Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry

Supplementary Information

CuI-catalyzed cycloisomerization of propargyl amides

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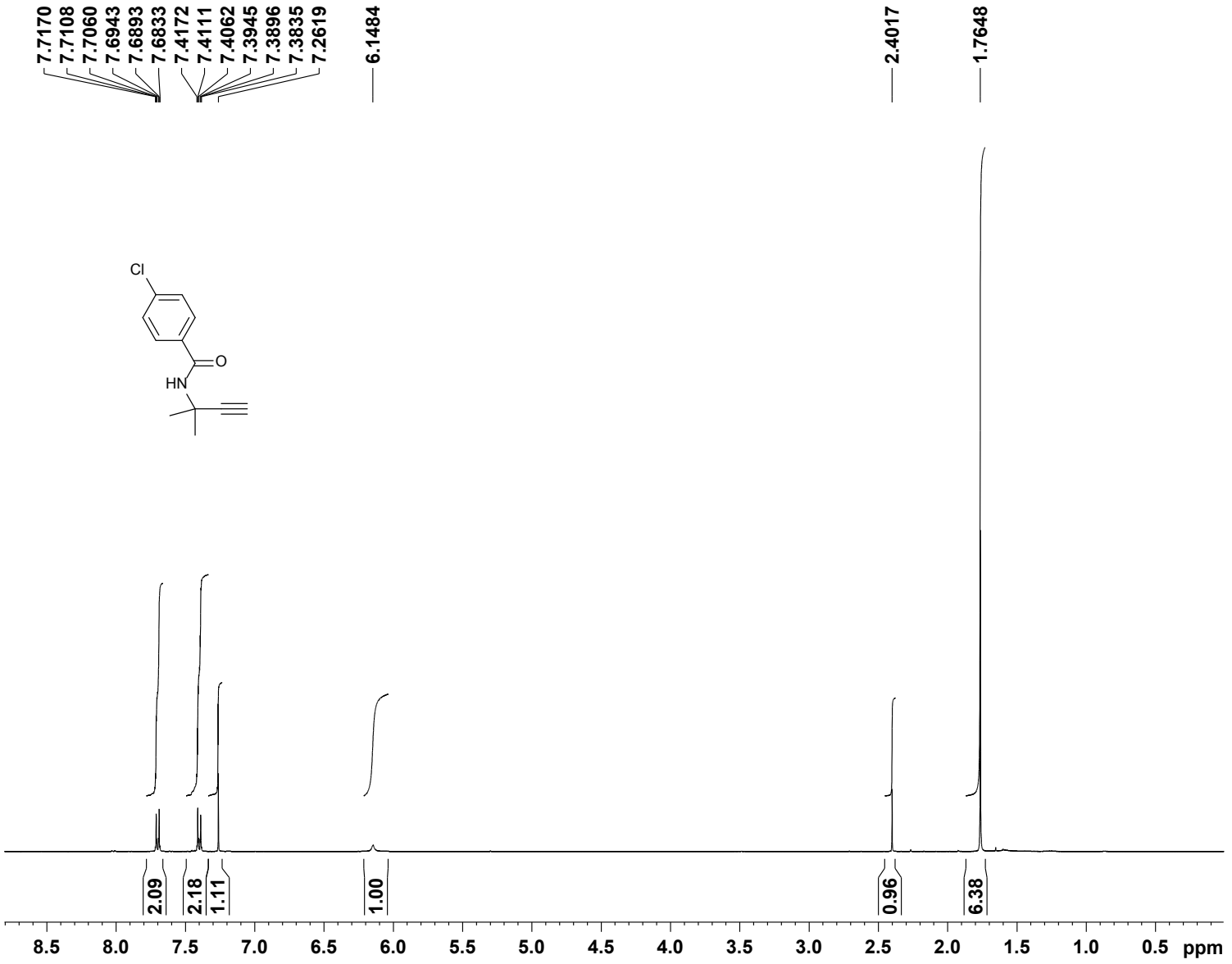
The analytical data for compounds **1a**,[1] **1c**,[1] **1e**,[1] **1f**,[1] **1h**,[2] **1j**,[2] **1k**,[1] **1l**,[1] **1o**,[2] **1p**[1] **3a**[1] and **3j**[3] matched the literature values.

[1] S. Yasuhara, M. Sasa, T. Kusakabe, H. Takayama, M. Kimura, T. Mochida and K. Kato, *Angew. Chem. Int. Ed.*, 2011, **50**, 3912.
[2] A. Antonio, C. Sandro, C. Lauro, F. Giancarlo and M. Fabio, *Org. Lett.*, 2001, **3**, 2501.
[3] M. Harmata and C. Huang, *Synlett*, 2008, 1399.

1H MNR spectrum for 4-Chloro-N-(1, 1-dimethylprop-2-ynyl) benzamide (1b)

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PROCNO                    1

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PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                   134.04
DW                   60.800 usec
DE                   10.69 usec
TE                   293.7 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                   1H
P1                   8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                    32768
SF             400.1300089 MHz
WDW                      EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.50
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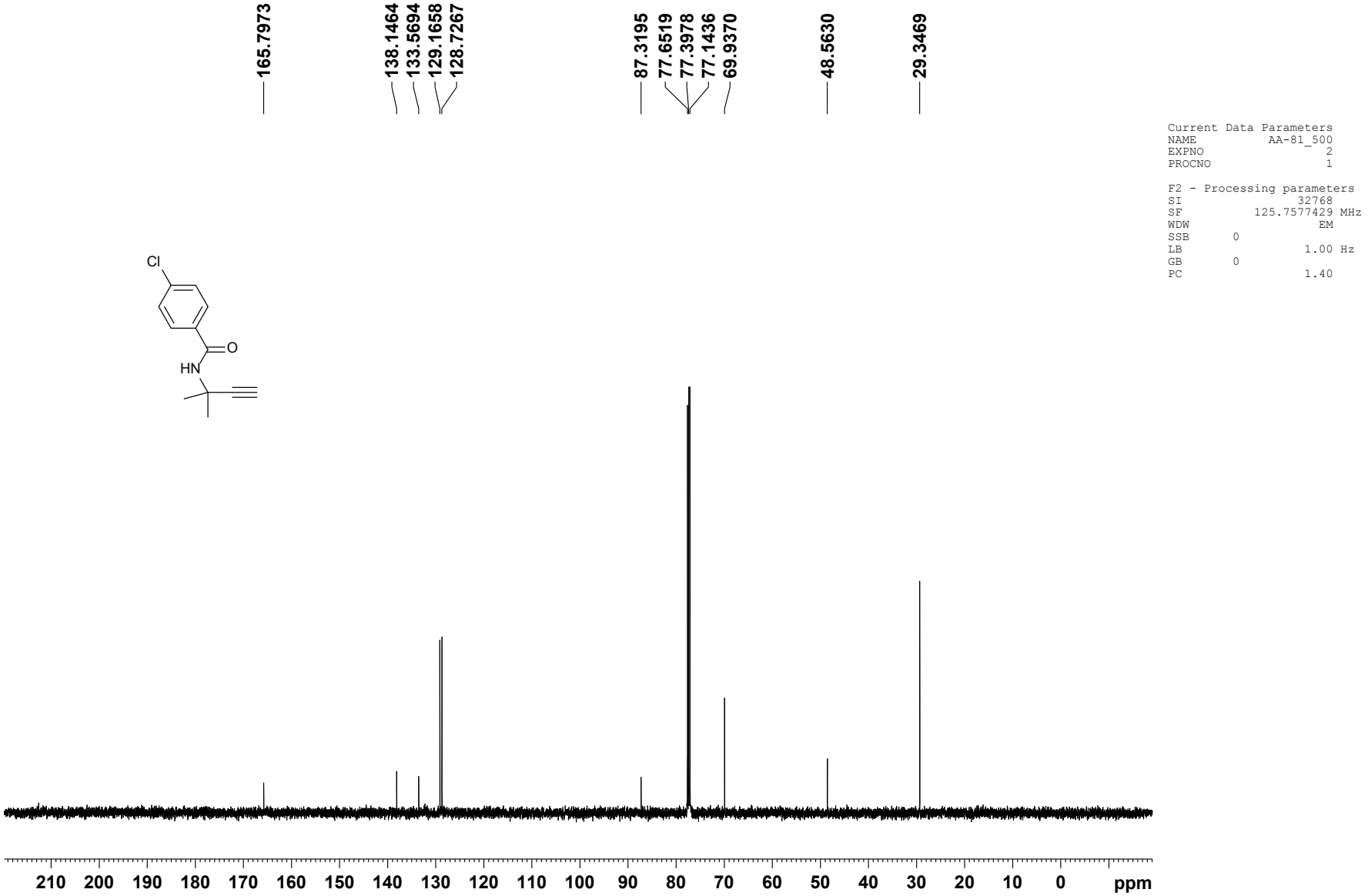
13C NMR spectrum for 4-Chloro-N-(1, 1-dimethylprop-2-ynyl) benzamide (1b)

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PROCNO                 1

F2 - Processing parameters
SI                 32768
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WDW                   EM
SSB       0
LB                 1.00 Hz
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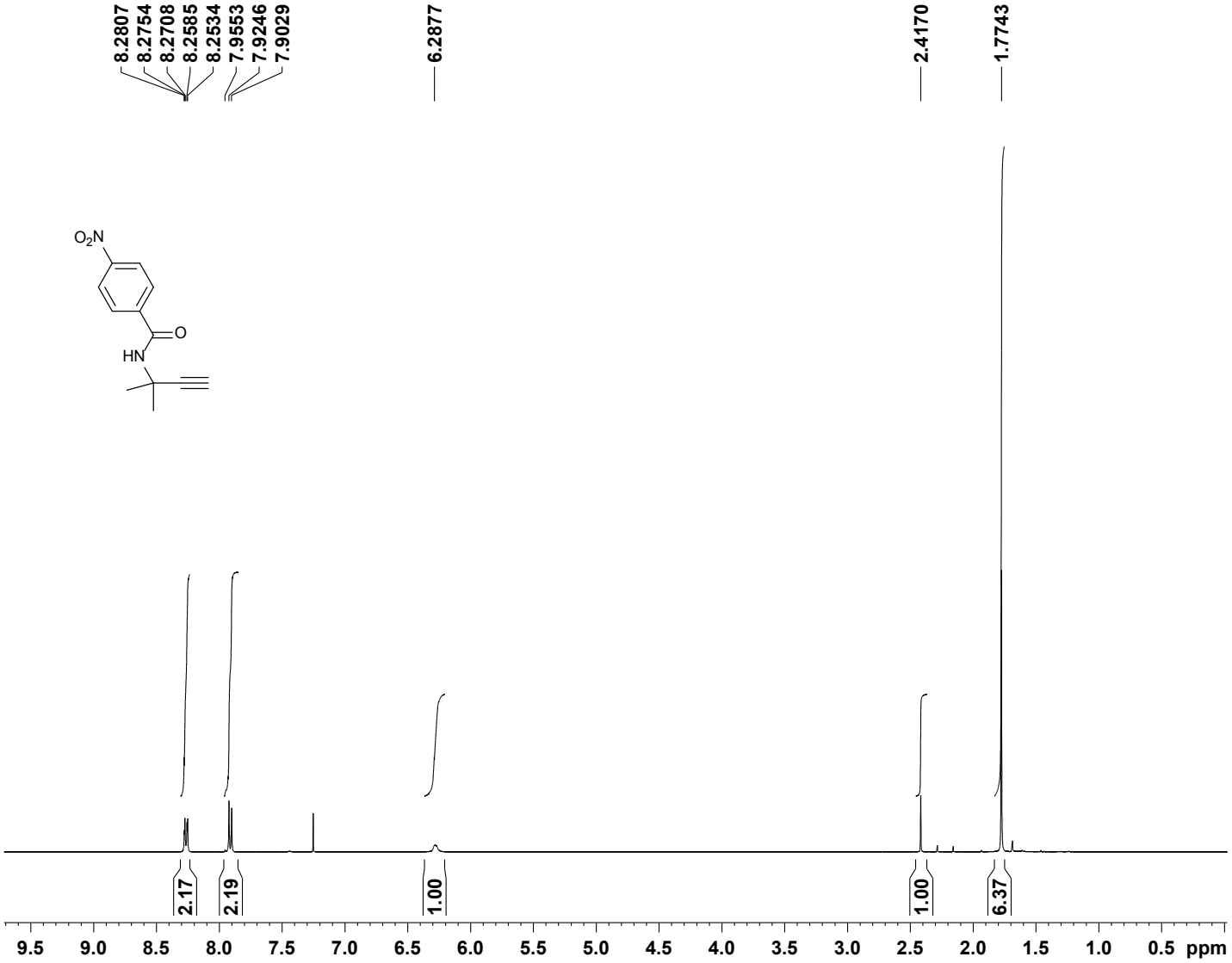
1H NMR spectrum for N-(2-methylbut-3-yn-2-yl)-4-nitrobenzamide (1d)

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EXPNO                     11
PROCNO                     1

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PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES             0.125483 Hz
AQ                 3.9845889 sec
RG                    104.33
DW                    60.800 usec
DE                    10.69 usec
TE                    294.1 K
D1              1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                     1H
P1                    8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                     32768
SF             400.1300122 MHz
WDW                      EM
SSB         0
LB                    0.30 Hz
GB          0
PC                    1.50
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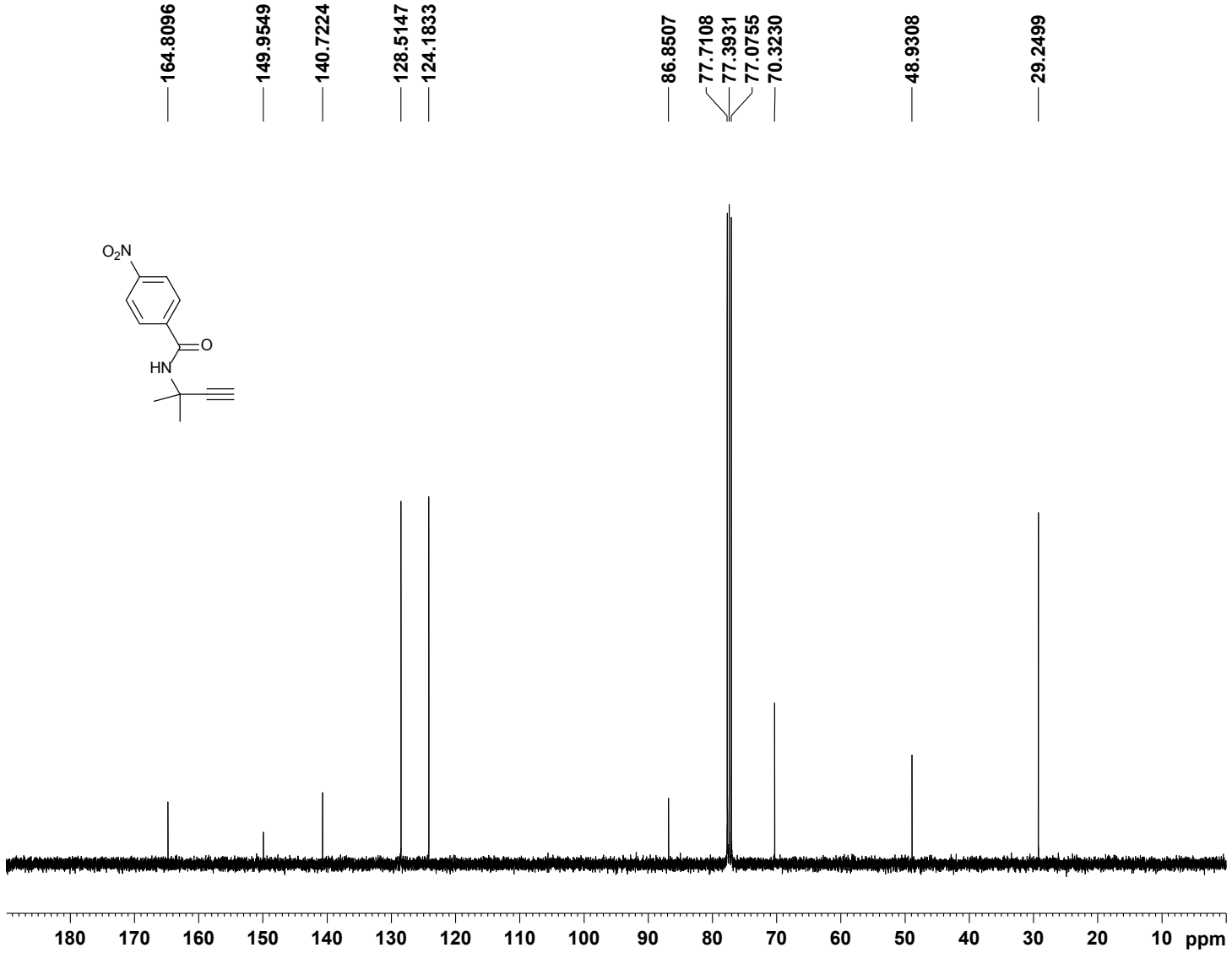
13C NMR spectrum for N-(2-Methylbut-3-yn-2-yl)-4-nitrobenzamide (1d)

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Current Data Parameters
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EXPNO                     10
PROCNO                     1

F2 - Acquisition Parameters
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Time                   16.40
INSTRUM                spect
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PULPROG              zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH                24038.461 Hz
FIDRES             0.366798 Hz
AQ                 1.3631488 sec
RG                    181.72
DW                    20.800 usec
DE                     8.18 usec
TE                    294.6 K
D1                 2.00000000 sec
D11                0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1             100.6228293 MHz
NUC1                     13C
P1                      9.00 usec
PLW1             77.00000000 W

======== CHANNEL f2 ========
SFO2             400.1316005 MHz
NUC2                     1H
CPDPRG[2             waltz16
PCPD2                  90.00 usec
PLW2             24.00000000 W
PLW12             0.17567000 W
PLW13             0.14229999 W

F2 - Processing parameters
SI                       65536
SF               100.6127329 MHz
WDW                         EM
SSB          0
LB                      0.50 Hz
GB           0
PC                      1.40
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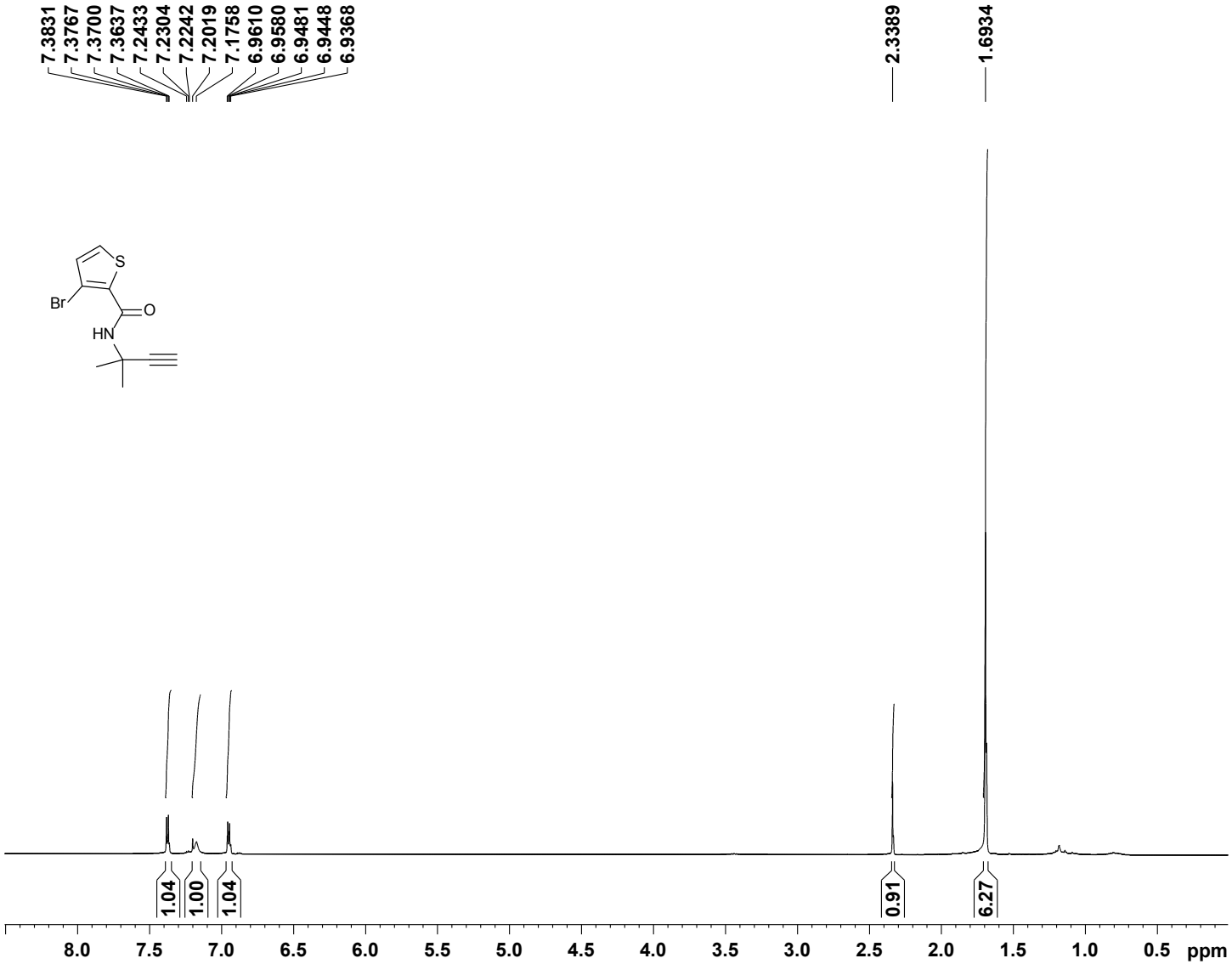
1H NMR spectrum for 3-Bromo-N-(1,1-dimethylprop-2-ynyl)thiophene-2-carboxamide (1g)

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PROCNO                 1

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INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     0
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ              3.9845889 sec
RG                  59.2
DW                60.800 usec
DE                10.69 usec
TE                293.8 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                1H
P1                  8.00 usec
PLW1        24.00000000 W

F2 - Processing parameters
SI                131072
SF          400.1300331 MHz
WDW                 EM
SSB       0
LB                0.30 Hz
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PC                1.50
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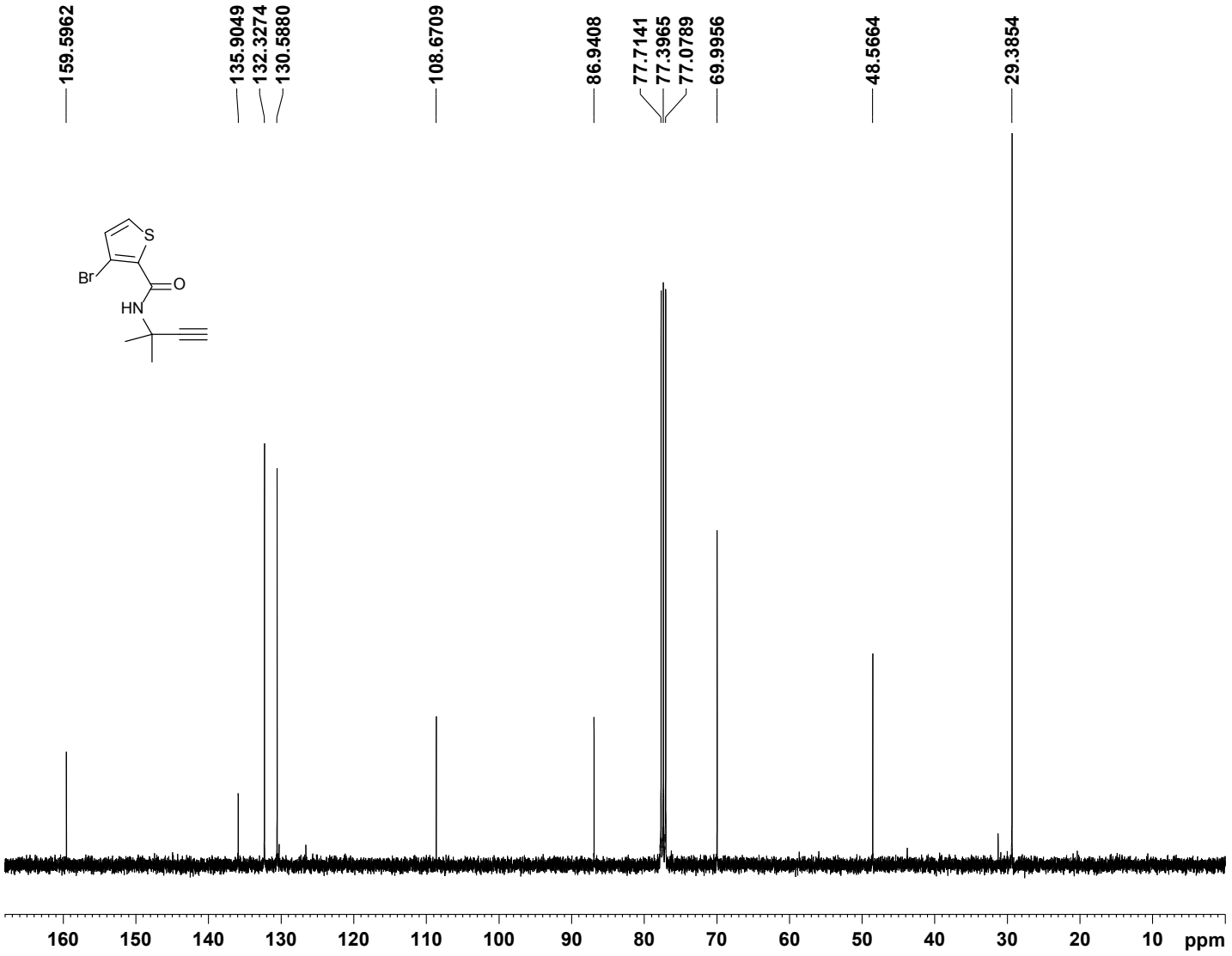
13C NMR spectrum for 3-Bromo-N-(1,1-dimethylprop-2-ynyl)thiophene-2-carboxamide (1g)

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EXPNO                     70
PROCNO                     1

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INSTRUM                spect
PROBHD    5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.5 K
D1               2.00000000 sec
D11              0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                     9.00 usec
PLW1            77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2            waltz16
PCPD2                 90.00 usec
PLW2            24.00000000 W
PLW12            0.17567000 W
PLW13            0.14229999 W

F2 - Processing parameters
SI                     65536
SF              100.6127348 MHz
WDW                       EM
SSB          0
LB                     0.50 Hz
GB           0
PC                     1.40
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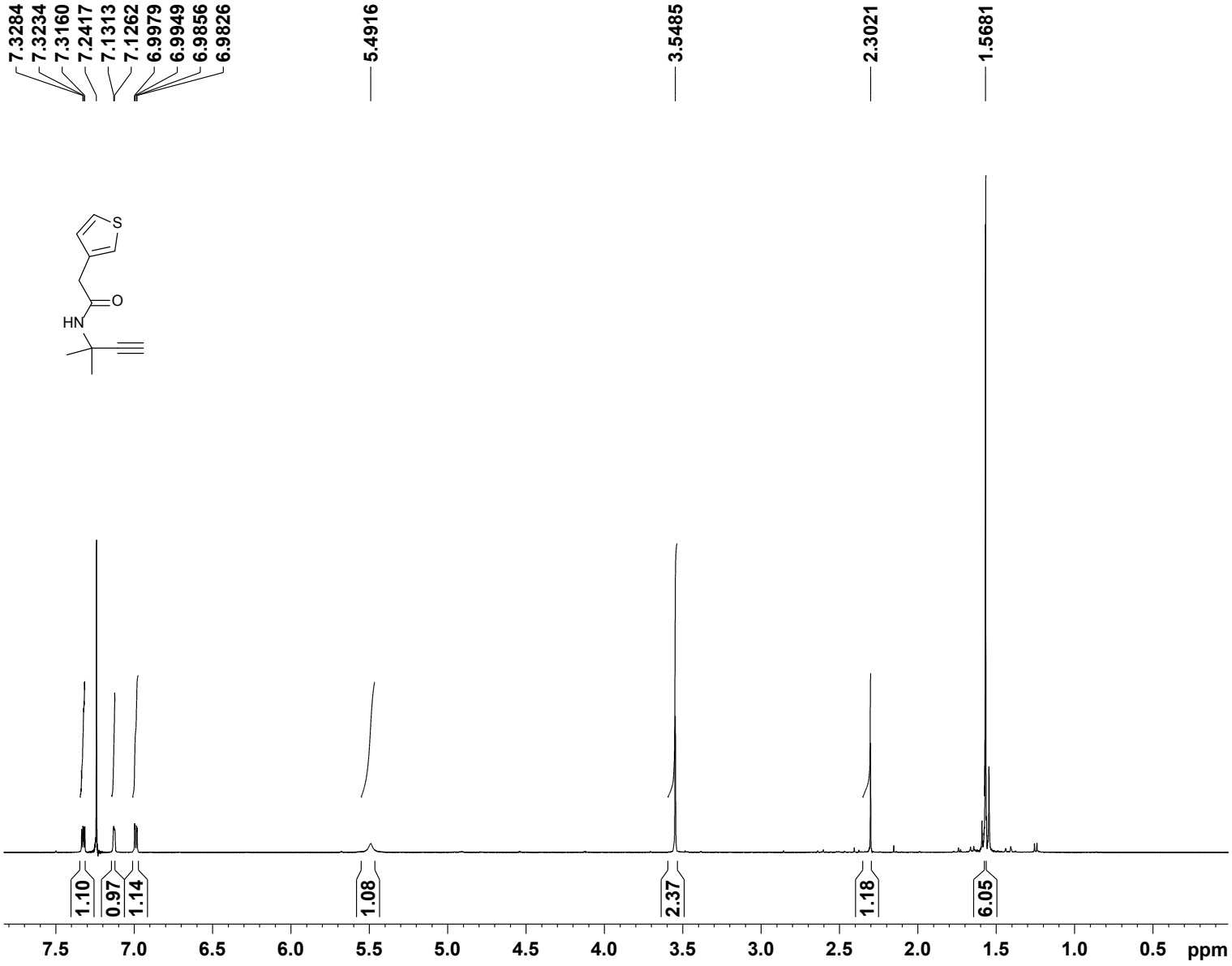
1H NMR spectrum of N-(1,1-Dimethylprop-2-ynyl)-2-(2-thienyl)acetamide (1i)

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EXPNO                    100
PROCNO                     1

F2 - Acquisition Parameters
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INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                   163.41
DW                   60.800 usec
DE                   10.69 usec
TE                   294.2 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                     1H
P1                    8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                   131072
SF             400.1300172 MHz
WDW                      EM
SSB          0
LB                    0.30 Hz
GB           0
PC                    1.50
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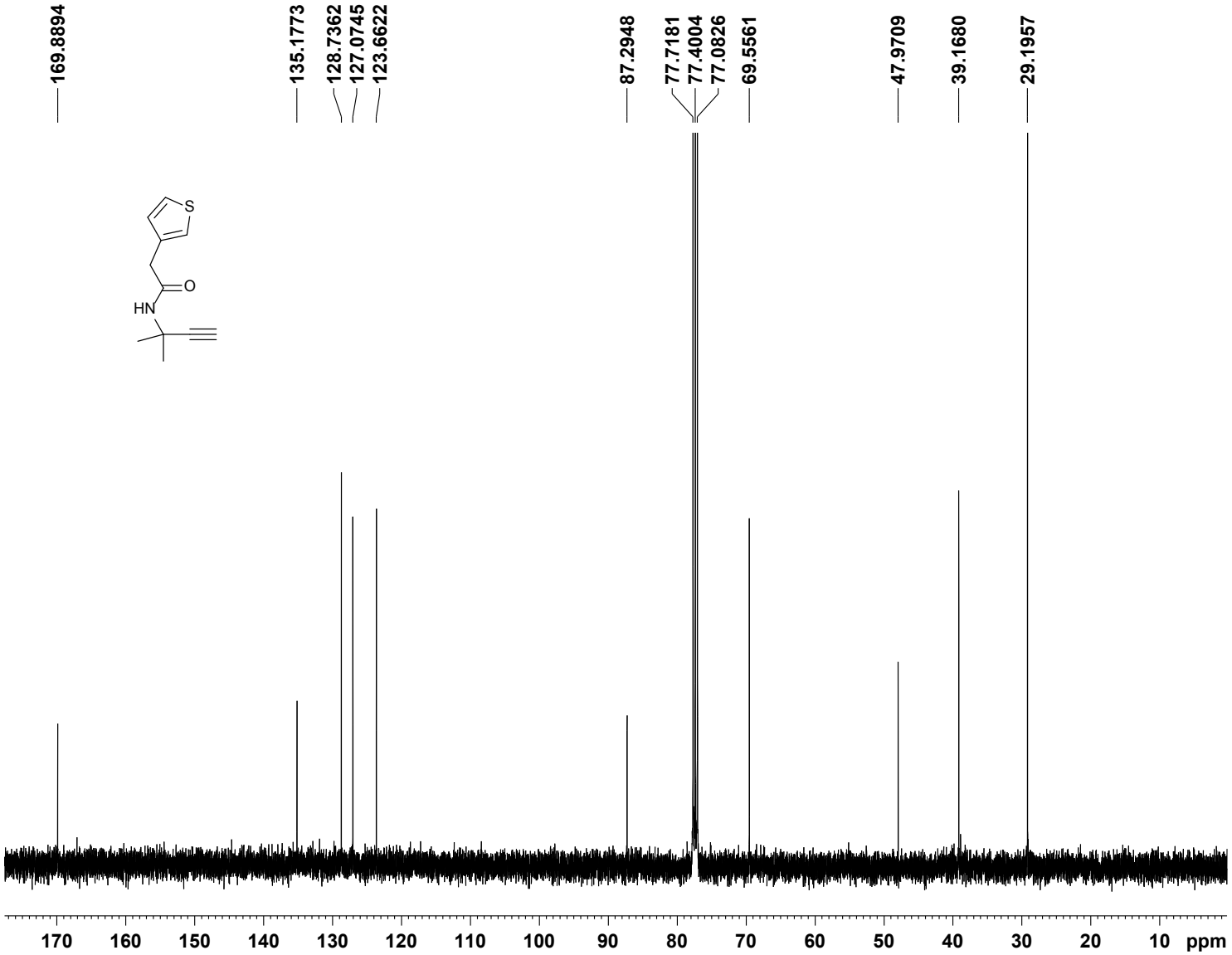
13C NMR spectrum for N-(1,1-Dimethylprop-2-ynyl)-2-(2-thienyl)acetamide (1i)

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EXPNO                     20
PROCNO                     1

F2 - Acquisition Parameters
Date_              20121114
Time                  11.19
INSTRUM                spect
PROBHD   5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.4 K
D1             2.00000000 sec
D11            0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1           100.6228293 MHz
NUC1                    13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2           400.1316005 MHz
NUC2                    1H
CPDPRG[2            waltz16
PCPD2                90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                     65536
SF            100.6127335 MHz
WDW                       EM
SSB       0
LB                    0.50 Hz
GB        0
PC                    1.40
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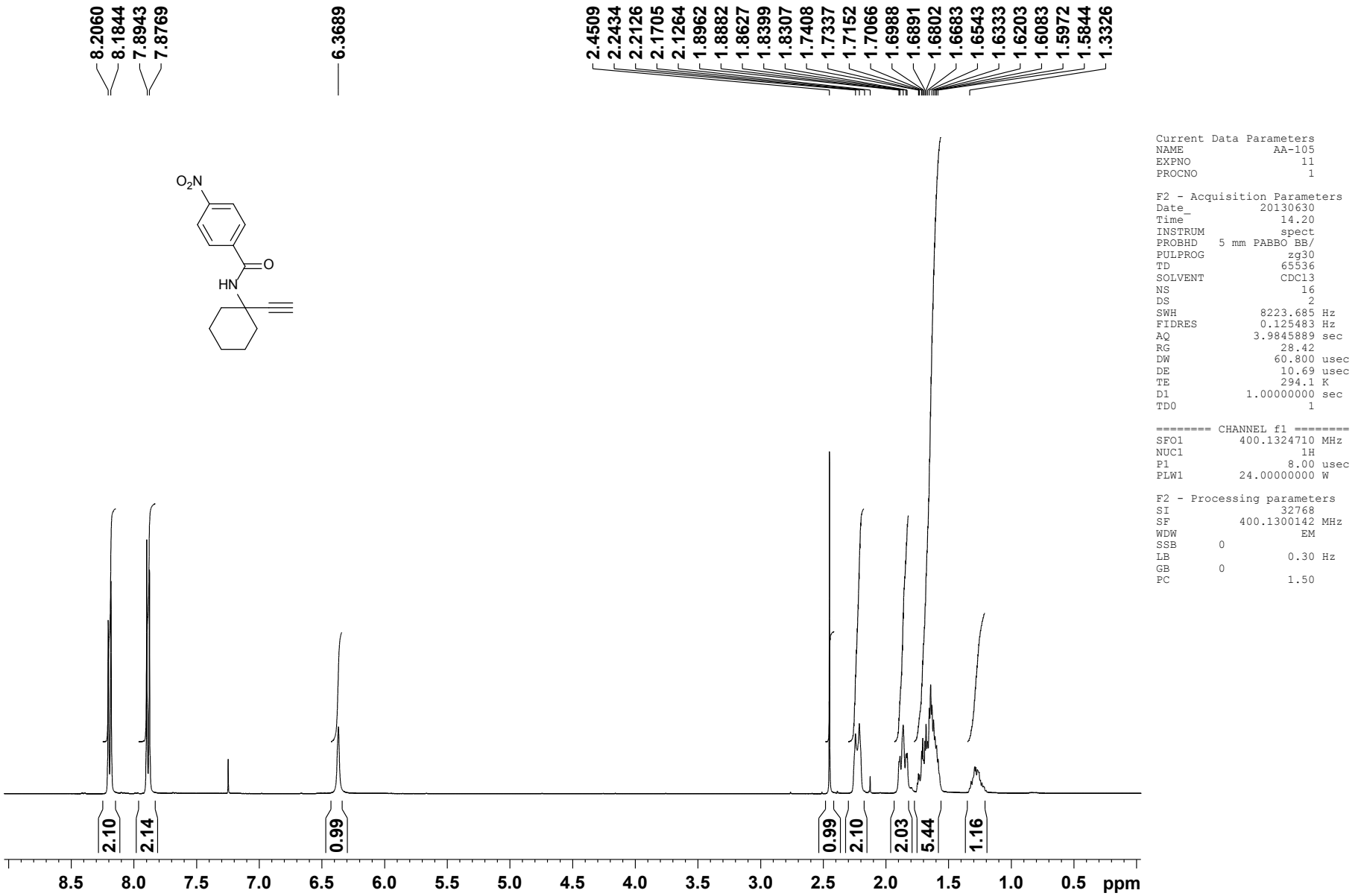
1H NMR spectrum for N-(1-Ethynylcyclohexyl)-4-nitrobenzamide (1m)

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PROCNO                     1

F2 - Acquisition Parameters
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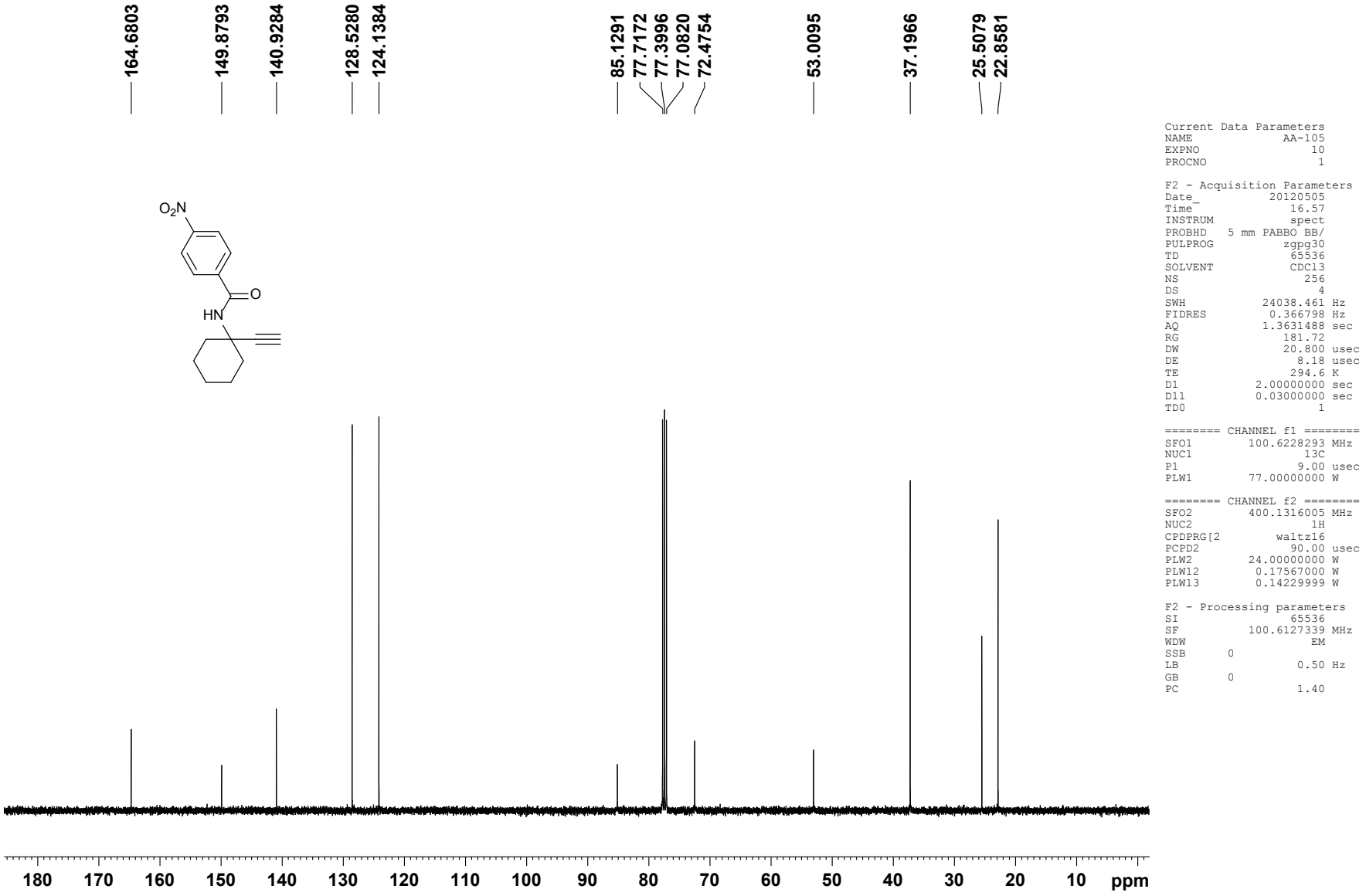
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES             0.125483 Hz
AQ                 3.9845889 sec
RG                    28.42
DW                   60.800 usec
DE                   10.69 usec
TE                   294.1 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                    1H
P1                    8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                    32768
SF             400.1300142 MHz
WDW                     EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.50
```

13C NMR spectrum for N-(1-Ethynylcyclohexyl)-4-nitrobenzamide (1m)

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EXPNO                     10
PROCNO                     1

F2 - Acquisition Parameters
Date_              20120505
Time                  16.57
INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT               CDCl3
NS                      256
DS                        4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.6 K
D1              2.00000000 sec
D11             0.03000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           100.6228293 MHz
NUC1                   13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2           400.1316005 MHz
NUC2                   1H
CPDPRG[2            waltz16
PCPD2                90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                    65536
SF               100.6127339 MHz
WDW                      EM
SSB          0
LB                    0.50 Hz
GB           0
PC                    1.40
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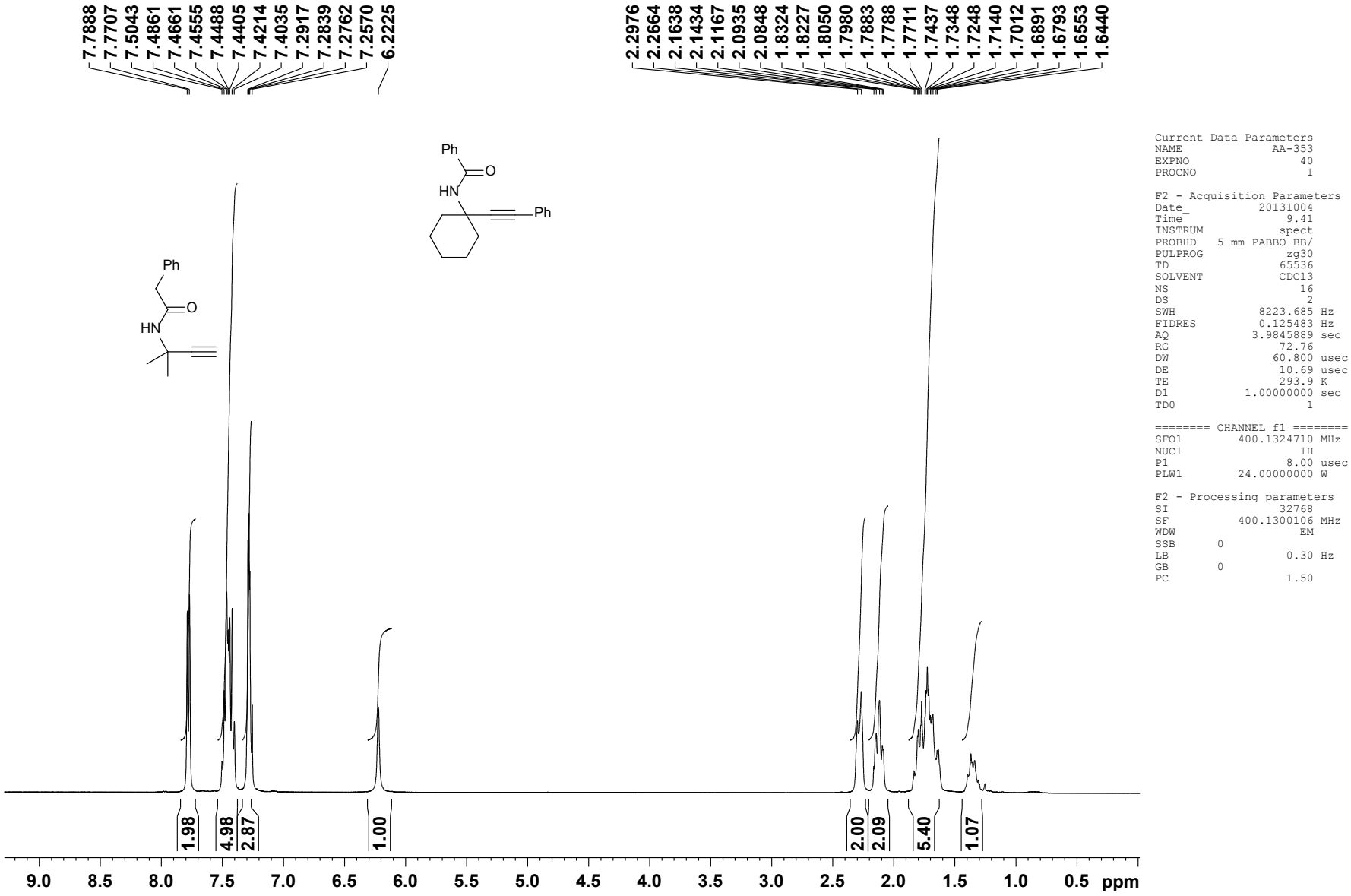
1H NMR spectrum for N-(1-(phenylethynyl)cyclohexyl)benzamide (1n)

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Current Data Parameters
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PROCNO                     1

F2 - Acquisition Parameters
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INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES             0.125483 Hz
AQ                 3.9845889 sec
RG                     72.76
DW                    60.800 usec
DE                    10.69 usec
TE                    293.9 K
D1                1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                     1H
P1                    8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                     32768
SF             400.1300106 MHz
WDW                      EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.50
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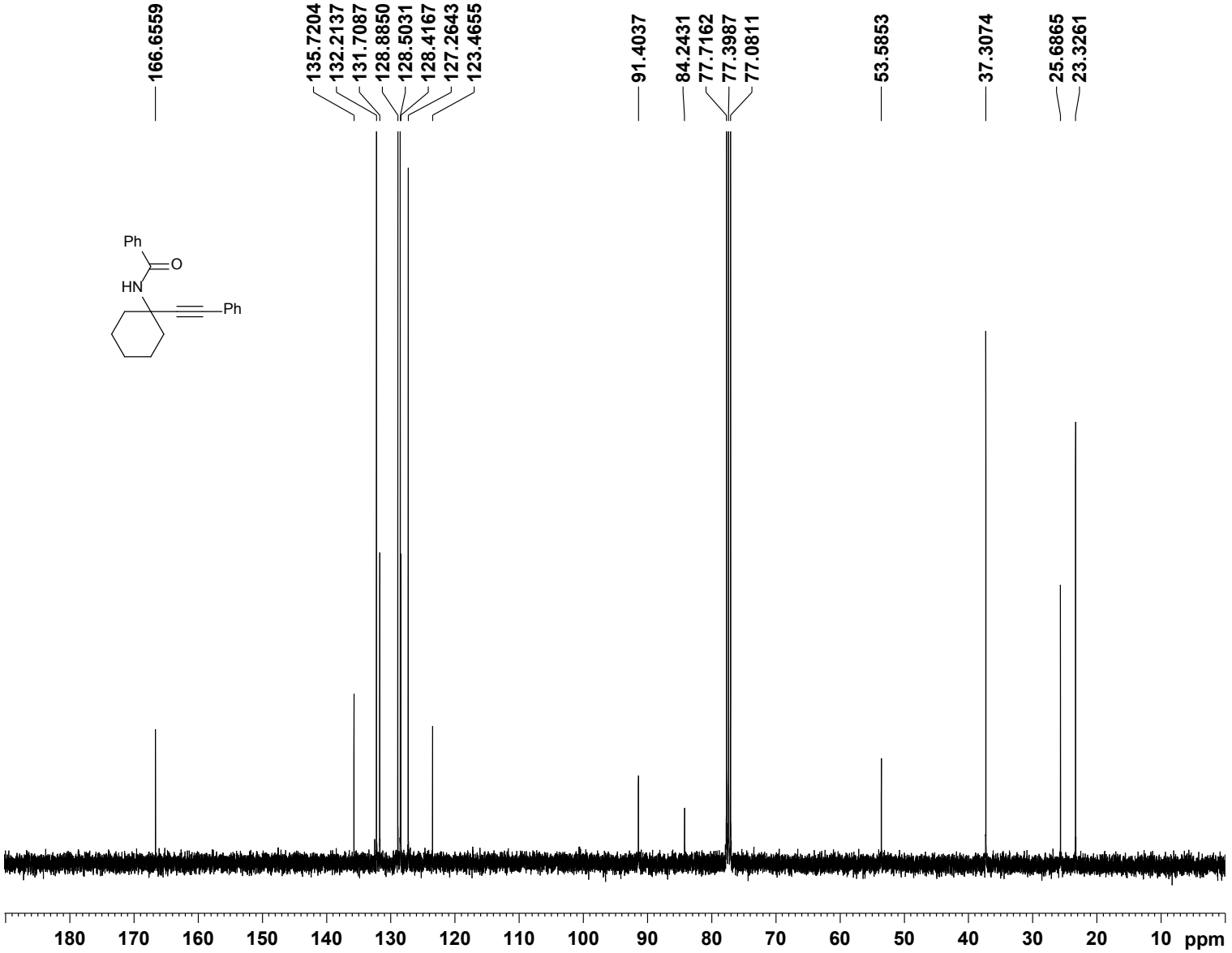
13C NMR spectrum for N-(1-(phenylethynyl)cyclohexyl)benzamide (1n)

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PROCNO                     1

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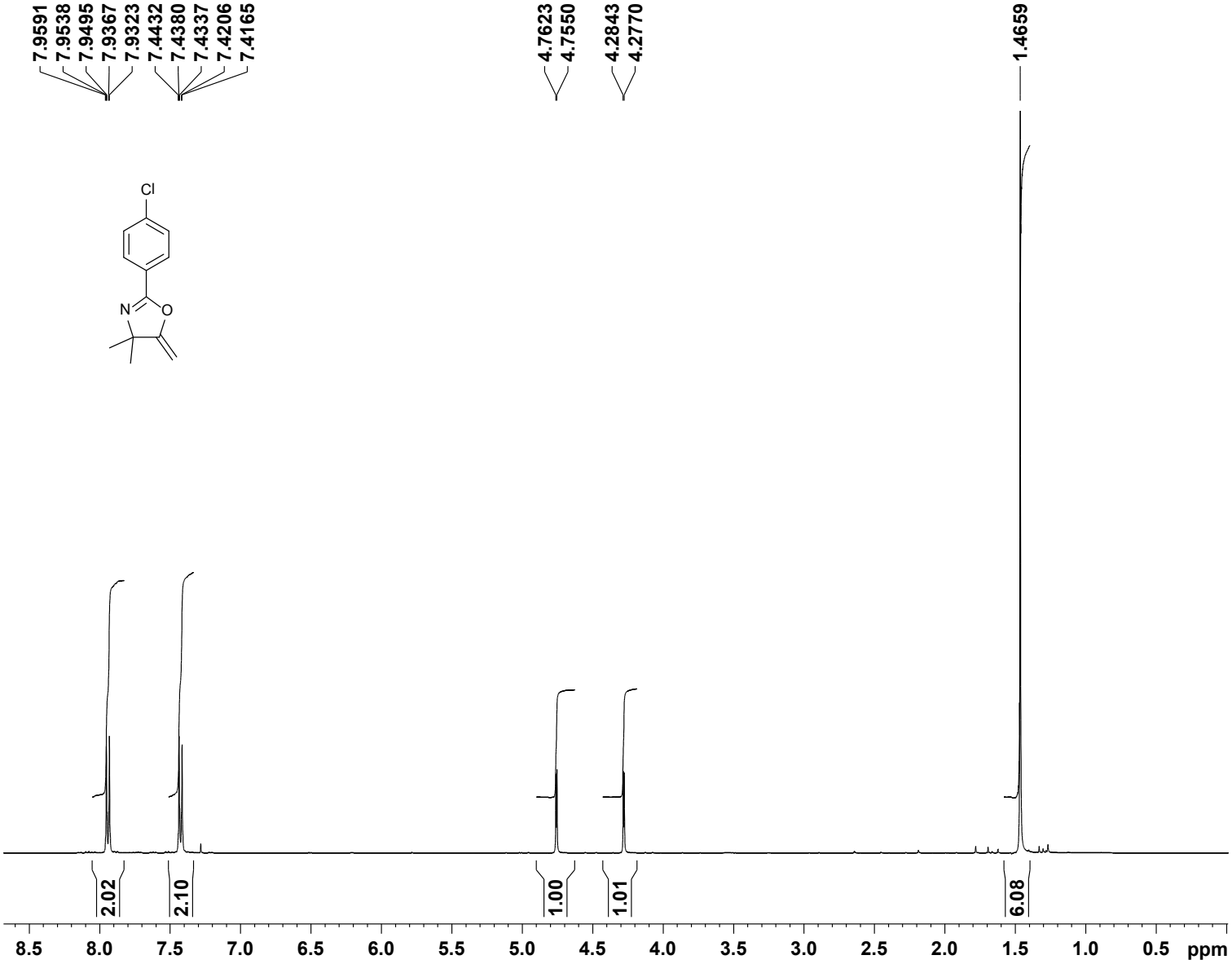
PULPROG               zgpg30
TD                     65536
SOLVENT               CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                 1.3631488 sec
RG                    181.72
DW                    20.800 usec
DE                     8.18 usec
TE                    294.3 K
D1              2.00000000 sec
D11             0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1           100.6228293 MHz
NUC1                    13C
P1                     9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2           400.1316005 MHz
NUC2                    1H
CPDPRG[2           waltz16
PCPD2                 90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                     65536
SF            100.6127344 MHz
WDW                       EM
SSB          0
LB                     0.50 Hz
GB           0
PC                     1.40
```

1H NMR spectrum for 2-(4-Chloro-phenyl)-4,4-dimethyl-5-methylene-4,5-dihydro-oxazole (3b)

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PROCNO                    1

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PROBHD   5 mm QNP  1H/1
PULPROG               zg30
TD                   65536
SOLVENT              CDC13
NS                      16
DS                       2
SWH               8278.146 Hz
FIDRES               0.126314 Hz
AQ                3.9583745 sec
RG                     143.7
DW                   60.400 usec
DE                    6.00 usec
TE                   293.2 K
D1             1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
NUC1                     1H
P1                    8.40 usec
PL1                  -3.00 dB
SFO1          400.1324710 MHz

F2 - Processing parameters
SI                    32768
SF            400.1300000 MHz
WDW                     EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.00
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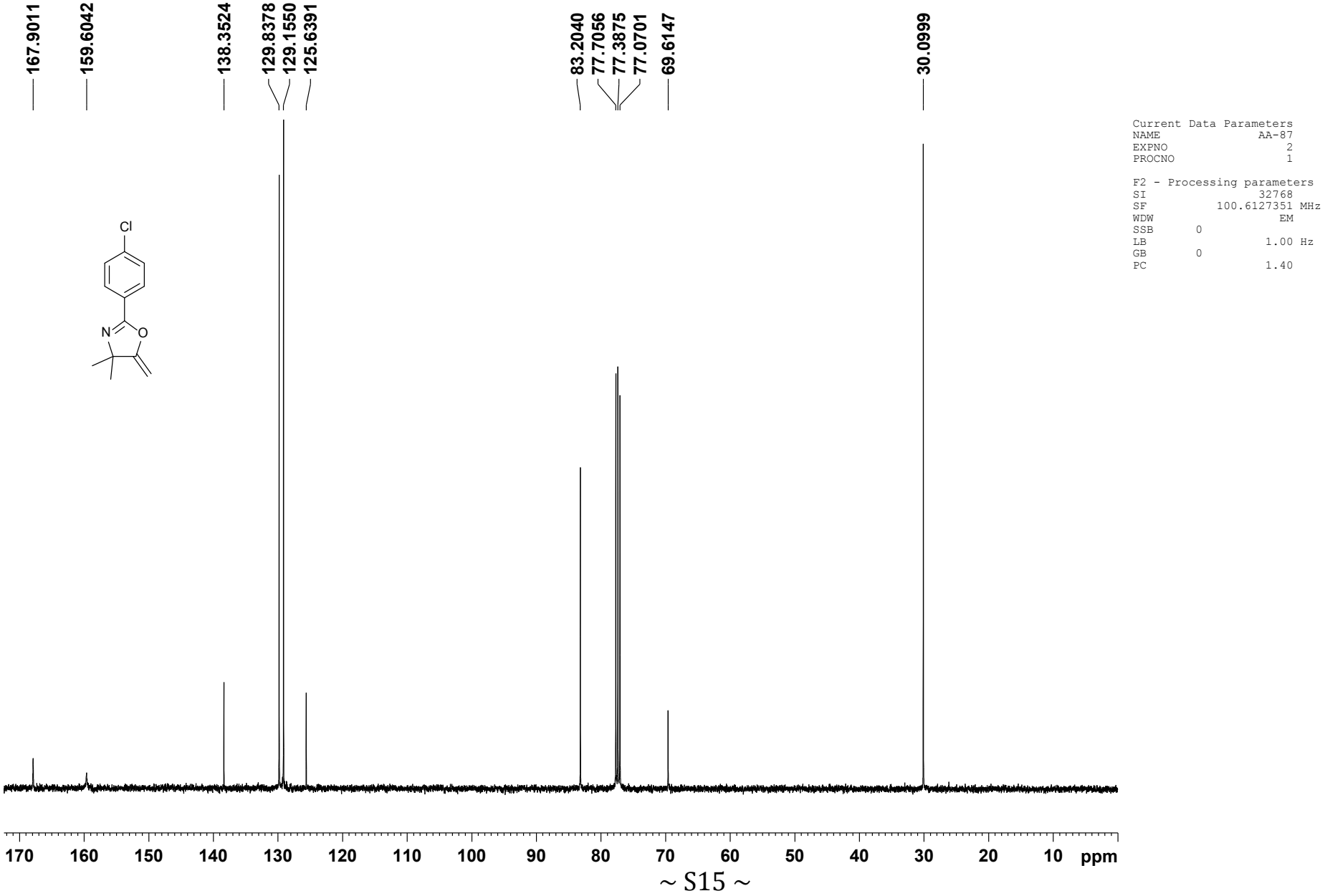
13C NMR spectrum for 2-(4-Chloro-phenyl)-4,4-dimethyl-5-methylene-4,5-dihydro-oxazole (3b)

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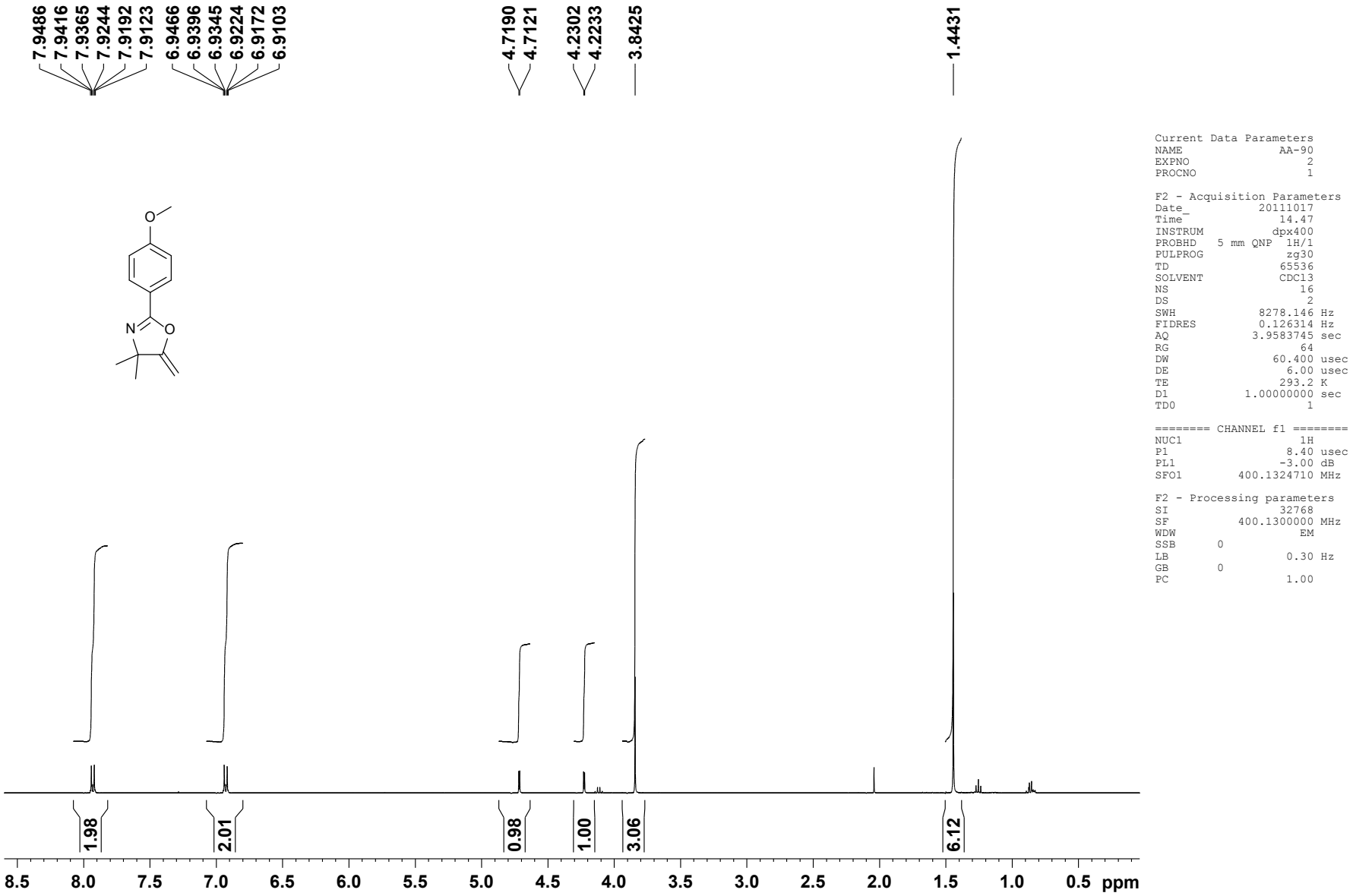
Current Data Parameters
NAME                  AA-87
EXPNO                     2
PROCNO                    1

F2 - Processing parameters
SI                    32768
SF          100.6127351 MHz
WDW                      EM
SSB       0
LB                 1.00 Hz
GB        0
PC                 1.40
```

1H NMR spectrum for 2-(4-Methoxy-phenyl)-4,4-dimethyl-5-methylene-4,5-dihydro-oxazole (3c)

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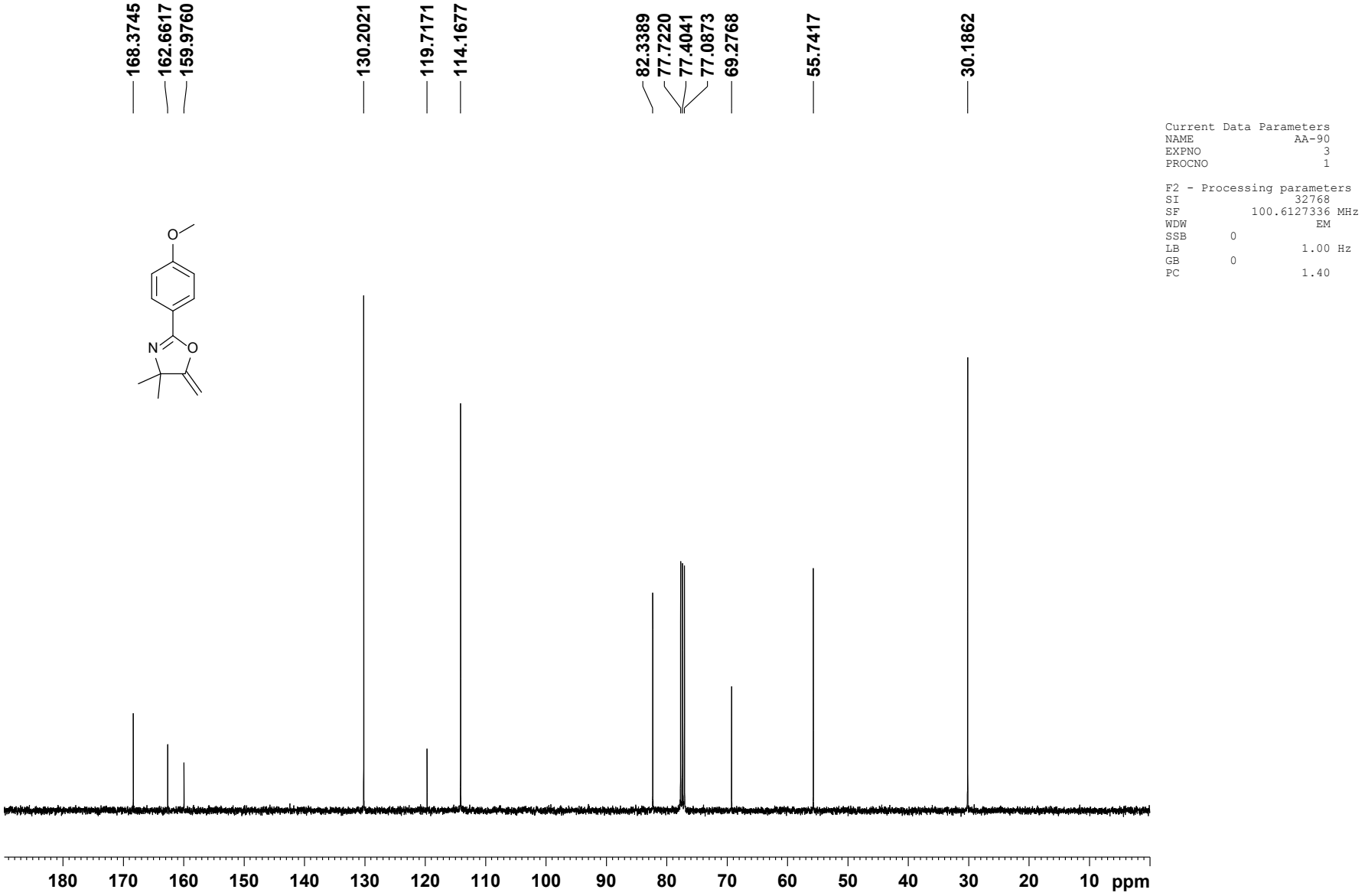
Current Data Parameters
NAME                 AA-90
EXPNO                    2
PROCNO                   1

F2 - Acquisition Parameters
Date_             20111017
Time                 14.47
INSTRUM             dpx400
PROBHD   5 mm QNP  1H/1
PULPROG              zg30
TD                  65536
SOLVENT             CDCl3
NS                     16
DS                      2
SWH              8278.146 Hz
FIDRES           0.126314 Hz
AQ               3.9583745 sec
RG                     64
DW                 60.400 usec
DE                  6.00 usec
TE                 293.2 K
D1              1.00000000 sec
TD0                     1

======== CHANNEL f1 ========
NUC1                   1H
P1                  8.40 usec
PL1                -3.00 dB
SFO1         400.1324710 MHz

F2 - Processing parameters
SI                  32768
SF           400.1300000 MHz
WDW                    EM
SSB       0
LB                  0.30 Hz
GB        0
PC                  1.00
```

13C NMR spectrum for 2-(4-Methoxy-phenyl)-4,4-dimethyl-5-methylene-4,5-dihydro-oxazole (3c)

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Current Data Parameters
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EXPNO                     3
PROCNO                    1

F2 - Processing parameters
SI                    32768
SF          100.6127336 MHz
WDW                      EM
SSB       0
LB                 1.00 Hz
GB        0
PC                 1.40
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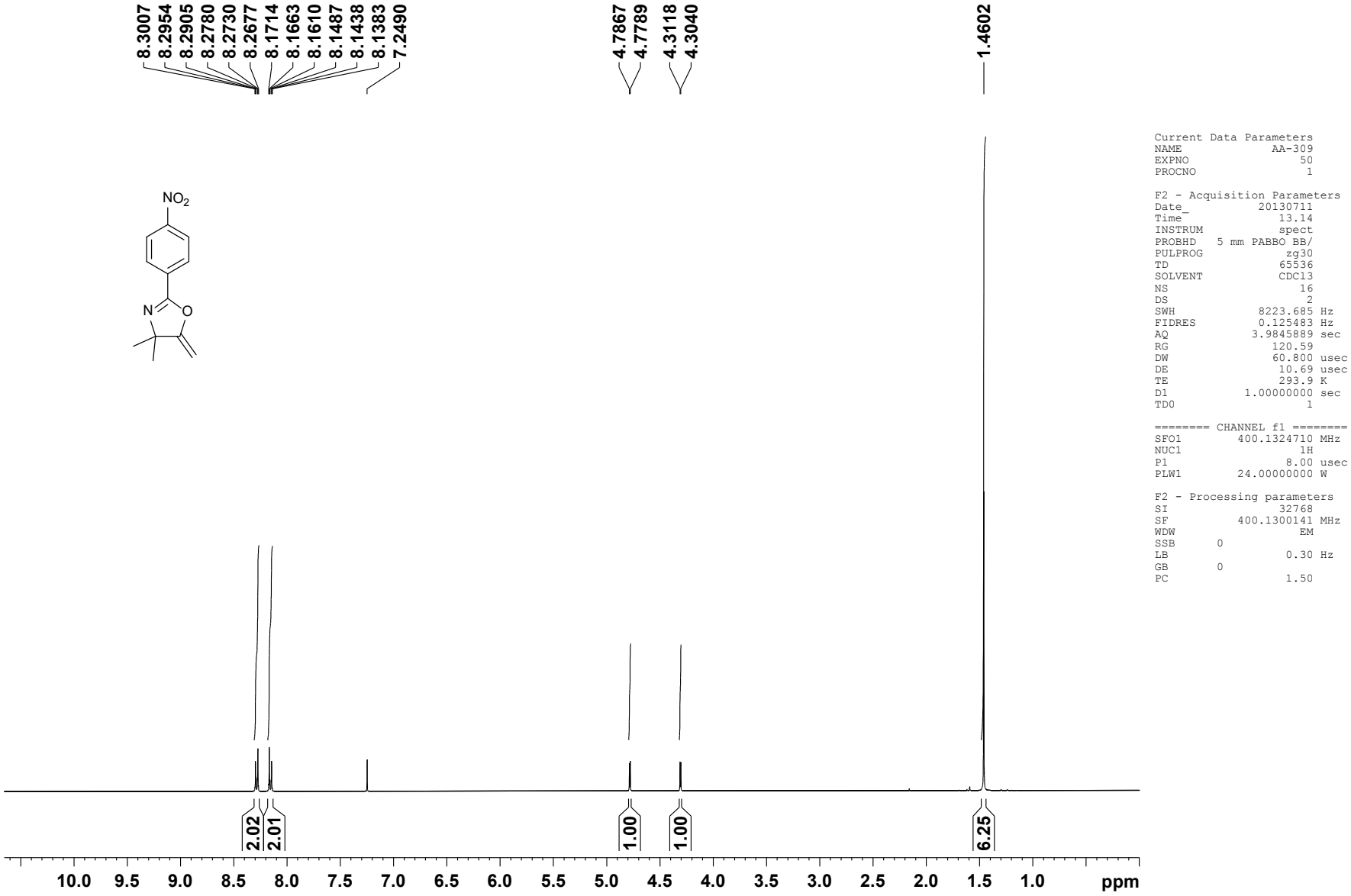
1H NMR spectrum for 2-(4-Nitro-phenyl)-4,4-dimethyl-5-methylene-4,5-dihydro-oxazole (3d)

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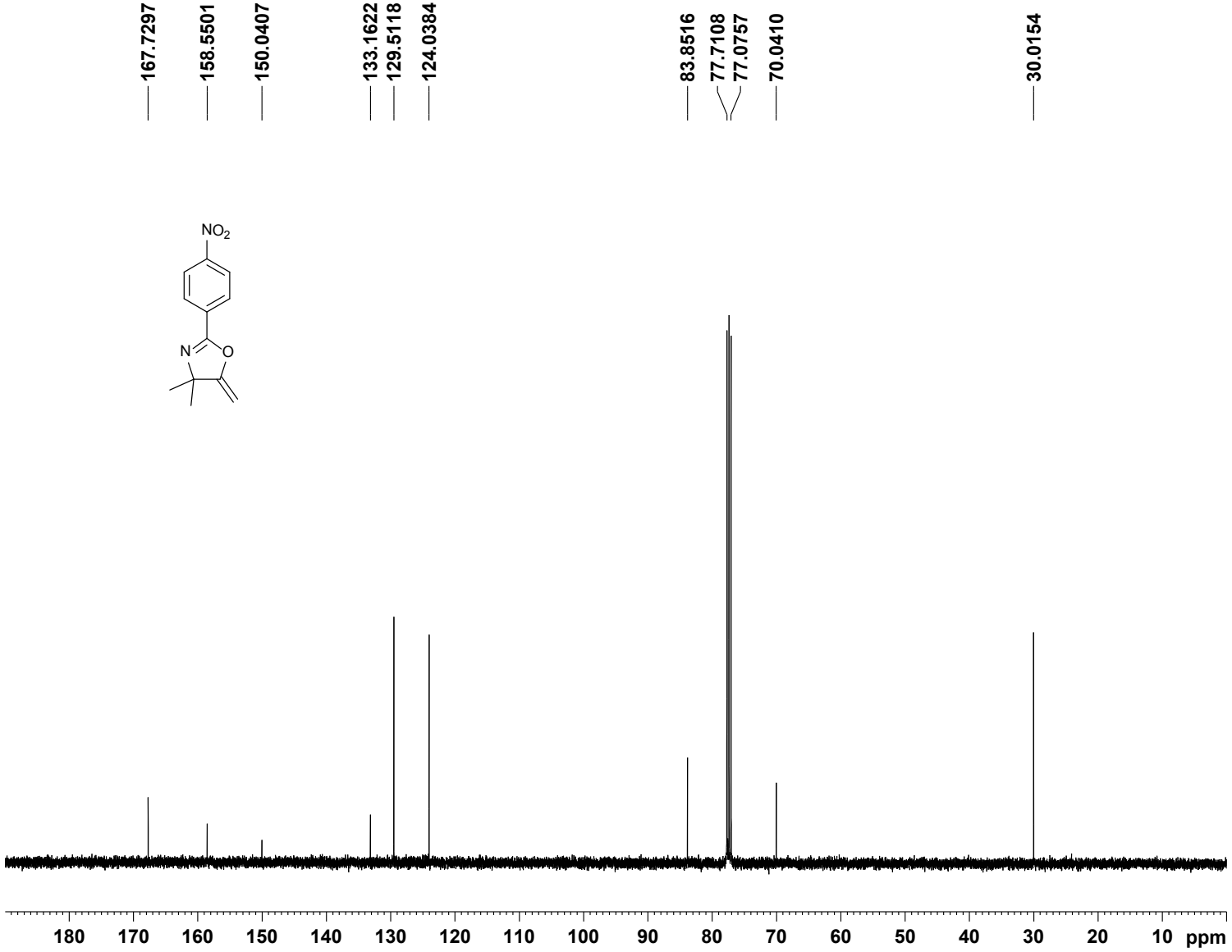
Current Data Parameters
NAME                  AA-309
EXPNO                     50
PROCNO                     1

F2 - Acquisition Parameters
Date_               20130711
Time                   13.14
INSTRUM                spect
PROBHD   5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                   120.59
DW                   60.800 usec
DE                   10.69 usec
TE                   293.9 K
D1                1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1            400.1324710 MHz
NUC1                      1H
P1                     8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                    32768
SF              400.1300141 MHz
WDW                      EM
SSB       0
LB                     0.30 Hz
GB        0
PC                     1.50
```

13C NMR spectrum for 2-(4-Nitro-phenyl)-4,4-dimethyl-5-methylene-4,5-dihydro-oxazole (3d)

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Current Data Parameters
NAME                  AA-309
EXPNO                     51
PROCNO                     1

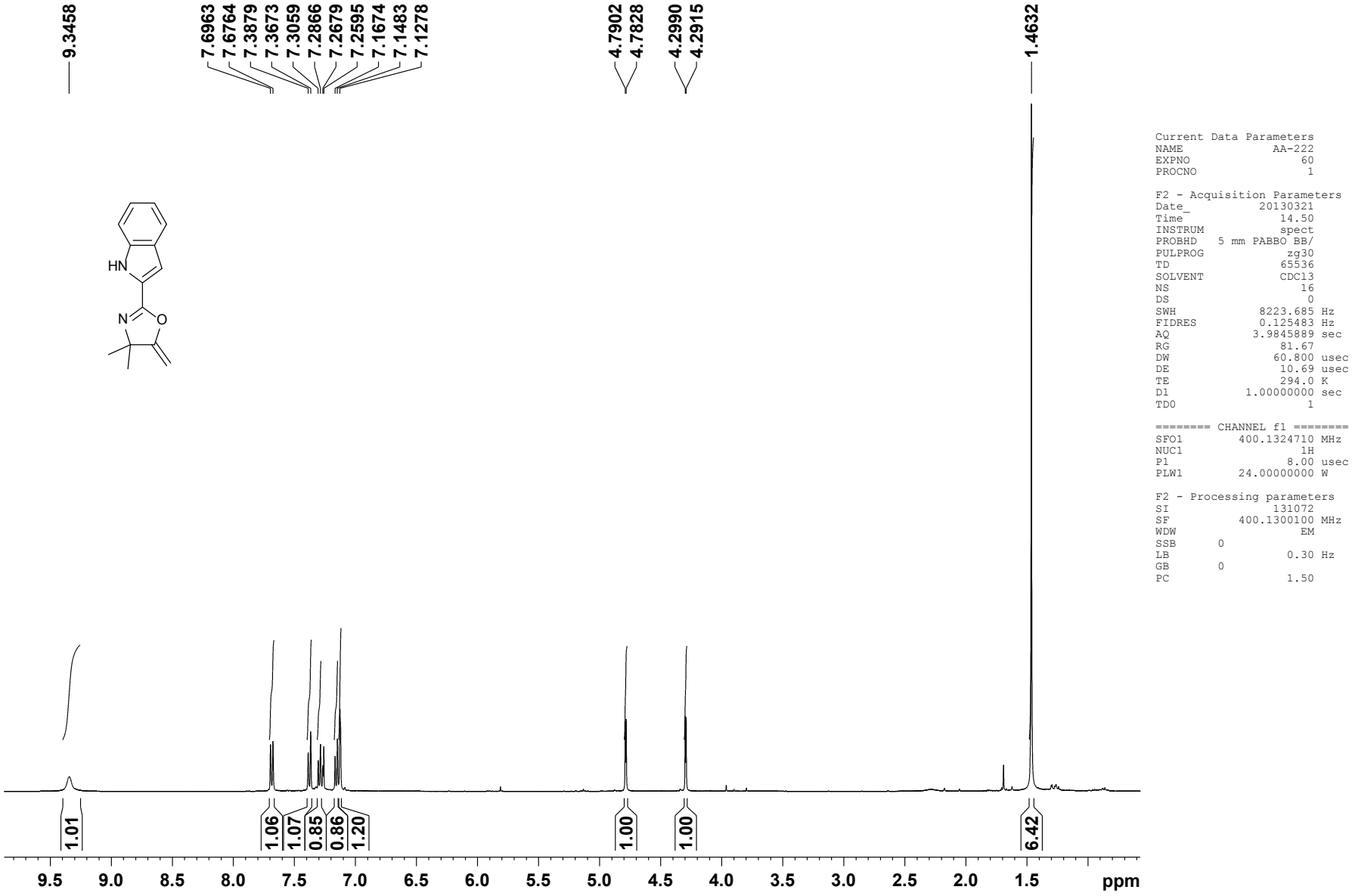
F2 - Acquisition Parameters
Date_              20130711
Time                  13.30
INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT               CDCl3
NS                      256
DS                        4
SWH              24038.461 Hz
FIDRES            0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.1 K
D1               2.00000000 sec
D11              0.03000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2             waltz16
PCPD2                90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                    65536
SF              100.6127326 MHz
WDW                     EM
SSB          0
LB                    0.50 Hz
GB           0
PC                    1.40
```

1H NMR spectrum for 2-(1H-Indol-2-yl)-4,4-dimethyl-5-methylene-4,5-dihydrooxazole 3e

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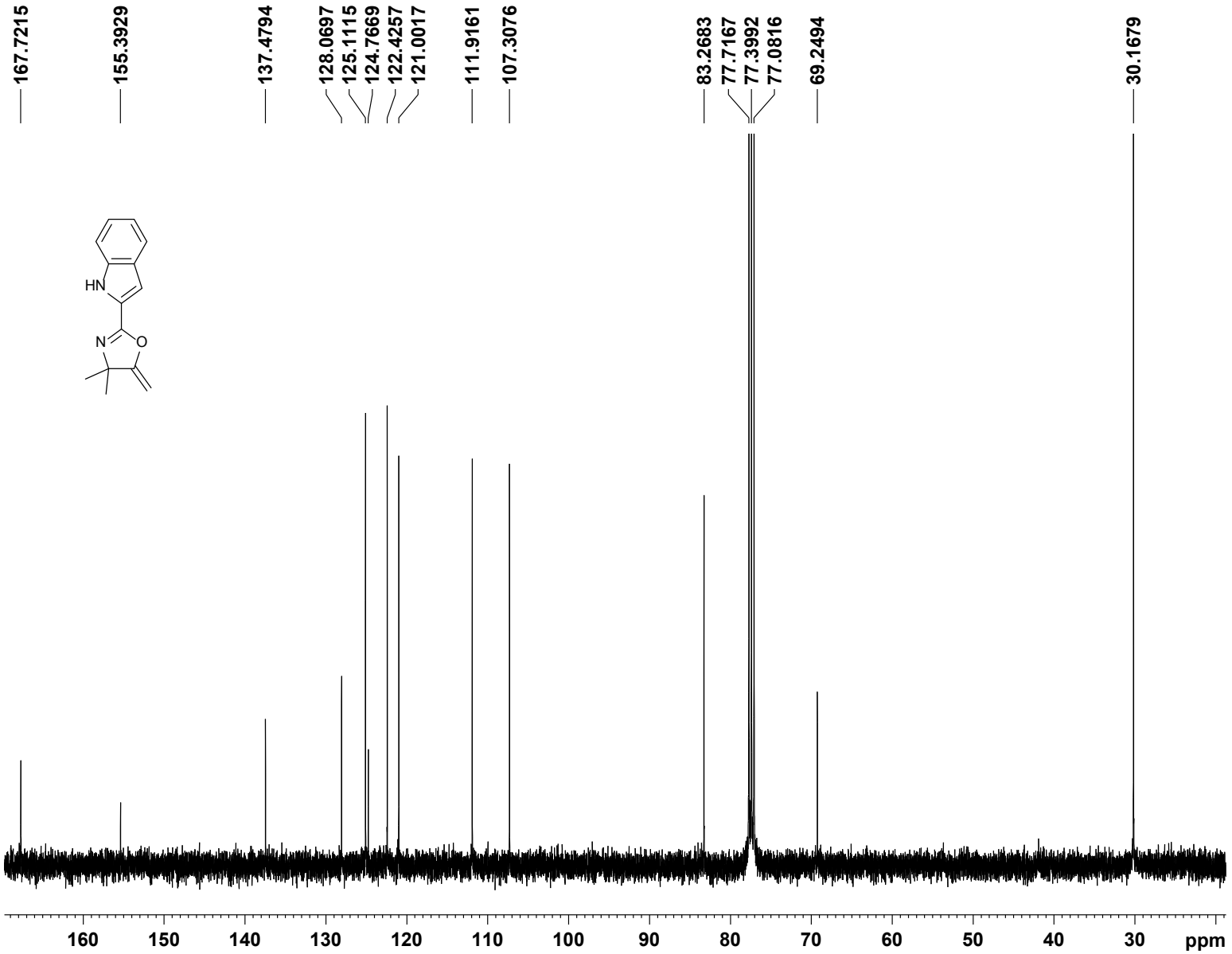
Current Data Parameters
NAME                  AA-222
EXPNO                     60
PROCNO                     1

F2 - Acquisition Parameters
Date_              20130321
Time                  14.50
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDC13
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                    81.67
DW                   60.800 usec
DE                   10.69 usec
TE                   294.0 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                    1H
P1                    8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                   131072
SF             400.1300100 MHz
WDW                     EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.50
```

13C NMR spectrum for 2-(1H-Indol-2-yl)-4,4-dimethyl-5-methylene-4,5-dihydrooxazole 3e




```
Current Data Parameters
NAME                 AA-222
EXPNO                    70
PROCNO                    1

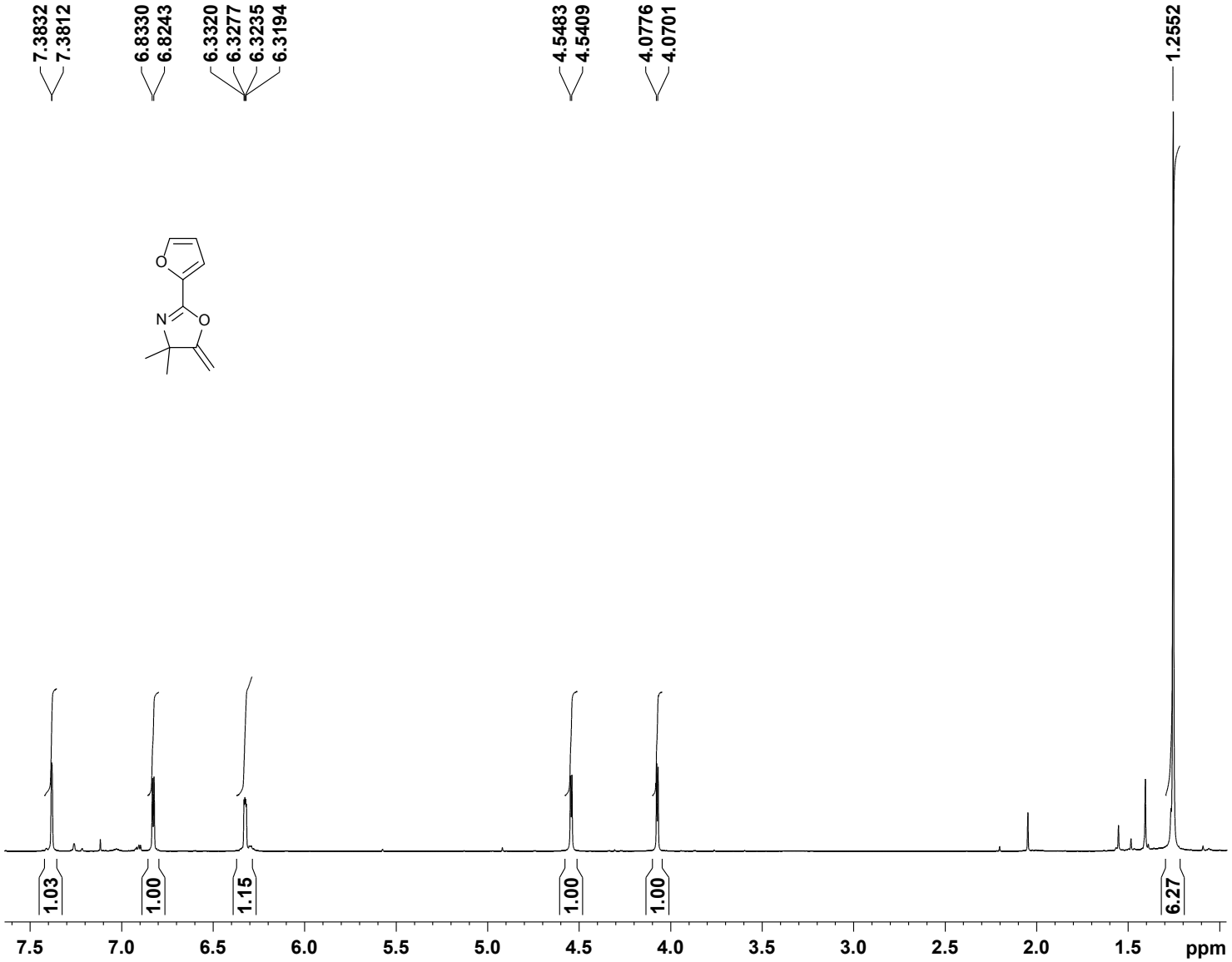
F2 - Acquisition Parameters
Date_              20130321
Time                  16.03
INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT               CDCl3
NS                      256
DS                        4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                 1.3631488 sec
RG                    181.72
DW                    20.800 usec
DE                     8.18 usec
TE                    294.3 K
D1                2.00000000 sec
D11               0.03000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                     9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2             waltz16
PCPD2                 90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                    65536
SF              100.6127337 MHz
WDW                     EM
SSB          0
LB                     0.50 Hz
GB           0
PC                     1.40
```

1H NMR spectrum for 2-(Furan-2-yl)-4,4-dimethyl-5-methylene-4,5-dihydrooxazole 3f



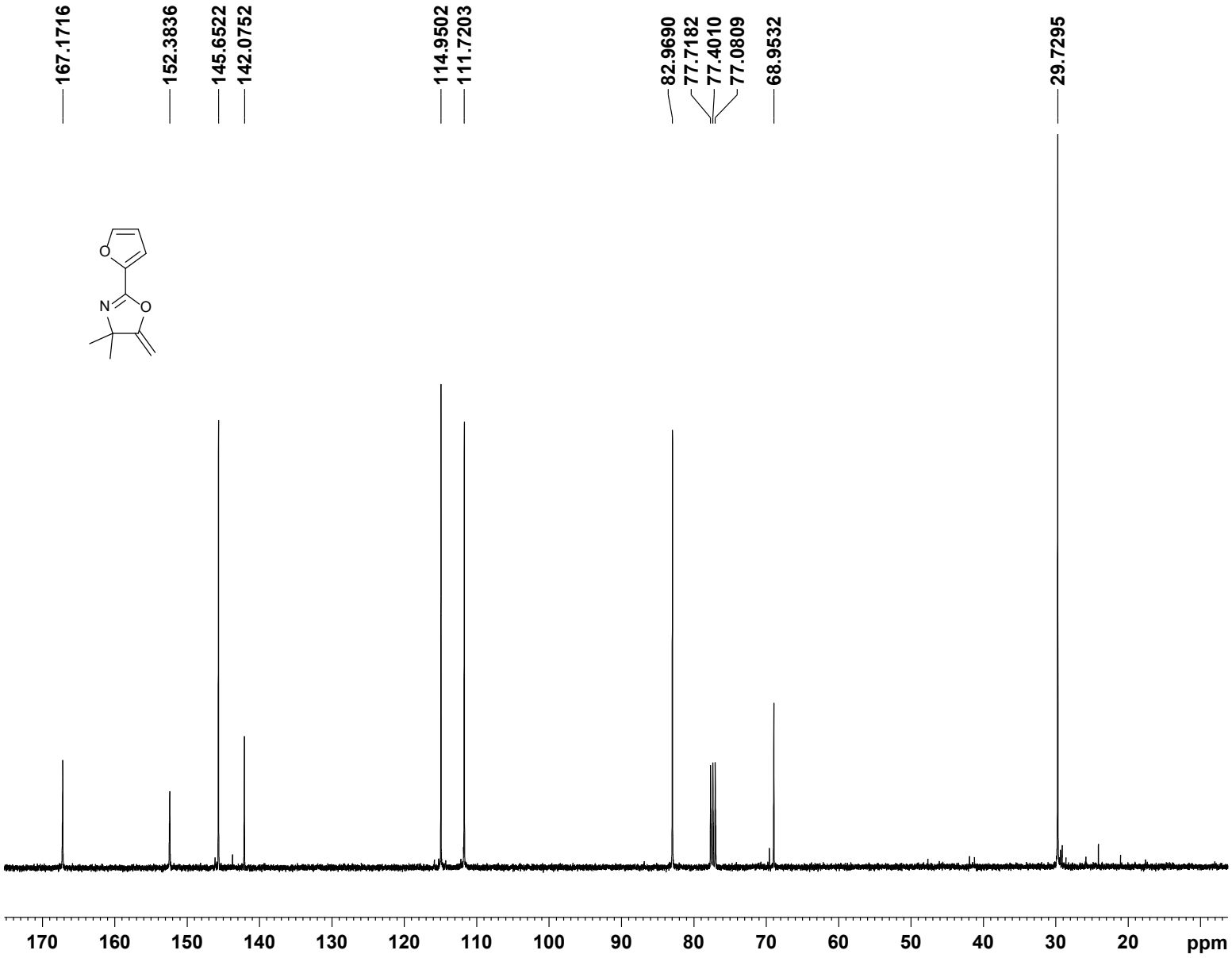

```
Current Data Parameters
NAME              AA-248
EXPNO                 50
PROCNO                 1

F2 - Acquisition Parameters
Date_           20130321
Time              14.46
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    0
SWH            8223.685 Hz
FIDRES        0.125483 Hz
AQ            3.9845889 sec
RG                28.42
DW               60.800 usec
DE               10.69 usec
TE               294.0 K
D1            1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1        400.1324710 MHz
NUC1                1H
P1                8.00 usec
PLW1       24.00000000 W

F2 - Processing parameters
SI              131072
SF          400.1300668 MHz
WDW                 EM
SSB       0
LB                0.30 Hz
GB        0
PC                1.50
```

13C spectrum for 2-(Furan-2-yl)-4,4-dimethyl-5-methylene-4,5-dihydrooxazole 3f




```
Current Data Parameters
NAME                  AA-248
EXPNO                     41
PROCNO                     1

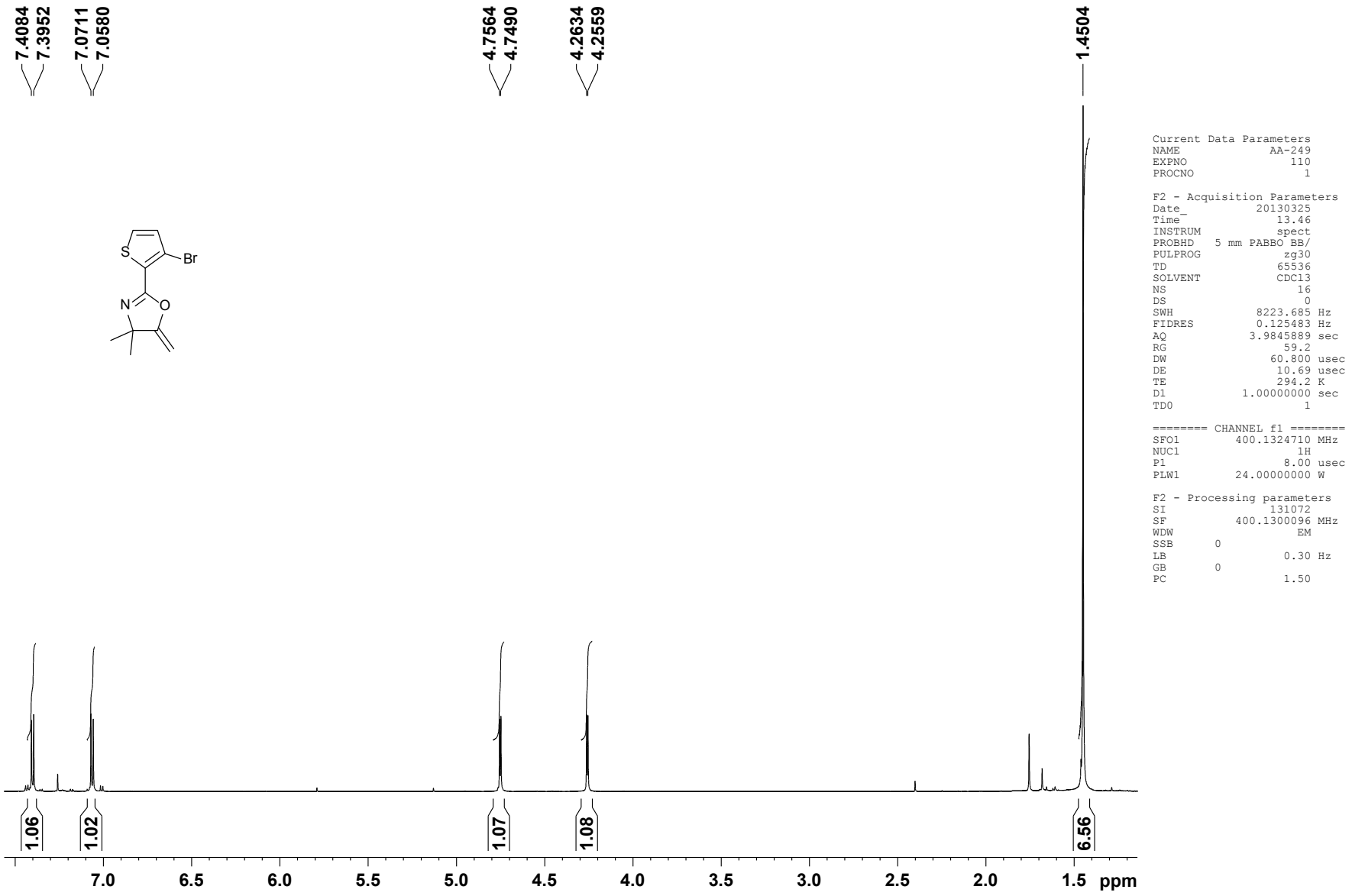
F2 - Acquisition Parameters
Date_               20130117
Time                   13.07
INSTRUM                spect
PROBHD   5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH                24038.461 Hz
FIDRES              0.366798 Hz
AQ                  1.3631488 sec
RG                     181.72
DW                     20.800 usec
DE                      8.18 usec
TE                     294.5 K
D1                 2.00000000 sec
D11                0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1             100.6228293 MHz
NUC1                     13C
P1                      9.00 usec
PLW1              77.00000000 W

======== CHANNEL f2 ========
SFO2             400.1316005 MHz
NUC2                     1H
CPDPRG[2              waltz16
PCPD2                  90.00 usec
PLW2              24.00000000 W
PLW12              0.17567000 W
PLW13              0.14229999 W

F2 - Processing parameters
SI                     65536
SF               100.6127534 MHz
WDW                       EM
SSB          0
LB                      0.50 Hz
GB           0
PC                      1.40
```

1H NMR spectrum for 2-(3-Bromothiophen-2-yl)-4,4-dimethyl-5-methylene-4,5-dihydrooxazole (3g)



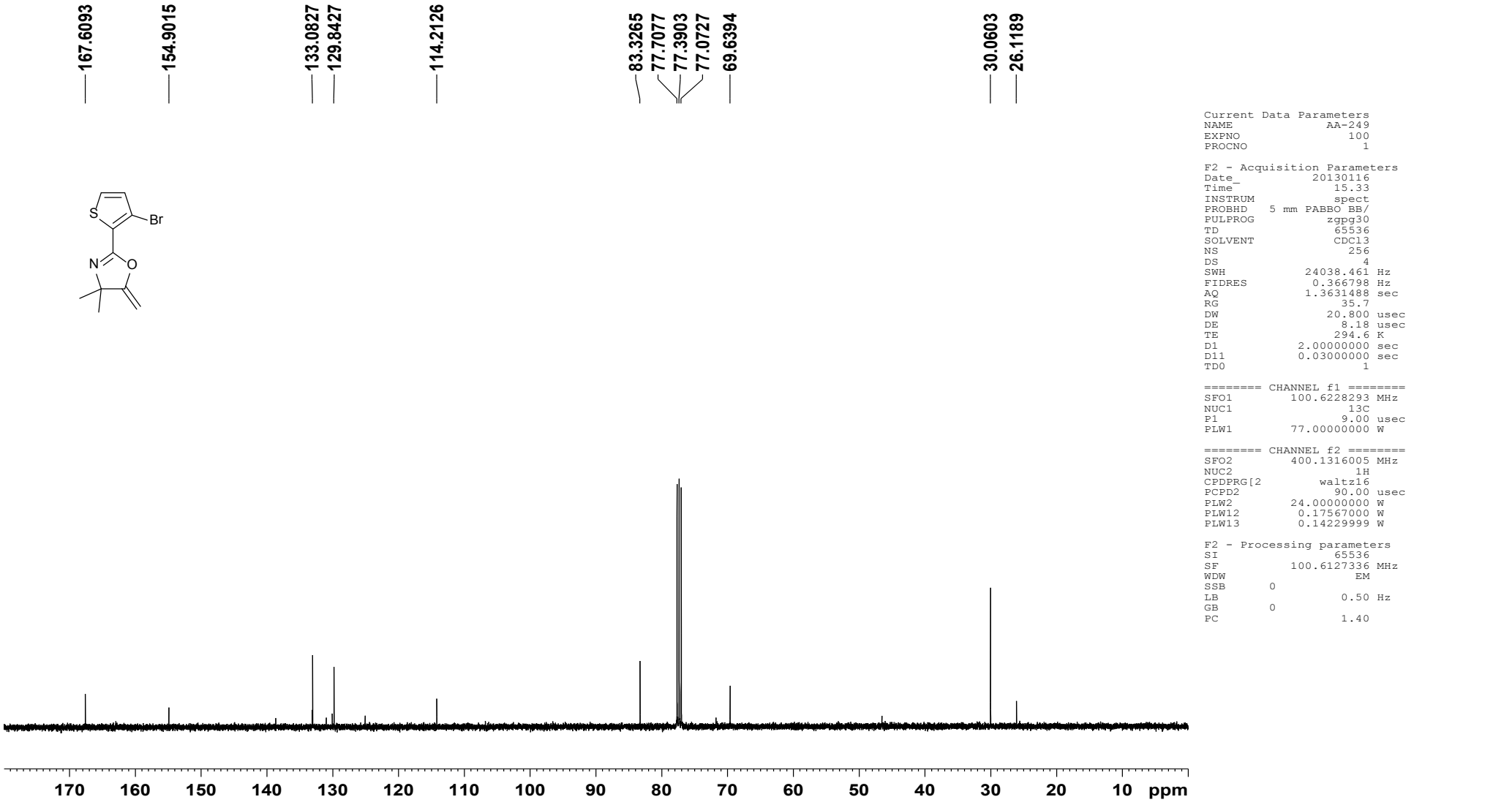

```
Current Data Parameters
NAME                 AA-249
EXPNO                   110
PROCNO                    1

F2 - Acquisition Parameters
Date_               20130325
Time                   13.46
INSTRUM                spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                     59.2
DW                   60.800 usec
DE                   10.69 usec
TE                   294.2 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                   1H
P1                   8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                   131072
SF             400.1300096 MHz
WDW                    EM
SSB       0
LB                   0.30 Hz
GB        0
PC                   1.50
```

13C NMR spectrum for 2-(3-Bromothiophen-2-yl)-4,4-dimethyl-5-methylene-4,5-dihydrooxazole (3g)




```
Current Data Parameters
NAME                  AA-249
EXPNO                    100
PROCNO                     1

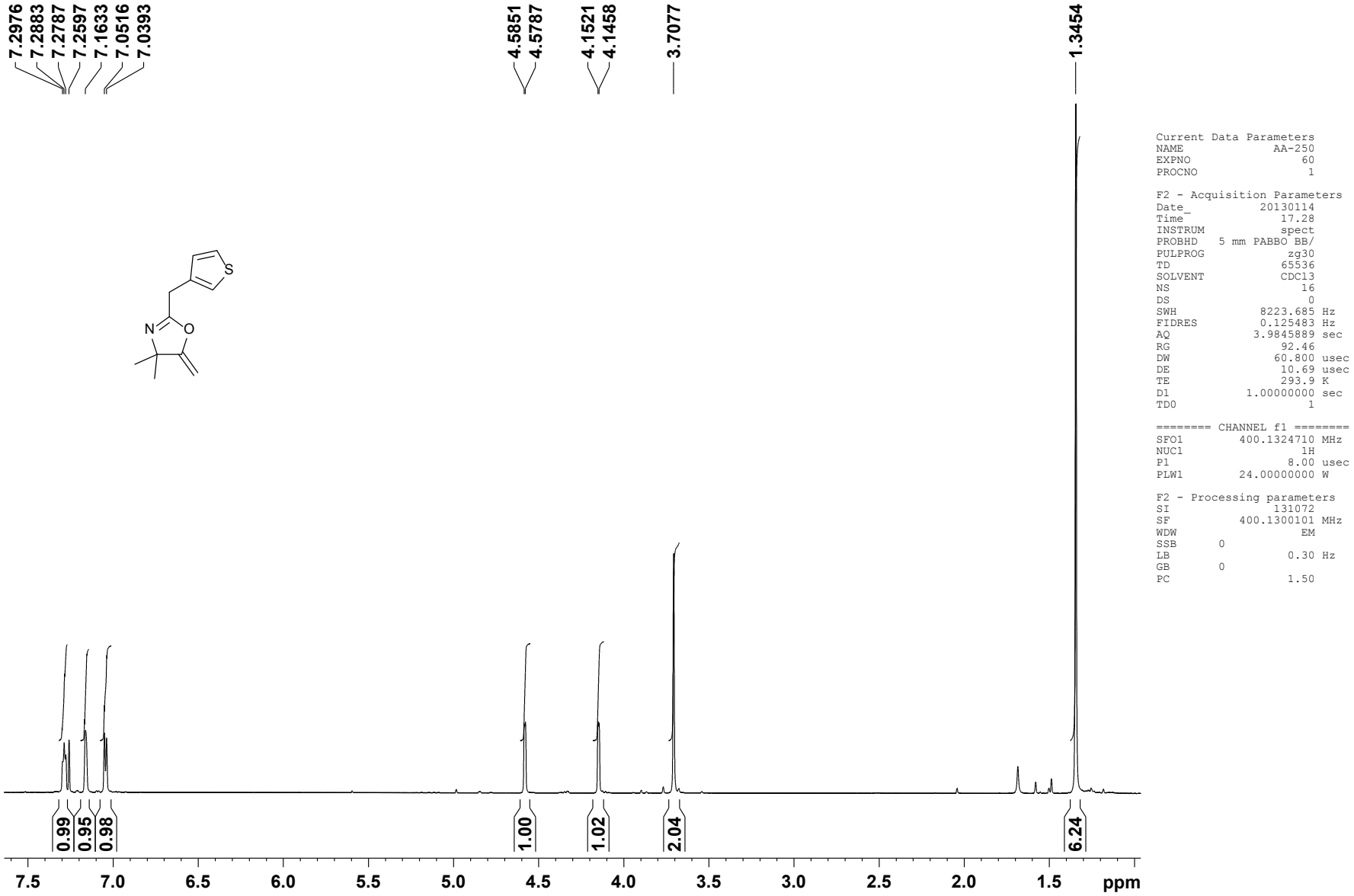
F2 - Acquisition Parameters
Date_              20130116
Time                   15.33
INSTRUM                spect
PROBHD    5 mm PABBO BB/
PULPROG             zgpg30
TD                      65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH                24038.461 Hz
FIDRES              0.366798 Hz
AQ                  1.3631488 sec
RG                      35.7
DW                     20.800 usec
DE                      8.18 usec
TE                     294.6 K
D1                 2.00000000 sec
D11                0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1              100.6228293 MHz
NUC1                      13C
P1                       9.00 usec
PLW1               77.00000000 W

======== CHANNEL f2 ========
SFO2              400.1316005 MHz
NUC2                      1H
CPDPRG[2               waltz16
PCPD2                   90.00 usec
PLW2               24.00000000 W
PLW12               0.17567000 W
PLW13               0.14229999 W

F2 - Processing parameters
SI                      65536
SF                100.6127336 MHz
WDW                        EM
SSB             0
LB                       0.50 Hz
GB              0
PC                       1.40
```

1H NMR spectrum for 4,4-Dimethyl-5-methylene-2-(thiophen-2-ylmethyl)-4,5-dihydrooxazole (3i).



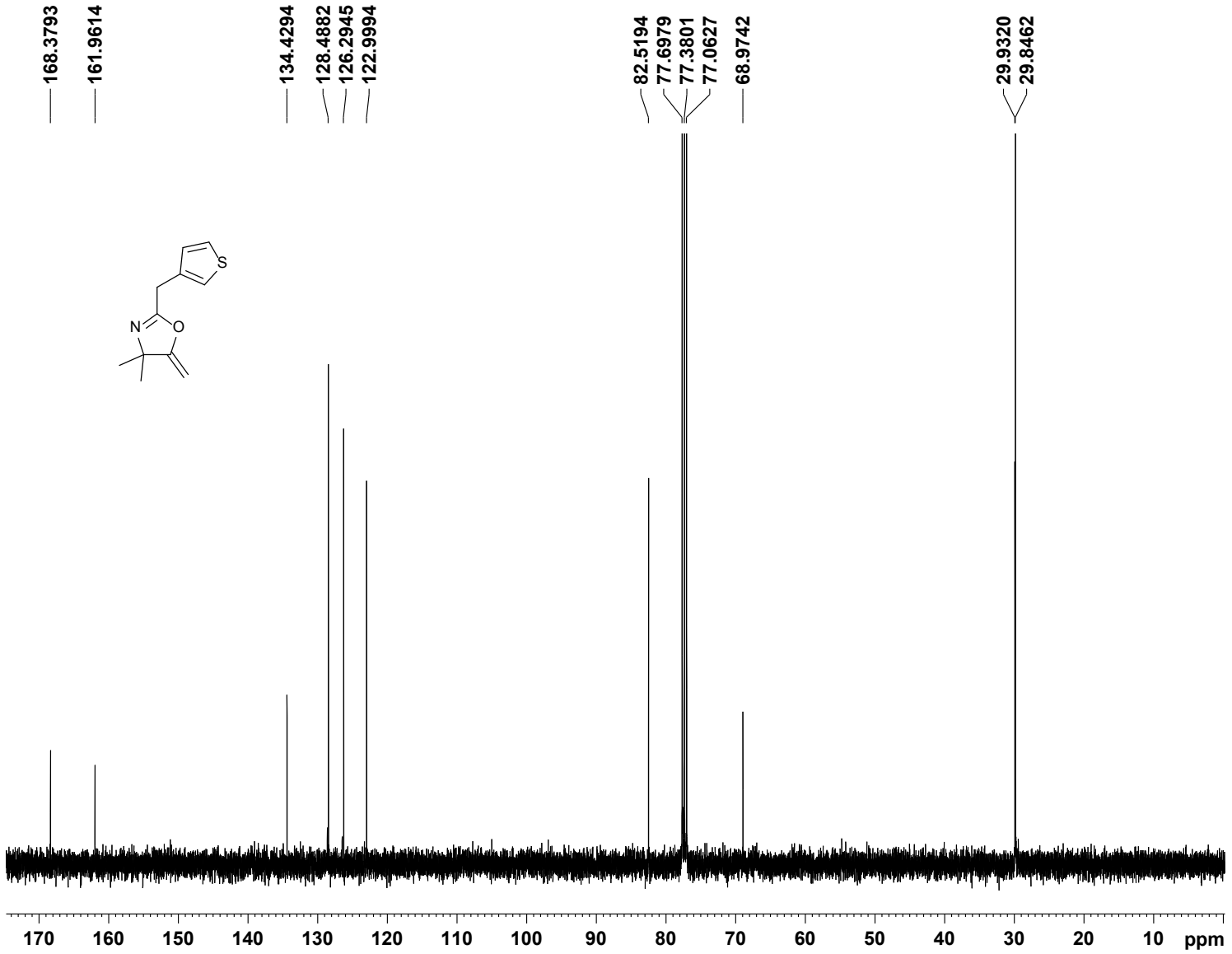

```
Current Data Parameters
NAME                  AA-250
EXPNO                     60
PROCNO                     1

F2 - Acquisition Parameters
Date_              20130114
Time                  17.28
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDC13
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                    92.46
DW                   60.800 usec
DE                   10.69 usec
TE                   293.9 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                   1H
P1                    8.00 usec
PLW1          24.00000000 W

F2 - Processing parameters
SI                   131072
SF             400.1300101 MHz
WDW                    EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.50
```

13C NMR spectrum for 4,4-Dimethyl-5-methylene-2-(thiophen-2-ylmethyl)-4,5-dihydrooxazole (3i)




```
Current Data Parameters
NAME                  AA-250
EXPNO                     70
PROCNO                     1

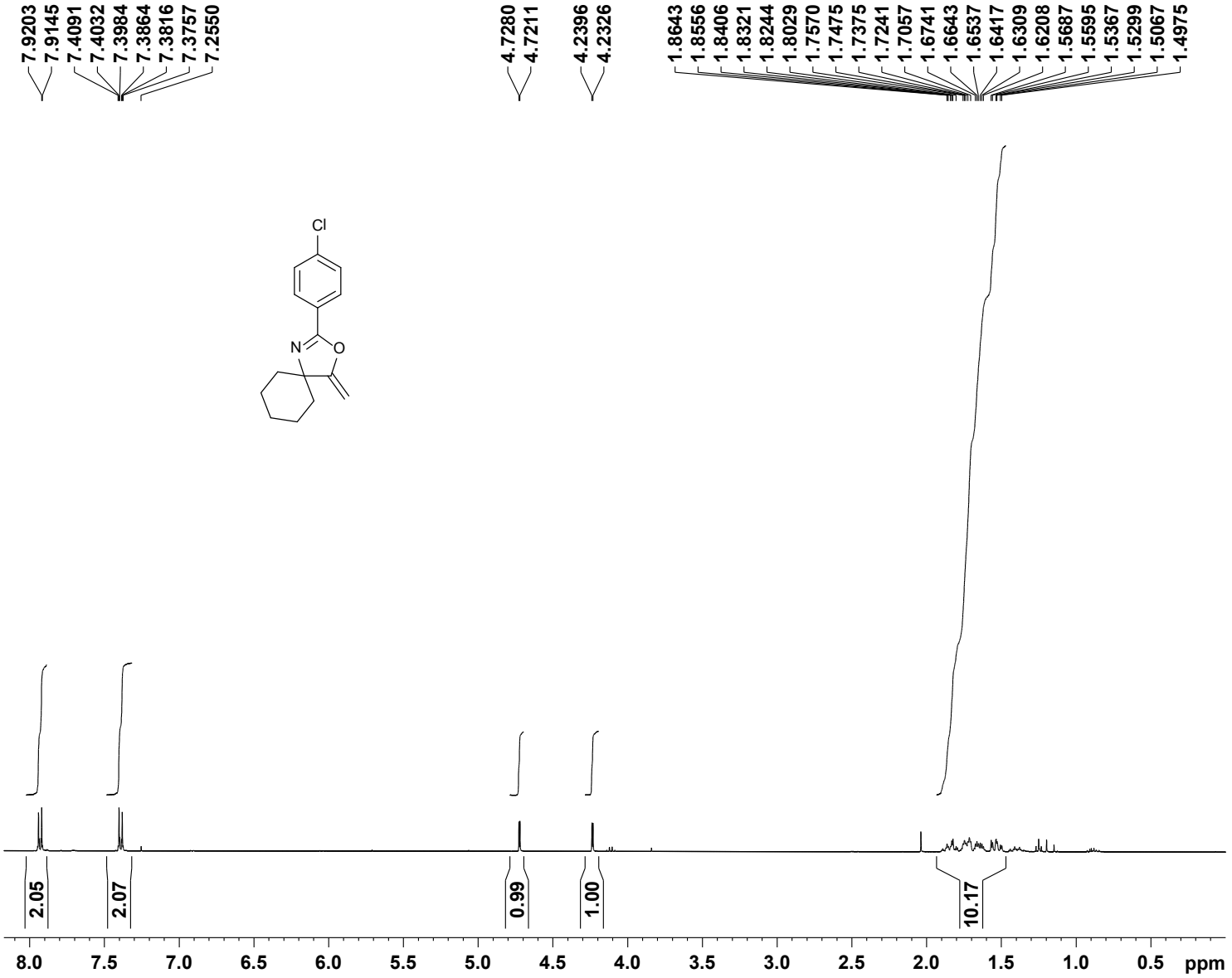
F2 - Acquisition Parameters
Date_               20130115
Time                   14.36
INSTRUM                spect
PROBHD   5 mm PABBO BB/
PULPROG                zgpg30
TD                      65536
SOLVENT                 CDCl3
NS                        256
DS                          4
SWH                 24038.461 Hz
FIDRES               0.366798 Hz
AQ                   1.3631488 sec
RG                      181.72
DW                      20.800 usec
DE                       8.18 usec
TE                      294.4 K
D1                   2.00000000 sec
D11                  0.03000000 sec
TD0                         1

======== CHANNEL f1 ========
SFO1               100.6228293 MHz
NUC1                       13C
P1                        9.00 usec
PLW1               77.00000000 W

======== CHANNEL f2 ========
SFO2               400.1316005 MHz
NUC2                       1H
CPDPRG[2               waltz16
PCPD2                    90.00 usec
PLW2               24.00000000 W
PLW12               0.17567000 W
PLW13               0.14229999 W

F2 - Processing parameters
SI                        65536
SF                 100.6127336 MHz
WDW                          EM
SSB             0
LB                        0.50 Hz
GB              0
PC                        1.40
```

1H NMR spectrum for 2-(4-Chlorophenyl)-4-methylene-3-oxa-1-azaspiro[4.5]dec-1-ene (3k)



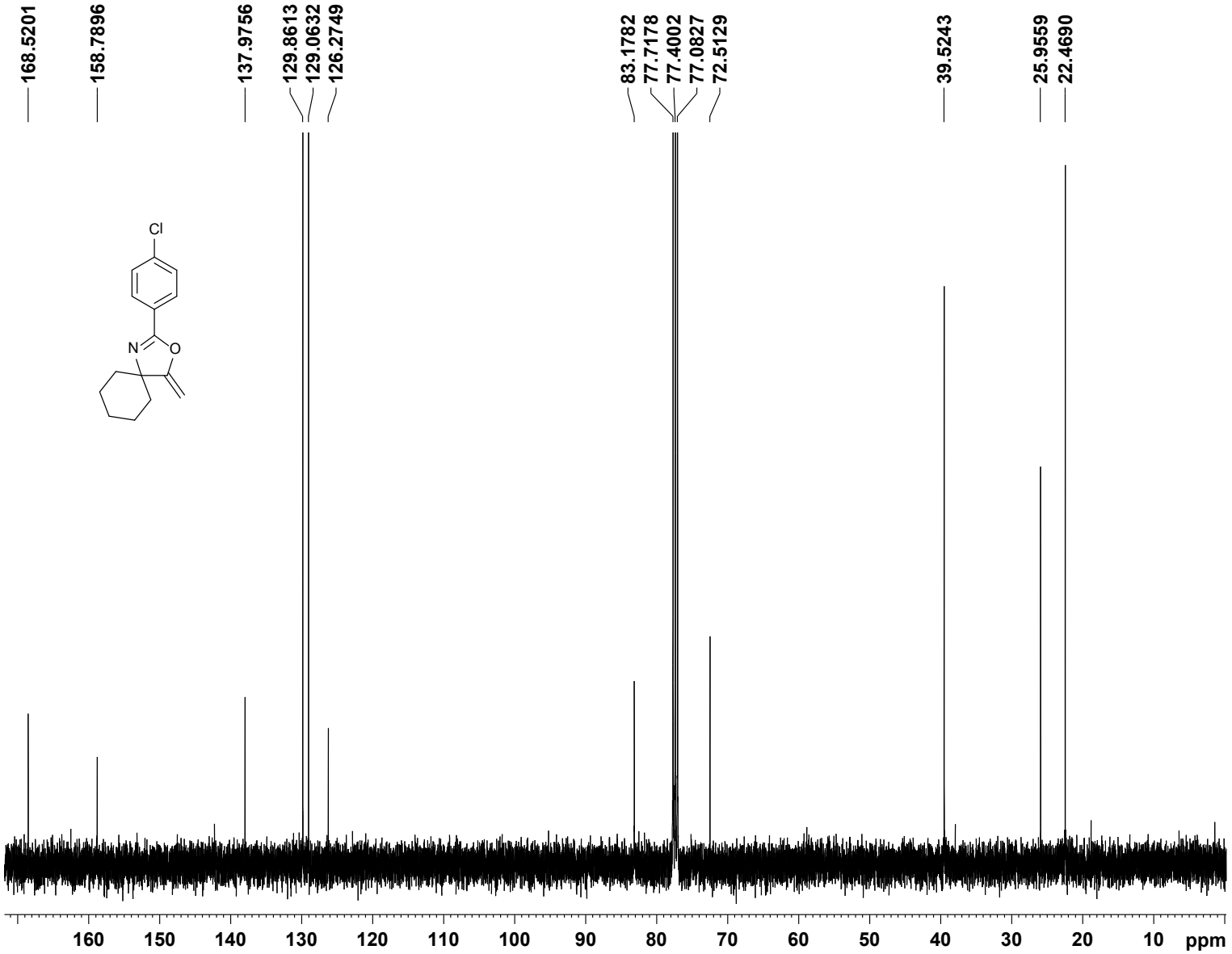

```
Current Data Parameters
NAME                  AA-85
EXPNO                     3
PROCNO                    1

F2 - Acquisition Parameters
Date_              20111011
Time                  12.15
INSTRUM             dpx400
PROBHD    5 mm QNP  1H/1
PULPROG               zg30
TD                   65536
SOLVENT              CDCl3
NS                      16
DS                       2
SWH               8278.146 Hz
FIDRES            0.126314 Hz
AQ                3.9583745 sec
RG                    101.6
DW                  60.400 usec
DE                   6.00 usec
TE                   292.9 K
D1             1.00000000 sec
TD0                      1

======== CHANNEL f1 ========
NUC1                    1H
P1                   8.40 usec
PL1                 -3.00 dB
SFO1          400.1324710 MHz

F2 - Processing parameters
SI                   32768
SF            400.1300115 MHz
WDW                     EM
SSB       0
LB                   0.30 Hz
GB        0
PC                   1.00
```

1C NMR spectrum for 2-(4-Chlorophenyl)-4-methylene-3-oxa-1-azaspiro[4.5]dec-1-ene (3k)




```
Current Data Parameters
NAME                  AA-182
EXPNO                      4
PROCNO                     1

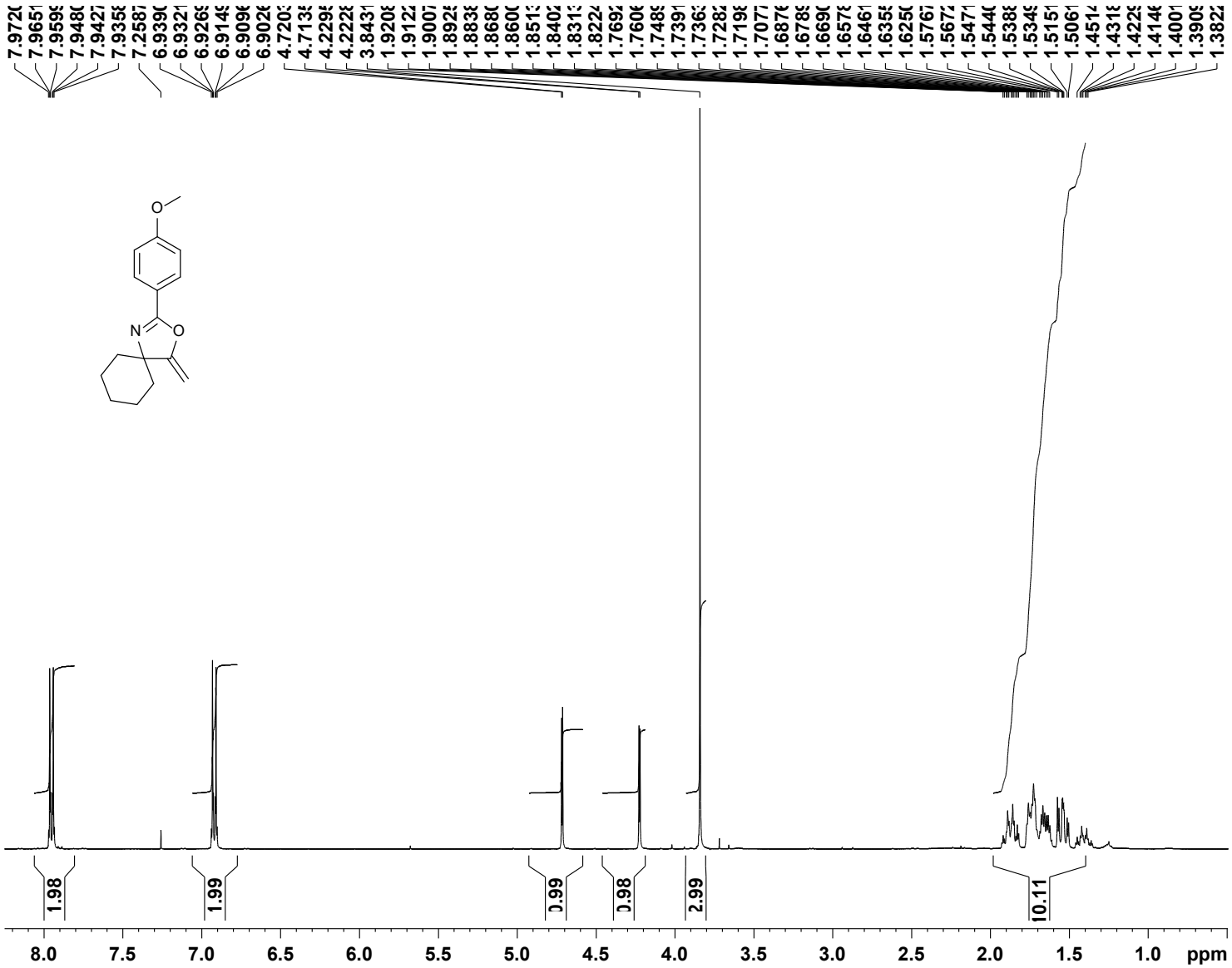
F2 - Acquisition Parameters
Date_              20120417
Time                  16.54
INSTRUM               spect
PROBHD   5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT               CDCl3
NS                      256
DS                        4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.2 K
D1              2.00000000 sec
D11             0.03000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2          waltz16
PCPD2                90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                    65536
SF              100.6127317 MHz
WDW                     EM
SSB       0
LB                    0.50 Hz
GB        0
PC                    1.40
```

1H NMR spectrum for 2-(4-Methoxyphenyl)-4-methylene-3-oxa-1-azaspiro[4.5]dec-1-ene (3l)



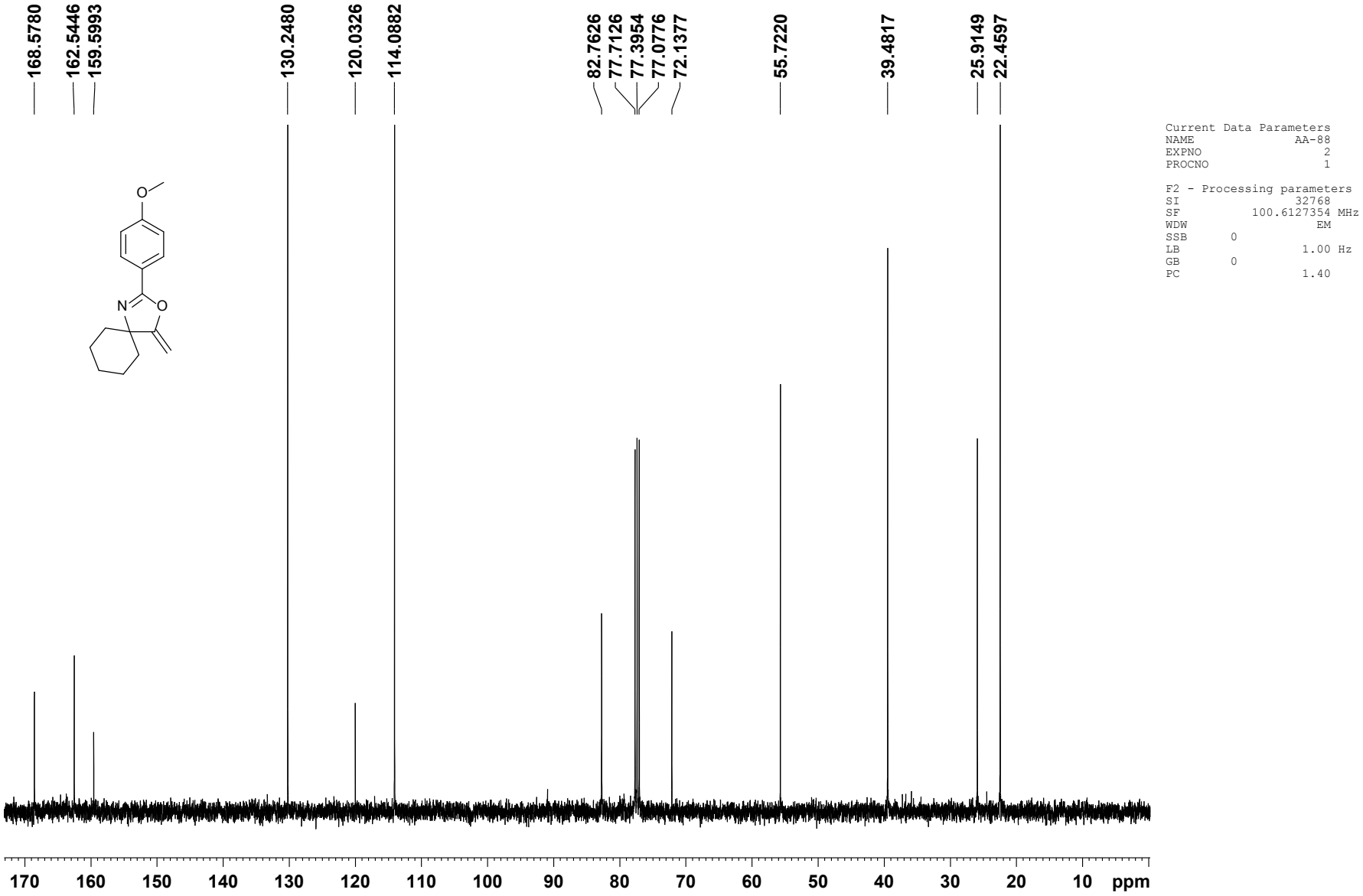

```
Current Data Parameters
NAME                  AA-88
EXPNO                     1
PROCNO                    1

F2 - Acquisition Parameters
Date_              20111010
Time                  12.17
INSTRUM               dpx400
PROBHD   5 mm QNP  1H/1
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8278.146 Hz
FIDRES             0.126314 Hz
AQ                 3.9583745 sec
RG                     90.5
DW                    60.400 usec
DE                     6.00 usec
TE                    292.9 K
D1              1.00000000 sec
TD0                       1

======== CHANNEL f1 ========
NUC1                     1H
P1                    8.40 usec
PL1                  -3.00 dB
SFO1          400.1324710 MHz

F2 - Processing parameters
SI                    32768
SF            400.1300101 MHz
WDW                      EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.00
```

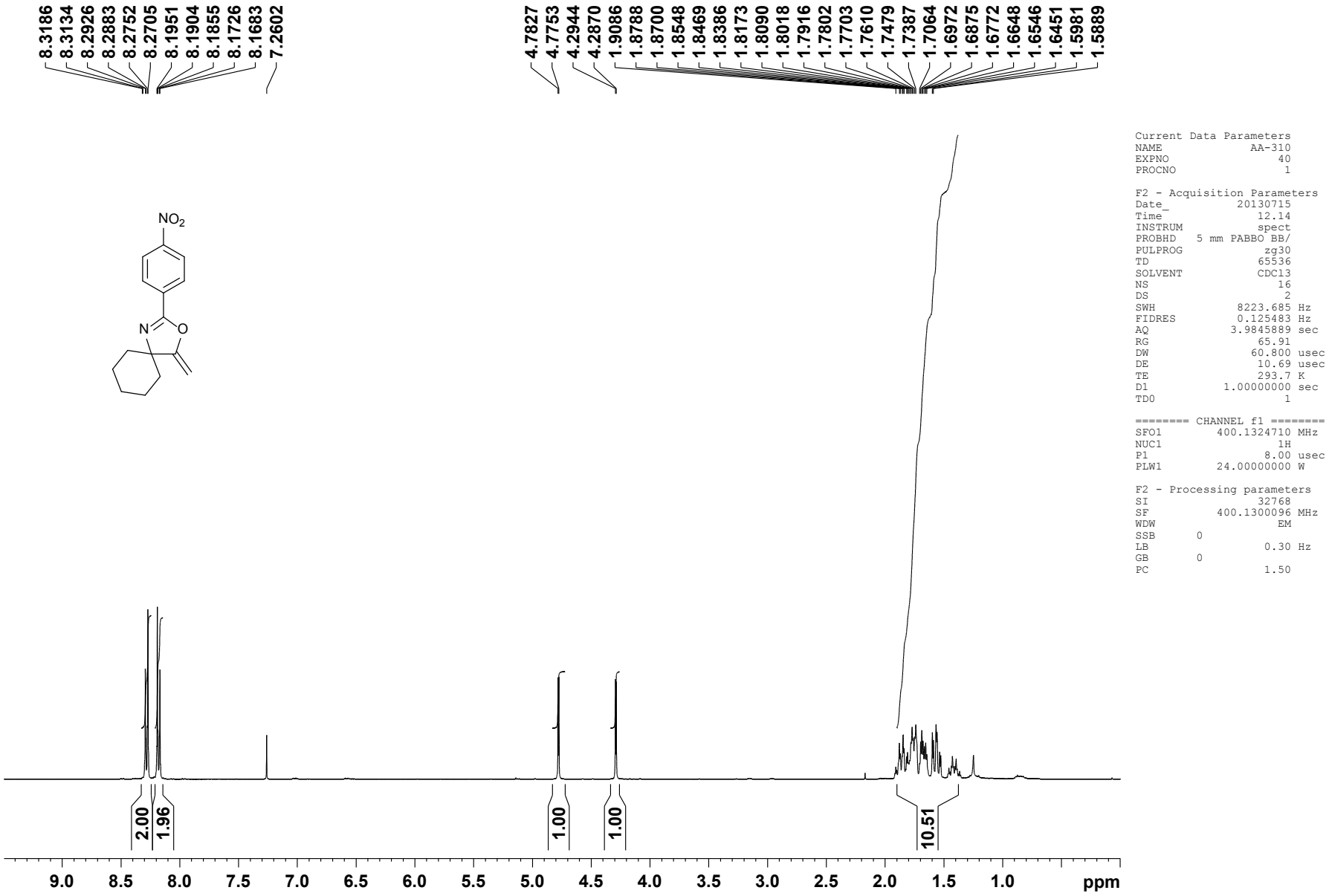
13C NMR spectrum for 2-(4-Methoxyphenyl)-4-methylene-3-oxa-1-azaspiro[4.5]dec-1-ene (3l)




```
Current Data Parameters
NAME                  AA-88
EXPNO                     2
PROCNO                    1

F2 - Processing parameters
SI                    32768
SF           100.6127354 MHz
WDW                      EM
SSB       0
LB                 1.00 Hz
GB        0
PC                 1.40
```

1H NMR spectrum for 2-(4-Nitrophenyl)-4-methylene-3-oxa-1-azaspiro[4.5]dec-1-ene (3m)



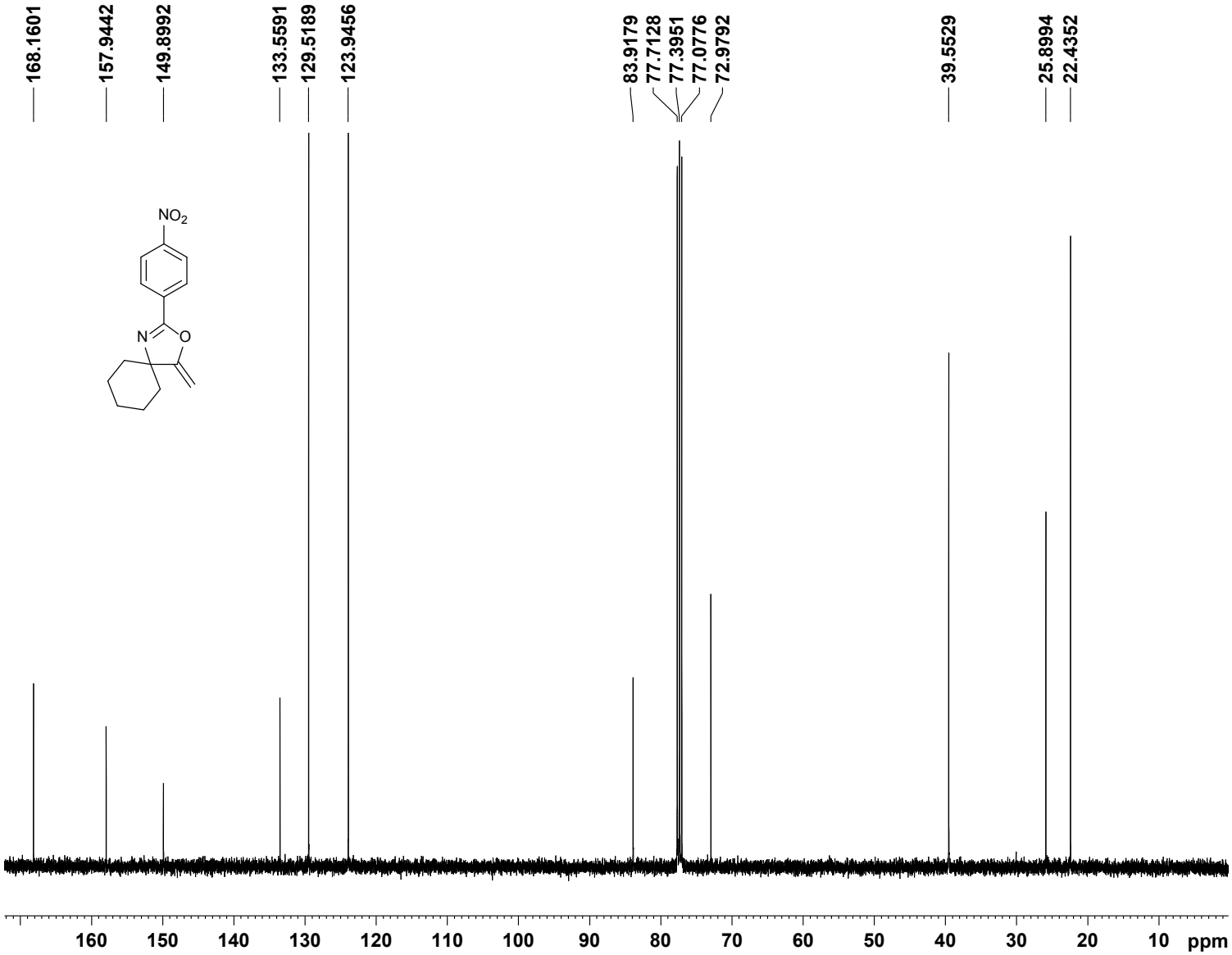

```
Current Data Parameters
NAME                  AA-310
EXPNO                     40
PROCNO                     1

F2 - Acquisition Parameters
Date_              20130715
Time                  12.14
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDC13
NS                       16
DS                        2
SWH                8223.685 Hz
FIDRES            0.125483 Hz
AQ                3.9845889 sec
RG                    65.91
DW                   60.800 usec
DE                   10.69 usec
TE                   293.7 K
D1                1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1           400.1324710 MHz
NUC1                      1H
P1                     8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                    32768
SF             400.1300096 MHz
WDW                      EM
SSB       0
LB                     0.30 Hz
GB        0
PC                     1.50
```

13C NMR spectrum for 2-(4-Nitrophenyl)-4-methylene-3-oxa-1-azaspiro[4.5]dec-1-ene (3m).




```
Current Data Parameters
NAME                  AA-310
EXPNO                     41
PROCNO                     1

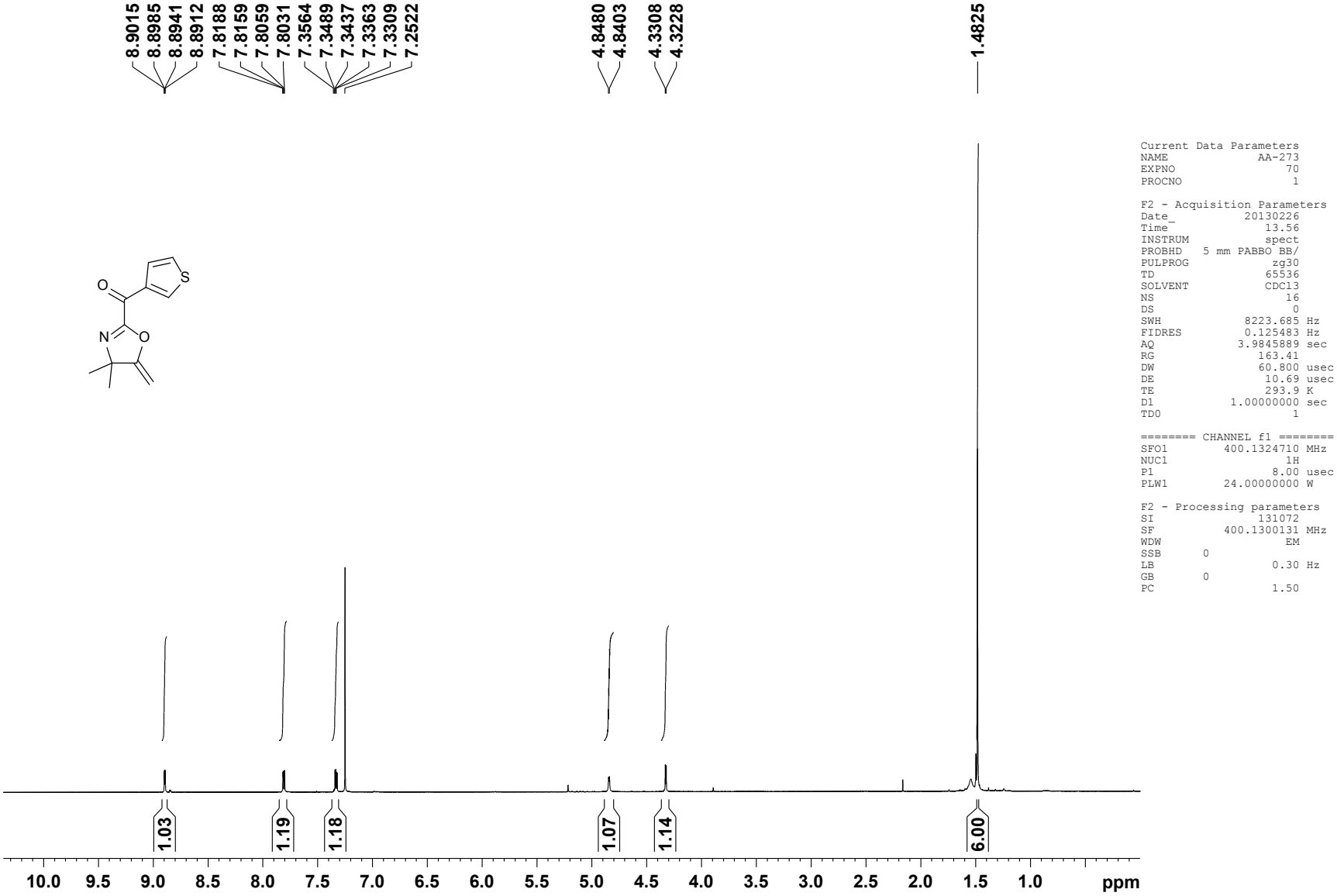
F2 - Acquisition Parameters
Date_              20130715
Time                  13.07
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                    181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.2 K
D1                2.00000000 sec
D11               0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2             waltz16
PCPD2                90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                     65536
SF              100.6127333 MHz
WDW                       EM
SSB          0
LB                    0.50 Hz
GB           0
PC                    1.40
```

1H NMR spectrum for 4,4-dimethyl-5-methylene-oxazol-2-yl)-(2-thienyl)methanone (4i)



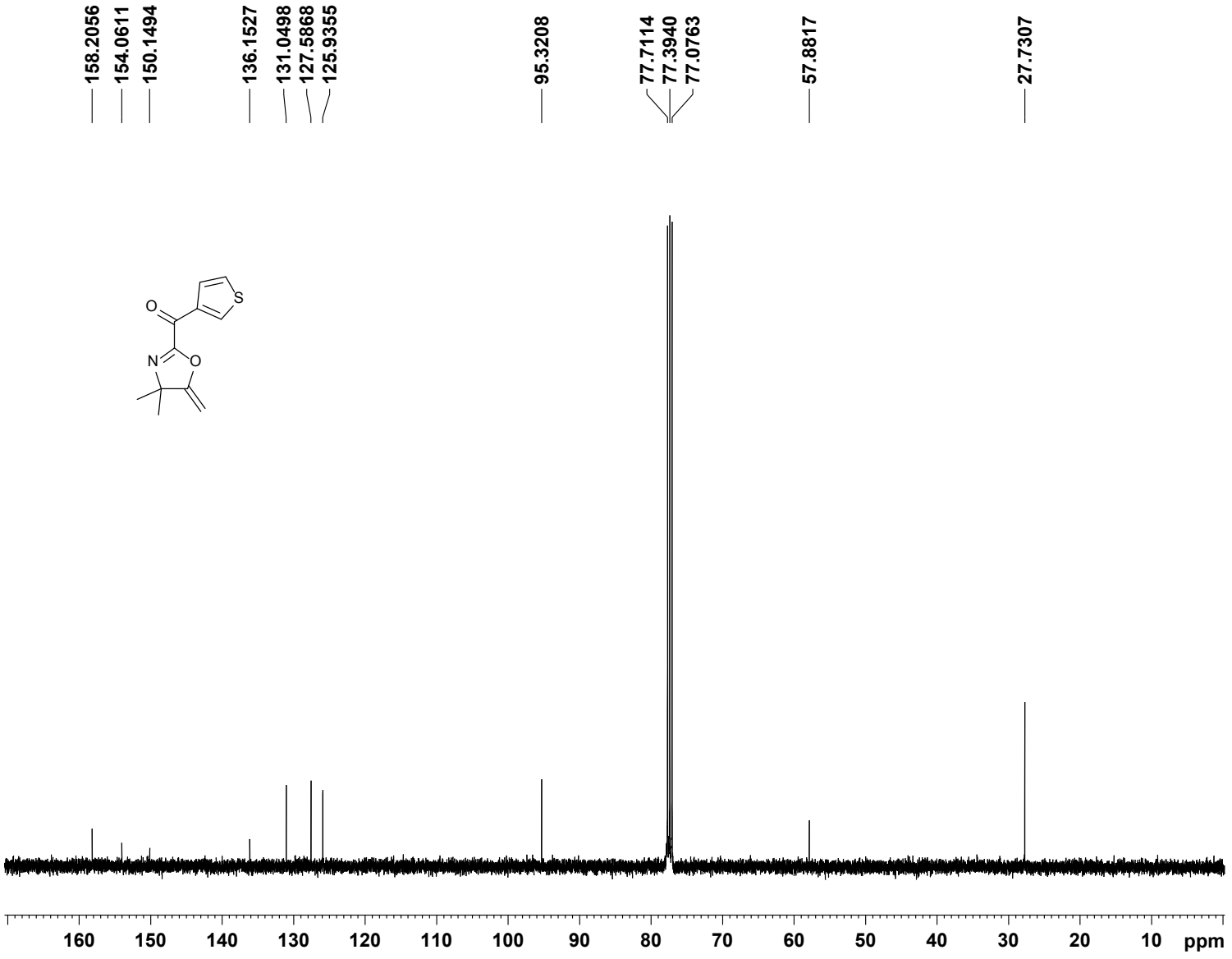

```
Current Data Parameters
NAME              AA-273
EXPNO                 70
PROCNO                 1

F2 - Acquisition Parameters
Date_           20130226
Time              13.56
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG            zg30
TD                65536
SOLVENT           CDCl3
NS                   16
DS                    0
SWH            8223.685 Hz
FIDRES        0.125483 Hz
AQ            3.9845889 sec
RG               163.41
DW               60.800 usec
DE               10.69 usec
TE               293.9 K
D1           1.00000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                 1H
P1                8.00 usec
PLW1        24.00000000 W

F2 - Processing parameters
SI                131072
SF           400.1300131 MHz
WDW                  EM
SSB       0
LB               0.30 Hz
GB        0
PC               1.50
```

13C NMR spectrum for (4,4-Dimethyl-5-methylene-oxazol-2-yl)-(2-thienyl)methanone (4i)




```
Current Data Parameters
NAME                  AA-261
EXPNO                     60
PROCNO                     1

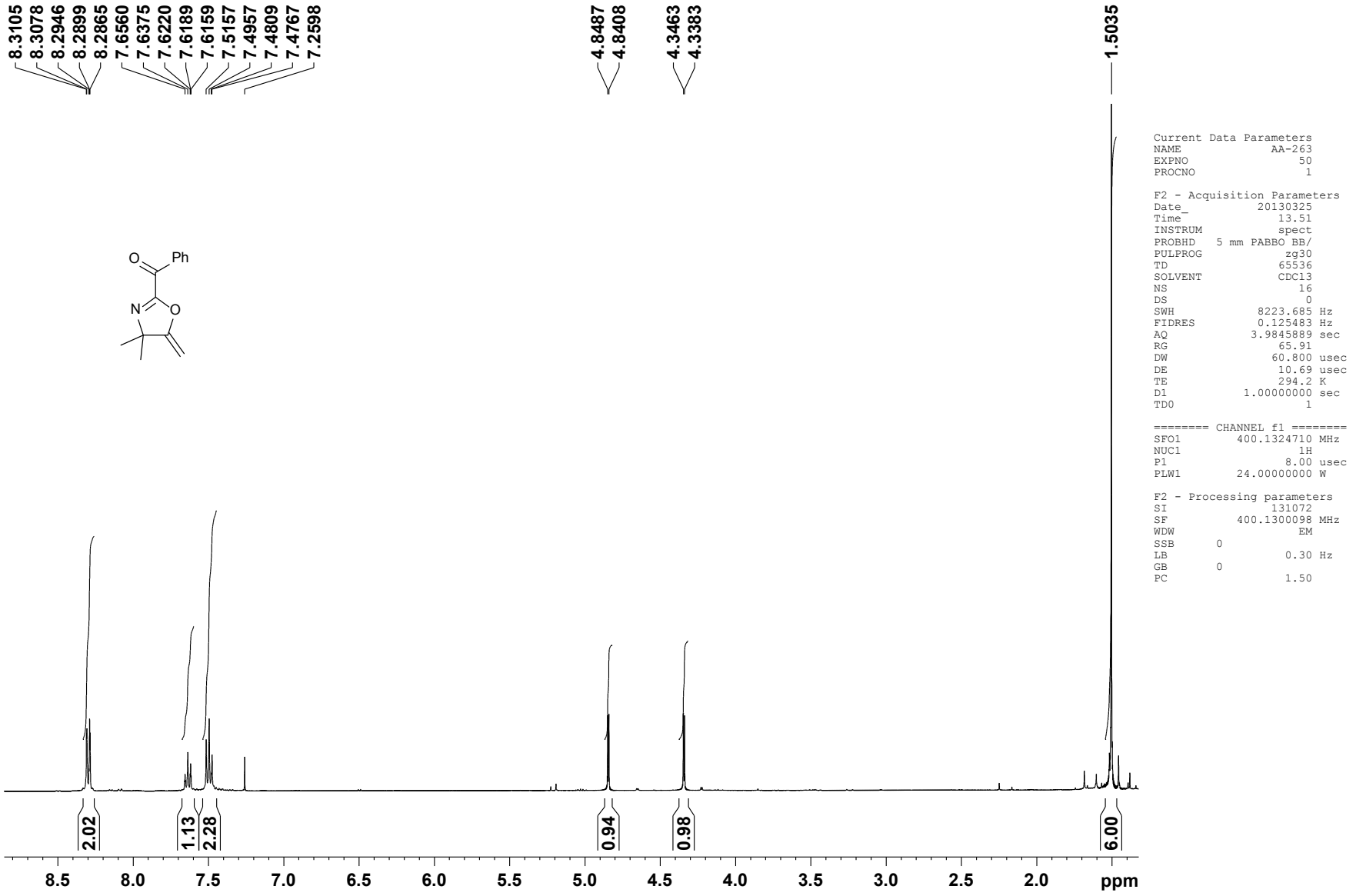
F2 - Acquisition Parameters
Date_              20130206
Time                   12.19
INSTRUM                spect
PROBHD   5 mm PABBO BB/
PULPROG               zgpg30
TD                     65536
SOLVENT                CDCl3
NS                       256
DS                         4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                 1.3631488 sec
RG                    181.72
DW                    20.800 usec
DE                     8.18 usec
TE                    294.5 K
D1                2.00000000 sec
D11               0.03000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                    9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2             waltz16
PCPD2                 90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                     65536
SF              100.6127324 MHz
WDW                       EM
SSB          0
LB                     0.50 Hz
GB           0
PC                     1.40
```

1H NMR spetrum for (4,4-Dimethyl-5-methylene-4,5-dihydrooxazol-2-yl)(phenyl)methanone (4p)



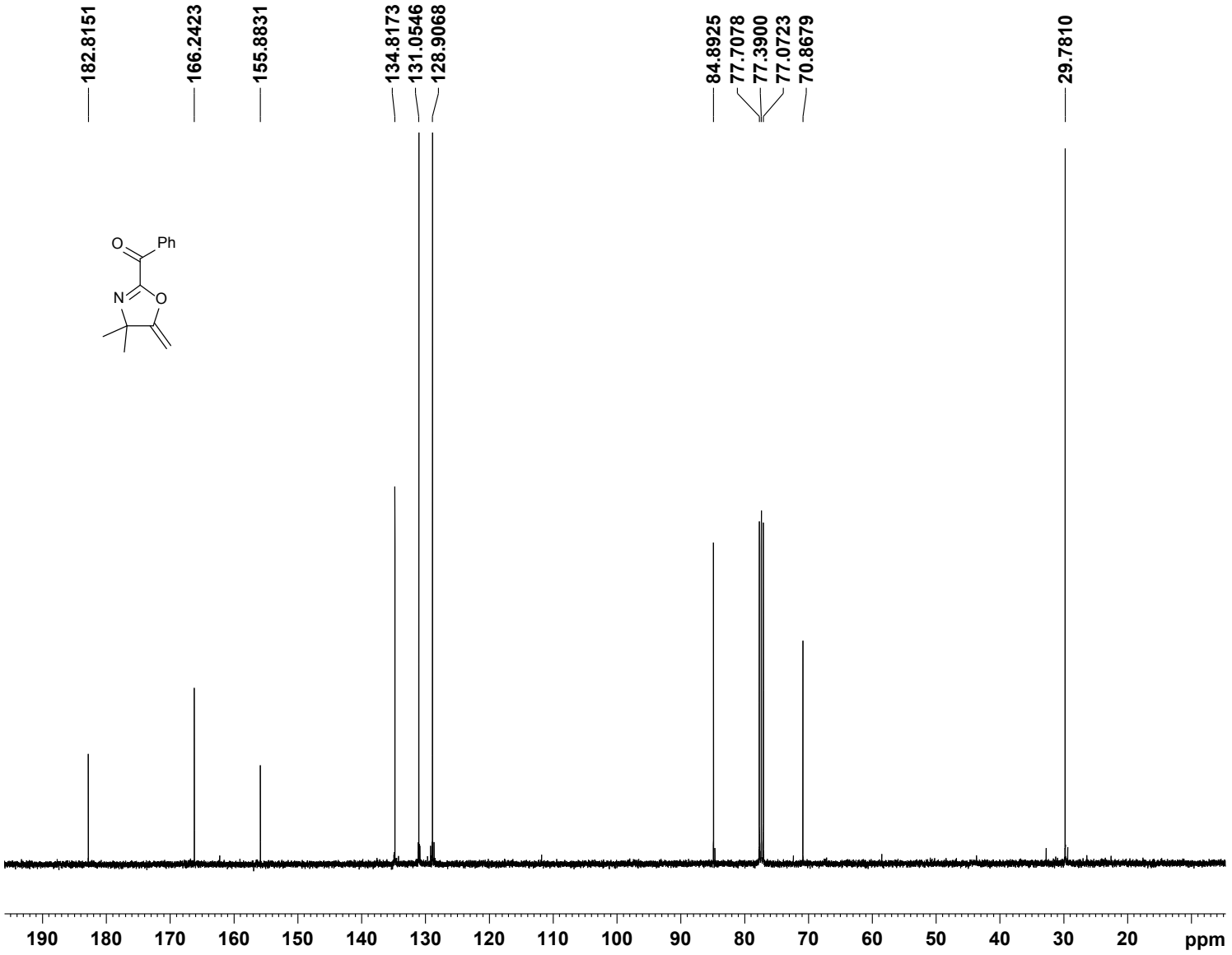

```
Current Data Parameters
NAME                  AA-263
EXPNO                     50
PROCNO                     1

F2 - Acquisition Parameters
Date_              20130325
Time                  13.51
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        0
SWH                8223.685 Hz
FIDRES             0.125483 Hz
AQ                 3.9845889 sec
RG                     65.91
DW                    60.800 usec
DE                    10.69 usec
TE                    294.2 K
D1                 1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
SFO1            400.1324710 MHz
NUC1                      1H
P1                     8.00 usec
PLW1           24.00000000 W

F2 - Processing parameters
SI                    131072
SF              400.1300098 MHz
WDW                       EM
SSB       0
LB                     0.30 Hz
GB        0
PC                     1.50
```

1C NMR spetrum for (4,4-Dimethyl-5-methylene-4,5-dihydrooxazol-2-yl)(phenyl)methanone (4p)

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Current Data Parameters
NAME              AA-263
EXPNO                 40
PROCNO                 1

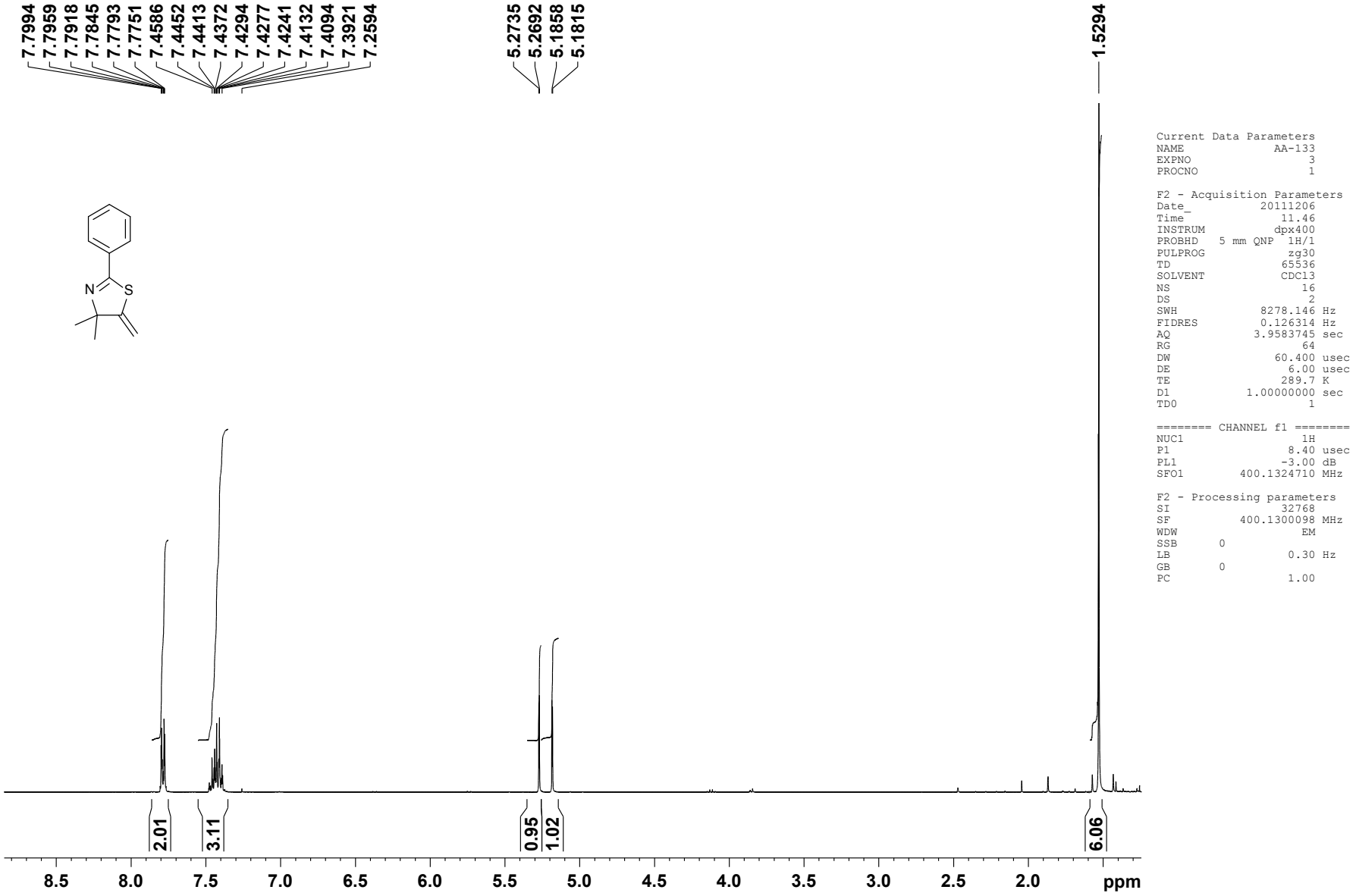
F2 - Acquisition Parameters
Date_           20130212
Time              16.36
INSTRUM           spect
PROBHD   5 mm PABBO BB/
PULPROG          zgpg30
TD                65536
SOLVENT           CDCl3
NS                  256
DS                    4
SWH           24038.461 Hz
FIDRES         0.366798 Hz
AQ            1.3631488 sec
RG               181.72
DW               20.800 usec
DE                8.18 usec
TE               294.4 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0                   1

======== CHANNEL f1 ========
SFO1         100.6228293 MHz
NUC1               13C
P1                9.00 usec
PLW1         77.00000000 W

======== CHANNEL f2 ========
SFO2         400.1316005 MHz
NUC2               1H
CPDPRG[2         waltz16
PCPD2             90.00 usec
PLW2         24.00000000 W
PLW12         0.17567000 W
PLW13         0.14229999 W

F2 - Processing parameters
SI                65536
SF           100.6127378 MHz
WDW                EM
SSB       0
LB                0.50 Hz
GB        0
PC                1.40
```

1H NMr spectrum for 4,4-Dimethyl-5-methylene-2-phenyl-thiazole (5a)



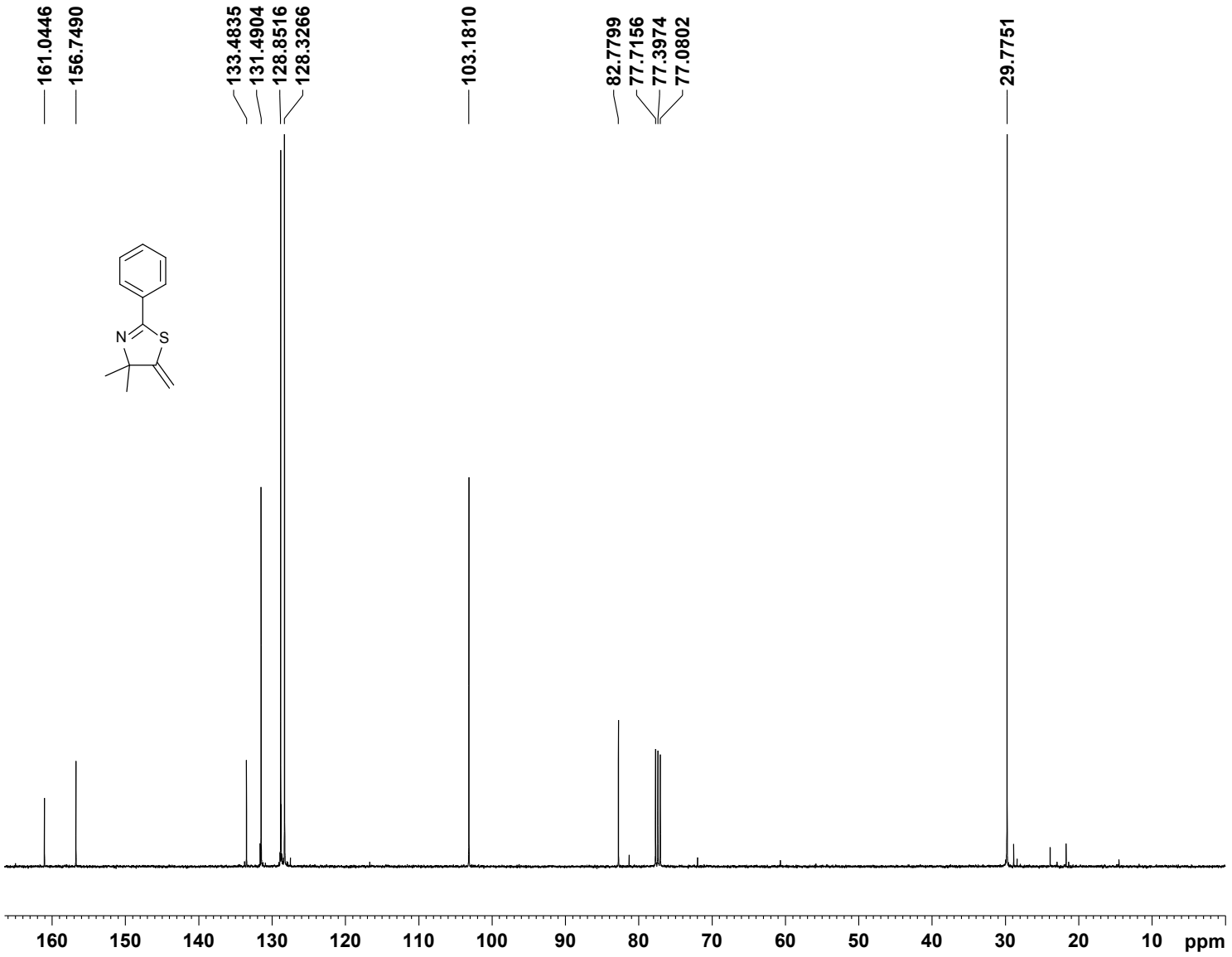

```
Current Data Parameters
NAME                  AA-133
EXPNO                      3
PROCNO                     1

F2 - Acquisition Parameters
Date_              20111206
Time                  11.46
INSTRUM              dpx400
PROBHD   5 mm QNP  1H/1
PULPROG                zg30
TD                    65536
SOLVENT               CDCl3
NS                       16
DS                        2
SWH                8278.146 Hz
FIDRES            0.126314 Hz
AQ                3.9583745 sec
RG                       64
DW                   60.400 usec
DE                    6.00 usec
TE                   289.7 K
D1              1.00000000 sec
TD0                        1

======== CHANNEL f1 ========
NUC1                     1H
P1                    8.40 usec
PL1                  -3.00 dB
SFO1          400.1324710 MHz

F2 - Processing parameters
SI                     32768
SF            400.1300098 MHz
WDW                      EM
SSB       0
LB                    0.30 Hz
GB        0
PC                    1.00
```

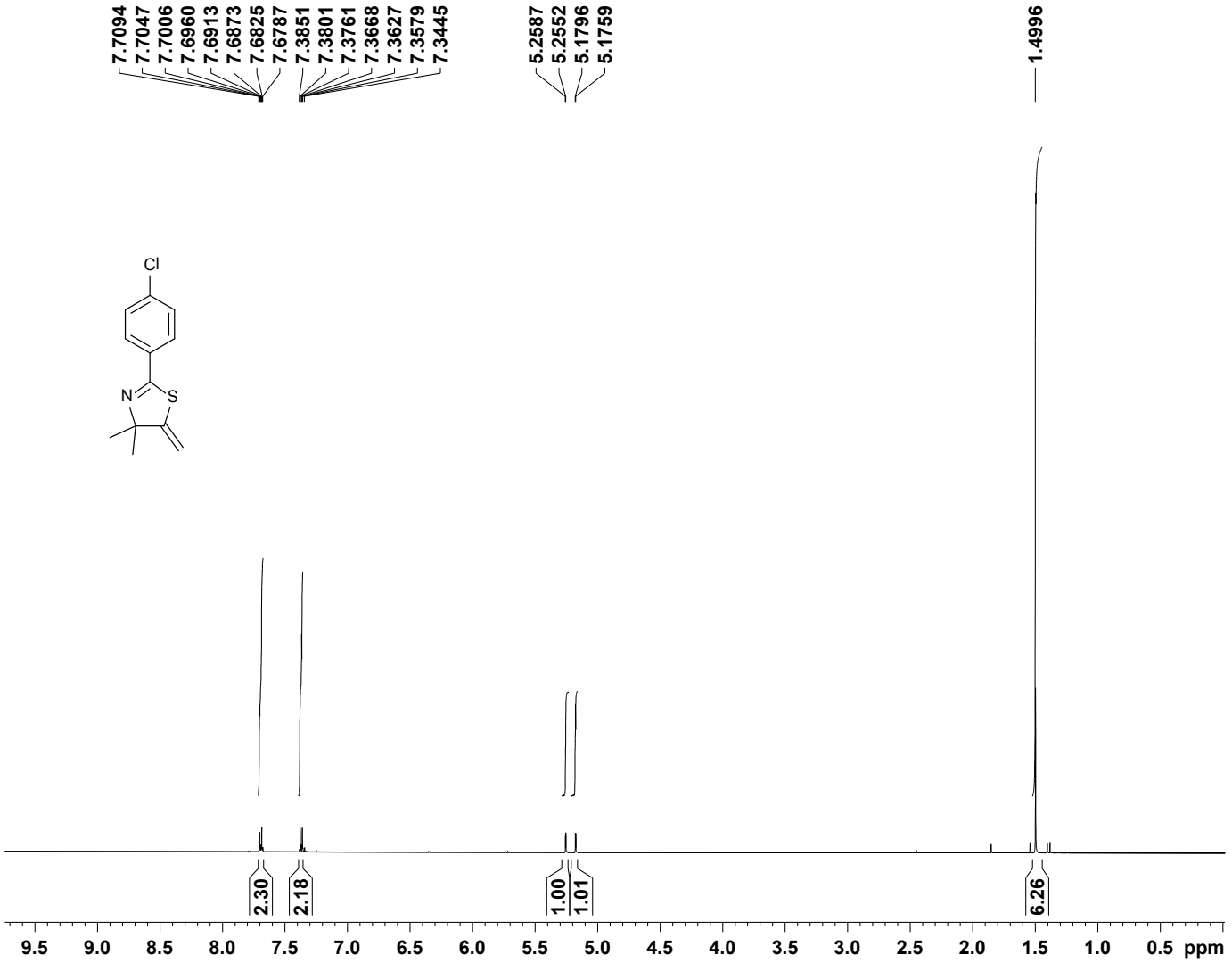
13C NMR spectrum for 4,4-Dimethyl-5-methylene-2-phenyl-thiazole (5a)




```
Current Data Parameters
NAME              AA-133
EXPNO                  6
PROCNO                 1

F2 - Processing parameters
SI                 32768
SF          100.6127430 MHz
WDW                   EM
SSB       0
LB                 1.00 Hz
GB        0
PC                 1.40
```

1H NMR spectrum for 2-(4-Chlorophenyl)-4,4-dimethyl-5-methylene-thiazole (5b)

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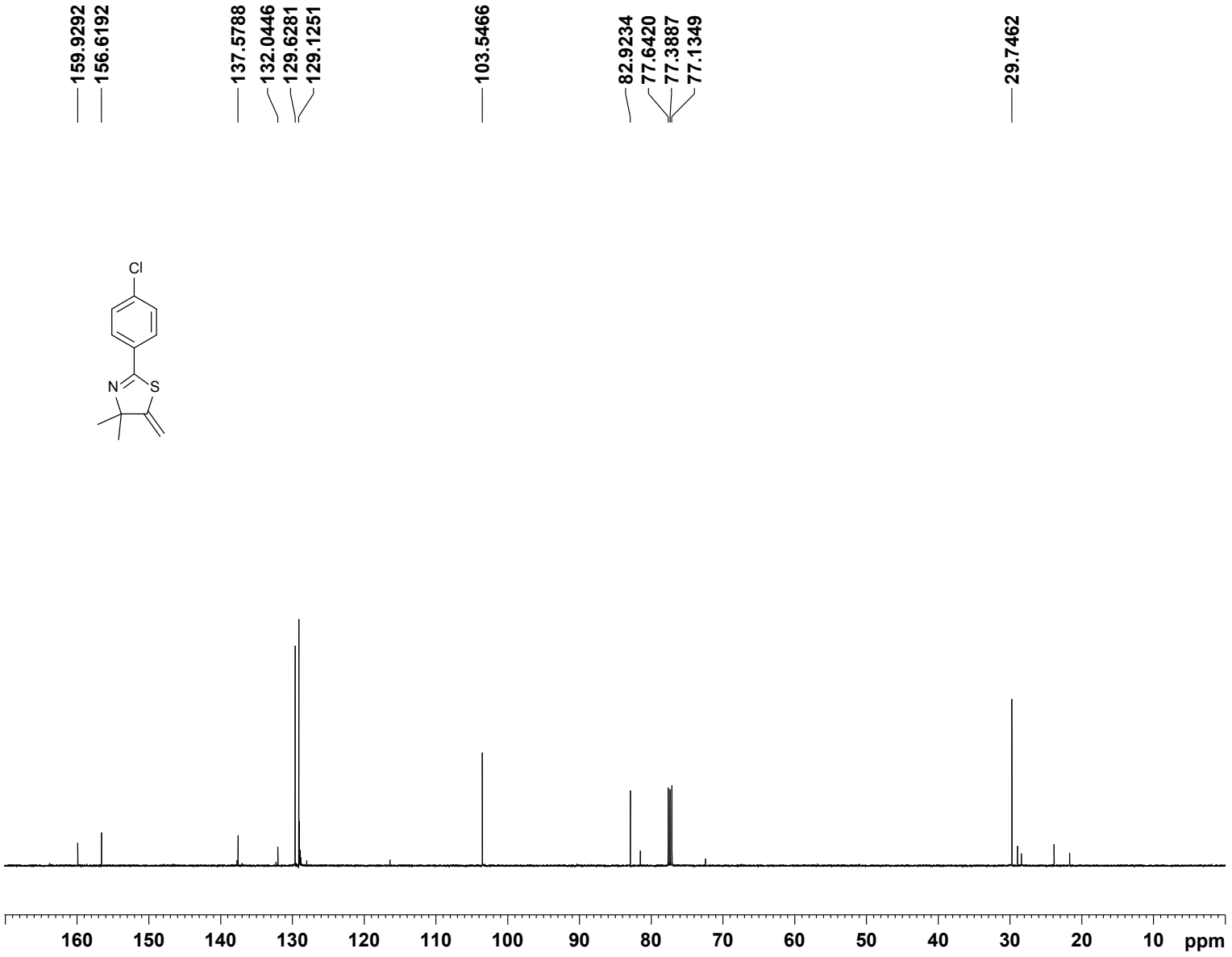
Current Data Parameters
NAME                  AA-141C
EXPNO                      10
PROCNO                      1

F2 - Acquisition Parameters
Date_               20120131
Time                   14.58
INSTRUM              av500sgu
PROBHD    5 mm PABBO BB-
PULPROG                 zg30
TD                     65536
SOLVENT                CDCl3
NS                         16
DS                          2
SWH                10330.578 Hz
FIDRES              0.157632 Hz
AQ                 3.1719425 sec
RG                         64
DW                    48.400 usec
DE                     6.00 usec
TE                     295.7 K
D1                1.00000000 sec
TD0                         1

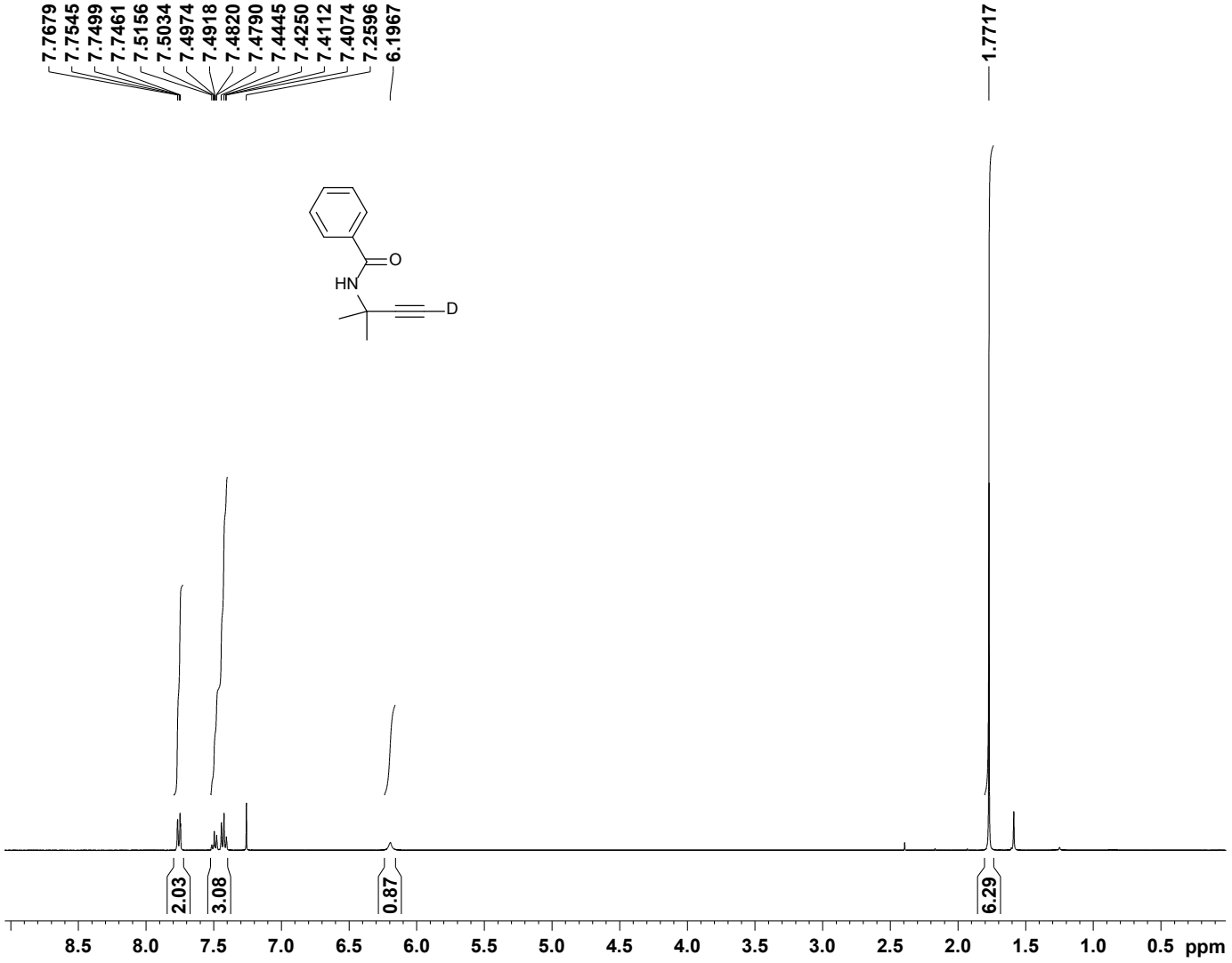
======== CHANNEL f1 ========
NUC1                       1H
P1                      9.70 usec
PL1                     0.10 dB
PL1W            22.82879257 W
SFO1            500.1330885 MHz

F2 - Processing parameters
SI                      32768
SF              500.1300174 MHz
WDW                        EM
SSB          0
LB                      0.30 Hz
GB           0
PC                      1.00
```

13C NMR spectrum for 2-(4-Chlorophenyl)-4,4-dimethyl-5-methylene-thiazole (5b)



1H NMR spectrum for N-(2-methylbut-3-yn-2-yl)benzamide-d1 (1a')



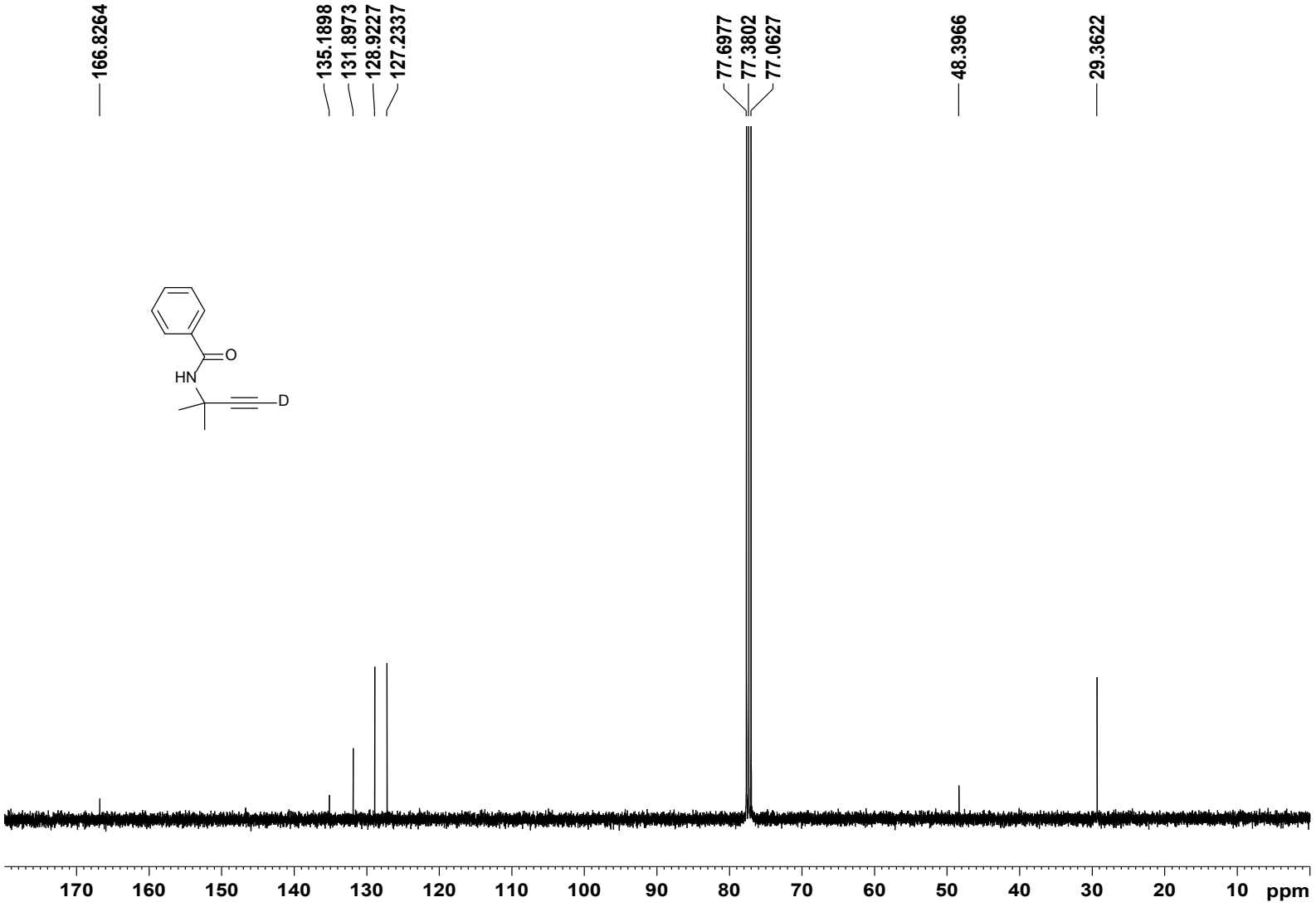

```
Current Data Parameters
NAME              AA-205
EXPNO                 20
PROCNO                 1

F2 - Acquisition Parameters
Date_           20121015
Time               13.37
INSTRUM            spect
PROBHD   5 mm PABBO BB/
PULPROG             zg30
TD                 65536
SOLVENT            CDCl3
NS                    16
DS                     0
SWH             8223.685 Hz
FIDRES          0.125483 Hz
AQ              3.9845889 sec
RG                134.04
DW                60.800 usec
DE                10.69 usec
TE                293.8 K
D1           1.00000000 sec
TD0                    1

======== CHANNEL f1 ========
SFO1         400.1324710 MHz
NUC1                   1H
P1                  8.00 usec
PLW1        24.00000000 W

F2 - Processing parameters
SI                131072
SF          400.1300100 MHz
WDW                   EM
SSB       0
LB                 0.30 Hz
GB        0
PC                 1.50
```

13C NMR spectrum for N-(2, 2-dimethylpropyne) benzamide (d1) (1a')




```
Current Data Parameters
NAME                  AA-205
EXPNO                     30
PROCNO                     1

F2 - Acquisition Parameters
Date_              20121106
Time                  20.37
INSTRUM               spect
PROBHD    5 mm PABBO BB/
PULPROG              zgpg30
TD                    65536
SOLVENT               CDCl3
NS                      256
DS                        4
SWH               24038.461 Hz
FIDRES             0.366798 Hz
AQ                1.3631488 sec
RG                   181.72
DW                   20.800 usec
DE                    8.18 usec
TE                   294.7 K
D1              2.00000000 sec
D11             0.03000000 sec
TD0                       1

======== CHANNEL f1 ========
SFO1            100.6228293 MHz
NUC1                    13C
P1                     9.00 usec
PLW1           77.00000000 W

======== CHANNEL f2 ========
SFO2            400.1316005 MHz
NUC2                    1H
CPDPRG[2             waltz16
PCPD2                 90.00 usec
PLW2           24.00000000 W
PLW12           0.17567000 W
PLW13           0.14229999 W

F2 - Processing parameters
SI                    65536
SF              100.6127337 MHz
WDW                     EM
SSB          0
LB                     0.50 Hz
GB           0
PC                     1.40
```