

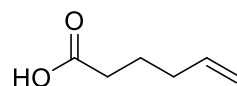


Current Data Parameters
NAME 07312013-50-michaelM
EXPNO 10
PROCNO 1

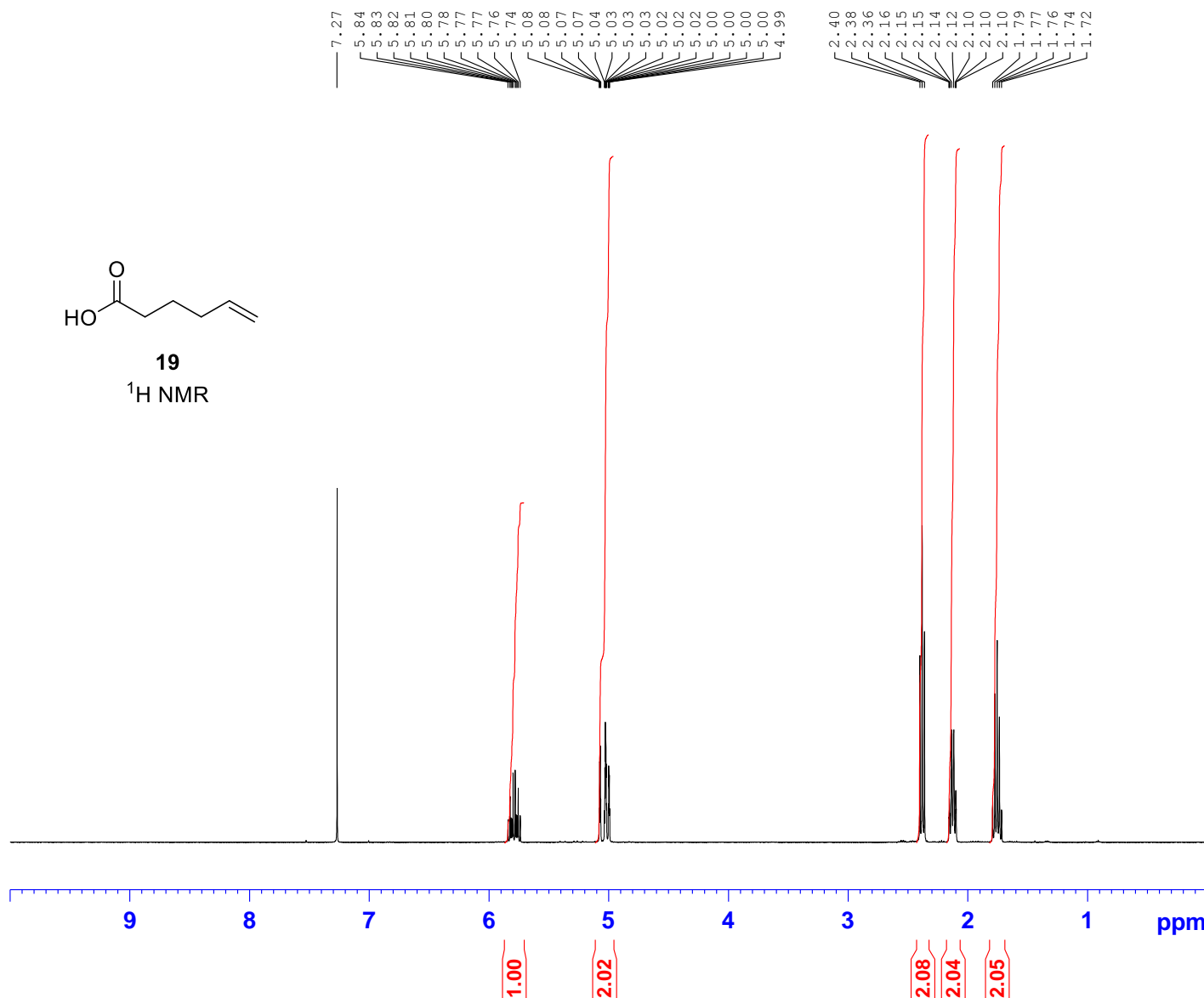
F2 - Acquisition Parameters
Date_ 20130731
Time 22.58
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 5597.015 Hz
FIDRES 0.085404 Hz
AQ 5.8545494 sec
RG 456
DW 89.333 usec
DE 6.50 usec
TE 295.6 K
D1 1.00000000 sec
TD0 1

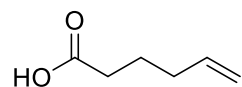
===== CHANNEL f1 =====
SF01 400.1324008 MHz
NUC1 1H
P1 12.50 usec
PLW1 15.04800034 W

F2 - Processing parameters
SI 32768
SF 400.1300059 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



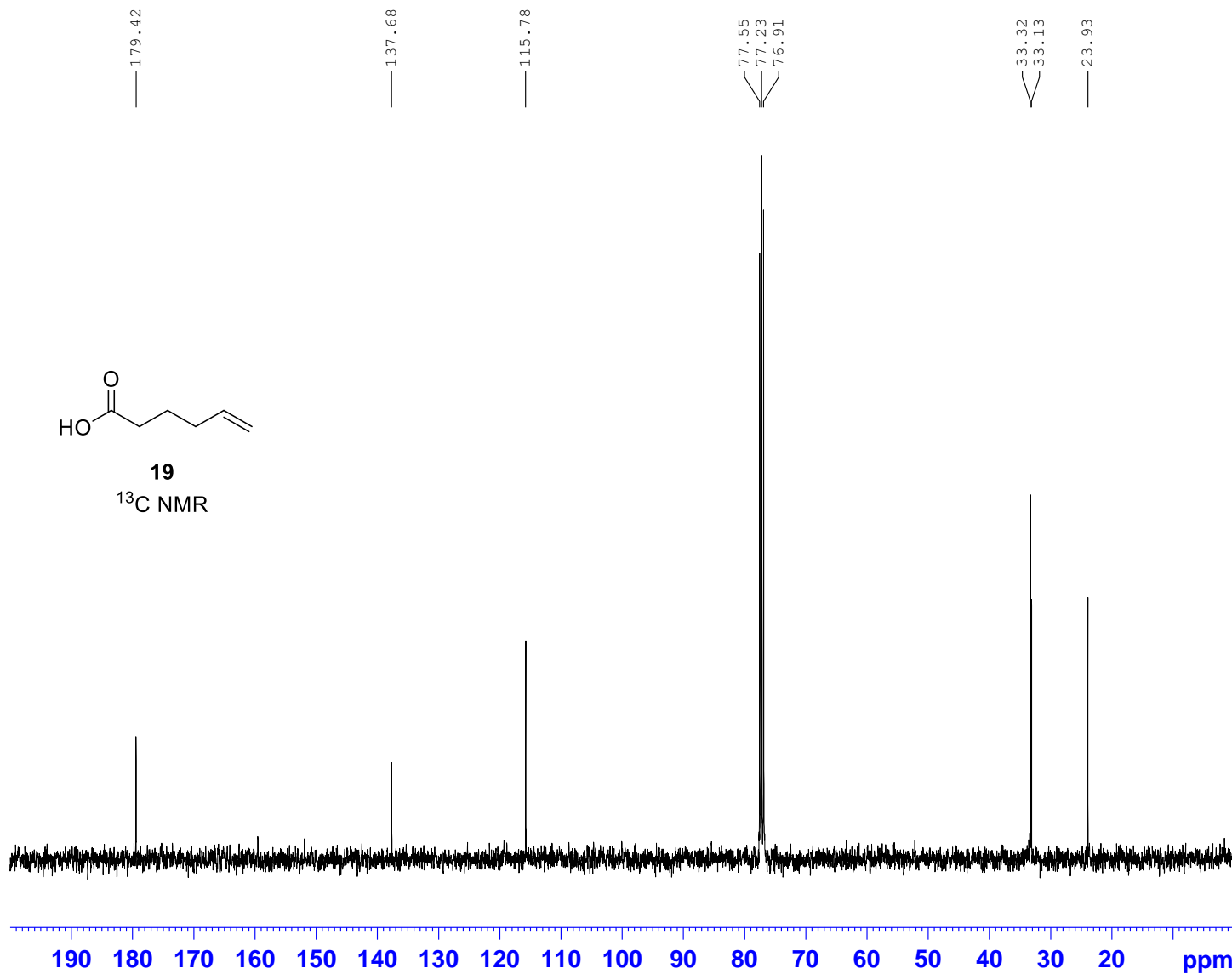
19
¹H NMR





19

¹³C NMR



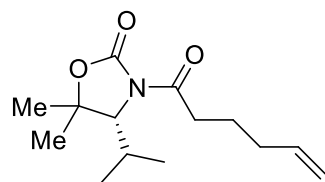
Current Data Parameters
 NAME 08012013-29-michaelM
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130802
 Time_ 2.18
 INSTRUM AVII400
 PROBHD 5 mm PABBO BB/
 PULPROG udeftnoe.and
 TD 8650
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 2.779013 Hz
 AQ 0.1799200 sec
 RG 203
 DW 20.800 usec
 DE 6.50 usec
 TE 296.4 K
 D1 2.00000000 sec
 D6 0.03000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D15 0.00302000 sec
 D20 1.53362894 sec
 D21 0.21294050 sec
 D24 0.10000000 sec
 L4 1

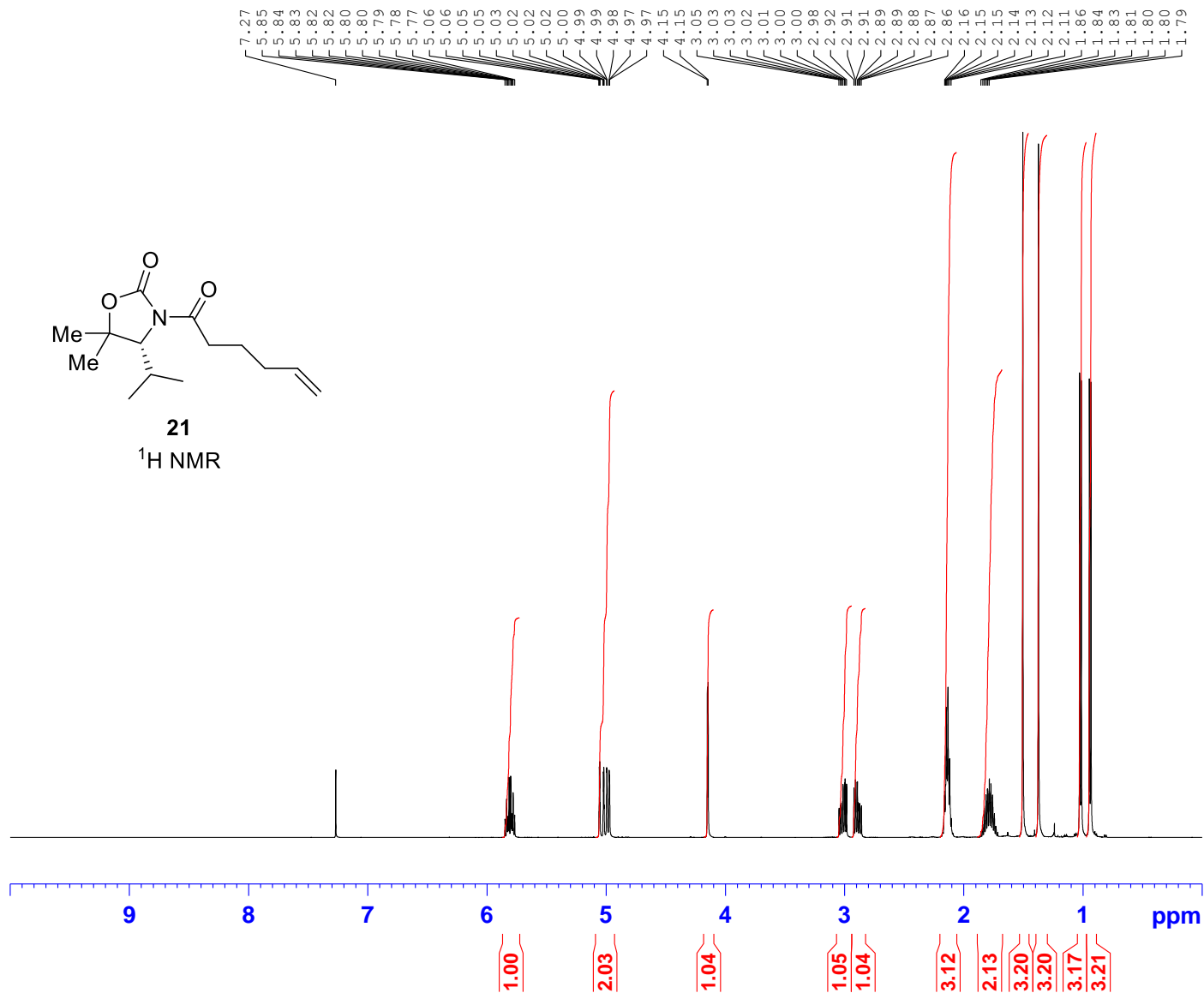
===== CHANNEL f1 =====
 SFO1 100.6238364 MHz
 NUC1 13C
 P1 8.50 usec
 P12 40000.00 usec
 P26 500.00 usec
 PLW1 55.73500061 W
 SPNAM[2] Q3.1000
 SPOAL2 0.500
 SPOFFS2 0 Hz
 SPW2 0.00043873 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 6.15259981 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCDP2 90.00 usec
 PLW2 15.04800034 W
 PLW13 0.21670000 W

F2 - Processing parameters
 SI 32768
 SF 100.6127477 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



21
¹H NMR

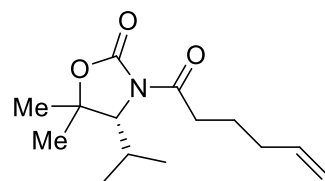


Current Data Parameters
NAME 08052013-14-doh-mc410-A
EXPNO 10
PROCNO 1

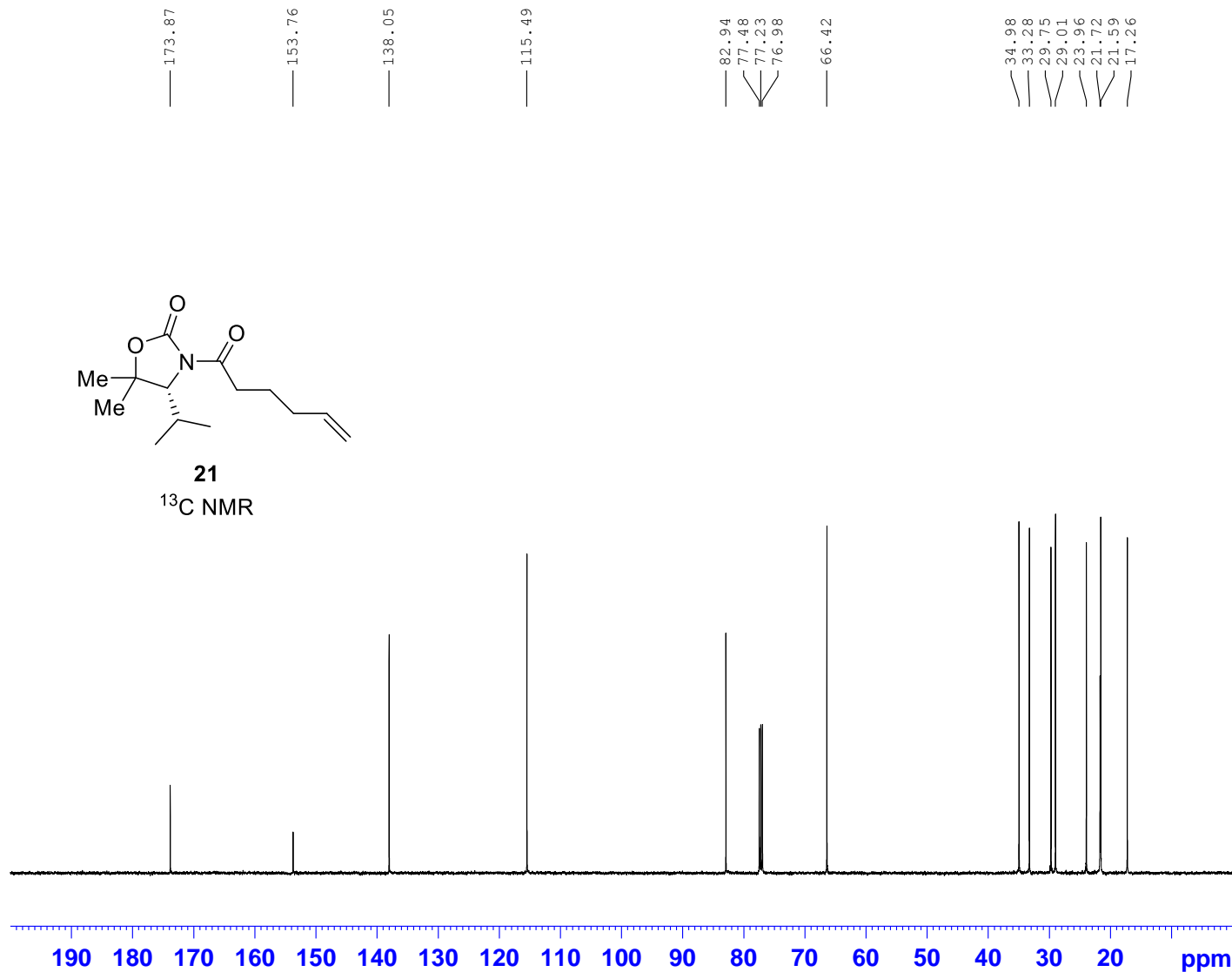
F2 - Acquisition Parameters
Date_ 20130805
Time 20.30
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 64
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300085 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



21
¹³C NMR



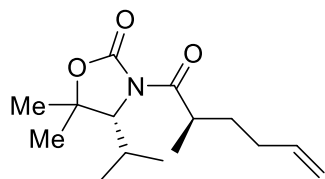
Current Data Parameters
NAME 08052013-14-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130805
Time 21.25
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

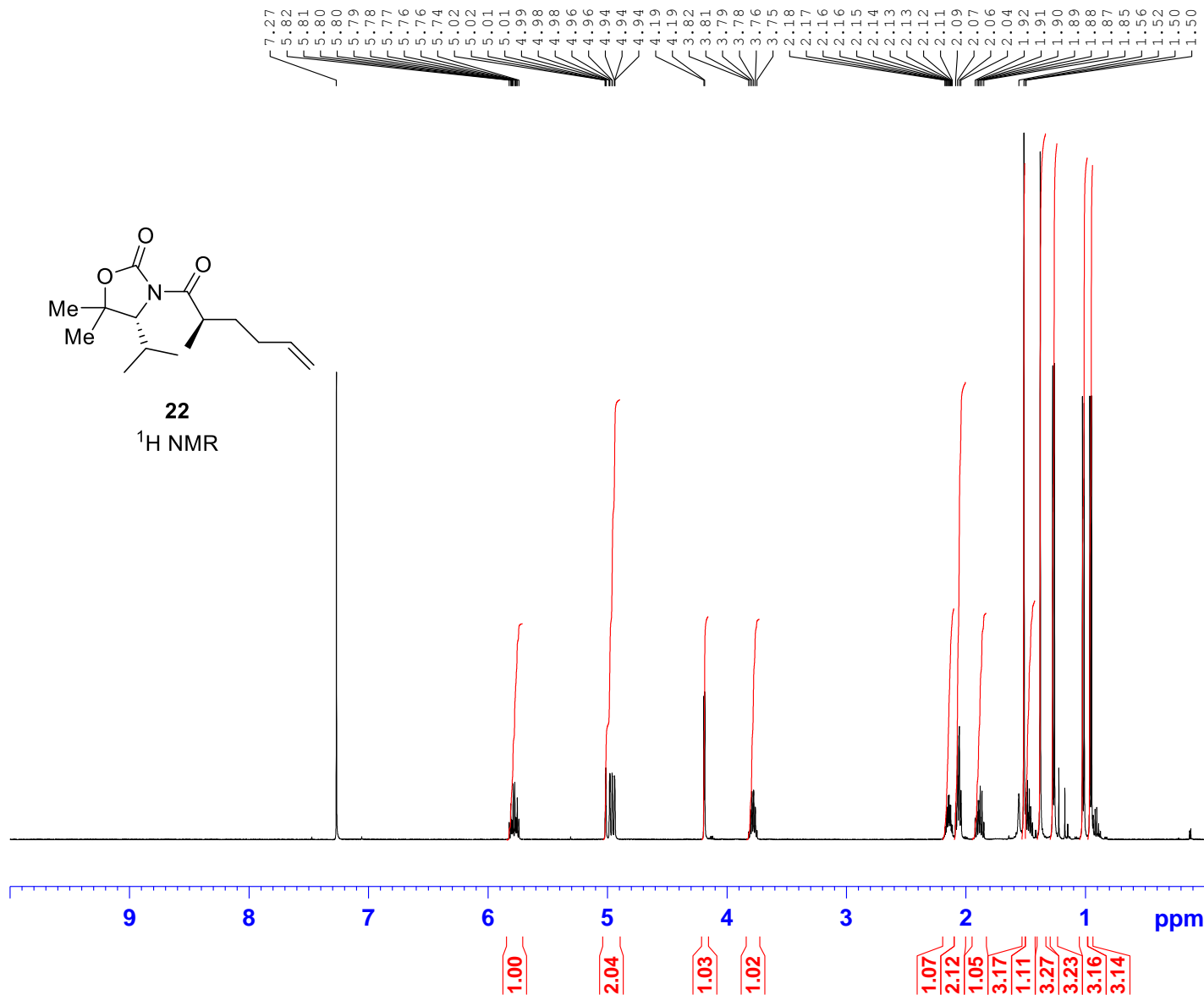
===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577662 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



22
¹H NMR

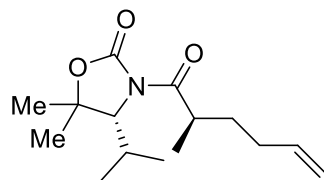


Current Data Parameters
NAME 08062013-10-doh-mc410-A
EXPNO 10
PROCNO 1

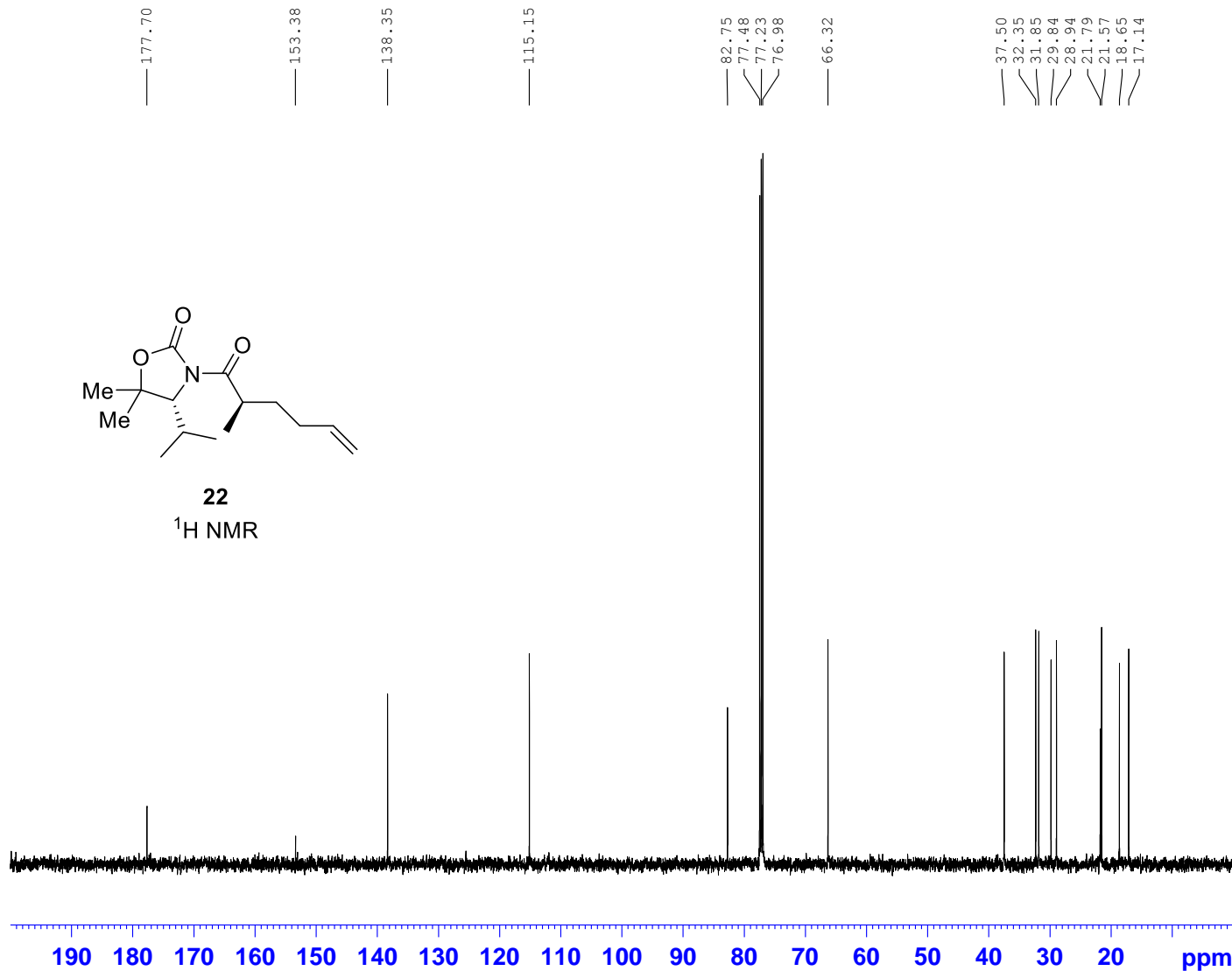
F2 - Acquisition Parameters
Date_ 20130807
Time_ 0.47
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 128
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300086 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



22
¹H NMR



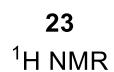
Current Data Parameters
NAME 08062013-10-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130807
Time 1.42
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeflt
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577640 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



```
Current Data Parameters
NAME      08192013-18-doh-mc410-A
EXPNO      10
PROCNO      1
```

```

F2 - Acquisition Parameters
Date_                20130820
Time_                2.24
INSTRUM              spect
PROBHD              5 mm PABBO BB/
PULPROG              zg30
TD                  65536
SOLVENT              CDCl3
NS                   8
DS                   2
SWH                  7002.801 Hz
FIDRES               0.106854 Hz
AQ                   4.6792703 sec
RG                   90.5
DW                   71.400 usec
DE                   11.40 usec
TE                   295.0 K
D1                   1.00000000 sec
TD0                  1

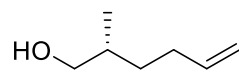
```

```
===== CHANNEL f1 =====
SF01          500.1330008 MHz
NUC1              1H
P1              10.35 usec
PLW1          24.00000000 W
```

```

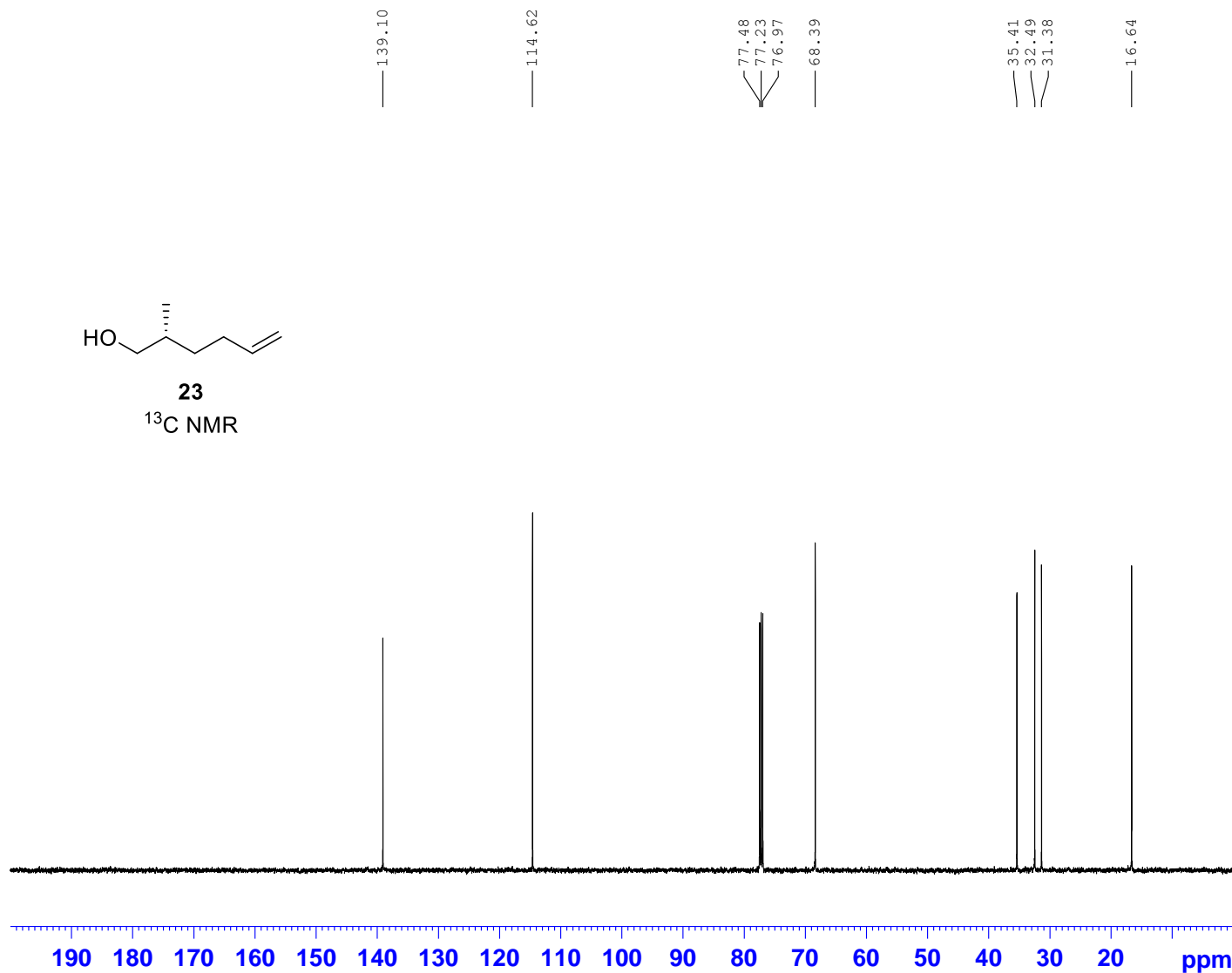
F2 - Processing parameters
SI                65536
SF              500.1300084 MHz
WDW              EM
SSB              0
LB                0.30 Hz
GB              0
PC                1.00

```



23

¹³C NMR



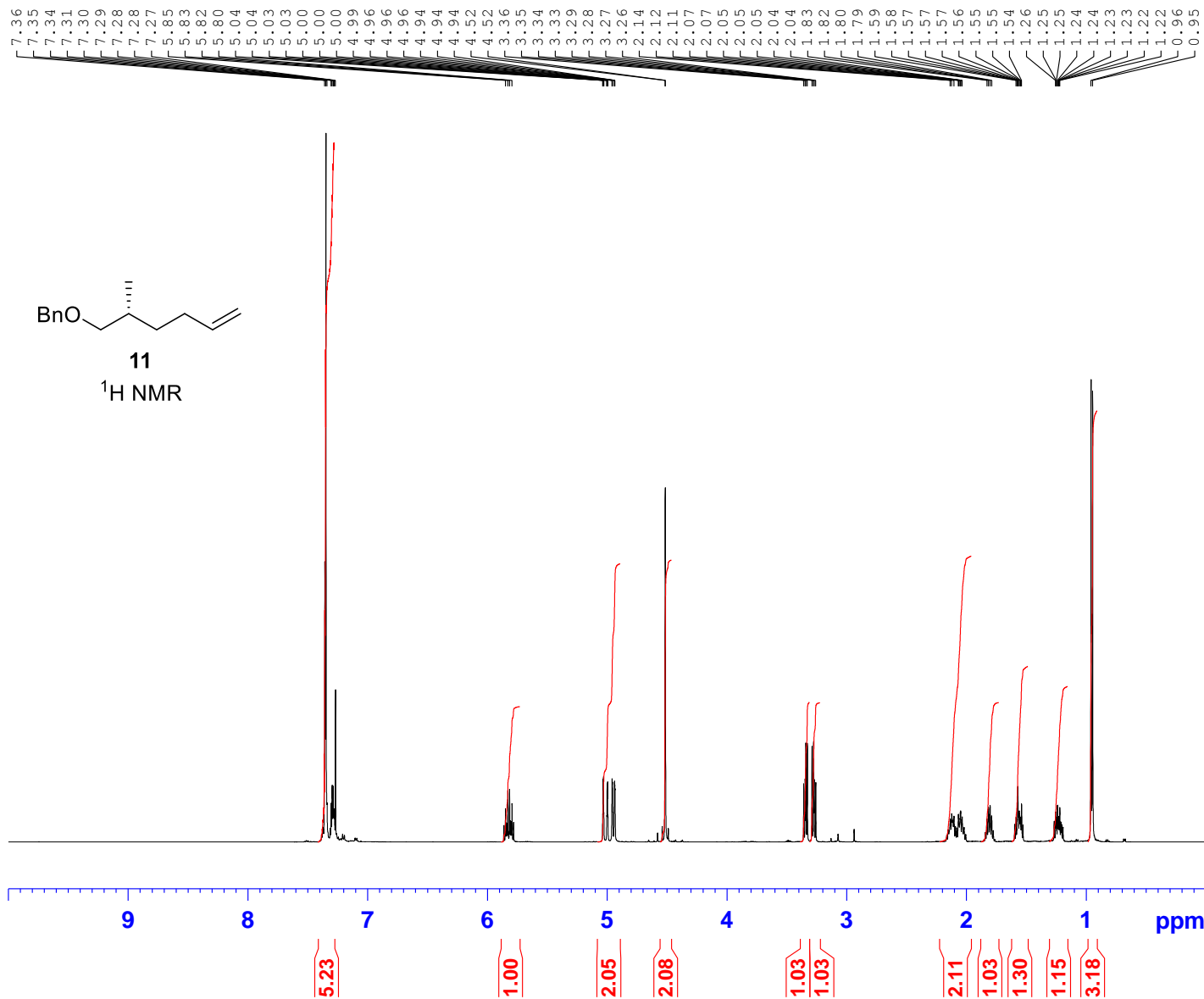
Current Data Parameters
 NAME 08192013-18-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130820
 Time 3.18
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDC13
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577647 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40

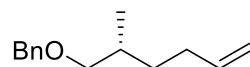


Current Data Parameters
 NAME 08192013-19-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130820
 Time 0.35
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDC13
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 90.5
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300085 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



11

¹³C NMR

139.27
138.99
128.53
127.73
127.64
114.46
77.48
77.23
76.98
75.99
73.17
33.17
33.04
31.42
17.21



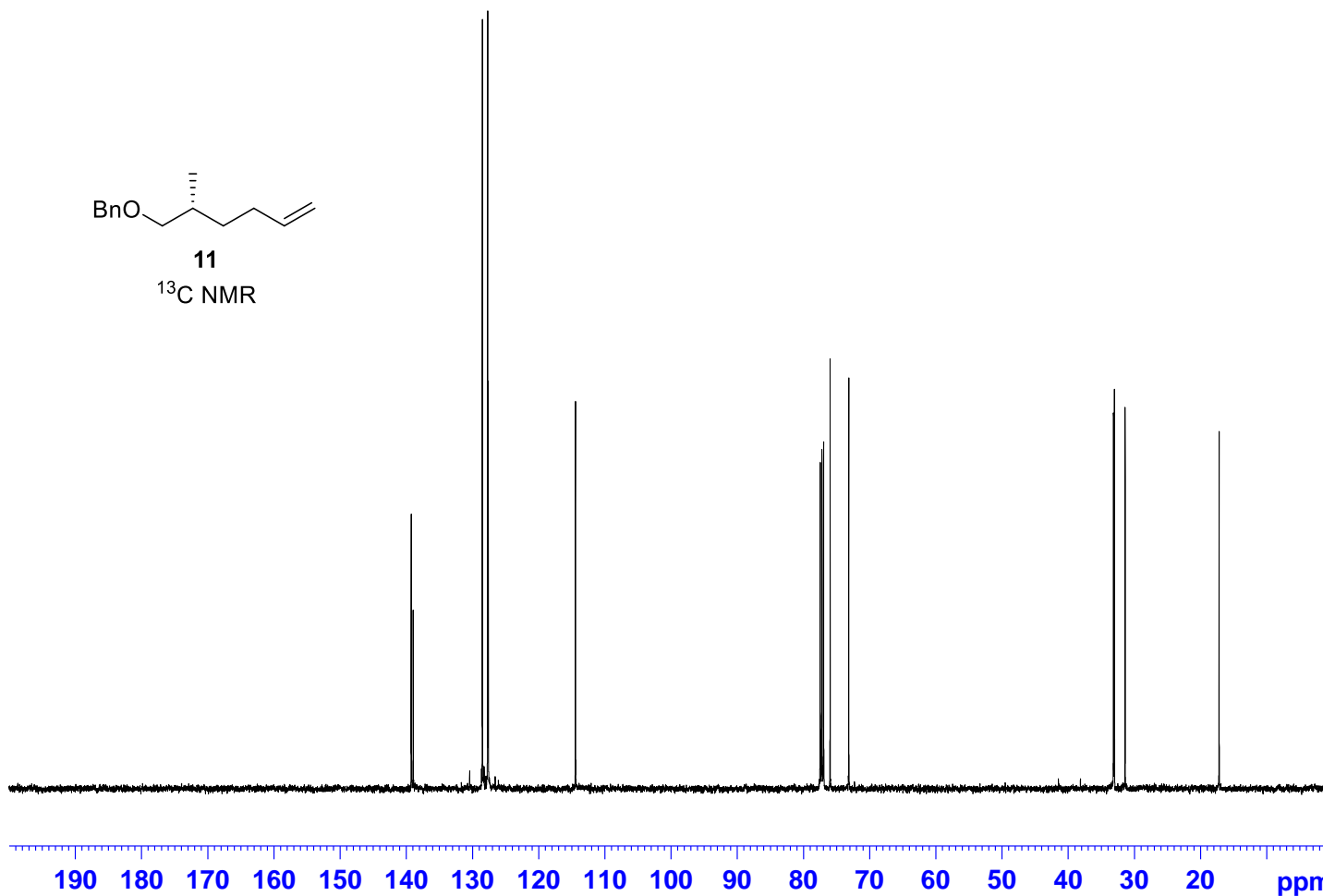
Current Data Parameters
NAME 08192013-19-doh-mc410-A
EXPNO 11
PROCNO 1

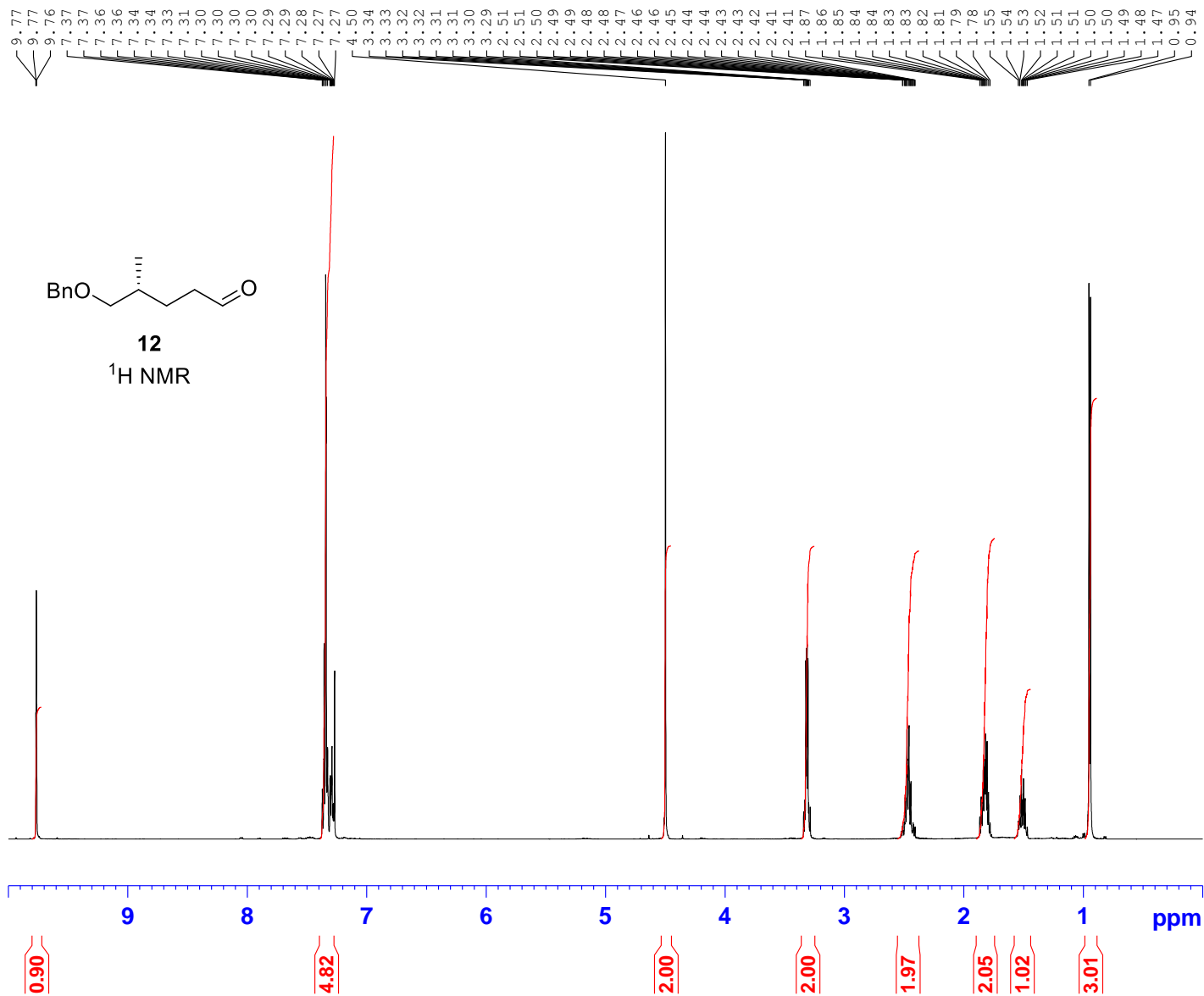
F2 - Acquisition Parameters
Date_ 20130820
Time_ 1.29
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeflt
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577651 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40





Current Data Parameters
 NAME 08232013-17-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130824
 Time 4.59
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 101
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300083 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

— 202.98

— 138.71

— 128.57

— 127.77

— 127.75

— 77.48

— 77.23

— 76.98

— 75.48

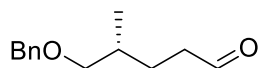
— 73.25

— 41.78

— 33.25

— 26.11

— 17.10



12

¹³C NMR



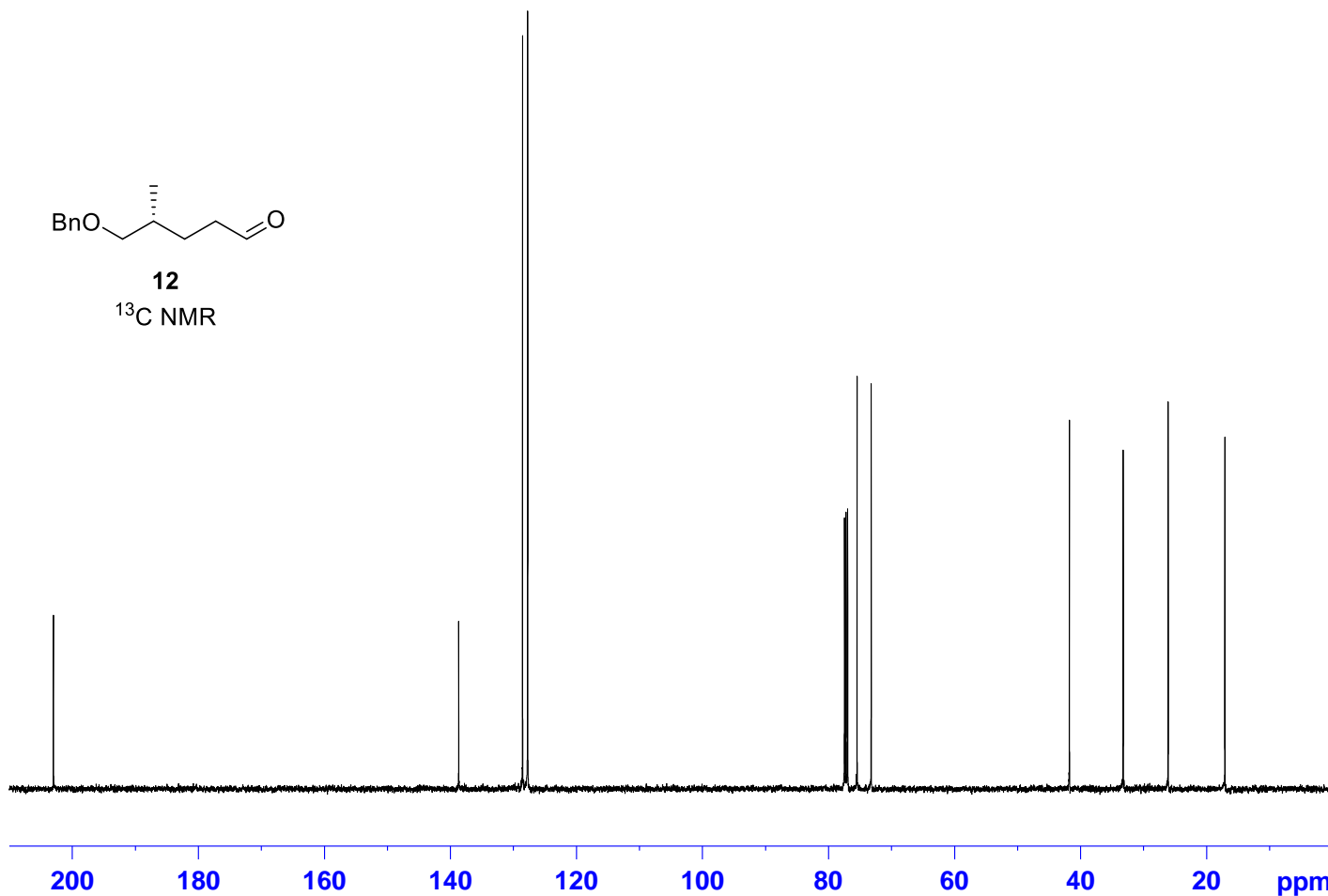
Current Data Parameters
NAME 08232013-17-doh-mc410-A
EXPNO 11
PROCNO 1

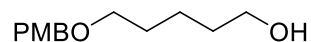
F2 - Acquisition Parameters
Date_ 20130824
Time 5.54
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

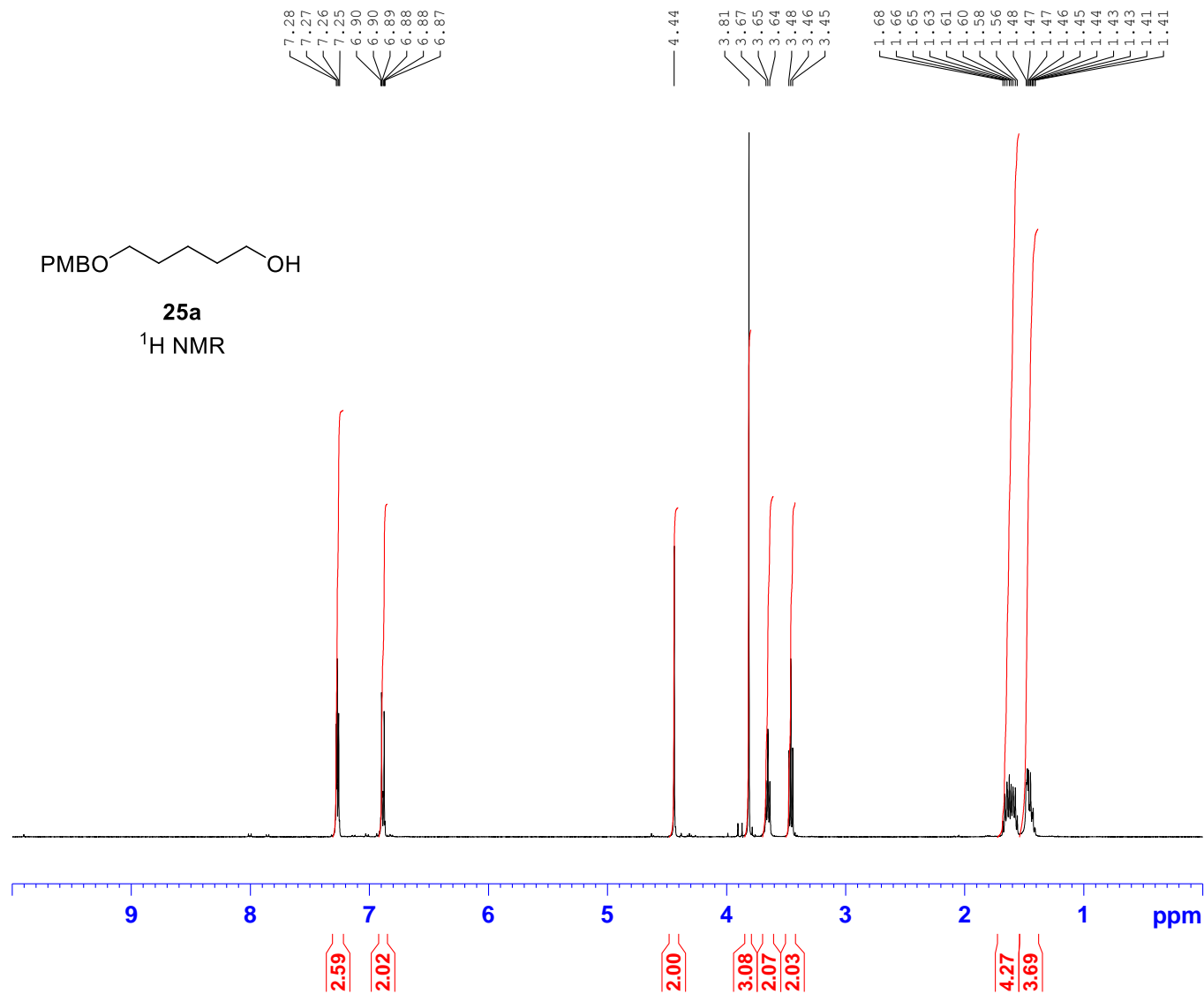
===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577654 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40





25a
¹H NMR

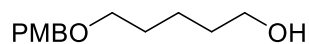


Current Data Parameters
 NAME 07092013-44-michaelM
 EXPNO 10
 PROCNO 1

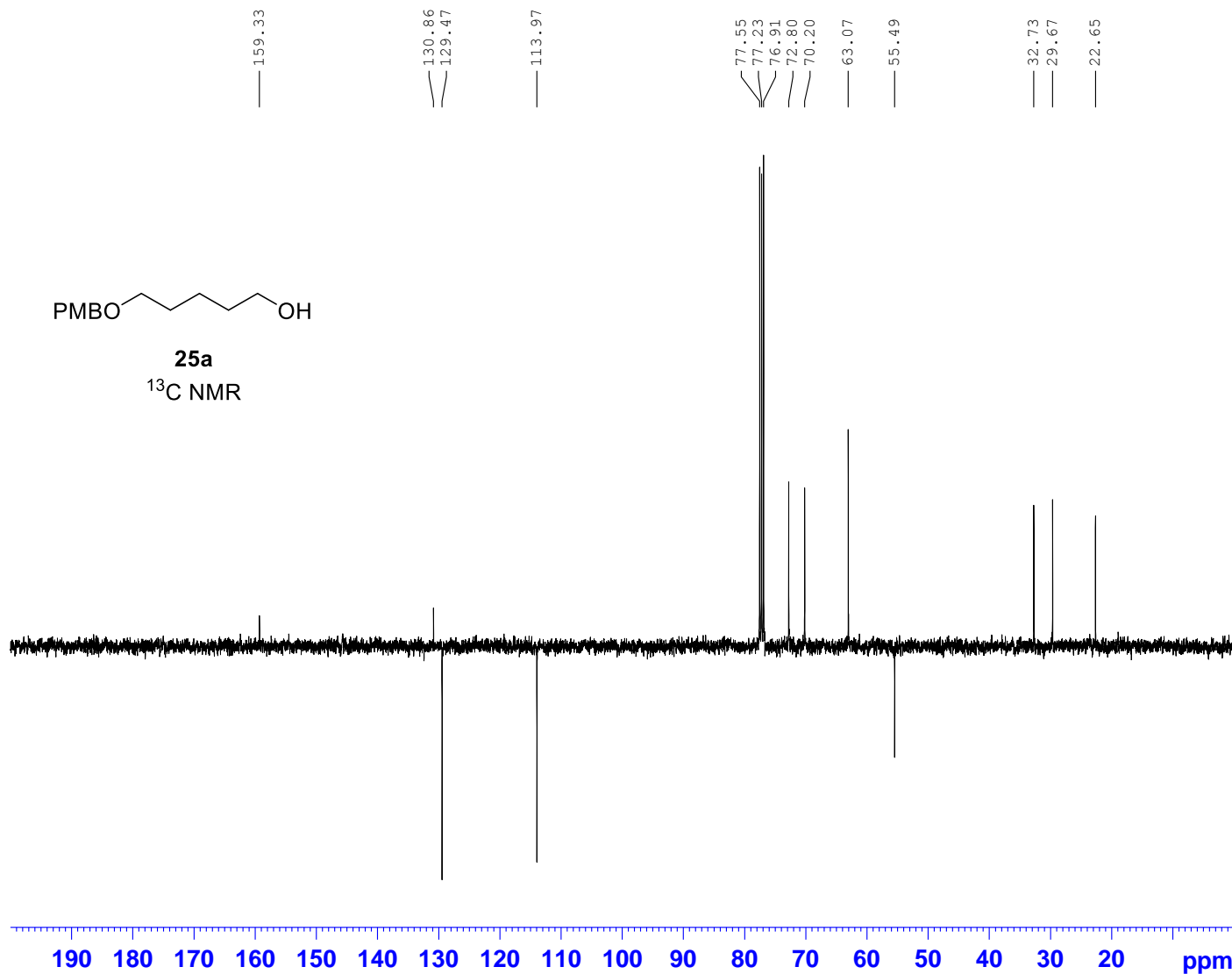
F2 - Acquisition Parameters
 Date_ 20130709
 Time_ 18.07
 INSTRUM AVII400
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 5597.015 Hz
 FIDRES 0.085404 Hz
 AQ 5.8545494 sec
 RG 362
 DW 89.333 usec
 DE 6.50 usec
 TE 295.9 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 400.1324008 MHz
 NUC1 1H
 P1 12.50 usec
 PLW1 15.04800034 W

F2 - Processing parameters
 SI 32768
 SF 400.1300056 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



25a
¹³C NMR



Current Data Parameters
NAME 07092013-44-michaelM
EXPNO 11
PROCNO 1

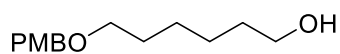
F2 - Acquisition Parameters
Date_ 20130710
Time_ 5.35
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG deptqgppsp.2
TD 65536
SOLVENT CDCl3
NS 800
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 2050
DW 20.800 usec
DE 6.50 usec
TE 295.9 K
CNST2 145.0000000
CNST12 1.5000000
D1 2.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
D16 0.00020000 sec
D28 1.50000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 100.6238364 MHz
NUC1 13C
P1 8.50 usec
P13 2000.00 usec
PLW0 -1.00000000 W
PLW1 55.73500061 W
SPNAM[5] Crp60comp.4
SFOALS 0.500
SPOFFS5 0 Hz
SPW5 6.15259981 W

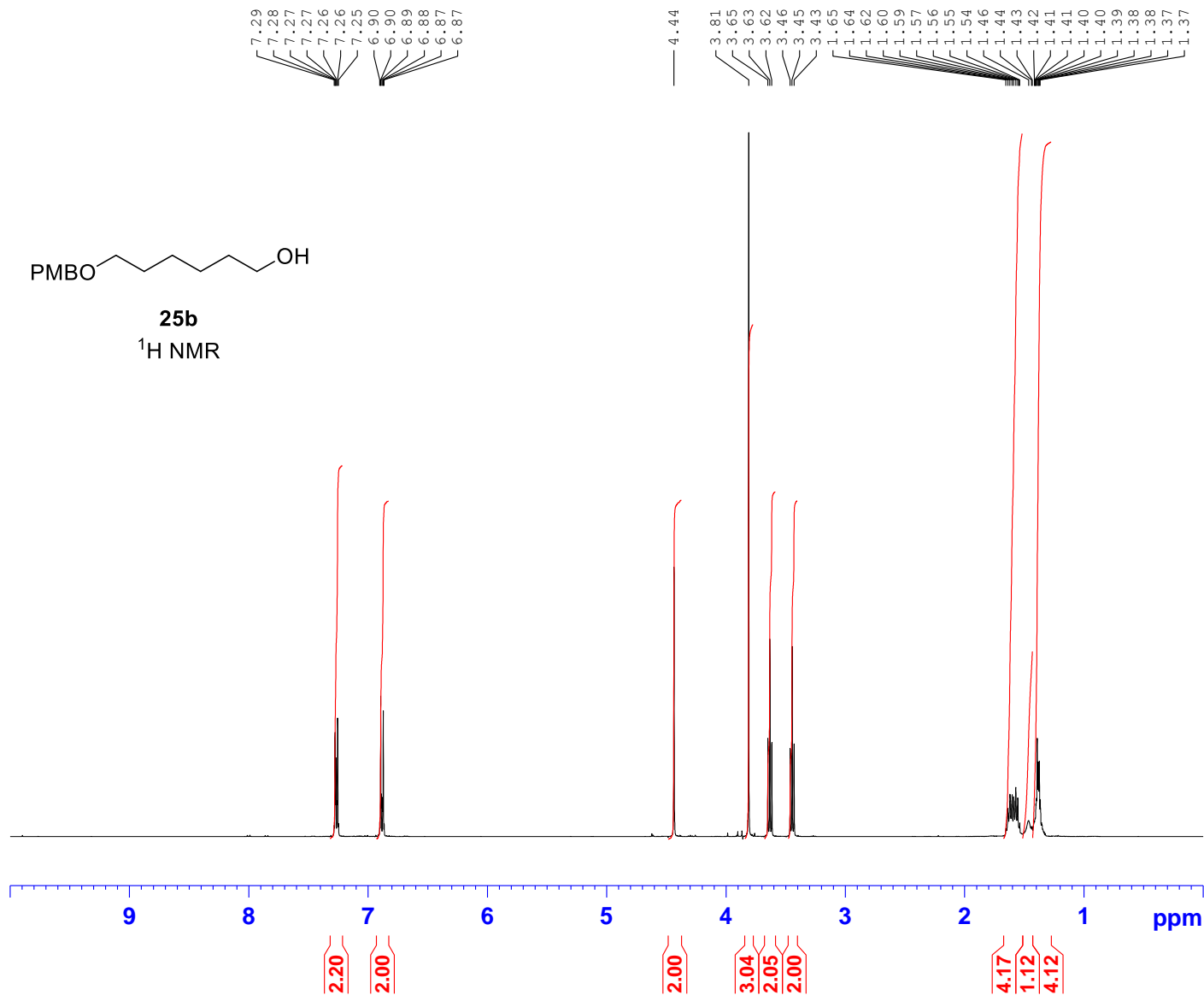
===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2] waltz16
P0 18.00 usec
P3 12.00 usec
P4 24.00 usec
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW12 0.26752999 W
PLW13 0.21670000 W

===== GRADIENT CHANNEL =====
GPNAM[1] SINE.100
GPNAM[2] SINE.100
GPNAM[3] SINE.100
GPZ1 31.00 %
GPZ2 31.00 %
GPZ3 31.00 %
P16 1000.00 usec

F2 - Processing parameters
SI 32768
SF 100.6127487 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



25b
¹H NMR

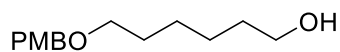


Current Data Parameters
NAME 07092013-43-michaelM
EXPNO 10
PROCNO 1

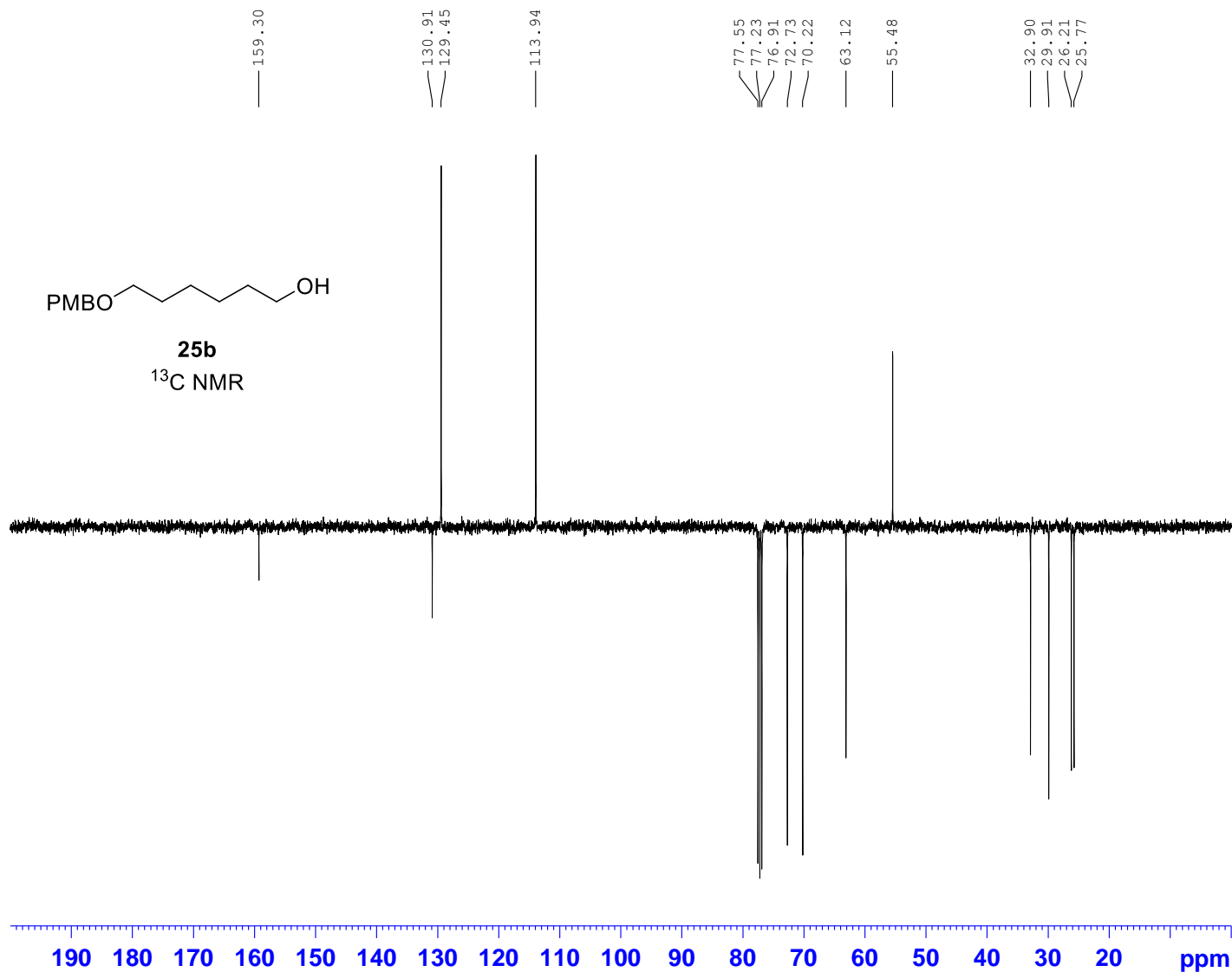
F2 - Acquisition Parameters
Date_ 20130709
Time_ 18.02
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 5597.015 Hz
FIDRES 0.085404 Hz
AQ 5.8545494 sec
RG 144
DW 89.333 usec
DE 6.50 usec
TE 295.9 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SF01 400.1324008 MHz
NUC1 1H
P1 12.50 usec
PLW1 15.04800034 W

F2 - Processing parameters
SI 32768
SF 400.1300057 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



25b
¹³C NMR



Current Data Parameters
NAME 07092013-43-michaelm
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130710
Time 4.45
INSTRUM AVI400
PROBHD 5 mm PABBO BB/
PULPROG deptqgppsp.2
TD 65536
SOLVENT CDC13
NS 800
DS 4
SWH 24038.461 Hz
FIDRES 0.366798 Hz
AQ 1.3631488 sec
RG 2050
DW 20.800 usec
DE 6.50 usec
TE 296.0 K
CNST2 145.0000000
CNST12 1.5000000
D1 2.00000000 sec
D2 0.00344828 sec
D12 0.00002000 sec
D16 0.00020000 sec
D28 1.50000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 100.6238364 MHz
NUC1 13C
P1 8.50 usec
P13 2000.00 usec
PLW0 -1.00000000 W
PLW1 55.73500061 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 6.15259981 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2] waltz16
P0 18.00 usec
P3 12.00 usec
P4 24.00 usec
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW12 0.26752999 W
PLW13 0.21670000 W

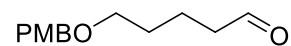
===== GRADIENT CHANNEL =====
GPNAM[1] SINE.100
GPNAM[2] SINE.100
GPNAM[3] SINE.100
GPZ1 31.00 %
GPZ2 31.00 %
GPZ3 31.00 %
P16 1000.00 usec

F2 - Processing parameters
SI 32768
SF 100.6127500 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40

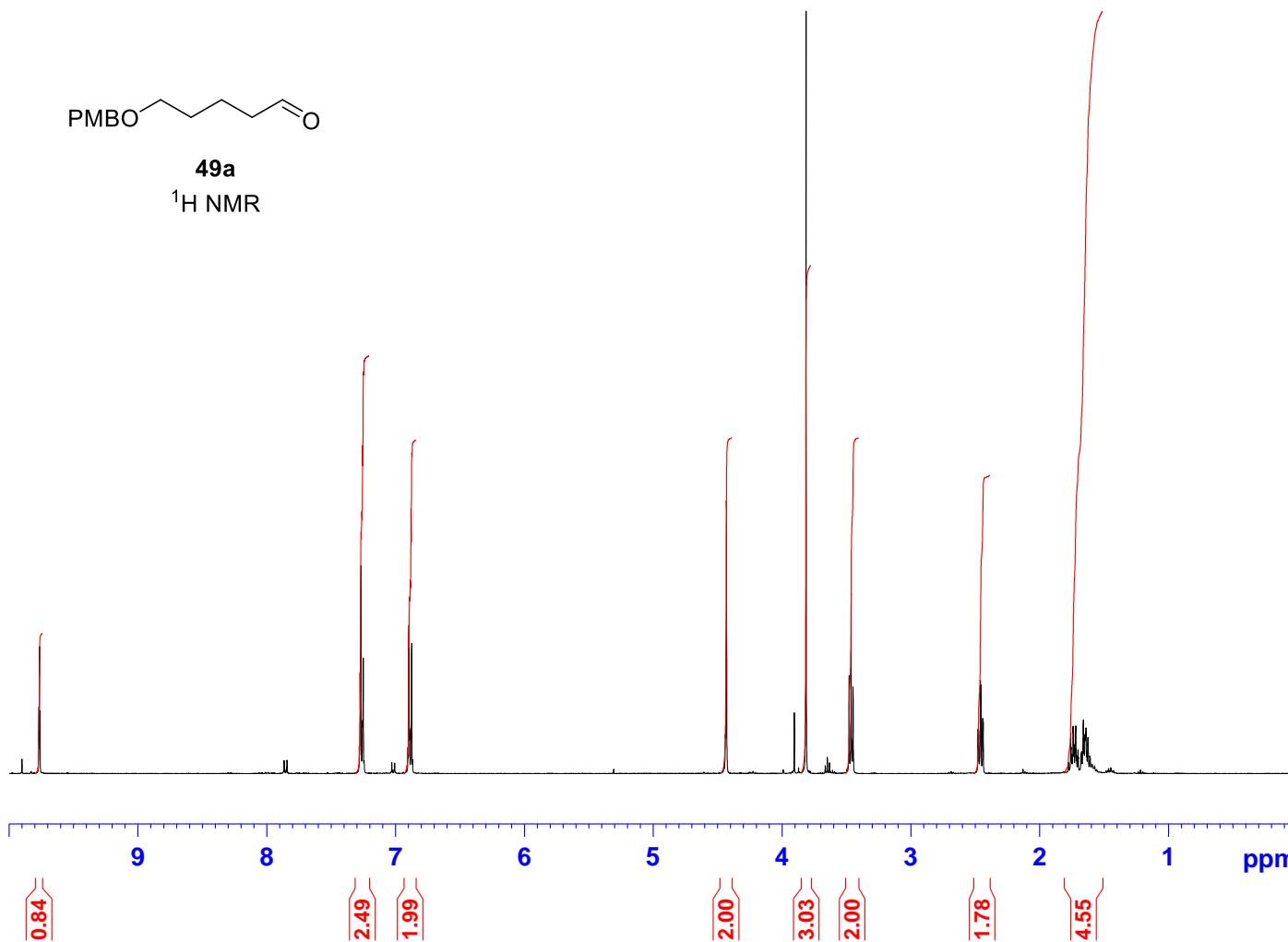
9.77
9.77
9.76

7.27
7.27
7.26
7.25
7.25
6.94
6.92
6.91
6.90
6.89
6.88
6.88
6.87

4.43
3.81
3.48
3.46
3.45
2.48
2.47
2.46
2.46
2.44
2.44
1.78
1.77
1.76
1.76
1.75
1.74
1.74
1.73
1.72
1.71
1.71
1.70
1.70
1.69
1.68
1.68
1.67
1.67
1.66
1.65
1.65



49a
¹H NMR

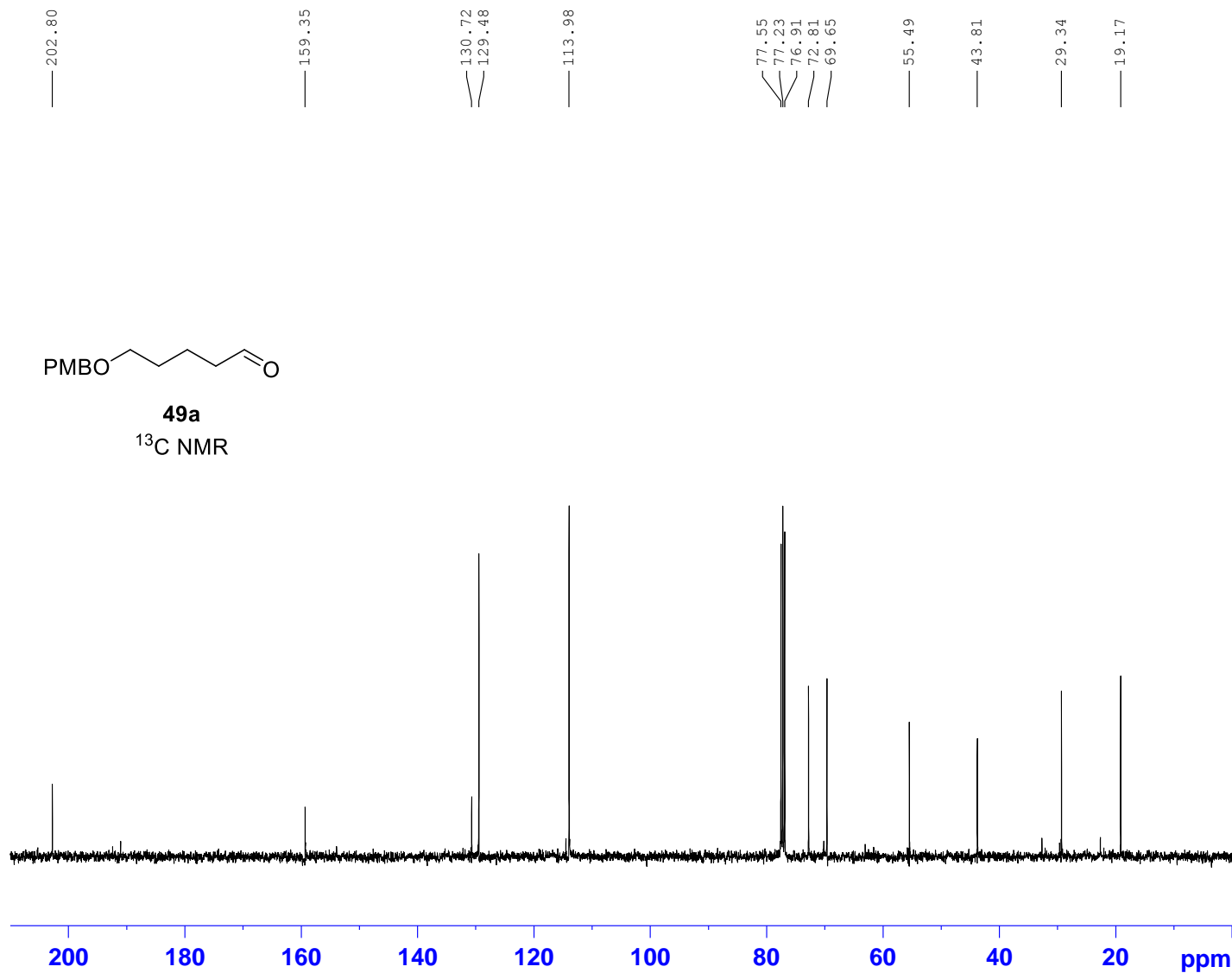


Current Data Parameters
NAME 07022013-16-michaelM
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130702
Time_ 15.20
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 5597.015 Hz
FIDRES 0.085404 Hz
AQ 5.8545494 sec
RG 362
DW 89.333 usec
DE 6.50 usec
TE 295.3 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SF01 400.1324008 MHz
NUC1 1H
P1 12.50 usec
PLW1 15.04800034 W

F2 - Processing parameters
SI 32768
SF 400.1300056 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



Current Data Parameters
 NAME 07022013-34-michaelM
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130703
 Time_ 2.17
 INSTRUM AVII400
 PROBHD 5 mm PABBO BB/
 PULPROG udeftnoe.and
 TD 8650
 SOLVENT CDCl3
 NS 1024
 DS 4
 SWH 24038.461 Hz
 FIDRES 2.779013 Hz
 AQ 0.1799200 sec
 RG 203
 DW 20.800 usec
 DE 6.50 usec
 TE 295.9 K
 D1 2.00000000 sec
 D6 0.03000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D15 0.00302000 sec
 D20 1.53362894 sec
 D21 0.21294050 sec
 D24 0.10000000 sec
 L4 1

===== CHANNEL f1 =====
 SFO1 100.6238364 MHz
 NUC1 13C
 P1 8.50 usec
 P12 40000.00 usec
 P26 500.00 usec
 PLW1 55.73500061 W
 SPNAM[2] Q3.1000
 SPOAL2 0.500
 SPOFFS2 0 Hz
 SPW2 0.00043873 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 6.15259981 W

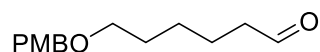
===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 90.00 usec
 PLW2 15.04800034 W
 PLW13 0.21670000 W

F2 - Processing parameters
 SI 32768
 SF 100.6127491 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40

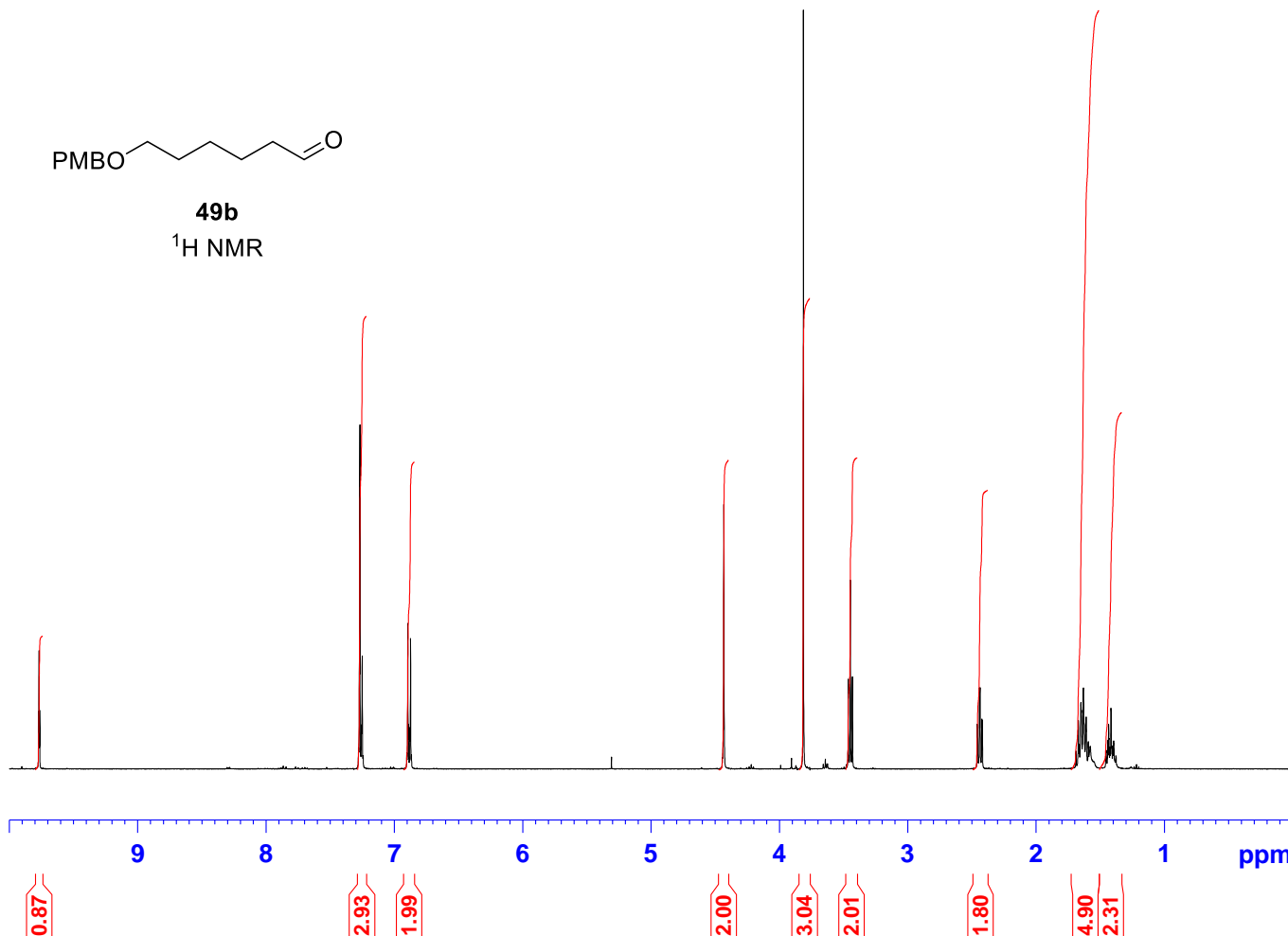
9.77
9.77
9.76

7.28
7.27
7.27
7.26
7.25
7.25
6.90
6.90
6.89
6.88
6.87

4.43
3.81
3.46
3.45
3.43
2.46
2.46
2.44
2.44
2.42
2.42
1.69
1.67
1.66
1.65
1.63
1.61
1.61
1.59
1.58
1.56
1.46
1.45
1.44
1.44
1.43
1.43
1.42
1.41



49b
¹H NMR

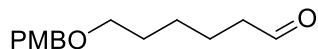


Current Data Parameters
NAME 07022013-15-michaelM
EXPNO 10
PROCNO 1

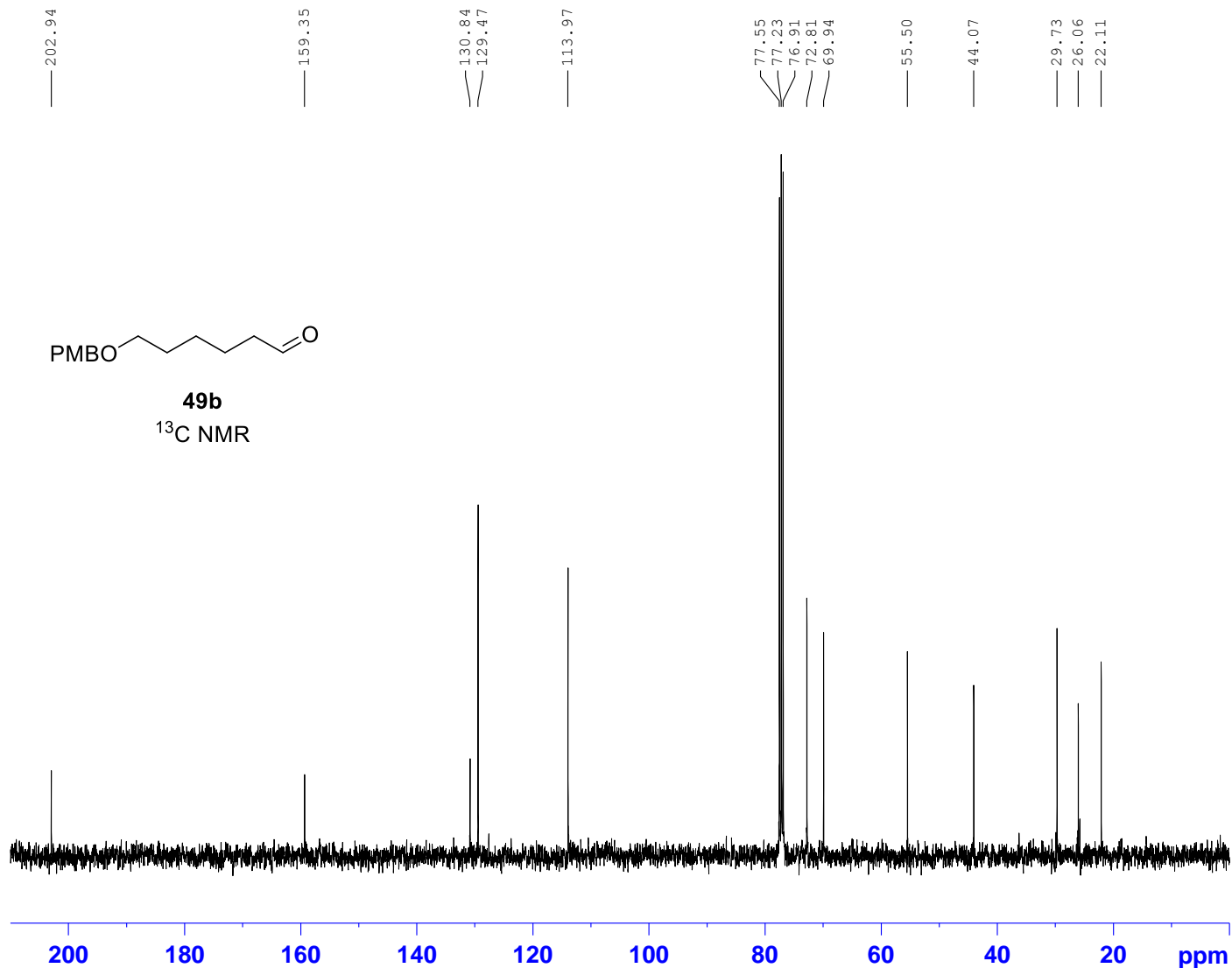
F2 - Acquisition Parameters
Date_ 20130702
Time_ 15.13
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl₃
NS 8
DS 2
SWH 5597.015 Hz
FIDRES 0.085404 Hz
AQ 5.8545494 sec
RG 406
DW 89.333 usec
DE 6.50 usec
TE 295.1 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 400.1324008 MHz
NUC1 ¹H
P1 12.50 usec
PLW1 15.04800034 W

F2 - Processing parameters
SI 32768
SF 400.1300057 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



49b
¹³C NMR



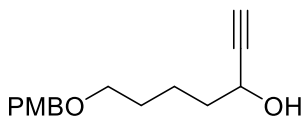
Current Data Parameters
NAME 07022013-33-michaelM
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130703
Time 1.42
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG udeftnoe.and
TD 8650
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 2.779013 Hz
AQ 0.1799200 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.8 K
D1 2.00000000 sec
D6 0.03000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D15 0.00302000 sec
D20 1.53362894 sec
D21 0.21294050 sec
D24 0.10000000 sec
L4 1

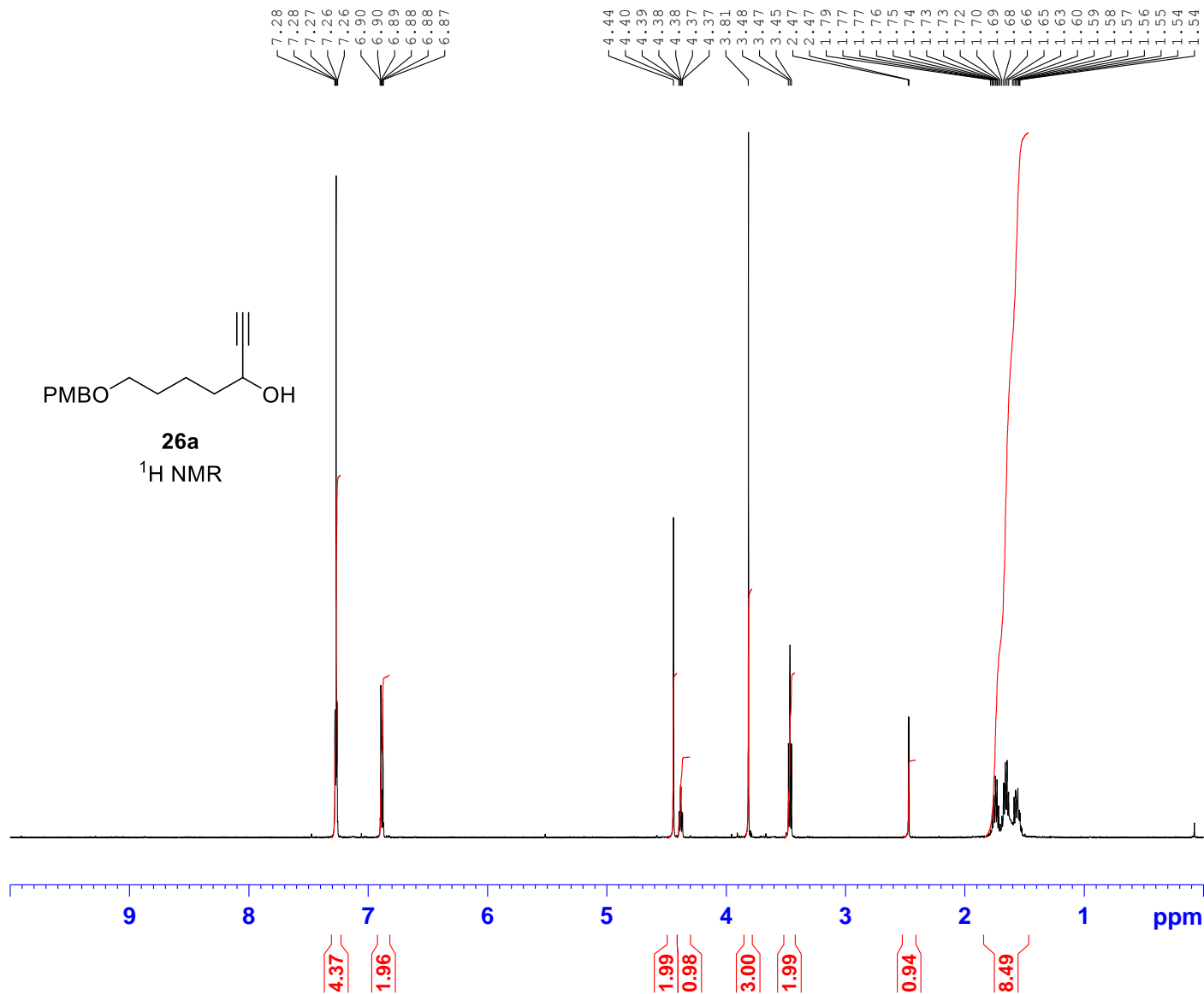
===== CHANNEL f1 =====
SFO1 100.6238364 MHz
NUC1 13C
P1 8.50 usec
P12 40000.00 usec
P26 500.00 usec
PLW1 55.73500061 W
SPNAM[2] Q3.1000
SPOAL2 0.500
SPOFFS2 0 Hz
SPW2 0.00043873 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 6.15259981 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW13 0.21670000 W

F2 - Processing parameters
SI 32768
SF 100.6127483 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



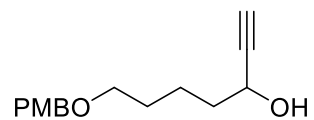
26a
¹H NMR



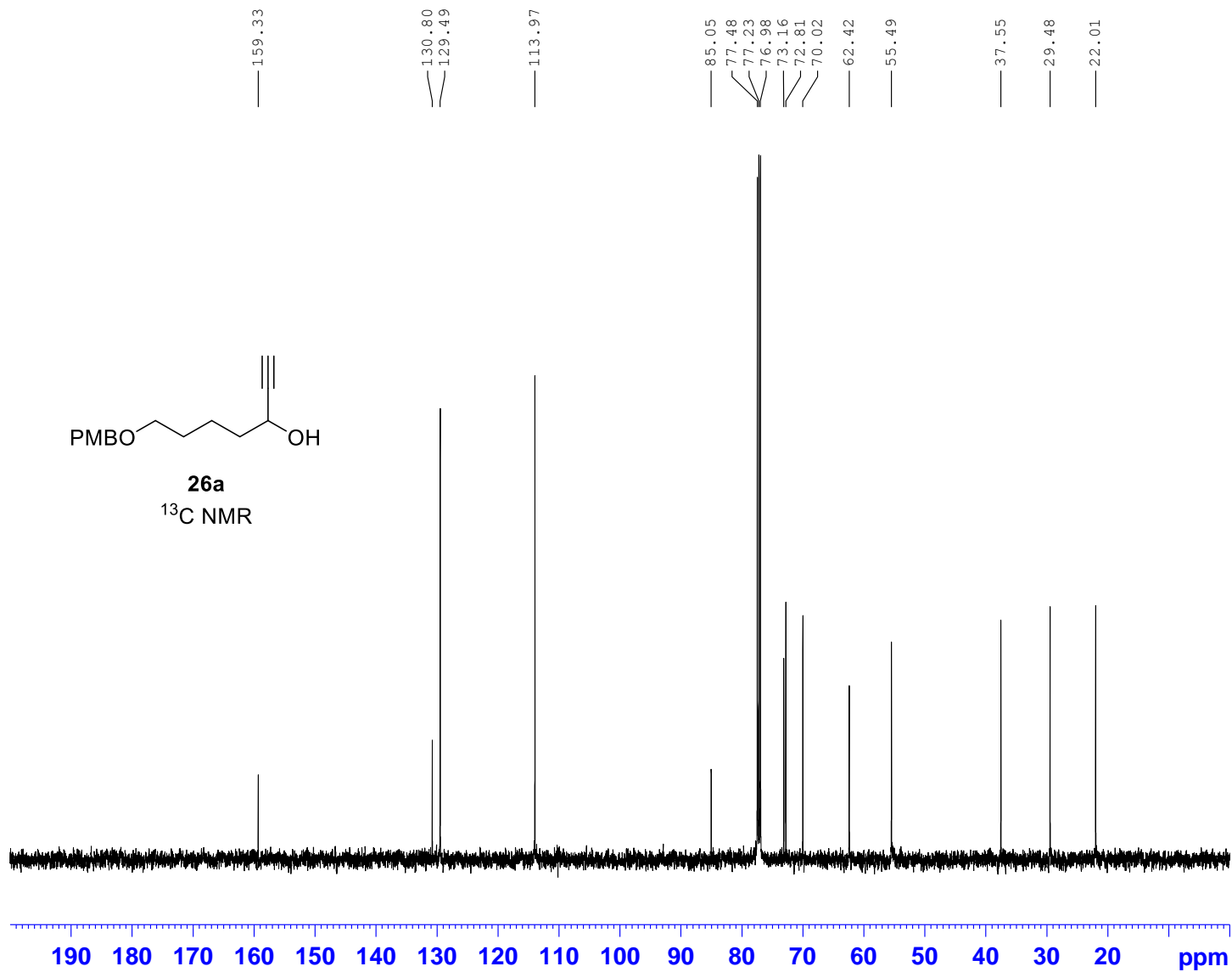
Current Data Parameters
NAME 09272013-19-doh-mc410-F
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130927
Time 21.16
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 812.7
DW 71.400 usec
DE 6.00 usec
TE 292.6 K
D1 1.00000000 sec
TD0 1
SFO1 499.9029994 MHz
NUC1 1H
P1 10.50 usec
PLW1 -1.00000000 W

F2 - Processing parameters
SI 65536
SF 499.9000044 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

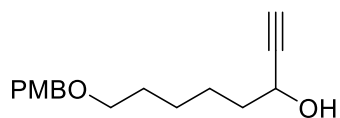


26a
¹³C NMR

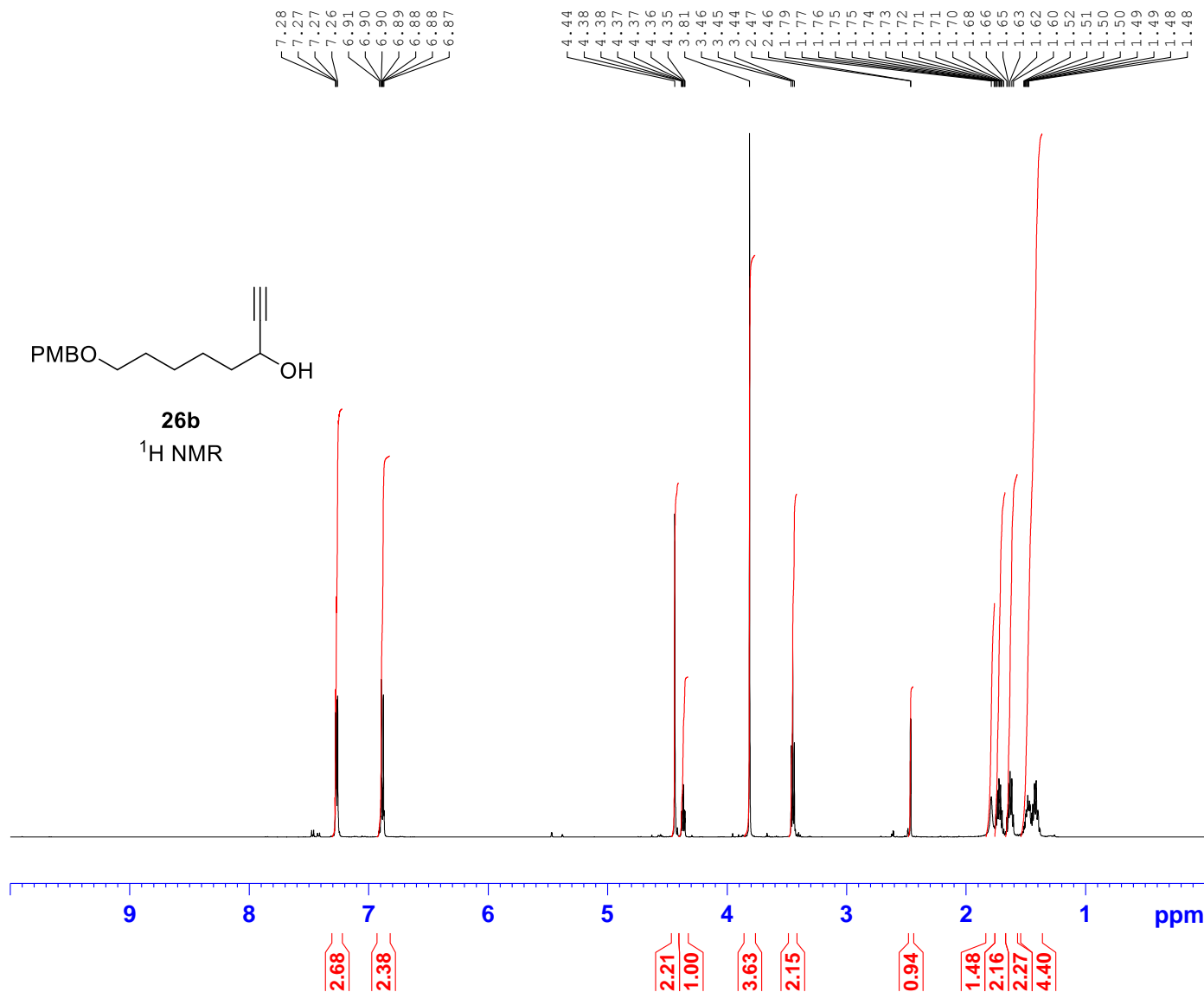


Current Data Parameters
NAME 09282013-30-doh-mc410-F
EXPNO 10
PROCNO 1

F2 - Processing parameters
SI 262144
SF 125.6999303 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



26b
¹H NMR

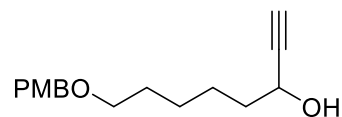


Current Data Parameters
 NAME 03072014-8-doh-mc410-A
 EXPNO 10
 PROCNO 1

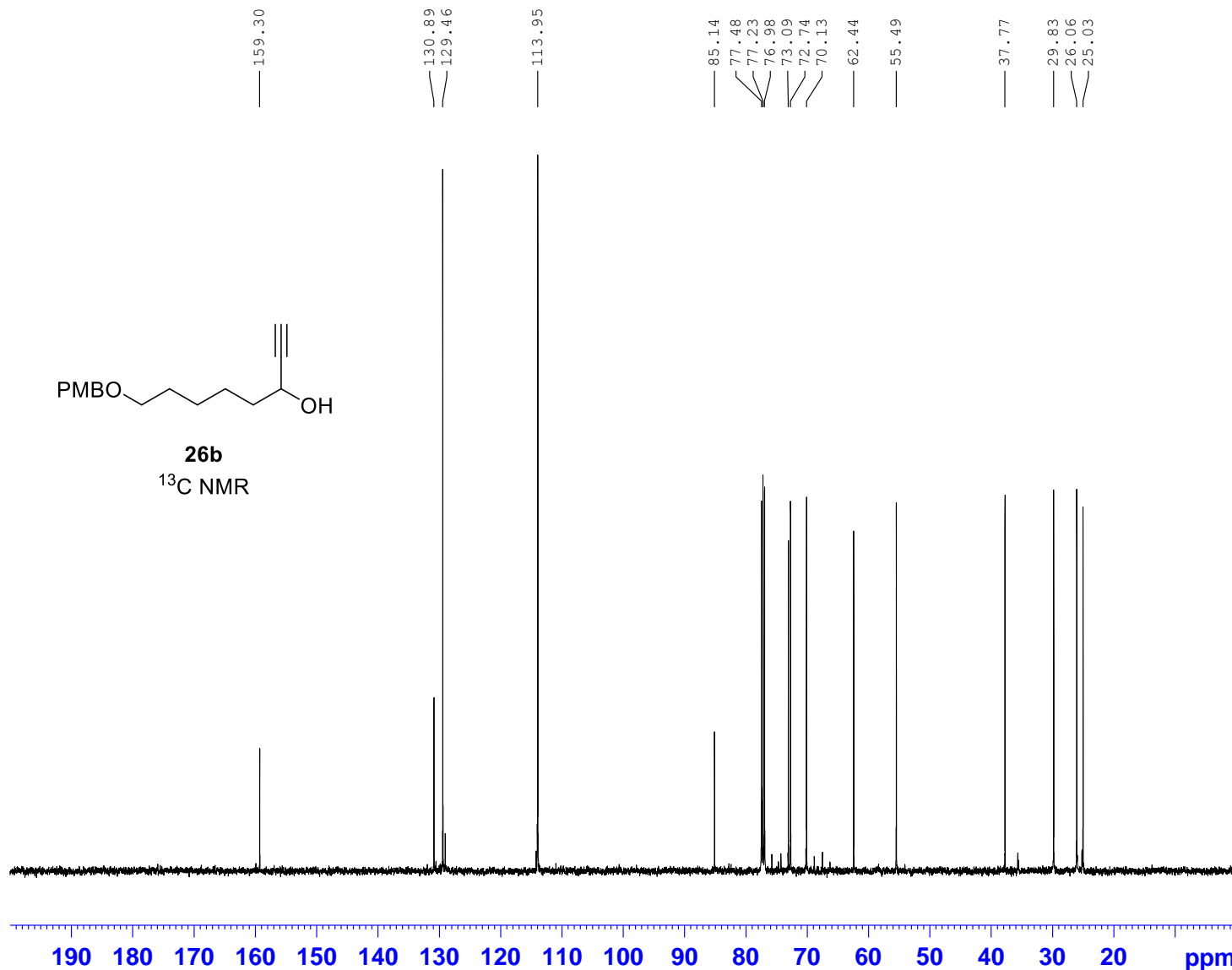
F2 - Acquisition Parameters
 Date_ 20140307
 Time 17.54
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl₃
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 90.5
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300065 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



26b
¹³C NMR



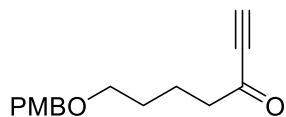
Current Data Parameters
NAME 03072014-8-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140308
Time_ 8.51
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDC13
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

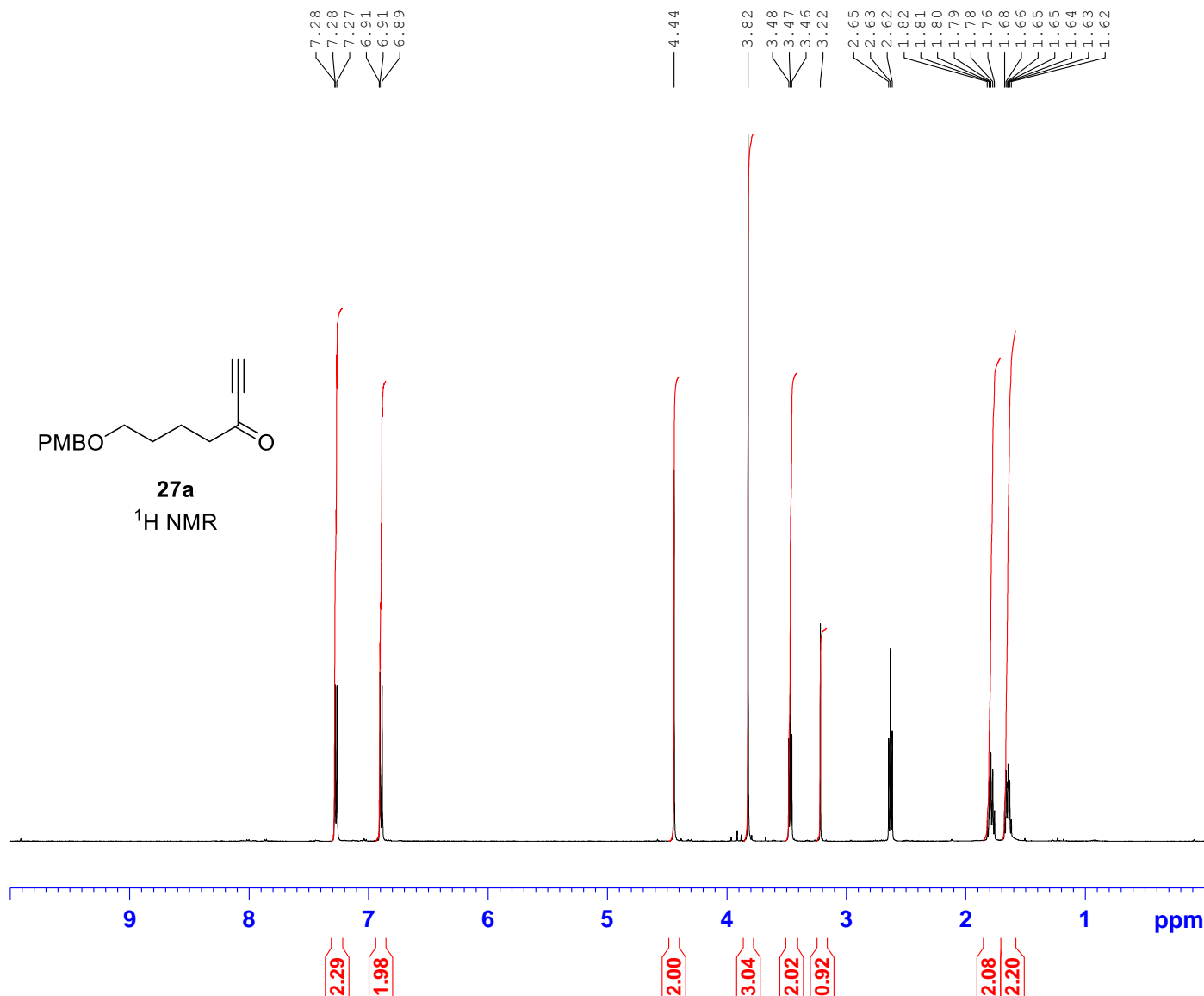
===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577649 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



27a
¹H NMR



Current Data Parameters
 NAME 09192013-41-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130919
 Time_ 16.59
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 101
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300034 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

—187.45

—159.34

130.72
129.47

—113.97

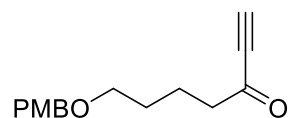
81.62
78.60
77.48
77.23
76.97
72.78
69.57

—55.48

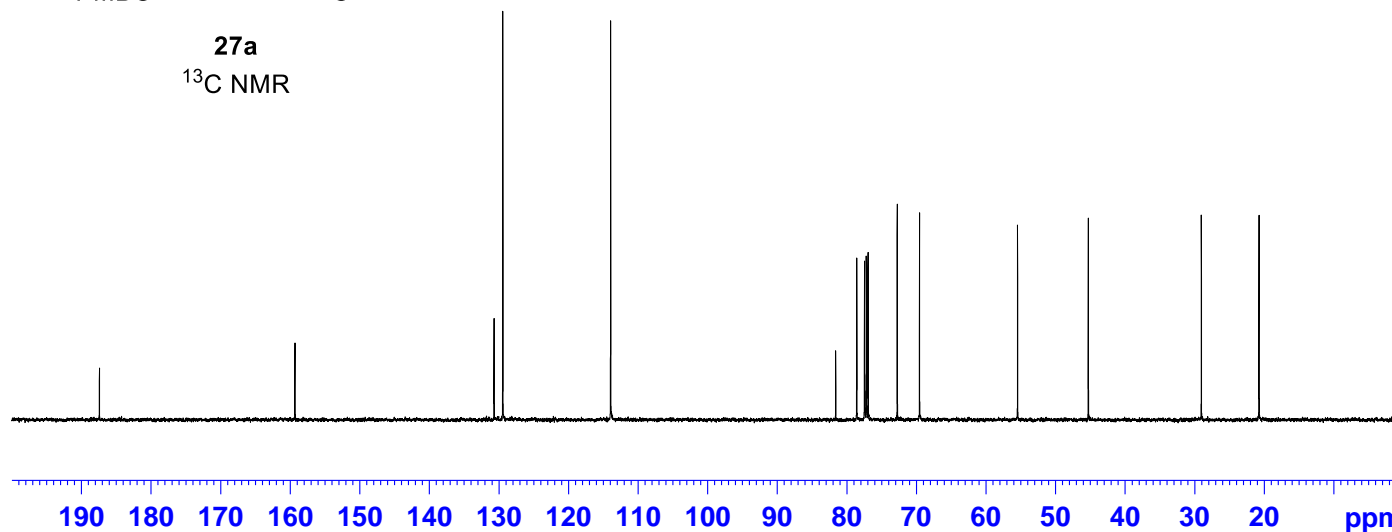
—45.31

—29.06

—20.77



27a
¹³C NMR



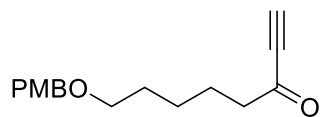
Current Data Parameters
NAME 09192013-41-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130919
Time 23.59
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

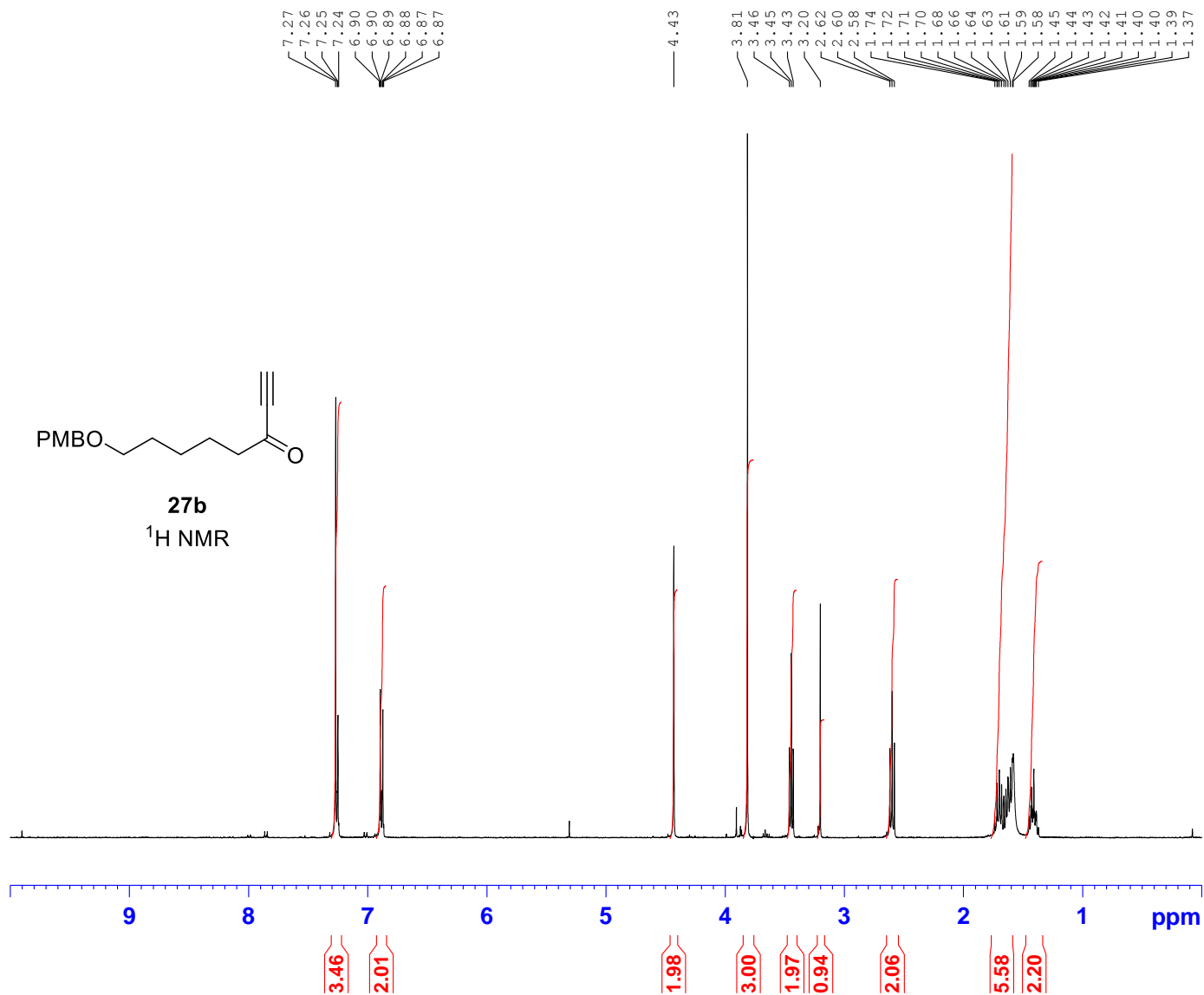
===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577660 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



27b
¹H NMR

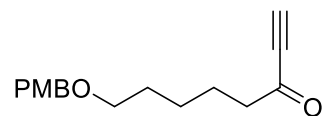


Current Data Parameters
NAME 10042013-23-michaelM
EXPNO 10
PROCNO 1

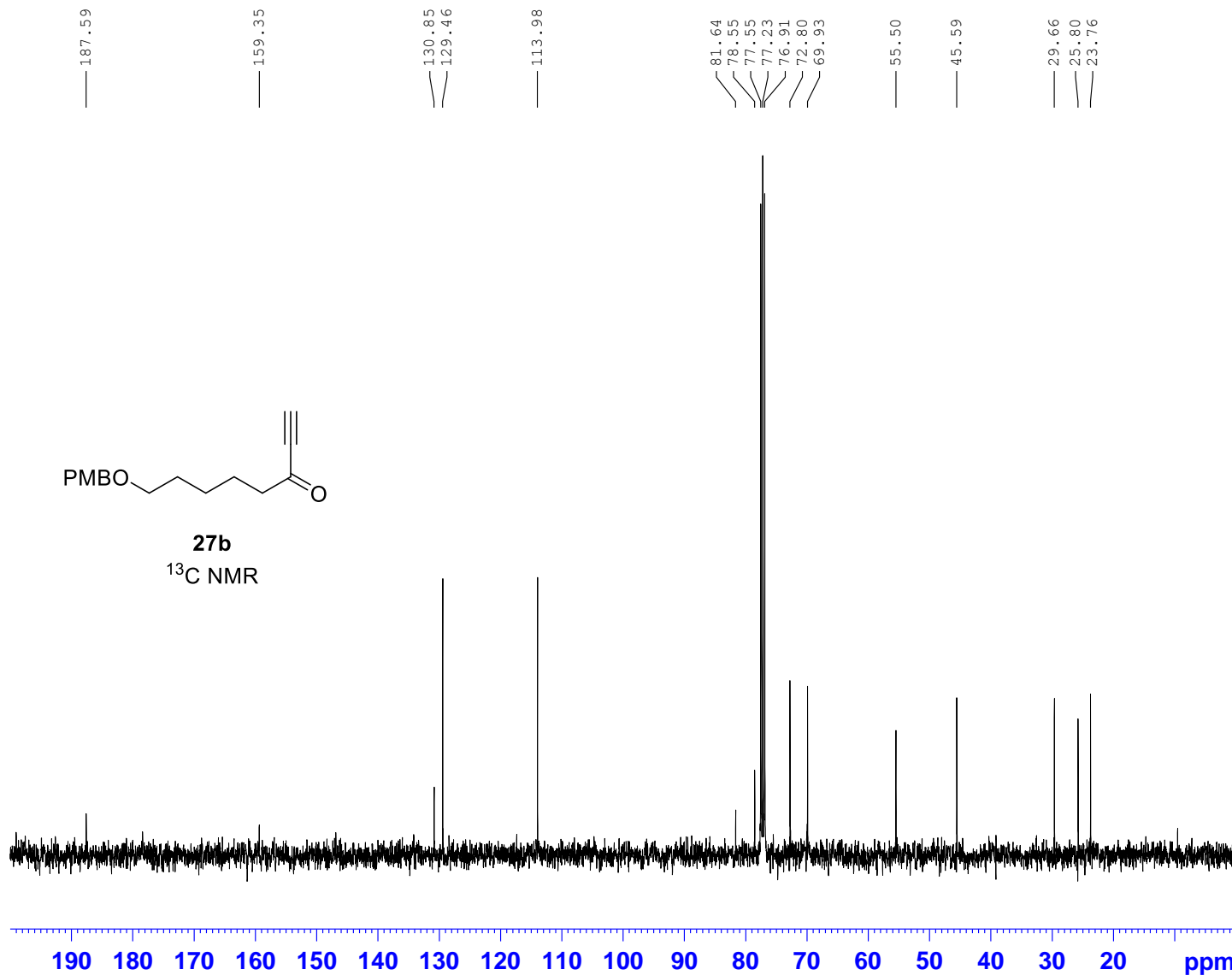
F2 - Acquisition Parameters
Date_ 20131005
Time_ 6.46
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 5597.015 Hz
FIDRES 0.085404 Hz
AQ 5.8545494 sec
RG 322
DW 89.333 usec
DE 6.50 usec
TE 296.4 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 400.1324008 MHz
NUC1 1H
P1 12.50 usec
PLW1 15.04800034 W

F2 - Processing parameters
SI 32768
SF 400.1300058 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



27b
¹³C NMR



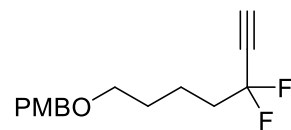
Current Data Parameters
NAME 10042013-23-michaelM
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131005
Time 7.47
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG udeftnoe.and
TD 8650
SOLVENT CDCl3
NS 1024
DS 4
SWH 24038.461 Hz
FIDRES 2.779013 Hz
AQ 0.1799200 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 297.1 K
D1 2.00000000 sec
D6 0.03000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D15 0.00302000 sec
D20 1.53362894 sec
D21 0.21294050 sec
D24 0.10000000 sec
L4 1

===== CHANNEL f1 =====
SFO1 100.6238364 MHz
NUC1 13C
P1 8.50 usec
P12 40000.00 usec
P26 500.00 usec
PLW1 55.73500061 W
SPNAM[2] Q3.1000
SPOAL2 0.500
SPOFFS2 0 Hz
SPW2 0.00043873 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 6.15259981 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW13 0.21670000 W

F2 - Processing parameters
SI 32768
SF 100.6127483 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



28a

¹H NMR

7.28
7.27
7.26
6.90
6.88

4.45
3.82
3.48
3.47
3.46
2.77
2.76
2.75
2.11
2.09
2.09
2.08
2.07
2.06
2.06
2.05
2.03
2.02
1.78
1.77
1.75
1.74
1.72
1.72
1.70
1.69
1.68
1.68
1.67
1.64
1.63

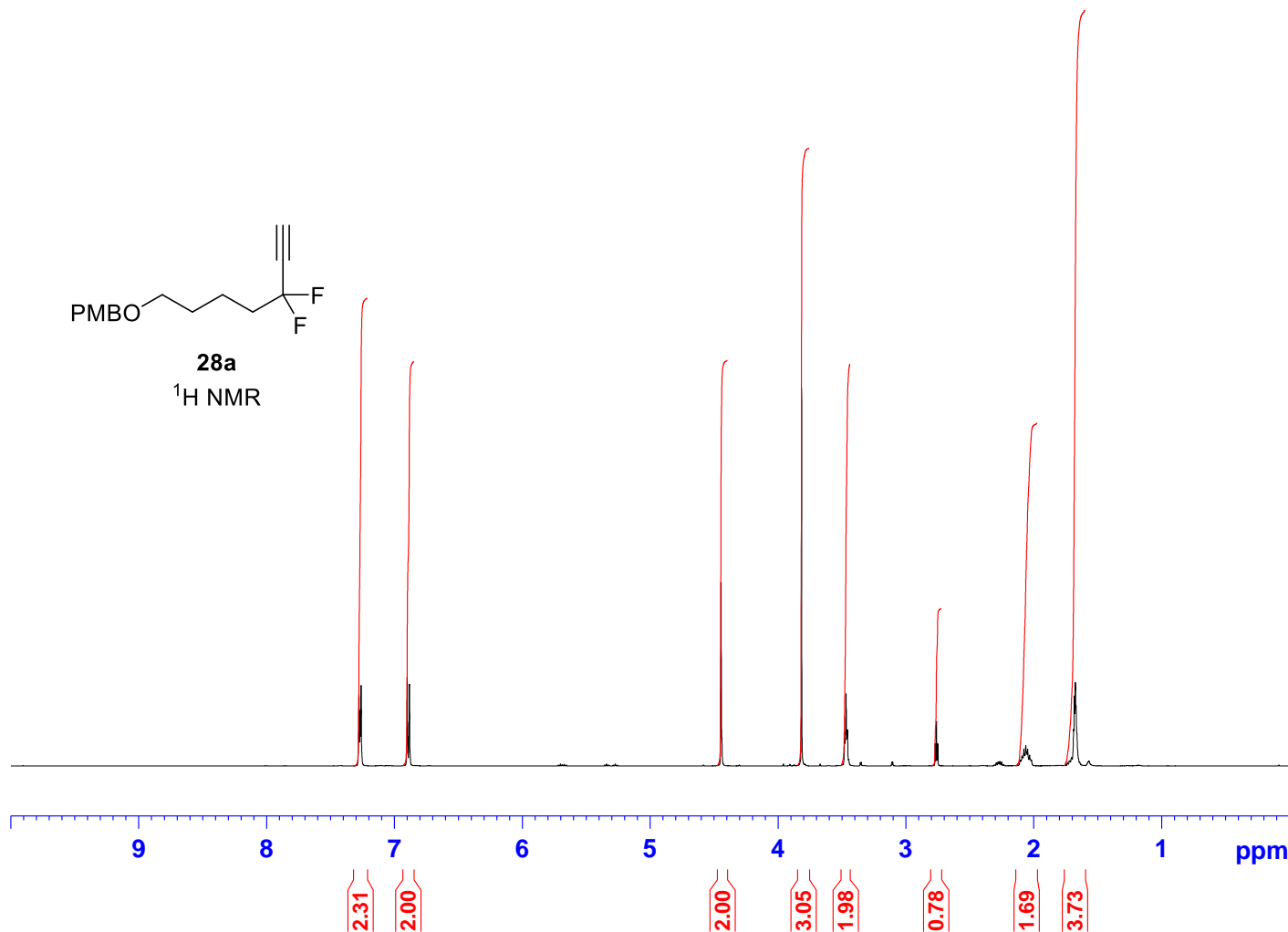


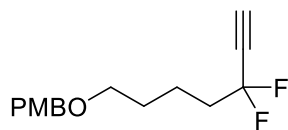
Current Data Parameters
NAME 09212013-46-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130921
Time_ 17.55
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 101
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

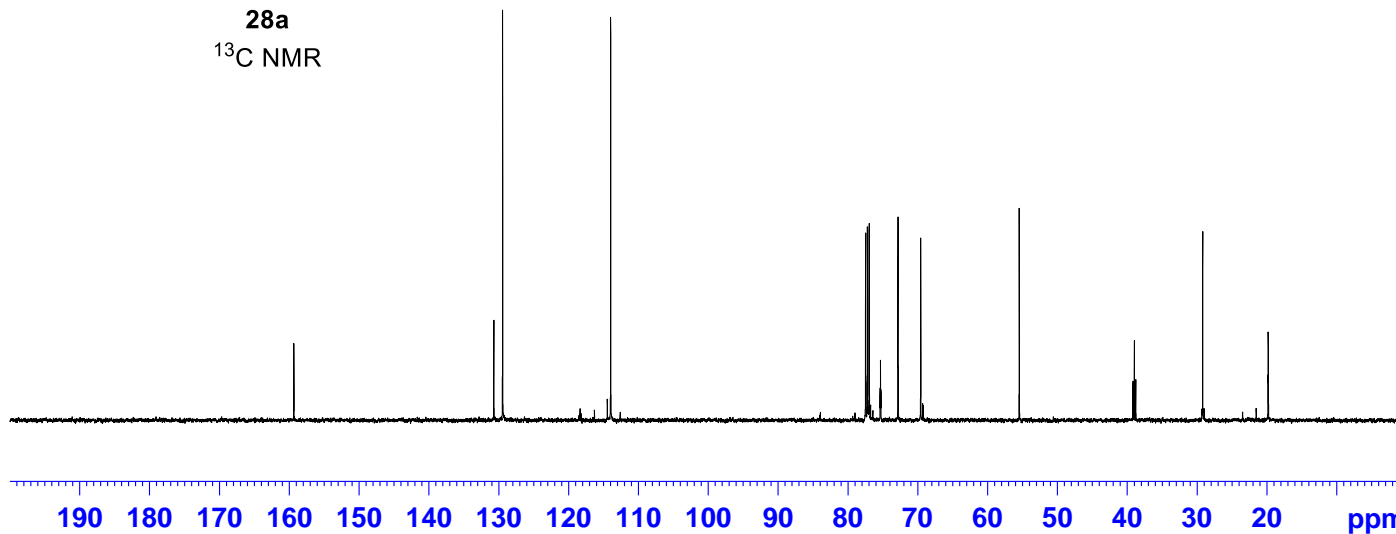
===== CHANNEL f1 =====
SFO1 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300087 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





28a
¹³C NMR



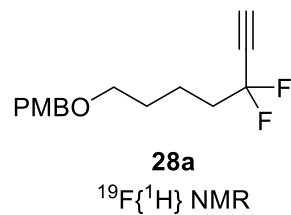
Current Data Parameters
 NAME 09212013-46-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130921
 Time 20.20
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577649 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



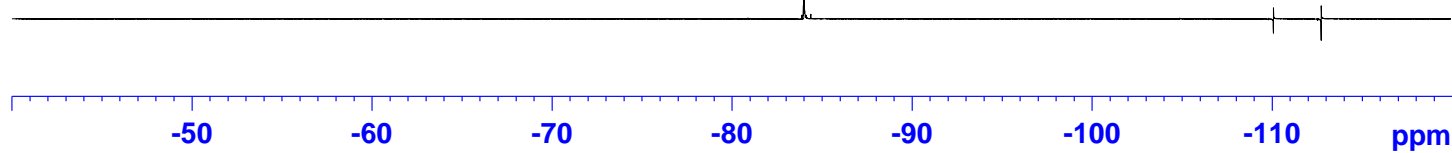
— -83.99



Current Data Parameters
 NAME 03042014-17-doh-mc410-F
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140304
 Time 11.05
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDC13
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 1625.5
 DW 13.300 usec
 DE 6.00 usec
 TE 293.9 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 19F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 0 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



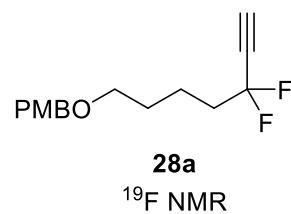


Current Data Parameters
NAME 03042014-17-doh-mc410-F
EXPNO 11
PROCNO 1

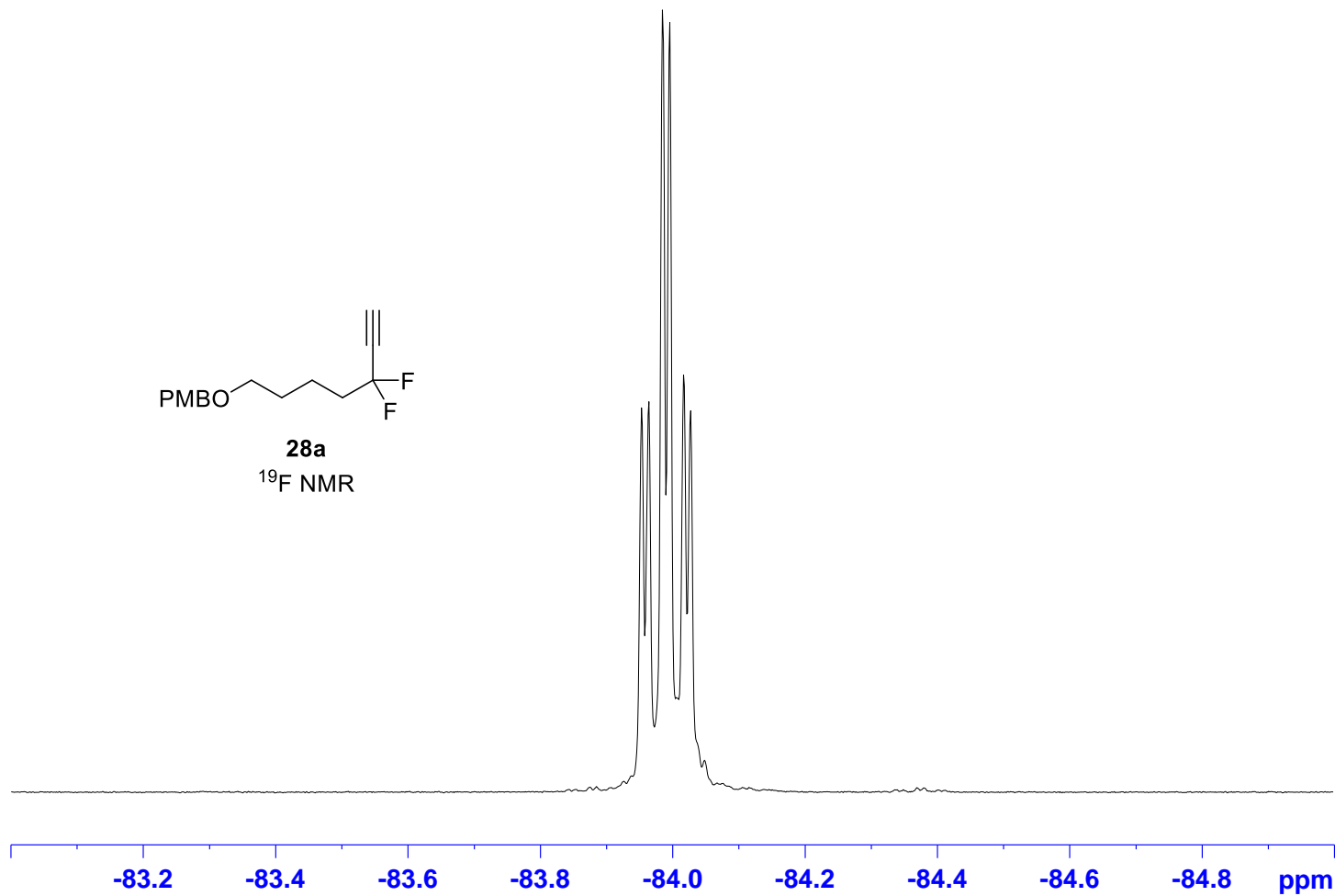
F2 - Acquisition Parameters
Date_ 20140304
Time 11.08
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zgpg30
TD 65536
SOLVENT CDC13
NS 64
DS 4
SWH 37593.984 Hz
FIDRES 0.573639 Hz
AQ 0.8716288 sec
RG 1024
DW 13.300 usec
DE 6.00 usec
TE 293.8 K
D1 1.00000000 sec
TD0 1

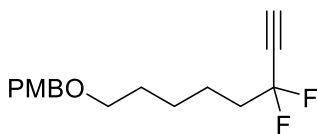
===== CHANNEL f1 =====
NUC1 19F
P1 12.15 usec
PL1 -5.00 dB
SFO1 470.3383309 MHz

F2 - Processing parameters
SI 65536
SF 470.3759460 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

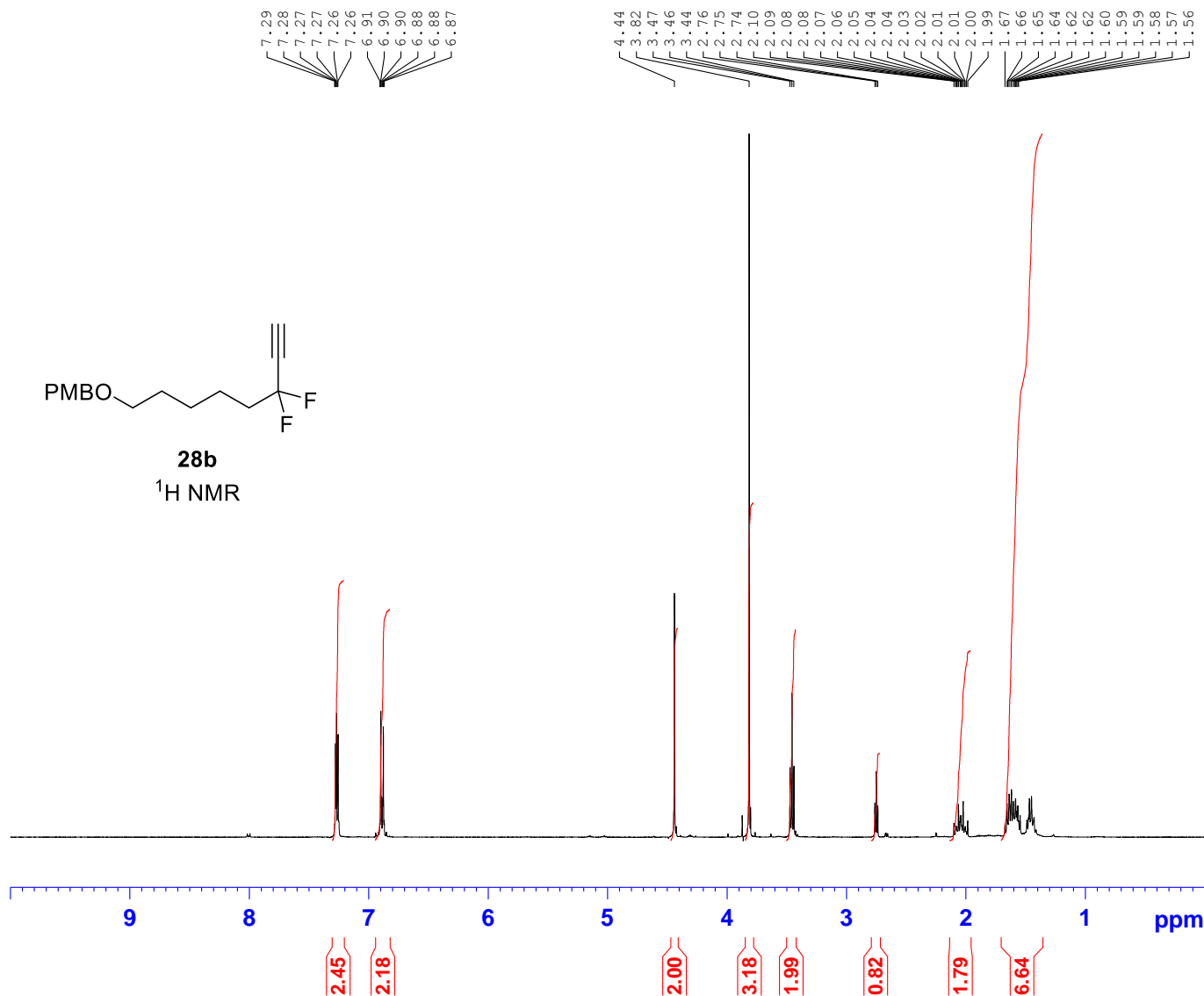


-83.95
-83.96
-83.98
-84.00
-84.02
-84.03





28b
¹H NMR

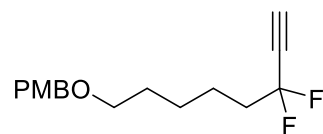


Current Data Parameters
 NAME 10182013-12-michaelM
 EXPNO 10
 PROCNO 1

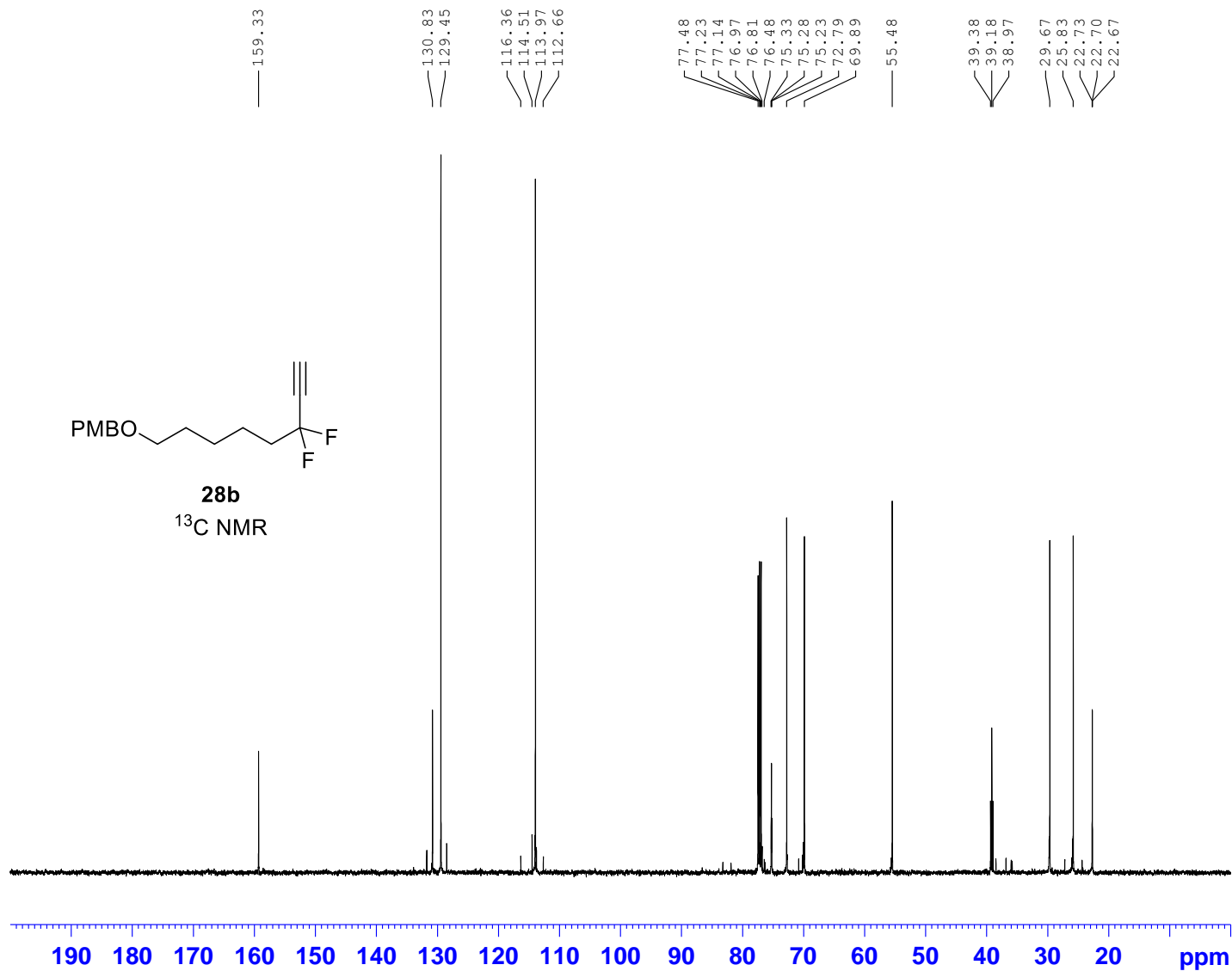
F2 - Acquisition Parameters
 Date_ 20131018
 Time 18.02
 INSTRUM AVII400
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 5597.015 Hz
 FIDRES 0.085404 Hz
 AQ 5.8545494 sec
 RG 181
 DW 89.333 usec
 DE 6.50 usec
 TE 296.1 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 400.1324008 MHz
 NUC1 1H
 P1 12.50 usec
 PLW1 15.04800034 W

F2 - Processing parameters
 SI 32768
 SF 400.1300058 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



28b
¹³C NMR



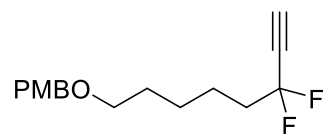
Current Data Parameters
NAME 10252013-9-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131026
Time_ 0.16
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeflt
TD 21424
SOLVENT CDCl3
NS 1600
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

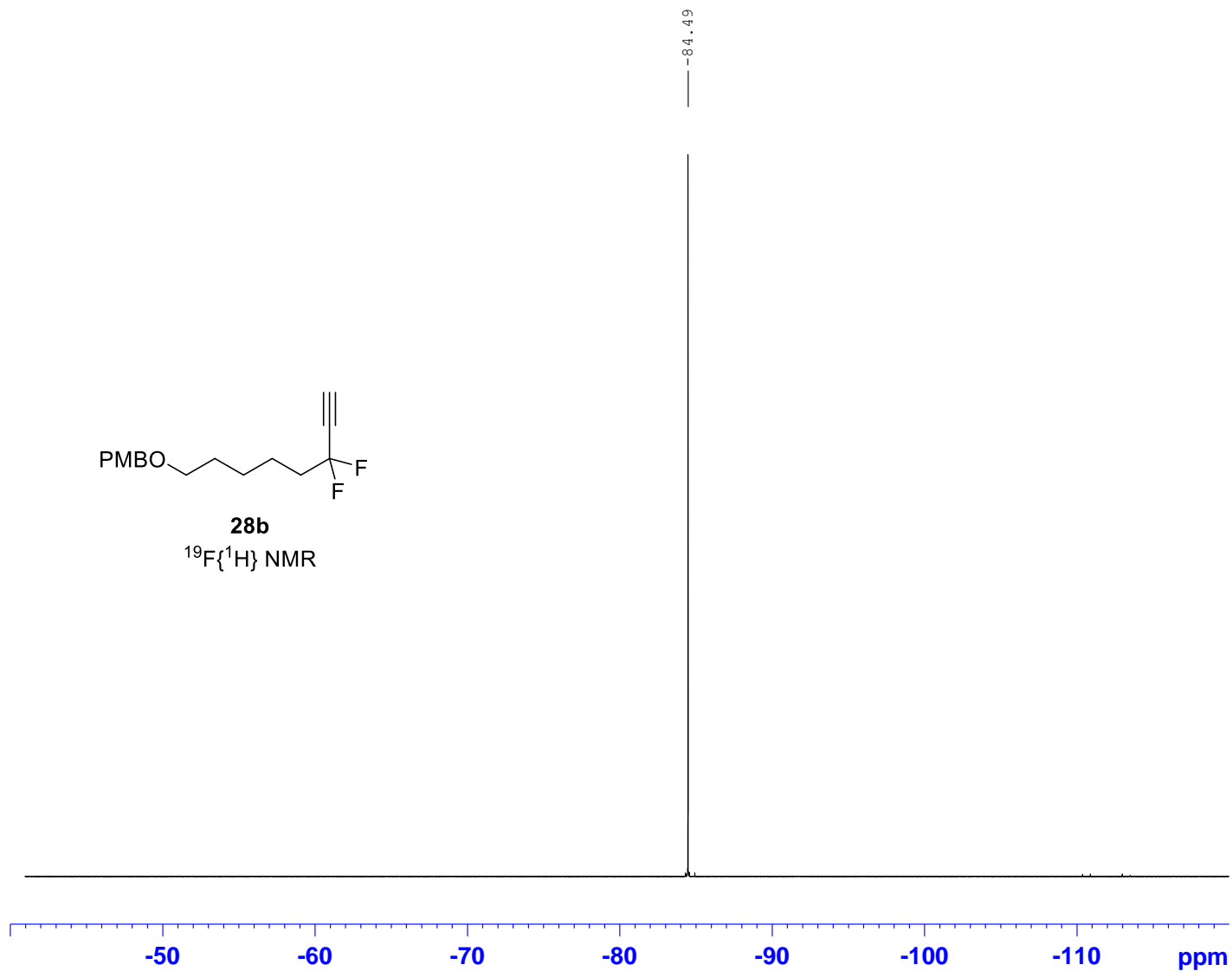
===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577649 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



28b

$^{19}\text{F}\{^1\text{H}\}$ NMR



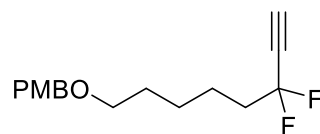
Current Data Parameters
NAME 10182013-12-michaelM
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131018
Time 18.07
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zgfhigqn.baseopt
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 2050
DW 16.800 usec
DE 9.42 usec
TE 296.4 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

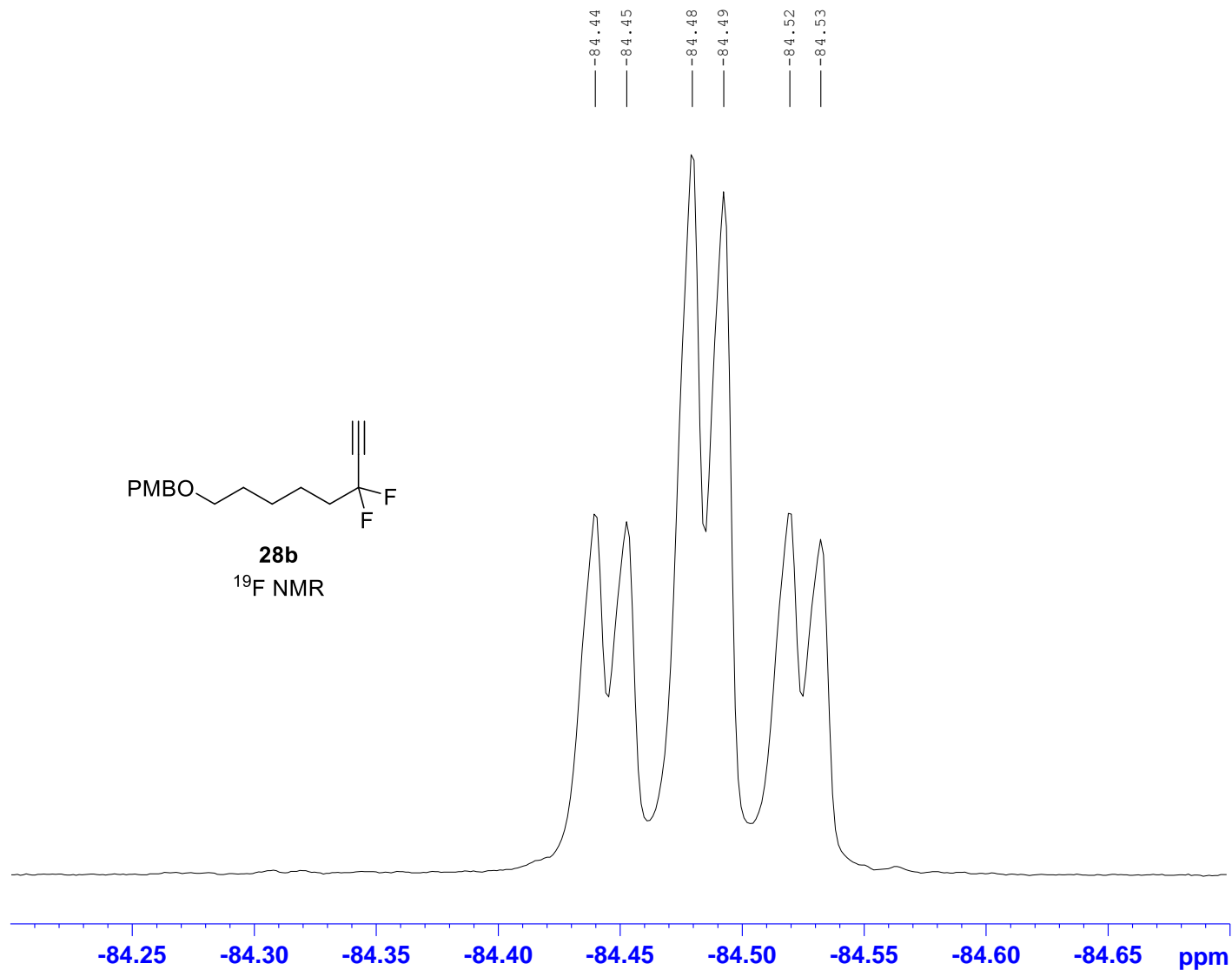
===== CHANNEL f1 =====
SFO1 376.4682461 MHz
NUC1 ^{19}F
P1 13.20 usec
PLW1 15.53699970 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 ^1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW12 0.26752999 W

F2 - Processing parameters
SI 65536
SF 376.4985513 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



28b
¹⁹F NMR

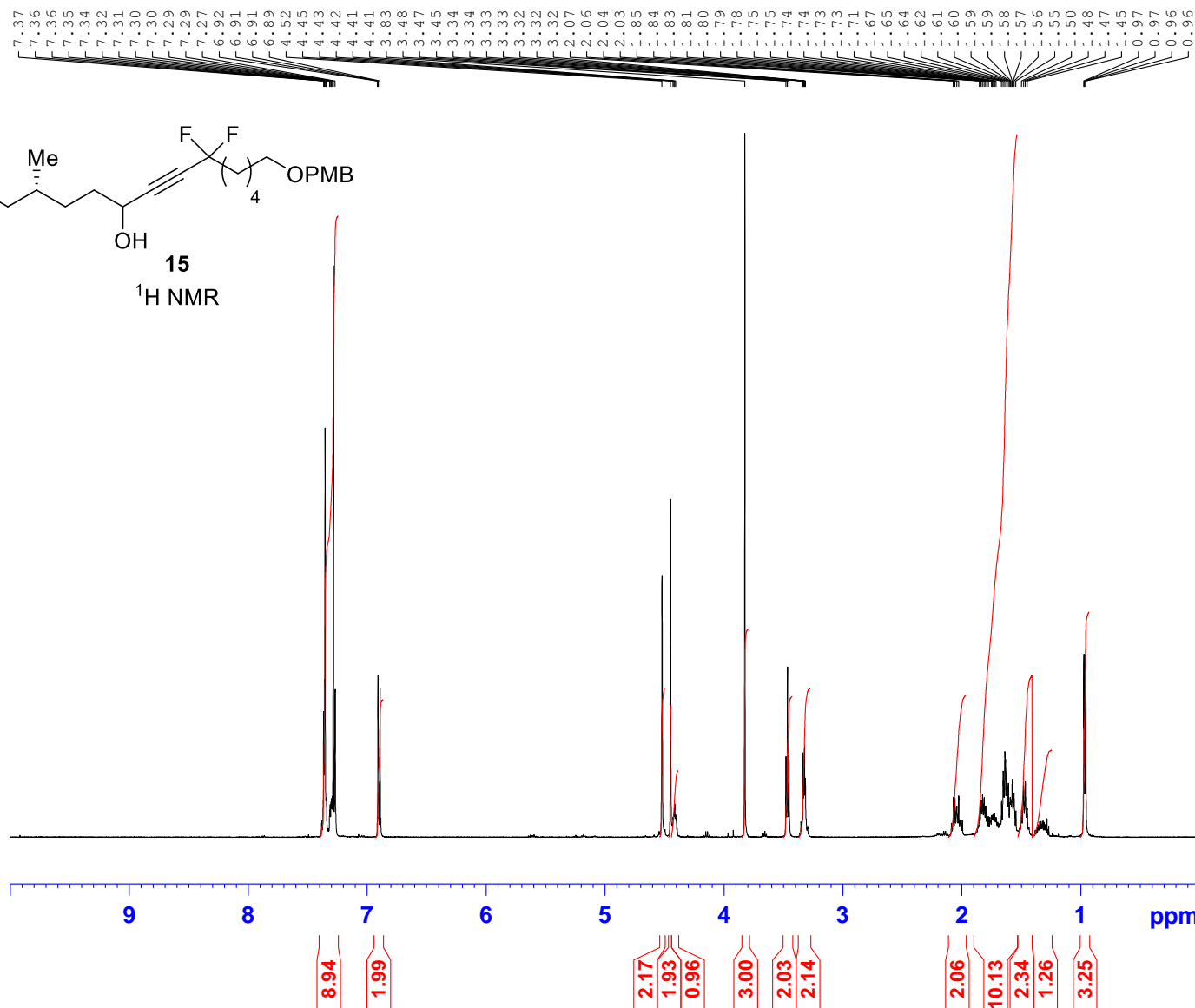
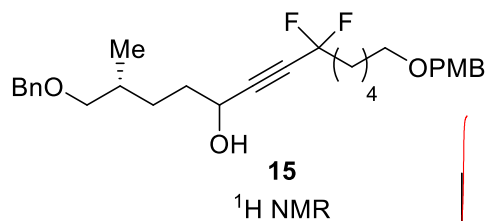


Current Data Parameters
NAME 10182013-12-michaelM
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131018
Time 18.11
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30.baseopt
TD 65536
SOLVENT CDC13
NS 64
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 2050
DW 16.800 usec
DE 9.42 usec
TE 296.2 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 376.4682461 MHz
NUC1 19F
P1 13.20 usec
PLW1 15.53699970 W

F2 - Processing parameters
SI 65536
SF 376.4985513 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

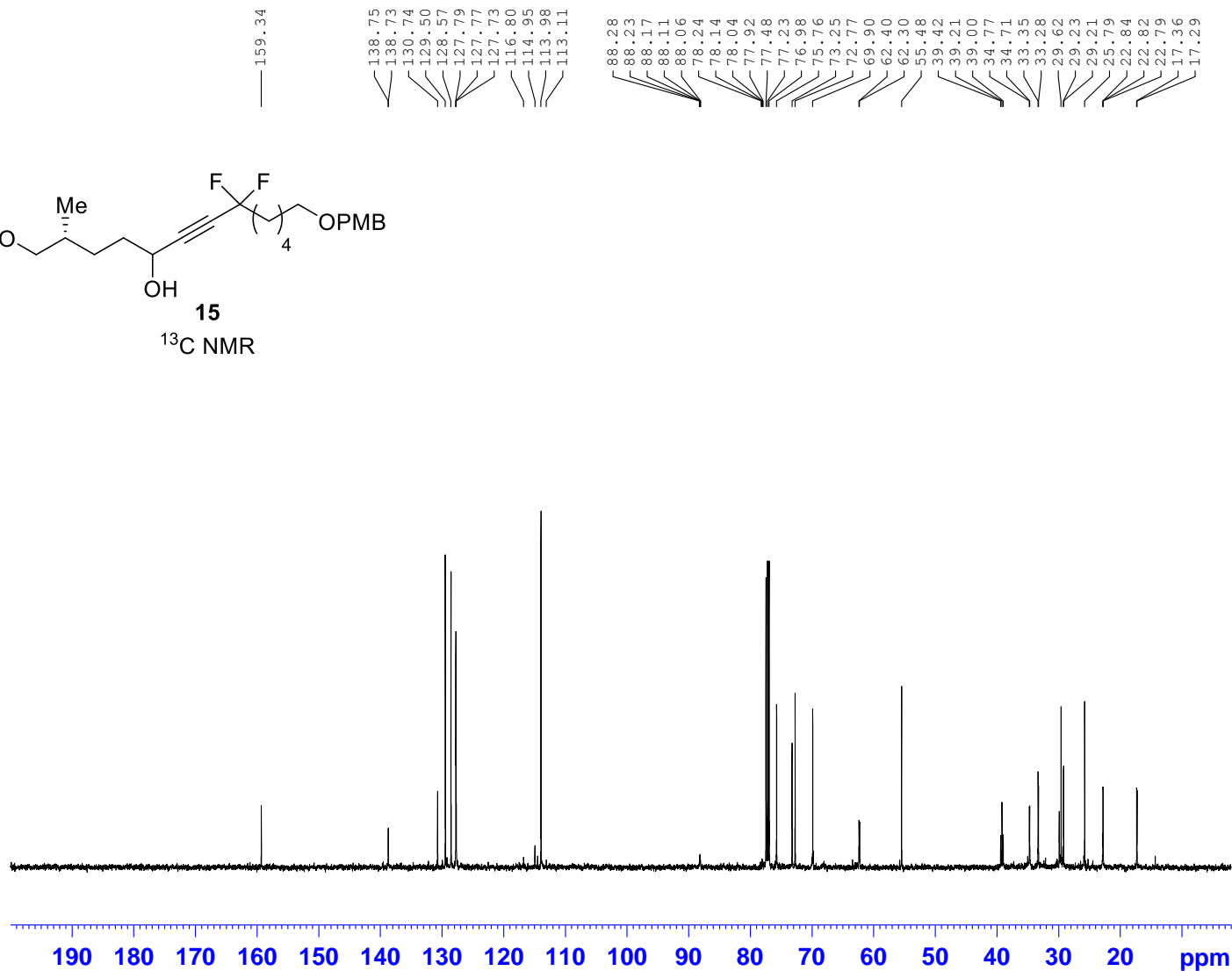
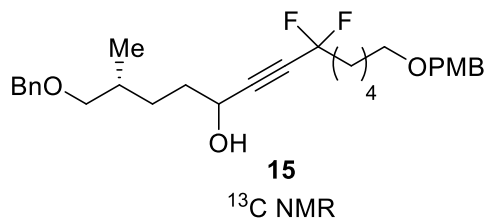


Current Data Parameters
 NAME 08262013-23-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130826
 Time 23.44
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TDO 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300008 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



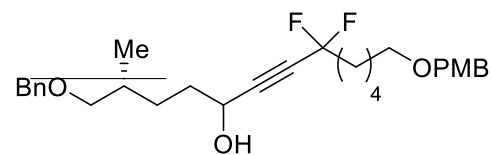
Current Data Parameters
 NAME 09132013-2-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130913
 Time_ 23.29
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDC13
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

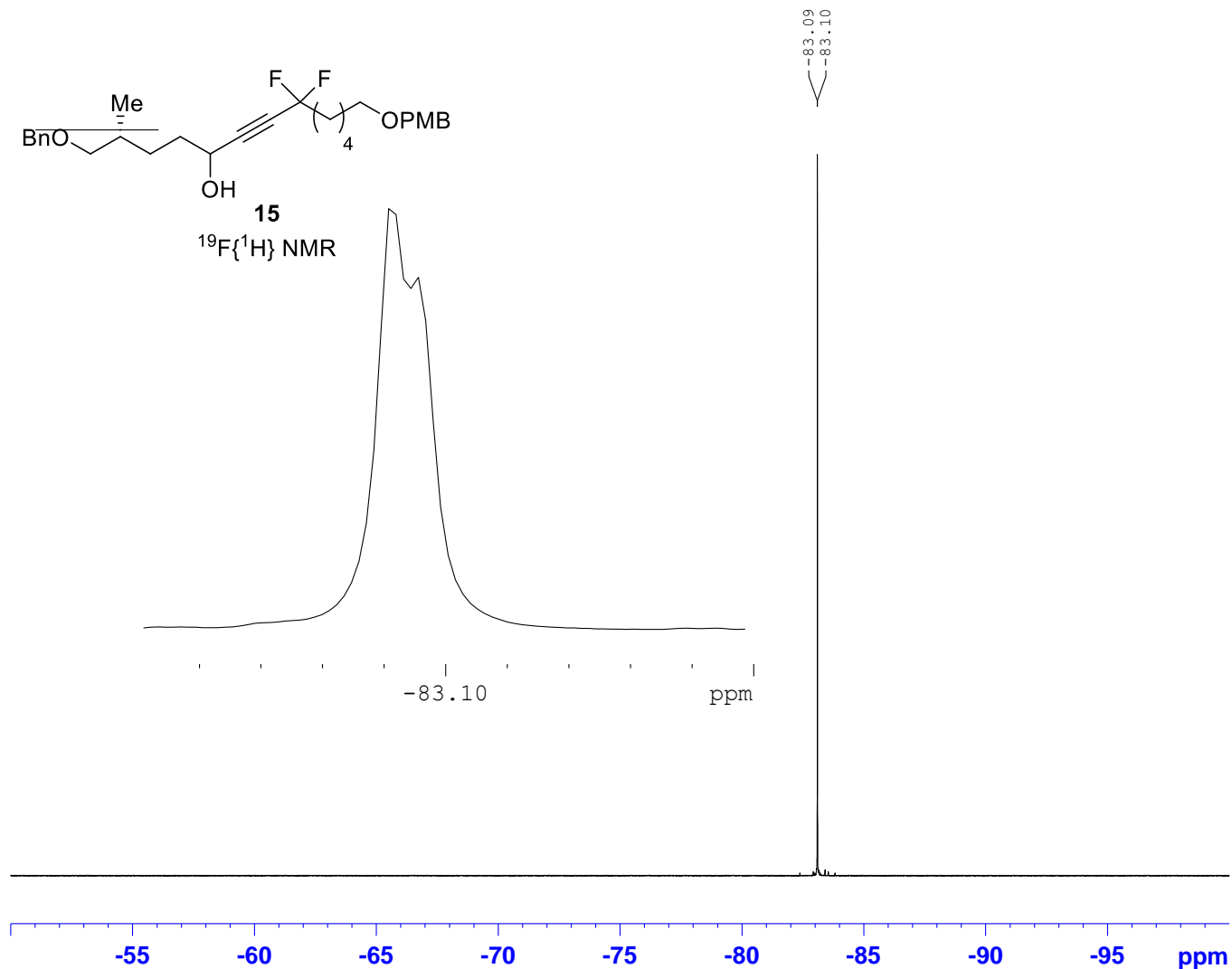
===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577656 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



15
19F{1H} NMR



Current Data Parameters
NAME 08252013-60-michaelM
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130825
Time_ 14.02
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zgfhigqn.baseopt
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 2050
DW 16.800 usec
DE 9.42 usec
TE 295.7 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 376.4682461 MHz
NUC1 19F
P1 13.20 usec
PLW1 15.53699970 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW12 0.26752999 W

F2 - Processing parameters
SI 65536
SF 376.4985513 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

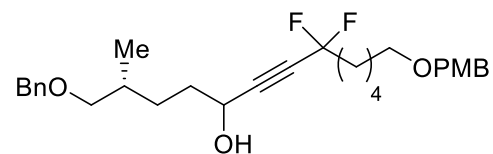


Current Data Parameters
NAME 09122013-13-michaelI
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130912
Time_ 18.50
INSTRUM av300
PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 131072
SOLVENT CDCl3
NS 64
DS 4
SWH 22522.523 Hz
FIDRES 0.171833 Hz
AQ 2.9097984 sec
RG 2580.3
DW 22.200 usec
DE 6.00 usec
TE 295.2 K
D1 1.00000000 sec
TD0 1

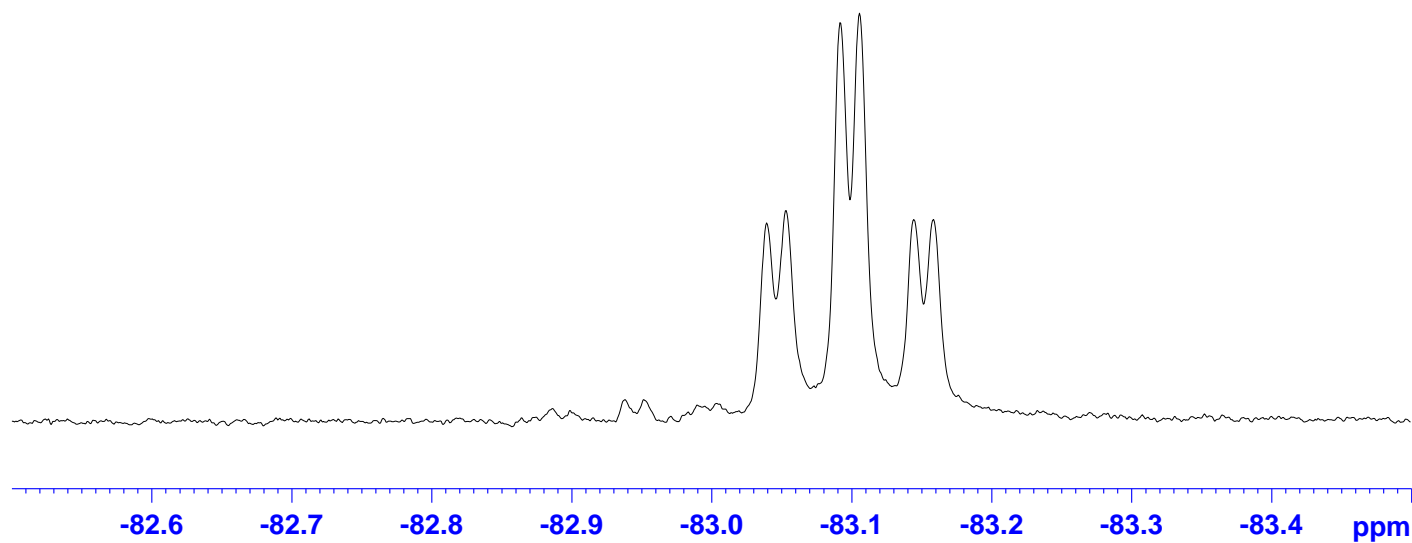
===== CHANNEL f1 =====
NUC1 19F
P1 8.50 usec
PL1 -3.00 dB
SFO1 282.3817627 MHz

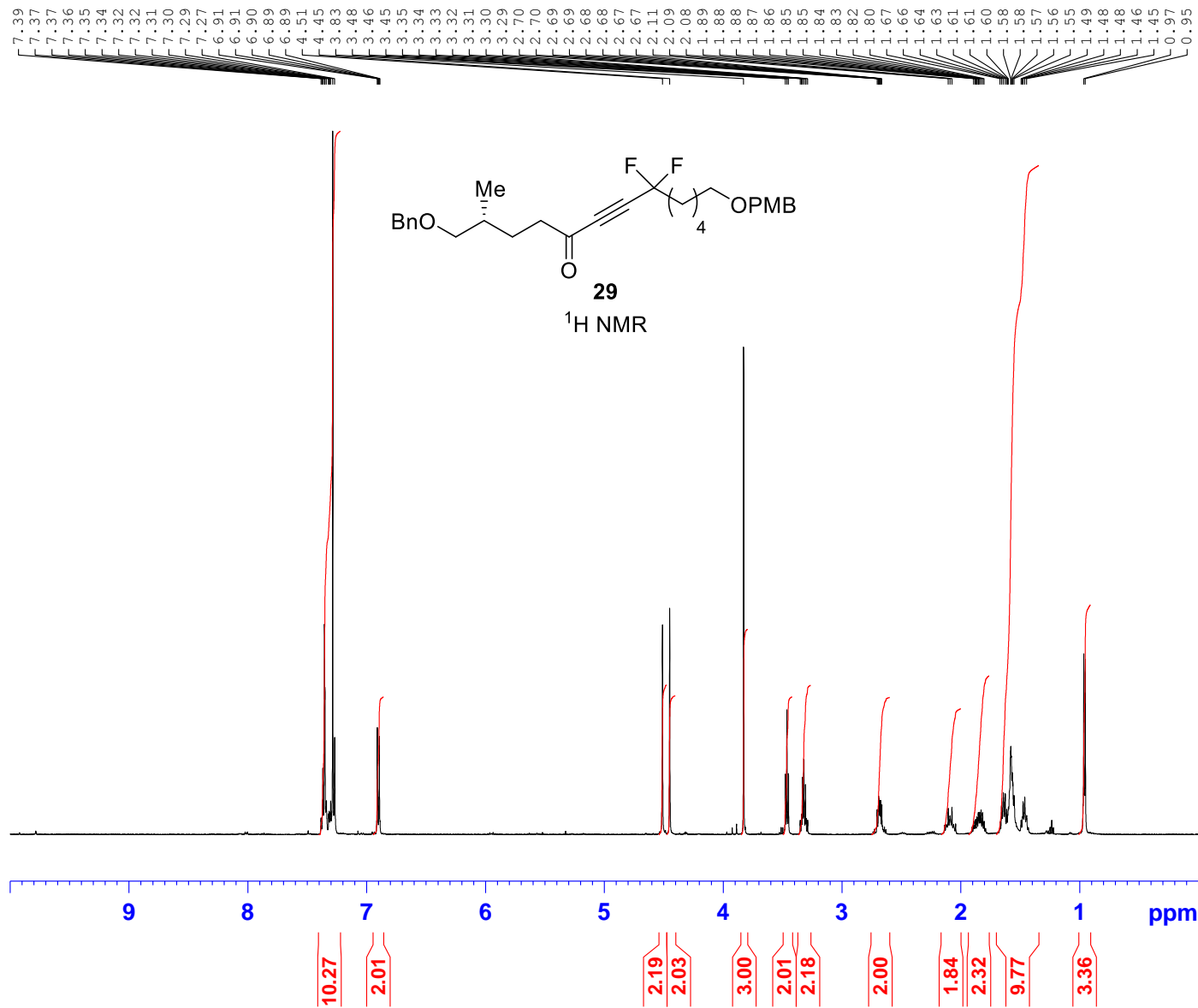
F2 - Processing parameters
SI 131072
SF 282.4044991 MHz
WDW EM
SSB 0
LB 0.50 Hz
GB 0
PC 1.00



15
¹⁹F NMR

— -83.04
— -83.05
— -83.09
— -83.11
— -83.14
— -83.16



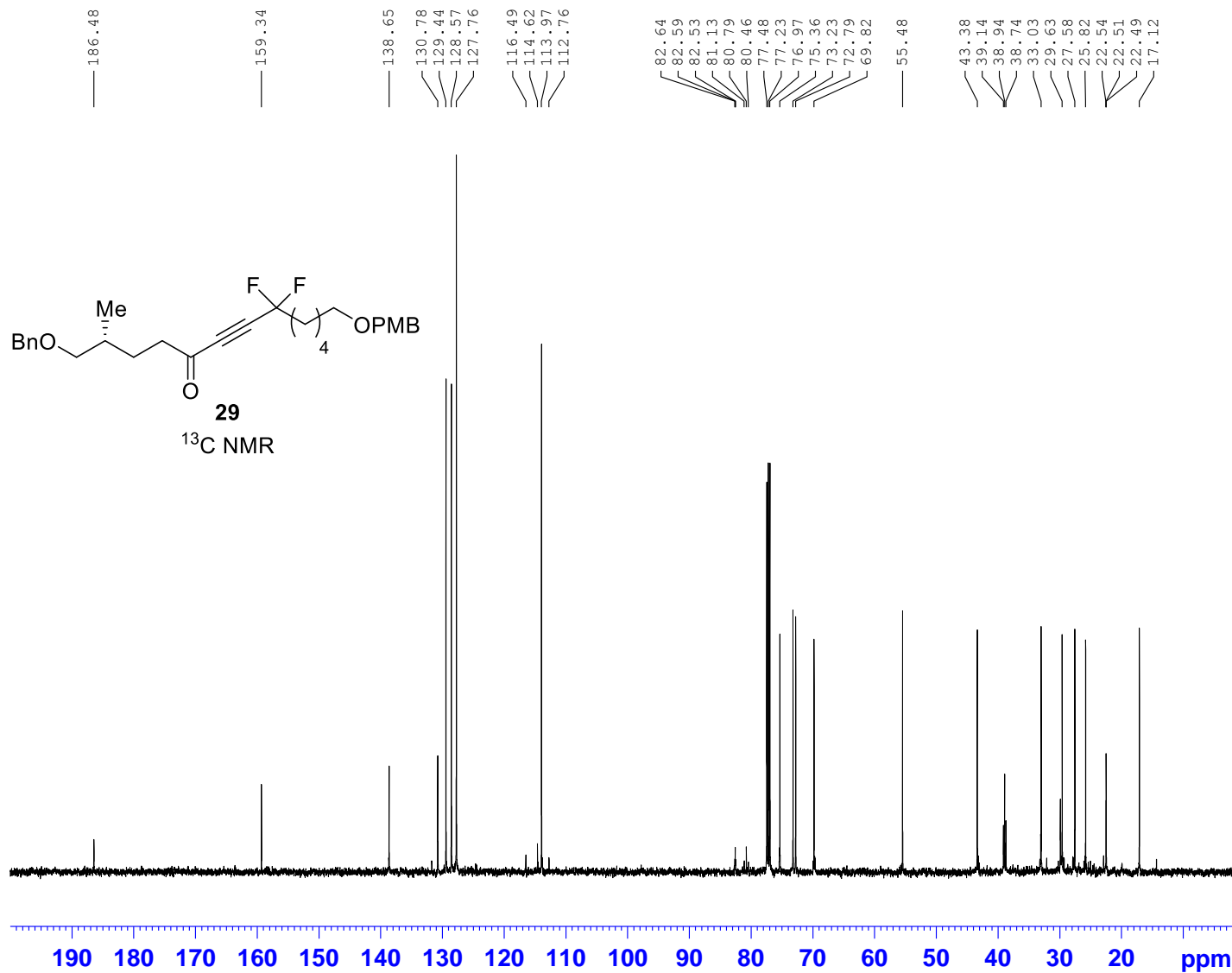


Current Data Parameters
 NAME 08262013-14-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130826
 Time 14.09
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDC13
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1299997 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



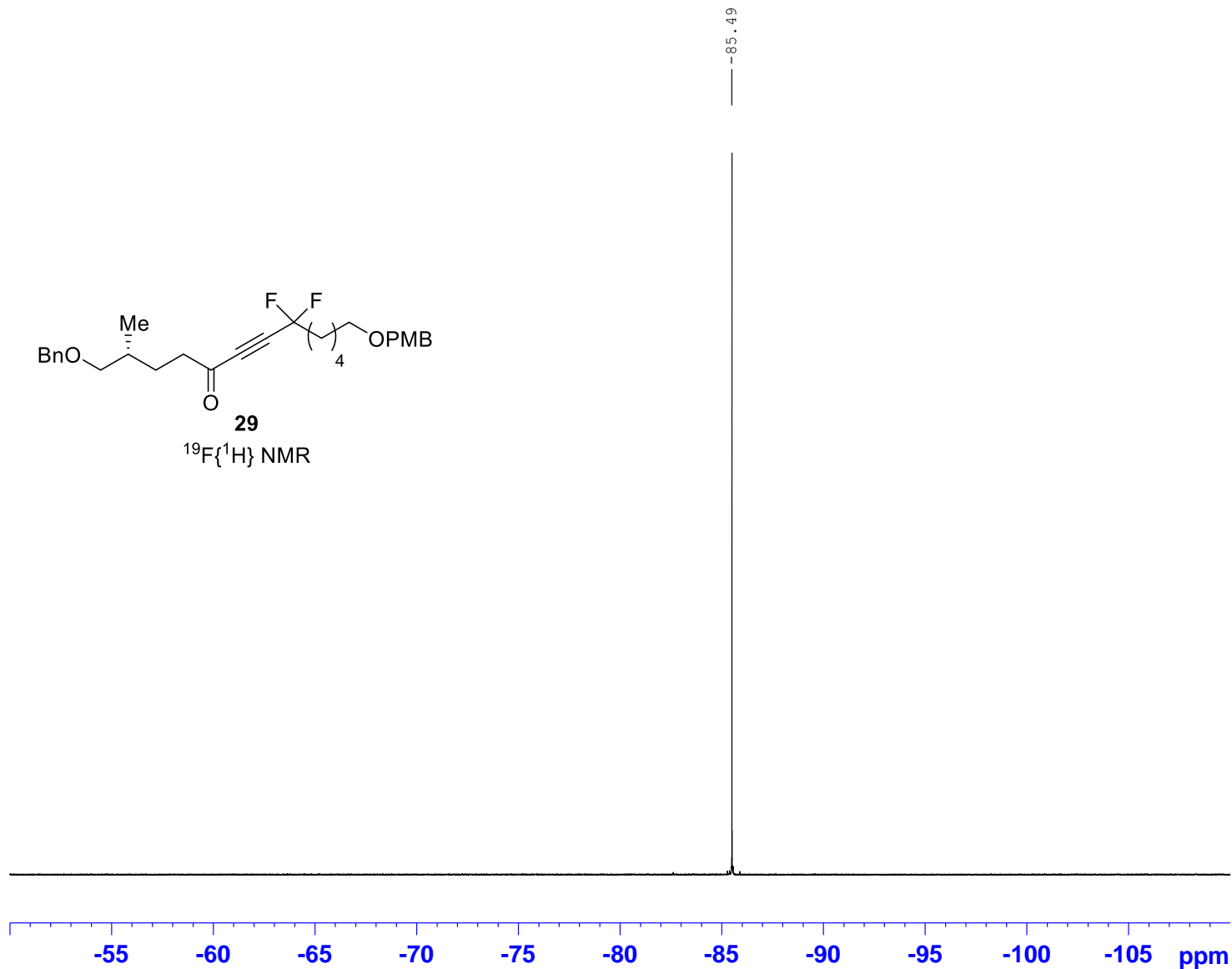
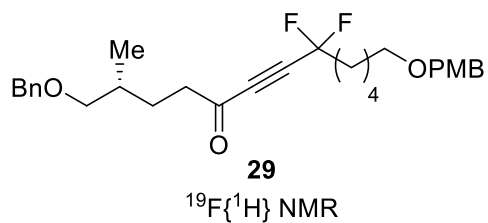
Current Data Parameters
 NAME 09132013-3-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130914
 Time_ 0.25
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SF02 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577661 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



Current Data Parameters
 NAME 08262013-14-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130826
 Time_ 14.13
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhigqn.3.and
 TD 65536
 SOLVENT CDCl₃
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 ¹⁹F
 P1 13.00 usec
 PLW1 55.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 ¹H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

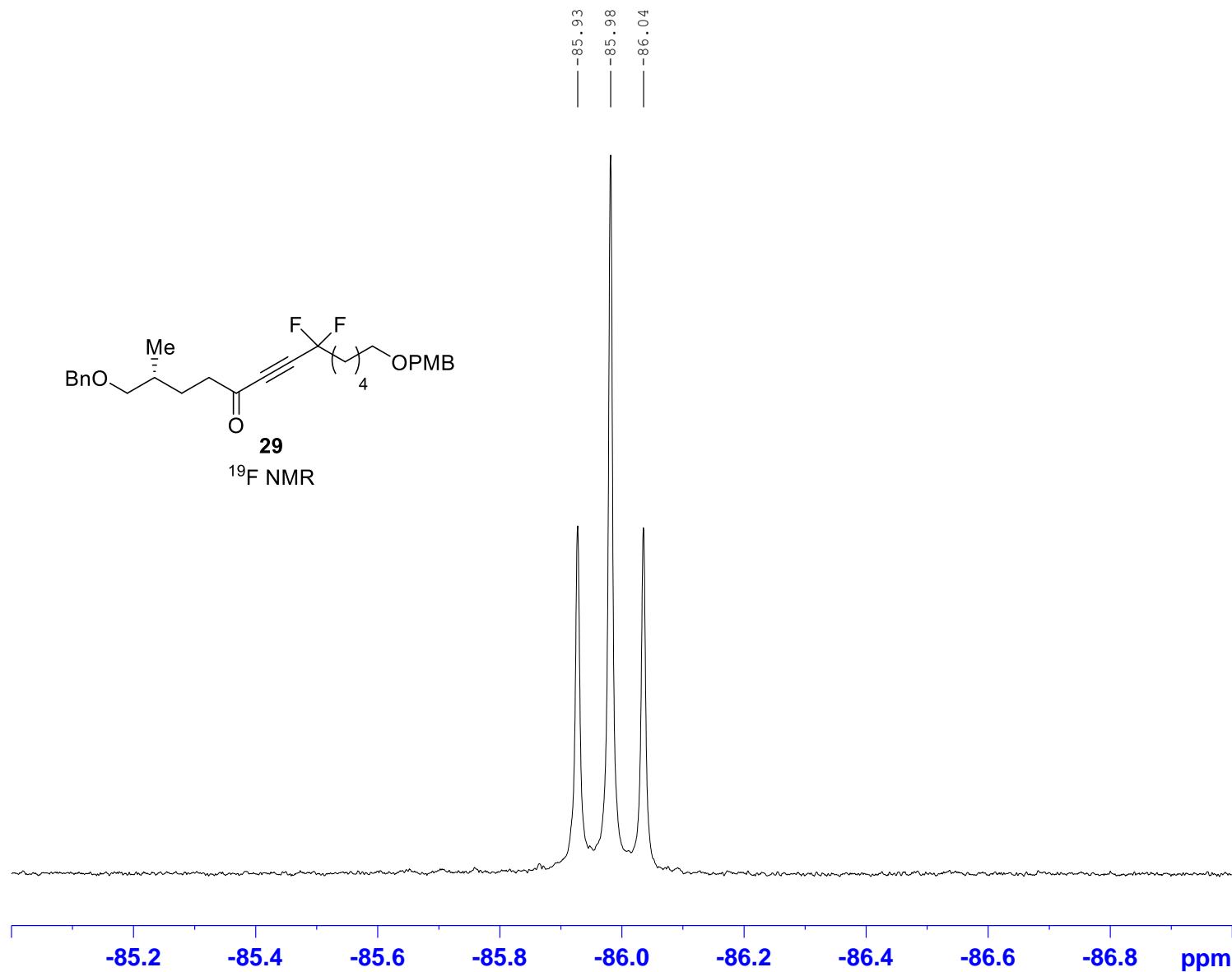
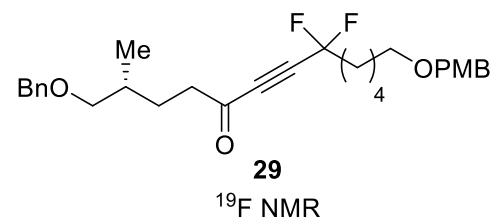


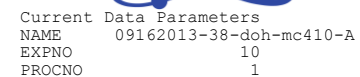
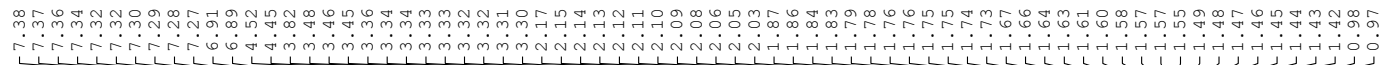
Current Data Parameters
NAME 09122013-14-michaelI
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130912
Time 19.00
INSTRUM av300
PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 131072
SOLVENT CDCl3
NS 64
DS 4
SWH 22522.523 Hz
FIDRES 0.171833 Hz
AQ 2.9097984 sec
RG 2298.8
DW 22.200 usec
DE 6.00 usec
TE 295.1 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 19F
P1 8.50 usec
PL1 -3.00 dB
SFO1 282.3817627 MHz

F2 - Processing parameters
SI 131072
SF 282.4044991 MHz
WDW EM
SSB 0
LB 0.50 Hz
GB 0
PC 1.00





Date_	20130917
Time_	5.45
INSTRUM	spect
PROBHD	5 mm PABBO BB/
PULPROG	zg30
TD	65536
SOLVENT	CDCl3
NS	8
DS	2
SWH	7002.801 Hz
FIDRES	0.106854 Hz
AQ	4.6792703 sec
RG	57
DW	71.400 usec
DE	11.40 usec
TE	295.0 K
D1	1.00000000 sec
TD0	1

```
===== CHANNEL f1 =====
SFO1          500.1330008 MHz
NUC1              1H
P1              10.35 usec
PLW1          24.00000000 W
```

```

F2 - Processing parameters
SI                65536
SF                500.1300057 MHz
WDW               EM
SSB               0
LB                0.30 Hz
GB               0
PC                1.00

```



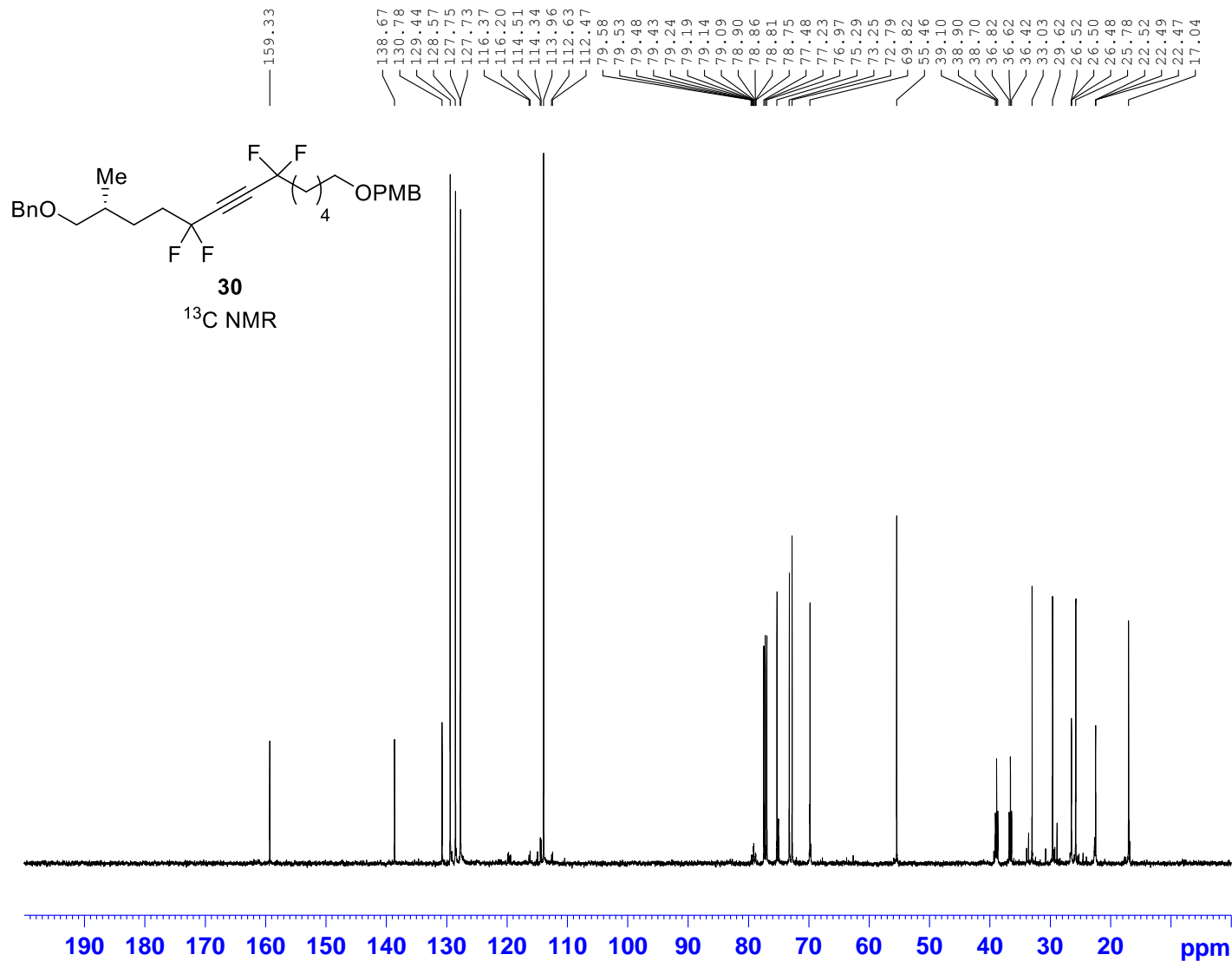
Current Data Parameters
 NAME 09162013-38-doh-mc410-A
 EXPNO 11
 PROCNO 1

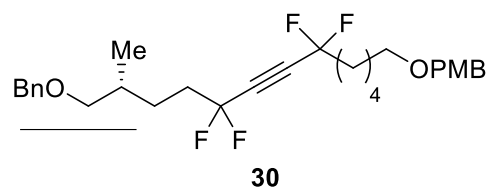
F2 - Acquisition Parameters
 Date_ 20130917
 Time 6.39
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDC13
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

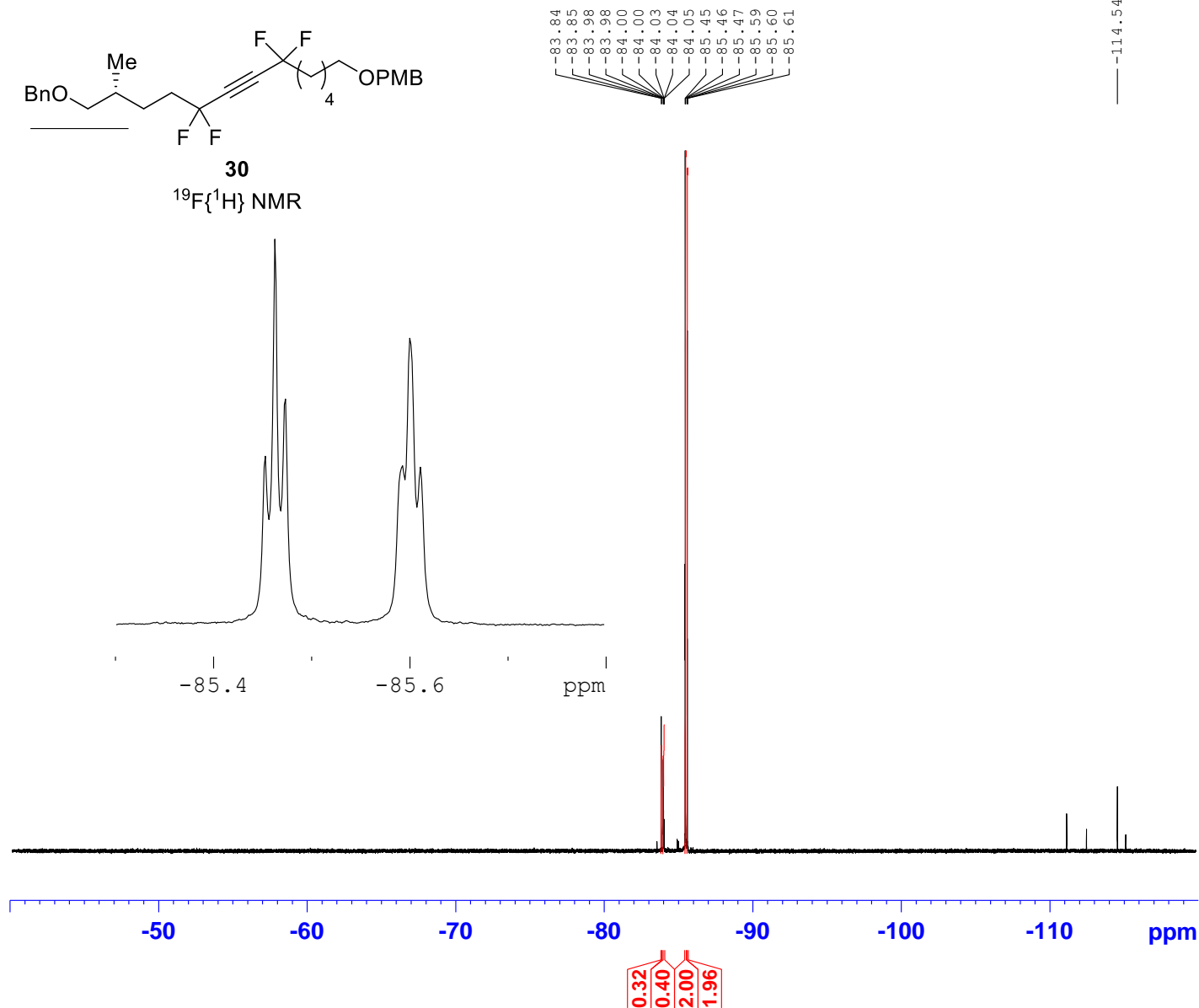
===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577675 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40





30
 $^{19}\text{F}\{^1\text{H}\}$ NMR



Current Data Parameters
 NAME 08272013-22-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130827
 Time_ 16.05
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhigqn.3.and
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 ^{19}F
 P1 13.00 usec
 PLW1 55.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 ^1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

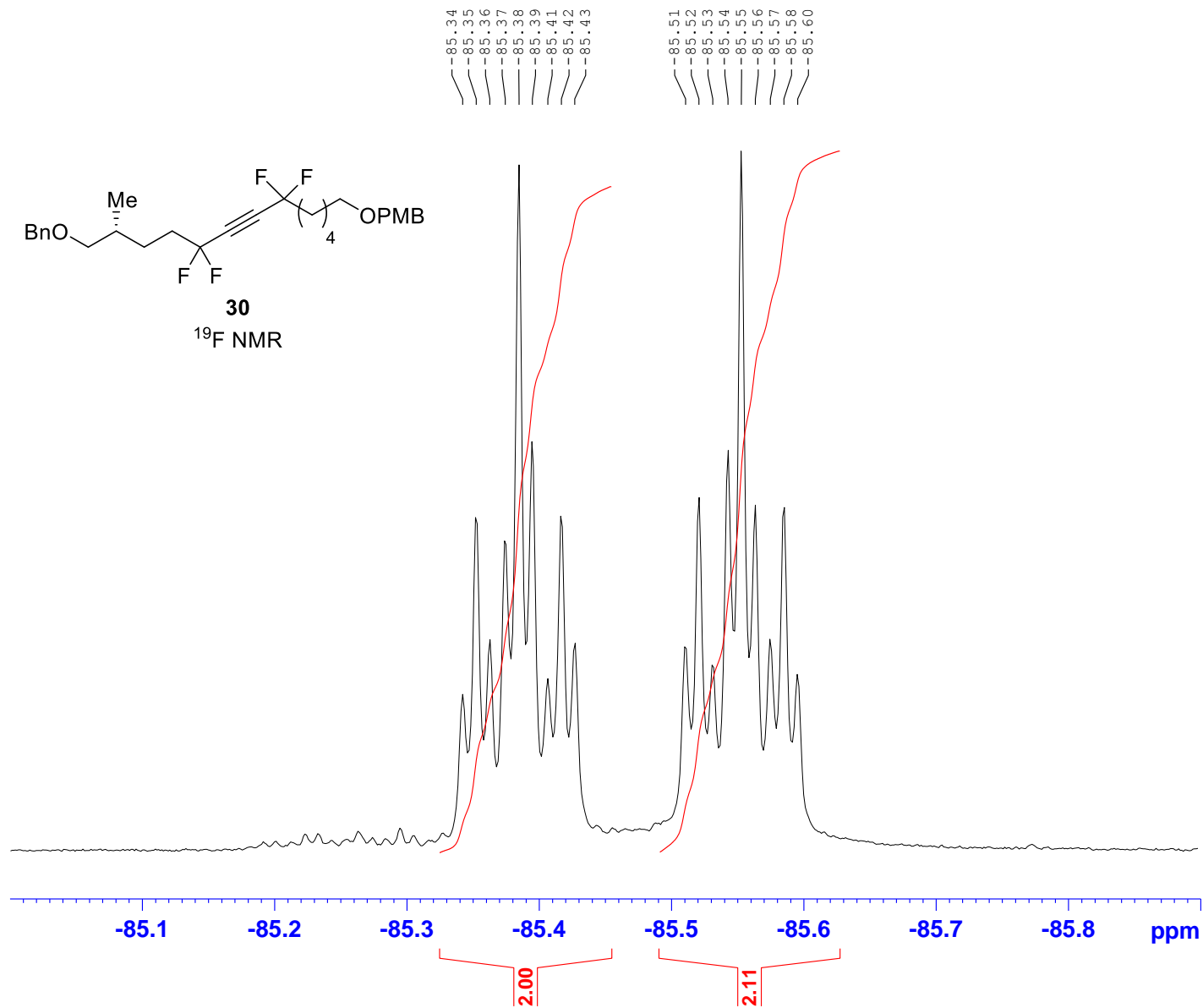
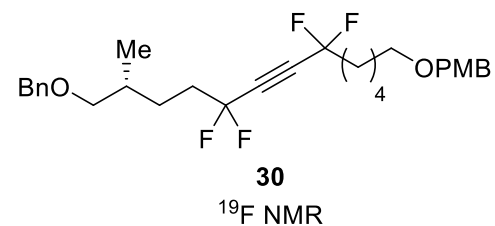


Current Data Parameters
 NAME 04232014-3-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140423
 Time_ 15.34
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfglqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



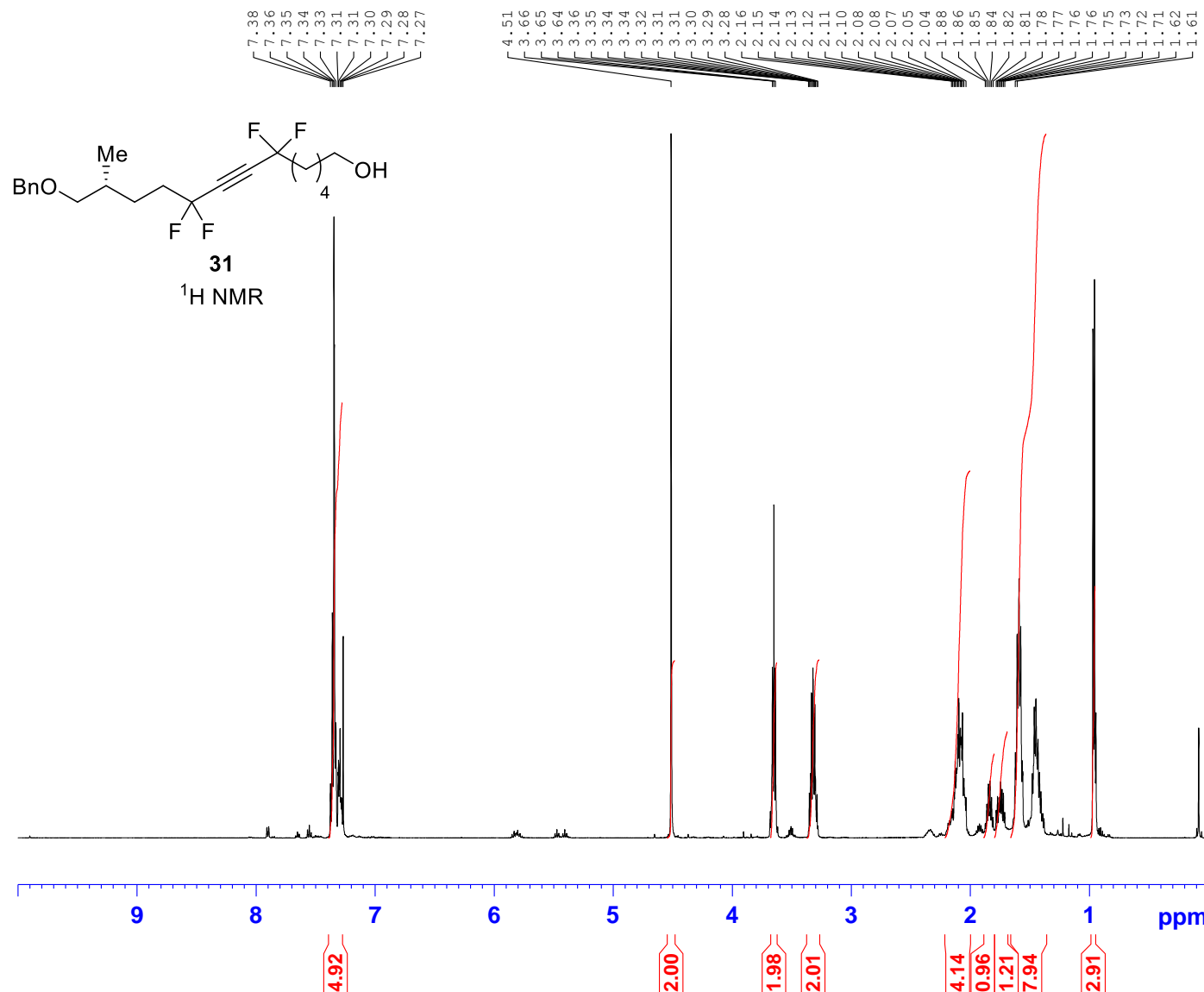


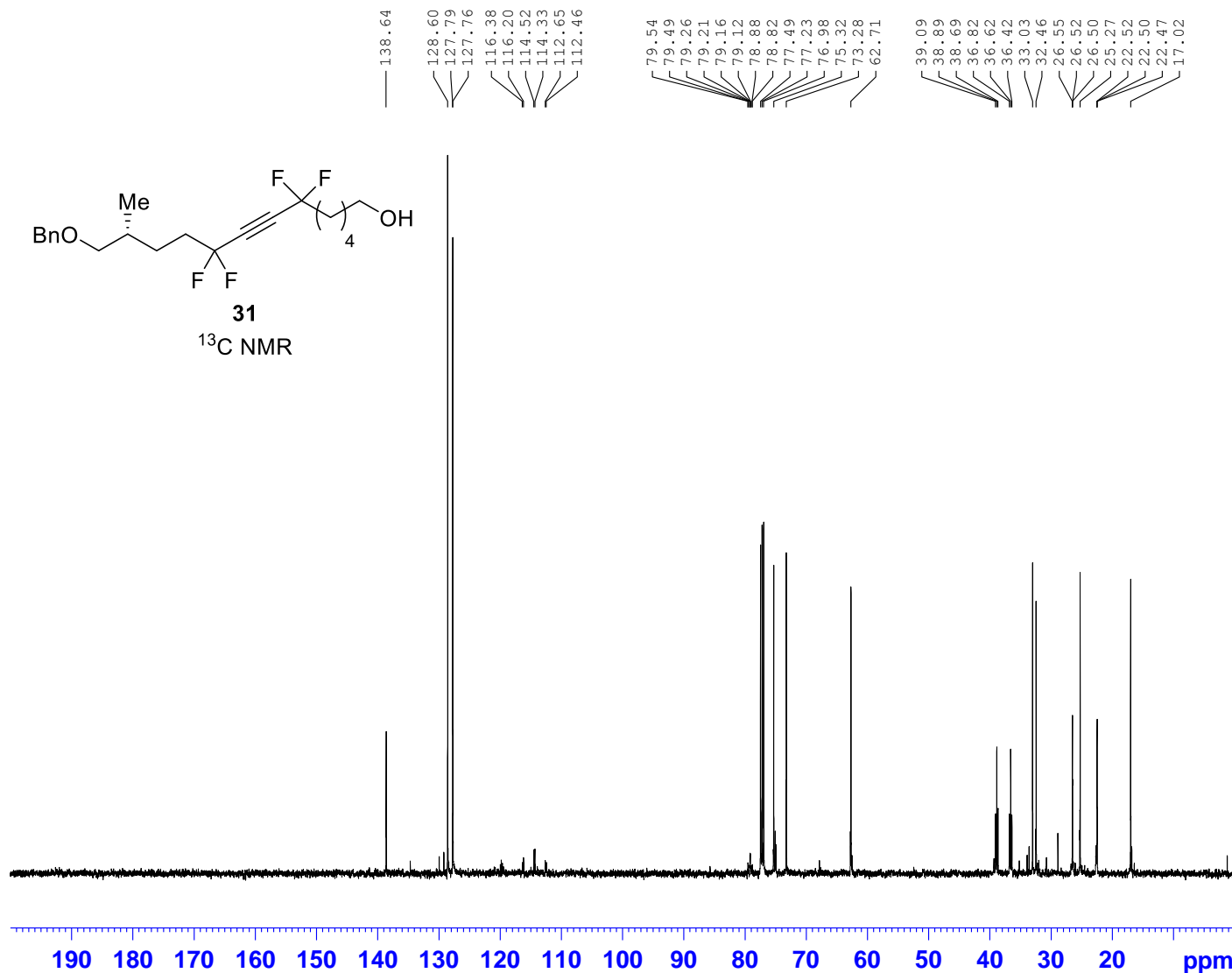
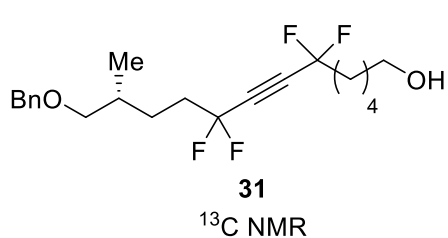
Current Data Parameters
 NAME 09162013-39-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130917
 Time 7.34
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 80.6
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300090 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00





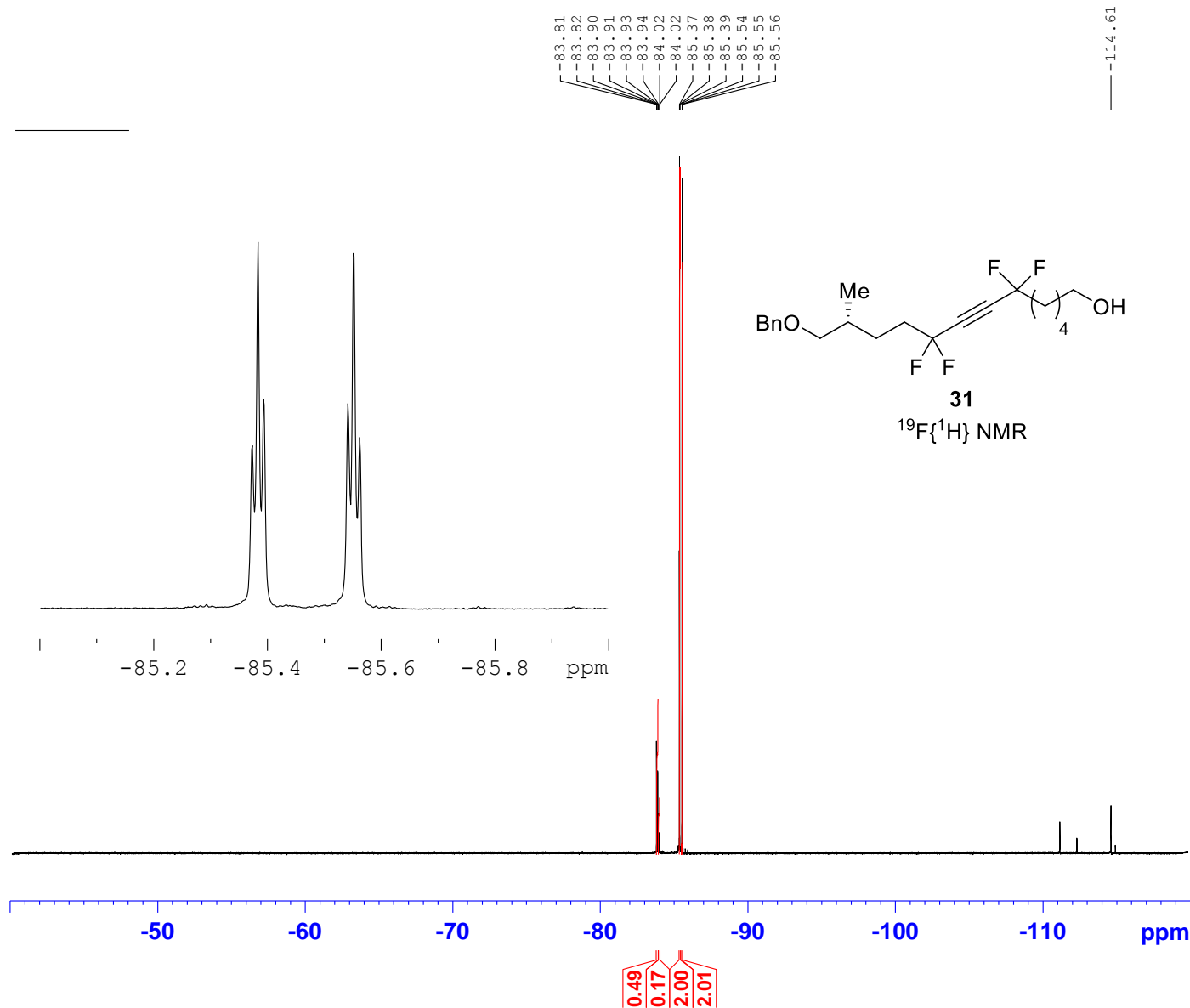
Current Data Parameters
 NAME 09162013-39-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130917
 Time 20.03
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udept
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577652 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



Current Data Parameters
 NAME 08292013-38-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130829
 Time 18.02
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhgqn.3.and
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 ^{19}F
 P1 13.00 usec
 PLW1 55.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 ^1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

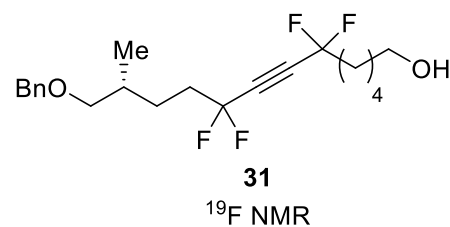


Current Data Parameters
NAME 04232014-3-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140423
Time 15.34
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgflqn
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

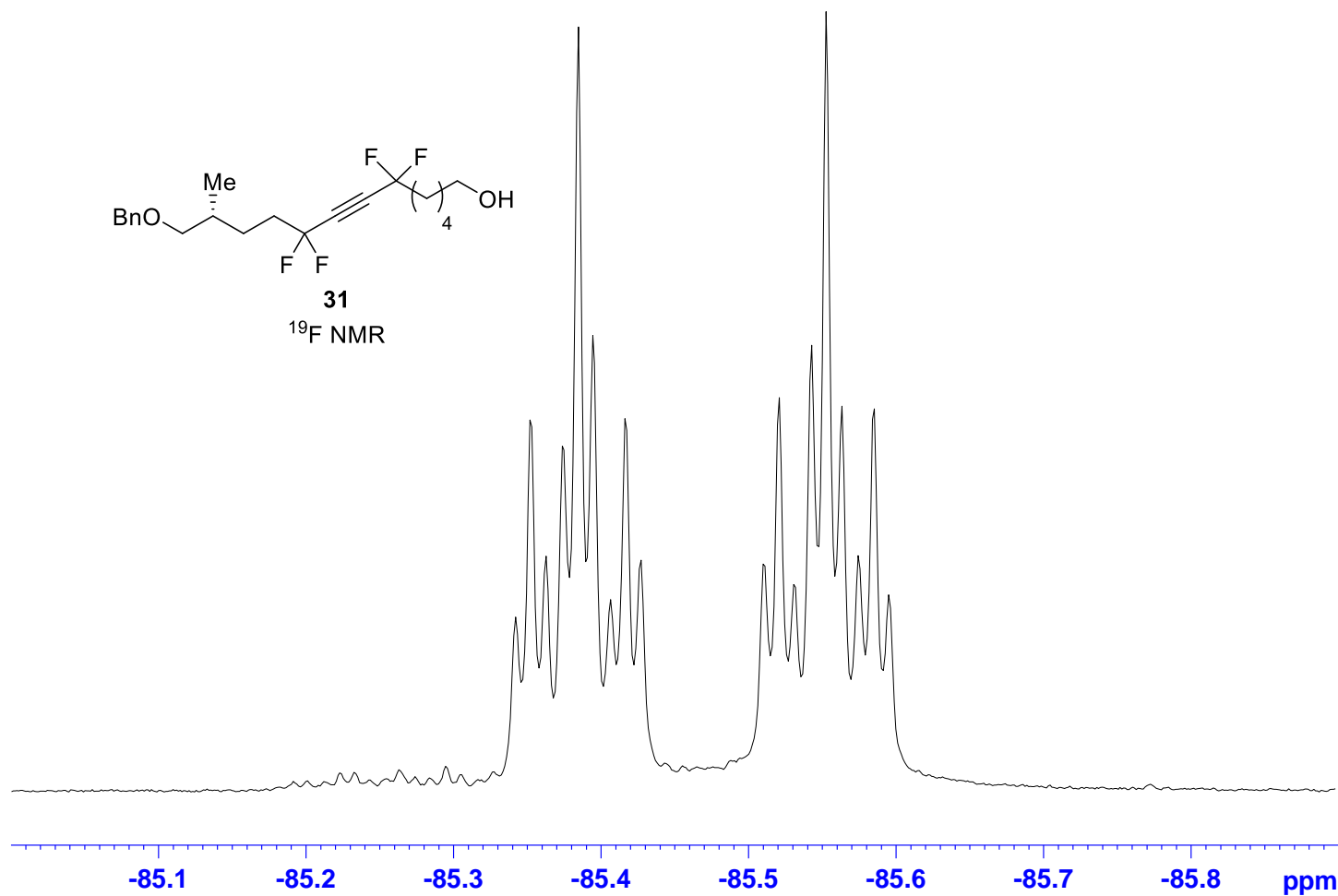
===== CHANNEL f1 =====
SFO1 470.5547296 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



-85.34
-85.35
-85.36
-85.37
-85.38
-85.39
-85.41
-85.42
-85.43

-85.51
-85.52
-85.53
-85.54
-85.55
-85.56
-85.57
-85.58
-85.60





Current Data Parameters
 NAME 10172013-1-doh-mc410-A_2
 EXPNO 14
 PROCNO 1

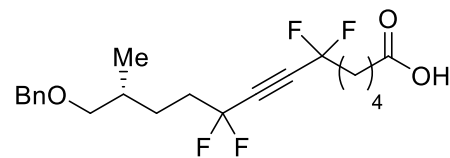
F2 - Acquisition Parameters
 Date_ 20131017
 Time_ 20.06
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

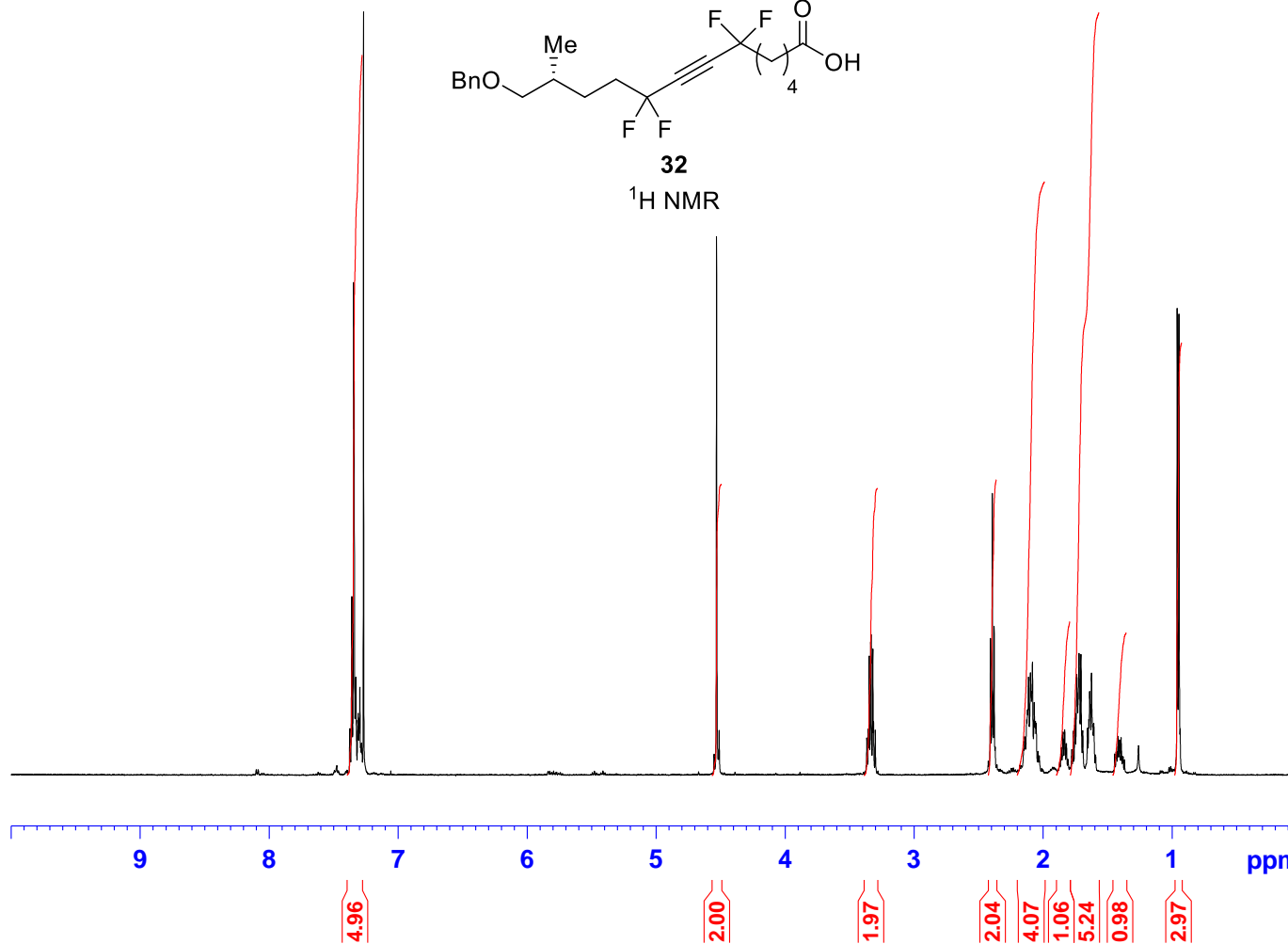
F2 - Processing parameters
 SI 65536
 SF 500.130077 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

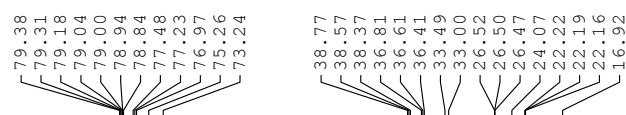
7.38
7.36
7.35
7.34
7.33
7.32
7.31
7.30
7.29
7.28
7.27

4.53
3.37
3.36
3.35
3.34
3.33
3.32
3.30
2.41
2.39
2.38
2.18
2.17
2.15
2.14
2.13
2.12
2.11
2.10
2.09
2.08
2.07
2.06
2.05
2.04
2.03
1.87
1.86
1.85
1.83
1.82
1.81
1.79
1.78
1.77
1.75
1.74
1.72
1.71
1.69



¹H NMR





```
Current Data Parameters
NAME      10252013-8-doh-mc410-A
EXPNO      10
PROCNO     1
```

```

F2 - Acquisition Parameters
Date_                20131025
Time_                22.30
INSTRUM              spect
PROBHD              5 mm PABBO BB/
PULPROG              udefrt
TD                  21424
SOLVENT              CDCl3
NS                   3200
DS                   0
SWH                  29761.904 Hz
FIDRES               1.389185 Hz
AQ                   0.3599232 sec
RG                   128
DW                   16.800
DE                   7.96 usec
TE                   295.0 K
D1                   3.00000000 sec
D11                  0.03000000 sec
D12                  0.00002000 sec
D20                  200.00000000 sec
TD0                  1

```

```
===== CHANNEL f1 =====
SF01      125.7716224 MHz
NUC1              13C
P1              8.90 usec
P13          2000.00 usec
P26          500.00 usec
PLW1      125.00000000 W
SPNAM[5]      Crp60comp.f
SPOAL5              0.500
SPOFFS5  0 Hz
SPW5          15.12800026 W
SPNAM[8]      Crp60,0.5,20.1
SPOAL8              0.500
SPOFFS8  0 Hz
SPW8          15.12800026 W
```

```
===== CHANNEL f2 =====
SFO2          500.1320005 MHz
NUC2          1H
CPDPRG[2      waltz65
PCPD2         80.00 usec
PLW2          24.00000000 W
PLW12         0.39015001 W
```

```
F2 - Processing parameters
SI                262144
SF                125.7577639 MHz
WDW               EM
SSB               0
LB                2.00 Hz
GB               0
PC                1.40
```



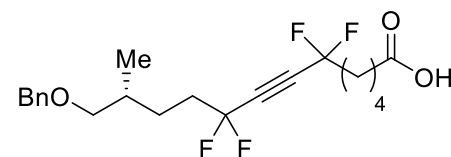
Current Data Parameters
NAME 10172013-1-doh-mc410-A_2
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131017
Time 16.46
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgfhigqn.3.and
TD 65536
SOLVENT CDC13
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

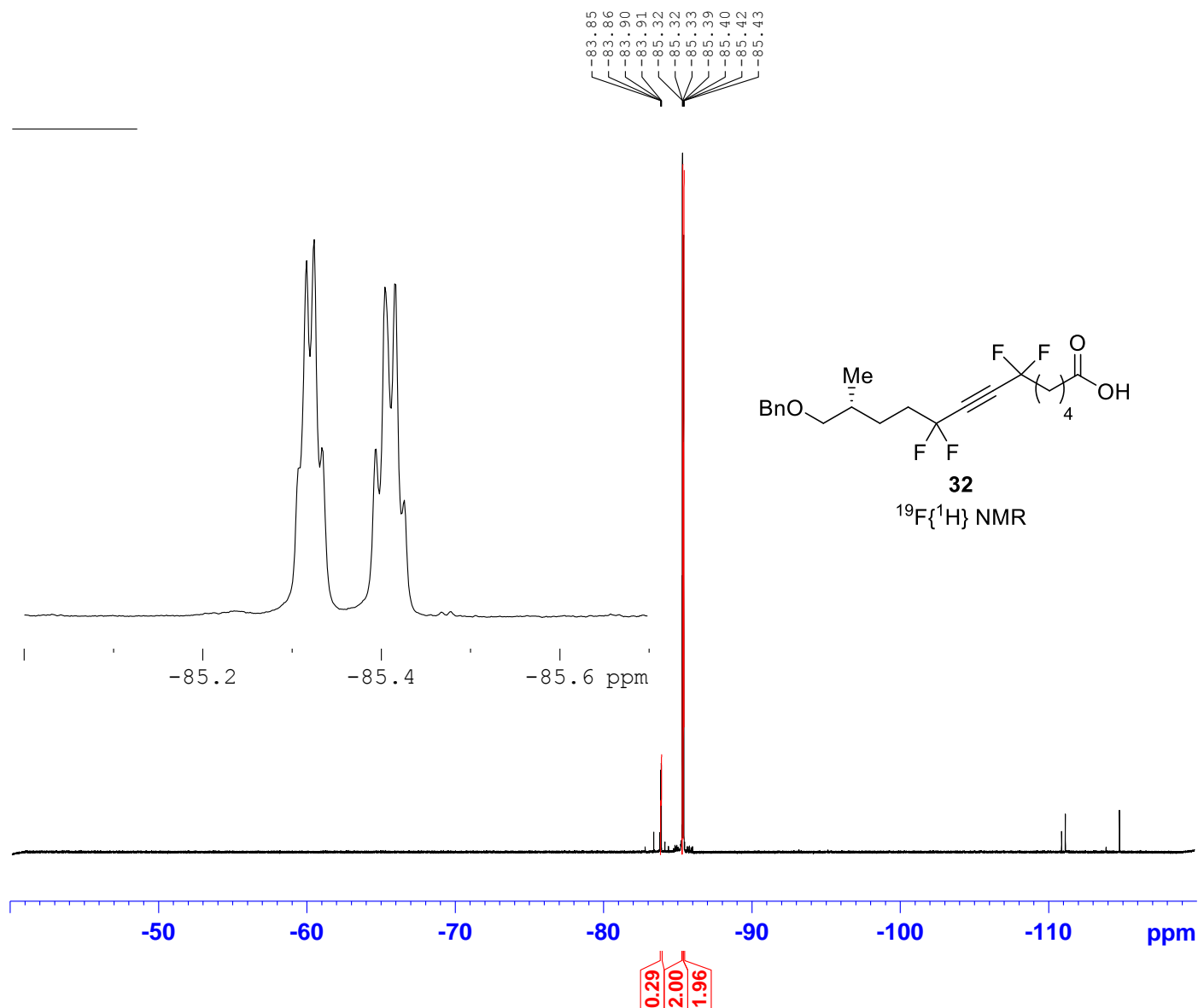
===== CHANNEL f1 =====
SFO1 470.5547296 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

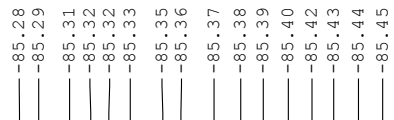
===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



32
¹⁹F{¹H} NMR

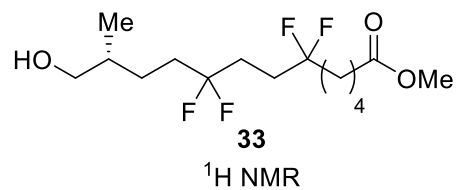




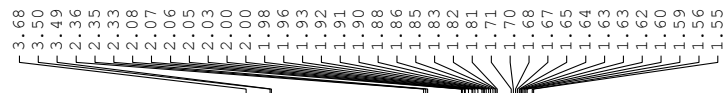
```

F2 - Processing parameters
SI                      65536
SF                      470.5923770 MHz
WDW                      EM
SSB                      0
LB                      0.30 Hz
GB                      0
PC                      1.00

```

7.27

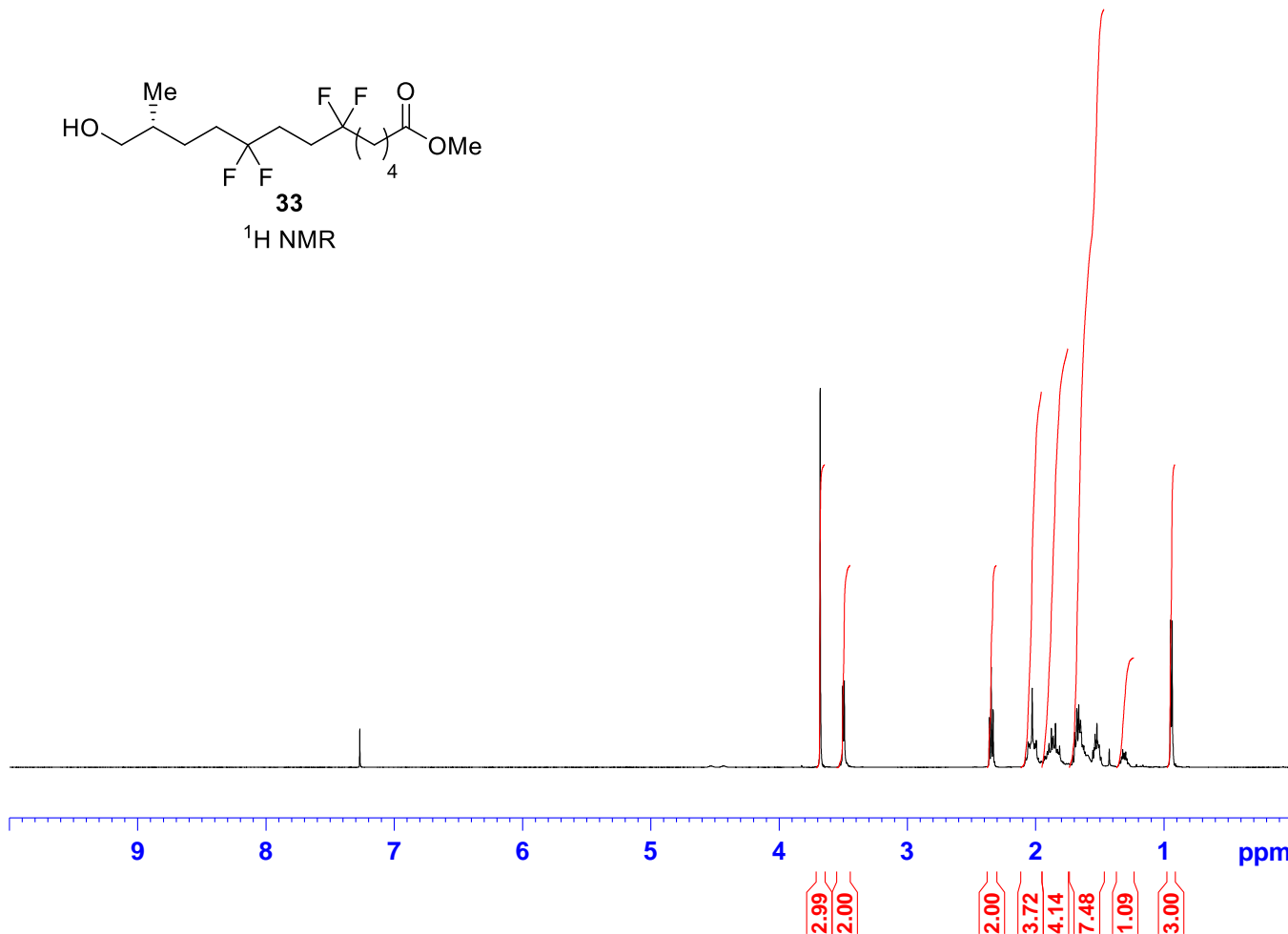


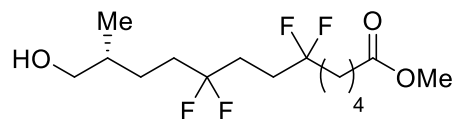
Current Data Parameters
NAME 09192013-26-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130919
Time_ 15.39
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 71.8
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300087 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





¹³C NMR

— 174.00

126.59
126.31
124.67
124.39
122.75
122.48

77.48
77.23
76.97

— 67.99

51.81
36.83
36.63
36.43
35.53
34.74
34.54
34.34
33.93
29.55
29.52
29.35
29.31
29.14
29.10
25.81
25.77
25.74
24.74
22.07
22.04



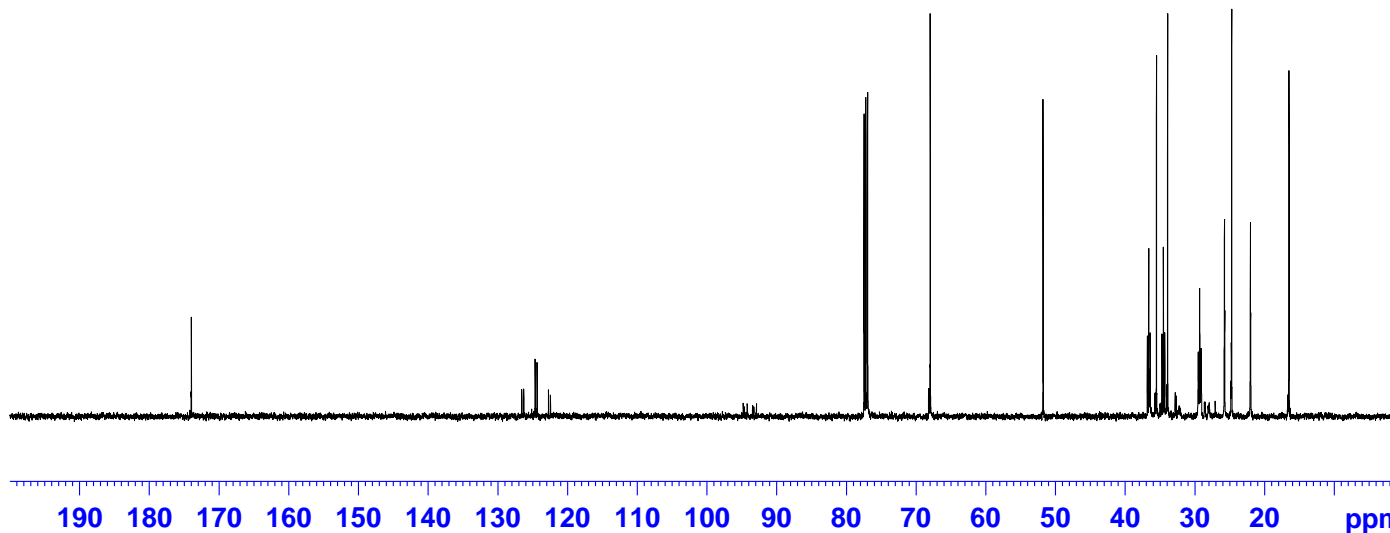
Current Data Parameters
NAME 09192013-42-doh-mc410-A
EXPNO 10
PROCNO 1

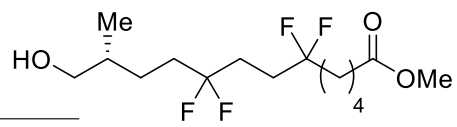
F2 - Acquisition Parameters
Date_ 20130920
Time 1.10
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SF01 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

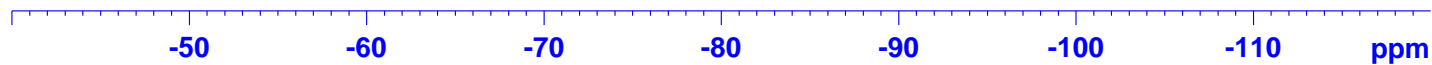
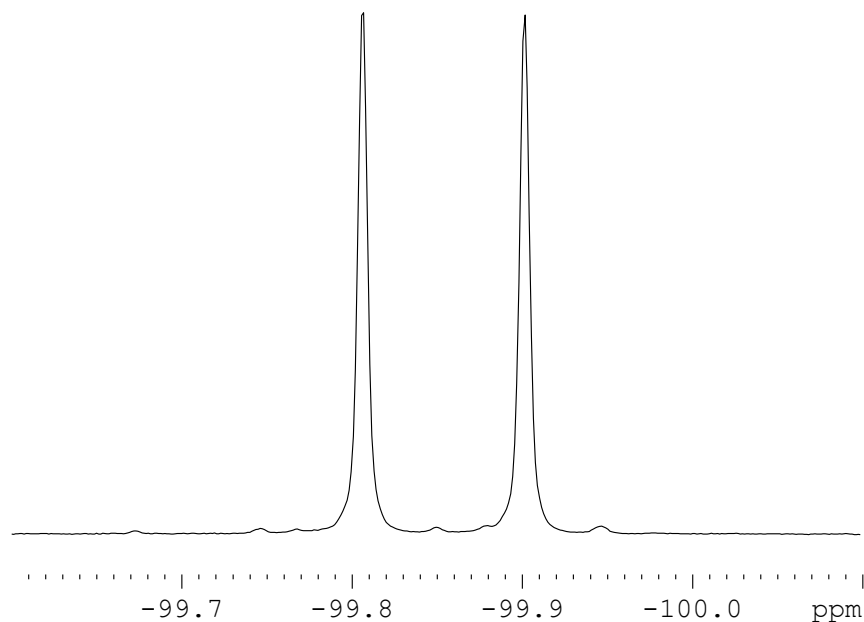
===== CHANNEL f2 =====
SF02 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577653 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40





33
¹⁹F{¹H} NMR



Current Data Parameters
 NAME 09132013-33-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130913
 Time_ 16.35
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhigqn.3.and
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

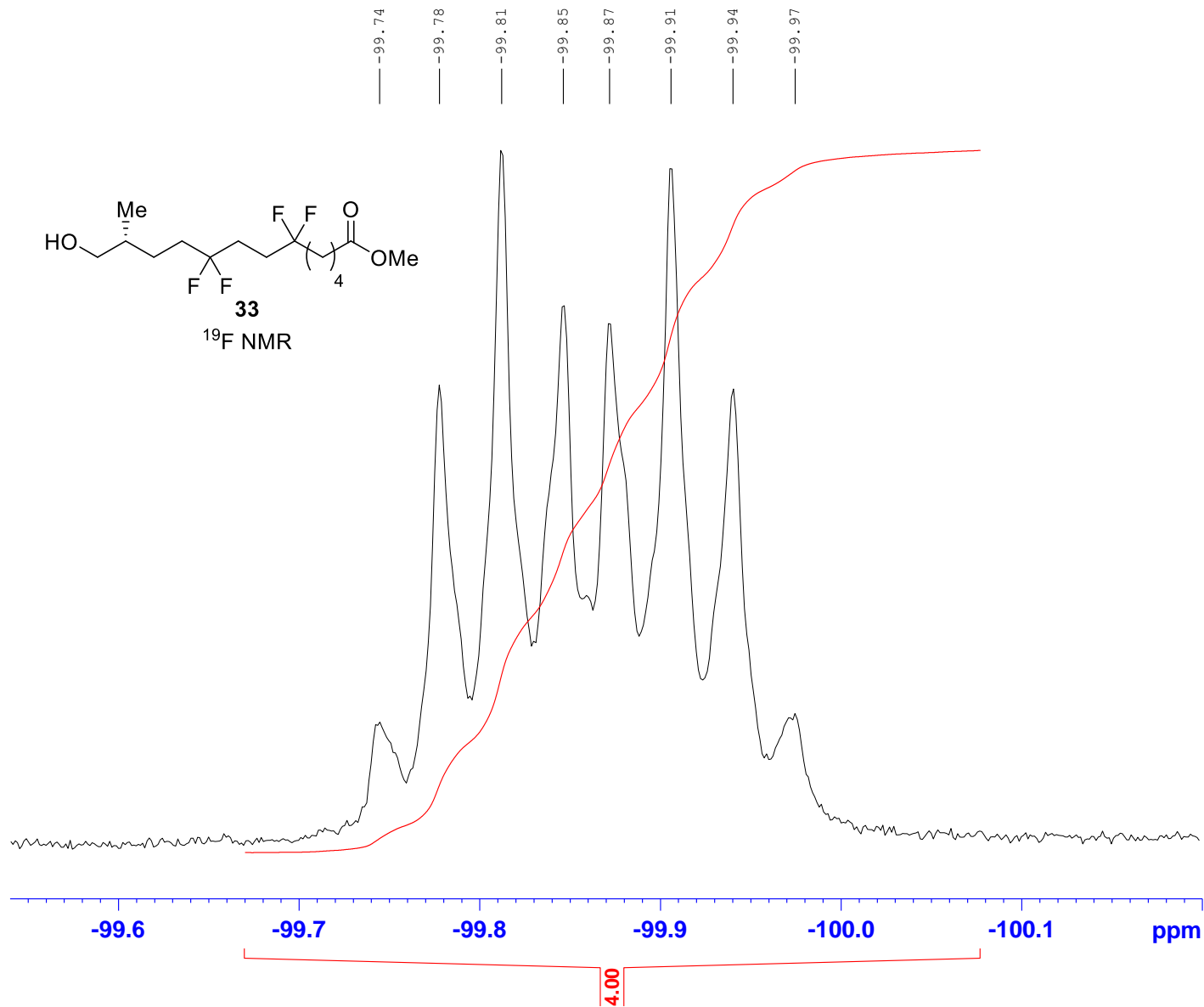


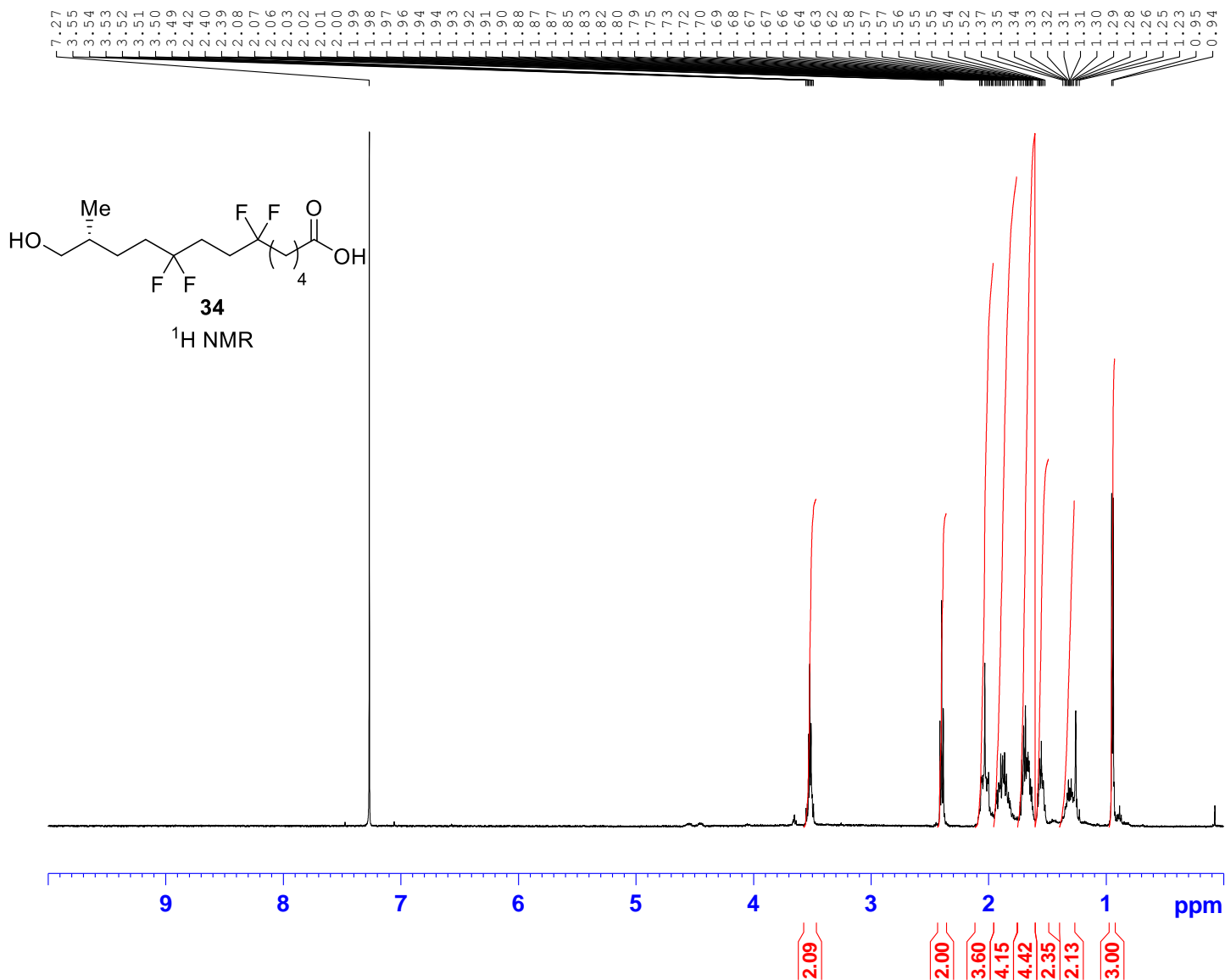
Current Data Parameters
NAME 04232014-4-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140423
Time_ 15.40
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDC13
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 470.5547296 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





Current Data Parameters
 NAME 09282013-28-doh-mc410-F
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130928
 Time_ 18.33
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 574.7
 DW 71.400 usec
 DE 6.00 usec
 TE 293.0 K
 D1 1.00000000 sec
 TD0 1
 SFO1 499.9029994 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000044 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



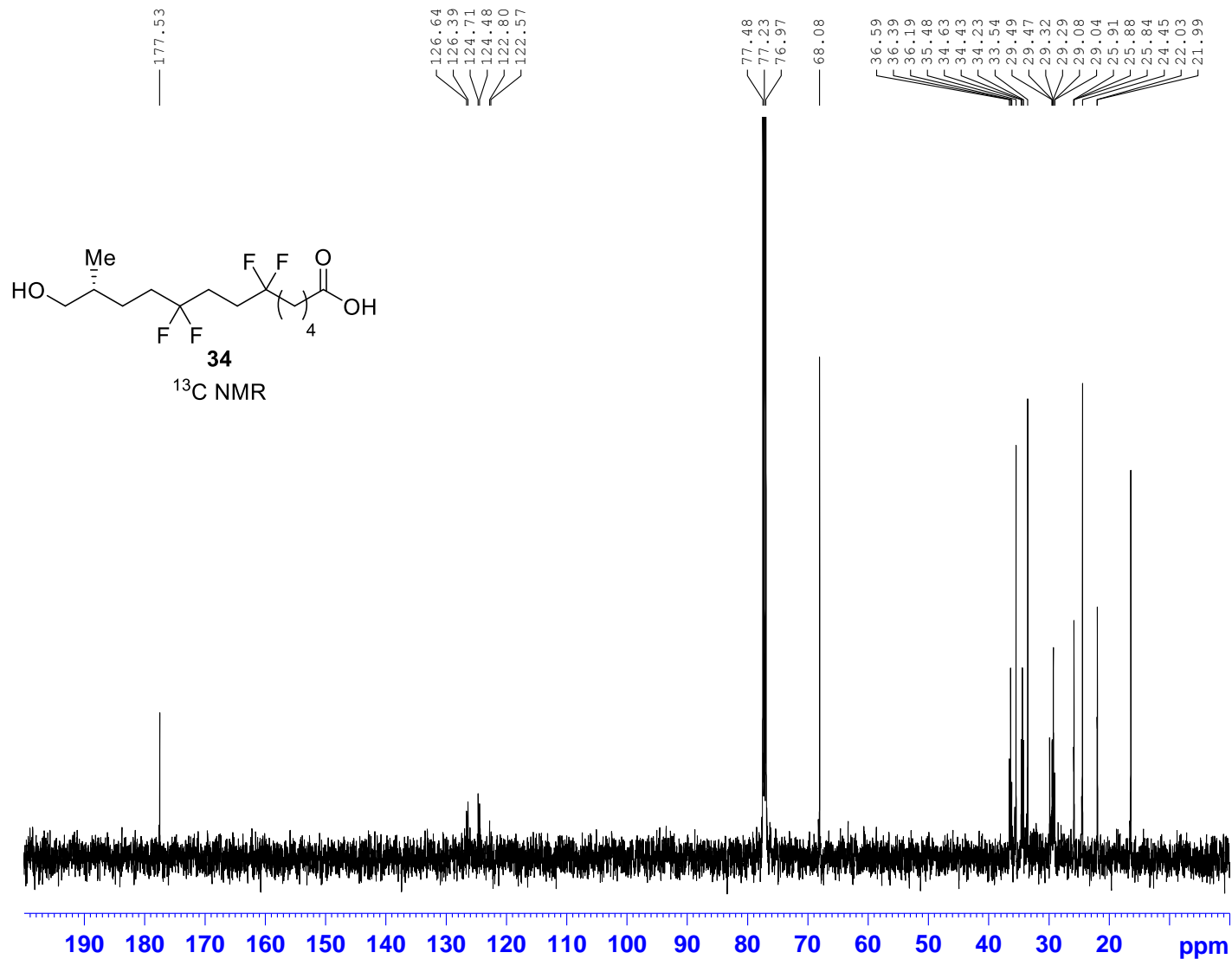
Current Data Parameters
 NAME 10022013-4-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131004
 Time 2.19
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDC13
 NS 1600
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577644 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40





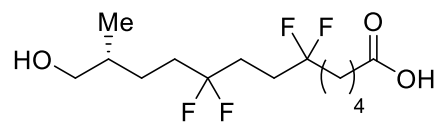
Current Data Parameters
NAME 04242014-27-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140424
Time_ 15.59
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgfhigqn.3.and
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

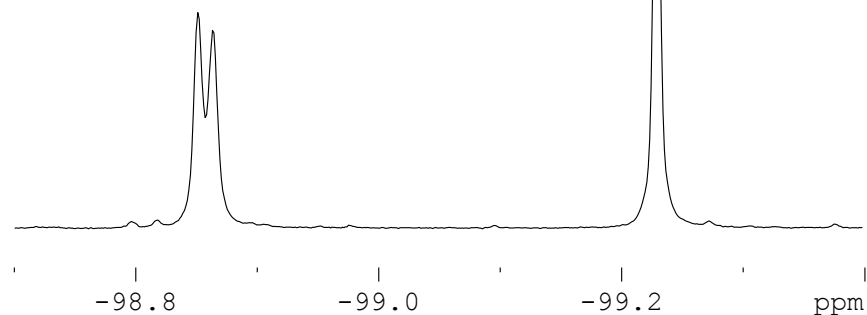
===== CHANNEL f1 =====
SFO1 470.5547296 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



34
 $^{19}\text{F}\{^1\text{H}\}$ NMR



-98.85
-98.86
-99.23

1.98
2.00

-50 -60 -70 -80 -90 -110 ppm

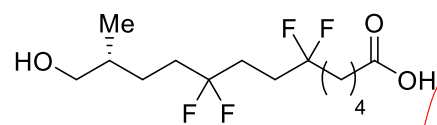


Current Data Parameters
NAME 04232014-5-doh-mc410-A
EXPNO 10
PROCNO 1

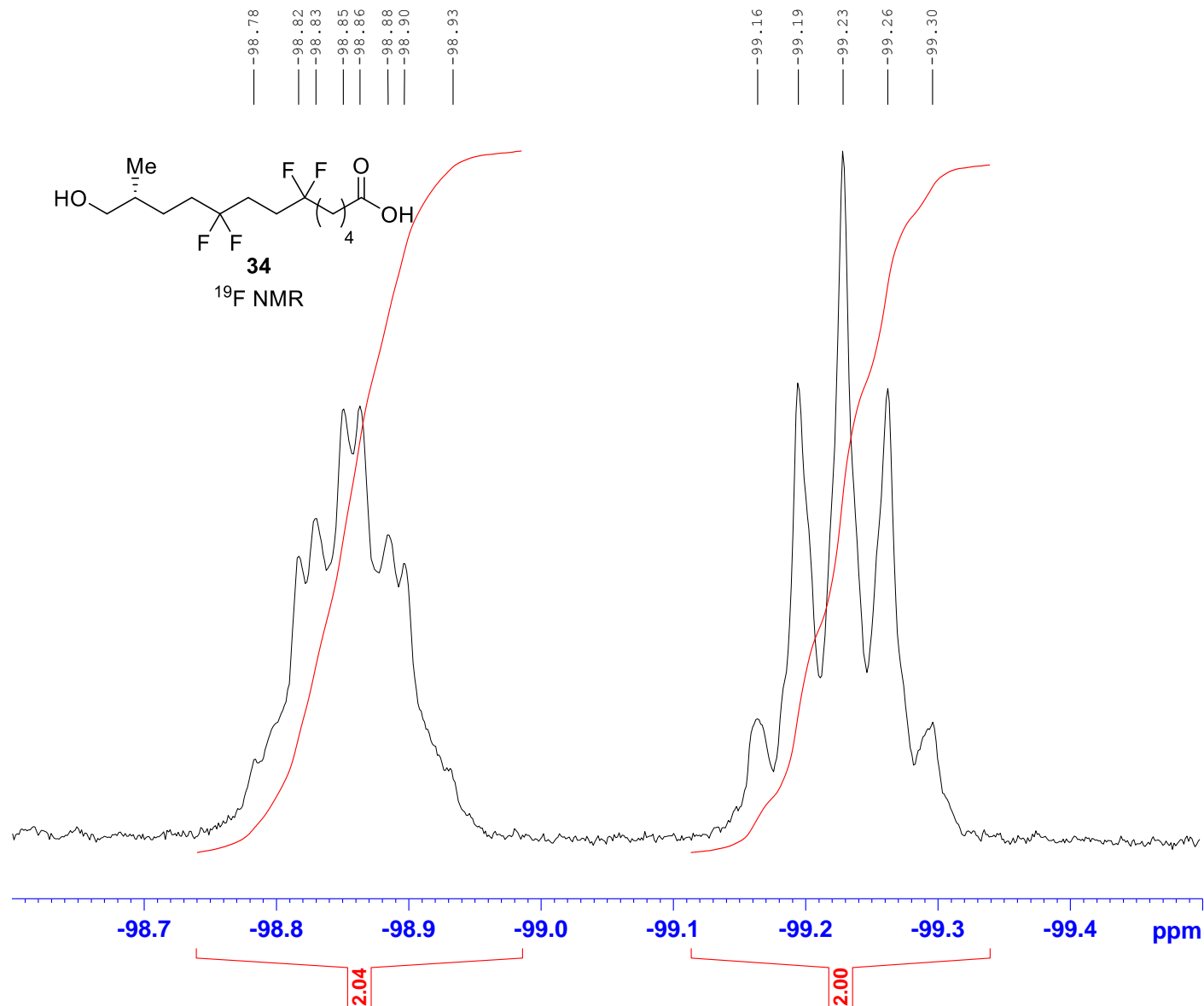
F2 - Acquisition Parameters
Date_ 20140423
Time 15.45
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

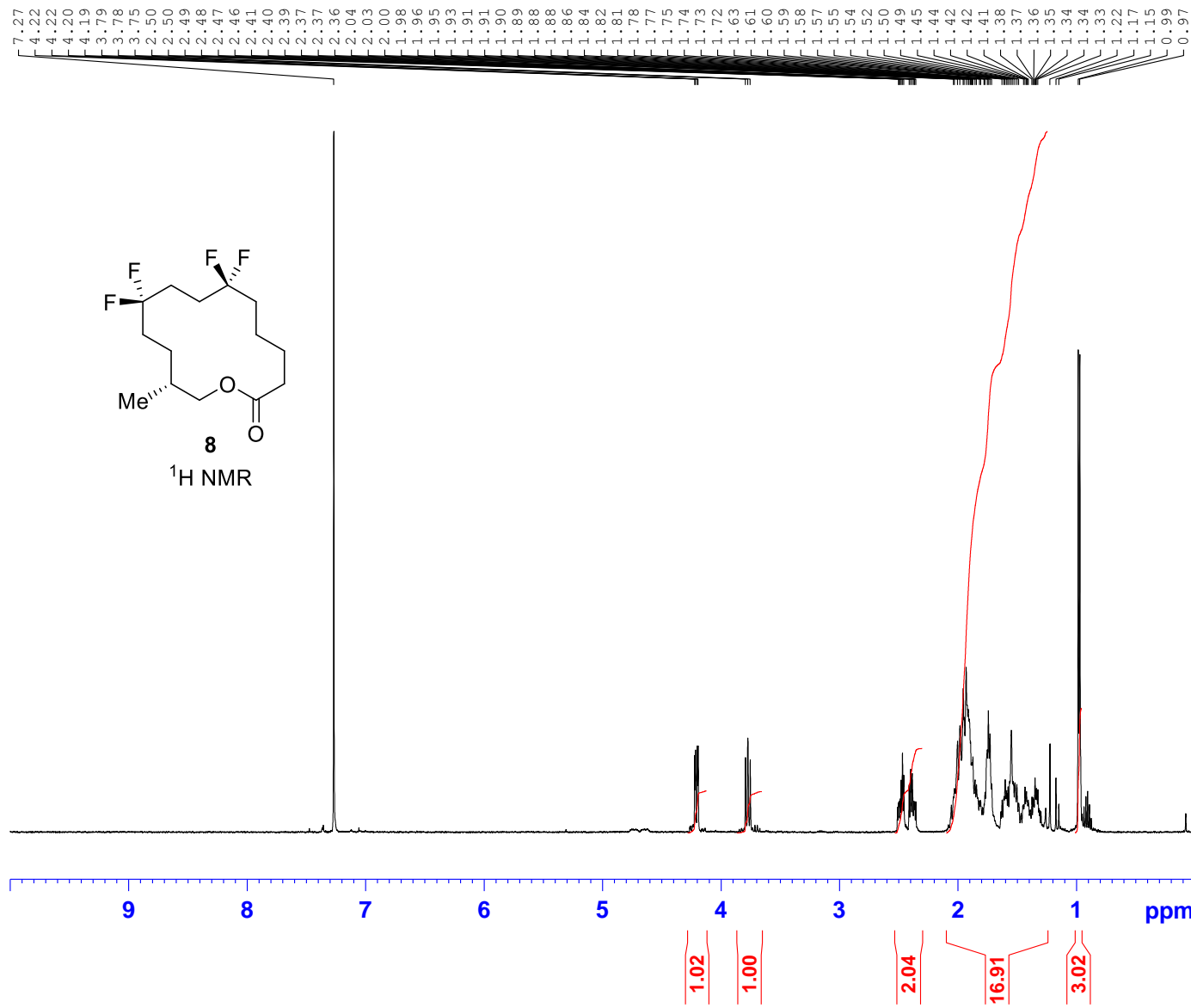
===== CHANNEL f1 =====
SFO1 470.5547296 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



¹⁹F NMR



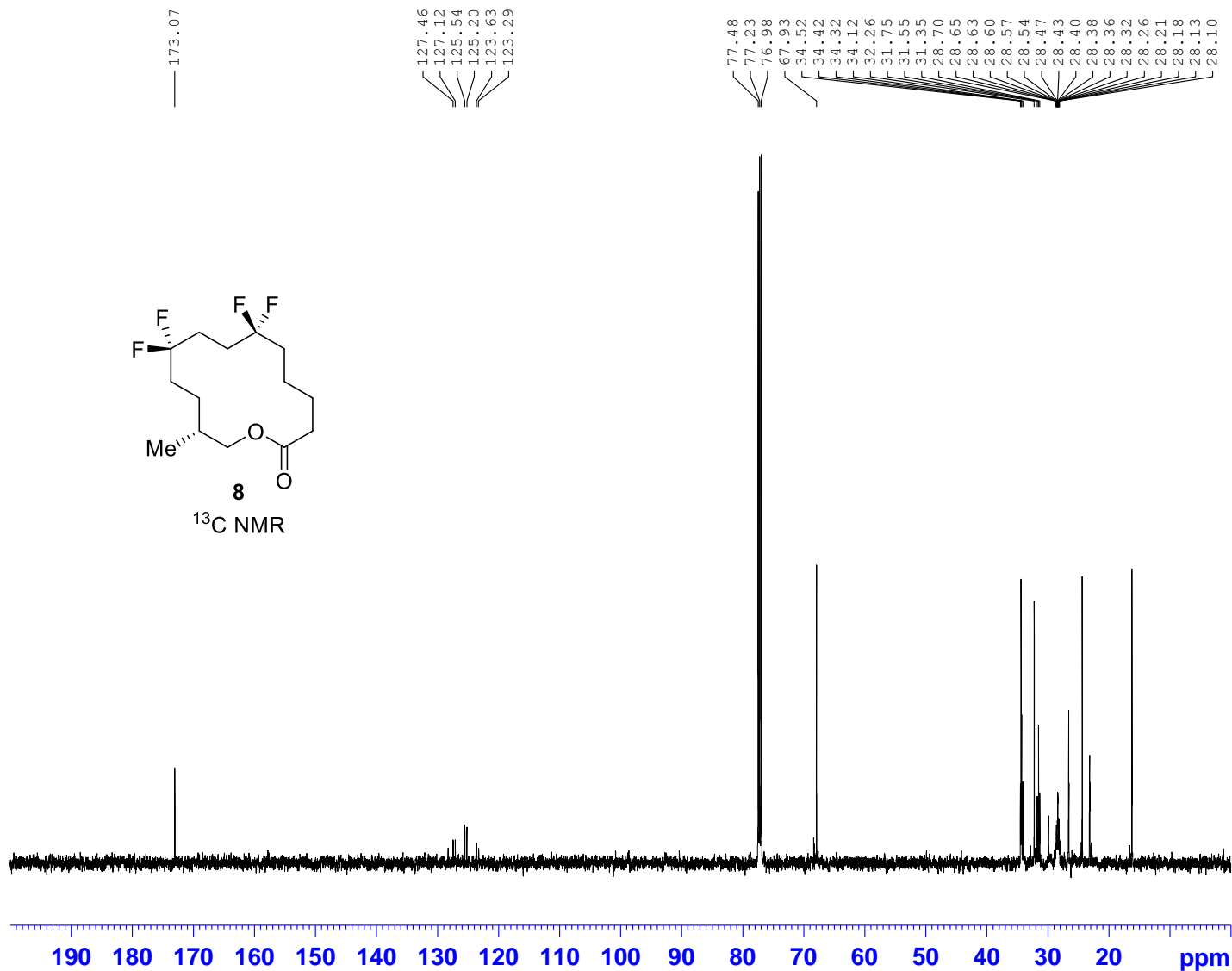
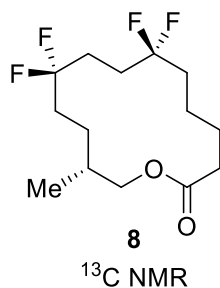


Current Data Parameters
 NAME 09262013-32-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130926
 Time 14.22
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300088 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



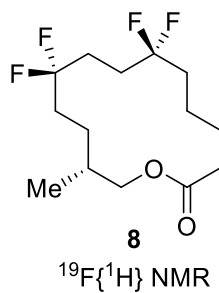
Current Data Parameters
 NAME 06112013-18-doh-mc410-A
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130611
 Time_ 21.42
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeflt
 TD 21424
 SOLVENT CDC13
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577653 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



-90.83
-91.01
-91.04
-91.36
-91.96
-92.49



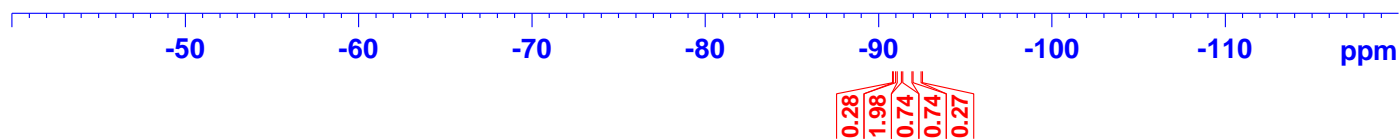
Current Data Parameters
NAME 09262013-32-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130926
Time_ 14.26
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgfhigqn.3.and
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 470.5547296 MHz
NUC1 ^{19}F
P1 13.00 usec
PLW1 55.00000000 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 ^1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





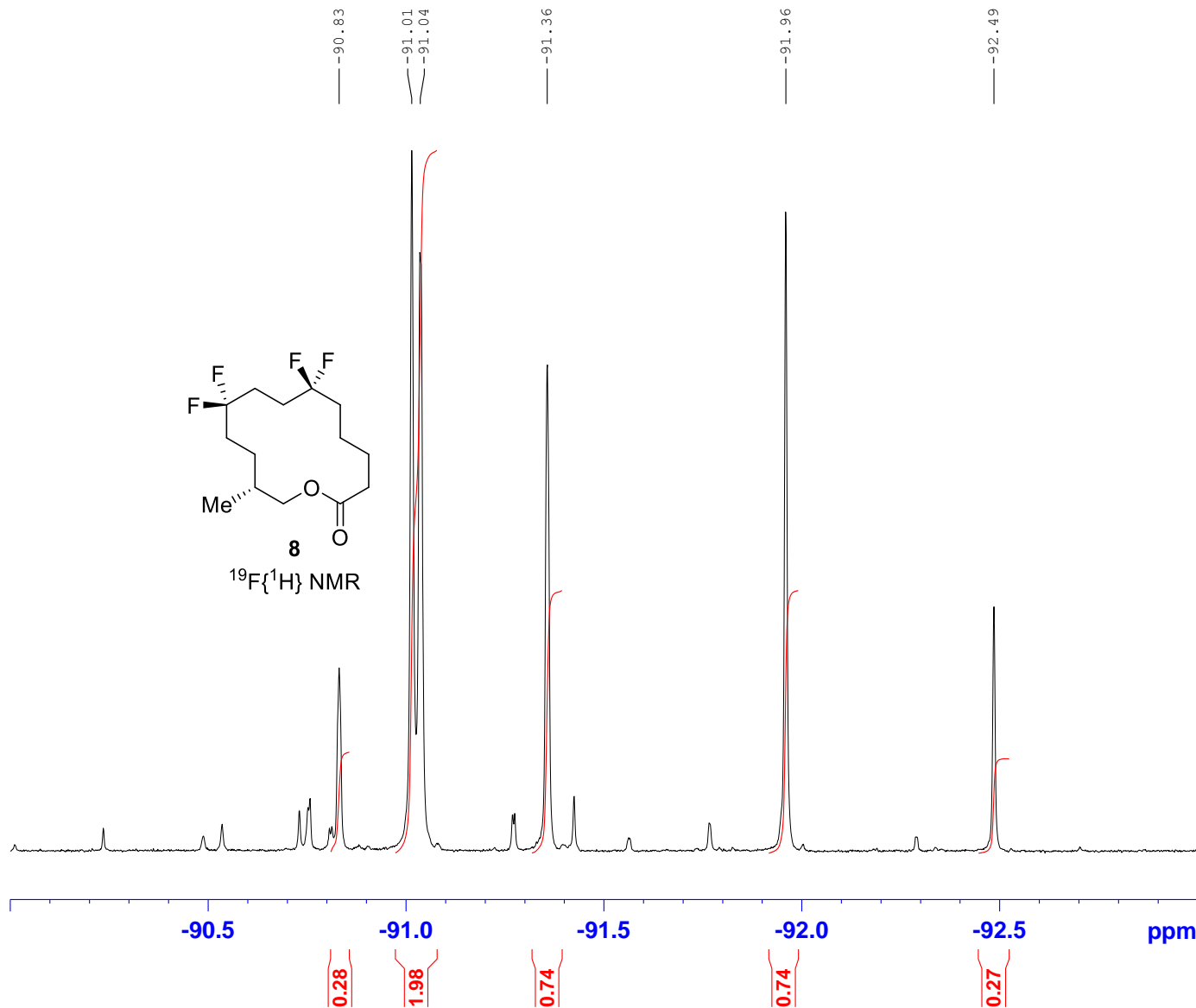
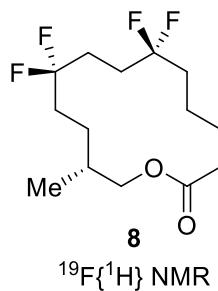
Current Data Parameters
 NAME 09262013-32-doh-mc410-A
 EXPNO 11
 PROCNO 1

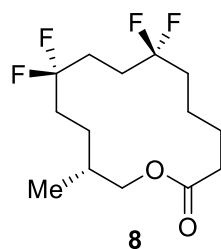
F2 - Acquisition Parameters
 Date_ 20130926
 Time 14.26
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhigqn.3.and
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00





-90.70
 -90.73
 -90.77
 -90.80
 -90.82
 -90.85
 -90.87
 -90.90
 -90.96
 -90.99
 -91.02
 -91.04
 -91.07
 -91.10
 -91.30
 -91.32
 -91.35
 -91.37
 -91.39
 -91.42
 -91.90
 -91.93
 -91.95
 -91.97
 -92.00
 -92.02
 -92.43
 -92.45
 -92.47
 -92.48
 -92.50
 -92.51
 -92.53
 -92.55

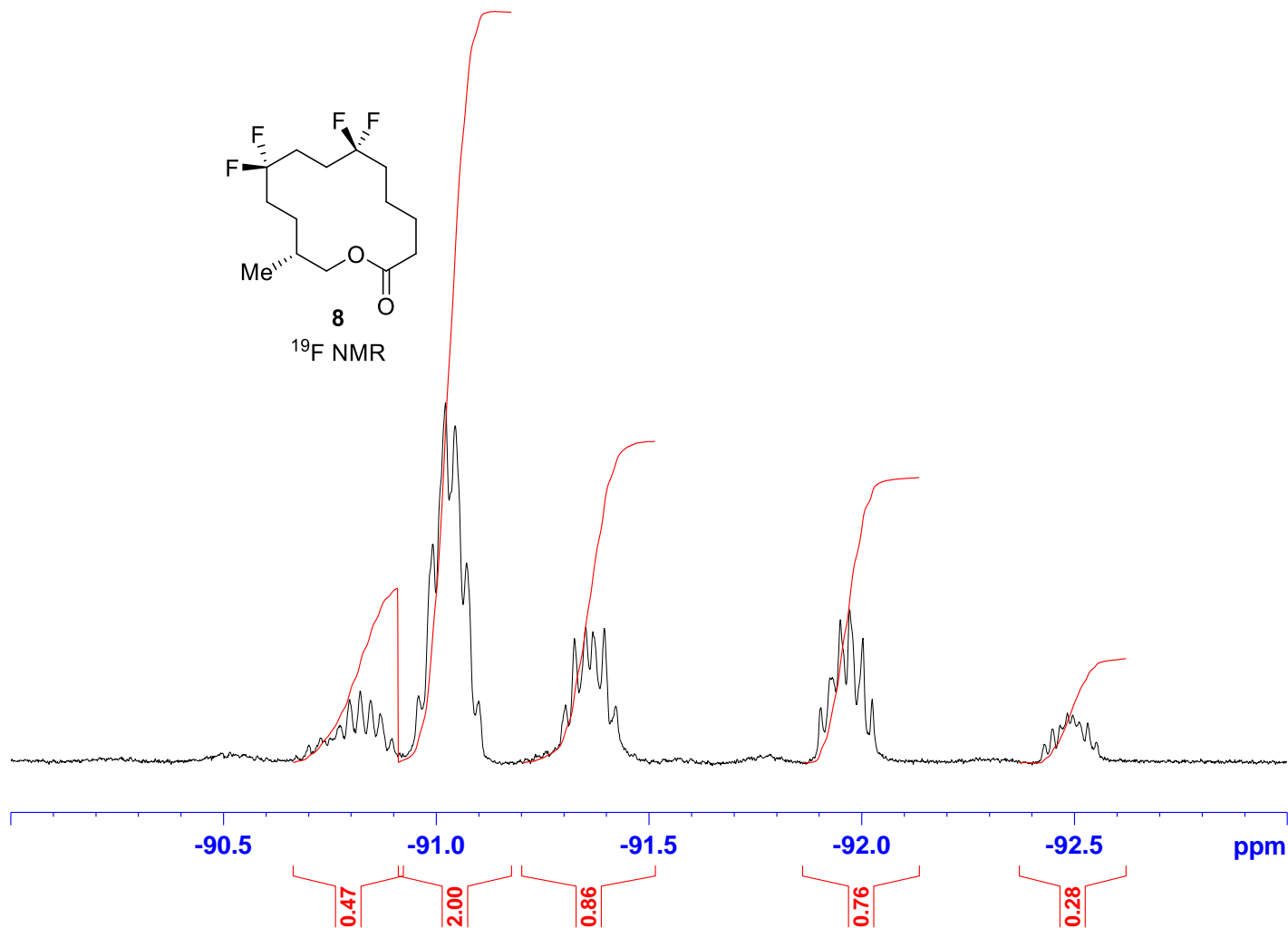


Current Data Parameters
 NAME 04232014-56-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140423
 Time 14.31
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfglqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



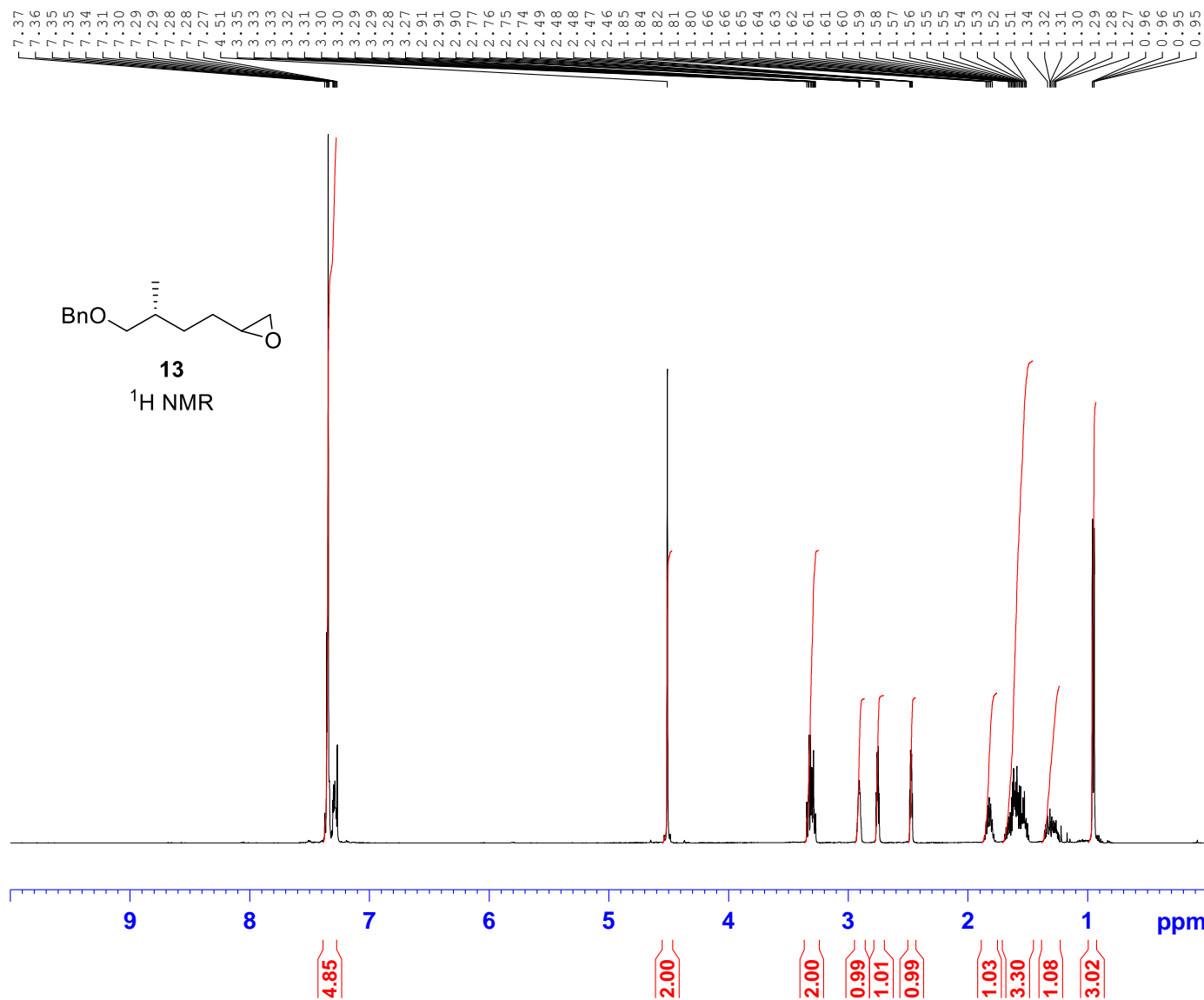
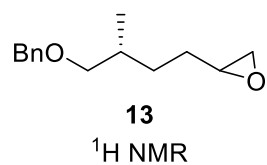


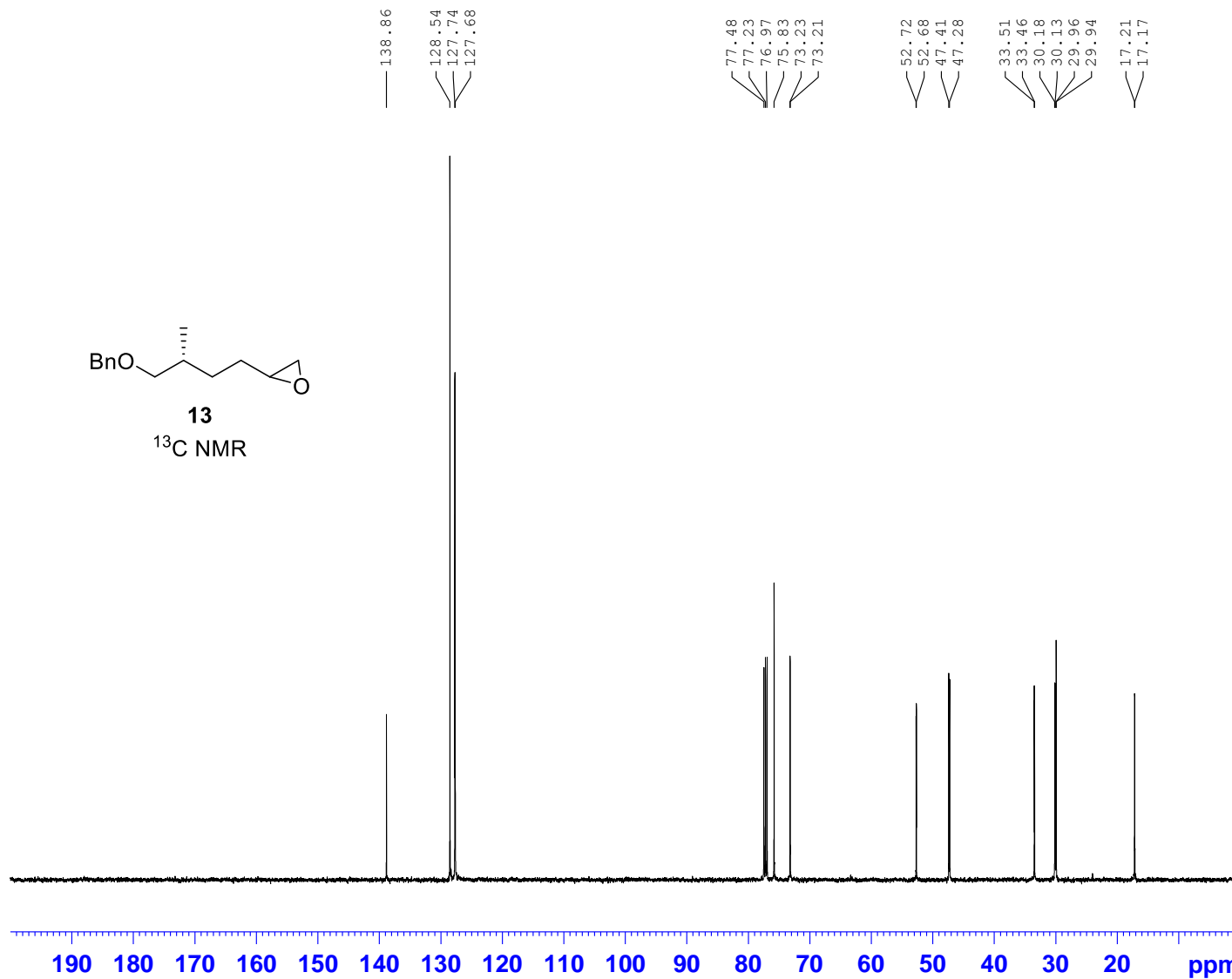
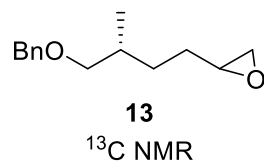
Current Data Parameters
NAME 09192013-40-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130919
Time 16.55
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 80.6
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300088 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





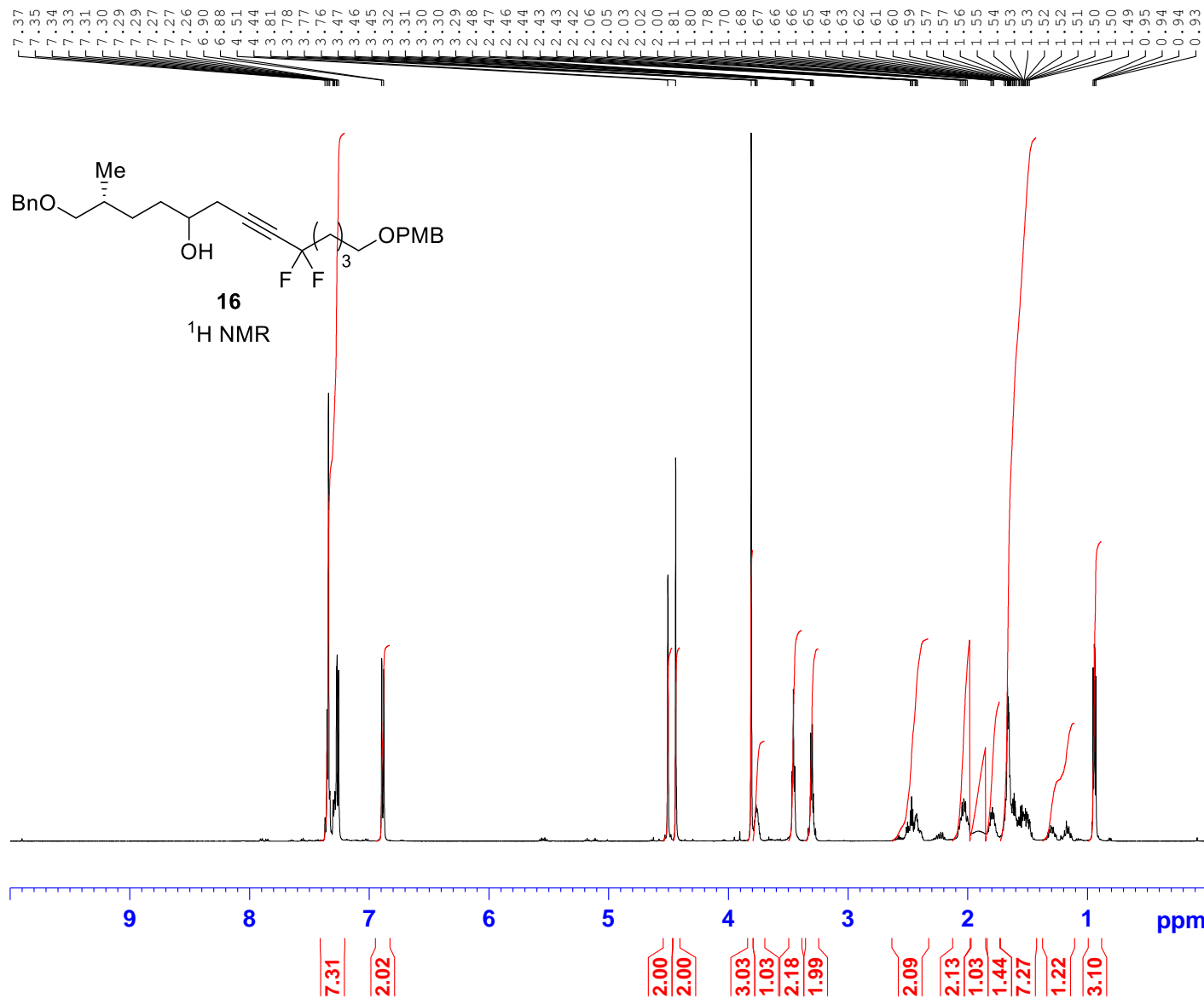
Current Data Parameters
 NAME 09192013-40-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130919
 Time 22.48
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeflt
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577667 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40

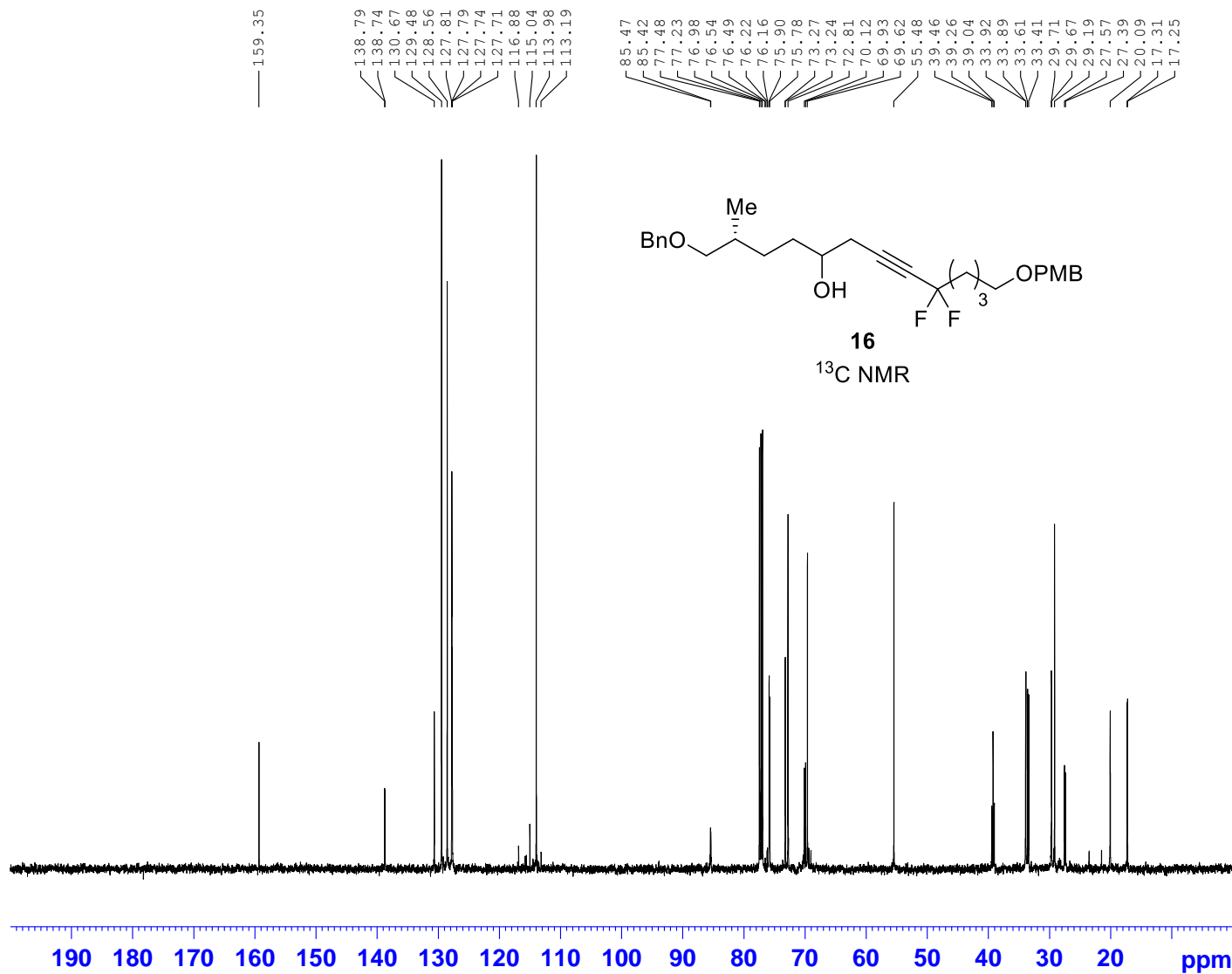


Current Data Parameters
 NAME 10112013-9-doh-mc410-A
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131011
 Time_ 22.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDC13
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 80.6
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300081 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



Current Data Parameters
NAME 10112013-9-doh-mc410-A
EXPNO 13
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131011
Time_ 22.56
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udef
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577662 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



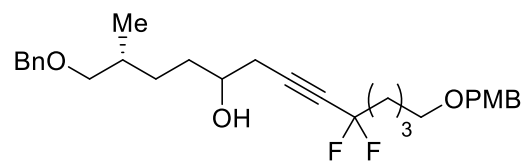
Current Data Parameters
 NAME 10112013-9-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131011
 Time_ 17.24
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhigqn.3.and
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

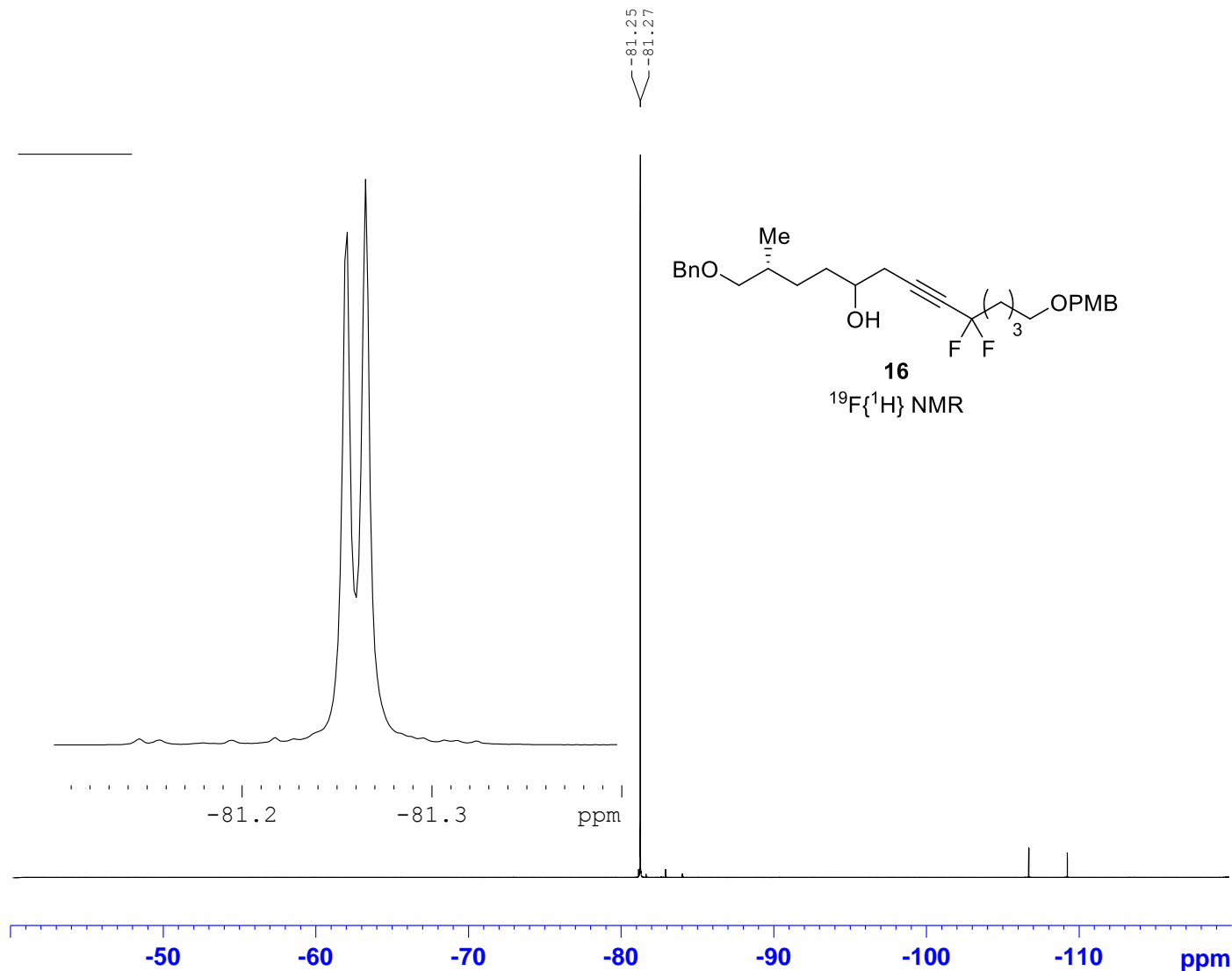
===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

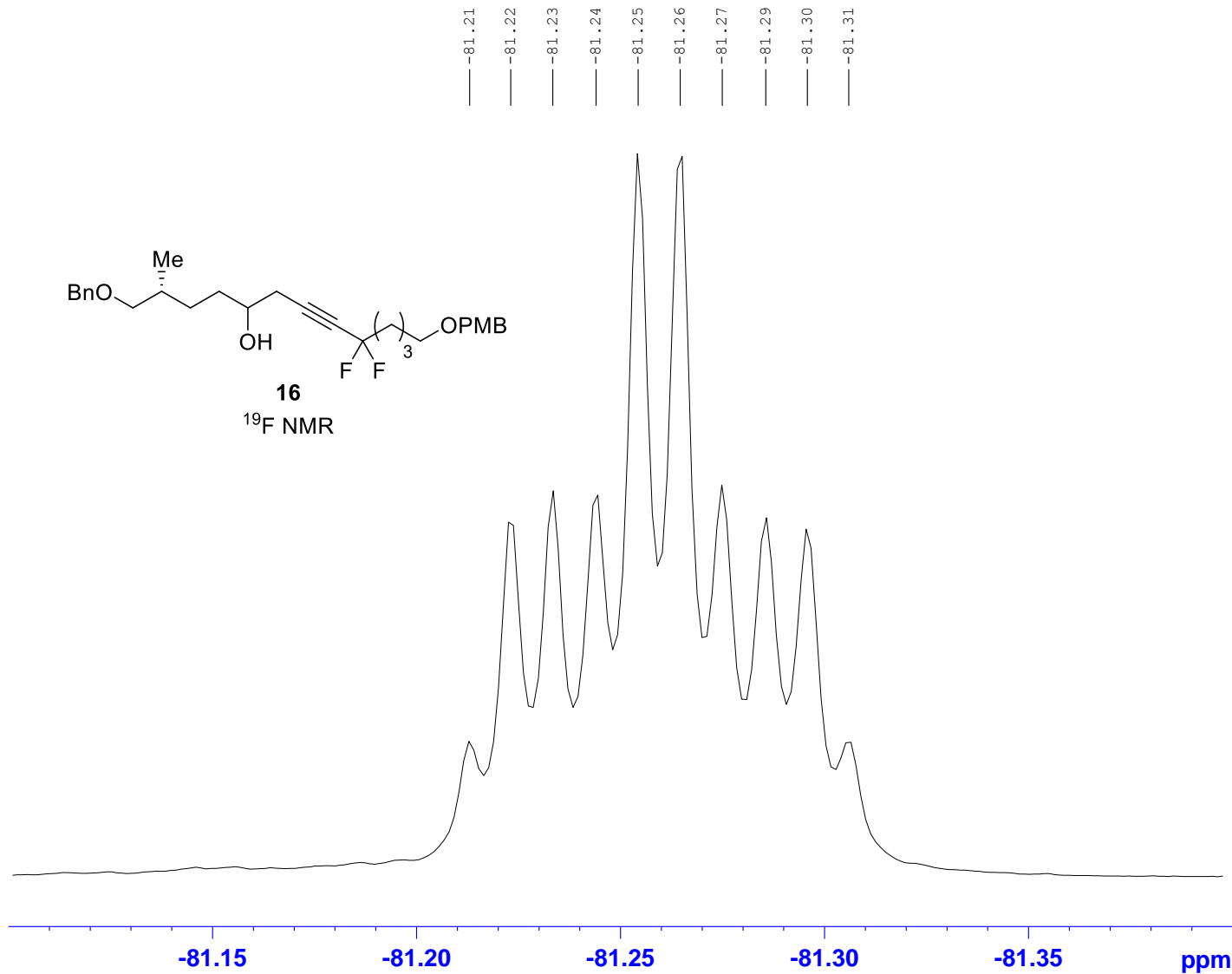
===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



16
¹⁹F{¹H} NMR





```
Current Data Parameters
NAME      10112013-9-doh-mc410-A
EXPNO     11
PROCNO    1
```

```

F2 - Acquisition Parameters
Date_                20131011
Time_               17.28
INSTRUM              spect
PROBHD               5 mm PABBO BB/
PULPROG              zgfgln
TD                   65536
SOLVENT              CDC13
NS                     64
DS                     4
SWH                 37500.000 Hz
FIDRES              0.572205 Hz
AQ                 0.8738133 sec
RG                     128
DW                  13.333 usec
DE                   7.77 usec
TE                  295.0 K
D1                  1.00000000 sec
TD0                   1

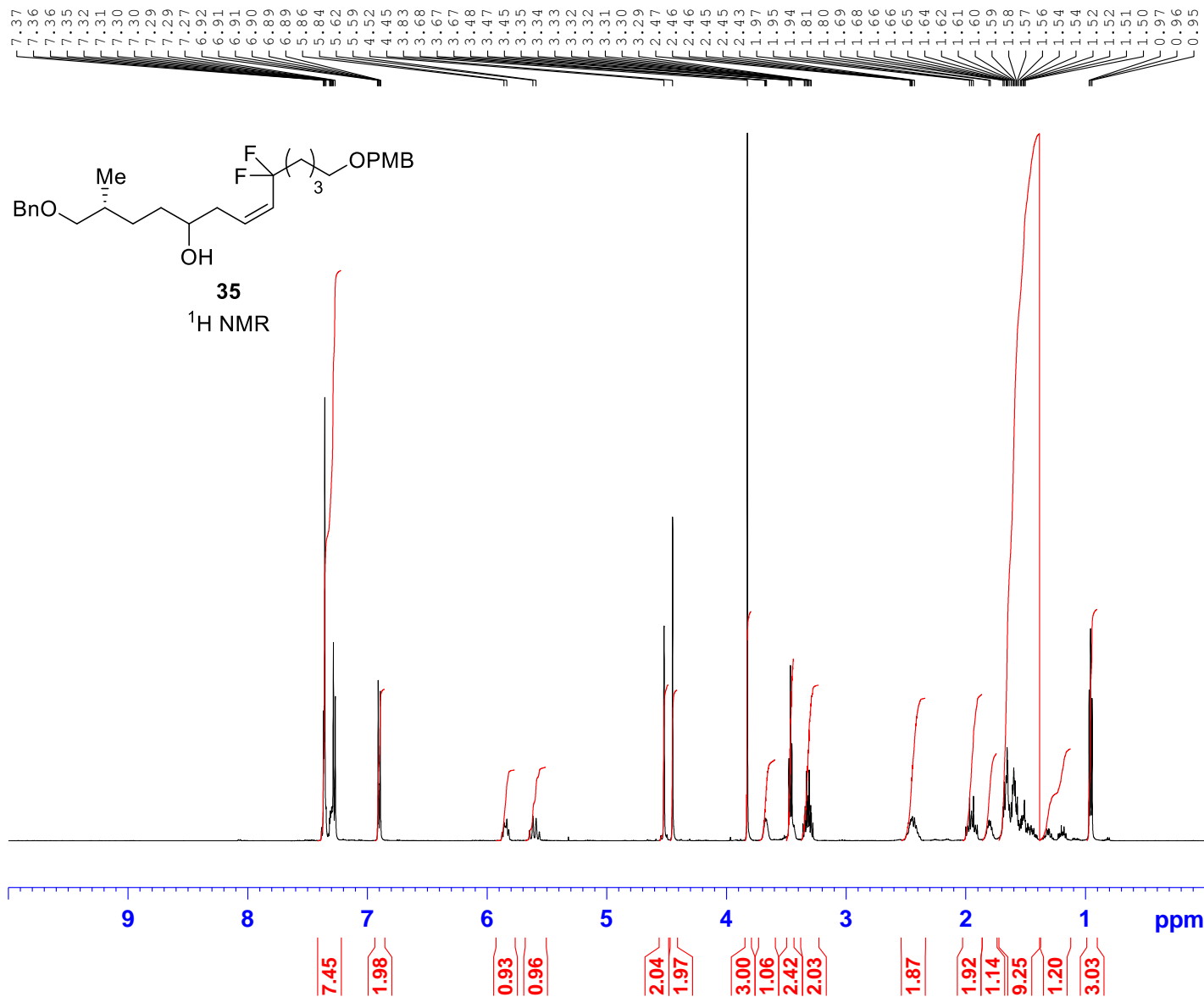
```

```
===== CHANNEL f1 =====
SFO1      470.5547296 MHz
NUC1              19F
P1              13.00 usec
PLW1      55.00000000 W
```

```

F2 - Processing parameters
SI                      65536
SF                      470.5923770 MHz
WDW                      EM
SSB                      0
LB                      0.30 Hz
GB                      0
PC                      1.00

```

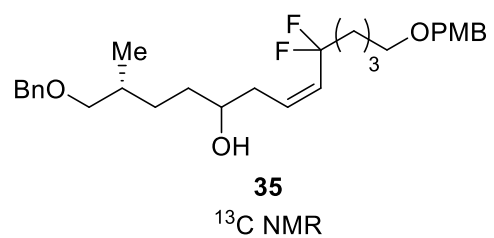
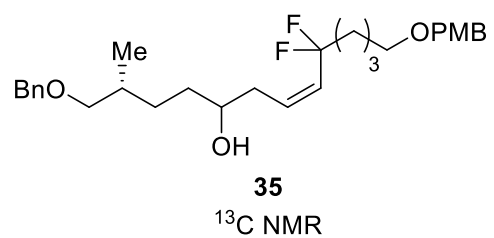


Current Data Parameters
 NAME 11062013-16-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131107
 Time 3.13
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDC13
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 80.6
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300003 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



```
Current Data Parameters
NAME      11062013-16-doh-mc410-A
EXPNO     12
PROCNO    1
```

F2 - Acquisition Parameters

```

F2 Acquisition Parameters
-----
Date_          20131107
Time_          4.58
INSTRUM        spect
PROBHD         5 mm PABBO BB/
PULPROG        udept
TD             21424
SOLVENT        CDCl3
NS             1600
DS             0
SWH            29761.904 Hz
FIDRES         1.389185 Hz
AQ             0.3599232 sec
RG            128
DW            16.800 usec
DE            7.96 usec
TE            295.0 K
D1            3.00000000 sec
D11           0.03000000 sec
D12           0.00002000 sec
D20           200.00000000 sec
TD0           1

```

```
===== CHANNEL f1 =====
```

SFO1	125.7716224	MHz
NUC1	13C	
P1	8.90	usec
P13	2000.00	usec
P26	500.00	usec
PLW1	125.00000000	W
SPNAM[5]	Crp60comp.4	
SPOAL5	0.500	
SPOFFS5	0 Hz	
SPW5	15.12800026	W
SPNAM[8]	Crp60,0.5,20.1	
SPOAL8	0.500	
SPOFFS8	0 Hz	
SPW8	15.12800026	W

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

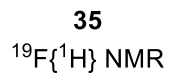
```

SFO2          500.1320005 MHz
NUC2          1H
CPDPRG[2      waltz65
PCPD2         80.00 usec
PLW2          24.00000000 W
PLW12         0.39015001 W

```

F2 - Processing parameters

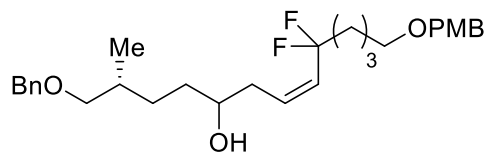
SI	262144
SF	125.7577661 MHz
WDW	EM
SSB	0
LB	2.00 Hz
GB	0
PC	1.40



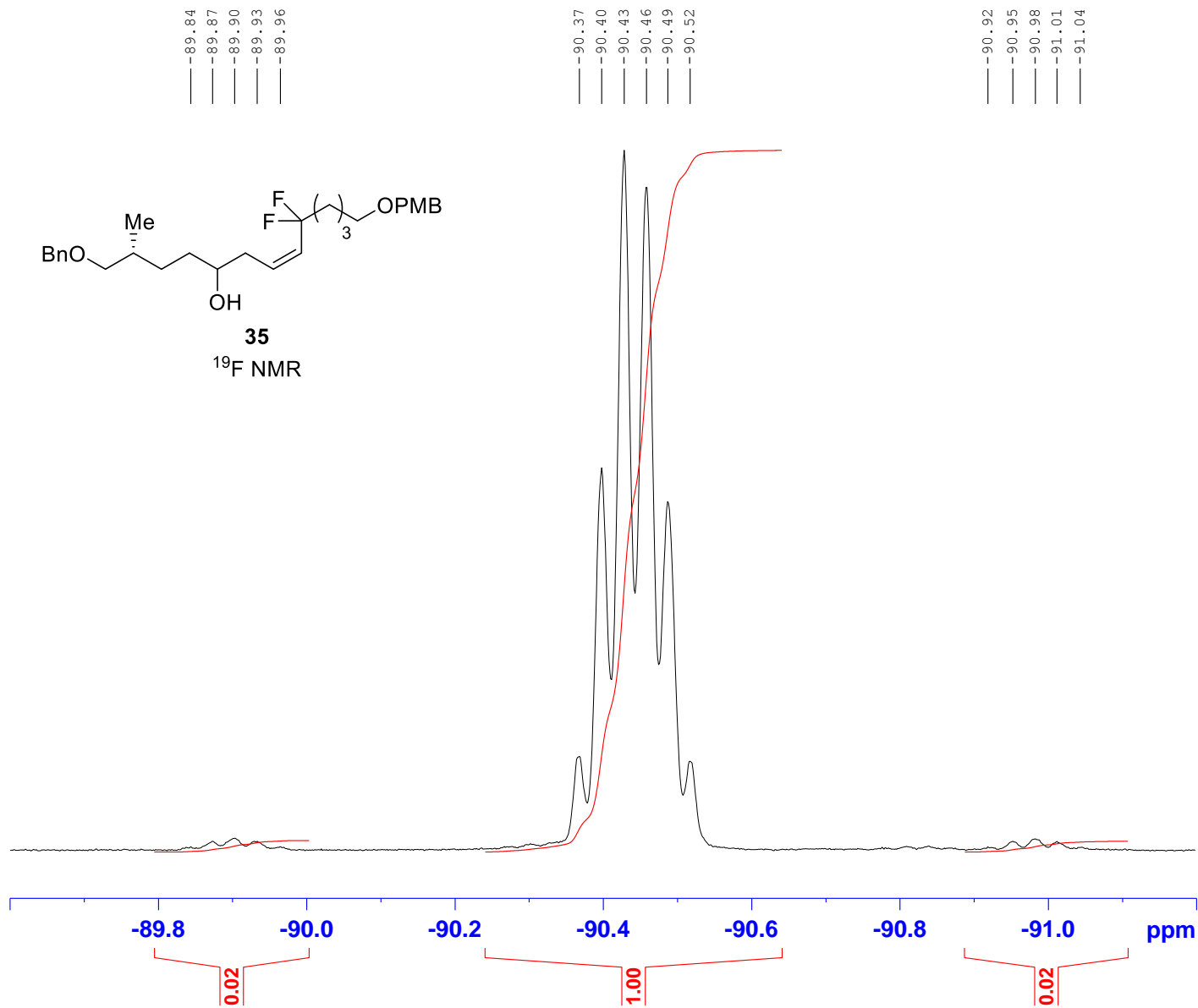
```

F2 - Processing parameters
SI                      65536
SF                      470.5923770 MHz
WDW                      EM
SSB                      0
LB                      0.30 Hz
GB                      0
PC                      1.00

```



35
¹⁹F NMR

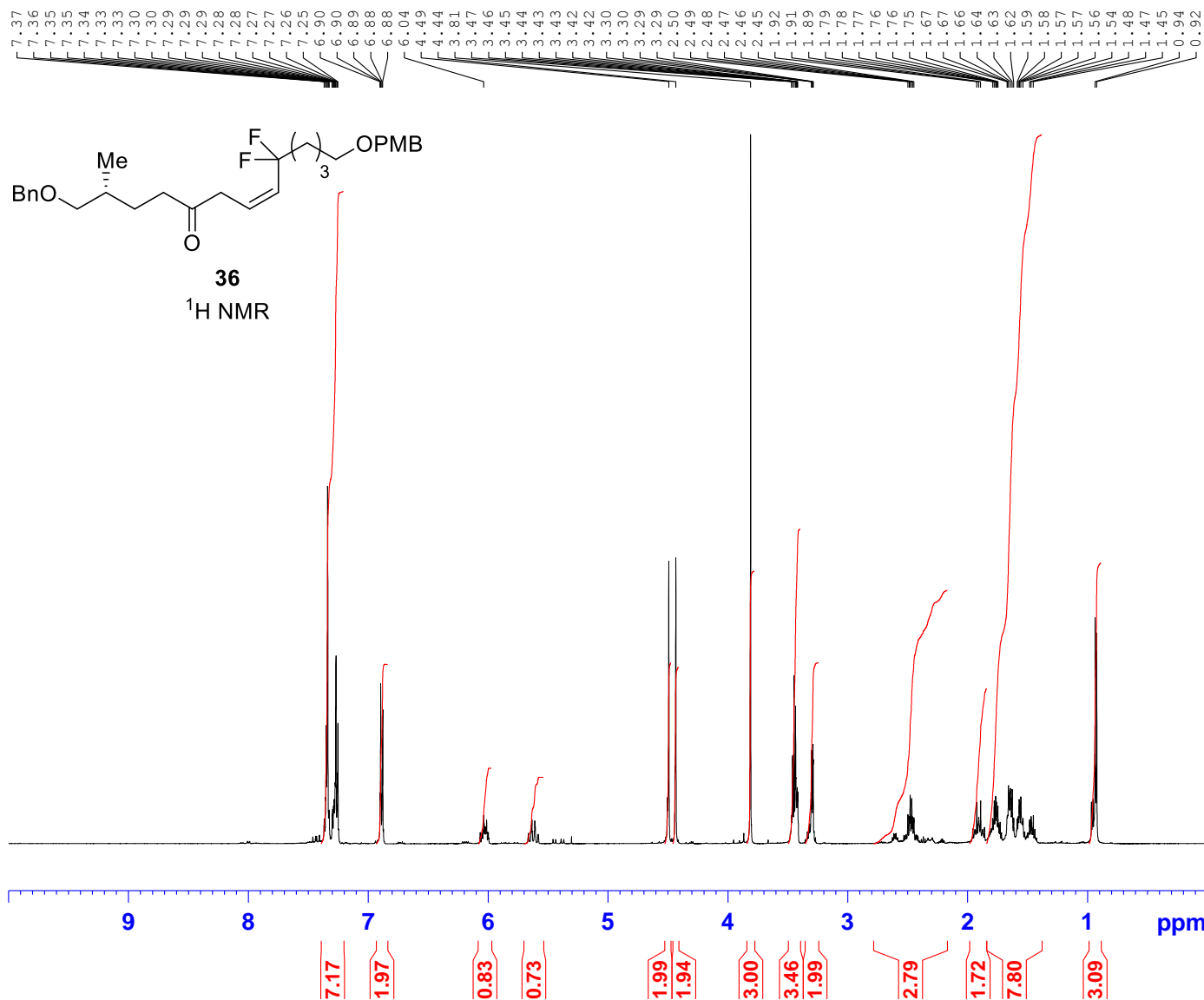


Current Data Parameters
NAME 11062013-16-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131106
Time_ 17.56
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37500.000 Hz
FIDRES 0.572205 Hz
AQ 0.8738133 sec
RG 128
DW 13.333 usec
DE 7.77 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SF01 470.5547296 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



Current Data Parameters
 NAME 11072013-10-doh-mc410-F
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131107
 Time 22.27
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 114
 DW 71.400 usec
 DE 6.00 usec
 TE 293.3 K
 D1 1.00000000 sec
 TD0 1
 SFO1 499.9029994 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000044 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

— 207.75

— 159.35

138.77
130.73
129.44
129.13
129.09
129.05
128.54
127.77
127.70
127.28
127.07
126.86
124.51
122.61
120.70
113.97

77.48
77.23
76.98
75.64
73.20
72.81
69.70

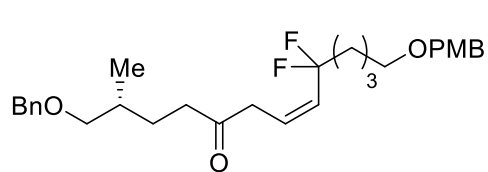
— 55.47

41.58
40.55
38.43
38.22
38.01
33.21
29.55
27.76
19.33
19.30
19.27
17.19

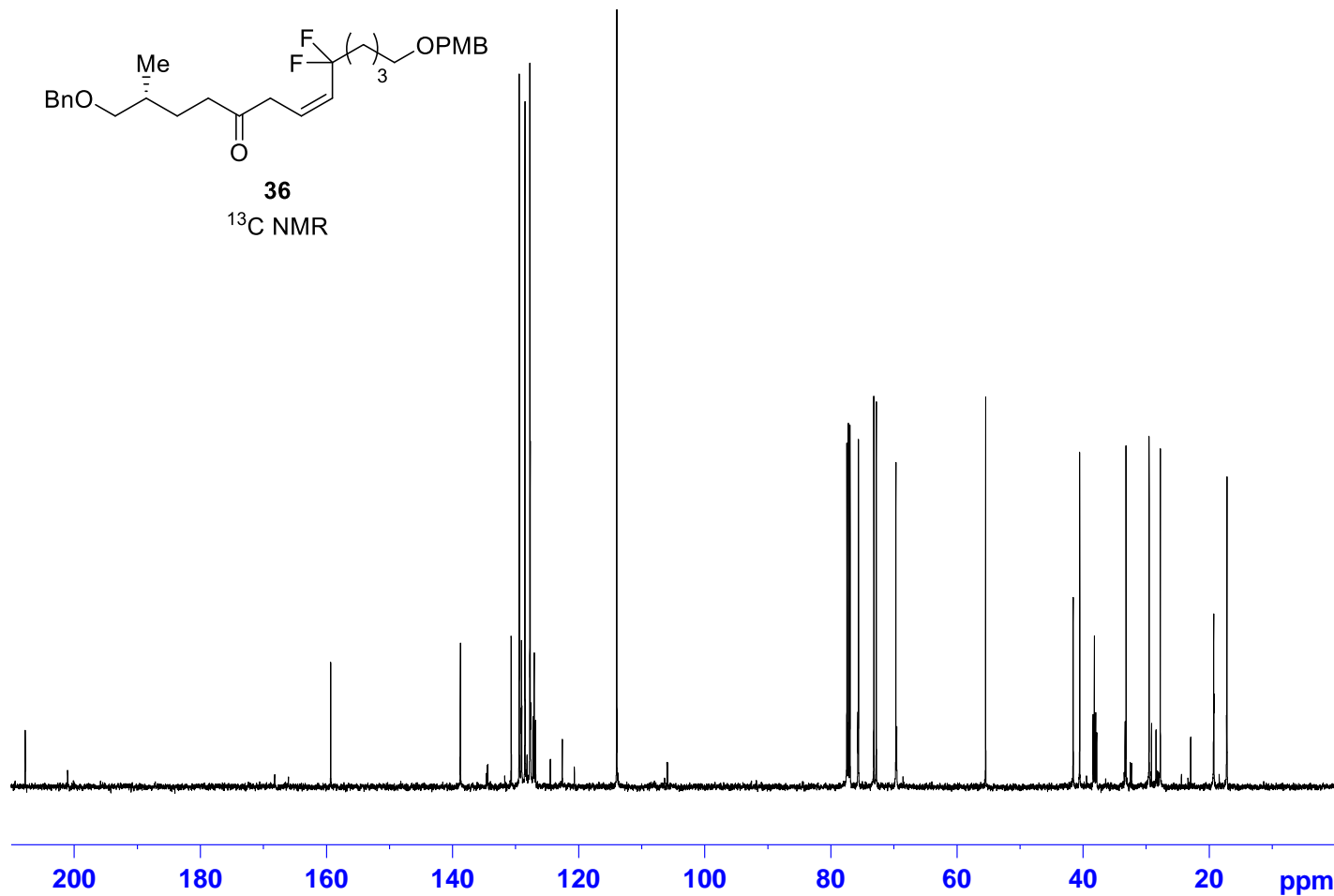


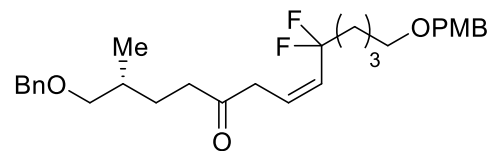
Current Data Parameters
NAME 11072013-10-doh-mc410-F
EXPNO 13
PROCNO 1

F2 - Processing parameters
SI 262144
SF 125.6999325 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



36
¹³C NMR





36

$^{19}\text{F}\{^1\text{H}\}$ NMR

-91.88



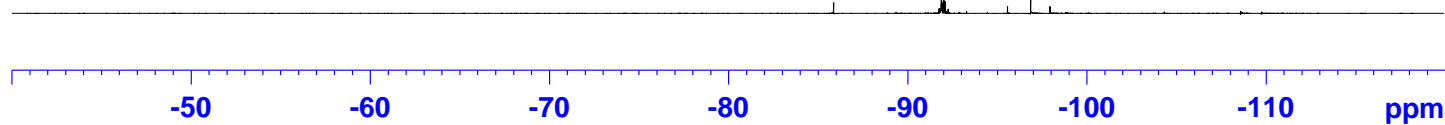
Current Data Parameters
 NAME 11072013-10-doh-mc410-F
 EXPNO 10
 PROCNO 1

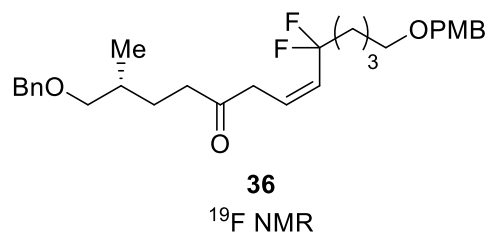
F2 - Acquisition Parameters

Date_ 20131107
 Time_ 22.23
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 1625.5
 DW 13.300 usec
 DE 6.00 usec
 TE 293.5 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 ^{19}F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 0 MHz
 NUC2 ^1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

F2 - Processing parameters

SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00





-91.82
 -91.83
 -91.86
 -91.89
 -91.89
 -91.92
 -91.93

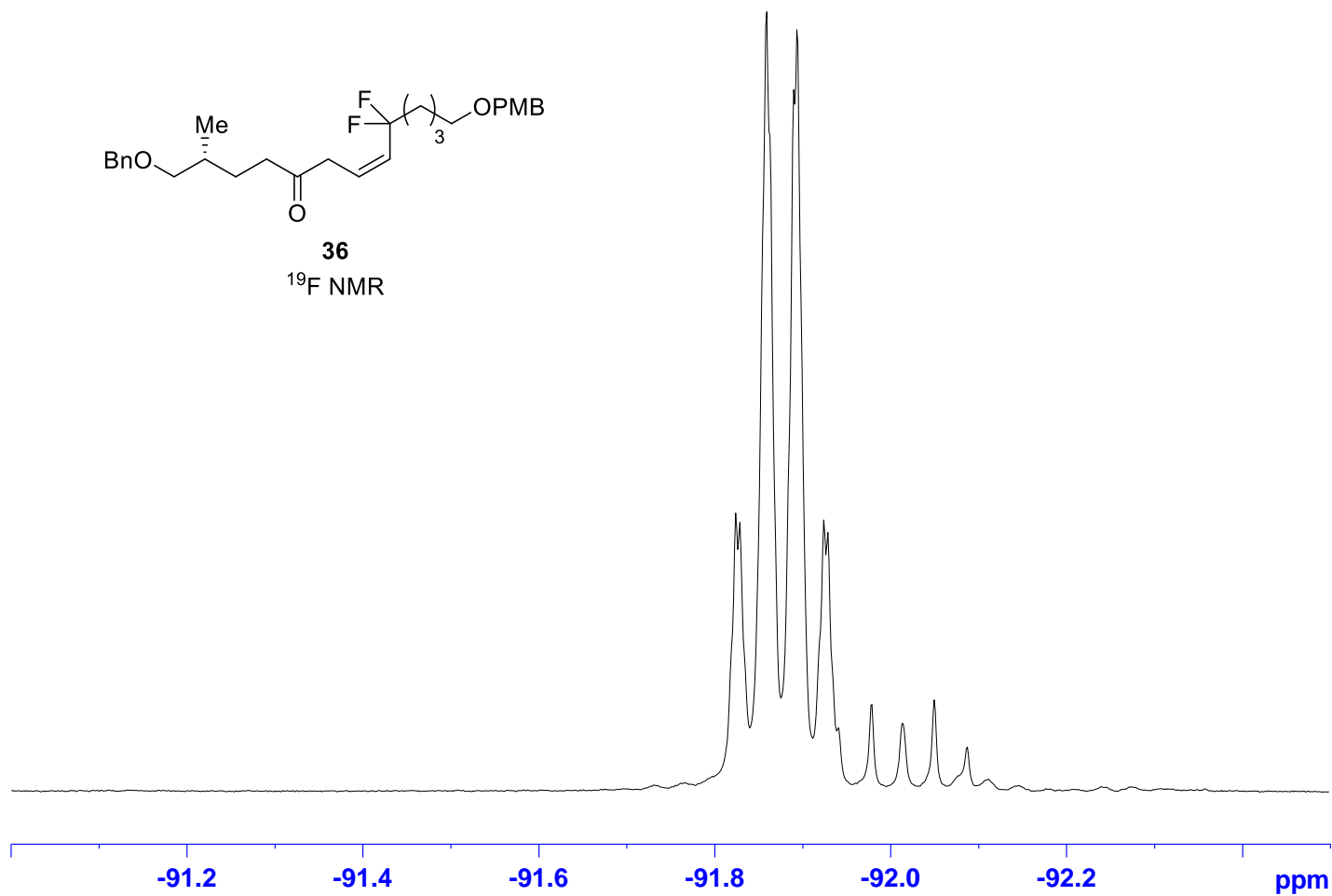


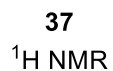
Current Data Parameters
 NAME 11072013-10-doh-mc410-F
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131107
 Time_ 22.26
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 1149.4
 DW 13.300 usec
 DE 6.00 usec
 TE 293.3 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 19F
 P1 12.15 usec
 PL1 -5.00 dB
 SFO1 470.3383309 MHz

F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00





```
Current Data Parameters
NAME      11072013-11-doh-mc410-F
EXPNO      12
PROCNO     1
```

F2 - Acquisition Parameters

```

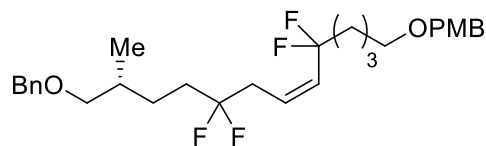
F2 - Acquisition Parameters
Date_                20131108
Time_                1.16
INSTRUM              spect
PROBHD              5 mm QNP 1H/13
PULPROG              zg30
TD                  65536
SOLVENT              CDCl3
NS                   8
DS                   2
SWH                  7002.801 Hz
FIDRES               0.106854 Hz
AQ                   4.6792703 sec
RG                   114
DW                   71.400 usec
DE                   6.00 usec
TE                   293.3 K
D1                   1.00000000 sec
TD0                  1
SF01                 499.9029994 MHz
NUC1                 1H
P1                   10.50 usec
PLW1                 -1.00000000 W

```

```

F2 - Processing parameters
SI                65536
SF                499.9000045 MHz
WDW               EM
SSB               0
LB                0.30 Hz
GB               0
PC                1.00

```



37
¹³C NMR

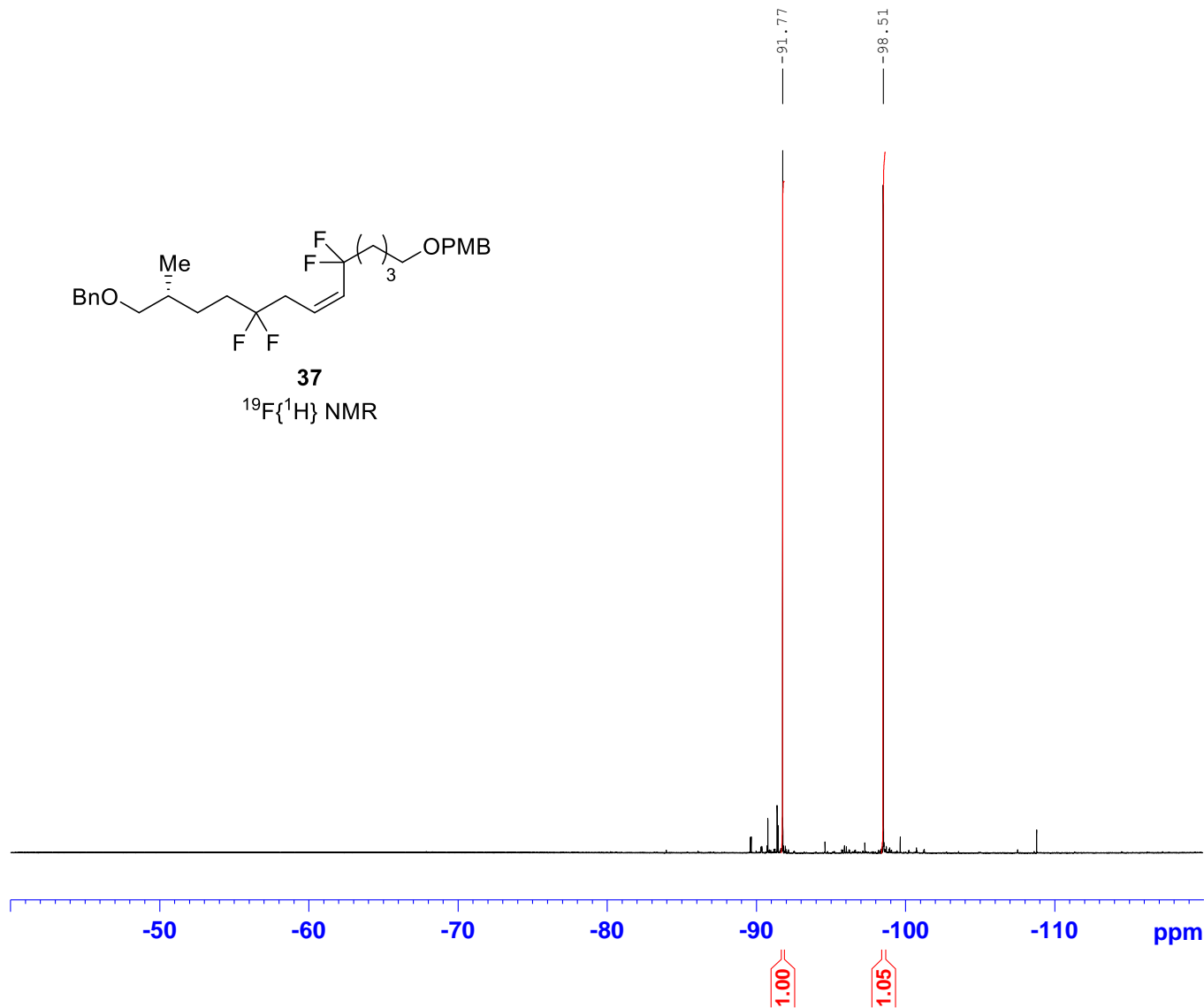
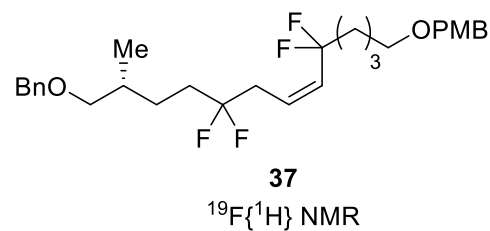


```
Current Data Parameters
NAME      11072013-11-doh-mc410-F
EXPNO      13
PROCNO     1
```

```

F2 - Processing parameters
SI                262144
SF                125.6999317 MHz
WDW               EM
SSB               0
LB                2.00 Hz
GB               0
PC               1.40

```



Current Data Parameters
 NAME 11012013-6-doh-mc410-F
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20131101
 Time 15.35
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 1625.5
 DW 13.300 usec
 DE 6.00 usec
 TE 295.5 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 19F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 499.9019996 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

F2 - Processing parameters

SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

-91.72
-91.75
-91.78
-91.81

-98.44
-98.47
-98.51
-98.54
-98.58

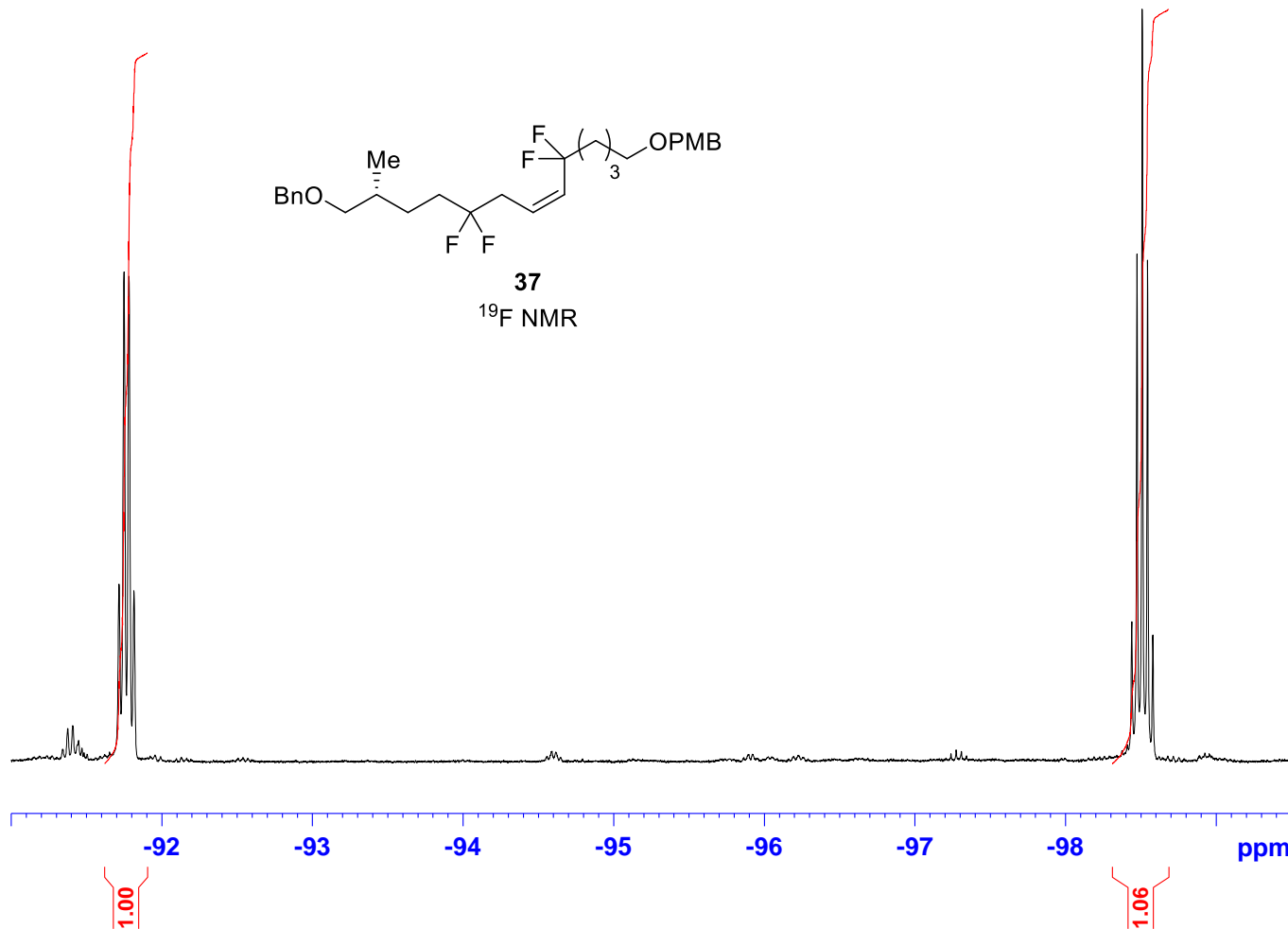
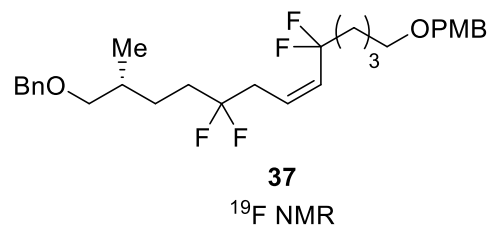


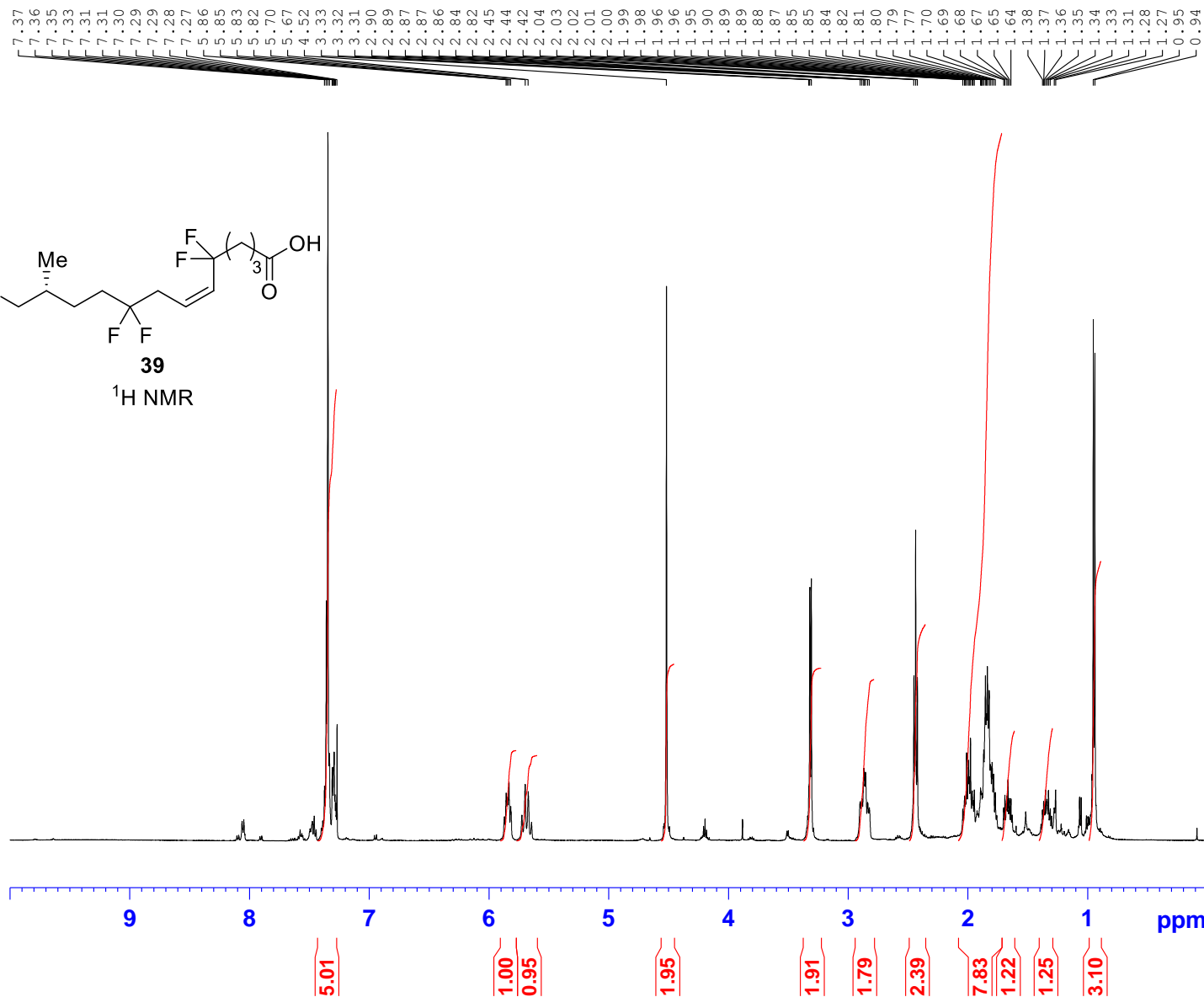
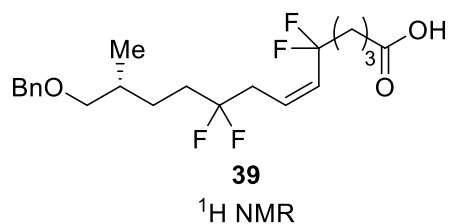
Current Data Parameters
NAME 11012013-6-doh-mc410-F
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131101
Time 15.38
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37593.984 Hz
FIDRES 0.573639 Hz
AQ 0.8716288 sec
RG 812.7
DW 13.300 usec
DE 6.00 usec
TE 295.5 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 19F
P1 12.15 usec
PL1 -5.00 dB
SFO1 470.3383309 MHz

F2 - Processing parameters
SI 65536
SF 470.3759460 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

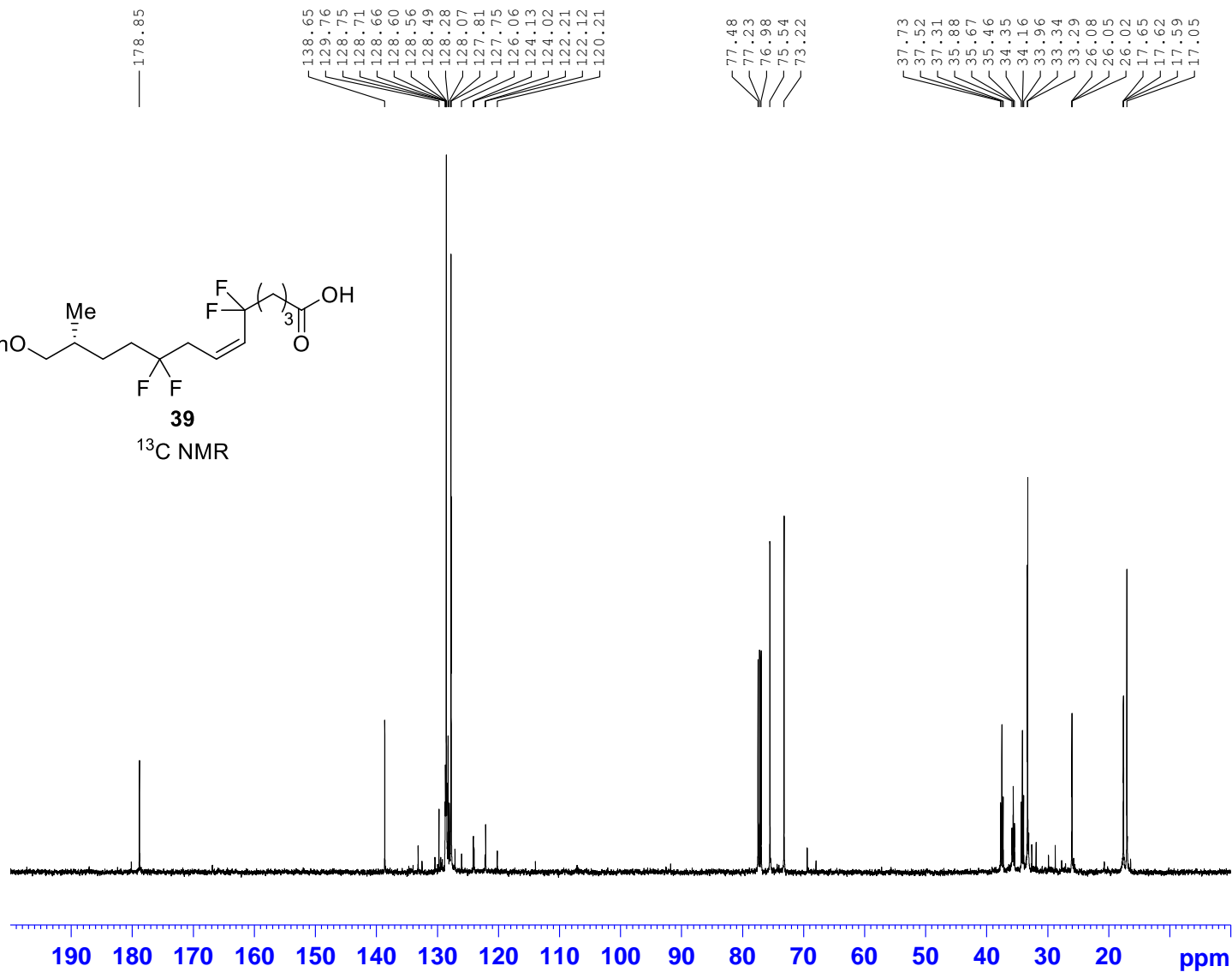
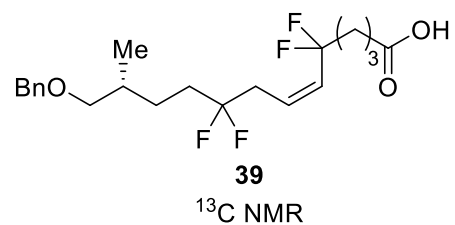




Current Data Parameters
 NAME 12082013-54-doh-mc410-F
 EXPNO 12
 PROCNO 1

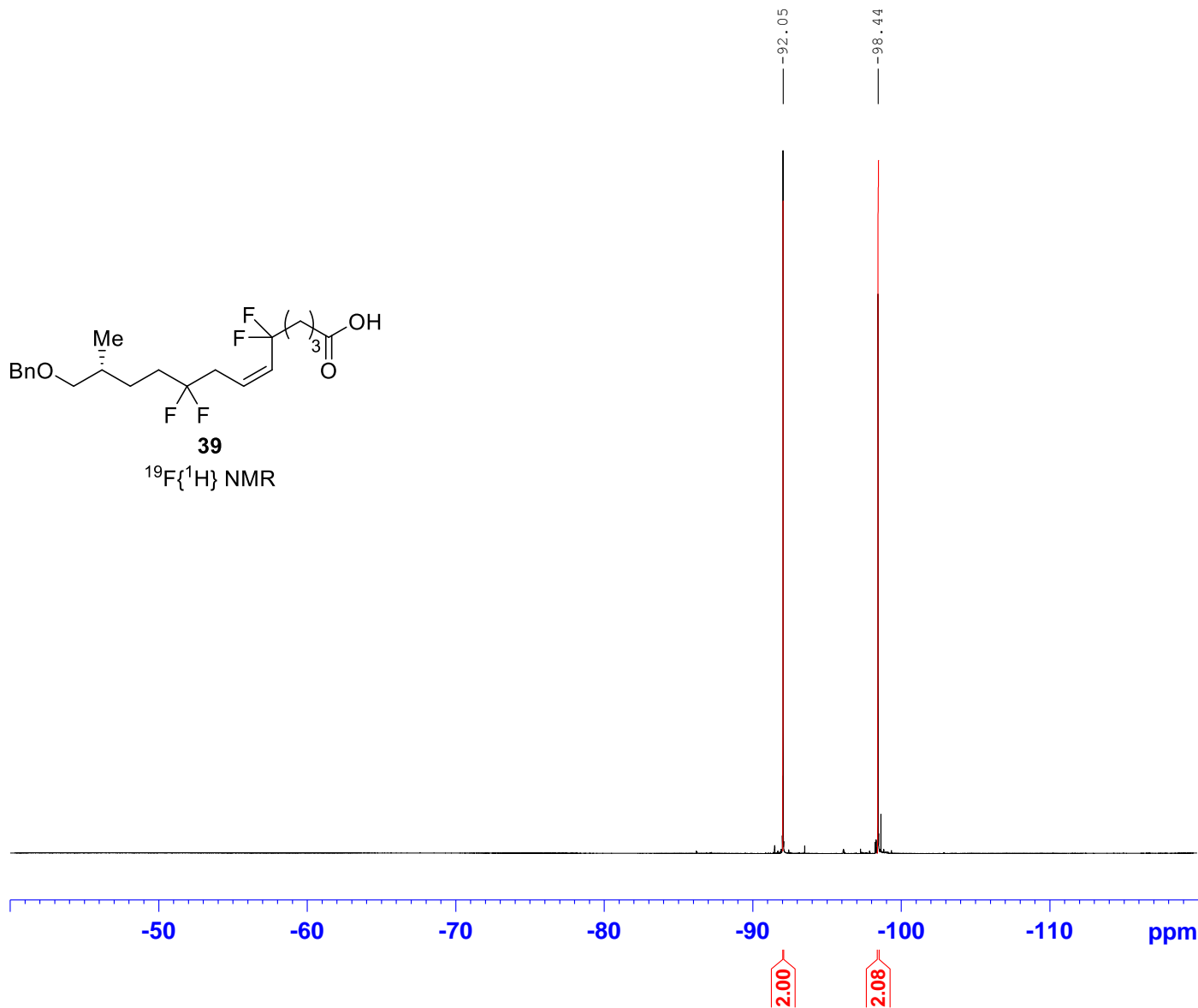
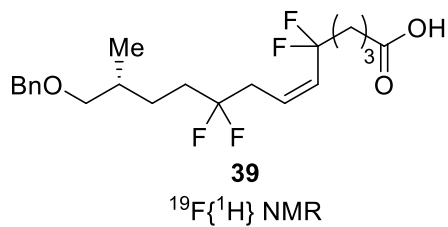
F2 - Acquisition Parameters
 Date_ 20131208
 Time_ 16.29
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 114
 DW 71.400 usec
 DE 6.00 usec
 TE 293.2 K
 D1 1.00000000 sec
 TD0 1
 SFO1 499.9029994 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000043 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



Current Data Parameters
 NAME 12082013-54-doh-mc410-F
 EXPNO 13
 PROCNO 1

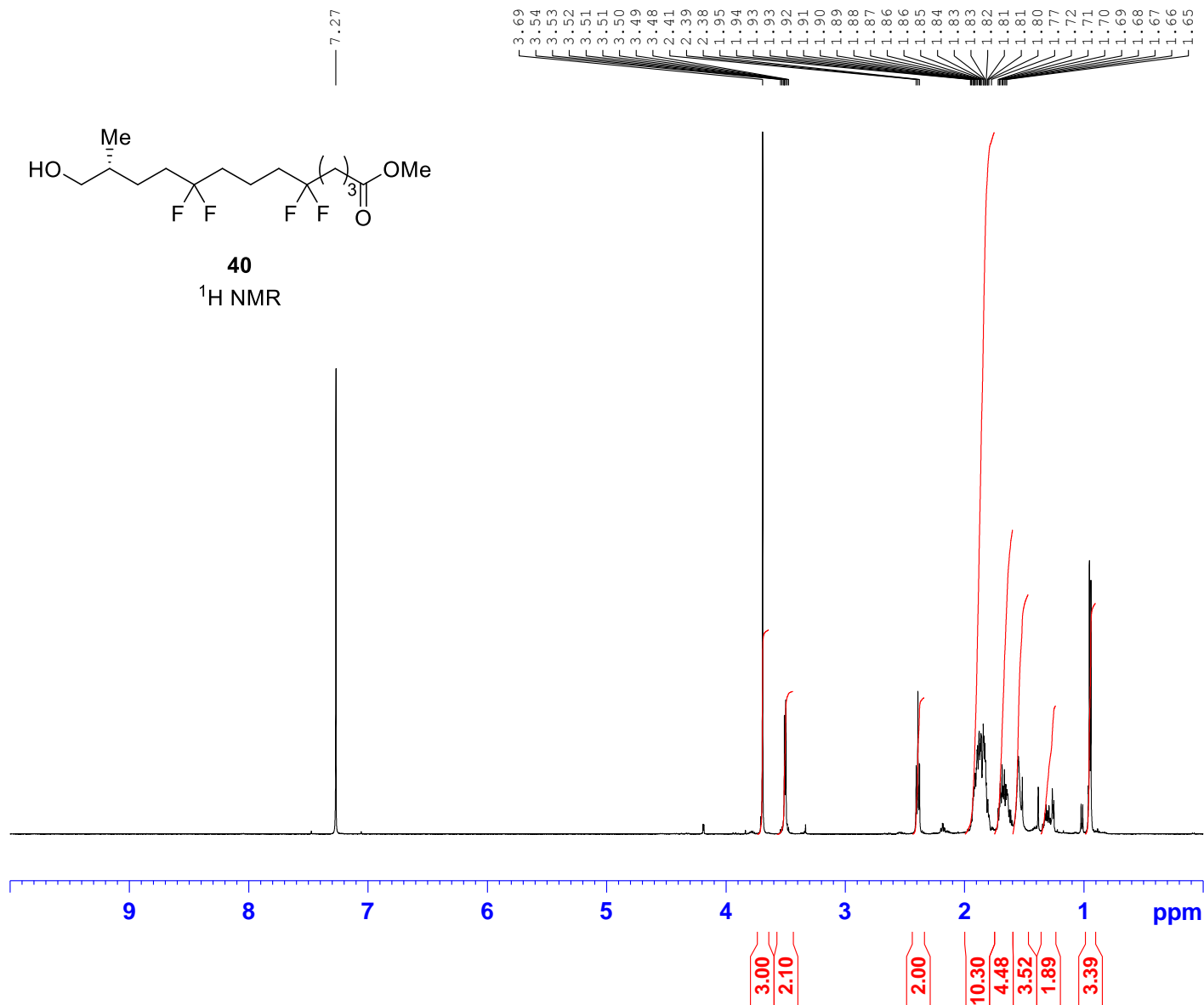
F2 - Processing parameters
 SI 262144
 SF 125.6999321 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



Current Data Parameters
 NAME 12082013-54-doh-mc410-F
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131208
 Time 16.25
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 812.7
 DW 13.300 usec
 DE 6.00 usec
 TE 293.6 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 19F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 0 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

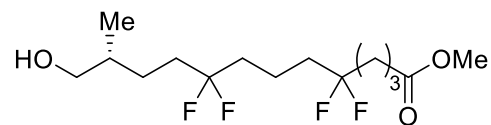
F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



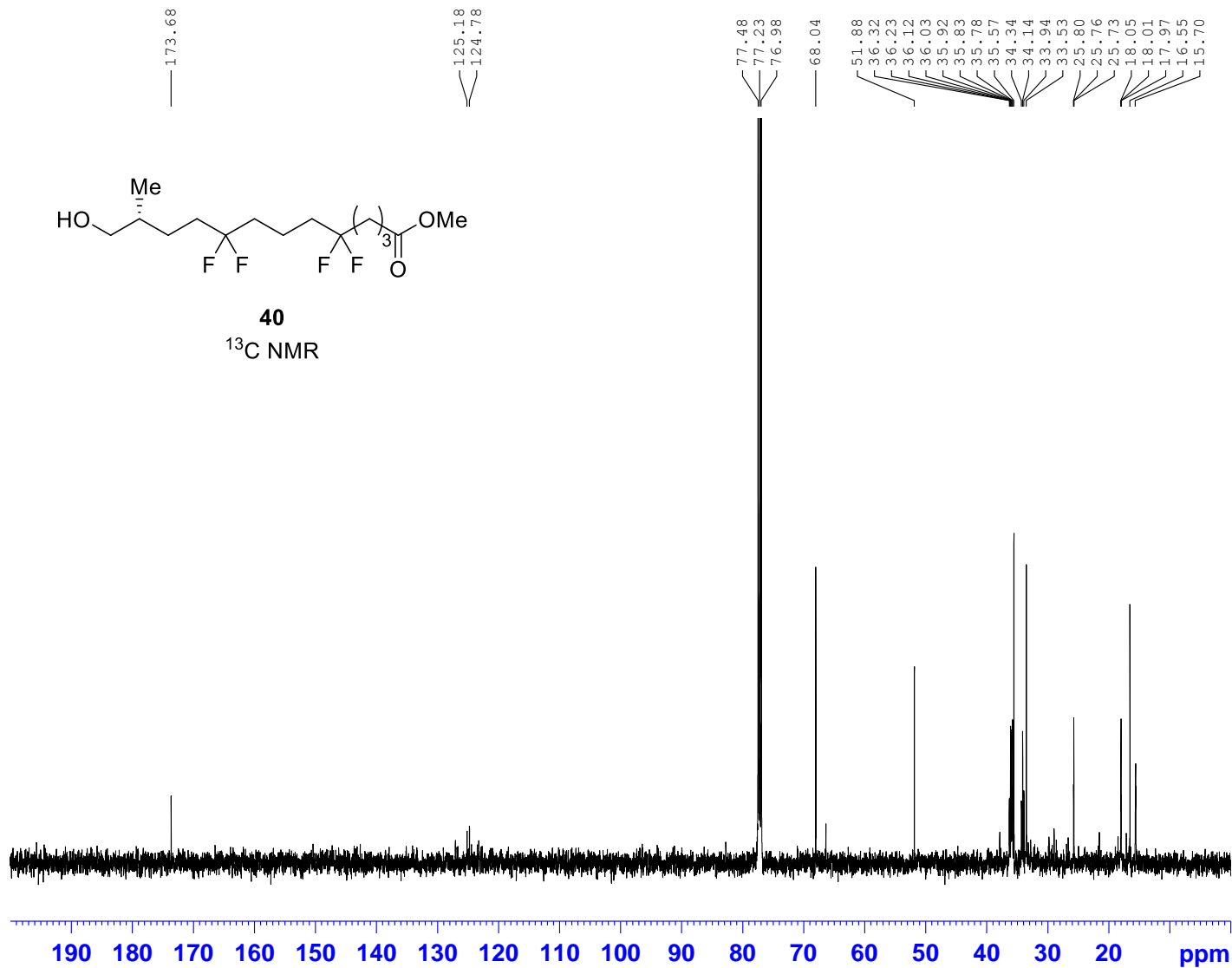
Current Data Parameters
 NAME 12122013-13-doh-mc410-F
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131213
 Time_ 2.32
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 574.7
 DW 71.400 usec
 DE 6.00 usec
 TE 293.1 K
 D1 1.00000000 sec
 TD0 1
 SFO1 499.9029994 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000044 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



40
¹³C NMR



```
Current Data Parameters
NAME      12122013-13-doh-mc410-F
EXPNO      13
PROCNO     1
```

```

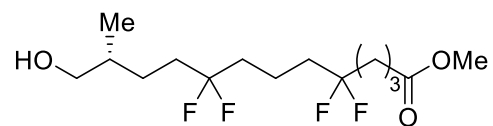
F2 - Processing parameters
SI                262144
SF                125.6999291 MHz
WDW               EM
SSB              0
LB                2.00 Hz
GB              0
PC                1.40

```

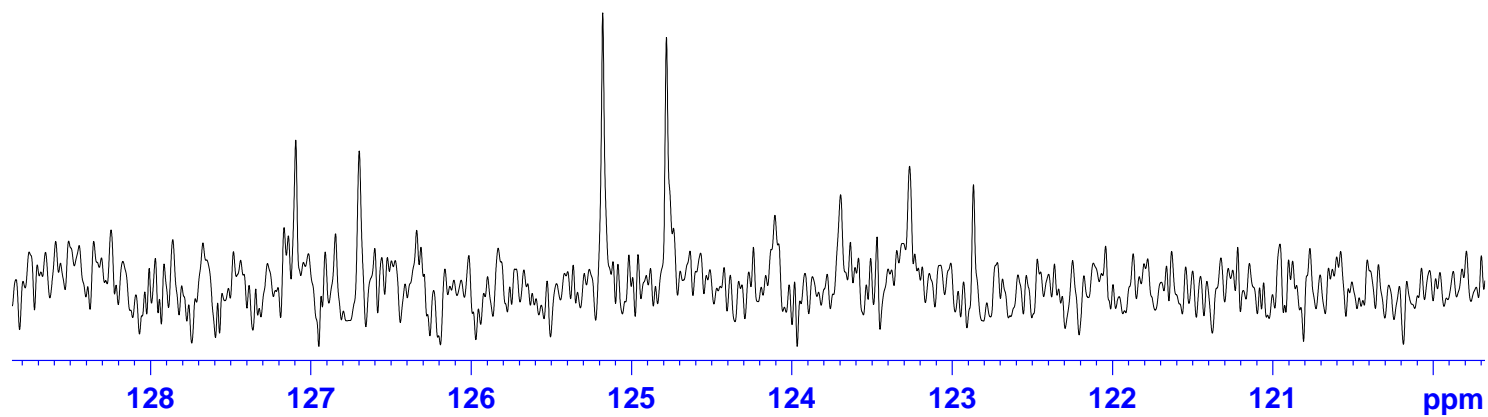


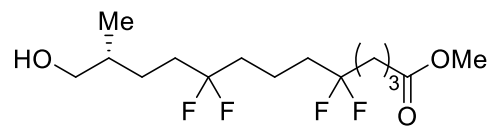
Current Data Parameters
NAME 12152013-21-doh-mc410-F
EXPNO 10
PROCNO 1

F2 - Processing parameters
SI 262144
SF 125.6999287 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40

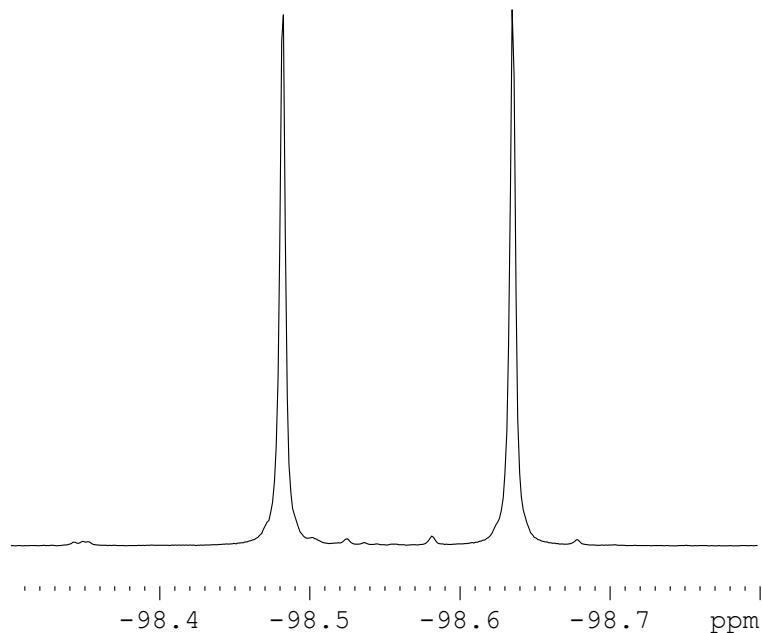


40
¹³C NMR





40
 $^{19}\text{F}\{^1\text{H}\}$ NMR



-98.48
-98.64



Current Data Parameters
NAME 12122013-13-doh-mc410-F
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131213
Time 2.27
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zgfhigqn
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37593.984 Hz
FIDRES 0.573639 Hz
AQ 0.8716288 sec
RG 1625.5
DW 13.300 usec
DE 6.00 usec
TE 293.6 K
D1 1.00000000 sec
d11 0.03000000 sec
d12 0.00002000 sec
TD0 1
SFO1 470.3383309 MHz
NUC1 19F
P1 12.15 usec
PLW1 -1.00000000 W
SFO2 0 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 -1.00000000 W
PLW12 -1.00000000 W

F2 - Processing parameters
SI 65536
SF 470.3759460 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

2.00
1.97

-50

-60

-70

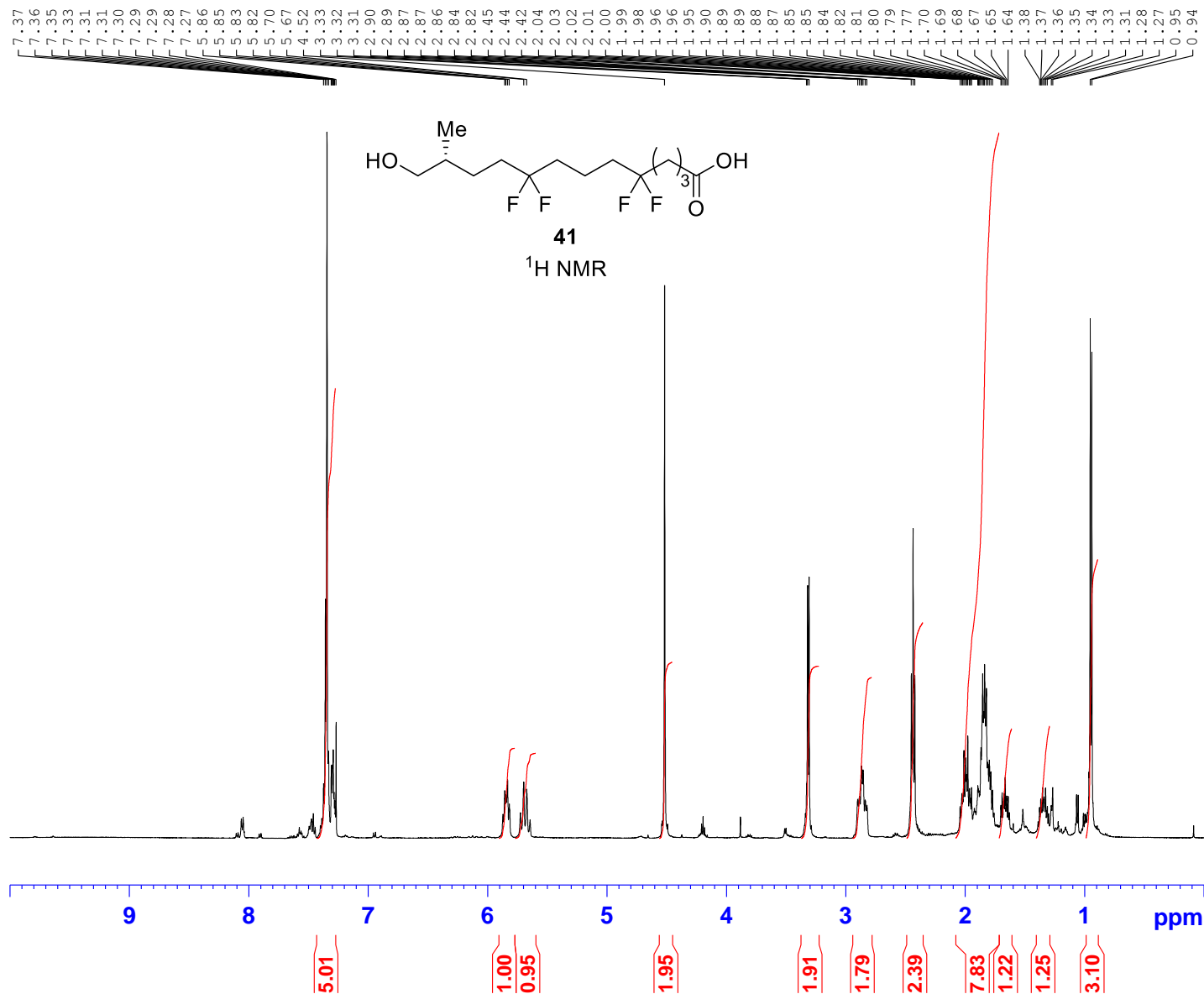
-80

-90

-100

-110

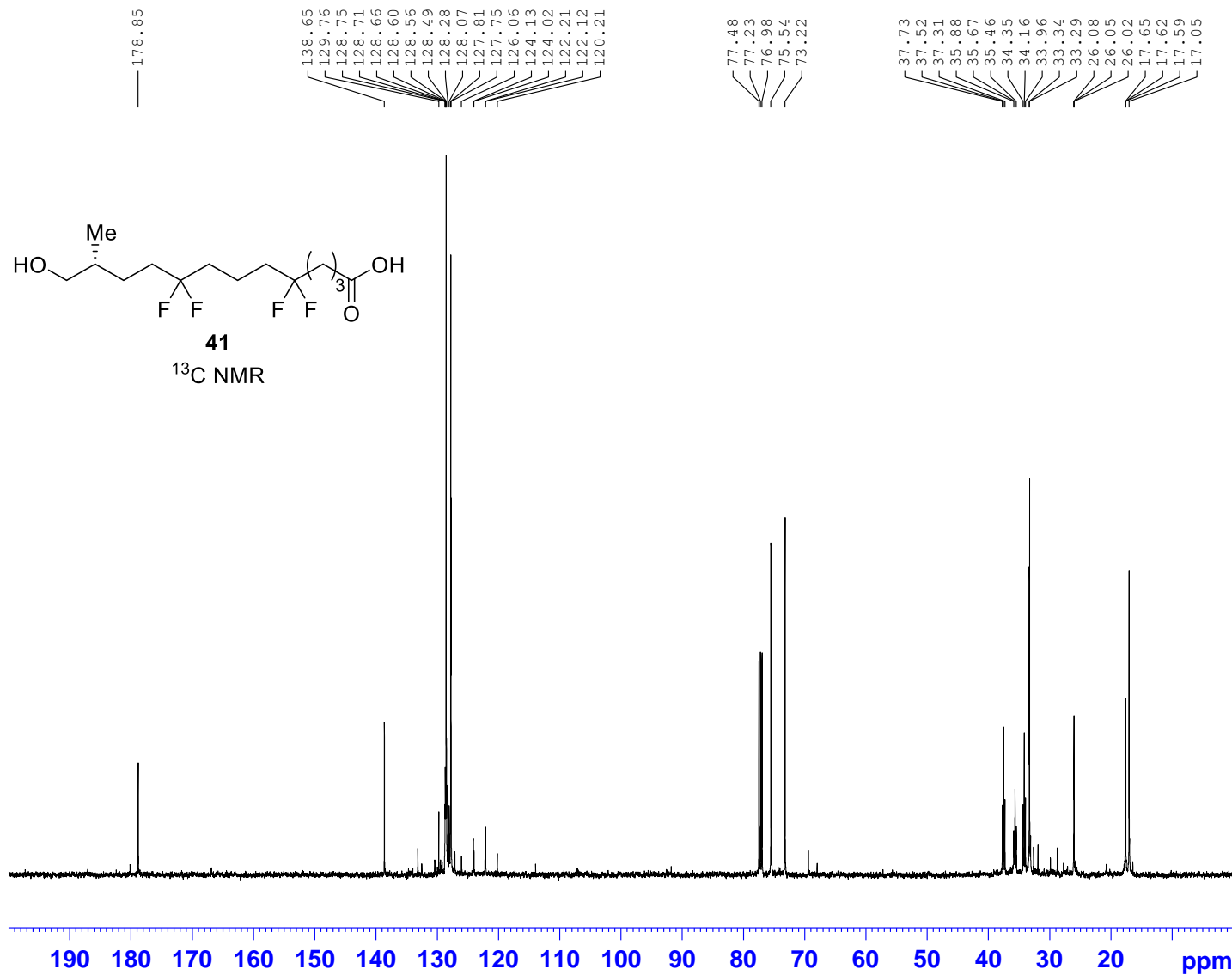
ppm



Current Data Parameters
NAME 12082013-54-doh-mc410-F
EXPNO 12
PROCNO 1

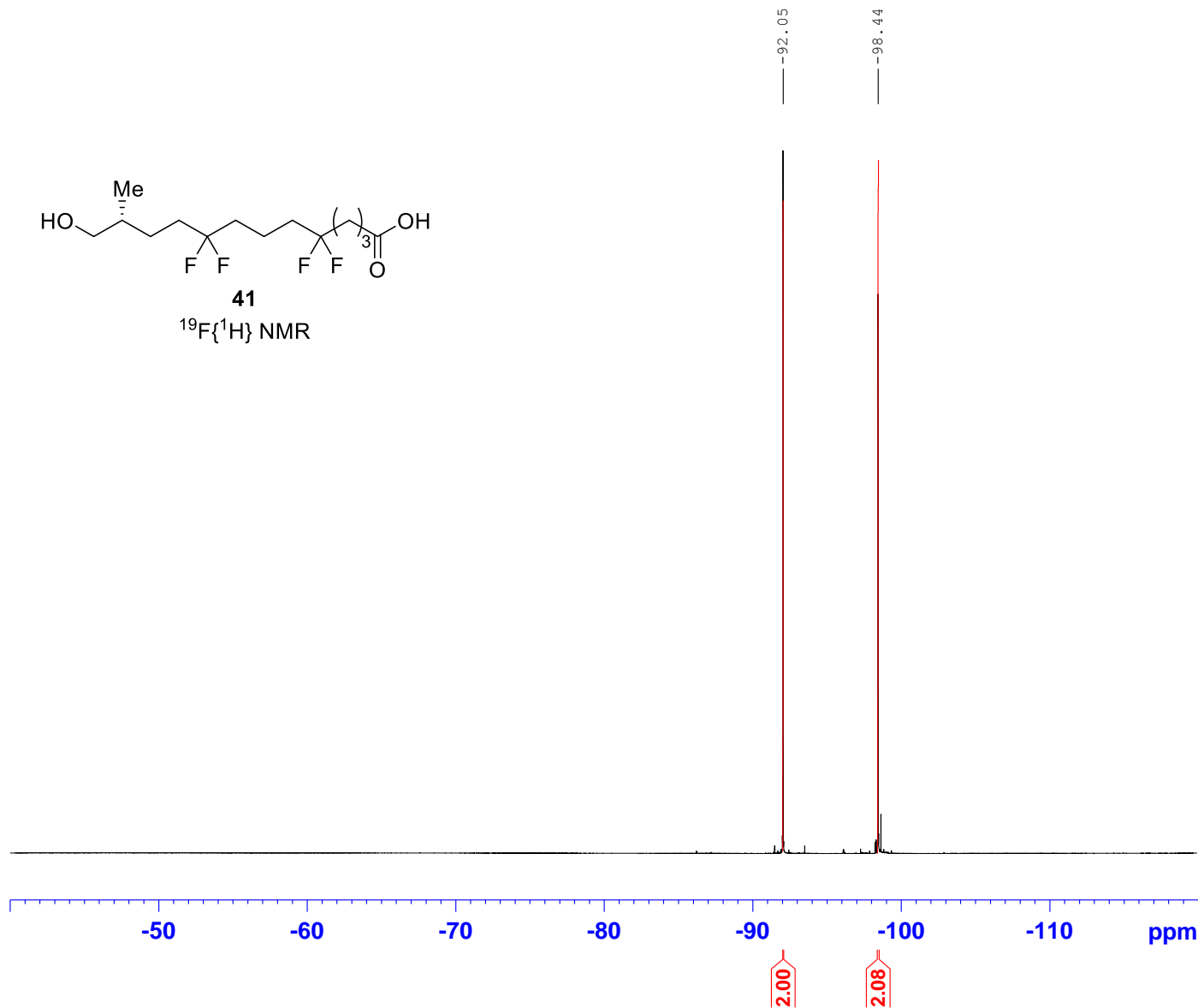
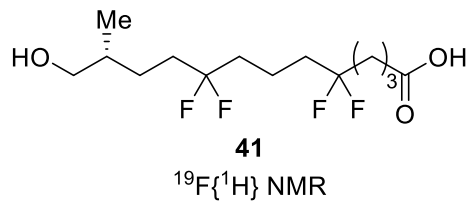
F2 - Acquisition Parameters
Date_ 20131208
Time_ 16.29
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 114
DW 71.400 usec
DE 6.00 usec
TE 293.2 K
D1 1.00000000 sec
TD0 1
SFO1 499.9029994 MHz
NUC1 1H
P1 10.50 usec
PLW1 -1.00000000 W

F2 - Processing parameters
SI 65536
SF 499.9000043 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



Current Data Parameters
NAME 12082013-54-doh-mc410-F
EXPNO 13
PROCNO 1

F2 - Processing parameters
SI 262144
SF 125.6999321 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



Current Data Parameters
 NAME 12082013-54-doh-mc410-F
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131208
 Time 16.25
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 812.7
 DW 13.300 usec
 DE 6.00 usec
 TE 293.6 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 ^{19}F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 0 MHz
 NUC2 ^1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

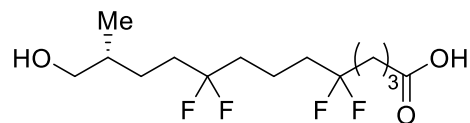


Current Data Parameters
NAME 12082013-54-doh-mc410-F
EXPNO 11
PROCNO 1

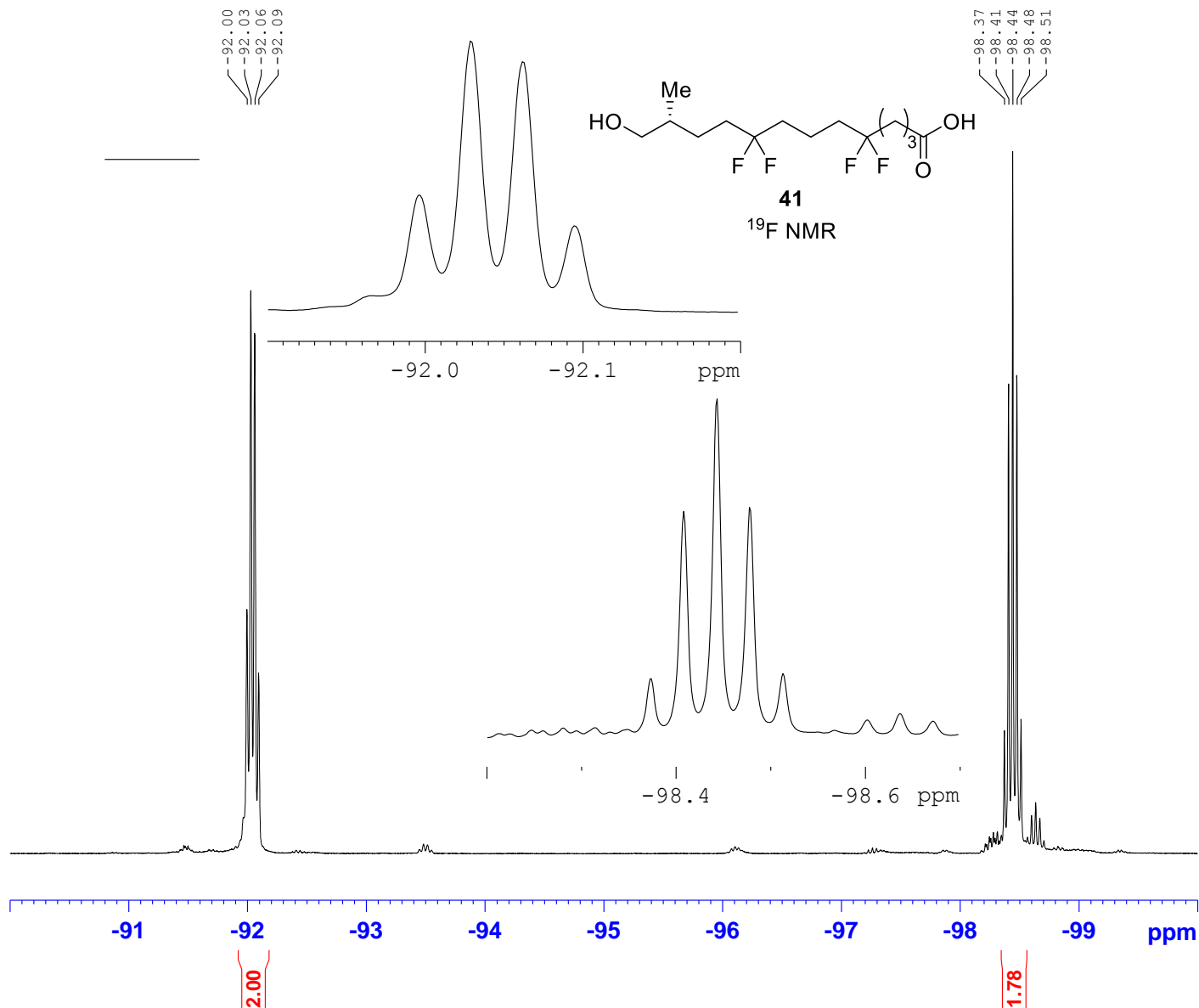
F2 - Acquisition Parameters
Date_ 20131208
Time 16.28
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zgfglqn
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 37593.984 Hz
FIDRES 0.573639 Hz
AQ 0.8716288 sec
RG 574.7
DW 13.300 usec
DE 6.00 usec
TE 293.3 K
D1 1.00000000 sec
TD0 1

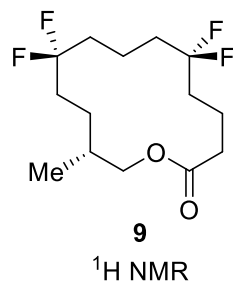
===== CHANNEL f1 =====
NUC1 19F
P1 12.15 usec
PL1 -5.00 dB
SFO1 470.3383309 MHz

F2 - Processing parameters
SI 65536
SF 470.3759460 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



41
¹⁹F NMR





— 7.27

4.21
 4.21
 4.19
 4.18
 3.88
 3.86
 3.85
 3.84
 2.54
 2.53
 2.52
 2.51
 2.50
 2.49
 2.46
 2.44
 2.43
 2.42
 2.40
 2.02
 2.01
 1.99
 1.98
 1.96
 1.95
 1.93
 1.92
 1.91
 1.90
 1.89
 1.88
 1.87
 1.86
 1.85
 1.83
 1.82
 1.81
 1.80
 1.79
 1.78
 1.77
 1.58

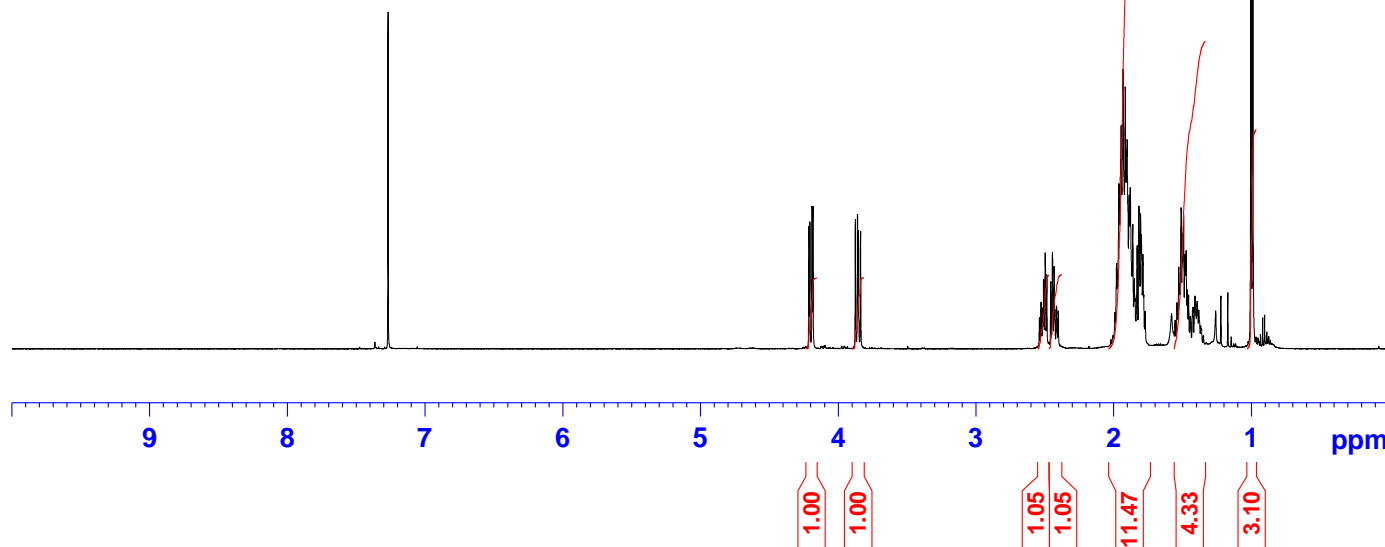


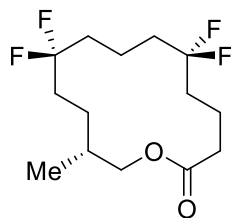
Current Data Parameters
 NAME 11262013-30-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131127
 Time 1.26
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 101
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

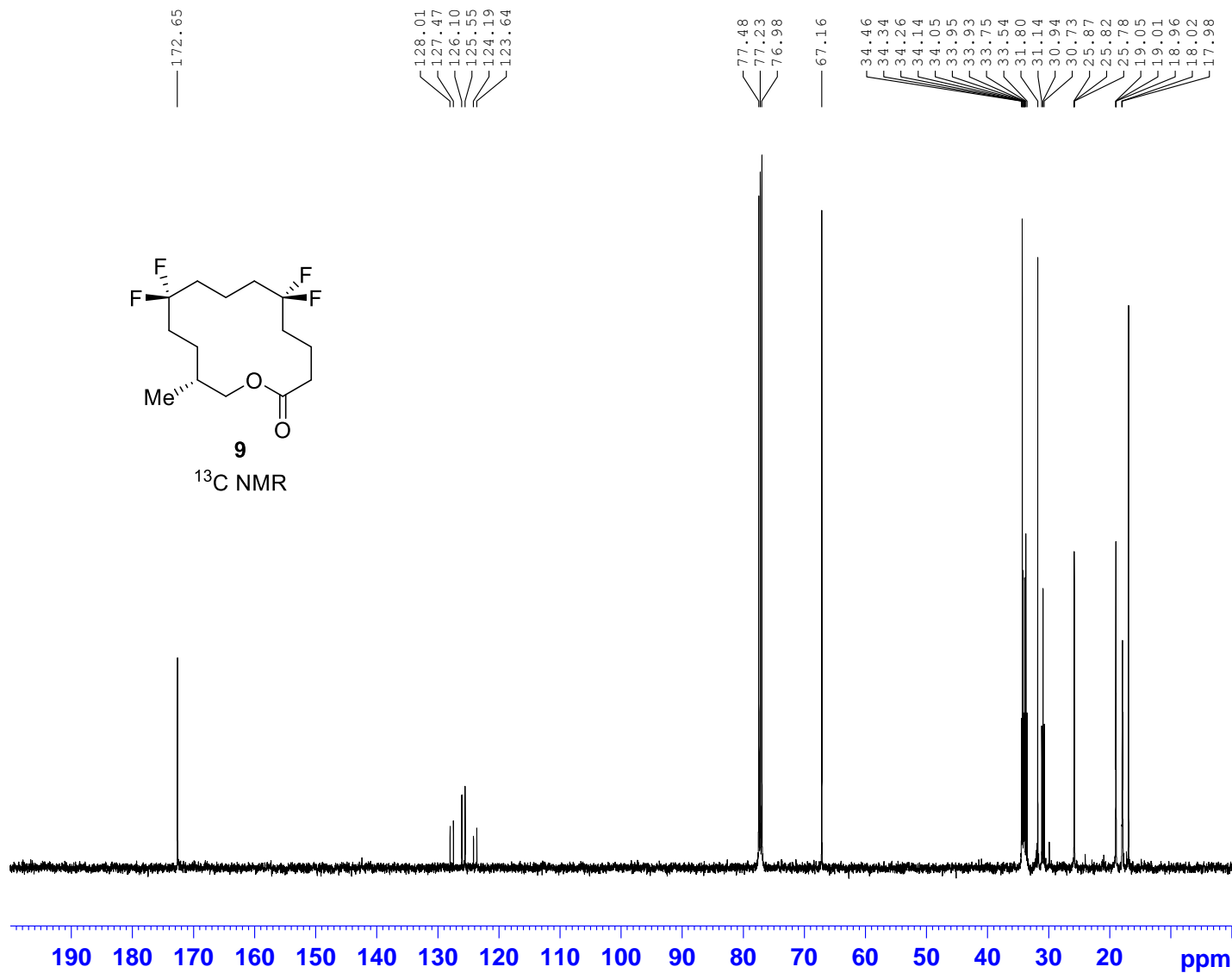
===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300076 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00





9
13C NMR



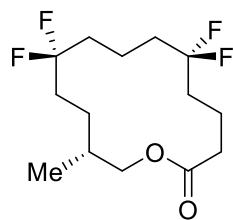
Current Data Parameters
NAME 11262013-30-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131127
Time_ 3.11
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 1600
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577640 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



9
 $^{19}\text{F}\{^1\text{H}\}$ NMR

-90.96
-90.99
-91.49
-91.54
-92.07



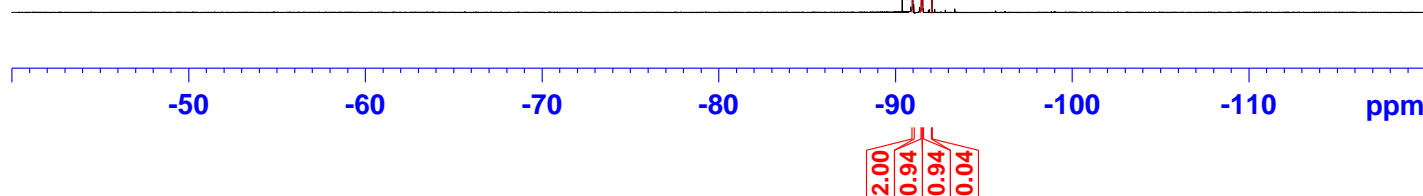
Current Data Parameters
NAME 11262013-2-doh-mc410-F
EXPNO 11
PROCNO 1

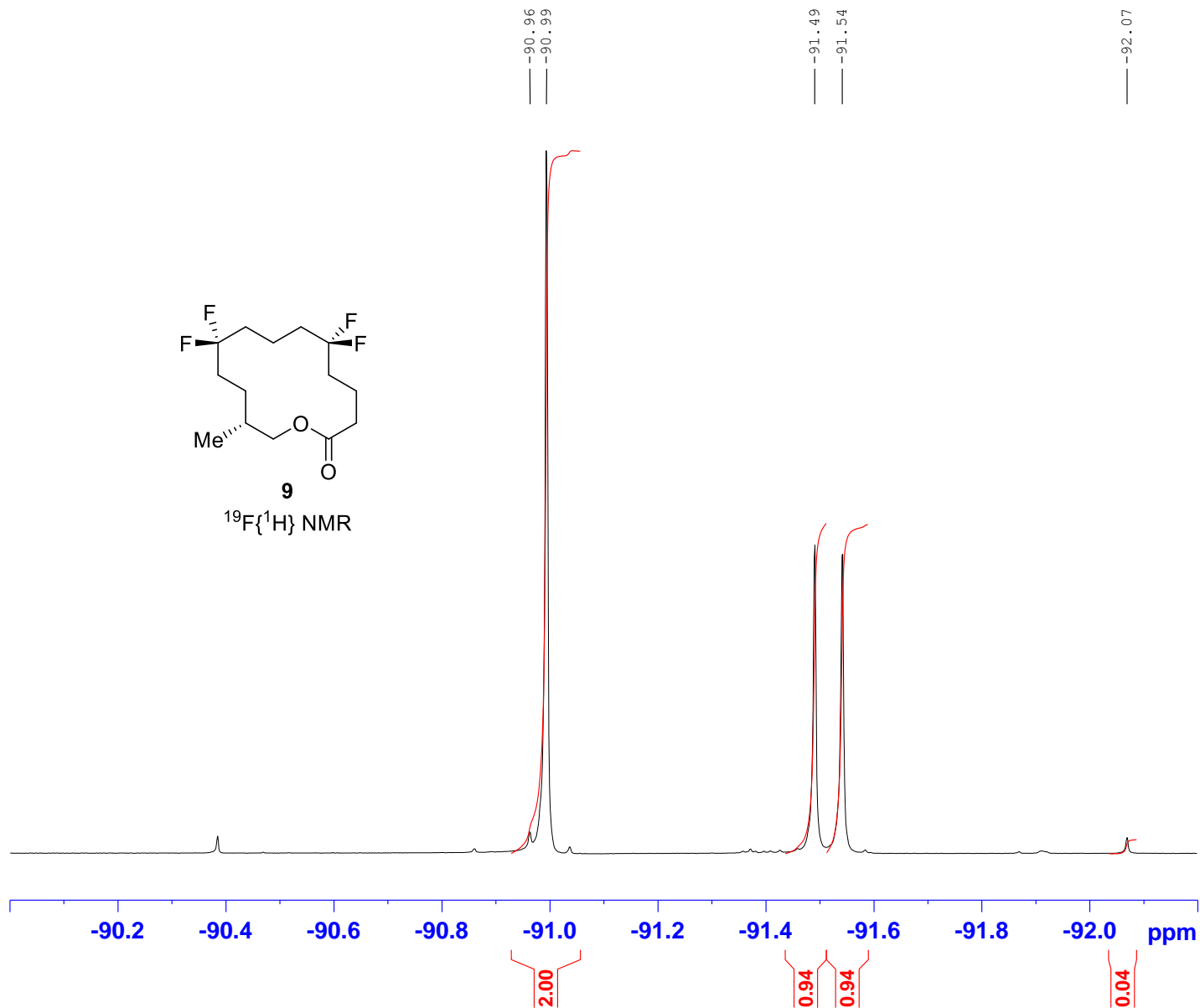
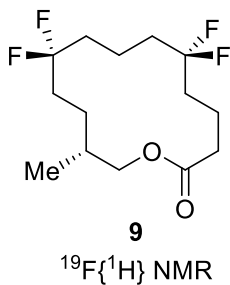
F2 - Acquisition Parameters

Date_ 20131126
Time 13.52
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zgfhigqn
TD 65536
SOLVENT CDC13
NS 64
DS 4
SWH 37593.984 Hz
FIDRES 0.573639 Hz
AQ 0.8716288 sec
RG 1290.2
DW 13.300 usec
DE 6.00 usec
TE 293.7 K
D1 1.00000000 sec
d11 0.03000000 sec
d12 0.00002000 sec
TD0 1
SFO1 470.3383309 MHz
NUC1 ^{19}F
P1 12.15 usec
PLW1 -1.00000000 W
SFO2 499.9019996 MHz
NUC2 ^1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 -1.00000000 W
PLW12 -1.00000000 W

F2 - Processing parameters

SI 65536
SF 470.3759460 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





Current Data Parameters
 NAME 11262013-2-doh-mc410-F
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20131126
 Time 13.52
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 1290.2
 DW 13.300 usec
 DE 6.00 usec
 TE 293.7 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 ^{19}F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 499.9019996 MHz
 NUC2 ^1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

F2 - Processing parameters

SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

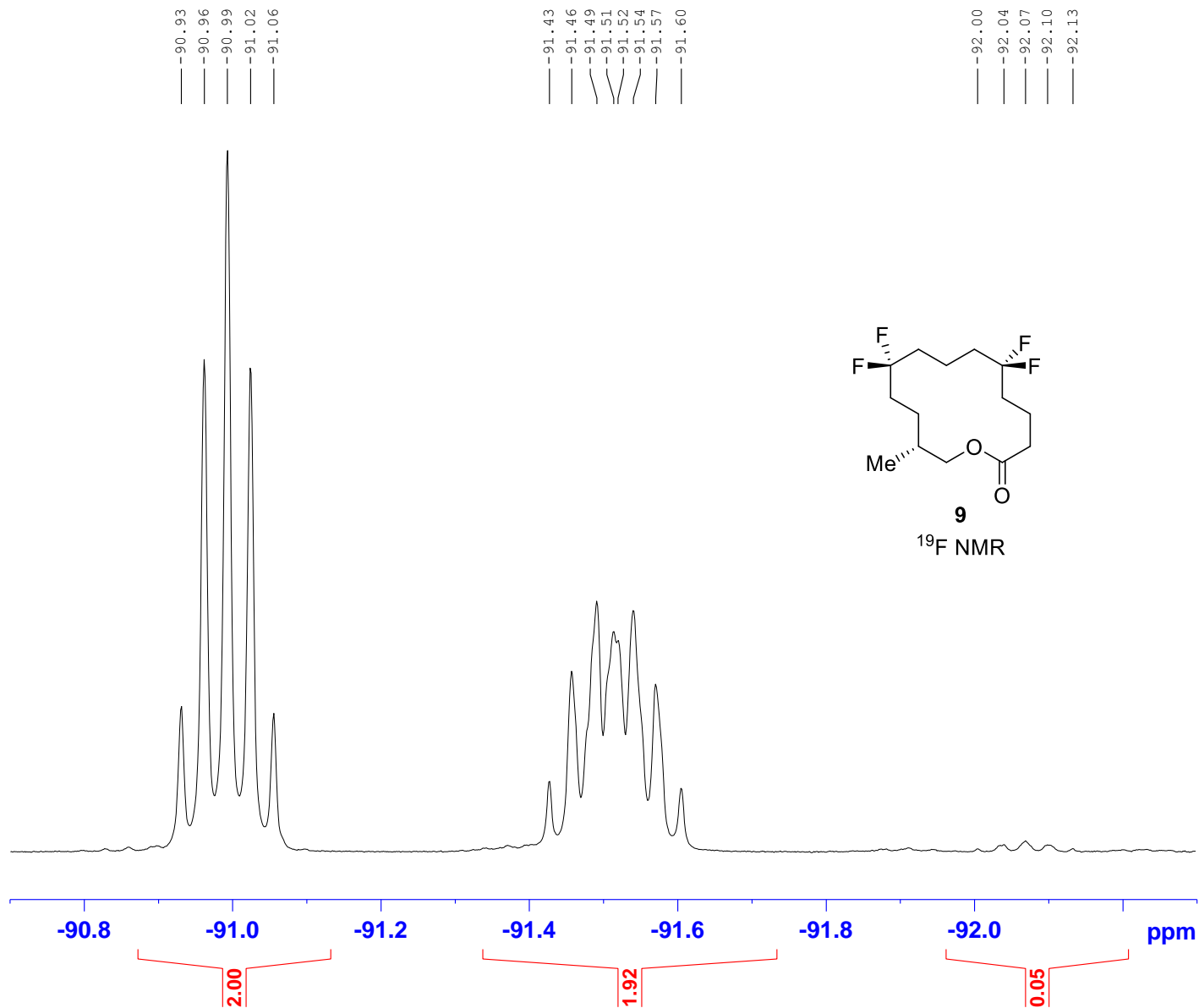
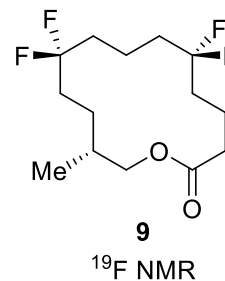


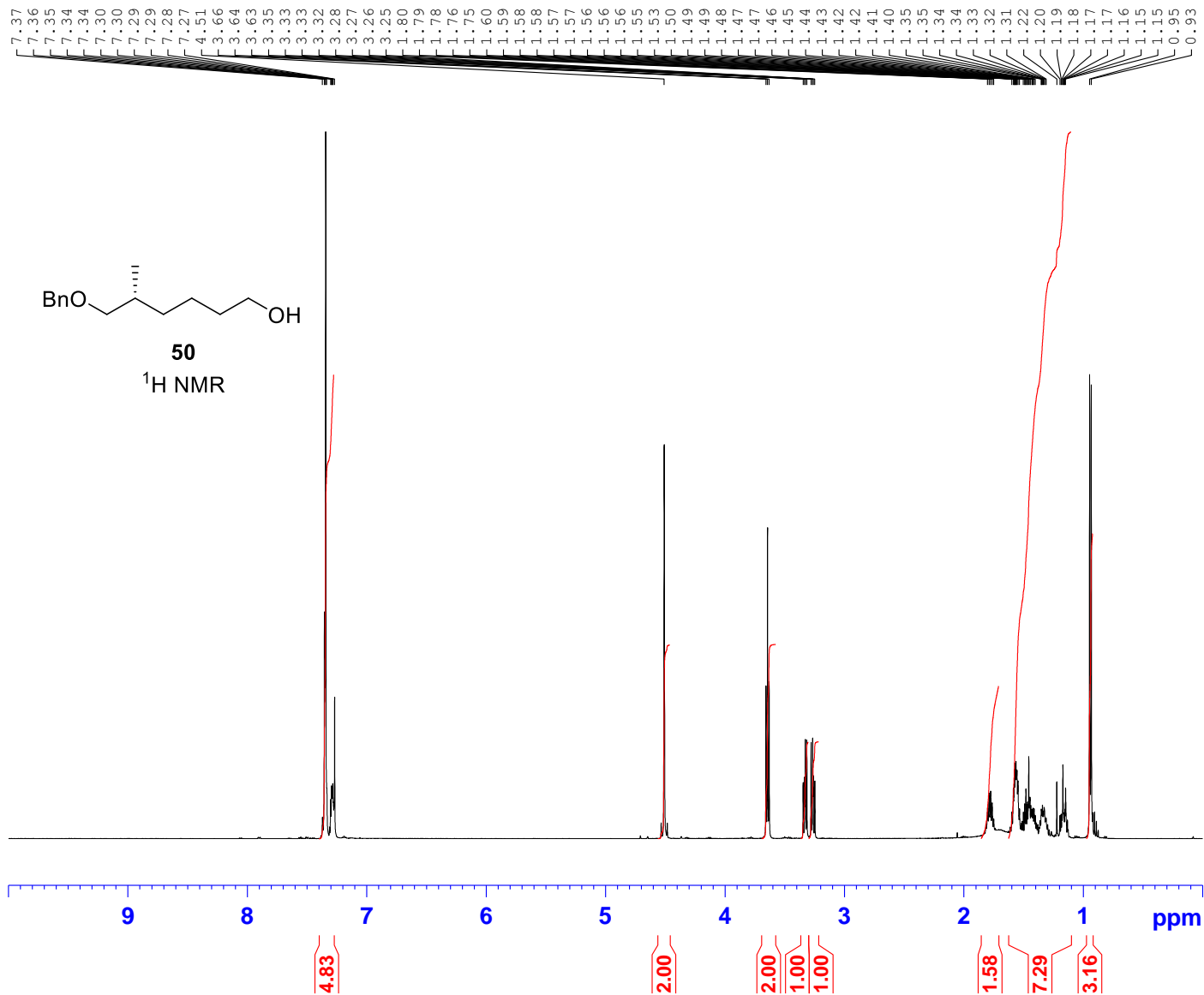
Current Data Parameters
NAME 11262013-2-doh-mc410-F
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131126
Time_ 13.55
INSTRUM spect
PROBHD 5 mm QNP 1H/13
PULPROG zgpg30
TD 65536
SOLVENT CDC13
NS 64
DS 4
SWH 37593.984 Hz
FIDRES 0.573639 Hz
AQ 0.8716288 sec
RG 1149.4
DW 13.300 usec
DE 6.00 usec
TE 293.4 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 19F
P1 12.15 usec
PL1 -5.00 dB
SFO1 470.3383309 MHz

F2 - Processing parameters
SI 65536
SF 470.3759460 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



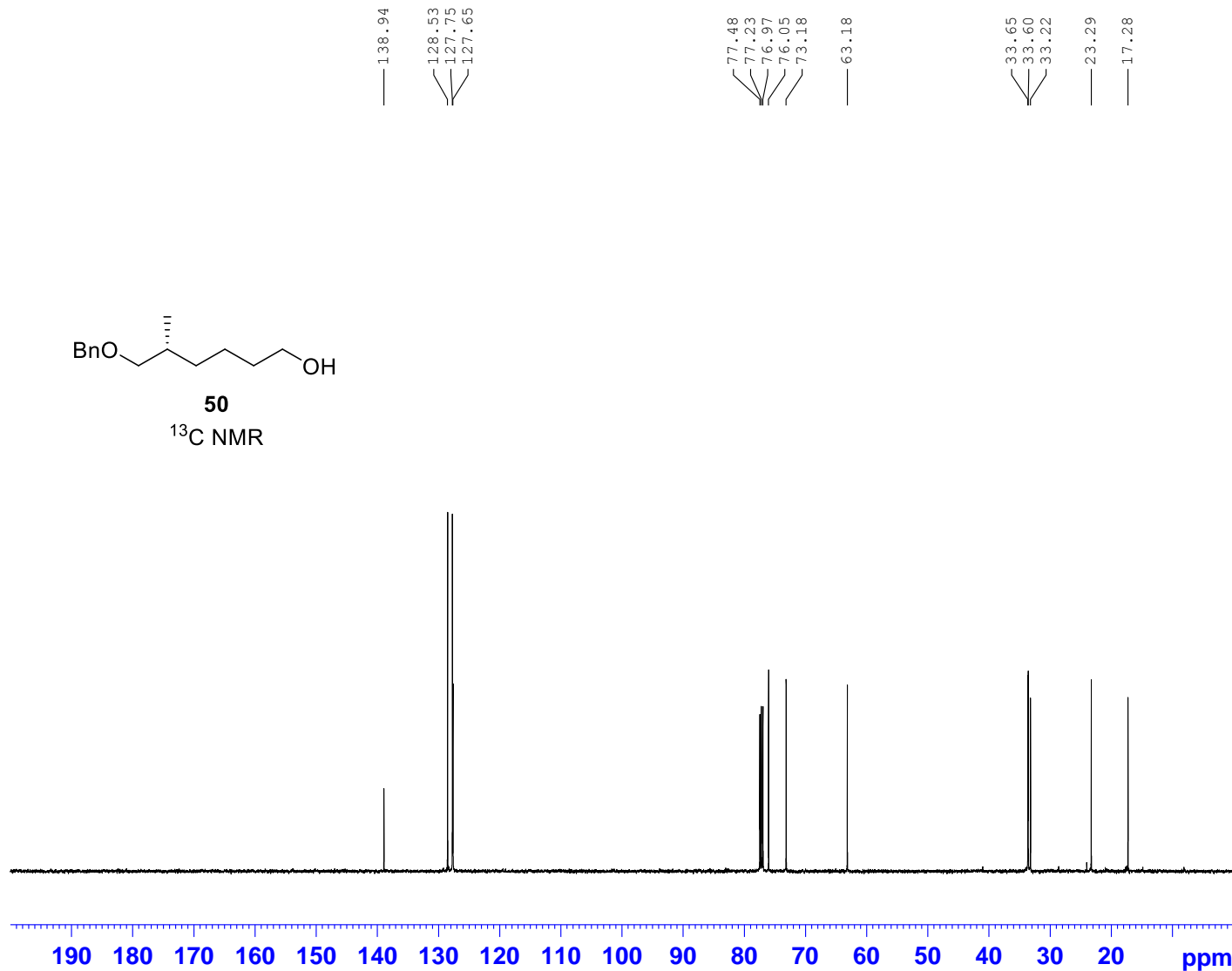
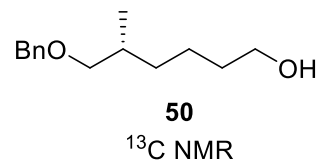


Current Data Parameters
 NAME 09132013-5-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130914
 Time_ 1.24
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 90.5
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300090 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



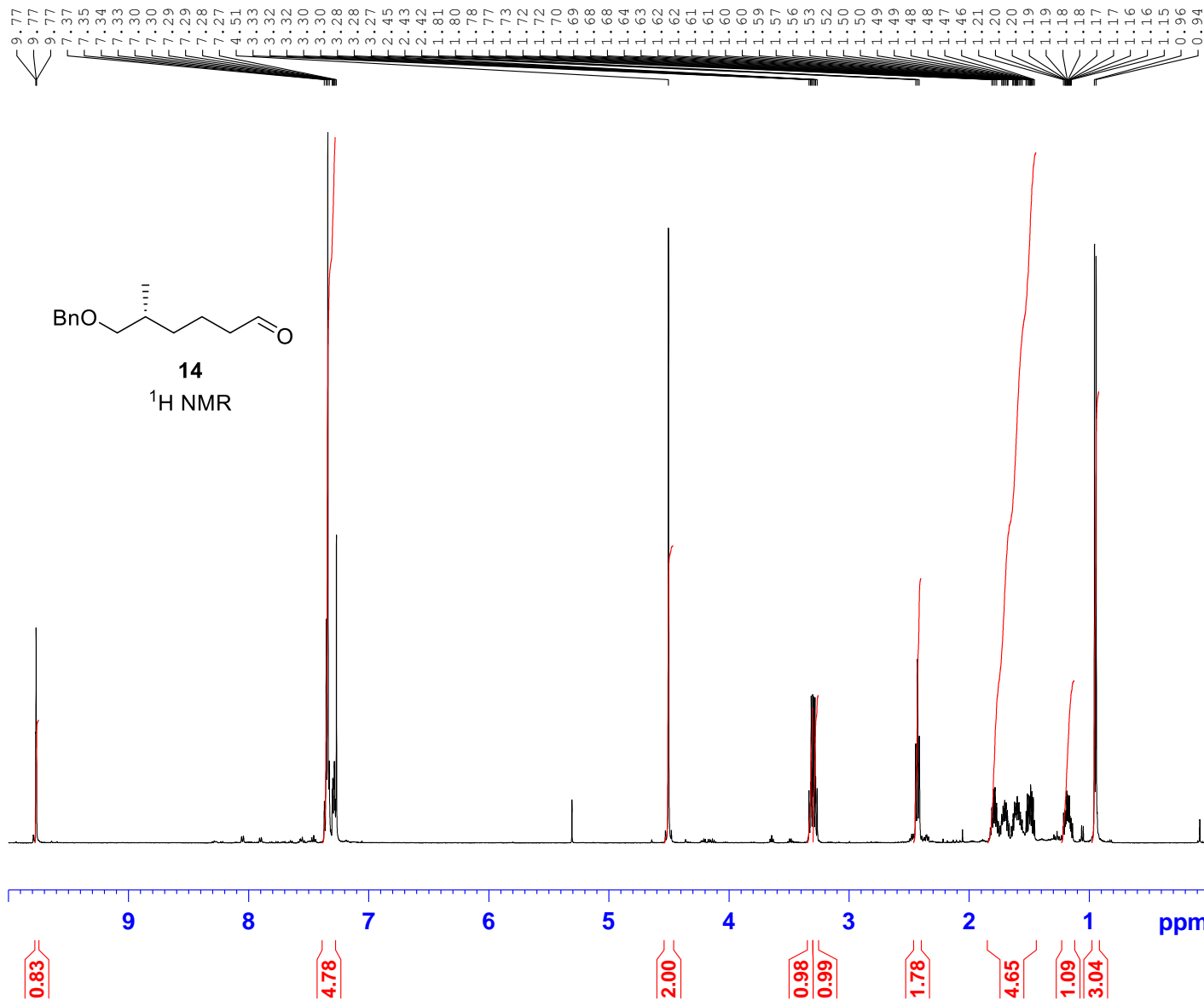
Current Data Parameters
 NAME 09132013-5-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130914
 Time 2.19
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDC13
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577661 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40

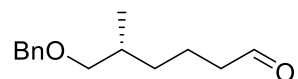


Current Data Parameters
 NAME 09182013-19-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130918
 Time 18.01
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 114
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

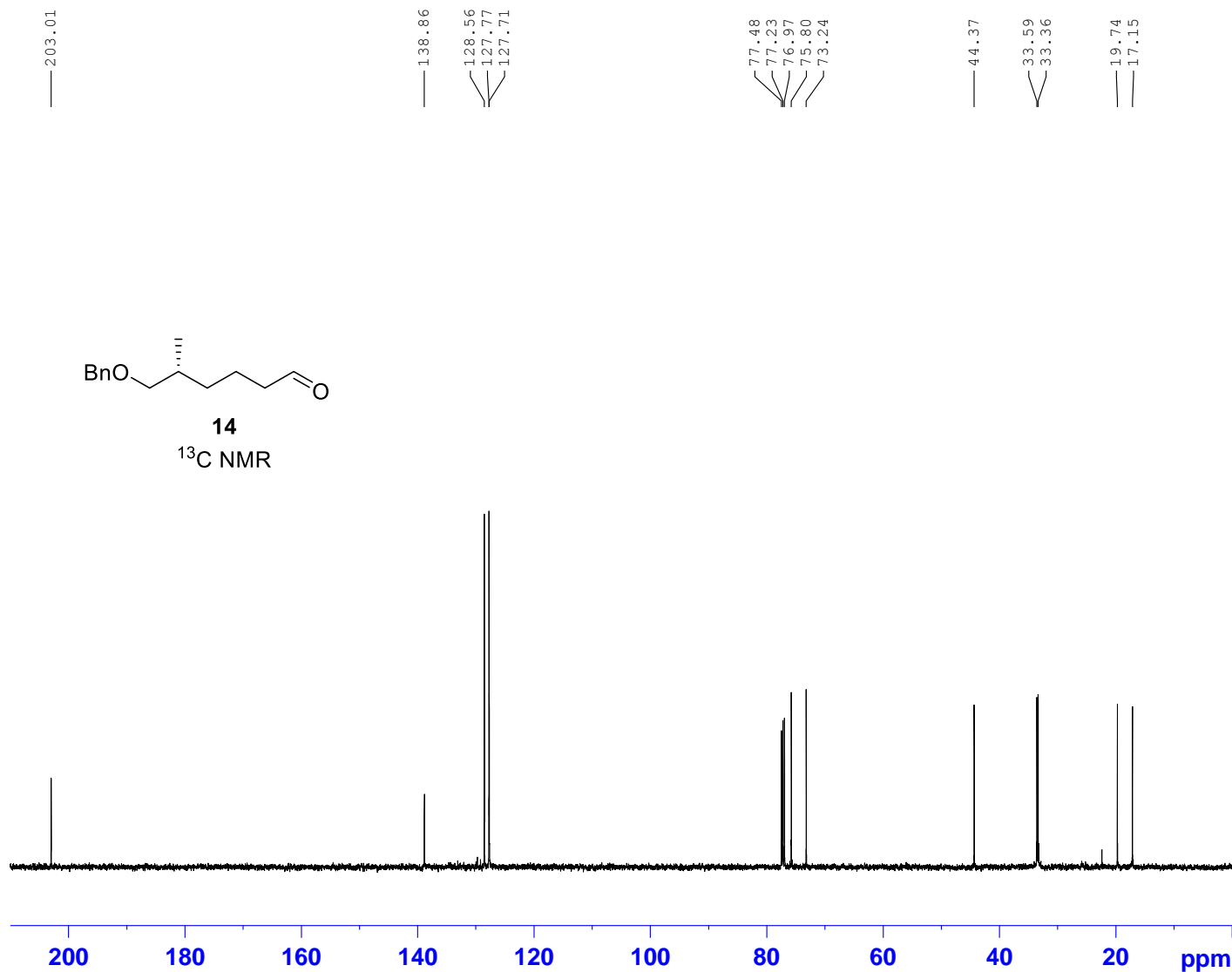
===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300088 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



14

¹³C NMR



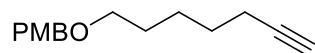
Current Data Parameters
 NAME 09202013-22-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130921
 Time_ 1.58
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeflt
 TD 21424
 SOLVENT CDC13
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577636 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



43

¹H NMR

7.28
7.27
7.26
6.90
6.88

4.44
3.81
3.47
3.46
3.44
2.22
2.21
2.20
2.20
2.19
2.18
1.96
1.95
1.95
1.66
1.64
1.63
1.61
1.60
1.59
1.57
1.56
1.54
1.53
1.51
1.50
1.50
1.48
1.47
1.47

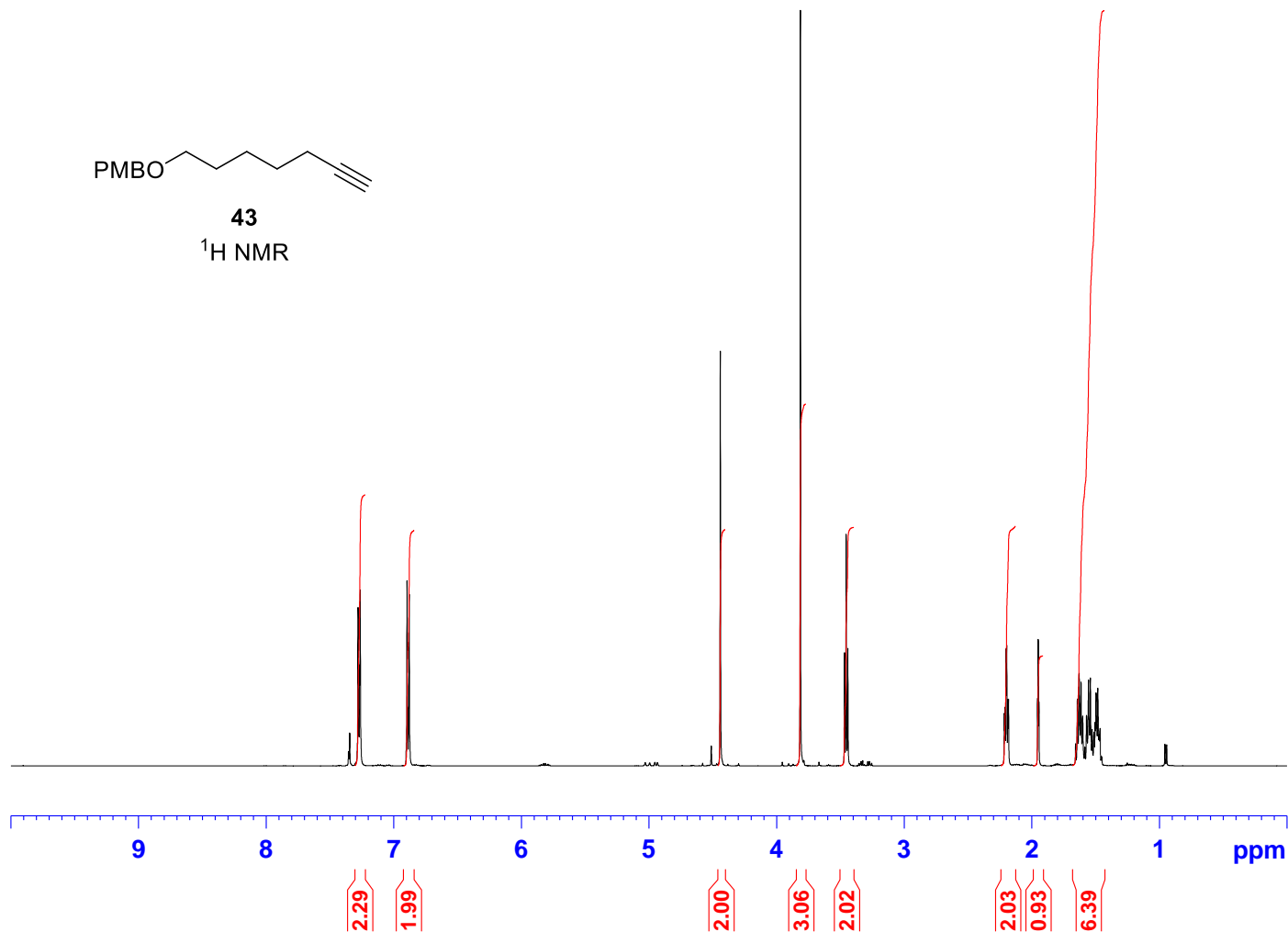


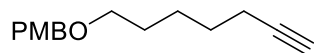
Current Data Parameters
NAME 09122013-3-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130912
Time 18.09
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 80.6
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

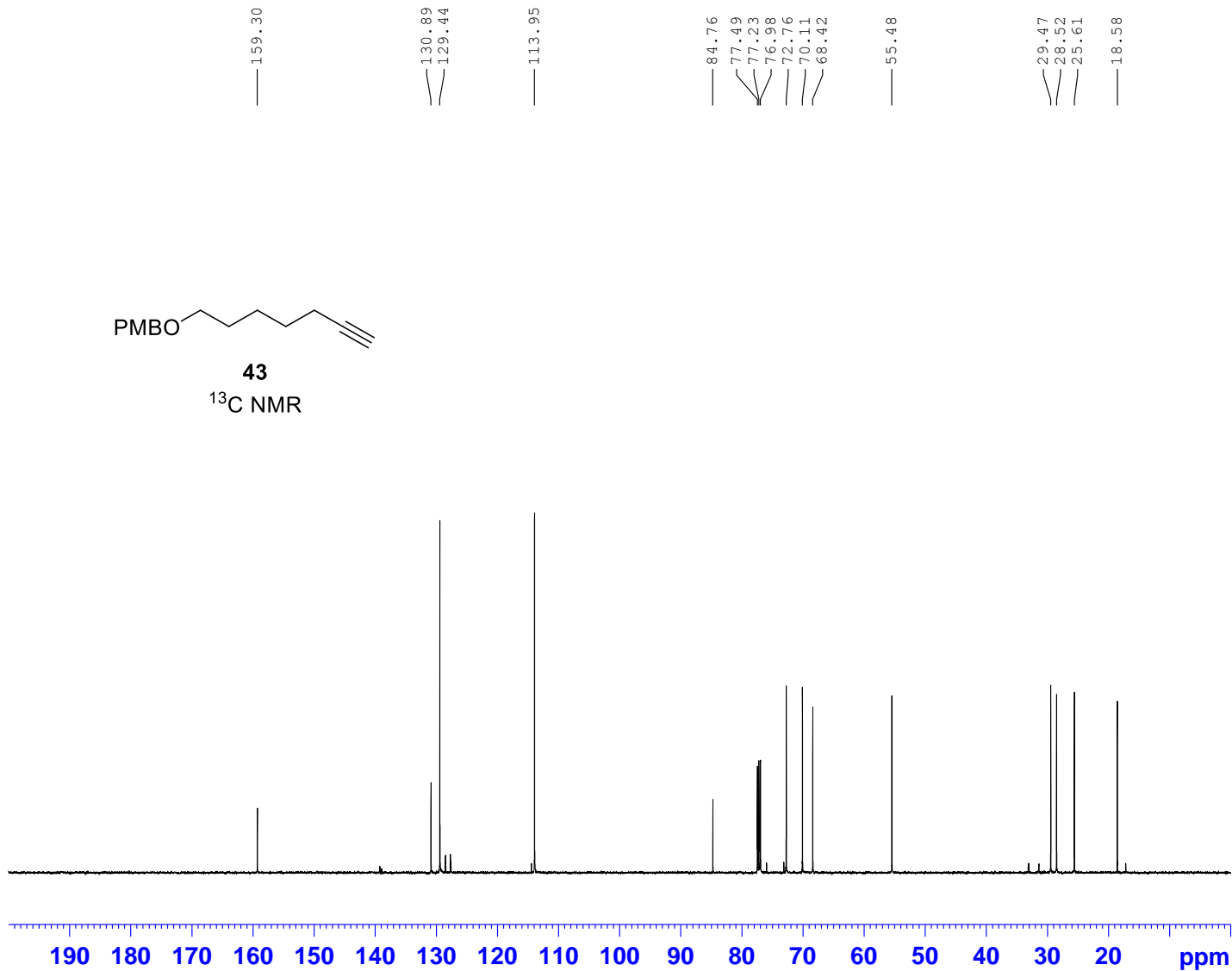
===== CHANNEL f1 =====
SF01 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300085 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





43
¹³C NMR



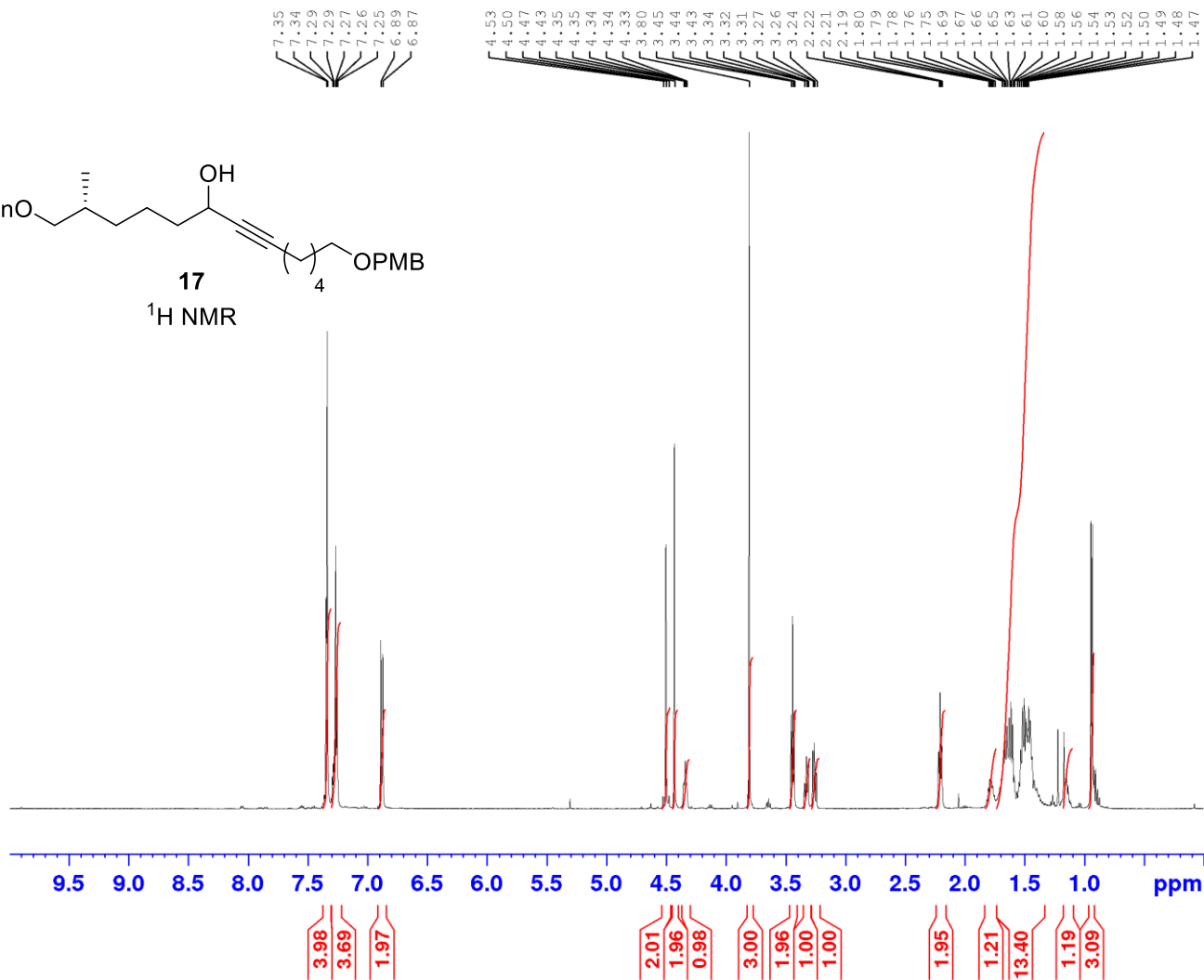
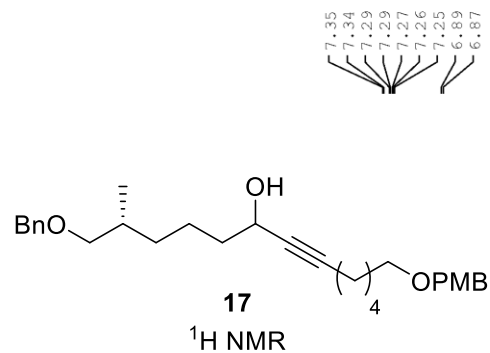
Current Data Parameters
NAME 09122013-3-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130913
Time_ 0.32
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577661 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40

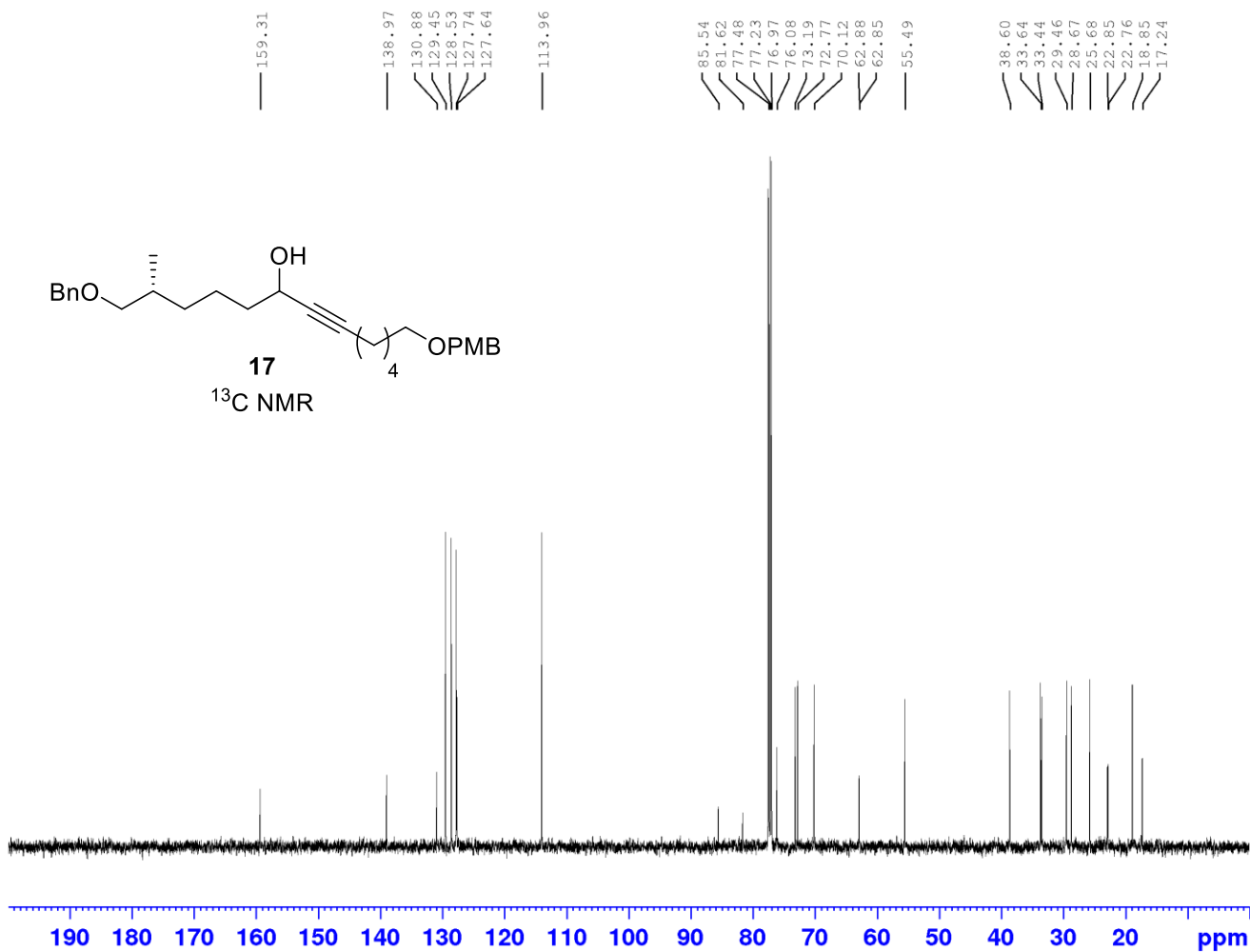


Current Data Parameters
 NAME 09242013-10-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130924
 Time 17.53
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 101
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300117 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



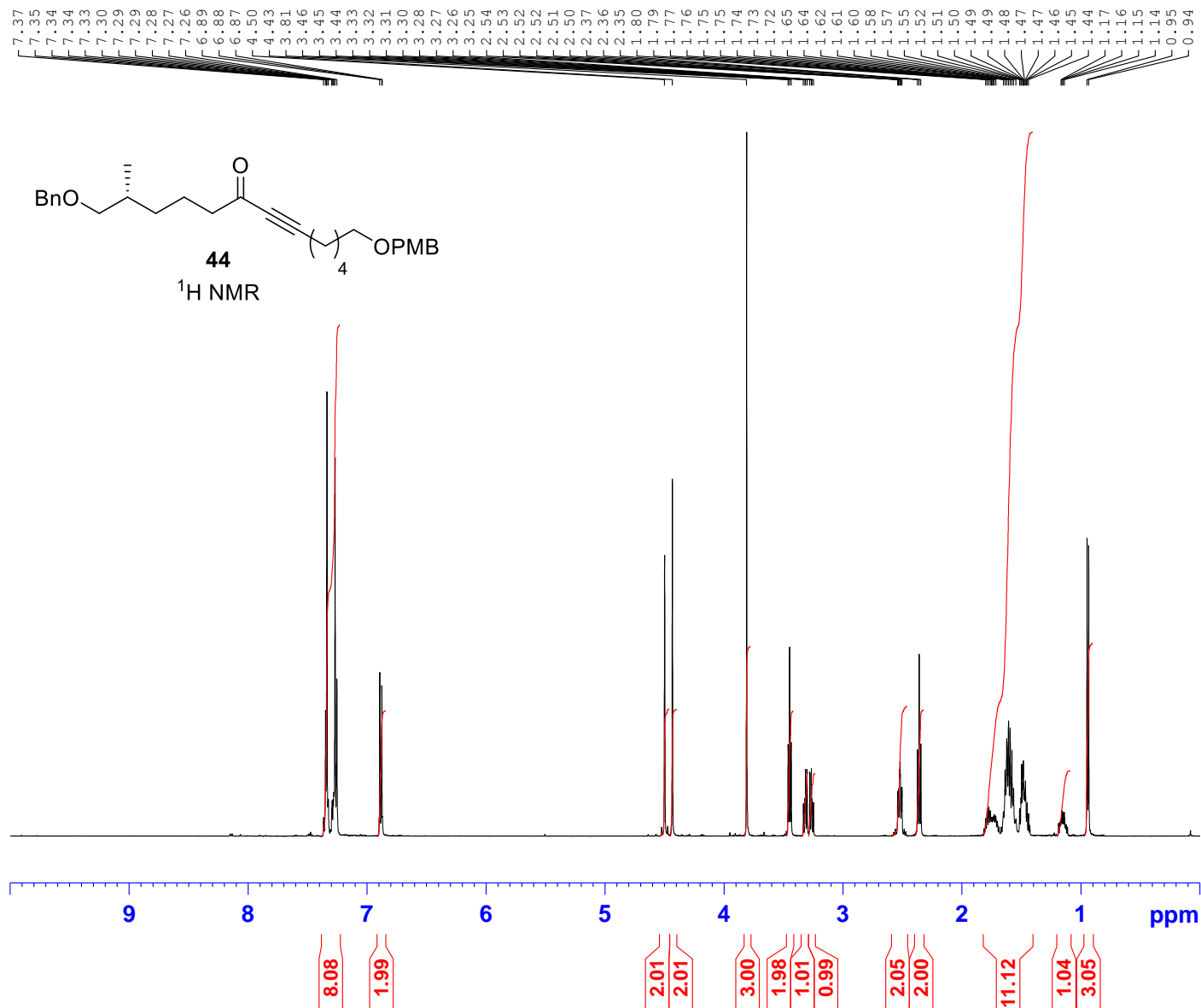
Current Data Parameters
 NAME 09202013-23-doh-mc410-A
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130921
 Time 2.56
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udef
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577648 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



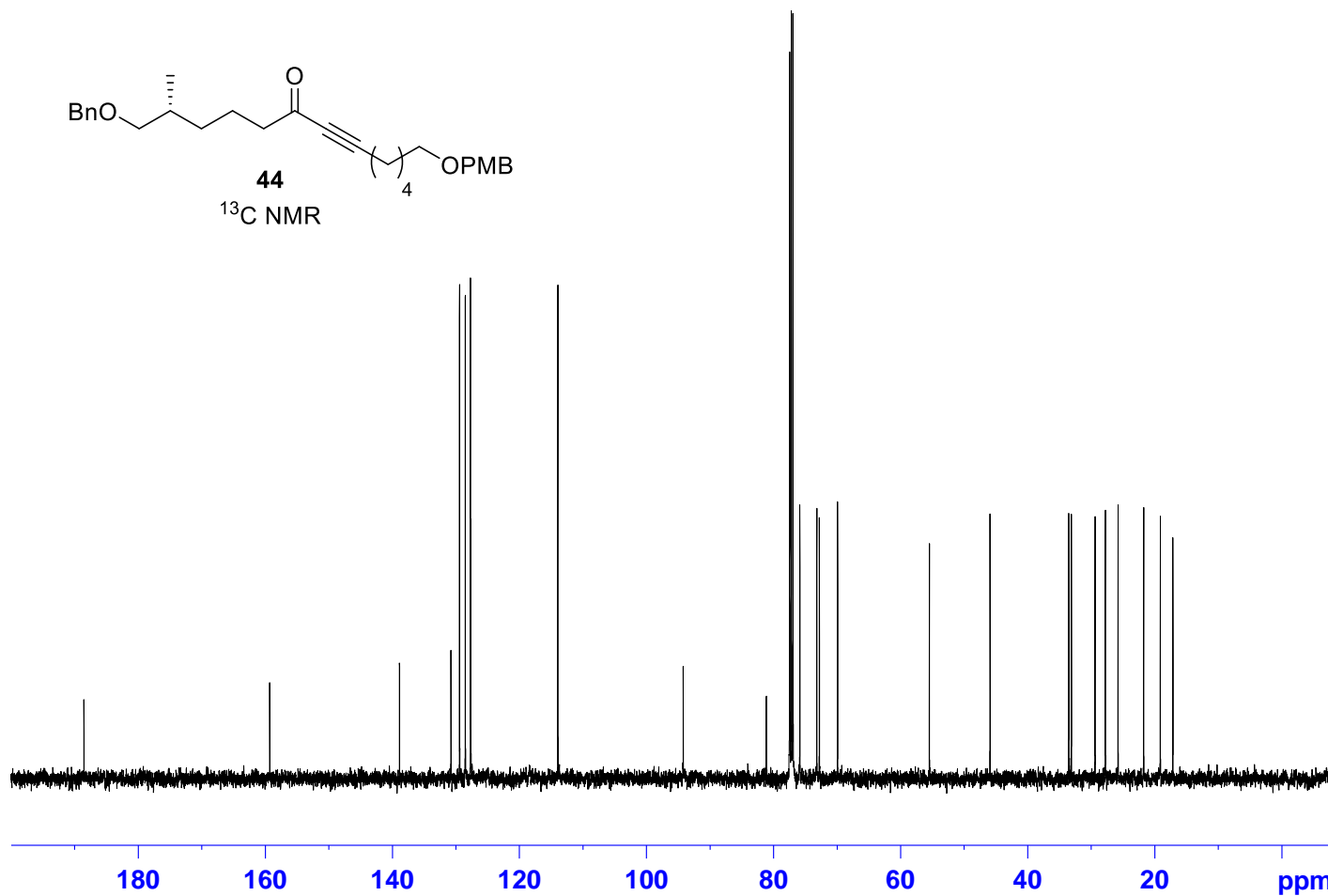
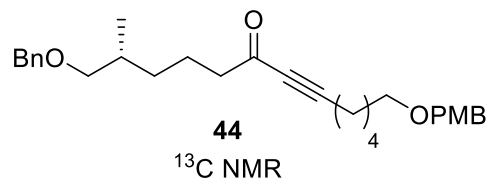
Current Data Parameters
 NAME 09212013-47-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130921
 Time 17.59
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl₃
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 ¹H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300090 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

— 188.57
 — 159.34
 — 138.90
 — 130.80
 — 129.45
 — 128.54
 — 127.73
 — 127.67
 — 113.97
 — 94.24
 — 81.16
 — 77.48
 — 77.23
 — 76.97
 — 75.89
 — 73.21
 — 72.81
 — 69.94
 — 55.49
 — 45.95
 — 33.55
 — 33.14
 — 29.40
 — 27.79
 — 25.78
 — 21.75
 — 19.13
 — 17.16



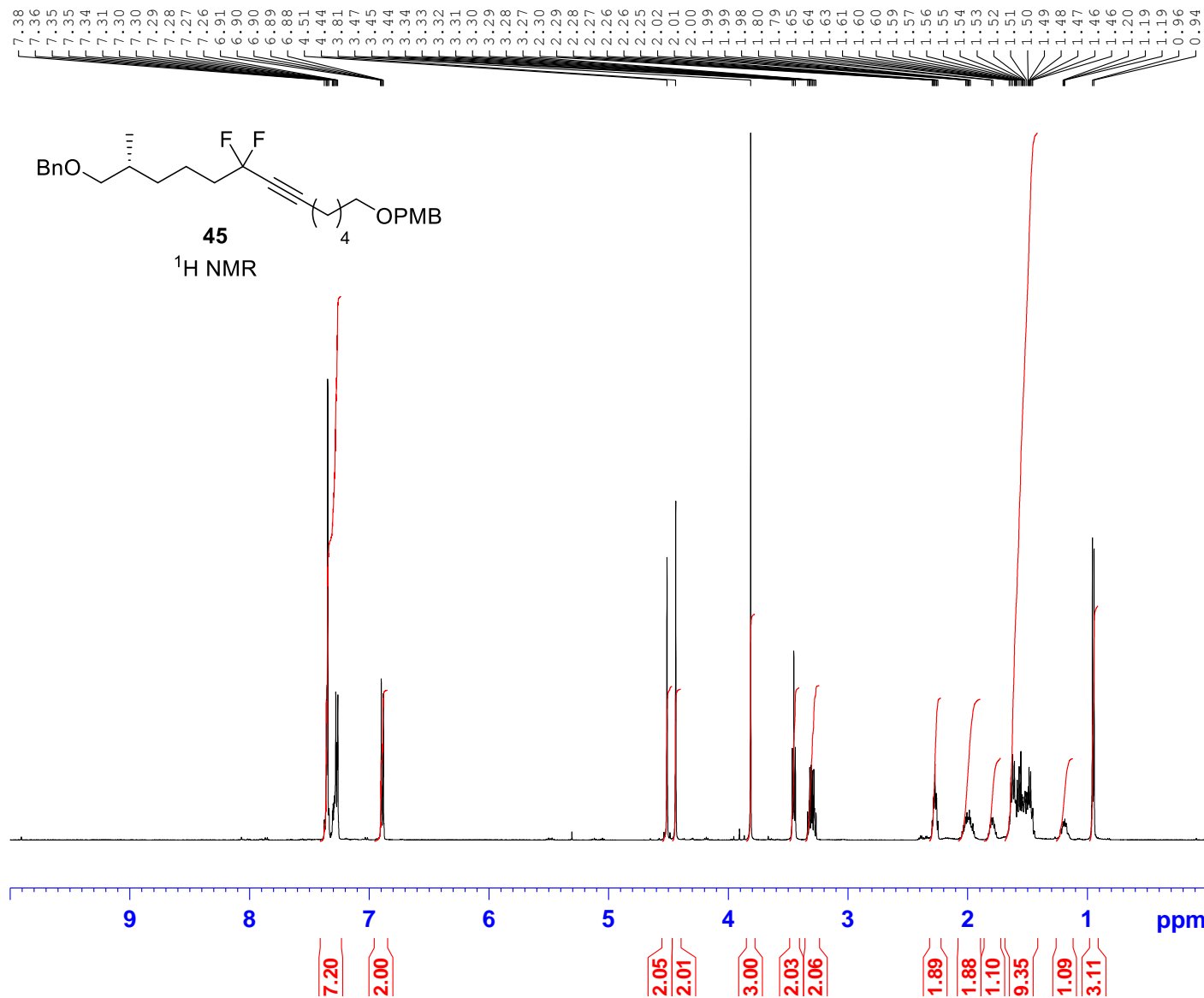
Current Data Parameters
 NAME 09212013-47-doh-mc410-A
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130921
 Time 21.32
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeft
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

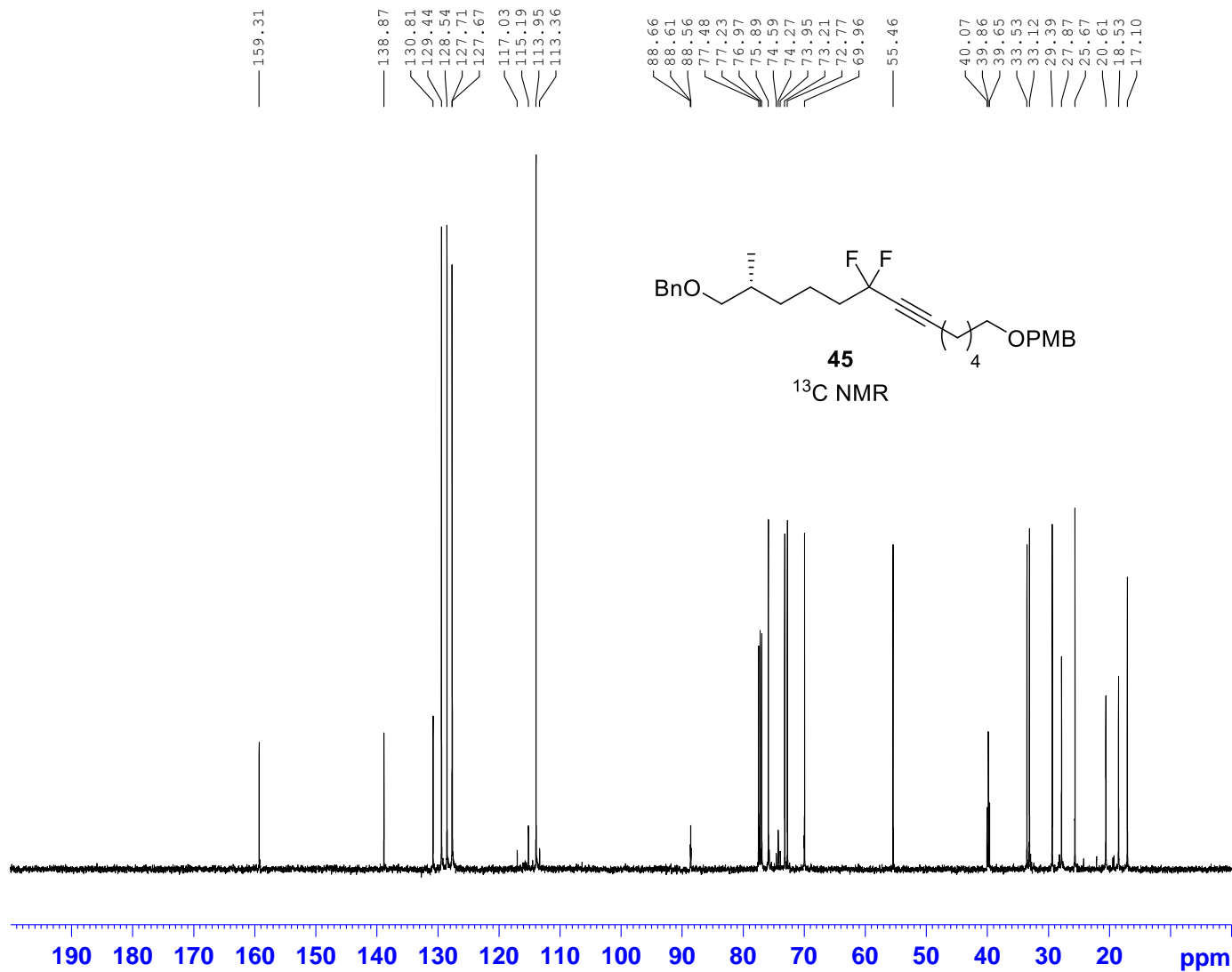
F2 - Processing parameters
 SI 262144
 SF 125.7577653 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



Current Data Parameters
 NAME 09272013-17-doh-mc410-F
 EXPNO 10
 PROCNO 1

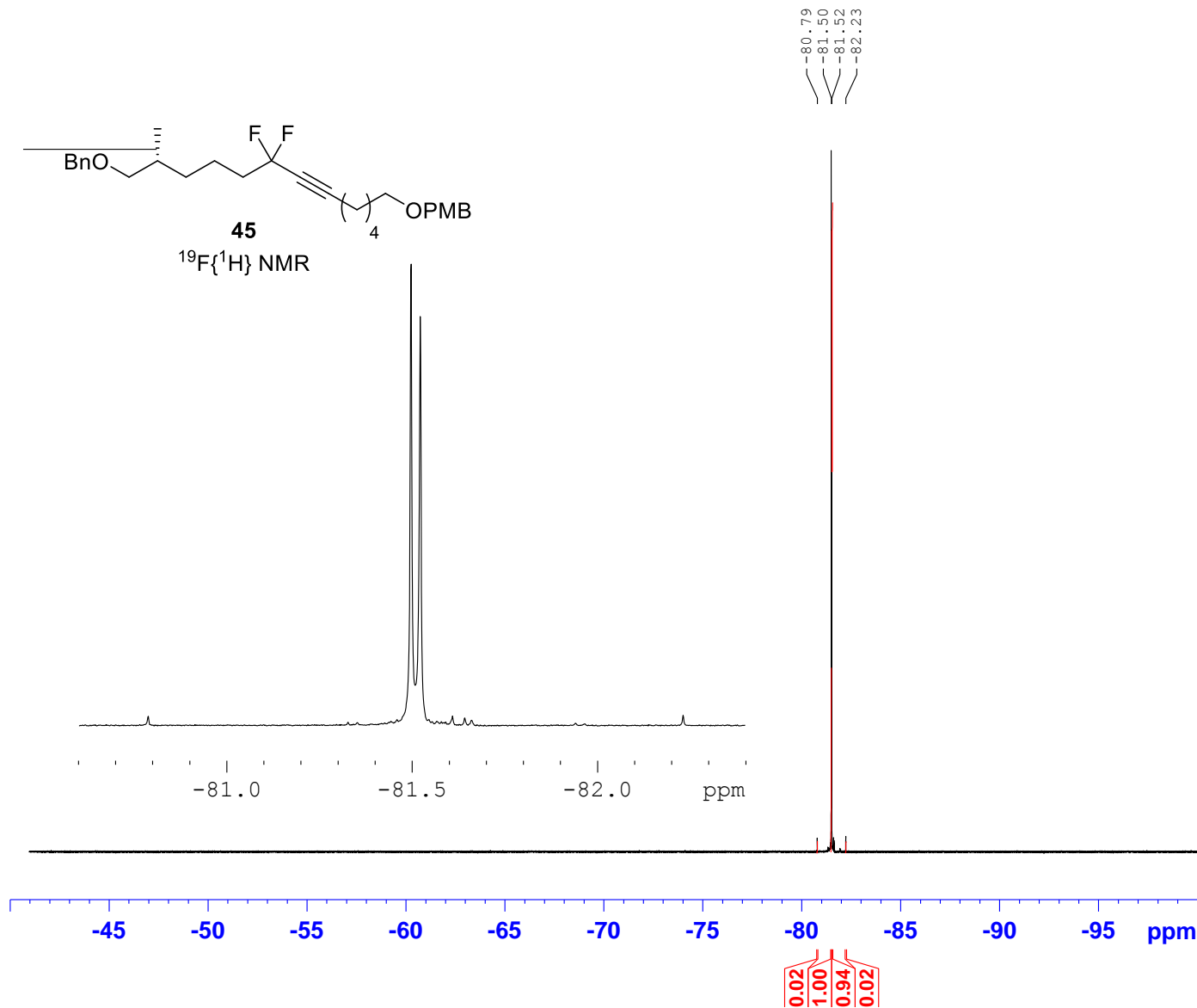
F2 - Acquisition Parameters
 Date_ 20130927
 Time_ 17.29
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 114
 DW 71.400 usec
 DE 6.00 usec
 TE 292.4 K
 D1 1.00000000 sec
 TD0 1
 SF01 499.9029994 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000040 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



Current Data Parameters
 NAME 09272013-17-doh-mc410-F
 EXPNO 11
 PROCNO 1

F2 - Processing parameters
 SI 262144
 SF 125.6999329 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



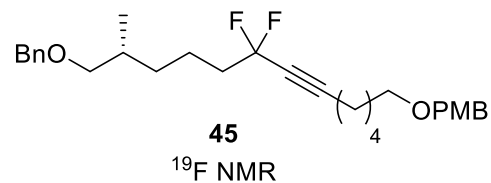
Current Data Parameters
 NAME 09242013-29-michaelM
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date 20130924
 Time 13.15
 INSTRUM AVII400
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhigqn.baseopt
 TD 65536
 SOLVENT CDC13
 NS 64
 DS 4
 SWH 29761.904 Hz
 FIDRES 0.454131 Hz
 AQ 1.1010048 sec
 RG 2050
 DW 16.800 usec
 DE 9.42 usec
 TE 296.3 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 376.4682461 MHz
 NUC1 19F
 P1 13.20 usec
 PLW1 15.53699970 W

===== CHANNEL f2 =====
 SFO2 400.1316005 MHz
 NUC2 1H
 CPDPRG[2] waltz16
 PCPD2 90.00 usec
 PLW2 15.04800034 W
 PLW12 0.26752999 W

F2 - Processing parameters
 SI 65536
 SF 376.4985513 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



— -80.40
 — -80.43
 — -80.46

— -80.95
 — -80.96
 — -80.98
 — -81.00
 — -81.01
 — -81.02
 — -81.03
 — -81.04
 — -81.06
 — -81.07

— -81.56
 — -81.60
 — -81.63

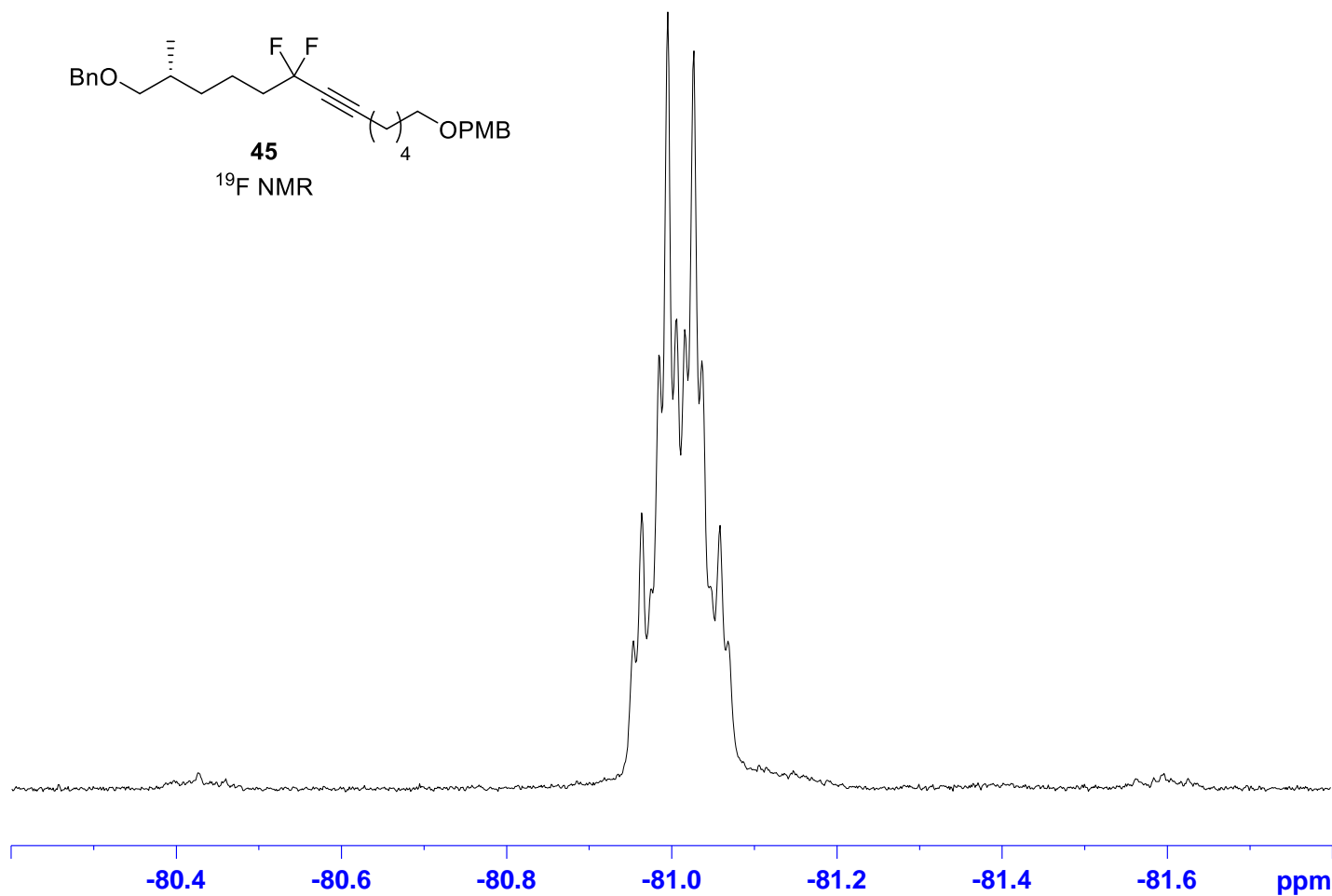


Current Data Parameters
 NAME 09242013-11-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130924
 Time_ 17.58
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



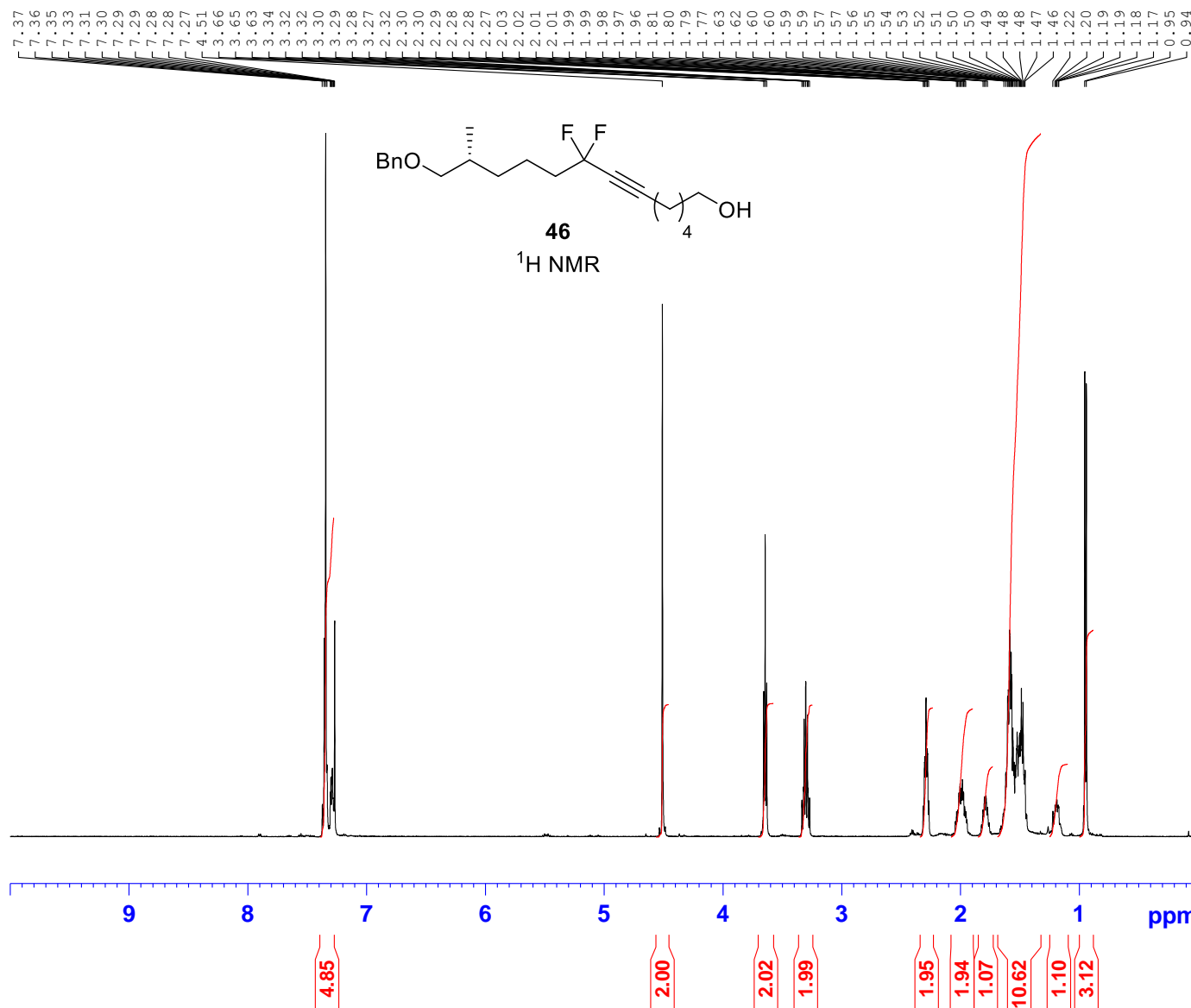


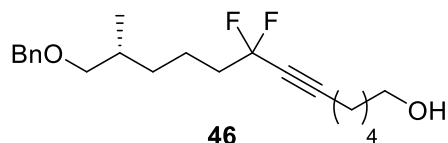
Current Data Parameters
NAME 09252013-7-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130926
Time_ 4.08
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 4
DS 2
SWH 7002.801 Hz
FIDRES 0.106854 Hz
AQ 4.6792703 sec
RG 128
DW 71.400 usec
DE 11.40 usec
TE 295.0 K
D1 1.00000000 sec
TD0 1

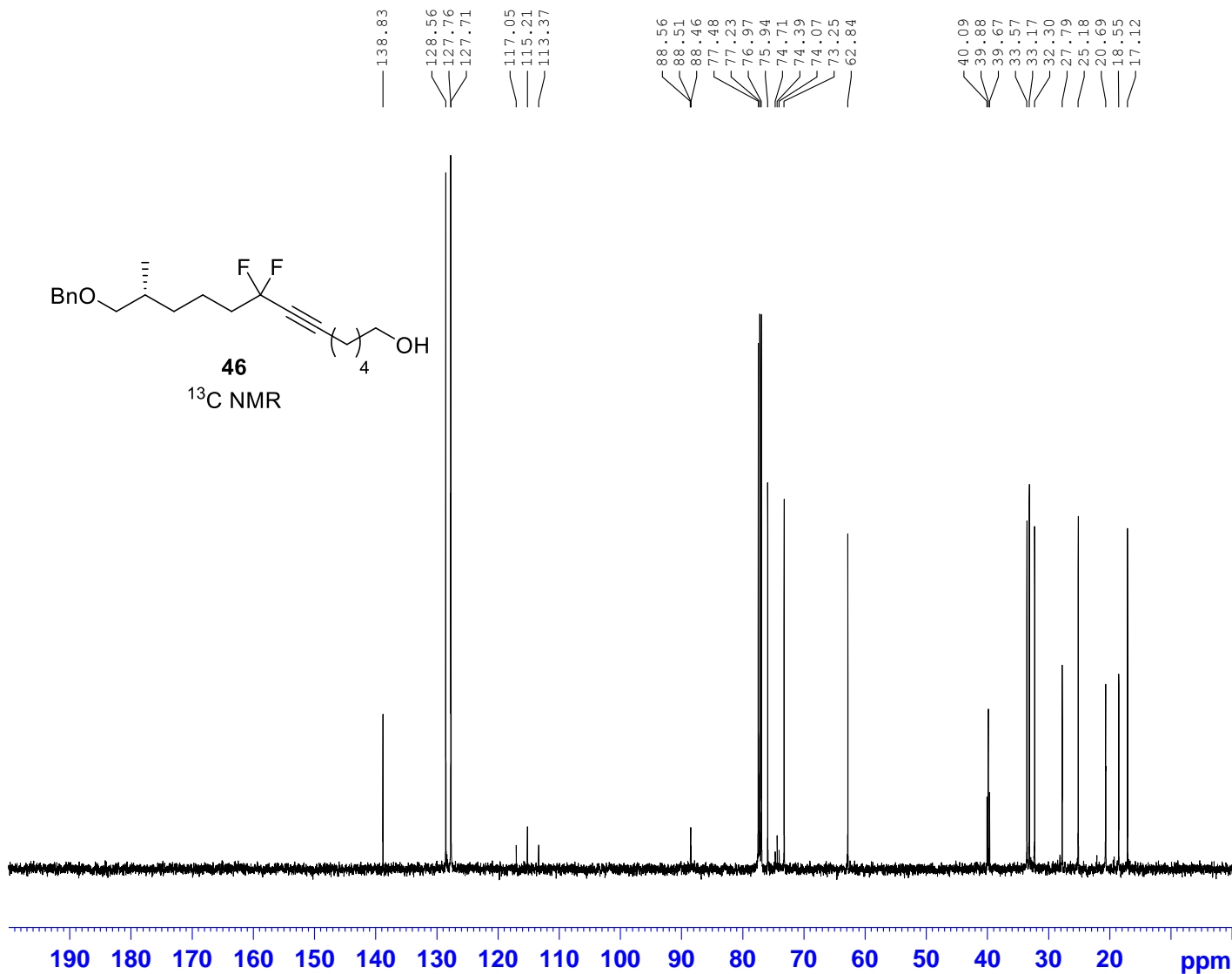
===== CHANNEL f1 =====
SFO1 500.1330008 MHz
NUC1 1H
P1 10.35 usec
PLW1 24.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300091 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00





¹³C NMR



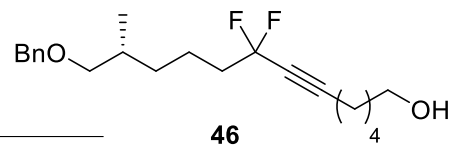
Current Data Parameters
NAME 09252013-7-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130926
Time 4.06
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDC13
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

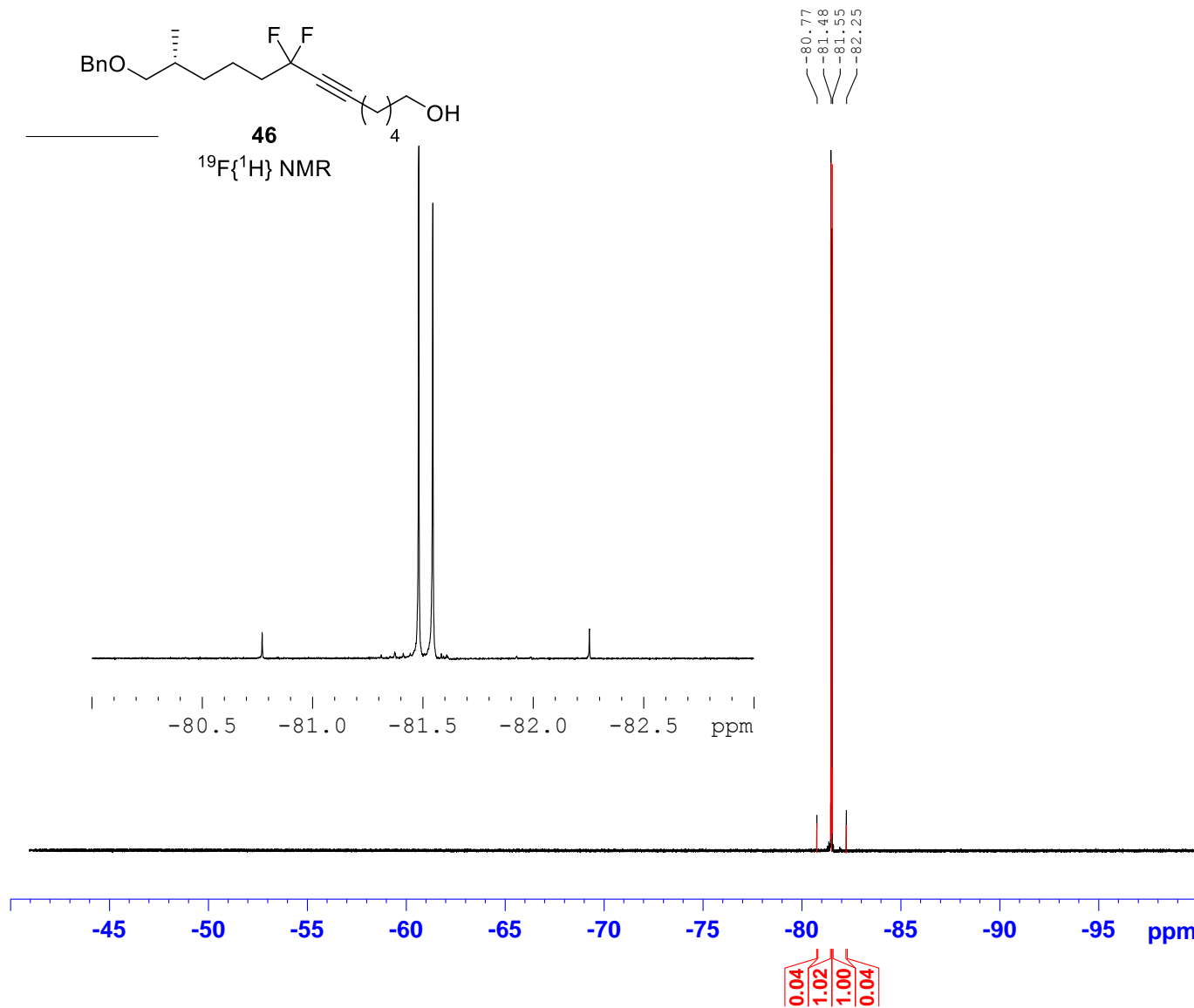
===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577653 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



46
 $^{19}\text{F}\{^1\text{H}\}$ NMR



Current Data Parameters
NAME 09242013-55-michaelM
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20130924
Time 17.21
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zgfhigqn.baseopt
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 2050
DW 16.800 usec
DE 9.42 usec
TE 296.5 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 376.4682461 MHz
NUC1 ^{19}F
P1 13.20 usec
PLW1 15.53699970 W

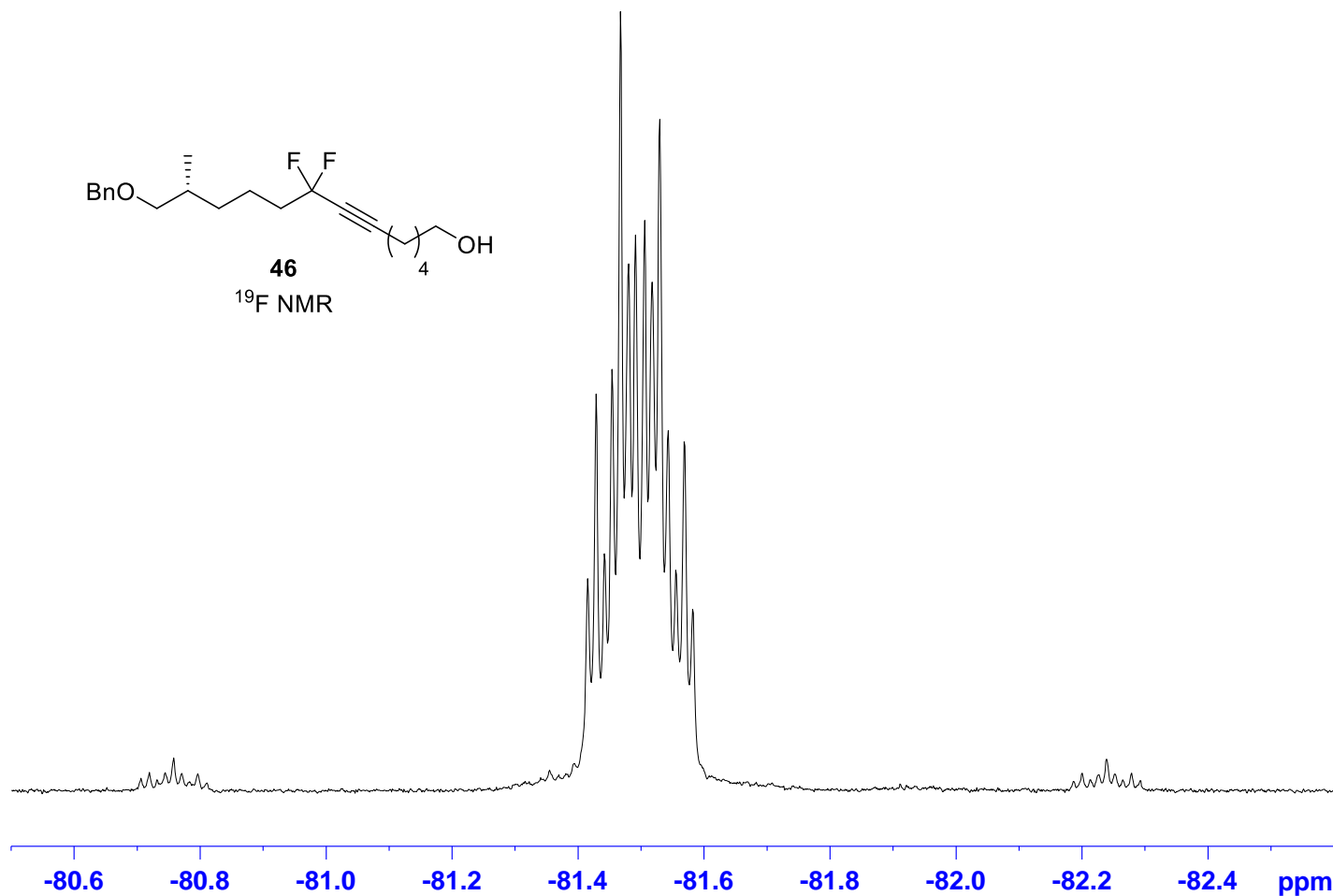
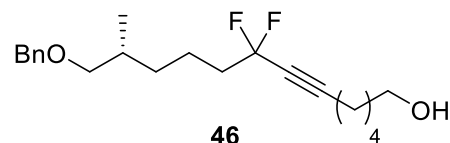
===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 ^1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW12 0.26752999 W

F2 - Processing parameters
SI 131072
SF 376.4985513 MHz
WDW no
SSB 0
LB 0 Hz
GB 0
PC 1.00

-80.71
-80.72
-80.73
-80.74
-80.76
-80.77
-80.78
-80.80
-80.81

-81.42
-81.43
-81.44
-81.45
-81.47
-81.48
-81.49
-81.51
-81.52
-81.53
-81.54
-81.56
-81.57
-81.58

-82.19
-82.20
-82.21
-82.23
-82.24
-82.25
-82.26
-82.28
-82.29

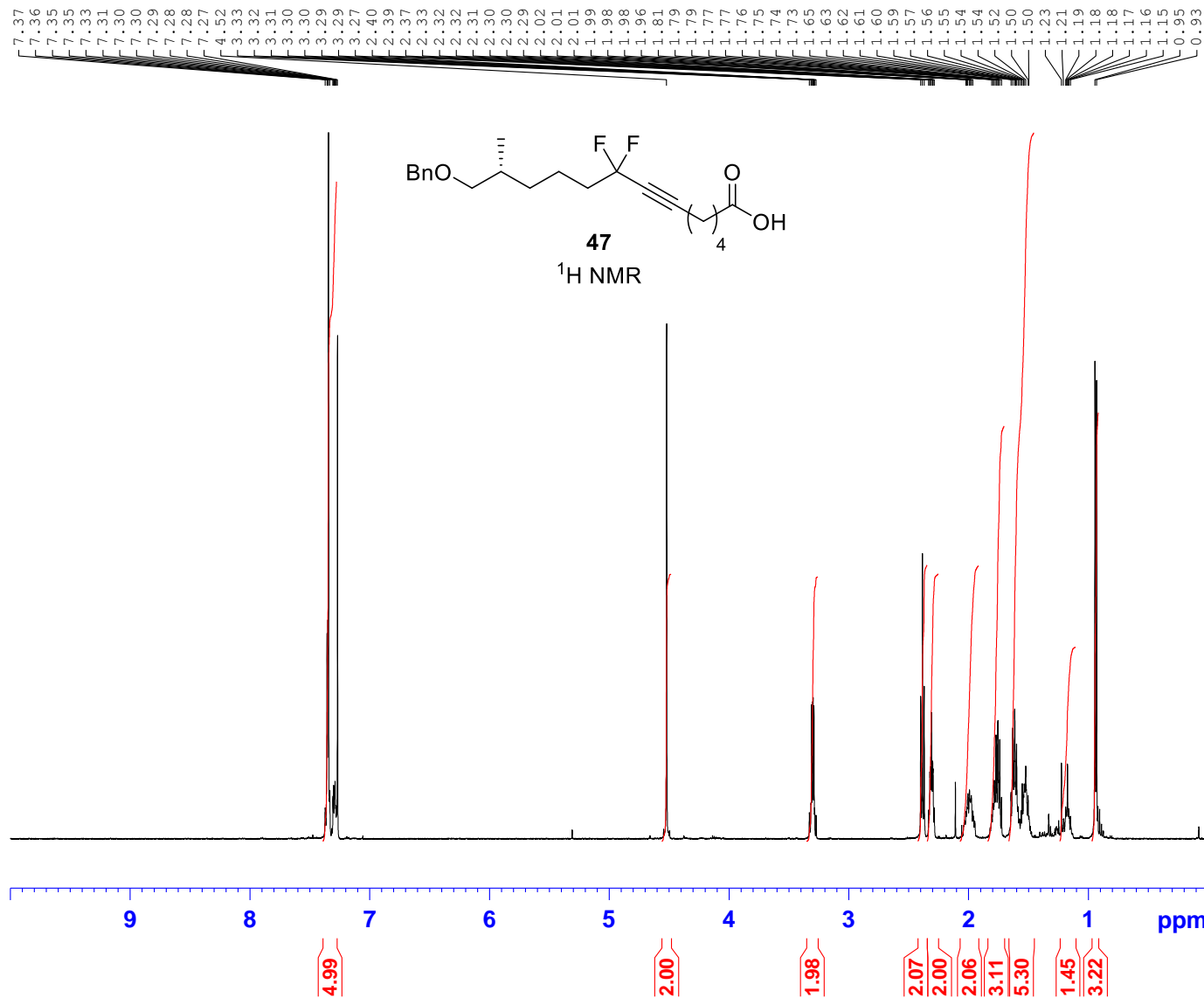


Current Data Parameters
 NAME 10022013-37-michaelM
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131002
 Time_ 15.54
 INSTRUM AVII400
 PROBHD 5 mm PABBO BB/
 PULPROG zg30.baseopt
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 29761.904 Hz
 FIDRES 0.454131 Hz
 AQ 1.1010048 sec
 RG 2050
 DW 16.800 usec
 DE 9.42 usec
 TE 296.4 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 376.4682461 MHz
 NUC1 19F
 P1 13.20 usec
 PLW1 15.53699970 W

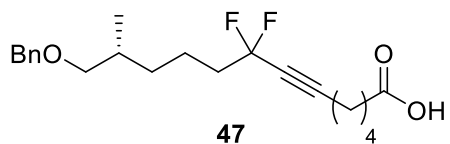
F2 - Processing parameters
 SI 65536
 SF 376.4985513 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



Current Data Parameters
 NAME 09272013-18-doh-mc410-F
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20130927
 Time_ 19.23
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 512
 DW 71.400 usec
 DE 6.00 usec
 TE 292.9 K
 D1 1.00000000 sec
 TD0 1
 SFO1 499.9029994 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000045 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



¹³C NMR

178.17

138.72

128.57

127.81

127.75

117.00

115.16

113.32

87.97

87.91

87.86

77.48

77.23

76.98

75.89

75.01

74.69

74.38

73.23

40.08

39.87

39.66

33.56

33.39

33.16

27.28

23.96

20.73

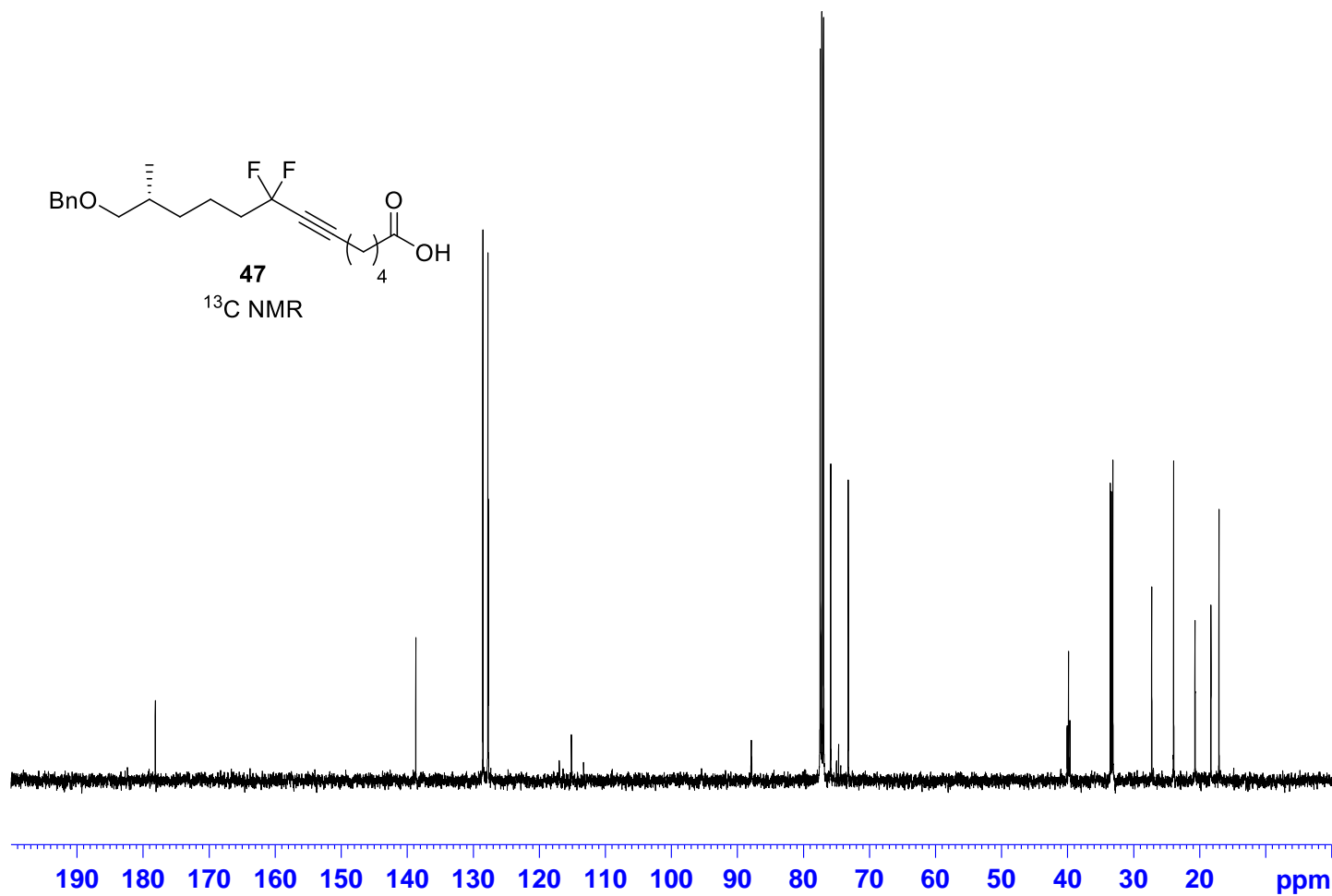
18.32

17.10



Current Data Parameters
NAME 09282013-29-doh-mc410-F
EXPNO 10
PROCNO 1

F2 - Processing parameters
SI 262144
SF 125.6999303 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40





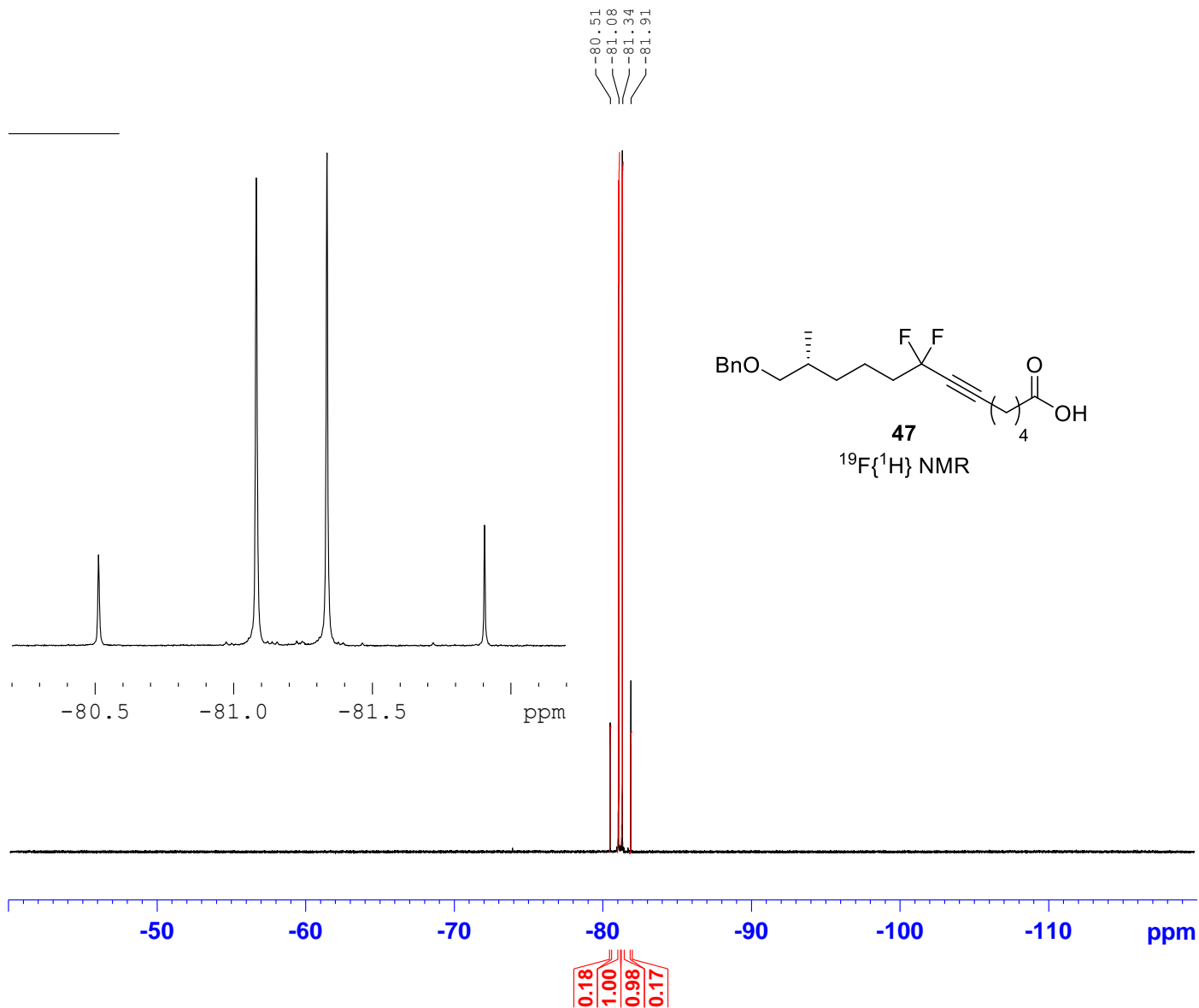
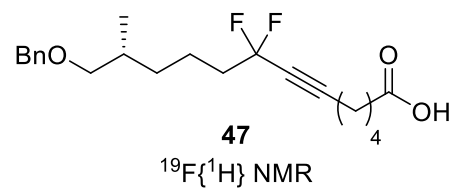
Current Data Parameters
 NAME 09262013-31-doh-mc410-A
 EXPNO 11
 PROCNO 1

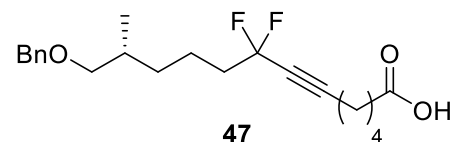
F2 - Acquisition Parameters
 Date_ 20130926
 Time_ 14.18
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zgfhgqn.3.and
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37500.000 Hz
 FIDRES 0.572205 Hz
 AQ 0.8738133 sec
 RG 128
 DW 13.333 usec
 DE 7.77 usec
 TE 295.0 K
 D1 1.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 470.5547296 MHz
 NUC1 19F
 P1 13.00 usec
 PLW1 55.00000000 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG2 waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 65536
 SF 470.5923770 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00





47
¹⁹F NMR

-80.87
-80.88
-80.89
-80.90
-80.92
-80.93
-80.94
-80.96
-80.97

-81.58
-81.59
-81.60
-81.62
-81.63
-81.64
-81.65
-81.67
-81.68
-81.71
-81.72
-81.73
-81.75
-81.76
-81.77
-81.79
-81.80
-81.81

-82.42
-82.43
-82.44
-82.46
-82.47
-82.48
-82.50
-82.51
-82.52

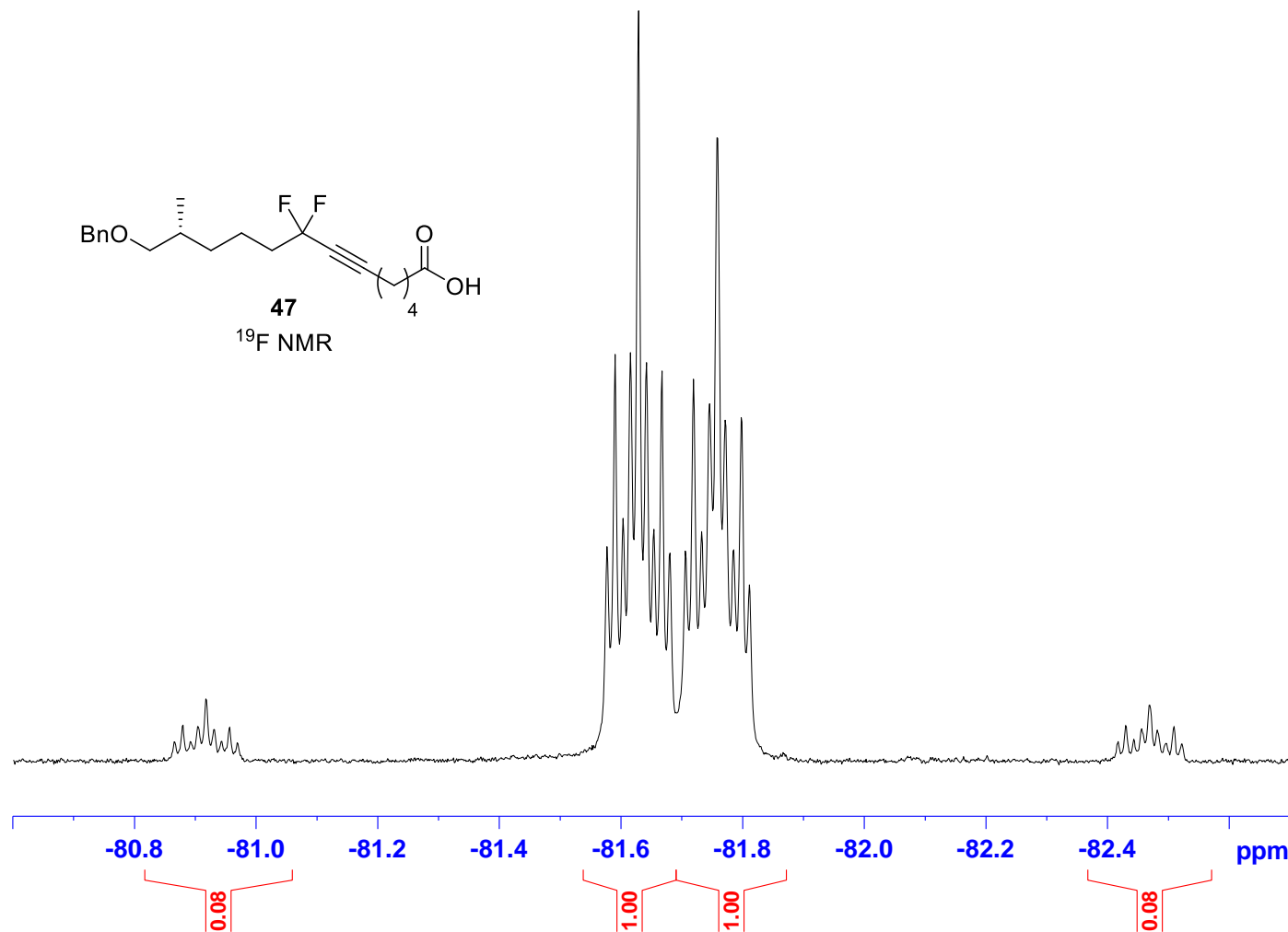


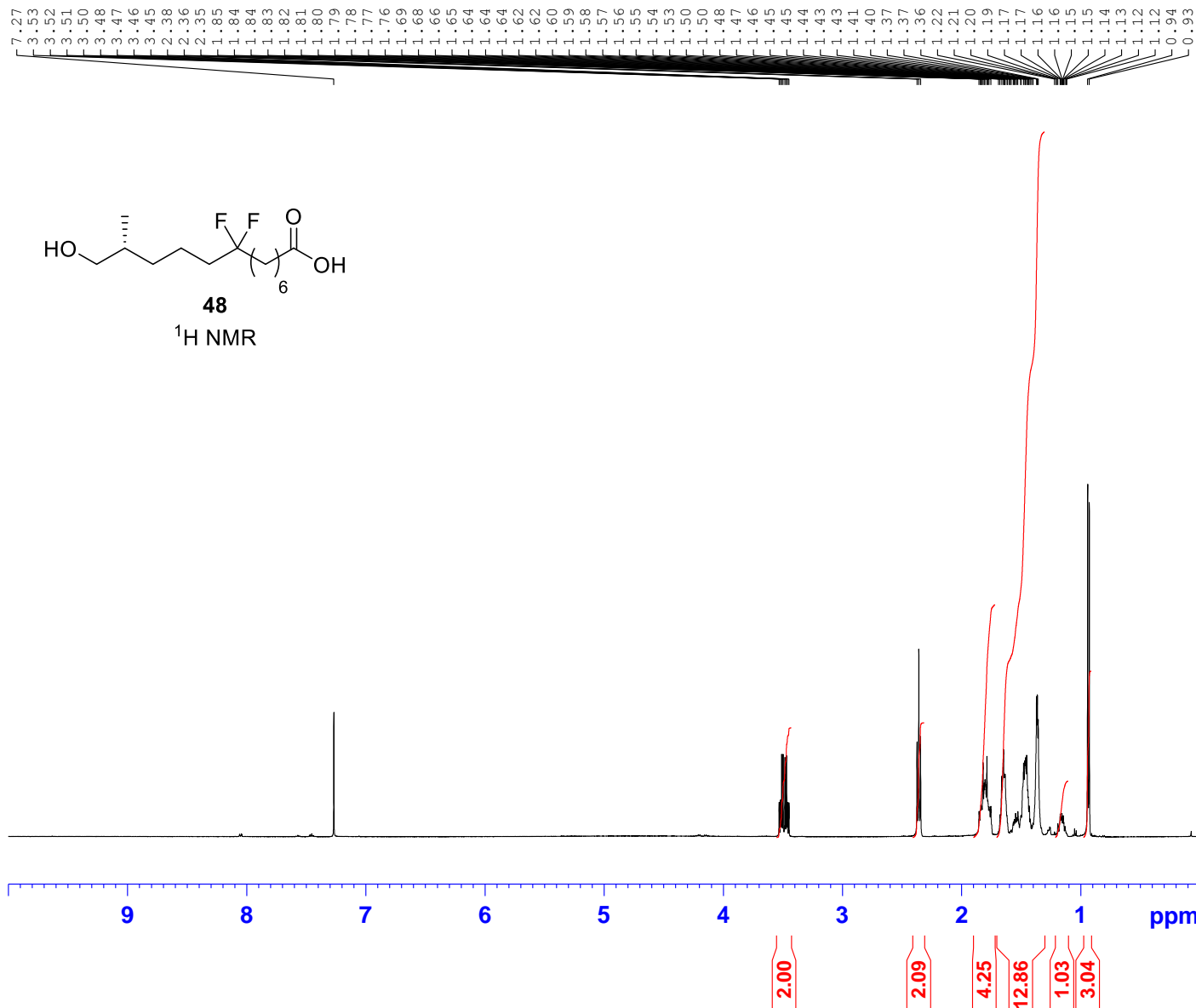
Current Data Parameters
NAME 10022013-38-michaelM
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131002
Time 16.01
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30.baseopt
TD 65536
SOLVENT CDCl3
NS 64
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 2050
DW 16.800 usec
DE 9.42 usec
TE 296.3 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 376.4682461 MHz
NUC1 19F
P1 13.20 usec
PLW1 15.53699970 W

F2 - Processing parameters
SI 65536
SF 376.4985513 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

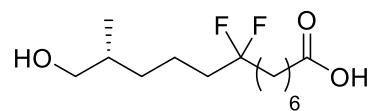




Current Data Parameters
 NAME 10042013-4-doh-mc410-F
 EXPNO 12
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131004
 Time_ 17.28
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 0 Hz
 FIDRES 0 Hz
 AQ 1.#INF000 sec
 RG 256
 DW 1.#IO usec
 DE 6.00 usec
 TE 292.6 K
 D1 1.00000000 sec
 TD0 1
 SFO1 0 MHz
 NUC1 1H
 P1 10.50 usec
 PLW1 -1.00000000 W

F2 - Processing parameters
 SI 65536
 SF 499.9000043 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



48

¹³C NMR

— 179.29

— 127.37
— 125.46
— 123.55

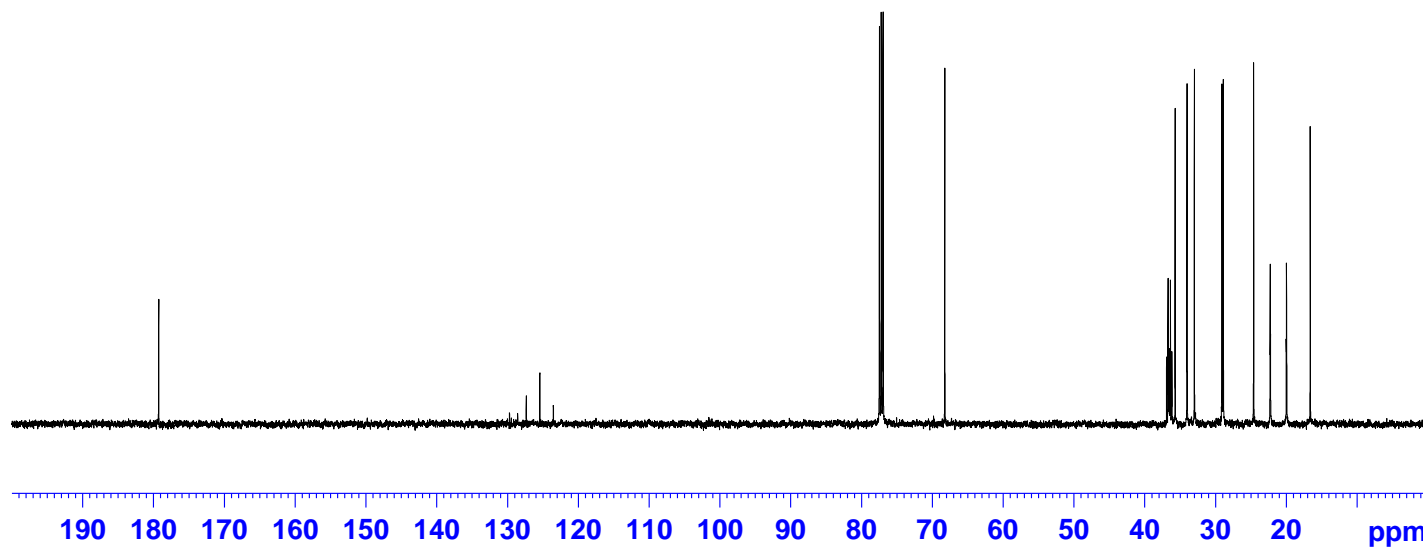
— 77.48
— 77.23
— 76.97
— 68.25

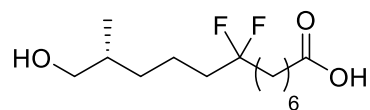
— 36.92
— 36.72
— 36.59
— 36.52
— 36.39
— 36.19
— 35.72
— 34.04
— 33.01
— 29.11
— 28.92
— 24.63
— 22.32
— 22.29
— 22.25
— 20.03
— 19.99
— 19.96
— 16.64



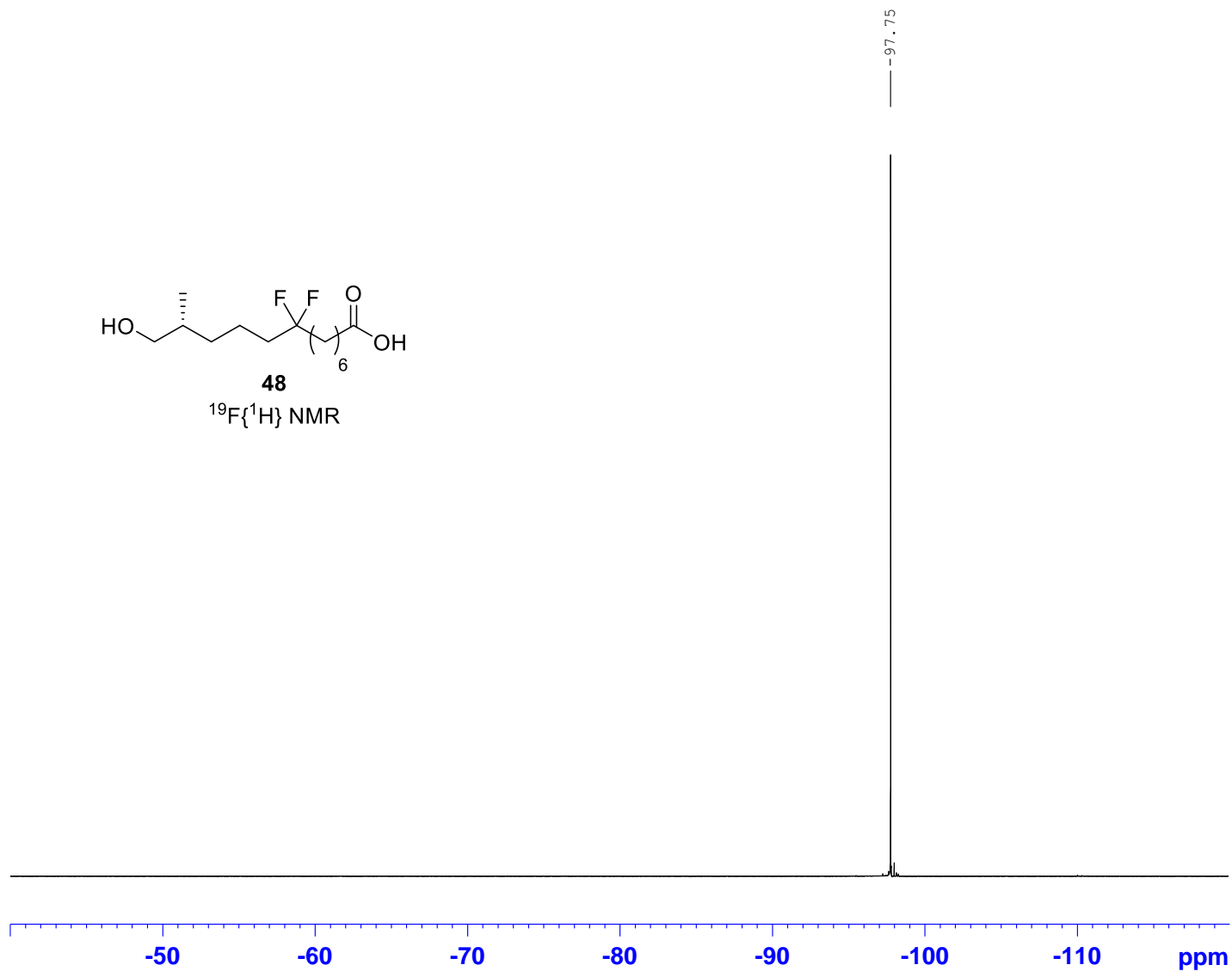
Current Data Parameters
NAME 10042013-4-doh-mc410-F
EXPNO 13
PROCNO 1

F2 - Processing parameters
SI 262144
SF 125.6999307 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40





48
 $^{19}\text{F}\{^1\text{H}\}$ NMR



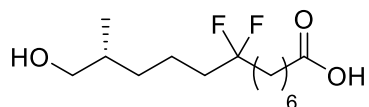
Current Data Parameters
 NAME 10042013-4-doh-mc410-F
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20131004
 Time_ 17.23
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDC13
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 1625.5
 DW 13.300 usec
 DE 6.00 usec
 TE 292.8 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 ^{19}F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 0 MHz
 NUC2 ^1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

F2 - Processing parameters

SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



48
19F NMR

---97.68
 ---97.71
 ---97.75
 ---97.78
 ---97.82

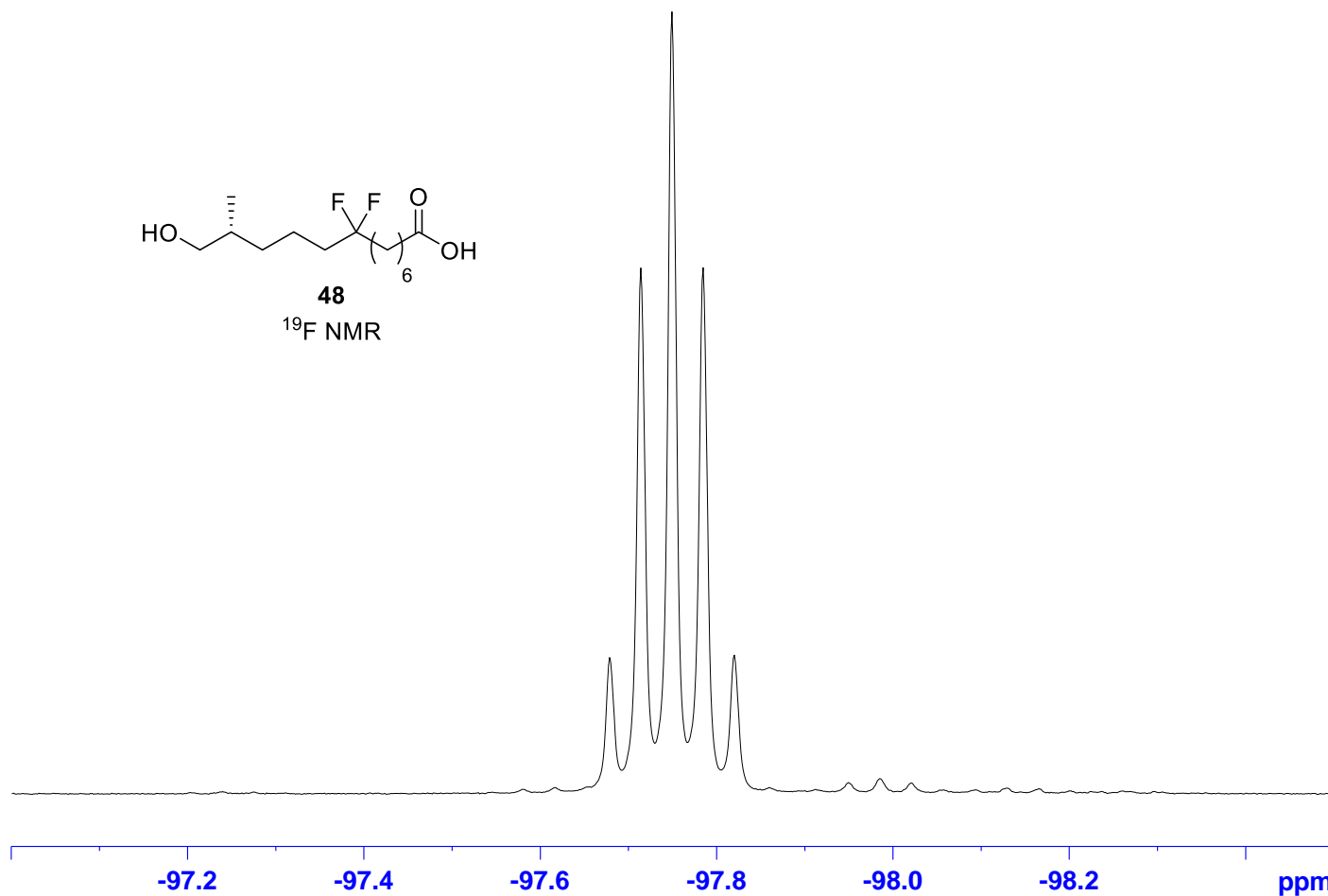


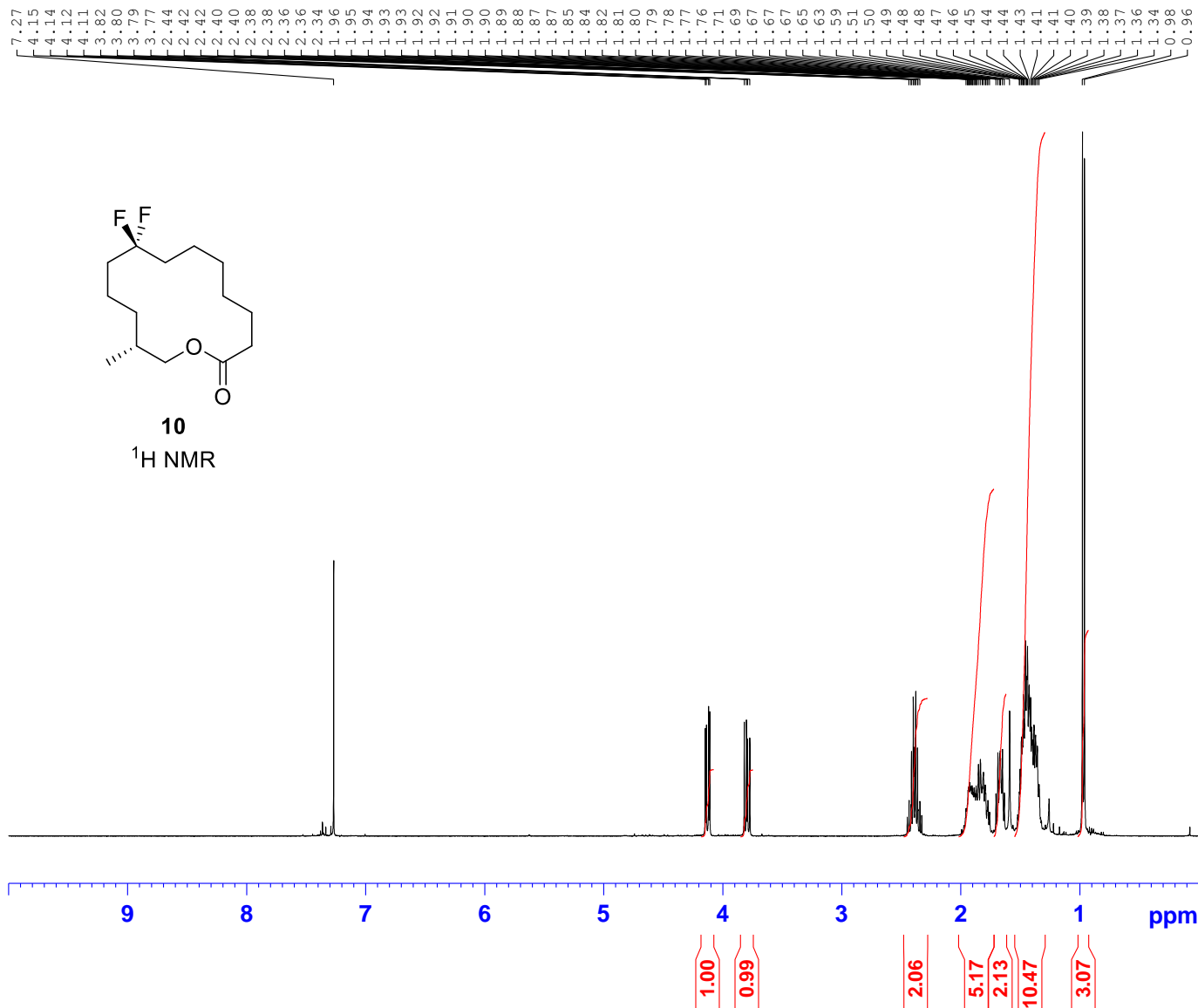
Current Data Parameters
 NAME 10042013-4-doh-mc410-F
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131004
 Time_ 17.26
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfglqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 812.7
 DW 13.300 usec
 DE 6.00 usec
 TE 292.5 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 19F
 P1 12.15 usec
 PL1 -5.00 dB
 SFO1 470.3383309 MHz

F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



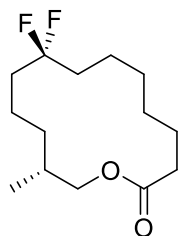


Current Data Parameters
NAME 10092013-58-michaelm
EXPNO 10
PROCNO 1

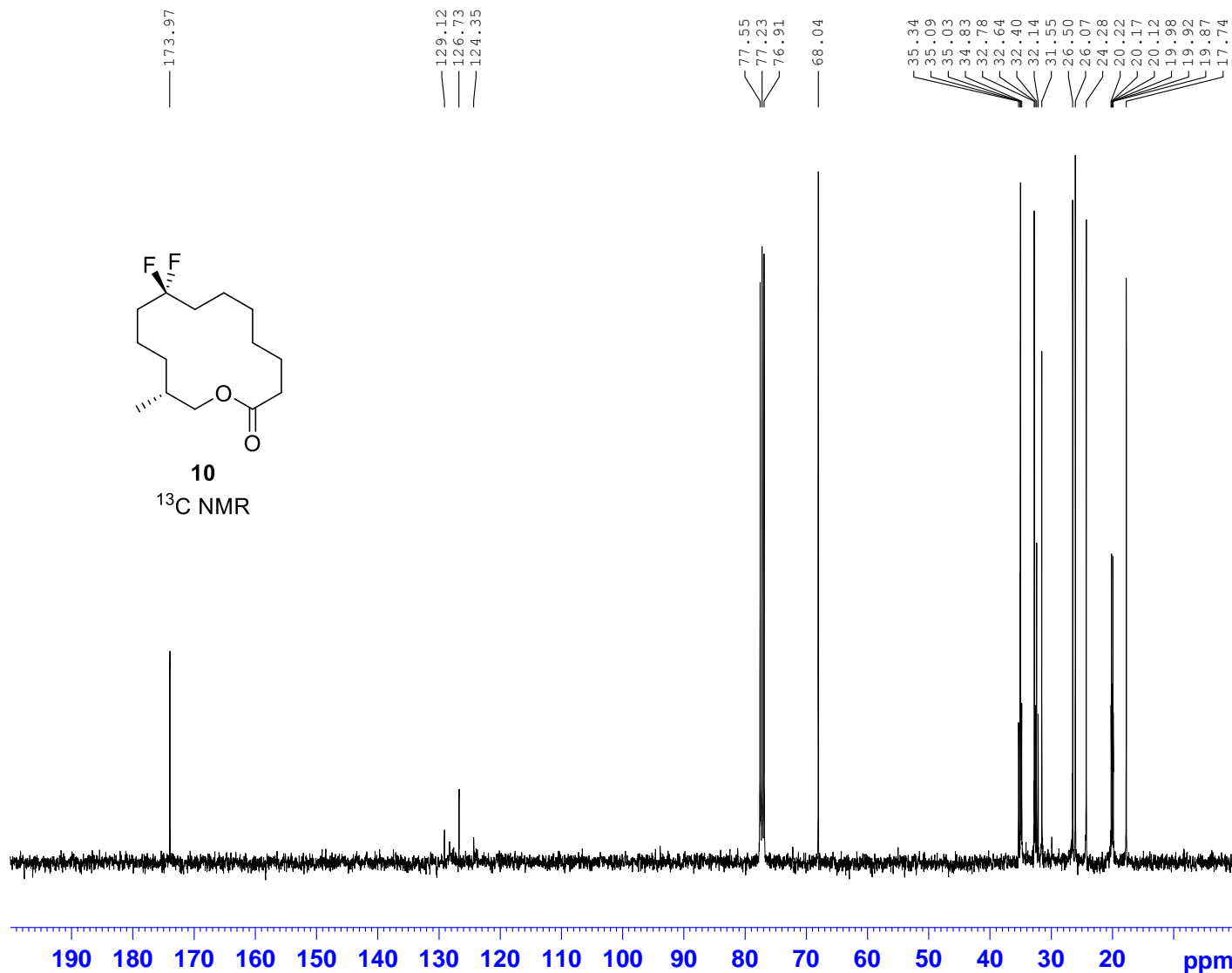
F2 - Acquisition Parameters
Date_ 20131009
Time 17.49
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 8
DS 2
SWH 5597.015 Hz
FIDRES 0.085404 Hz
AQ 5.8545494 sec
RG 181
DW 89.333 usec
DE 6.50 usec
TE 296.0 K
D1 1.00000000 sec
TD0 1

===== CHANNEL f1 =====
SF01 400.1324008 MHz
NUC1 1H
P1 12.50 usec
PLW1 15.04800034 W

F2 - Processing parameters
SI 32768
SF 400.1300057 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



10
¹³C NMR



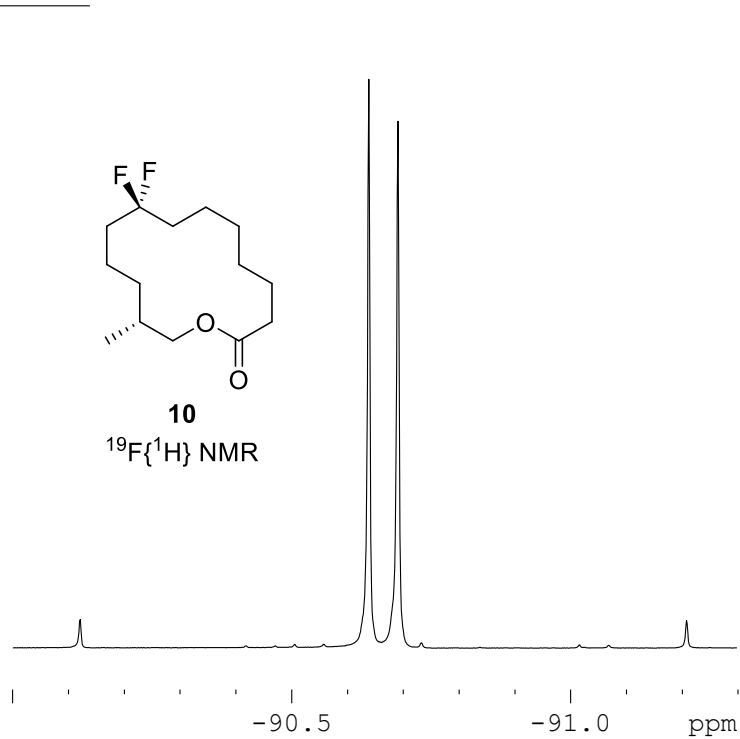
Current Data Parameters
NAME 10092013-58-michaelM
EXPNO 14
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131010
Time_ 3.02
INSTRUM AVII400
PROBHD 5 mm PABBO BB/
PULPROG udeftnoe.and
TD 8650
SOLVENT CDCl3
NS 2048
DS 4
SWH 24038.461 Hz
FIDRES 2.779013 Hz
AQ 0.1799200 sec
RG 203
DW 20.800 usec
DE 6.50 usec
TE 295.6 K
D1 2.00000000 sec
D6 0.03000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D15 0.00302000 sec
D20 1.53362894 sec
D21 0.21294050 sec
D24 0.10000000 sec
L4 1

===== CHANNEL f1 =====
SFO1 100.6238364 MHz
NUC1 13C
P1 8.50 usec
P12 40000.00 usec
P26 500.00 usec
PLW1 55.73500061 W
SPNAM[2] Q3.1000
SPOAL2 0.500
SPOFFS2 0 Hz
SPW2 0.00043873 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 6.15259981 W

===== CHANNEL f2 =====
SFO2 400.1316005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 90.00 usec
PLW2 15.04800034 W
PLW13 0.21670000 W

F2 - Processing parameters
SI 32768
SF 100.6127487 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



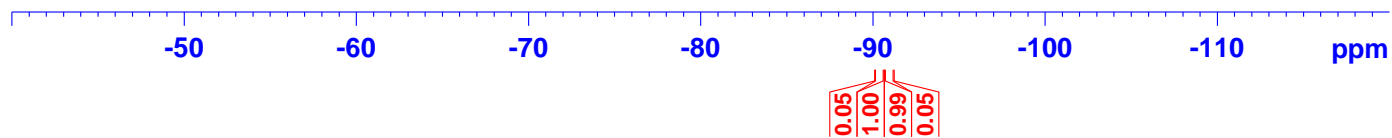
-90.12
 -90.64
 -90.69
 -91.21



Current Data Parameters
 NAME 10092013-9-doh-mc410-F
 EXPNO 11
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20131009
 Time_ 9.29
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfhigqn
 TD 65536
 SOLVENT CDCl3
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 2048
 DW 13.300 usec
 DE 6.00 usec
 TE 293.1 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 d12 0.00002000 sec
 TD0 1
 SFO1 470.3383309 MHz
 NUC1 19F
 P1 12.15 usec
 PLW1 -1.00000000 W
 SFO2 499.9019996 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 -1.00000000 W
 PLW12 -1.00000000 W

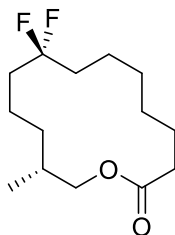
F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



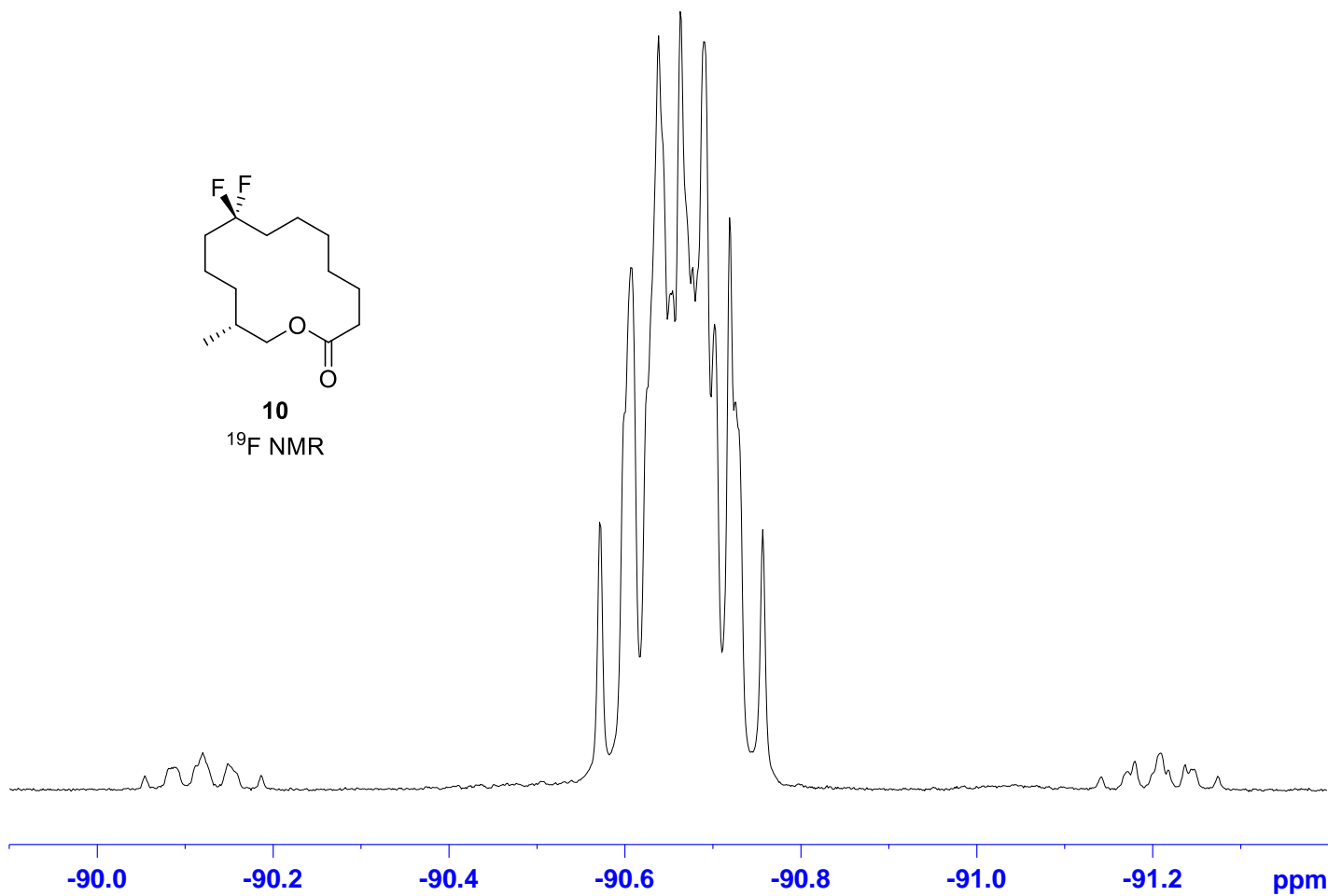
— -90.05
 — -90.09
 — -90.12
 — -90.15
 — -90.19

— -90.57
 — -90.61
 — -90.64
 — -90.65
 — -90.66
 — -90.68
 — -90.69
 — -90.70
 — -90.72
 — -90.73
 — -90.76

— -91.14
 — -91.17
 — -91.18
 — -91.21
 — -91.22
 — -91.24
 — -91.24
 — -91.27



10
¹⁹F NMR

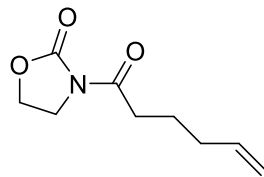


Current Data Parameters
 NAME 10092013-2-doh-mc410-F
 EXPNO 10
 PROCNO 1

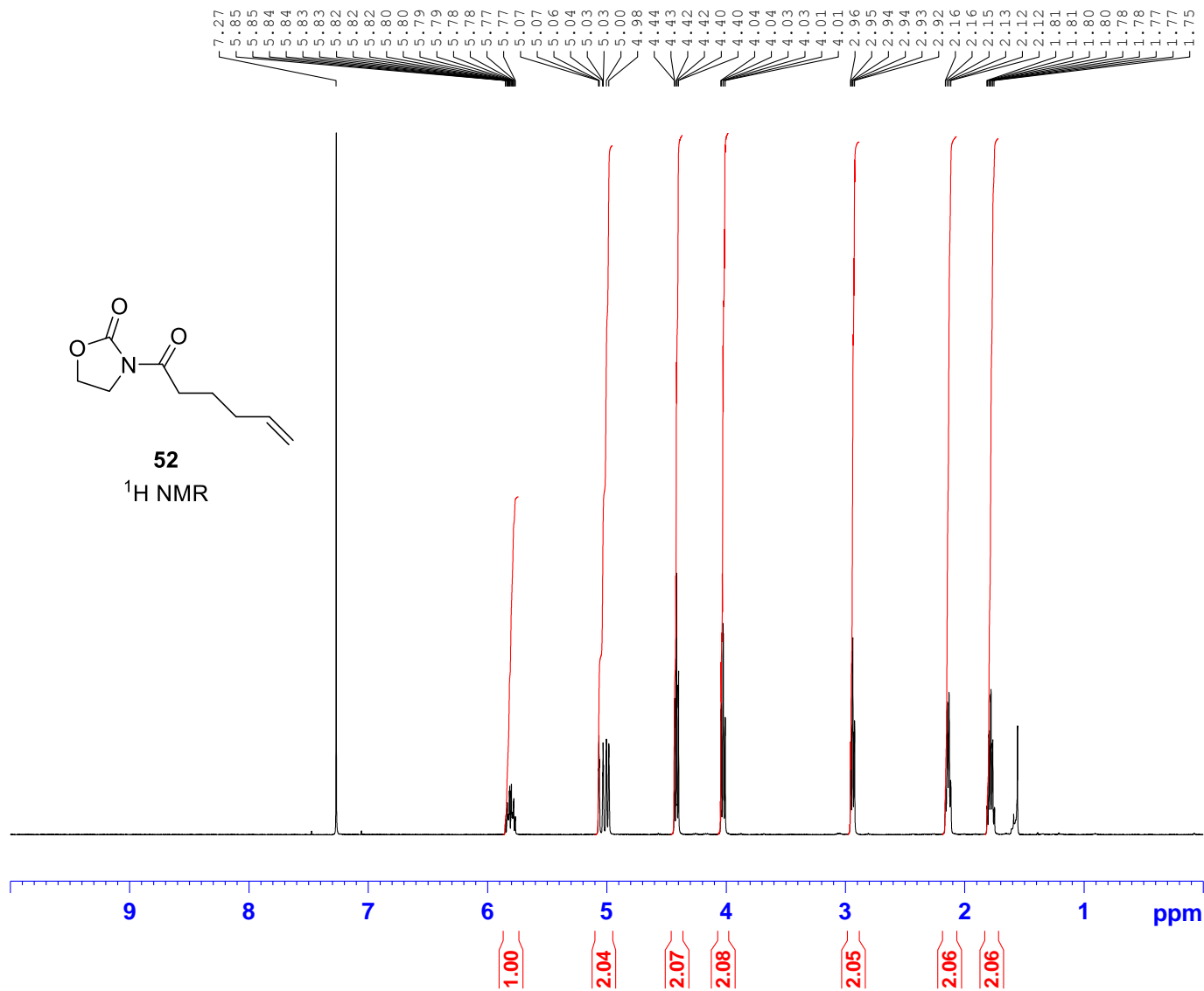
F2 - Acquisition Parameters
 Date_ 20131009
 Time 12.11
 INSTRUM spect
 PROBHD 5 mm QNP 1H/13
 PULPROG zgfglqn
 TD 65536
 SOLVENT CDC13
 NS 64
 DS 4
 SWH 37593.984 Hz
 FIDRES 0.573639 Hz
 AQ 0.8716288 sec
 RG 812.7
 DW 13.300 usec
 DE 6.00 usec
 TE 293.2 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 NUC1 19F
 P1 12.15 usec
 PL1 -5.00 dB
 SFO1 470.3383309 MHz

F2 - Processing parameters
 SI 65536
 SF 470.3759460 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



¹H NMR

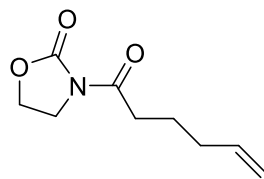


Current Data Parameters
 NAME 04232014-14-doh-mc410-A
 EXPNO 10
 PROCNO 1

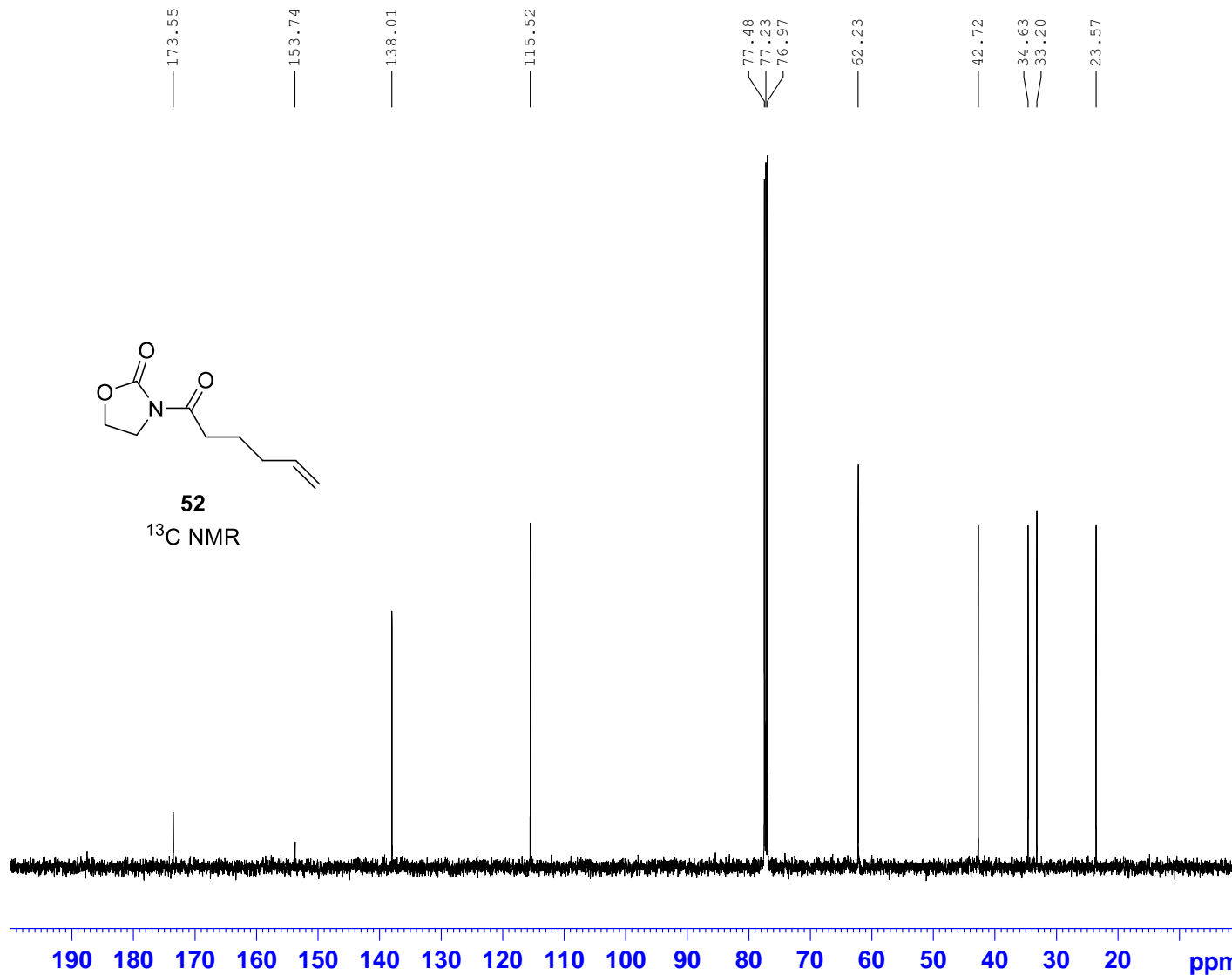
F2 - Acquisition Parameters
 Date_ 20140423
 Time 20.47
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SF01 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300073 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



52
¹³C NMR



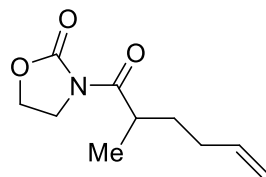
Current Data Parameters
NAME 04232014-14-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140423
Time 21.41
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeflt
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

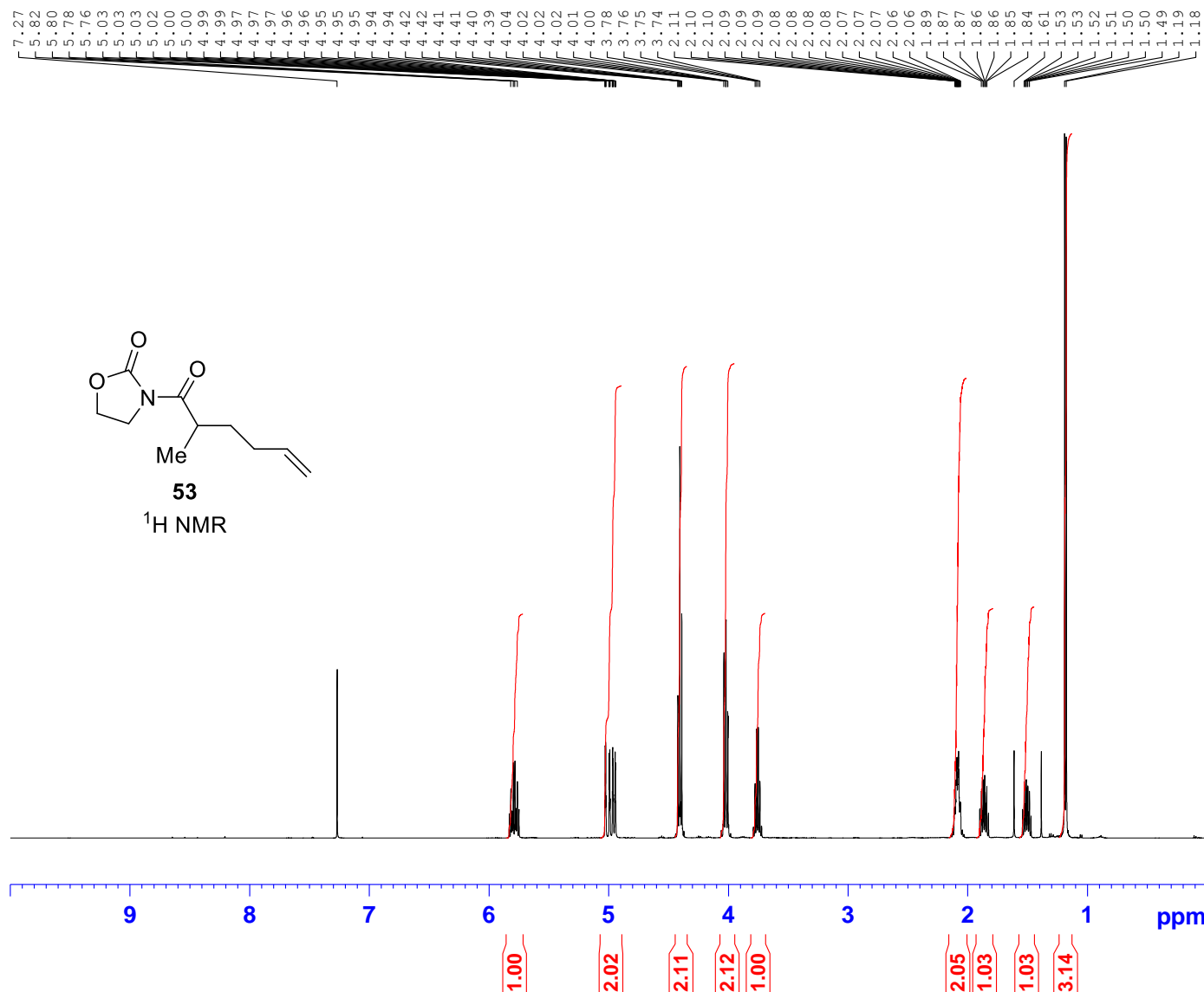
===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577642 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



53
¹H NMR

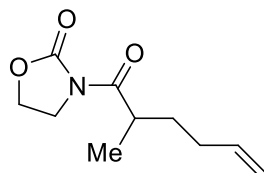


Current Data Parameters
 NAME 04232014-15-doh-mc410-A
 EXPNO 10
 PROCNO 1

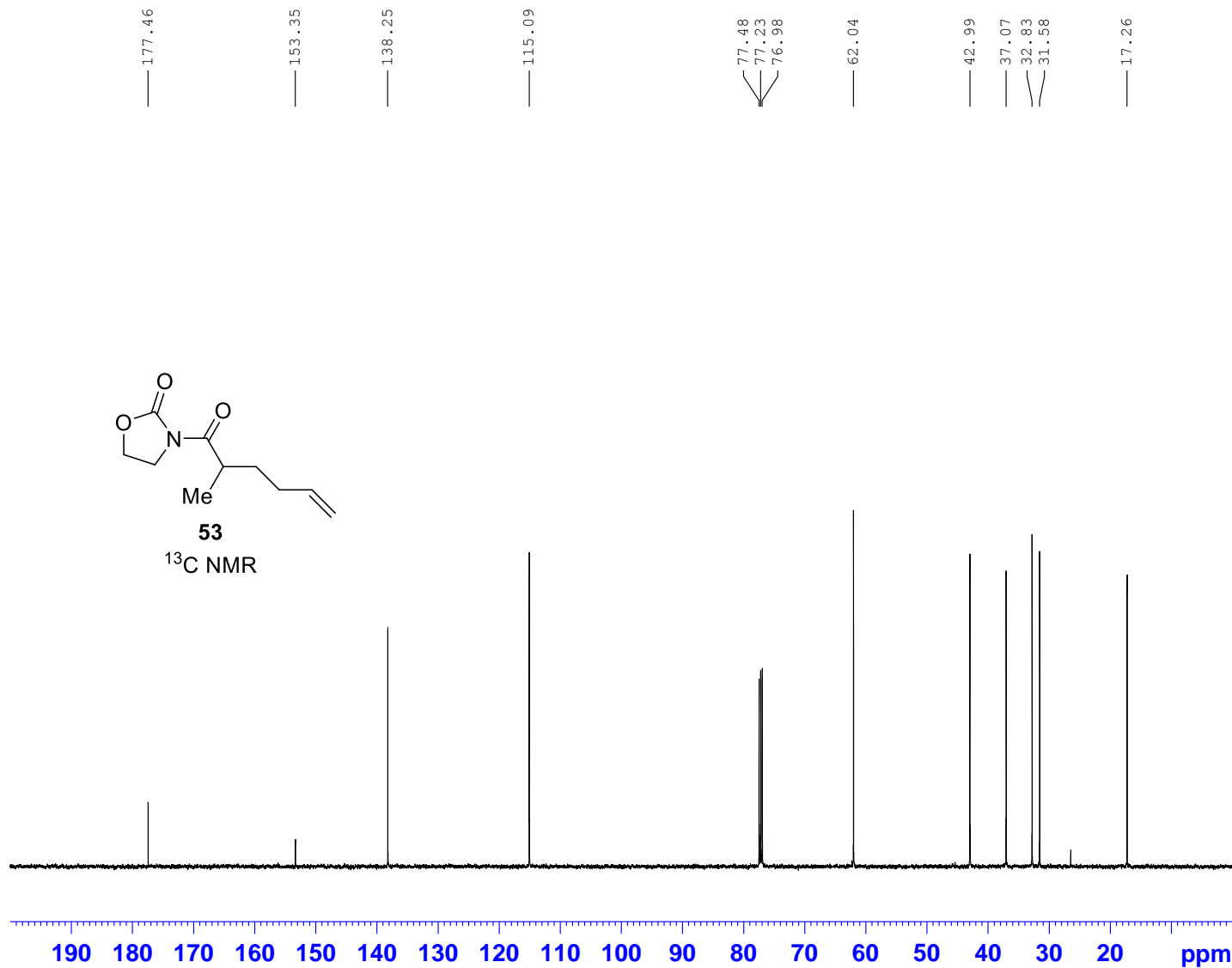
F2 - Acquisition Parameters
 Date_ 20140423
 Time 21.45
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 90.5
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300072 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



53
¹³C NMR



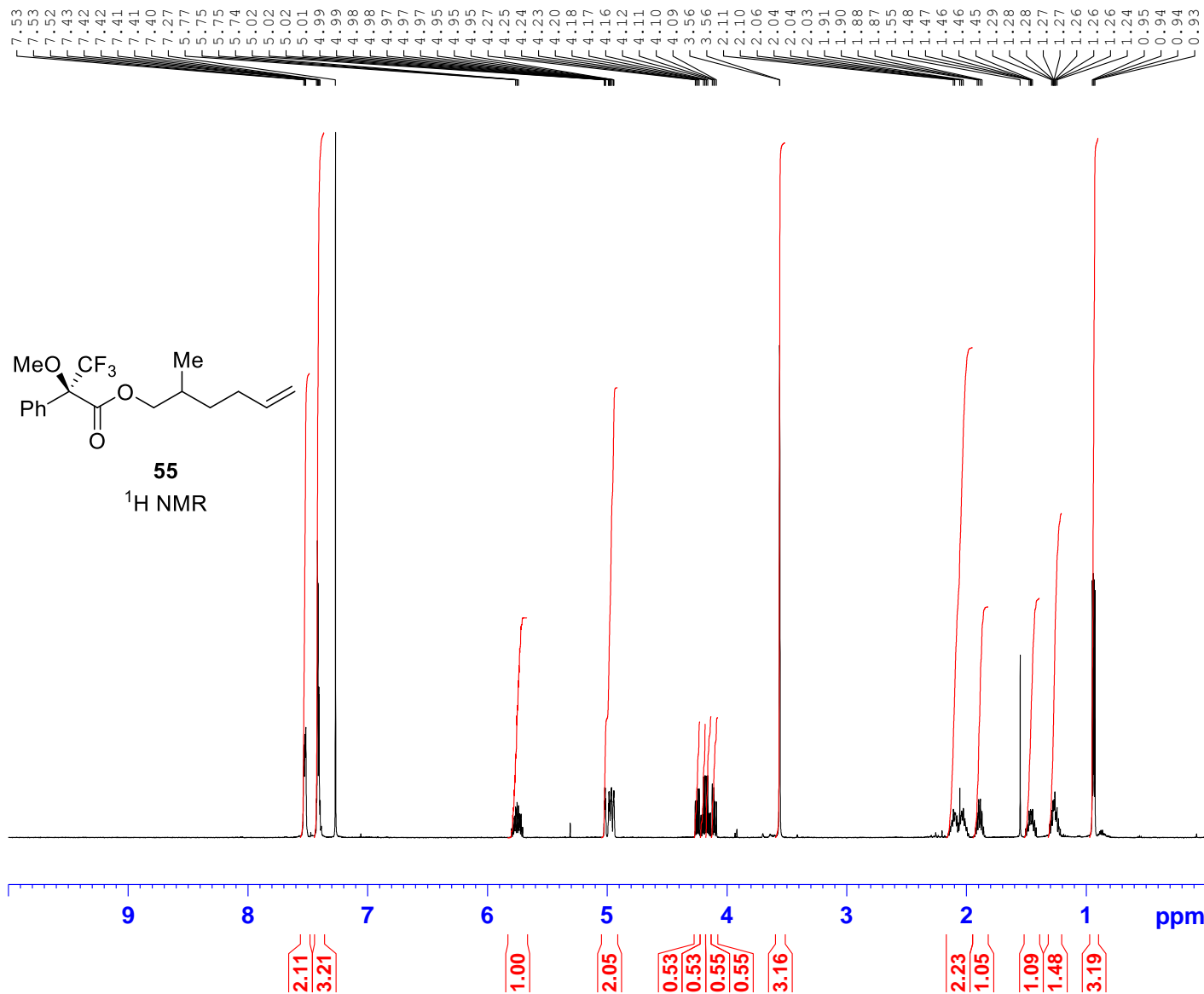
Current Data Parameters
NAME 04232014-15-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140423
Time 22.39
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeft
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577655 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40

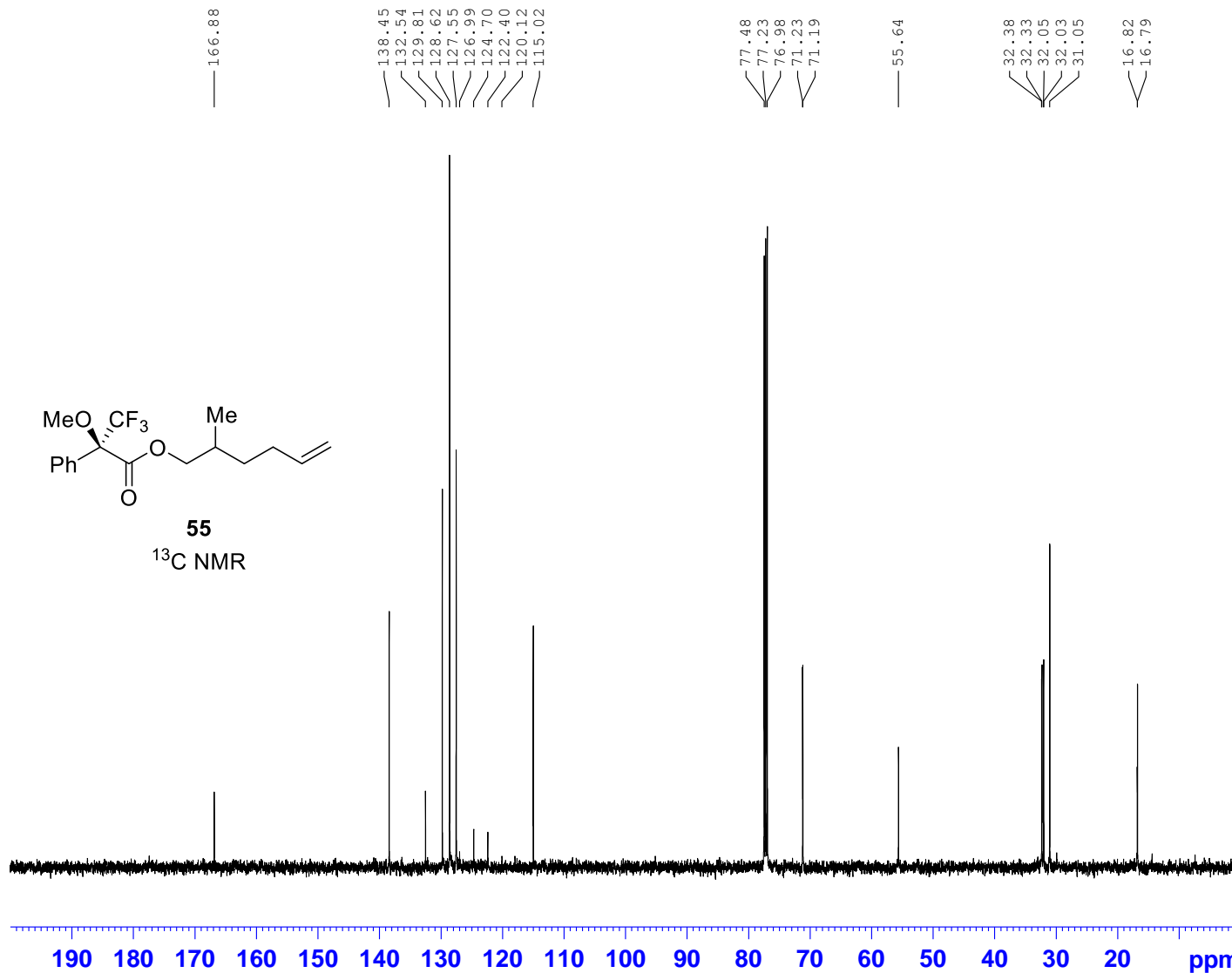


Current Data Parameters
 NAME 04042014-17-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140404
 Time 10.58
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 7002.801 Hz
 FIDRES 0.106854 Hz
 AQ 4.6792703 sec
 RG 128
 DW 71.400 usec
 DE 11.40 usec
 TE 295.0 K
 D1 1.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 500.1330008 MHz
 NUC1 1H
 P1 10.35 usec
 PLW1 24.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300074 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



Current Data Parameters
 NAME 04222014-4-doh-mc410-A
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140423
 Time 0.56
 INSTRUM spect
 PROBHD 5 mm PABBO BB/
 PULPROG udeflt
 TD 21424
 SOLVENT CDCl3
 NS 800
 DS 0
 SWH 29761.904 Hz
 FIDRES 1.389185 Hz
 AQ 0.3599232 sec
 RG 128
 DW 16.800 usec
 DE 7.96 usec
 TE 295.0 K
 D1 3.00000000 sec
 D11 0.03000000 sec
 D12 0.00002000 sec
 D20 200.00000000 sec
 TD0 1

===== CHANNEL f1 =====
 SFO1 125.7716224 MHz
 NUC1 13C
 P1 8.90 usec
 P13 2000.00 usec
 P26 500.00 usec
 PLW1 125.00000000 W
 SPNAM[5] Crp60comp.4
 SPOAL5 0.500
 SPOFFS5 0 Hz
 SPW5 15.12800026 W
 SPNAM[8] Crp60,0.5,20.1
 SPOAL8 0.500
 SPOFFS8 0 Hz
 SPW8 15.12800026 W

===== CHANNEL f2 =====
 SFO2 500.1320005 MHz
 NUC2 1H
 CPDPRG[2] waltz65
 PCPD2 80.00 usec
 PLW2 24.00000000 W
 PLW12 0.39015001 W

F2 - Processing parameters
 SI 262144
 SF 125.7577638 MHz
 WDW EM
 SSB 0
 LB 2.00 Hz
 GB 0
 PC 1.40



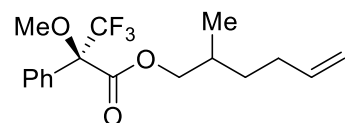
Current Data Parameters
NAME 04042014-17-doh-mc410-A
EXPNO 11
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140404
Time_ 11.01
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgfhgqn.3.and
TD 131072
SOLVENT CDCl3
NS 64
DS 4
SWH 125000.000 Hz
FIDRES 0.953674 Hz
AQ 0.5242880 sec
RG 128
DW 4.000 usec
DE 6.95 usec
TE 295.0 K
D1 1.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 470.5359059 MHz
NUC1 19F
P1 13.00 usec
PLW1 55.00000000 W

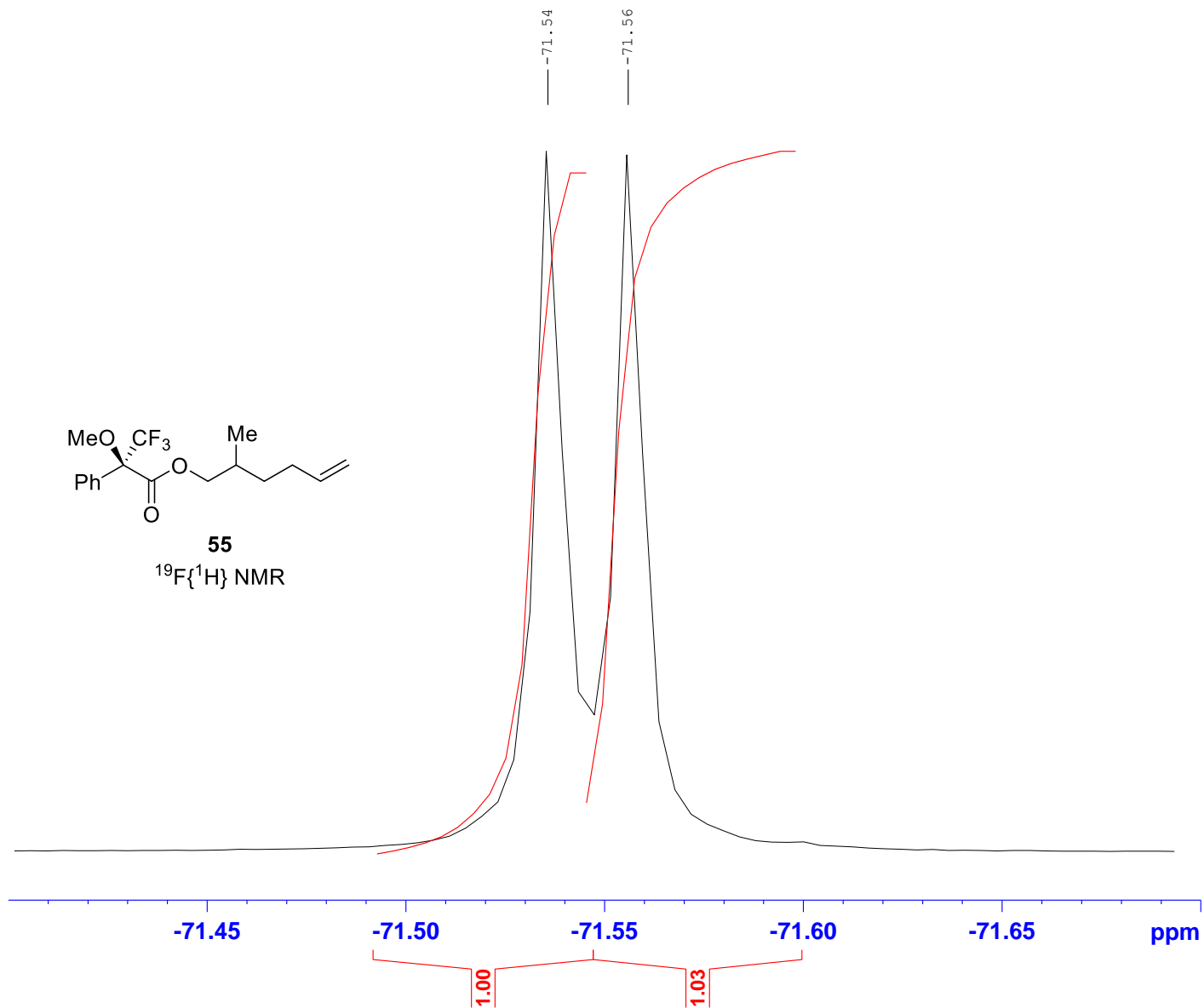
===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

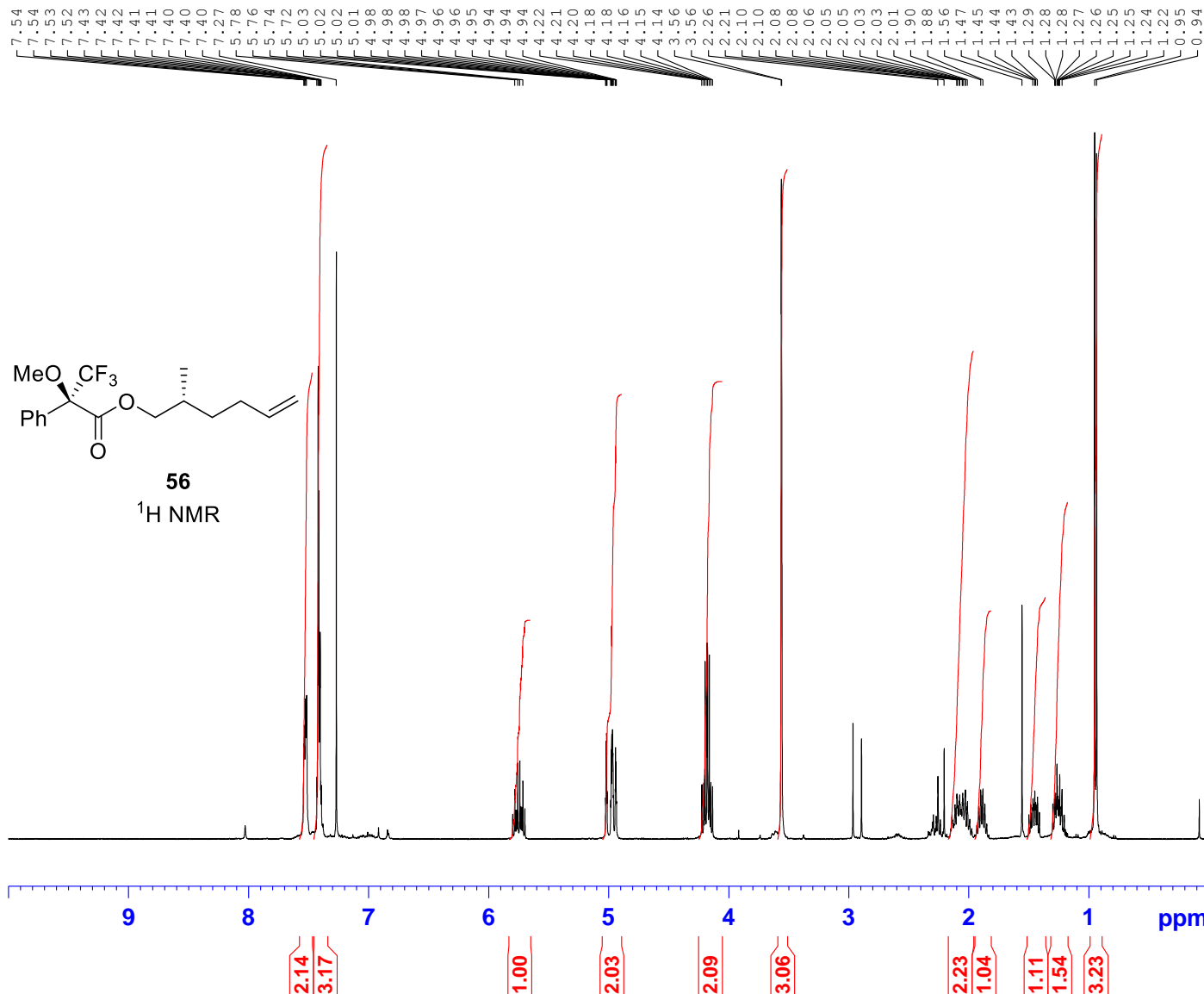
F2 - Processing parameters
SI 65536
SF 470.5923770 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



55

$^{19}\text{F}\{^1\text{H}\}$ NMR





Current Data Parameters
 NAME 04112014-8-doh-mc410-N
 EXPNO 10
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140411
 Time_ 21.40
 INSTRUM AV400
 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 2
 SWH 5592.841 Hz
 FIDRES 0.085340 Hz
 AQ 5.8589182 sec
 RG 228.1
 DW 89.400 usec
 DE 6.50 usec
 TE 296.7 K
 D1 1.00000000 sec
 TDO 1

===== CHANNEL f1 =====
 NUC1 1H
 P1 12.00 usec
 PL1 -3.00 dB
 PLLW 19.24057770 W
 SFO1 400.3024018 MHz

F2 - Processing parameters
 SI 65536
 SF 400.3000055 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



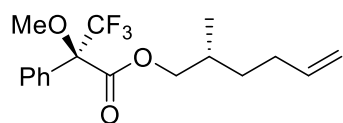
Current Data Parameters
NAME 04222014-5-doh-mc410-A
EXPNO 10
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140423
Time_ 1.52
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG udeflt
TD 21424
SOLVENT CDCl3
NS 800
DS 0
SWH 29761.904 Hz
FIDRES 1.389185 Hz
AQ 0.3599232 sec
RG 128
DW 16.800 usec
DE 7.96 usec
TE 295.0 K
D1 3.00000000 sec
D11 0.03000000 sec
D12 0.00002000 sec
D20 200.00000000 sec
TD0 1

===== CHANNEL f1 =====
SFO1 125.7716224 MHz
NUC1 13C
P1 8.90 usec
P13 2000.00 usec
P26 500.00 usec
PLW1 125.00000000 W
SPNAM[5] Crp60comp.4
SPOAL5 0.500
SPOFFS5 0 Hz
SPW5 15.12800026 W
SPNAM[8] Crp60,0.5,20.1
SPOAL8 0.500
SPOFFS8 0 Hz
SPW8 15.12800026 W

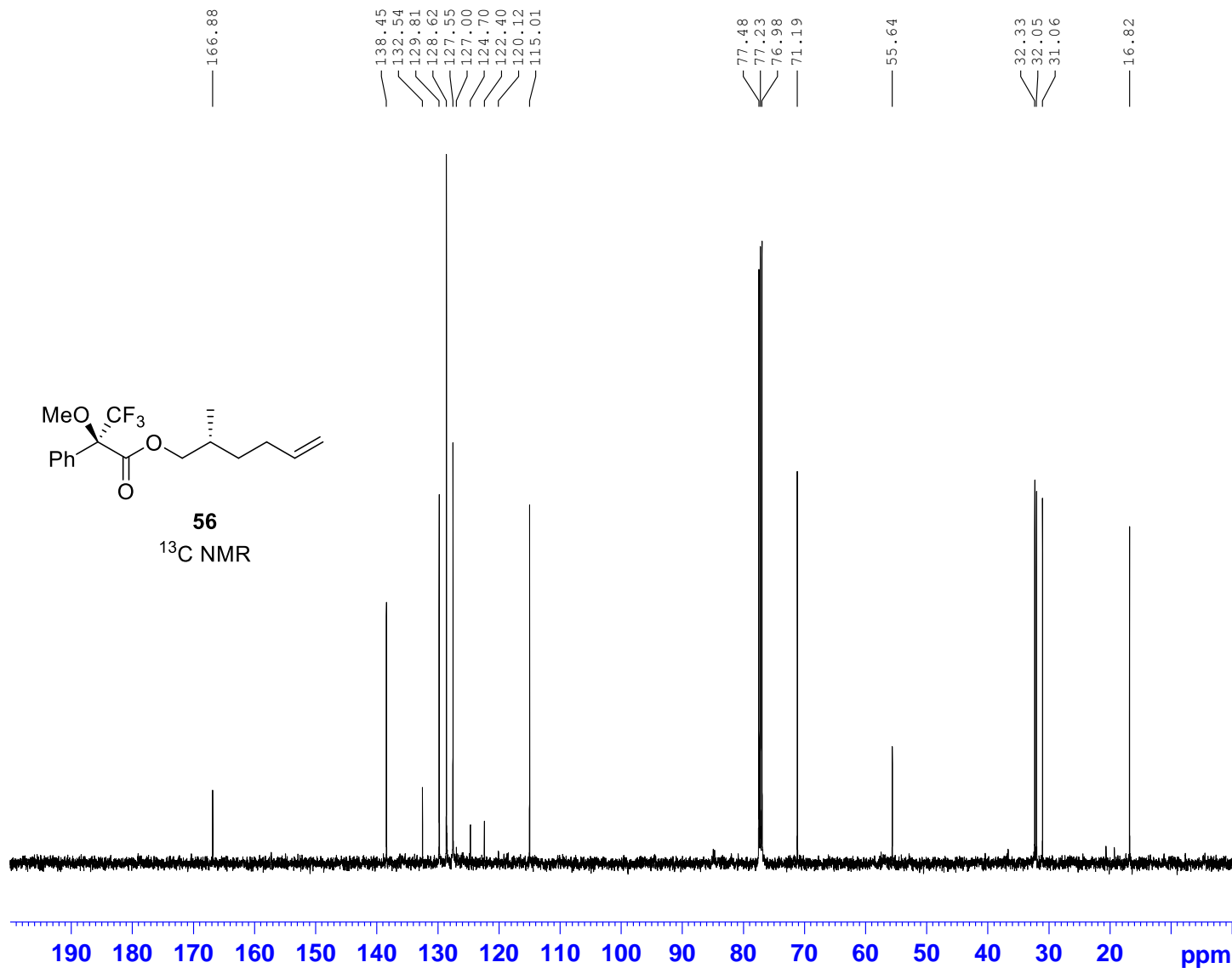
===== CHANNEL f2 =====
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz65
PCPD2 80.00 usec
PLW2 24.00000000 W
PLW12 0.39015001 W

F2 - Processing parameters
SI 262144
SF 125.7577638 MHz
WDW EM
SSB 0
LB 2.00 Hz
GB 0
PC 1.40



56

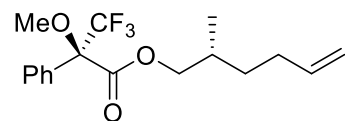
¹³C NMR





Current Data Parameters
NAME 04112014-8-doh-mc410-N
EXPNO 12
PROCNO 1

F2 - Processing parameters
SI 65536
SF 376.6583260 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



56
 $^{19}\text{F}\{^1\text{H}\}$ NMR

