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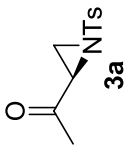

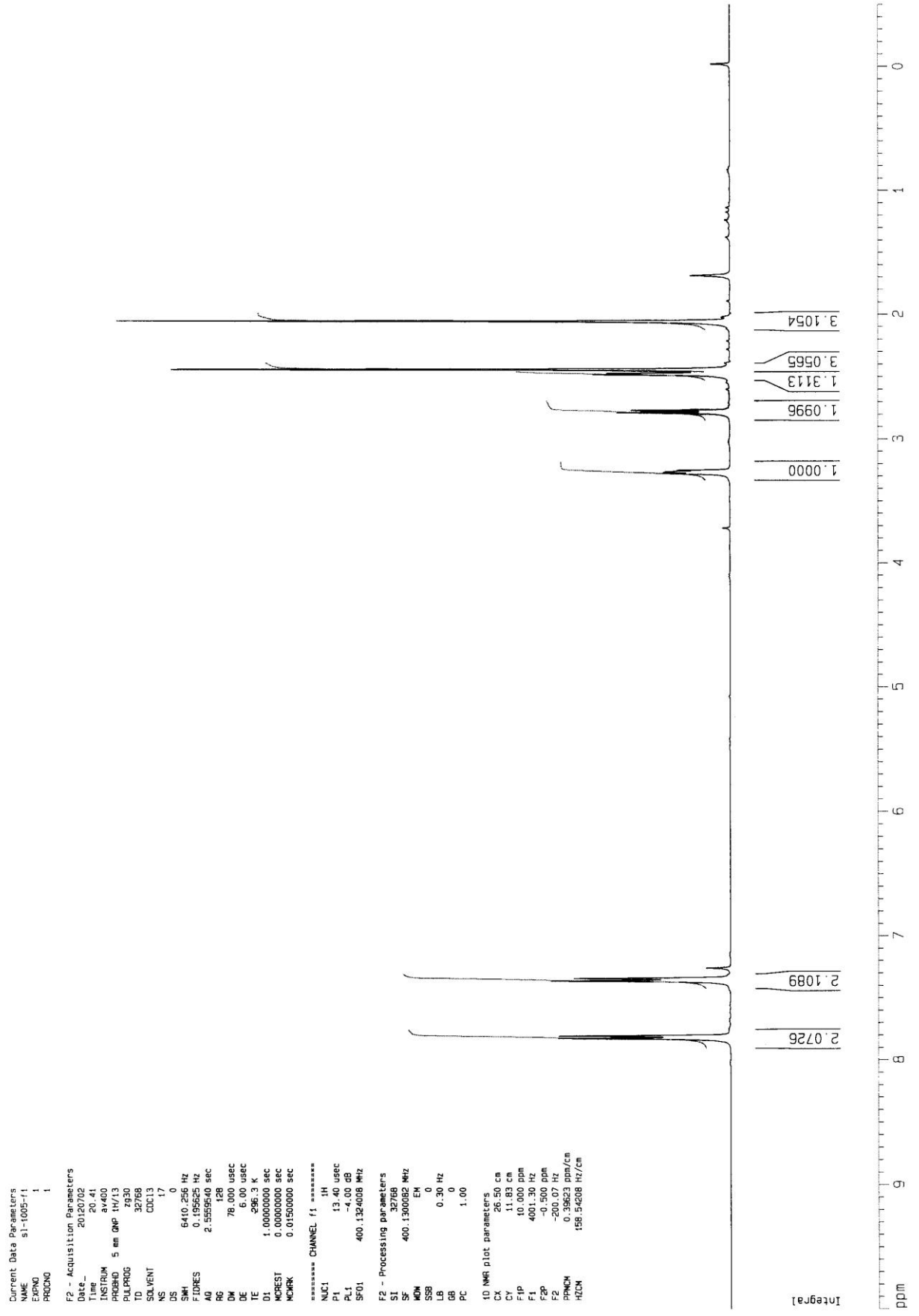

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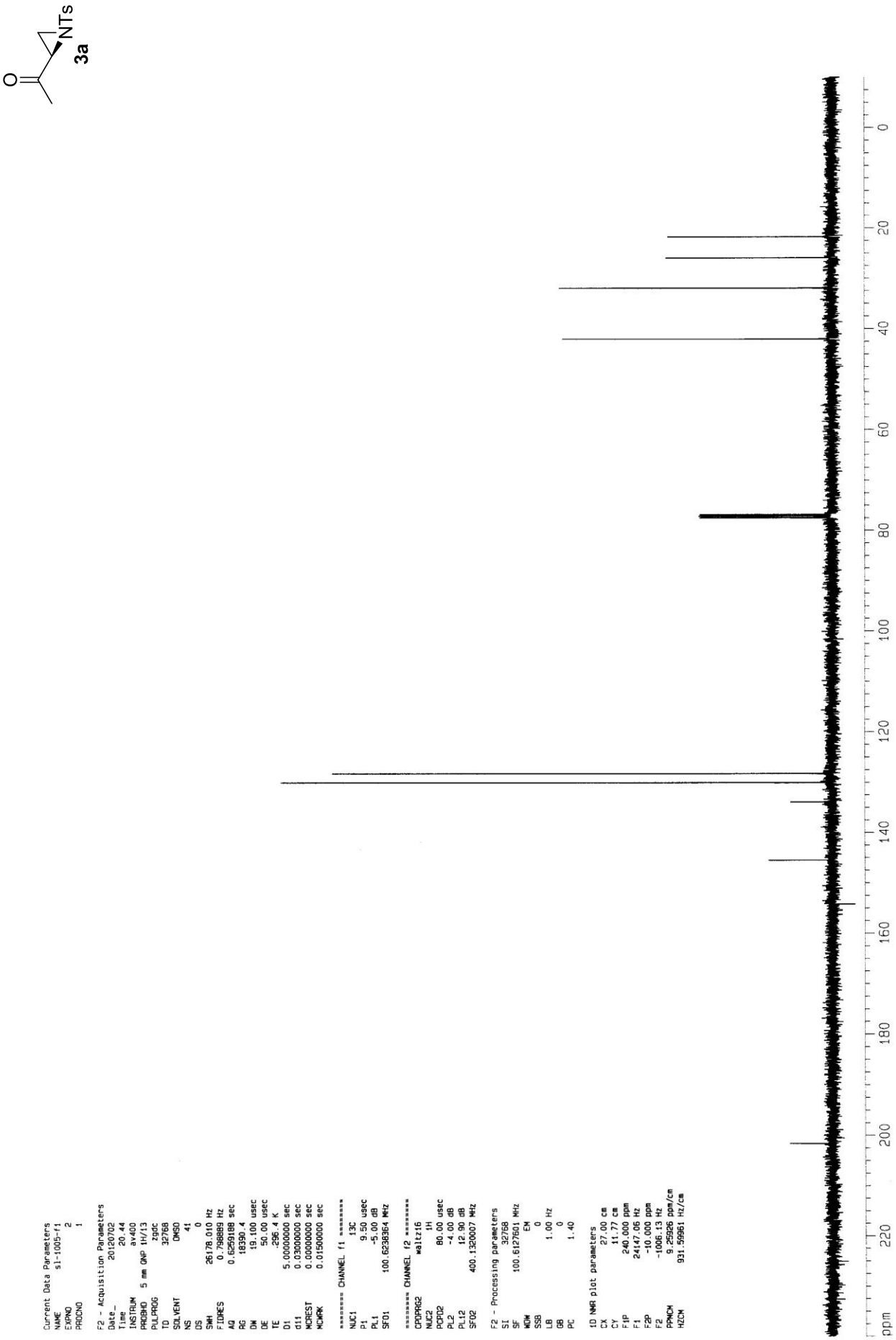

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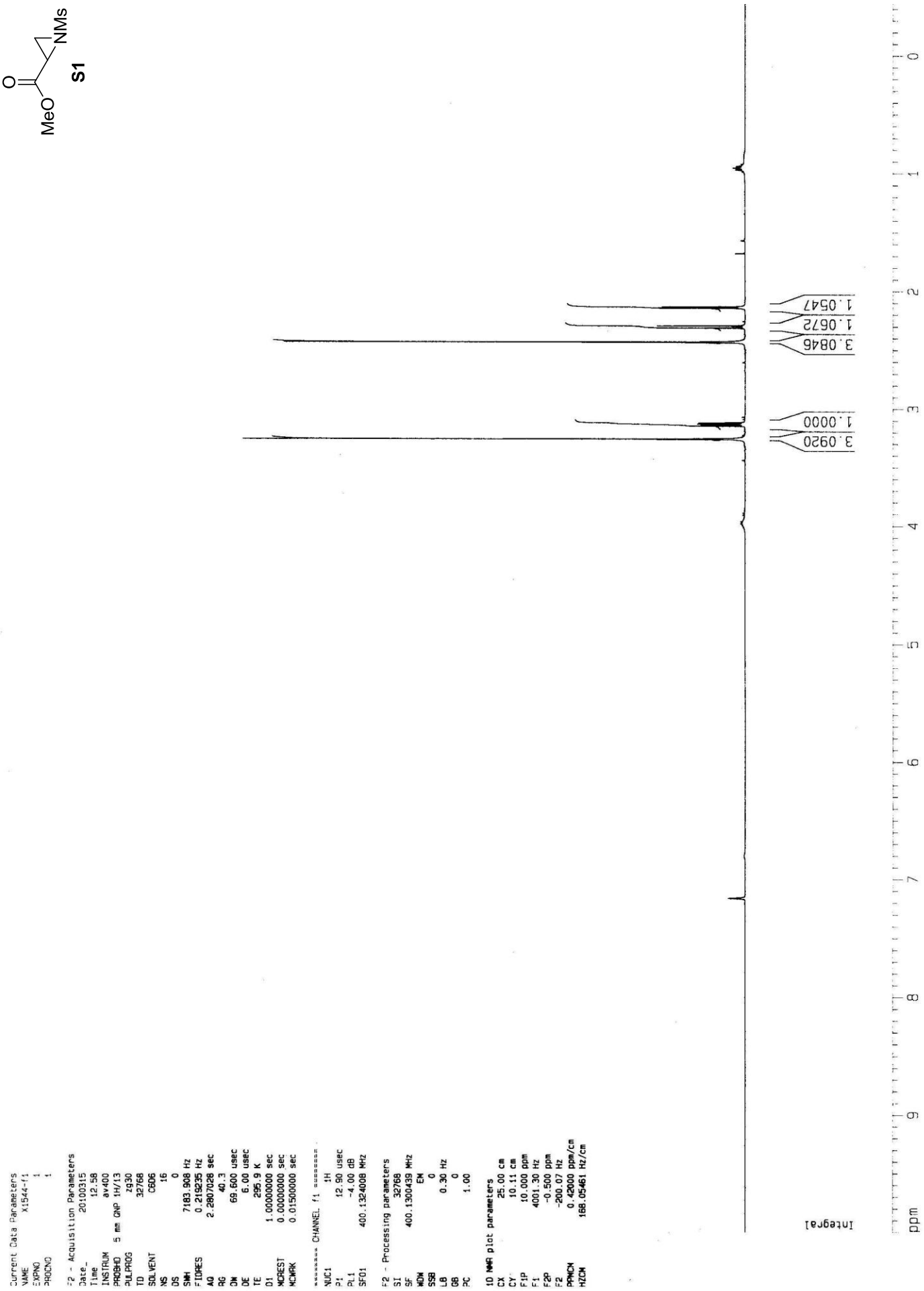
S1

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EXPNO                1
PROCNO               1

F2 - Acquisition Parameters
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Time             12.58
INSTRUM          av400
PROBHD  5 mm QNP 1H/13
PULPROG          zg30
TD              32768
SOLVENT          C6D6
NS                  16
DS                   0
SWH           7183.908 Hz
FIDRES        0.219235 Hz
AQ            2.2807028 sec
RG                40.3
DW               69.600 usec
DE                6.00 usec
TE               295.9 K
D1            1.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======= CHANNEL f1 =======
NUC1                1H
P1               12.90 usec
PL1               -4.00 dB
SFO1         400.1324008 MHz

F2 - Processing parameters
SI              32768
SF         400.1300439 MHz
WDW                EM
SSB                 0
LB               0.30 Hz
GB                  0
PC               1.00

1D NMR plot parameters
CX              25.00 cm
CY              10.11 cm
F1P             10.000 ppm
F1            4001.30 Hz
F2P             -0.500 ppm
F2            -200.07 Hz
PPMCM          0.42000 ppm/cm
HZCM         168.05461 Hz/cm
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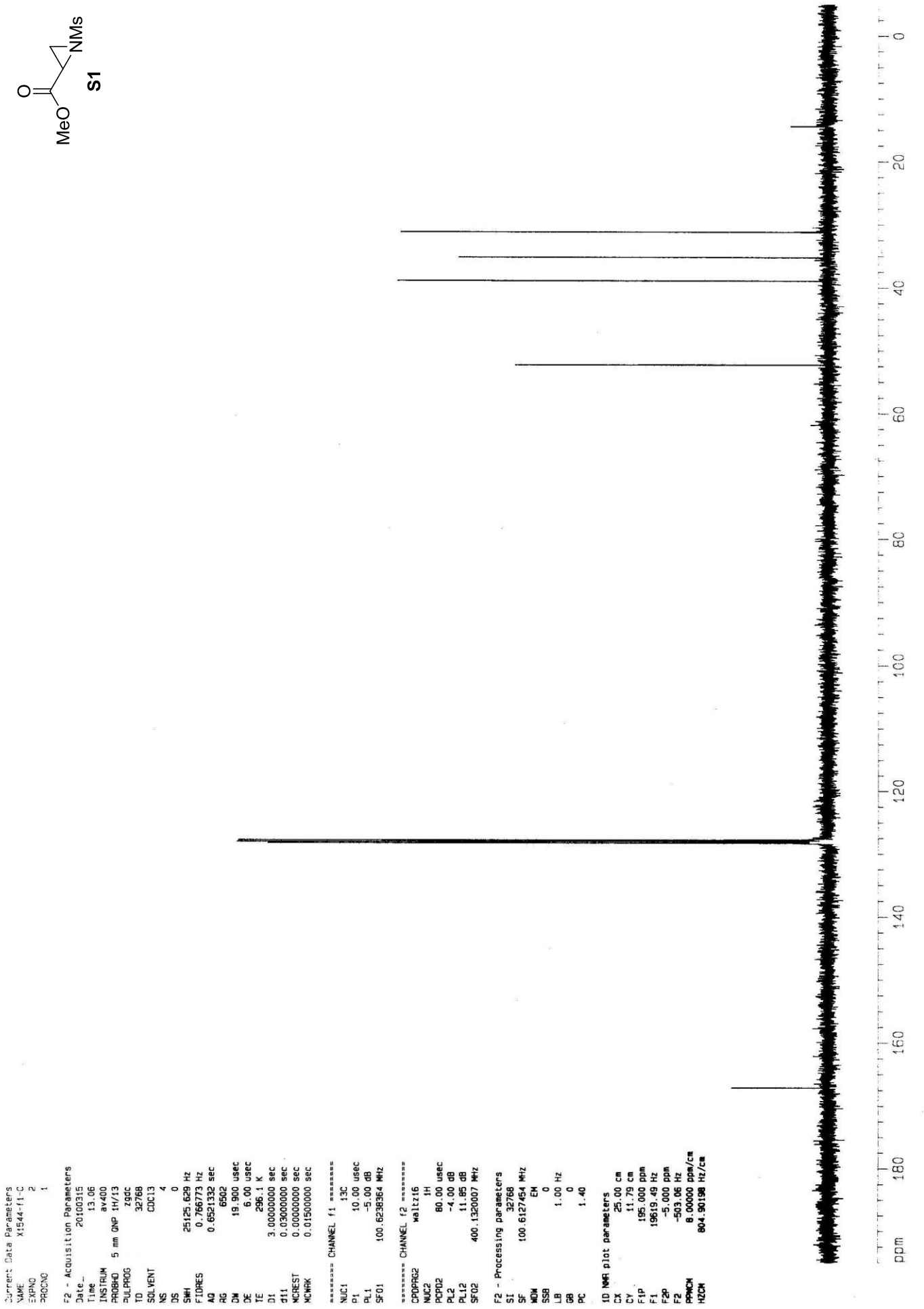

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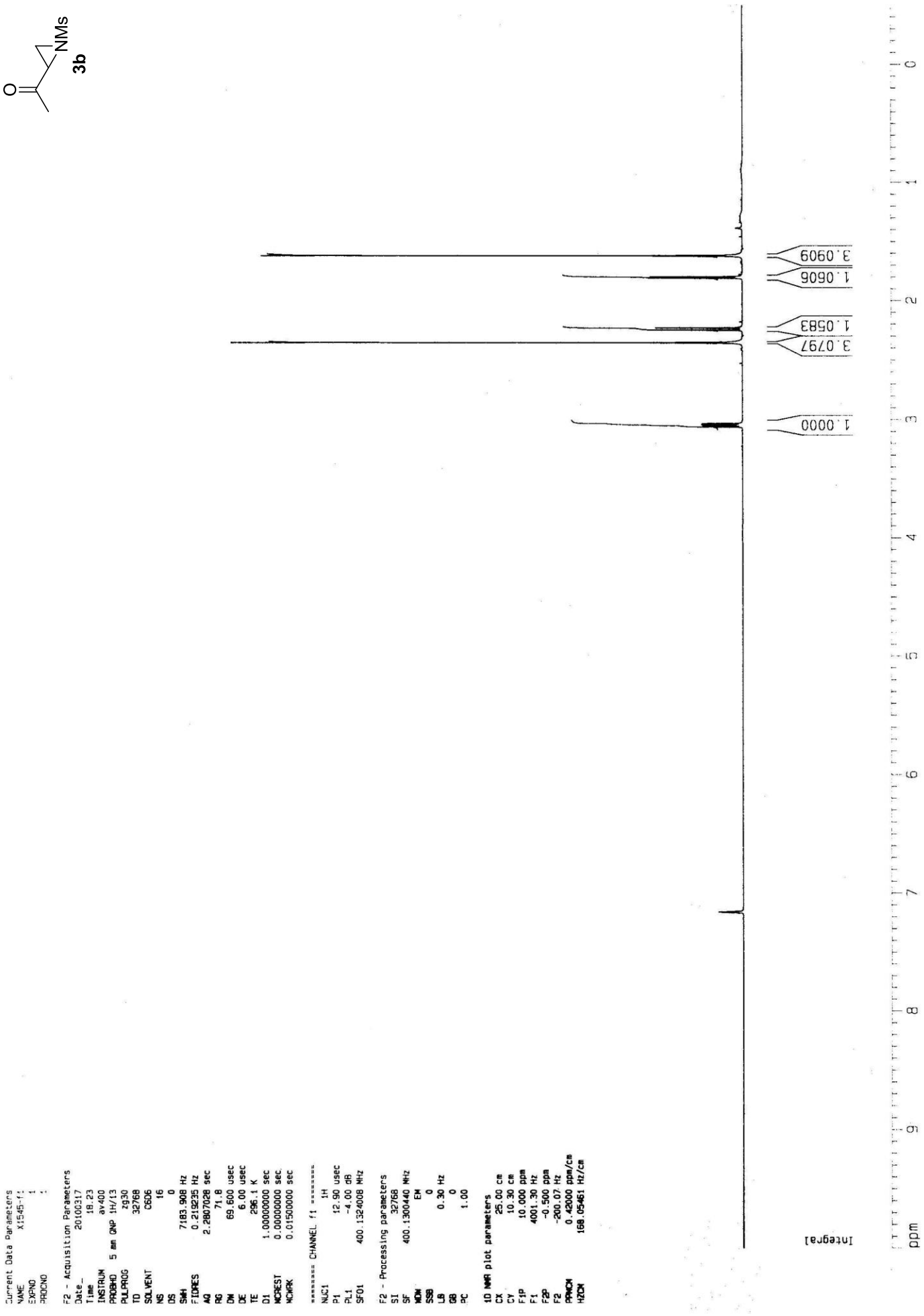


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Current Data Parameters
NAME                 X1545-f1
EXPNO                       1
PROCNO                      1

F2 - Acquisition Parameters
Date_              20100317
Time                   18.23
INSTRUM                av400
PROBHD     5 mm QNP 1H/13
PULPROG                zg30
TD                    32768
SOLVENT                C6D6
NS                       16
DS                        0
SWH               7183.908 Hz
FIDRES            0.219235 Hz
AQ                2.2807028 sec
RG                     71.8
DW                69.600 usec
DE                 6.00 usec
TE                   296.1 K
D1                1.00000000 sec
MCREST            0.00000000 sec
MCWRK             0.01500000 sec

======== CHANNEL f1 ========
NUC1                    1H
P1                   12.90 usec
PL1                  -4.00 dB
SFO1          400.1324008 MHz

F2 - Processing parameters
SI                    32768
SF          400.1300440 MHz
WDW                      EM
SSB                       0
LB                 0.30 Hz
GB                        0
PC                     1.00

1D NMR plot parameters
CX                   25.00 cm
CY                   10.30 cm
F1P                10.000 ppm
F1                 4001.30 Hz
F2P                -0.500 ppm
F2                 -200.07 Hz
PPMCM              0.42000 ppm/cm
HZCM               168.05461 Hz/cm
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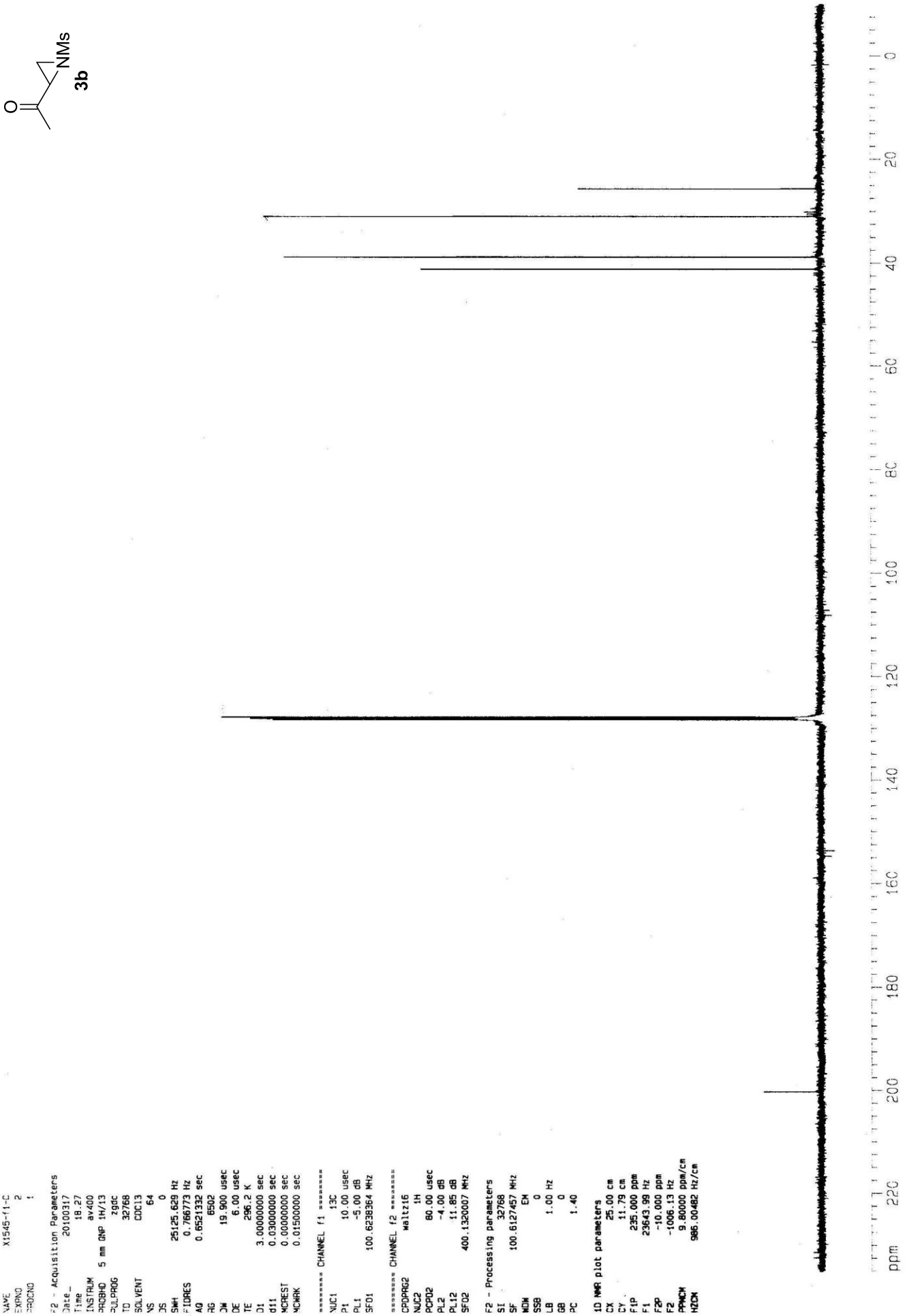

Current Data Parameters
NAME X1545-f1-C
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20100317
Time 18.27
INSTRUM av400
PROBHD 5 mm QNP 1H/13
PULPROG zgdc
TD 32768
SOLVENT CDCl3
NS 64
DS 0
SWH 25125.629 Hz
FIDRES 0.766773 Hz
AQ 0.6521332 sec
RG 6502
DW 19.900 usec
DE 6.00 usec
TE 296.2 K
D1 3.00000000 sec
d11 0.03000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -5.00 dB
SFO1 100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -4.00 dB
PL12 11.85 dB
SFO2 400.1320007 MHz

F2 - Processing parameters
SI 32768
SF 100.6127457 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 25.00 cm
CY 11.79 cm
F1P 235.000 ppm
F1 23643.99 Hz
F2P -10.000 ppm
F2 -1006.13 Hz
PPMCM 9.80000 ppm/cm
HZCM 986.00482 Hz/cm

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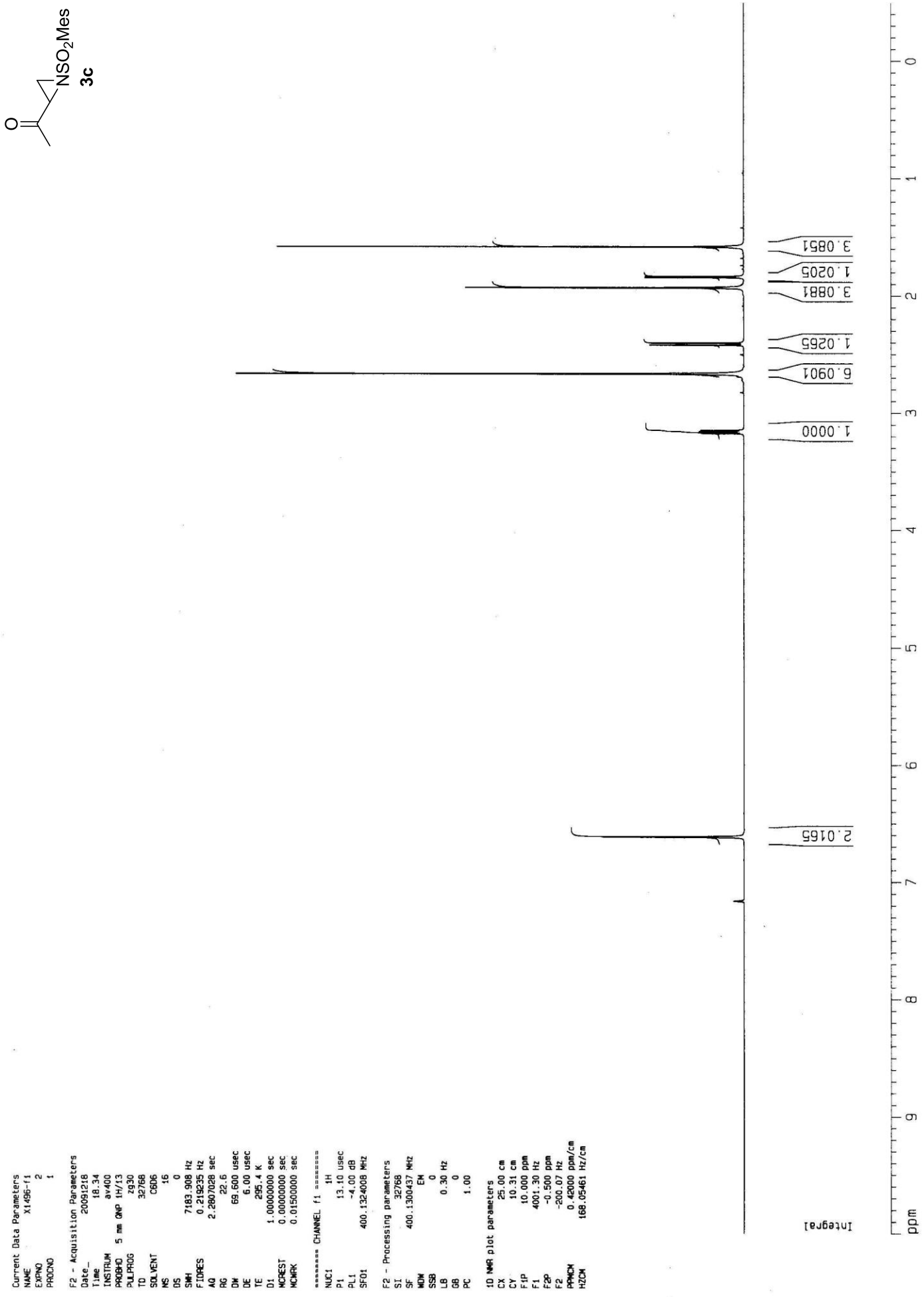

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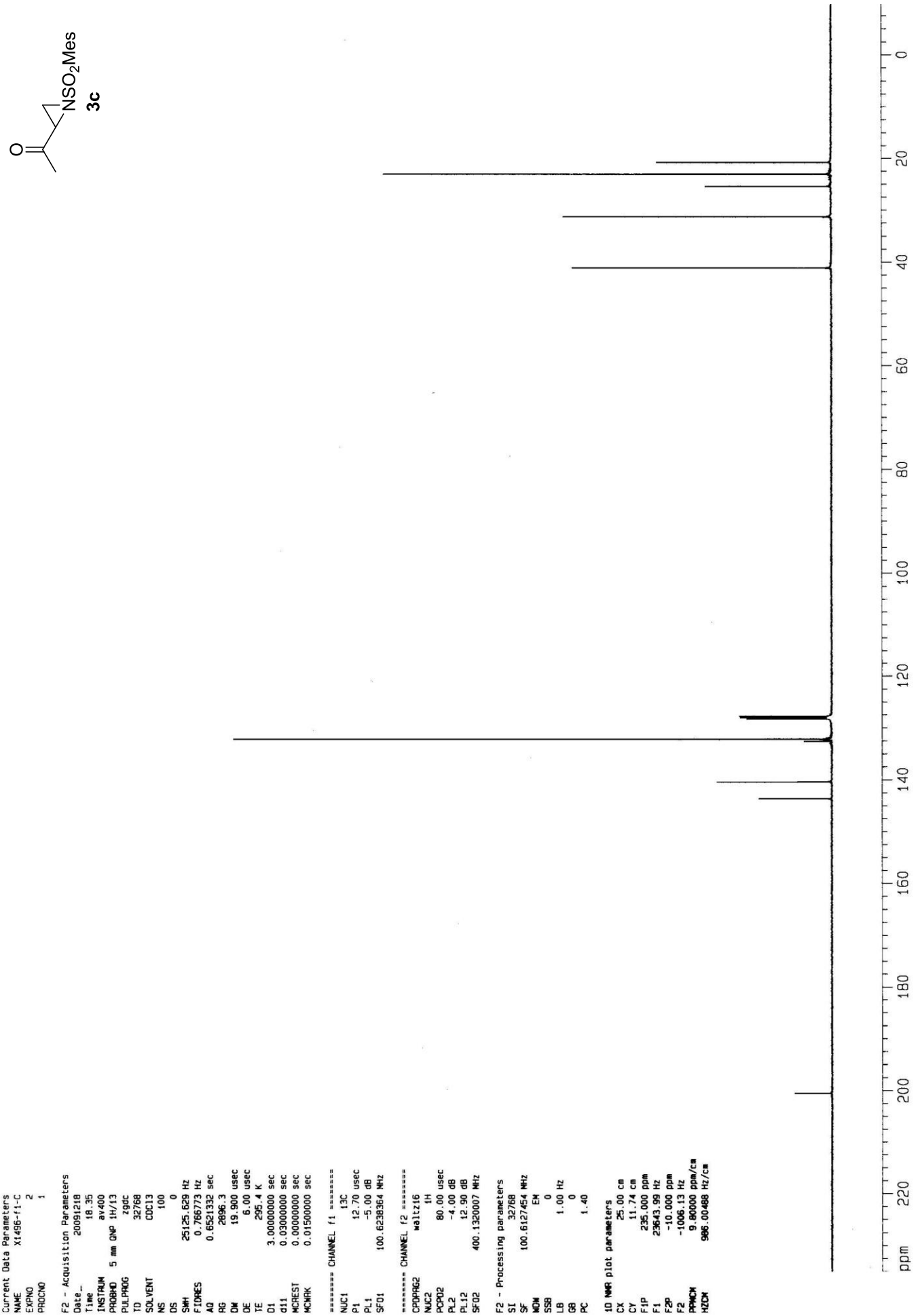

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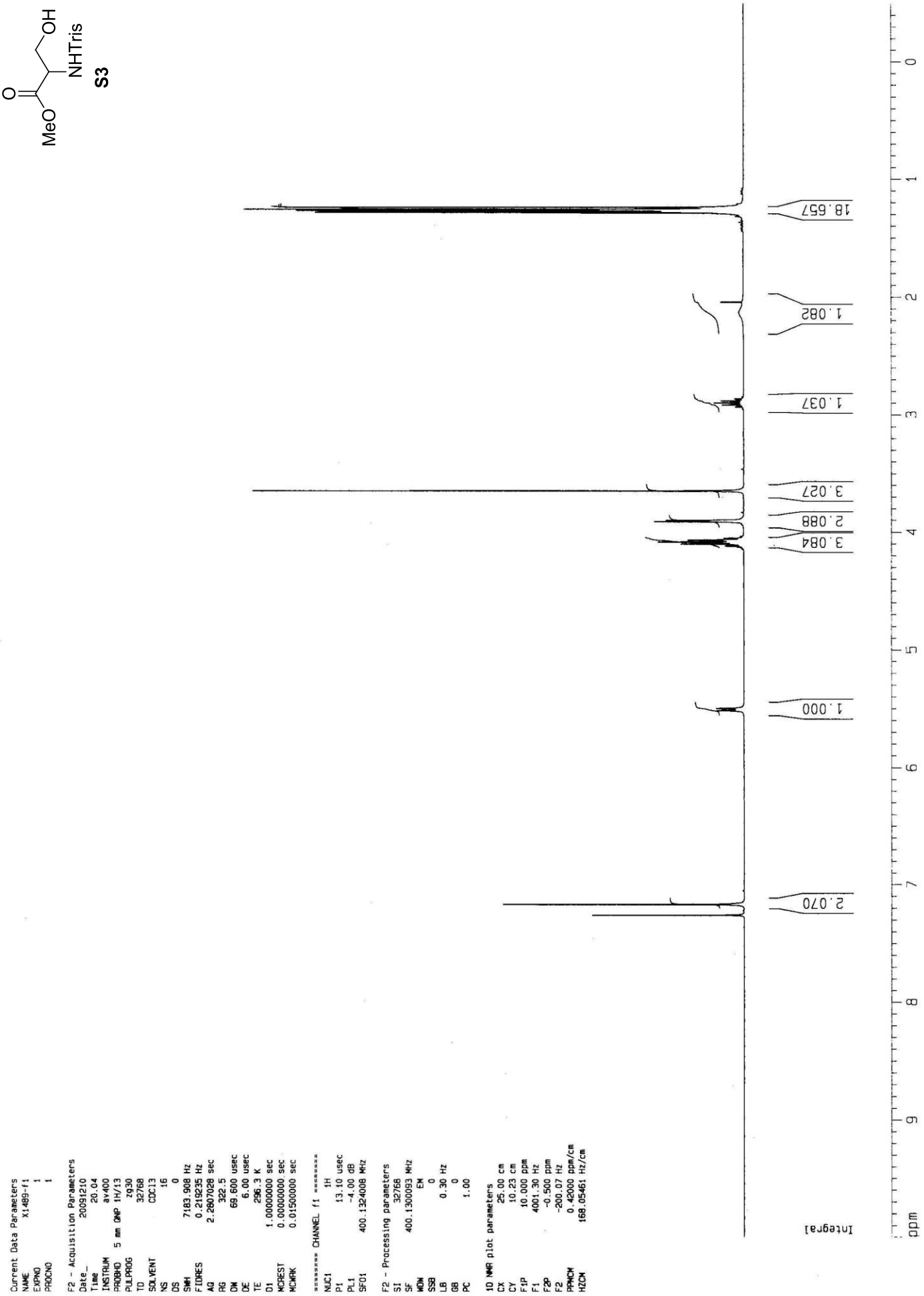
S3



Current Data Parameters
NAME X1489-f1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20091210
Time 20.04
INSTRUM av400
PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7183.908 Hz
FIDRES 0.219235 Hz
AQ 2.2807028 sec
RG 322.5
DW 69.600 usec
DE 6.00 usec
TE 296.3 K
D1 1.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======= CHANNEL f1 =======
NUC1 1H
P1 13.10 usec
PL1 -4.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300093 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 25.00 cm
CY 10.23 cm
F1P 10.000 ppm
F1 4001.30 Hz
F2P -0.500 ppm
F2 -200.07 Hz
PPMCM 0.42000 ppm/cm
HZCM 168.05461 Hz/cm

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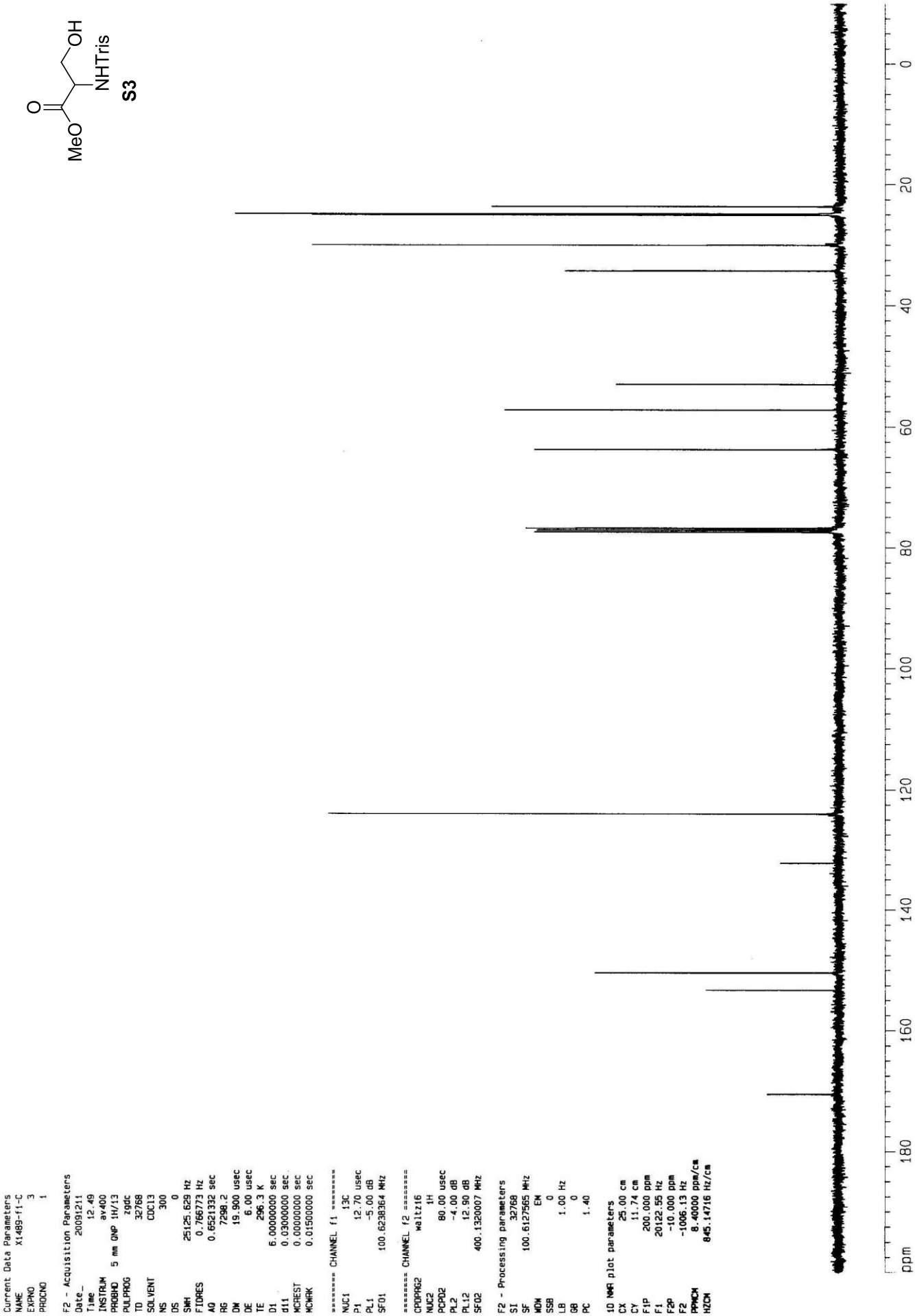

Current Data Parameters
NAME X1489-f1-C
EXPNO 3
PROCNO 1

F2 - Acquisition Parameters
Date_ 20091211
Time 12.49
INSTRUM av400
PROBHD 5 mm QNP 1H/13
PULPROG zgdc
TD 32768
SOLVENT CDCl3
NS 300
DS 0
SWH 25125.629 Hz
FIDRES 0.766773 Hz
AQ 0.6521332 sec
RG 7298.2
DW 19.900 usec
DE 6.00 usec
TE 296.3 K
D1 6.00000000 sec
d11 0.03000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 13C
P1 12.70 usec
PL1 -5.00 dB
SFO1 100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -4.00 dB
PL12 12.90 dB
SFO2 400.1320007 MHz

F2 - Processing parameters
SI 32768
SF 100.6127565 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 25.00 cm
CY 11.74 cm
F1P 200.000 ppm
F1 20122.55 Hz
F2P -10.000 ppm
F2 -1006.13 Hz
PPMCM 8.40000 ppm/cm
HZCM 845.14716 Hz/cm

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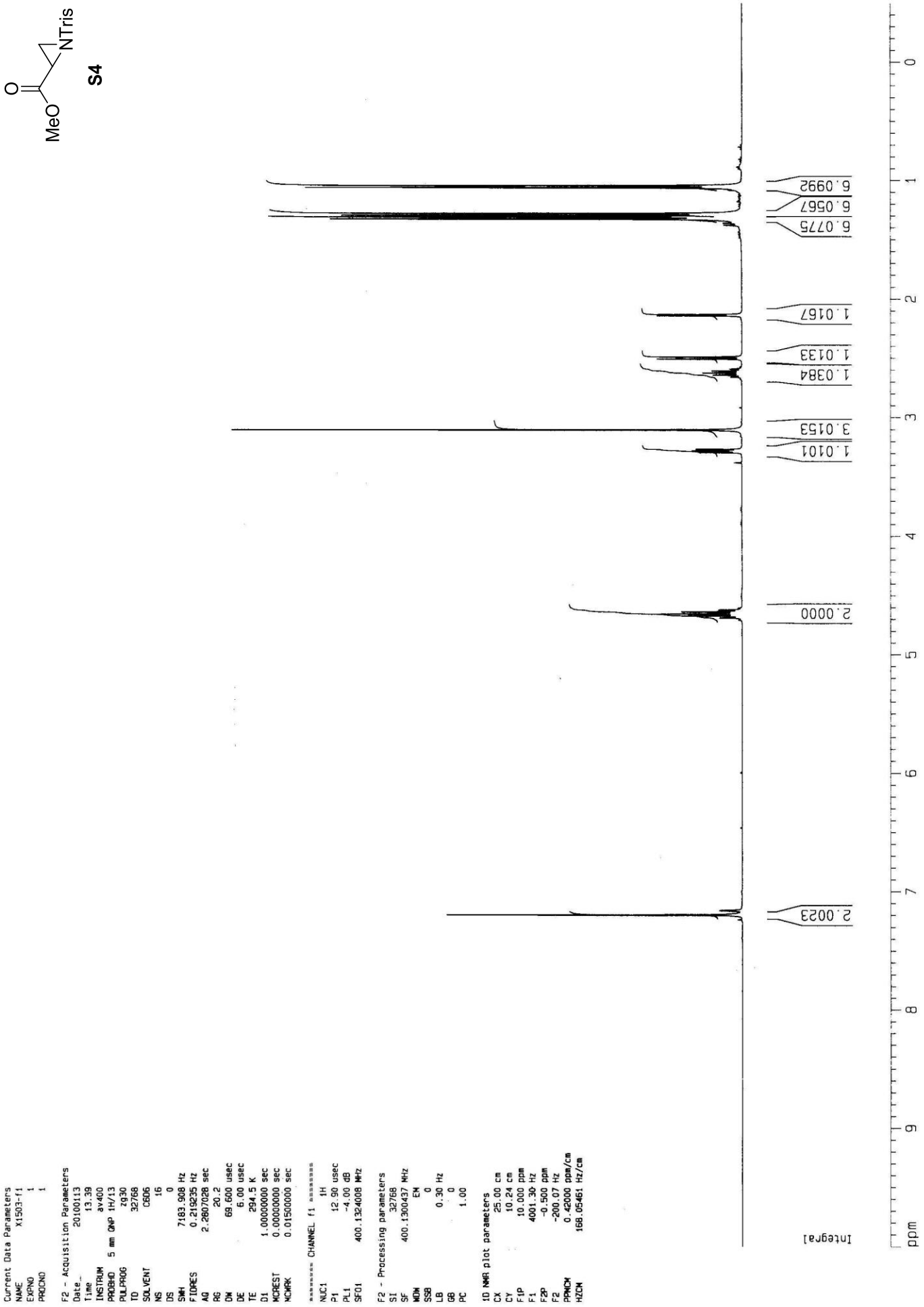

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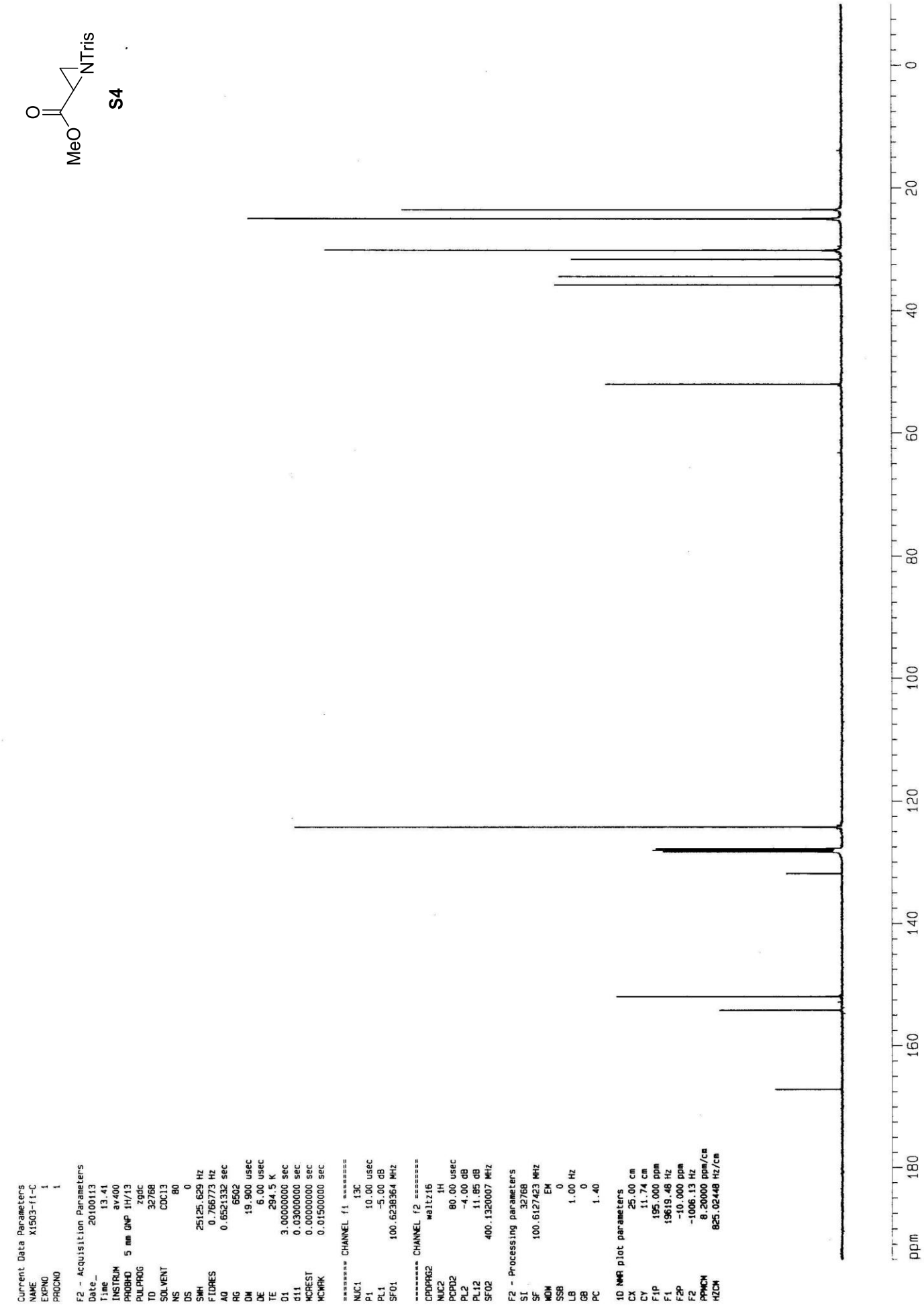

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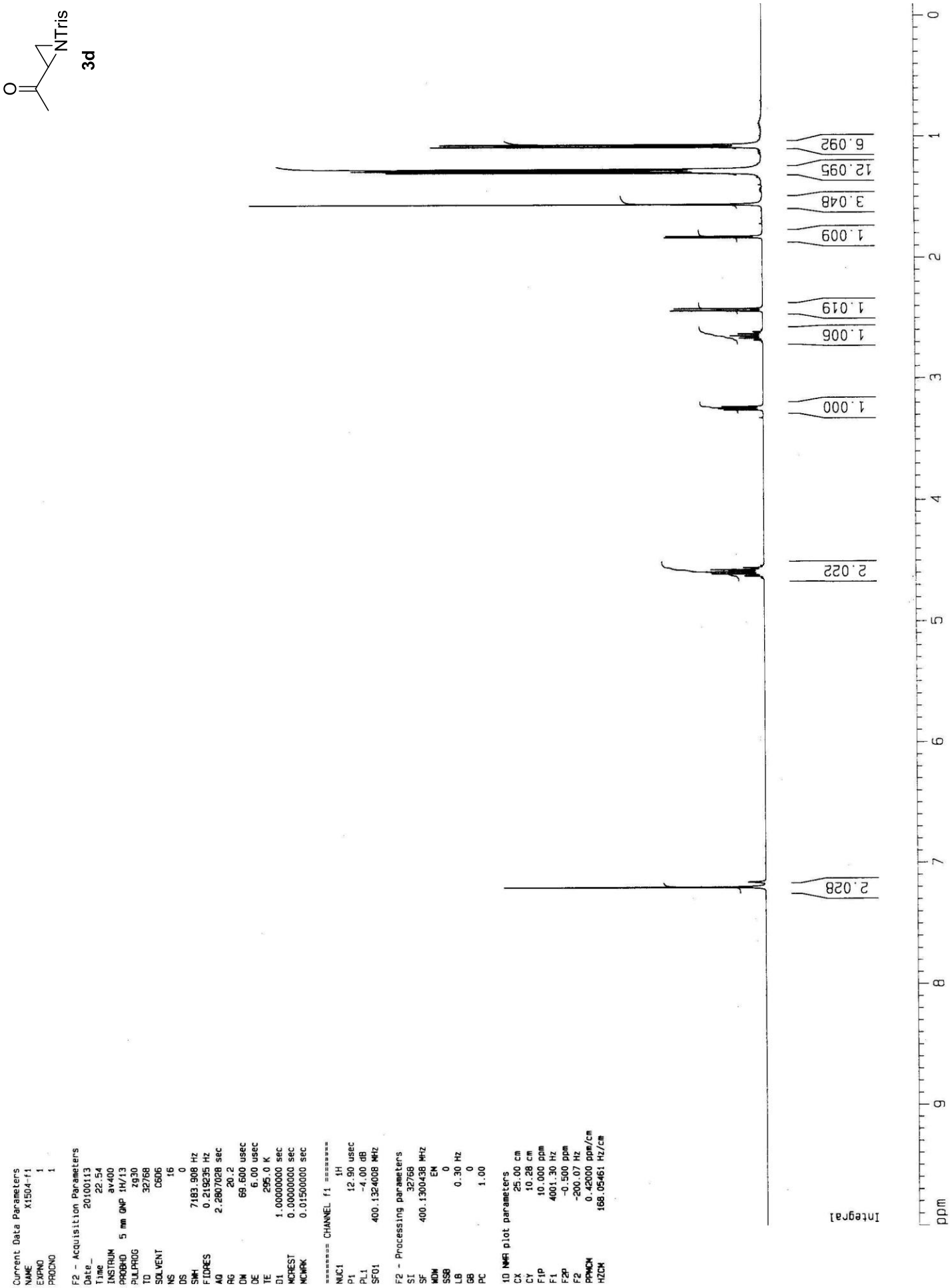

Current Data Parameters
NAME X1504-f1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20100113
Time 22.54
INSTRUM av400
PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 16
DS 0
SWH 7183.908 Hz
FIDRES 0.219235 Hz
AQ 2.2807028 sec
RG 20.2
DW 69.600 usec
DE 6.00 usec
TE 295.0 K
D1 1.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======= CHANNEL f1 =======
NUC1 1H
P1 12.90 usec
PL1 -4.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300438 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 25.00 cm
CY 10.28 cm
F1P 10.000 ppm
F1 4001.30 Hz
F2P -0.500 ppm
F2 -200.07 Hz
PPMCM 0.42000 ppm/cm
HZCM 168.05461 Hz/cm

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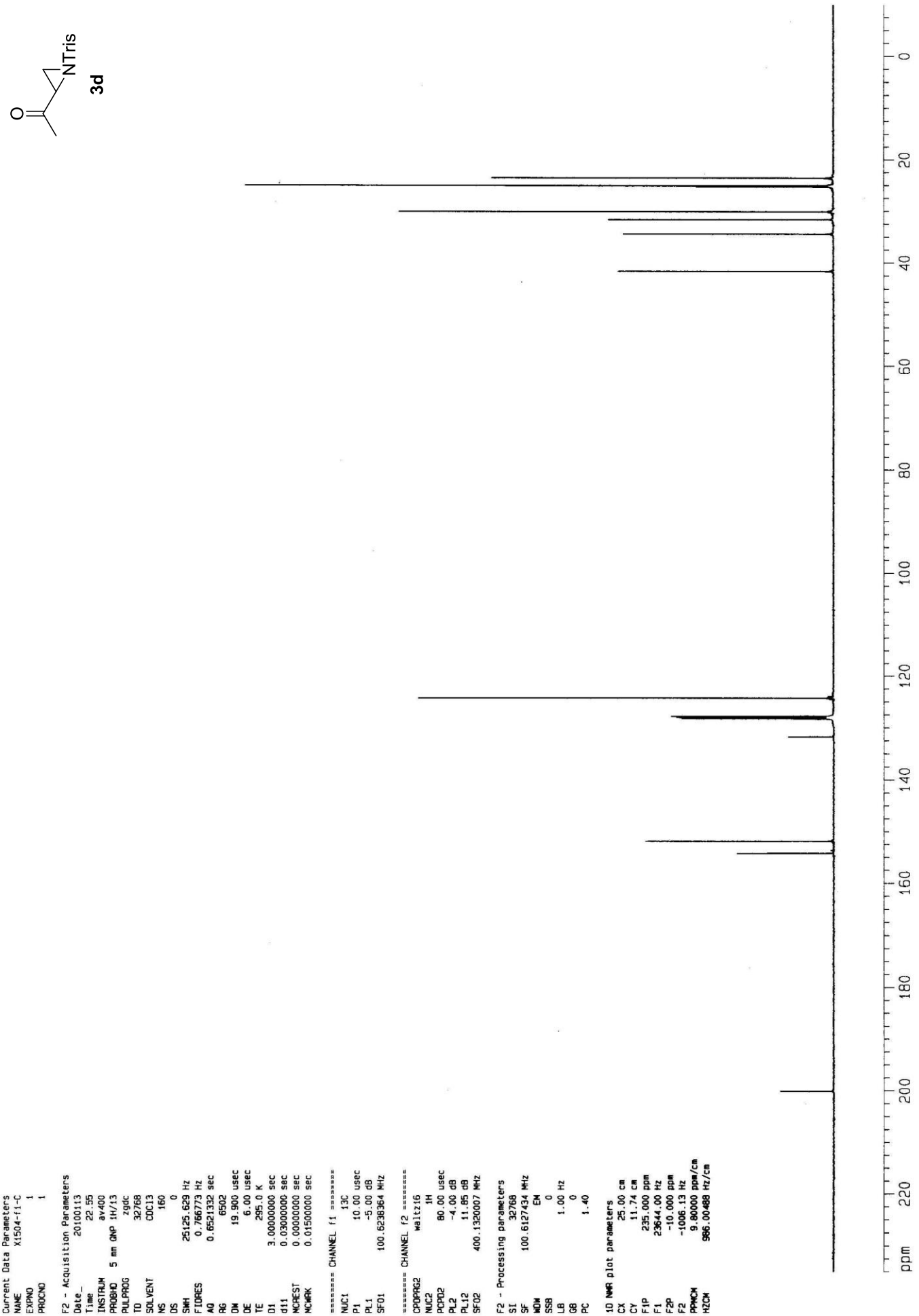


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Current Data Parameters
NAME          X1504-f1-C
EXPNO                  1
PROCNO                 1

F2 - Acquisition Parameters
Date_           20100113
Time               22.55
INSTRUM            av400
PROBHD  5 mm QNP 1H/13
PULPROG             zgdc
TD                 32768
SOLVENT             CDCl3
NS                    160
DS                      0
SWH             25125.629 Hz
FIDRES          0.766773 Hz
AQ              0.6521332 sec
RG                   6502
DW                19.900 usec
DE                 6.00 usec
TE                 295.0 K
D1              3.00000000 sec
d11             0.03000000 sec
MCREST          0.00000000 sec
MCWRK           0.01500000 sec

======== CHANNEL f1 ========
NUC1                  13C
P1                 10.00 usec
PL1                -5.00 dB
SFO1          100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2            waltz16
NUC2                    1H
PCPD2              80.00 usec
PL2                -4.00 dB
PL12               11.85 dB
SFO2          400.1320007 MHz

F2 - Processing parameters
SI                   32768
SF            100.6127434 MHz
WDW                     EM
SSB                      0
LB                1.00 Hz
GB                       0
PC                    1.40

1D NMR plot parameters
CX                  25.00 cm
CY                  11.74 cm
F1P                235.000 ppm
F1                 23644.00 Hz
F2P                -10.000 ppm
F2                 -1006.13 Hz
PPMCM             9.80000 ppm/cm
HZCM              986.00488 Hz/cm
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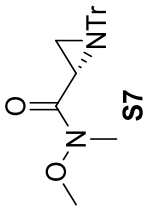

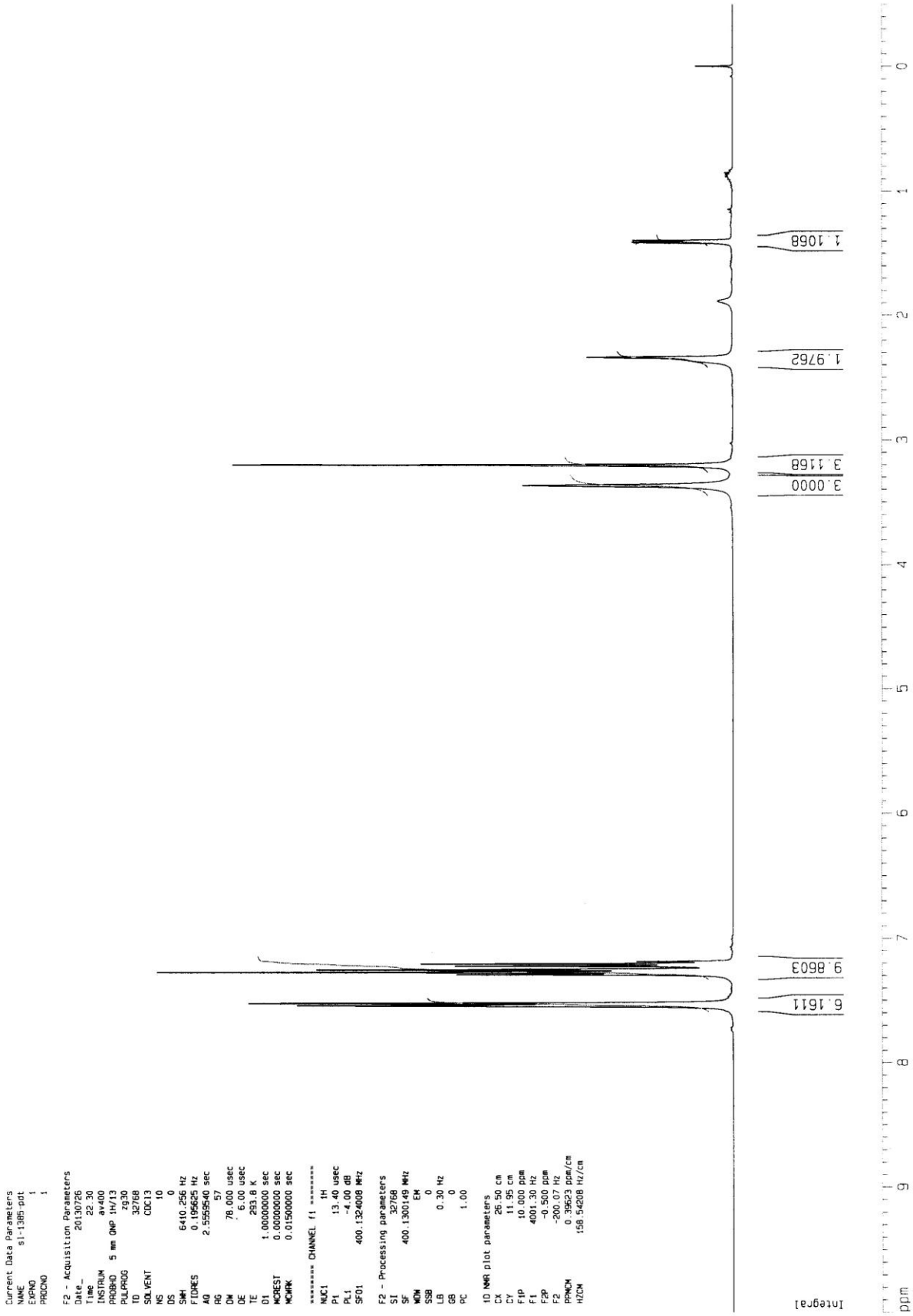

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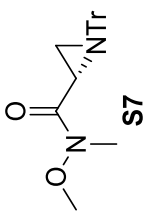

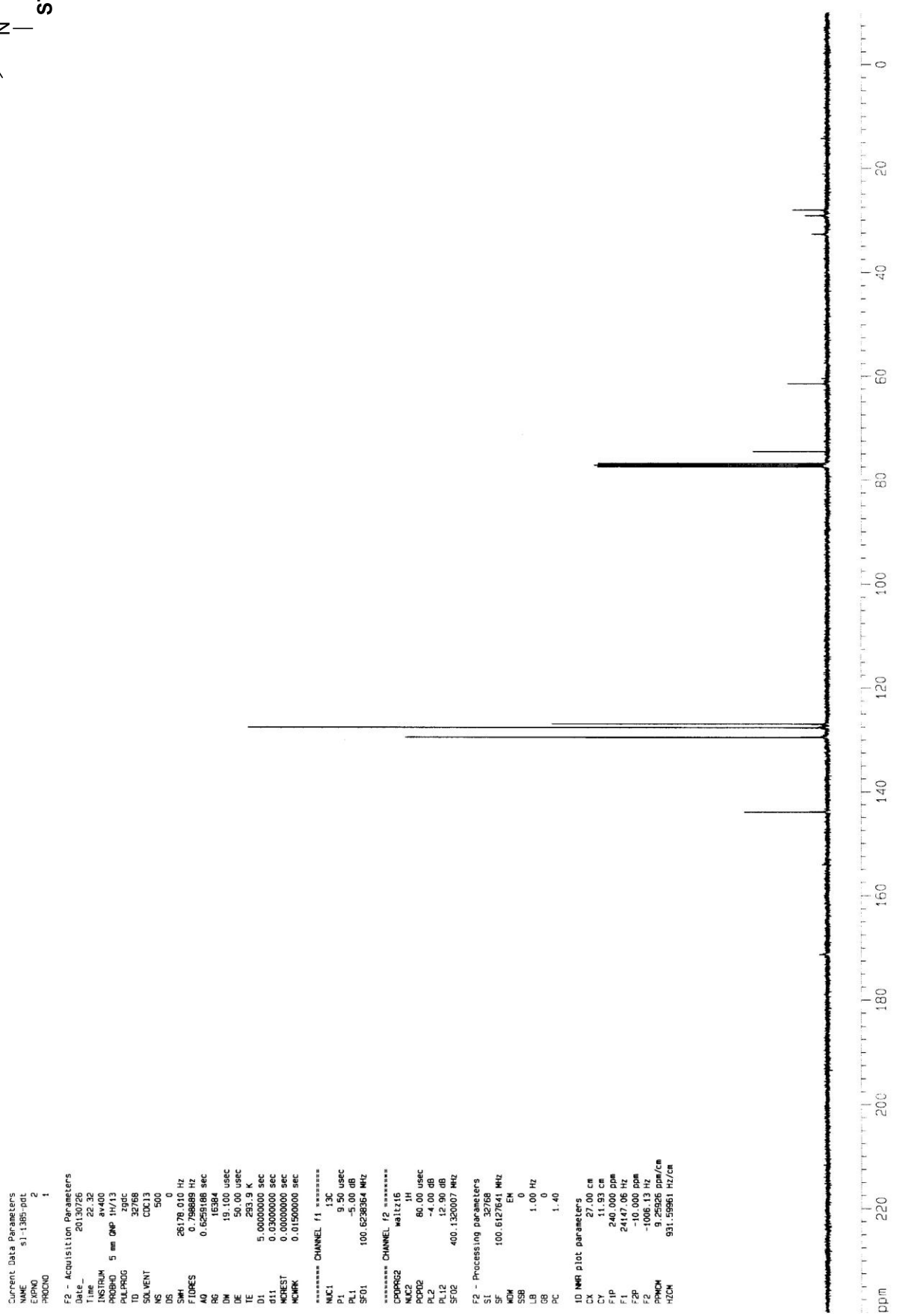

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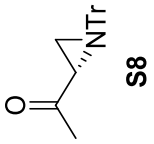
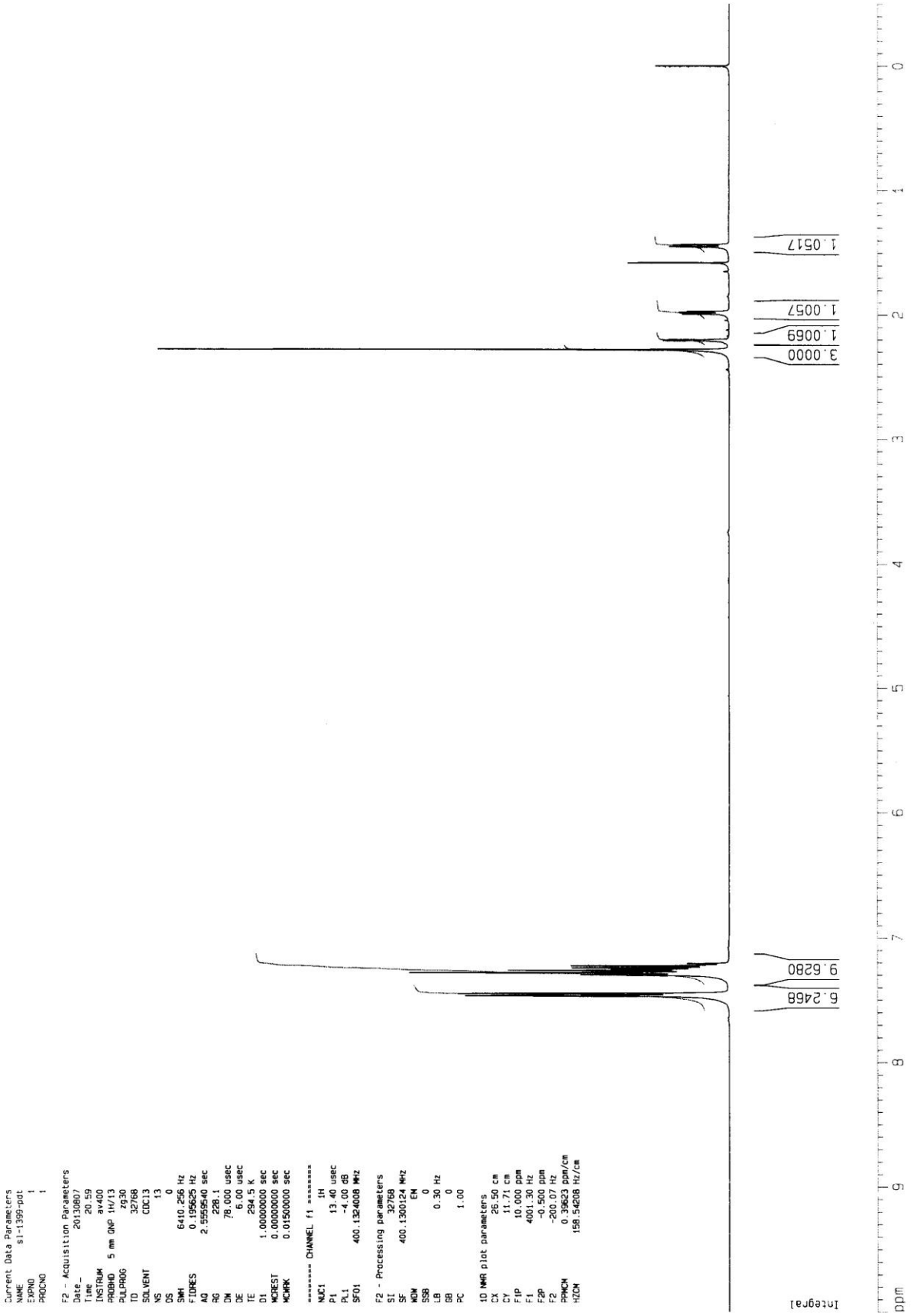


S8

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EXPNO                   1
PROCNO                  1

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Time_               20.59
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PROBHD  5 mm QNP 1H/13
PULPROG             zg30
TD                 32768
SOLVENT             CDCl3
NS                     13
DS                      0
SWH           6410.256 Hz
FIDRES        0.195625 Hz
AQ            2.5559540 sec
RG                 228.1
DW                78.000 usec
DE                 6.00 usec
TE                 294.5 K
D1            1.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                1H
P1                13.40 usec
PL1               -4.00 dB
SFO1        400.1324008 MHz

F2 - Processing parameters
SI                 32768
SF          400.1300124 MHz
WDW                   EM
SSB                    0
LB                  0.30 Hz
GB                     0
PC                  1.00

1D NMR plot parameters
CX                 26.50 cm
CY                 11.71 cm
F1P               10.000 ppm
F1              4001.30 Hz
F2P               -0.500 ppm
F2              -200.07 Hz
PPMCM          0.39623 ppm/cm
HZCM          158.54208 Hz/cm
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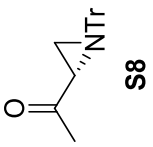
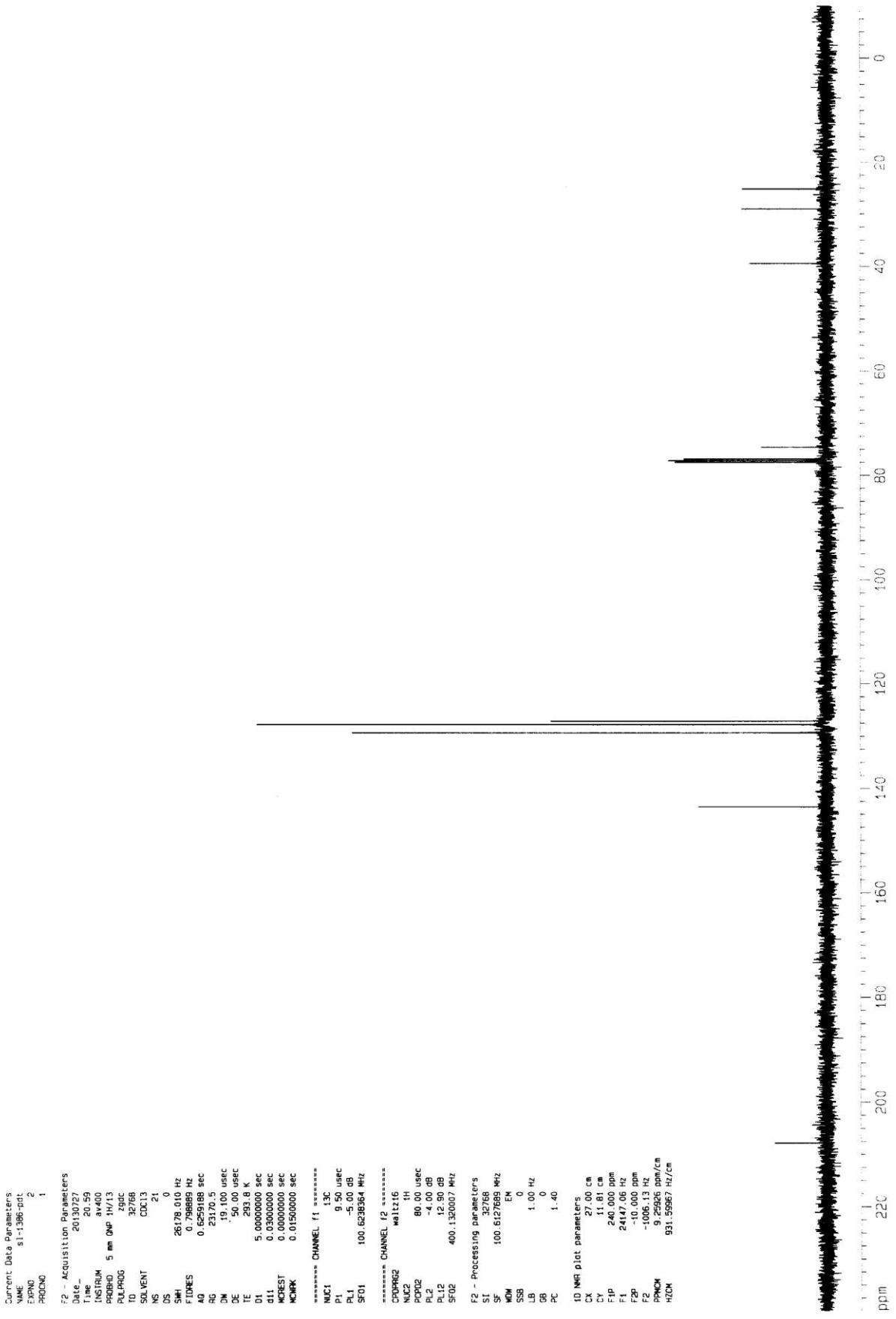


S8



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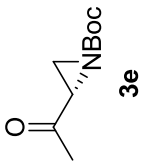

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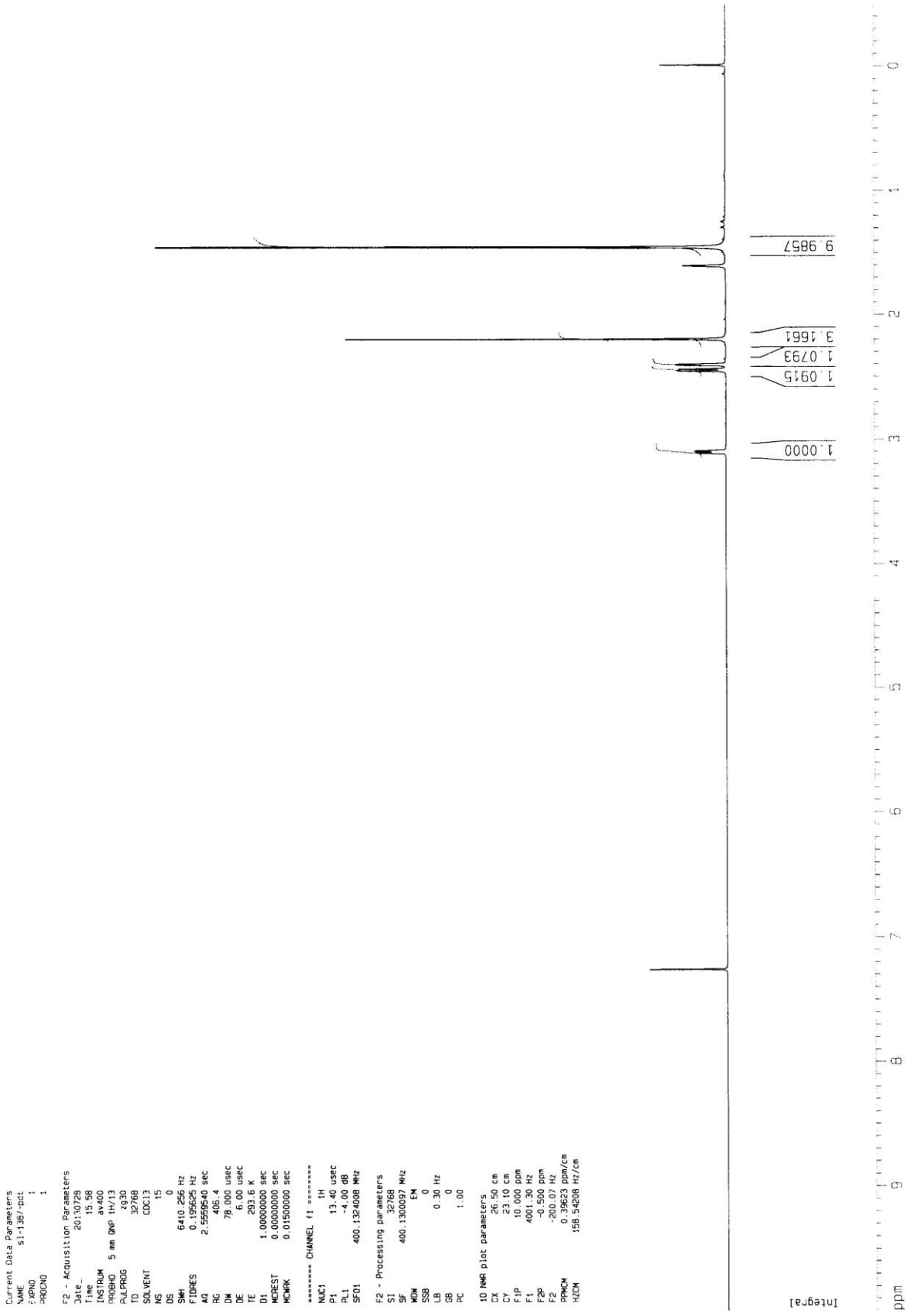


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Current Data Parameters
NAME          s1-136/-pdt
EXPNO                   1
PROCNO                  1

F2 - Acquisition Parameters
Date_              20130728
Time_                 15.58
INSTRUM                av400
PROBHD  5 mm QNP 1H/13
PULPROG               zg30
TD                   32768
SOLVENT              CDCl3
NS                      16
DS                       0
SWH              6410.256 Hz
FIDRES           0.195625 Hz
AQ               2.5559540 sec
RG                   406.4
DW                78.000 usec
DE                 6.00 usec
TE                 293.6 K
D1               1.00000000 sec
MCREST           0.00000000 sec
MCWRK            0.01500000 sec

======== CHANNEL f1 ========
NUC1                   1H
P1                 13.40 usec
PL1                -4.00 dB
SFO1         400.1324008 MHz

F2 - Processing parameters
SI                   32768
SF           400.1300097 MHz
WDW                    EM
SSB                     0
LB                 0.30 Hz
GB                      0
PC                   1.00

1D NMR plot parameters
CX                 26.50 cm
CY                 23.10 cm
F1P               10.000 ppm
F1              4001.30 Hz
F2P               -0.500 ppm
F2              -200.07 Hz
PPMCM          0.39623 ppm/cm
HZCM           158.54208 Hz/cm
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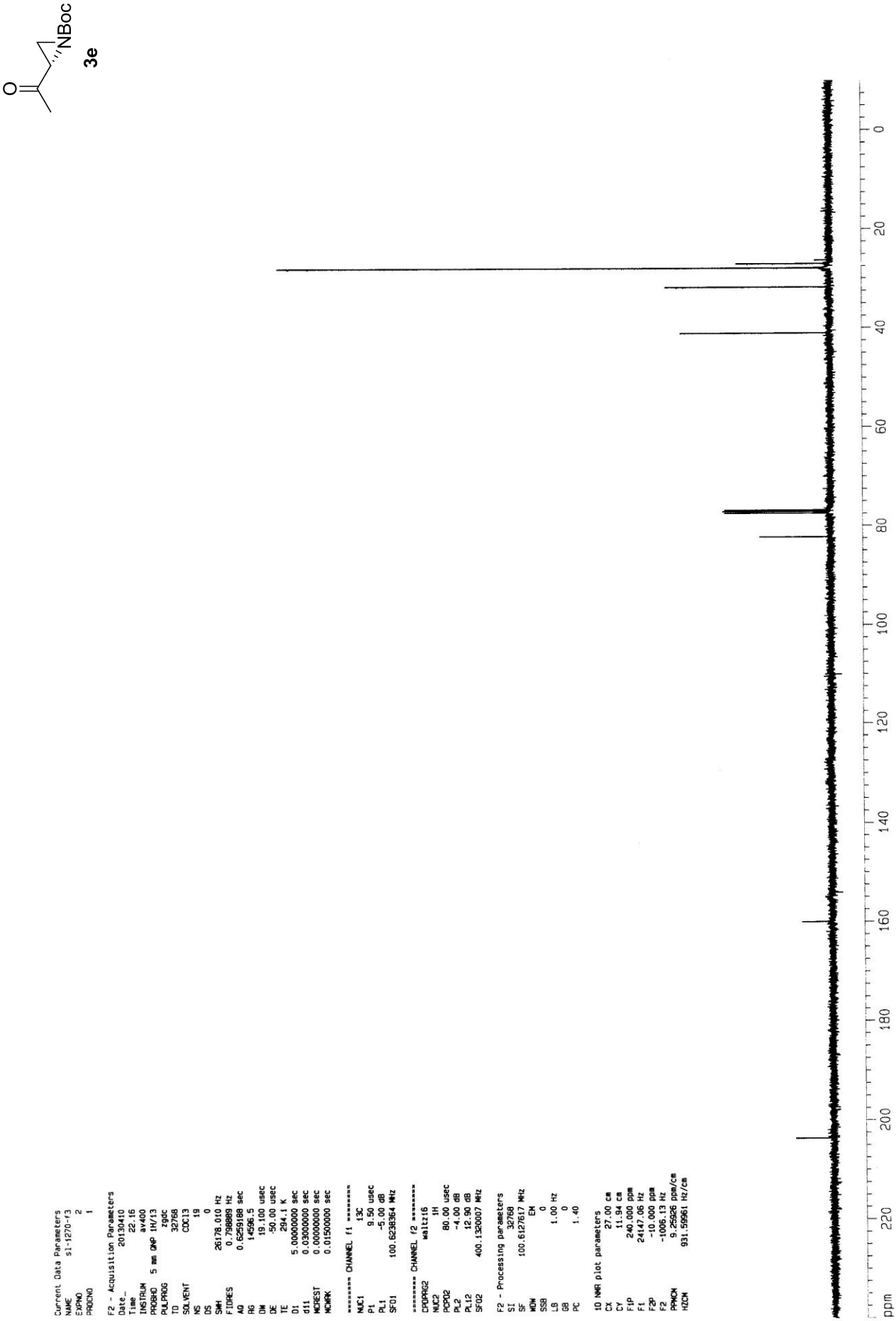

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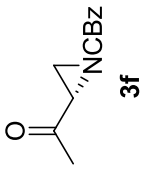
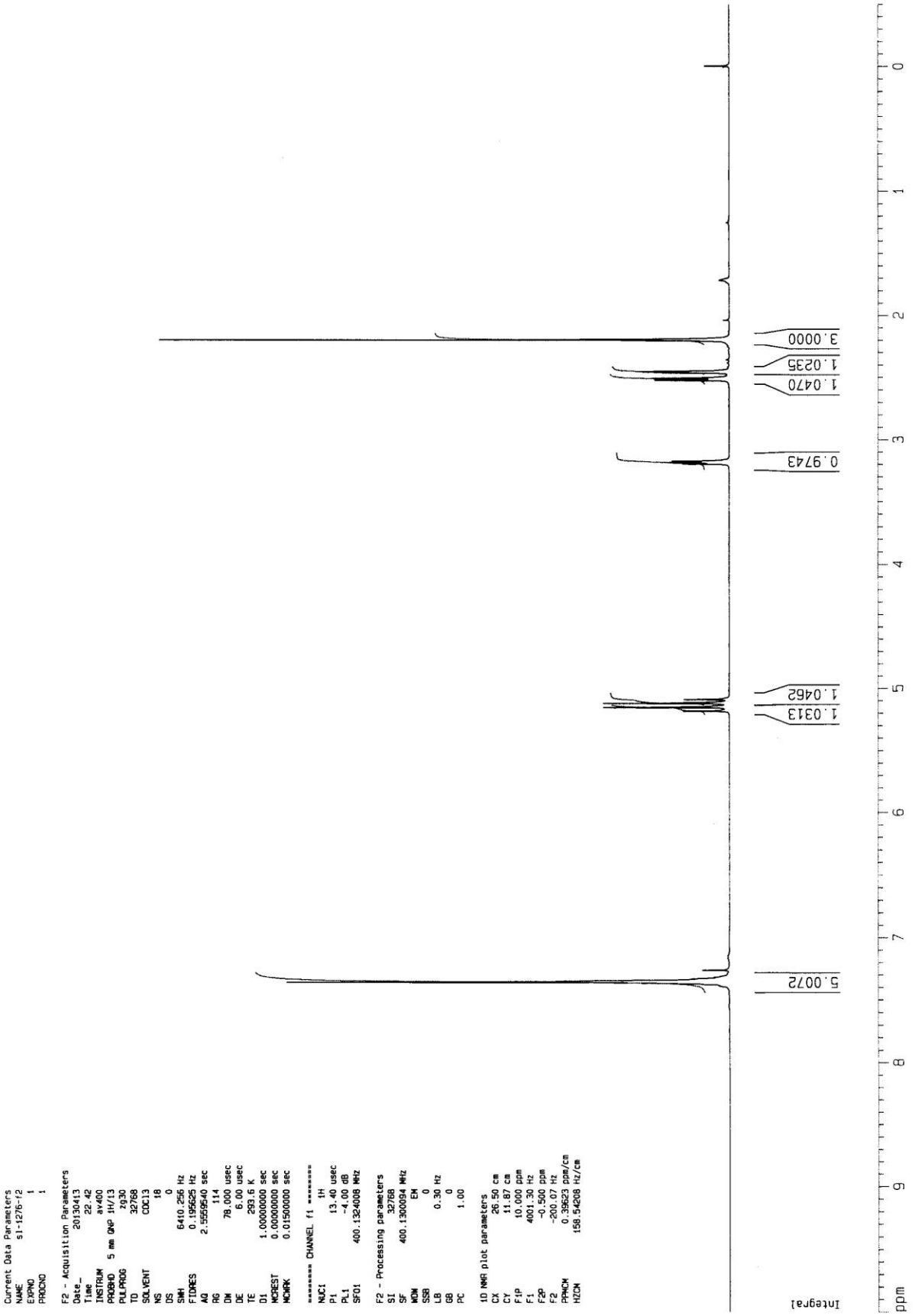


3f



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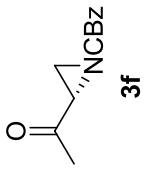
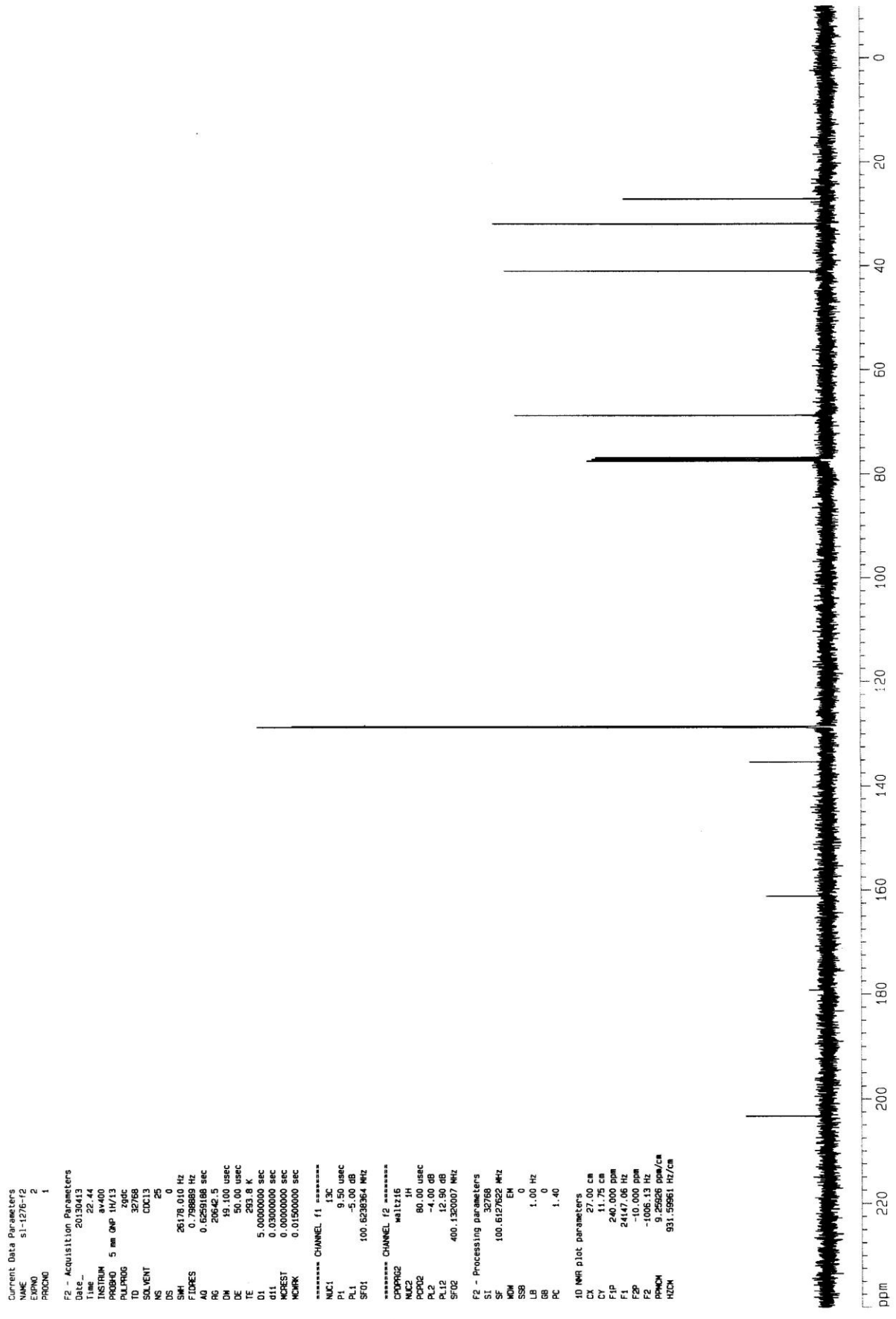


3f



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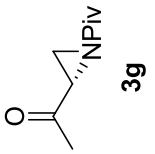
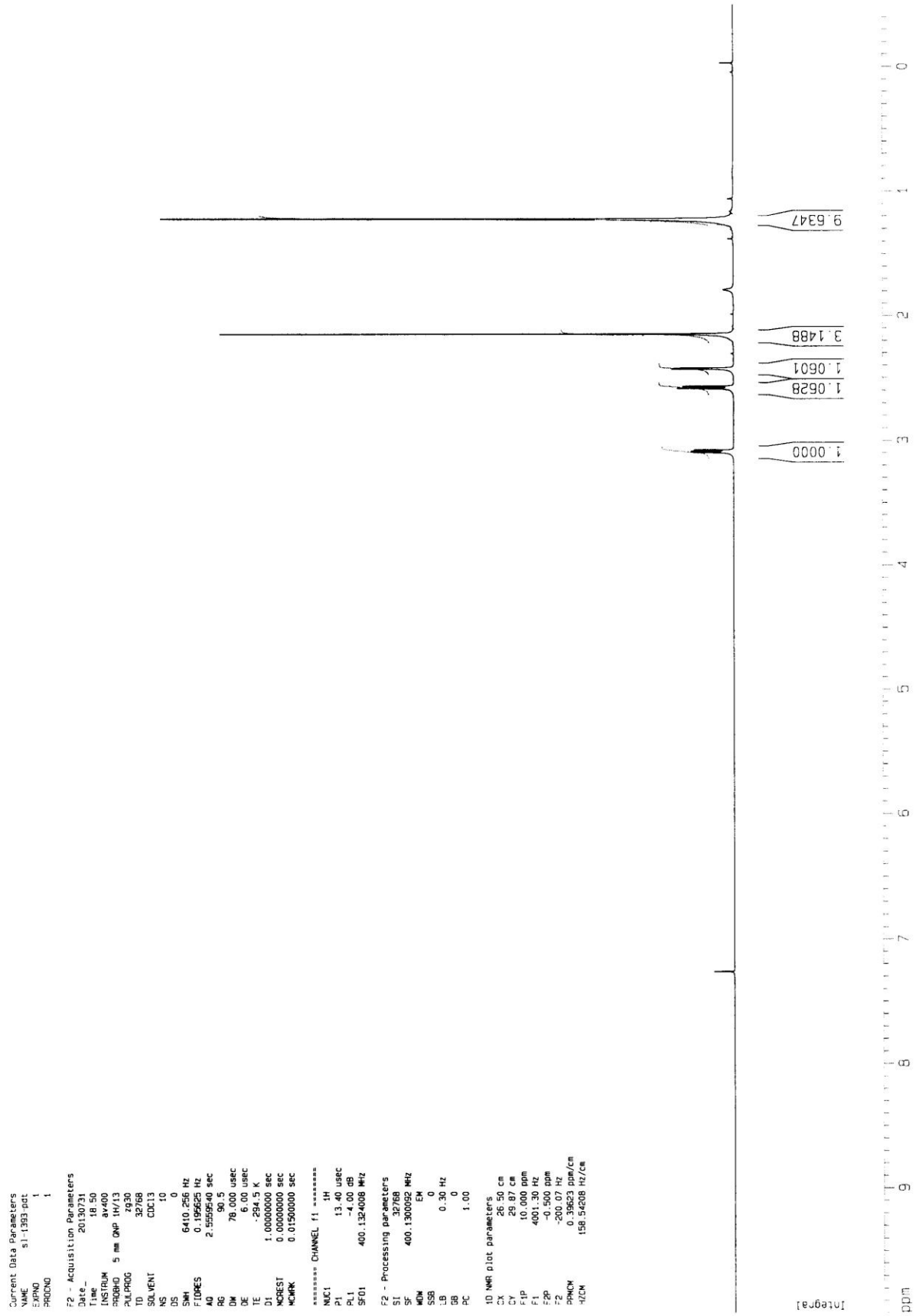


3g

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EXPNO                   1
PROCNO                  1

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Time_                 18:50
INSTRUM             av400
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PULPROG               zg30
TD                   32768
SOLVENT              CDCl3
NS                      10
DS                       0
SWH               6410.256 Hz
FIDRES            0.195625 Hz
AQ                2.5559540 sec
RG                     90.5
DW                78.000 usec
DE                 6.00 usec
TE                 294.5 K
D1                1.00000000 sec
MCREST            0.00000000 sec
MCWRK             0.01500000 sec

======== CHANNEL f1 ========
NUC1                   1H
P1                 13.40 usec
PL1                -4.00 dB
SFO1          400.1324008 MHz

F2 - Processing parameters
SI                   32768
SF            400.1300092 MHz
WDW                     EM
SSB                      0
LB                  0.30 Hz
GB                       0
PC                    1.00

1D NMR plot parameters
CX                   26.50 cm
CY                   29.87 cm
F1P                10.000 ppm
F1                 4001.30 Hz
F2P                -0.500 ppm
F2                 -200.07 Hz
PPMCM             0.39623 ppm/cm
HZCM              158.54208 Hz/cm
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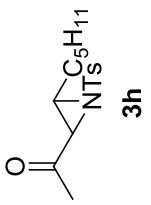

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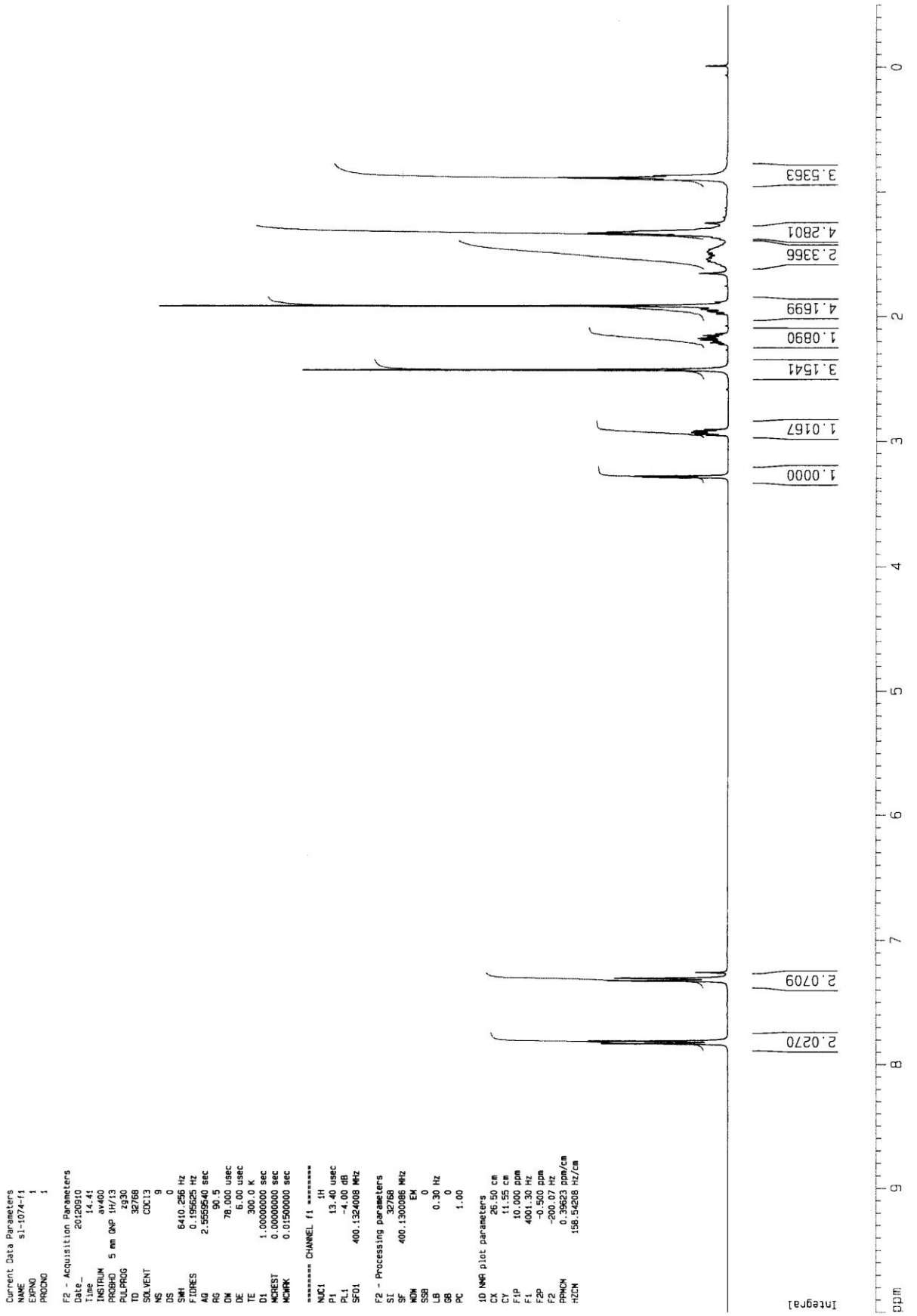

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EXPNO 1
PROCNO 1

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Time 14.41
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PROBHD 5 mm QNP 1H/13
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 9
DS 0
SWH 6410.256 Hz
FIDRES 0.195625 Hz
AQ 2.5559540 sec
RG 90.15
DW 78.000 usec
DE 6.00 usec
TE 300.0 K
D1 1.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 1H
P1 13.40 usec
PL1 -4.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300086 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 26.50 cm
CY 11.55 cm
F1P 10.000 ppm
F1 4001.30 Hz
F2P -0.500 ppm
F2 -200.07 Hz
PPMCM 0.39623 ppm/cm
HZCM 158.54208 Hz/cm

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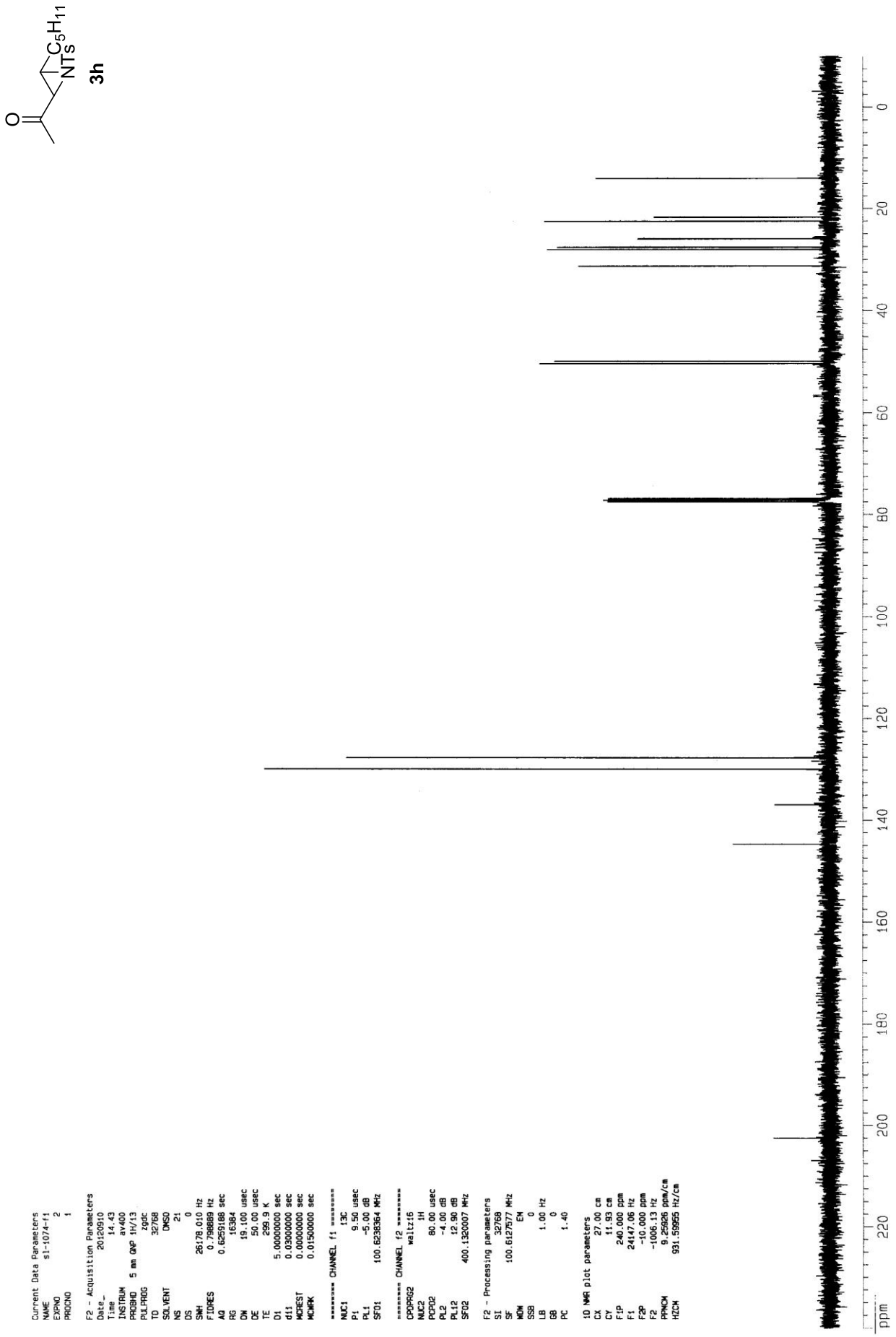

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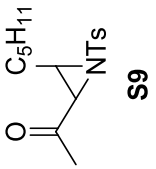
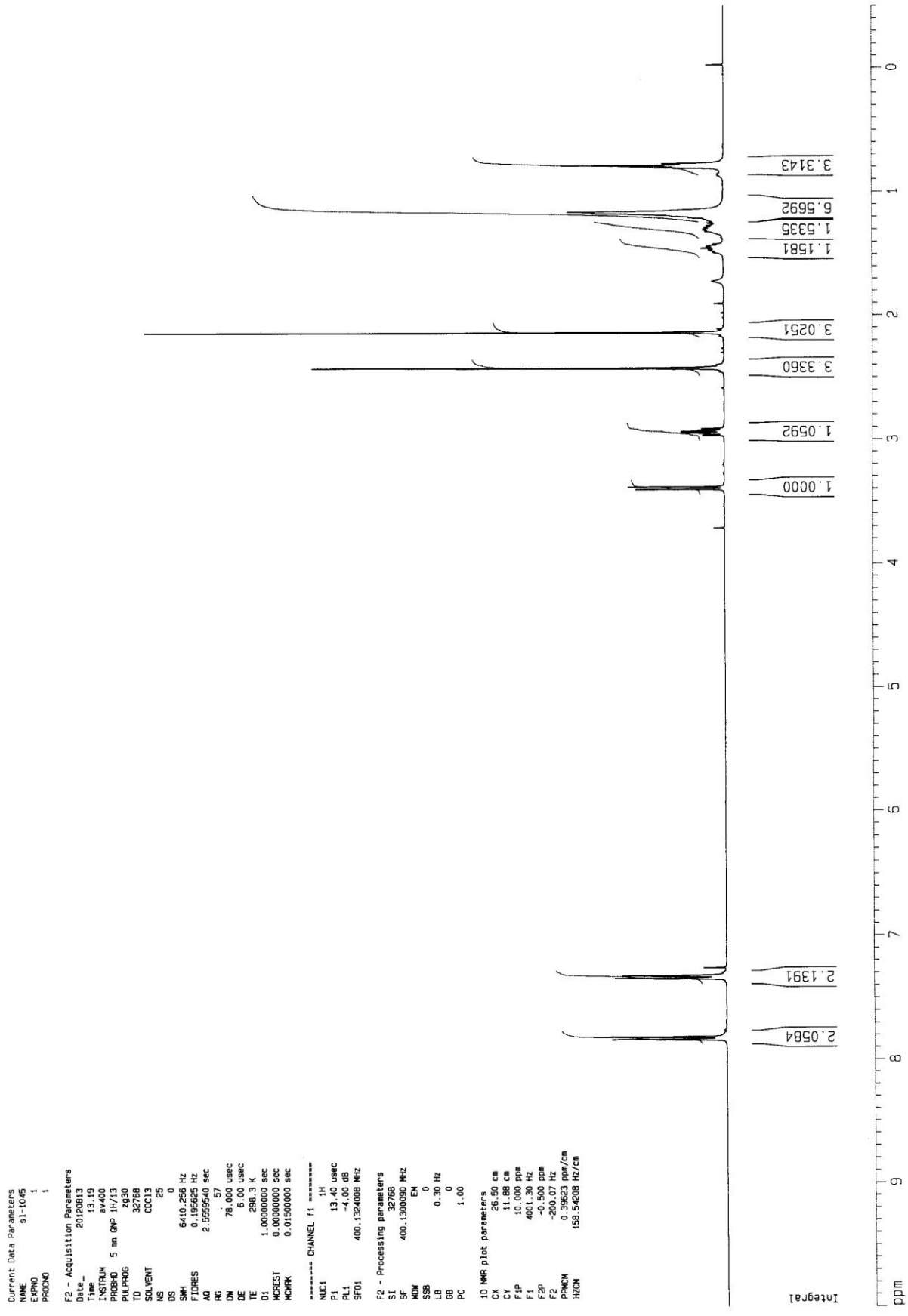


S9



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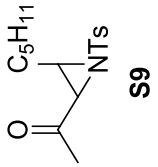
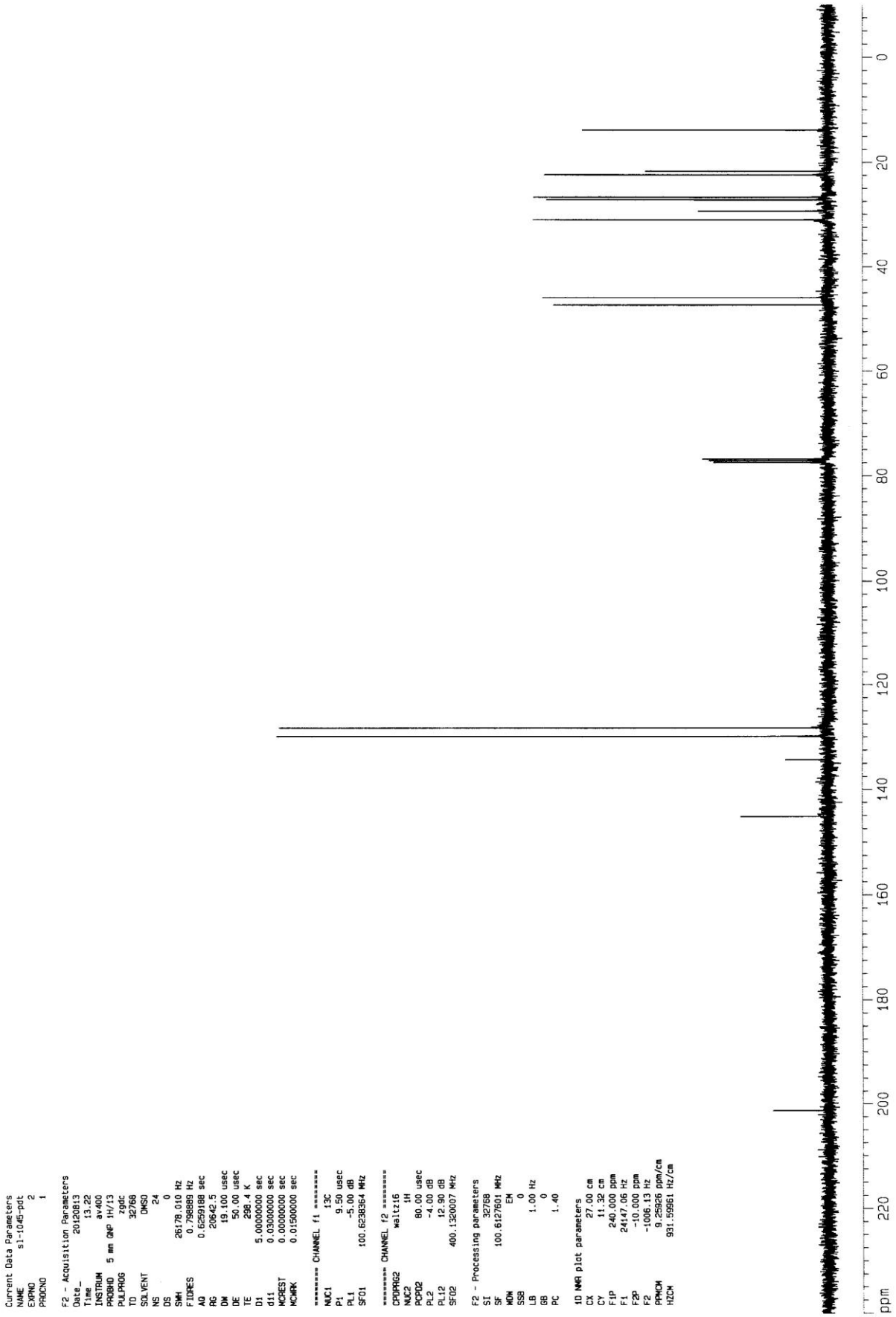


S9

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PROCNO              1

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Time            13.22
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PULPROG          zgdc
TD              32768
SOLVENT          DMSO
NS                 24
DS                  0
SWH         26178.010 Hz
FIDRES          0.798889 Hz
AQ              0.6259188 sec
RG              20642.5
DW                19.100 usec
DE                50.00 usec
TE               298.4 K
D1          5.00000000 sec
d11         0.03000000 sec
MCREST      0.00000000 sec
MCWRK       0.01500000 sec

======== CHANNEL f1 ========
NUC1               13C
P1                9.50 usec
PL1              -5.00 dB
SFO1        100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2         waltz16
NUC2                1H
PCPD2           80.00 usec
PL2             -4.00 dB
PL12            12.90 dB
SFO2        400.1320007 MHz

F2 - Processing parameters
SI              32768
SF          100.6127601 MHz
WDW                 EM
SSB                  0
LB                1.00 Hz
GB                   0
PC                1.40

1D NMR plot parameters
CX              27.00 cm
CY              11.32 cm
F1P           240.000 ppm
F1          24147.06 Hz
F2P           -10.000 ppm
F2          -1006.13 Hz
PPMCM         9.25926 ppm/cm
HZCM        931.59961 Hz/cm
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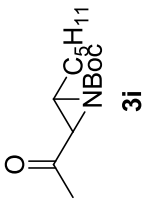

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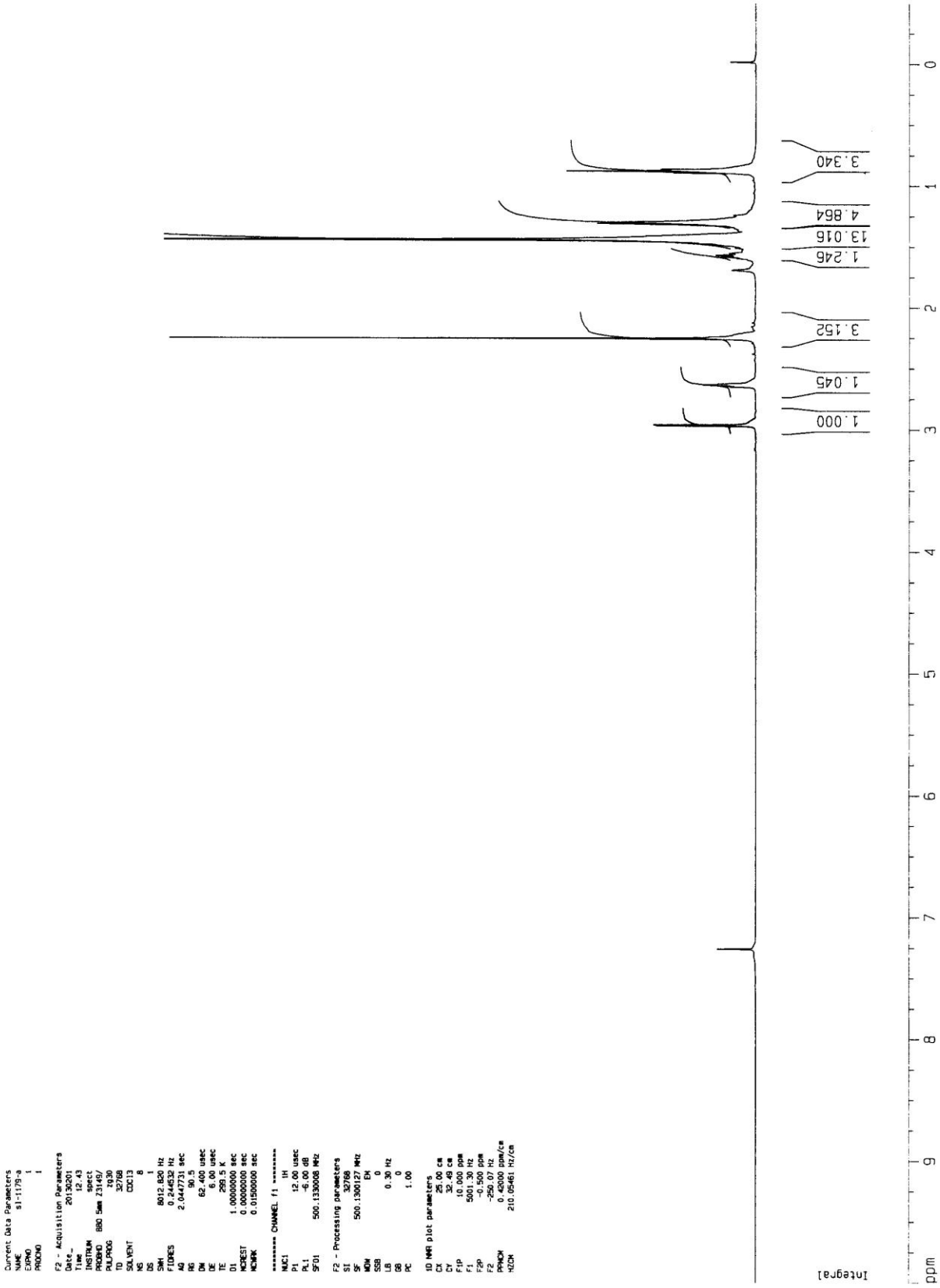

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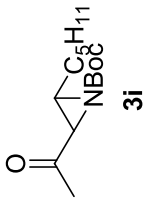

3i

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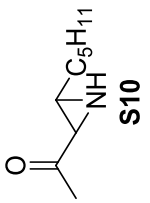
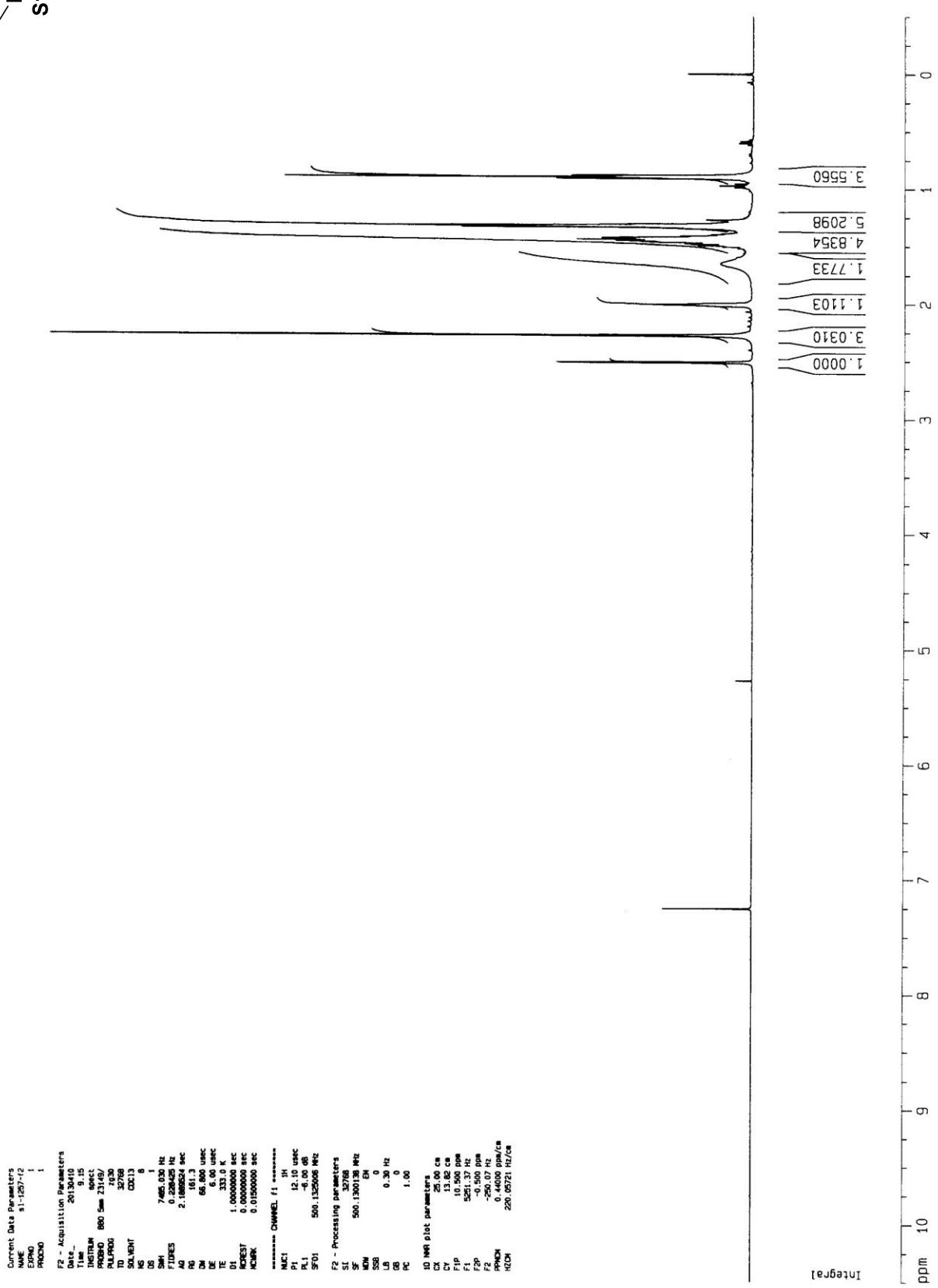


S10



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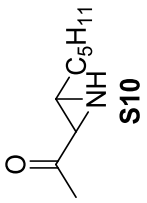
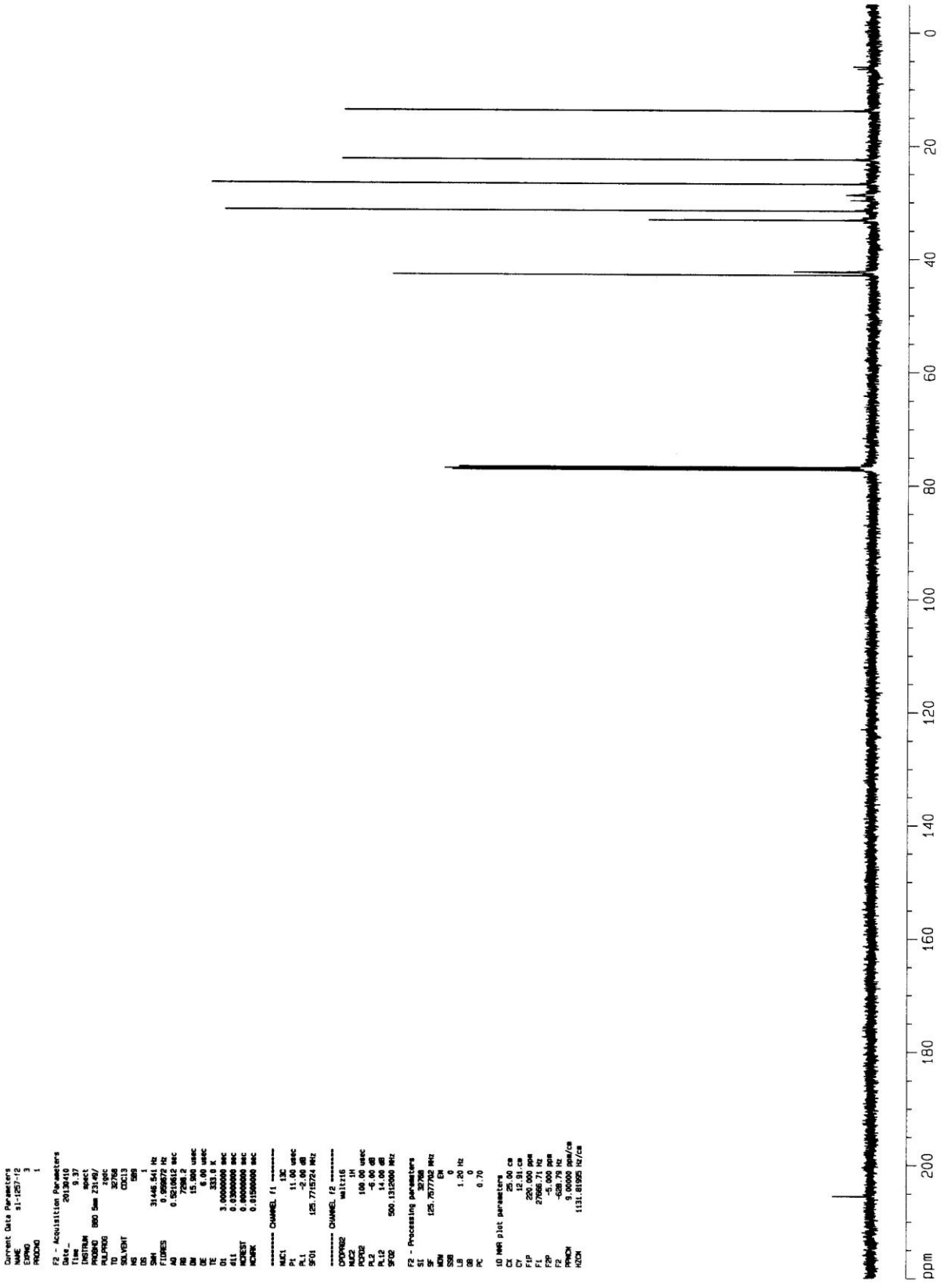


S10



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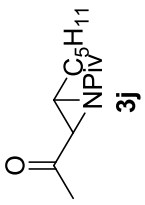

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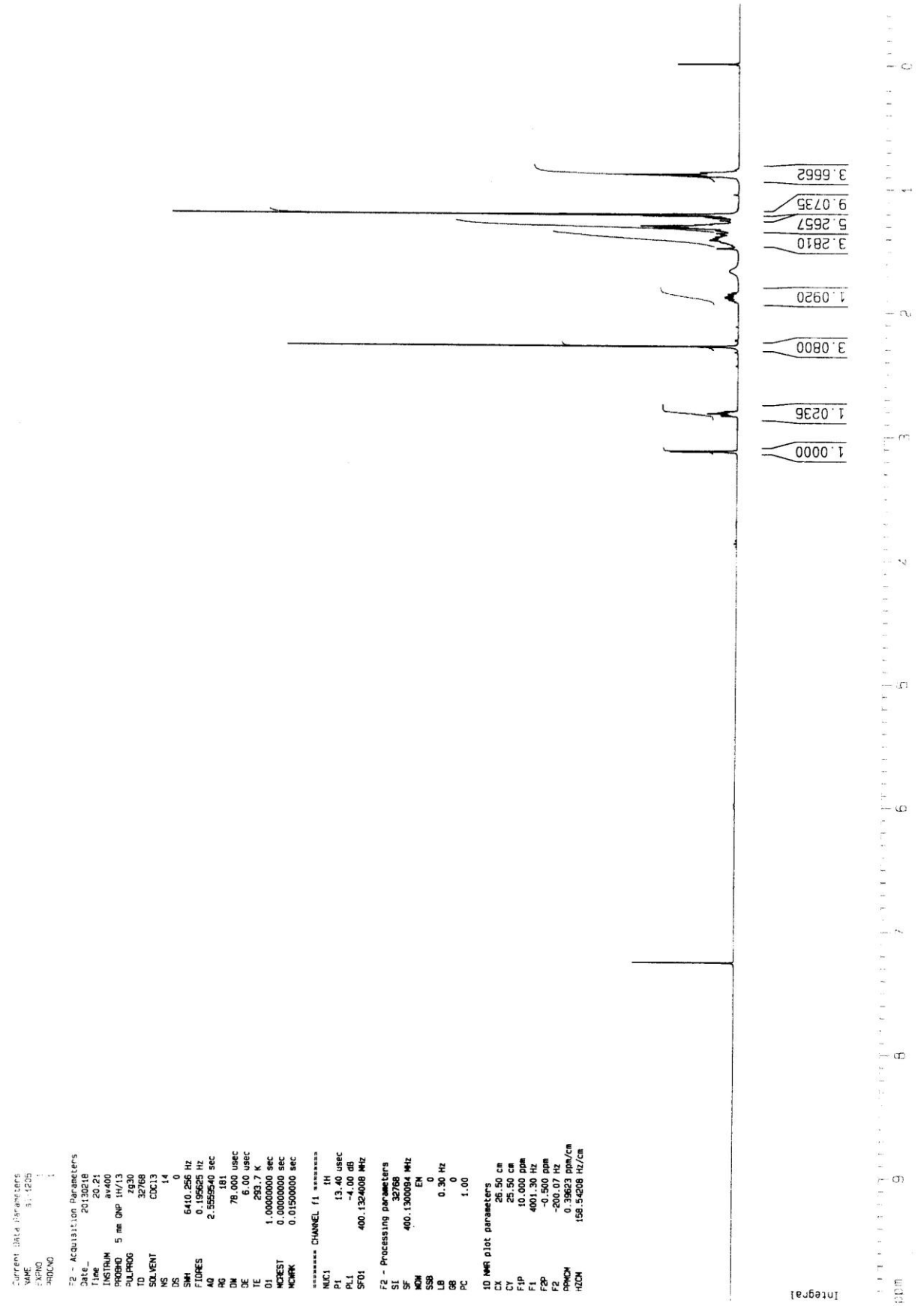

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EXPNO
PROCNO

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PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 14
DS 0
SWH 6410.256 Hz
FIDRES 0.195625 Hz
AQ 2.5559540 sec
RG 181
DW 78.000 usec
DE 6.00 usec
TE 293.7 K
D1 1.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 1H
P1 13.40 usec
PL1 -4.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300094 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 26.50 cm
CY 25.50 cm
F1P 10.000 ppm
F1 4001.30 Hz
F2P -0.500 ppm
F2 -200.07 Hz
PPMCM 0.39623 ppm/cm
HZCM 158.54208 Hz/cm

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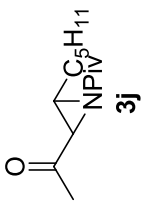
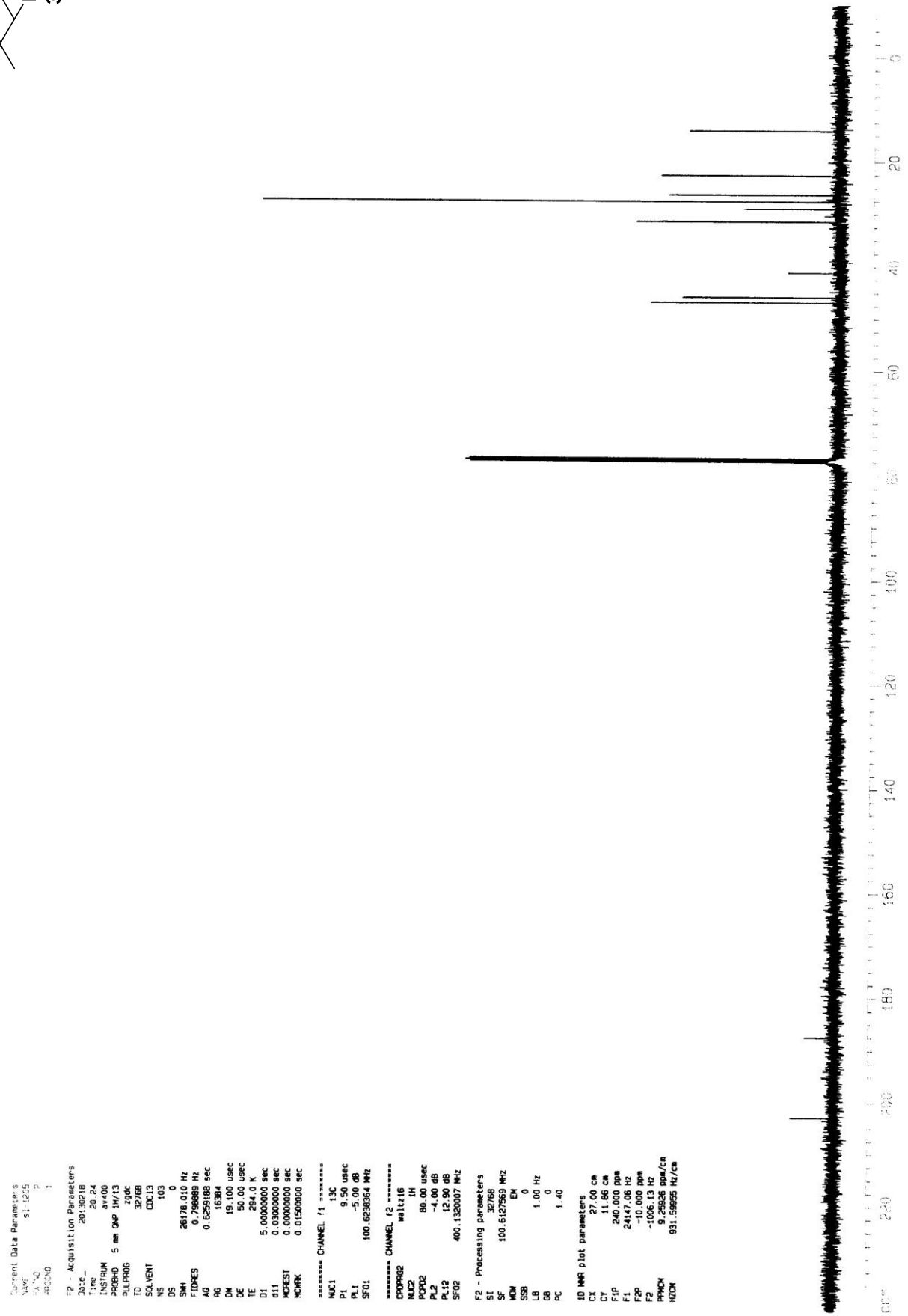


3j



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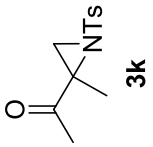

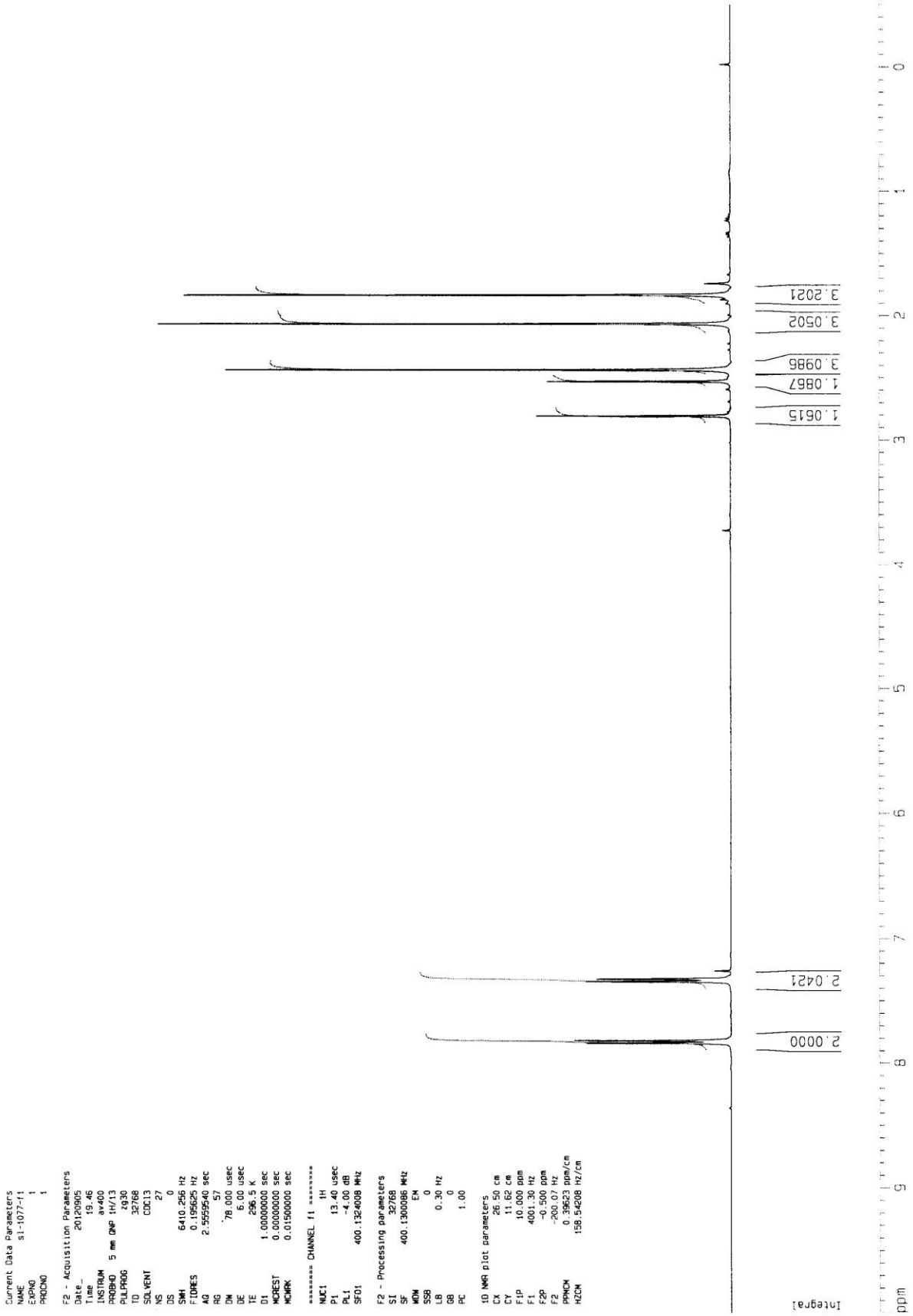

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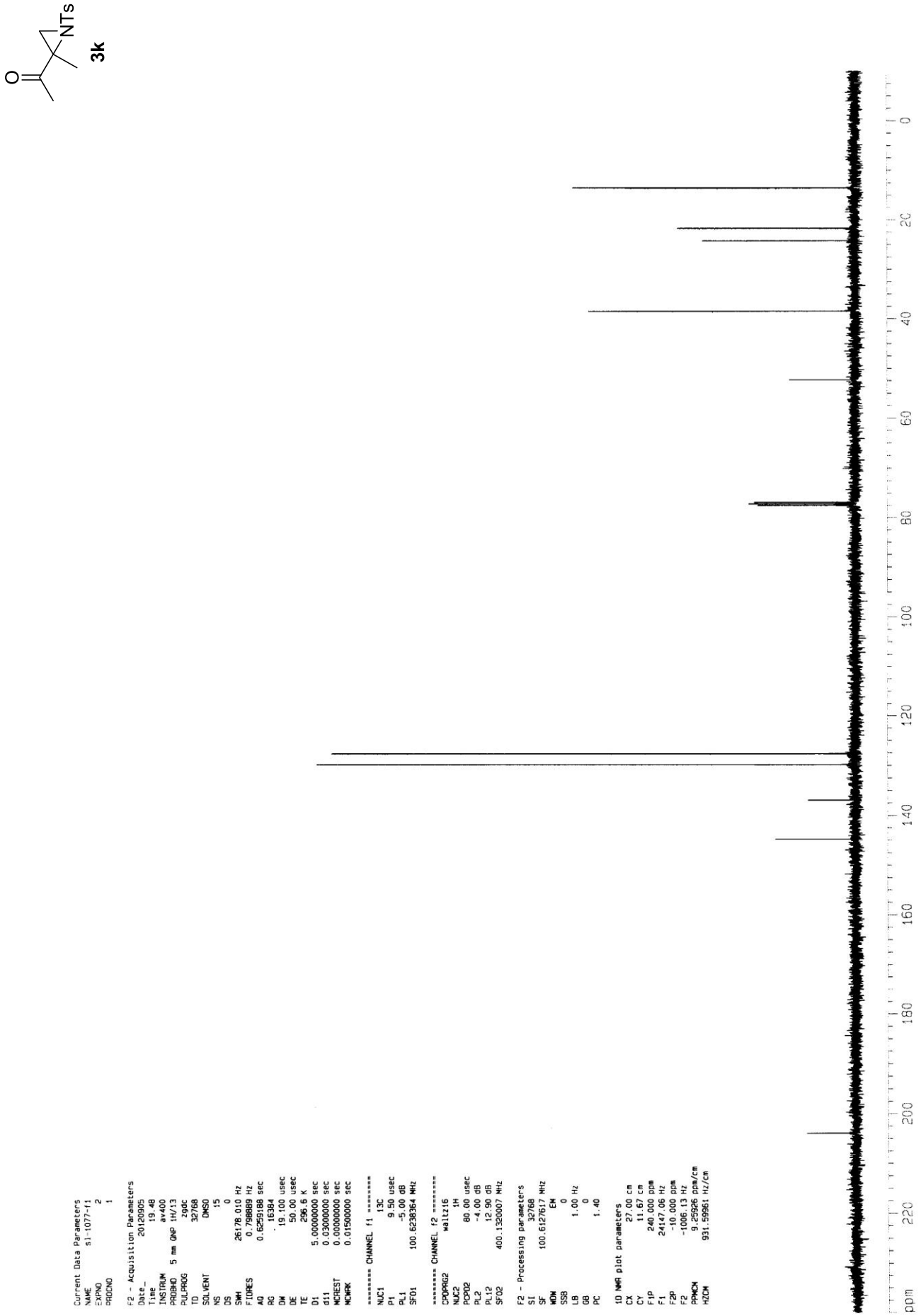

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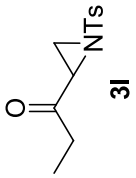

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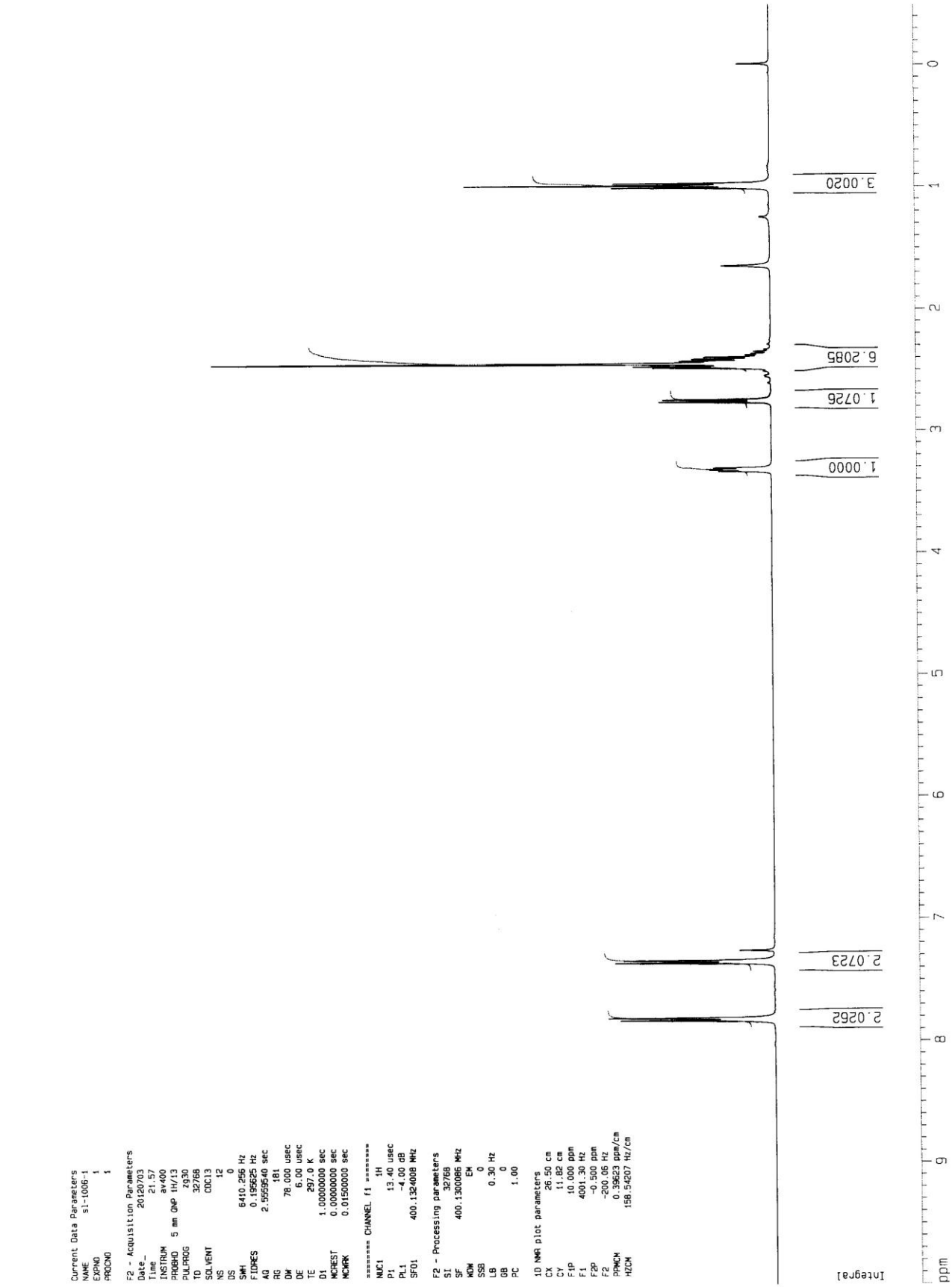


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PROCNO                1

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PULPROG           zg30
TD               32768
SOLVENT           CDCl3
NS                   12
DS                    0
SWH           6410.256 Hz
FIDRES        0.195625 Hz
AQ            2.5559540 sec
RG                  181
DW               78.000 usec
DE                6.00 usec
TE                297.0 K
D1            1.00000000 sec
MCREST        0.00000000 sec
MCWRK         0.01500000 sec

======== CHANNEL f1 ========
NUC1                1H
P1               13.40 usec
PL1               -4.00 dB
SFO1        400.1324008 MHz

F2 - Processing parameters
SI               32768
SF          400.1300086 MHz
WDW                 EM
SSB                  0
LB                0.30 Hz
GB                   0
PC                1.00

1D NMR plot parameters
CX               26.50 cm
CY               11.82 cm
F1P              10.000 ppm
F1             4001.30 Hz
F2P              -0.500 ppm
F2             -200.06 Hz
PPMCM         0.39623 ppm/cm
HZCM          158.54207 Hz/cm
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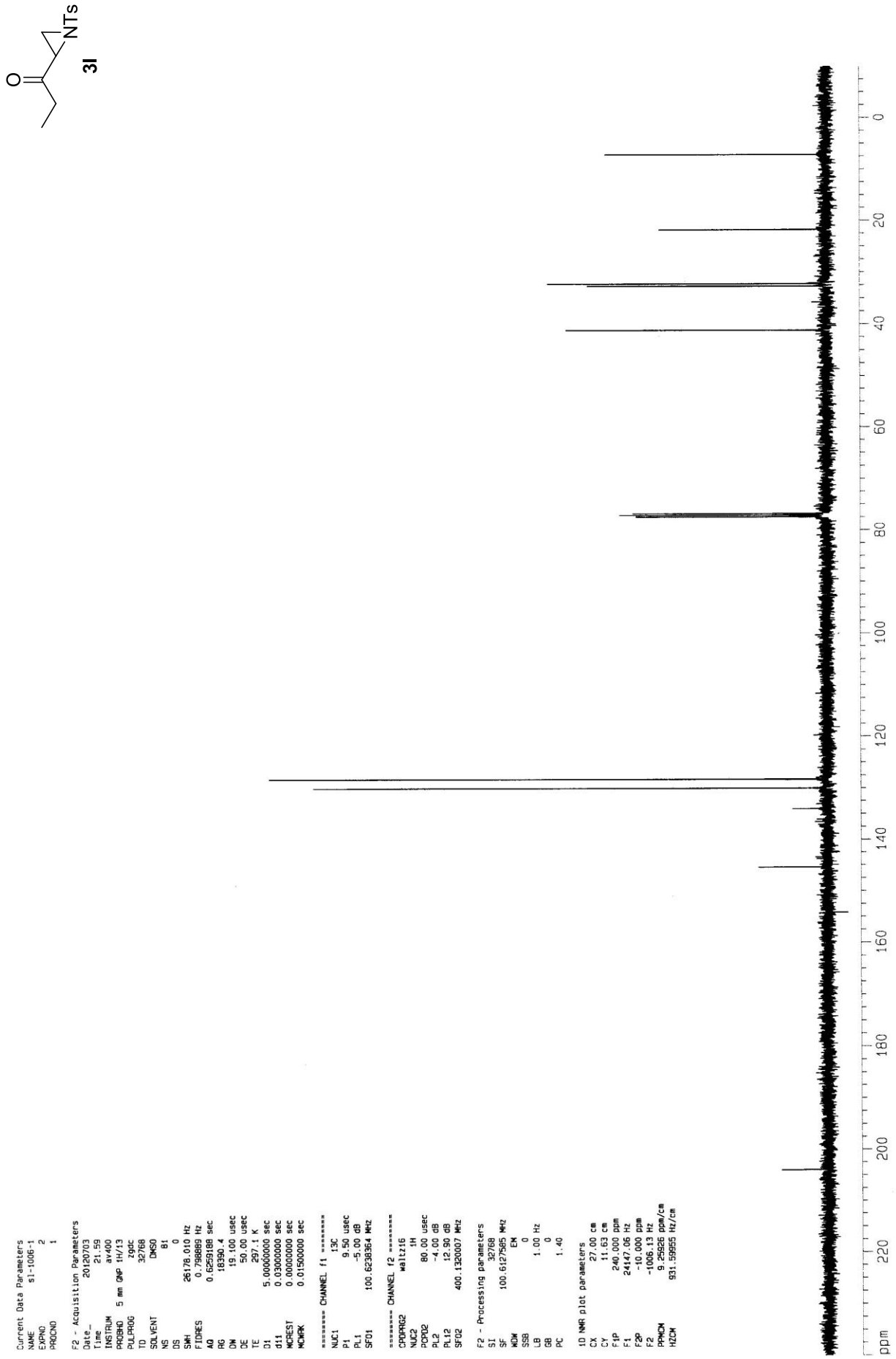

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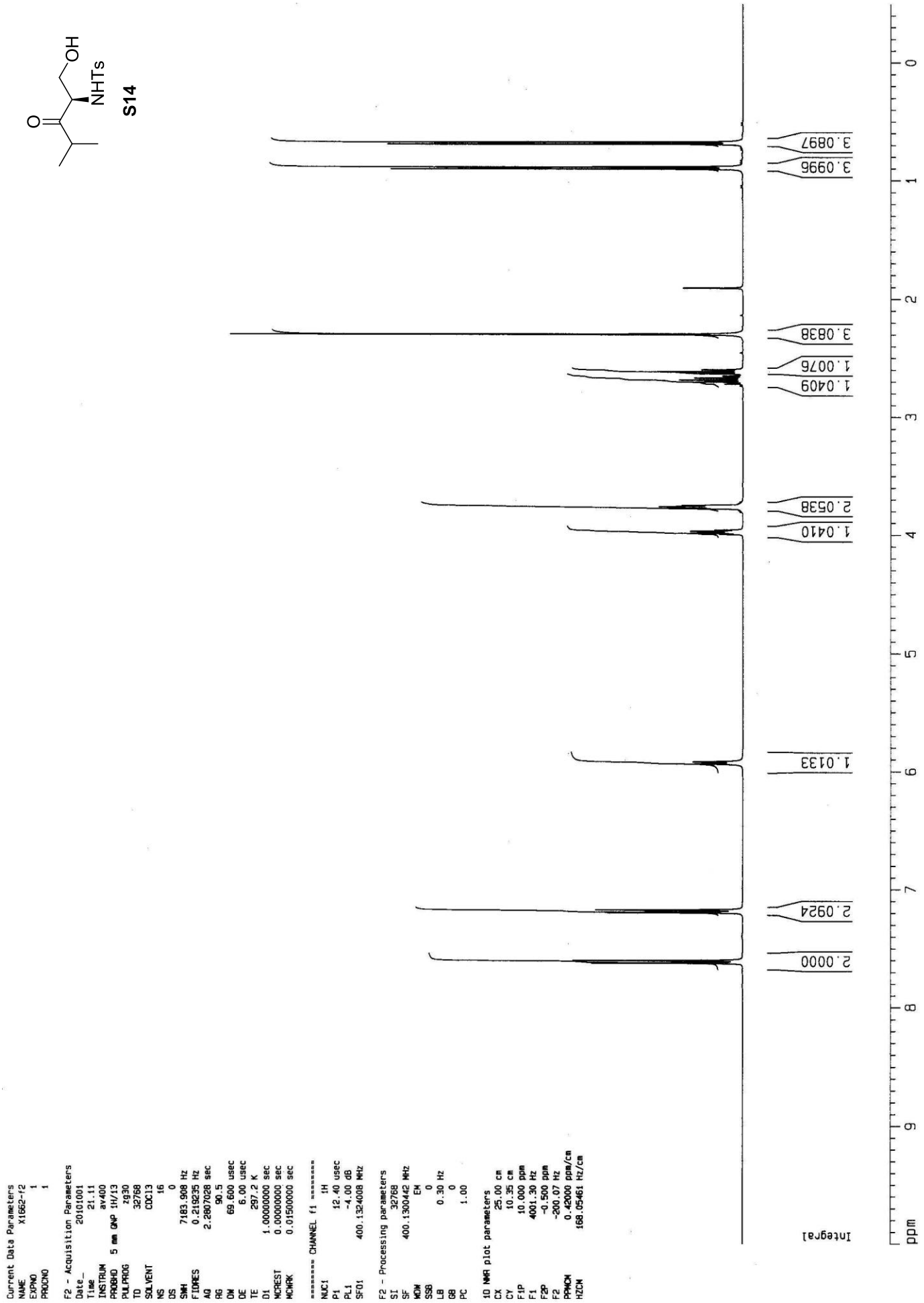

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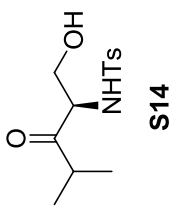
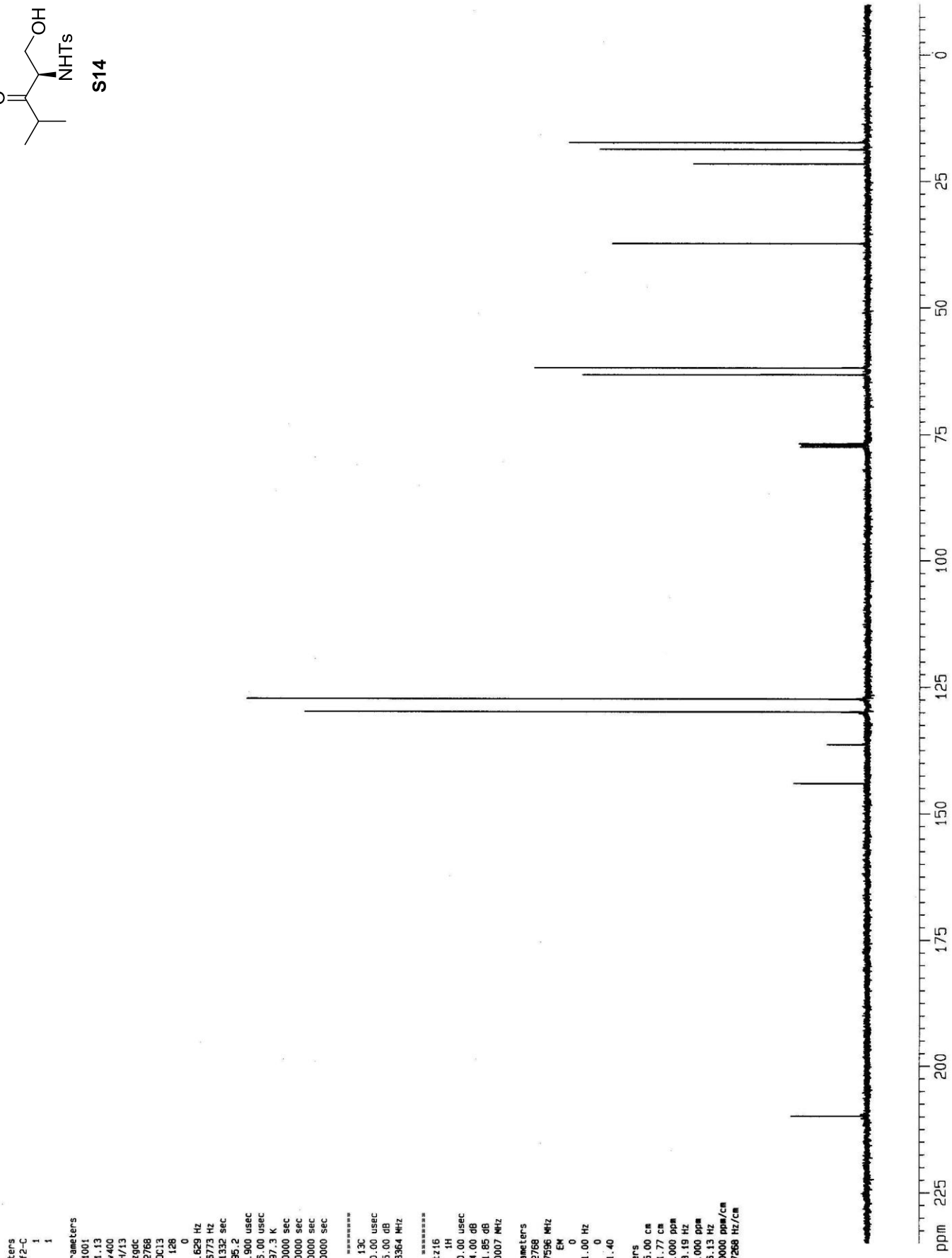


S14

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EXPNO                  1
PROCNO                 1

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Time               21.13
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PROBHD  5 mm QNP 1H/13
PULPROG             zgdc
TD                 32768
SOLVENT             CDCl3
NS                    128
DS                      0
SWH             25125.629 Hz
FIDRES          0.766773 Hz
AQ              0.6521332 sec
RG                 9195.2
DW                19.900 usec
DE                 6.00 usec
TE                 297.3 K
D1              3.00000000 sec
d11             0.03000000 sec
MCREST          0.00000000 sec
MCWRK           0.01500000 sec

======== CHANNEL f1 ========
NUC1                  13C
P1                 10.00 usec
PL1                -5.00 dB
SFO1           100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2            waltz16
NUC2                    1H
PCPD2              80.00 usec
PL2                -4.00 dB
PL12               11.85 dB
SFO2           400.1320007 MHz

F2 - Processing parameters
SI                     32768
SF             100.6127596 MHz
WDW                       EM
SSB                        0
LB                  1.00 Hz
GB                         0
PC                      1.40

1D NMR plot parameters
CX                     25.00 cm
CY                     11.77 cm
F1P                250.000 ppm
F1               25153.19 Hz
F2P                -10.000 ppm
F2               -1006.13 Hz
PPMCM             10.40000 ppm/cm
HZCM           1046.37268 Hz/cm
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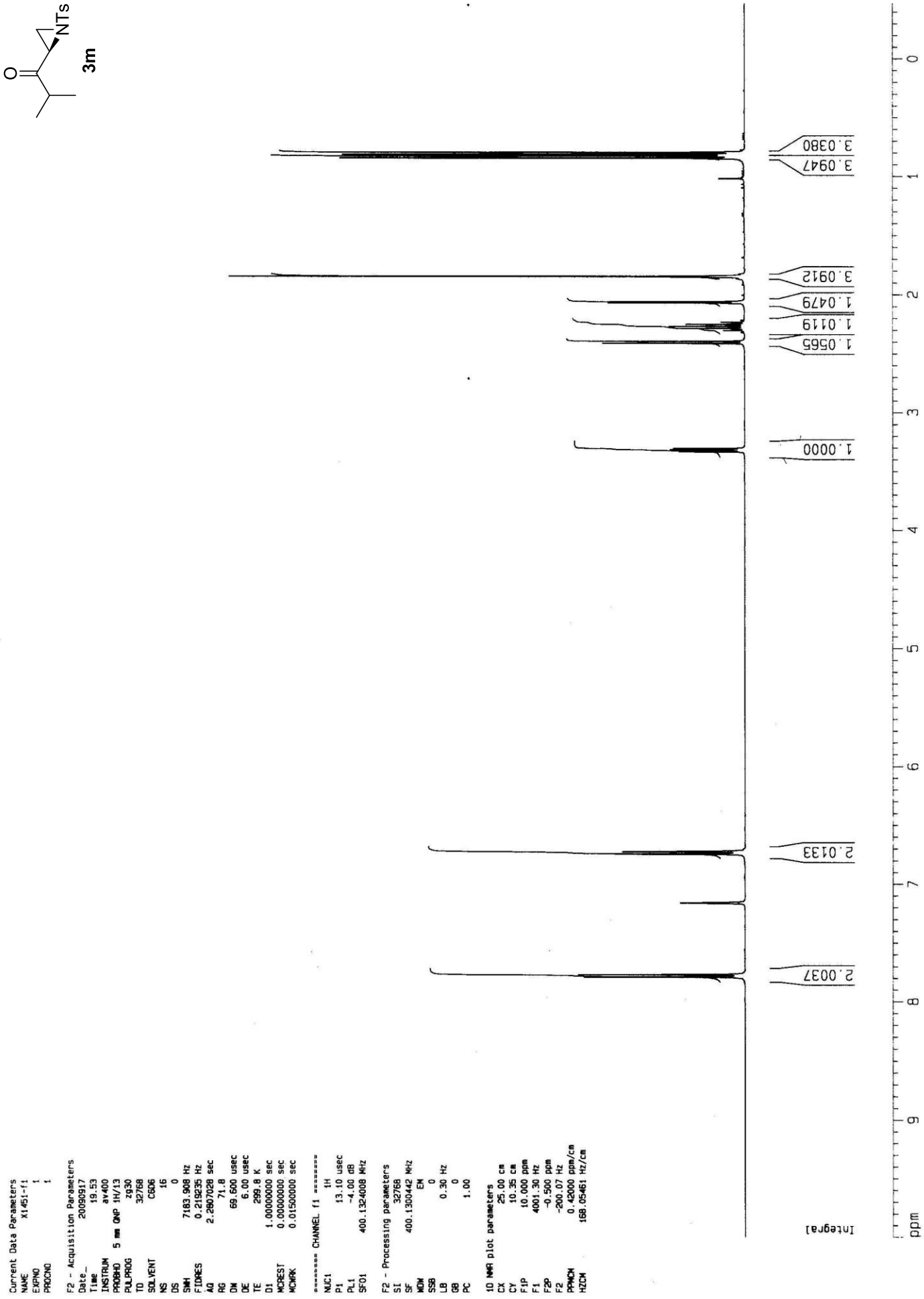

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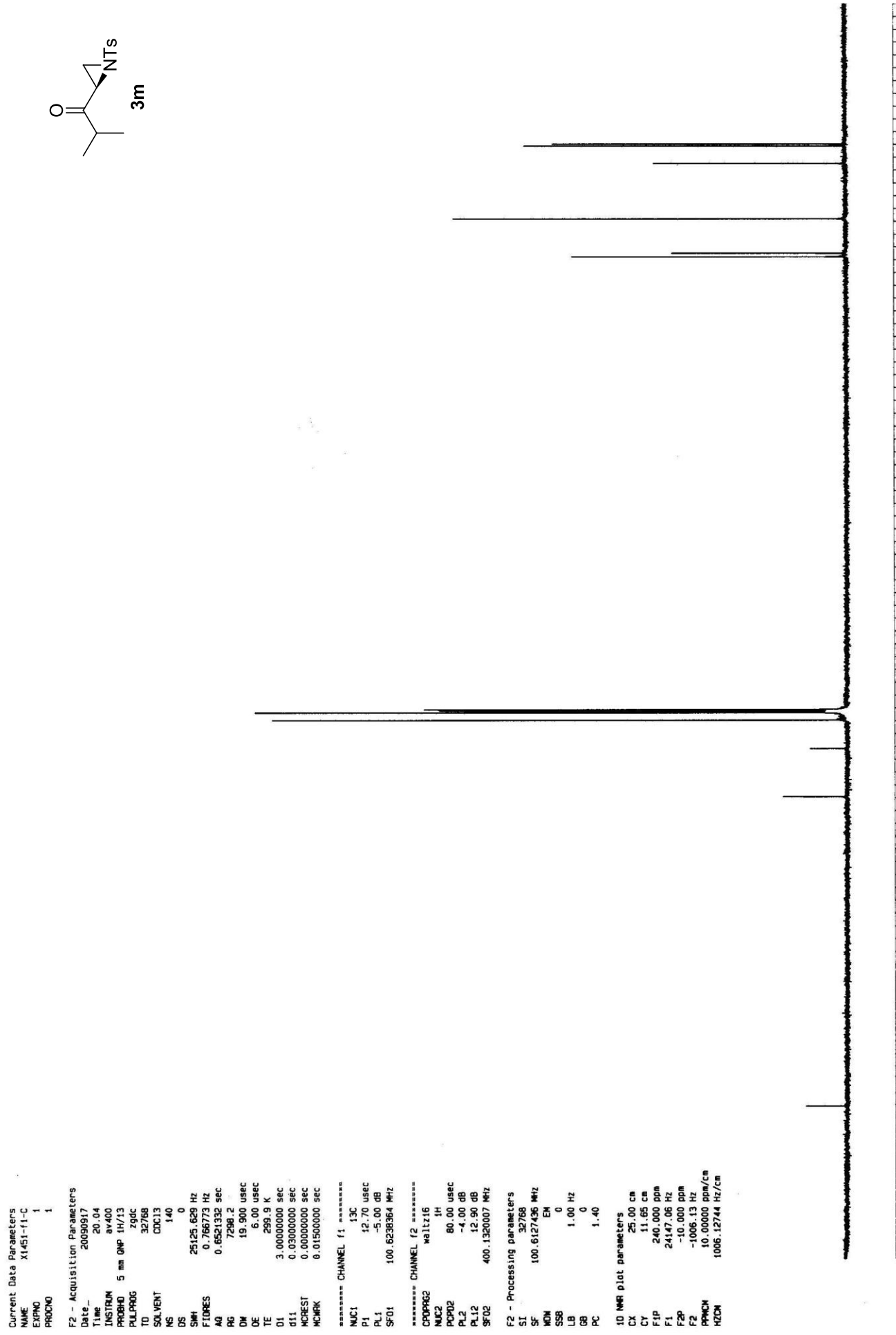


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EXPNO                  1
PROCNO                 1

F2 - Acquisition Parameters
Date_           20090917
Time                20.04
INSTRUM             av400
PROBHD  5 mm QNP 1H/13
PULPROG             zgdc
TD                  32768
SOLVENT             CDCl3
NS                    140
DS                      0
SWH             25125.629 Hz
FIDRES          0.766773 Hz
AQ              0.6521332 sec
RG                 7298.2
DW                19.900 usec
DE                 6.00 usec
TE                 299.9 K
D1              3.00000000 sec
d11             0.03000000 sec
MCREST          0.00000000 sec
MCWRK           0.01500000 sec

======== CHANNEL f1 ========
NUC1                  13C
P1                 12.70 usec
PL1                -5.00 dB
SFO1          100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2           waltz16
NUC2                   1H
PCPD2             80.00 usec
PL2                -4.00 dB
PL12               12.90 dB
SFO2          400.1320007 MHz

F2 - Processing parameters
SI                  32768
SF          100.6127436 MHz
WDW                    EM
SSB                     0
LB                1.00 Hz
GB                      0
PC                   1.40

1D NMR plot parameters
CX                 25.00 cm
CY                 11.65 cm
F1P               240.000 ppm
F1              24147.06 Hz
F2P               -10.000 ppm
F2              -1006.13 Hz
PPMCM          10.00000 ppm/cm
HZCM           1006.12744 Hz/cm
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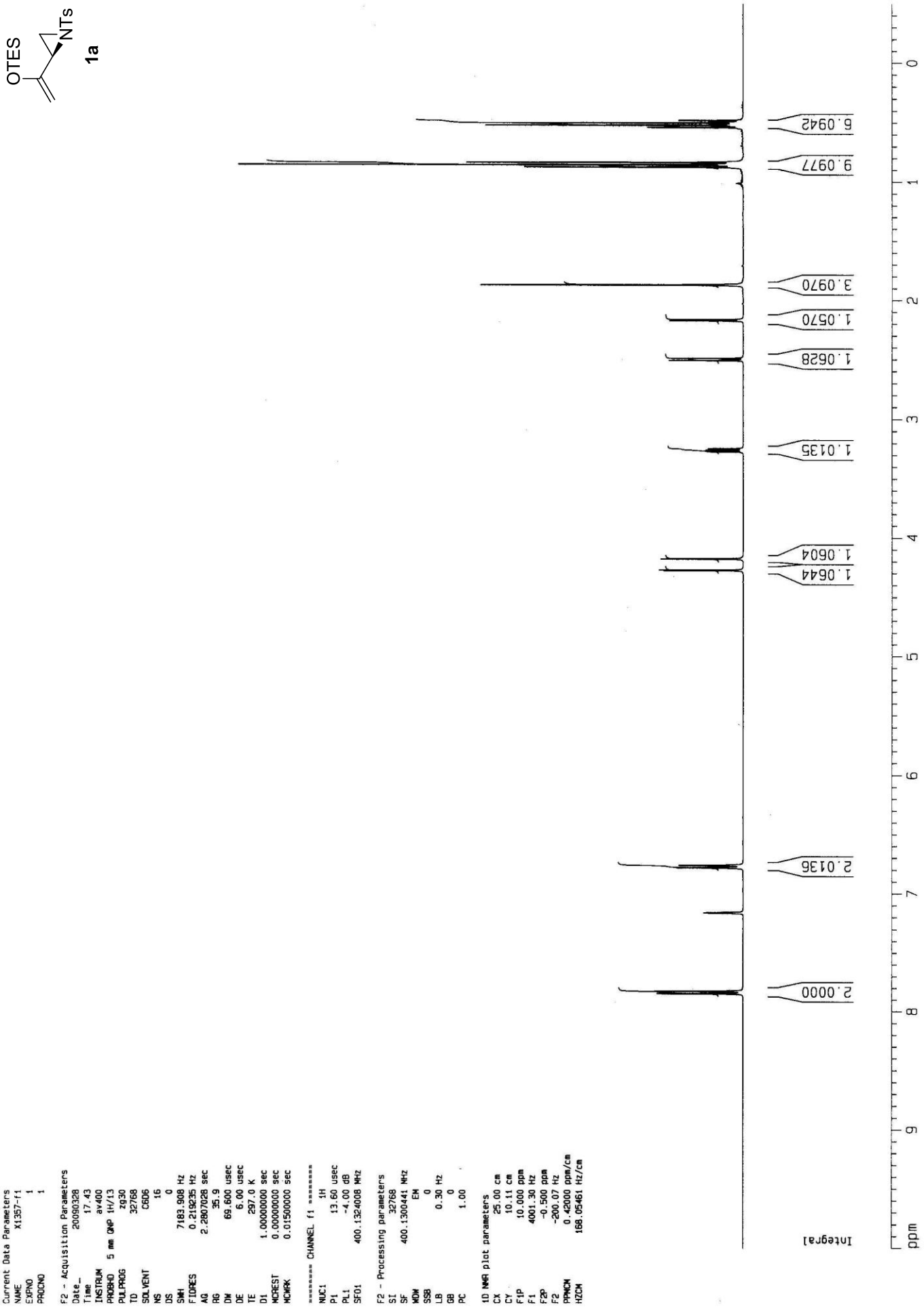

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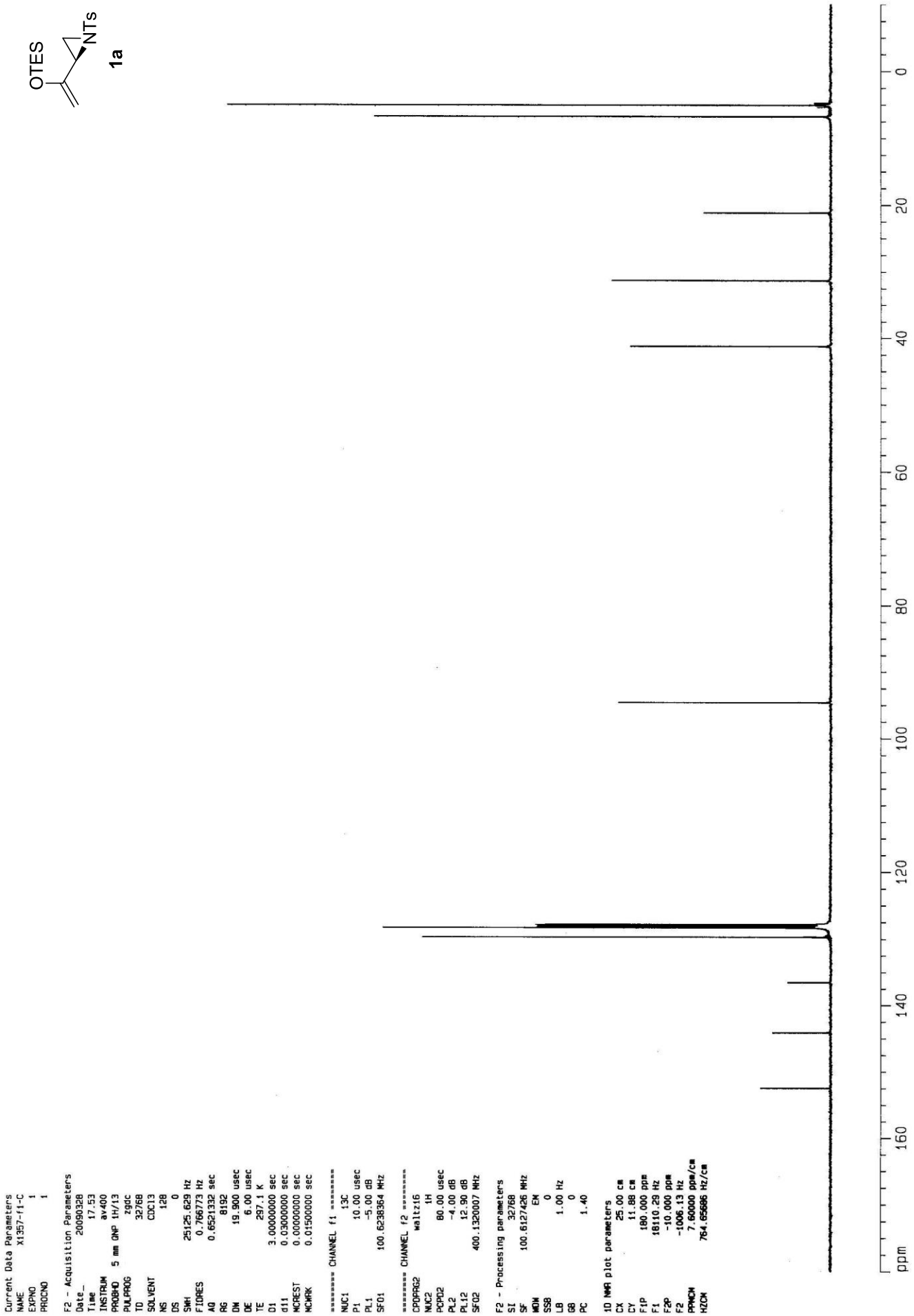

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NAME X1357-f1-C
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
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Time 17.53
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PROBHD 5 mm QNP 1H/13
PULPROG zgdc
TD 32768
SOLVENT CDCl3
NS 128
DS 0
SWH 25125.629 Hz
FIDRES 0.766773 Hz
AQ 0.6521332 sec
RG 8192
DW 19.900 usec
DE 6.00 usec
TE 297.1 K
D1 3.00000000 sec
d11 0.03000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 13C
P1 10.00 usec
PL1 -5.00 dB
SFO1 100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 -4.00 dB
PL12 12.90 dB
SFO2 400.1320007 MHz

F2 - Processing parameters
SI 32768
SF 100.6127426 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

1D NMR plot parameters
CX 25.00 cm
CY 11.88 cm
F1P 180.000 ppm
F1 18110.29 Hz
F2P -10.000 ppm
F2 -1006.13 Hz
PPMCM 7.60000 ppm/cm
HZCM 764.65686 Hz/cm

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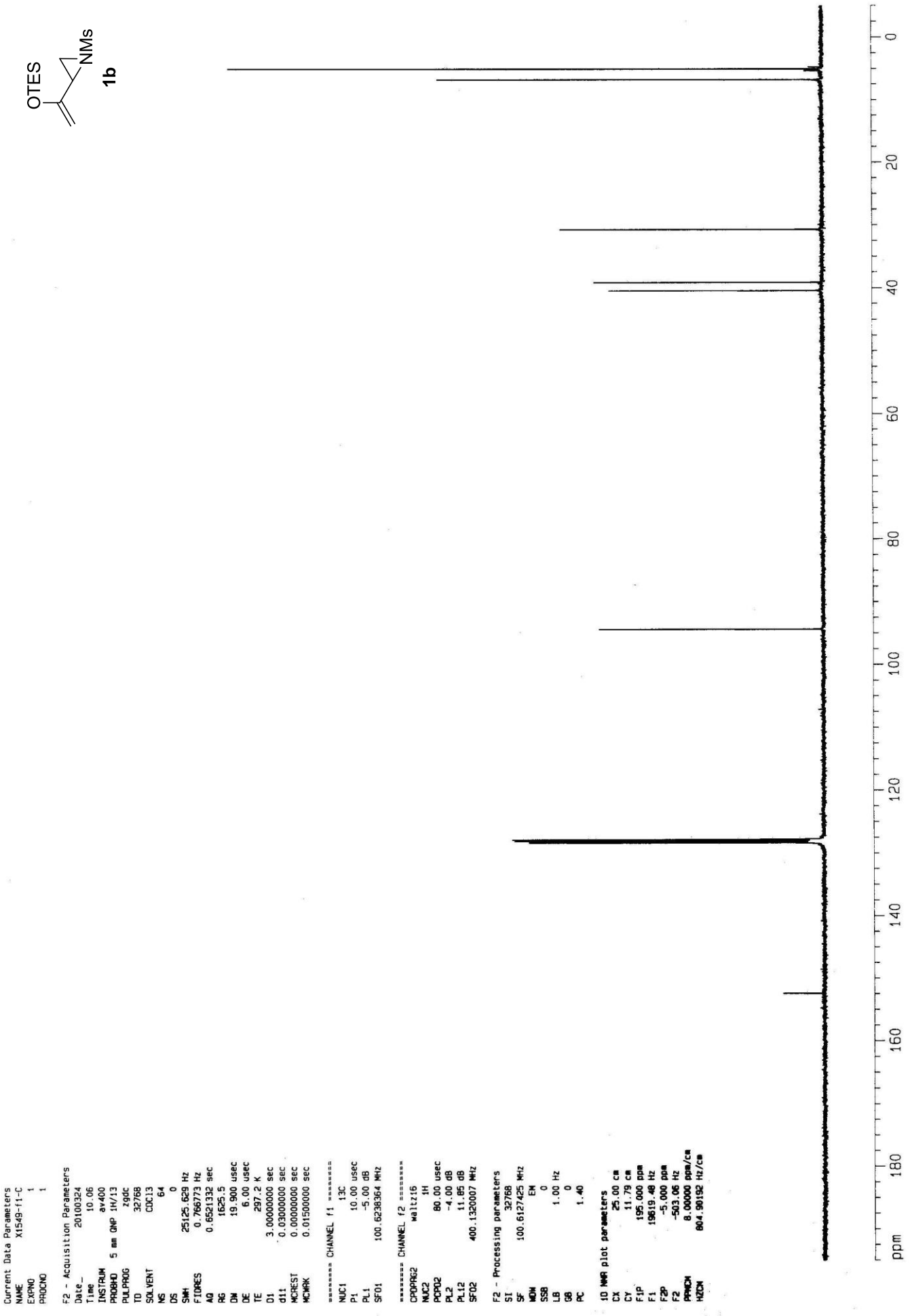

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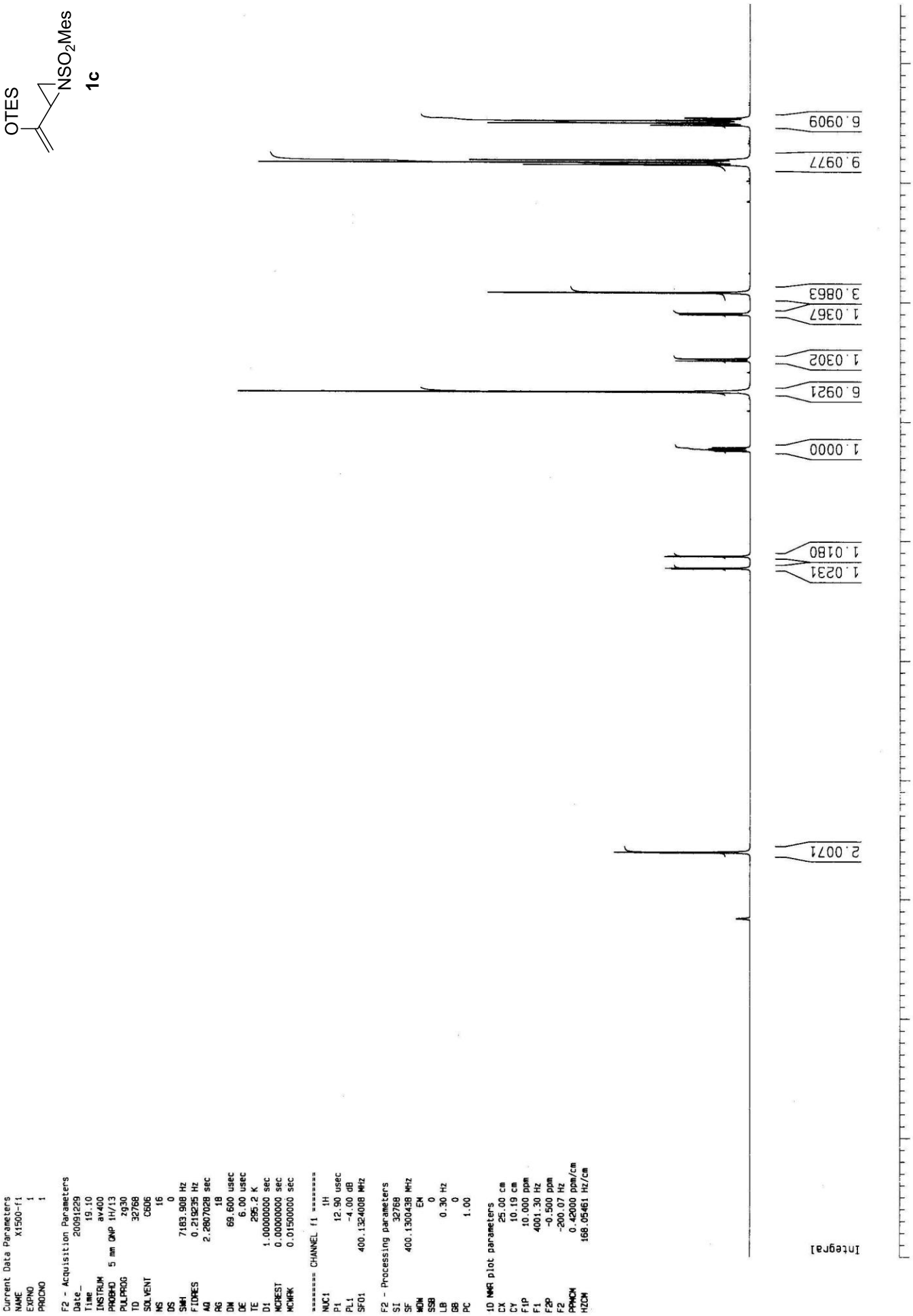

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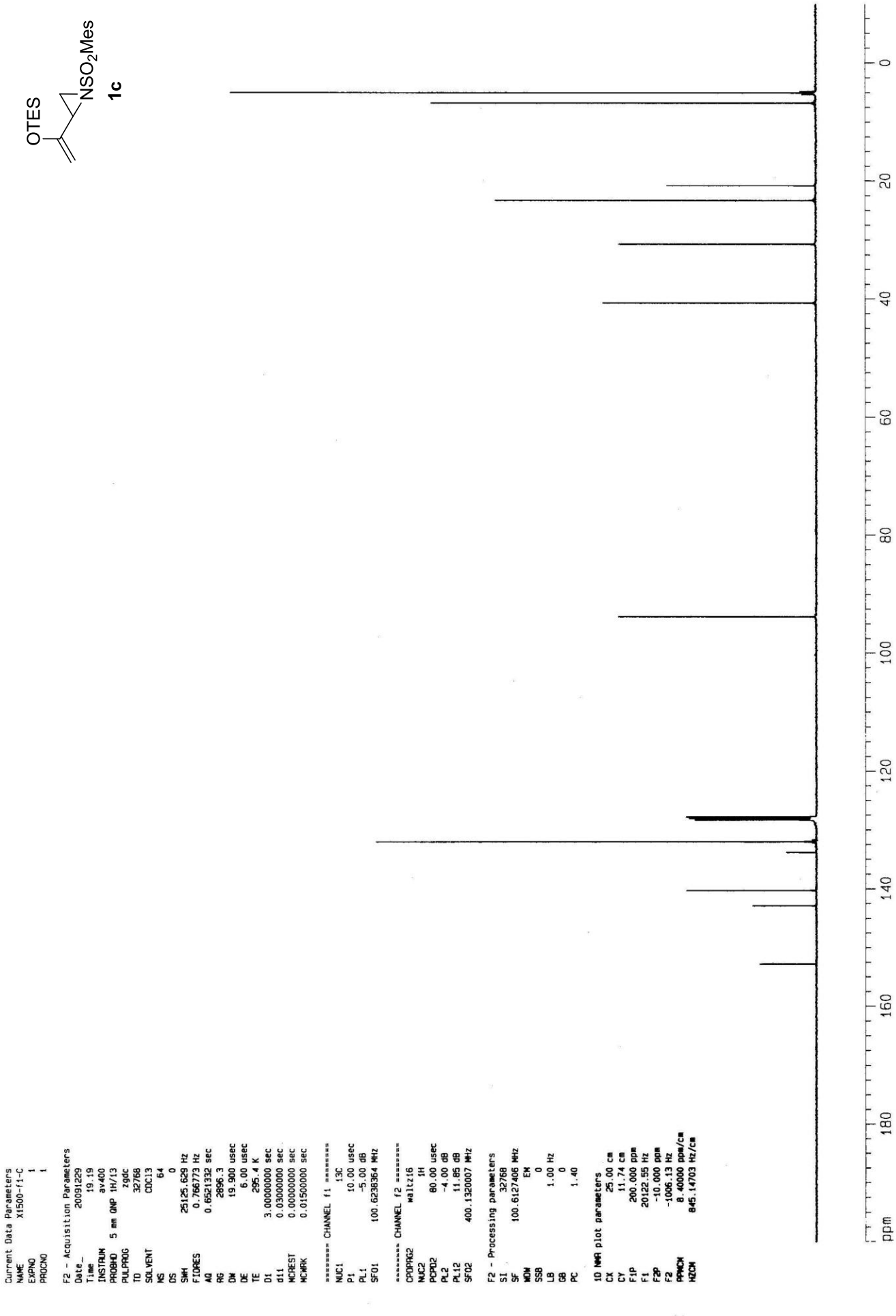


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PROCNO                 1

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TD                 32768
SOLVENT             CDCl3
NS                     64
DS                      0
SWH            25125.629 Hz
FIDRES             0.766773 Hz
AQ             0.6521332 sec
RG                 2896.3
DW                19.900 usec
DE                 6.00 usec
TE                 295.4 K
D1             3.00000000 sec
d11            0.03000000 sec
MCREST         0.00000000 sec
MCWRK          0.01500000 sec

======== CHANNEL f1 ========
NUC1                   13C
P1                  10.00 usec
PL1                 -5.00 dB
SFO1          100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2             waltz16
NUC2                    1H
PCPD2              80.00 usec
PL2                -4.00 dB
PL12               11.65 dB
SFO2          400.1320007 MHz

F2 - Processing parameters
SI                     32768
SF            100.6127406 MHz
WDW                       EM
SSB                        0
LB                  1.00 Hz
GB                         0
PC                      1.40

1D NMR plot parameters
CX                  25.00 cm
CY                  11.74 cm
F1P                200.000 ppm
F1                20122.55 Hz
F2P                -10.000 ppm
F2               -1006.13 Hz
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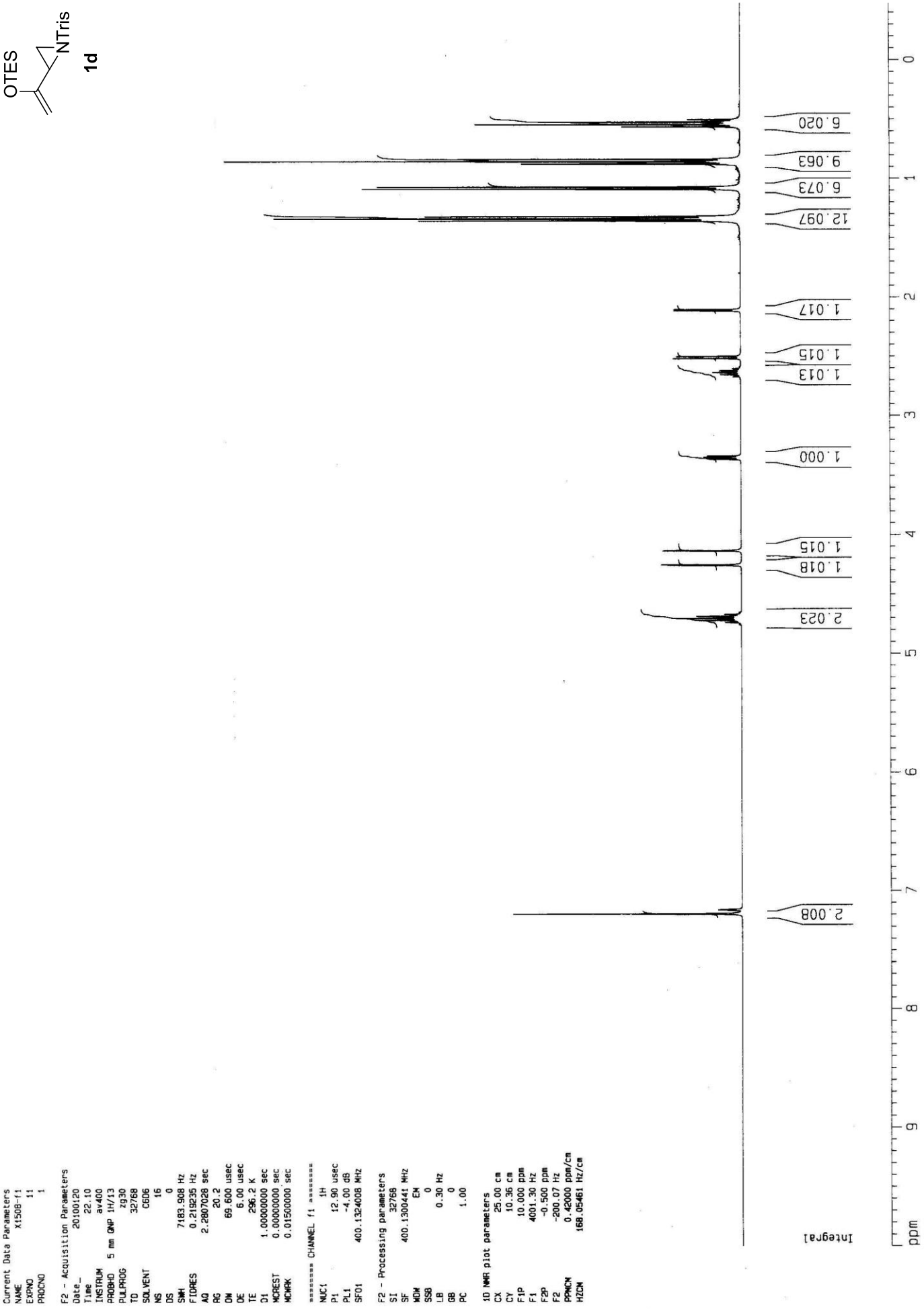

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PROCNO 1

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PULPROG zg30
TD 32768
SOLVENT C606
NS 16
DS 0
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FIDRES 0.219235 Hz
AQ 2.2807028 sec
RG 20.2
DW 69.600 usec
DE 6.00 usec
TE 296.2 K
D1 1.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
NUC1 1H
P1 12.90 usec
PL1 -4.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300441 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
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CY 10.36 cm
F1P 10.000 ppm
F1 4001.30 Hz
F2P -0.500 ppm
F2 -200.07 Hz
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HZCM 168.05461 Hz/cm

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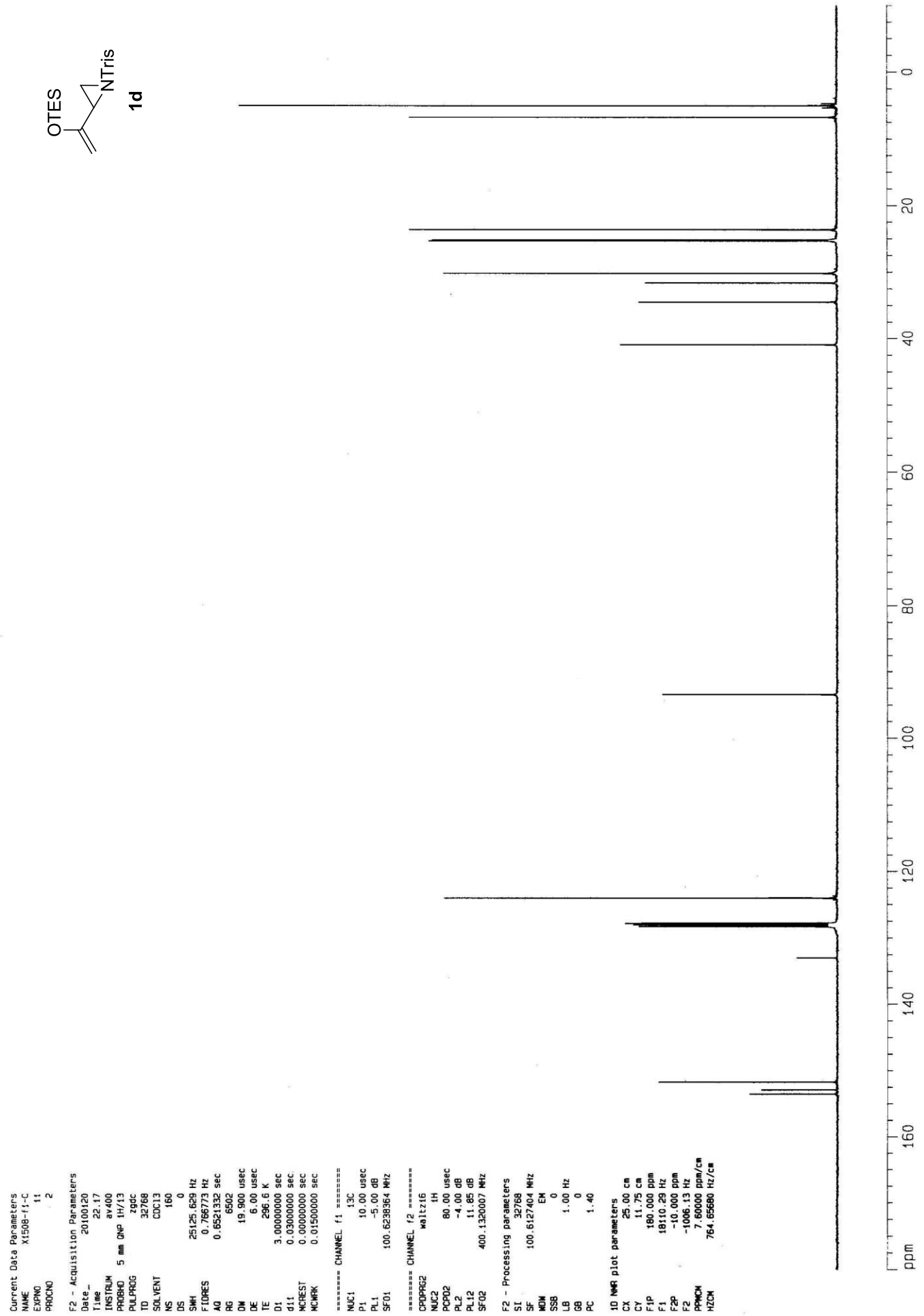

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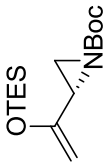

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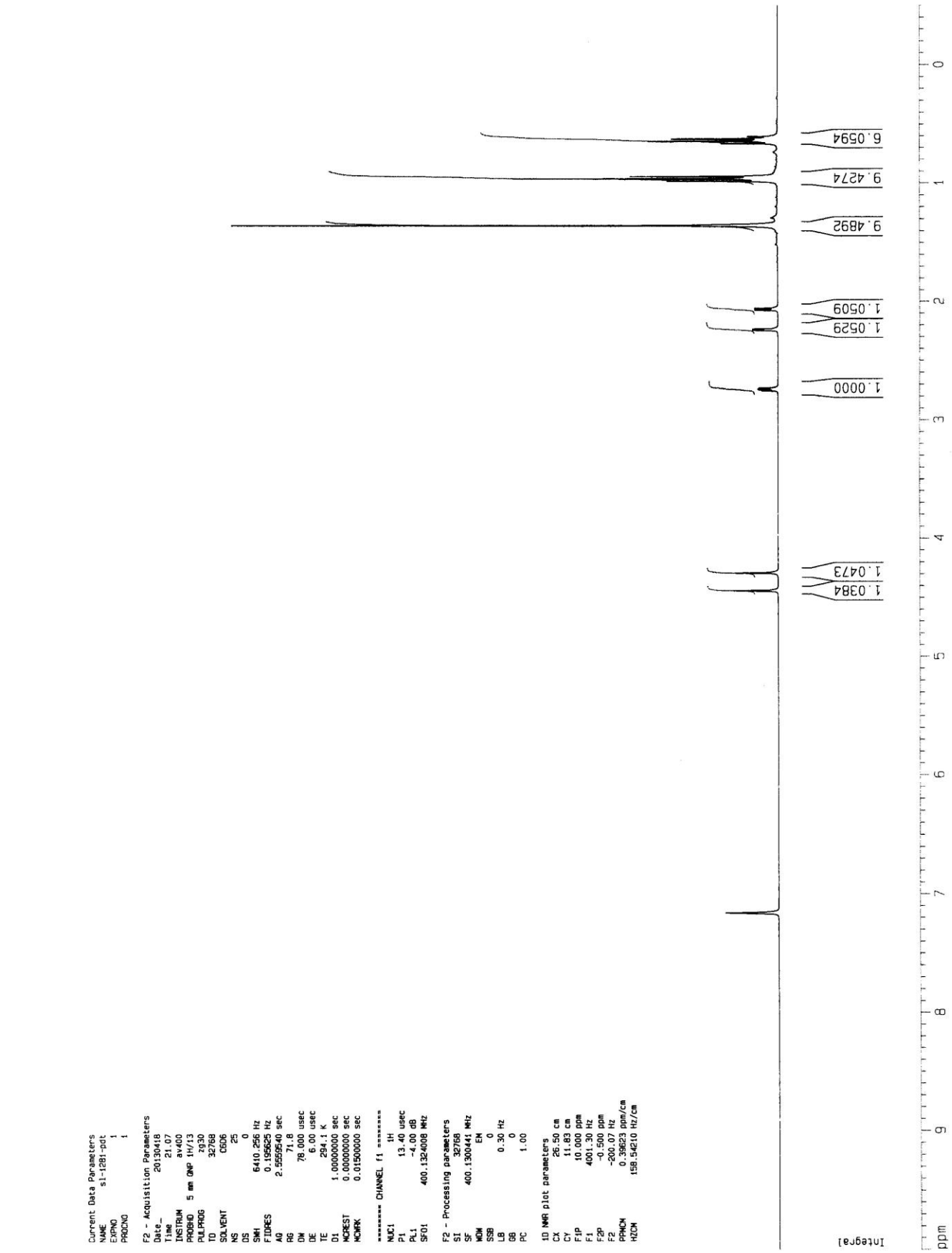


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PROCNO                  1

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PULPROG                zg30
TD                    32768
SOLVENT               C6D6
NS                      25
DS                       0
SWH               6410.256 Hz
FIDRES            0.195625 Hz
AQ                2.5559540 sec
RG                     71.8
DW                78.000 usec
DE                 6.00 usec
TE                 294.1 K
D1                1.00000000 sec
MCREST            0.00000000 sec
MCWRK             0.01500000 sec

======== CHANNEL f1 ========
NUC1                    1H
P1                 13.40 usec
PL1                -4.00 dB
SFO1          400.1324008 MHz

F2 - Processing parameters
SI                    32768
SF            400.1300441 MHz
WDW                      EM
SSB                       0
LB                 0.30 Hz
GB                        0
PC                     1.00

1D NMR plot parameters
CX                 26.50 cm
CY                 11.83 cm
F1P               10.000 ppm
F1                400.30 Hz
F2P               -0.500 ppm
F2               -200.07 Hz
PPMCM             0.39623 ppm/cm
HZCM             158.54210 Hz/cm
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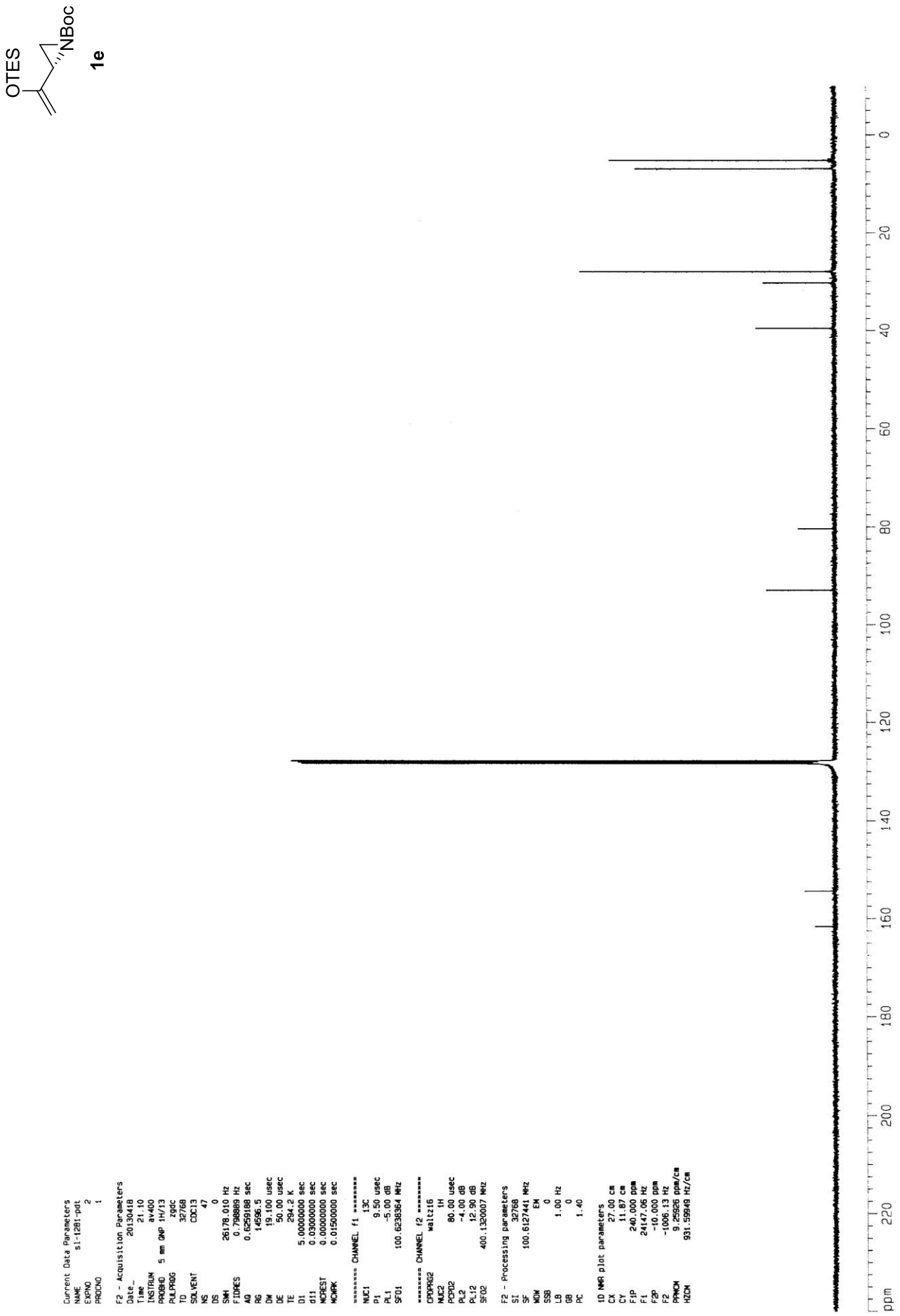


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PROCNO                  1

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PULPROG             zgdc
TD                 32768
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NS                     47
DS                      0
SWH             26178.010 Hz
FIDRES              0.798889 Hz
AQ                  0.6259188 sec
RG                  14596.5
DW                  19.100 usec
DE                  50.00 usec
TE                  294.2 K
D1                  5.00000000 sec
d11                 0.03000000 sec
MCREST              0.00000000 sec
MCWRK               0.01500000 sec

======== CHANNEL f1 ========
NUC1                   13C
P1                   9.50 usec
PL1                 -5.00 dB
SFO1           100.6238364 MHz

======== CHANNEL f2 ========
CPDPRG2             waltz16
NUC2                    1H
PCPD2               80.00 usec
PL2                 -4.00 dB
PL12                12.90 dB
SFO2           400.1320007 MHz

F2 - Processing parameters
SI                     32768
SF             100.6127441 MHz
WDW                    EM
SSB                     0
LB                   1.00 Hz
GB                      0
PC                   1.40

1D NMR plot parameters
CX                  27.00 cm
CY                  11.87 cm
F1P                240.000 ppm
F1                 24147.06 Hz
F2P                -10.000 ppm
F2                 -1006.13 Hz
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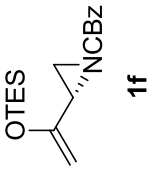

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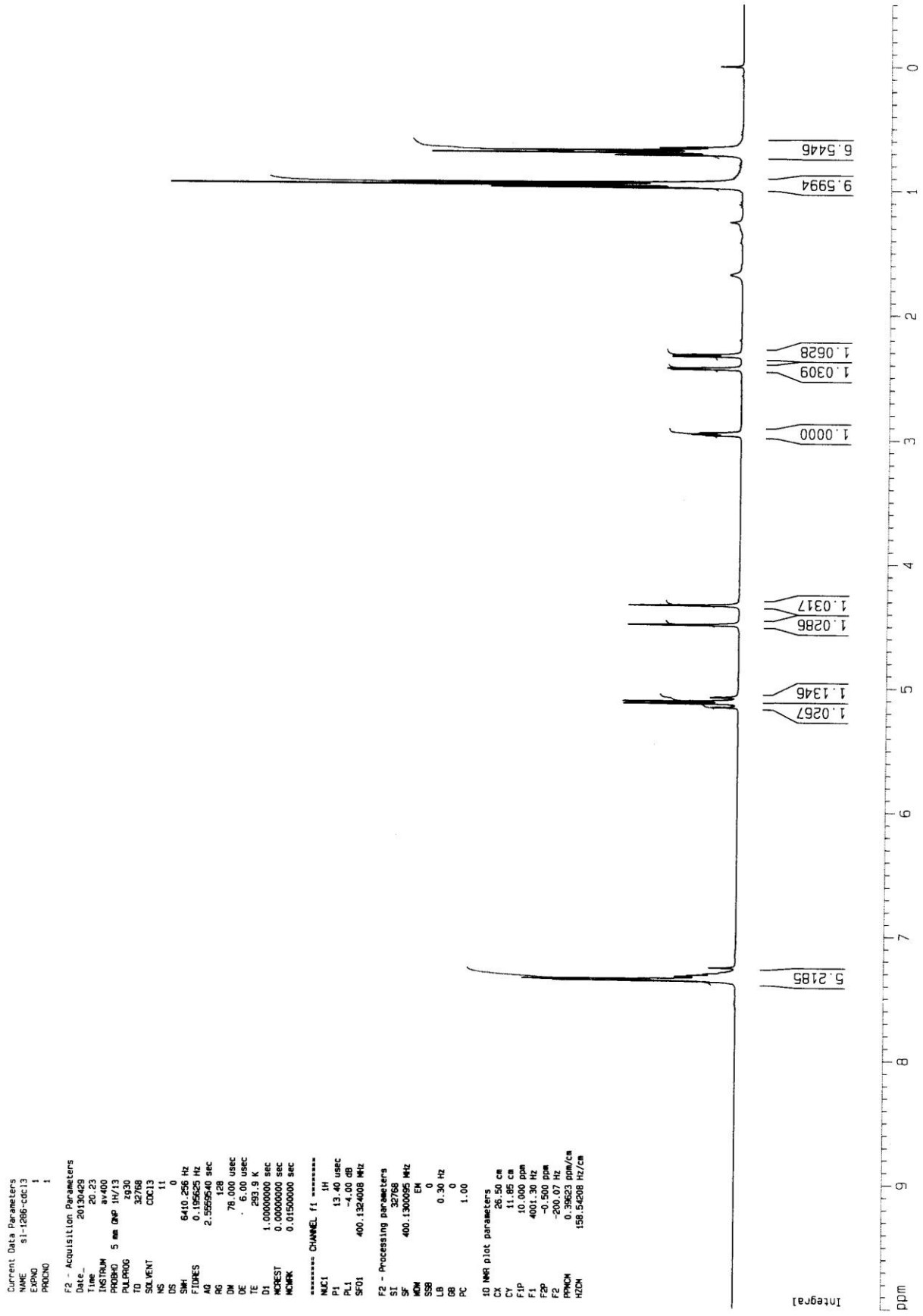

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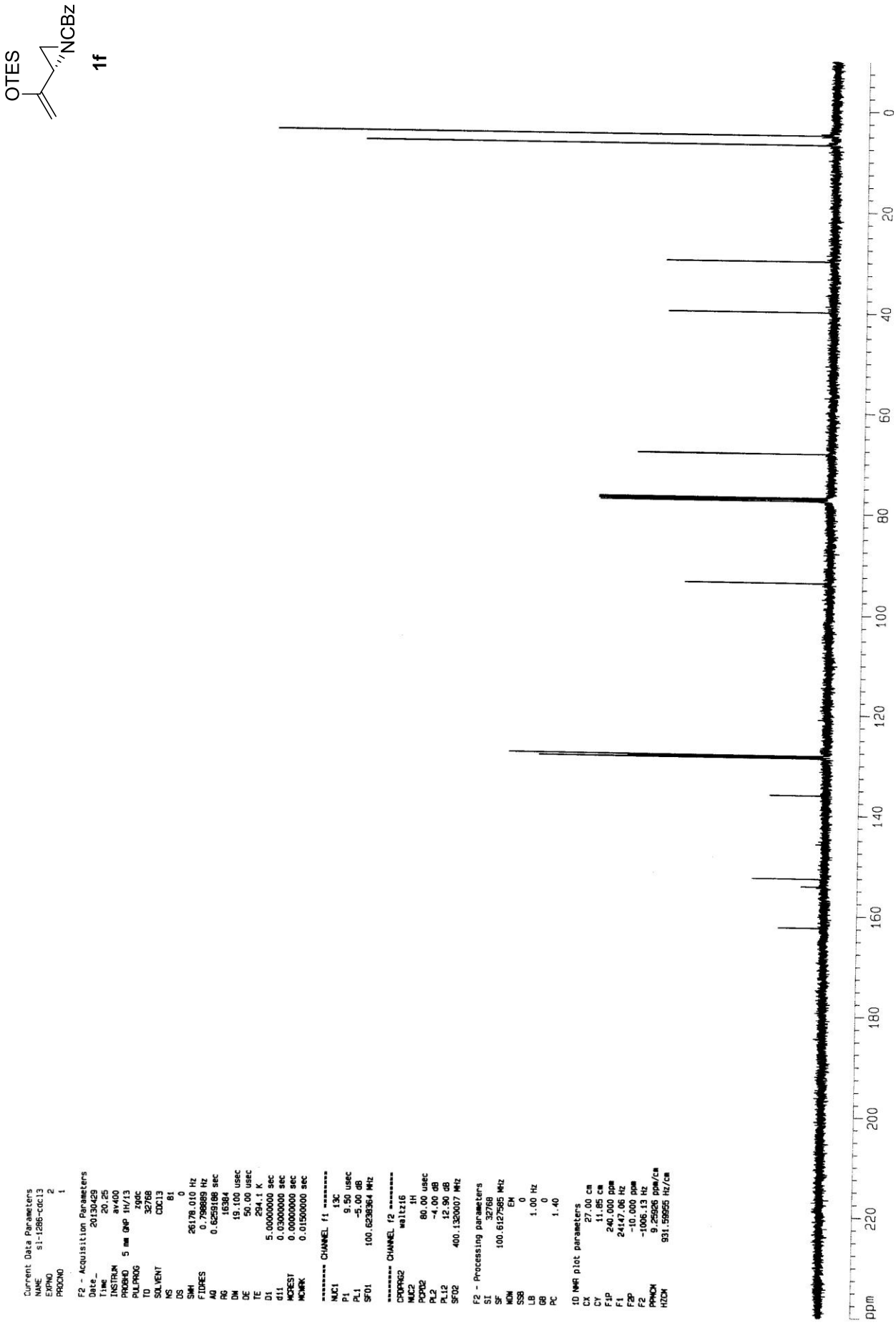

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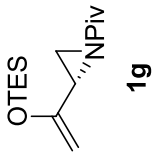

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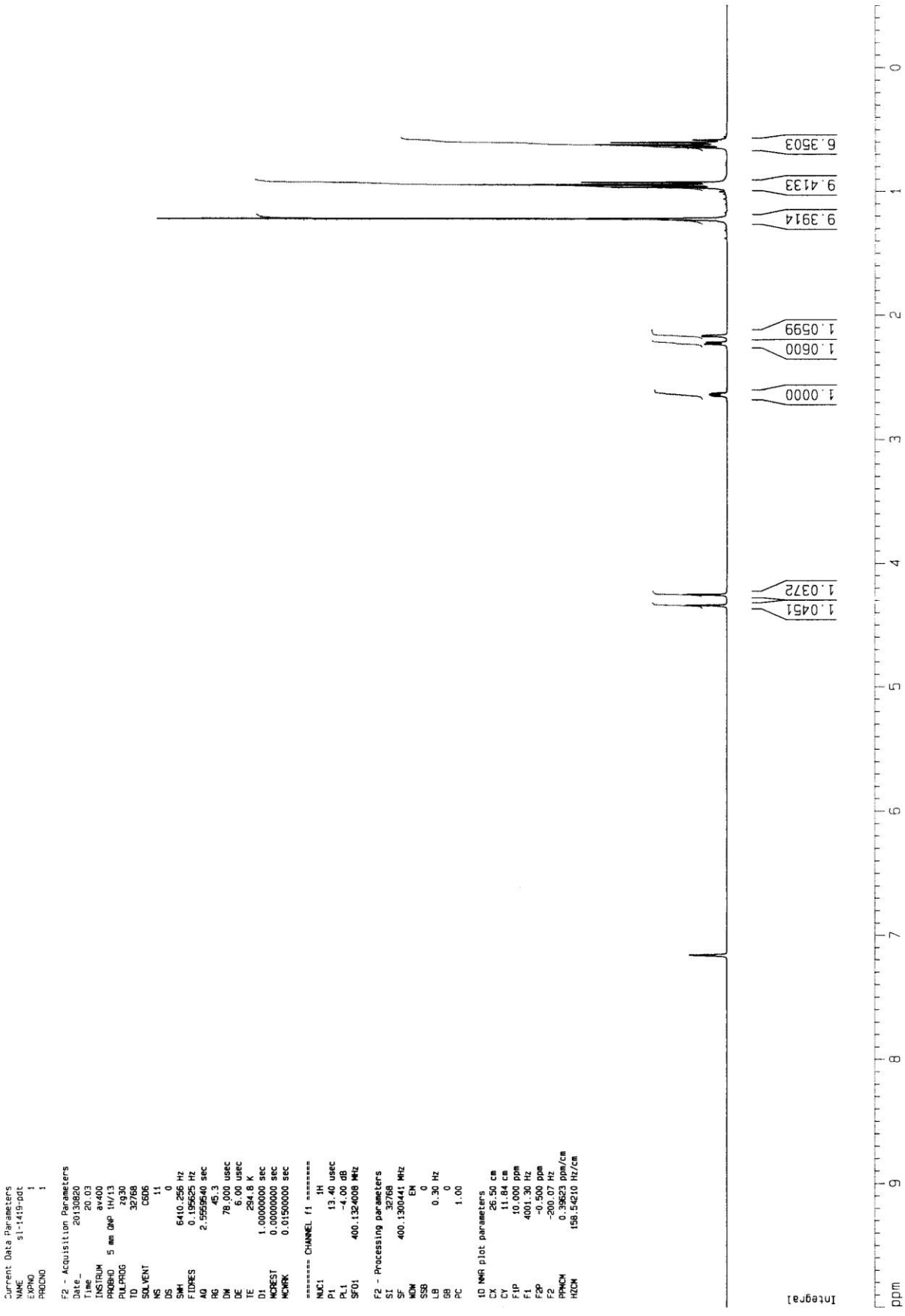


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EXPNO                   1
PROCNO                  1

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Time_                 20.03
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PROBHD     5 mm QNP 1H/13
PULPROG              zg30
TD                  32768
SOLVENT              CDCl3
NS                      11
DS                       0
SWH              6410.256 Hz
FIDRES           0.195625 Hz
AQ               2.5559540 sec
RG                    45.3
DW                78.000 usec
DE                 6.00 usec
TE                294.8 K
D1               1.00000000 sec
MCREST           0.00000000 sec
MCWRK            0.01500000 sec

======== CHANNEL f1 ========
NUC1                   1H
P1                  13.40 usec
PL1                 -4.00 dB
SFO1          400.1324008 MHz

F2 - Processing parameters
SI                     32768
SF            400.1300441 MHz
WDW                       EM
SSB                        0
LB                  0.30 Hz
GB                         0
PC                      1.00

1D NMR plot parameters
CX                  26.50 cm
CY                  11.84 cm
F1P                10.000 ppm
F1                4001.30 Hz
F2P                -0.500 ppm
F2                -200.07 Hz
PPMCM             0.39623 ppm/cm
HZCM              158.54210 Hz/cm
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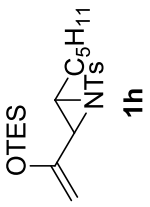

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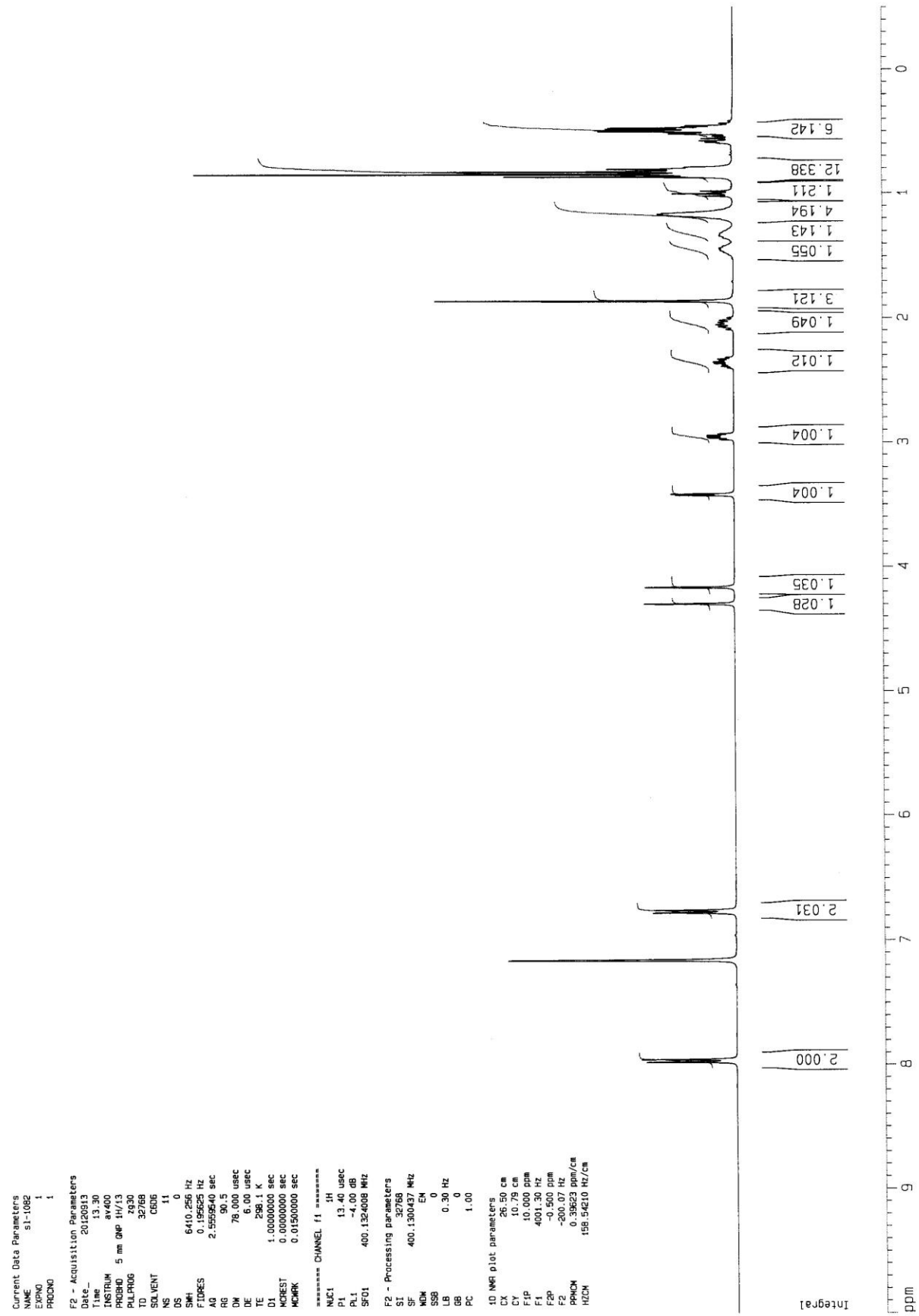


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PROCNO              1

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PULPROG          zg30
TD              32768
SOLVENT          C6D6
NS                 11
DS                  0
SWH          6410.256 Hz
FIDRES       0.195625 Hz
AQ           2.5559540 sec
RG                90.5
DW              78.000 usec
DE               6.00 usec
TE              298.1 K
D1           1.00000000 sec
MCREST       0.00000000 sec
MCWRK        0.01500000 sec

======== CHANNEL f1 ========
NUC1               1H
P1              13.40 usec
PL1             -4.00 dB
SFO1        400.1324008 MHz

F2 - Processing parameters
SI              32768
SF          400.1300437 MHz
WDW                EM
SSB                 0
LB               0.30 Hz
GB                  0
PC               1.00

1D NMR plot parameters
CX              26.50 cm
CY              10.79 cm
F1P             10.000 ppm
F1            4001.30 Hz
F2P            -0.500 ppm
F2           -200.07 Hz
PPMCM          0.39623 ppm/cm
HZCM         158.54210 Hz/cm
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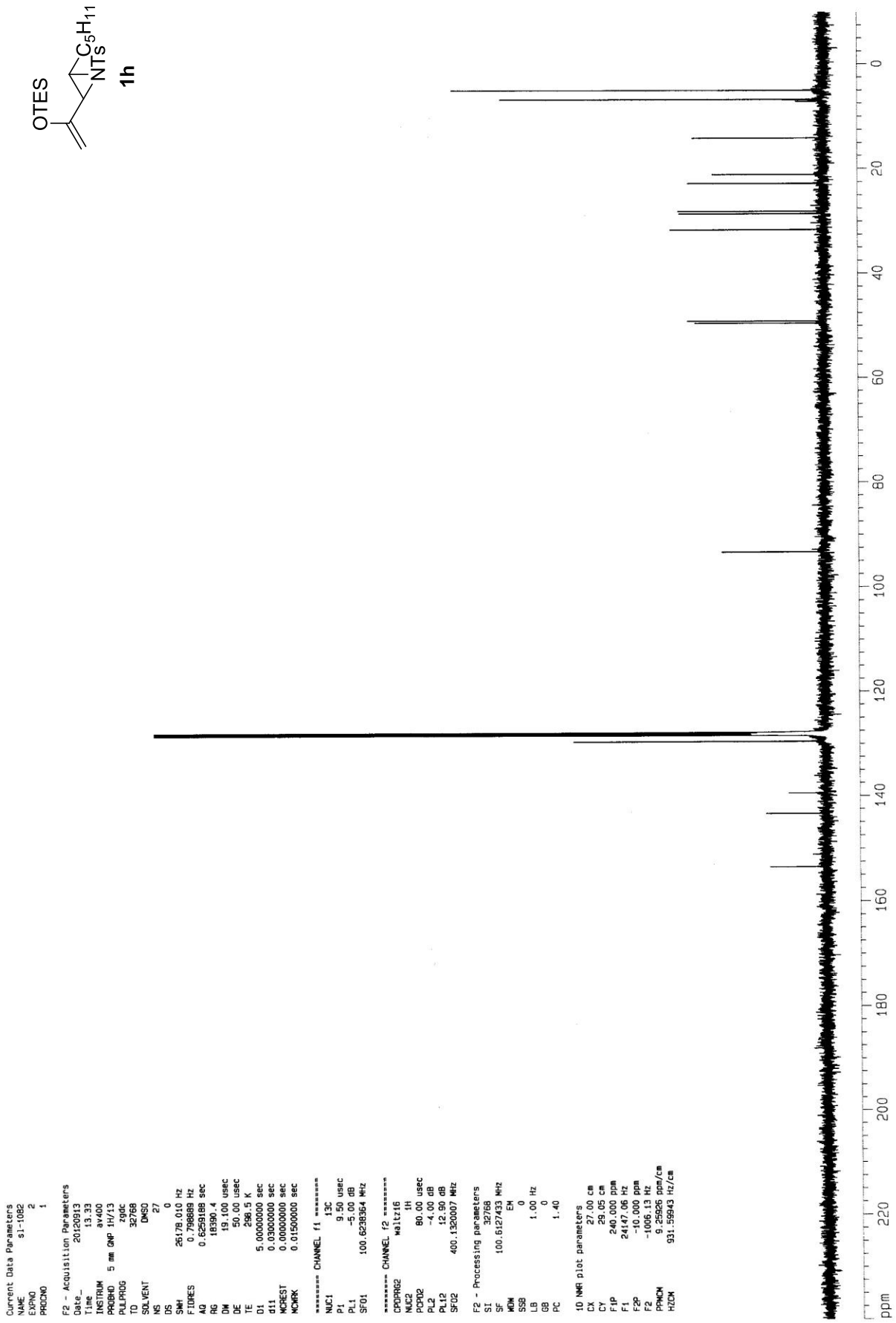

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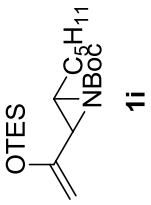

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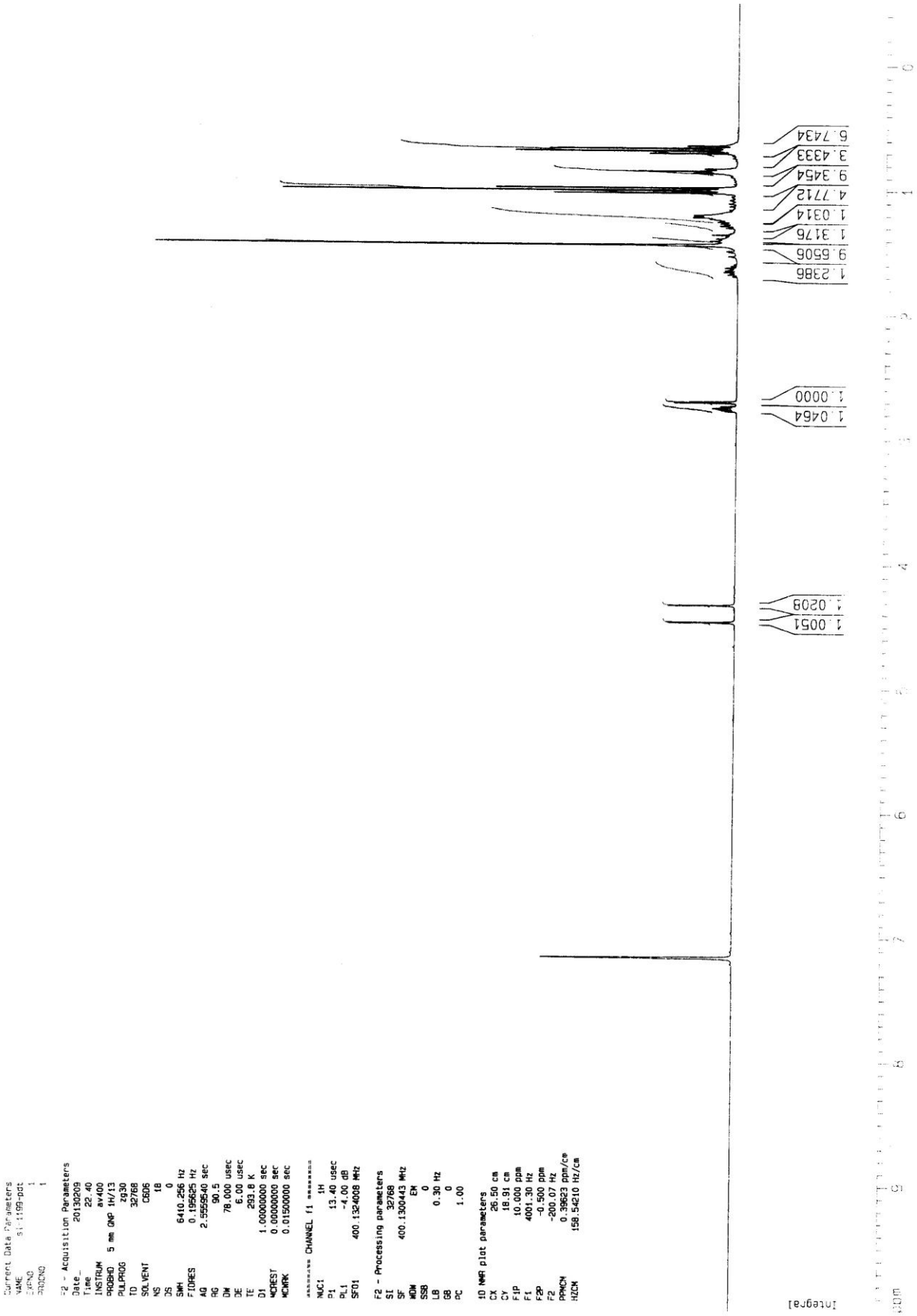

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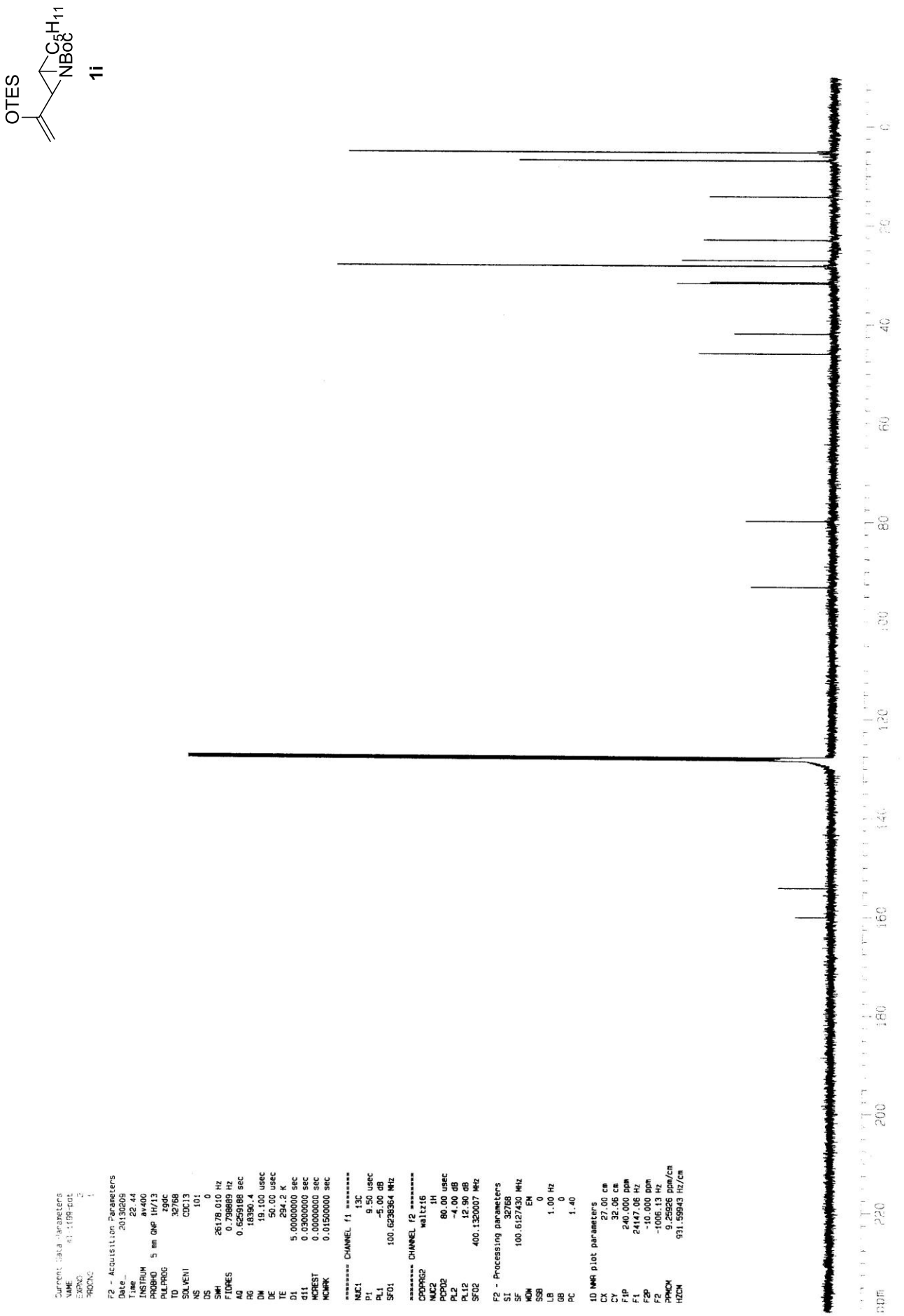

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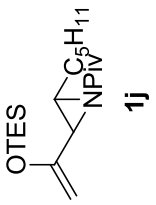

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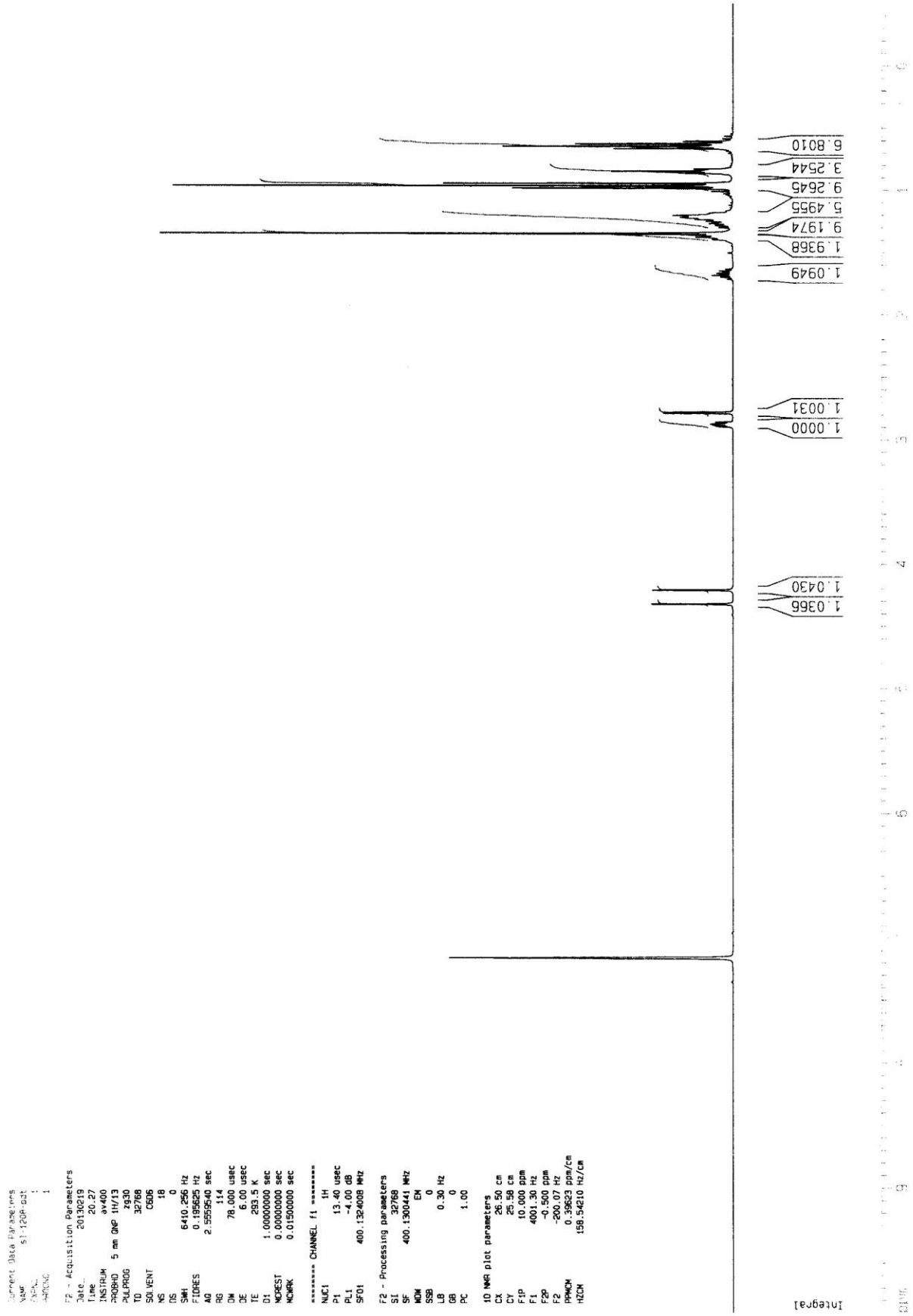

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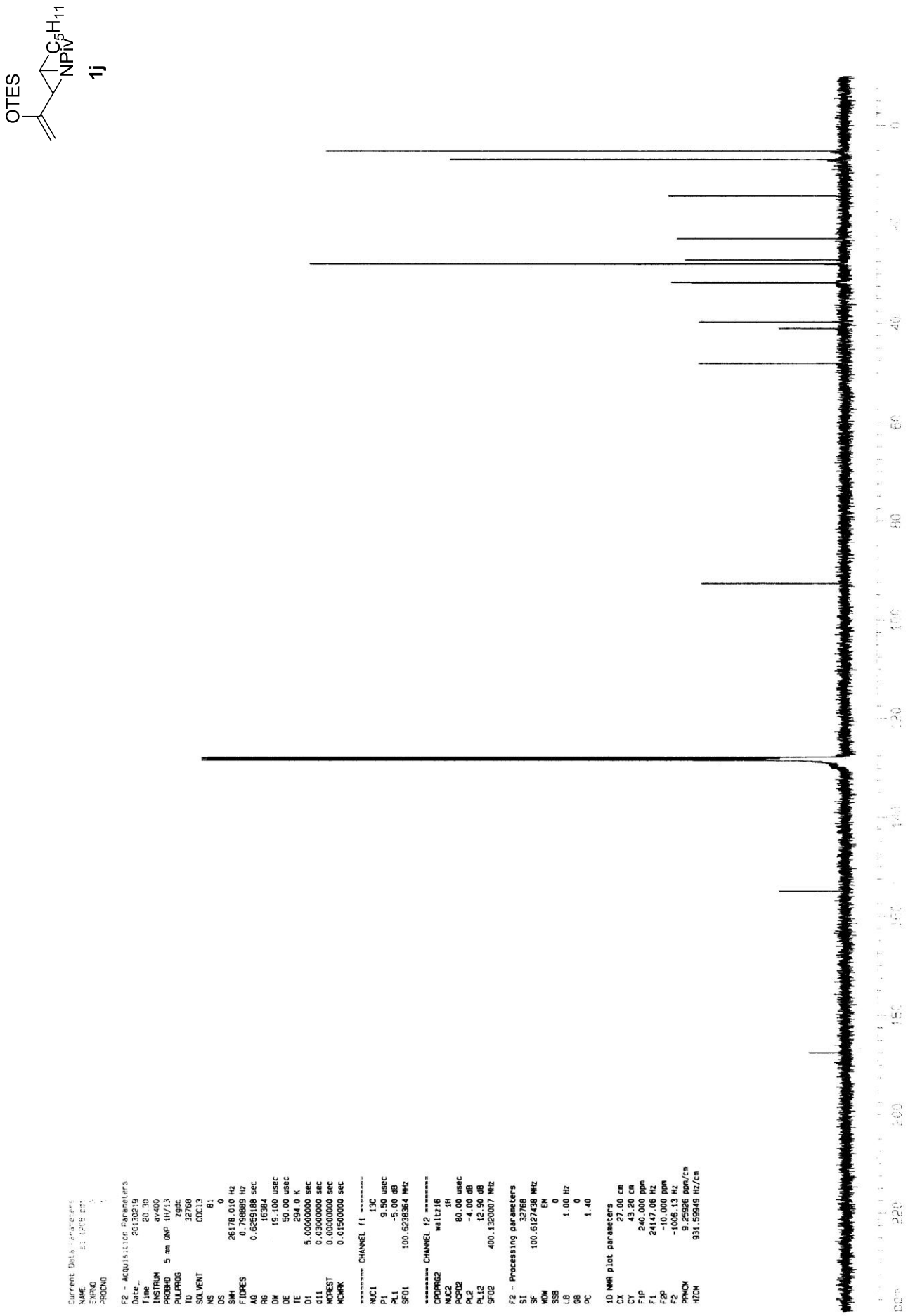

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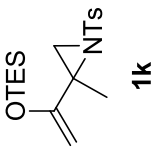

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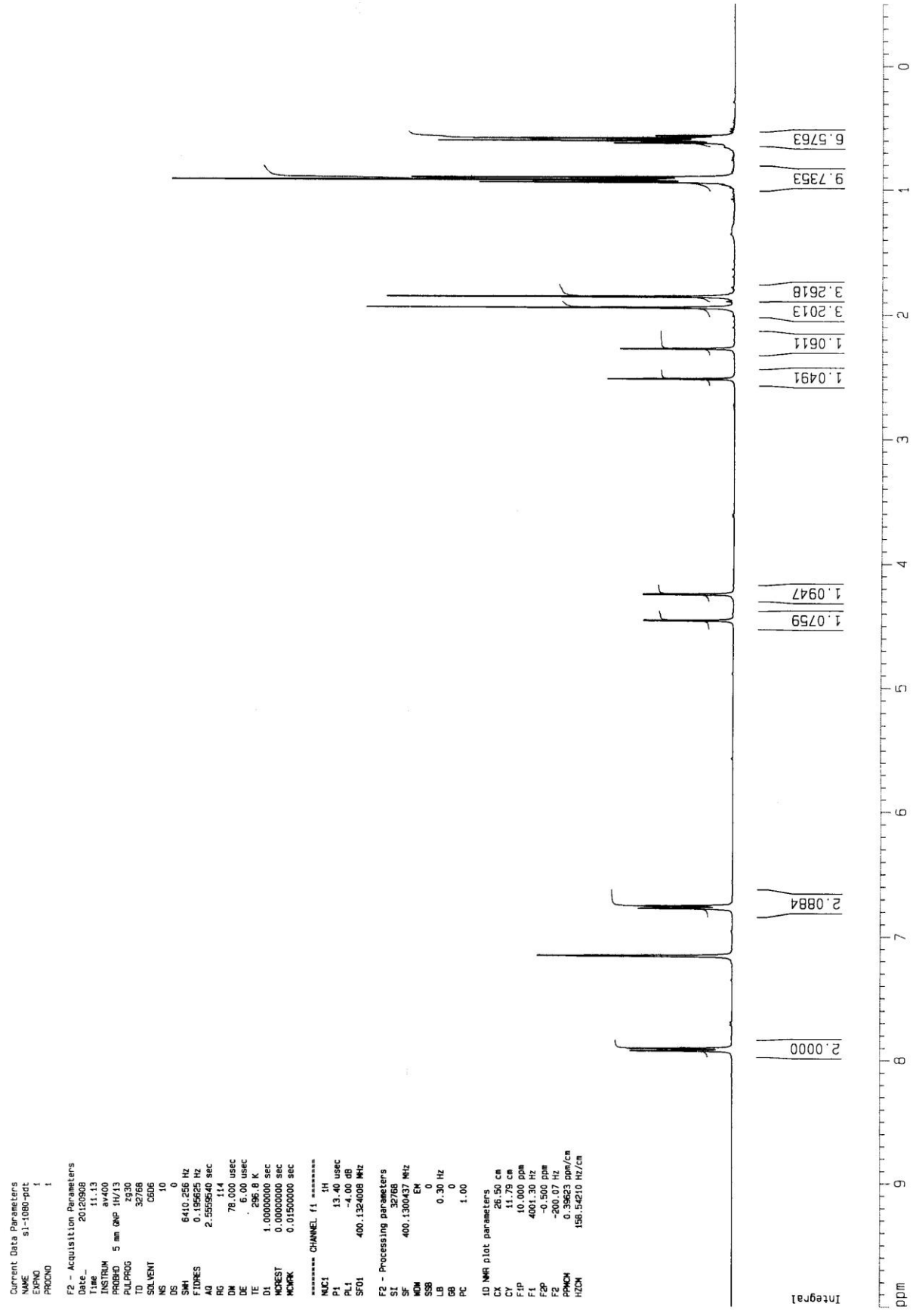

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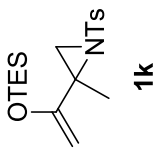

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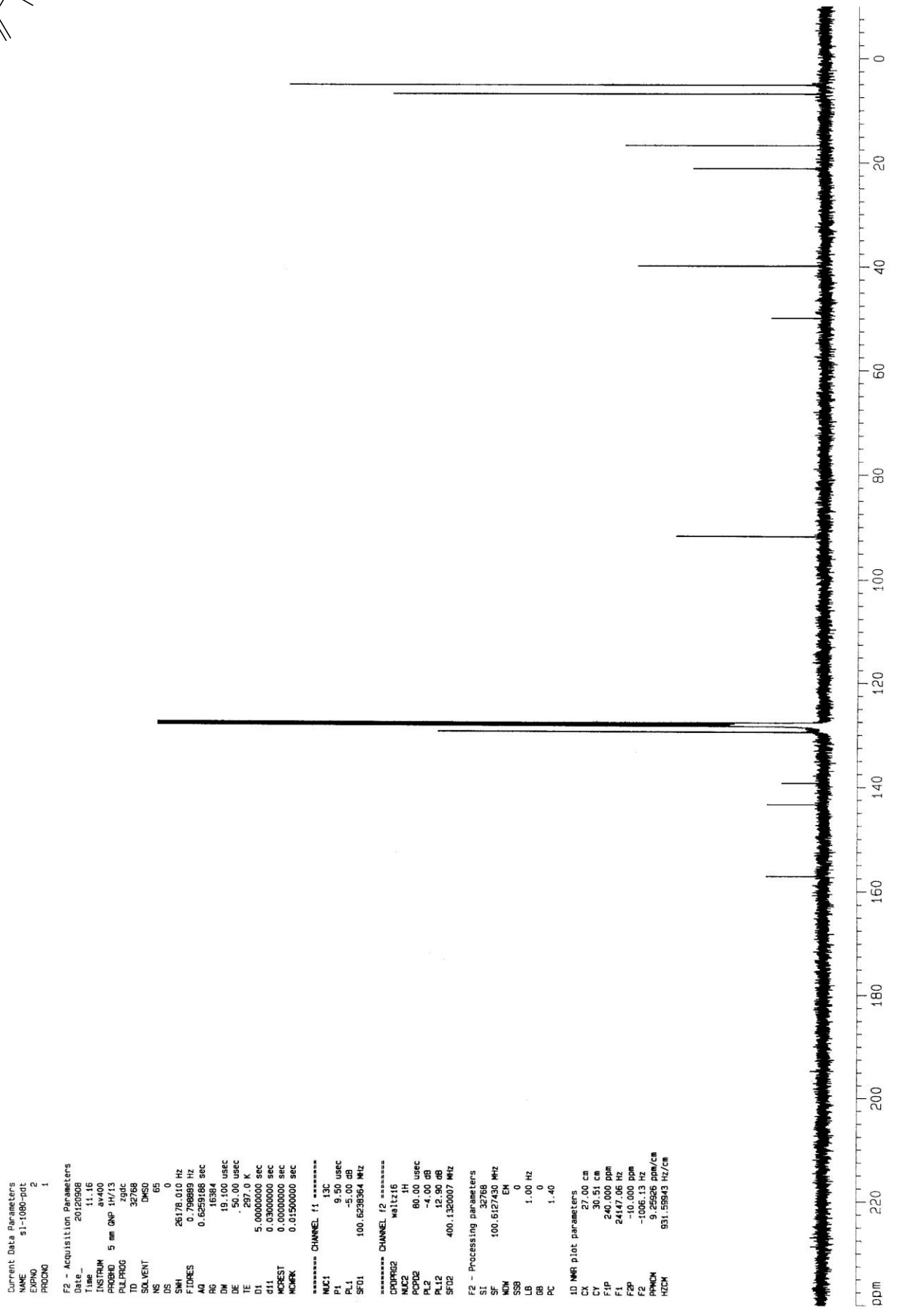

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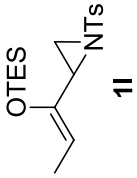

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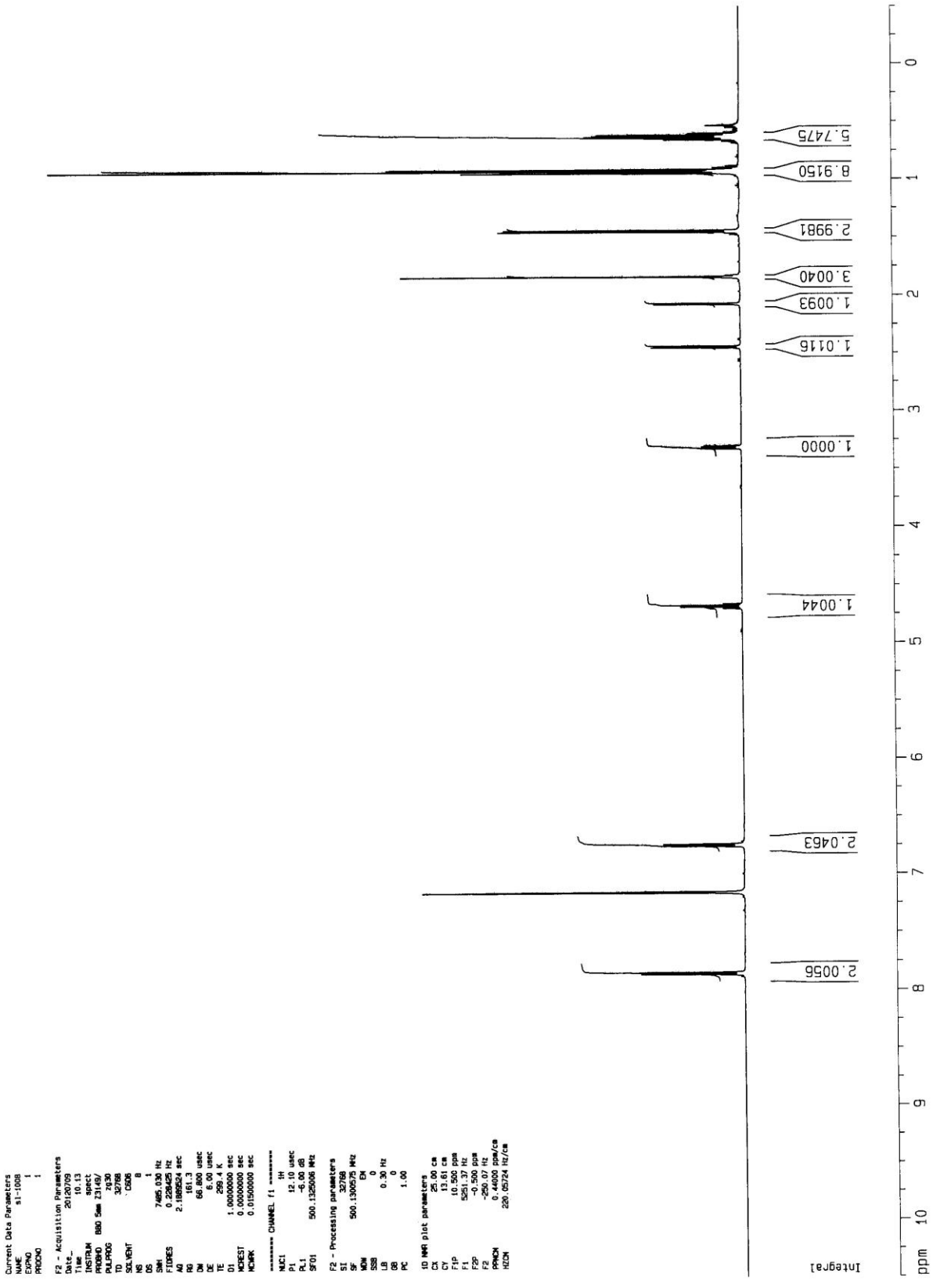

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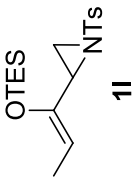

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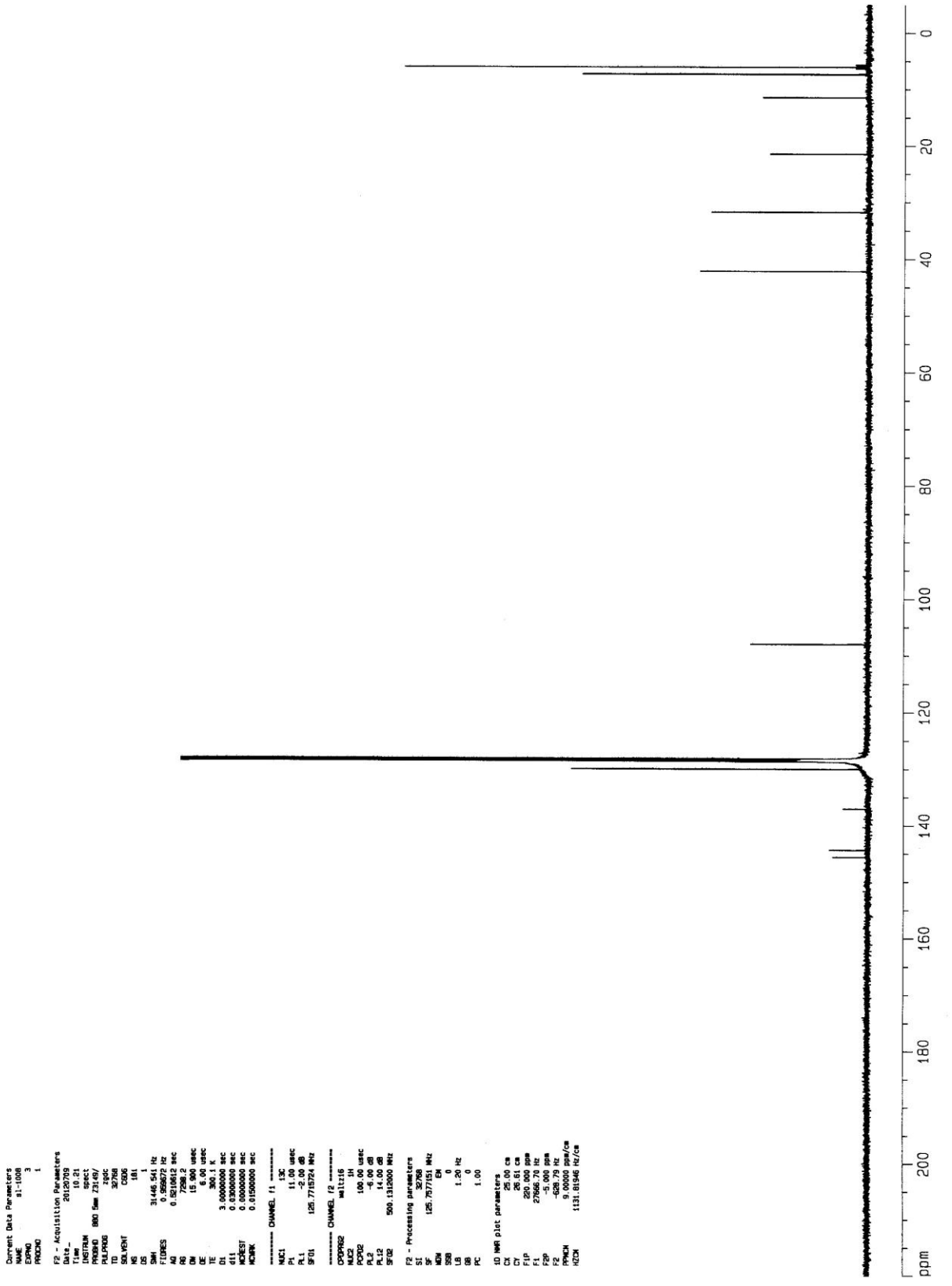

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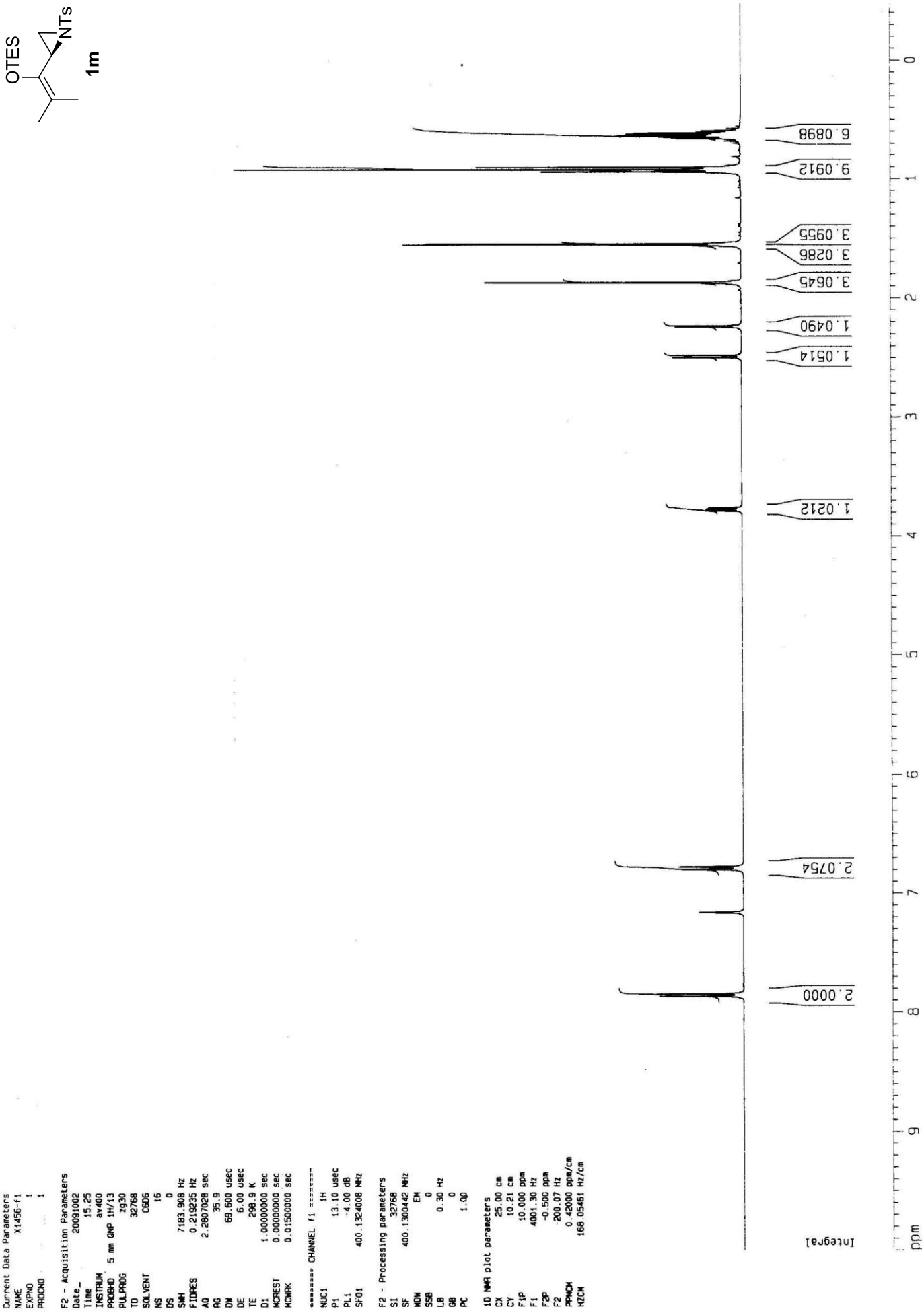

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PROCNO 1

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TD 32768
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NS 16
DS 0
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FIDRES 0.219235 Hz
AQ 2.2807028 sec
RG 35.9
DW 69.600 usec
DE 6.00 usec
TE 298.9 K
D1 1.00000000 sec
MCREST 0.00000000 sec
MCWRK 0.01500000 sec

======== CHANNEL f1 ========
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P1 13.10 usec
PL1 -4.00 dB
SFO1 400.1324008 MHz

F2 - Processing parameters
SI 32768
SF 400.1300442 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

1D NMR plot parameters
CX 25.00 cm
CY 10.21 cm
F1P 10.000 ppm
F1 4001.30 Hz
F2P -0.500 ppm
F2 -200.07 Hz
PPMCM 0.42000 ppm/cm
HZCM 168.05461 Hz/cm

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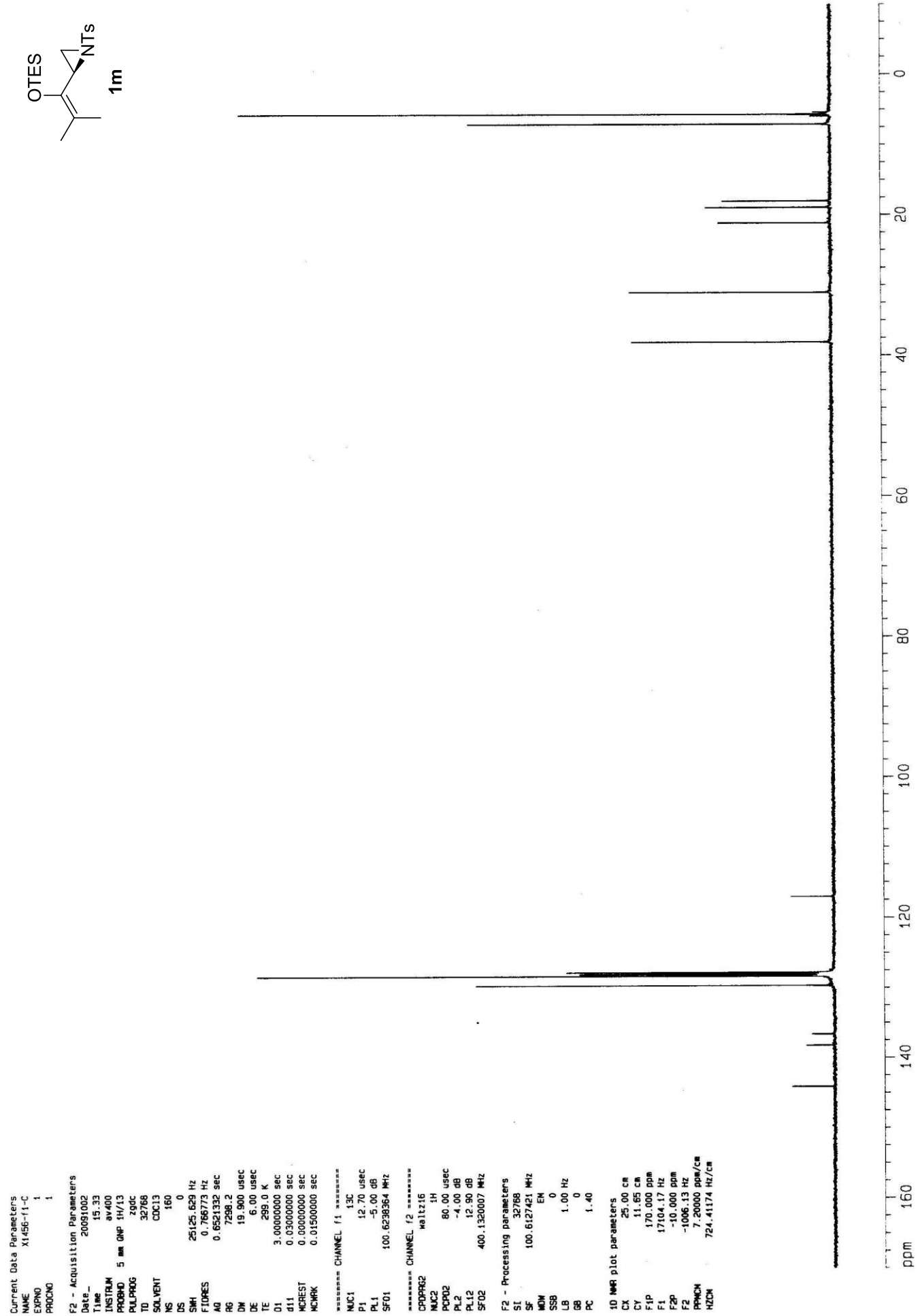

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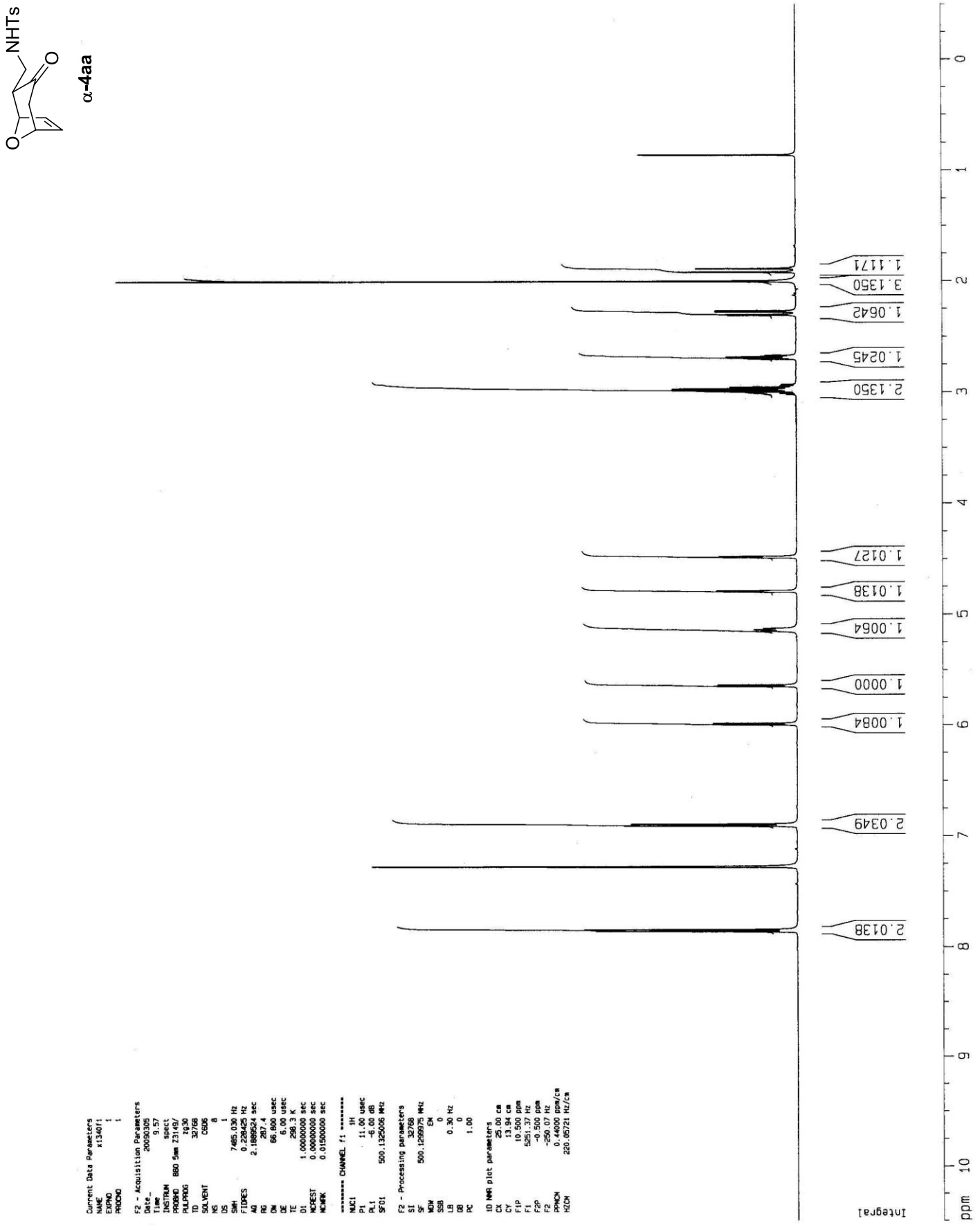

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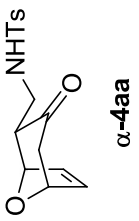
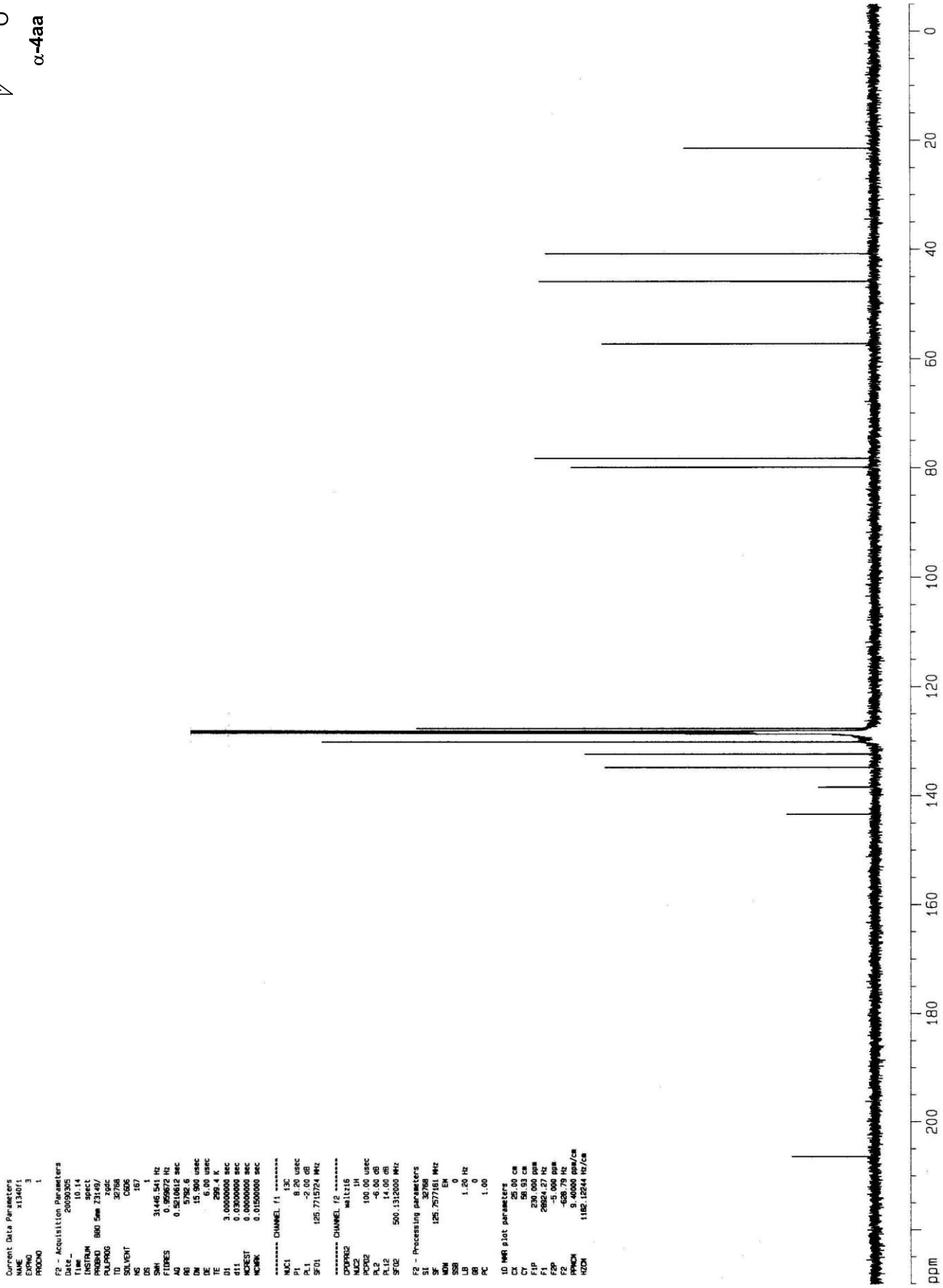


α-4aa



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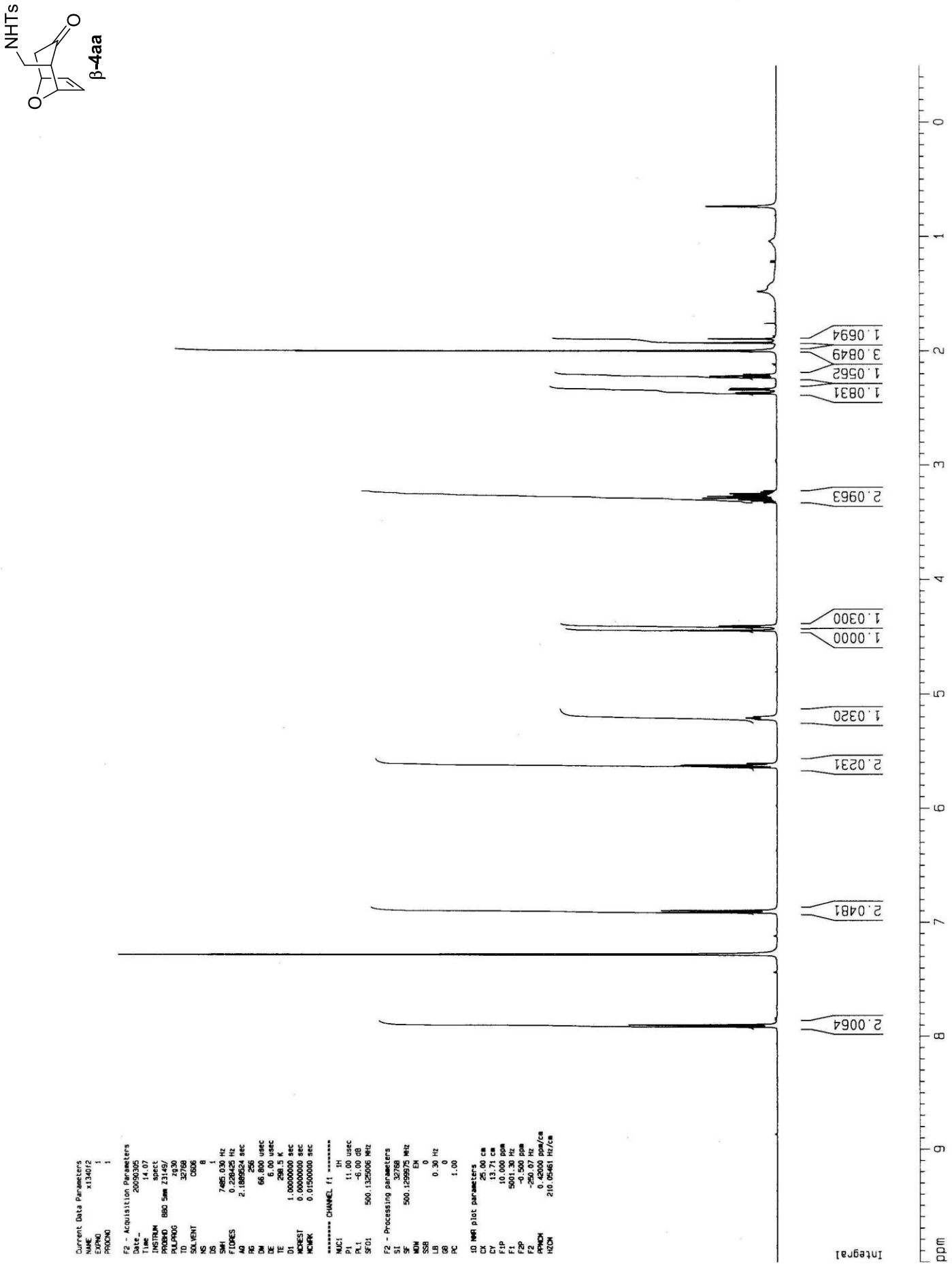

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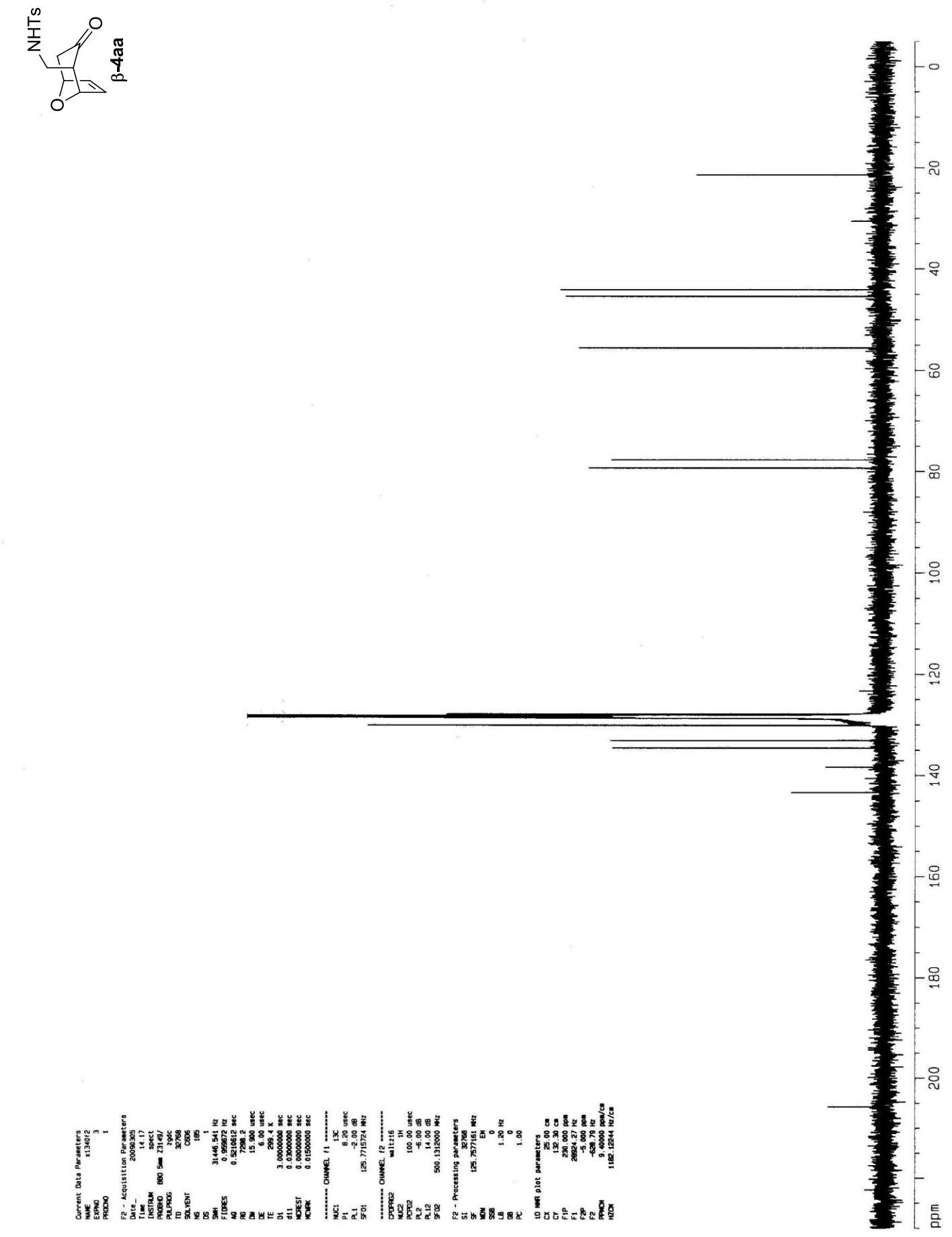

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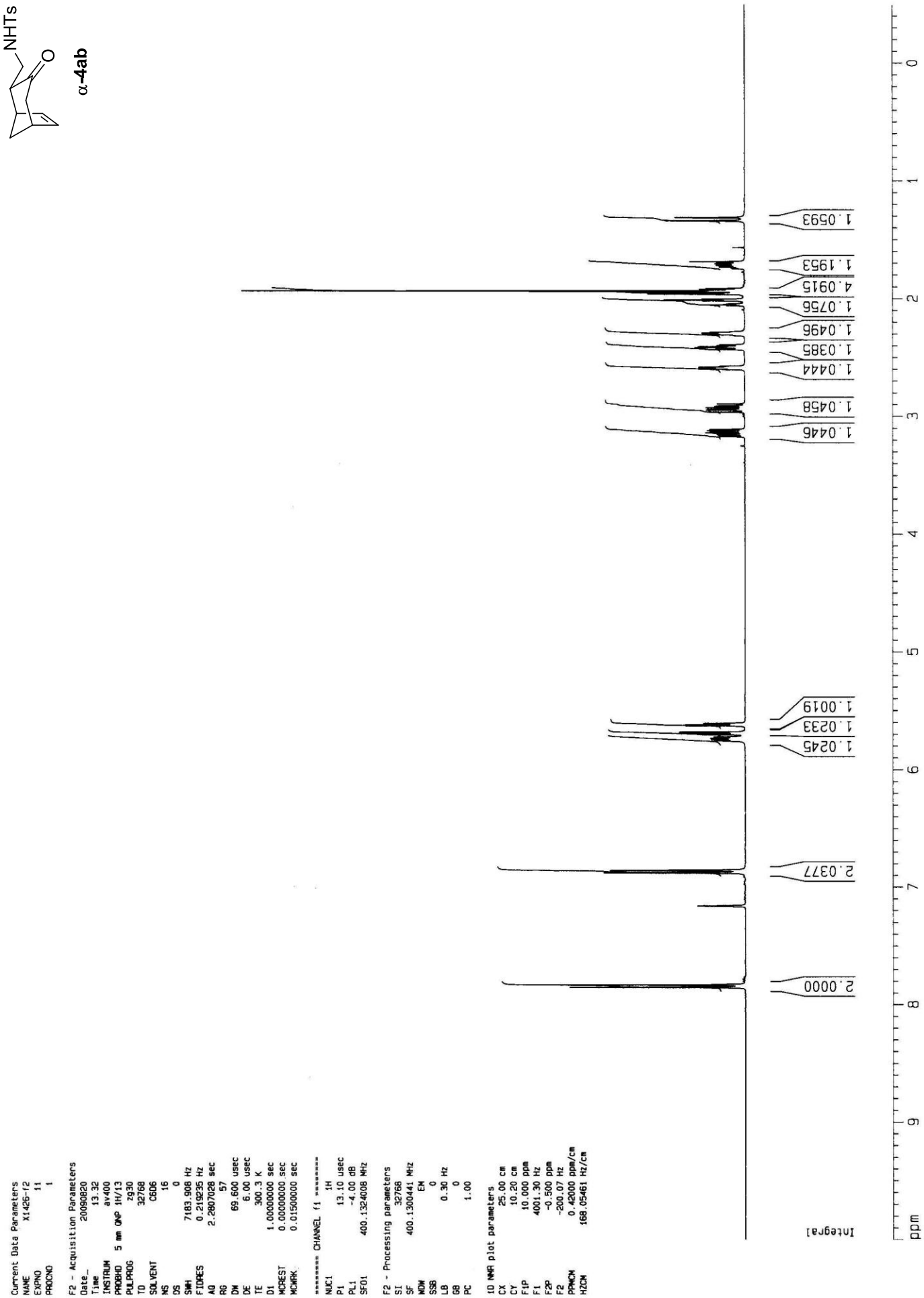

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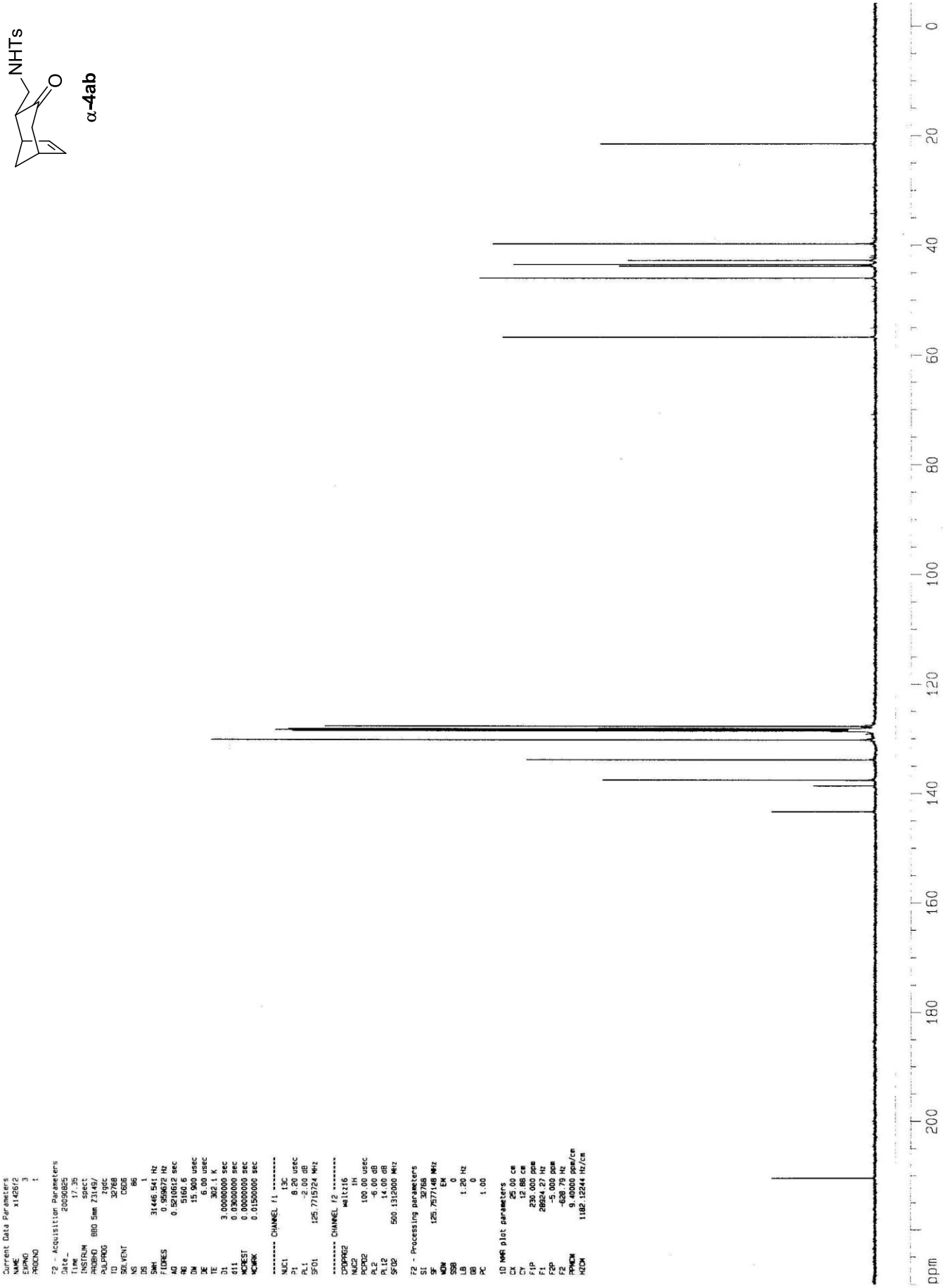

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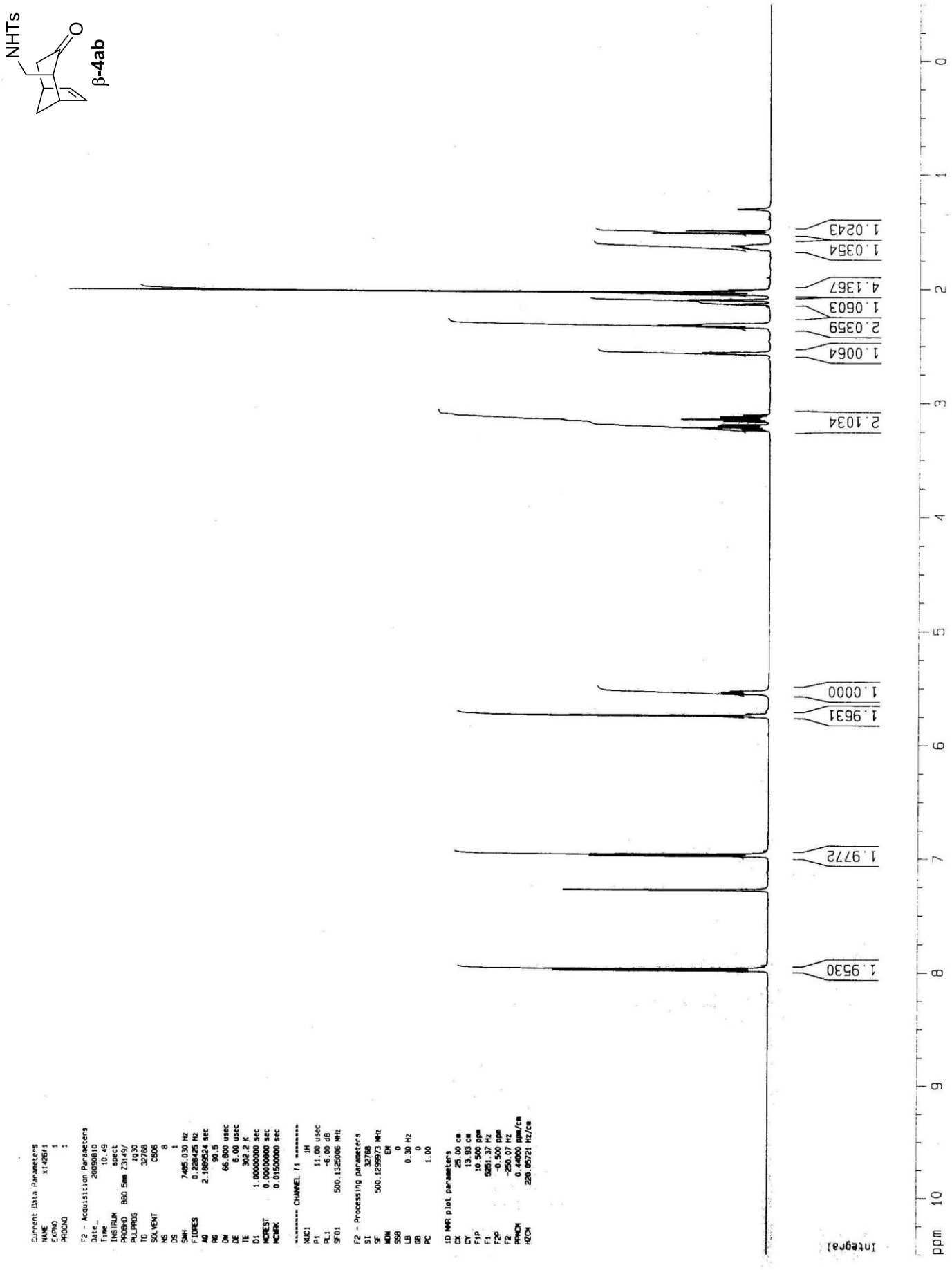

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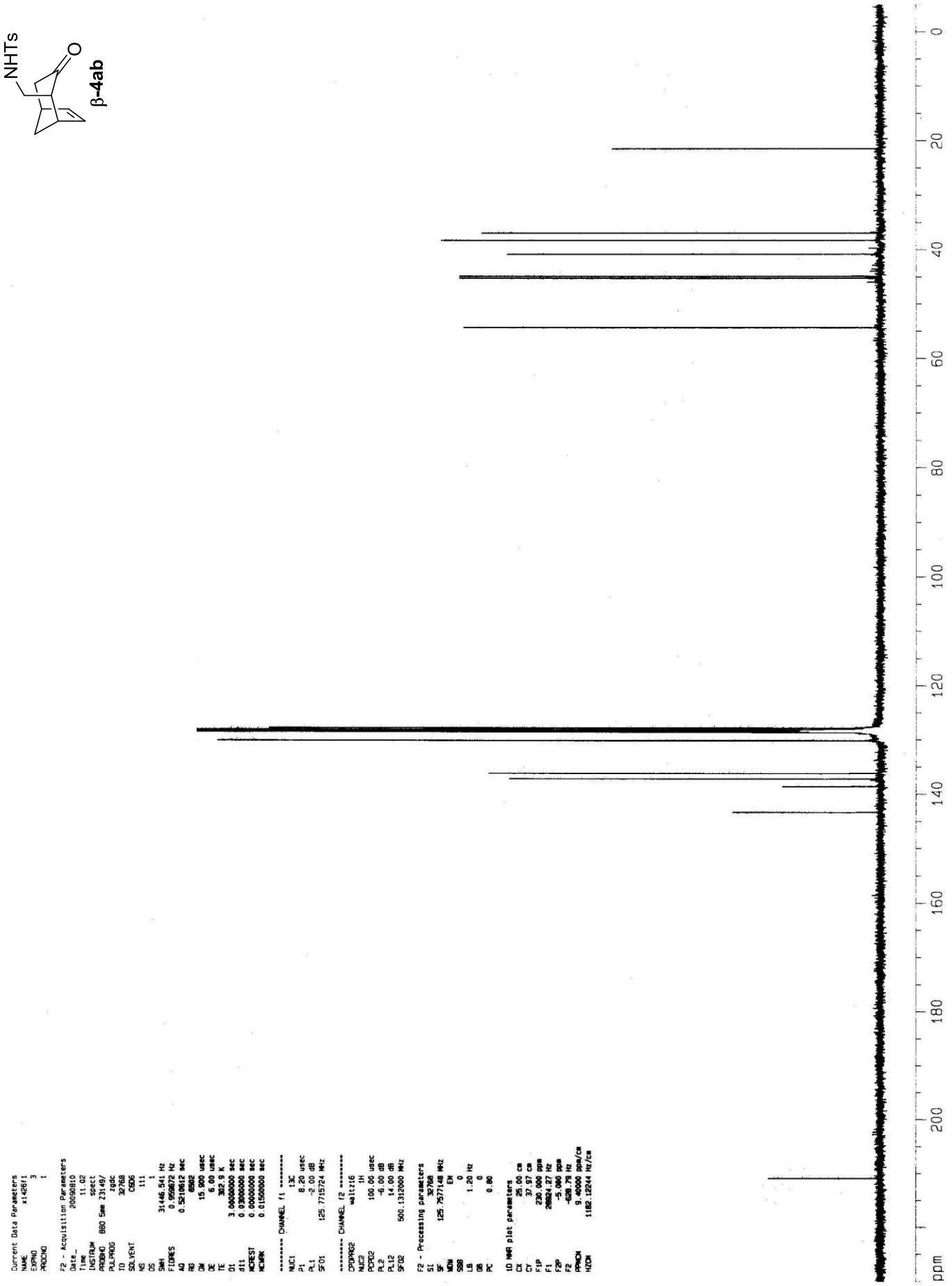

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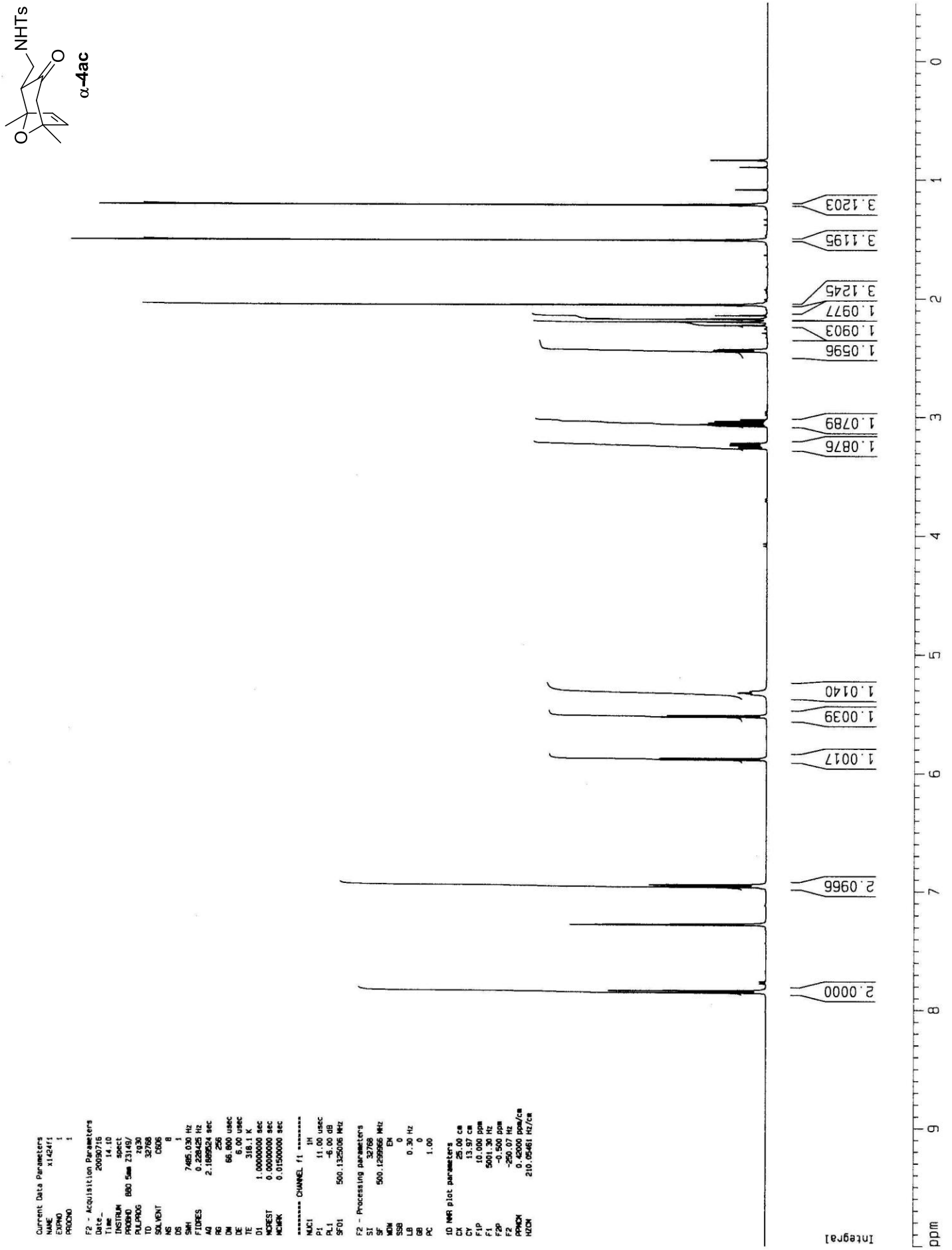

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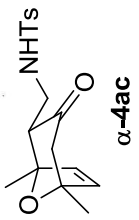

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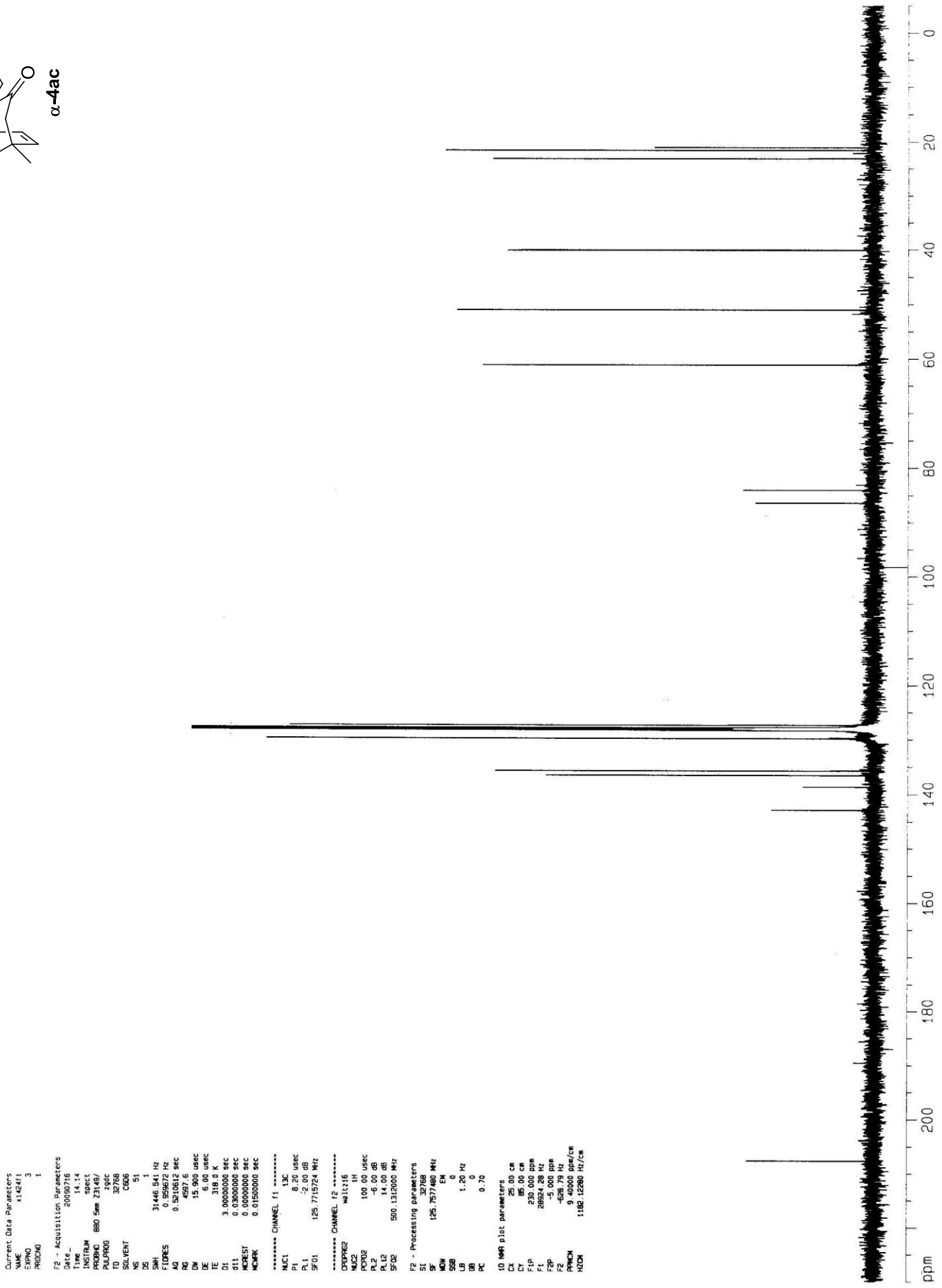

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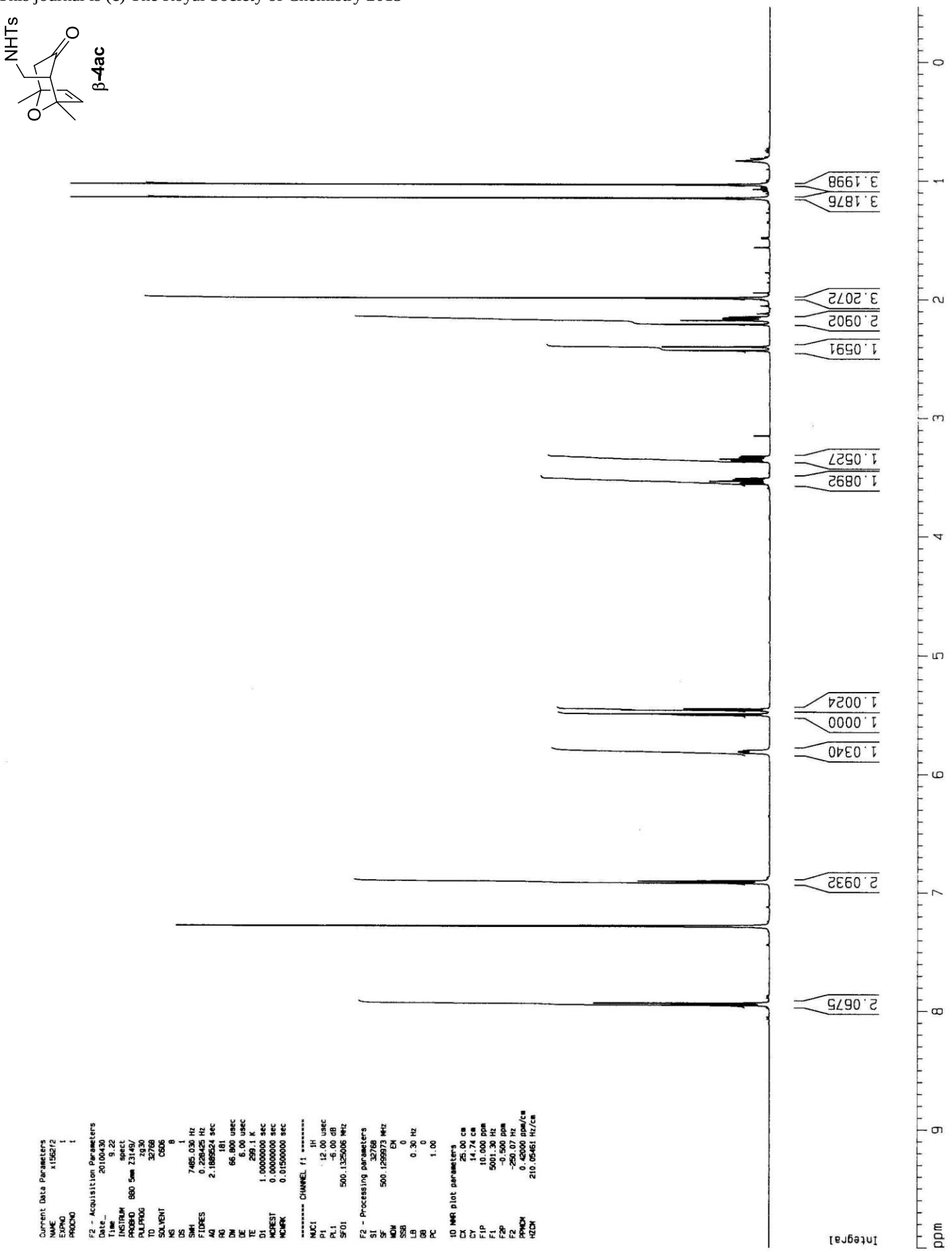

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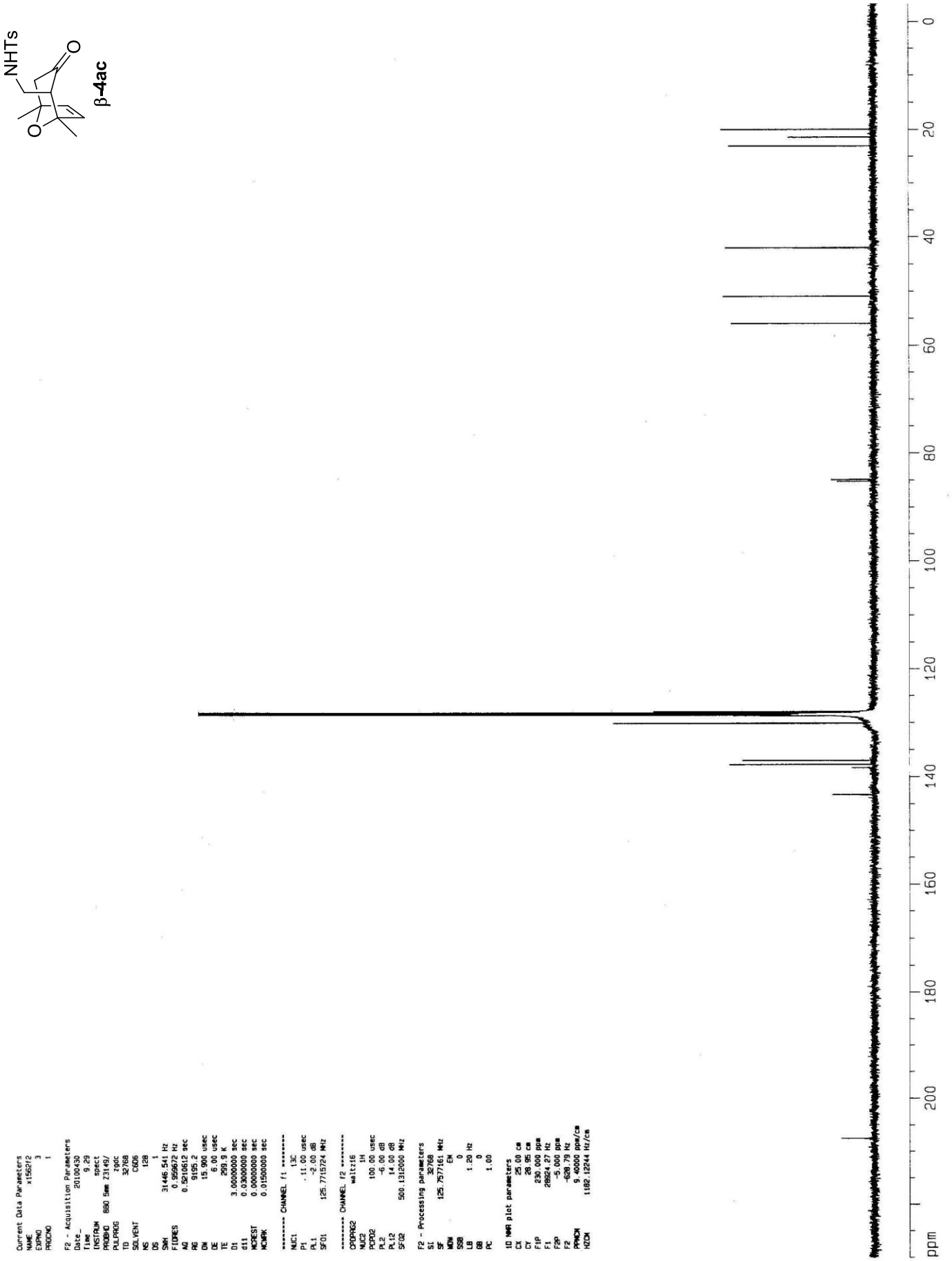

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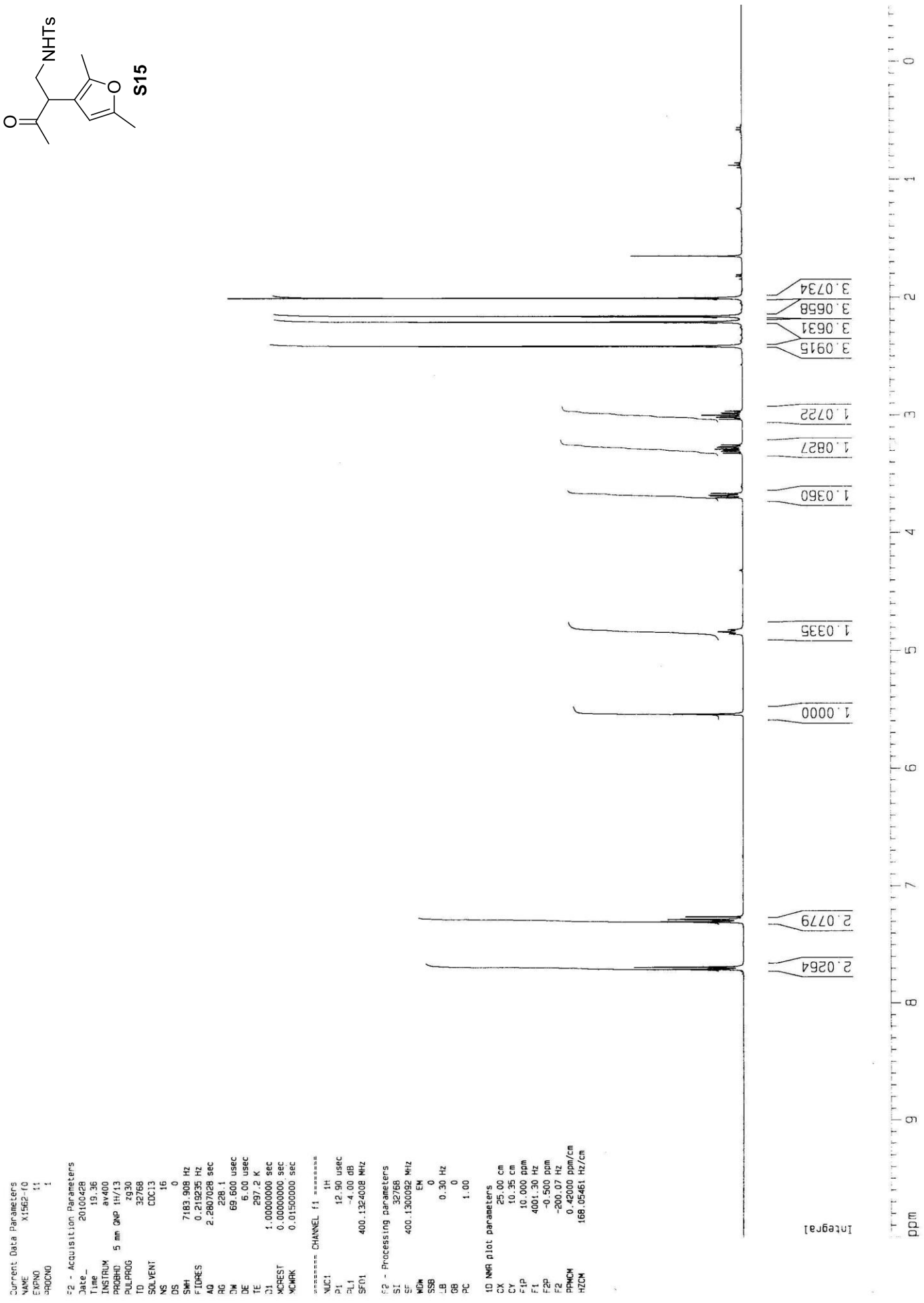
S15



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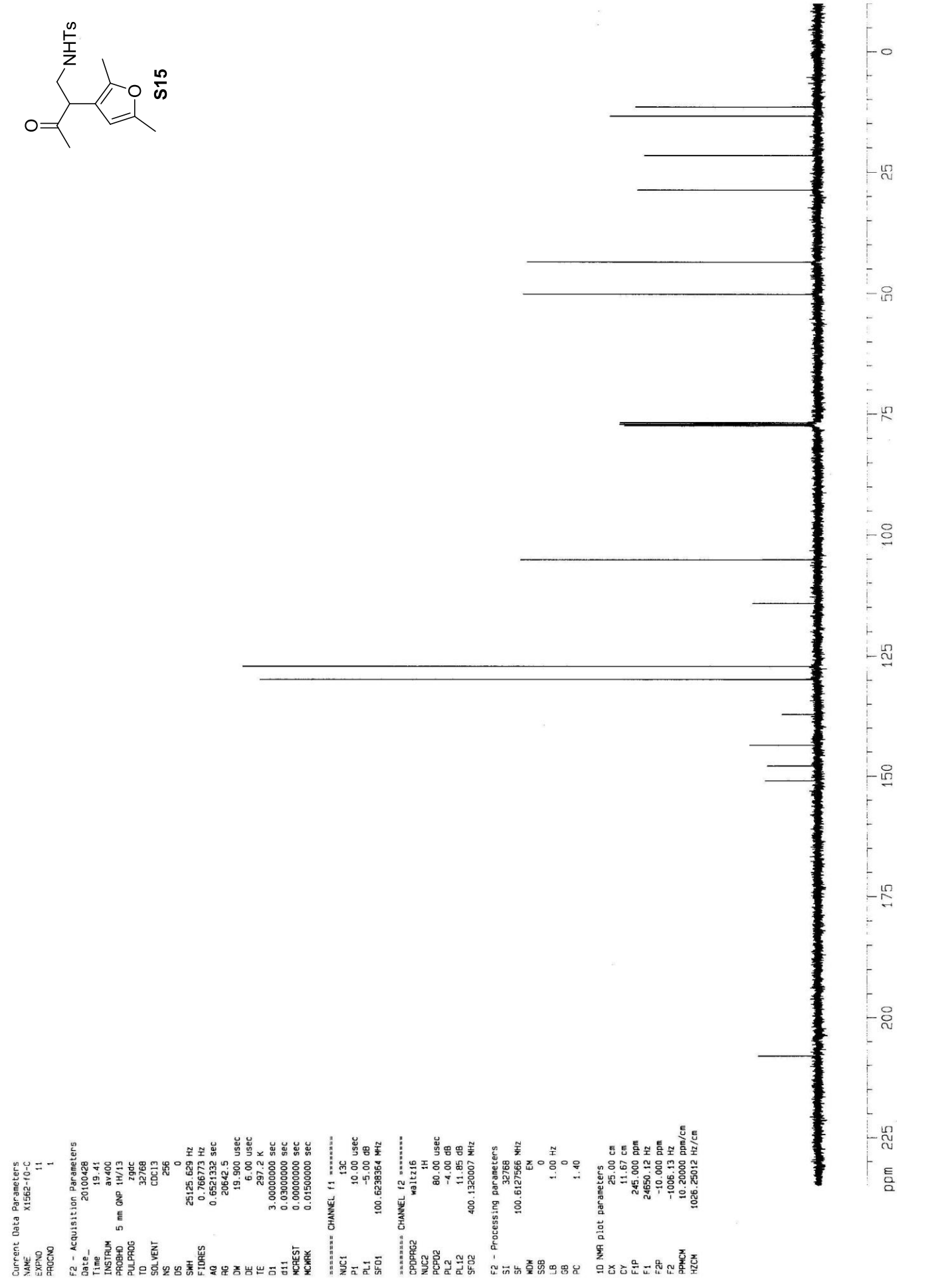

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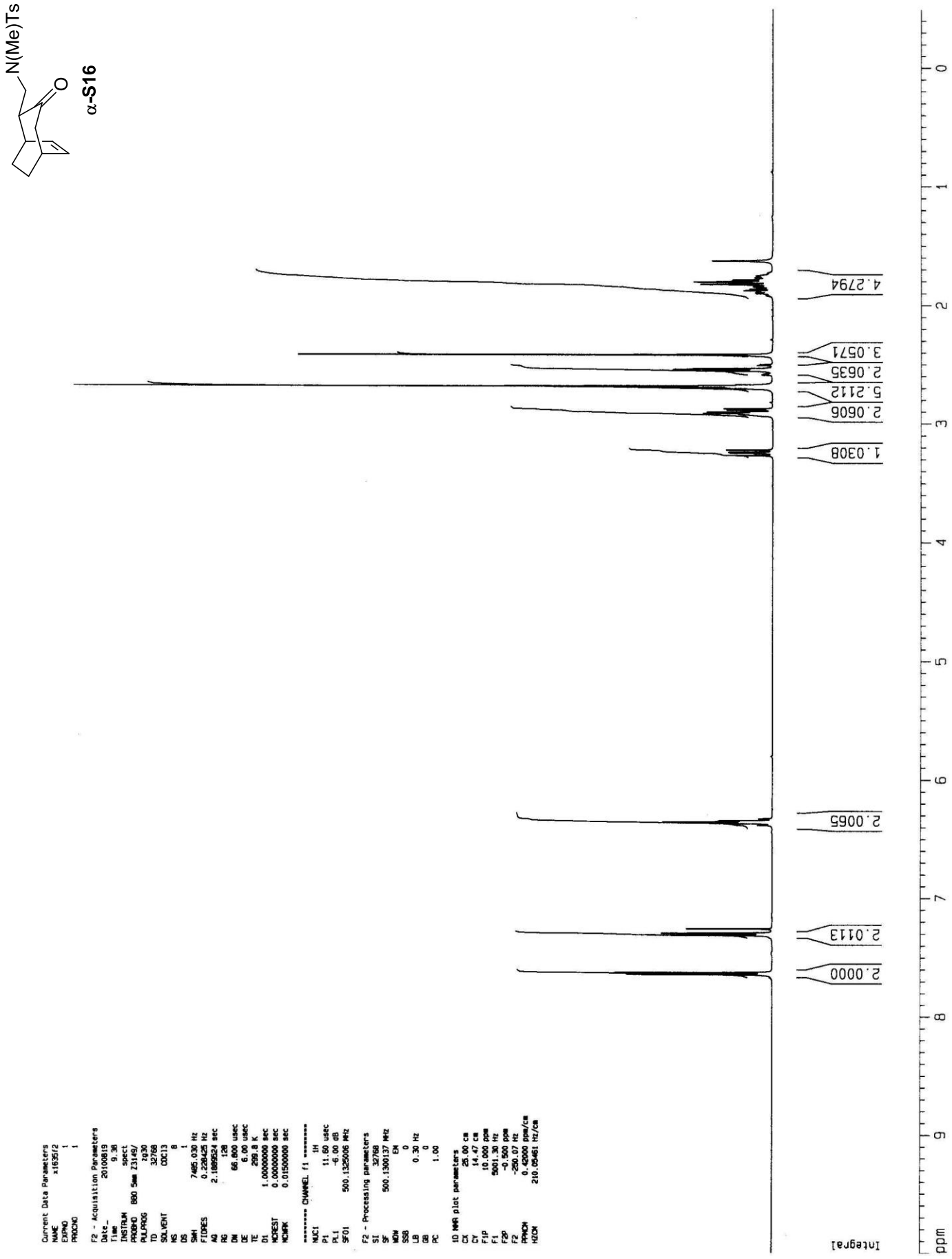

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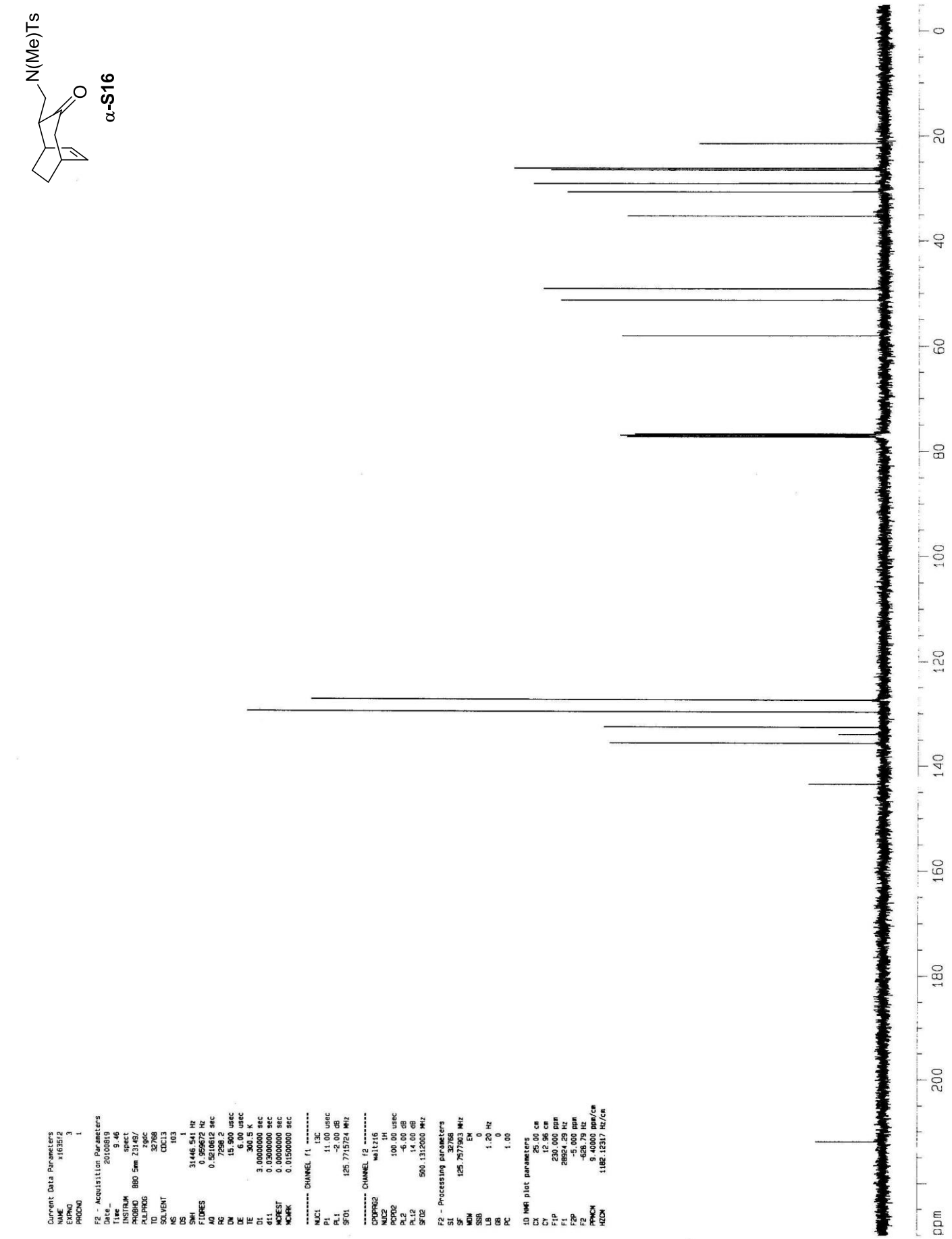

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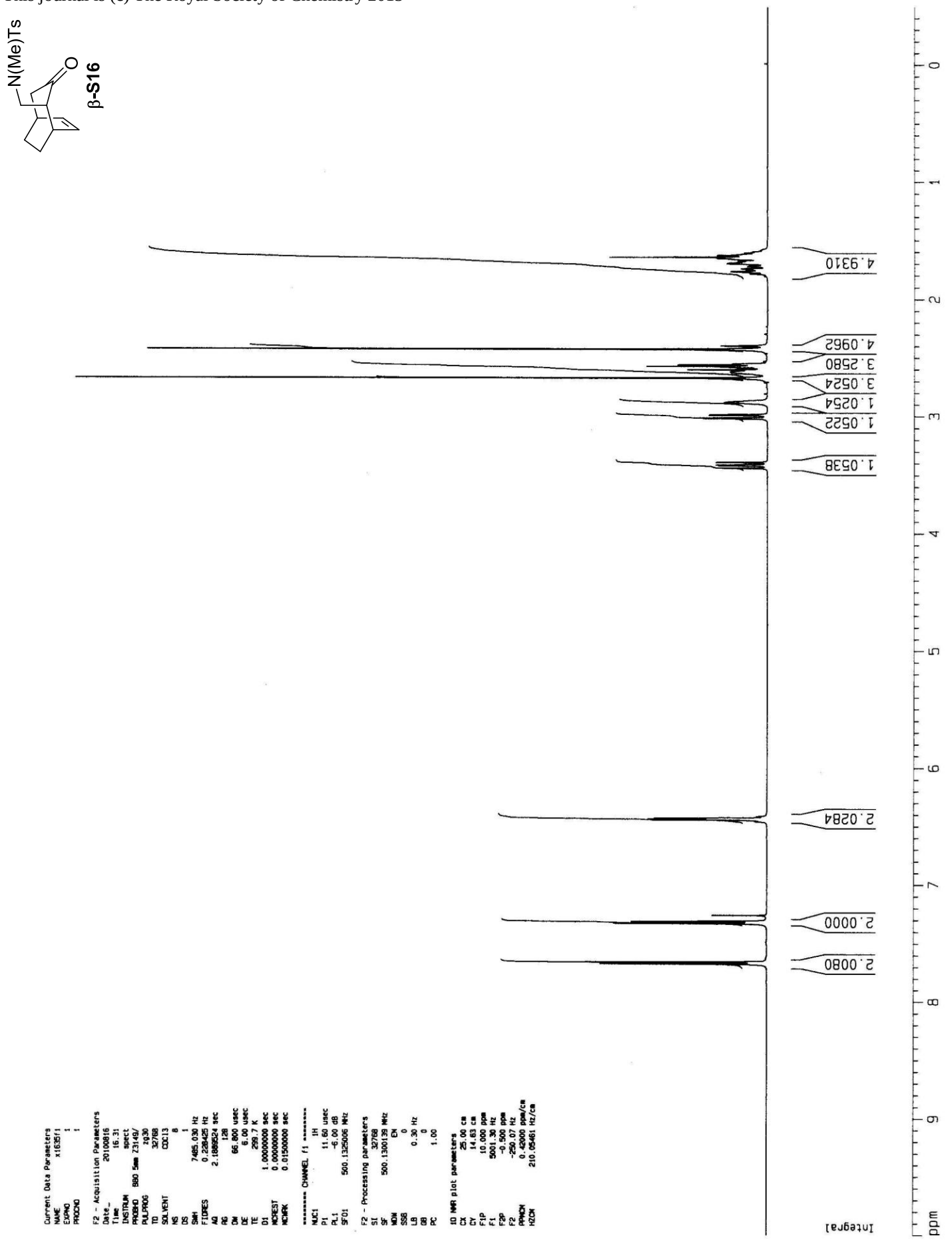

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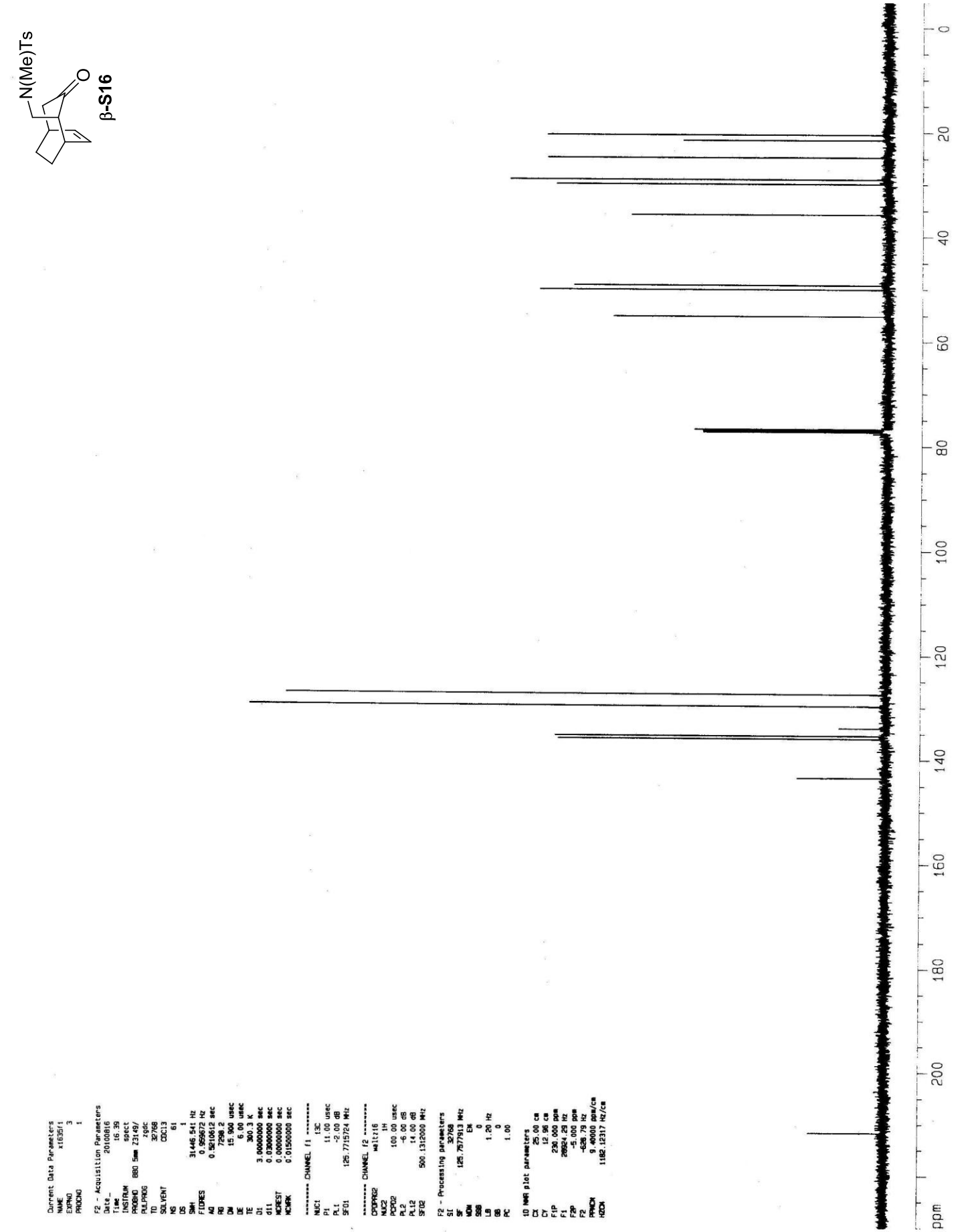

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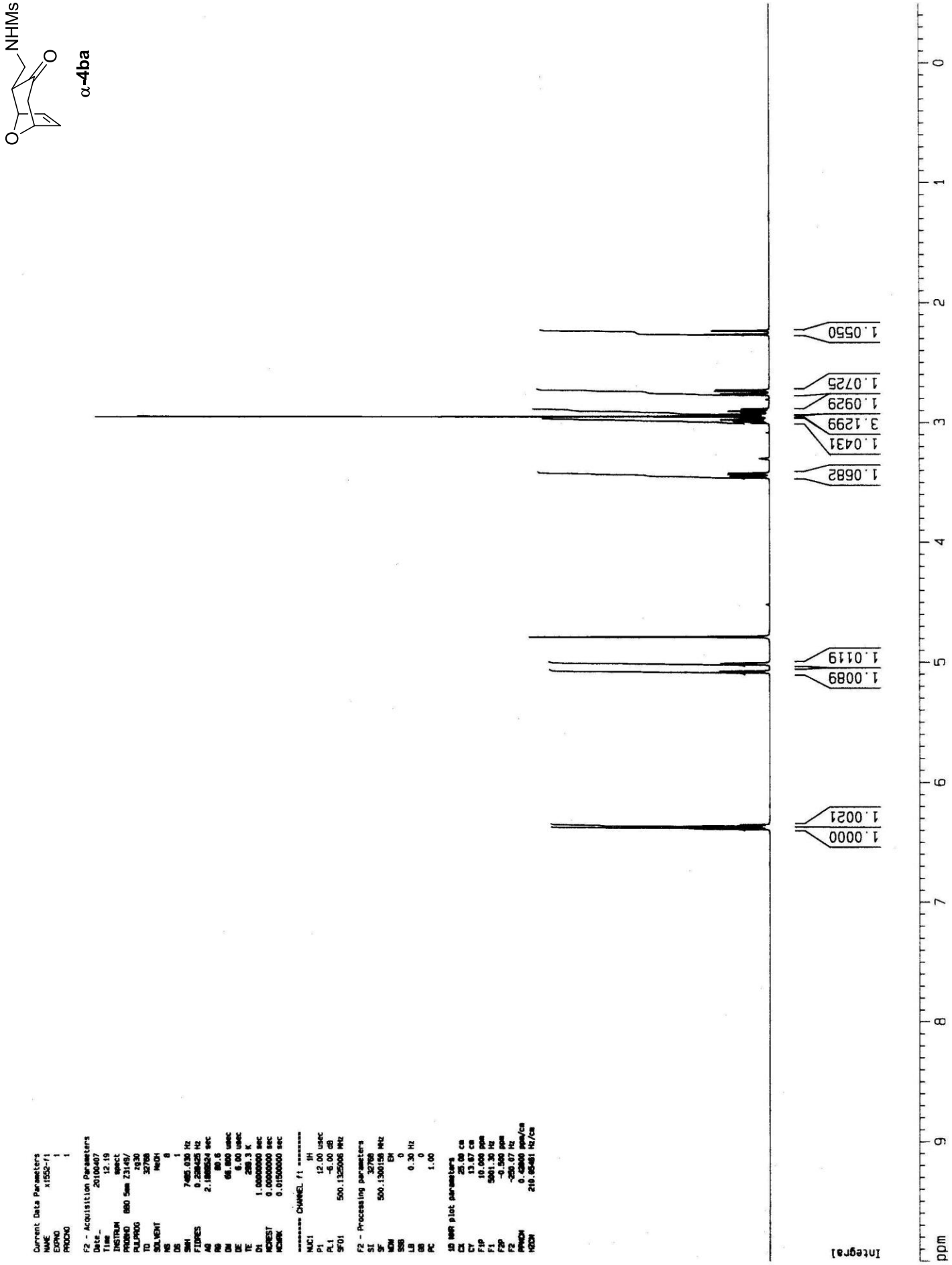

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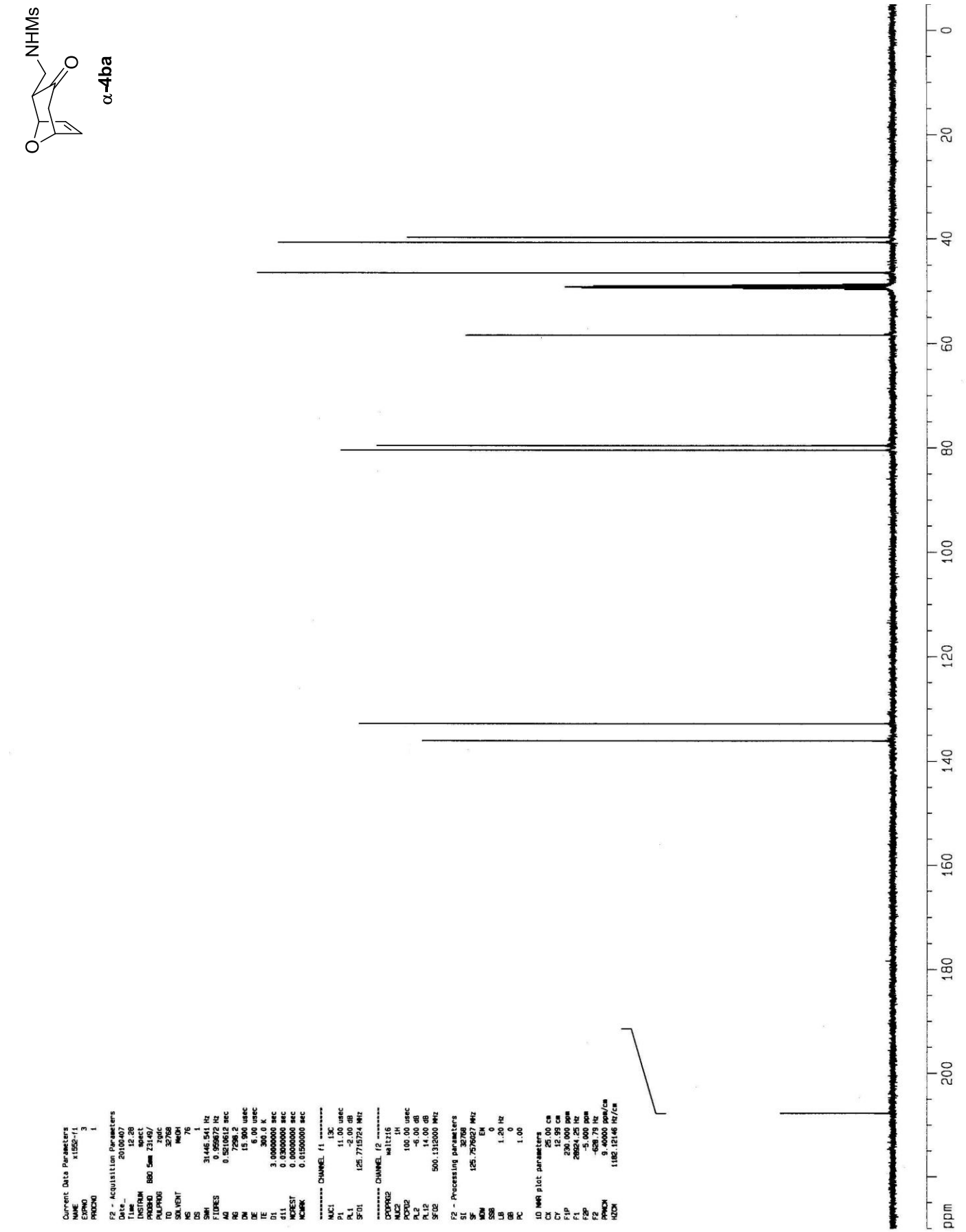

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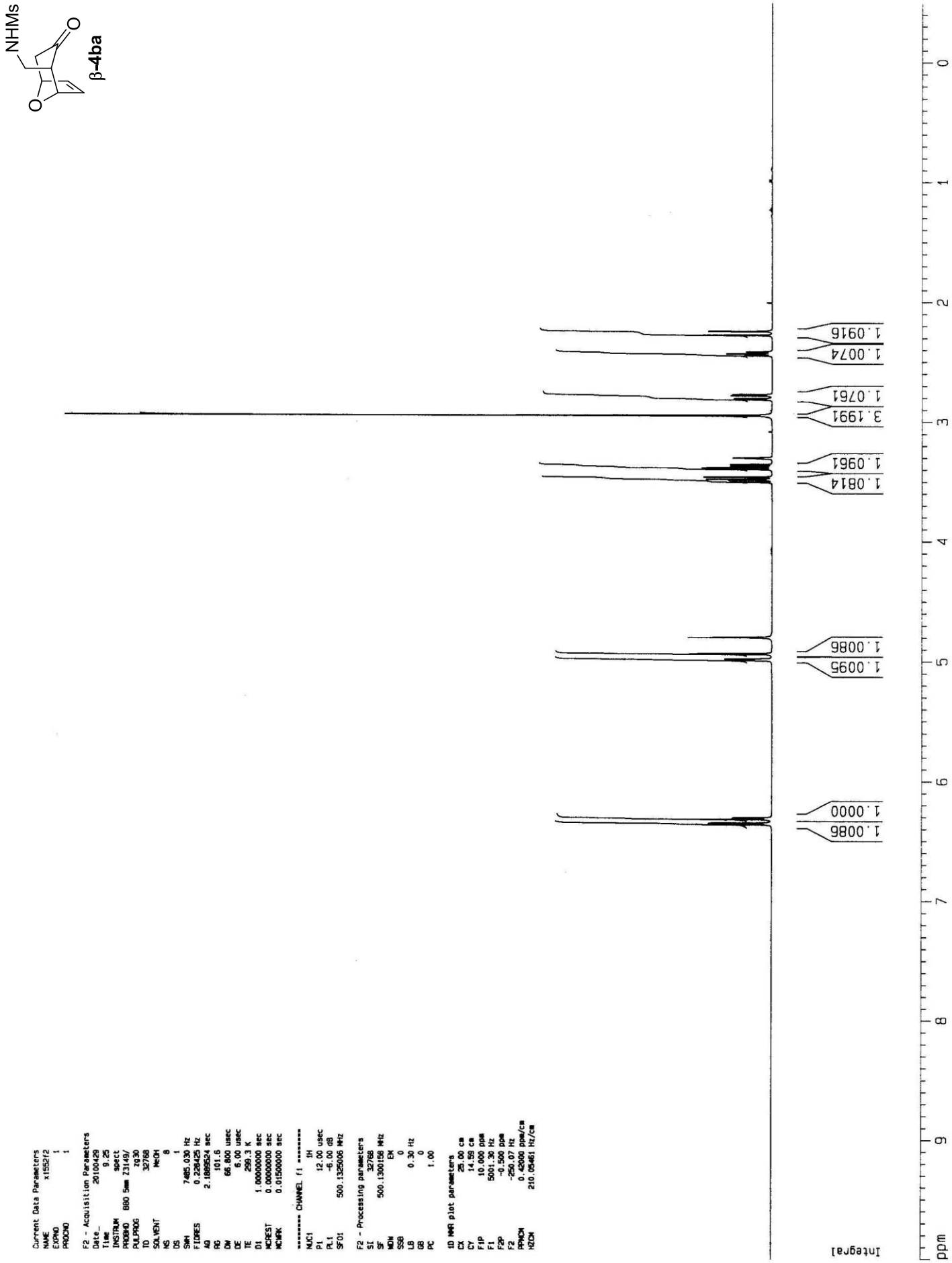

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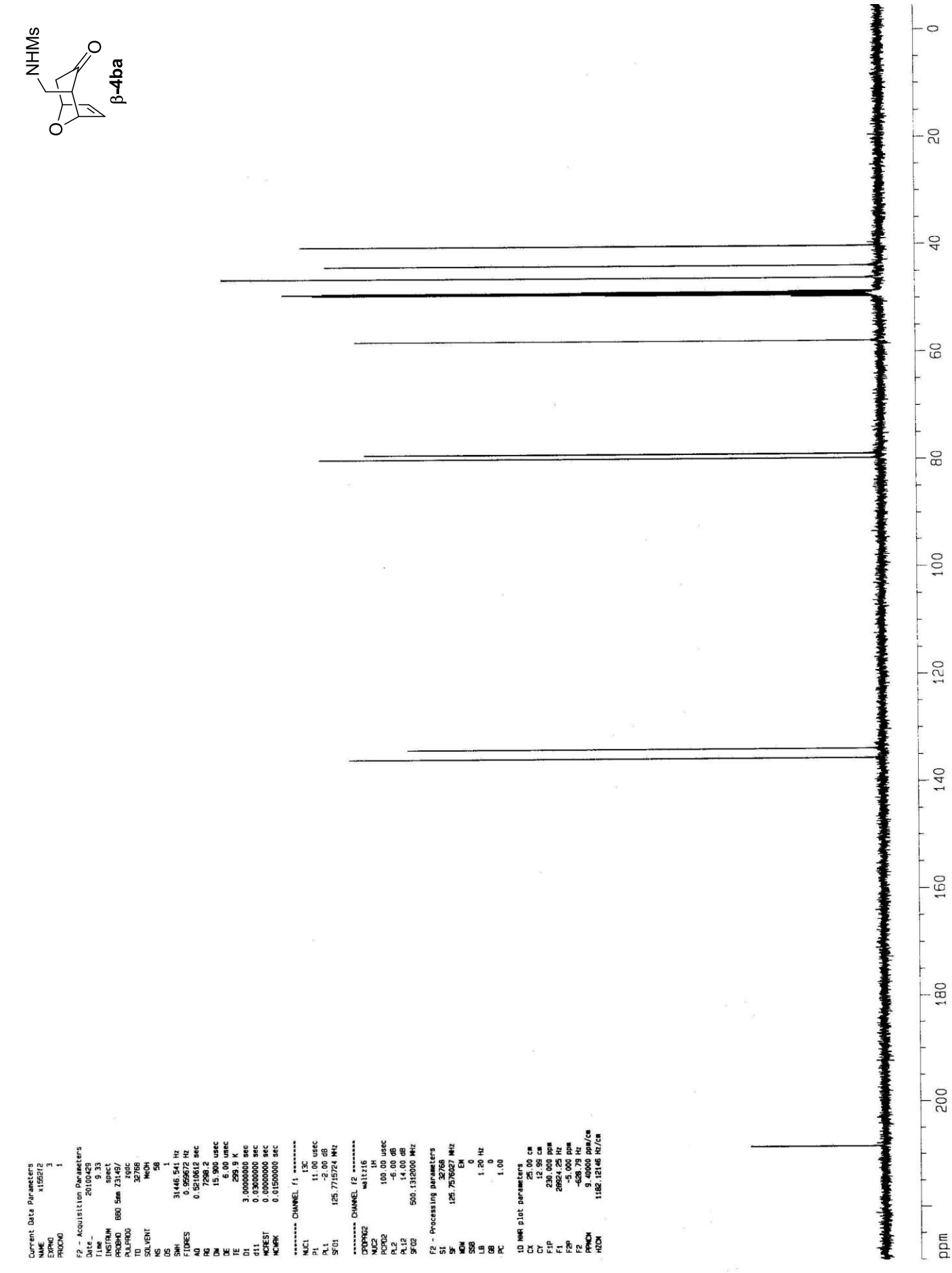

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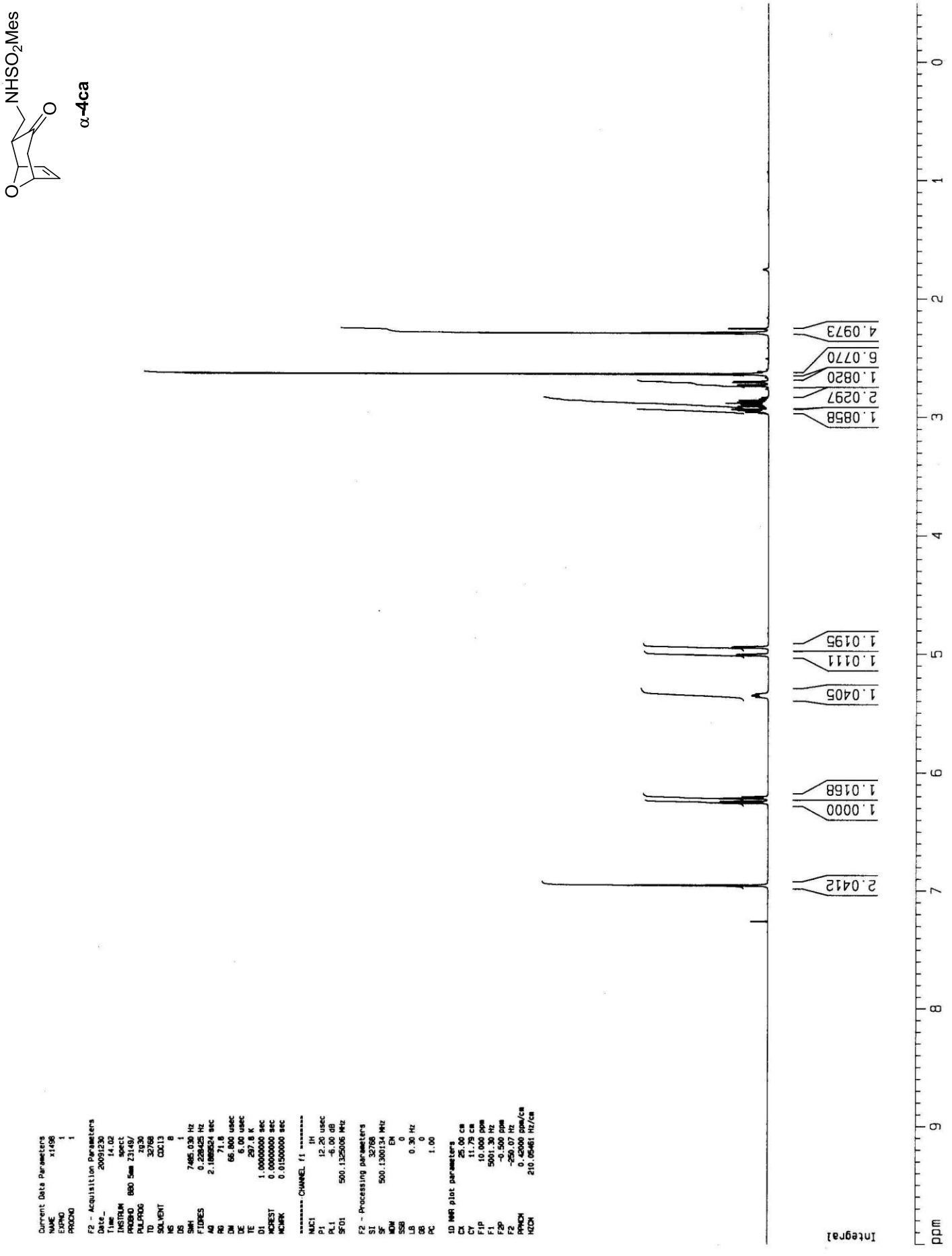

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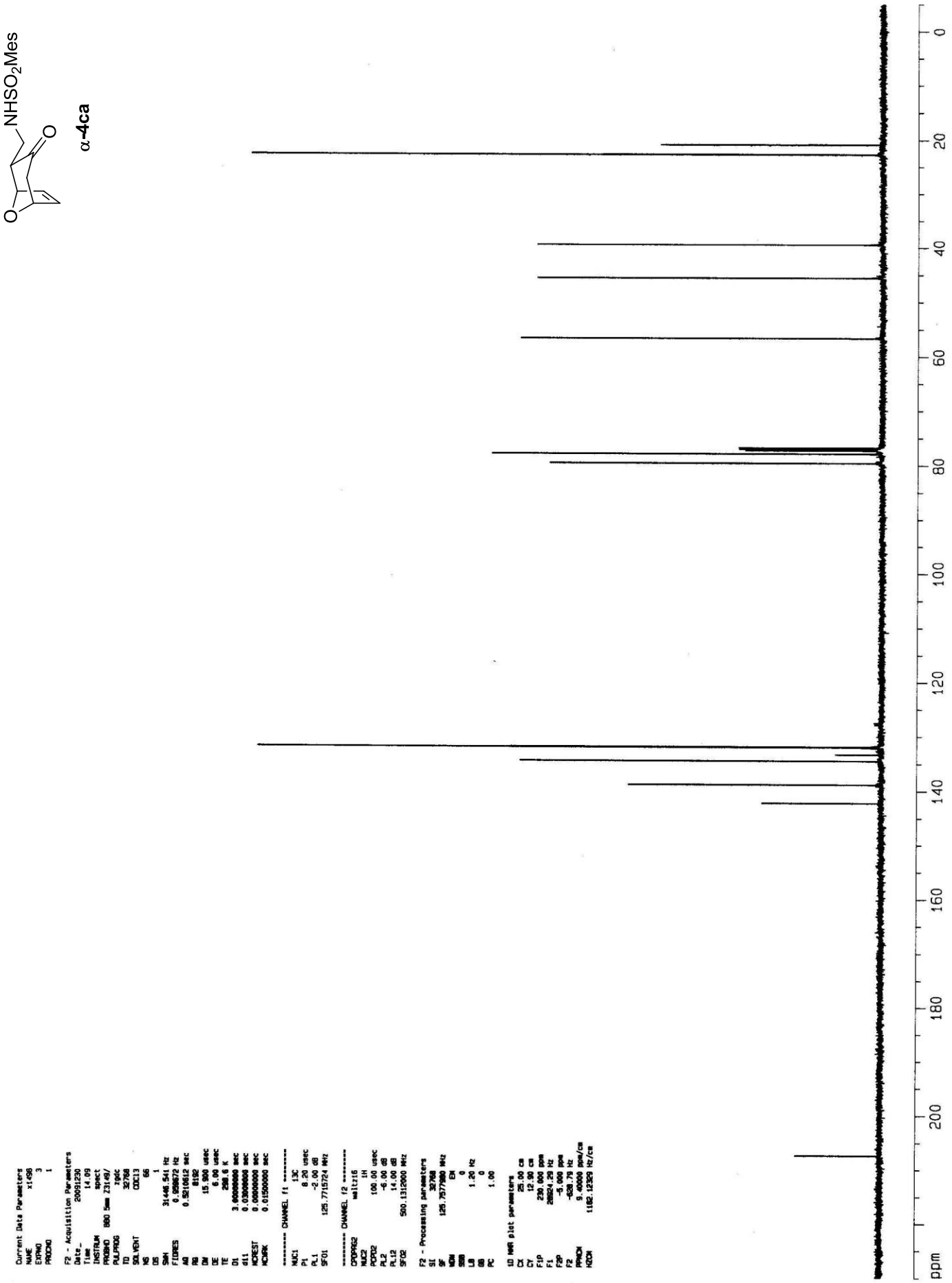

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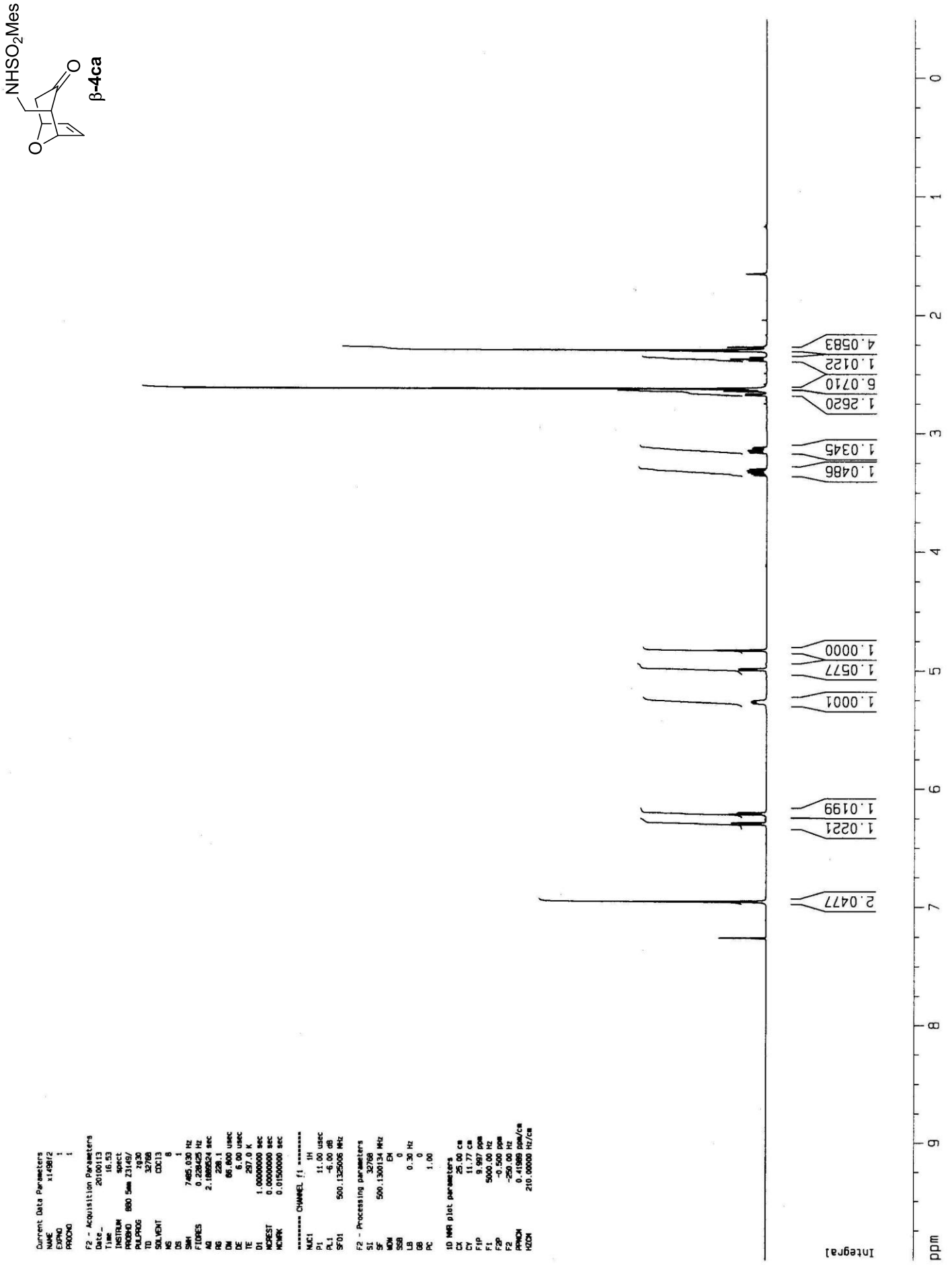

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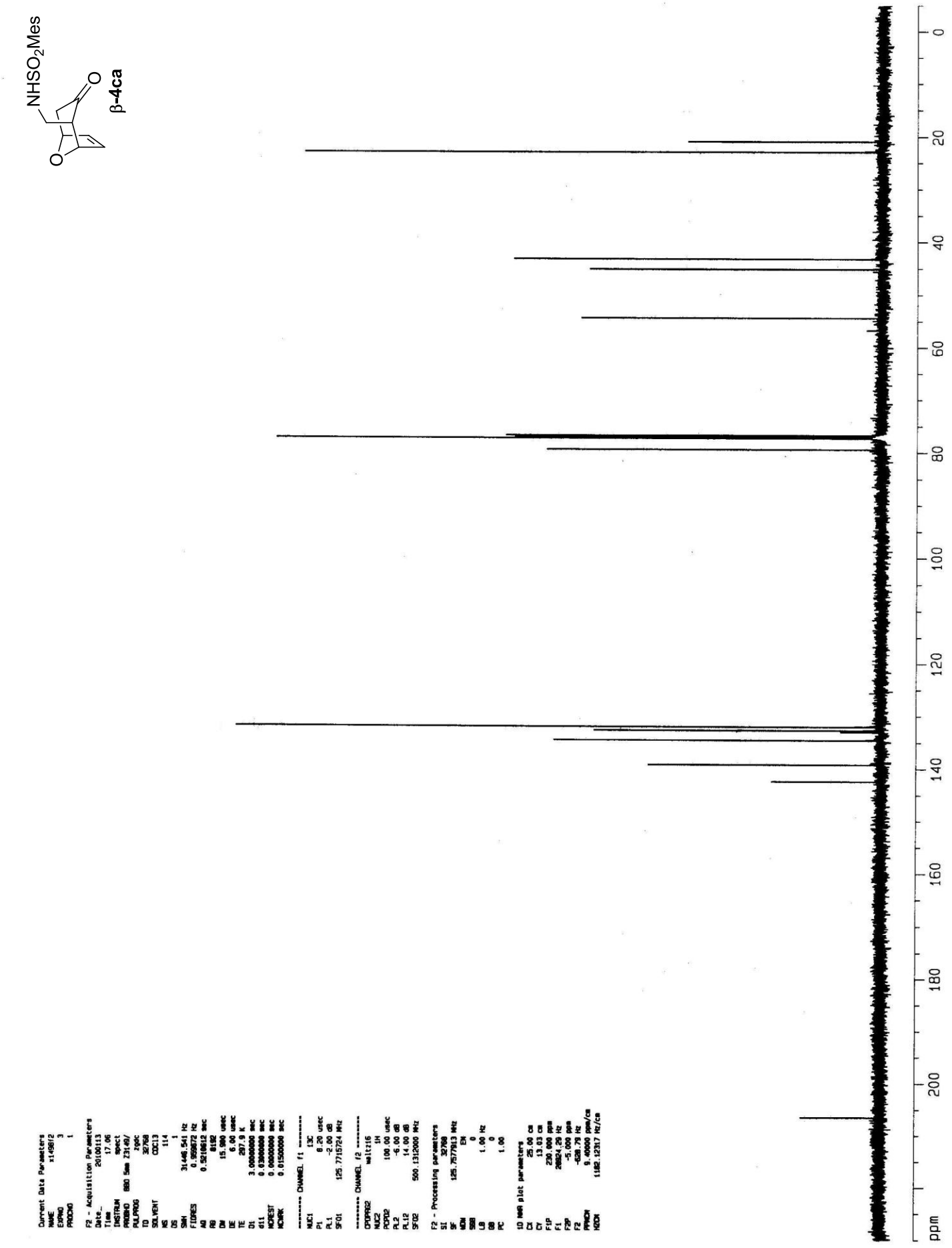

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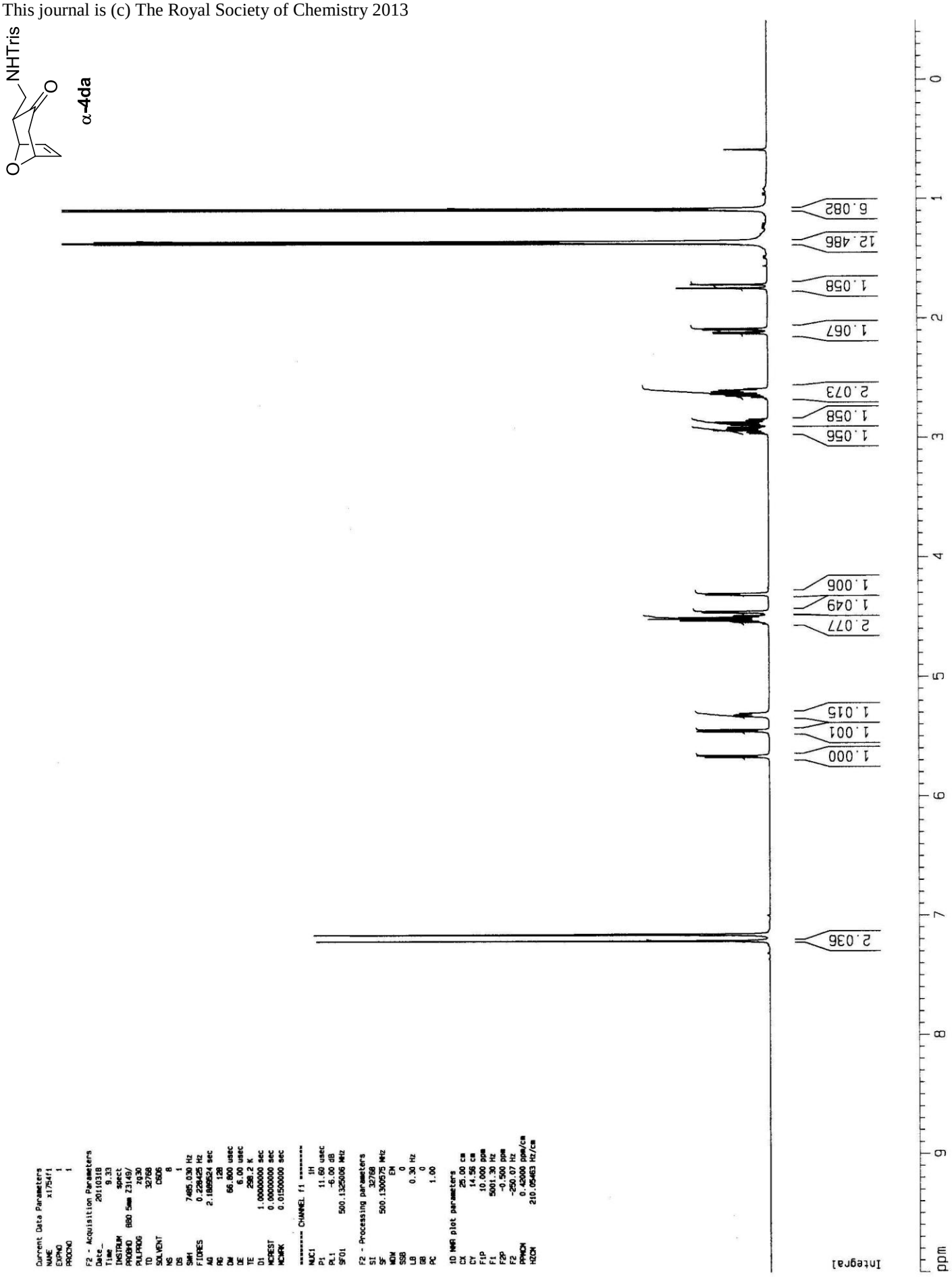

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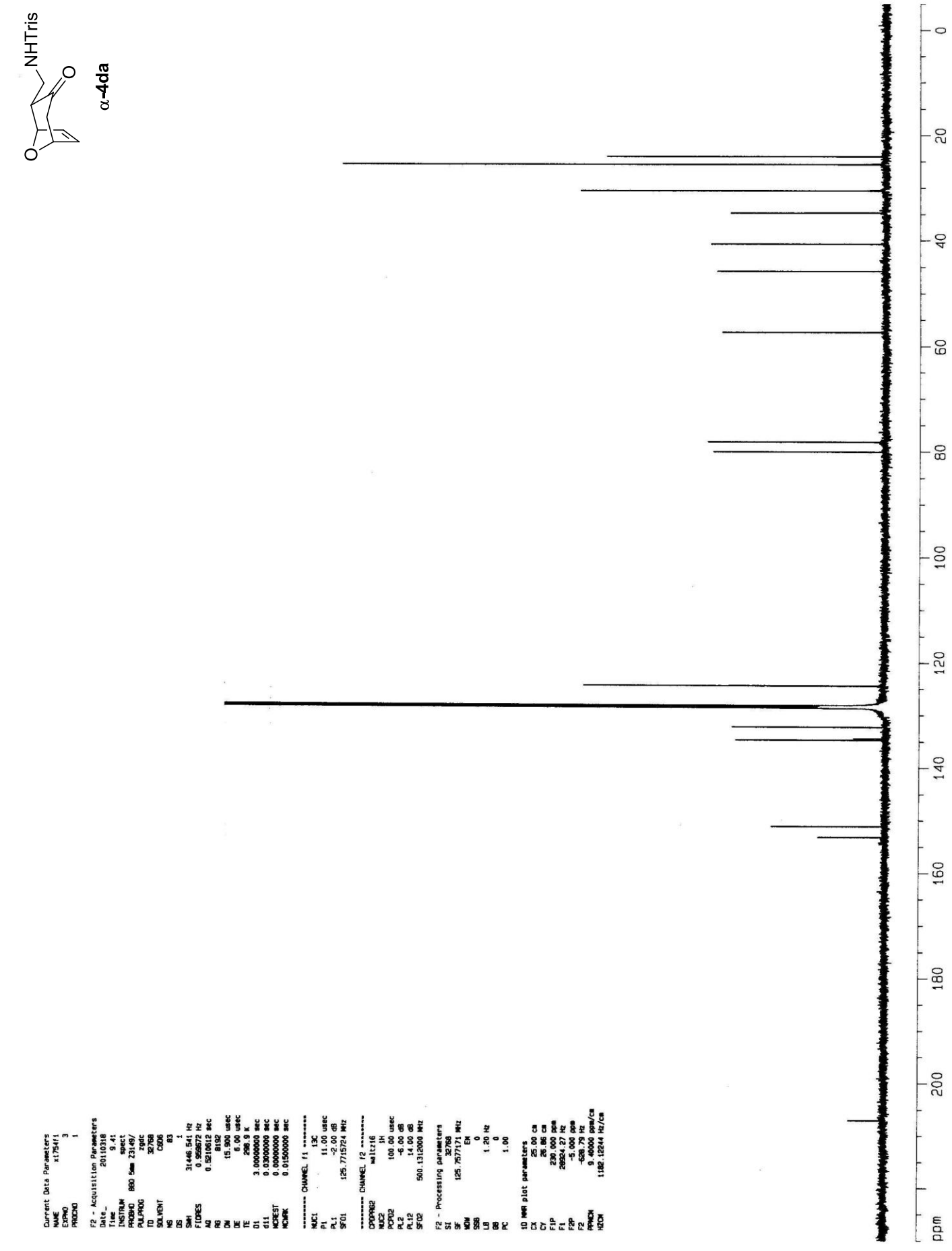

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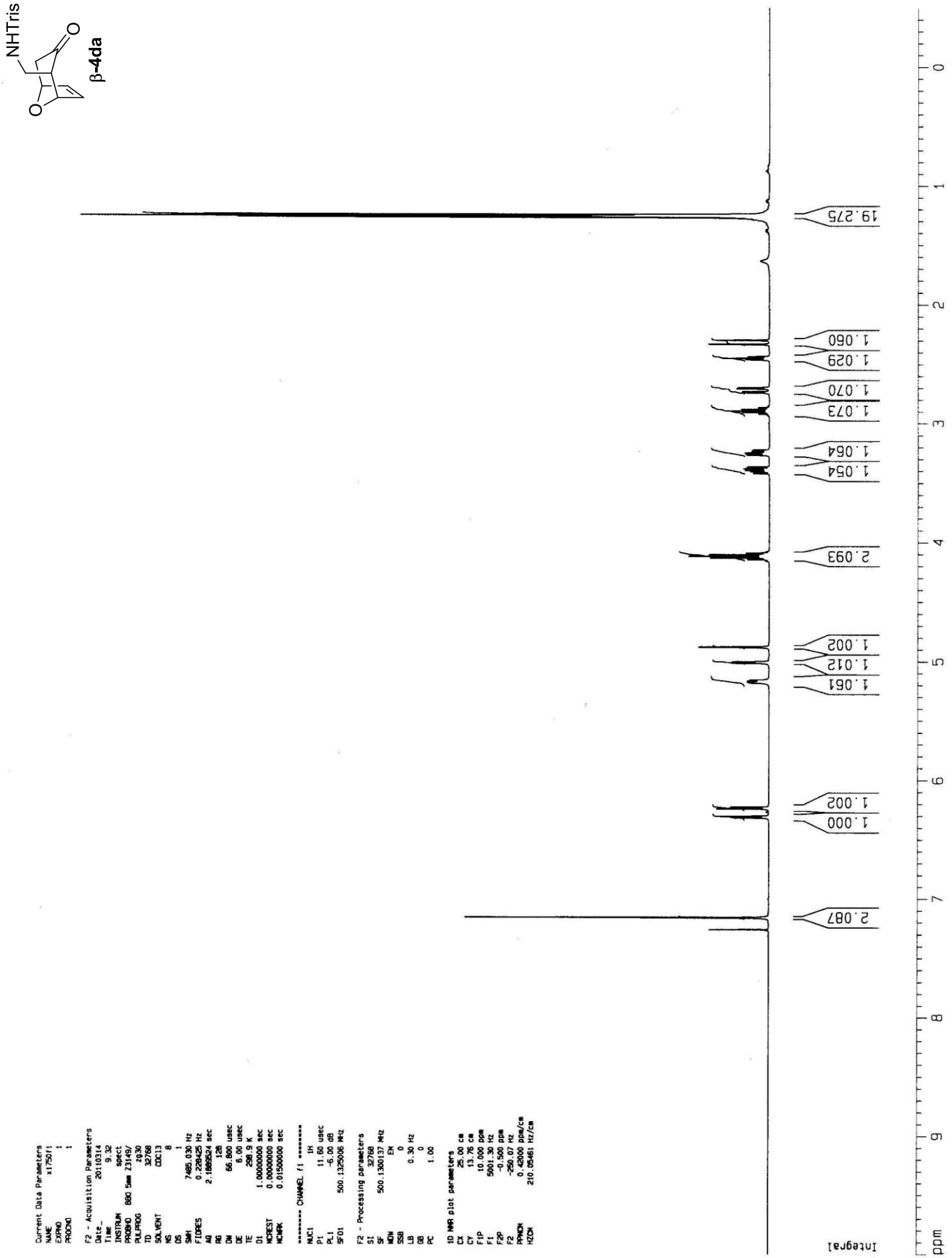

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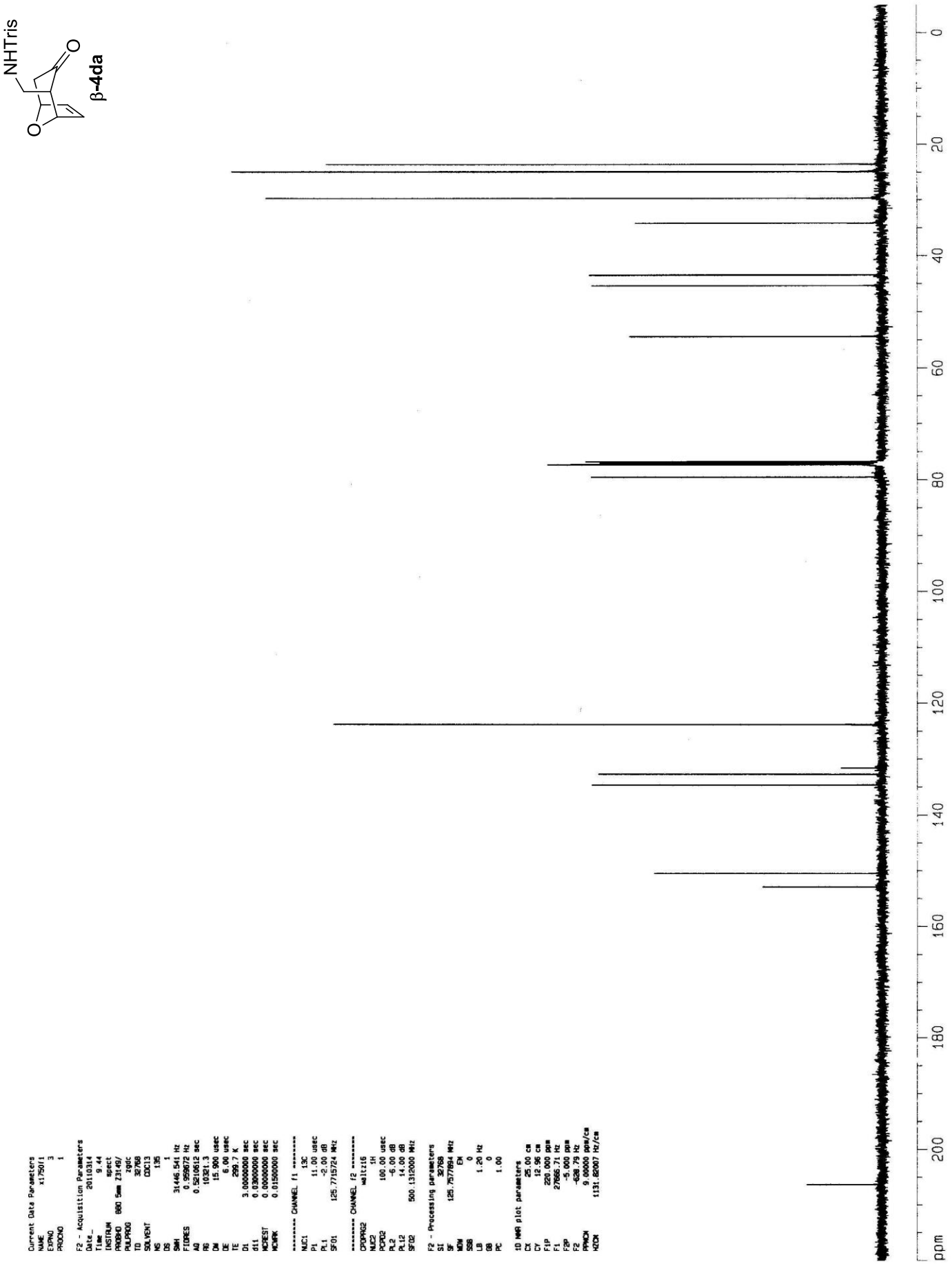

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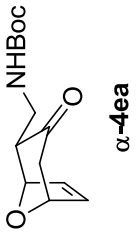

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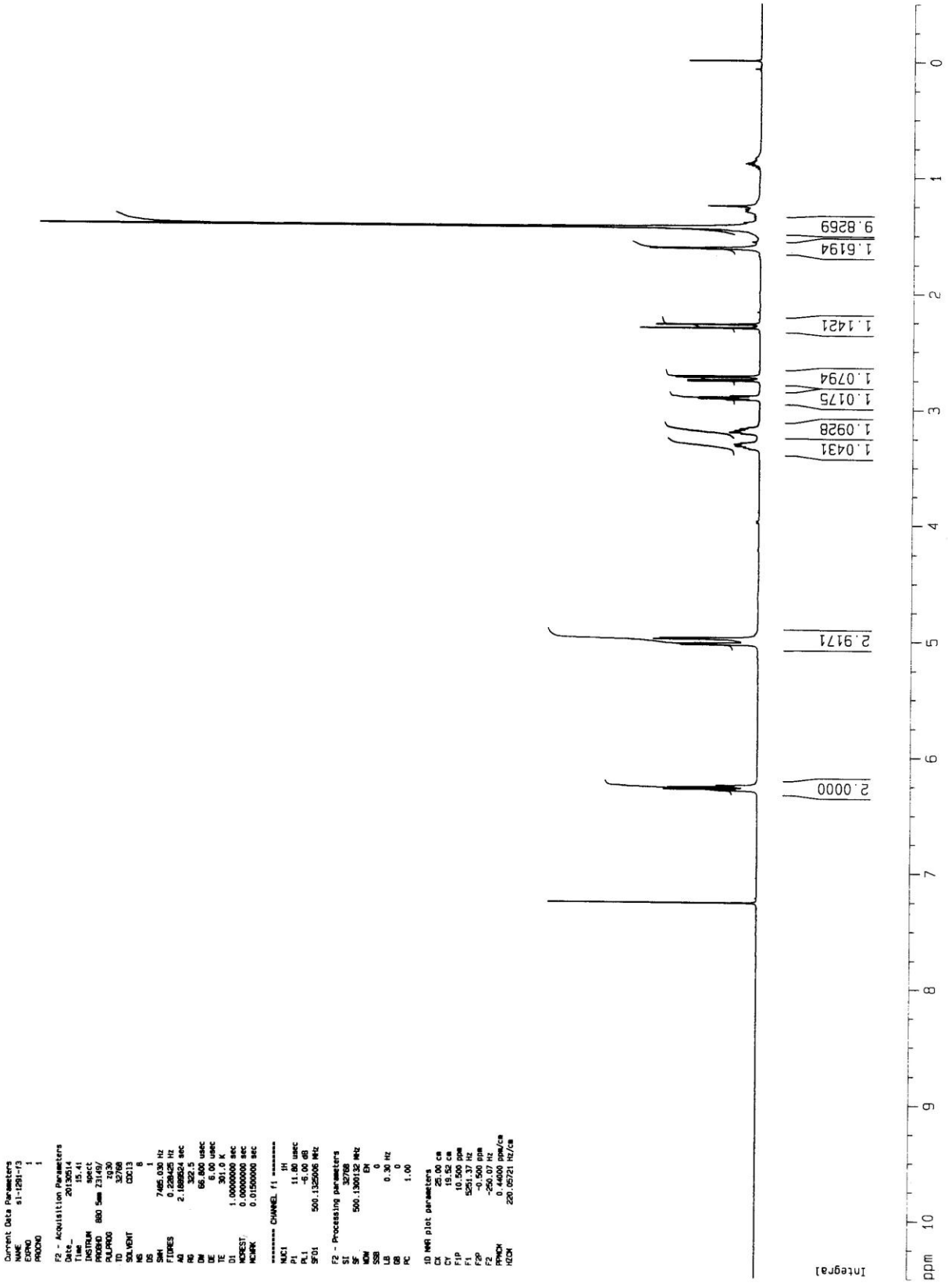

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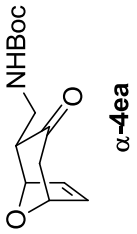

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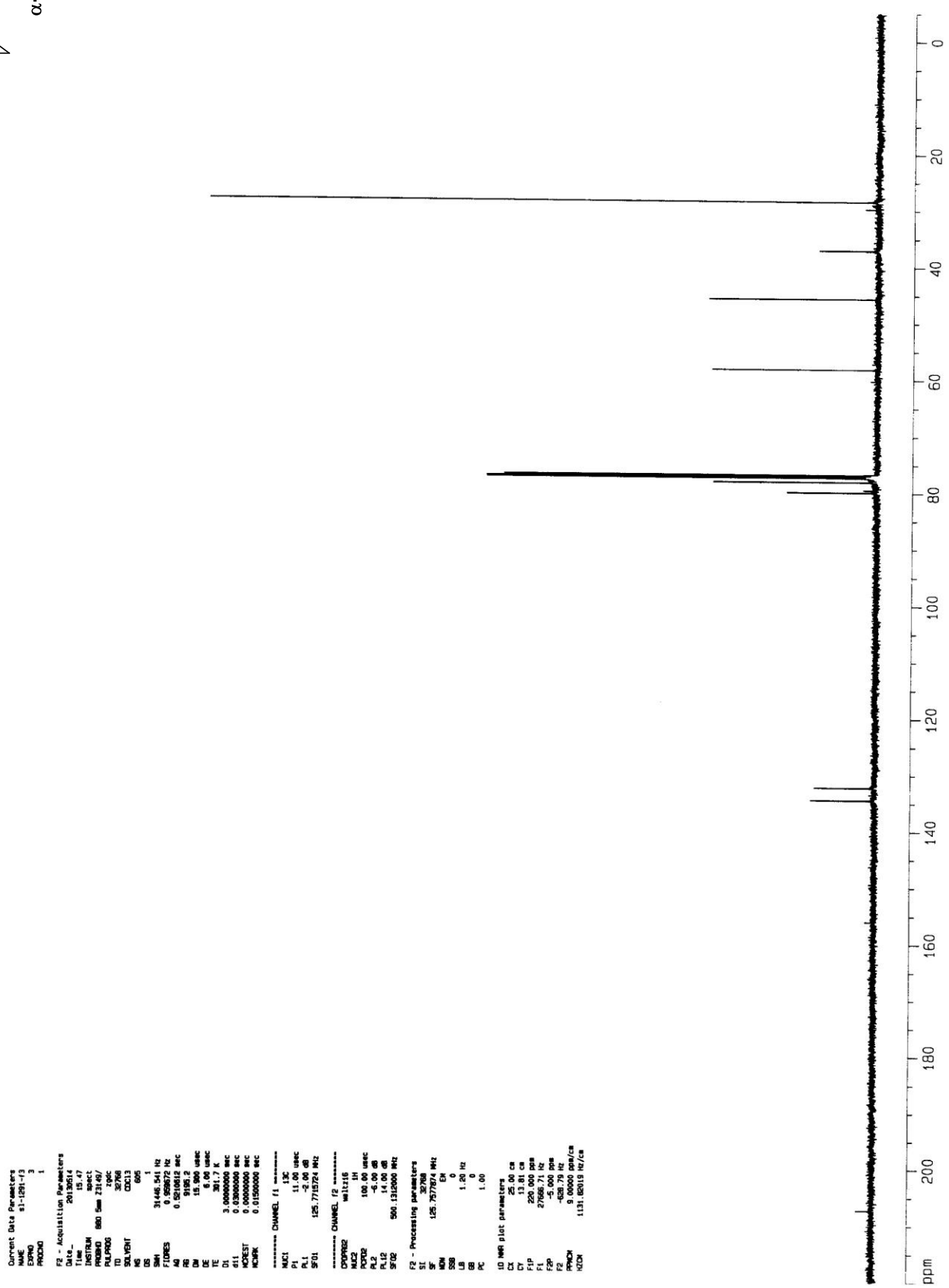

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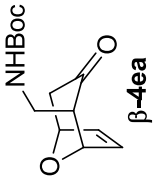

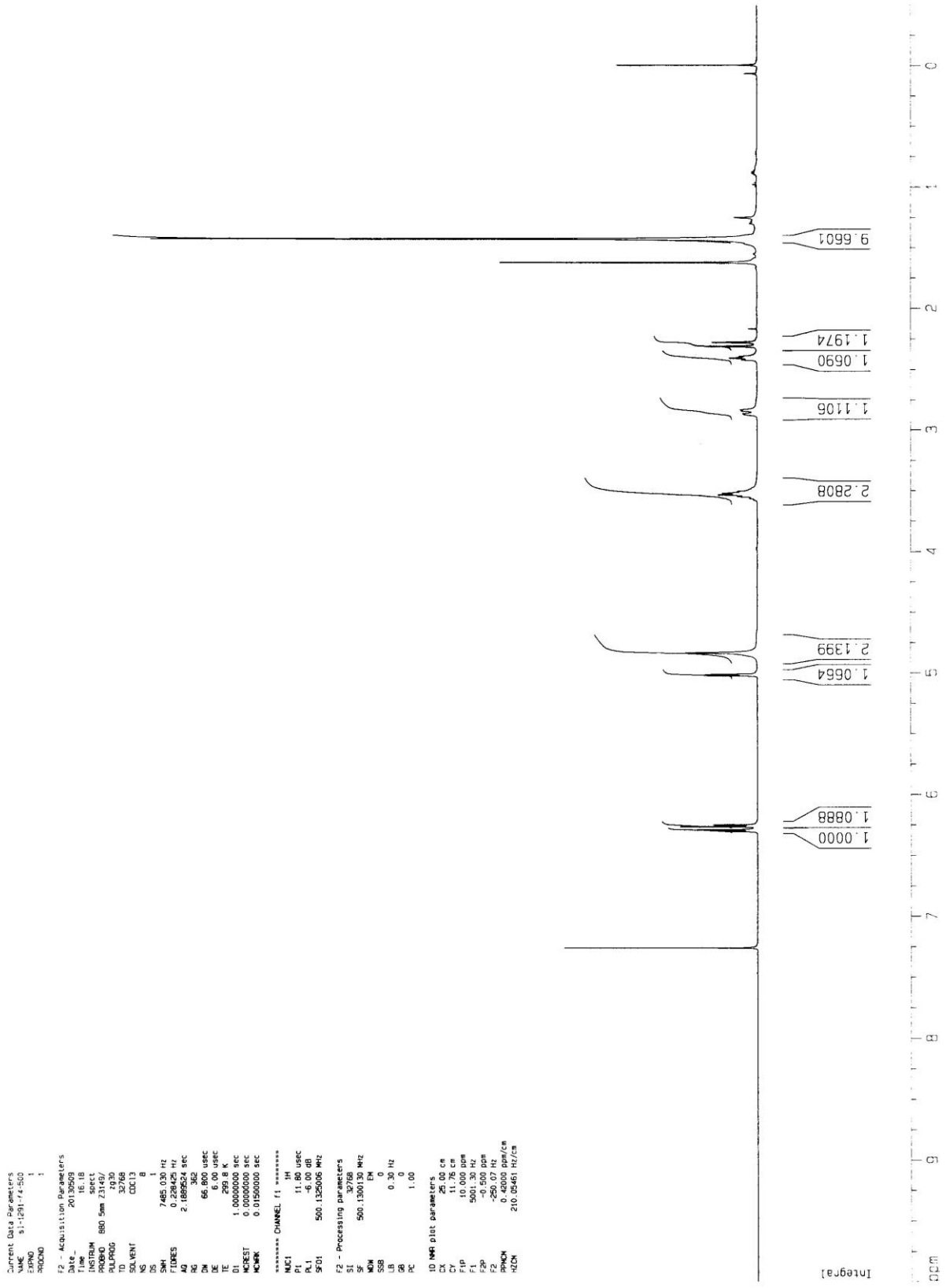

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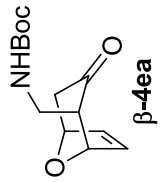

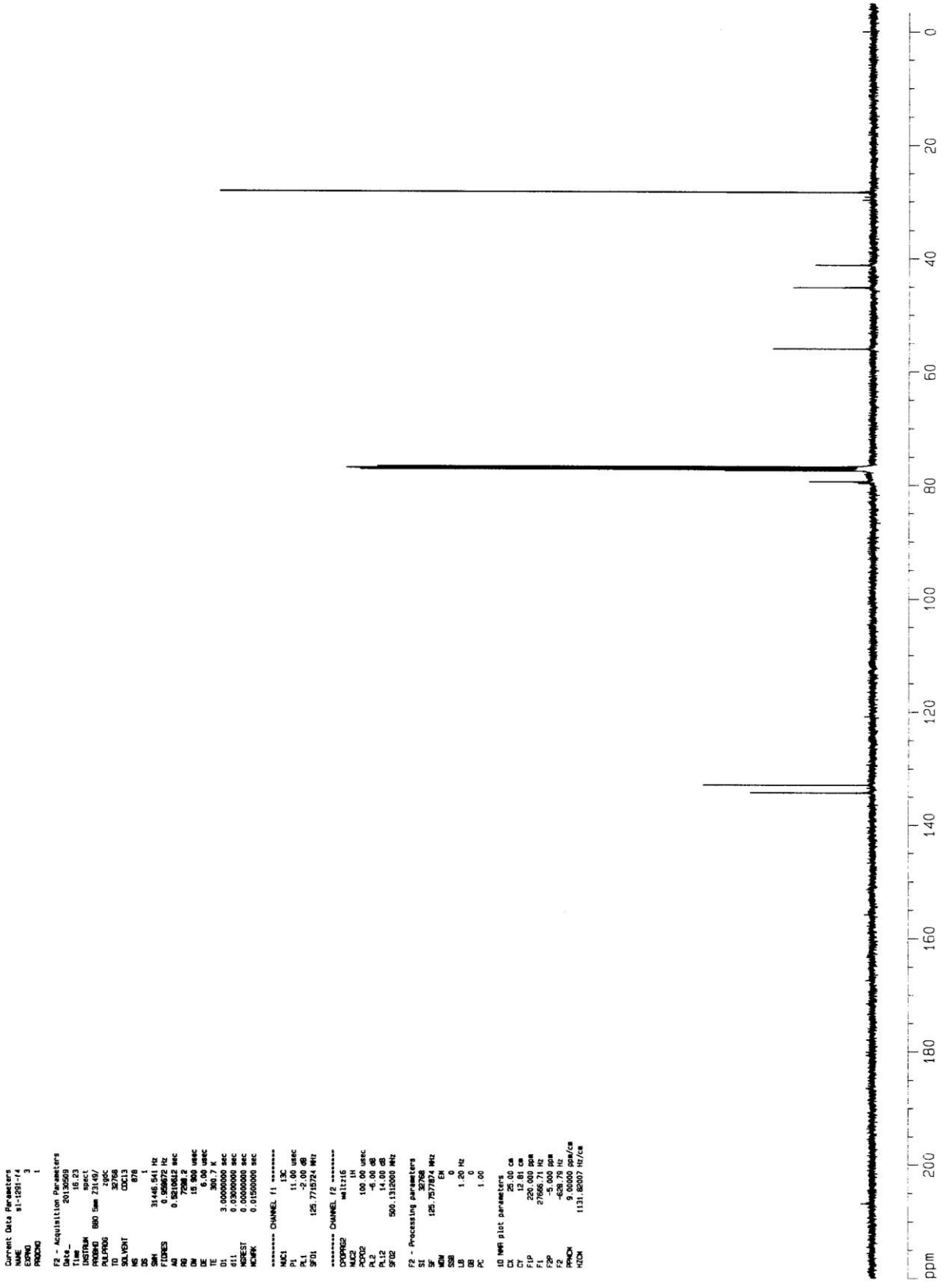

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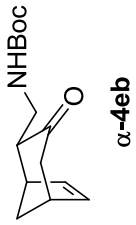

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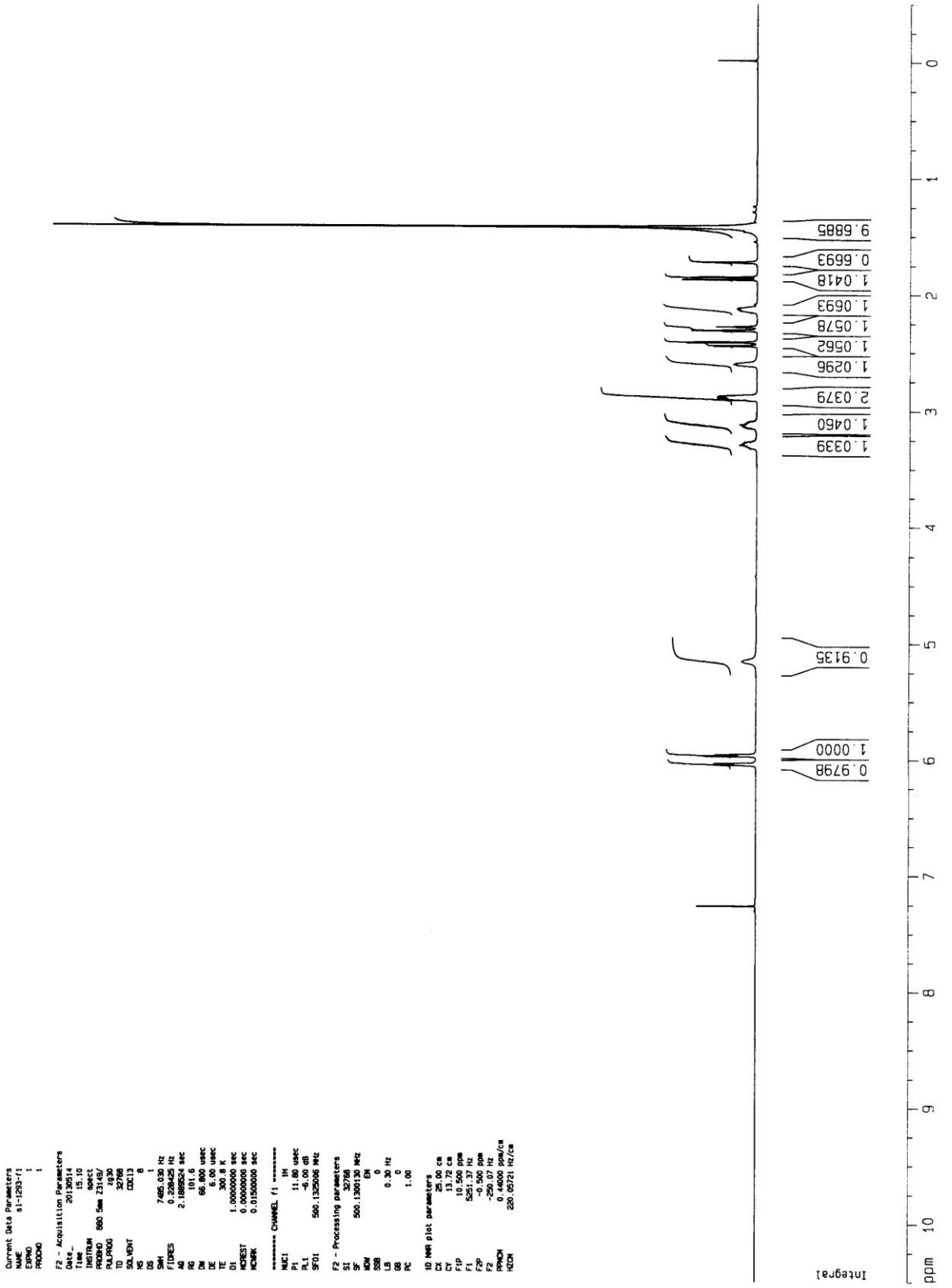

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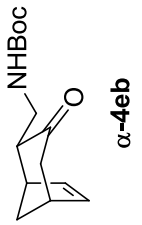

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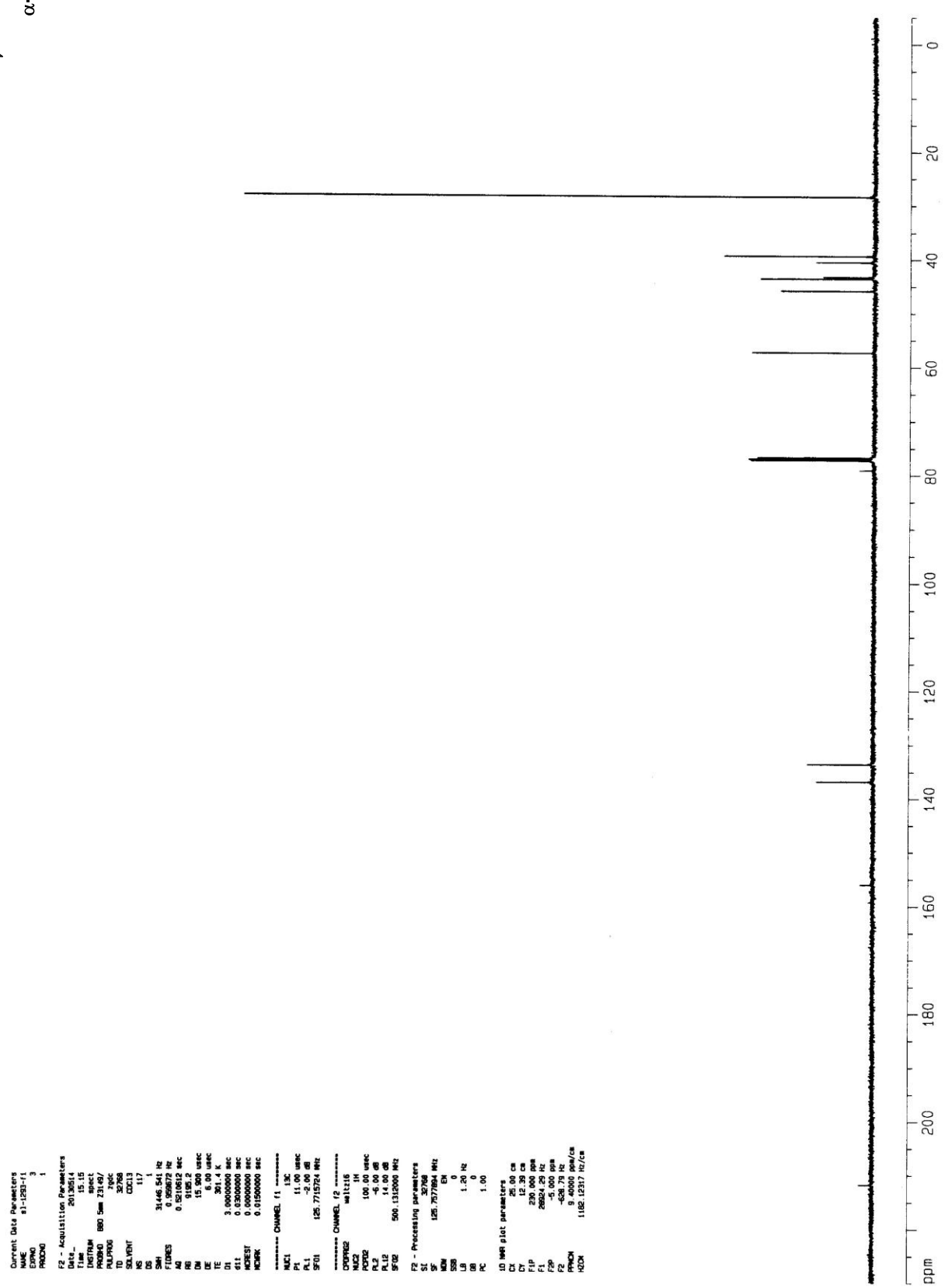

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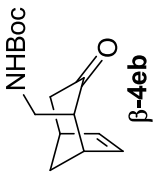

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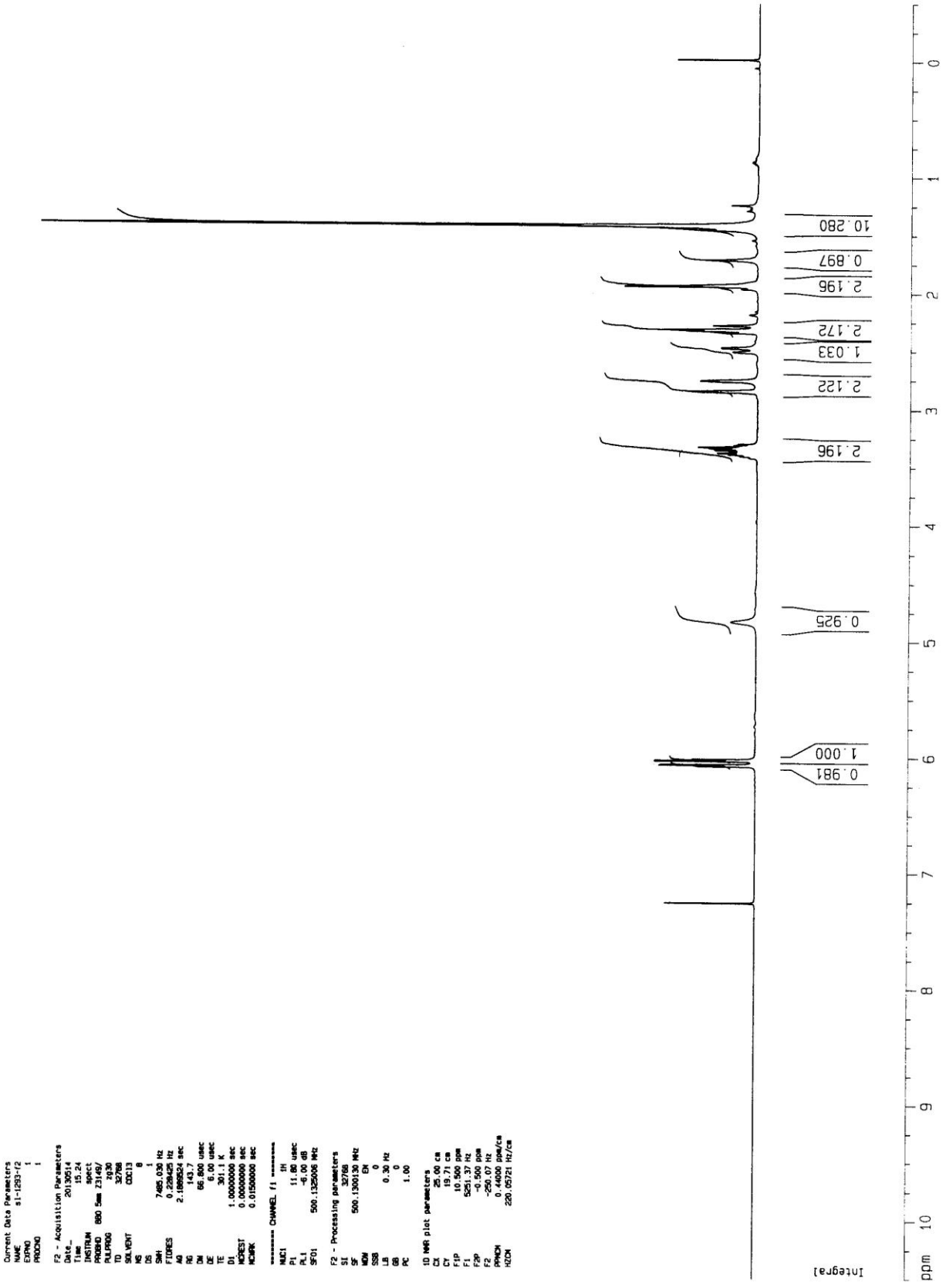

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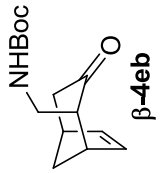

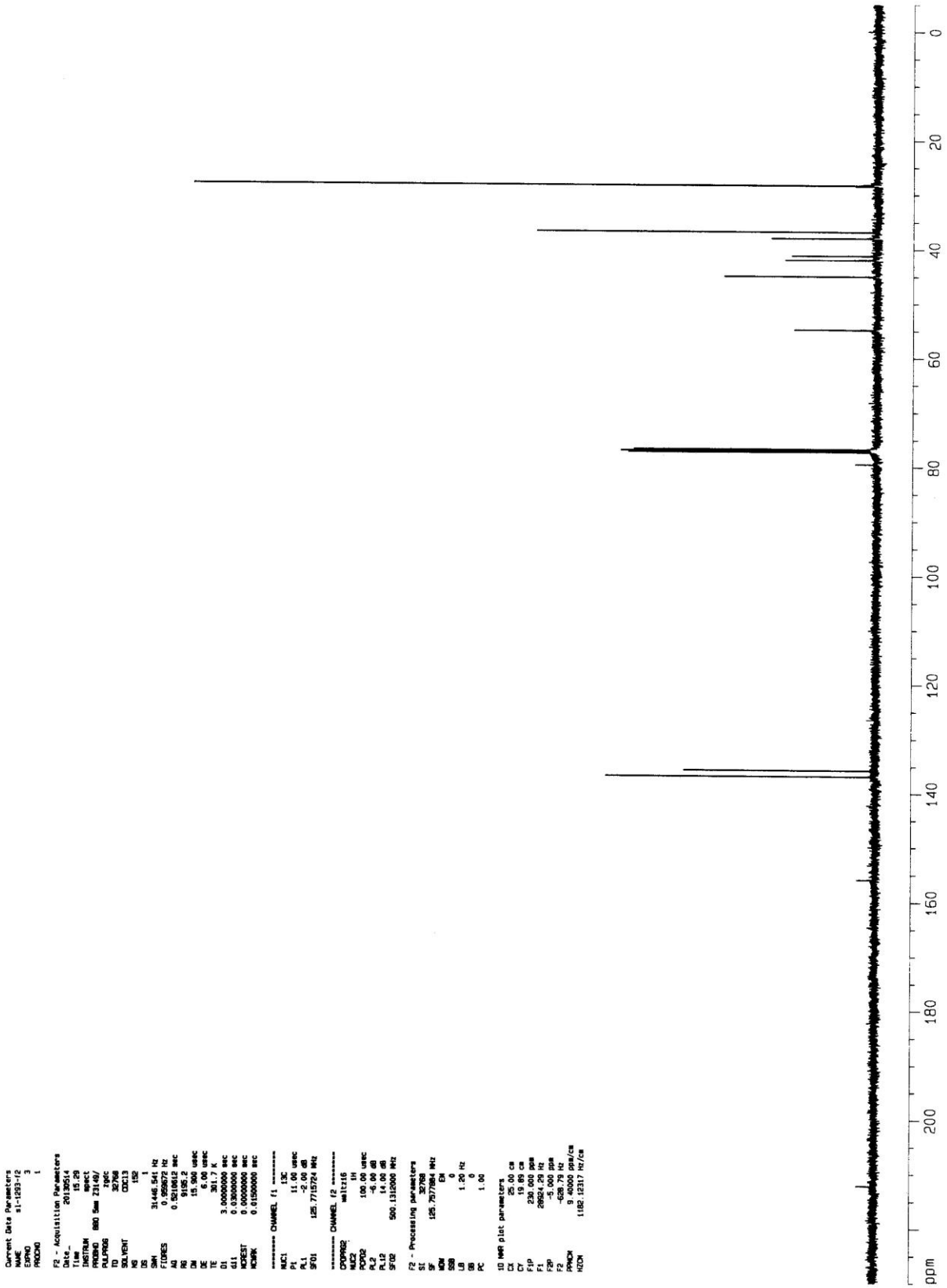

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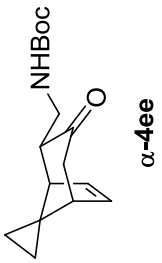

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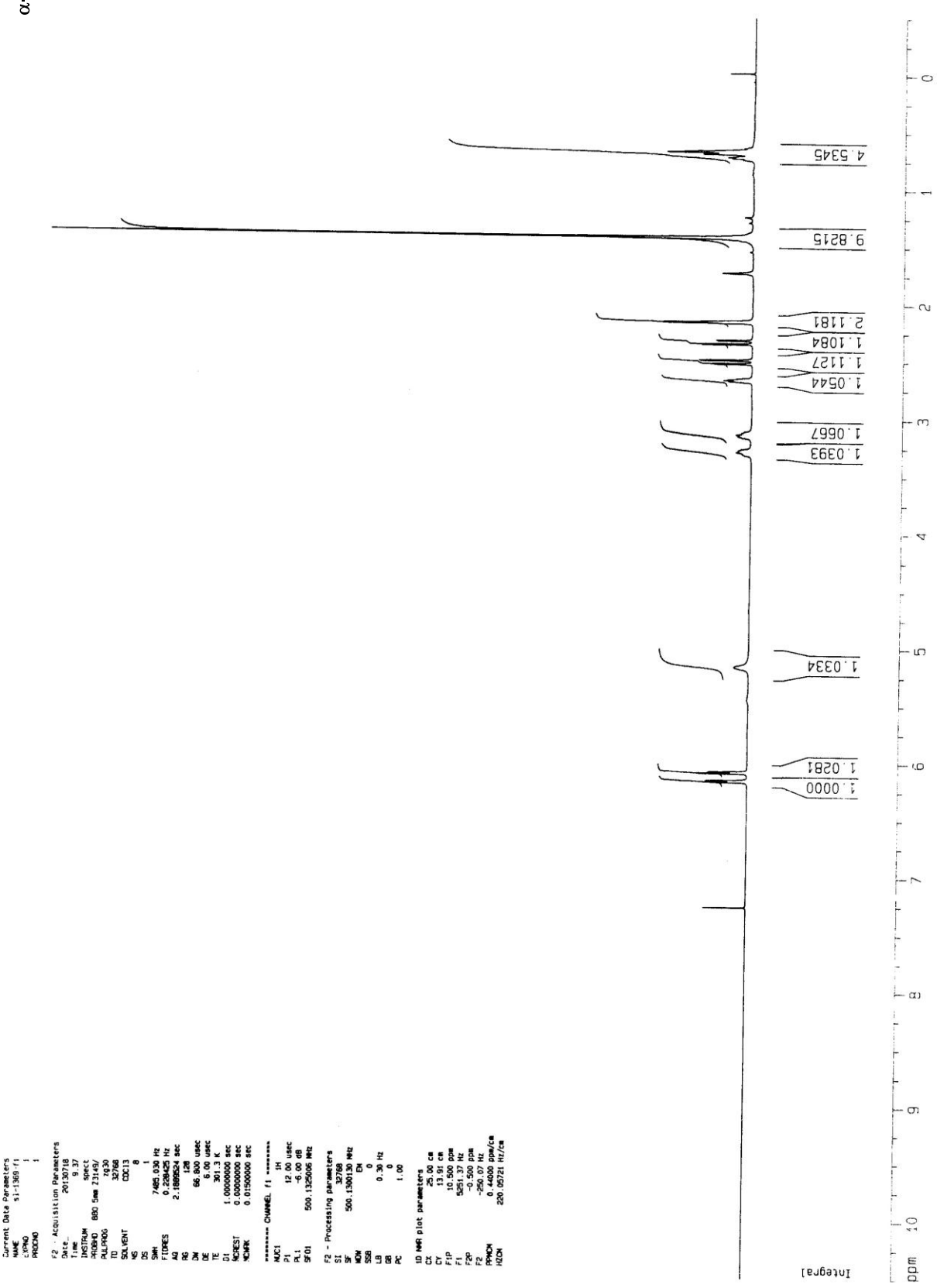

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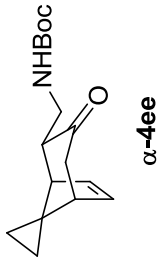

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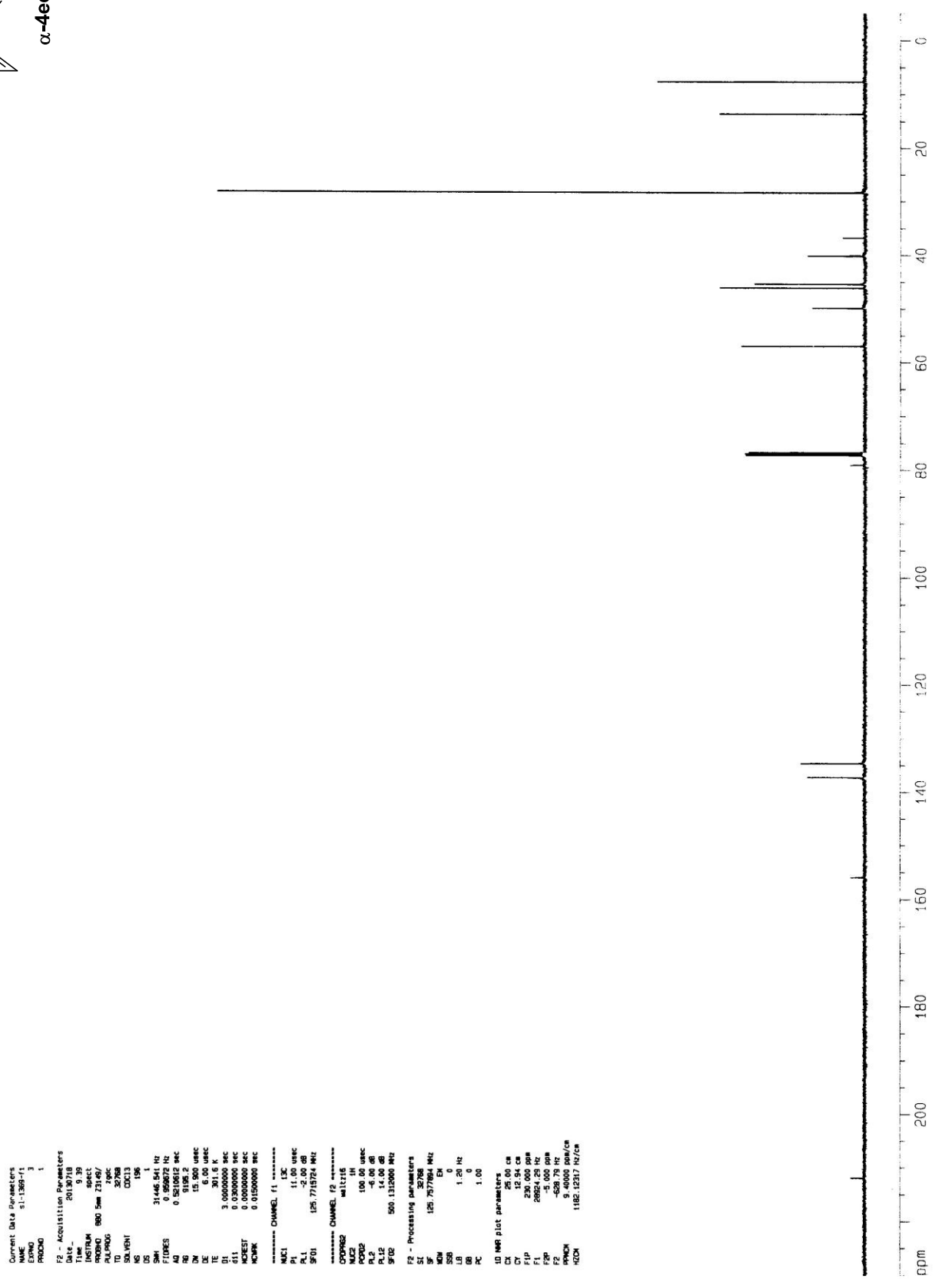

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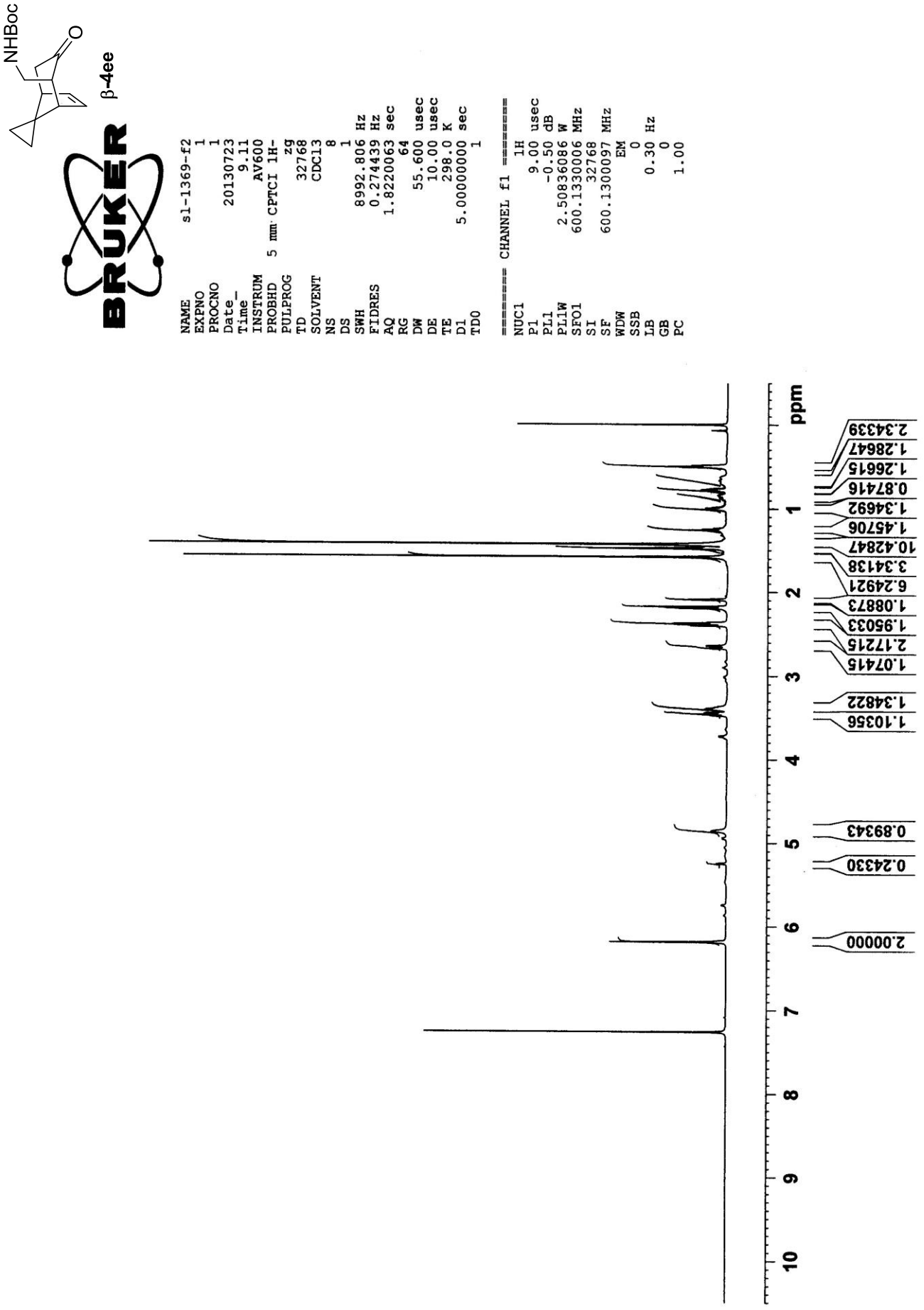

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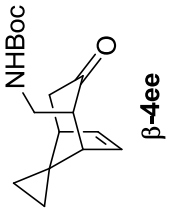

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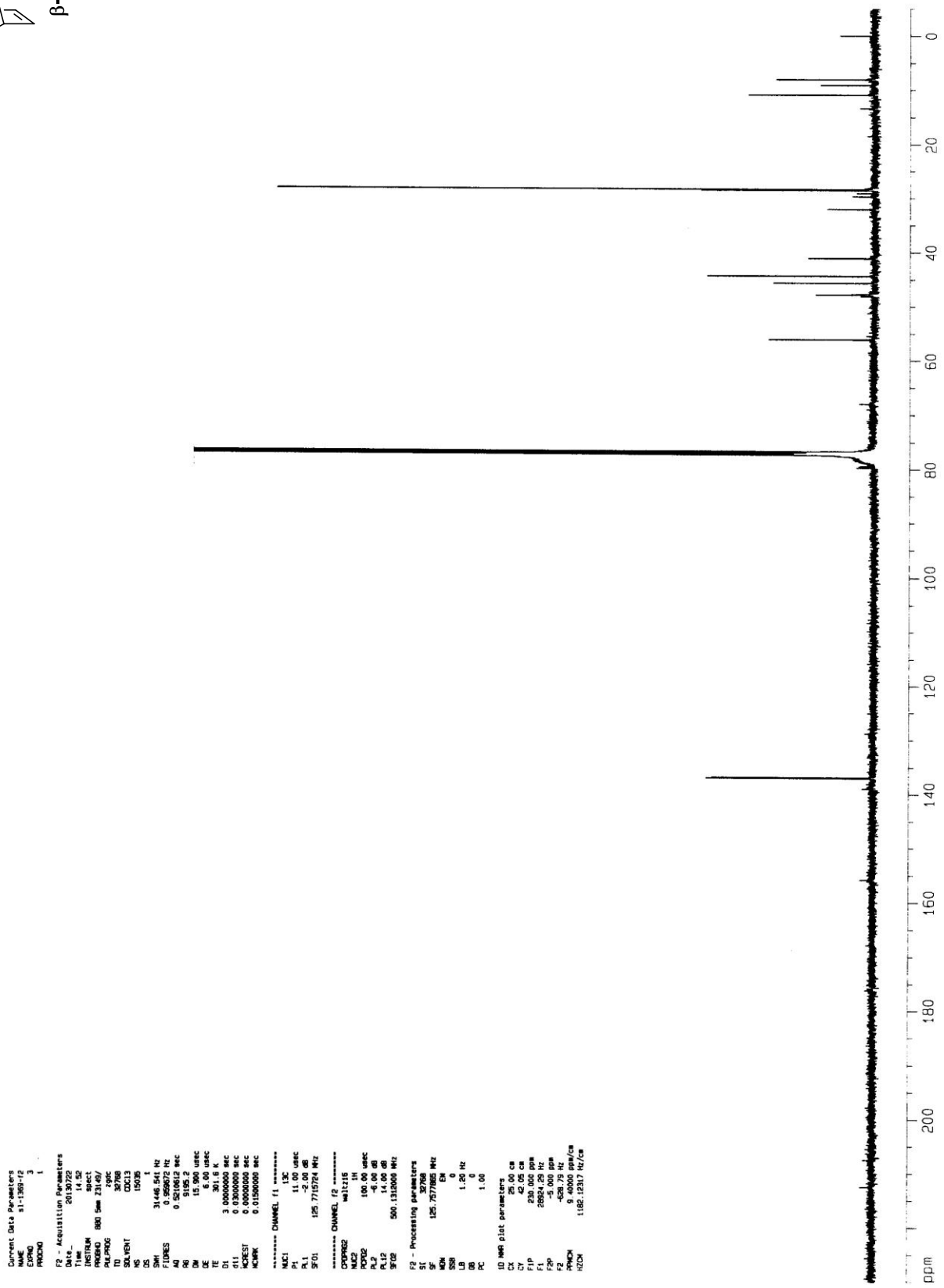

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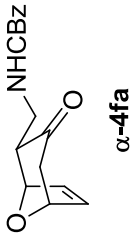

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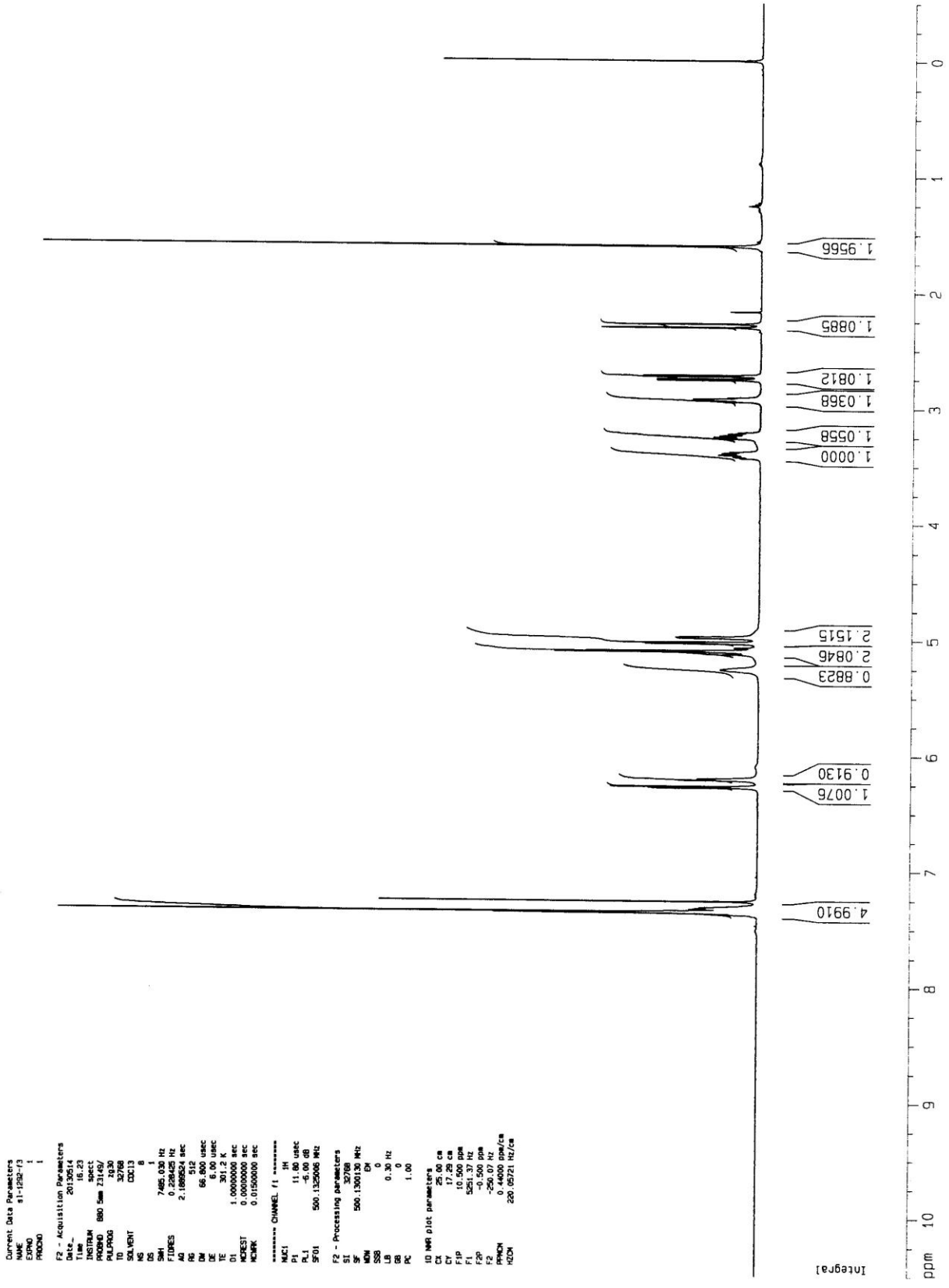

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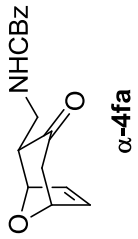

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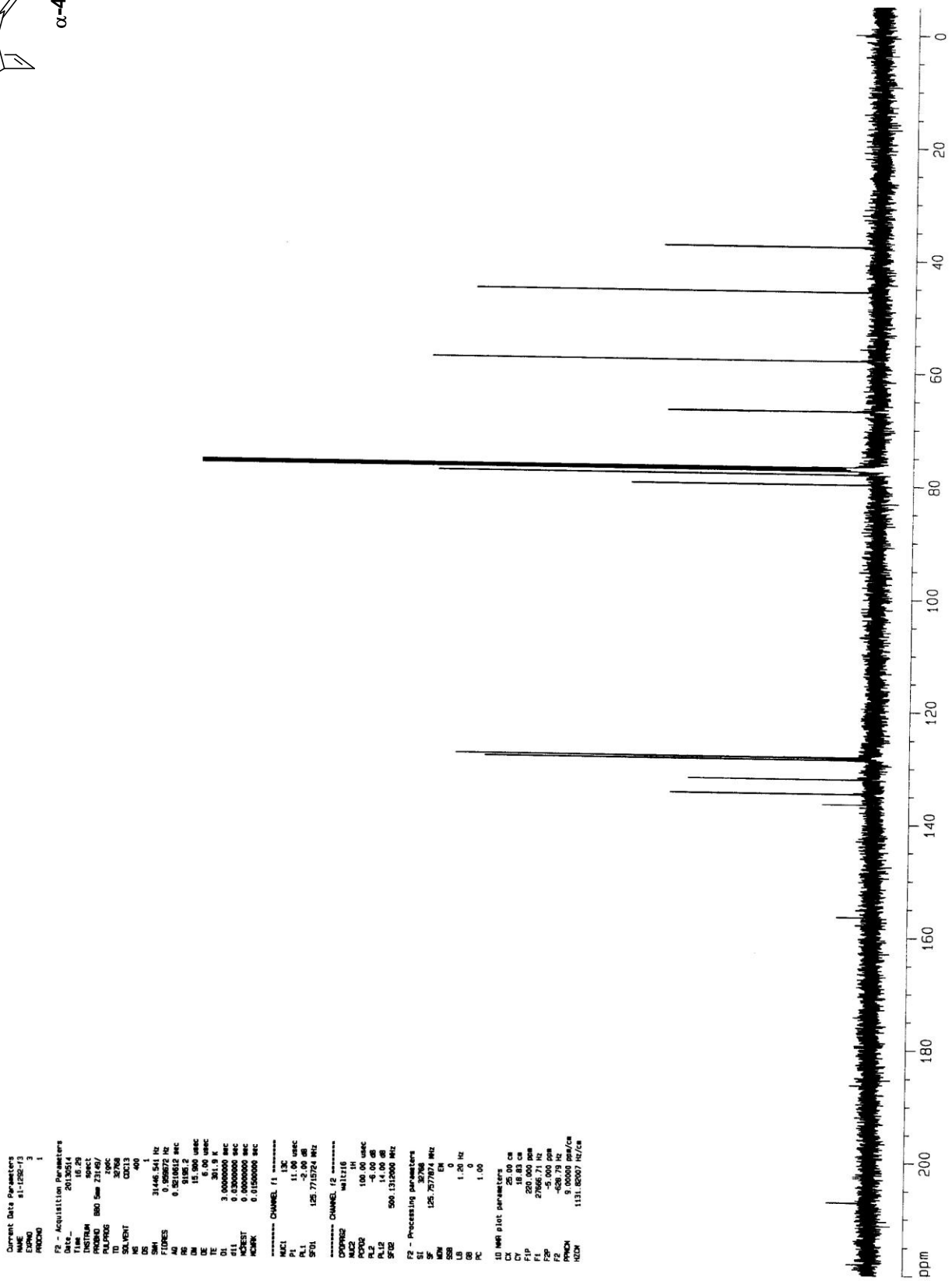

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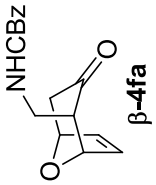

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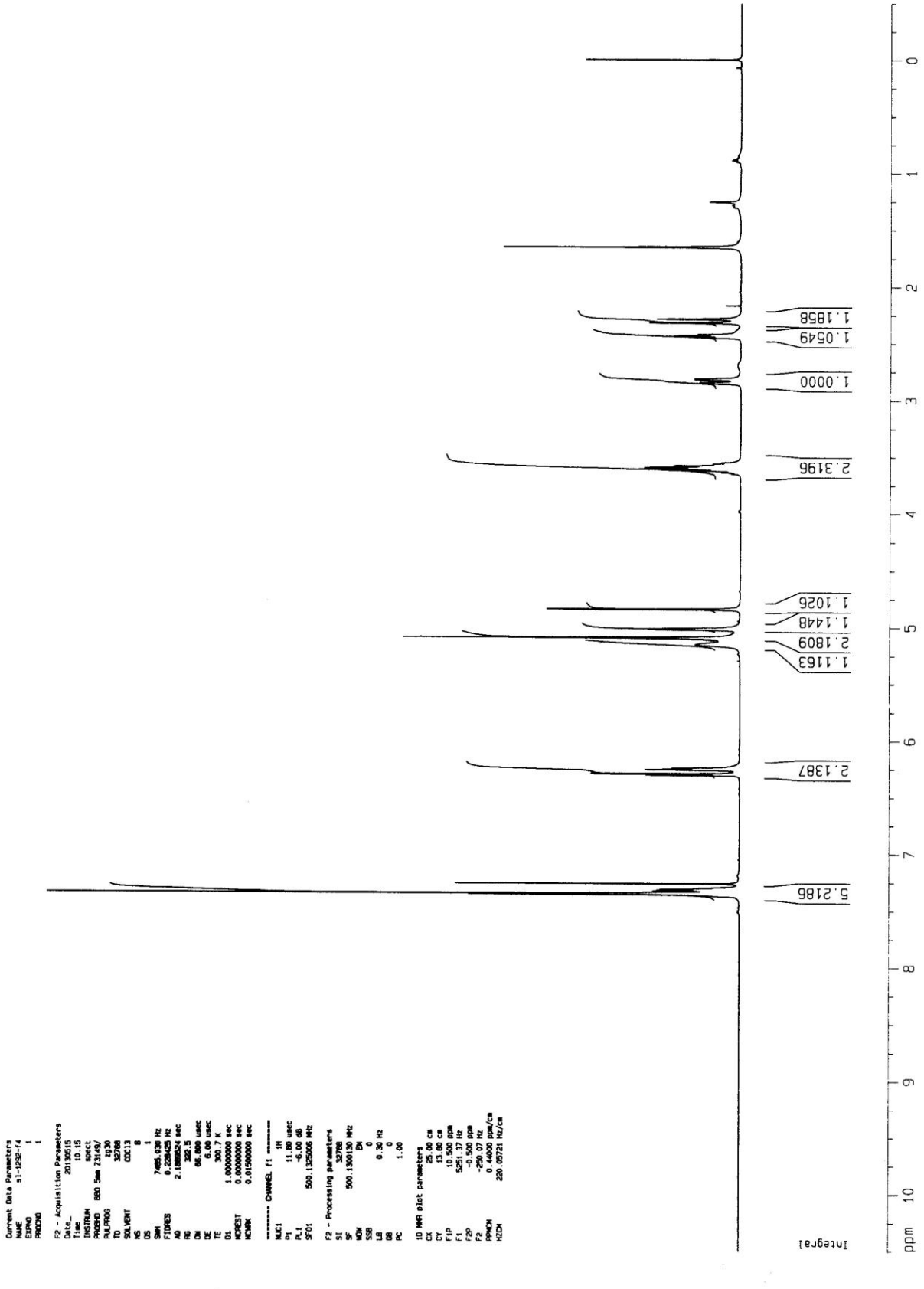

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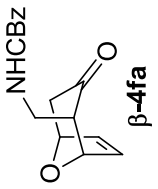

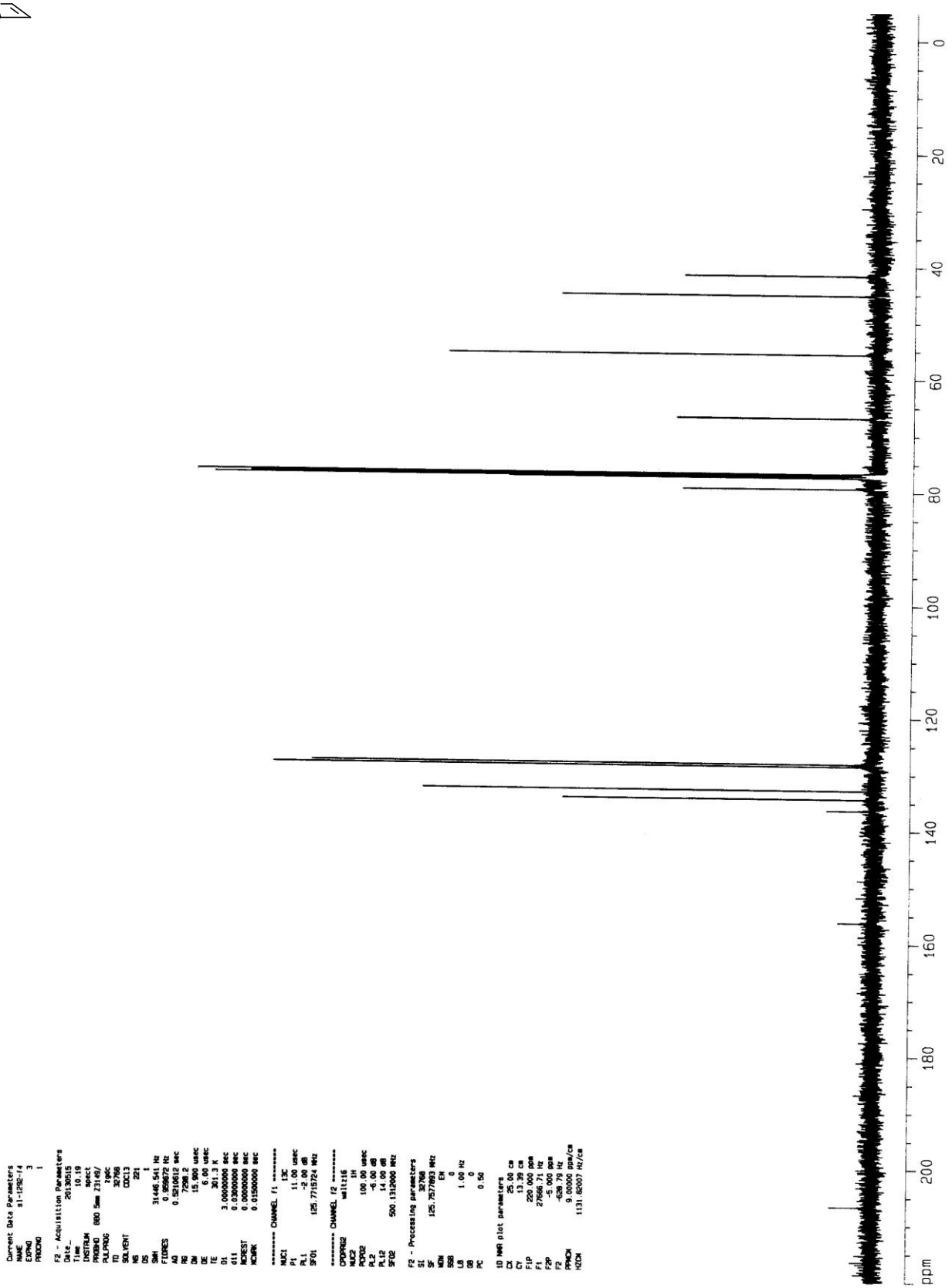

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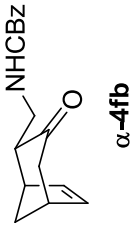

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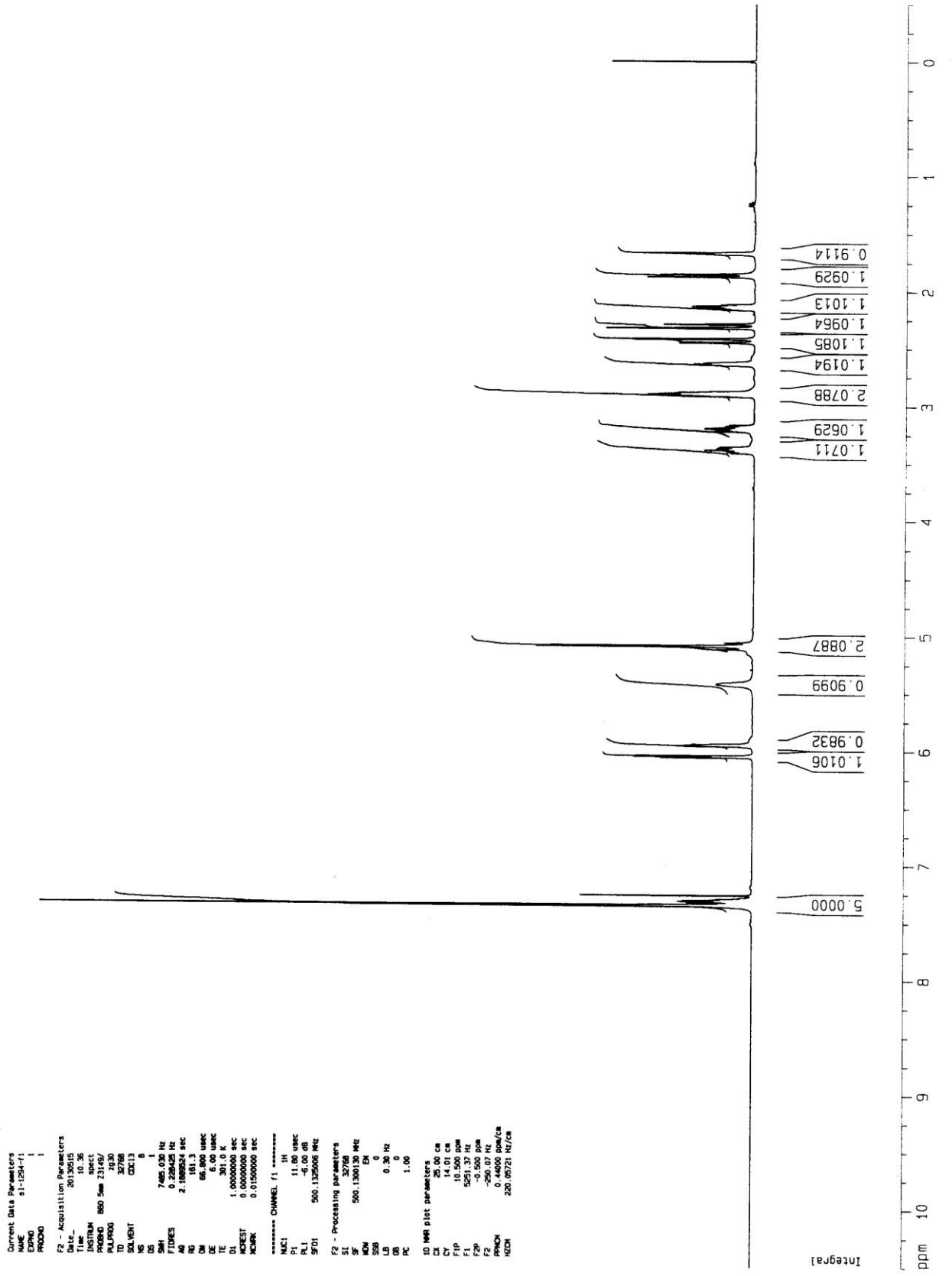

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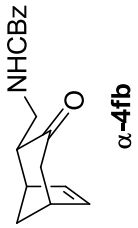

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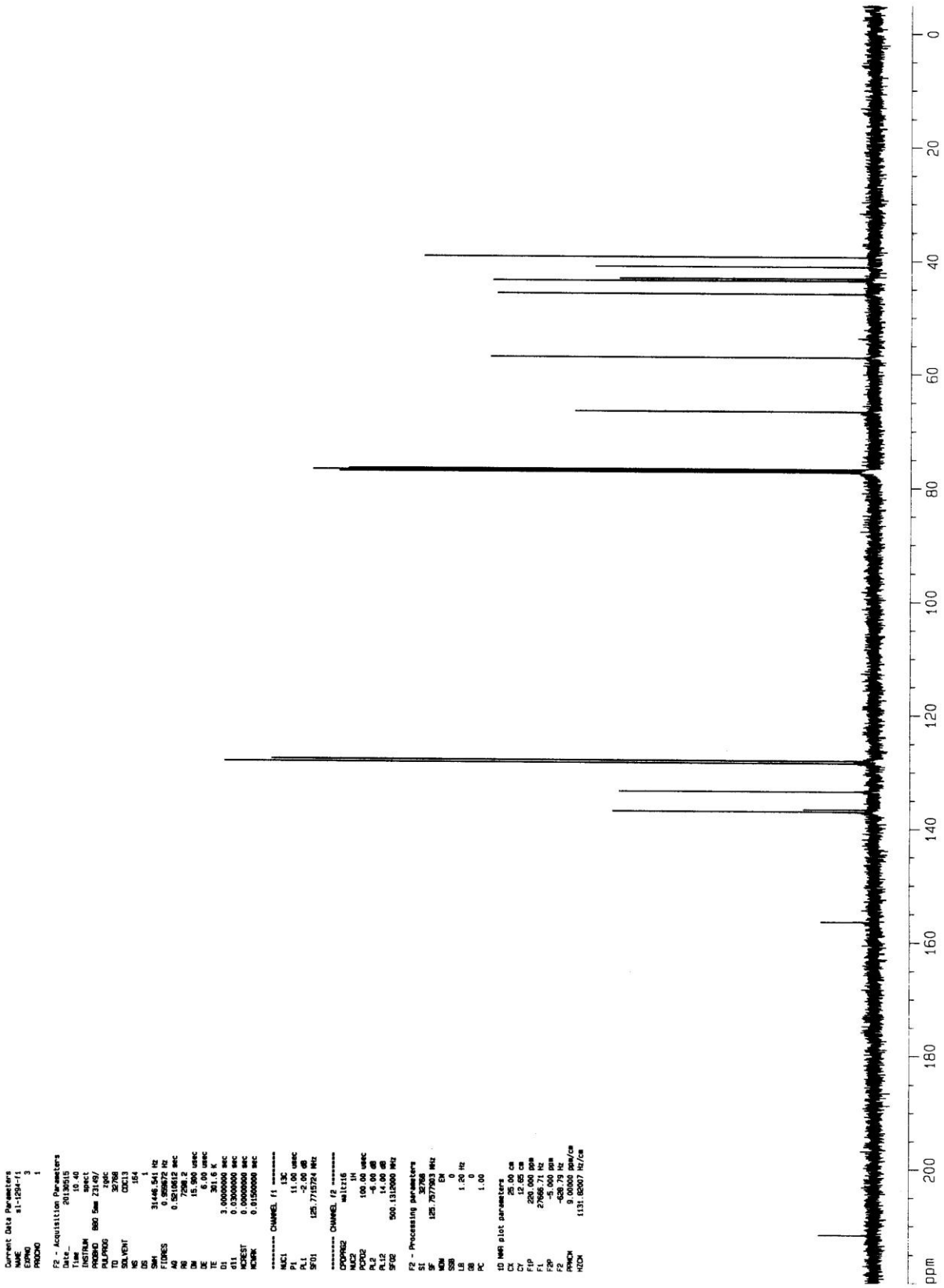

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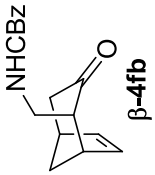

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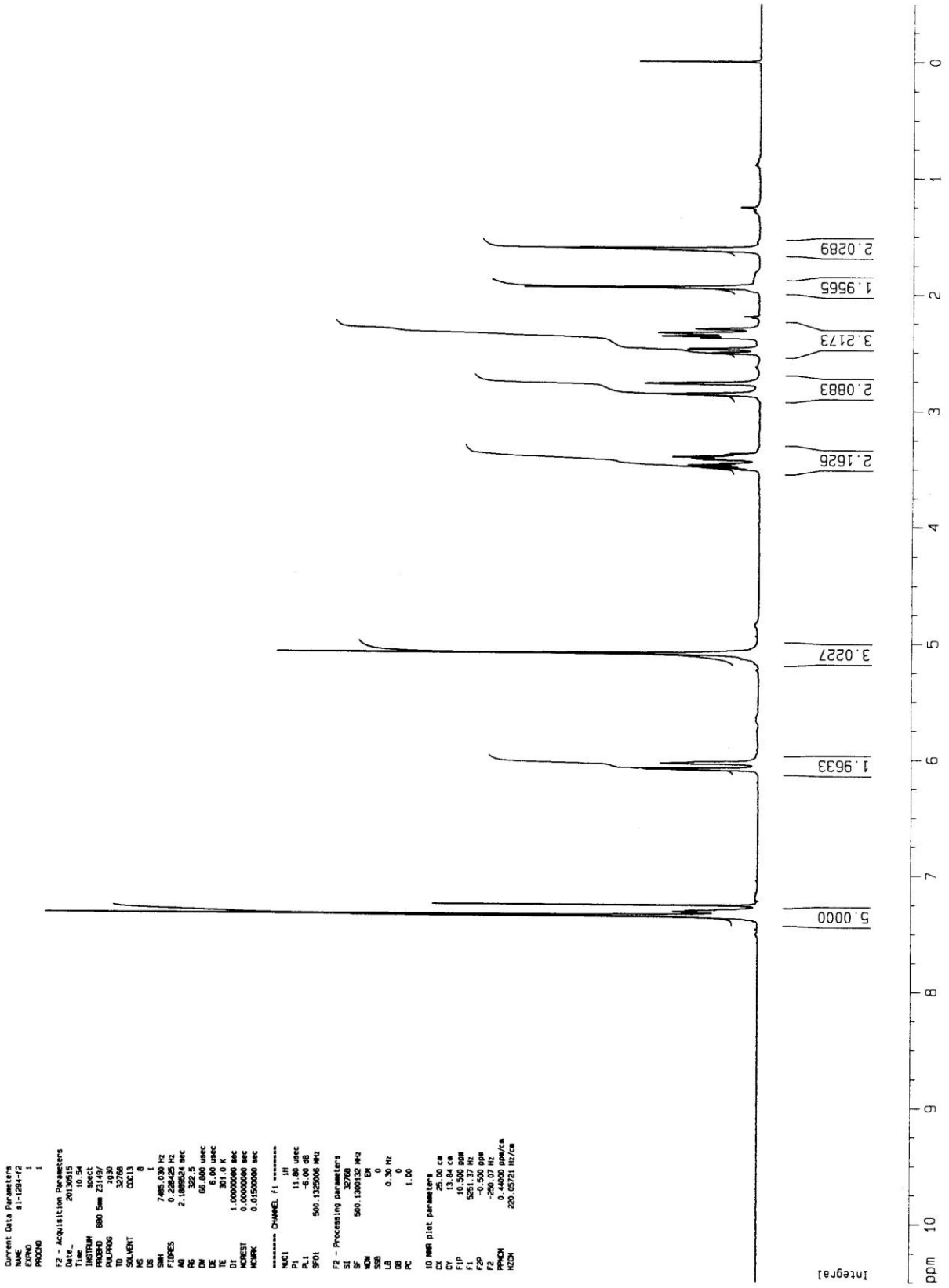

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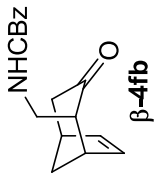

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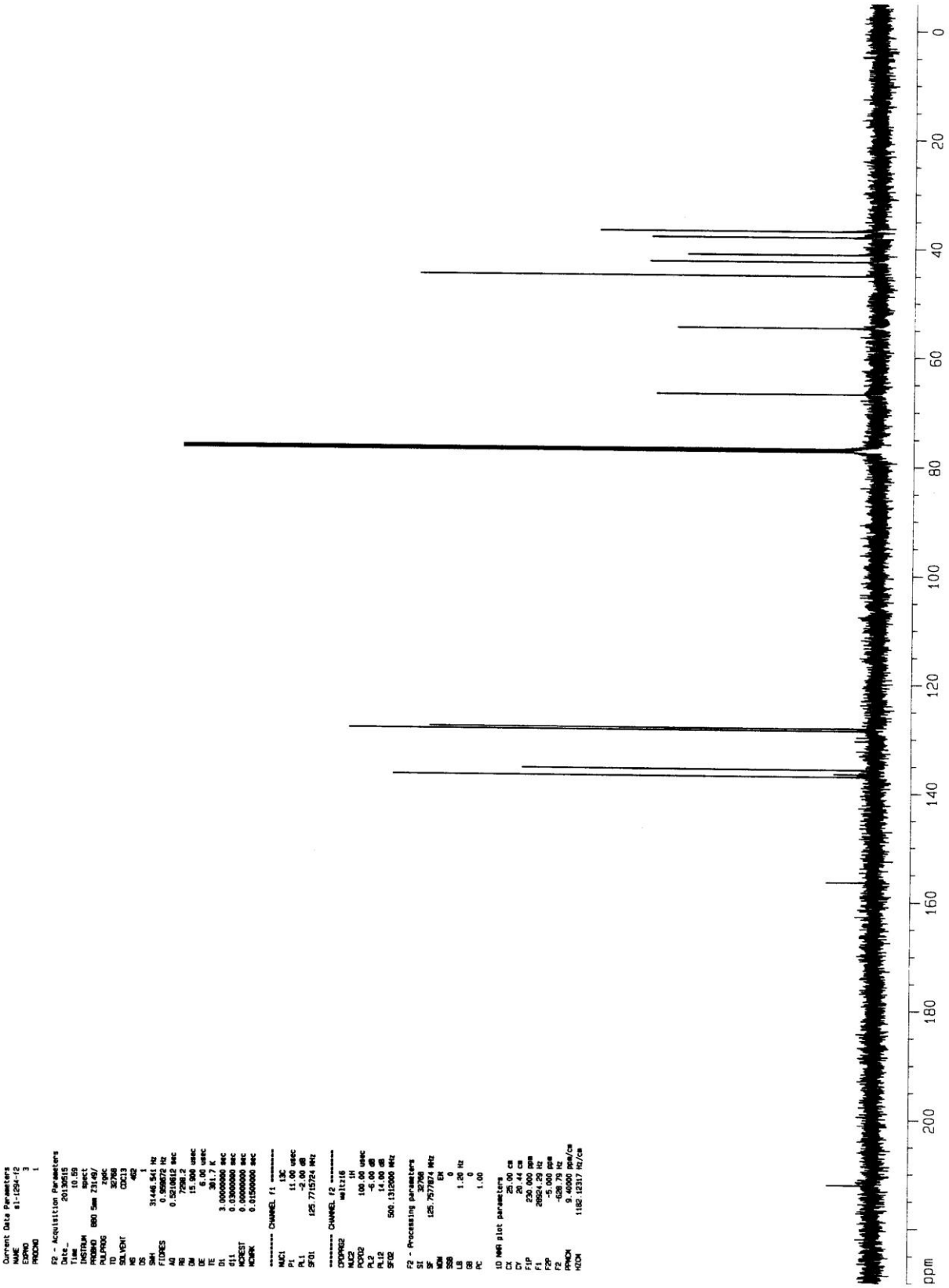

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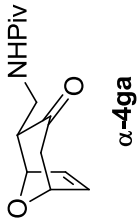

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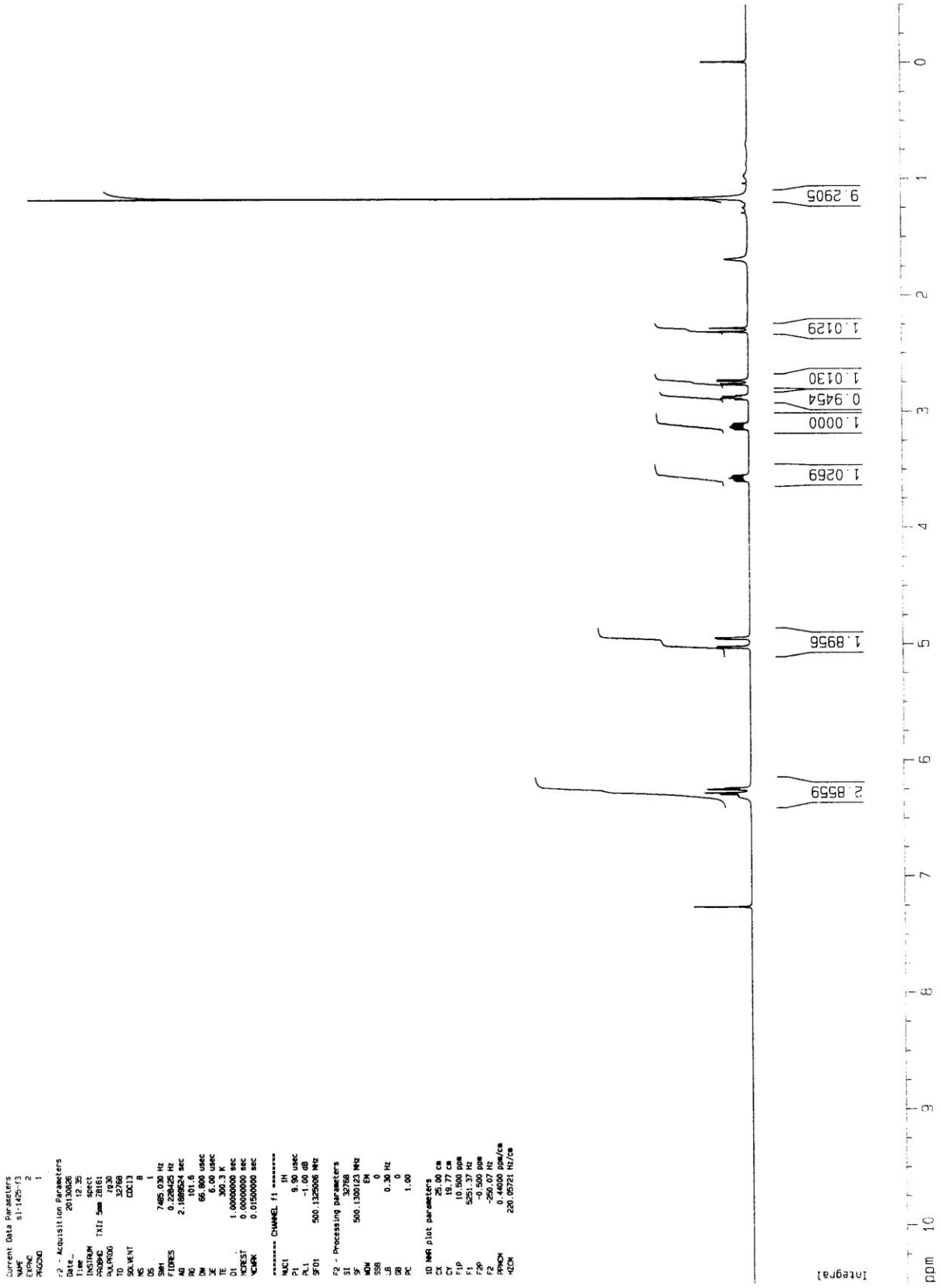

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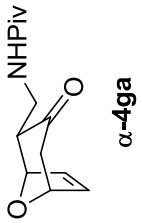

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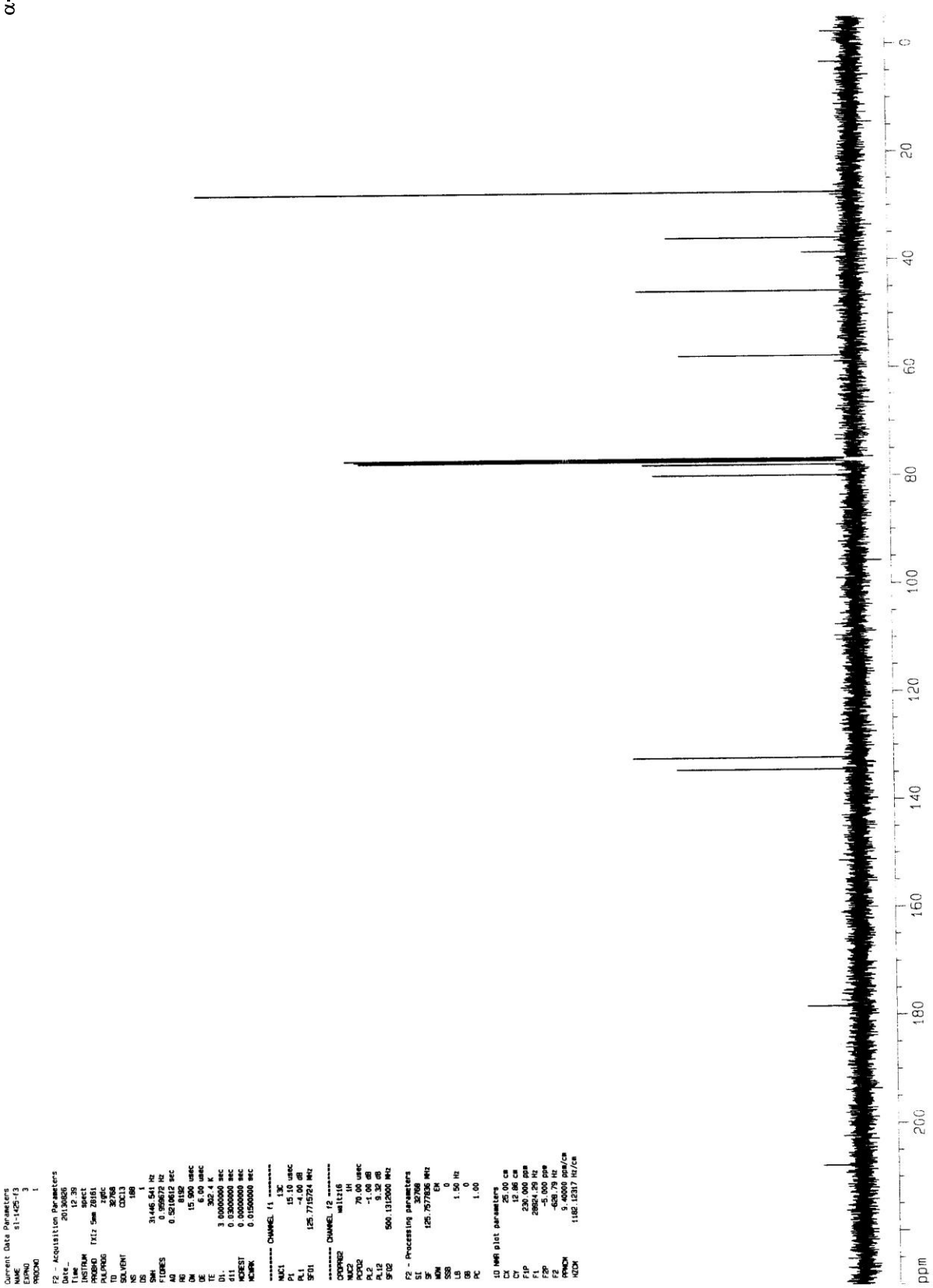

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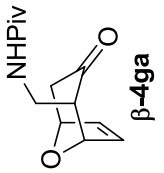

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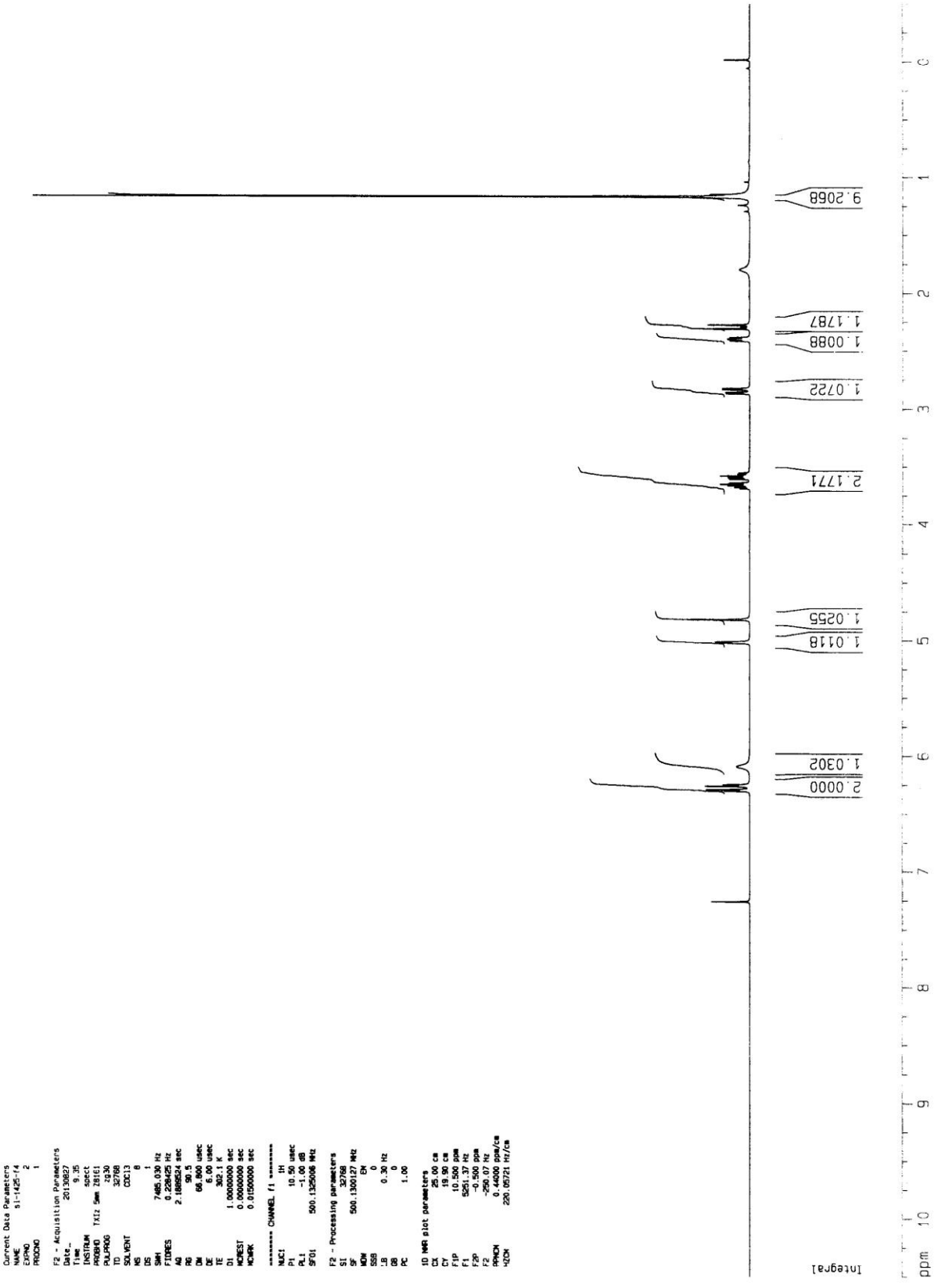

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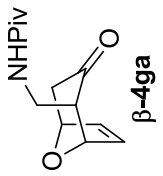

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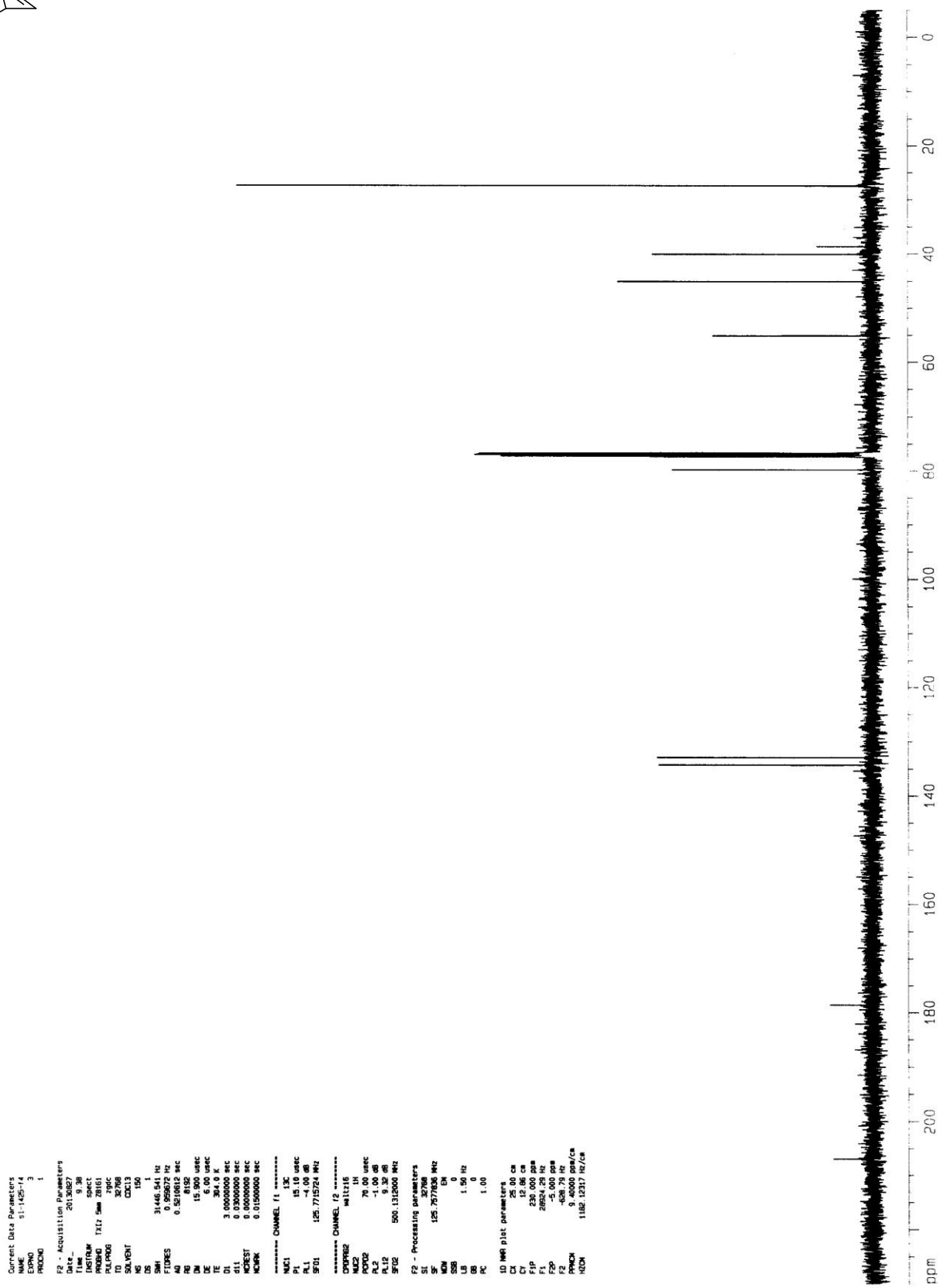

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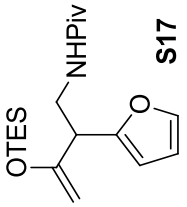

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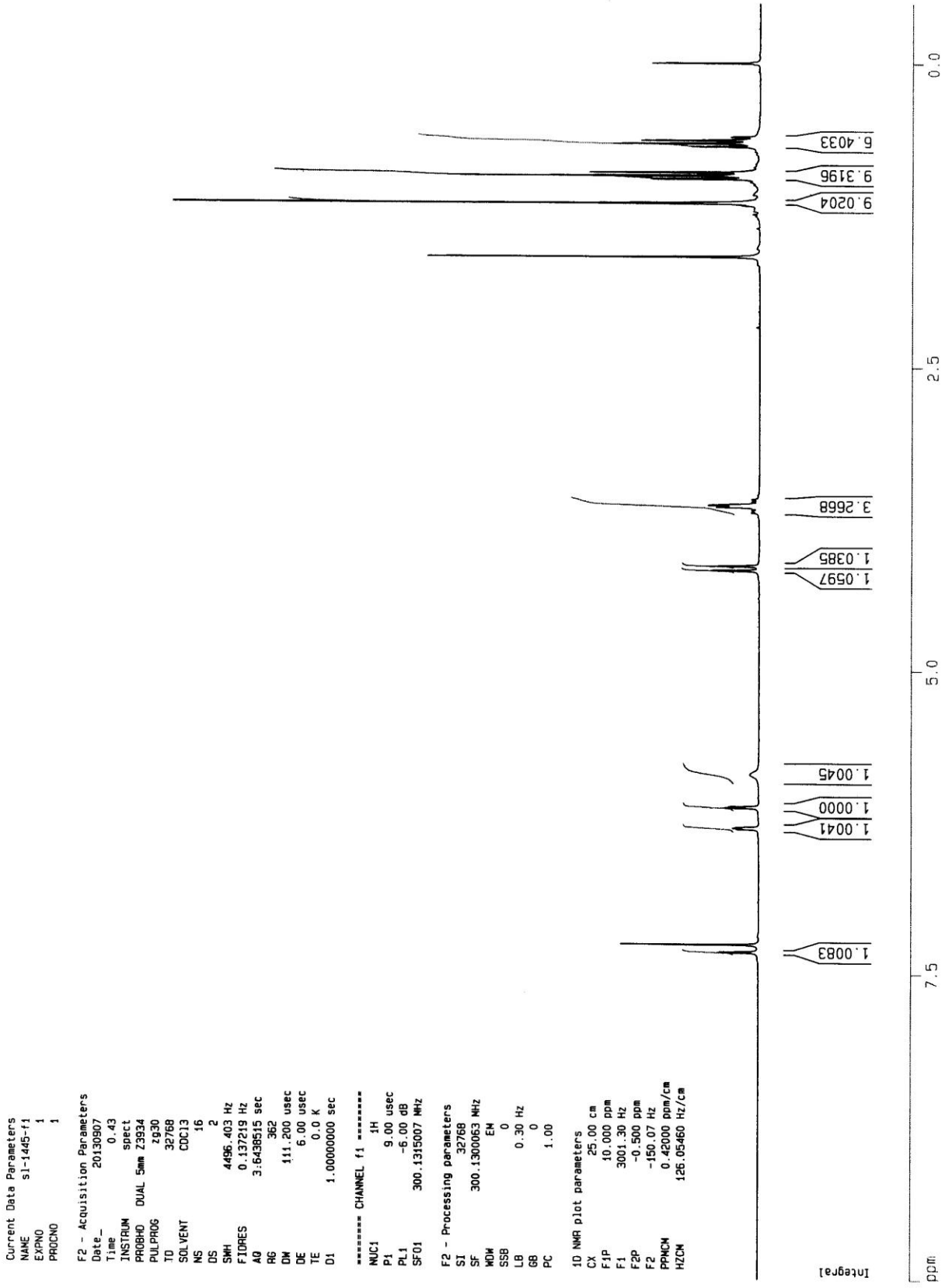

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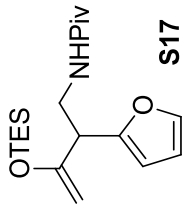

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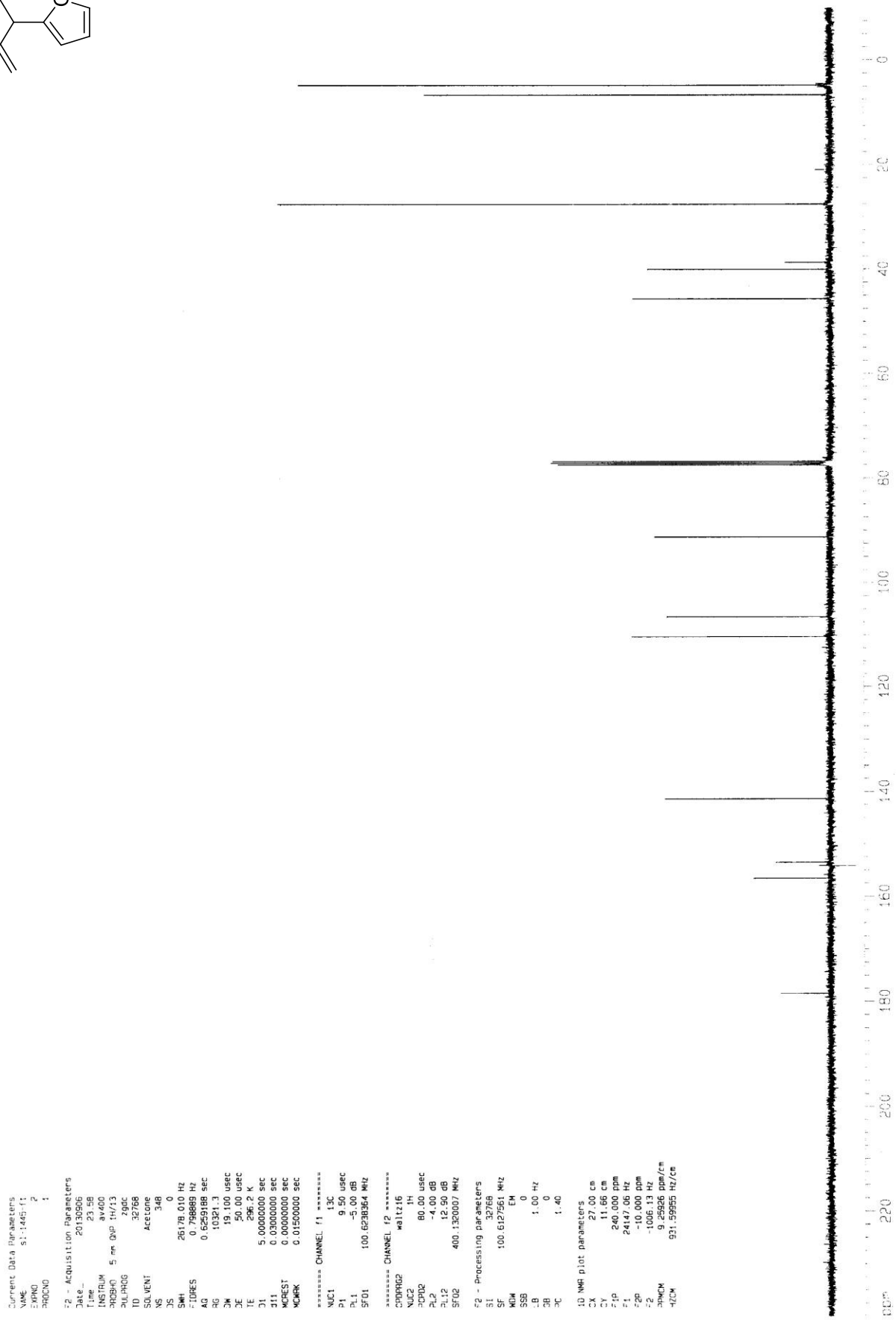

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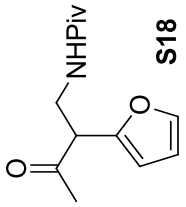

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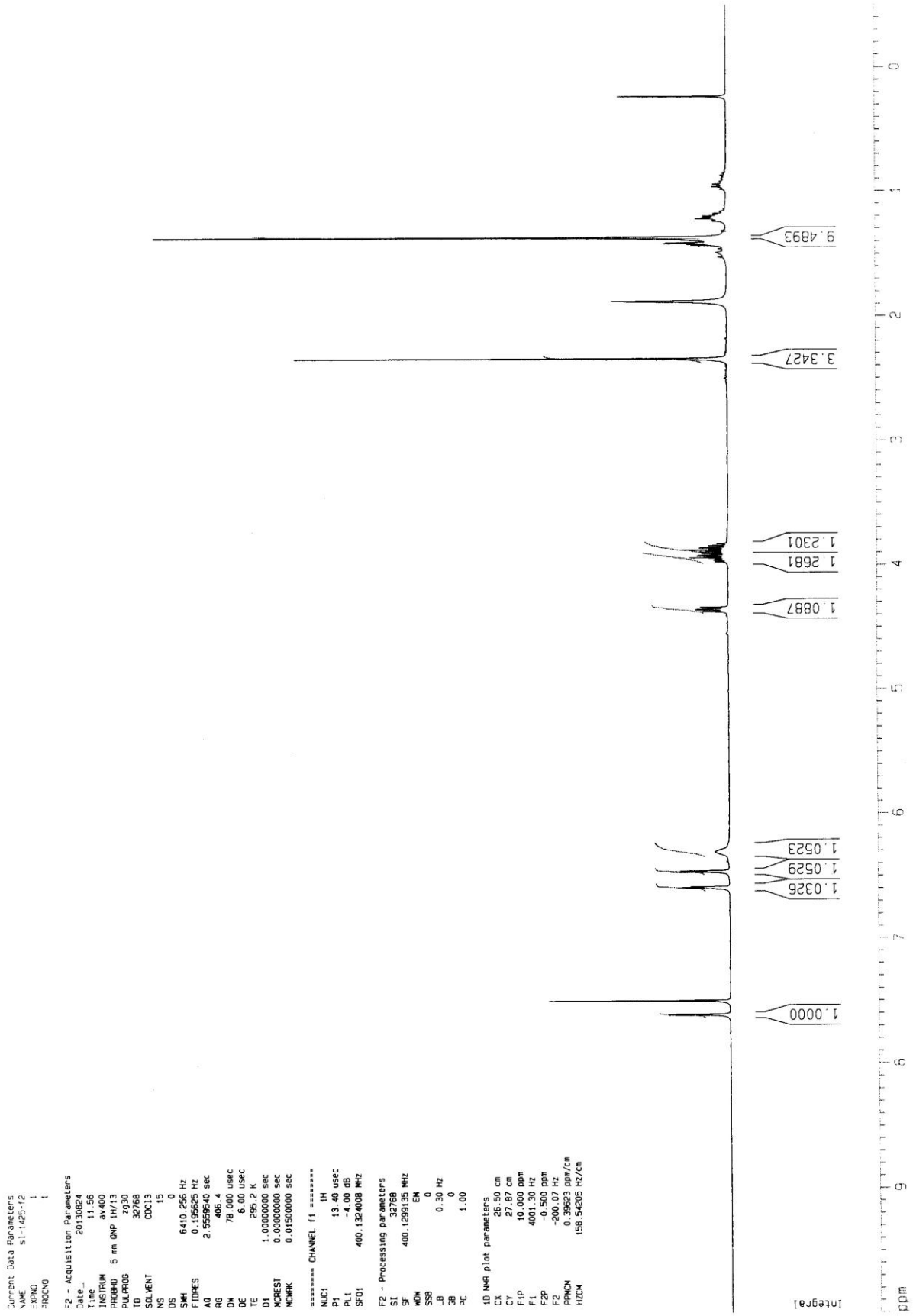

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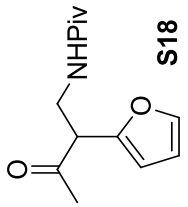

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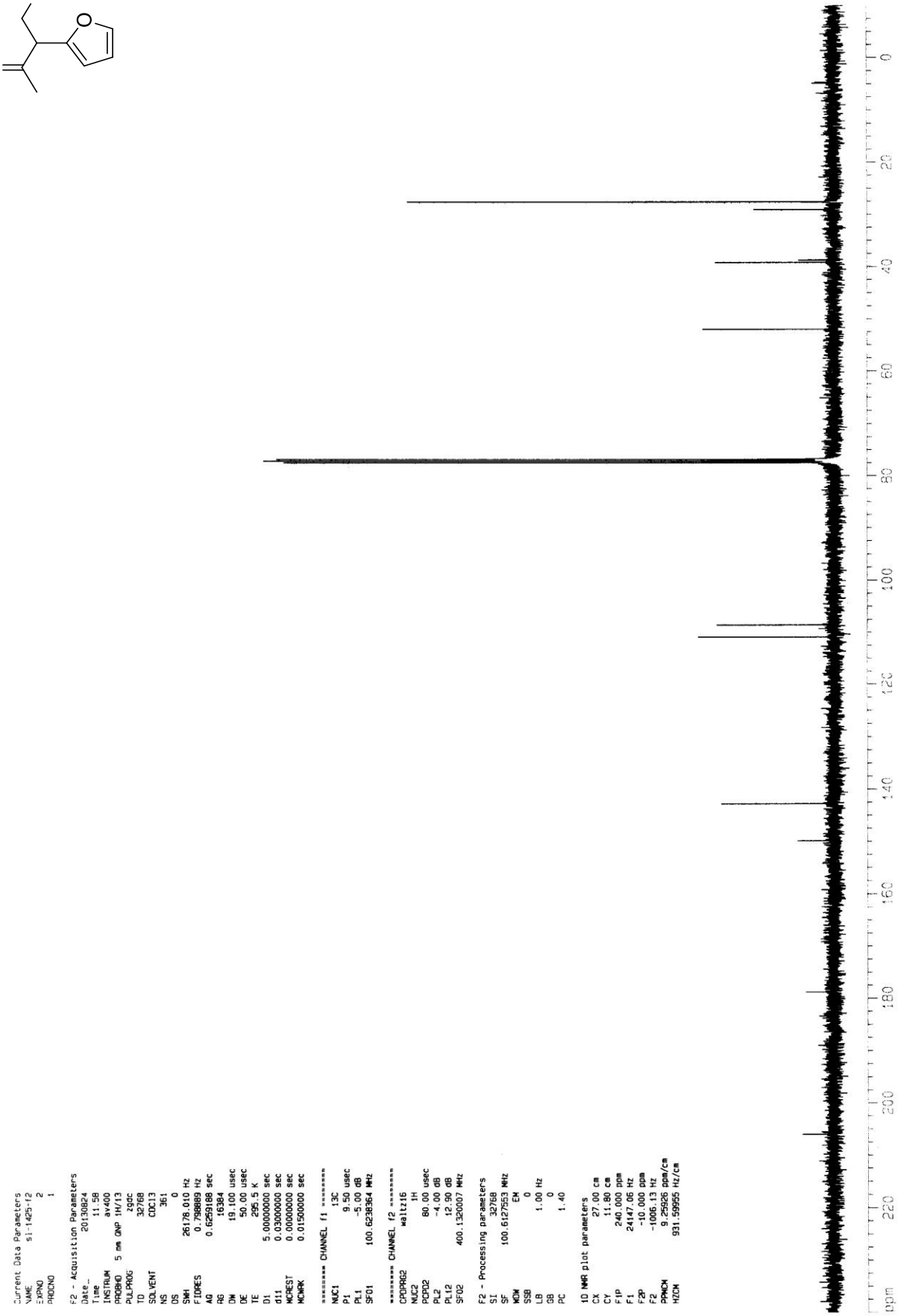


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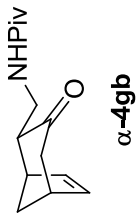

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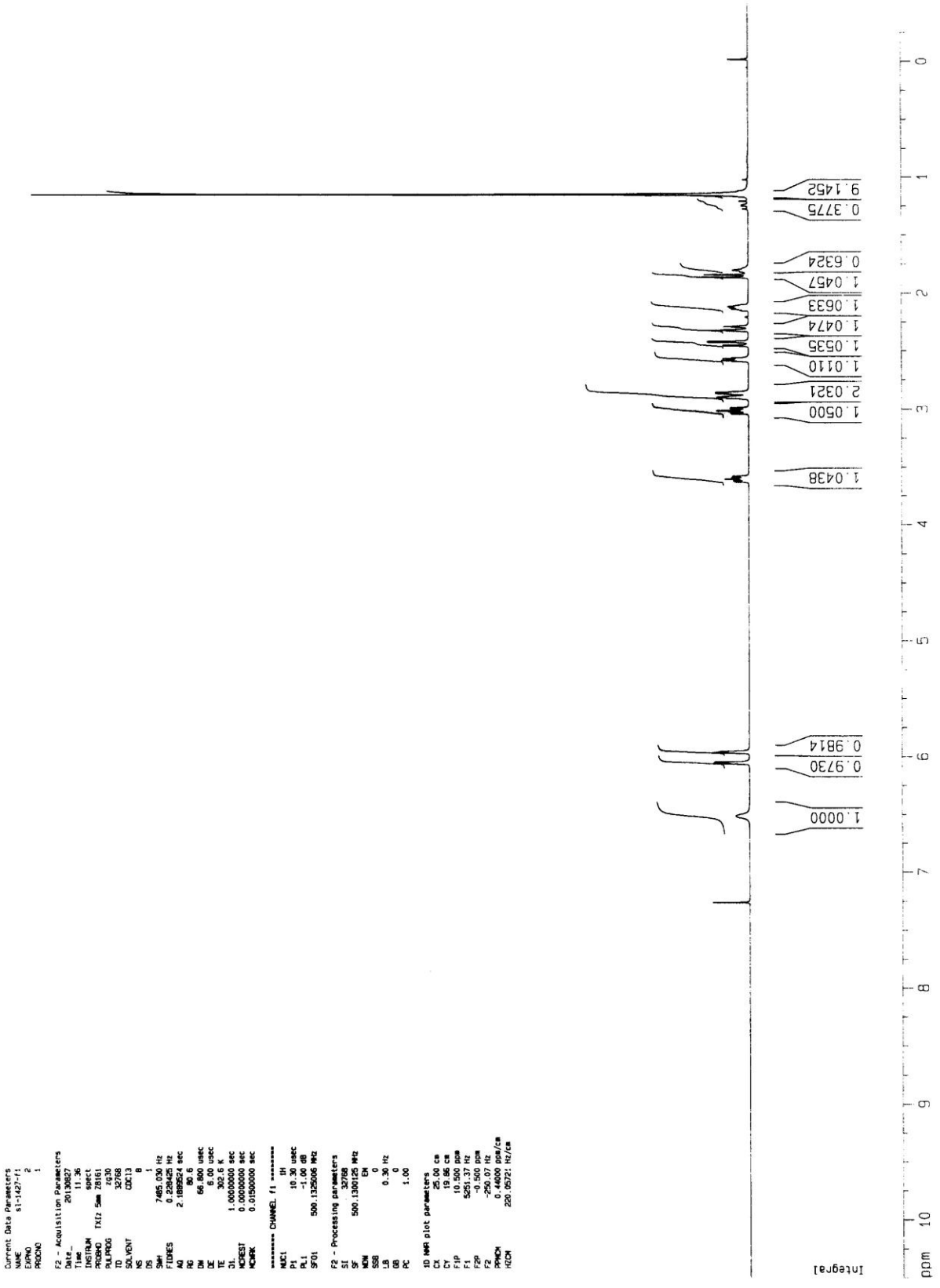

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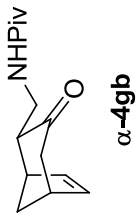

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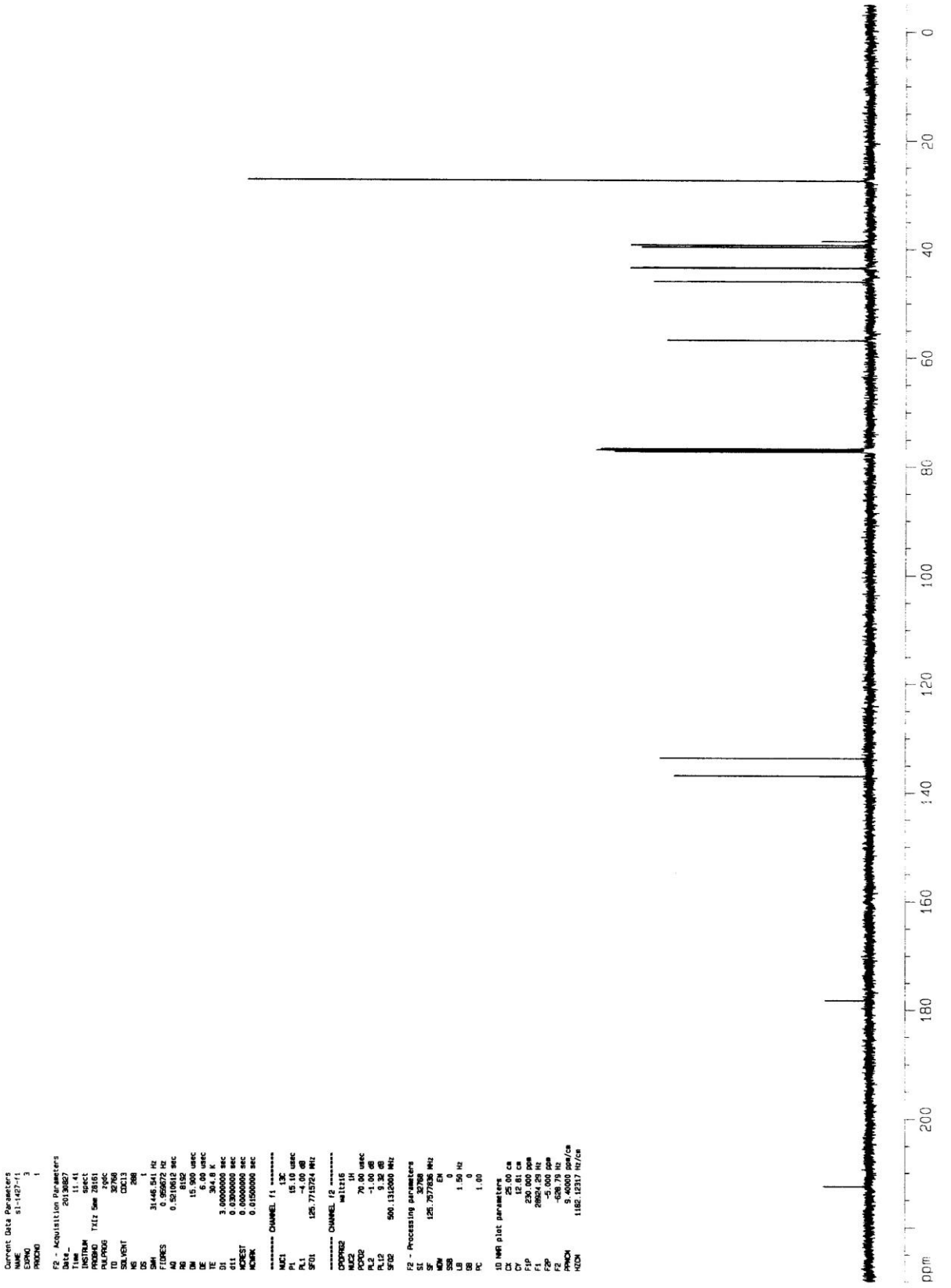

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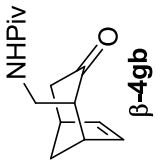

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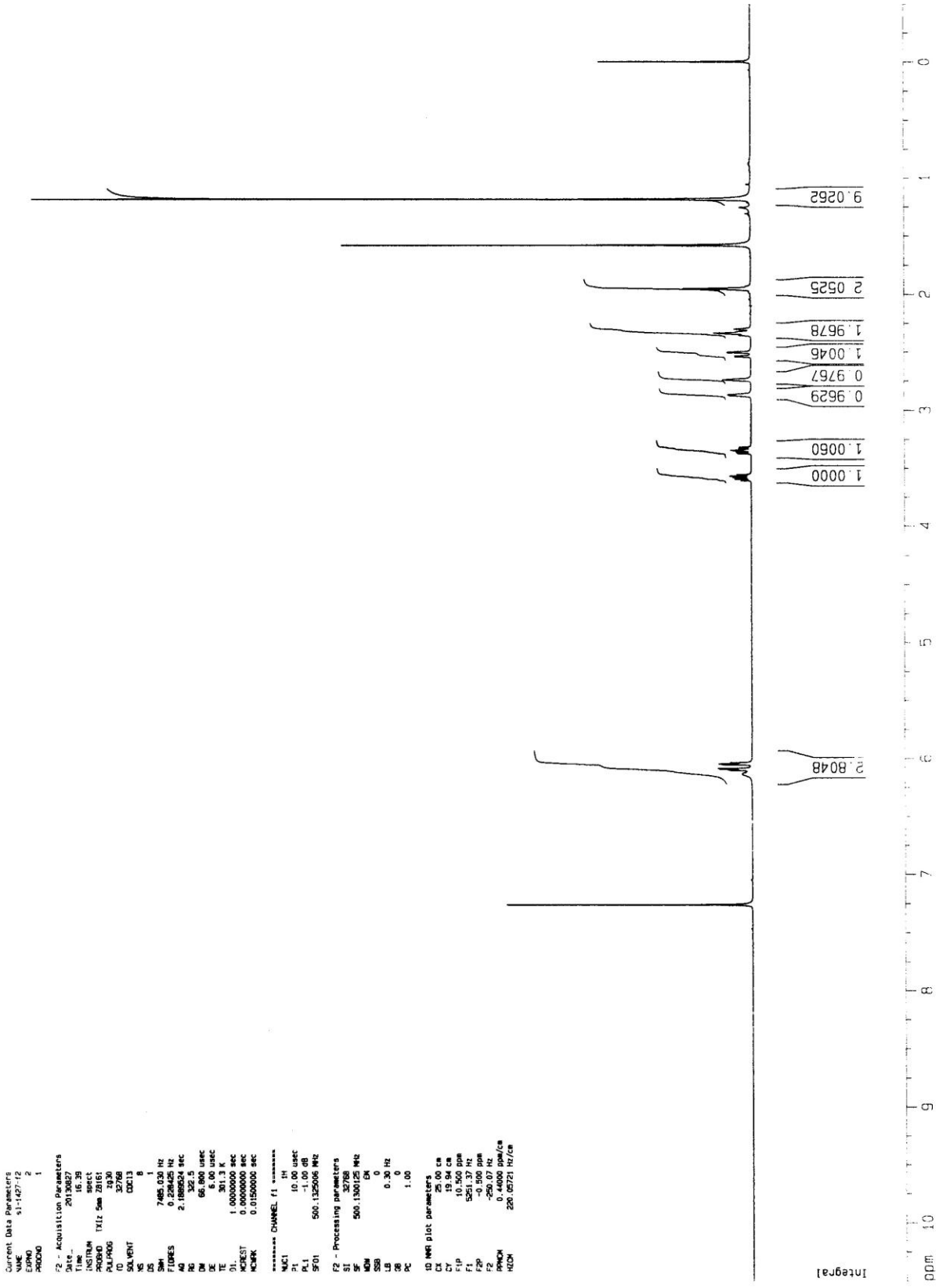

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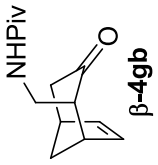

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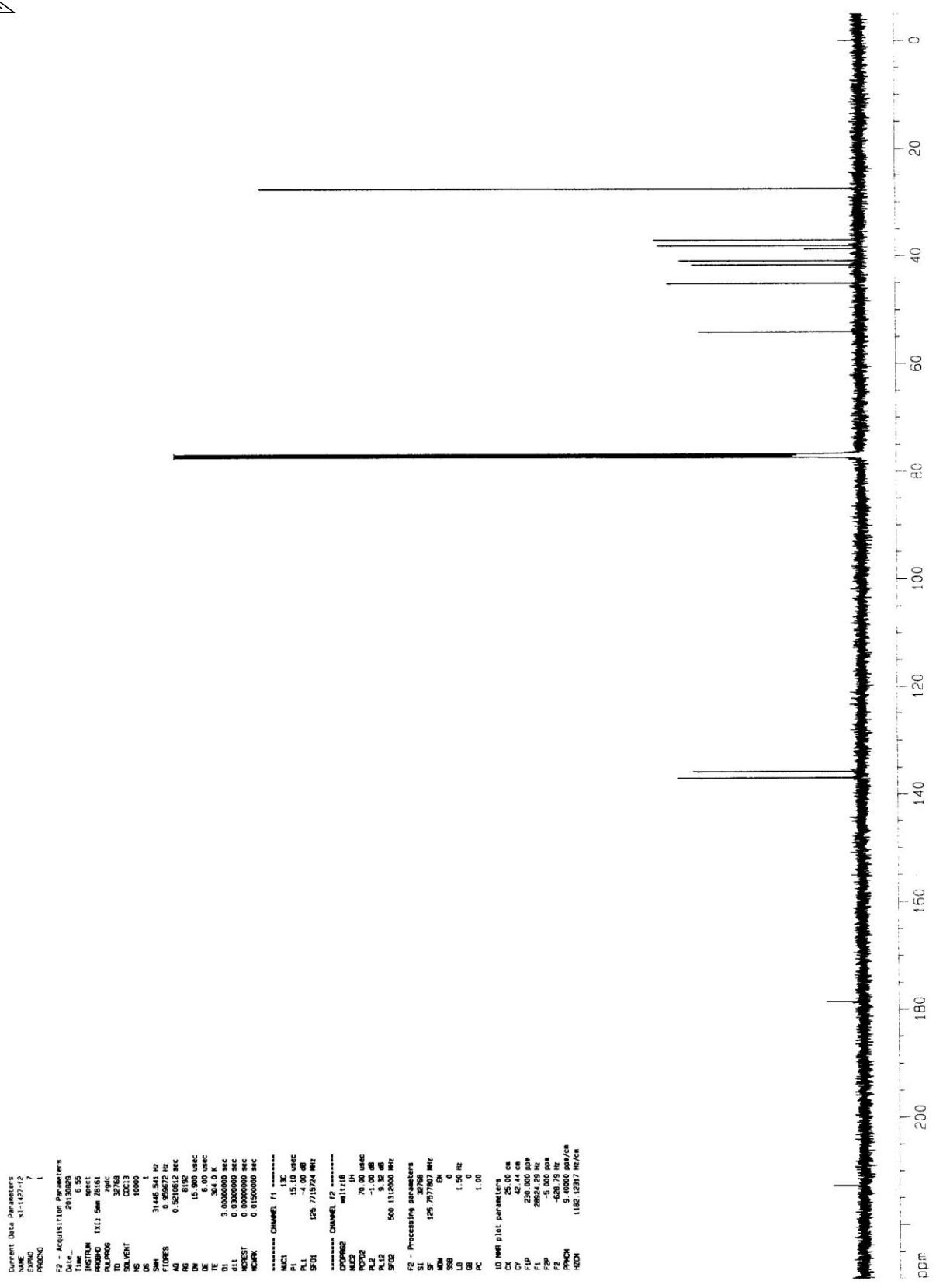

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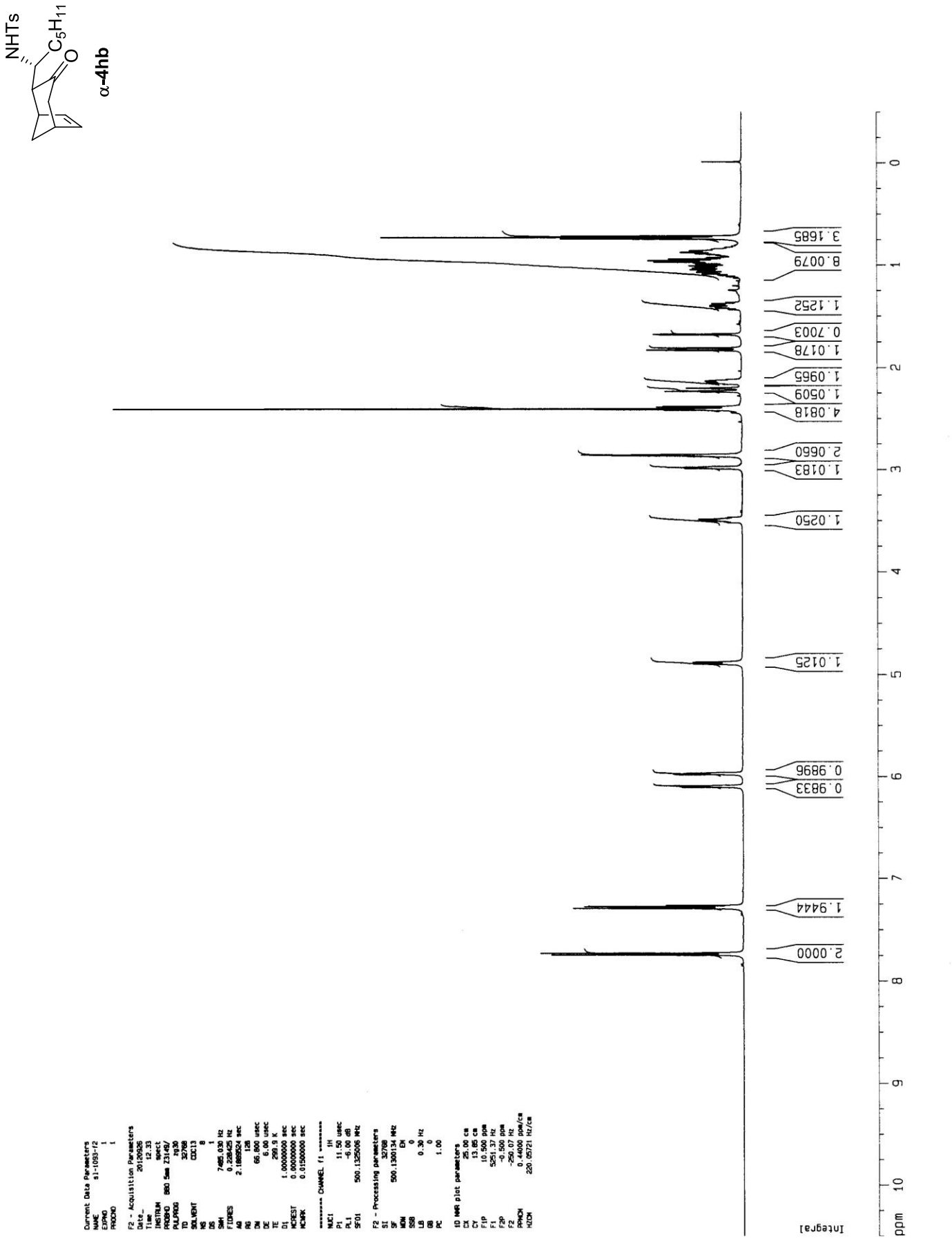

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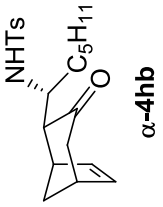

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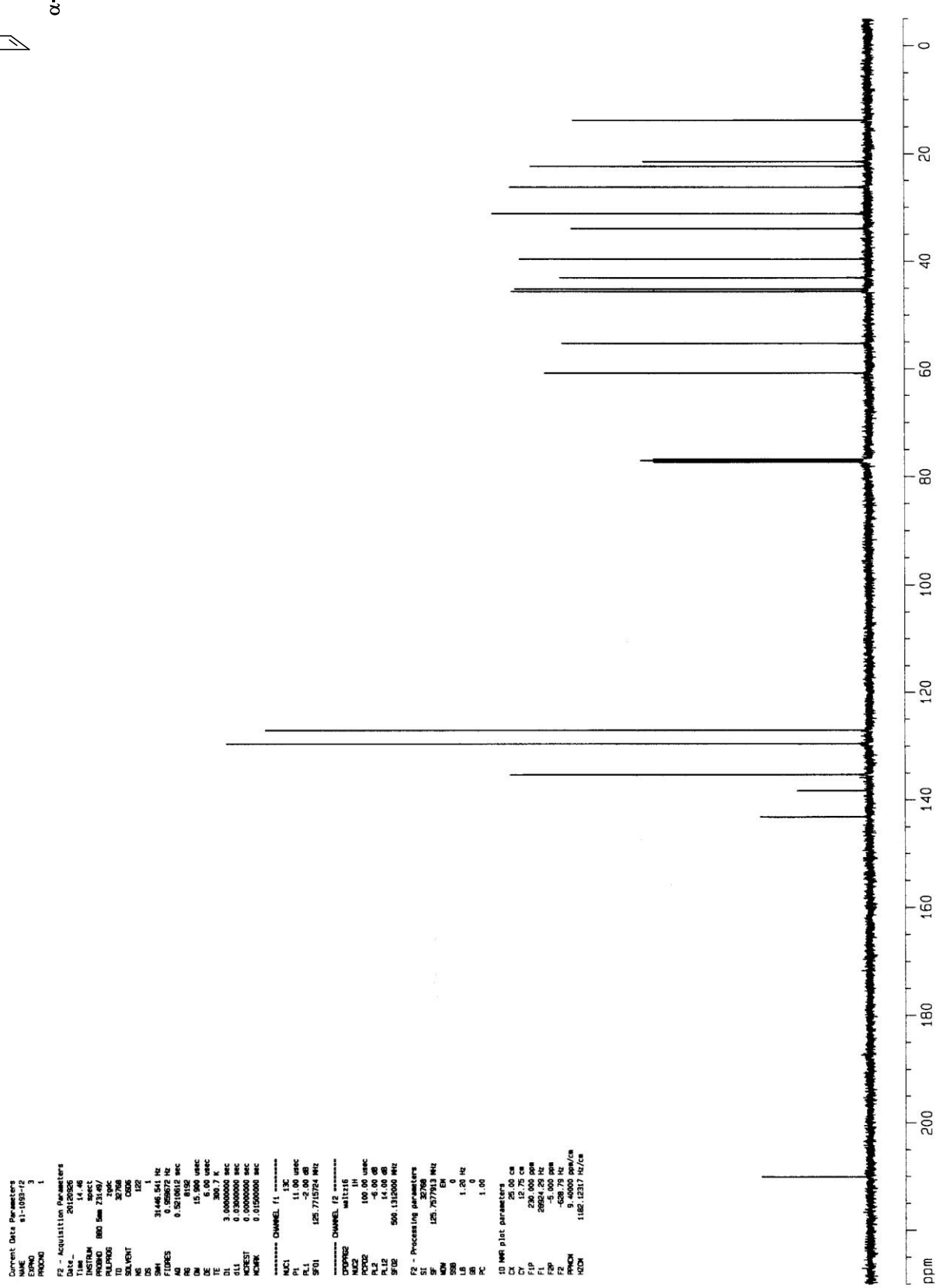

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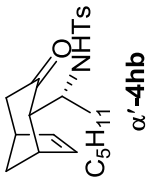
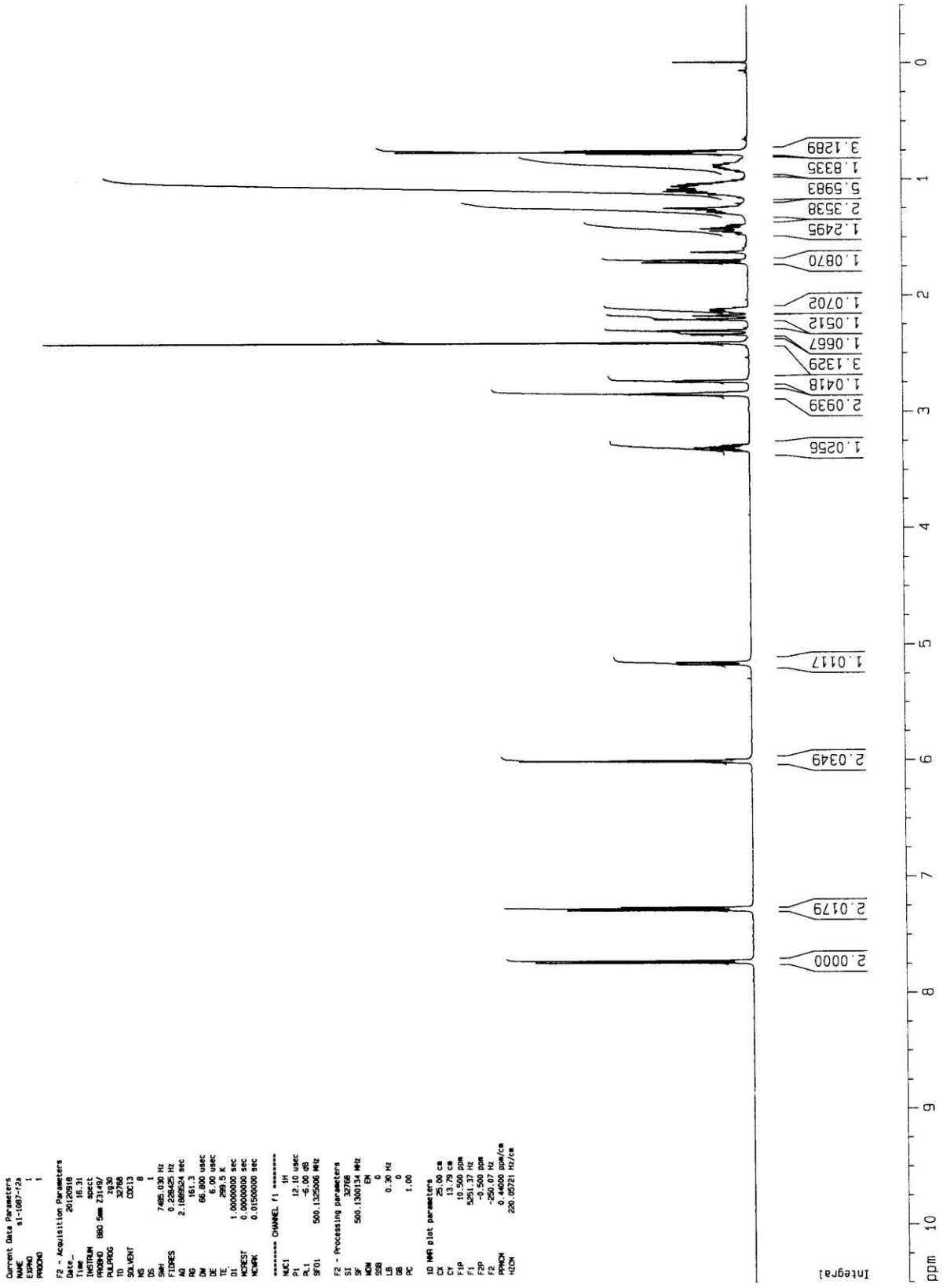


α′-4hb



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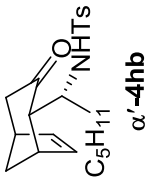

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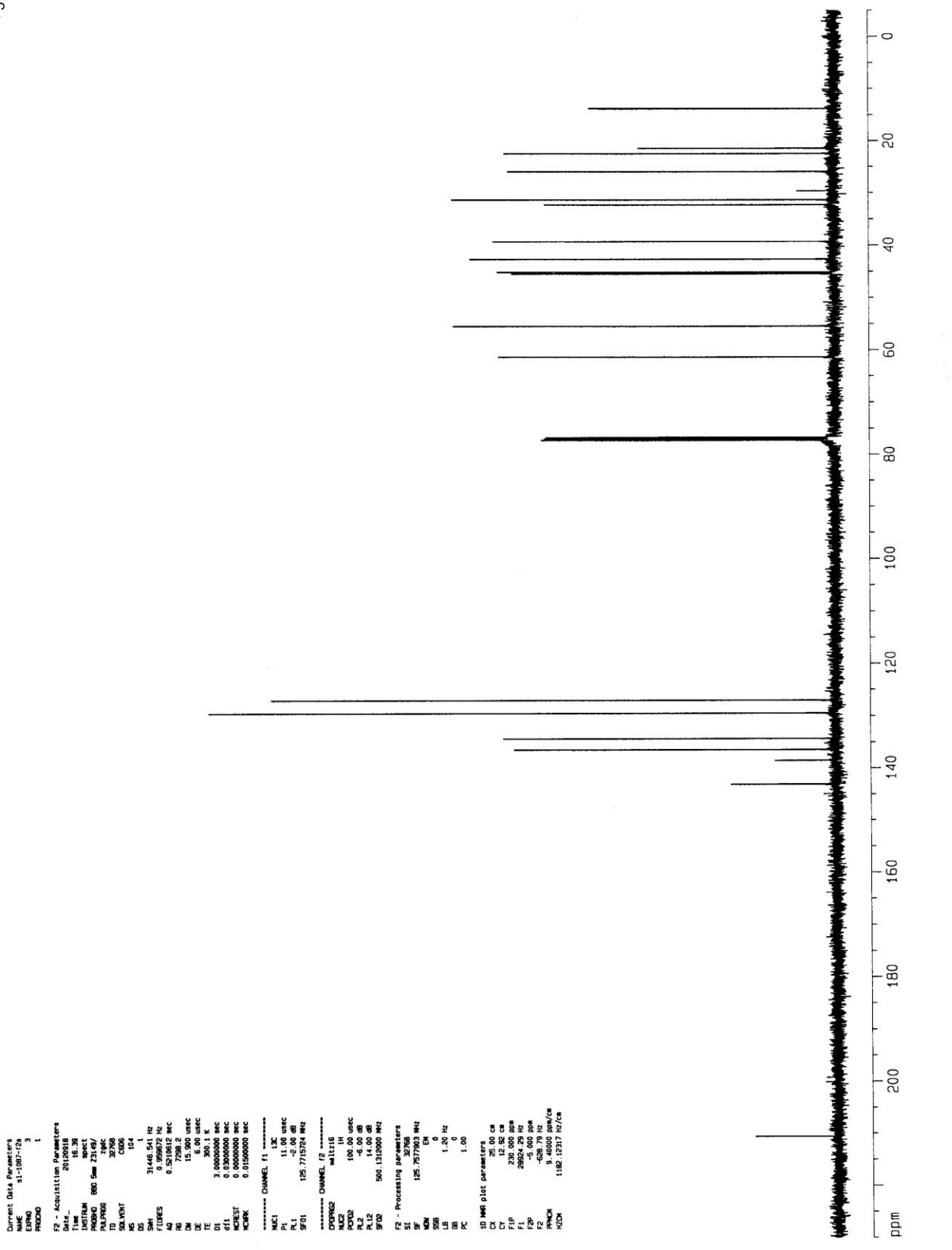

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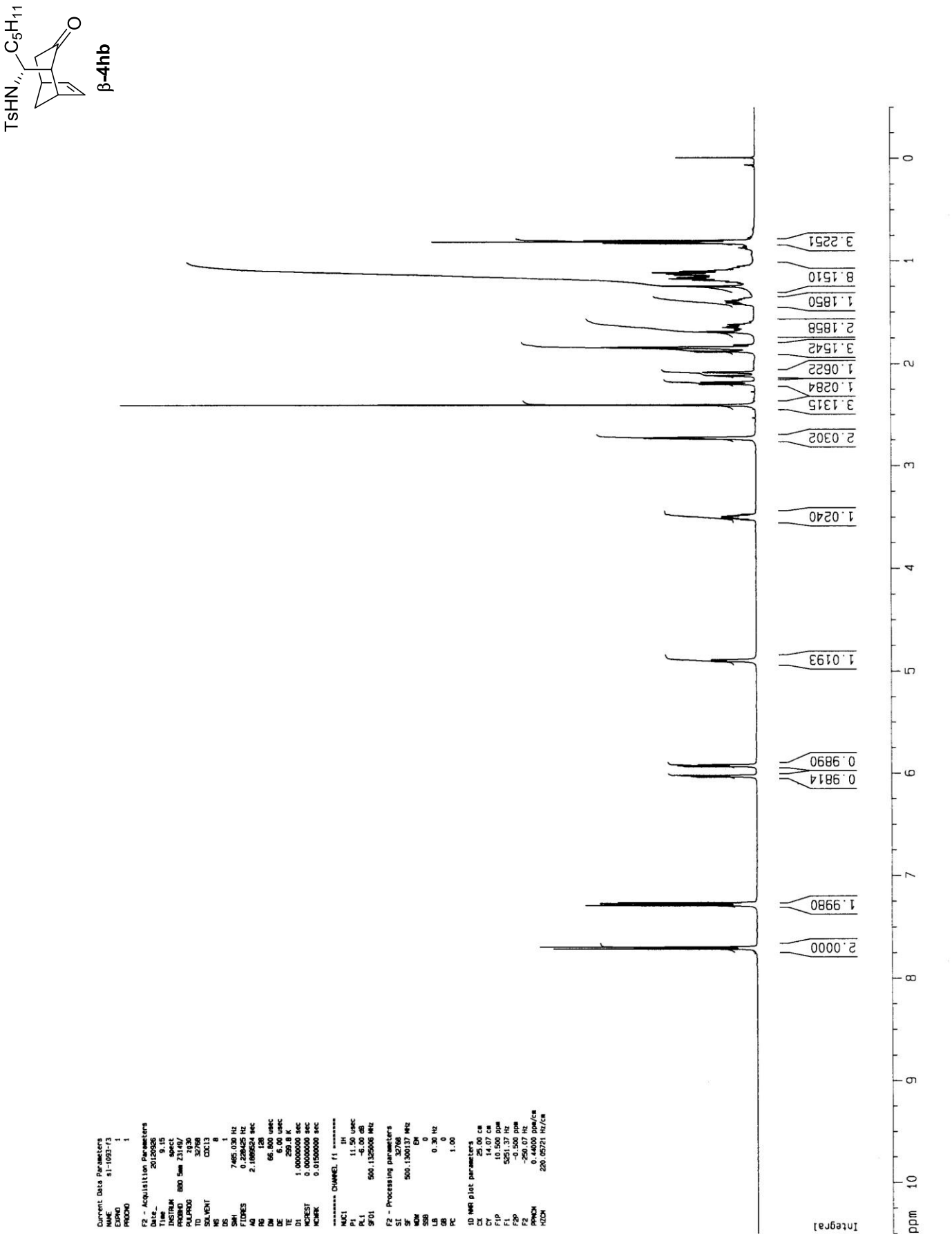

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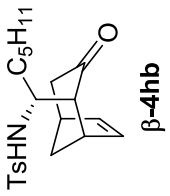

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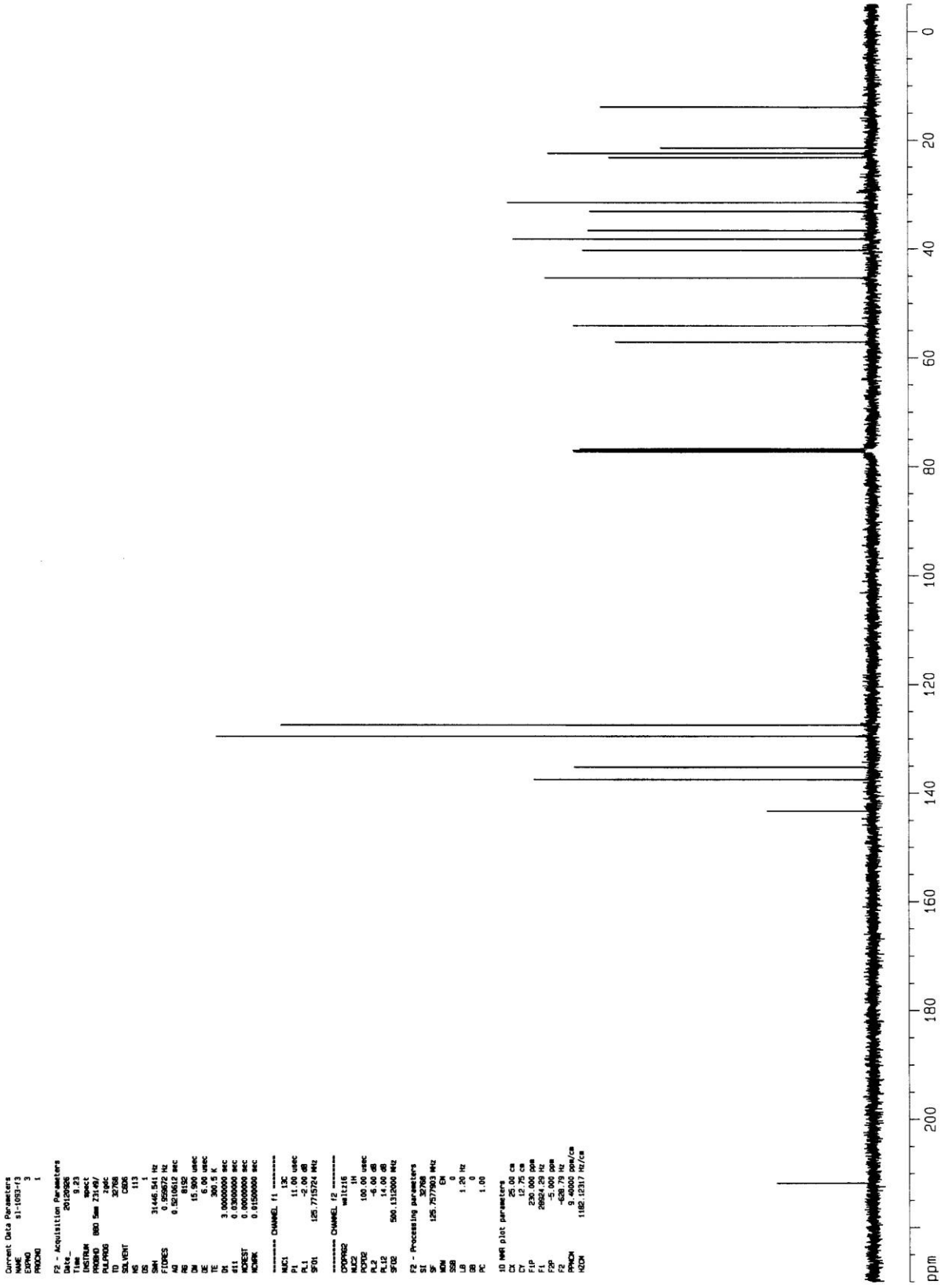

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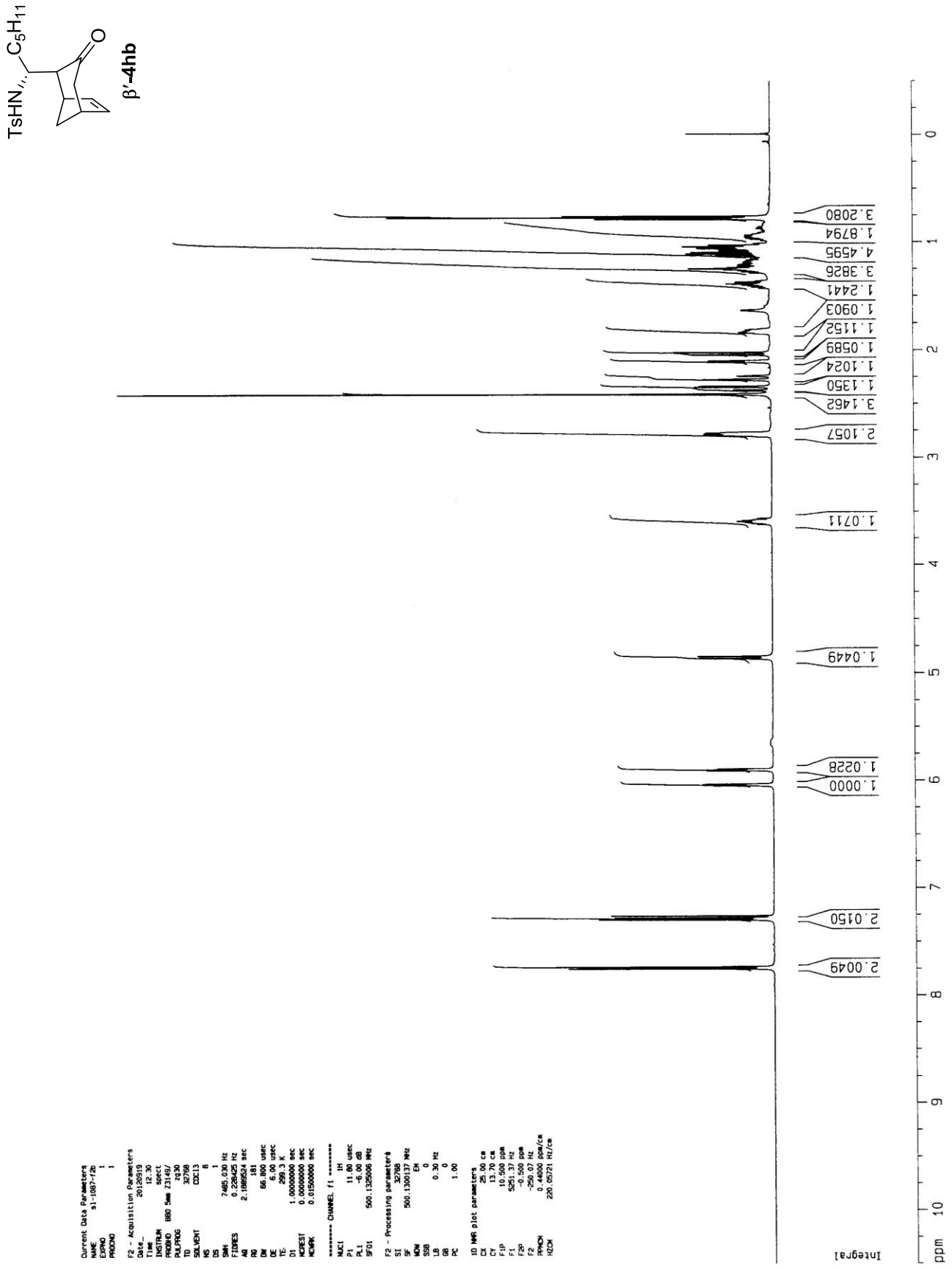

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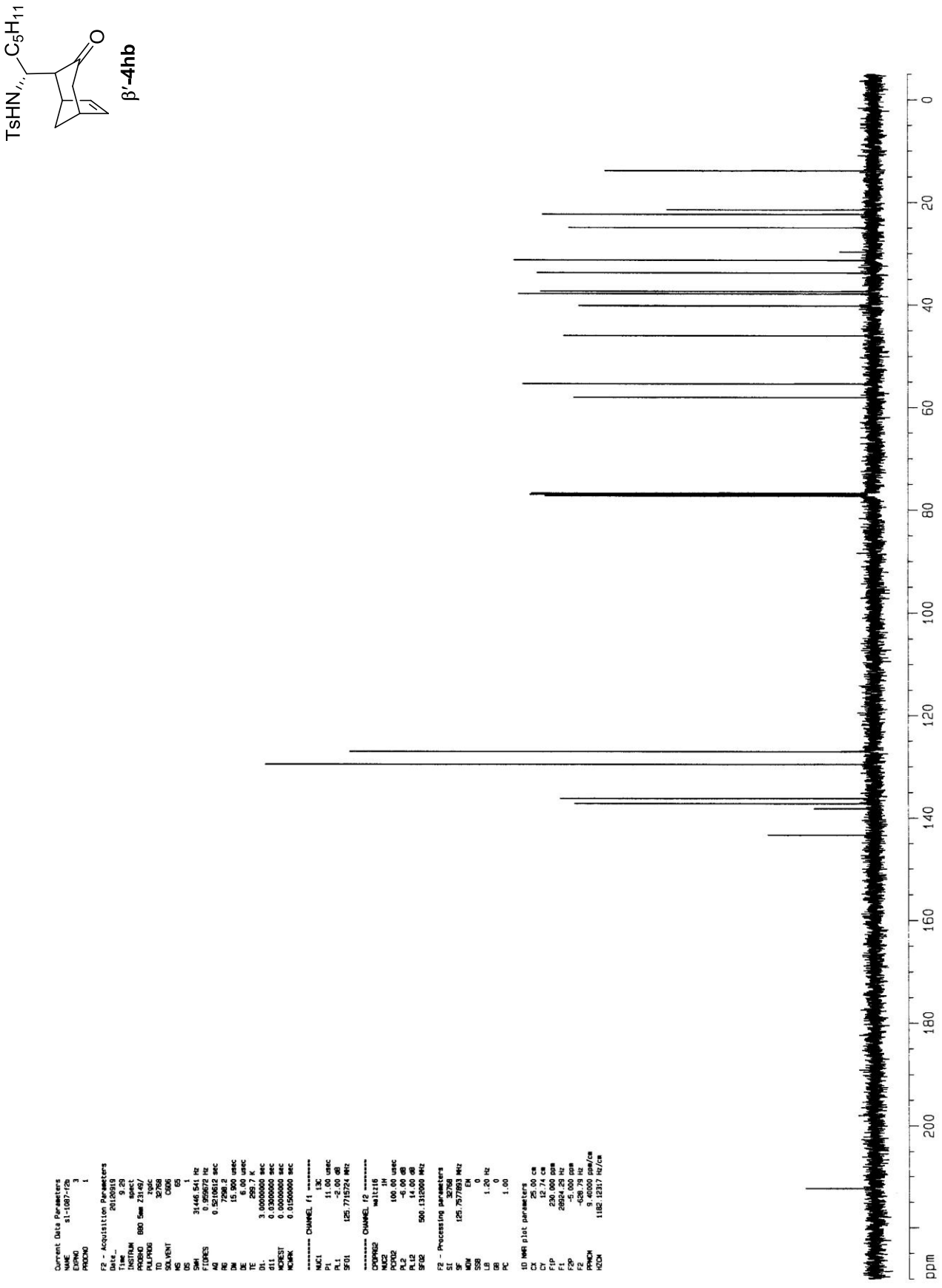

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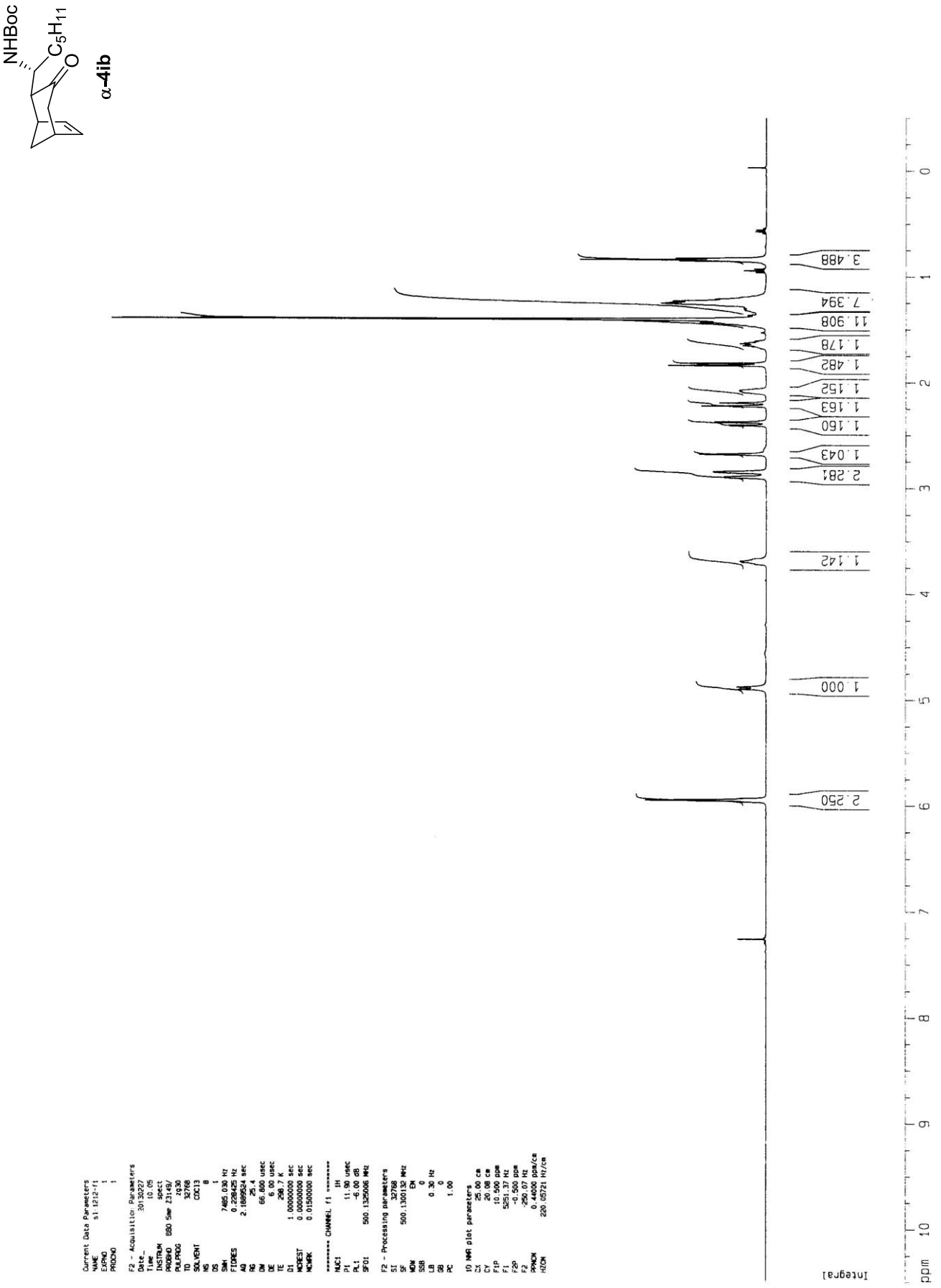

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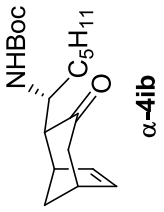

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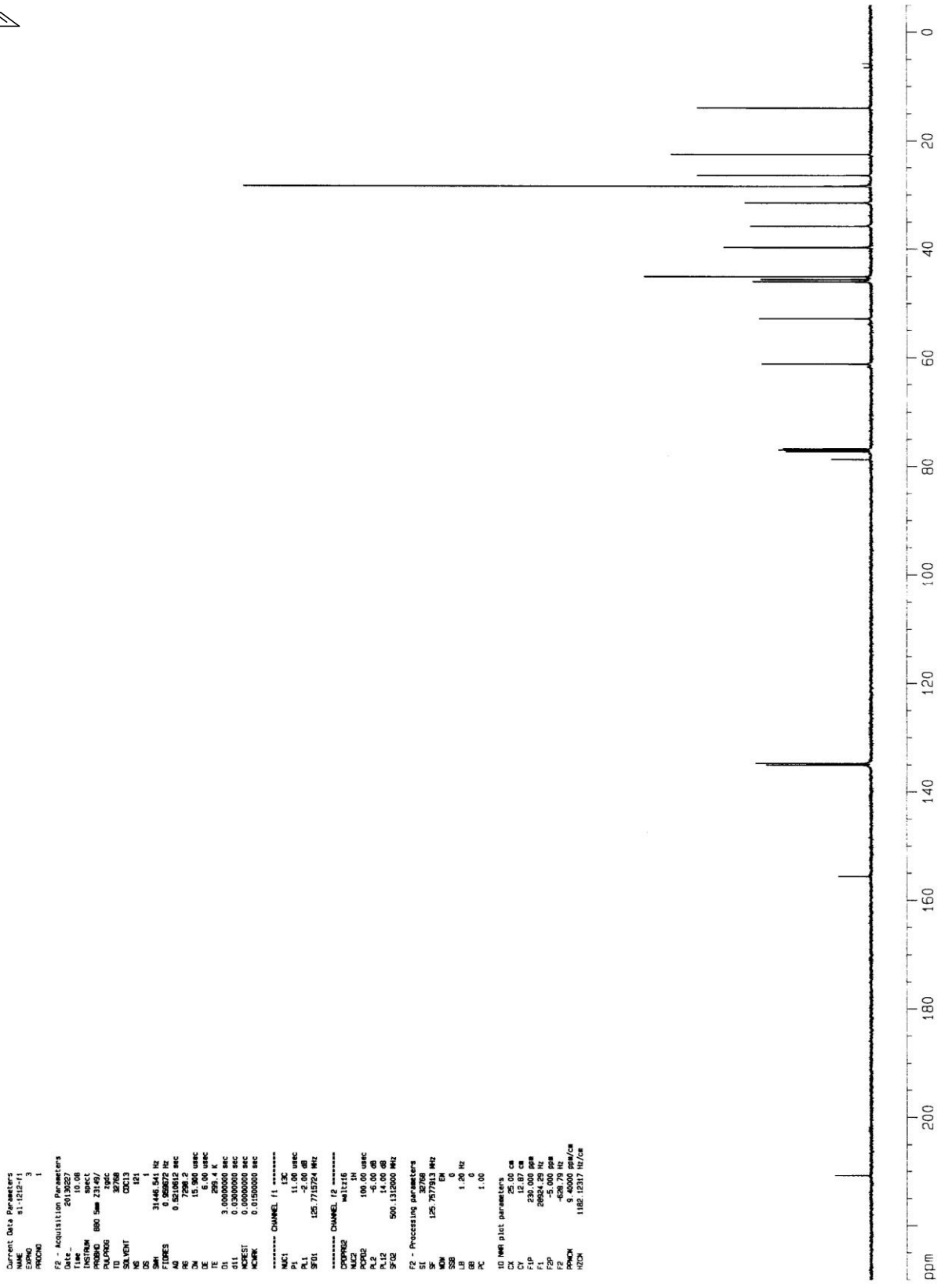

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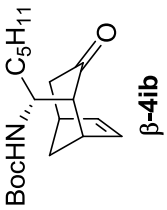

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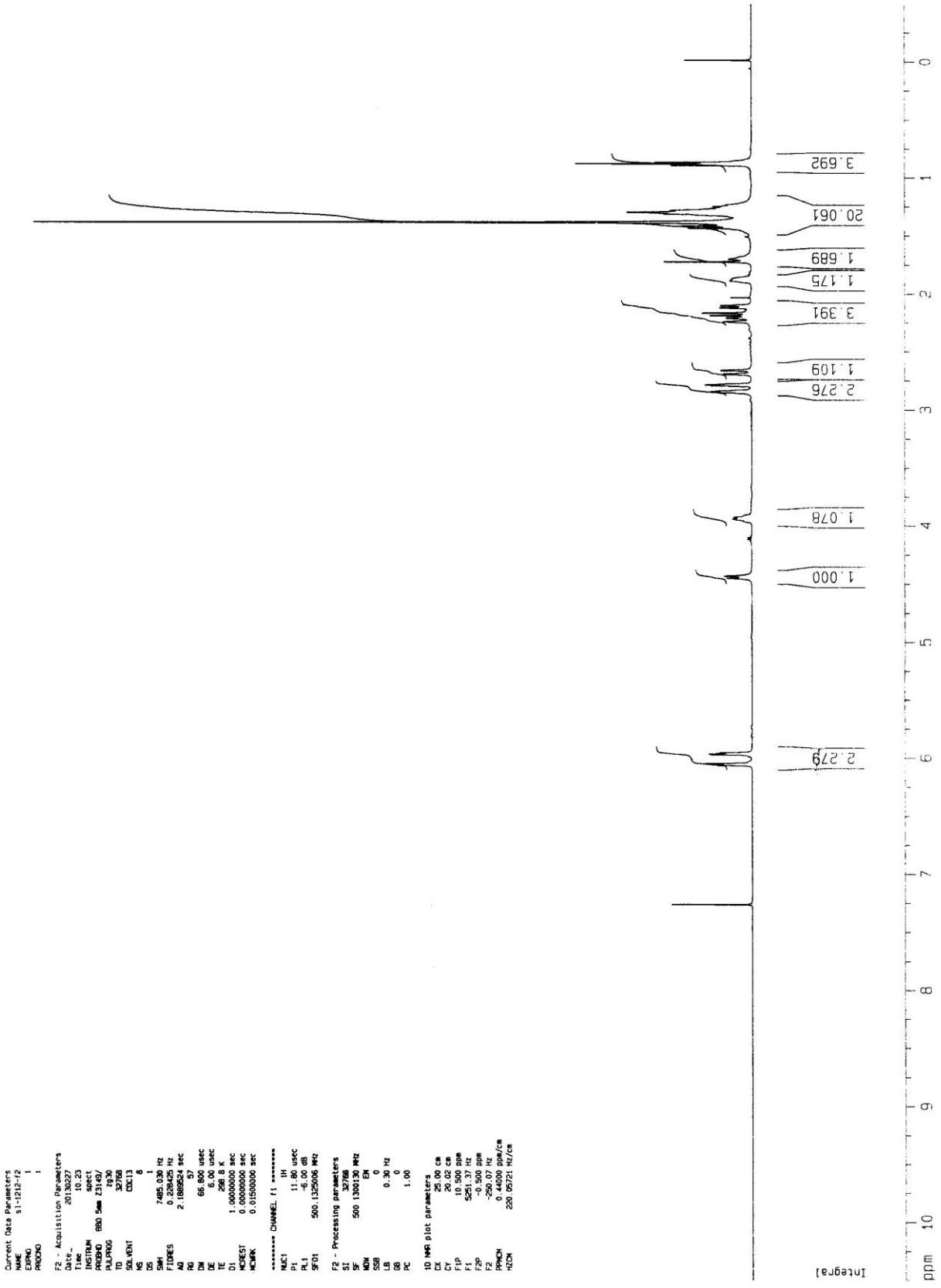

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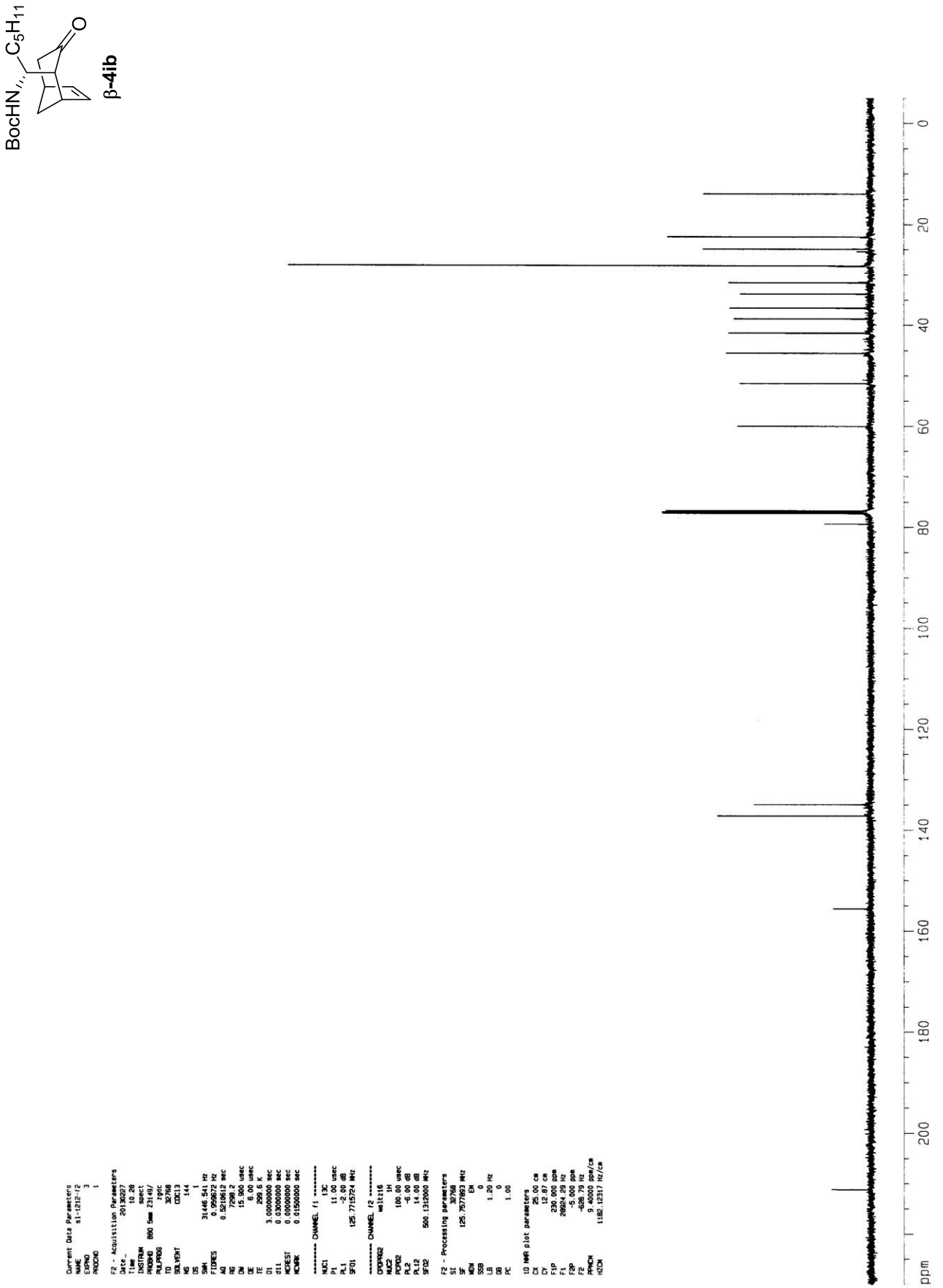

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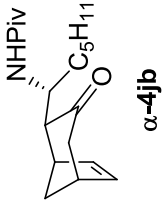

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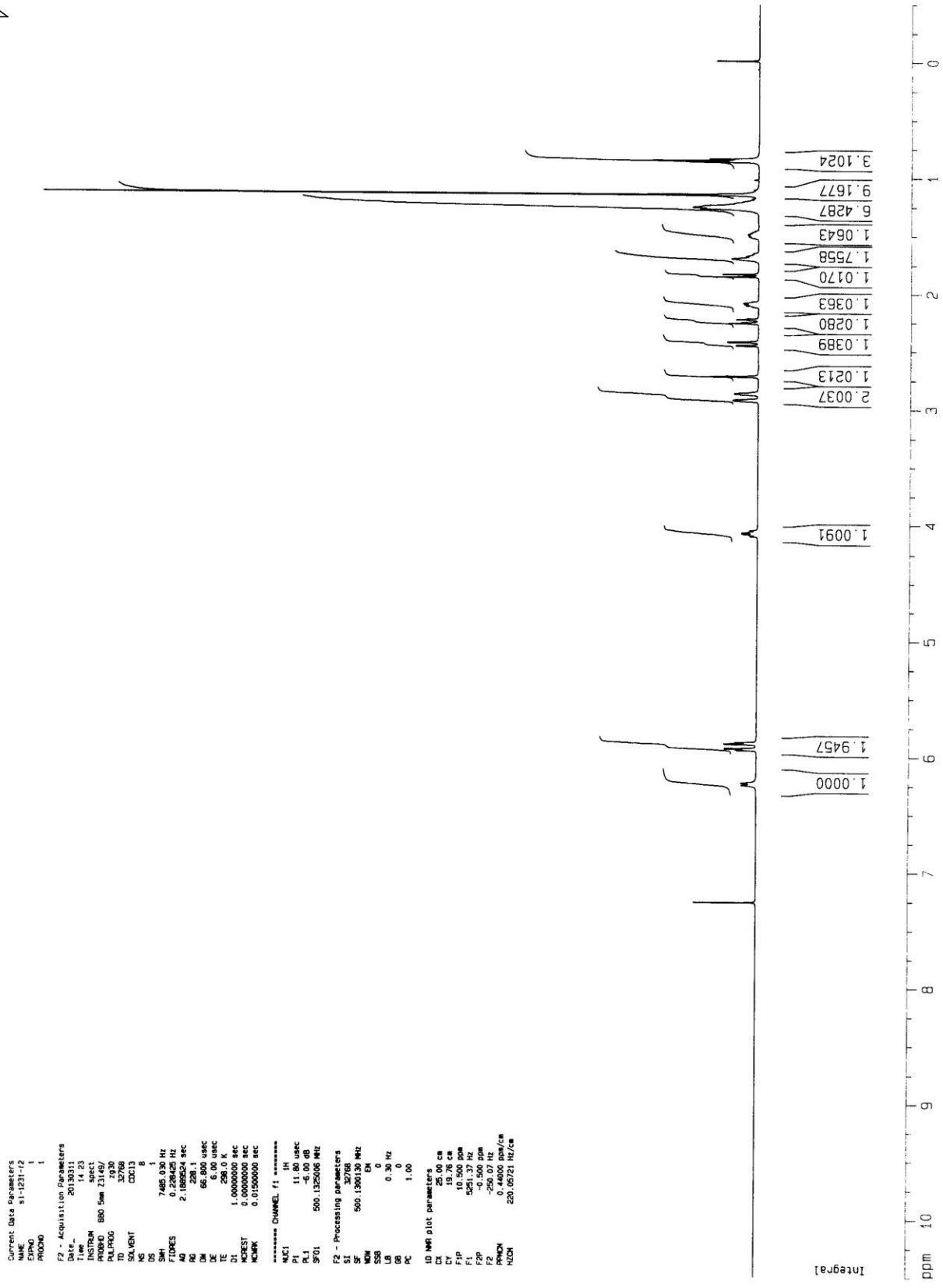

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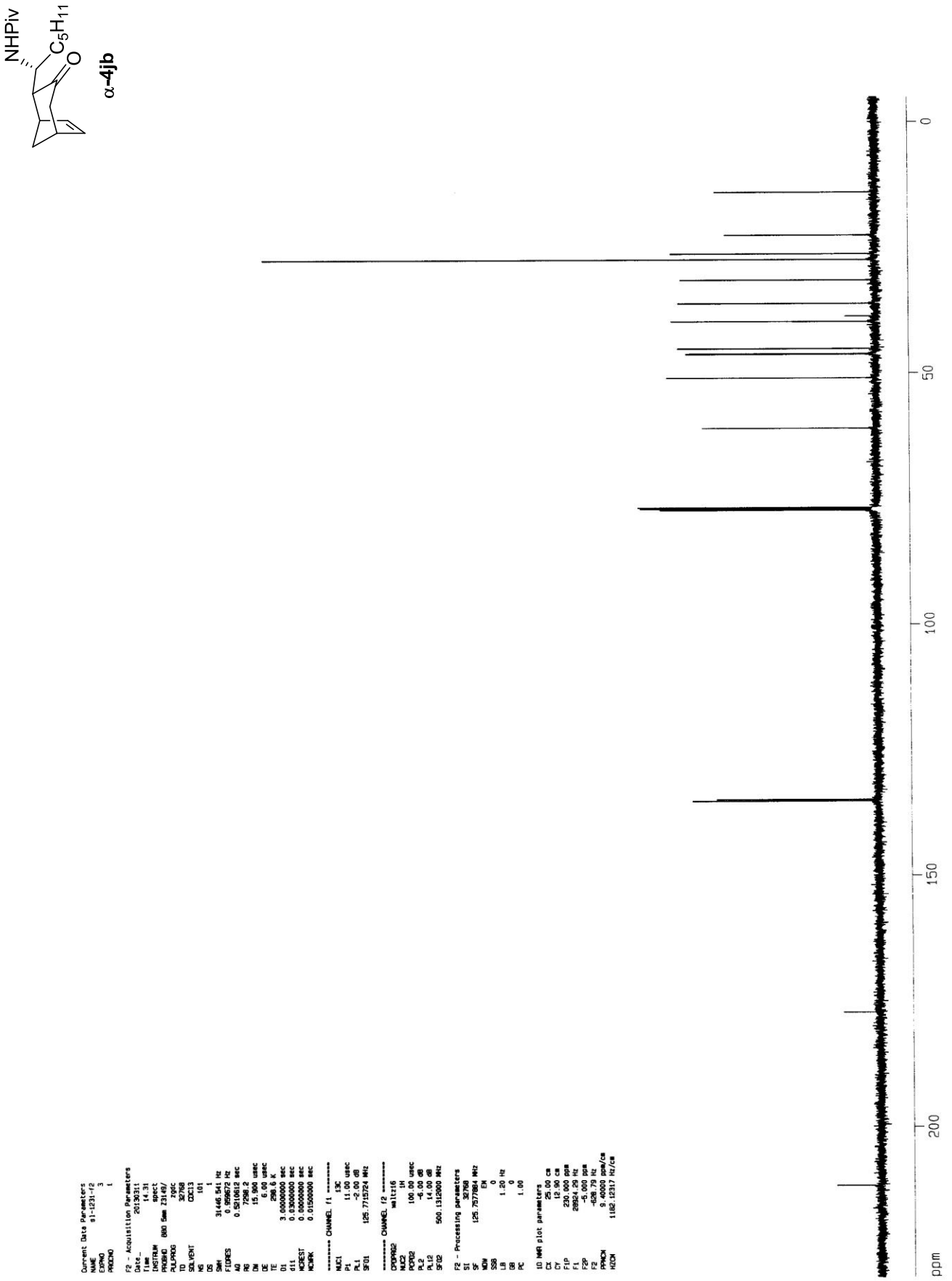

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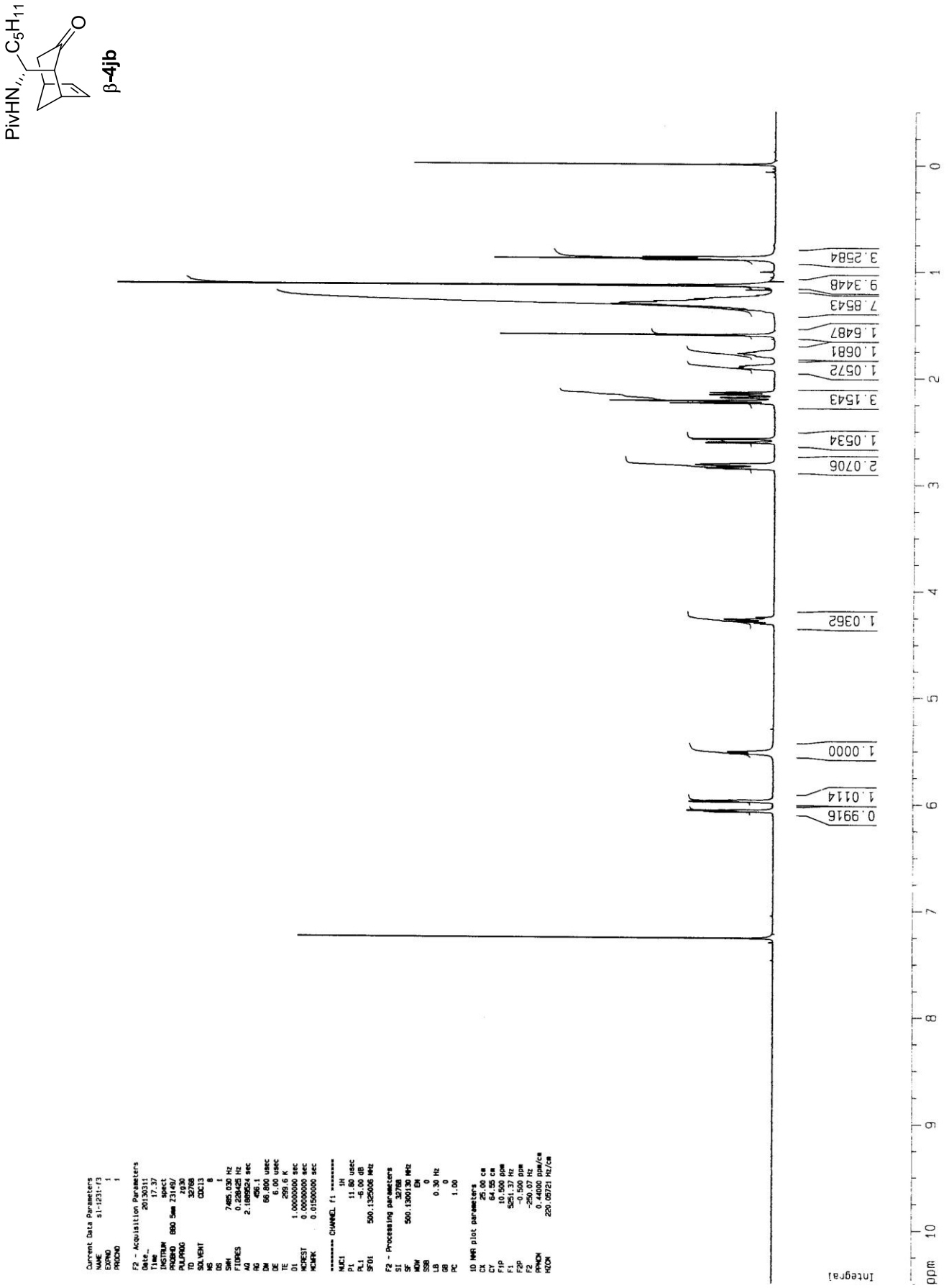

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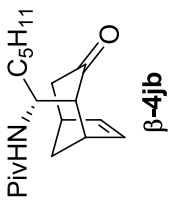

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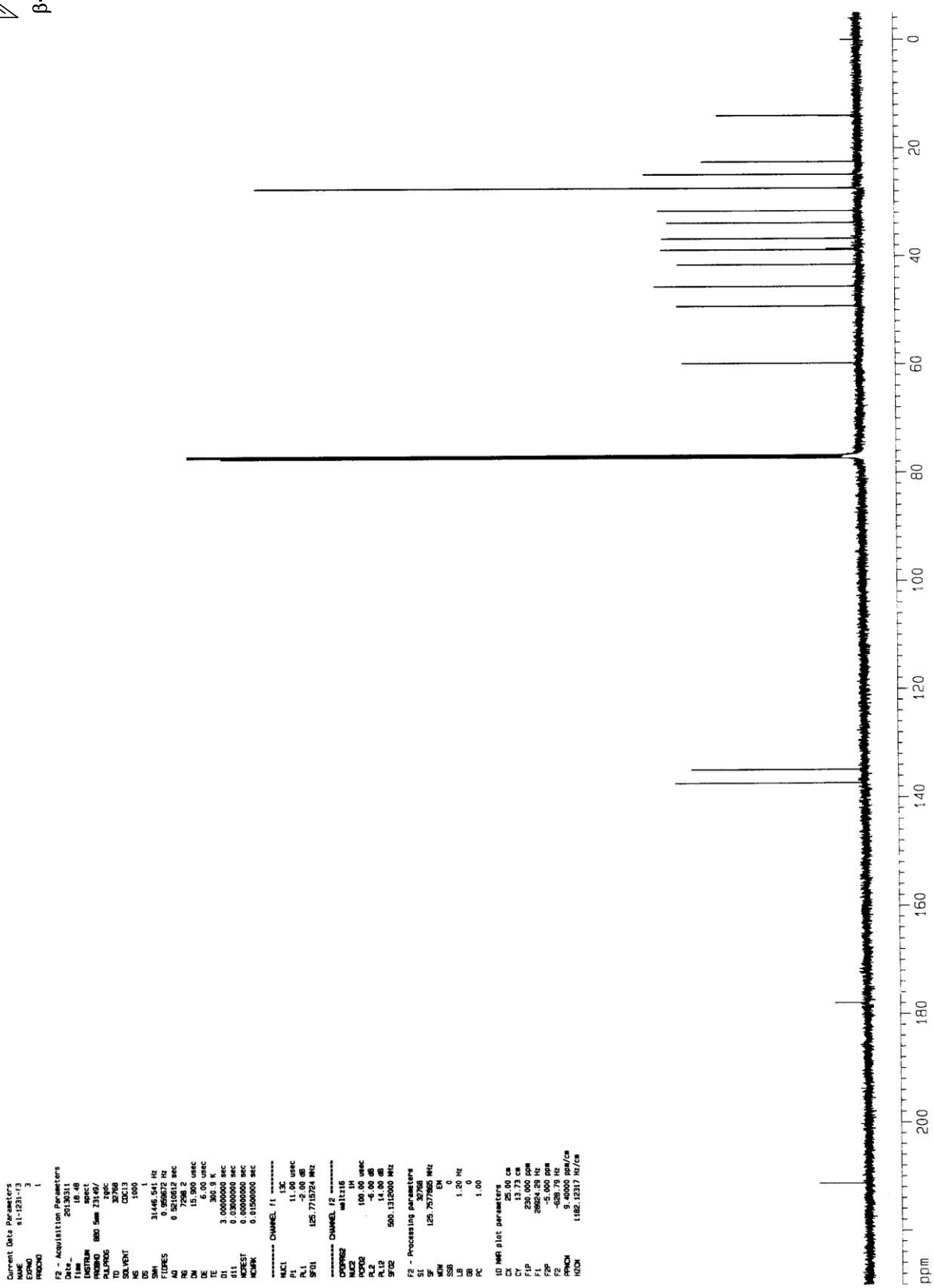

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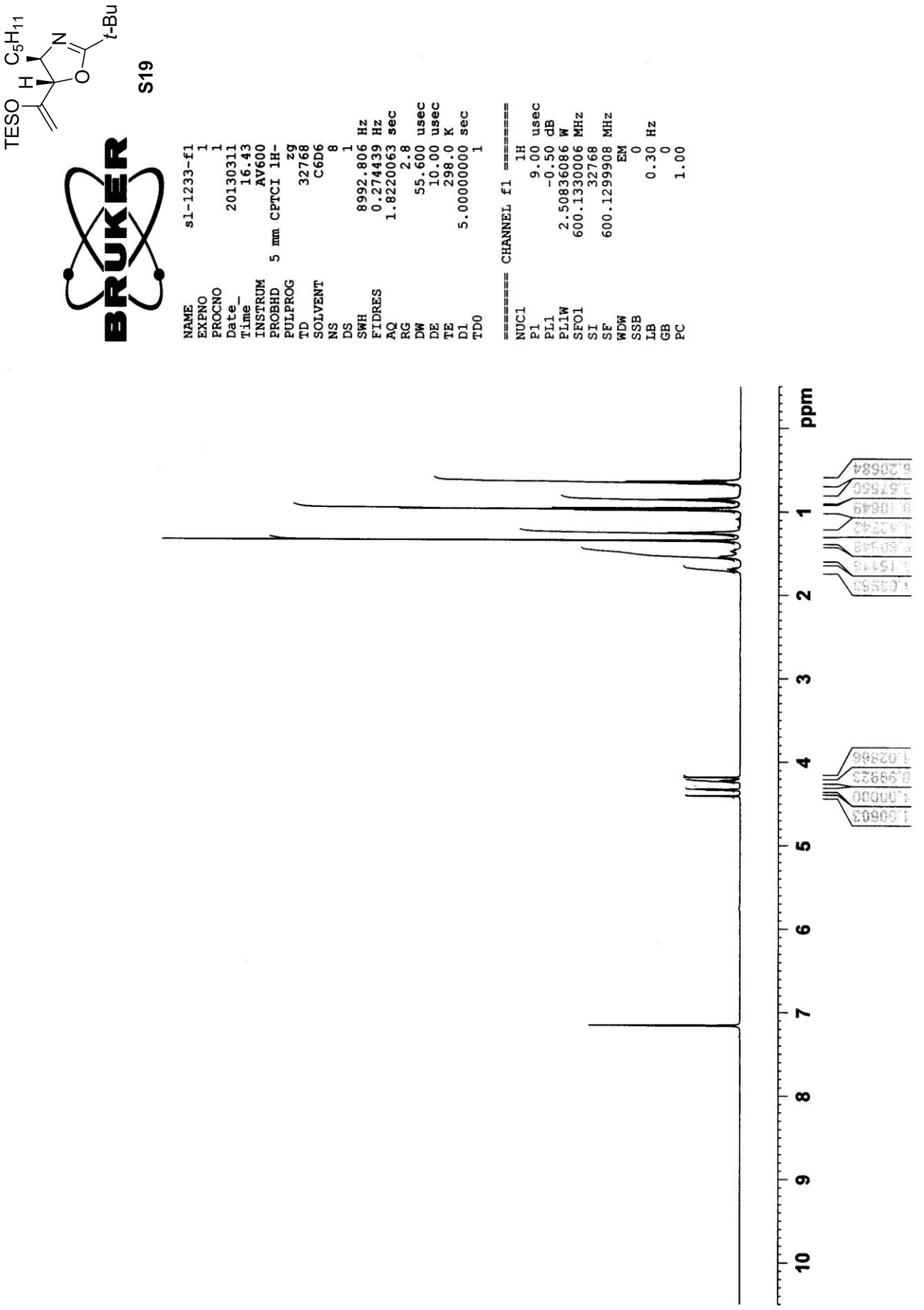

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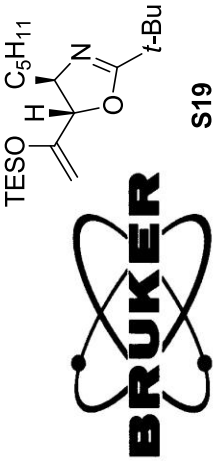

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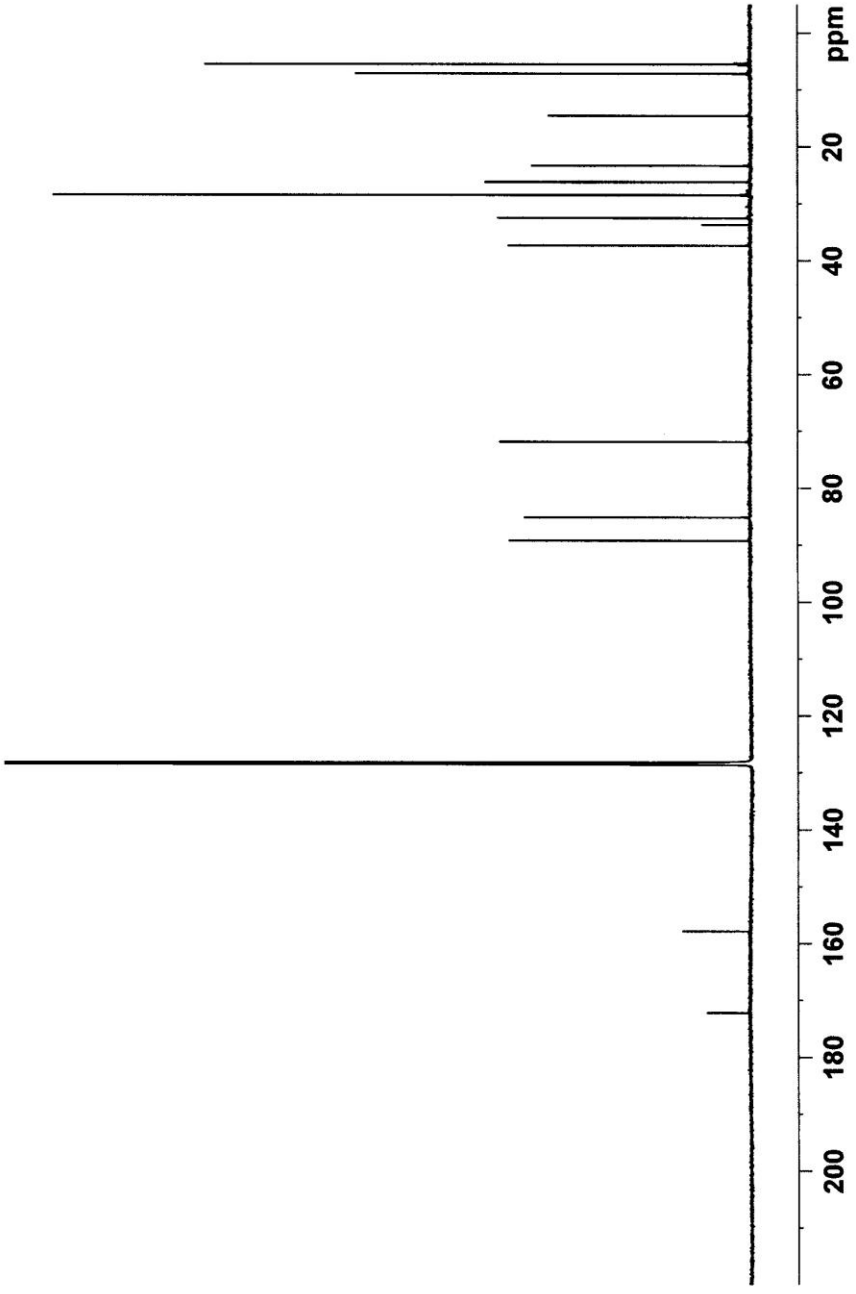

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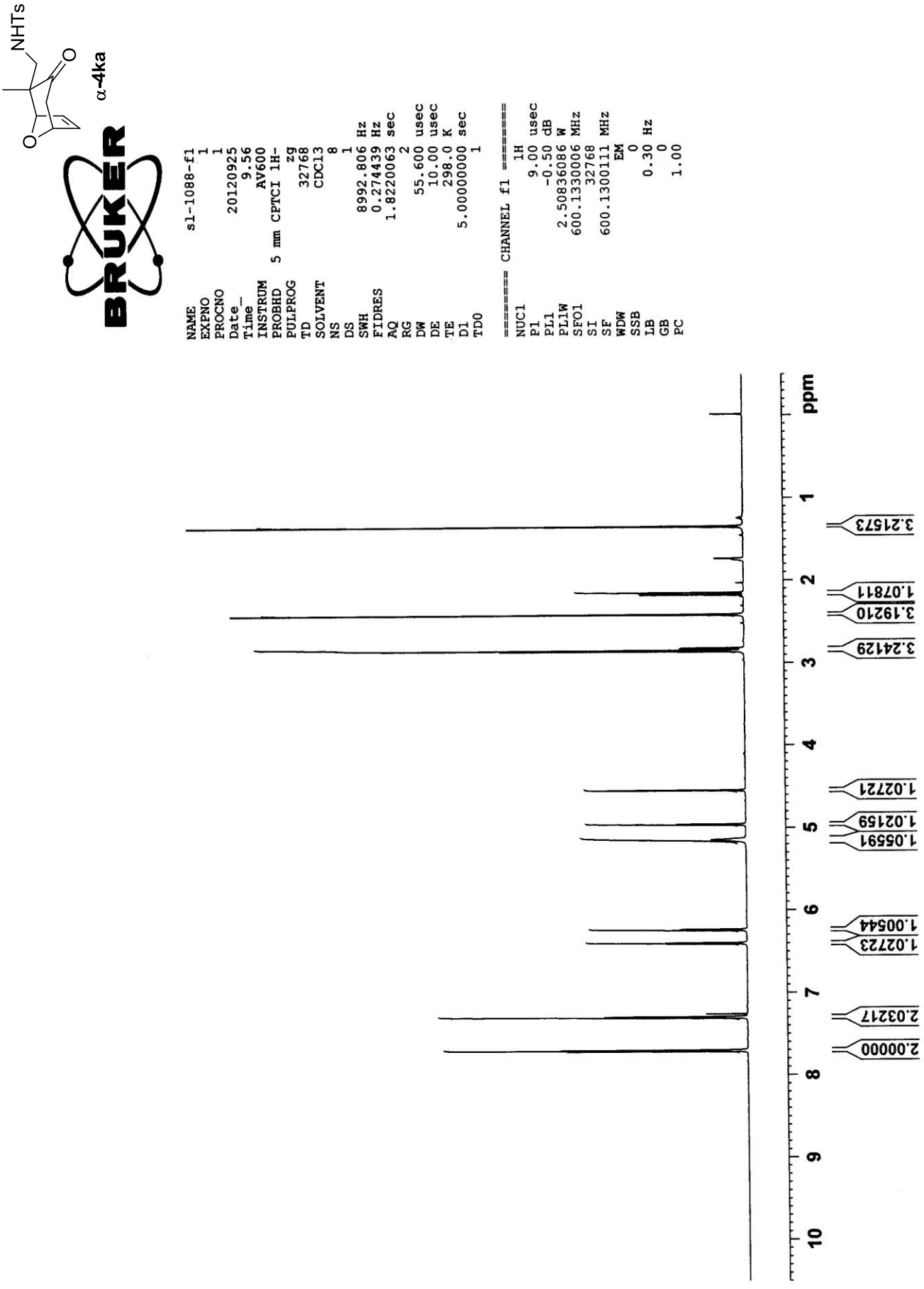

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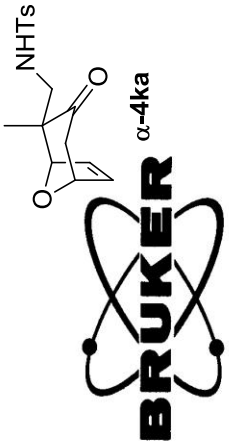


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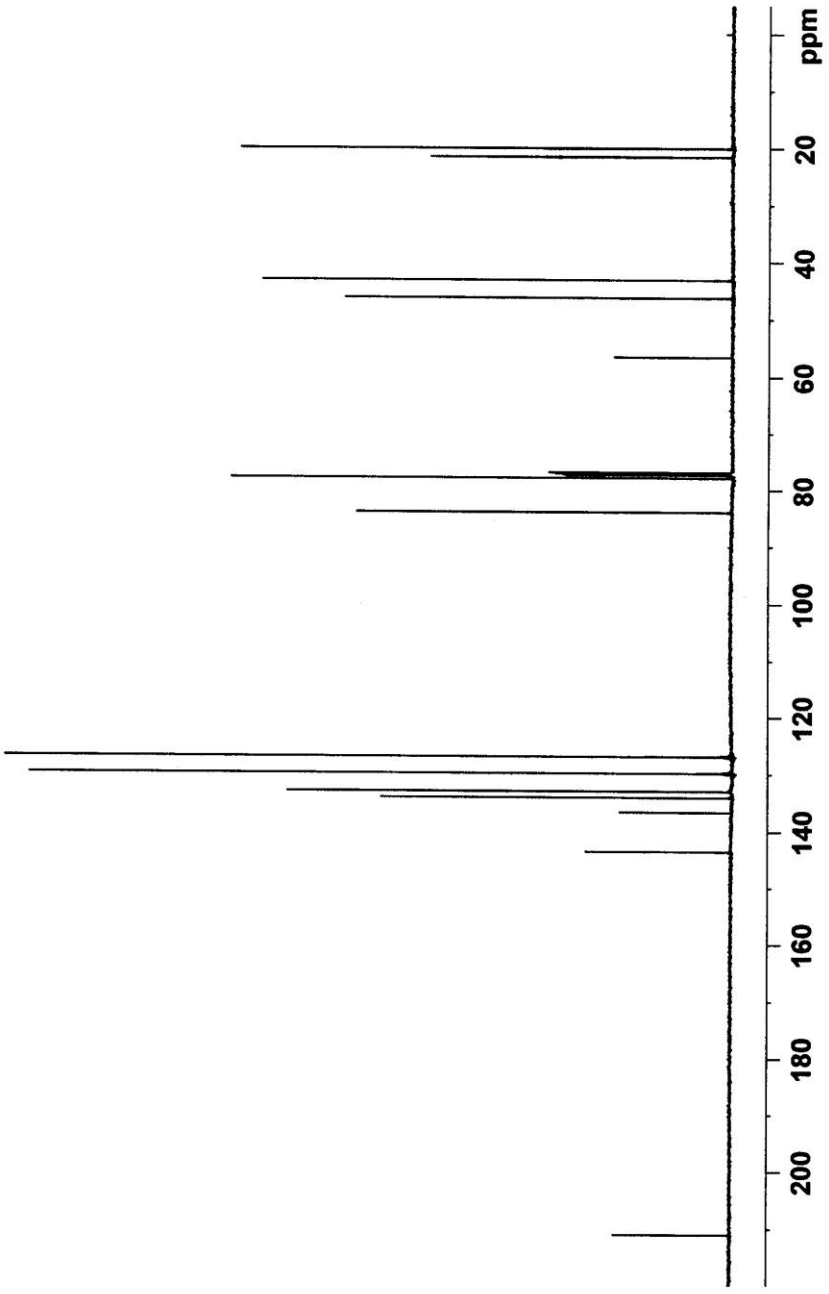

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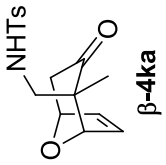

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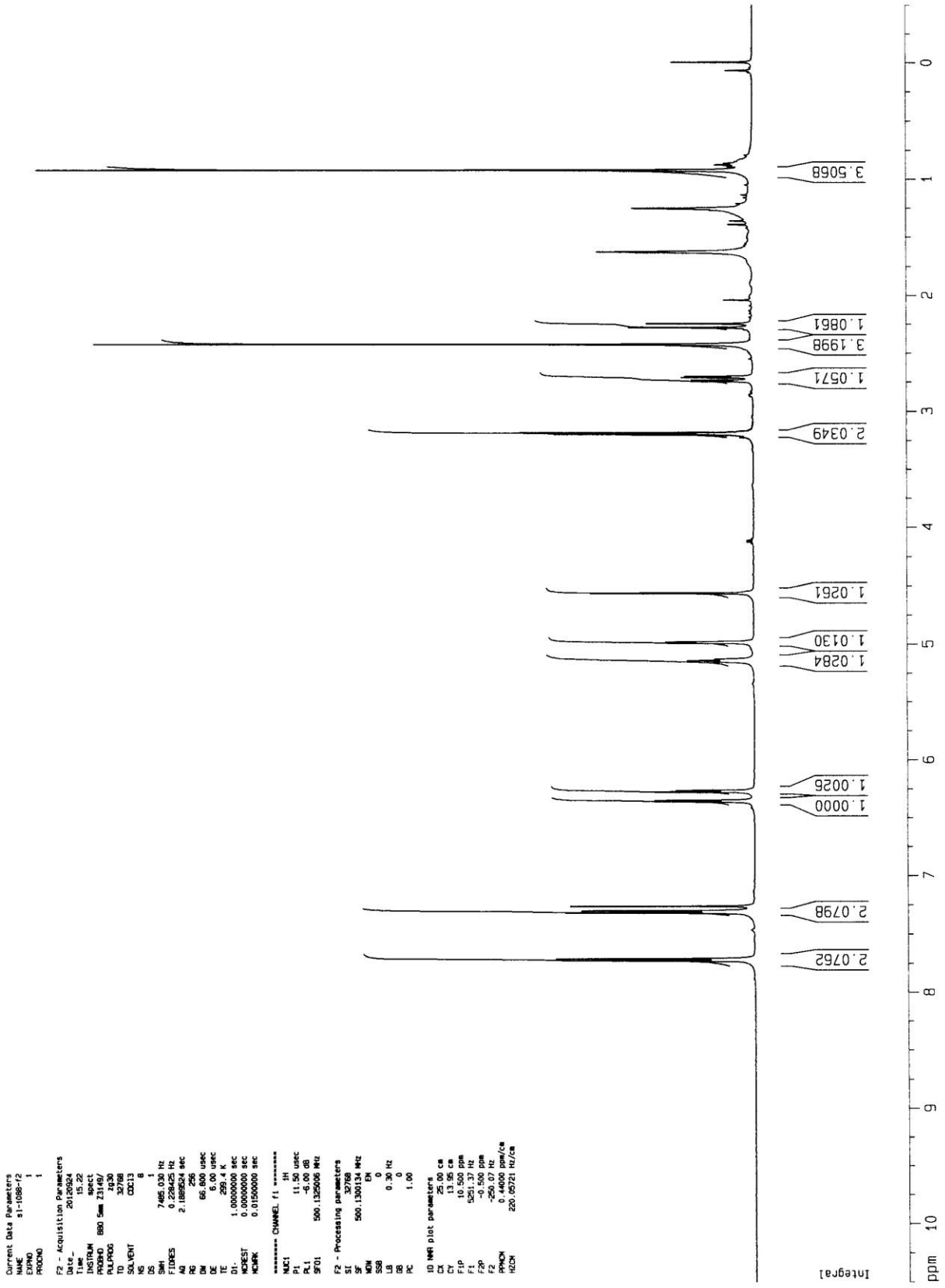

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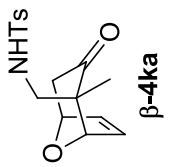

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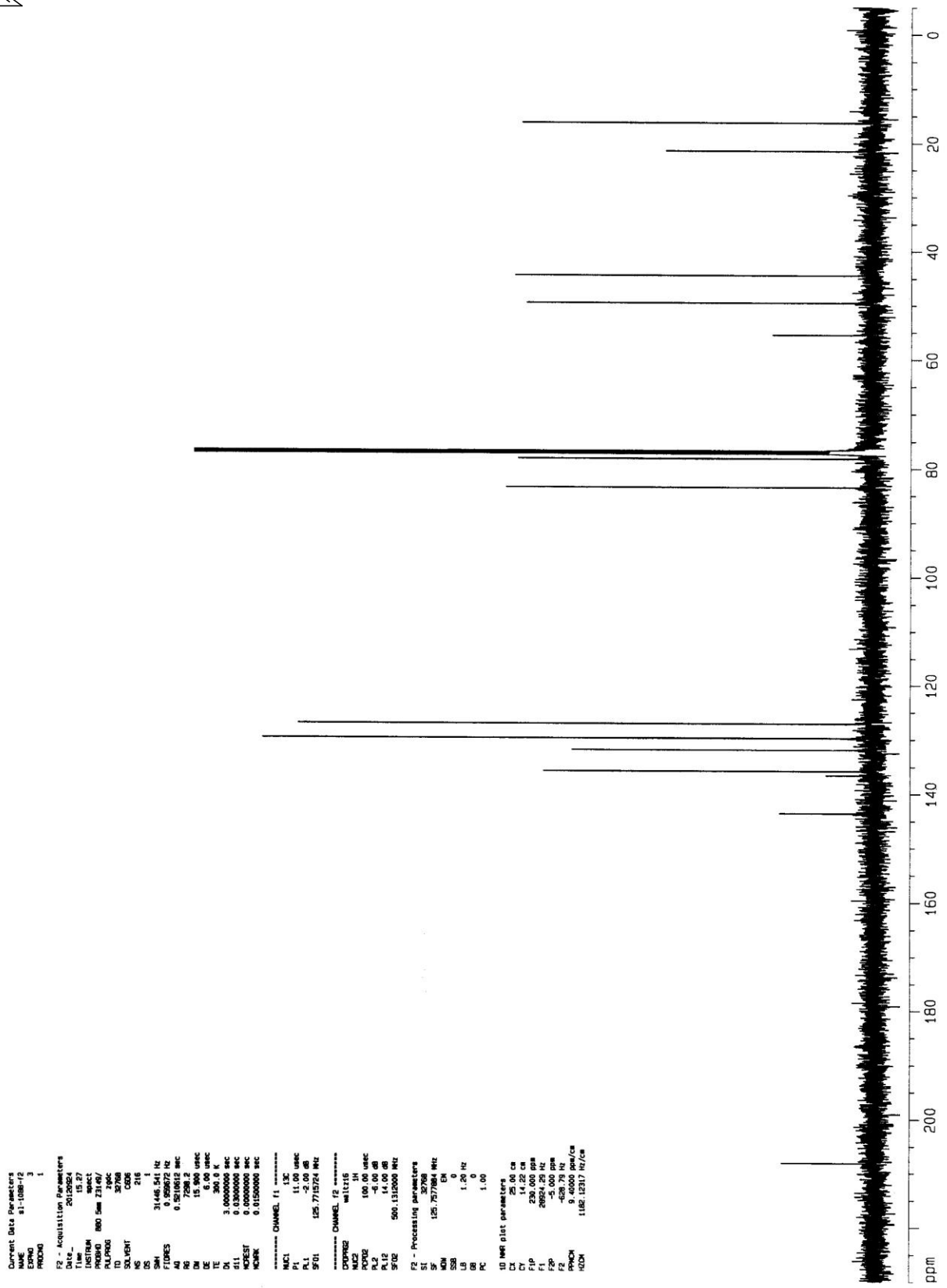

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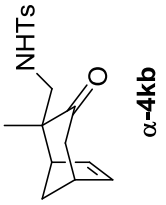

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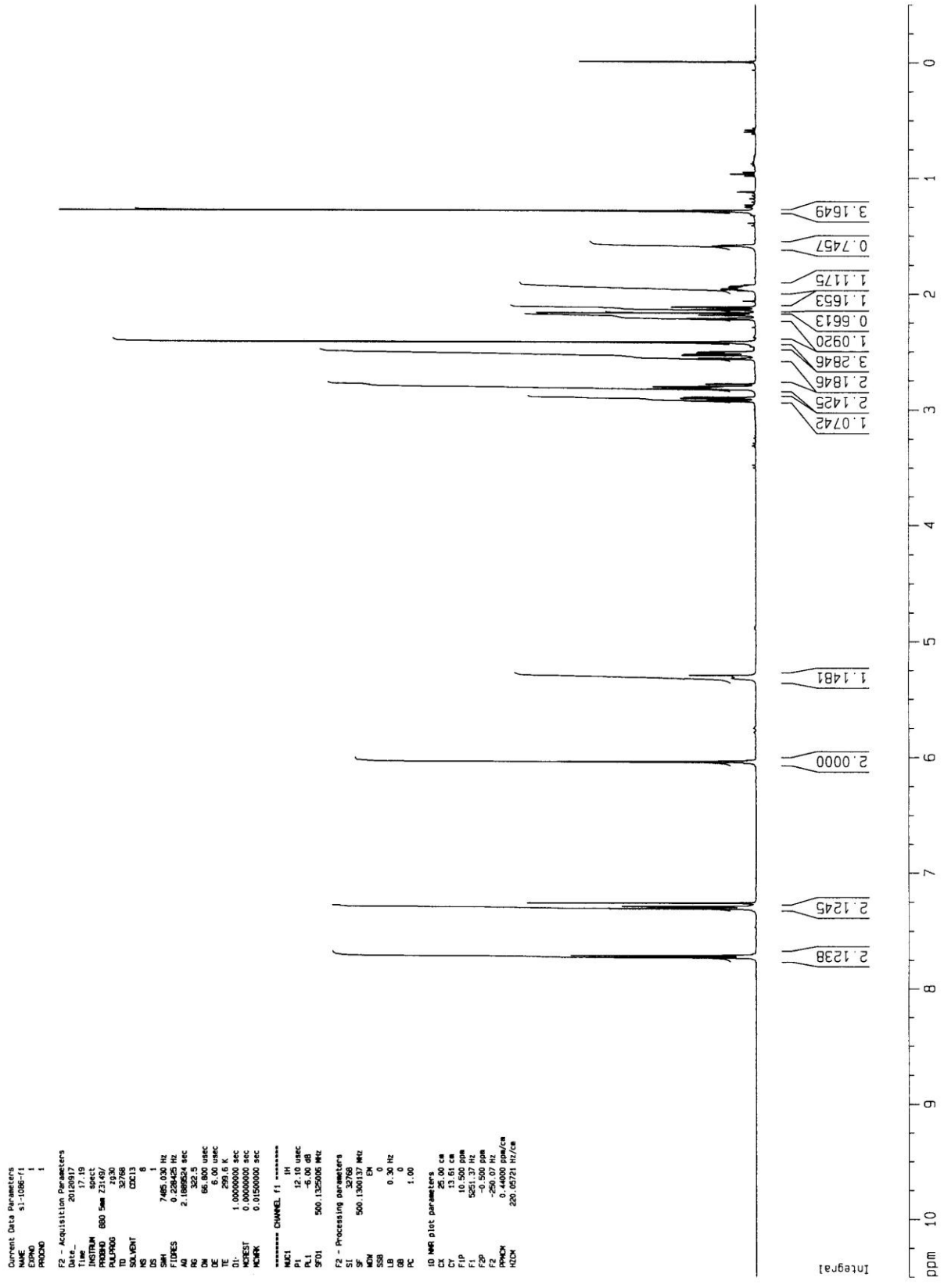

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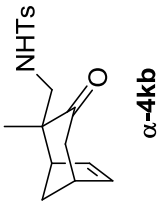

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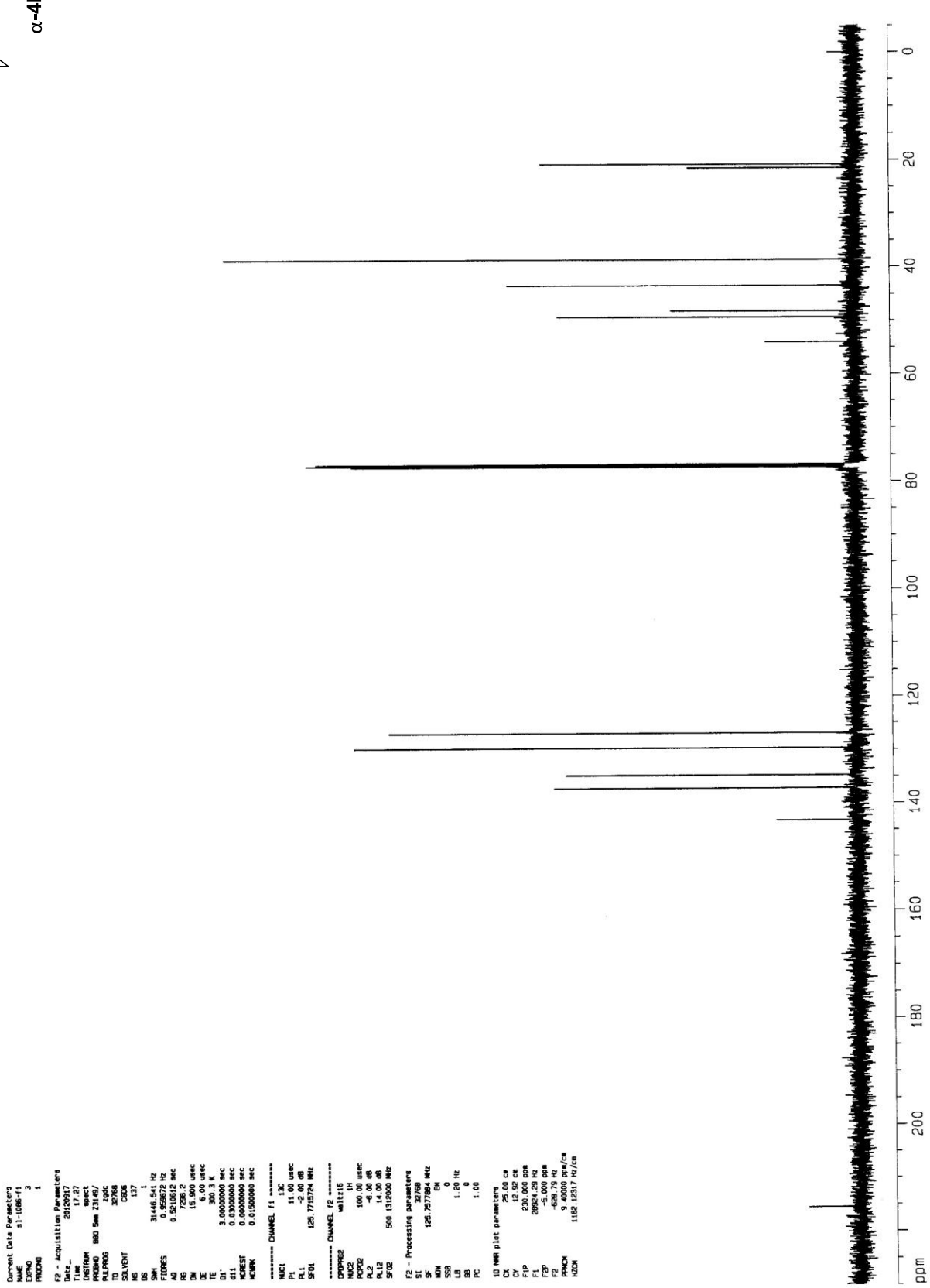

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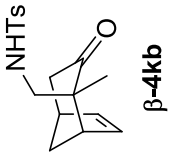

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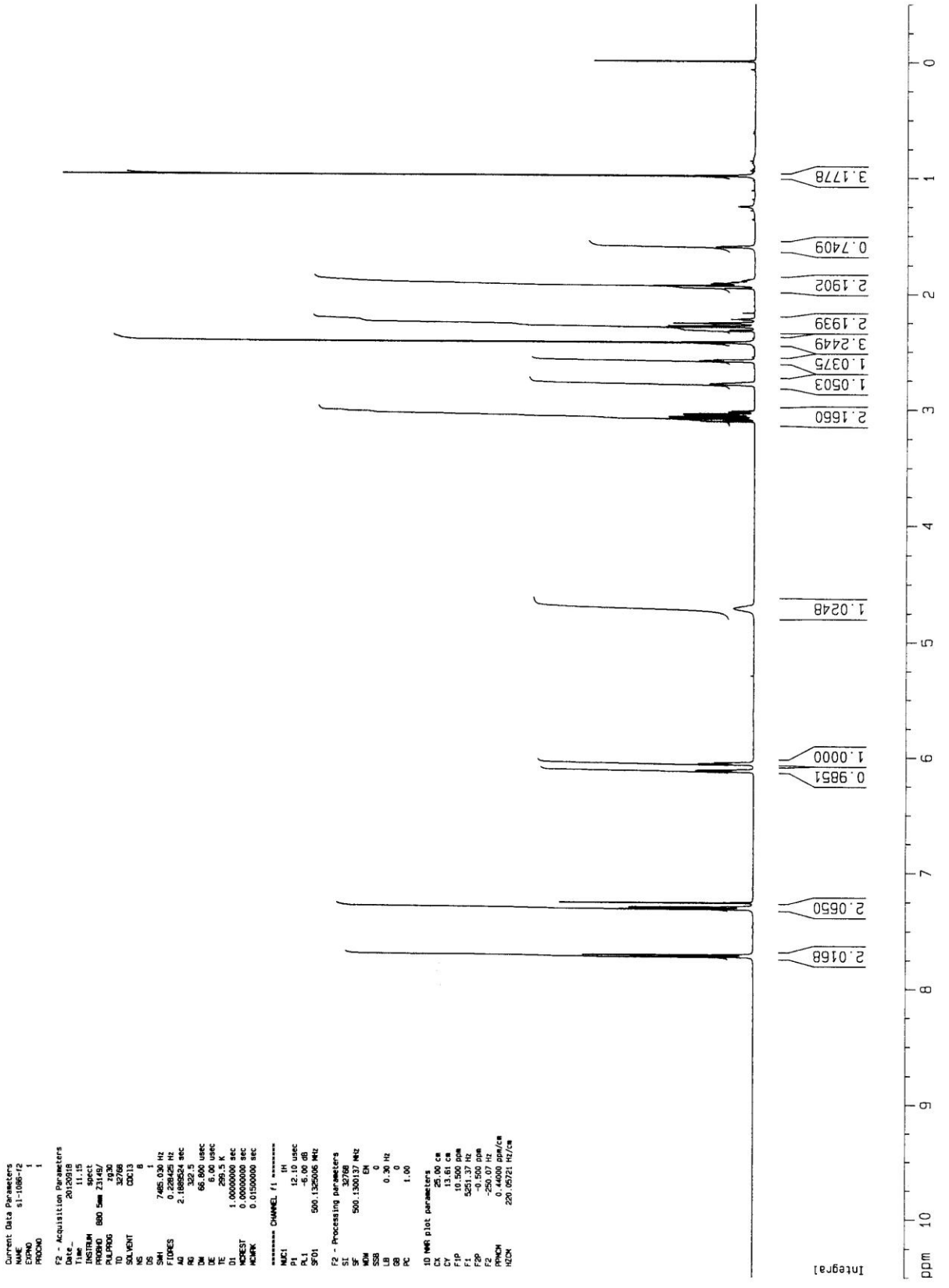

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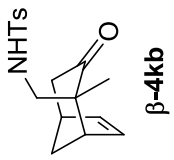

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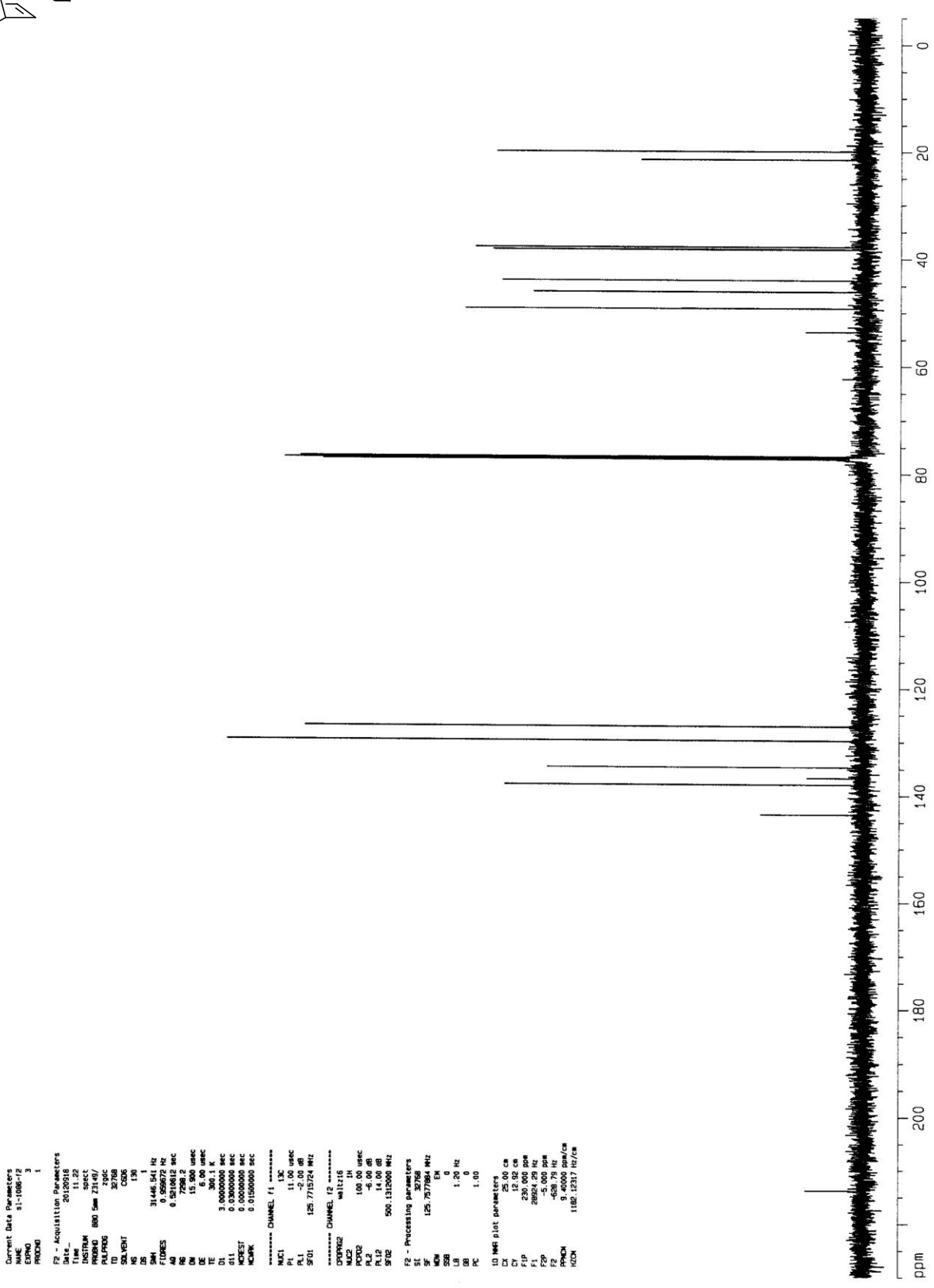

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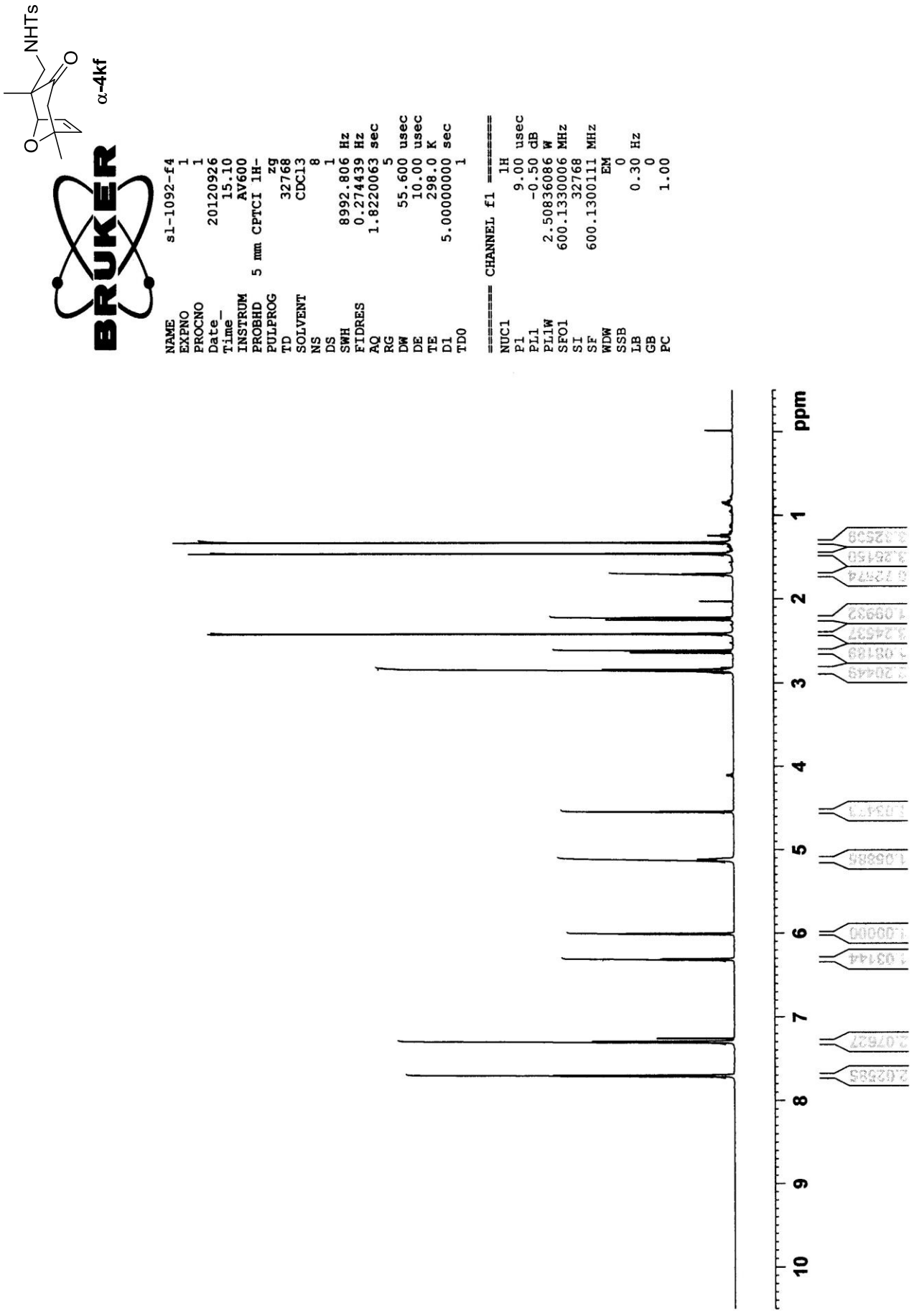

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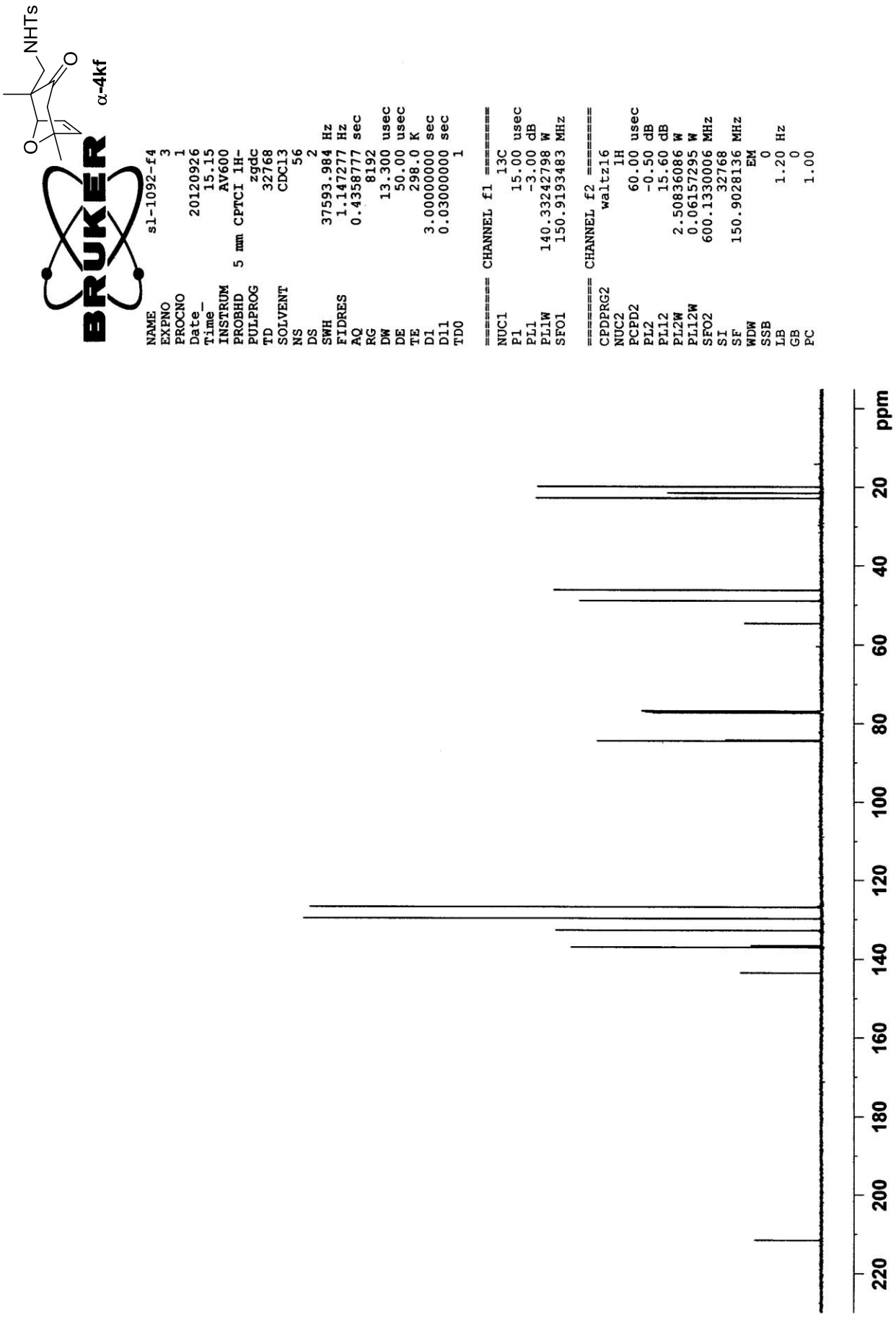

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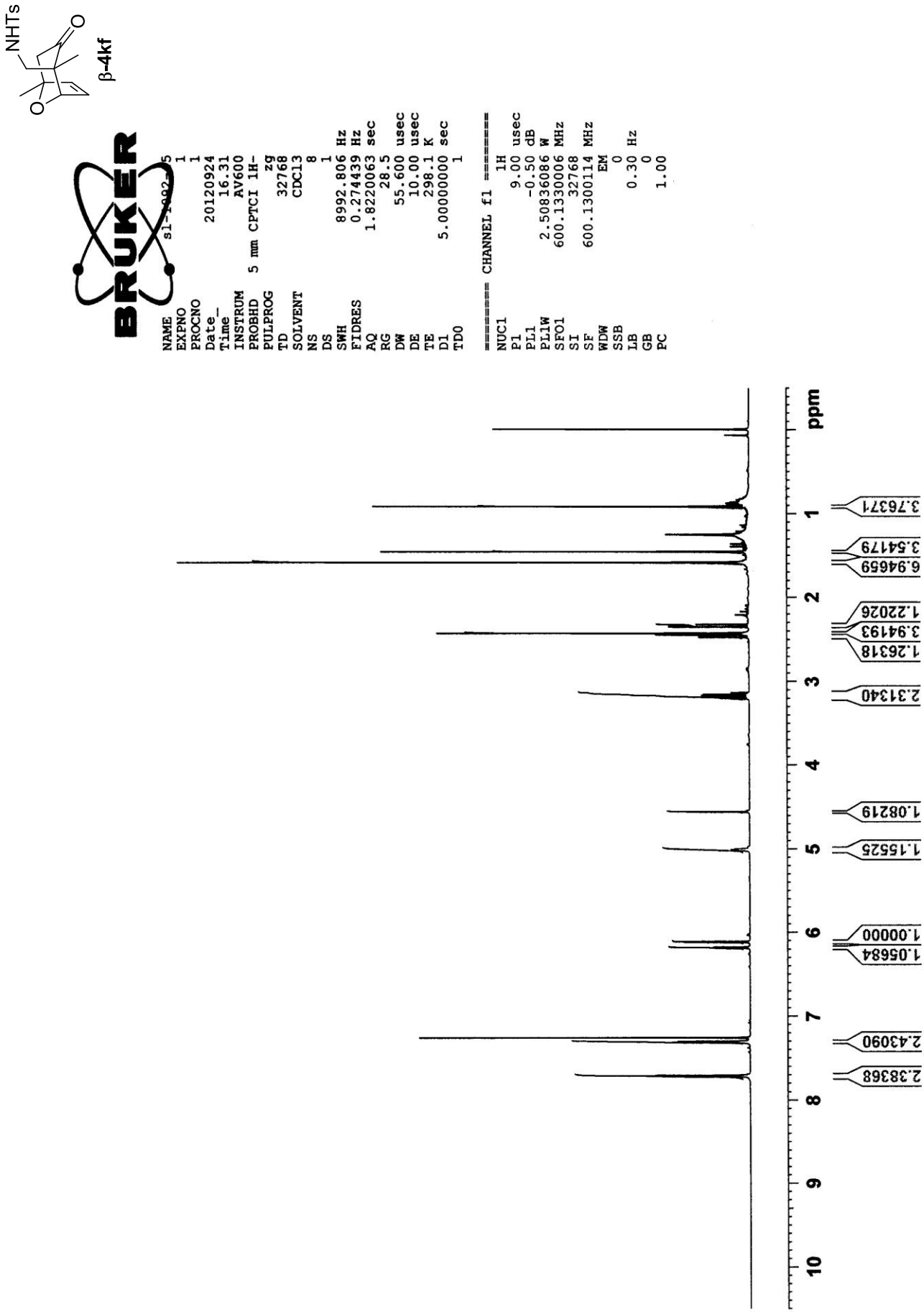

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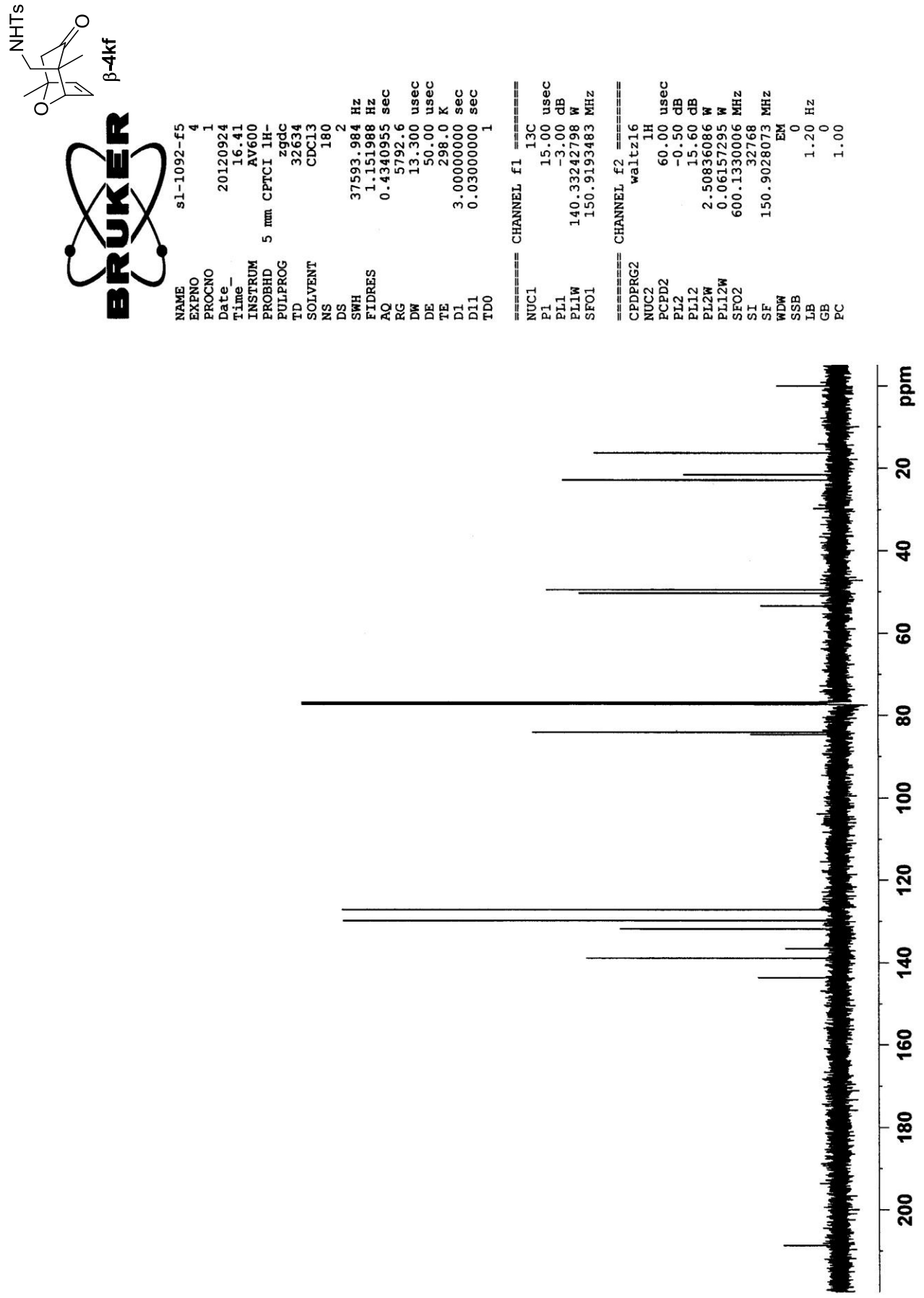

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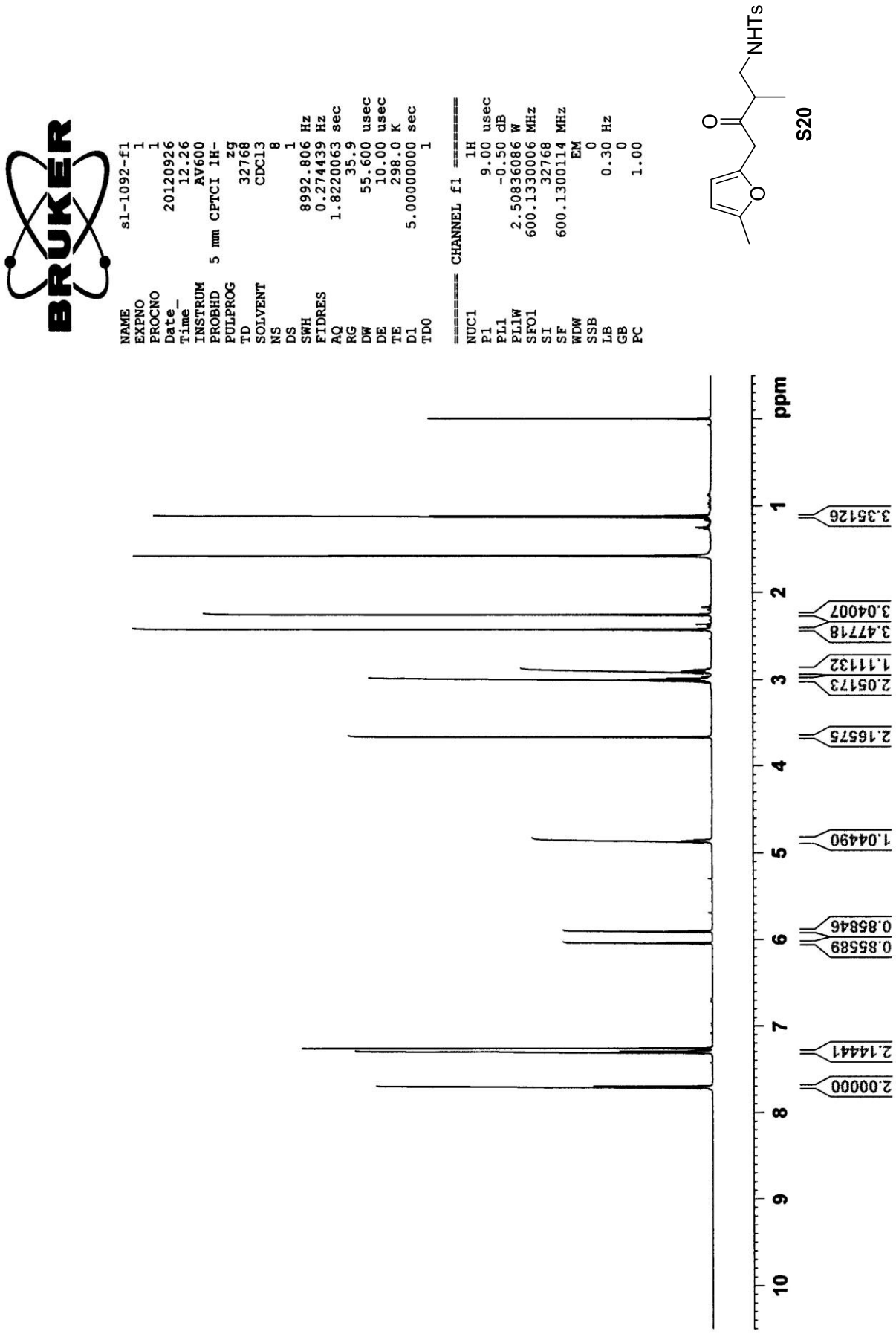

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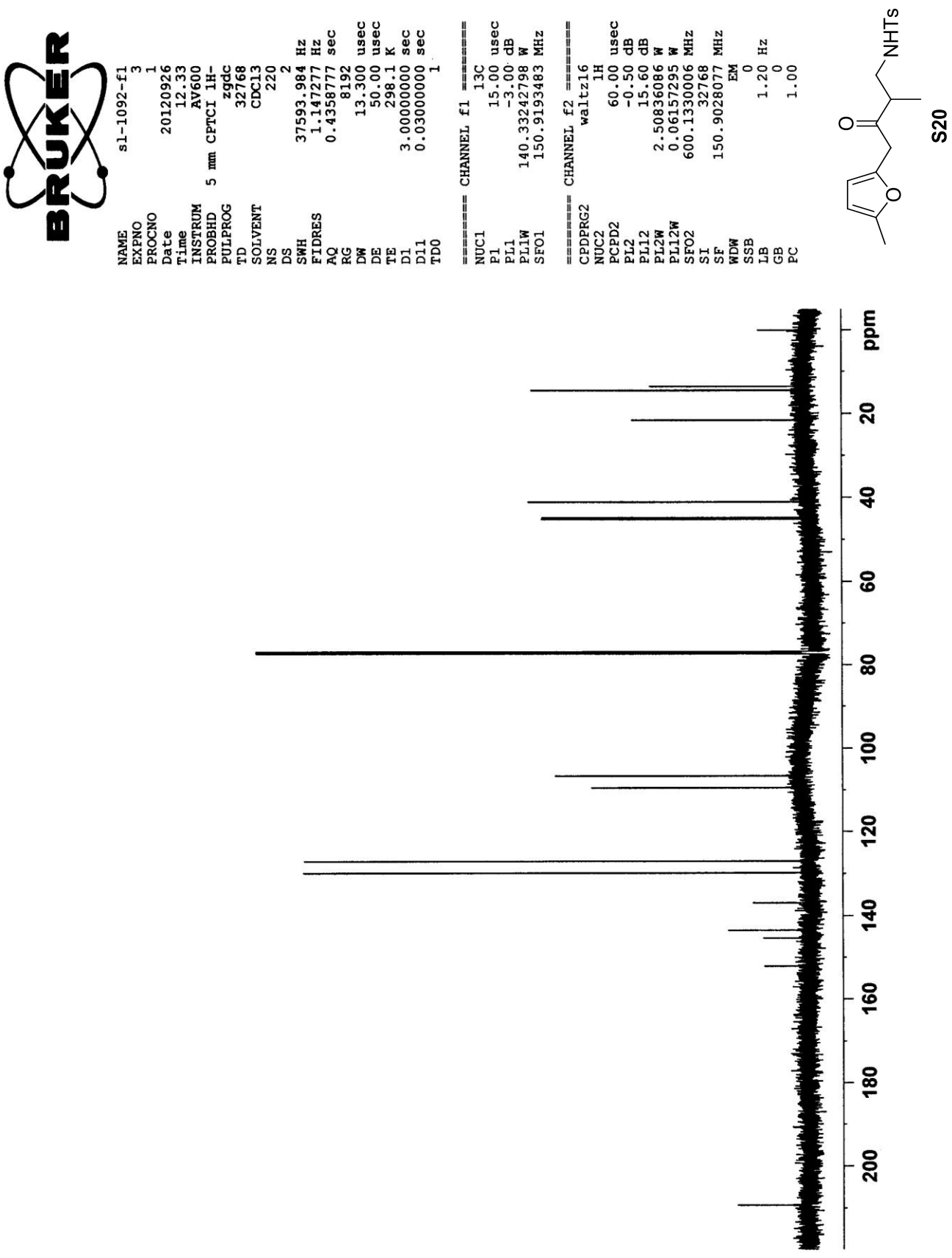

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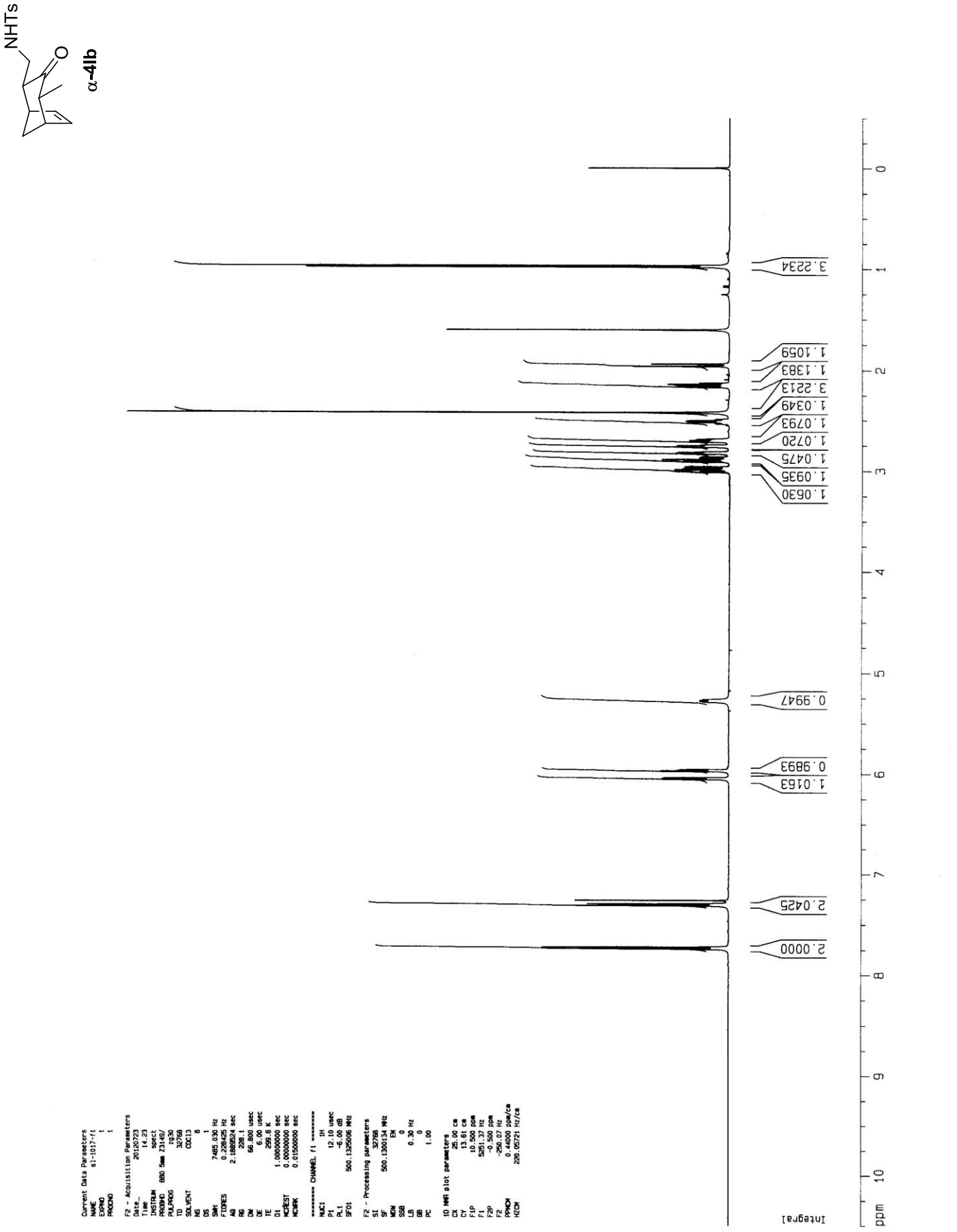

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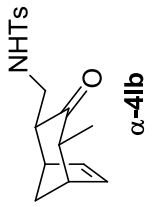

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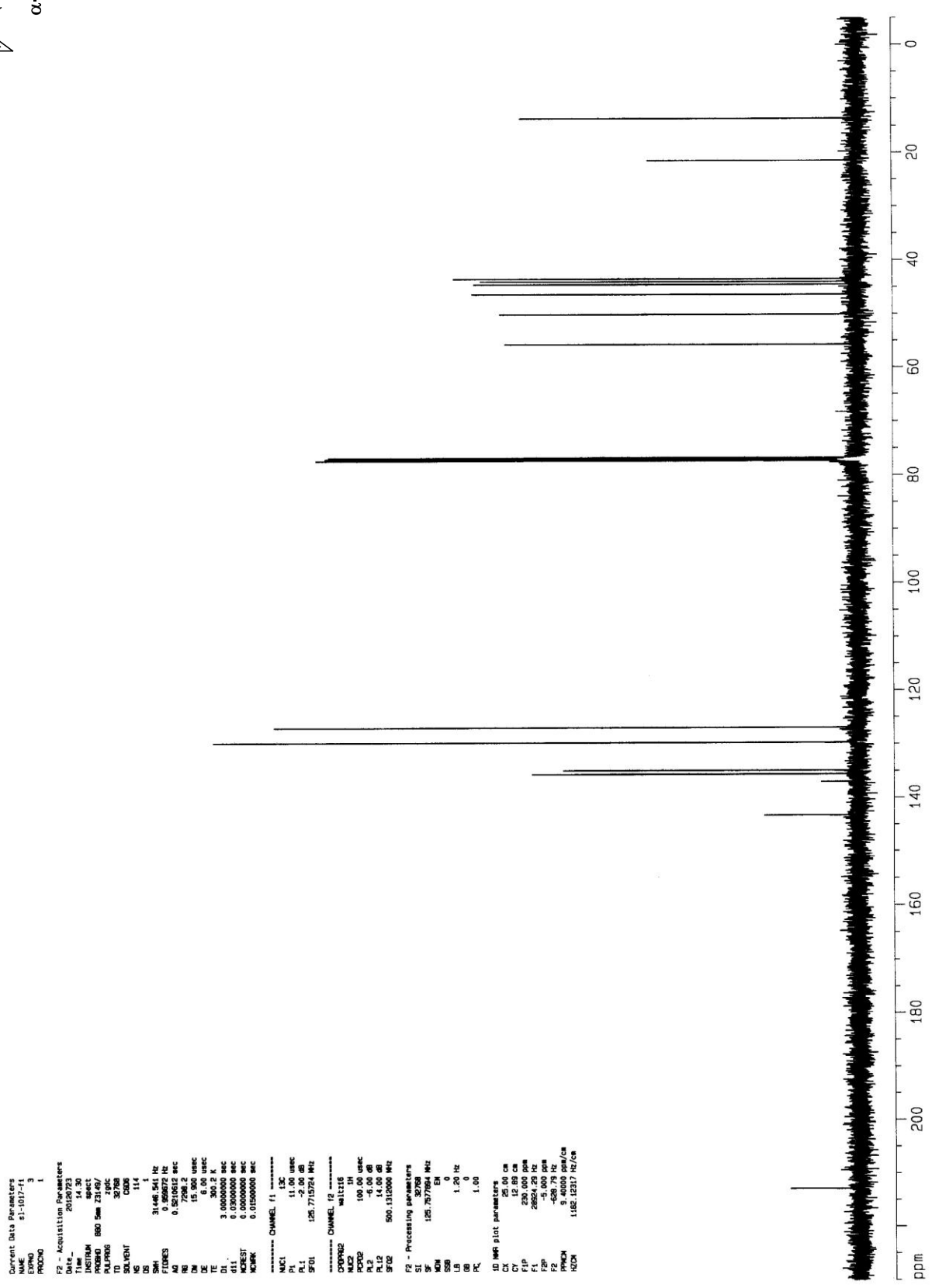

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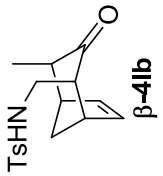

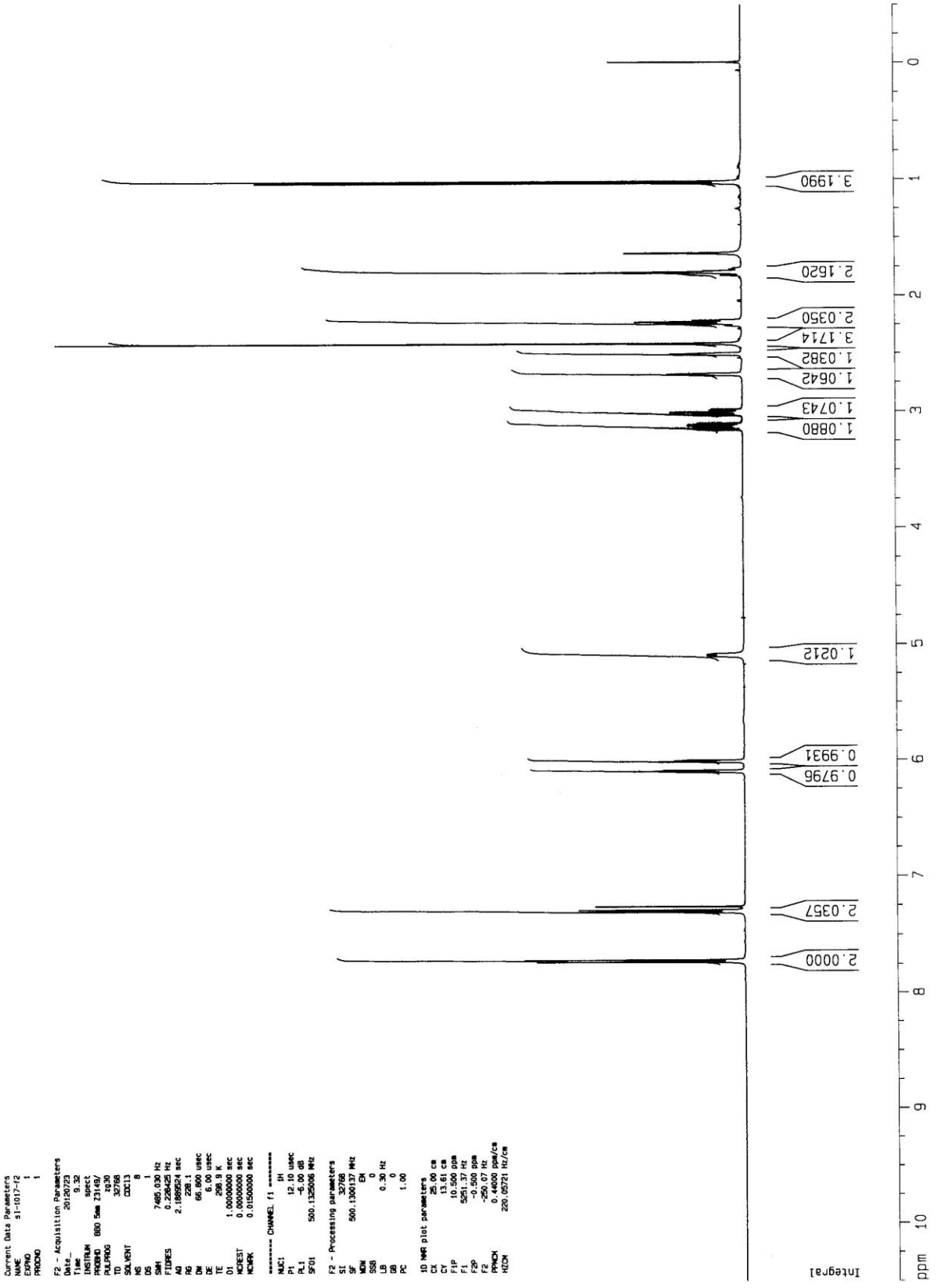

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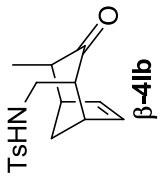

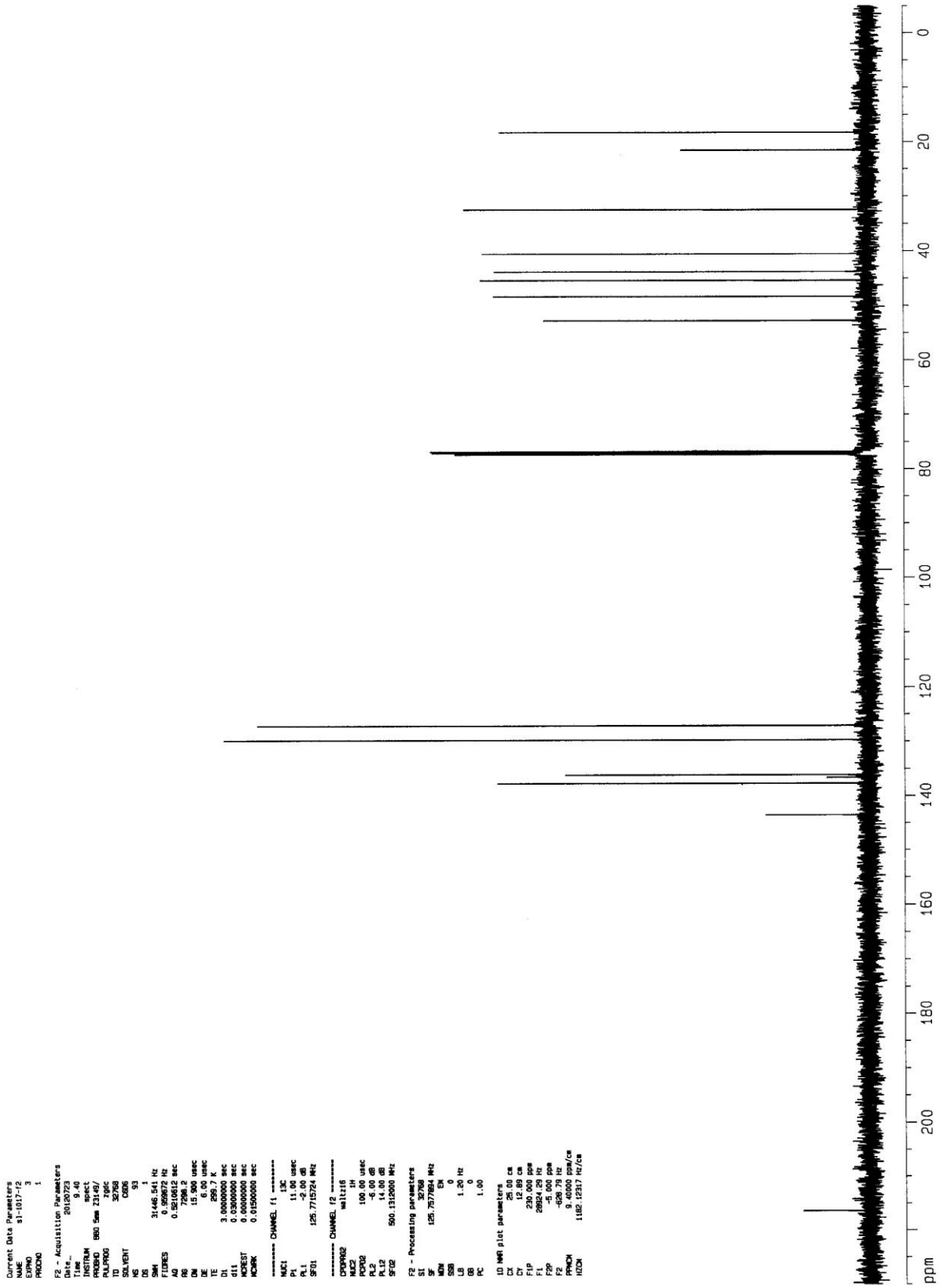

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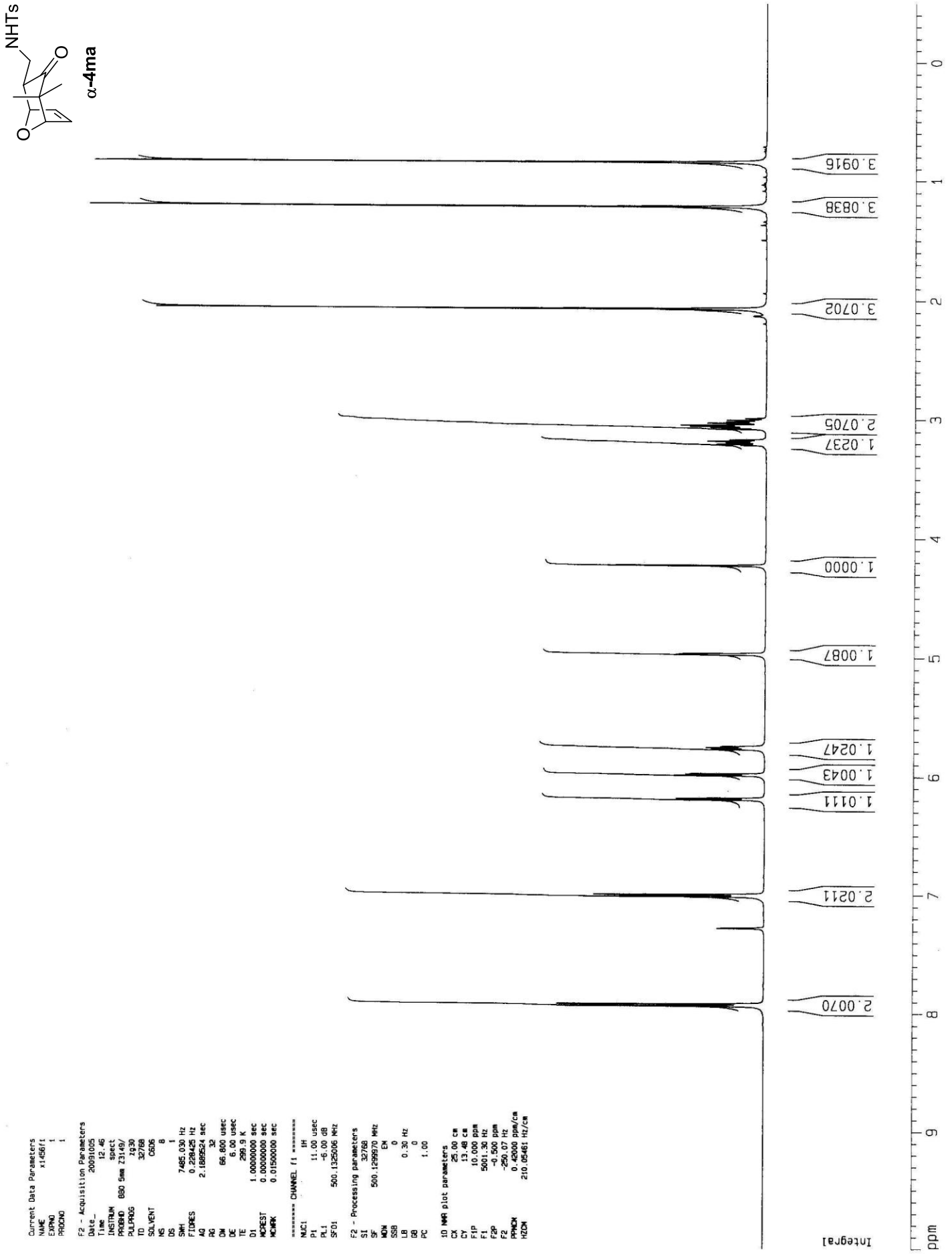

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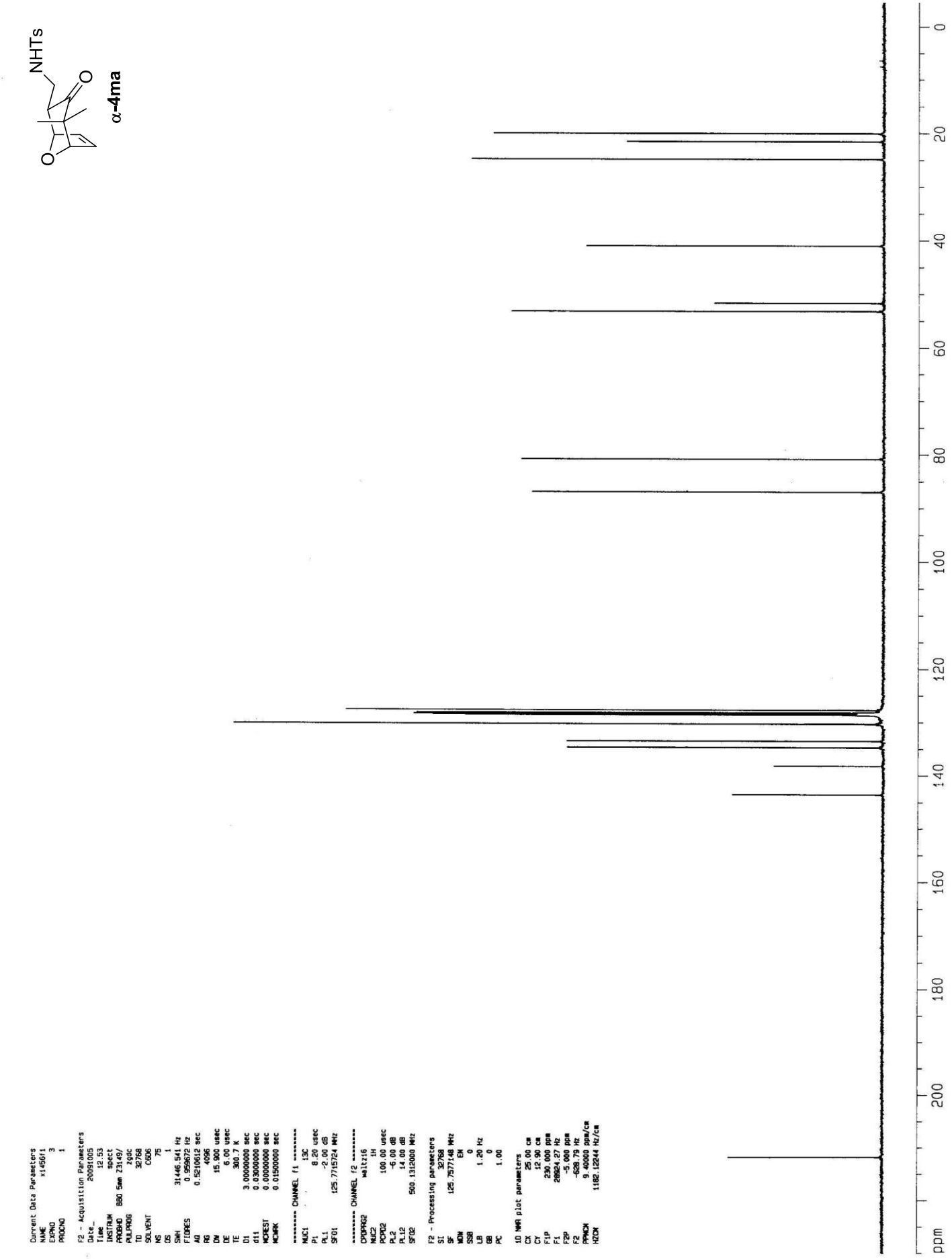

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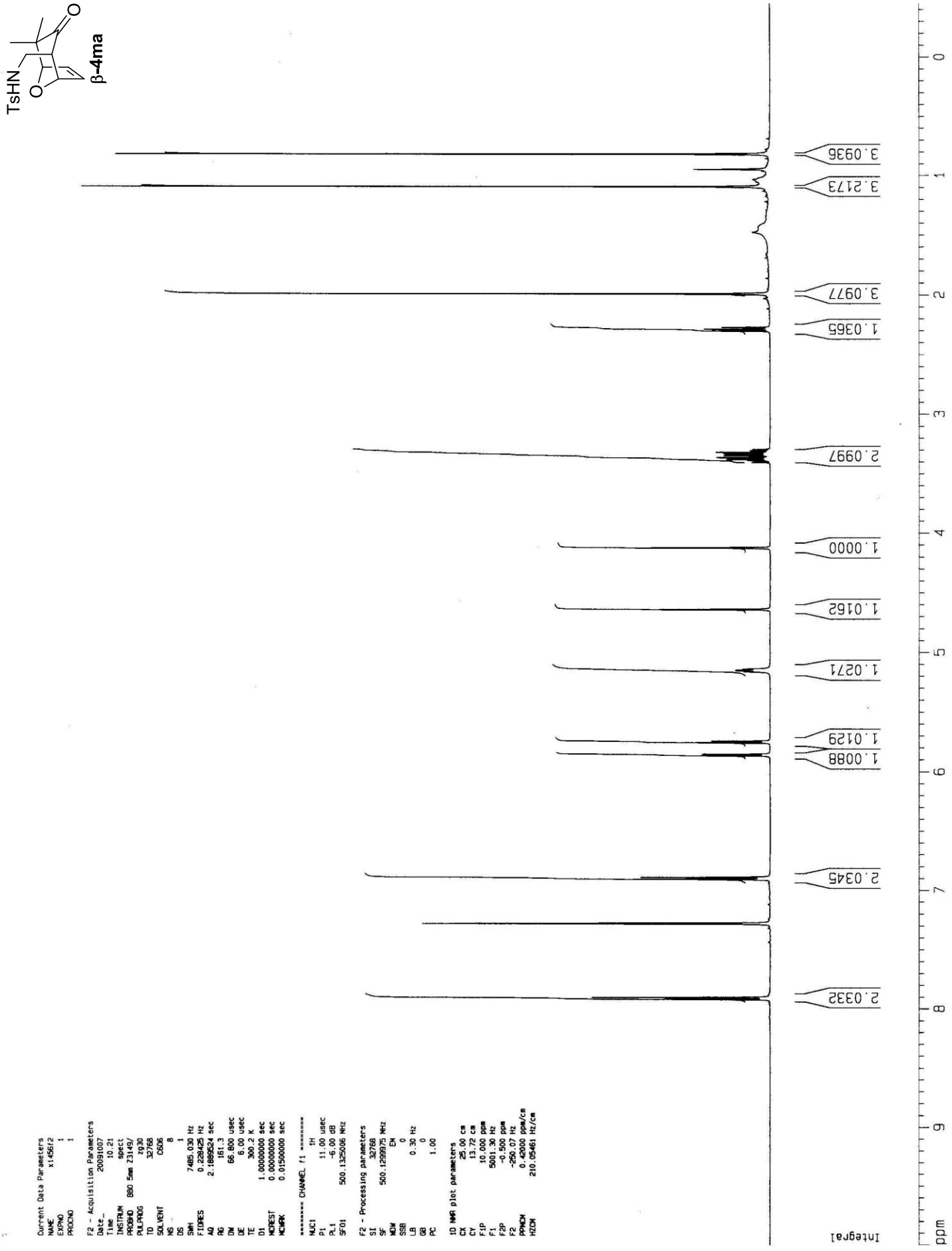

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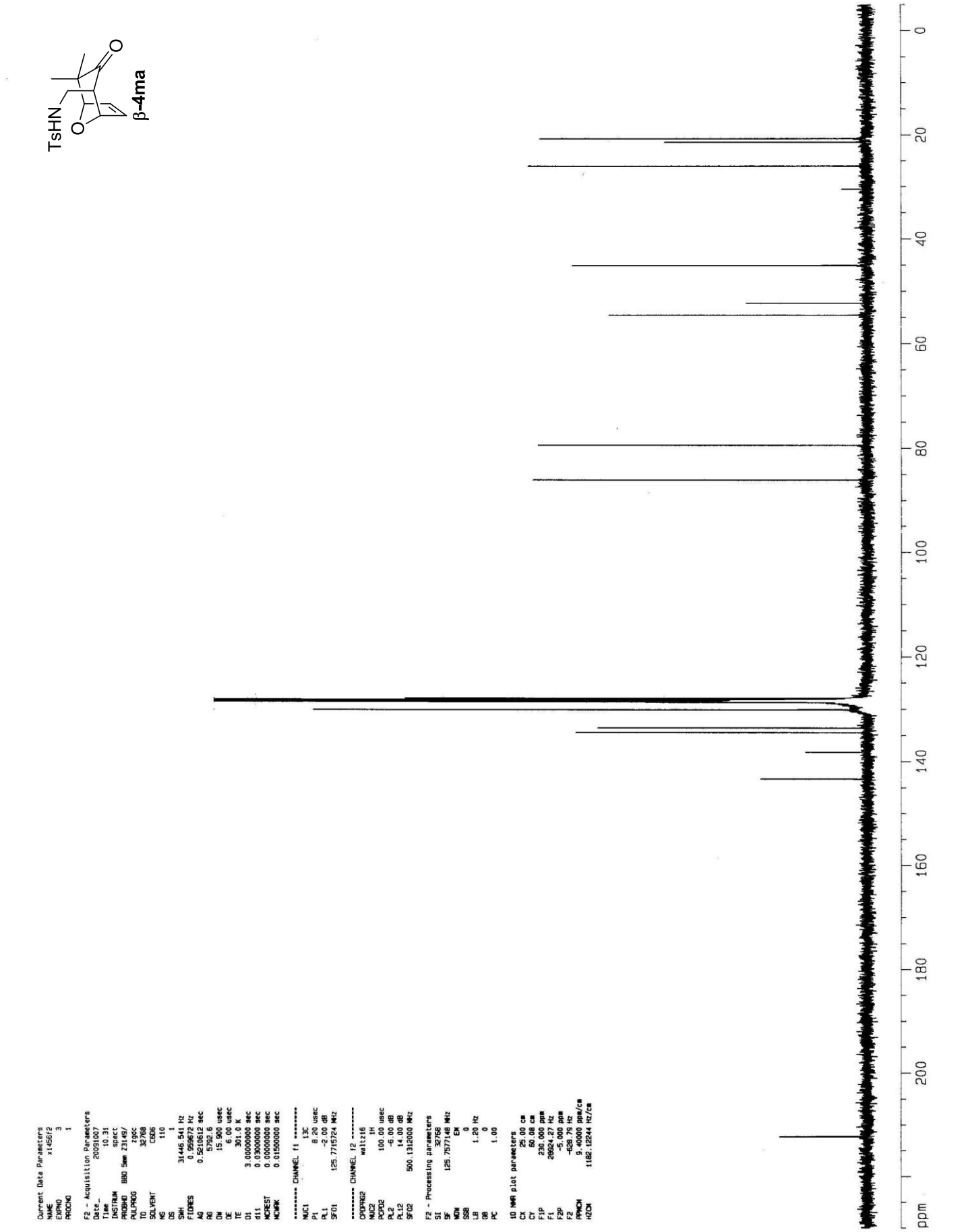

Supplementary Material (ESI) for Chemical Communications
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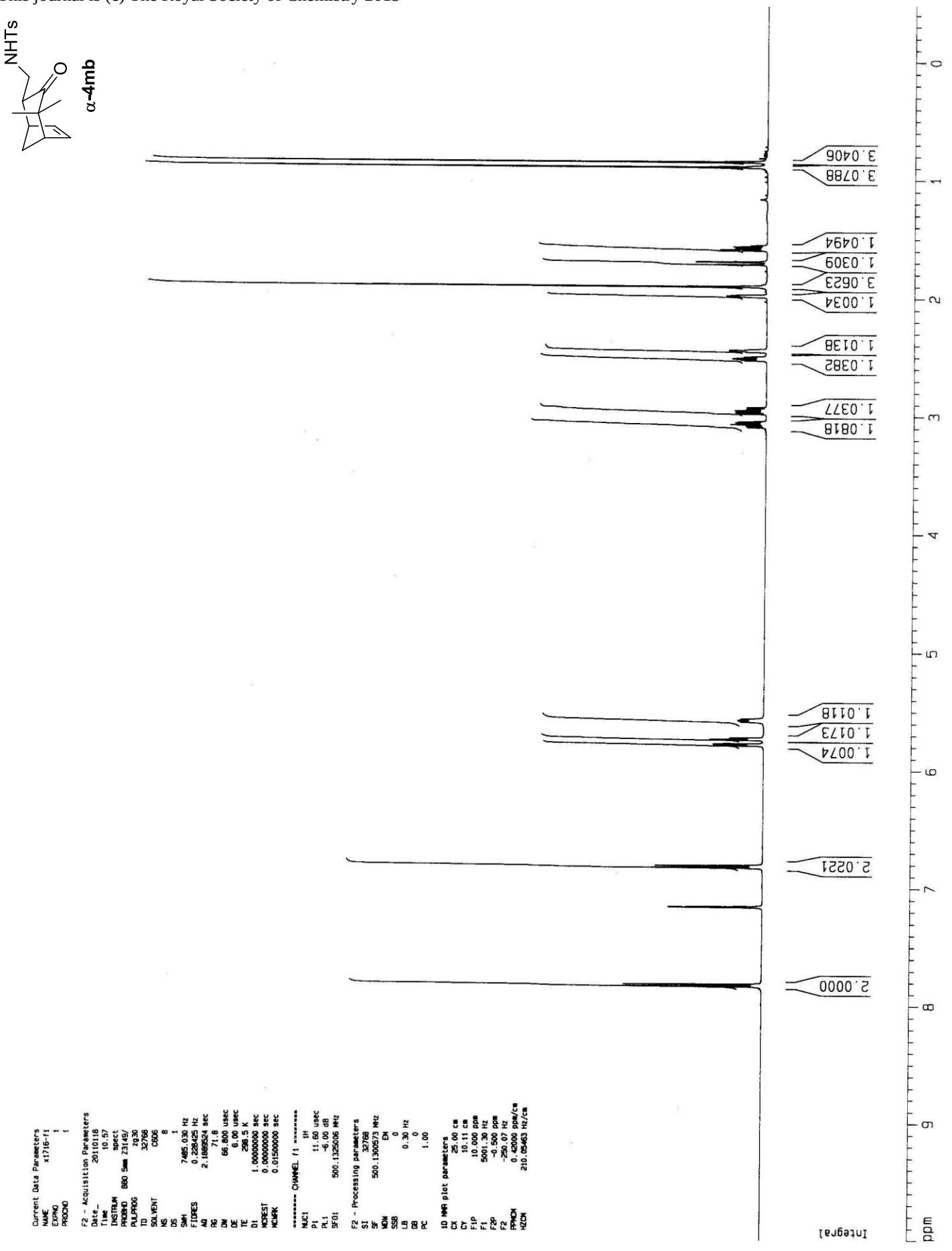

Supplementary Material (ESI) for Chemical Communications
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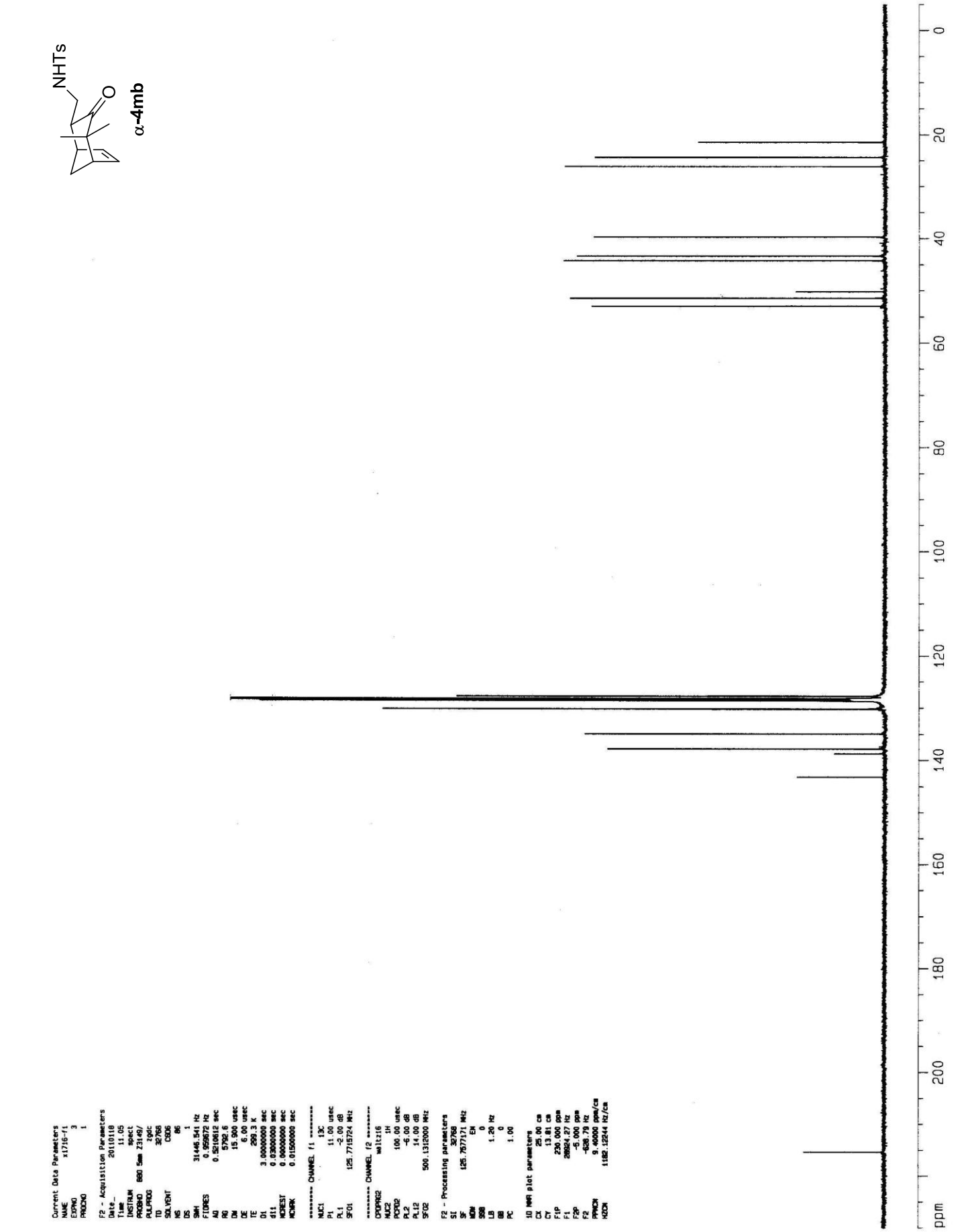

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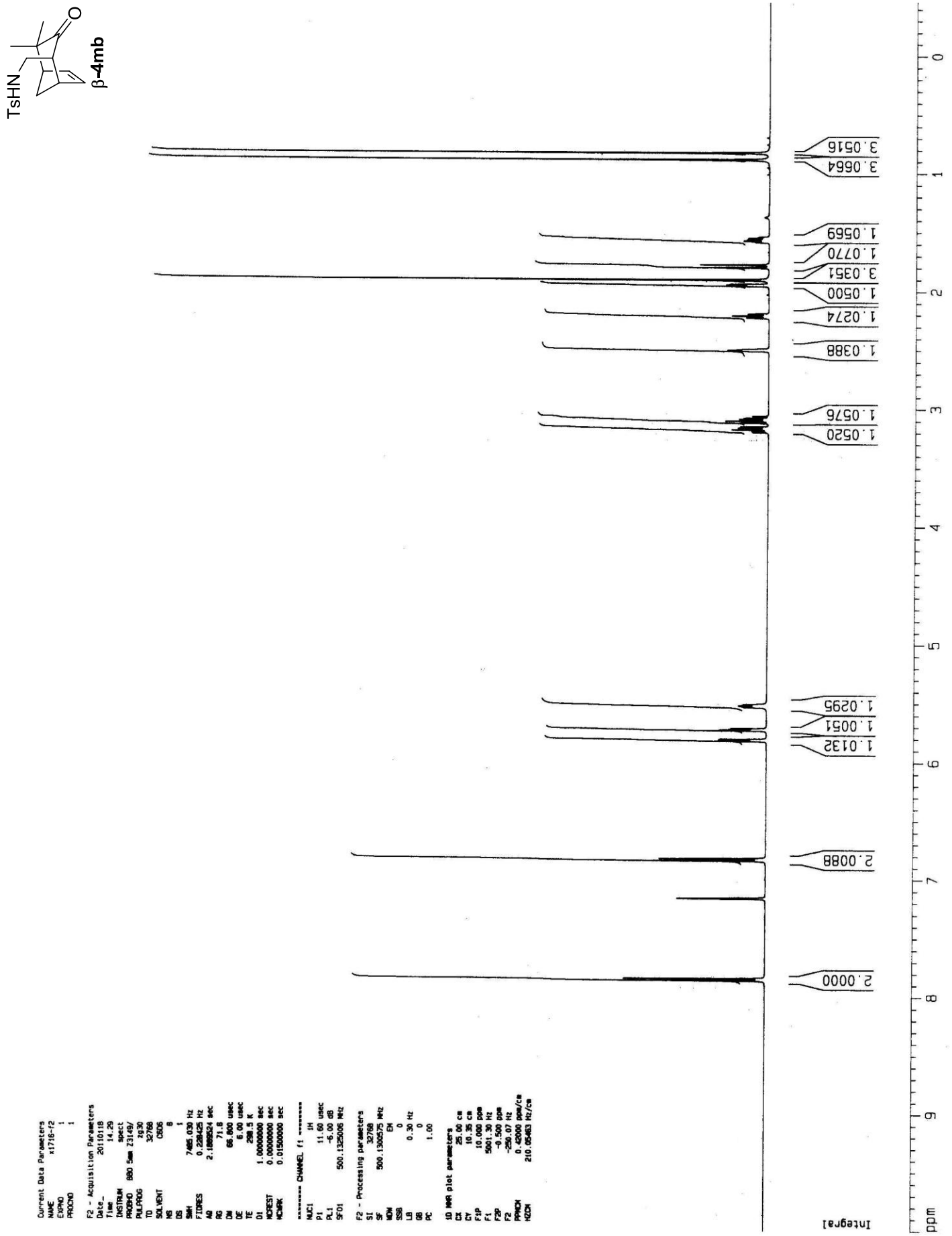

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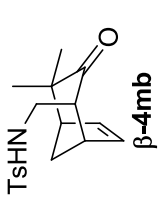

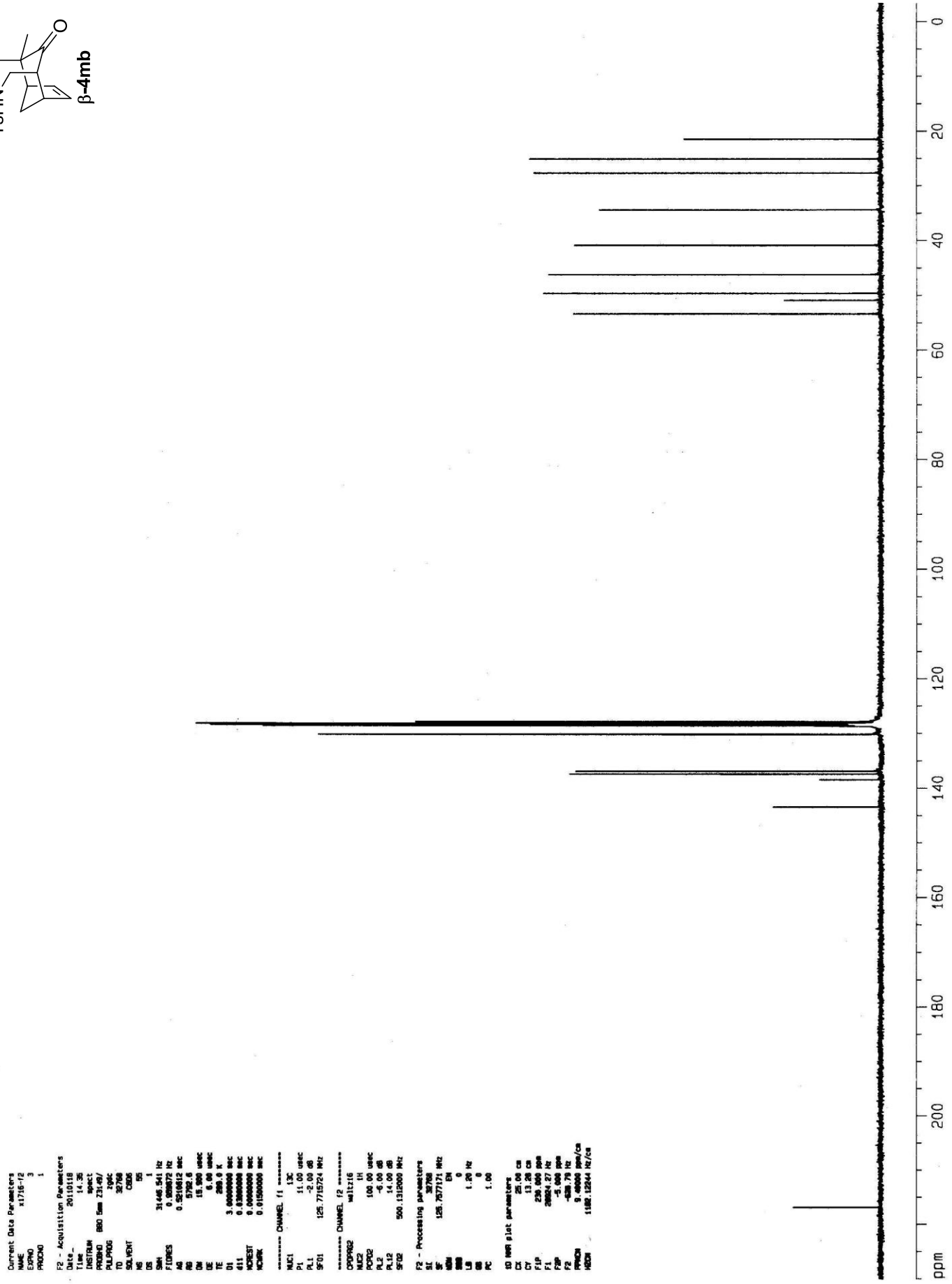

Supplementary Material (ESI) for Chemical Communications
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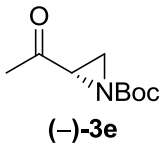
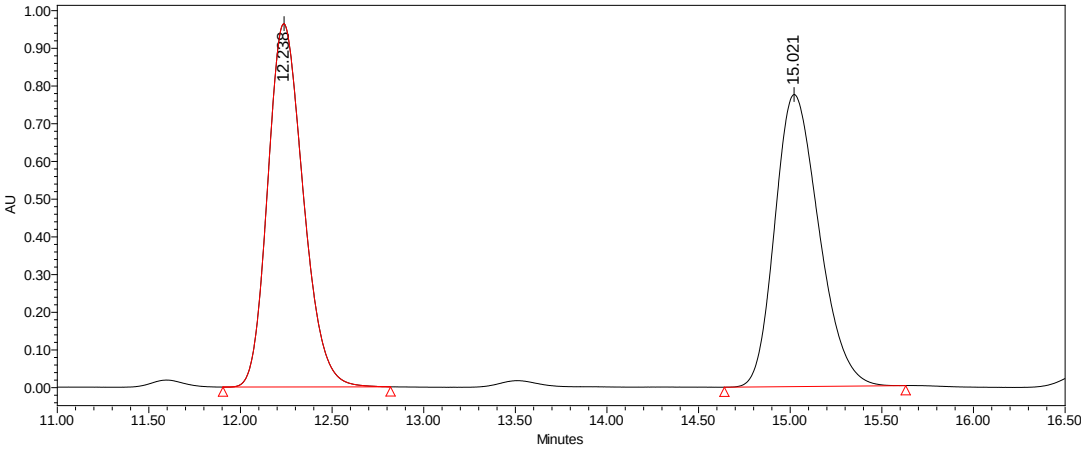
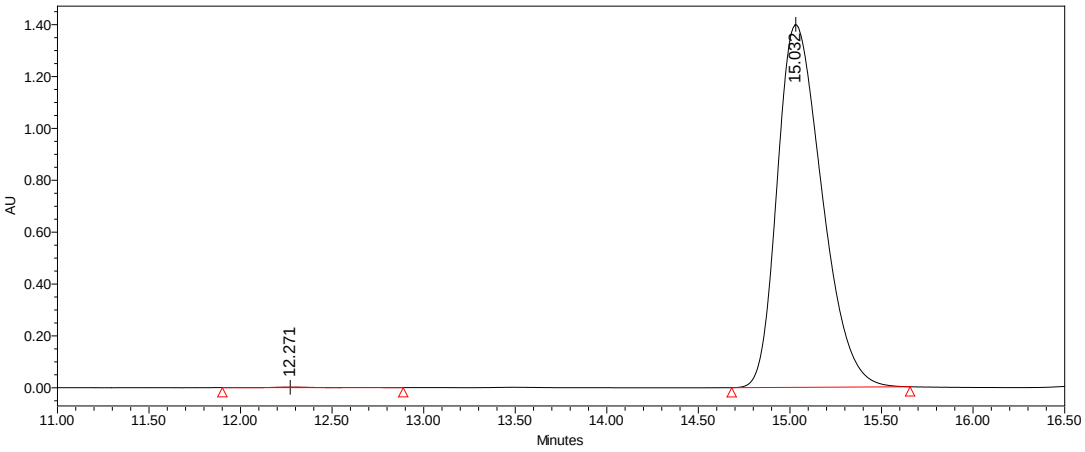
Sample	**rac-3e/ (–)-3e**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 6:94 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(–)-3e



	Retention Time (min)	Area	% Area	Height
1	12.238	12978527	50.04	963724
2	15.021	12959787	49.96	774682



	Retention Time (min)	Area	% Area	Height
1	12.271	25663	0.11	1582
2	15.032	23730889	99.89	1399476

ee = 99%

Supplementary Material (ESI) for Chemical Communications
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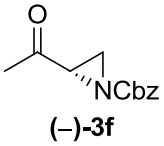
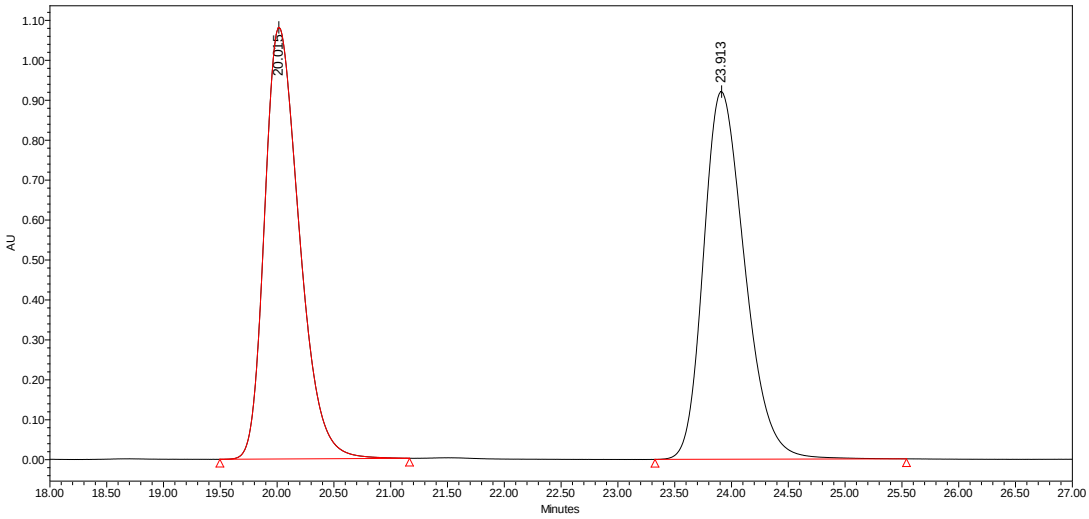
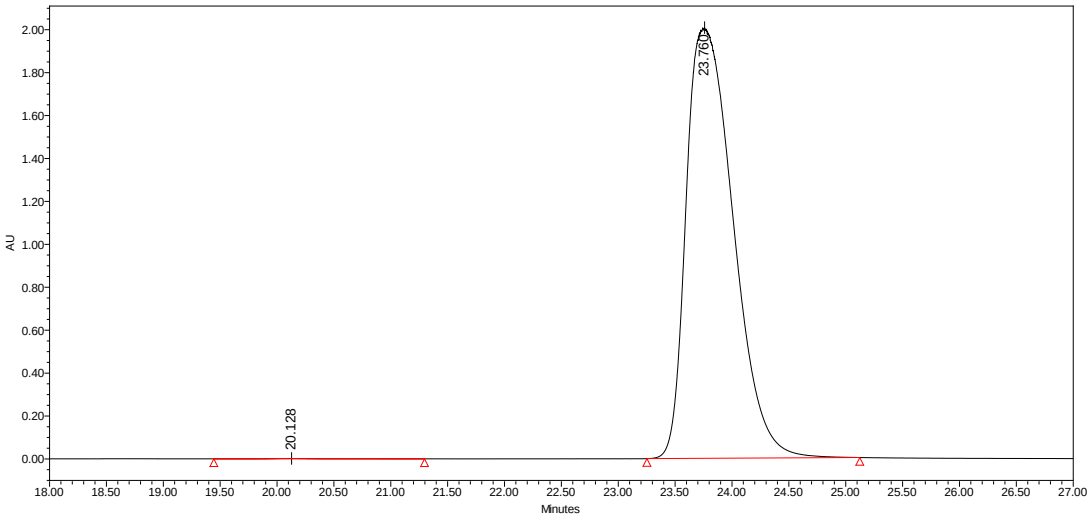
Sample	**rac-3f/ (–)-3f**
Column	CHIRALCEL OD-3
Mobile phase	2-Propanol/n-Hexane = 20:80 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(–)-3f



	Retention Time (min)	Area	% Area	Height
1	20.015	22984897	49.72	1080566
2	23.913	23247923	50.28	920870



	Retention Time (min)	Area	% Area	Height
1	20.128	52093	0.09	1766
2	23.760	57591779	99.91	2006504

ee = 99%

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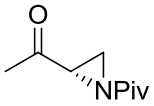
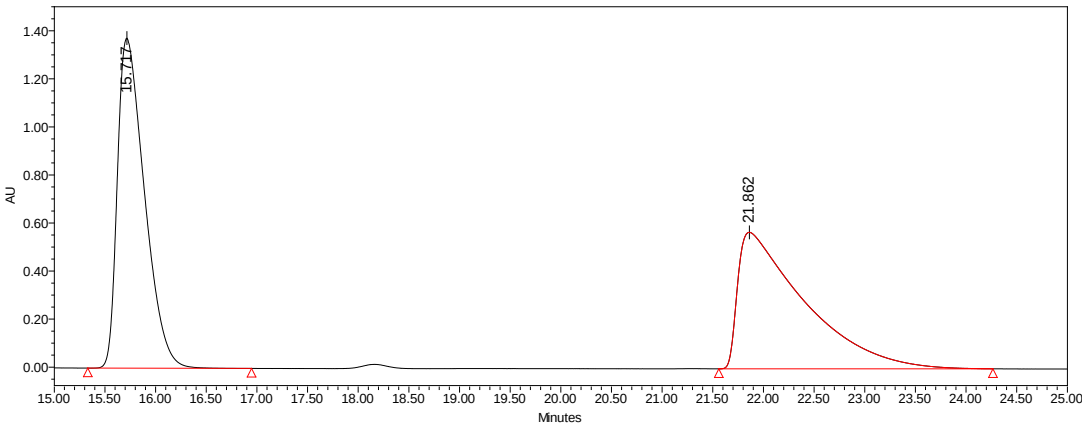
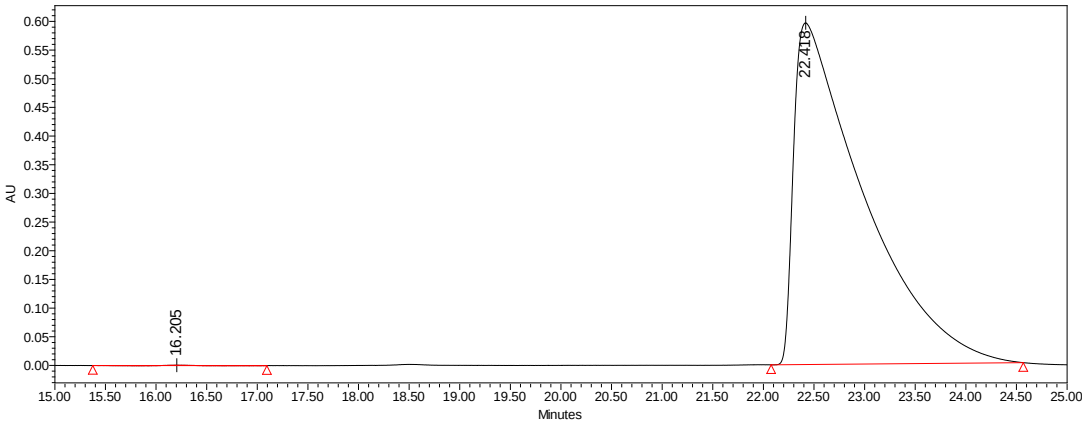
Sample	**rac-3g/ (–)-3g**
Column	CHIRALPAK AY-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(–)-3g



	Retention Time (min)	Area	% Area	Height
1	15.717	25455141	49.51	1374086
2	21.862	25963069	50.49	568235



	Retention Time (min)	Area	% Area	Height
1	16.205	18020	0.06	754
2	22.418	28516187	99.94	595928

ee = 99%

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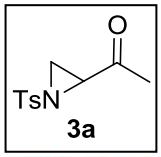
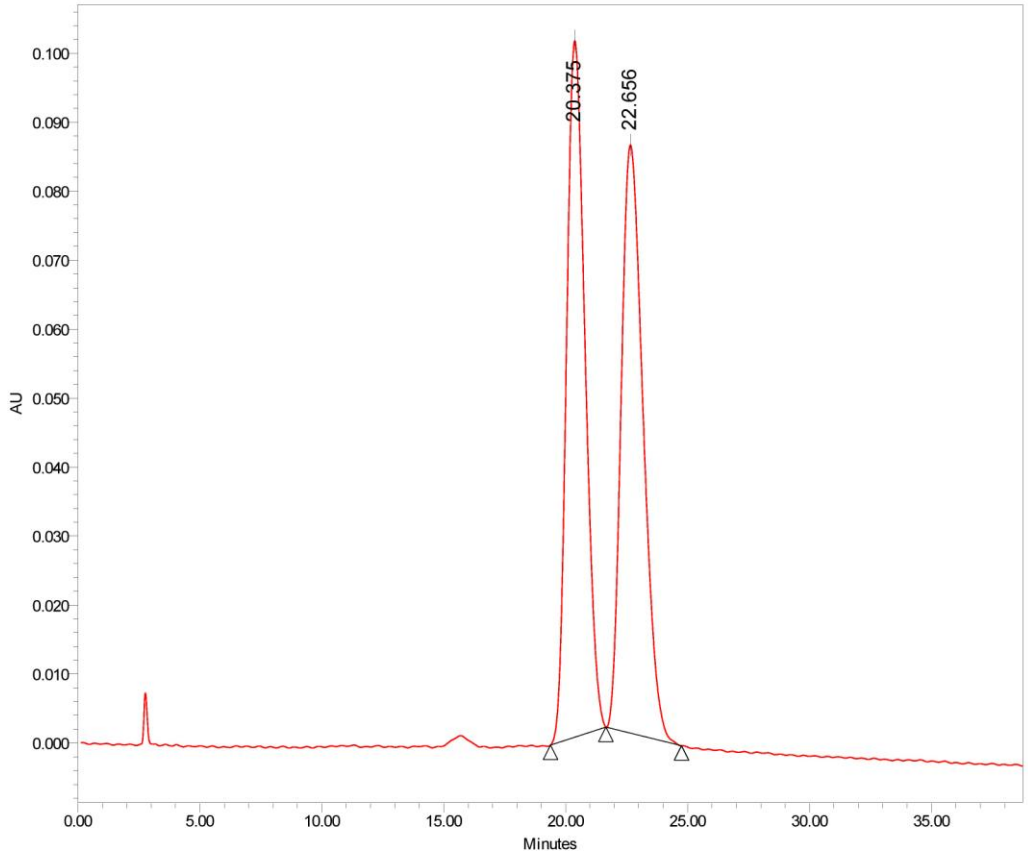
HPLC data for *rac*-1-(1-tosylaziridin-2-yl)ethanone (**rac-3a**)
Column conditions: OF column, 40% IPA/hexane, 1.00 mL/min.
Eluted time: 20.375 min. / 22.656 min.



Breeze 2 HPLC System

HKU

Project Name Secant
Reported by User: Breeze user (Breeze)



Sample Name: X1555_f1_rac_OF_40%_1mL; Date Acquired: 23/7/2010 0:46:48 HKT; Vial: 1:A,5; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1555_f1_rac_OF_40%_1mL	1:A,5	1	22.656	5311974	50.00	85276
2	X1555_f1_rac_OF_40%_1mL	1:A,5	1	20.375	5312432	50.00	100988
Mean				21.515	5312203.088		93132.255
Std. Dev.				1.613	323.320		11110.25
% RSD				7.50	0.01		11.930

Report Method: Peak Summary Report
Page: 1 of 2

Printed: 22/12/2010
12:18:19 Asia/Hong_Kong

Supplementary Material (ESI) for Chemical Communications
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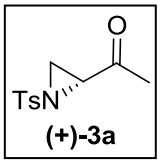
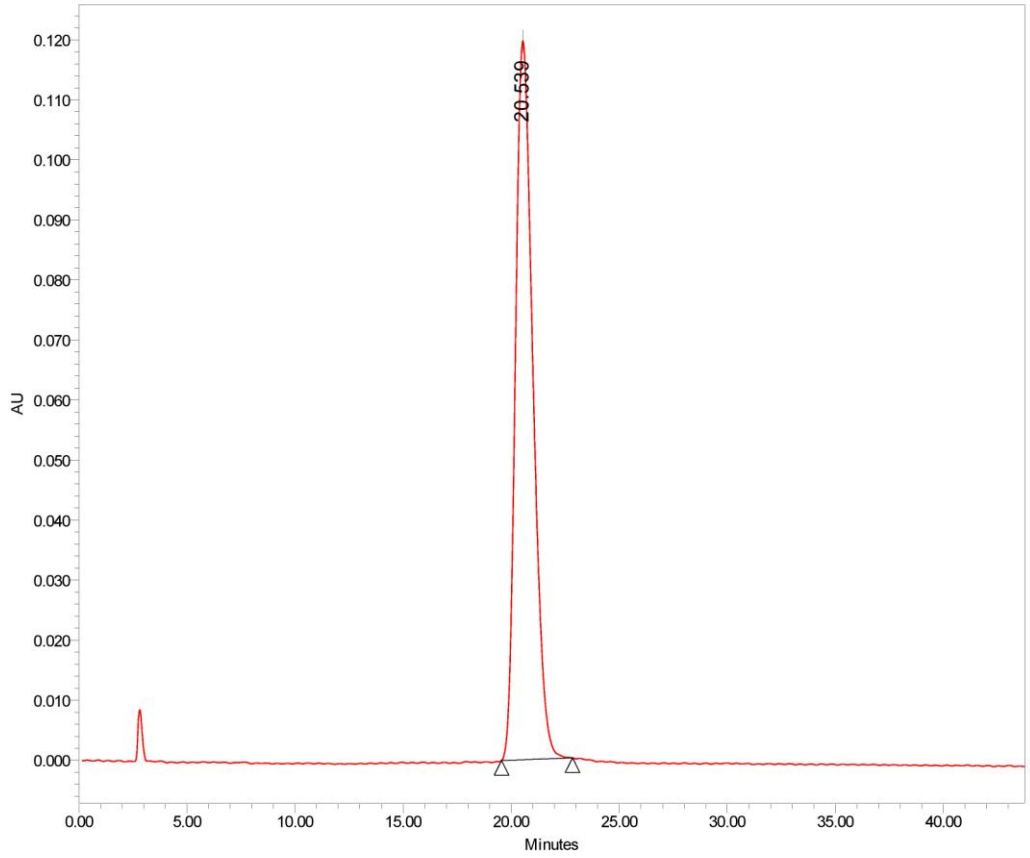
HPLC data for (*R*)-1-(1-tosylaziridin-2-yl)ethanone (**(+)-3a**)
Column conditions: OF column, 40% IPA/hexane, 1.00 mL/min.



Eluted time: 20.539 min. (>99% ee)

HKU
Project Name Secant
Reported by User: Breeze user (Breeze)



Sample Name: X1558_f1_chiral_OF_40%_1mL; Date Acquired: 23/7/2010 2:13:47 HKT; Vial: 1:A,6; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1558_f1_chiral_OF_40%_1mL	1:A,6	1	20.539	6734253	100.00	119722
Mean				20.539	6734253.163		119722.019
Std. Dev.							
% RSD							

Report Method: Peak Summary Report
Page: 1 of 2

Printed: 22/12/2010
12:25:14 Asia/Hong_Kong

Supplementary Material (ESI) for Chemical Communications
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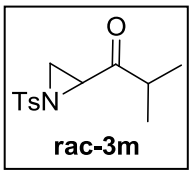
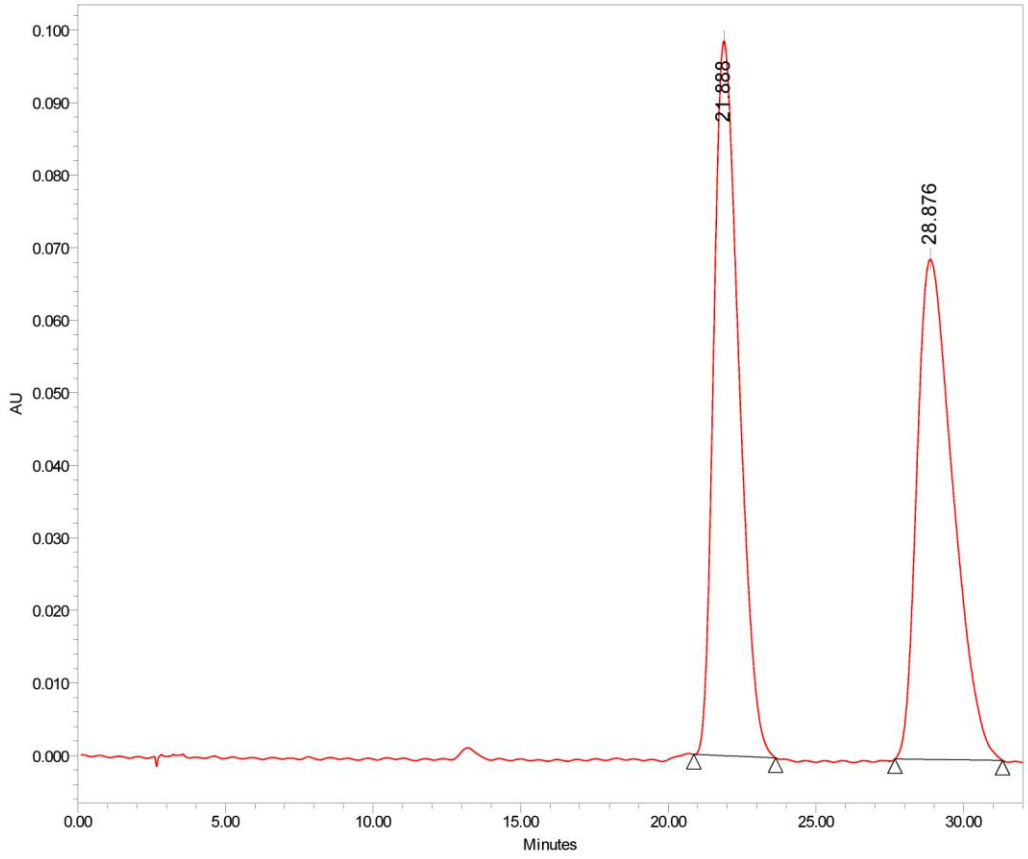
HPLC data for **rac-3m**
Column conditions: OF column, 30% IPA/hexane, 1.00 mL/min
Eluted time: 21.888 min. / 28.876 min.



rac-3m

HKU
Project Name Secant
Reported by User: Breeze user (Breeze)

Breeze 2 HPLC System



Sample Name: X1698_f1_rac_OF_30%_1mL; Date Acquired: 12/1/2011 13:19:10 HKT; Vial: 1:A,7; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1698_f1_rac_OF_30%_1mL	1:A,7	1	28.876	5841926	50.02	68924
2	X1698_f1_rac_OF_30%_1mL	1:A,7	1	21.888	5838042	49.98	98521
Mean				25.382	5839984.153		83722.428
Std. Dev.				4.941	2746.482		20928.06
% RSD				19.47	0.05		24.997

Report Method: Peak Summary Report
Page: 1 of 2
Printed: 12/1/2011
21:19:10 Asia/Hong_Kong

Supplementary Material (ESI) for Chemical Communications
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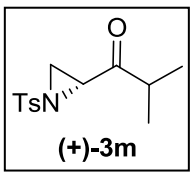
HPLC data for **(+)-3m**

Column conditions: OF column, 30% IPA/hexane, 1.00 mL/min

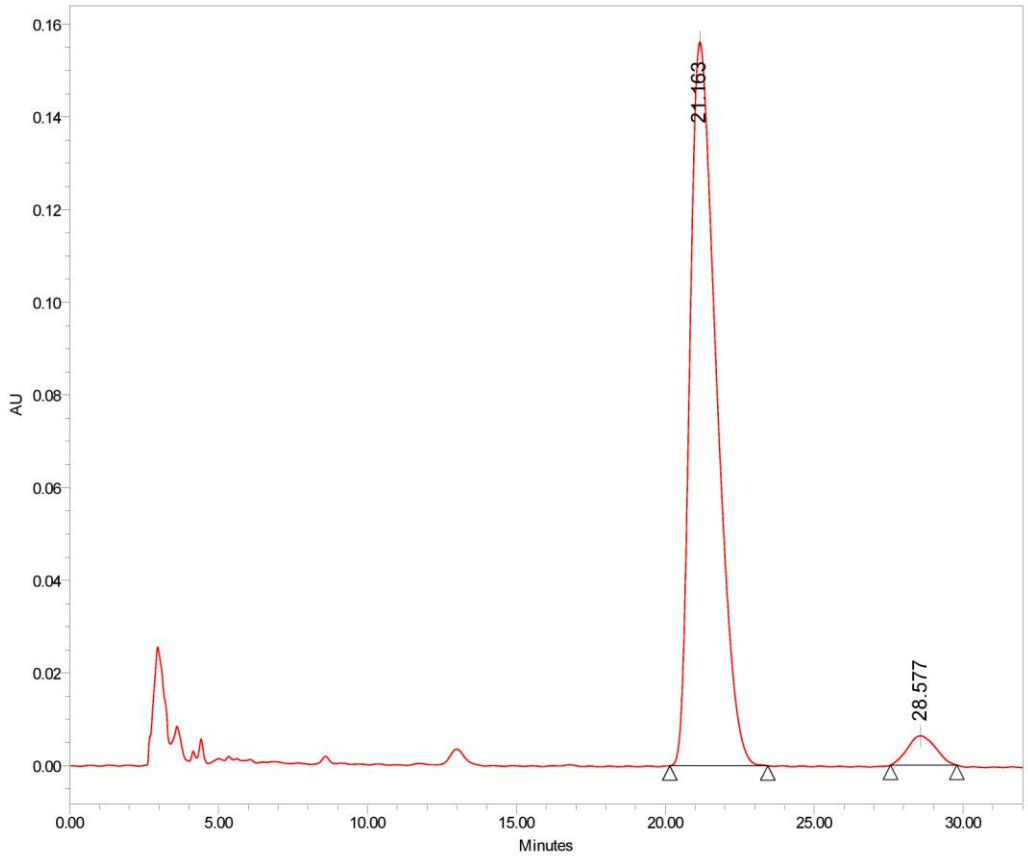
Eluted time: 21.163 min. / 28.577 min. (91.78% ee)



HKU

Project Name Secant

Reported by User: Breeze user (Breeze)



Sample Name: X1714_f1_chi_OF_30%_1mL; Date Acquired: 12/1/2011 18:40:43 HKT; Vial: 1:A,8; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1714_f1_chi_OF_30%_1mL	1:A,8	1	28.577	411922	4.11	6274
2	X1714_f1_chi_OF_30%_1mL	1:A,8	1	21.163	9619189	95.89	156176
Mean				24.870	5015555.058		81225.216
Std. Dev.				5.243	6510520.977		105996.34
% RSD				21.08	129.81		130.497

Report Method: Peak Summary Report

Printed: 12/1/2011 21:13:15 Asia/Hong_Kong

Page: 1 of 2

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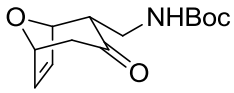
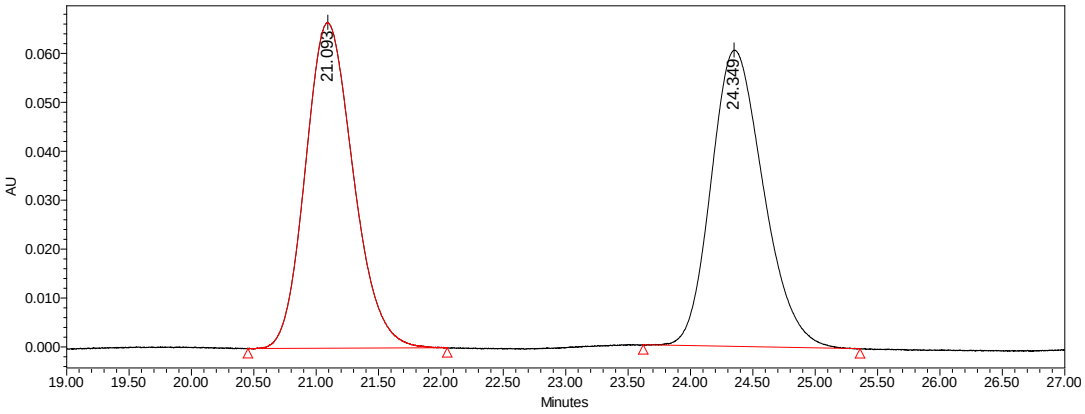
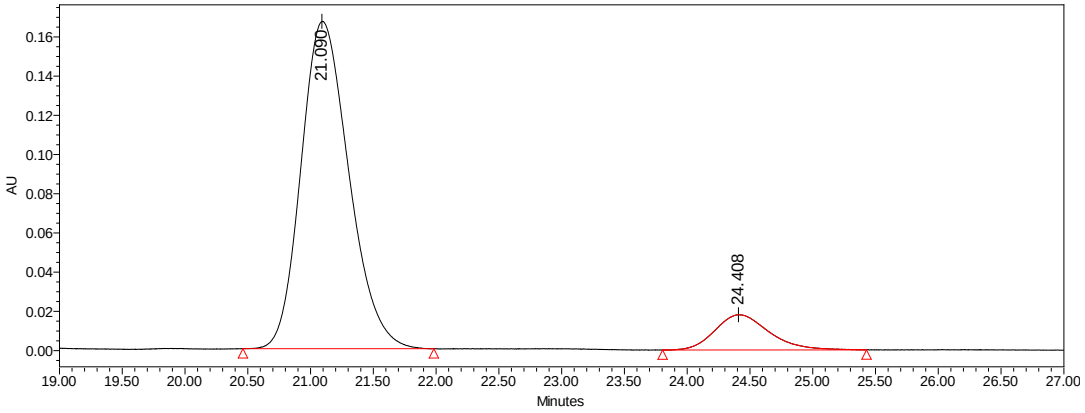
Sample	**rac-α-4ea/ (+)-α-4ea**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-α-4ea



	Retention Time (min)	Area	% Area	Height
1	21.093	1774667	50.15	66601
2	24.349	1763880	49.85	60557



	Retention Time (min)	Area	% Area	Height
1	21.090	4425968	89.20	166987
2	24.408	536141	10.80	17998

ee = 78%

Supplementary Material (ESI) for Chemical Communications
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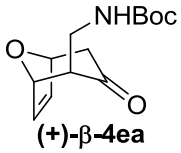
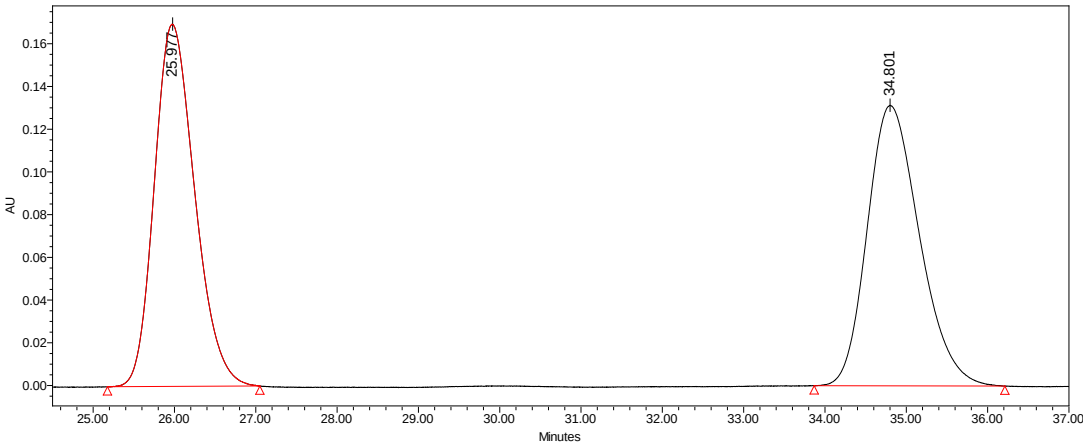
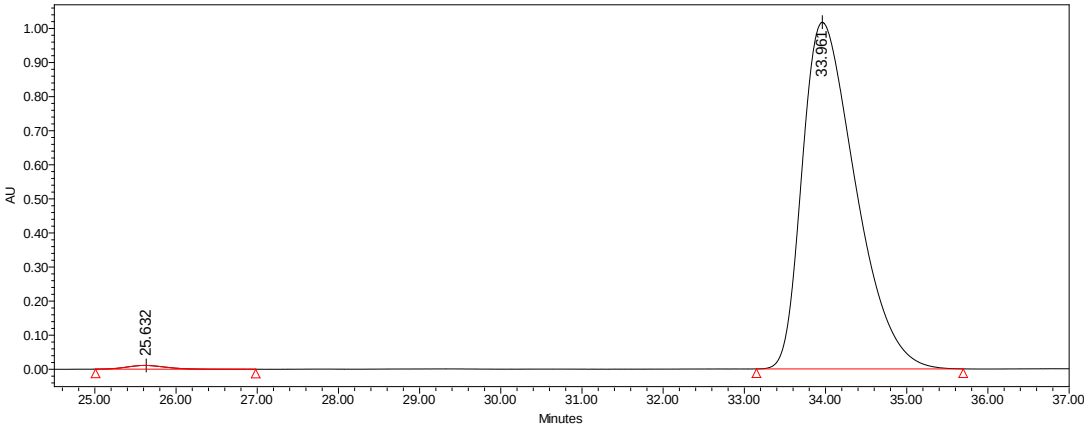
Sample	**rac-β-4ea/ (+)-β-4ea**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-β-4ea



	Retention Time (min)	Area	% Area	Height
1	25.977	5855242	50.00	169586
2	34.801	5856283	50.00	131367



	Retention Time (min)	Area	% Area	Height
1	25.632	365591	0.78	11031
2	33.961	46443134	99.22	1017257

ee = 98%

Supplementary Material (ESI) for Chemical Communications
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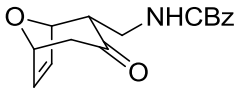
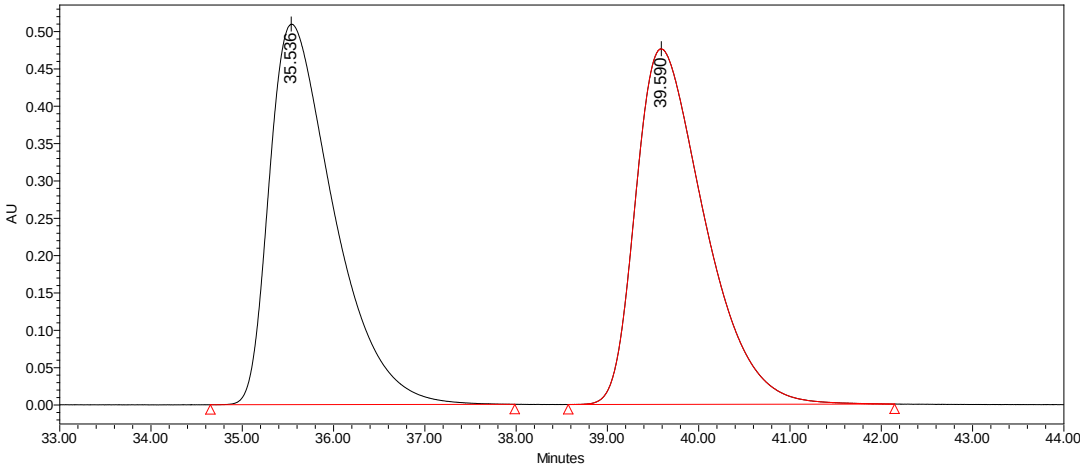
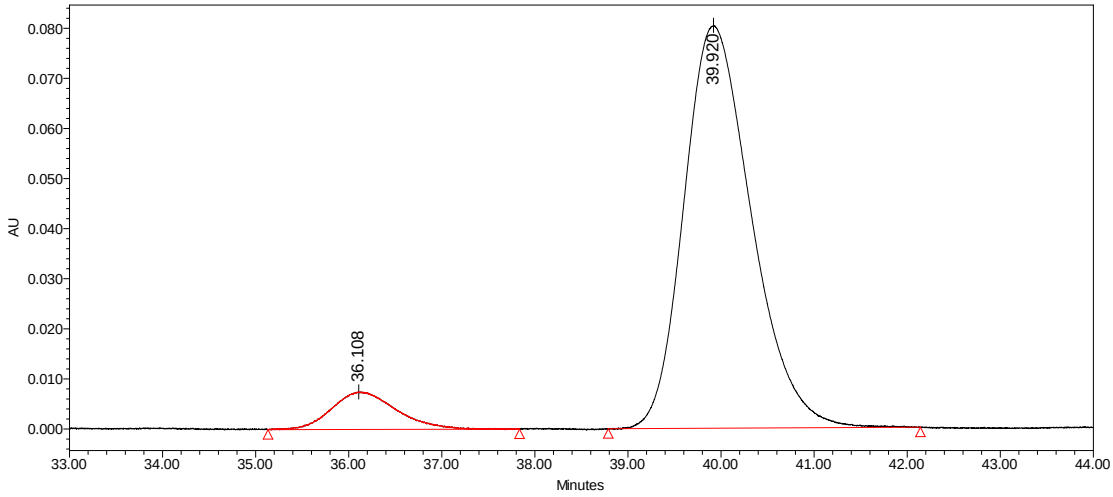
Sample	**rac-α-4fa/ (+)-α-4fa**
Column	CHIRALCEL OD-3
Mobile phase	2-Propanol/n-Hexane = 20:80 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-α-4fa



	Retention Time (min)	Area	% Area	Height
1	35.536	25048566	50.02	509507
2	39.590	25031097	49.98	476110



	Retention Time (min)	Area	% Area	Height
1	36.108	361455	8.20	7518
2	39.920	4048092	91.80	80431

ee = 84%

Supplementary Material (ESI) for Chemical Communications
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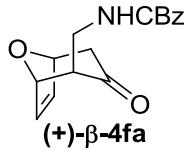
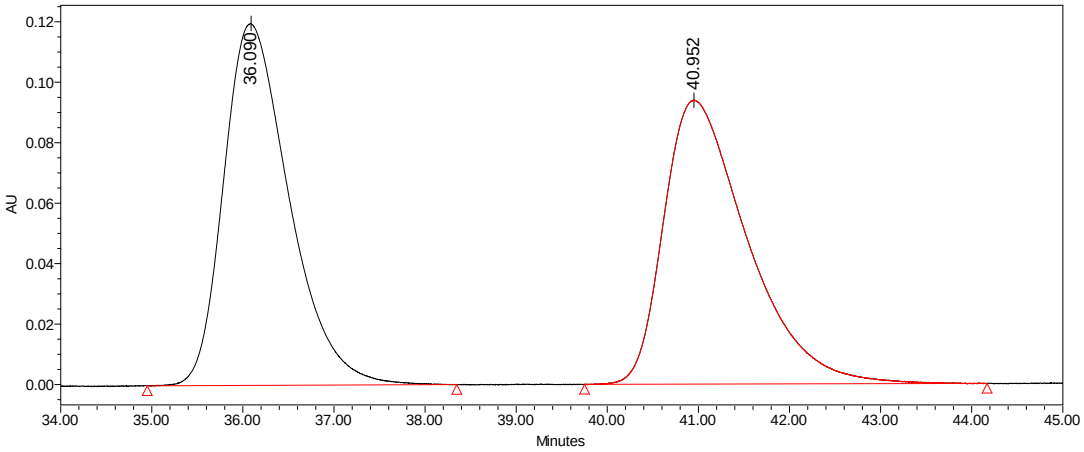
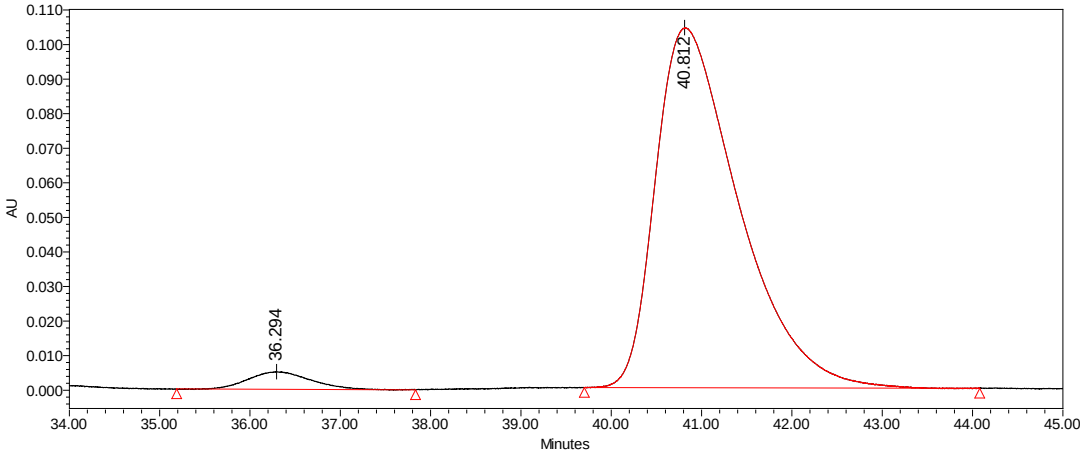
Sample	**rac-β-4fa/ (+)-β-4fa**
Column	CHIRALCEL OD-3
Mobile phase	2-Propanol/n-Hexane = 20:80 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-β-4fa



	Retention Time (min)	Area	% Area	Height
1	36.090	5987847	49.98	119724
2	40.952	5992621	50.02	93960



	Retention Time (min)	Area	% Area	Height
1	36.294	244840	3.54	5115
2	40.812	6668249	96.46	104196

ee = 93%

Supplementary Material (ESI) for Chemical Communications
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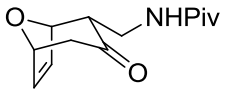
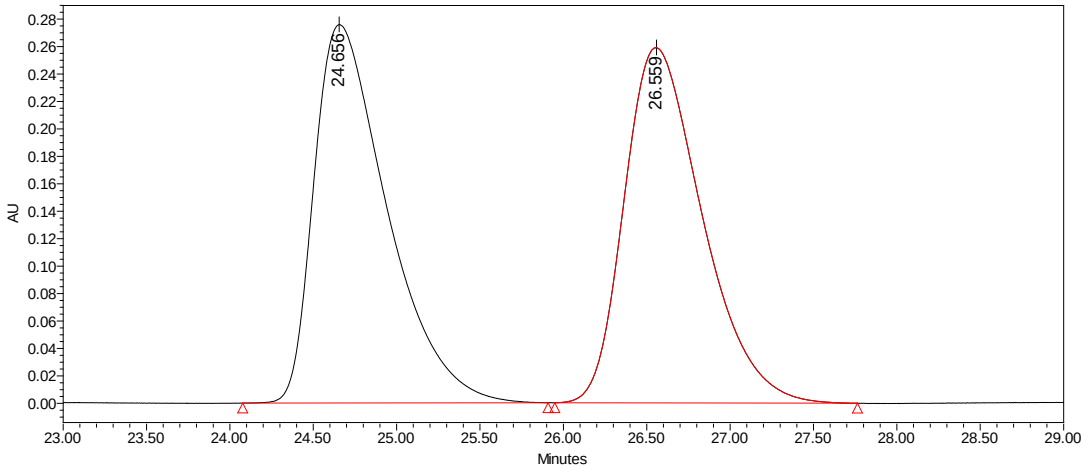
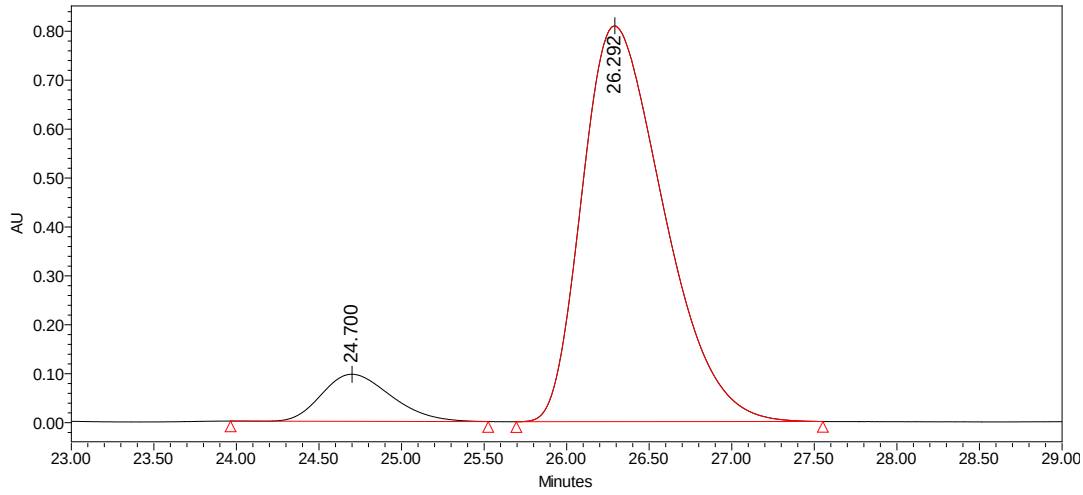
Sample	**rac-α-4ga/ (+)-α-4ga**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-α-4ga



	Retention Time (min)	Area	% Area	Height
1	24.656	8392361	49.91	275755
2	26.559	8423993	50.09	258965



	Retention Time (min)	Area	% Area	Height
1	24.700	2806921	9.18	96209
2	26.292	27755860	90.82	808947

ee = 82%

Supplementary Material (ESI) for Chemical Communications
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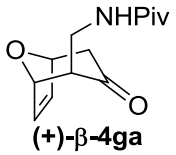
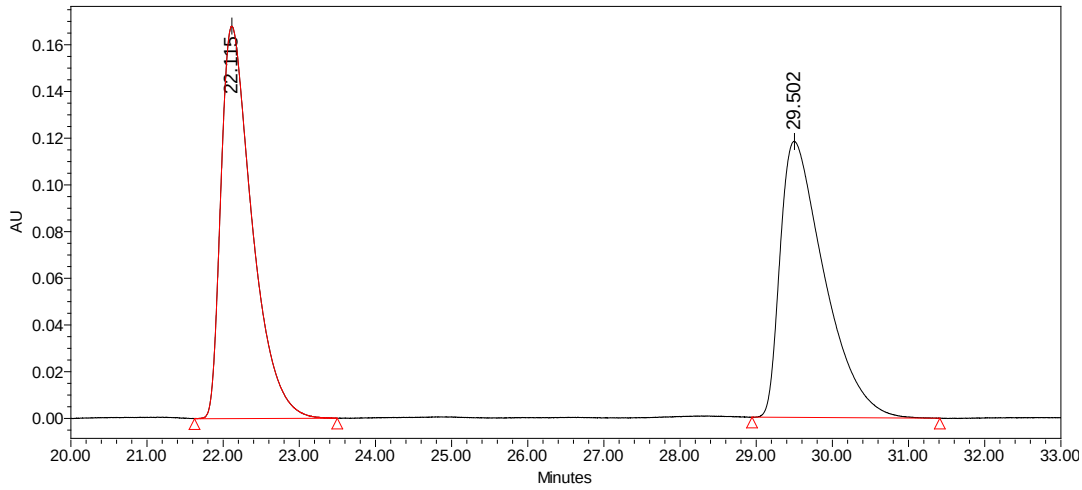
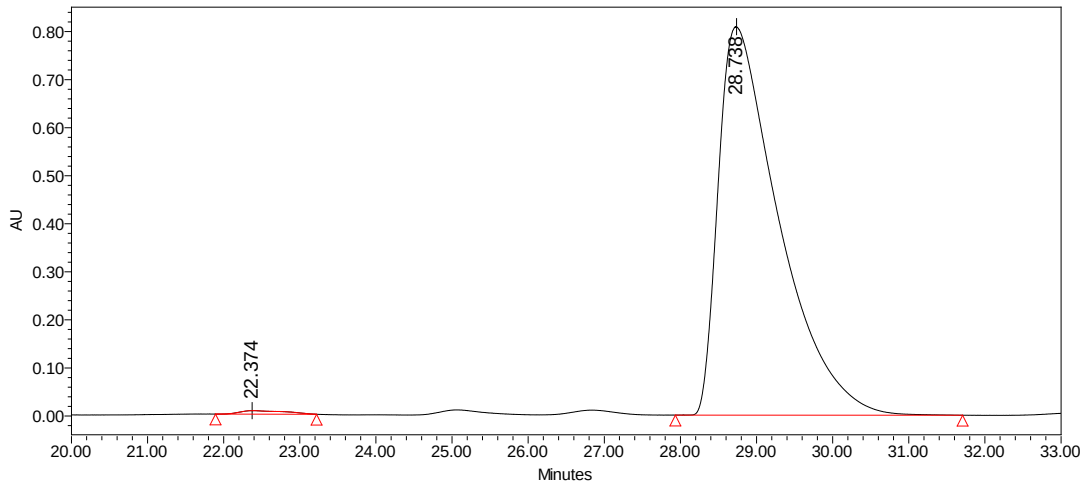
Sample	**rac-β-4ga/ (+)-β-4ga**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-β-4ga



	Retention Time (min)	Area	% Area	Height
1	22.115	4774460	50.02	168102
2	29.502	4771026	49.98	118227



	Retention Time (min)	Area	% Area	Height
1	22.374	302515	0.67	7313
2	28.738	44670392	99.33	808524

ee = 99%

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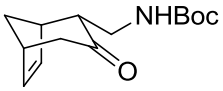
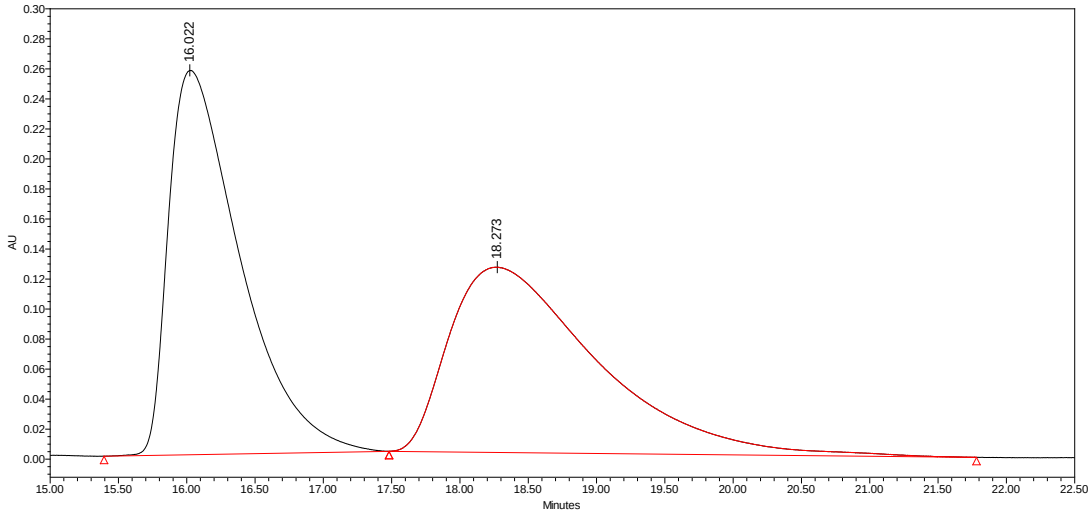
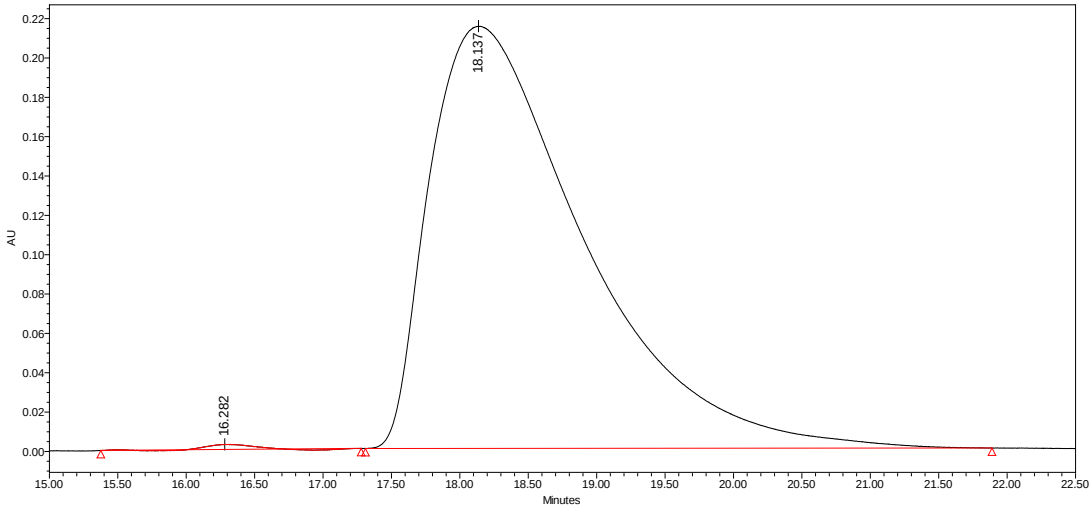
Sample	**rac-α-4eb/ (+)-α-4eb**
Column	CHIRALPAK AY-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-α-4eb



	Retention Time (min)	Area	% Area	Height
1	16.022	9343110	50.11	256122
2	18.273	9300422	49.89	123521



	Retention Time (min)	Area	% Area	Height
1	16.282	80368	0.48	2597
2	18.137	16813702	99.52	214624

ee = 99%

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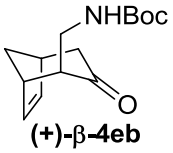
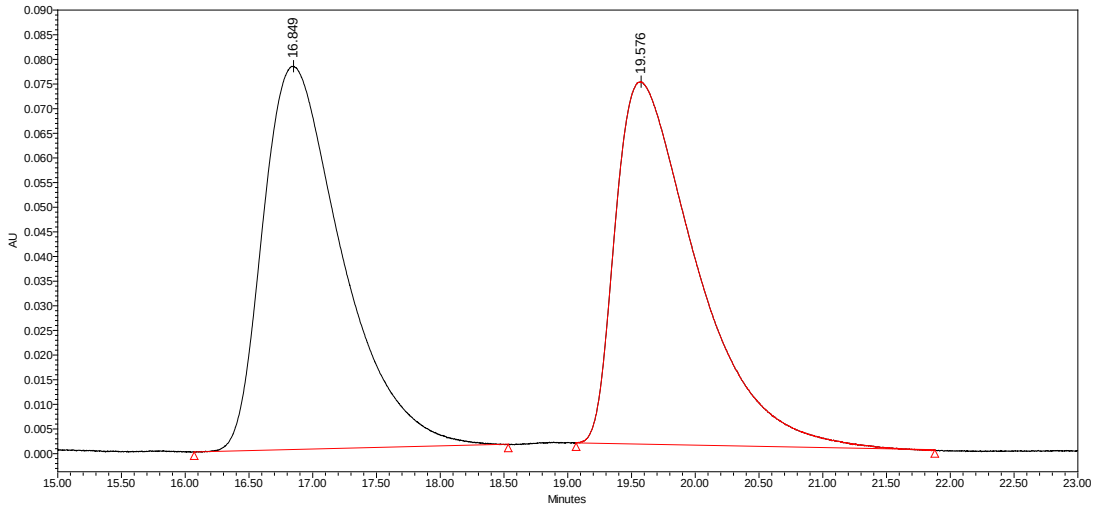
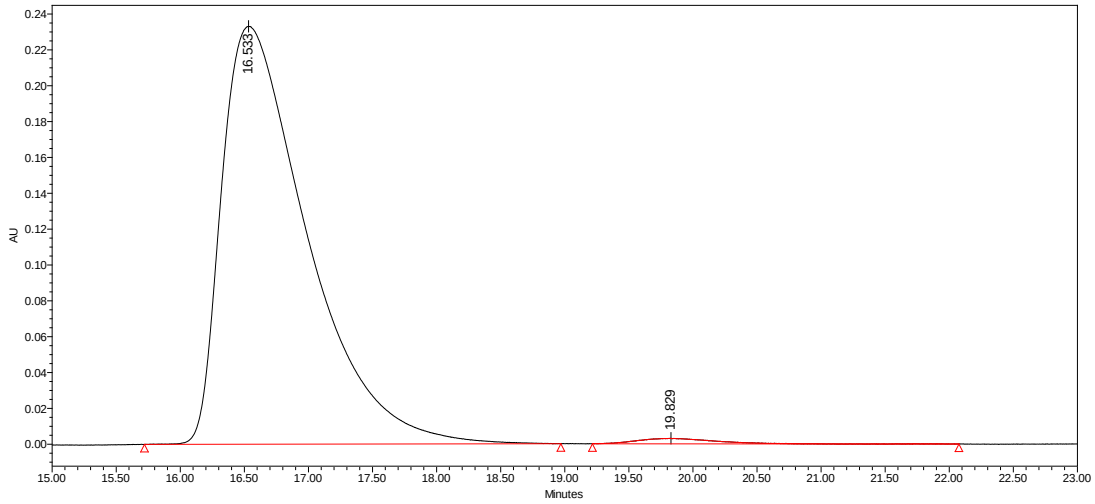
Sample	**rac-β-4eb/ (+)-β-4eb**
Column	CHIRALPAK AY-3
Mobile phase	2-Propanol/n-Hexane = 10:90 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-β-4eb



	Retention Time (min)	Area	% Area	Height
1	16.849	3355388	50.75	77787
2	19.576	3256473	49.25	73570



	Retention Time (min)	Area	% Area	Height
1	16.533	10808078	98.82	233107
2	19.829	128540	1.18	3108

ee = 98%

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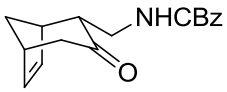
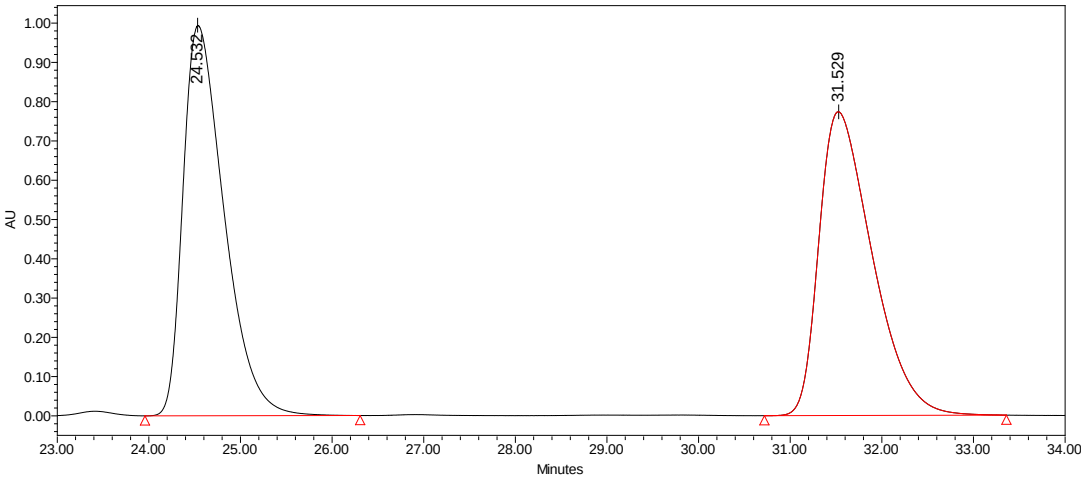
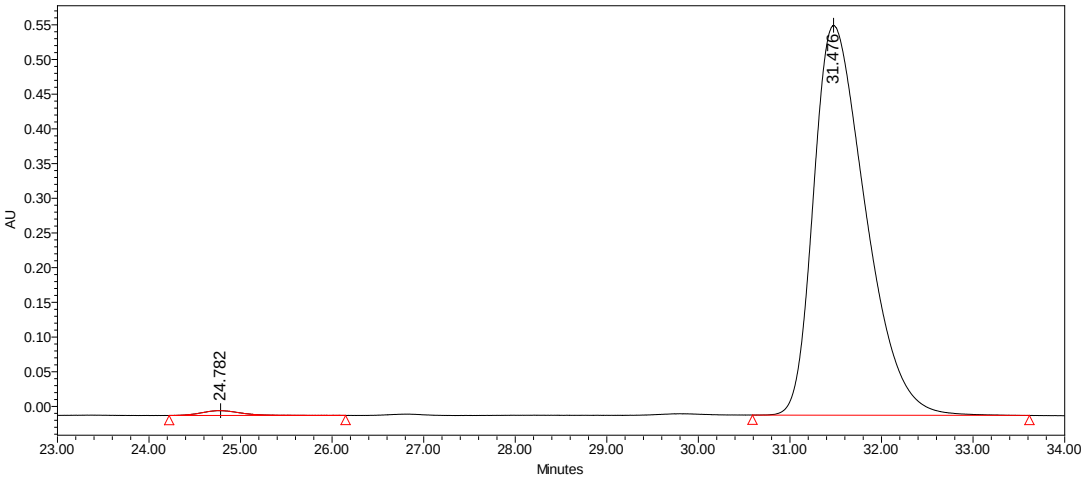
Sample	**rac-α-4fb/ (+)-α-4fb**
Column	CHIRALCEL OD-3
Mobile phase	2-Propanol/n-Hexane = 16:84 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-α-4fb



	Retention Time (min)	Area	% Area	Height
1	24.532	30986718	49.80	994228
2	31.529	31230286	50.20	773283



	Retention Time (min)	Area	% Area	Height
1	24.782	210083	0.94	7021
2	31.476	22136956	99.06	561847

ee = 98%

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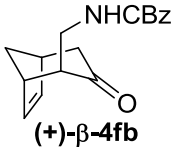
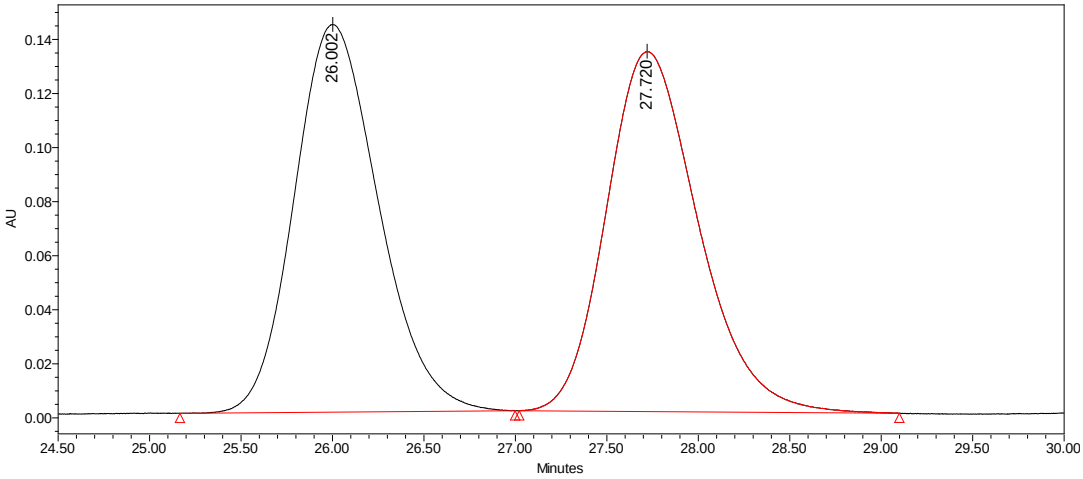
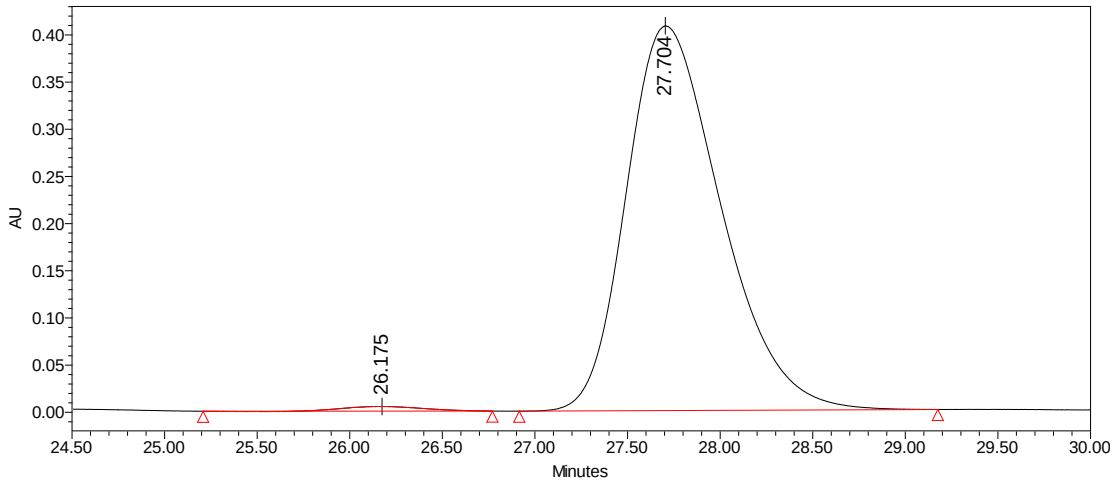
Sample	**rac-β-4fb/ (+)-β-4fb**
Column	CHIRALCEL OD-3
Mobile phase	2-Propanol/n-Hexane = 16:84 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-β-4fb



	Retention Time (min)	Area	% Area	Height
1	26.002	4596397	49.73	143446
2	27.720	4645748	50.27	133297



	Retention Time (min)	Area	% Area	Height
1	26.175	154516	1.05	4948
2	27.704	14511968	98.95	407809

ee = 98%

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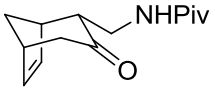
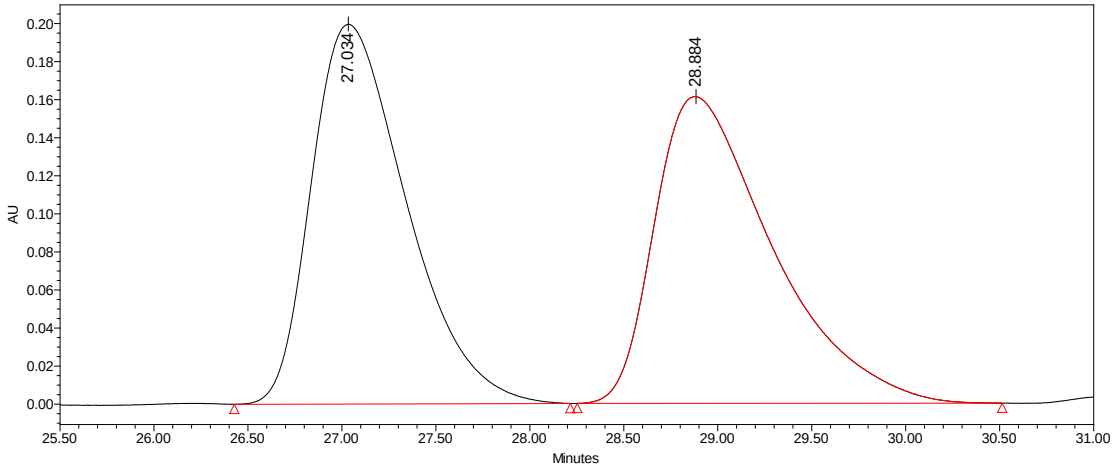
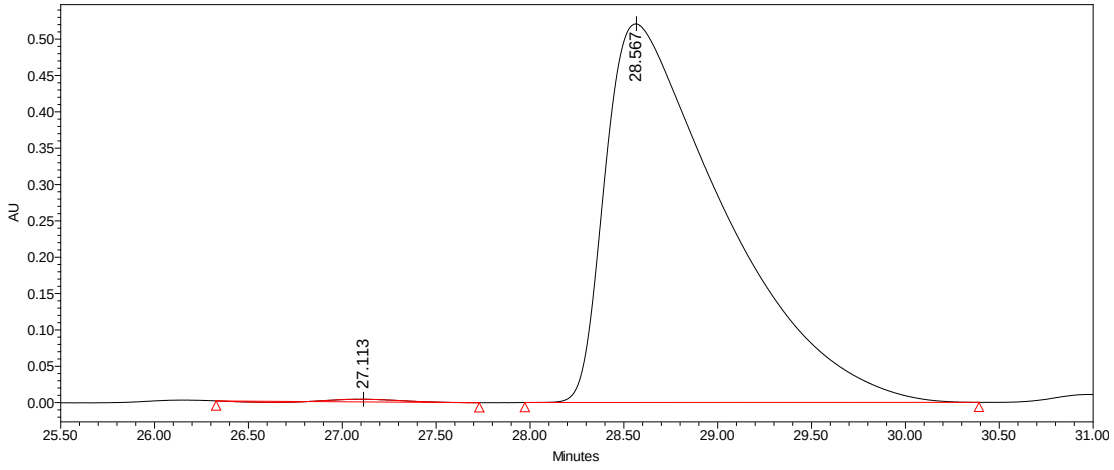
Sample	**rac-α-4gb/ (+)-α-4gb**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 4:96 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-α-4gb



	Retention Time (min)	Area	% Area	Height
1	27.034	7023079	50.01	199773
2	28.884	7019046	49.99	161250



	Retention Time (min)	Area	% Area	Height
1	27.113	118174	0.51	3715
2	28.567	22879229	99.49	521195

ee = 99%

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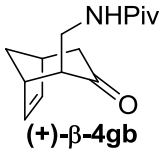
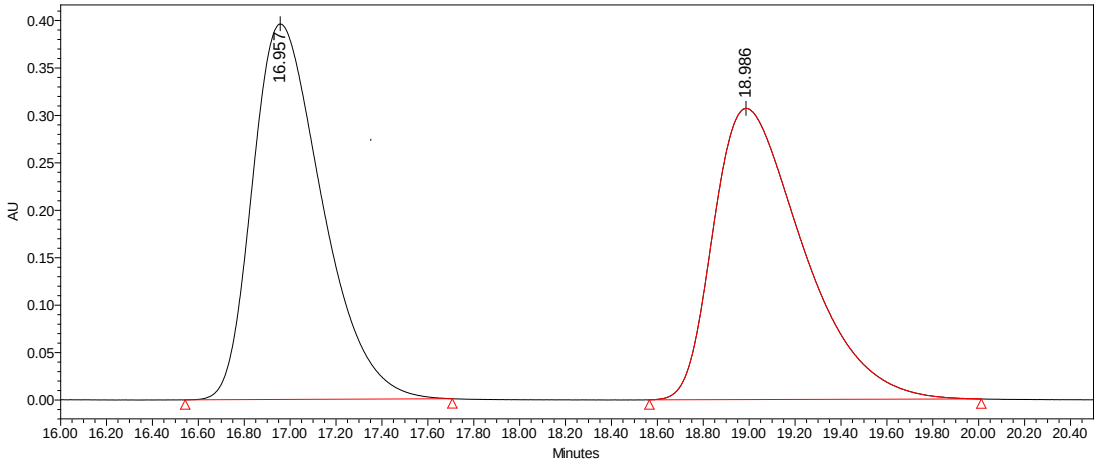
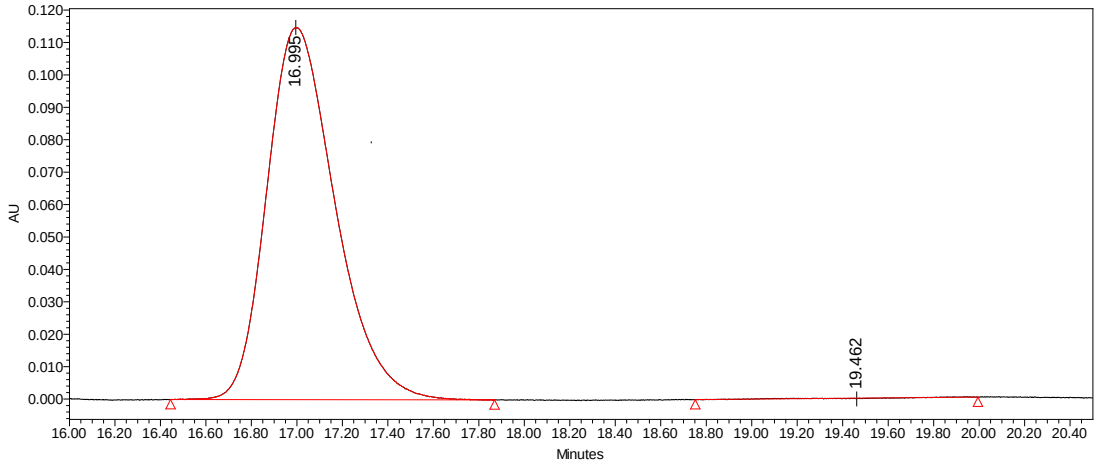
Sample	**rac-β-4gb/ (+)-β-4gb**
Column	CHIRALPAK AD-3
Mobile phase	2-Propanol/n-Hexane = 6:94 (v/v)
Flow rate	0.5 mL/min
Detection	UV 210 nm



(+)-β-4gb



	Retention Time (min)	Area	% Area	Height
1	16.957	8359545	50.05	395927
2	18.986	8341599	49.95	306985



	Retention Time (min)	Area	% Area	Height
1	16.995	2398210	99.81	114849
2	19.462	4496	0.19	216

ee = 99%

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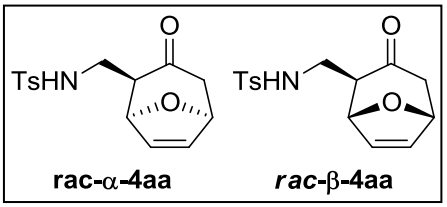
HPLC data for **rac-α-4aa** and **rac-β-4aa**
Column conditions: AS3 column, 80% IPA/hexane, 0.25 mL/min.
Eluted time: 44.224 min. / 54.070 min. for **rac-α-4aa**
65.190 min. / 78.795 min. for **rac-α-4aa**



rac-α-4aa ***rac*-β-4aa**

α-4aa and **β-4aa** can crystallize easily inside the column. These re-crystallizations can lead to optical enrichment in the latter eluted fraction comparing to the former fraction for both**α-4aa** and **β-4aa**. To eliminate this uncertainty, **α-4aa** and **β-4aa** were submitted to the HPLC analysis collectively.

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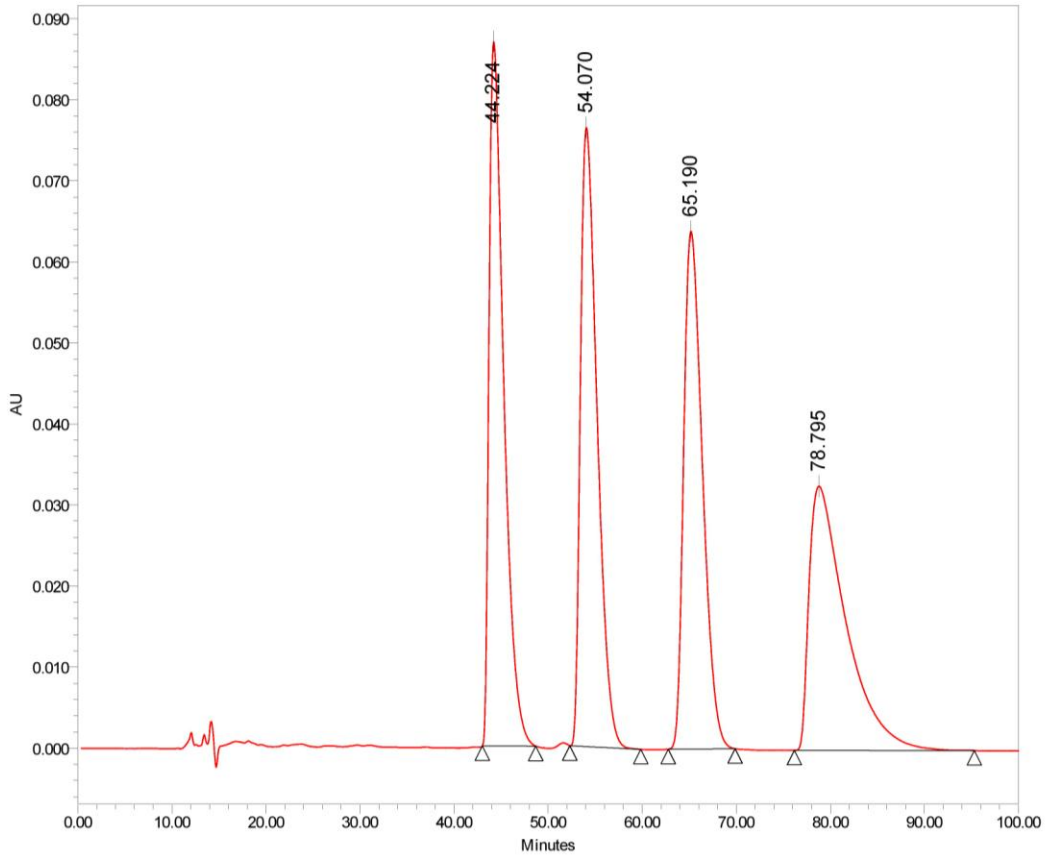
Breeze 2 HPLC System



Sample Name: X1340_f1_f2_rac_AS3_80%_025mL; Date Acquired: 13/2/2011 20:14:30 HKT;
Vial: 1:A,1; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1340_f1_f2_rac_AS3_80%_025mL	1:A,1	1	44.224	9435715	25.80	86885
2	X1340_f1_f2_rac_AS3_80%_025mL	1:A,1	1	78.795	8850183	24.20	32584
3	X1340_f1_f2_rac_AS3_80%_025mL	1:A,1	1	65.190	8851771	24.21	63869
4	X1340_f1_f2_rac_AS3_80%_025mL	1:A,1	1	54.070	9429055	25.79	76388
Mean				60.570	9141681.018		64931.570

Report Method: Peak Summary Report
Page: 1 of 2
Printed: 13/2/2011
23:17:33 Asia/Hong_Kong

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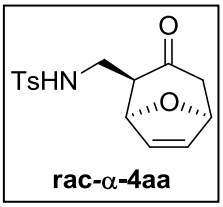
HPLC data for **rac-α-4aa**

Column conditions: AS3 column, 80% IPA/hexane, 0.25 mL/min.

Eluted time: 44.409 min. / 54.465 min.



rac-α-4aa

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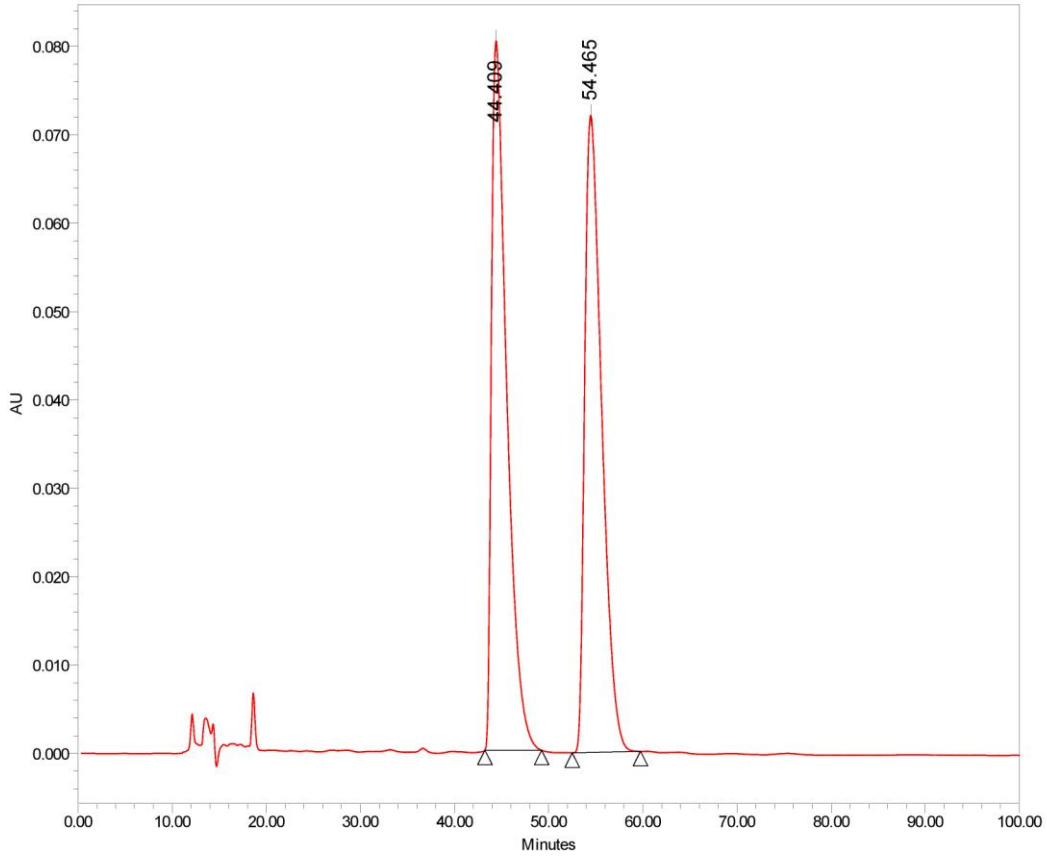

Sample Name: X1340_f1_rac_AS3_80%_025mL; Date Acquired: 11/2/2011 23:12:19 HKT; Vial: 1:A,3; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1340_f1_rac_AS3_80%_025mL	1:A,3	1	54.465	9057975	50.00	72079
2	X1340_f1_rac_AS3_80%_025mL	1:A,3	1	44.409	9059673	50.00	80262
Mean				49.437	9058824.266		76170.188
Std. Dev.				7.110	1200.906		5785.99
% RSD				14.38	0.01		7.596

Report Method: Peak Summary Report

Page: 1 of 2

Printed: 13/2/2011 18:34:27 Asia/Hong_Kong

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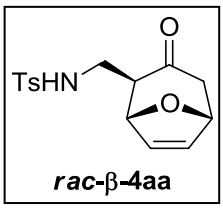
HPLC data for **rac-β-4aa**

Column conditions: AS3 column, 80% IPA/hexane, 0.25 mL/min.

Eluted time: 66.193 min. / 80.487 min.



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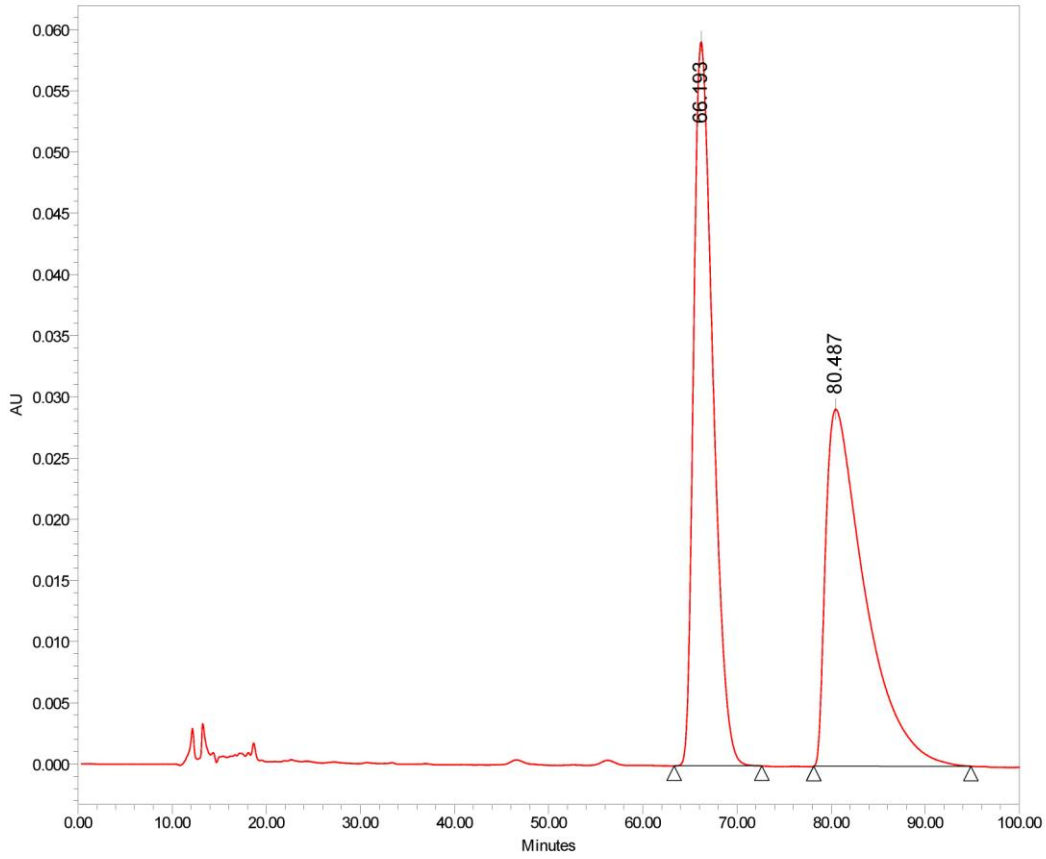
Breeze 2 HPLC System



Sample Name: X1340_f2_rac_AS3_80%_025mL; Date Acquired: 12/2/2011 2:37:12 HKT; Vial: 1:A,4; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1340_f2_rac_AS3_80%_025mL	1:A,4	1	80.487	8451327	50.00	29172
2	X1340_f2_rac_AS3_80%_025mL	1:A,4	1	66.193	8450901	50.00	59145
Mean				73.340	8451114.088		44158.199
Std. Dev.				10.107	301.765		21194.03
% RSD				13.78	0.00		47.996

Report Method: Peak Summary Report

Page: 1 of 2

Printed: 13/2/2011 18:44:58 Asia/Hong_Kong

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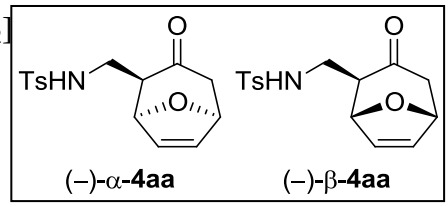
HPLC data for **(–)-α-4aa** and **(–)-β-4aa** [Reaction solvent: $EtNO_2$]
Column conditions: AS3 column, 80% IPA/hexane, 0.25 mL/min.
Eluted time: 44.768 min. / 53.796 min. for **(–)-α-4aa** (66.91% ee)
66.519 min. / 77.377 min. for **(–)-β-4aa** (92.12% ee)



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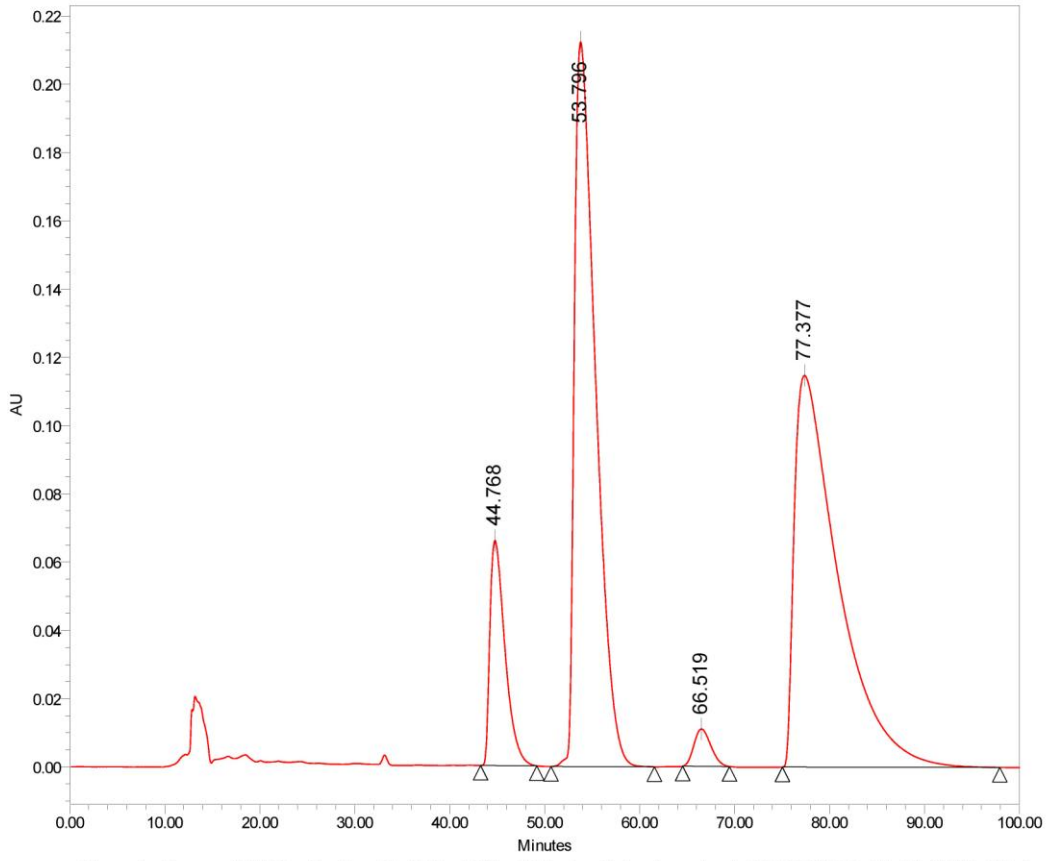
Breeze 2 HPLC System



Sample Name: X1729_f1_f2_chi_AS3_80%_025mL; Date Acquired: 12/2/2011 0:54:45 HKT; Vial: 1:A,1; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1729_f1_f2_chi_AS3_80%_025mL	1:A,1	1	44.768	7311022	9.32	65922
2	X1729_f1_f2_chi_AS3_80%_025mL	1:A,1	1	77.377	36898954	47.01	114731
3	X1729_f1_f2_chi_AS3_80%_025mL	1:A,1	1	66.519	1352403	1.72	10954
4	X1729_f1_f2_chi_AS3_80%_025mL	1:A,1	1	53.796	32923140	41.95	212301
Mean				60.615	19621379.701		100976.918

Report Method: Peak Summary Report
Page: 1 of 2
Printed: 13/2/2011
18:39:19 Asia/Hong_Kong

Supplementary Material (ESI) for Chemical Communications
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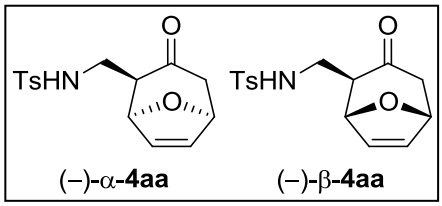
HPLC data for **(–)-α-4aa** and **(–)-β-4aa** [Reaction solvent: CH_2Cl_2]
Column conditions: AS3 column, 80% IPA/hexane, 0.25 mL/min.
Eluted time: 44.479 min. / 53.876 min. for **(–)-α-4aa** (87.80% ee)
65.454 min. / 77.472 min. for **(–)-β-4aa** (98.83% ee)



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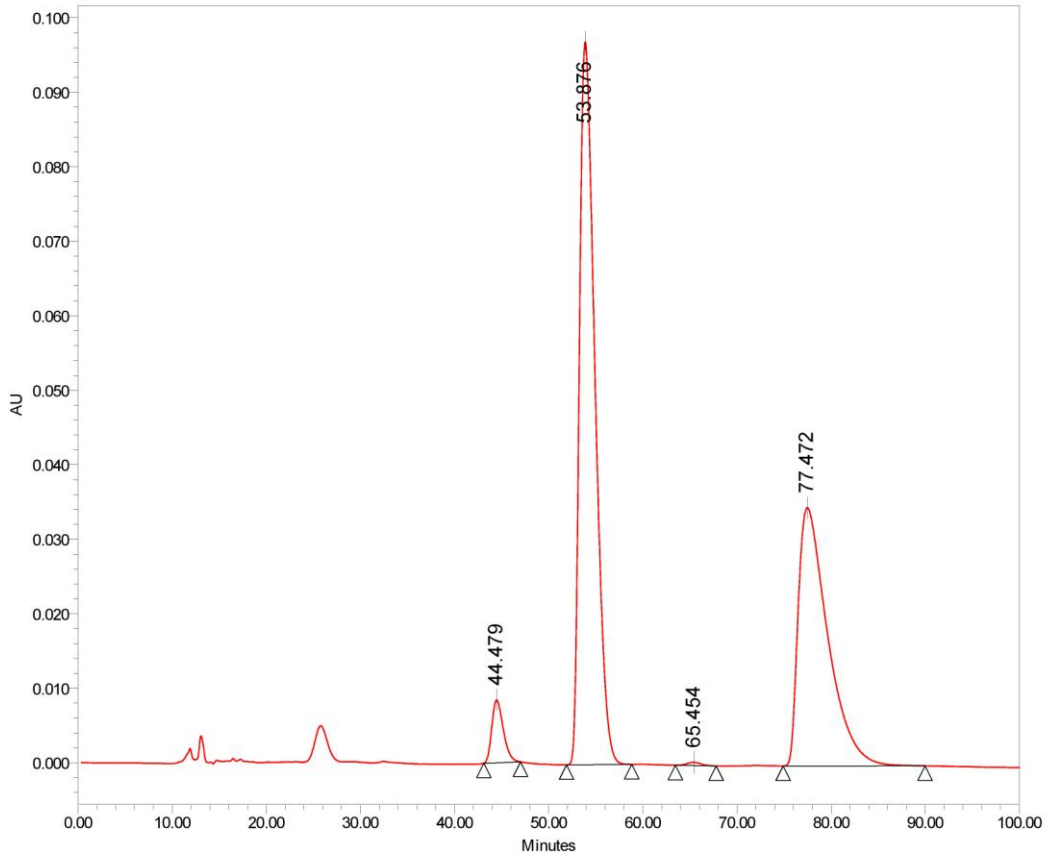
Breeze 2 HPLC System



Sample Name: X1742_f1_f2_chi_AS3_80%_025mL; Date Acquired: 3/3/2011 22:24:20 HKT; Vial: 1:A,1; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1742_f1_f2_chi_AS3_80%_025mL	1:A,1	1	44.479	717491	3.71	8436
2	X1742_f1_f2_chi_AS3_80%_025mL	1:A,1	1	77.472	7542190	38.97	34665
3	X1742_f1_f2_chi_AS3_80%_025mL	1:A,1	1	65.454	43711	0.23	431
4	X1742_f1_f2_chi_AS3_80%_025mL	1:A,1	1	53.876	11050751	57.10	97021
Mean				60.320	4838535.623		35138.309

Report Method: Peak Summary Report
Page: 1 of 2
Printed: 5/3/2011
2:39:38 Asia/Hong_Kong

Supplementary Material (ESI) for Chemical Communications
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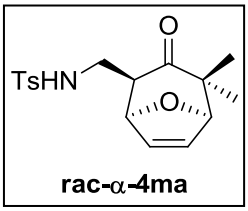
HPLC data for **rac-α-4ma**
Column conditions: ADH column, 15% IPA/hexane, 1.00 mL/min
Eluted time: 27.789 min. / 33.282 min.



rac-α-4ma

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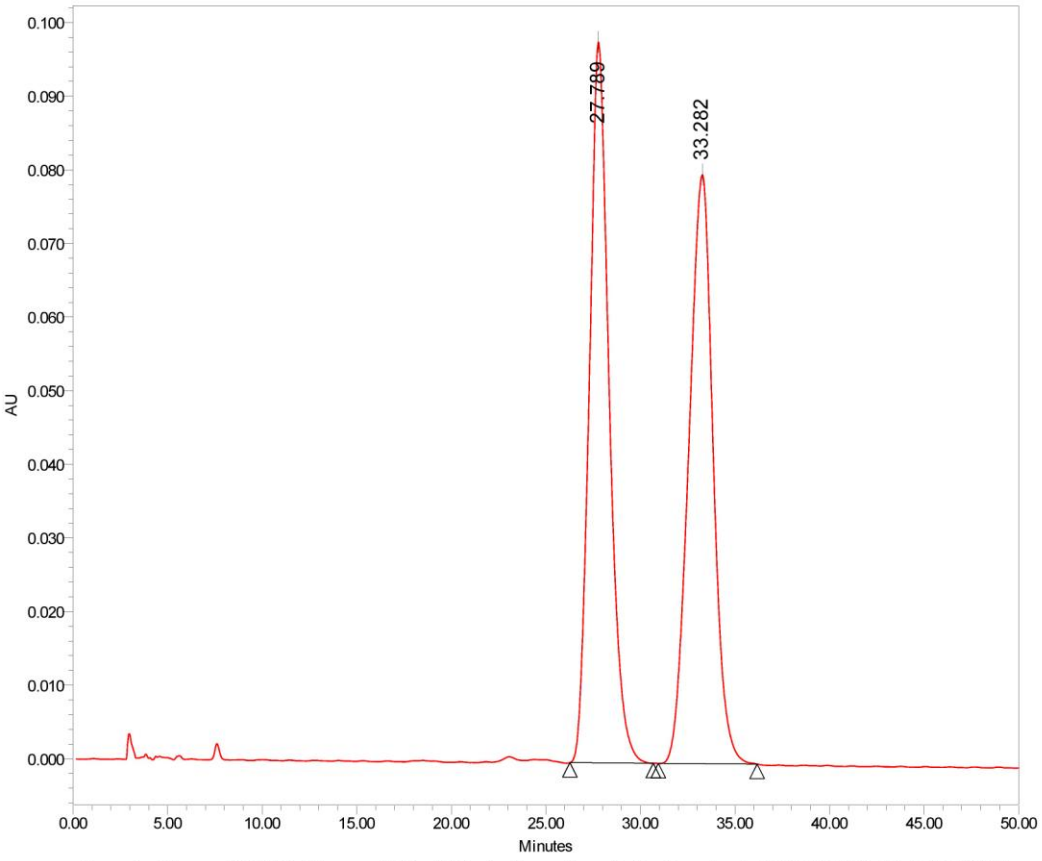
Breeze 2 HPLC System



Sample Name: X1456_f1_rac_ADH_15%_1mL_major; Date Acquired: 22/12/2010 12:48:00 HKT;
Vial: 1:A,3; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1456_f1_rac_ADH_15%_1mL_major	1:A,3	1	33.282	7097578	50.00	80010
2	X1456_f1_rac_ADH_15%_1mL_major	1:A,3	1	27.789	7096517	50.00	97913
Mean				30.536	7097047.760		88961.180
Std. Dev.				3.884	750.064		12659.36
% RSD				12.72	0.01		14.230

Report Method: Peak Summary Report
Page: 1 of 2
Printed: 22/12/2010
16:12:43 Asia/Hong_Kong

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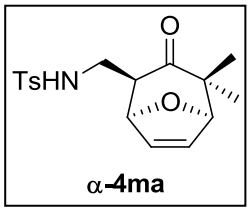
HPLC data for **α-4ma**

Column conditions: ADH column, 15% IPA/hexane, 1.00 mL/min

Eluted time: 27.687 min. / 33.120 min. (5.70 % ee)



α-4ma

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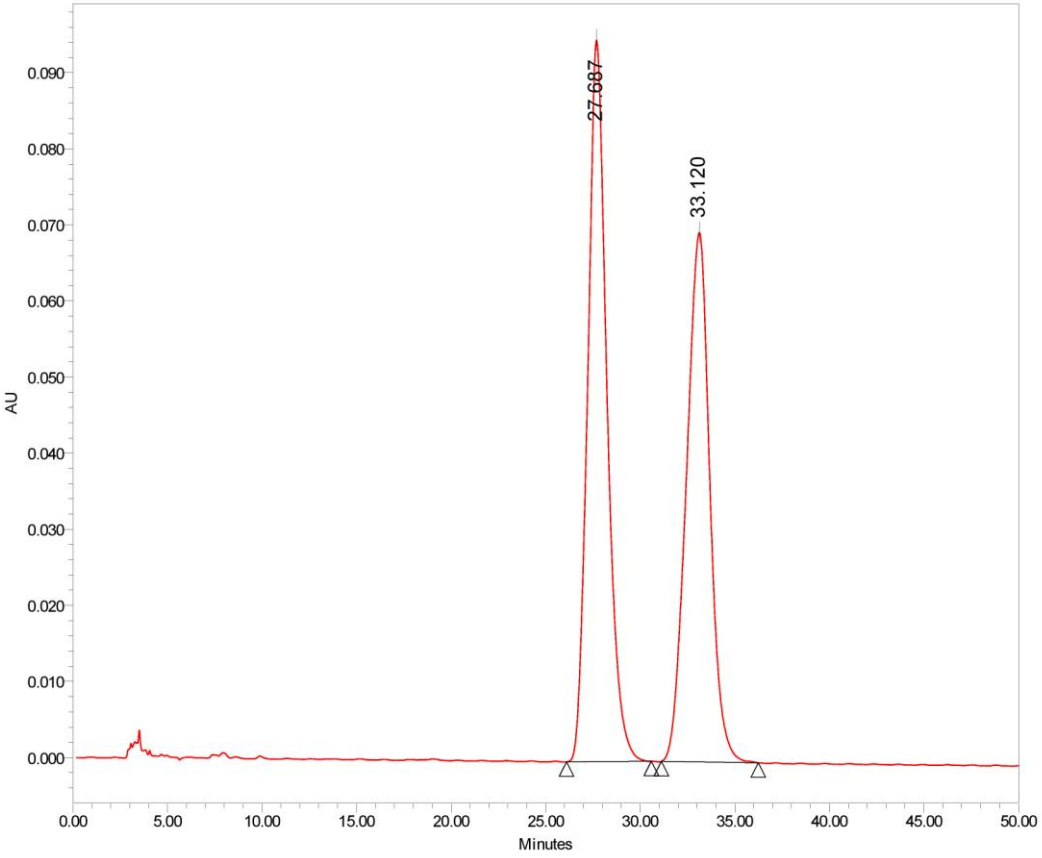
Project Name Secant

Reported by User: Breeze user (Breeze)

Breeze 2 HPLC System



Sample Name: X1709_f1_chi_ADH_15%_1mL_major; Date Acquired: 22/12/2010 15:33:44 HKT;
Vial: 1:A,4; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1709_f1_chi_ADH_15%_1mL_major	1:A,4	1	27.687	6683629	52.85	94810
2	X1709_f1_chi_ADH_15%_1mL_major	1:A,4	1	33.120	5962055	47.15	69564
Mean				30.404	6322841.717		82187.091
Std. Dev.				3.842	510229.895		17851.77
% RSD				12.64	8.07		21.721

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Printed: 22/12/2010 16:26:48 Asia/Hong_Kong

Page: 1 of 2

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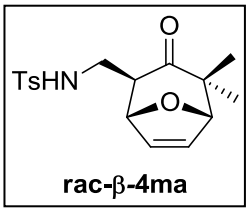
HPLC data for **rac-β-4ma**

Column conditions: OD3 column, 40% IPA/hexane, 0.50 mL/min.
Eluted time: 11.054 min. / 12.726 min.



rac-β-4ma

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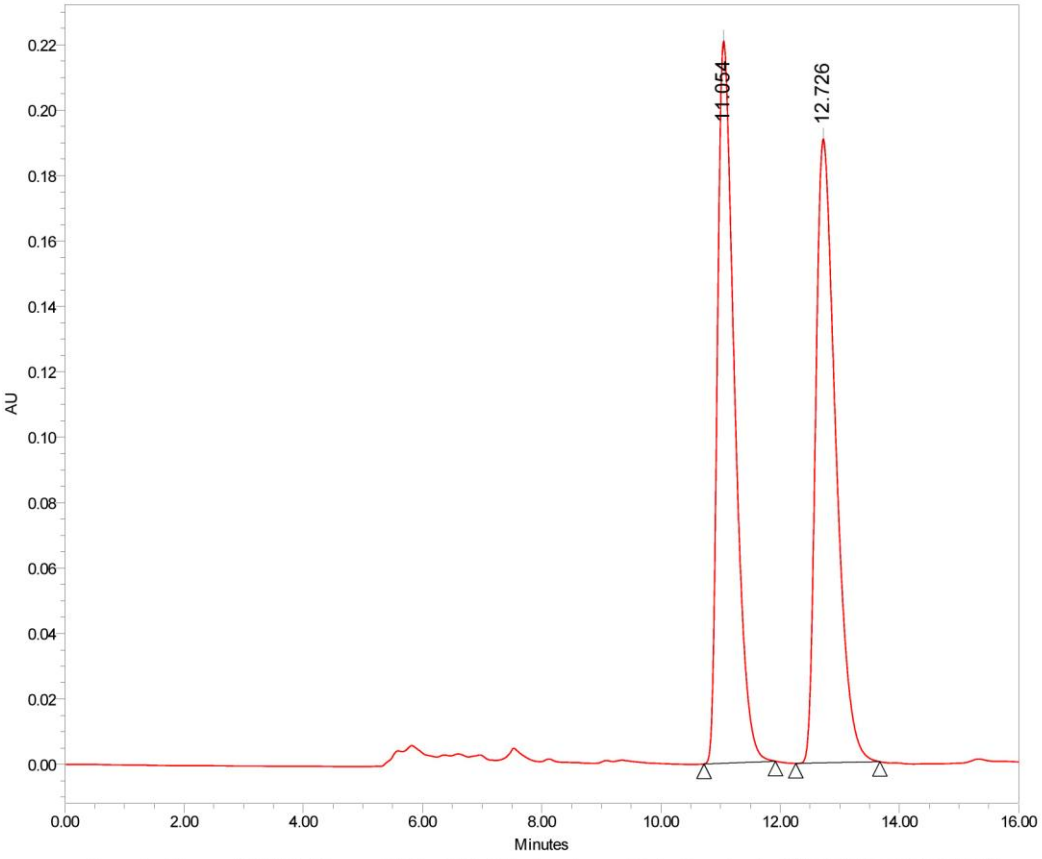
Project Name Secant
Reported by User: Breeze user (Breeze)

Breeze 2 HPLC System



Sample Name: X1456_f2_rac_OD3_40%_05mL_minor; Date Acquired: 4/1/2011 20:01:26 HKT;
Vial: 1:A,5; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1456_f2_rac_OD3_40%_05mL_minor	1:A,5	1	12.726	4443663	50.20	190681
2	X1456_f2_rac_OD3_40%_05mL_minor	1:A,5	1	11.054	4407939	49.80	220772
Mean				11.890	4425800.721		205726.775
Std. Dev.				1.182	25260.649		21277.59
% RSD				9.94	0.57		10.343

Report Method: Peak Summary Report
Page: 1 of 2

Printed: 5/1/2011
16:37:44 Asia/Hong_Kong

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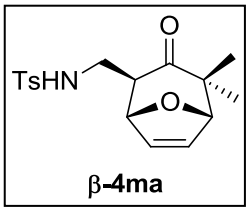
HPLC data for **β-4ma**

Column conditions: OD3 column, 40% IPA/hexane, 0.50 mL/min.

Eluted time: 11.212 min. / 12.927 min. (1.06 % ee)



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Project Name Secant

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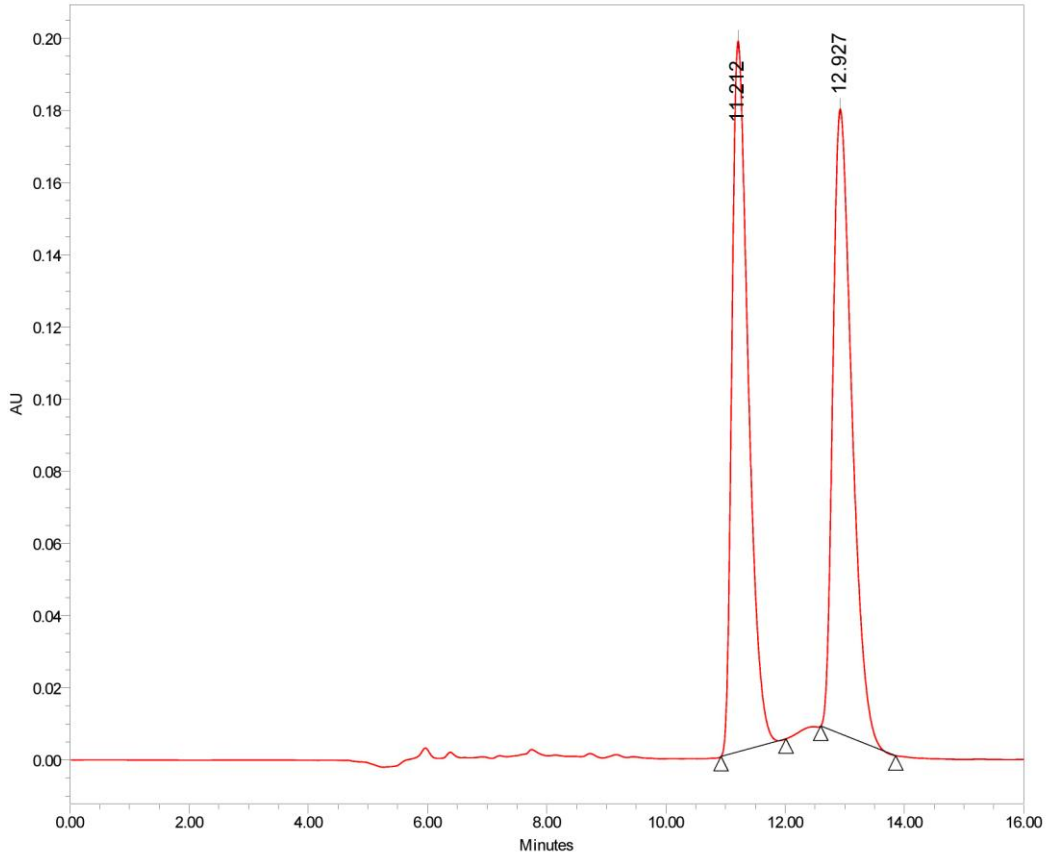
Breeze 2 HPLC System



Sample Name: X1709_f2_chi_OD3_40%_05mL_minor; Date Acquired: 5/1/2011 16:07:59 HKT;
Vial: 1:A,6; Injection: 1

Peak Summary with Statistics
Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1709_f2_chi_OD3_40%_05mL_minor	1:A,6	1	12.927	3839909	50.53	173098
2	X1709_f2_chi_OD3_40%_05mL_minor	1:A,6	1	11.212	3759287	49.47	196928
Mean				12.069	3799597.637		185012.921
Std. Dev.				1.212	57008.256		16850.76
% RSD				10.04	1.50		9.108

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Page: 1 of 2

Printed: 5/1/2011
16:33:33 Asia/Hong_Kong

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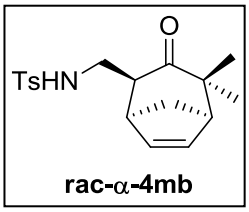
HPLC data for **rac-α-4mb**

Column conditions: AD3 column, 30% IPA/hexane, 0.50 mL/min

Eluted time: 21.695 min. / 28.530 min.



rac-α-4mb

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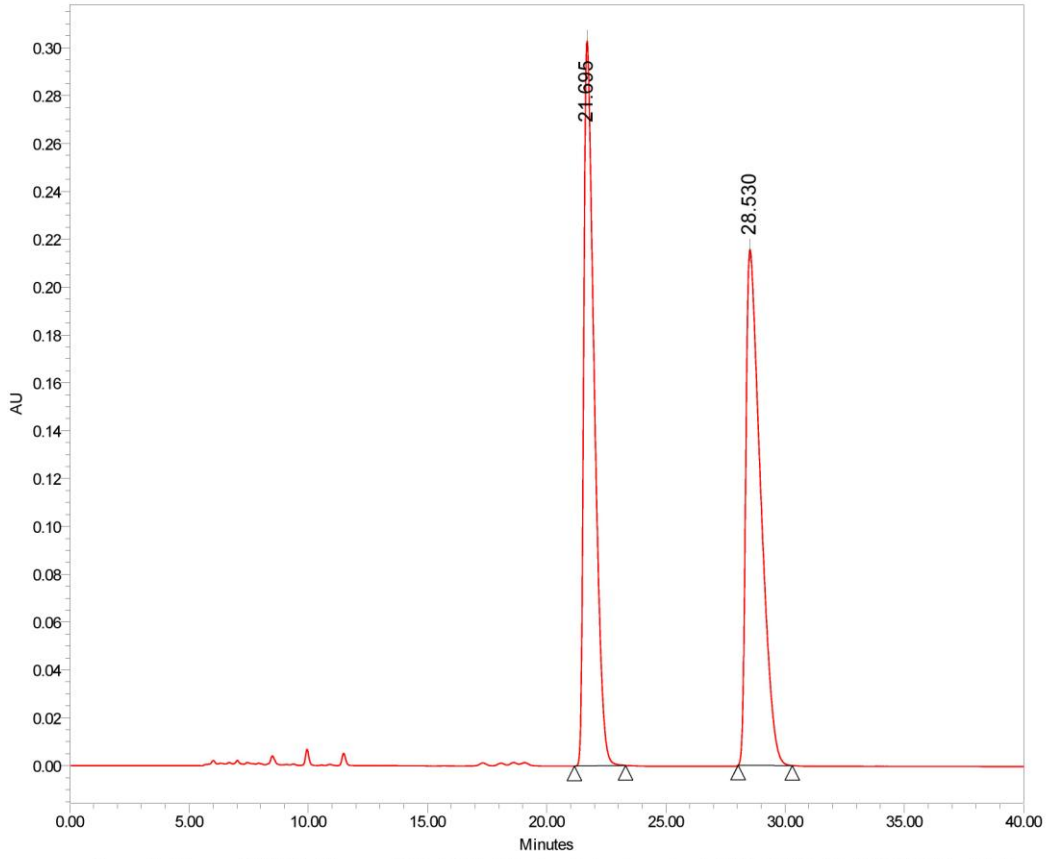
Project Name Secant

Reported by User: Breeze user (Breeze)

Breeze 2 HPLC System



Sample Name: X1717_f1_rac_AD3_30%_05mL; Date Acquired: 19/1/2011 13:18:52 HKT; Vial: 1:A,1; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1717_f1_rac_AD3_30%_05mL	1:A,1	1	28.530	9287456	50.00	215523
2	X1717_f1_rac_AD3_30%_05mL	1:A,1	1	21.695	9285712	50.00	302916
Mean				25.113	9286583.899		259219.914
Std. Dev.				4.833	1232.895		61796.23
% RSD				19.25	0.01		23.839

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Page: 1 of 2

Printed: 19/1/2011 17:27:47 Asia/Hong_Kong

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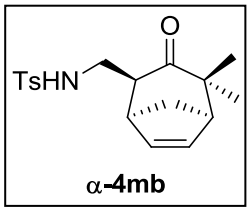
HPLC data for **α-4mb**

Column conditions: AD3 column, 30% IPA/hexane, 0.50 mL/min

Eluted time: 21.796 min. / 28.680 min. (7.70 % ee)



α-4mb

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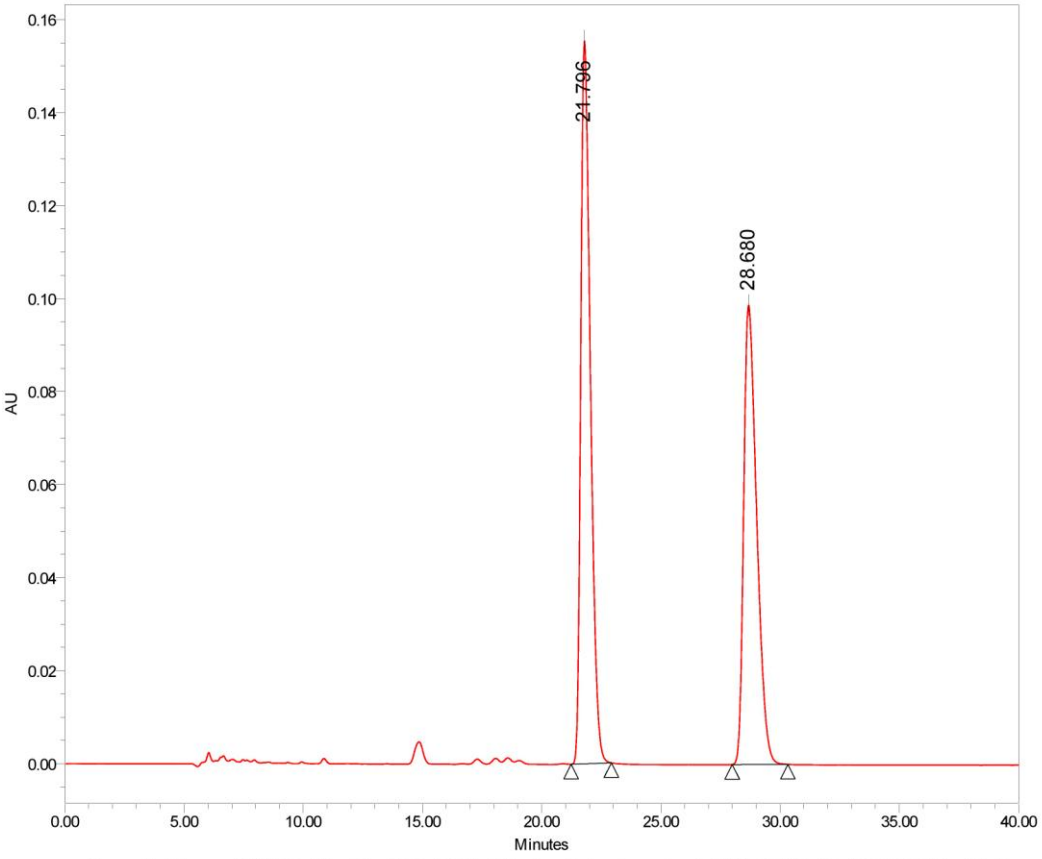
Project Name Secant

Reported by User: Breeze user (Breeze)

Breeze 2 HPLC System



Sample Name: X1716_f1_chi_AD3_30%_05mL; Date Acquired: 19/1/2011 16:12:20 HKT; Vial: 1:A,2; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (*sec)	% Area	Height ()
1	X1716_f1_chi_AD3_30%_05mL	1:A,2	1	28.680	3740564	46.15	98768
2	X1716_f1_chi_AD3_30%_05mL	1:A,2	1	21.796	4365499	53.85	155433
Mean				25.238	4053031.425		127100.445
Std. Dev.				4.867	441896.144		40068.73
% RSD				19.29	10.90		31.525

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Page: 1 of 2

Printed: 19/1/2011 17:30:33 Asia/Hong_Kong

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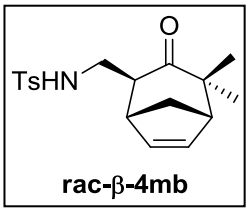
HPLC data for **rac-β-4mb**

Column conditions: AY3 column, 40% IPA/hexane, 0.50 mL/min

Eluted time: 31.364 min. / 60.698 min.



rac-β-4mb

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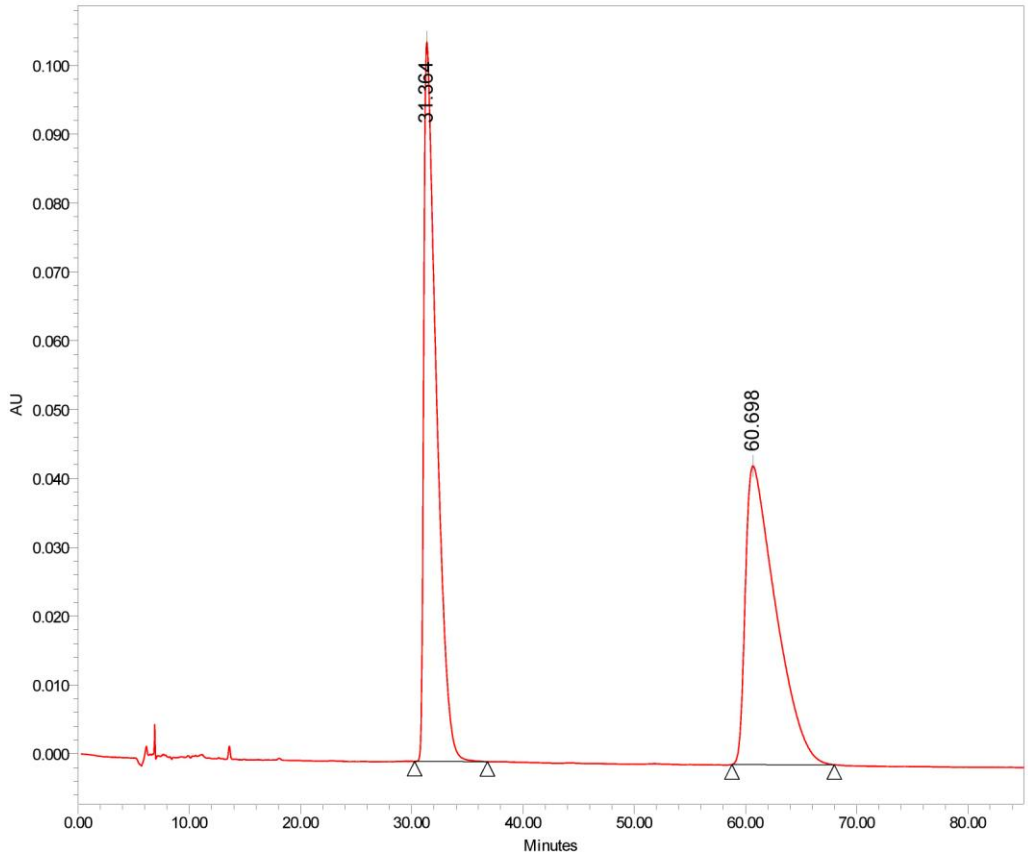
Breeze 2 HPLC System



Sample Name: X1717_f2_rac_AY3_40%_05mL; Date Acquired: 26/1/2011 13:24:20 HKT; Vial: 1:A,1; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1717_f2_rac_AY3_40%_05mL	1:A,1	1	60.698	8193673	50.00	43381
2	X1717_f2_rac_AY3_40%_05mL	1:A,1	1	31.364	8193942	50.00	104509
Mean				46.031	8193807.583		73944.625
Std. Dev.				20.742	190.785		43223.93
% RSD				45.06	0.00		58.454

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Page: 1 of 2

Printed: 26/1/2011 19:40:30 Asia/Hong_Kong

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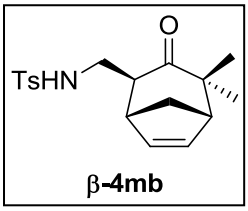
HPLC data for **β-mb**

Column conditions: AY3 column, 40% IPA/hexane, 0.50 mL/min

Eluted time: 30.966 min. / 60.890 min. (9.78% ee)



β-4mb

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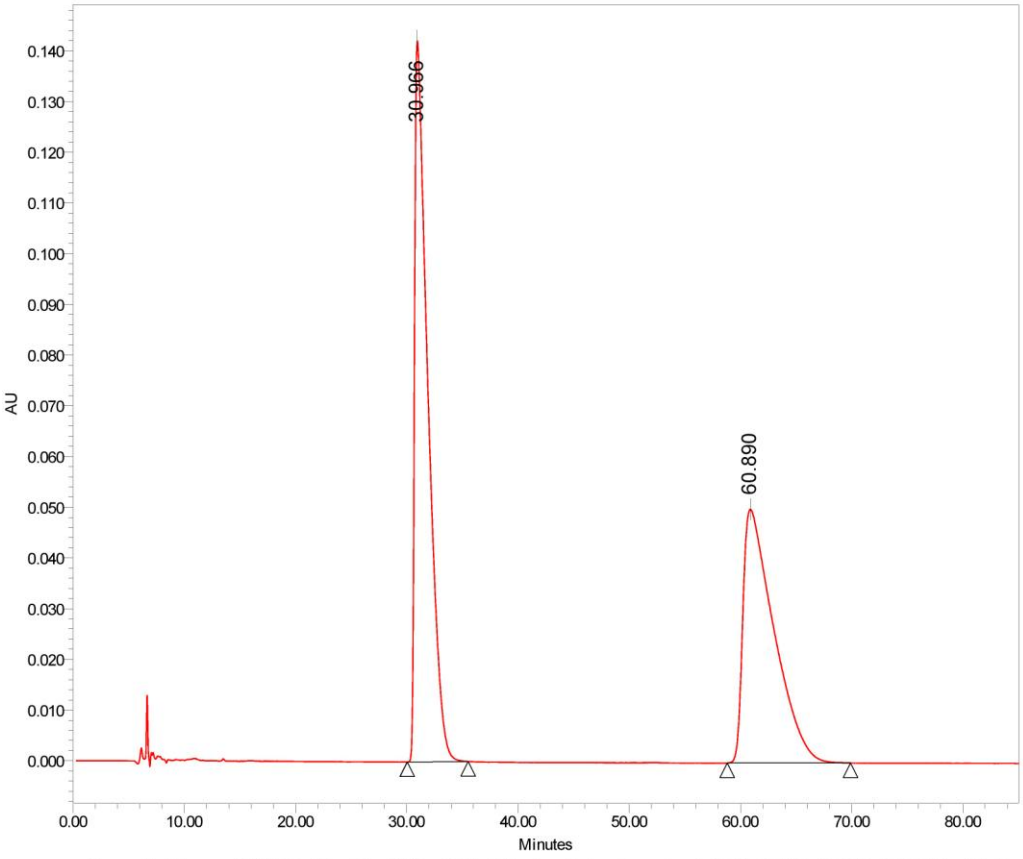
Project Name Secant

Reported by User: Breeze user (Breeze)

Breeze 2 HPLC System



Sample Name: X1716_f2_chi_AY3_40%_05mL; Date Acquired: 26/1/2011 16:25:11 HKT; Vial: 1:A,2; Injection: 1

Peak Summary with Statistics

Peak Name:

	Sample Name	Vial	Inj.	RT (min)	Area (猩*sec)	% Area	Height (猩)
1	X1716_f2_chi_AY3_40%_05mL	1:A,2	1	60.890	9648243	45.11	50033
2	X1716_f2_chi_AY3_40%_05mL	1:A,2	1	30.966	11741779	54.89	142153
Mean				45.928	10695010.558		96092.967
Std. Dev.				21.160	1480353.524		65139.02
% RSD				46.07	13.84		67.788

Report Method: Peak Summary Report

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Page: 1 of 2