Stille Cross-Coupling Reactions of Aryl Mesylates and Tosylates Using a Biarylphosphine Based Catalyst

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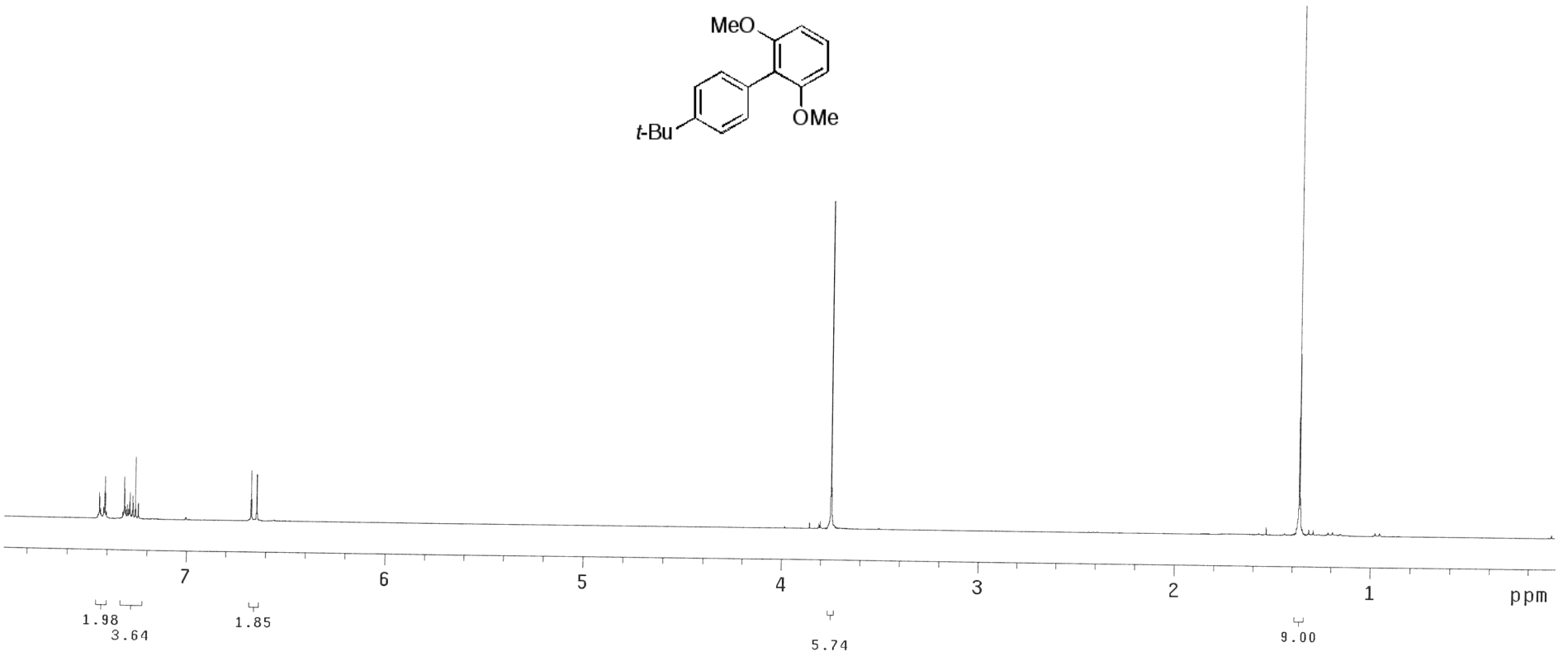
Supporting Information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OMe
t-Bu
7
6
5
4
3
2
1
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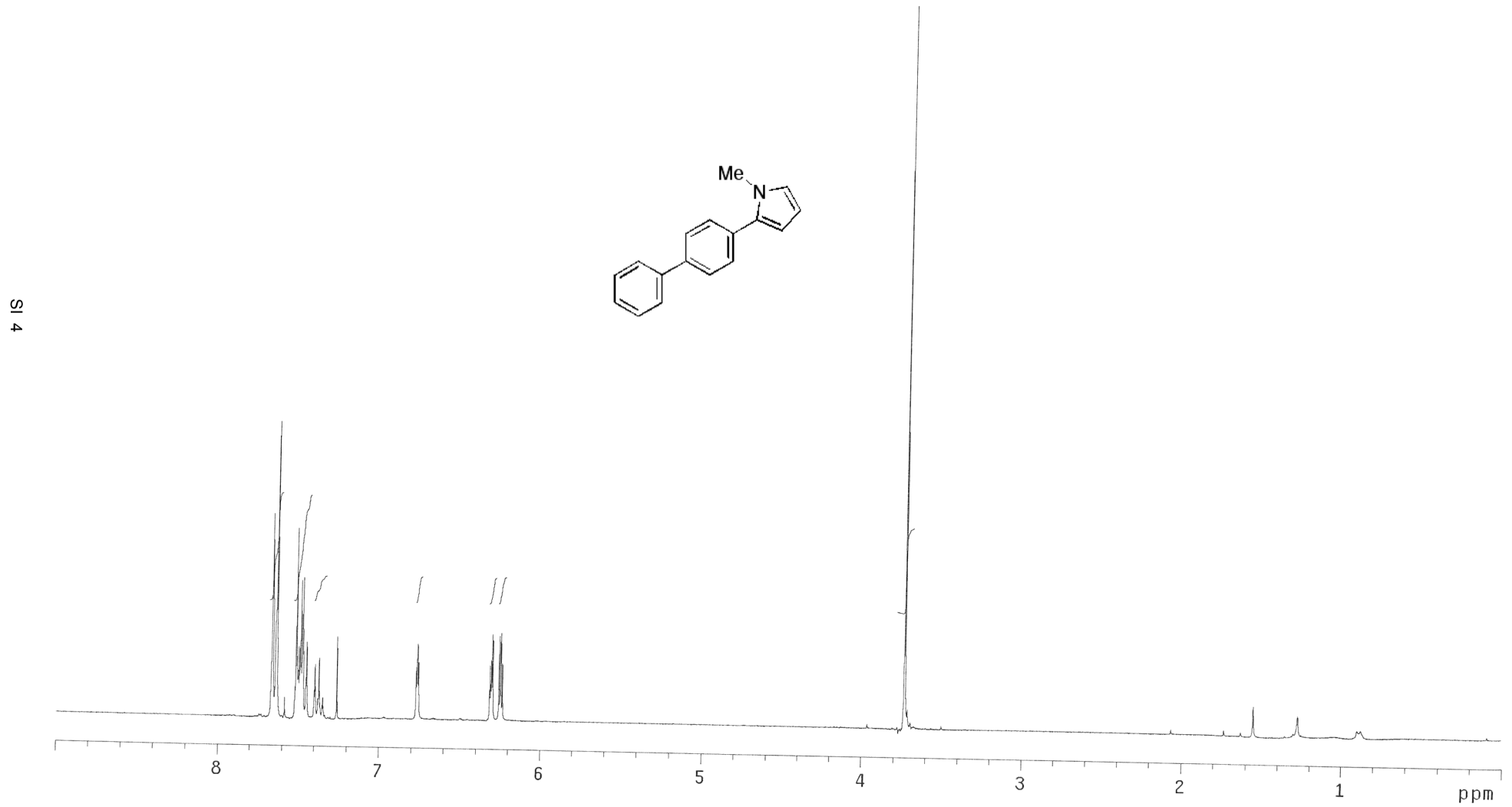
3.64
1.85
5.74
9.00

31.608
34.707
56.092
76.807
77.230
77.653
104.297
119.465
124.845
128.566
130.602
130.954
149.274
157.897
MeO
OMe
t-Bu
ppm


Me
N
8
7
6
5
4
3
2
1
ppm

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77.230
77.655
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109.011
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129.092
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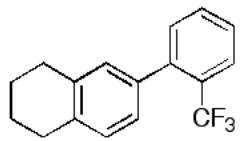
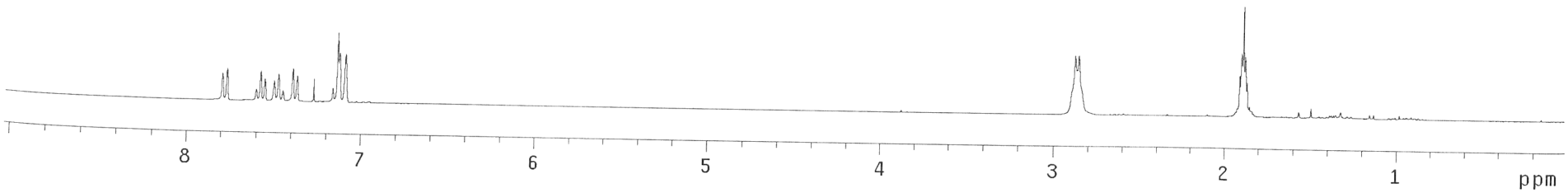
134.417
139.617
140.879
Me
N
ppm


CF3


8
7
6
5
4
3
2
1
ppm

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CF3
76.807
77.230
77.653
122.642
125.597
126.082
126.153
126.226
126.258
127.207
128.374
128.646
128.767
129.335
129.778
129.799
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132.393
136.700
136.721
137.233
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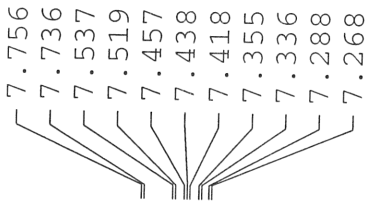
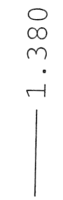
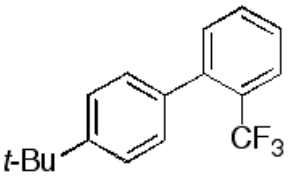
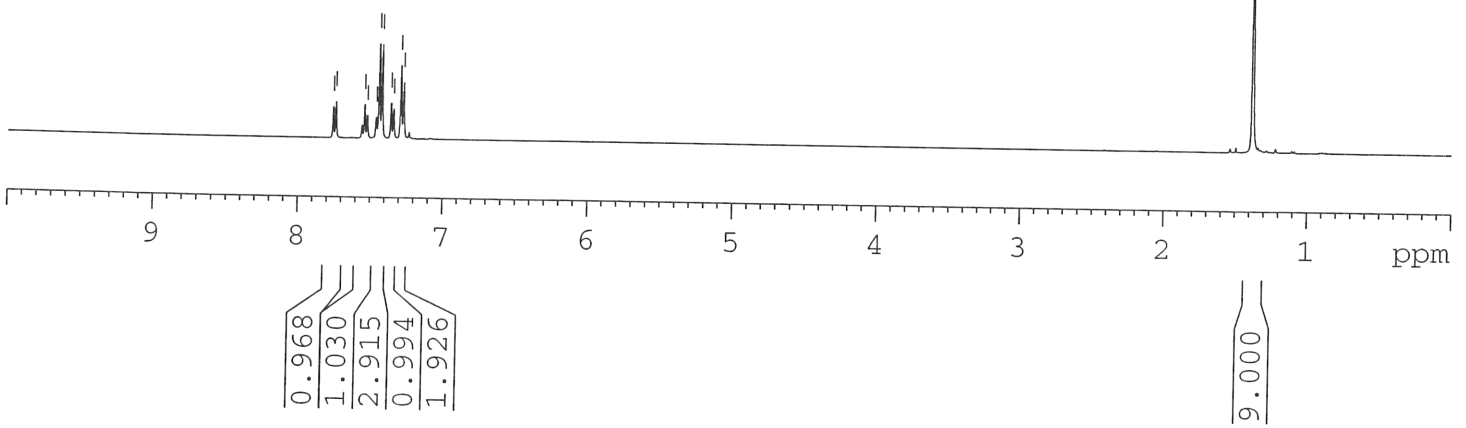
141.867
ppm









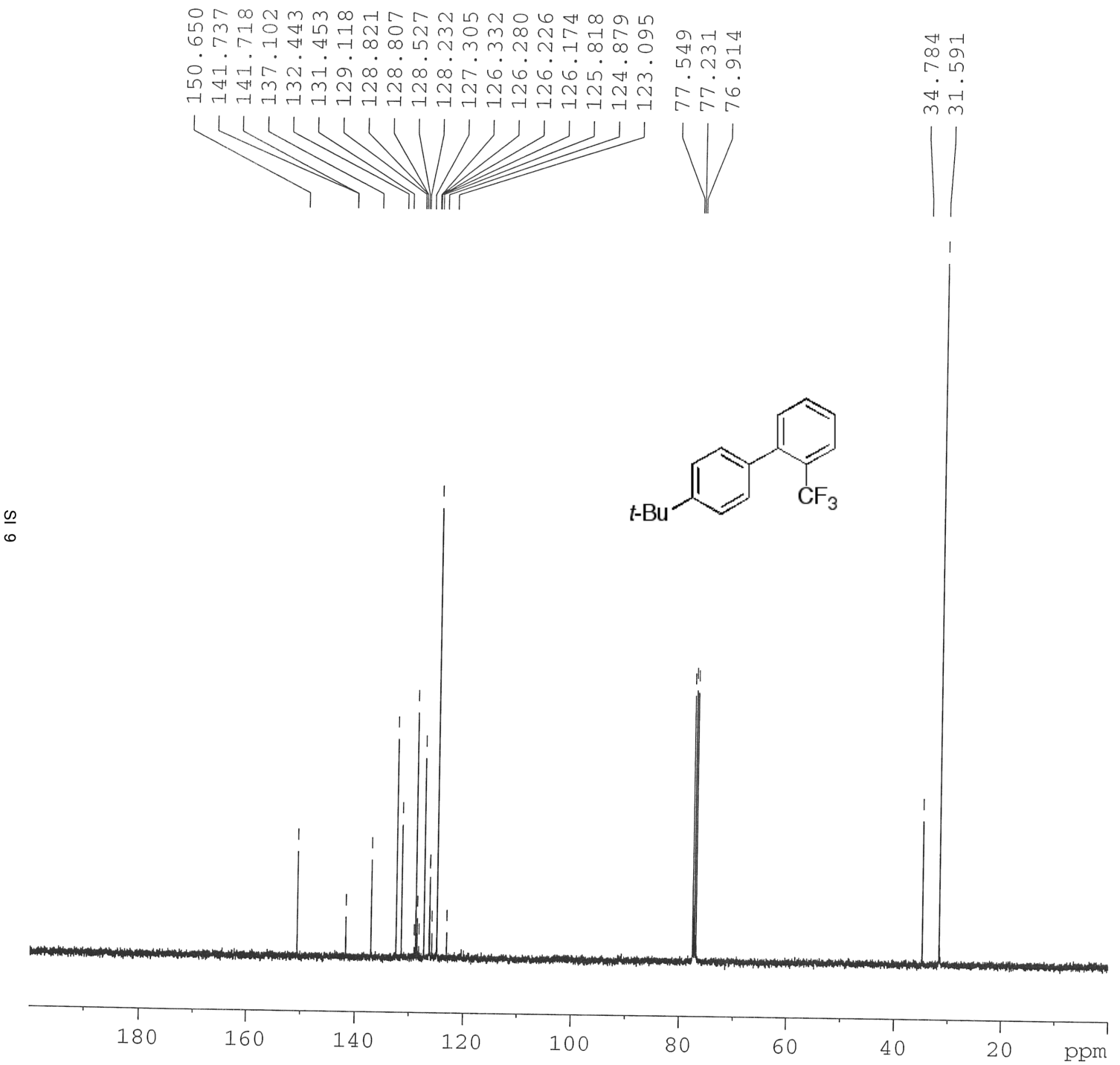
SI 8

Current Data Parameters
NAME JN5-108-010
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20090731
Time 1.57
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 65536
SOLVENT
NS 16
DS 2
SWH 8278.146 Hz
FIDRES 0.126314 Hz
AQ 3.9584243 sec
RG 40.3
DW 60.400 usec
DE 6.00 usec
TE 293.2 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 15.07 usec
PL1 0.00 dB
SFO1 400.1324710 MHz

F2 - Processing parameters
SI 65536
SF 400.1300212 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



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Current Data Parameters

NAME	JN5-108-010
EXPNO	13
PROCNO	1

F2 - Acquisition Parameters

Date_	20090731
Time	2.01
INSTRUM	spect
PROBHD	5 mm BBO BB-1H
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	71
DS	2
SWH	23980.814 Hz
FIDRES	0.365918 Hz
AQ	1.3664756 sec
RG	16384
DW	20.850 usec
DE	6.00 usec
TE	293.2 K
D1	2.00000000 sec
d11	0.03000000 sec
DELTA	1.89999998 sec
TD0	1

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

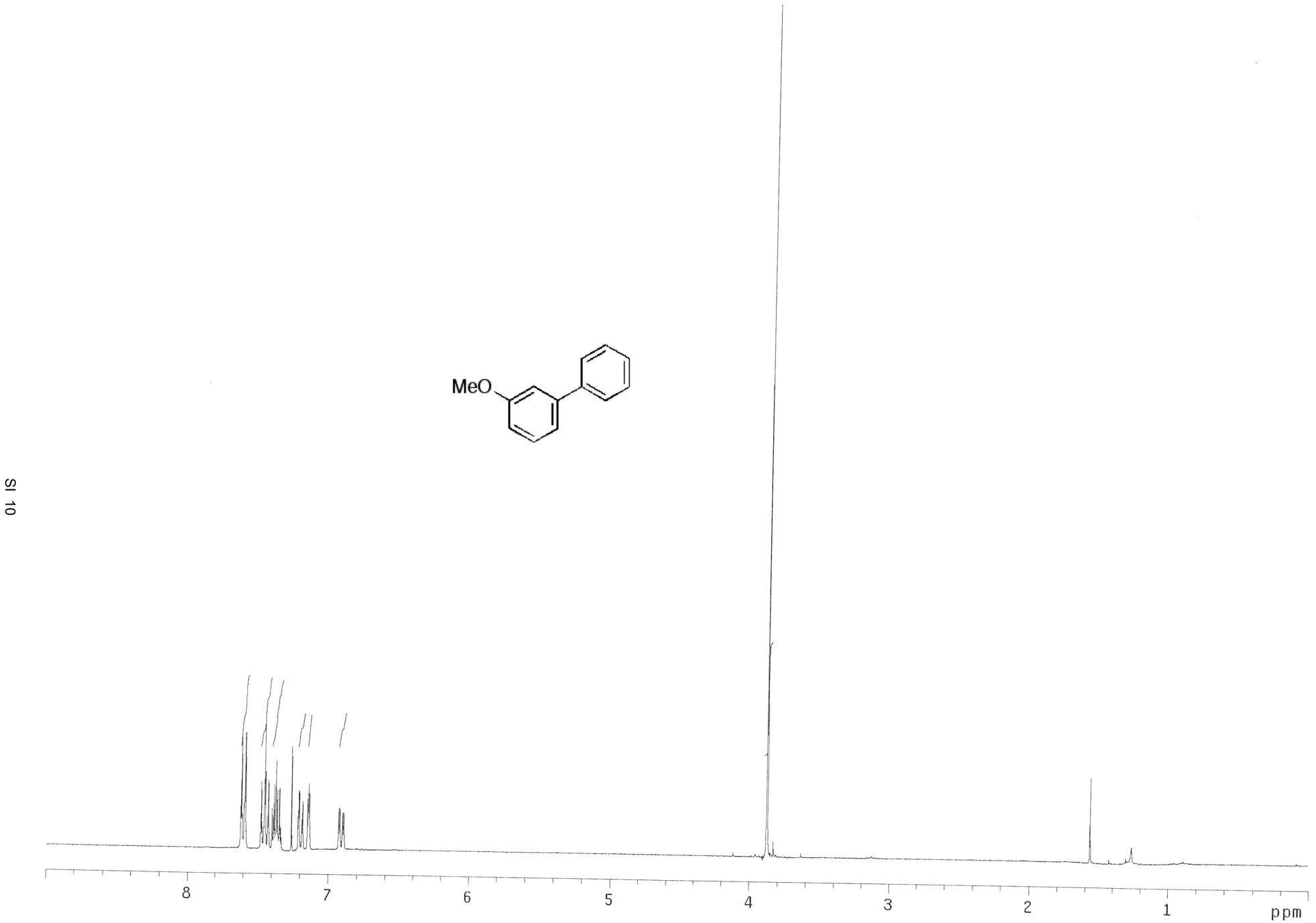
NUC1	13C
P1	8.75 usec
PL1	-3.00 dB
SFO1	100.6228298 MHz

======== CHANNEL f2 ========

CPDPRG2	waltz16
NUC2	1H
PCPD2	90.00 usec
PL2	-1.00 dB
PL12	14.52 dB
PL13	18.00 dB
SFO2	400.1316005 MHz

F2 - Processing parameters

SI	65536
SF	100.6127514 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40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7
6
5
4
3
2
1
ppm

MeO
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77.230
77.653
112.847
113.071
119.879
127.402
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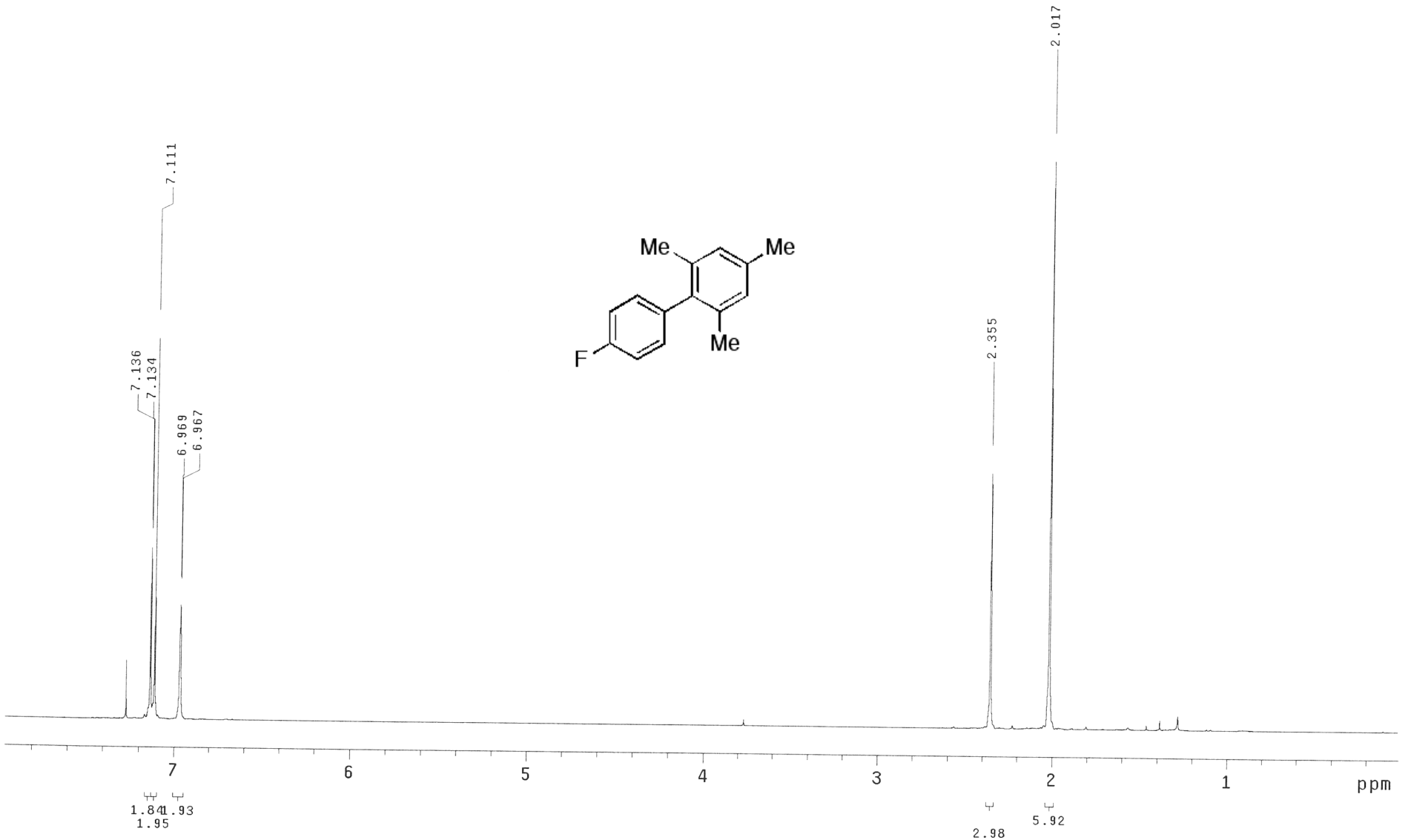
129.955
141.282
142.961
160.098
ppm
20
40
60
80
100
120
140
160

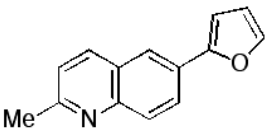

7.111
7.136
7.134
6.969
6.967
2.355
2.017
Me
Me
Me
F
7
6
5
4
3
2
1
ppm
1.84
1.95
1.93
2.98
5.92

20.951
21.230
76.807
77.230
77.653
109.853
115.372
115.651
128.310
130.966
131.069
136.362
137.002
137.020
138.173
137.048
160.260
163.502
ppm
0
20
40
60
80
100
120
140
160
180
200
220
240
260
Me
Me
Me
F

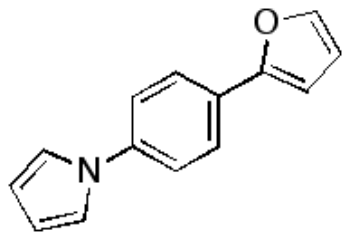
STANDARD 1H OBSERVE

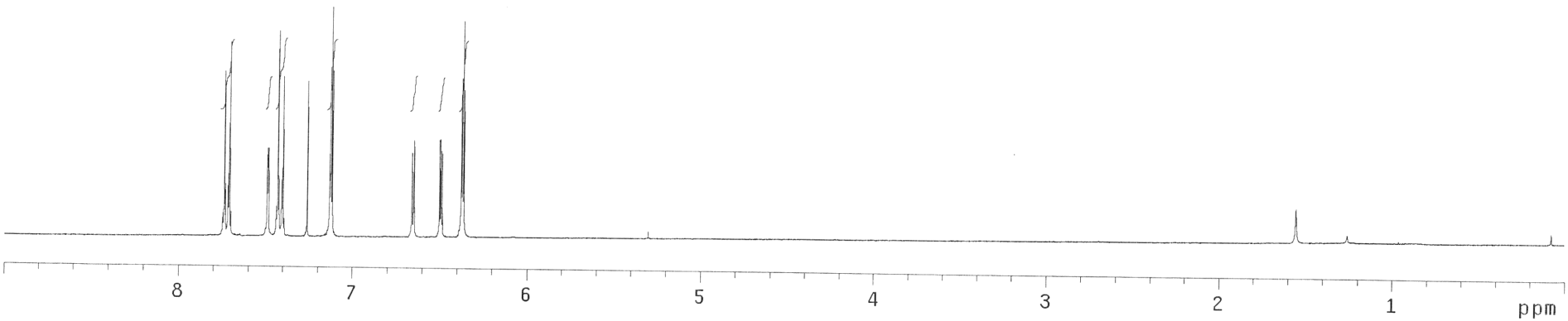
exp1 std1h

SAMPLE		DEC. & VT	
date	Jul 21 2009	dfrq	300.107
solvent	CDCl3	dn	H1
file	exp	dpwr	30
ACQUISITION		dof	0
sfrq	300.108	dm	nnn
tn	H1	dmm	c
at	4.003	dmf	200
np	48052	temp	20.0
sw	6002.4	PROCESSING	
fb	not used	wtfile	
bs	16	proc	ft
tpwr	54	fn	131072
pw	8.0		
d1	0.050	werr	
tof	867.7	wexp	
nt	16	wbs	
ct	16	wnt	
alock	n		
gain	not used		
FLAGS			
il	n		
in	n		
dp	y		
DISPLAY			
sp	-16.2		
wp	2445.1		
vs	151		
sc	0		
wc	250		
hzmm	9.78		
is	500.00		
rfl	2839.3		
rfp	2181.8		
th	7		
ins	3.000		
nm	ph		



158.879
153.474
147.252
142.602
136.282
129.056
128.090
126.663
125.929
122.598
121.528
111.985
106.054
77.653
77.230
76.807
25.393
Me
N
O
ppm
160
140
120
100
80
60
40
20


O
N


8
7
6
5
4
3
2
1
ppm

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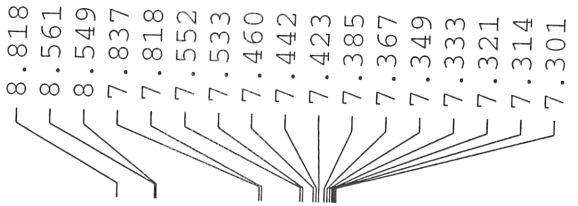
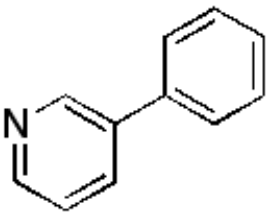
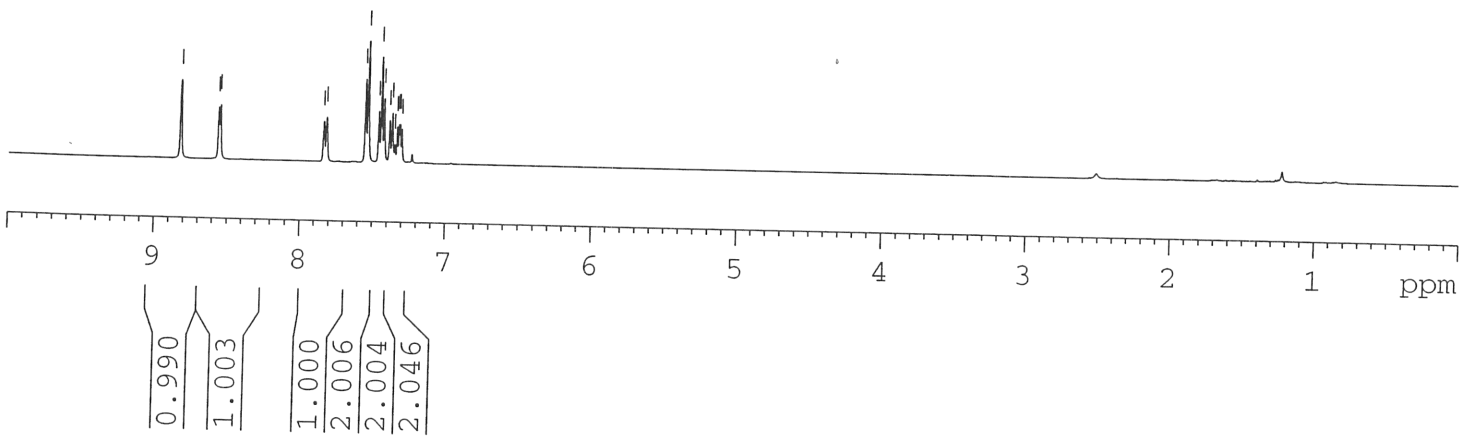
139.765
128.507
125.121
120.677
119.320
111.953
110.759
105.139
77.653
77.230
76.805
O
N
ppm
160
140
120
100
80
60
40
20







Current Data Parameters

NAME	JN5-101-1
EXPNO	1
PROCNO	1

F2 - Acquisition Parameters

Date_	20090728
Time	17.13
INSTRUM	spect
PROBHD	5 mm BBO BB-1H
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	16
DS	2
SWH	8278.146 Hz
FIDRES	0.126314 Hz
AQ	3.9584243 sec
RG	57
DW	60.400 usec
DE	6.00 usec
TE	293.2 K
D1	1.00000000 sec
TD0	1

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

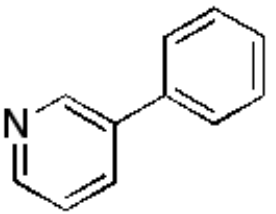
NUC1	1H
P1	15.07 usec
PL1	0.00 dB
SFO1	400.1324710 MHz

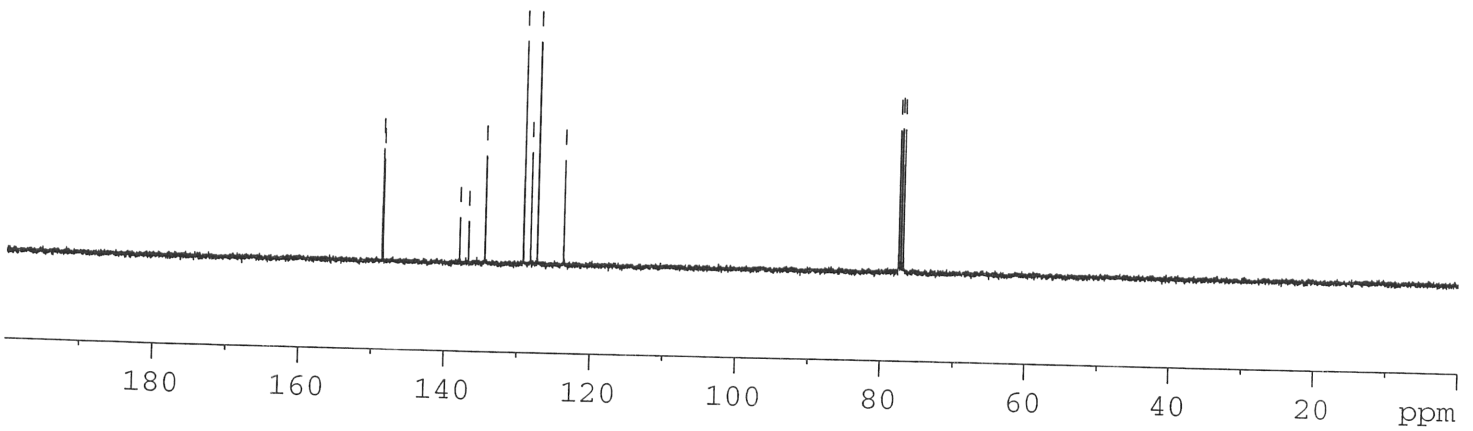
F2 - Processing parameters

SI	65536
SF	400.1300212 MHz
WDW	EM
SSB	0
LB	0.30 Hz
GB	0
PC	1.00

148.672
148.529
138.012
136.814
134.554
129.282
128.301
127.348
123.753

77.621
77.303
76.985





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Current Data Parameters

NAME	JN5-101-1
EXPNO	13
PROCNO	1

F2 - Acquisition Parameters

Date_	20090728
Time	17.16
INSTRUM	spect
PROBHD	5 mm BBO BB-1H
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	33
DS	2
SWH	23980.814 Hz
FIDRES	0.365918 Hz
AQ	1.3664756 sec
RG	8192
DW	20.850 usec
DE	6.00 usec
TE	293.2 K
D1	2.00000000 sec
d11	0.03000000 sec
DELTA	1.89999998 sec
TD0	1

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

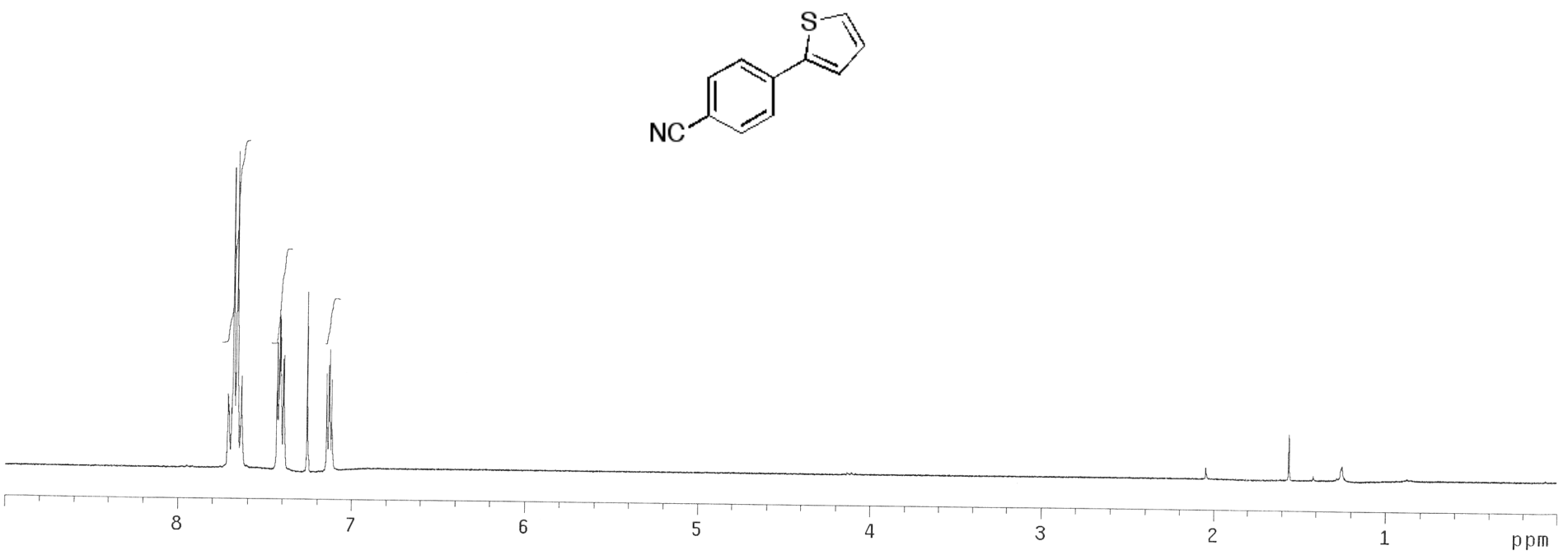
NUC1	13C
P1	8.75 usec
PL1	-3.00 dB
SFO1	100.6228298 MHz

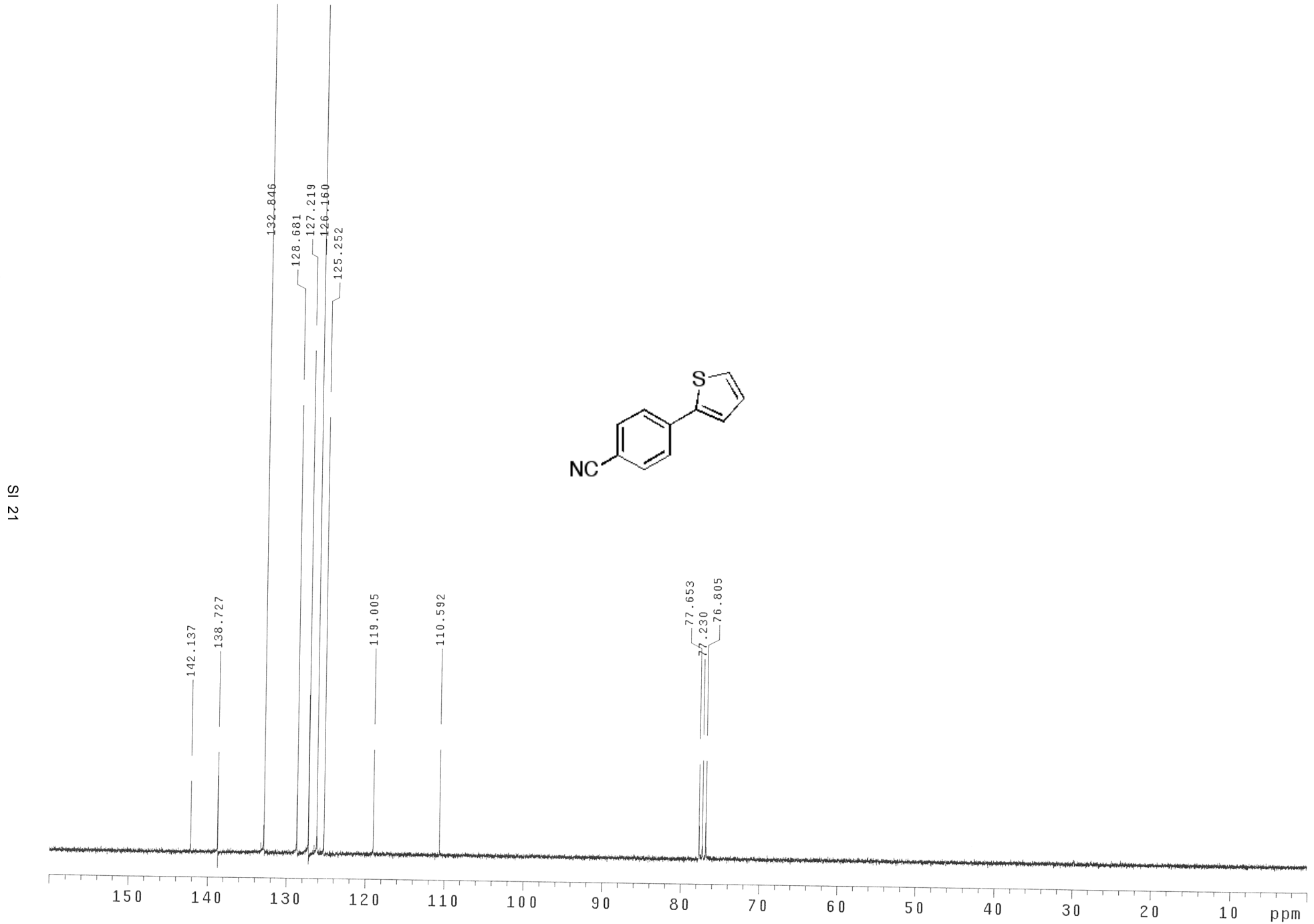
======== CHANNEL f2 ========

CPDPRG2	waltz16
NUC2	1H
PCPD2	90.00 usec
PL2	-1.00 dB
PL12	14.52 dB
PL13	18.00 dB
SFO2	400.1316005 MHz

F2 - Processing parameters

SI	65536
SF	100.6127514 MHz
WDW	EM
SSB	0
LB	1.00 Hz
GB	0
PC	1.40


S
NC
8
7
6
5
4
3
2
1
ppm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132.846
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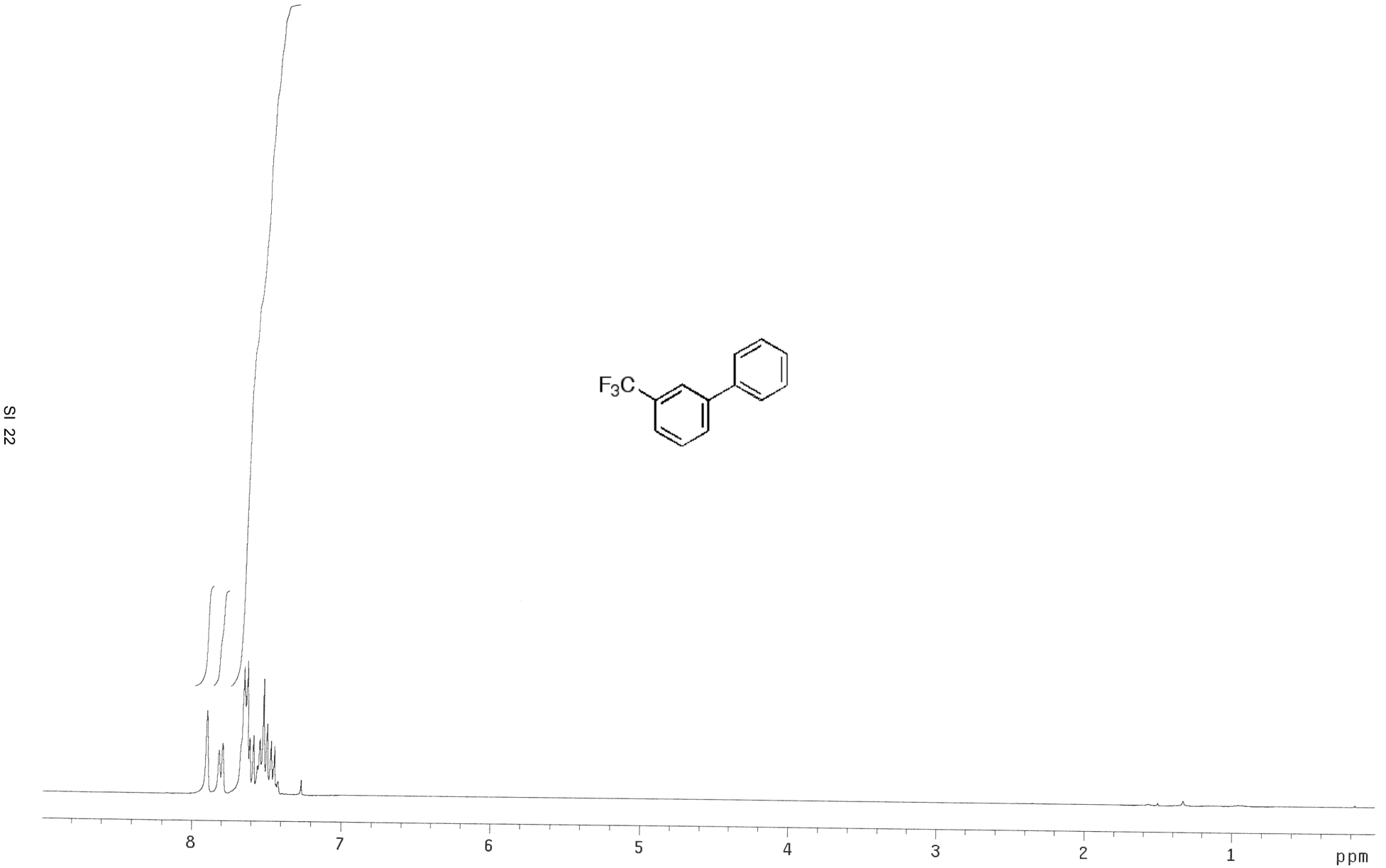
127.219
126.160
125.252
119.005
110.592
77.653
77.230
76.805
S
NC
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm


F3C
8
7
6
5
4
3
2
1
ppm

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131.207
130.710
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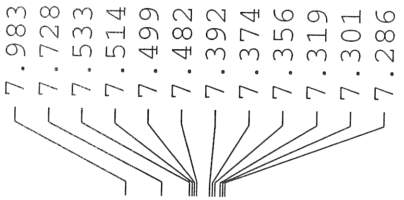
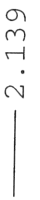
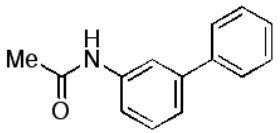
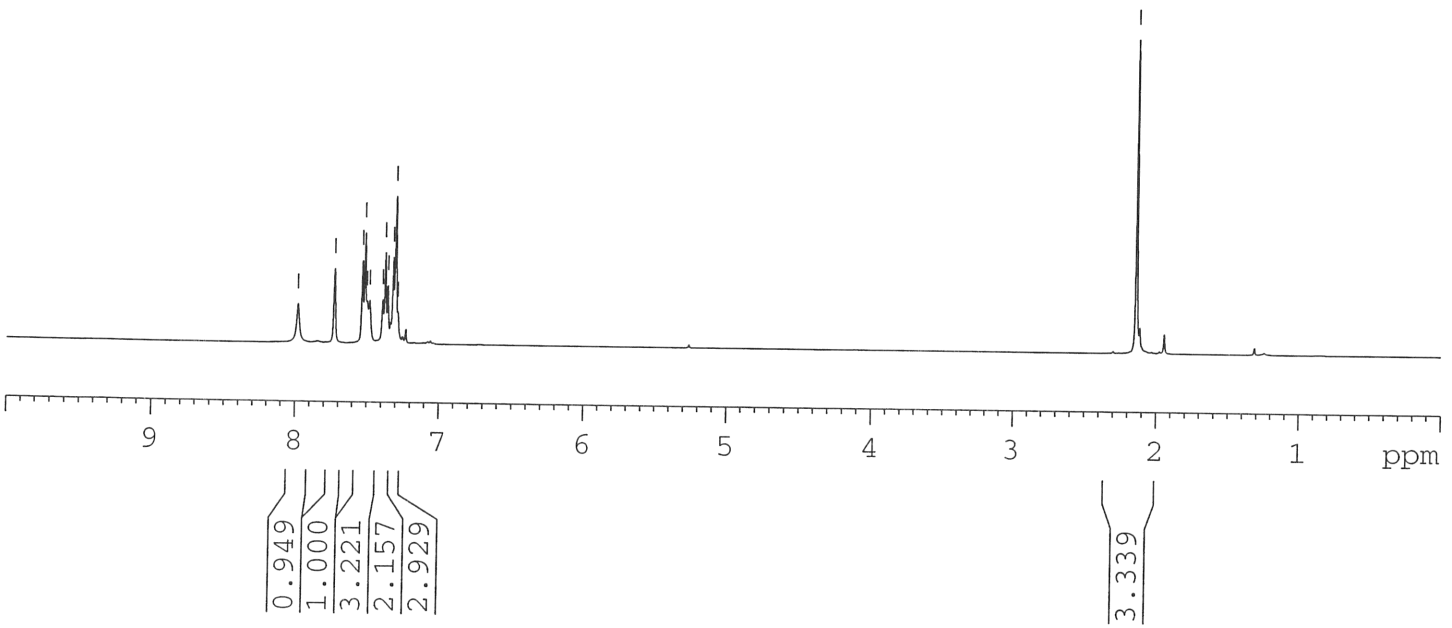
129.512
129.281
128.315
127.469
126.321
124.287
124.237
124.187
124.134
122.711
77.725
77.302
76.879
ppm
0
20
40
60
80
100
120
140
160
180
200
220
240
260
F3C









BRUKER

Current Data Parameters
NAME JN5-96-030
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20090731
Time 2.13
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 8278.146 Hz
FIDRES 0.126314 Hz
AQ 3.9584243 sec
RG 57
DW 60.400 usec
DE 6.00 usec
TE 293.2 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ========
NUC1 1H
P1 15.07 usec
PL1 0.00 dB
SFO1 400.1324710 MHz

F2 - Processing parameters
SI 65536
SF 400.1300212 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

169.142
142.225
140.866
138.636
129.541
128.961
127.679
127.338
123.318
119.162
119.002
77.607
77.289
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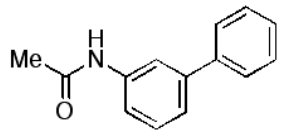
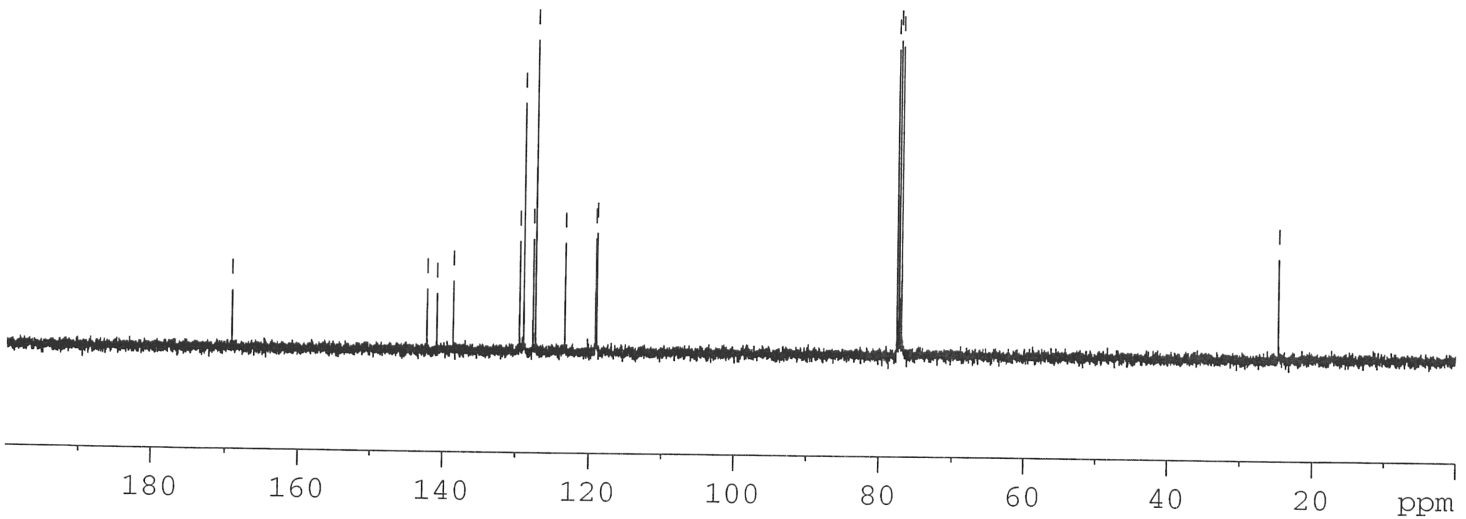
24.746





BRUKER

Current Data Parameters
NAME JN5-96-030
EXPNO 13
PROCNO 1

F2 - Acquisition Parameters
Date_ 20090731
Time 2.19
INSTRUM spect
PROBHD 5 mm BBO BB-1H
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 40
DS 2
SWH 23980.814 Hz
FIDRES 0.365918 Hz
AQ 1.3664756 sec
RG 9195.2
DW 20.850 usec
DE 6.00 usec
TE 293.2 K
D1 2.00000000 sec
d11 0.03000000 sec
DELTA 1.89999998 sec
TD0 1

======== CHANNEL f1 ========
NUC1 13C
P1 8.75 usec
PL1 -3.00 dB
SFO1 100.6228298 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 90.00 usec
PL2 -1.00 dB
PL12 14.52 dB
PL13 18.00 dB
SFO2 400.1316005 MHz

F2 - Processing parameters
SI 65536
SF 100.6127514 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40