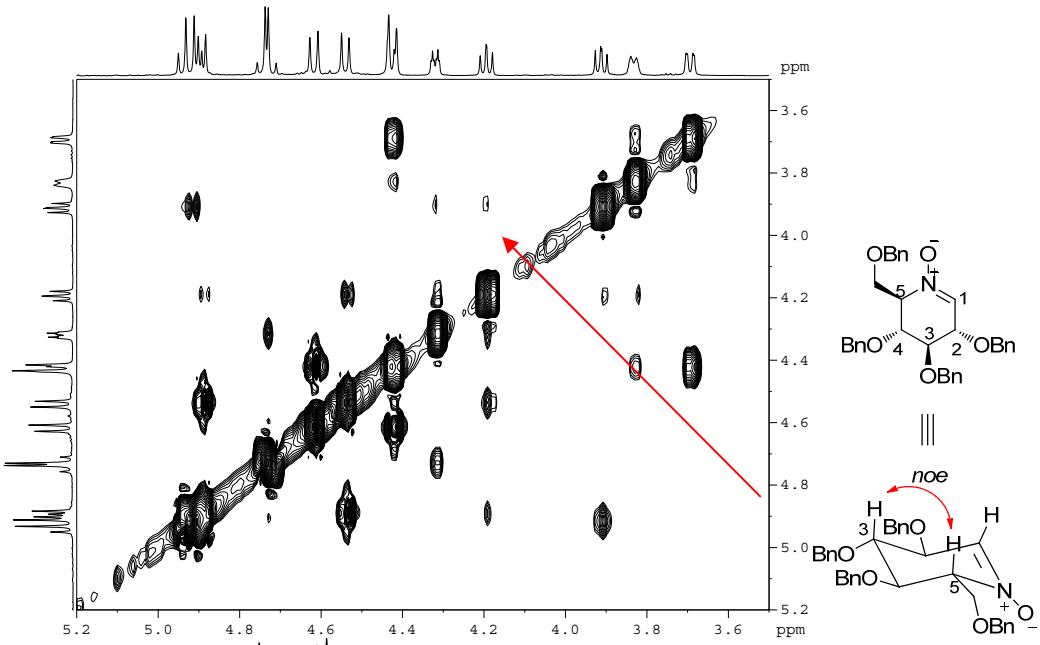
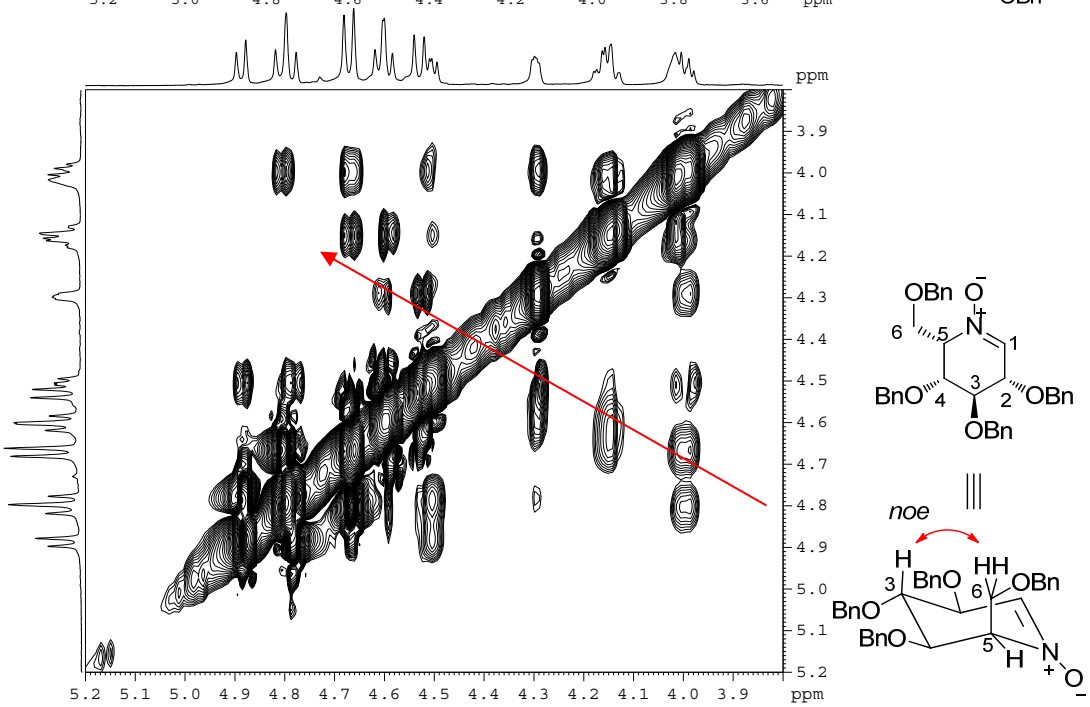
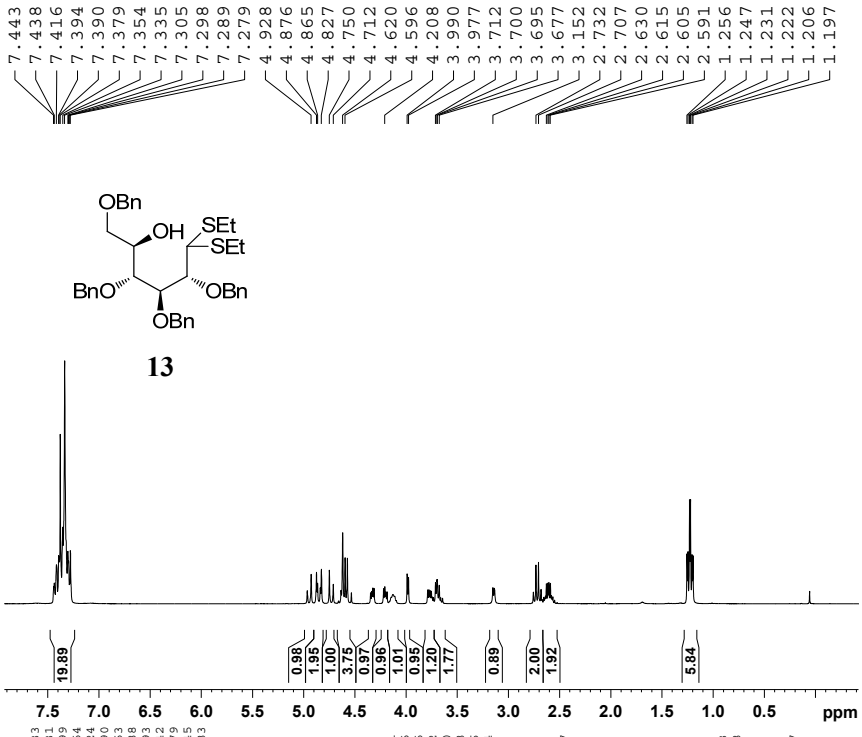
Supplementary Materials

Section A: NOESY of nitrone 7 and nitrone 17

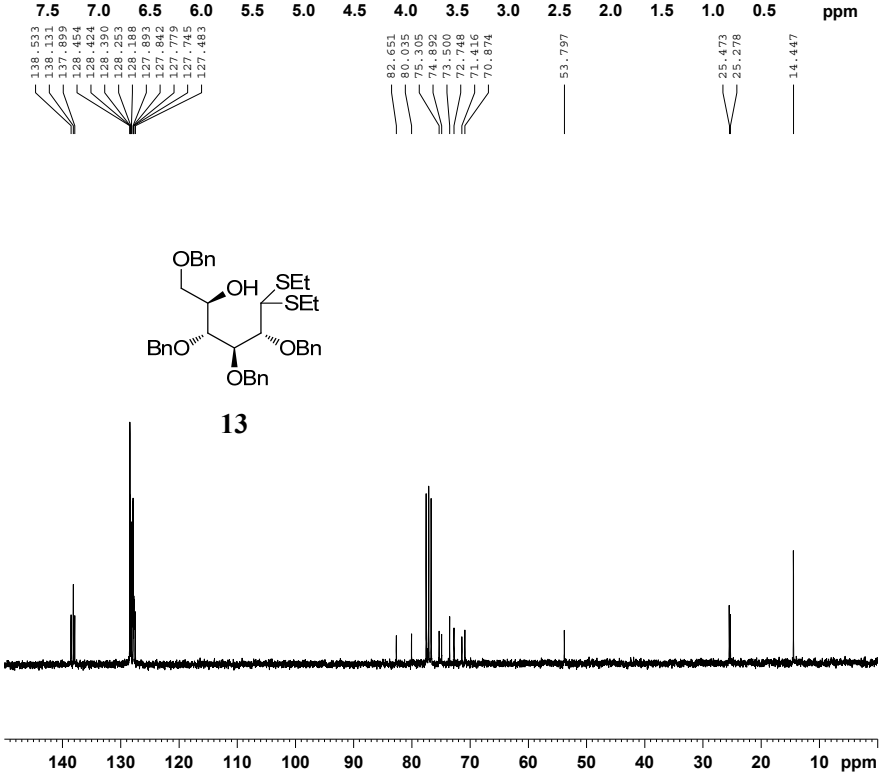




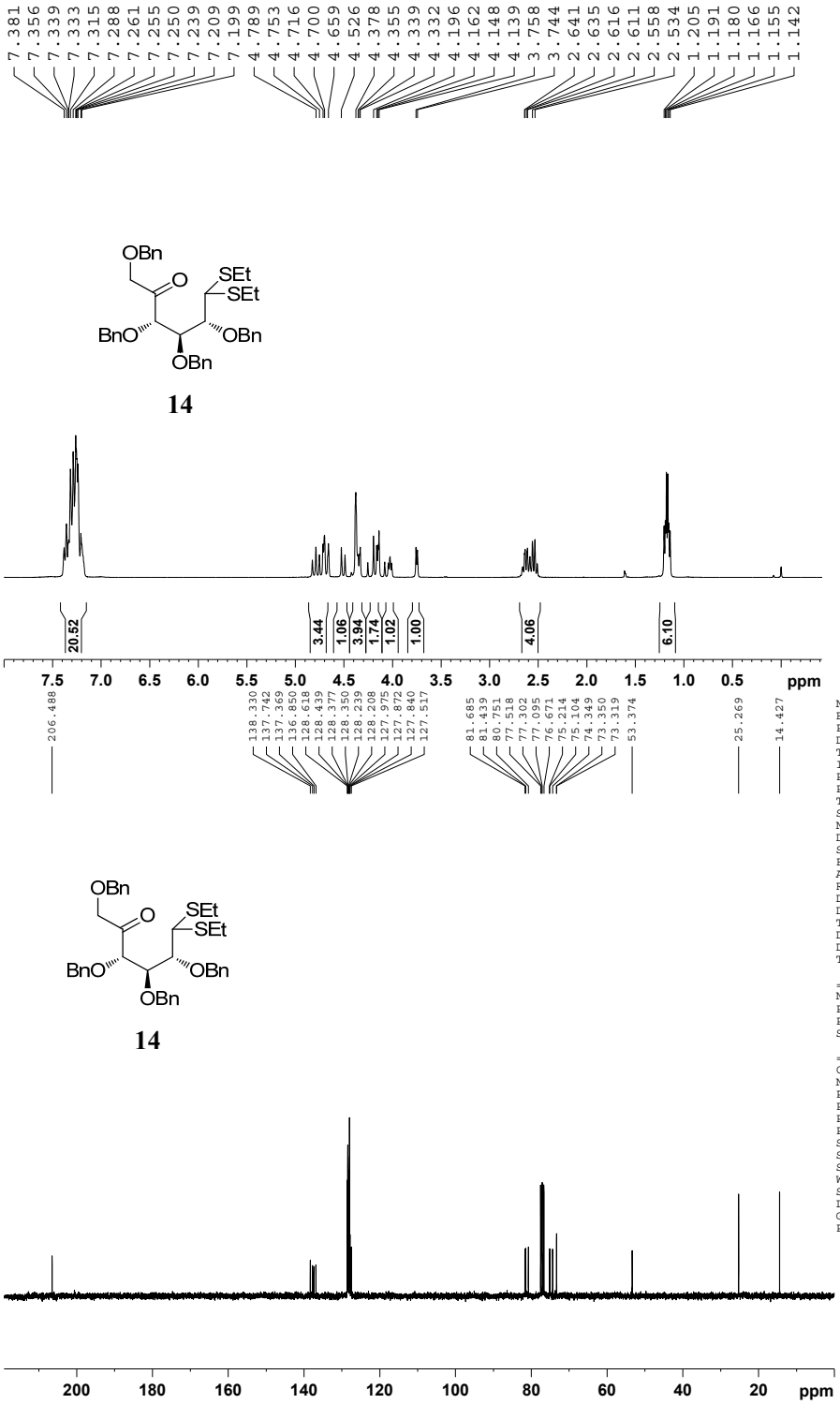
Section B: Spectra of Compounds




```
NAME            zhh10-24
EXPNO                  1
PROCNO                 1
Date_           20120306
Time               21.57
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG             zg30
TD                 32768
SOLVENT            CDCl3
NS                    16
DS                     0
SWH            8992.806 Hz
FIDRES         0.274439 Hz
AQ           1.8219508 sec
RG                  71.8
DW               55.600 usec
DE                 8.00 usec
TE                296.3 K
D1           2.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1318008 MHz
SI                32768
SF          300.1300000 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

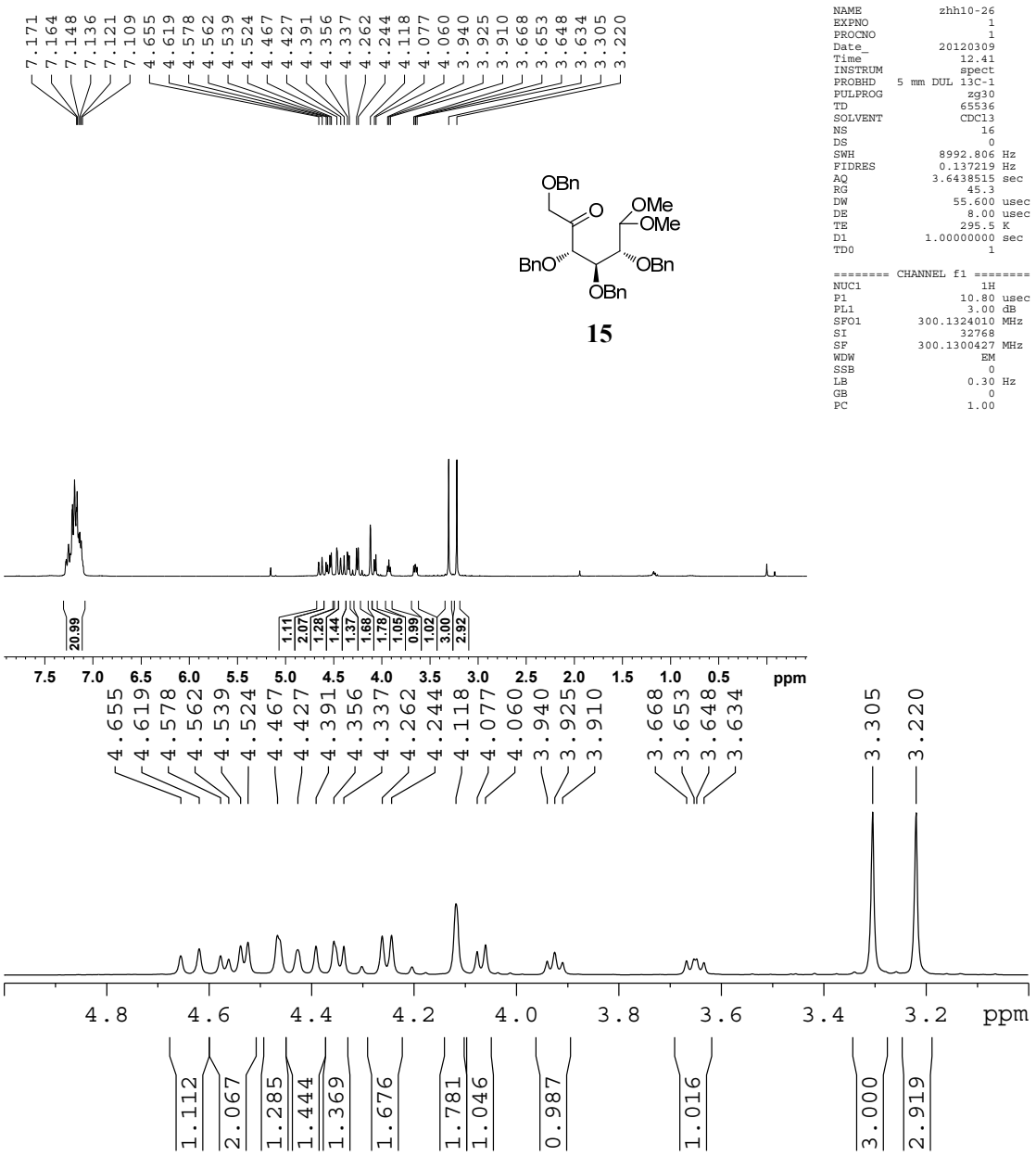


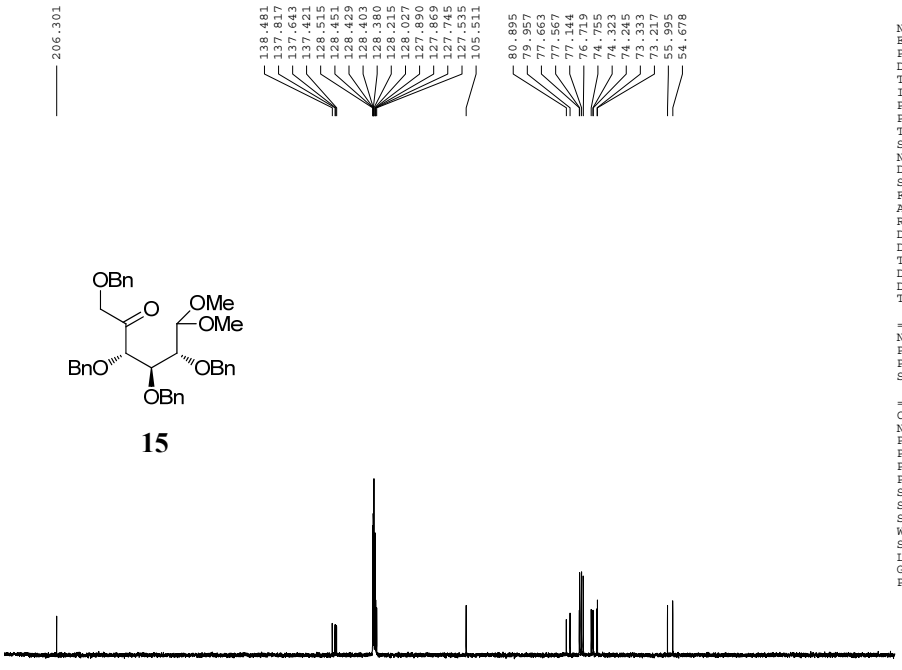

```
NAME            zhh10-24
EXPNO                  2
PROCNO                 1
Date_           20120306
Time               22.00
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG           zgig30
TD                 32768
SOLVENT            CDCl3
NS                   106
DS                     0
SWH           18832.393 Hz
FIDRES         0.574719 Hz
AQ            0.8700404 sec
RG                   256
DW               26.550 usec
DE                 8.00 usec
TE                296.4 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                12.50 usec
PL1                2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2            100.00 usec
PL2                3.00 dB
PL12              22.33 dB
SFO2        300.1312005 MHz
SI                32768
SF           75.4677490 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```




```
NAME            zhh10-25
EXPNO                  1
PROCNO                 1
Date_           20120309
Time               12.29
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     0
SWH            8992.806 Hz
FIDRES         0.137219 Hz
AQ            3.6438515 sec
RG                   128
DW               55.600 usec
DE                8.00 usec
TE                295.4 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1324010 MHz
SI                32768
SF          300.1300134 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00
```

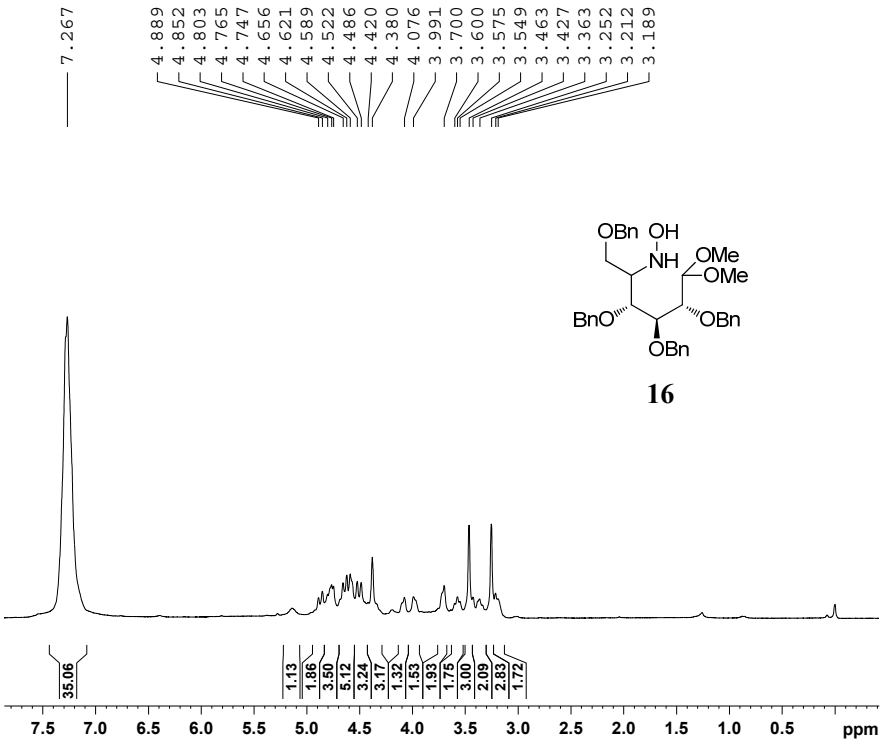
```
NAME            zhh10-25
EXPNO                  2
PROCNO                 1
Date_           20120309
Time               12.32
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG           zgpg30
TD                 65536
SOLVENT            CDCl3
NS                    61
DS                     4
SWH           17985.611 Hz
FIDRES         0.274439 Hz
AQ            1.8219508 sec
RG                 574.7
DW               27.800 usec
DE                6.50 usec
TE                295.7 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                12.50 usec
PL1                2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2            100.00 usec
PL2                3.00 dB
PL12              22.33 dB
PL13              23.00 dB
SFO2        300.1312005 MHz
SI                32768
SF           75.4677490 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```


7.171 7.164 7.148 7.136 7.121 7.109 4.655 4.619 4.578 4.562 4.539 4.524 4.467 4.427 4.391 4.356 4.337 4.262 4.244 4.118 4.077 4.060 3.940 3.925 3.910 3.668 3.653 3.648 3.634 3.305 3.220
OBn
O
OMe
OMe
BnO
OBn
OBn
15
NAME zhh10-26
EXPNO 1
PROCNO 1
Date_ 20120309
Time 12.41
INSTRUM spect
PROBHD 5 mm DUL 13C-1
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 0
SWH 8992.806 Hz
FIDRES 0.137219 Hz
AQ 3.6438515 sec
RG 45.3
DW 55.600 usec
DE 8.00 usec
TE 295.5 K
D1 1.00000000 sec
TD0 1
======== CHANNEL f1 ========
NUC1 1H
P1 10.80 usec
PL1 3.00 dB
SFO1 300.1324010 MHz
SI 32768
SF 300.1300427 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00
20.99
1.11 2.07 1.28 1.44 1.37 1.68 1.78 1.05 0.99 1.02 3.00 2.92
7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 ppm
4.8 4.6 4.4 4.2 4.0 3.8 3.6 3.4 3.2 ppm
1.112 2.067 1.285 1.444 1.369 1.676 1.781 1.046 0.987 1.016 3.000 2.919



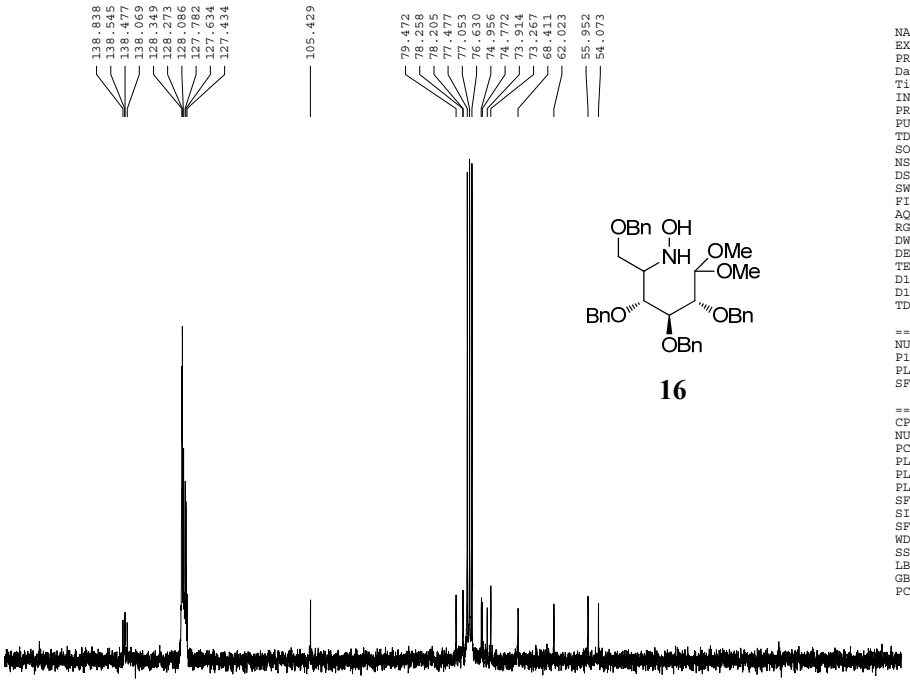
15

```
NAME            zhh10-26
EXPNO                  2
PROCNO                 1
Date_           20120309
Time               12.43
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                   53
DS                    4
SWH           17985.611 Hz
FIDRES         0.274439 Hz
AQ            1.8219508 sec
RG                812.7
DW               27.800 usec
DE                6.50 usec
TE                295.8 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                 13C
P1                12.50 usec
PL1                2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
PCPD2            100.00 usec
PL2                3.00 dB
PL12              22.33 dB
PL13              23.00 dB
SFO2        300.1312005 MHz
SI                32768
SF           75.4677490 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

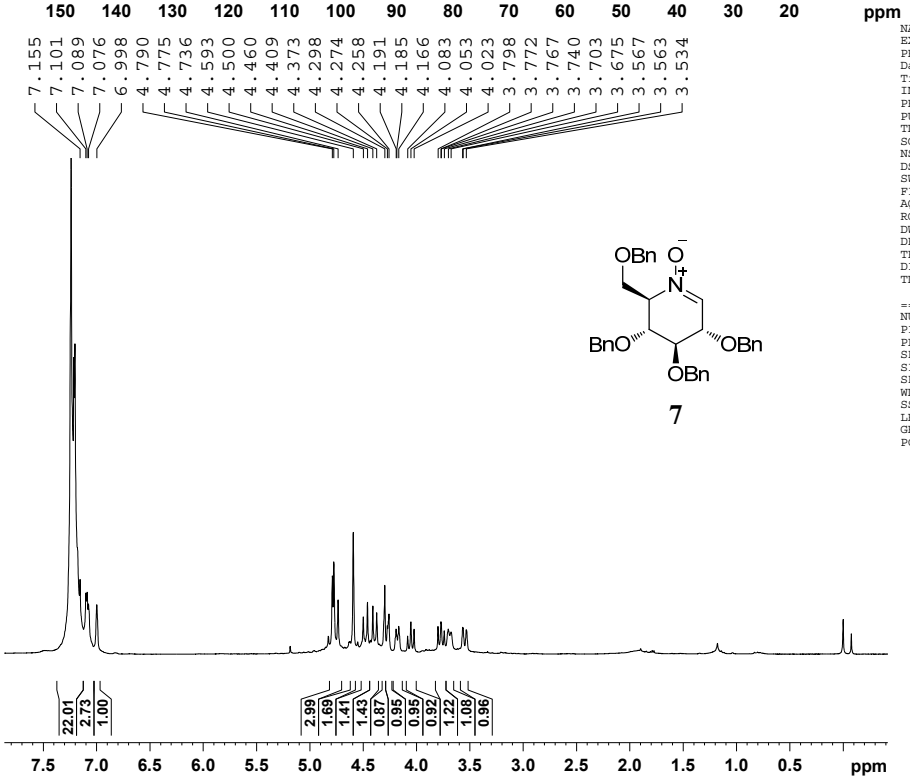


16

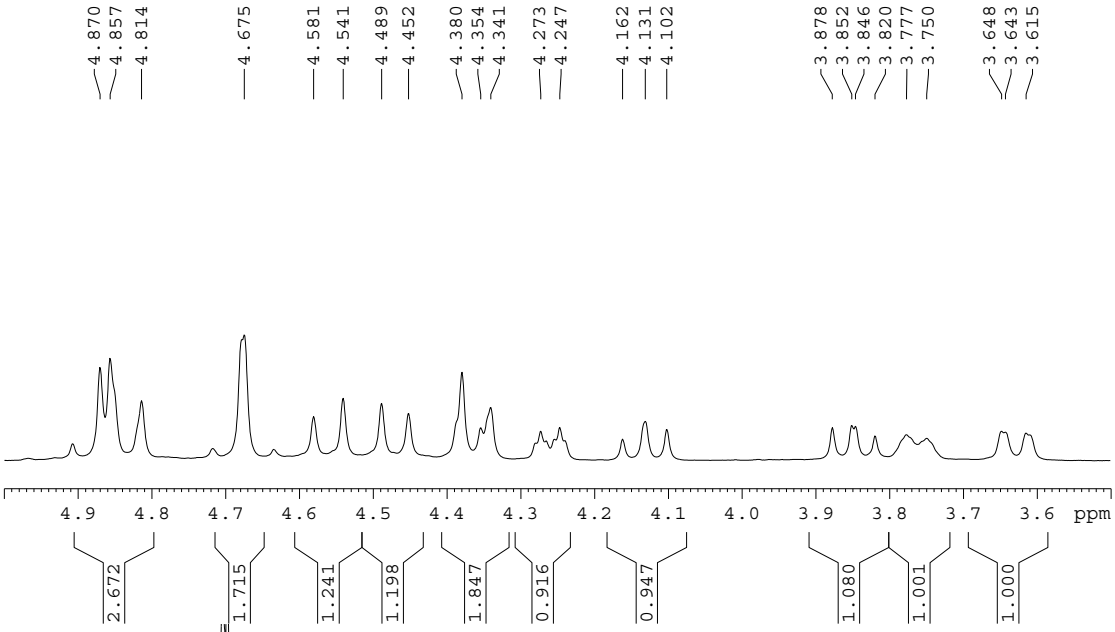
```
NAME            zhh10-28
EXPNO                 10
PROCNO                 1
Date_           20120312
Time                9.02
INSTRUM            spect
PROBHD   5 mm DUL 13C-1
PULPROG             zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    0
SWH            8992.806 Hz
FIDRES         0.137219 Hz
AQ            3.6438515 sec
RG                  128
DW               55.600 usec
DE                8.00 usec
TE                295.7 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
NUC1                  1H
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1324010 MHz
SI                32768
SF          300.1300108 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

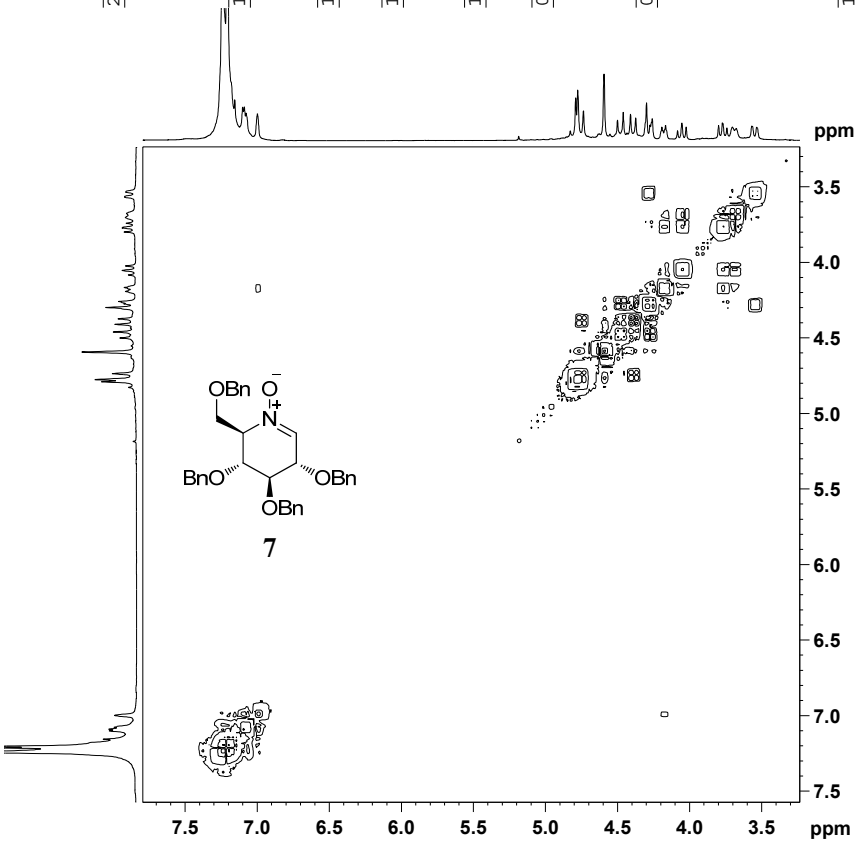



```
NAME          zhh10-28
EXPNO               11
PROCNO               1
Date_         20120312
Time              9.06
INSTRUM          spect
PROBHD   5 mm DUL 13C-1
PULPROG         zgpg30
TD               65536
SOLVENT          CDCl3
NS                 236
DS                   4
SWH          17985.611 Hz
FIDRES        0.274439 Hz
AQ           1.8219508 sec
RG                 512
DW              27.800 usec
DE               6.50 usec
TE              296.0 K
D1          2.00000000 sec
D11         0.03000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                13C
P1                12.50 usec
PL1                2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                 1H
PCPD2           100.00 usec
PL2               3.00 dB
PL12             22.33 dB
PL13             23.00 dB
SFO2        300.1312005 MHz
SI                32768
SF          75.4677490 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```

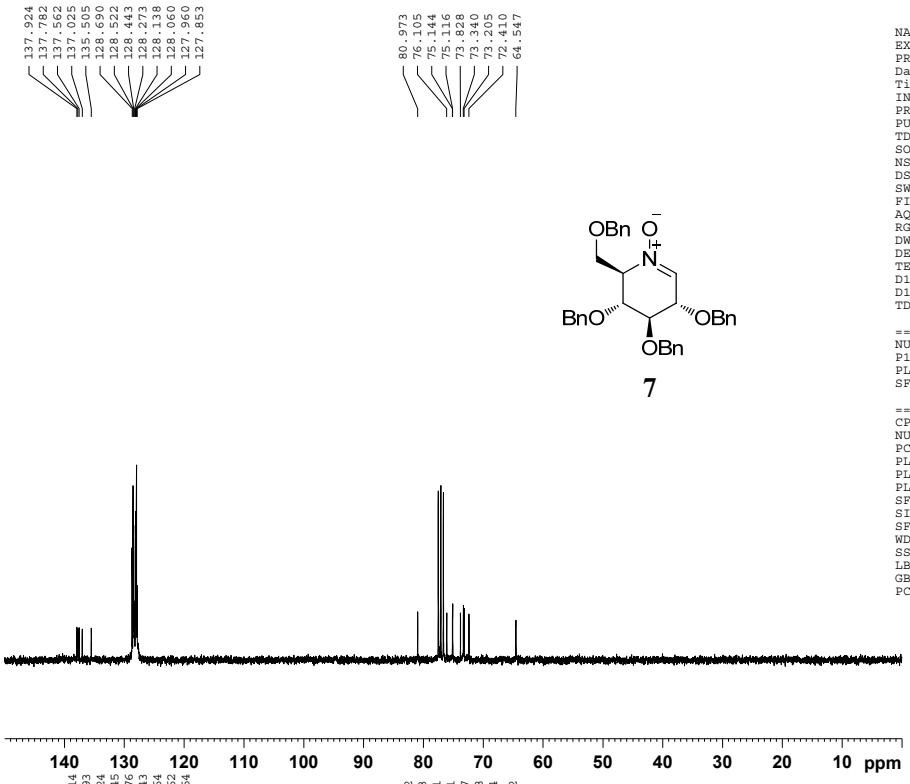



```
NAME          zhh10-26A
EXPNO                10
PROCNO                1
Date_         20120316
Time             22.23
INSTRUM          spect
PROBHD   5 mm DUL 13C-1
PULPROG             zg30
TD               65536
SOLVENT          CDCl3
NS                  16
DS                   0
SWH           8992.806 Hz
FIDRES        0.137219 Hz
AQ           3.6438515 sec
RG                 128
DW              55.600 usec
DE               8.00 usec
TE              295.5 K
D1          1.00000000 sec
TD0                  1

======== CHANNEL f1 ========
NUC1                 1H
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1324010 MHz
SI                32768
SF          300.1300375 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```

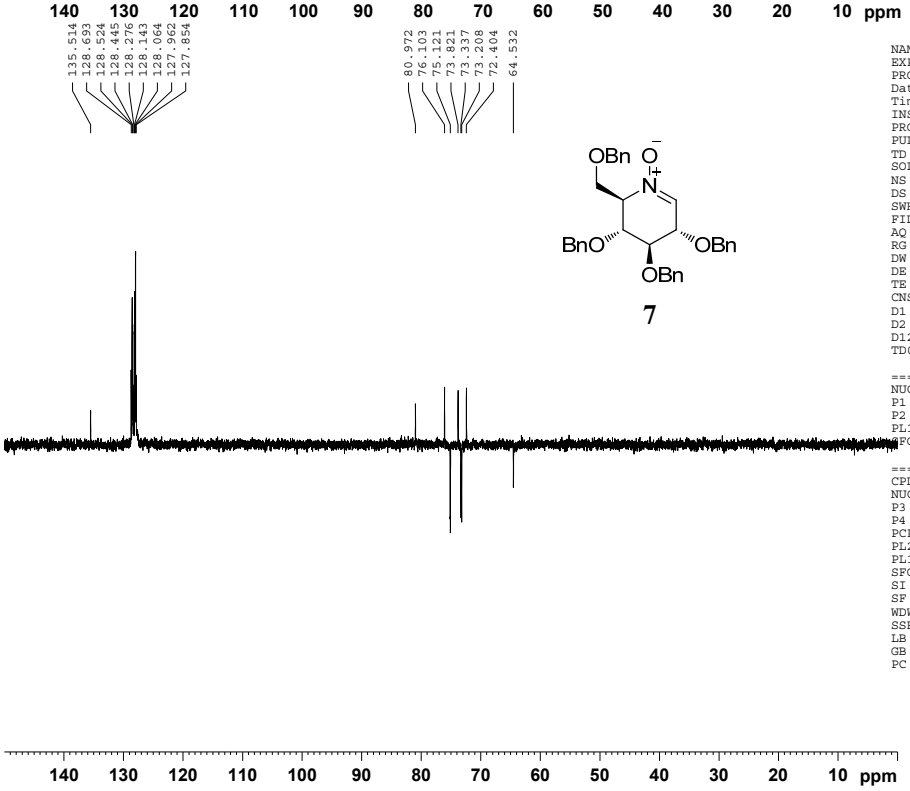




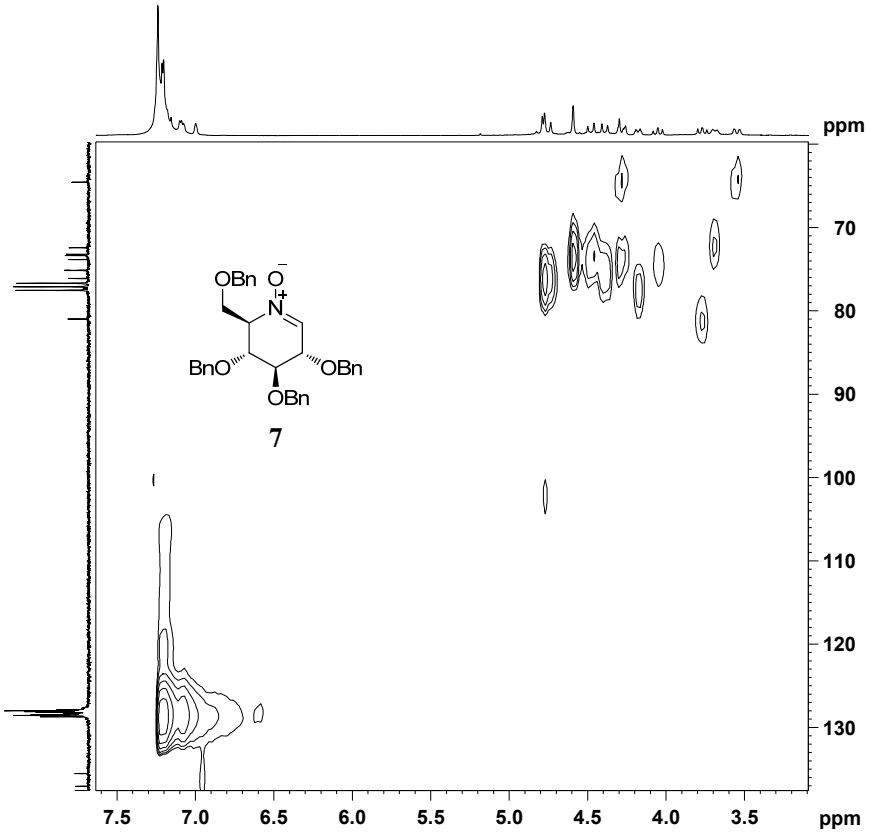

```
NAME          zhh10-26A
EXPNO                11
PROCNO                1
Date_          20120316
Time              22.23
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG       cosygpqf
TD                 2048
SOLVENT           CDCl3
NS                    4
DS                    8
SWH            3086.420 Hz
FIDRES         1.507041 Hz
AQ            0.3318260 sec
RG                 45.3
DW              162.000 usec
DE                8.00 usec
TE                295.5 K
D0          0.00000300 sec
D1          1.46477306 sec
D13         0.00000400 sec
D16         0.00020000 sec
IN0         0.00032400 sec

======== CHANNEL f1 ========
NUC1                 1H
P0                10.80 usec
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1313753 MHz

====== GRADIENT CHANNEL =====
GPNAM1          SINE.100
GPZ1               10.00 %
P16              1000.00 usec
ND0                   1
TD                   57
SFO1            300.1314 MHz
FIDRES         54.147717 Hz
SW                10.284 ppm
FnMODE               QF
SI                 1024
SF          300.1300375 MHz
WDW                SINE
SSB                   0
LB                 0.00 Hz
GB                    0
PC                 1.40
SI                 1024
MC2                  QF
SF          300.1300375 MHz
WDW                SINE
SSB                   0
LB                 0.00 Hz
GB                    0
```



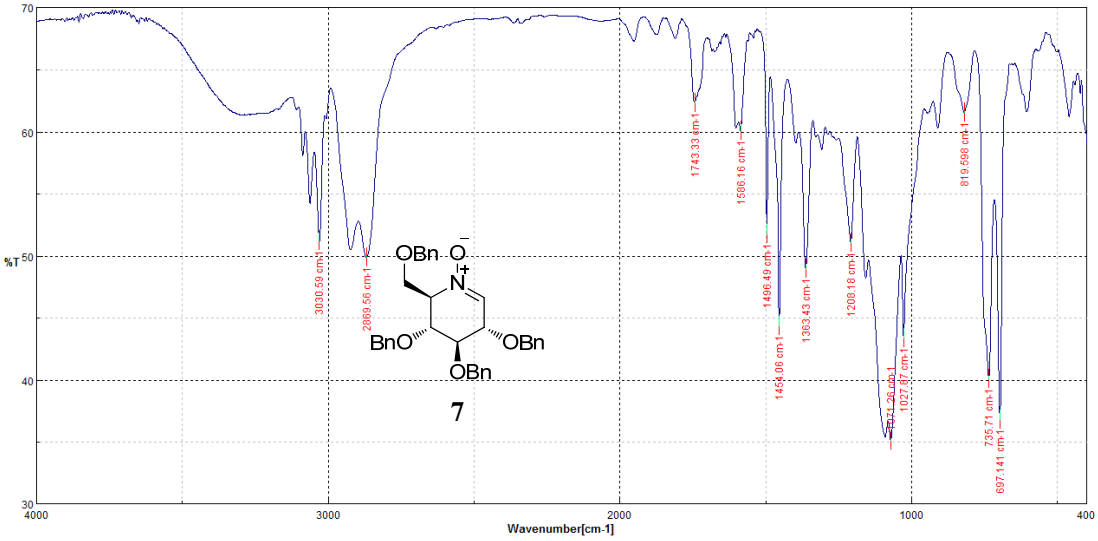

```
NAME          zhh10-26A
EXPNO                12
PROCNO                1
Date_          20120316
Time              22.36
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                   78
DS                    4
SWH           17985.611 Hz
FIDRES         0.274439 Hz
AQ            1.8219508 sec
RG                574.7
DW               27.800 usec
DE                 6.50 usec
TE                295.7 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 13C
P1                 12.50 usec
PL1                 2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            100.00 usec
PL2                 3.00 dB
PL12               22.33 dB
PL13               23.00 dB
SFO2        300.1312005 MHz
SI                 32768
SF           75.4677490 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

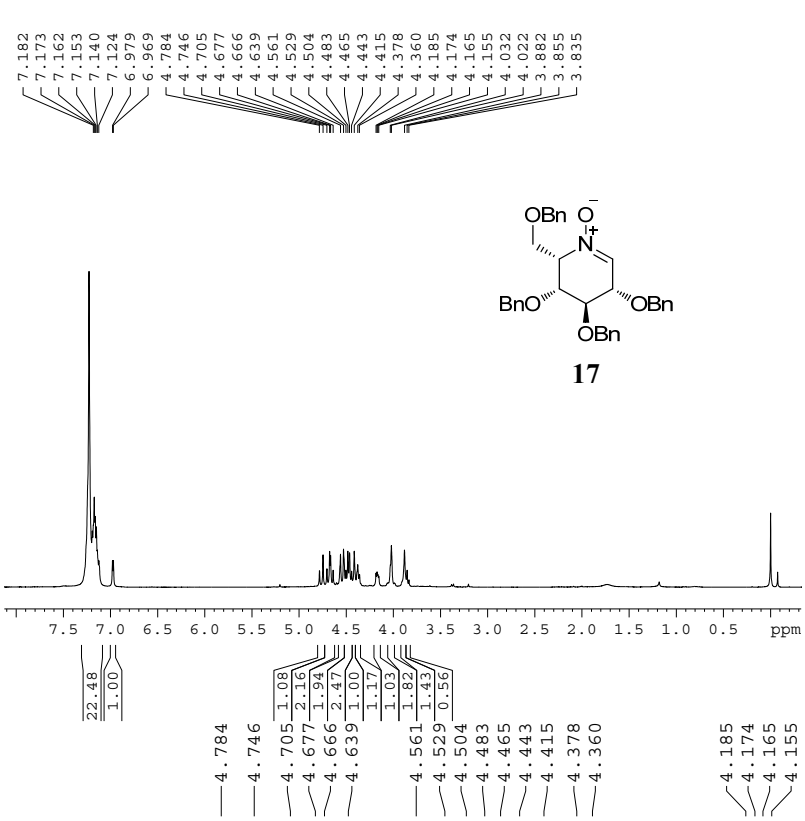



```
NAME          zhh10-26A
EXPNO                13
PROCNO                1
Date_          20120316
Time              22.39
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG         dept135
TD                65536
SOLVENT           CDCl3
NS                   33
DS                    4
SWH           17985.611 Hz
FIDRES         0.274439 Hz
AQ            1.8219508 sec
RG                16384
DW               27.800 usec
DE                 6.50 usec
TE                295.5 K
CNST2       145.0000000
D1           2.00000000 sec
D2           0.00344828 sec
D12          0.00002000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 13C
P1                 12.50 usec
P2                 25.00 usec
PL1                 2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
P3                 10.80 usec
P4                 21.60 usec
PCPD2            100.00 usec
PL2                 3.00 dB
PL12               22.33 dB
SFO2        300.1312005 MHz
SI                 32768
SF           75.4677490 MHz
WDW                   EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

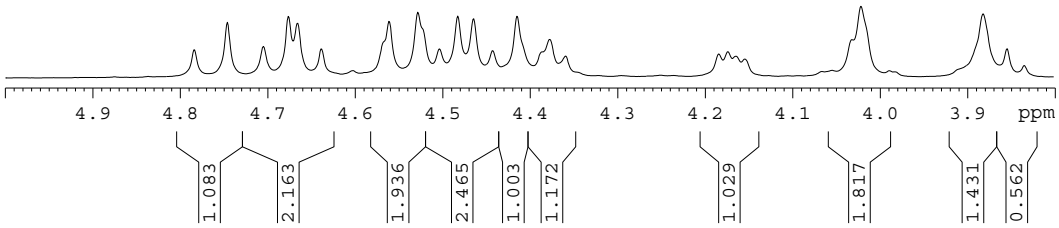


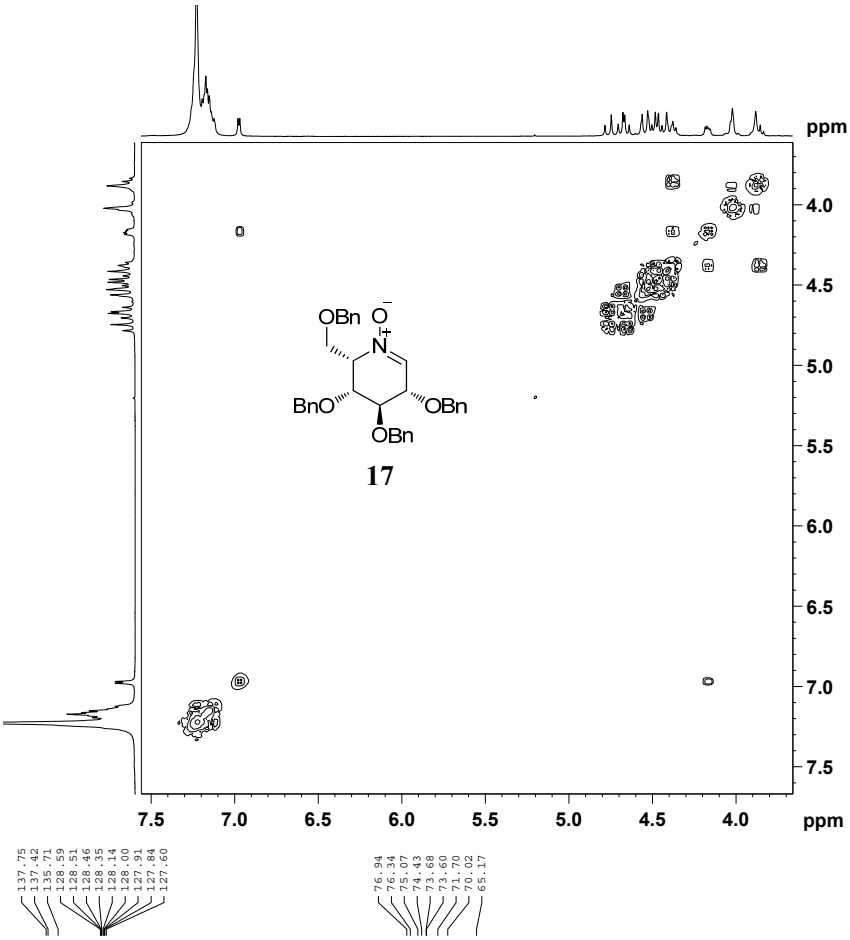

```
NAME          zhh10-26A
EXPNO               14
PROCNO               1
Date_         20120316
Time               22.40
INSTRUM          spect
PROBHD   5 mm DUL 13C-1
PULPROG       hsqcetgp
TD                 2048
SOLVENT           CDCl3
NS                    4
DS                   16
SWH            5995.204 Hz
FIDRES         2.927346 Hz
AQ            0.1708532 sec
RG                  256
DW               83.400 usec
DE                8.00 usec
TE                295.7 K
CNST2        145.0000000
D0             0.00000300 sec
D1             1.50000000 sec
D4             0.00172414 sec
D11            0.03000000 sec
D13            0.00000400 sec
D16            0.00020000 sec
IN0            0.00002650 sec
ZGOPTNS

======== CHANNEL f1 ========
NUC1                  1H
P1                10.80 usec
P2                21.60 usec
P28             1000.00 usec
PL1                3.00 dB
SFO1         300.1324010 MHz

======== CHANNEL f2 ========
CPDPRG2             garp
NUC2                 13C
P3                12.50 usec
P4                25.00 usec
PCPD2             90.00 usec
PL2                2.00 dB
PL12              19.15 dB
SFO2          75.4752958 MHz

====== GRADIENT CHANNEL =====
GPNAM1          SINE.100
GPNAM2          SINE.100
GPZ1              80.00 %
GPZ2              20.10 %
P16             1000.00 usec
ND0                   2
TD                  180
SFO1             75.4753 MHz
FIDRES        104.826797 Hz
SW            250.000 ppm
FnMODE     Echo-Antiecho
SI                 1024
SF           300.1300364 MHz
WDW               QSINE
SSB                   2
LB                 0.00 Hz
GB                    0
PC                 1.40
SI                 1024
MC2        echo-antiecho
SF            75.4676585 MHz
WDW               QSINE
SSB                   2
LB                 0.00 Hz
GB                    0
```



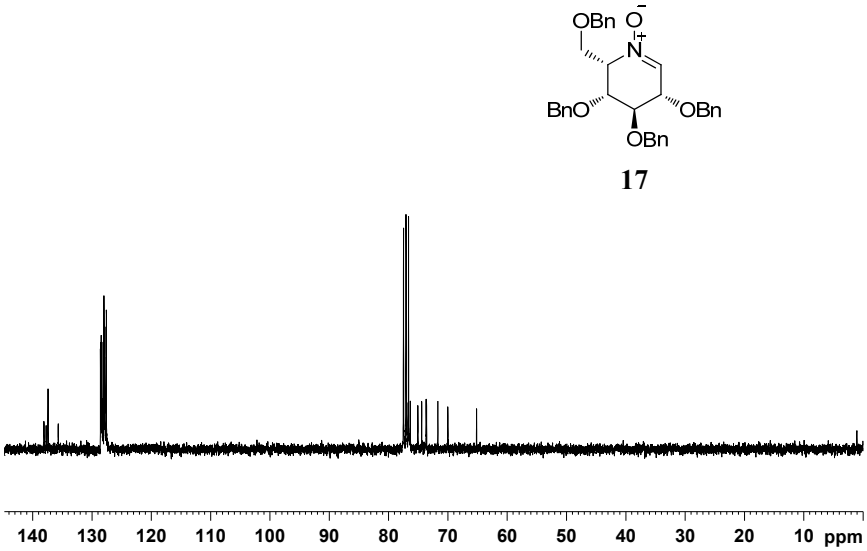


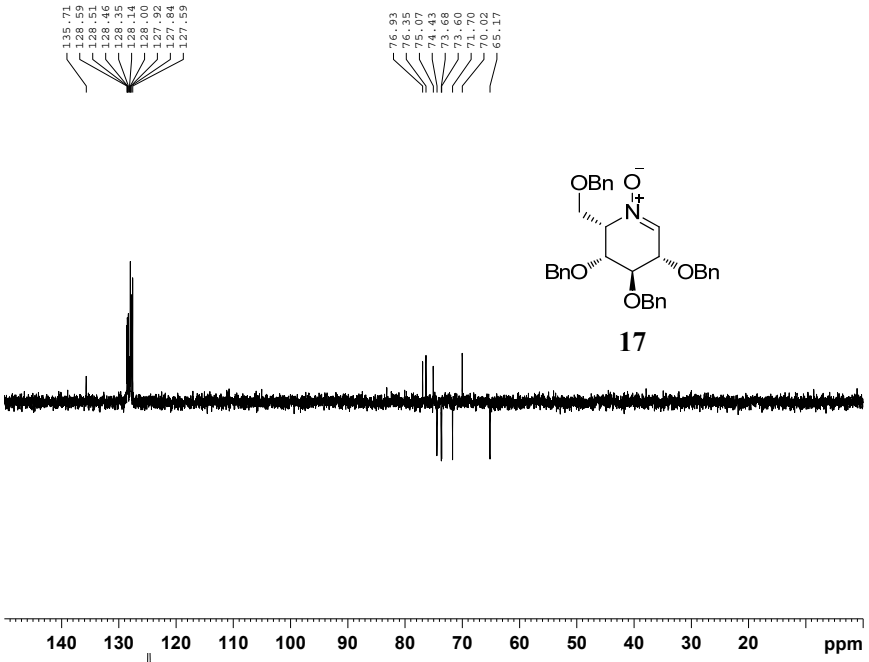

```
NAME          zhh10-29B
EXPNO                12
PROCNO                1
Date_          20120317
Time               6.36
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    0
SWH            8992.806 Hz
FIDRES         0.137219 Hz
AQ            3.6438515 sec
RG                  128
DW               55.600 usec
DE                8.00 usec
TE                295.3 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 1H
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1324010 MHz
SI                32768
SF          300.1300323 MHz
WDW                  EM
SSB                   0
LB                 0.30 Hz
GB                    0
PC                 1.00
```



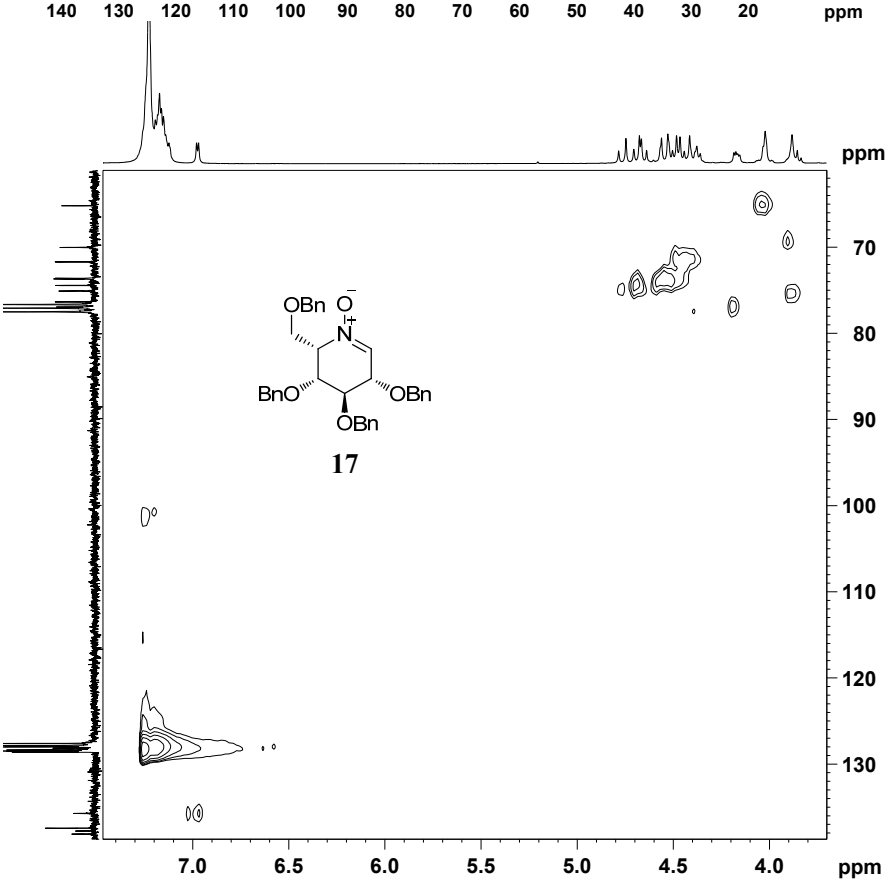



```
NAME          zhh10-29B
EXPNO                13
PROCNO                1
Date_          20120317
Time               6.36
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG       cosygpqf
TD                 2048
SOLVENT           CDCl3
NS                    1
DS                    8
SWH            2913.753 Hz
FIDRES         1.422731 Hz
AQ           0.3514868 sec
RG                 71.8
DW              171.600 usec
DE                 8.00 usec
TE                295.4 K
D0           0.00000300 sec
D1           1.44634104 sec
D13          0.00000400 sec
D16          0.00020000 sec
IN0          0.00034320 sec

======== CHANNEL f1 ========
NUC1                 1H
P0                10.80 usec
P1                10.80 usec
PL1                3.00 dB
SFO1        300.1312917 MHz

====== GRADIENT CHANNEL =====
GPNAM1          SINE.100
GPZ1               10.00 %
P16              1000.00 usec
ND0                   1
TD                  128
SFO1            300.1313 MHz
FIDRES         22.763695 Hz
SW                 9.708 ppm
FnMODE                QF
SI                  1024
SF          300.1300323 MHz
WDW                 SINE
SSB                    0
LB                  0.00 Hz
GB                     0
PC                  1.40
SI                  1024
MC2                   QF
SF          300.1300323 MHz
WDW                 SINE
SSB                    0
LB                  0.00 Hz
GB                     0
NAME          zhh10-29B
EXPNO                14
PROCNO                1
Date_          20120317
Time               6.43
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                   77
DS                    4
SWH           17985.611 Hz
FIDRES         0.274439 Hz
AQ           1.8219508 sec
RG                  512
DW               27.800 usec
DE                6.50 usec
TE                295.4 K
D1           2.00000000 sec
D11          0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 13C
P1                12.50 usec
PL1                2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                 1H
PCPD2            100.00 usec
PL2                3.00 dB
PL12              22.33 dB
PL13              23.00 dB
SFO2        300.1312005 MHz
SI                32768
SF           75.4677490 MHz
WDW                  EM
SSB                    0
LB                  1.00 Hz
GB                     0
PC                  1.40
```

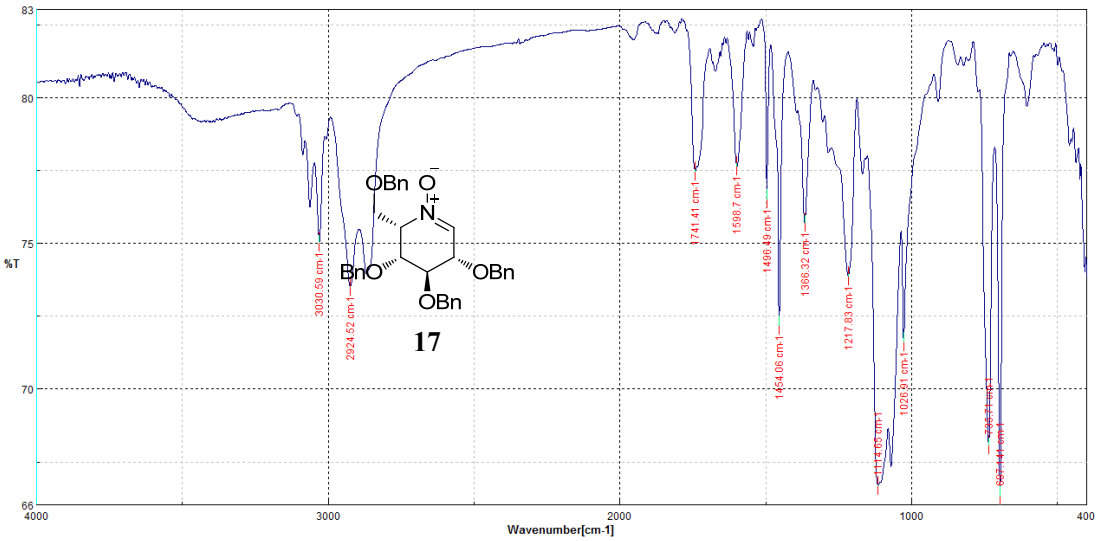





```
NAME          zhh10-29B
EXPNO                15
PROCNO                1
Date_          20120317
Time               6.49
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG         dept135
TD                65536
SOLVENT           CDCl3
NS                   32
DS                    4
SWH           17985.611 Hz
FIDRES         0.274439 Hz
AQ            1.8219508 sec
RG                16384
DW               27.800 usec
DE                6.50 usec
TE               295.7 K
CNST2       145.0000000
D1           2.00000000 sec
D2           0.00344828 sec
D12          0.00002000 sec
TD0                   1

======== CHANNEL f1 ========
NUC1                 13C
P1                 12.50 usec
P2                 25.00 usec
PL1                 2.00 dB
SFO1         75.4752953 MHz

======== CHANNEL f2 ========
CPDPRG2          waltz16
NUC2                  1H
P3                 10.80 usec
P4                 21.60 usec
PCPD2             100.00 usec
PL2                 3.00 dB
PL12               22.33 dB
SFO2        300.1312005 MHz
SI                32768
SF          75.4677490 MHz
WDW                  EM
SSB                   0
LB                 1.00 Hz
GB                    0
PC                 1.40
```




```
NAME          zhh10-29B
EXPNO                16
PROCNO                1
Date_          20120317
Time               6.51
INSTRUM           spect
PROBHD   5 mm DUL 13C-1
PULPROG         hsqcetgp
TD                 2048
SOLVENT           CDCl3
NS                    4
DS                   16
SWH           5995.204 Hz
FIDRES        2.927346 Hz
AQ            0.1708532 sec
RG                  256
DW               83.400 usec
DE                8.00 usec
TE               295.6 K
CNST2       145.0000000
D0           0.00000300 sec
D1           1.50000000 sec
D4           0.00172414 sec
D11          0.03000000 sec
D13          0.00000400 sec
D16          0.00020000 sec
IN0          0.00002650 sec
ZGOPTNS

======== CHANNEL f1 ========
NUC1                  1H
P1                 10.80 usec
P2                 21.60 usec
P28              1000.00 usec
PL1                 1.00 dB
SFO1        300.1324010 MHz

======== CHANNEL f2 ========
CPDPRG2            garp
NUC2                 13C
P3                 12.50 usec
P4                 25.00 usec
PCPD2              90.00 usec
PL2                 2.00 dB
PL12               19.15 dB
SFO2         75.4752958 MHz

====== GRADIENT CHANNEL =====
GPNAM1          SINE.100
GPNAM2          SINE.100
GPZ1               80.00 %
GPZ2               20.10 %
P16              1000.00 usec
ND0                   2
TD                  256
SFO1            75.4753 MHz
FIDRES         73.706345 Hz
SW               250.000 ppm
FnMODE    Echo-Antiecho
SI                 1024
SF          300.1300203 MHz
WDW                QSINE
SSB                   2
LB                 0.00 Hz
GB                    0
PC                 1.40
SI                 1024
MC2       echo-antiecho
SF          75.4677178 MHz
WDW                QSINE
SSB                   2
LB                 0.00 Hz
GB                    0
```


83
80
75
70
66
%T
4000
3000
2000
1000
400
Wavenumber[cm-1]
3030.59 cm-1
2924.52 cm-1
1741.41 cm-1
1598.7 cm-1
1496.49 cm-1
1454.06 cm-1
1368.32 cm-1
1217.83 cm-1
1114.65 cm-1
1026.91 cm-1
OBn
O
N
BnO
OBn
OBn
17