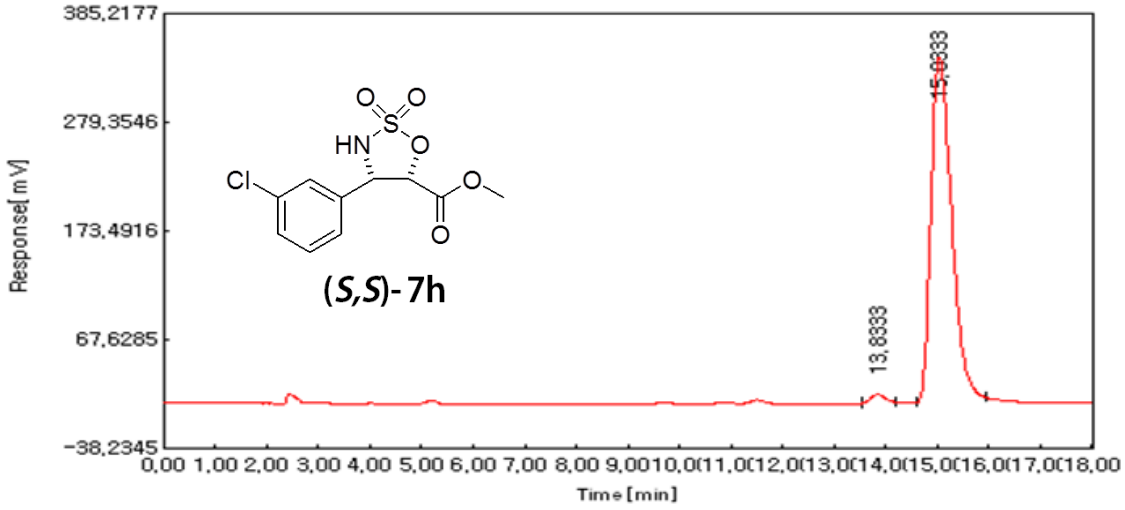
▶ **Sample name:** (*S*,*S*) **-7h**

▶ **Analysis condition:** Chiralpak AD-H, 10% iPrOH/n-hexane, 1.2 ml/min, 215nm



racemic **7h**

N	RT[min]	Area%
1	13.9000	**49.3177**
2	15.1667	**50.6823**



(*S,S*)-**7h**

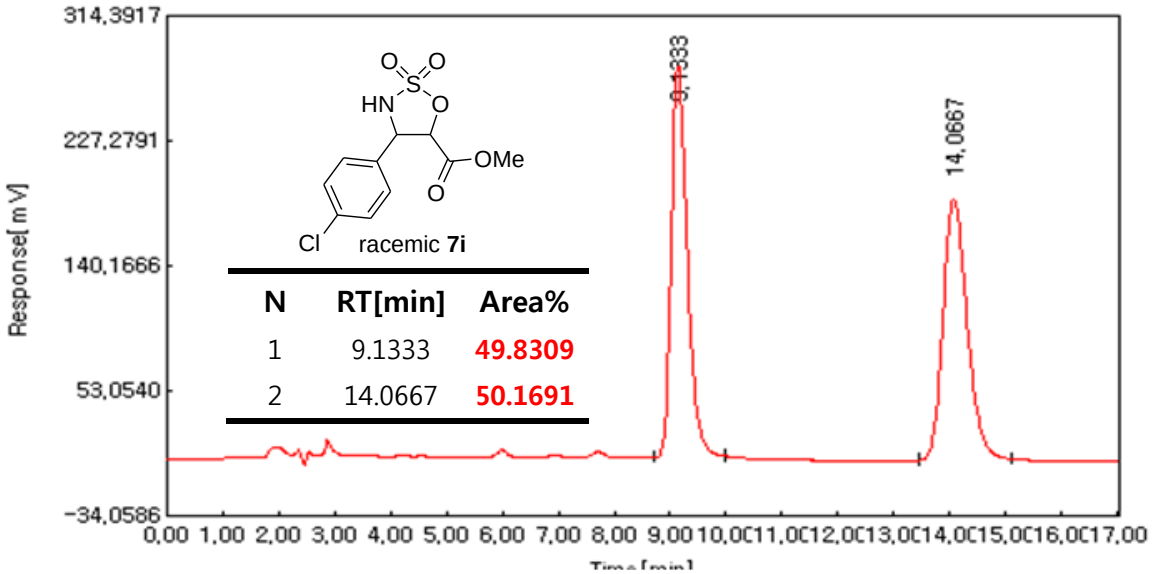
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	13.8333	156.0047	FF	40.0000	1.6030
2	15.0333	9576.3127	FF	80.0000	98.3970
Total		9732.3174			

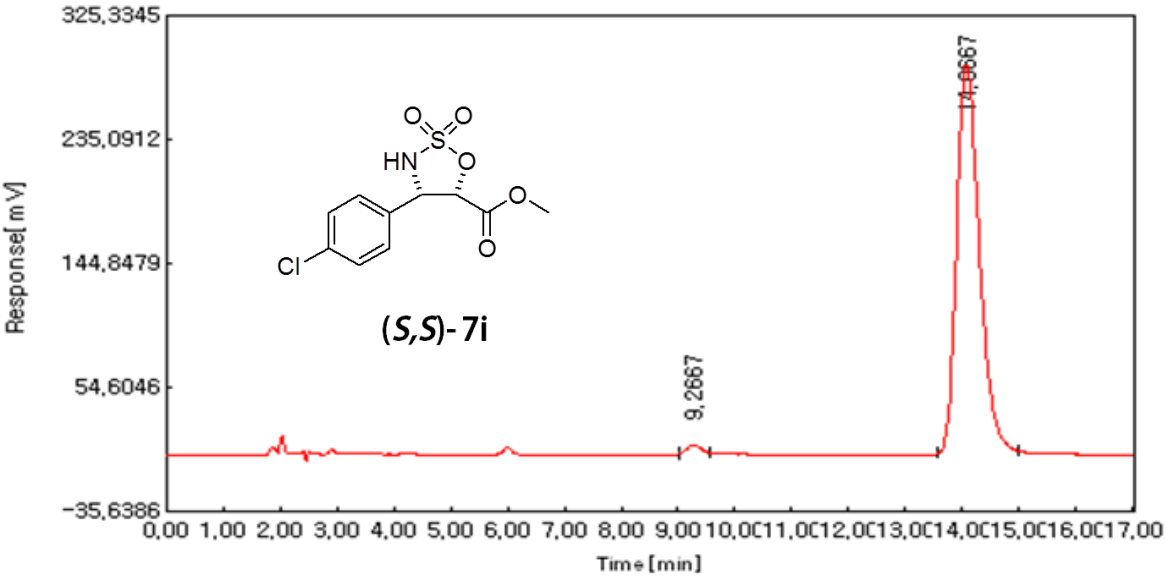
ee=96.7%

▶ **Sample name:** (*S*,*S*)-**7i**

▶ **Analysis condition:** Chiralpak AD-H, 10% EtOH/n-hexane, 1.5 ml/min, 215nm



N	RT[min]	Area%
1	9.1333	49.8309
2	14.0667	50.1691



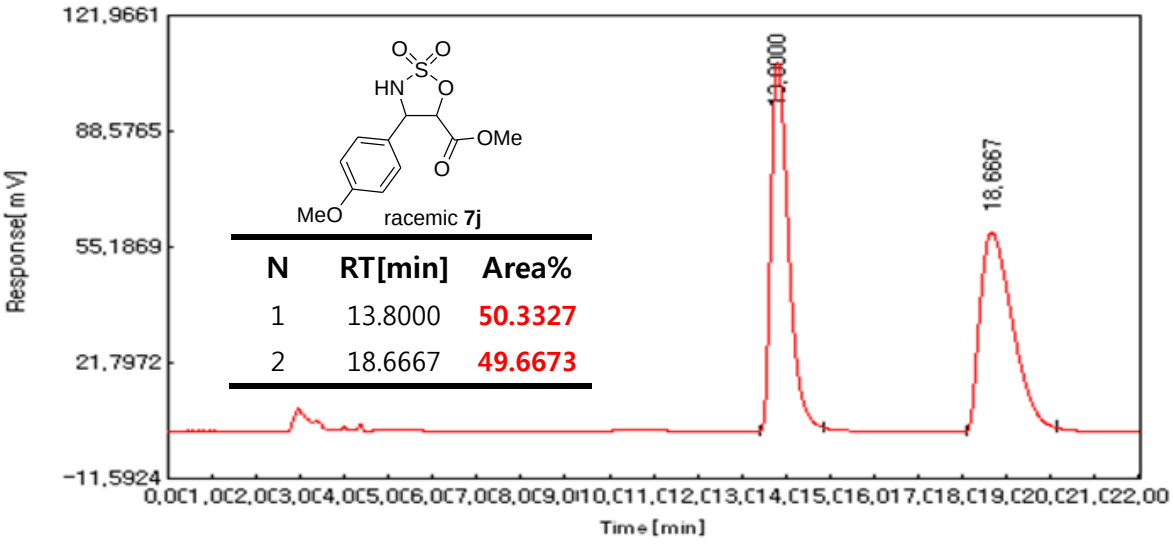
▸ Result Report

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.2667	110.8649	FF	33.0000	1.3545
2	14.0667	8073.8913	FF	85.0000	98.6455
Total		8184.7563			

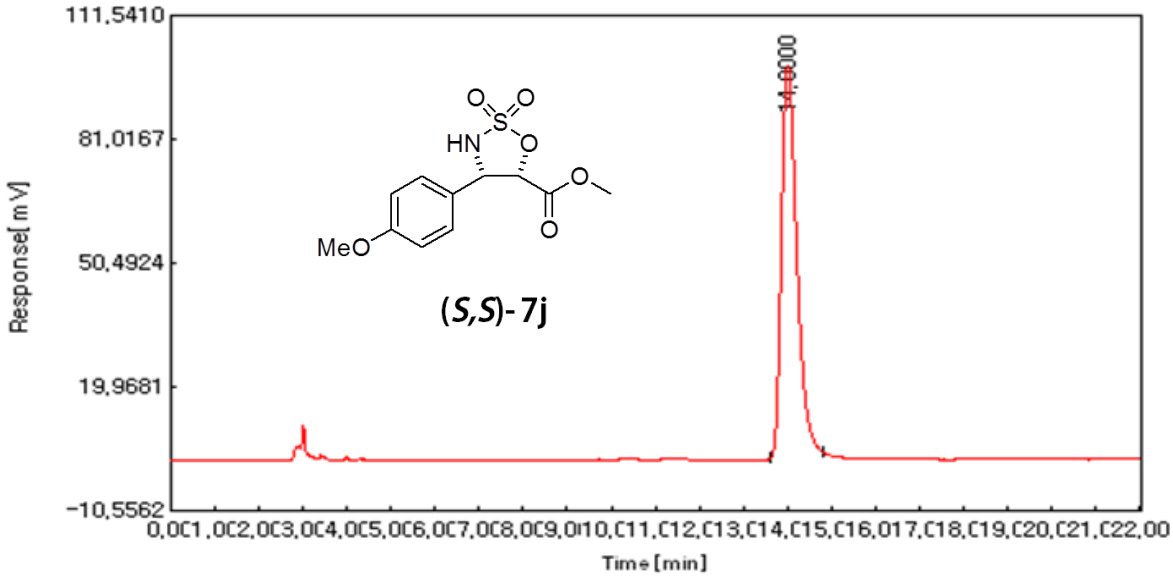
ee=97.3%

▶ **Sample name:** (*S*,*S*)-**7j**

▶ **Analysis condition:** Chiralpak AD-H, 20% iPrOH/n-hexane, 1.0 ml/min, 215nm



N	RT[min]	Area%
1	13.8000	50.3327
2	18.6667	49.6673



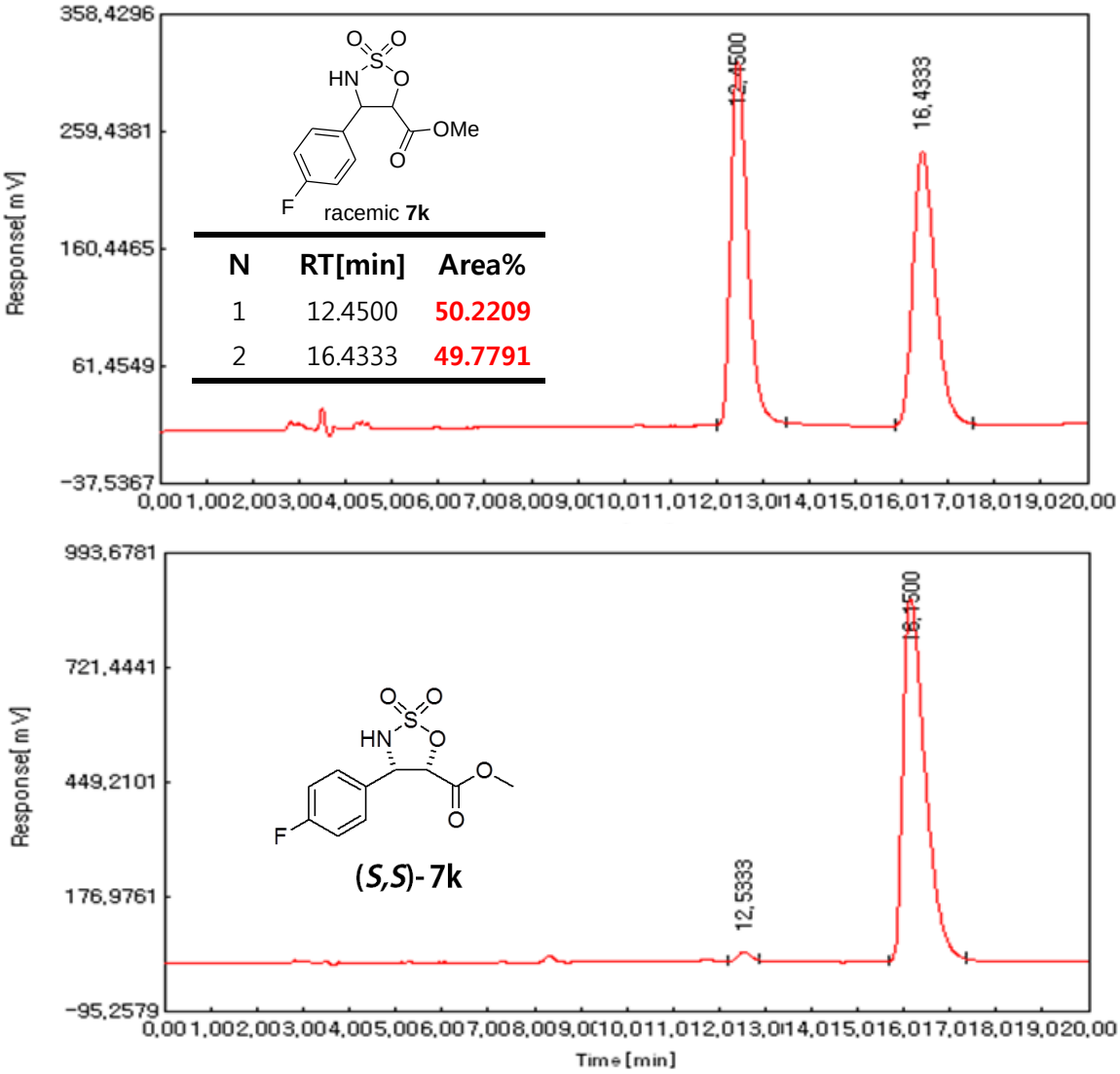
▸ Result Report

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	14.0000	2420.6589	FF	72.0000	100.0000
Total					100.0000

ee=>99%

▶ **Sample name:** (*S*,*S*)-**7k**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.0 ml/min, 215nm



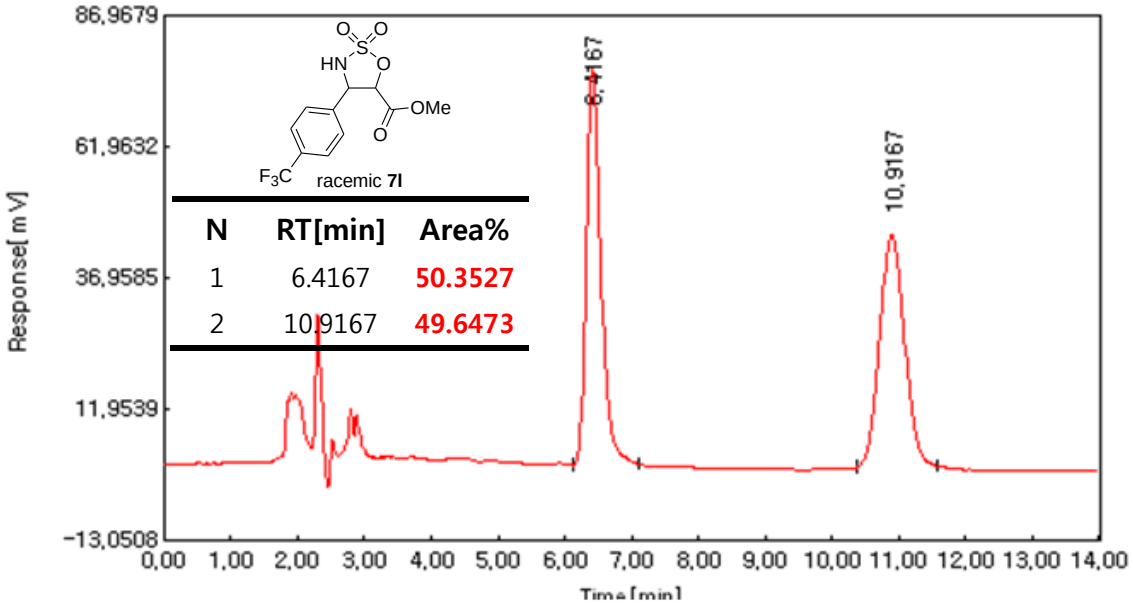
▸ **Result Report**

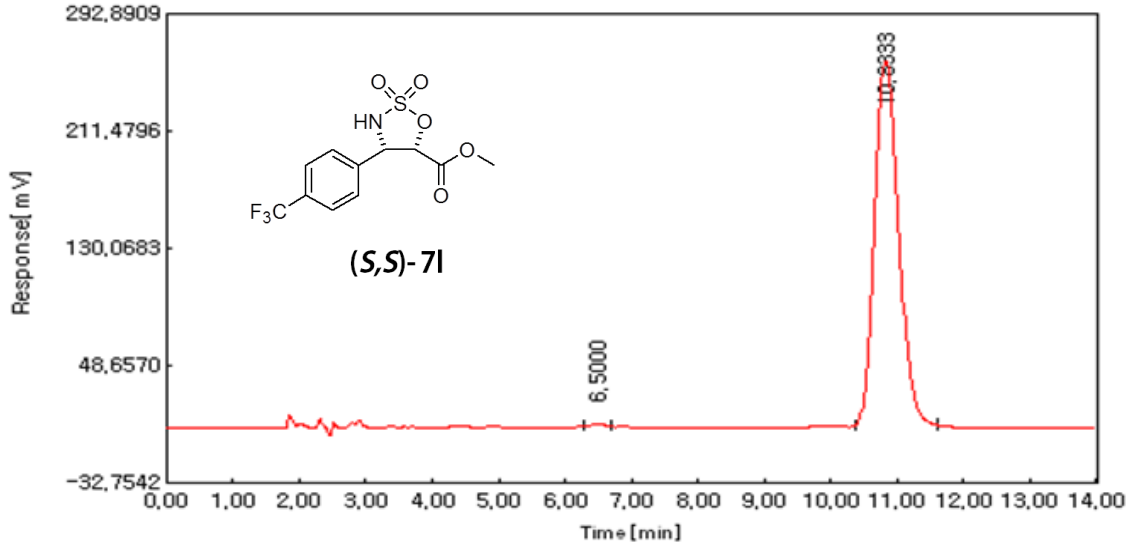
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	12.5333	402.7184	FF	41.0000	1.3427
2	16.1500	29590.0409	FF	100.0000	98.6573
Total		29992.7598			

ee=97.3%

▶ **Sample name:** (*S*,*S*)-**7l**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.5 ml/min, 215nm





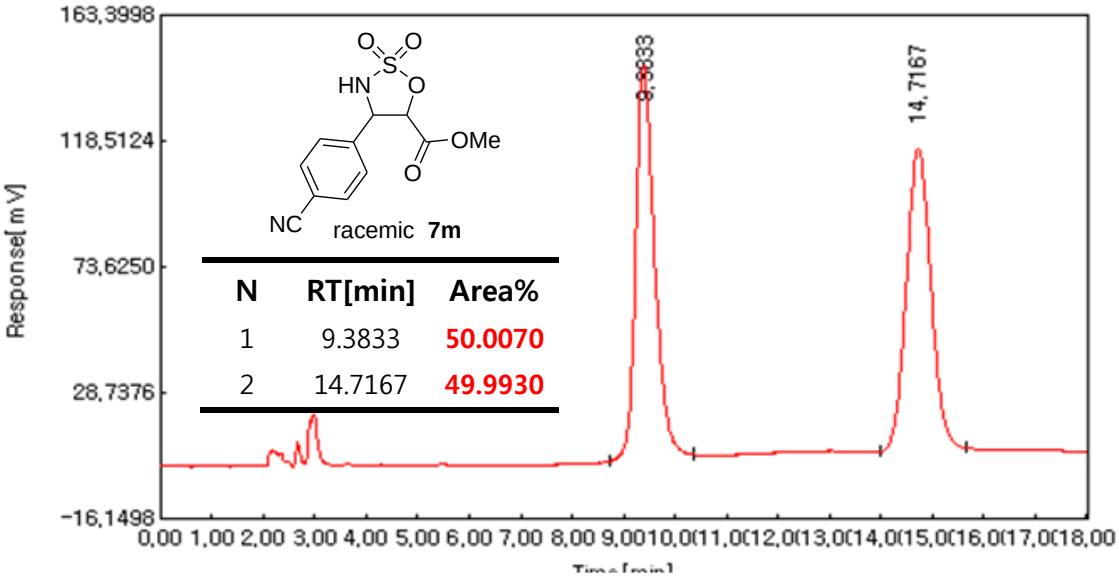
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	6.5000	16.5963	FF	24.0000	0.2520
2	10.8333	6569.2955	FF	74.0000	99.7480
Total		6585.8921			

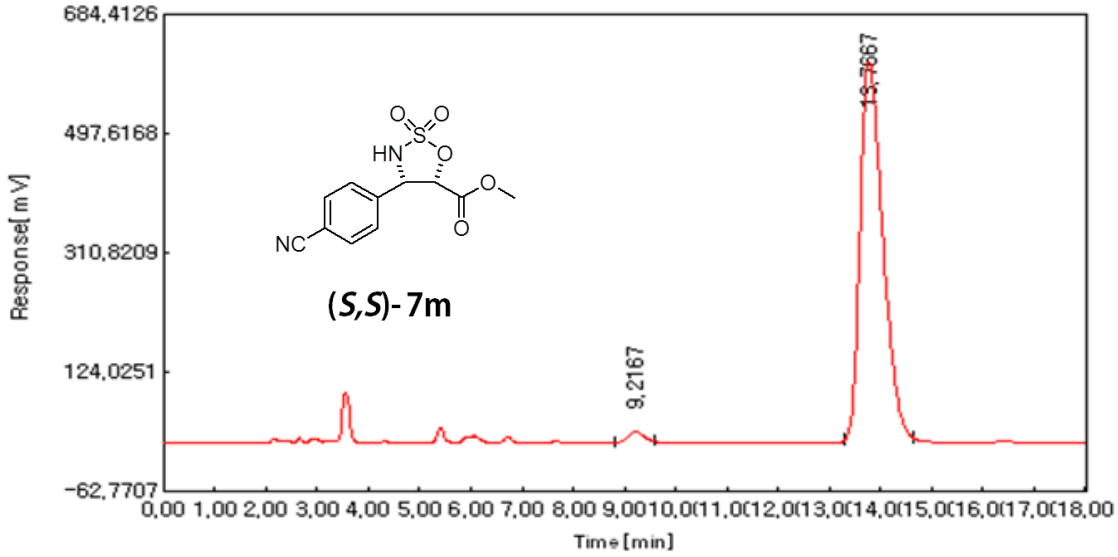
ee=98.5%

▶ **Sample name:** (*S*,*S*)-**7m**

▶ **Analysis condition:** Chiralpak IA, 30% EtOH/n-hexane, 1.3 ml/min, 215nm



N	RT[min]	Area%
1	9.3833	50.0070
2	14.7167	49.9930



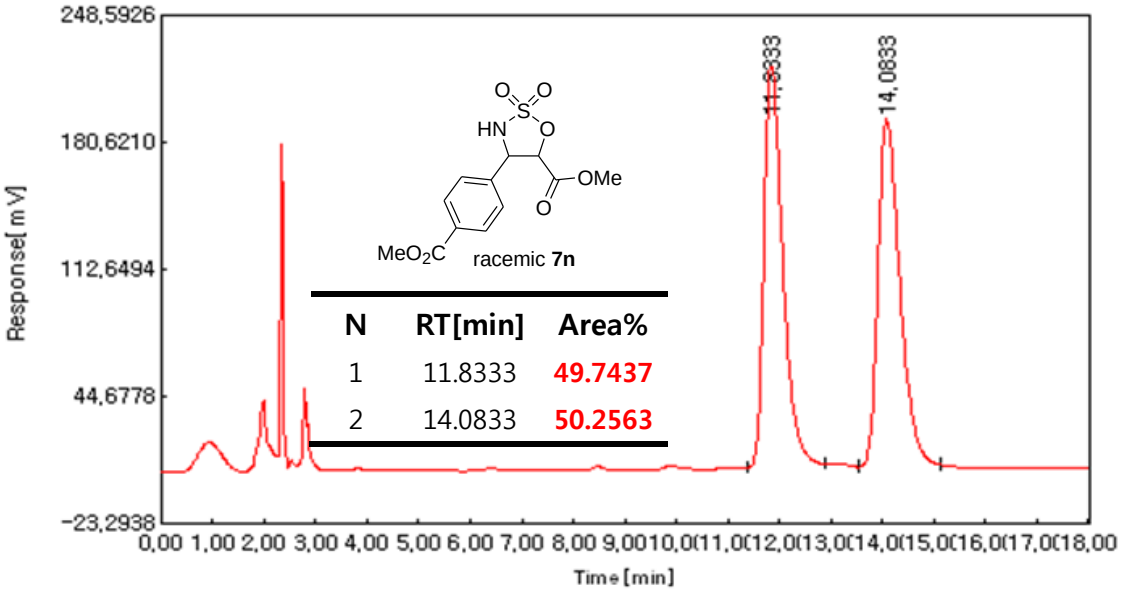
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.2167	351.4940	FF	46.0000	1.8410
2	13.7667	18740.6826	FF	81.0000	98.1590
Total		19092.1758			

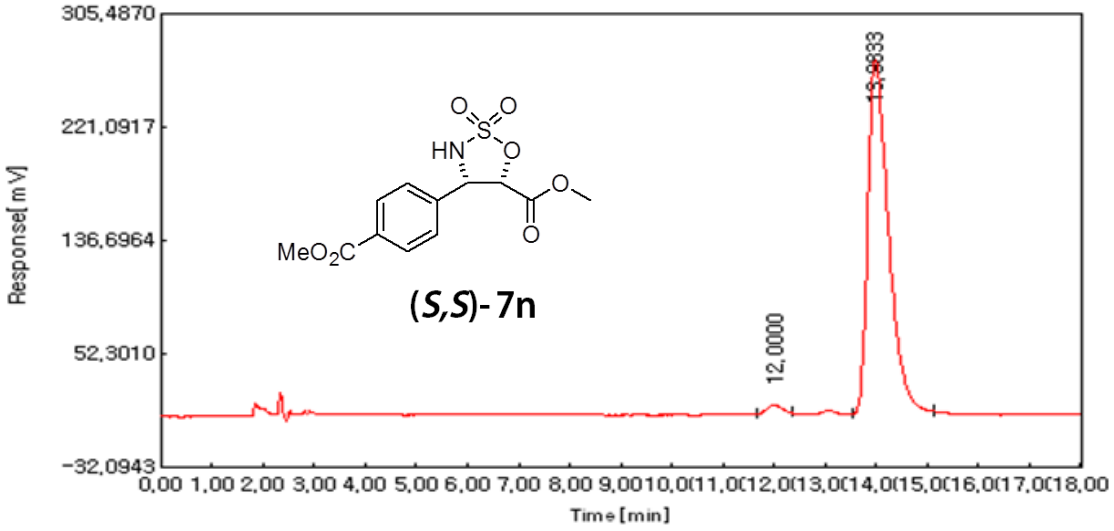
ee=96.3%

▶ **Sample name:** (*S*,*S*)-**7n**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.5 ml/min, 215nm



N	RT[min]	Area%
1	11.8333	49.7437
2	14.0833	50.2563



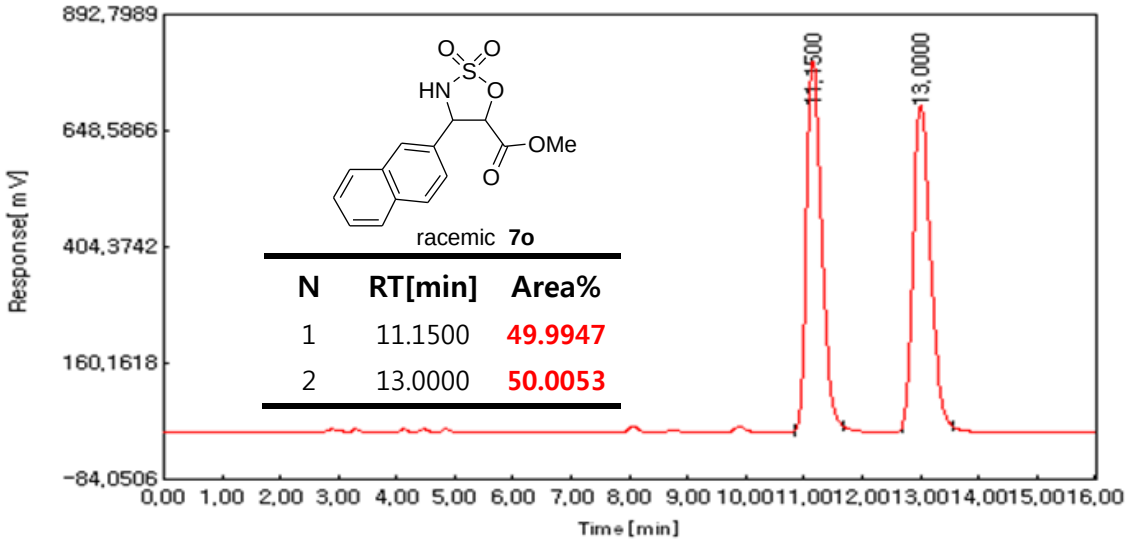
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	12.0000	129.7953	FF	41.0000	1.6647
2	13.9833	7666.9291	BB	97.0000	98.3353
Total		7796.7246			

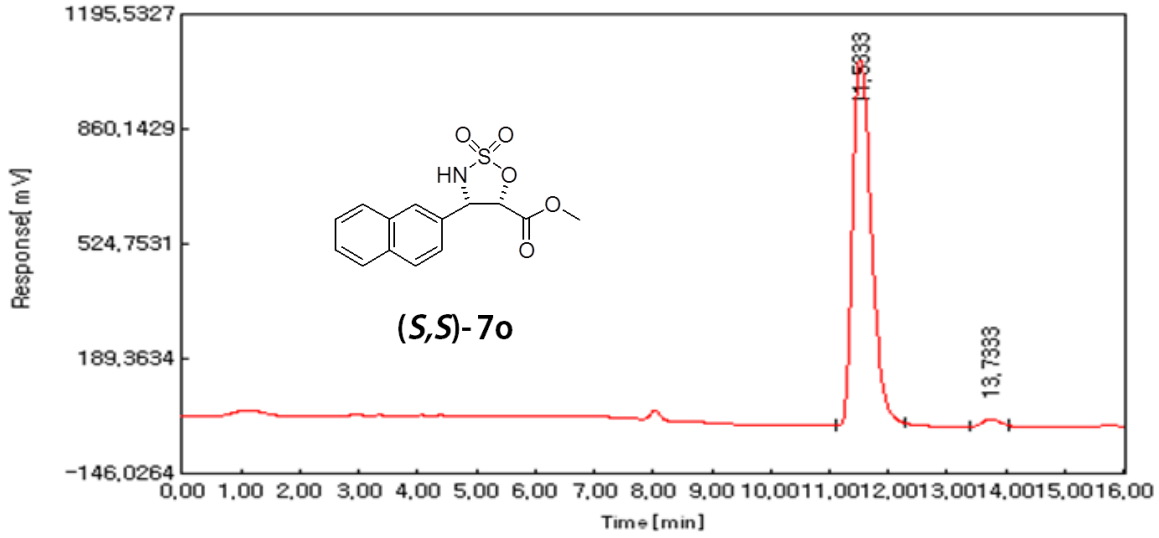
ee=96.7%

▶ **Sample name:** (*S*,*S*) **-7o**

▶ **Analysis condition:** Chiralpak AD-H, 20% iprOH/n-hexane, 1.0 ml/min, 215nm



N	RT[min]	Area%
1	11.1500	49.9947
2	13.0000	50.0053



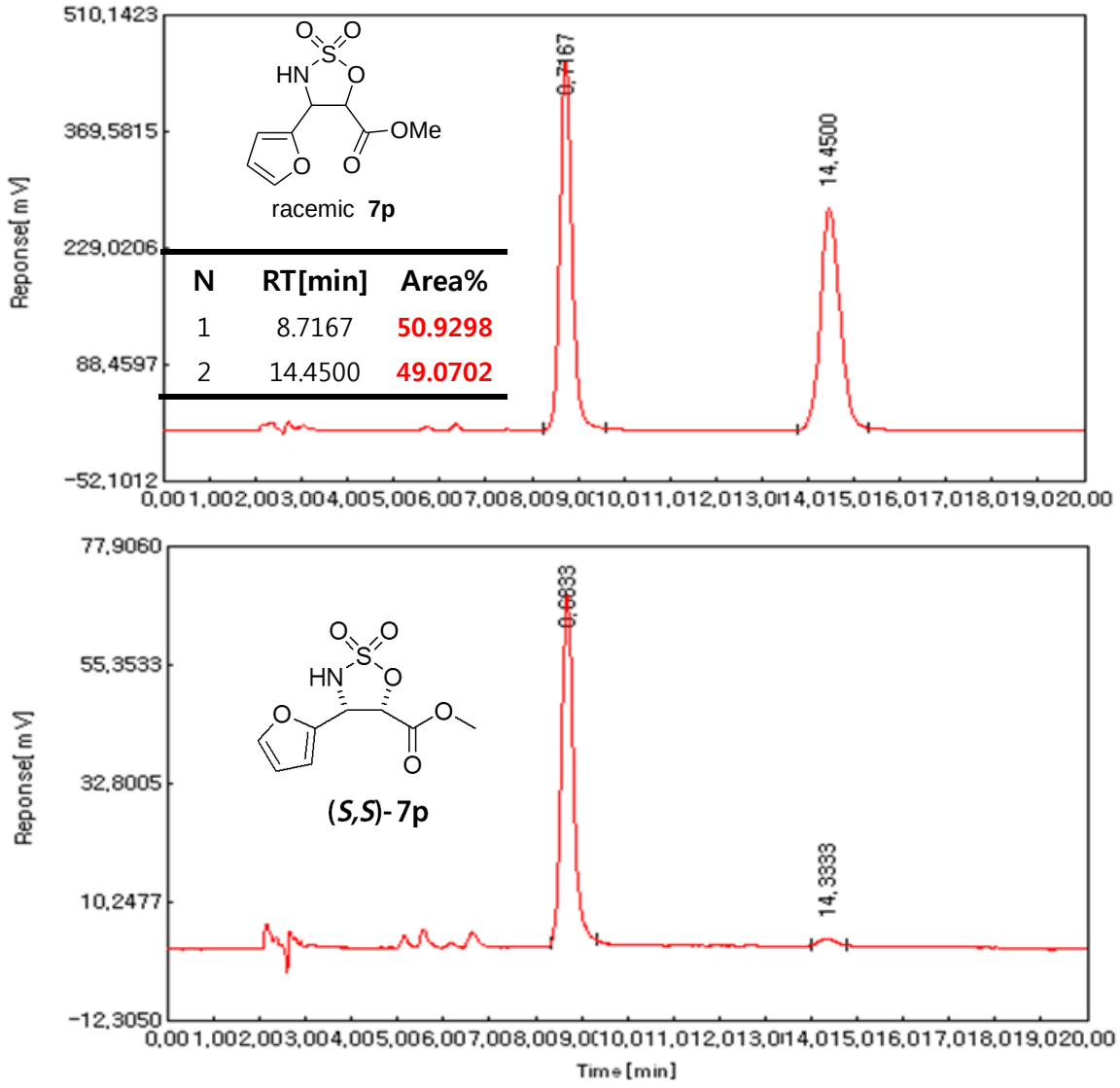
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	11.5333	24396.7379	FF	69.0000	98.3557
2	13.7333	407.8611	FF	41.0000	1.6443
Total		24804.5996			

ee=96.7%

▶ **Sample name:** (*S*,*S*) **-7p**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.5 ml/min, 215nm



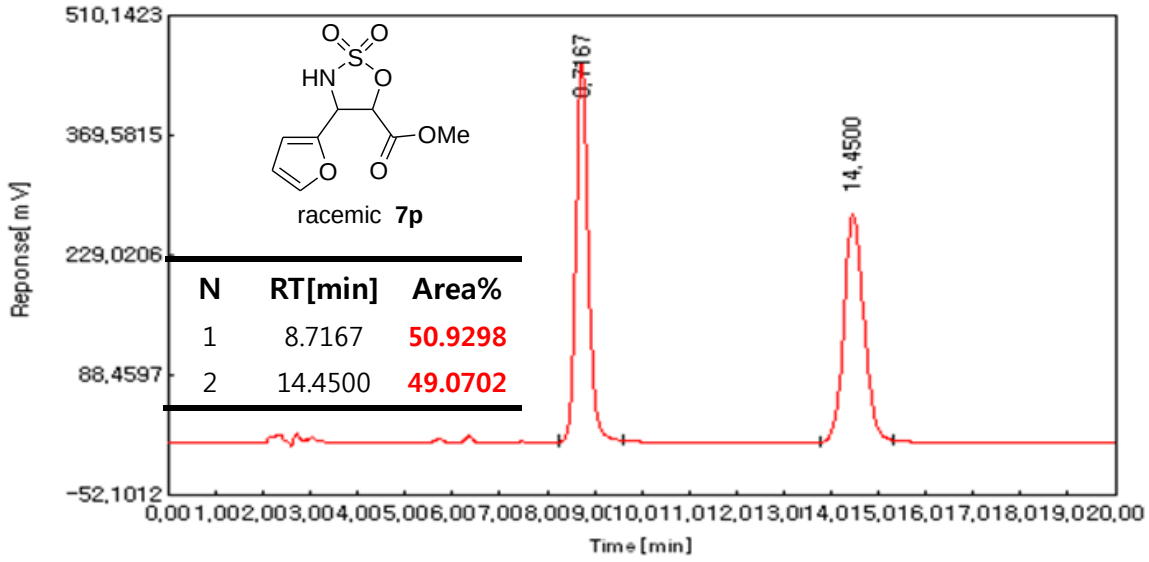
▸ **Result Report**

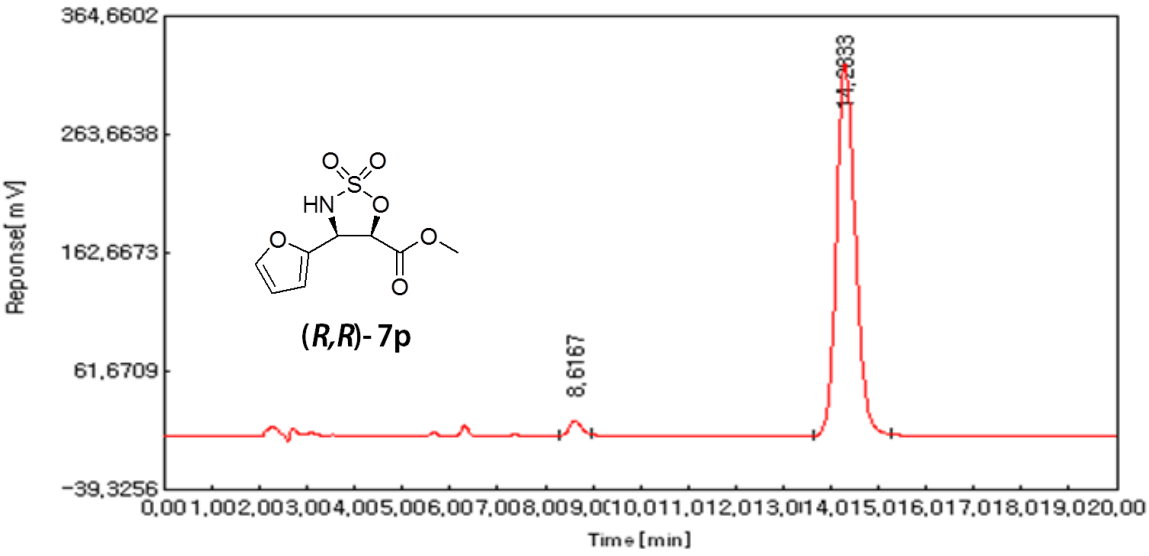
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	8.6833	1230.3090	FF	60.0000	97.4679
2	14.3333	31.9625	FF	48.0000	2.5321
Total		1262.2714			

ee=94.9%

▶ **Sample name:** (*R,R*)-**7p**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.5 ml/min, 215nm





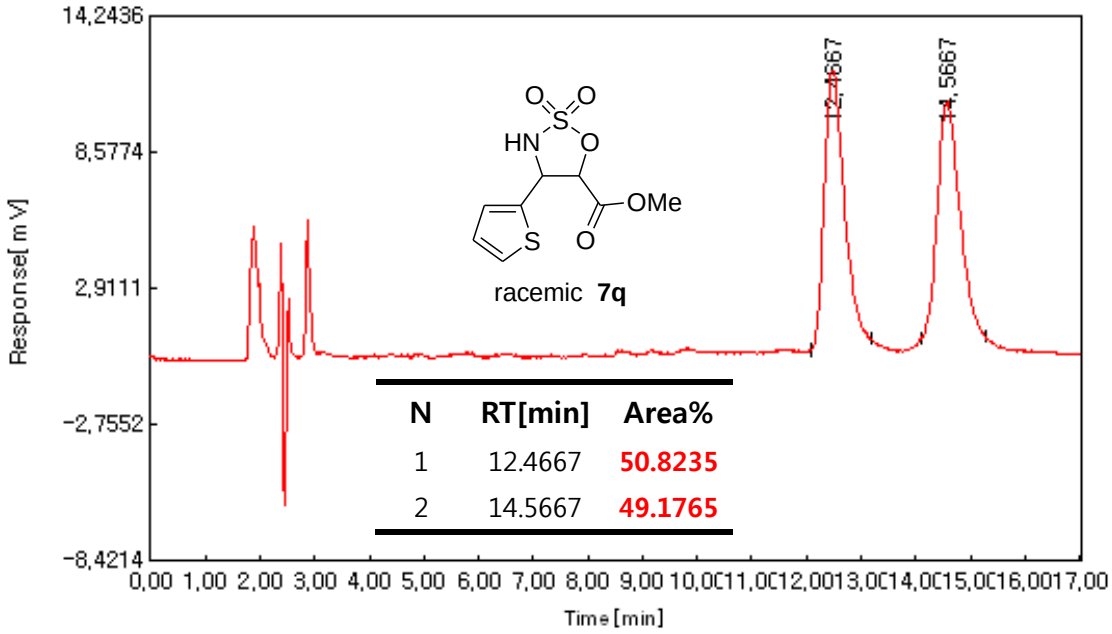
▸ Result Report

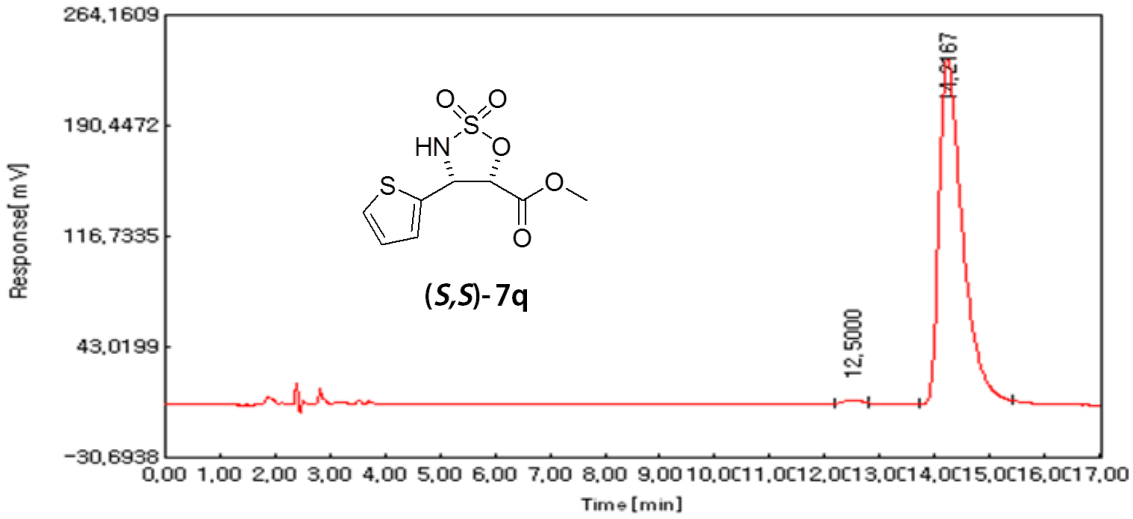
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	8.6167	213.4351	FF	39.0000	2.3101
2	14.2833	9025.6053	BB	99.0000	97.6899
Total		9239.0400			

ee=95.3%

▶ **Sample name:** (*S*,*S*)-**7q**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.5 ml/min, 215nm





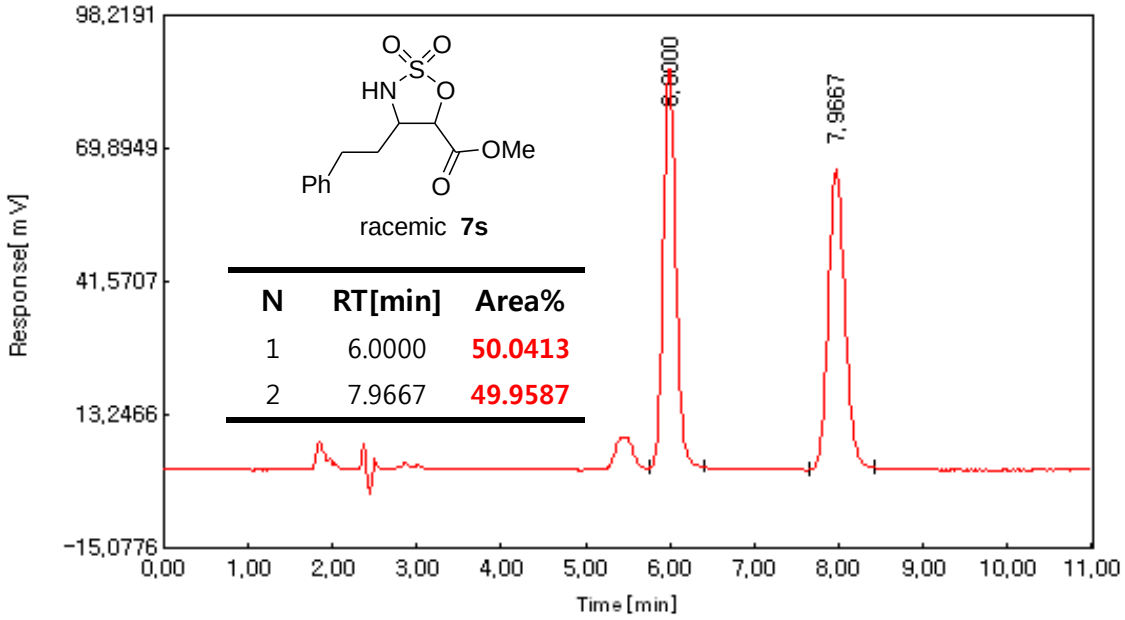
▸ Result Report

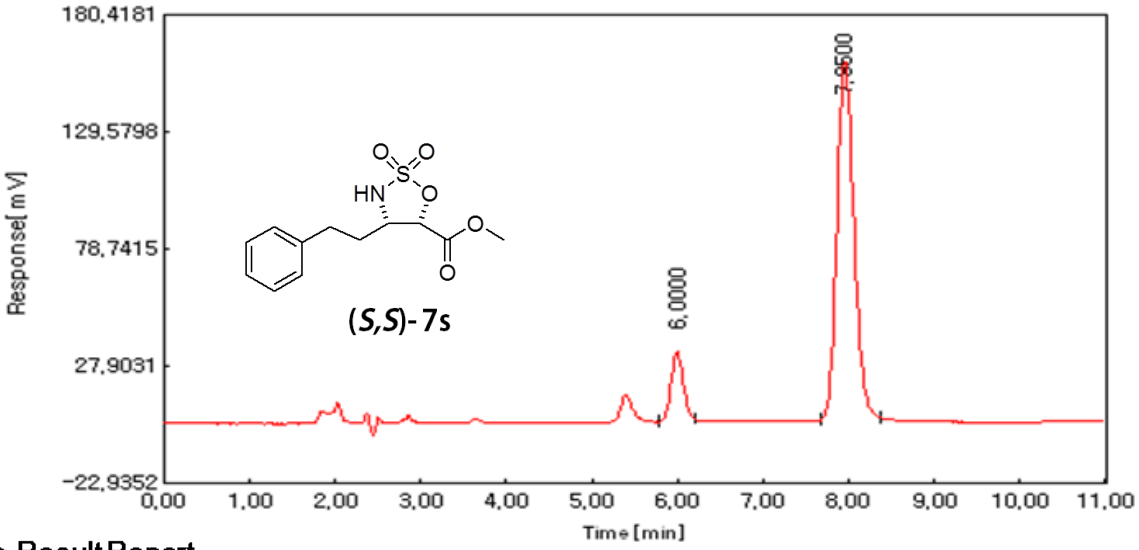
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	12.5000	47.0973	FF	36.0000	0.6703
2	14.2167	6979.5146	FF	100.0000	99.3297
Total		7026.6118			

ee=98.7%

▶ **Sample name:** (*S*,*S*)-**7s**

▶ **Analysis condition:** Chiralpak IA, 20% EtOH/n-hexane, 1.5 ml/min, 215nm





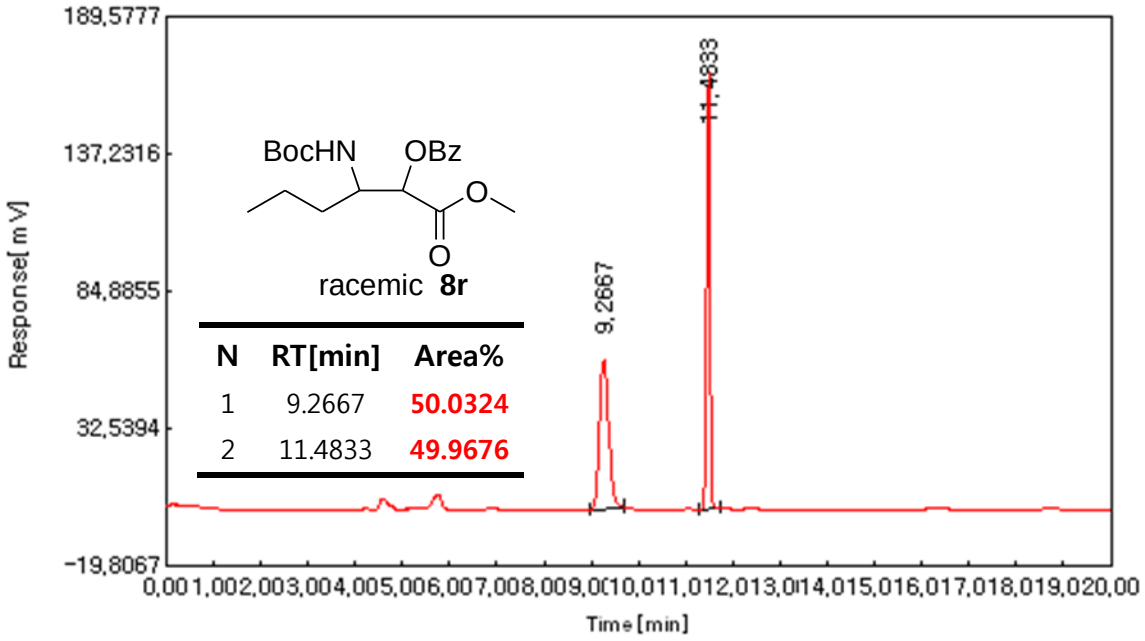
▸ **Result Report**

Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	6.0000	302.5704	FF	25.0000	11.9138
2	7.9500	2237.1001	FF	43.0000	88.0862
Total		2539.6707			

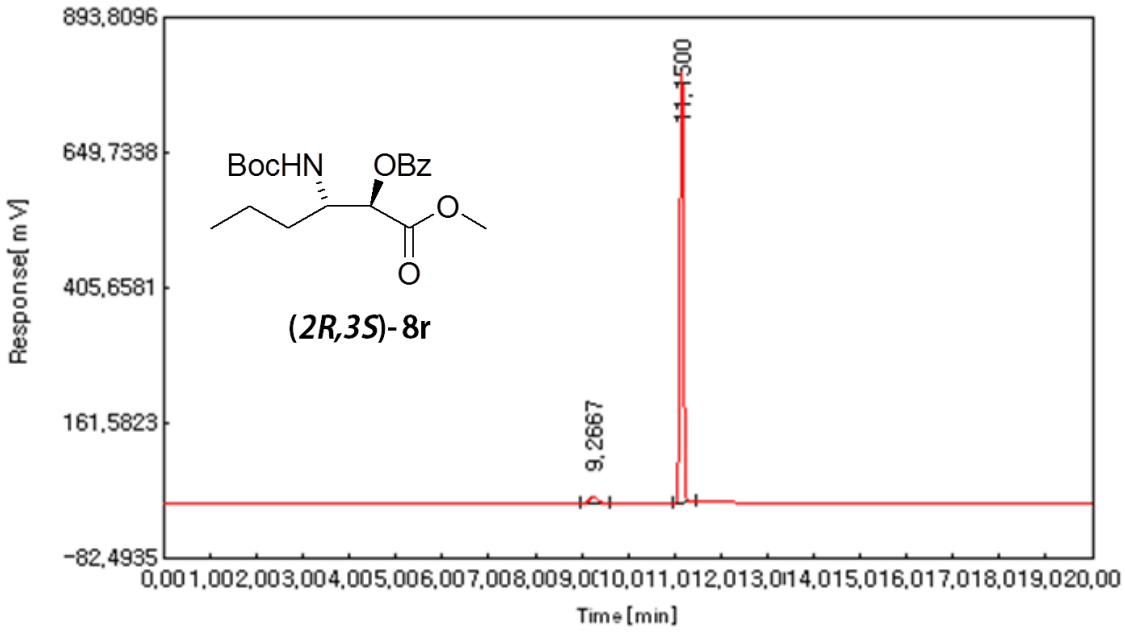
ee=76.1%

▶ **Sample name:** (*2R*,3*S*)-**8r**

▶ **Analysis condition:** Chiralpak IC, 10% iPrOH/n-hexane, 0.7 ml/min, 254nm



N	RT[min]	Area%
1	9.2667	**50.0324**
2	11.4833	**49.9676**

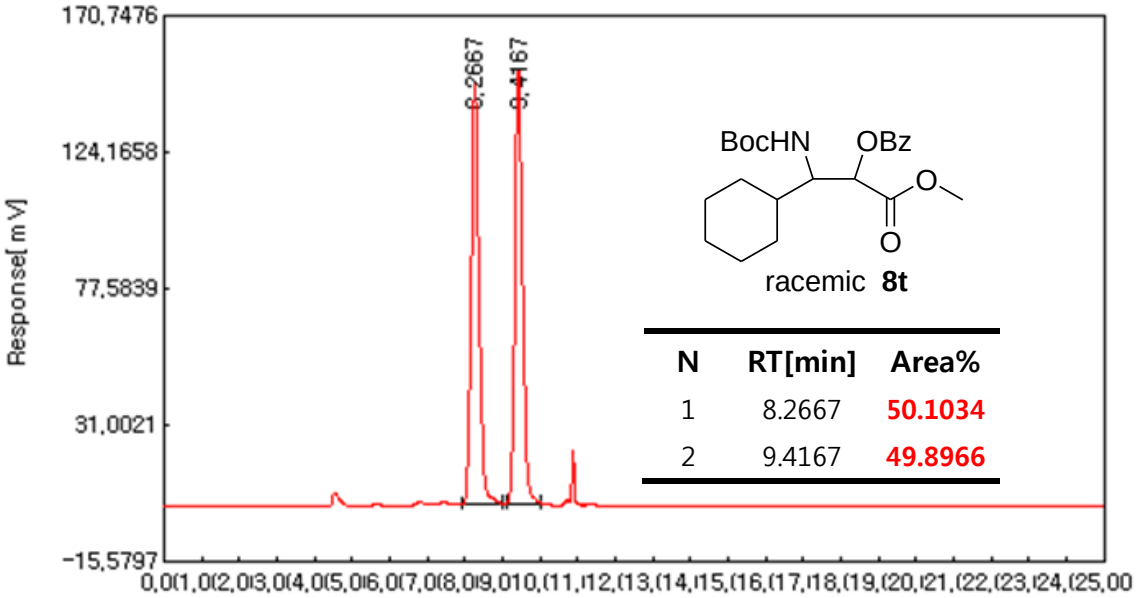


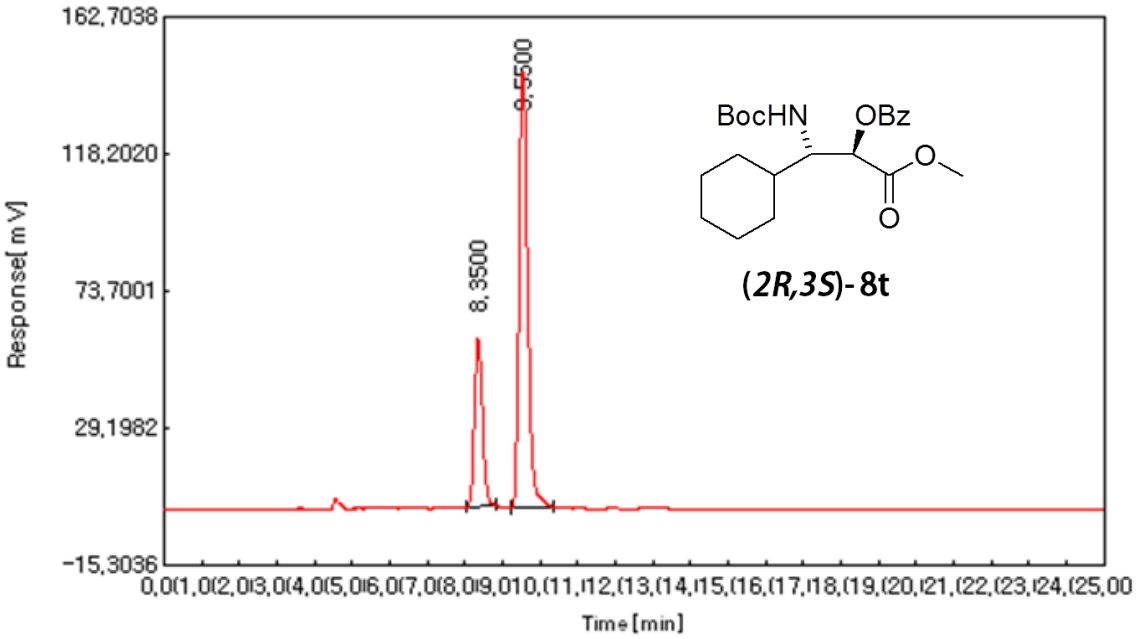
Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	9.2667	185.5496	BB	38.0000	4.3399
2	11.1500	4089.8949	BB	28.0000	95.6601
Total		4275.4443			

ee=91.3%

▶ **Sample name:** (*2R*,3*S*)-**8t**

▶ **Analysis condition:** Chiralpak IC, 10% iPrOH/n-hexane, 0.7 ml/min, 254nm





Peak #	Time[min]	Area[mV*s]	BL	wide[sec]	Area%
1	8.3500	832.8883	BB	46.0000	26.2840
2	9.5500	2335.9153	BB	68.0000	73.7160
Total		3168.8035			

ee=47.4%