

## Supporting Information

Preparation of Quinazolines via a 2+2+2 Annulation from Aryldiazonium salts and Nitriles

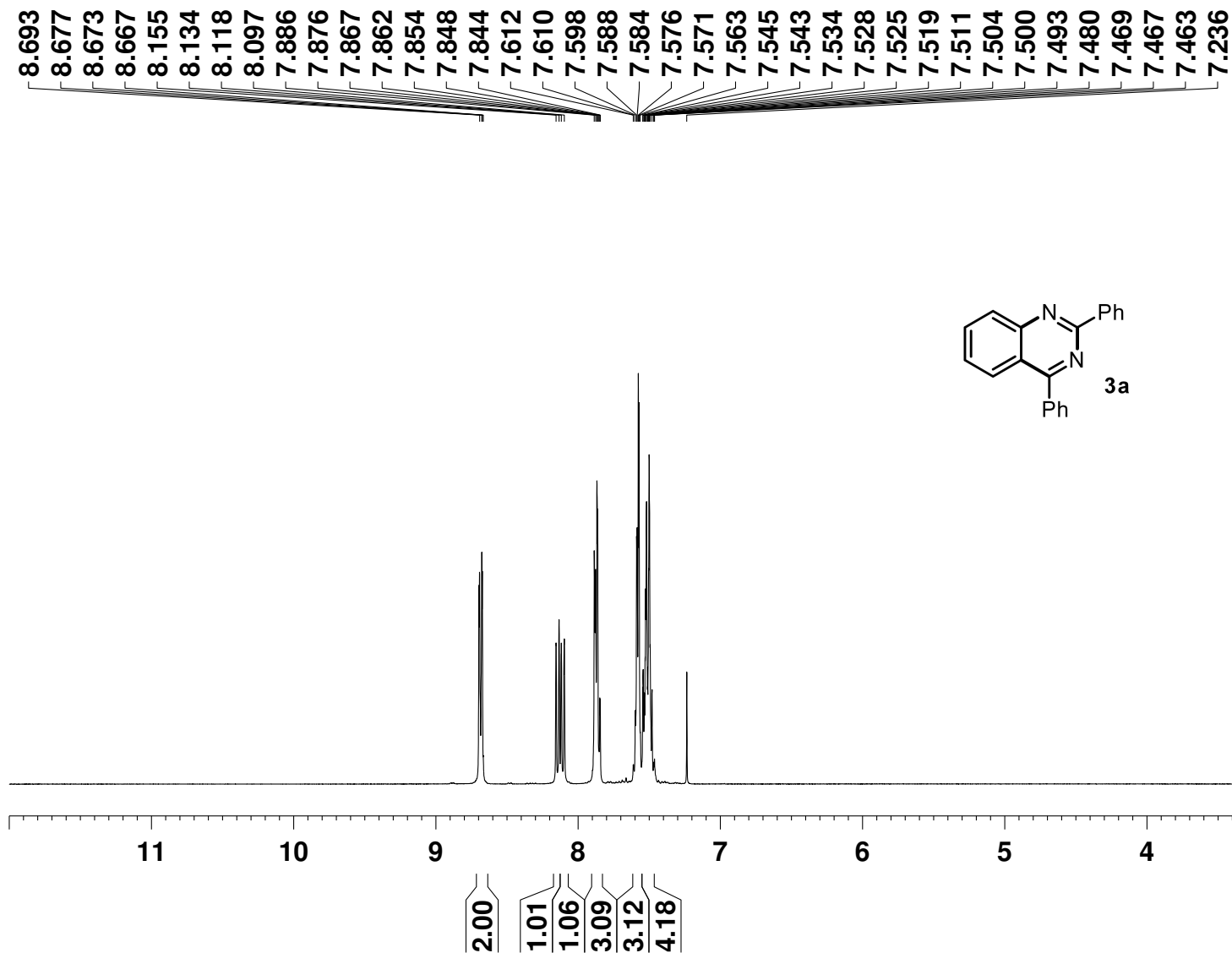
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Department of Chemistry, National Taiwan University, Taipei 106, Taiwan

Contents:

Copies of  $^1\text{H}$  NMR and  $^{13}\text{C}$  NMR Spectra-----S1-S78

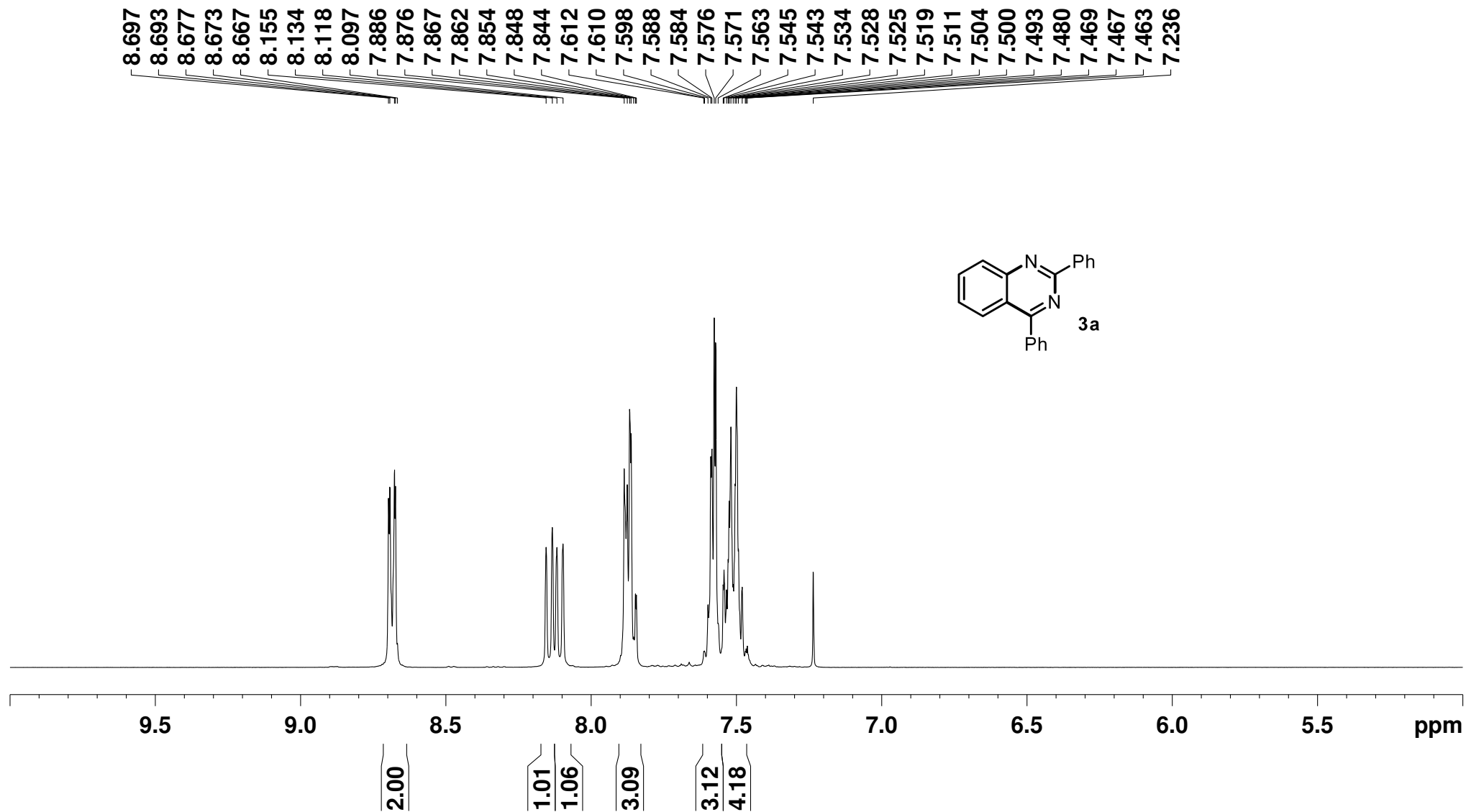
Phdiazonium salt, Dry benzonitrile, 110deg, 3h, purified

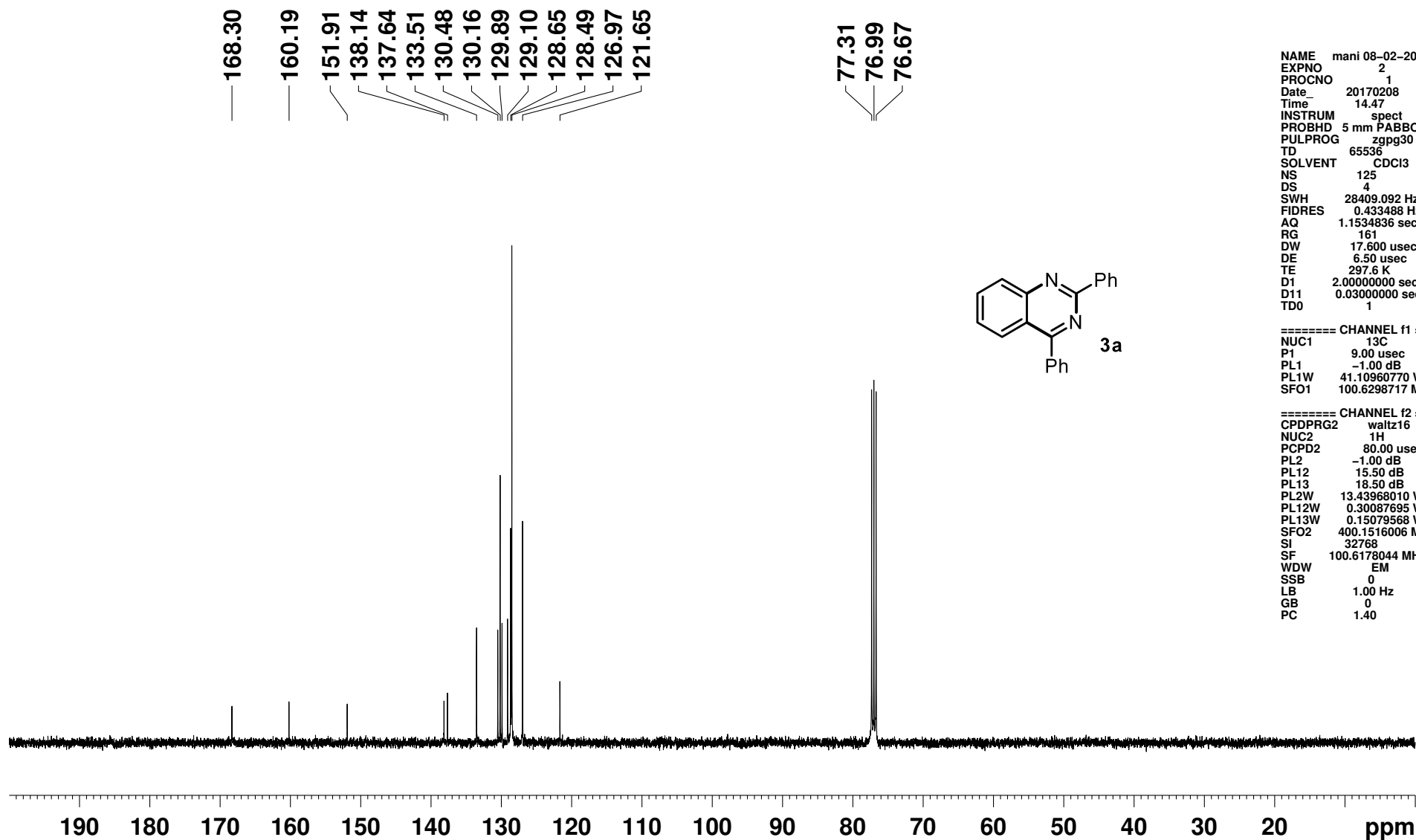


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Date\_ 20170516  
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INSTRUM spect  
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PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 30  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 144  
DW 60.800 usec  
DE 6.50 usec  
TE 299.9 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 12.65 usec  
PL1 -1.00 dB  
PL1W 13.43968010 W  
SFO1 400.1528010 MHz  
SI 32768  
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SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

Phdiazonium salt, Dry benzonitrile, 110deg, 3h, purified



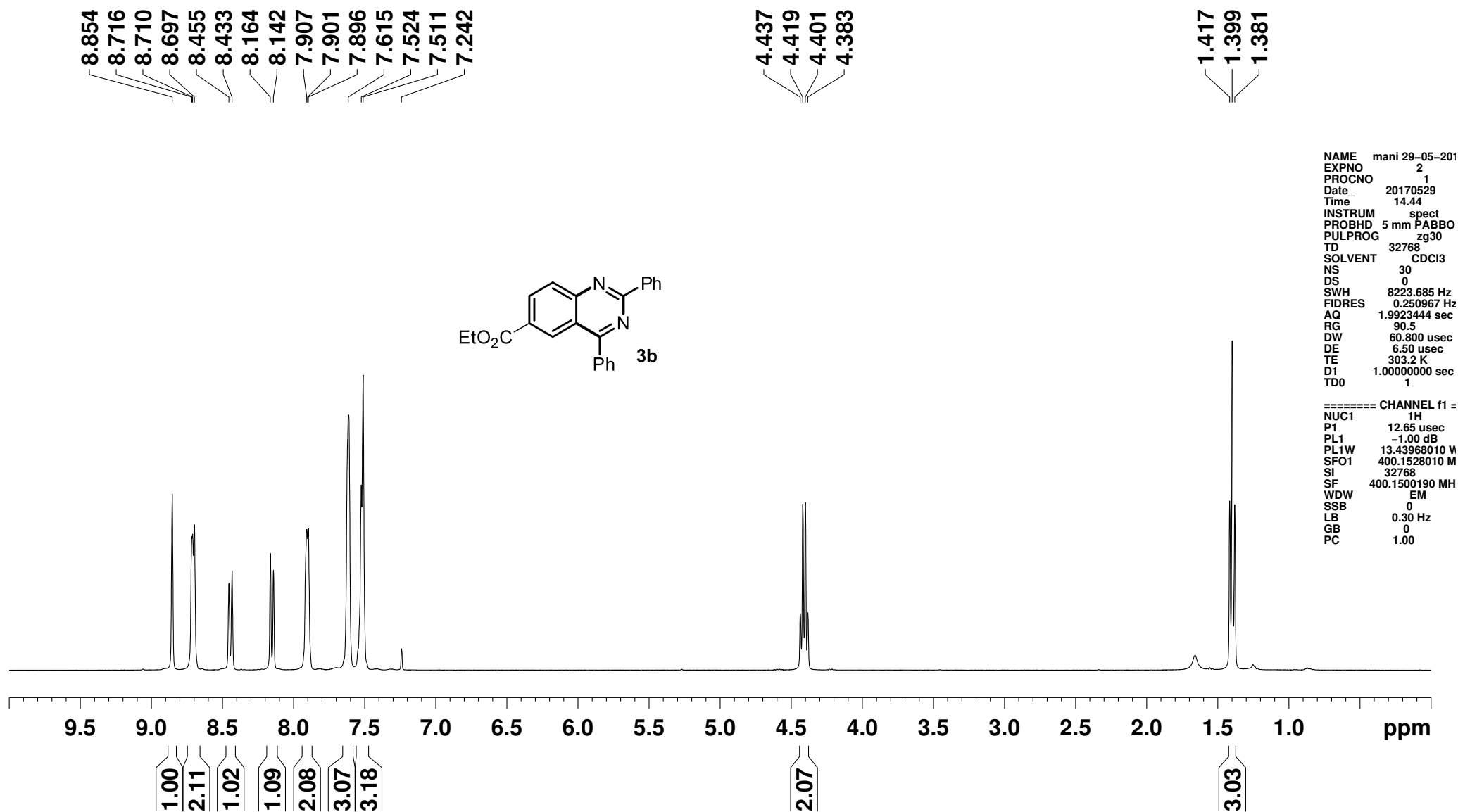


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 INSTRUM spect  
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 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 125  
 DS 4  
 SWH 28409.092 Hz  
 FIDRES 0.433488 Hz  
 AQ 1.1534836 sec  
 RG 161  
 DW 17.600 usec  
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 TE 297.6 K  
 D1 2.00000000 sec  
 D11 0.03000000 sec  
 TD0 1

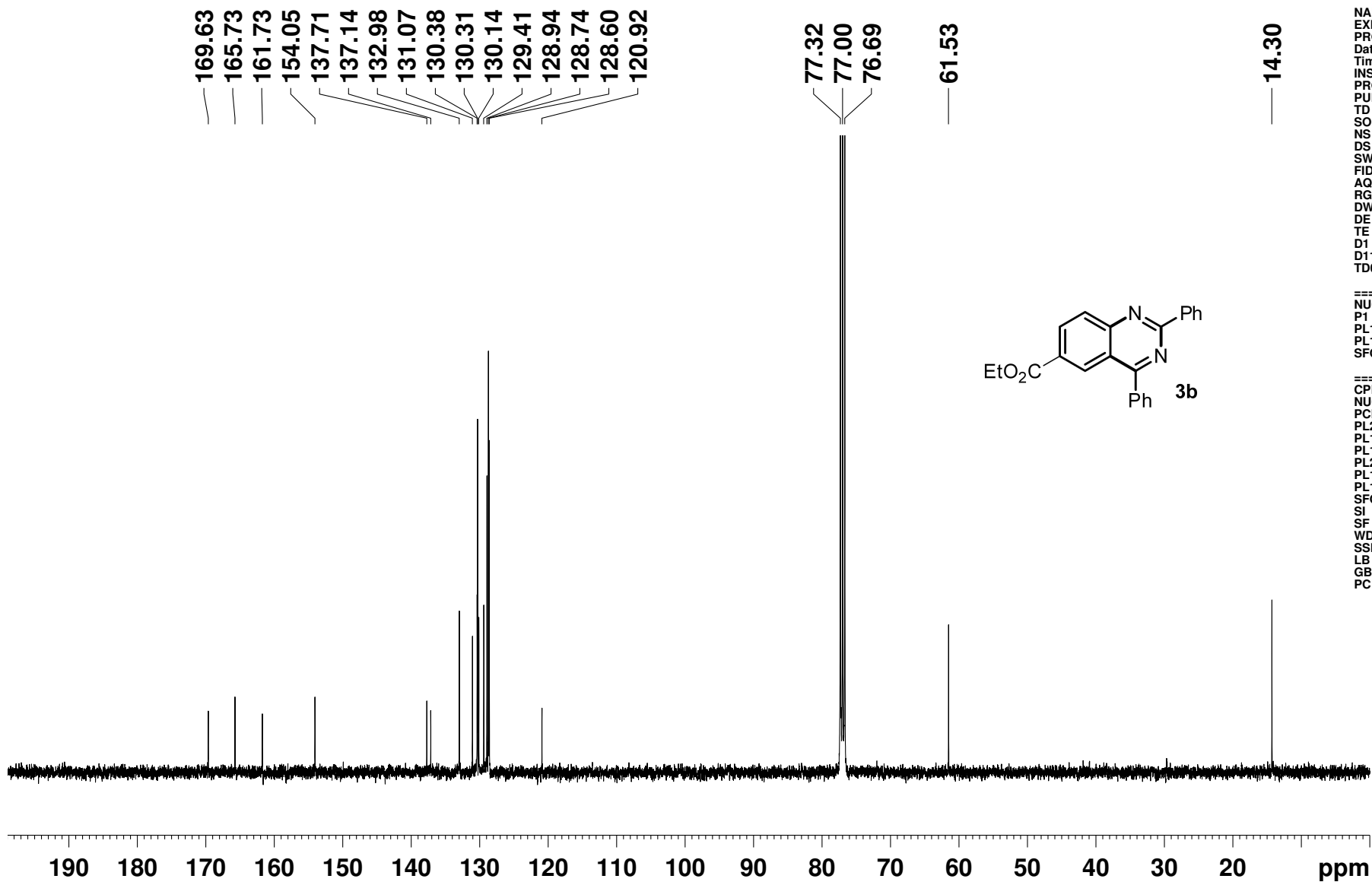
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 P1 9.00 usec  
 PL1 -1.00 dB  
 PL1W 41.10960770 W  
 SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 -1.00 dB  
 PL12 15.50 dB  
 PL13 18.50 dB  
 PL2W 13.43968010 W  
 PL12W 0.30087695 W  
 PL13W 0.15079568 W  
 SFO2 400.1516006 MHz  
 SI 32768  
 SF 100.6178044 MHz  
 WDW EM  
 SSB 0  
 LB 1.00 Hz  
 GB 0  
 PC 1.40

4-Carbethoxy Phdiazonium salt, Dry PhCN, 110deg, 3h, purified



4-Carbethoxy Phdiazonium salt, Dry PhCN, 110 deg, 3h, purified major spot

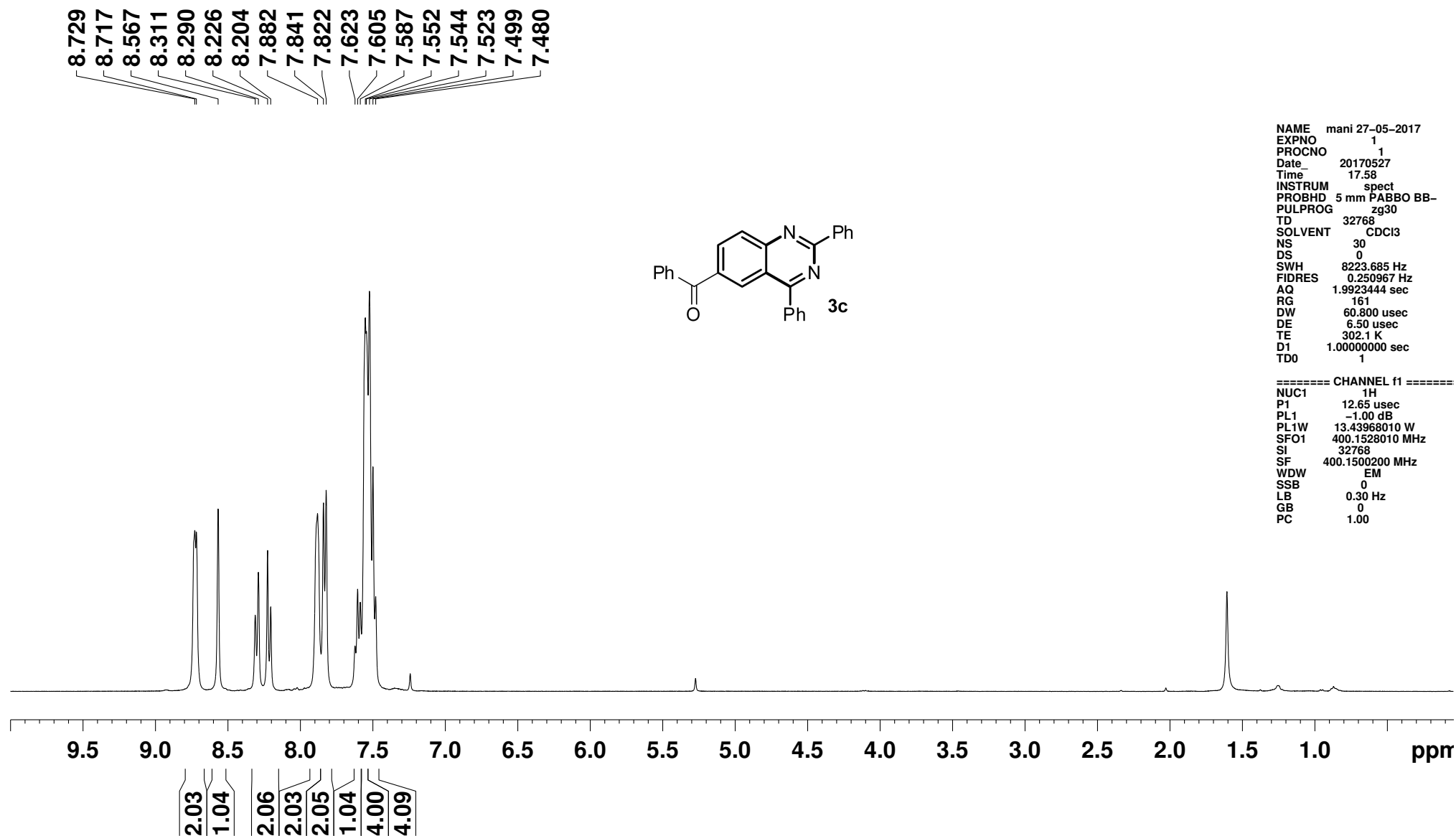


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 PROCNO 1  
 Date\_ 20170227  
 Time 15.09  
 INSTRUM spect  
 PROBHD 5 mm PABBO BB-  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 679  
 DS 4  
 SWH 28409.092 Hz  
 FIDRES 0.433488 Hz  
 AQ 1.1534836 sec  
 RG 114  
 DW 17.600 usec  
 DE 6.50 usec  
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 D1 2.00000000 sec  
 D11 0.03000000 sec  
 TD0 1

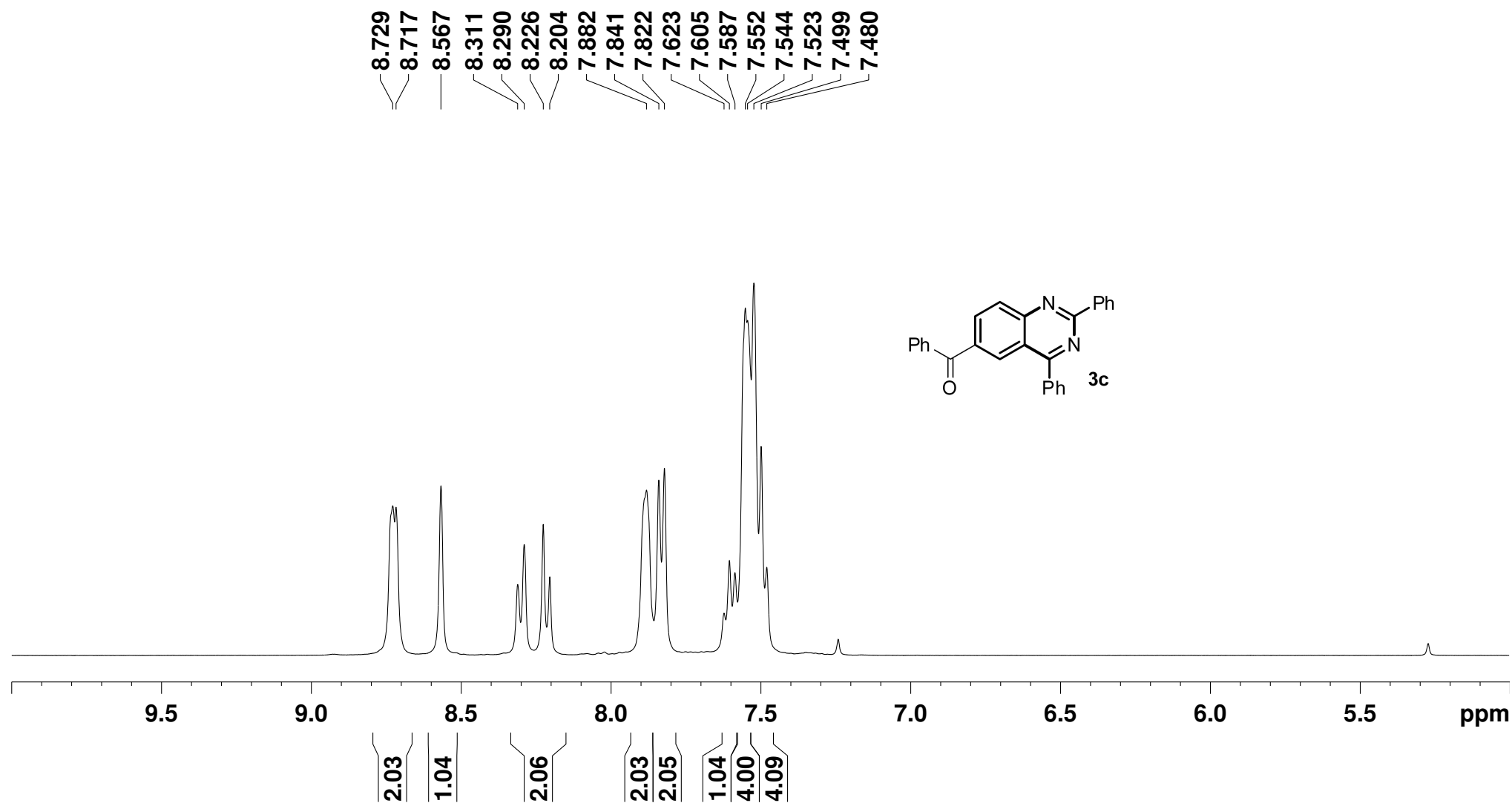
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 SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
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 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 -3.00 dB  
 PL12 13.48 dB  
 PL13 18.50 dB  
 PL2W 21.30045700 W  
 PL12W 0.47905898 W  
 PL13W 0.15079568 W  
 SFO2 400.1516006 MHz  
 SI 32768  
 SF 100.6178001 MHz  
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 GB 0  
 PC 1.40

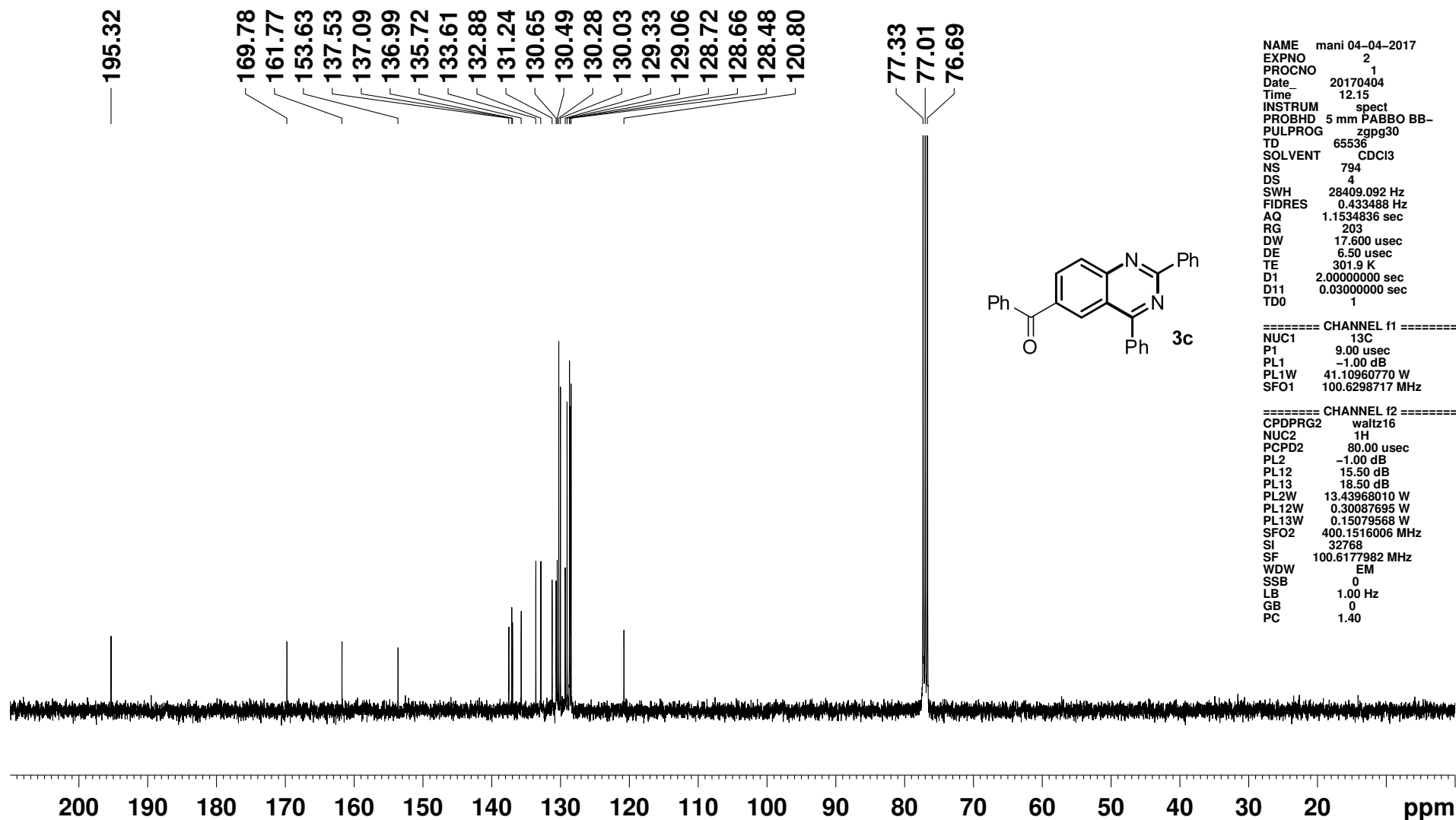
4-COPh diazonium salt, Dry PhCN, 110deg, 3h, purified



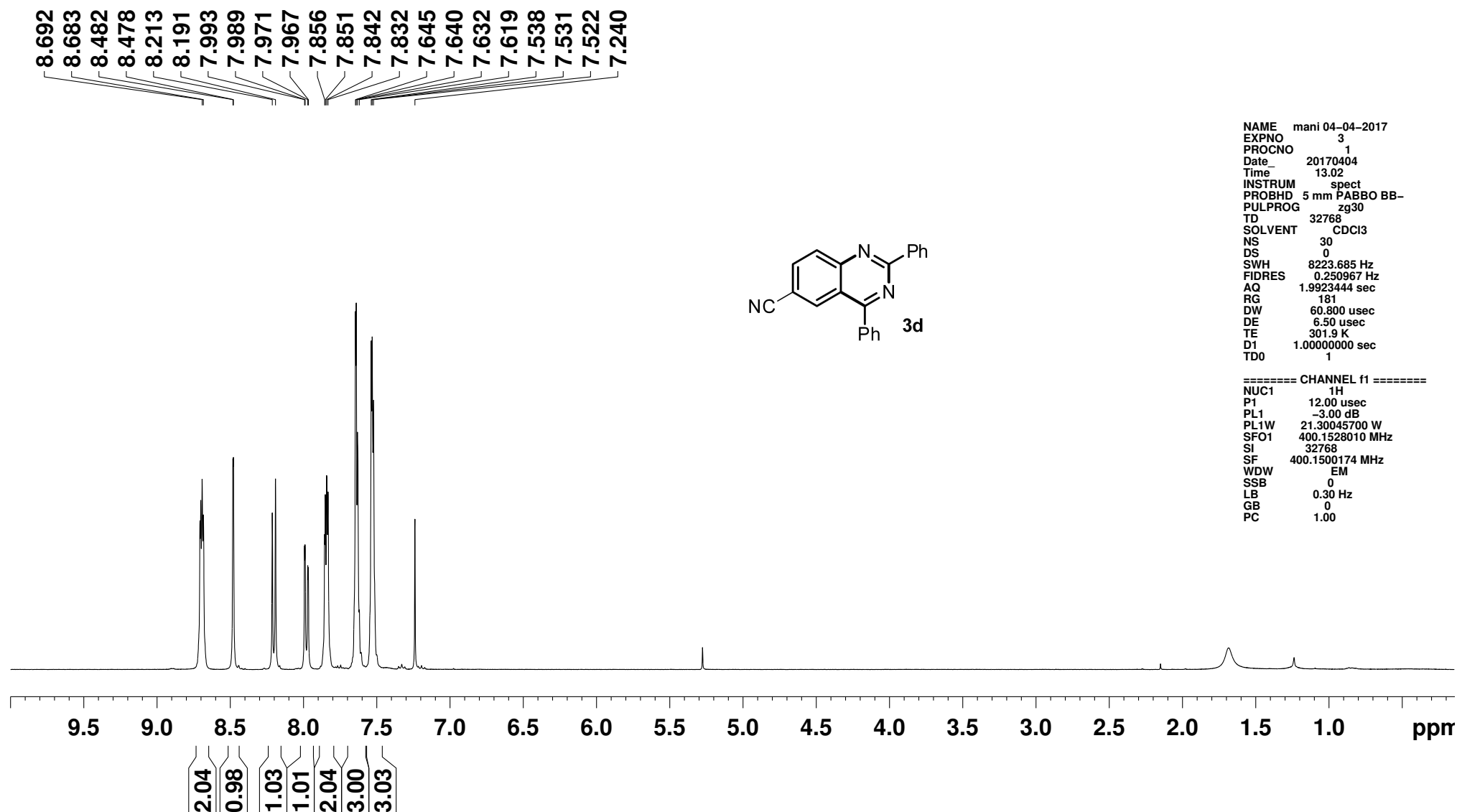
4-COPh diazonium salt, Dry PhCN, 110deg, 3h, purified



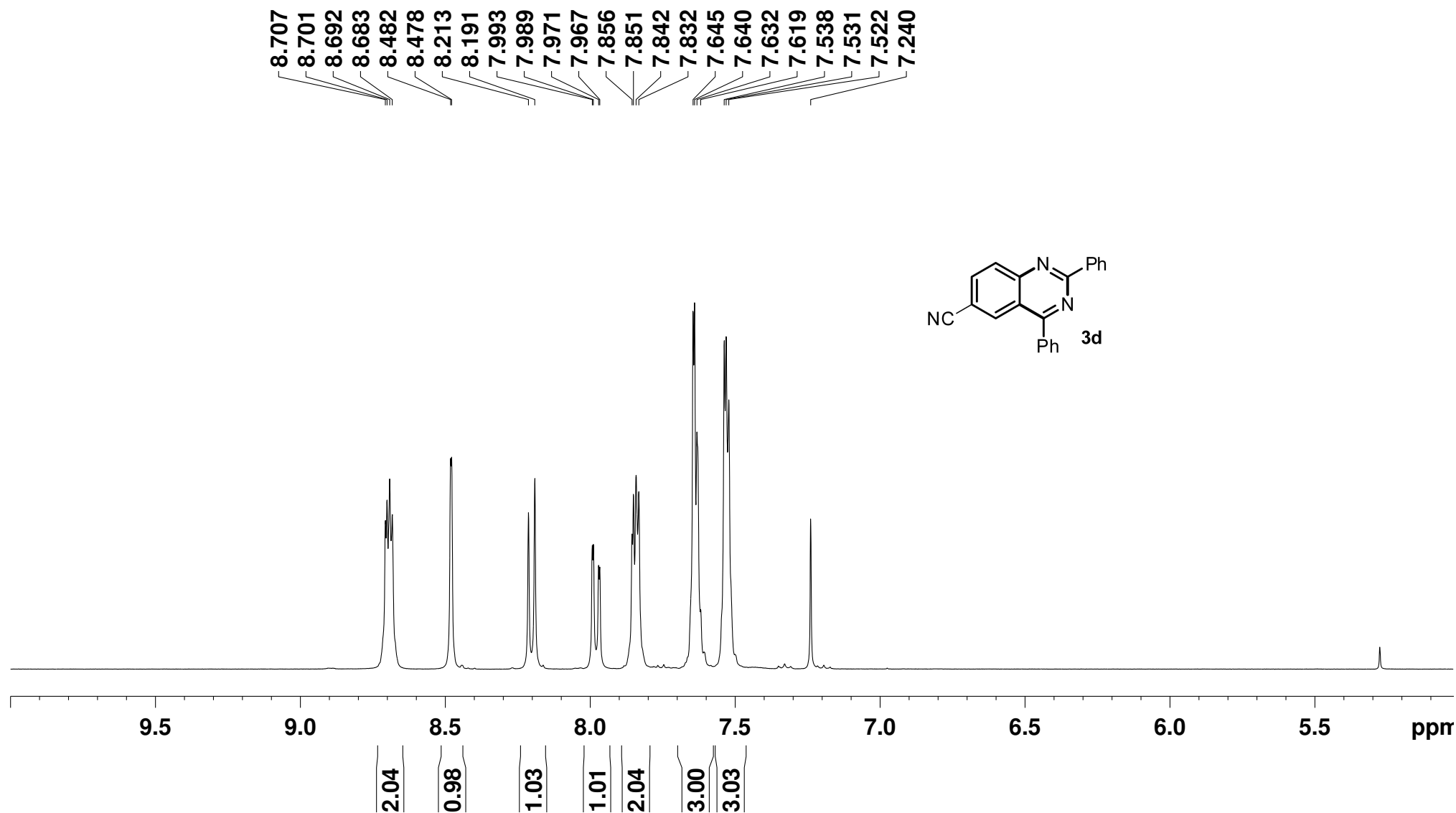
4-COPh-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid



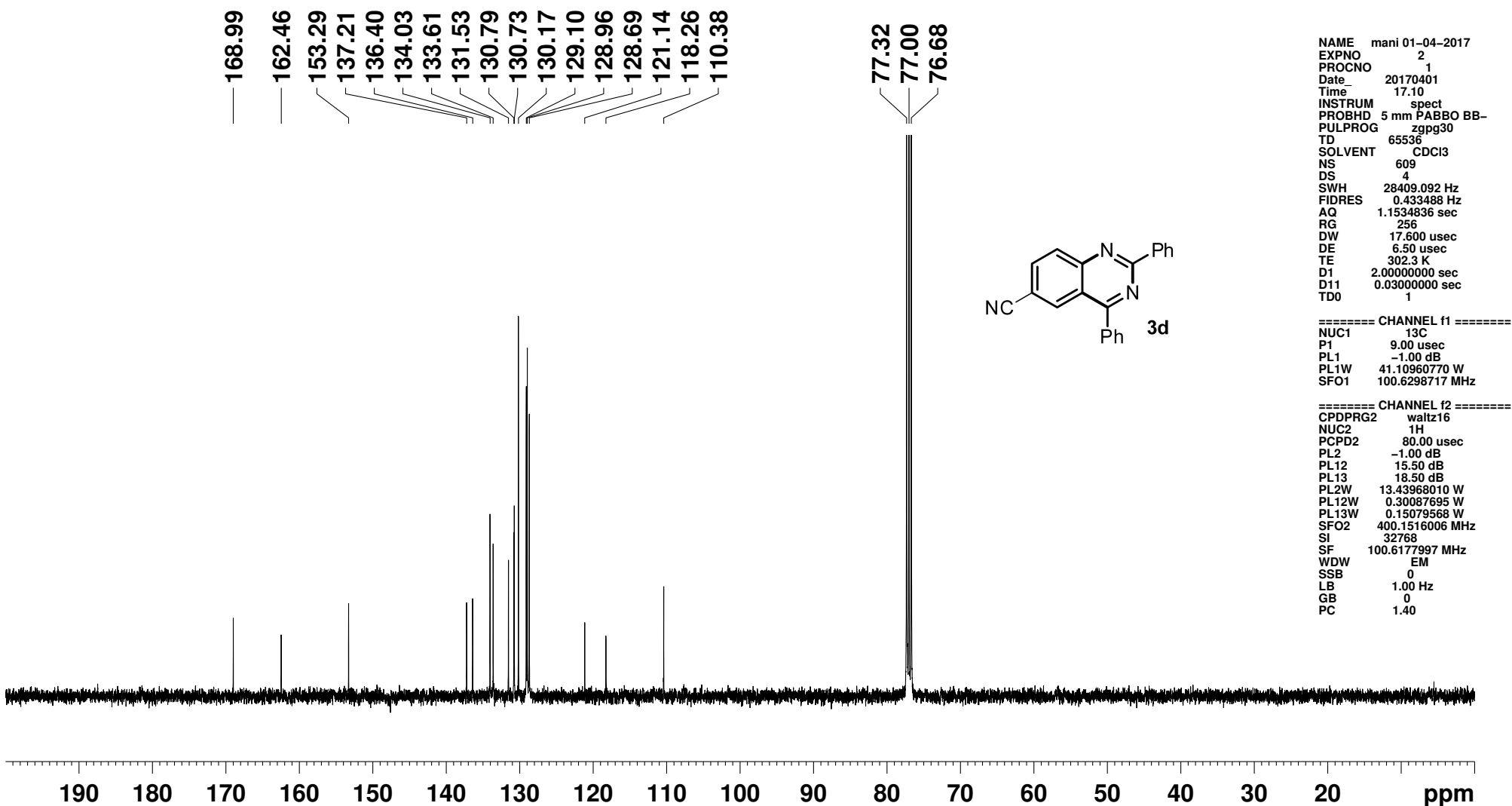
4-CNPh-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid



4-CNPh-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid



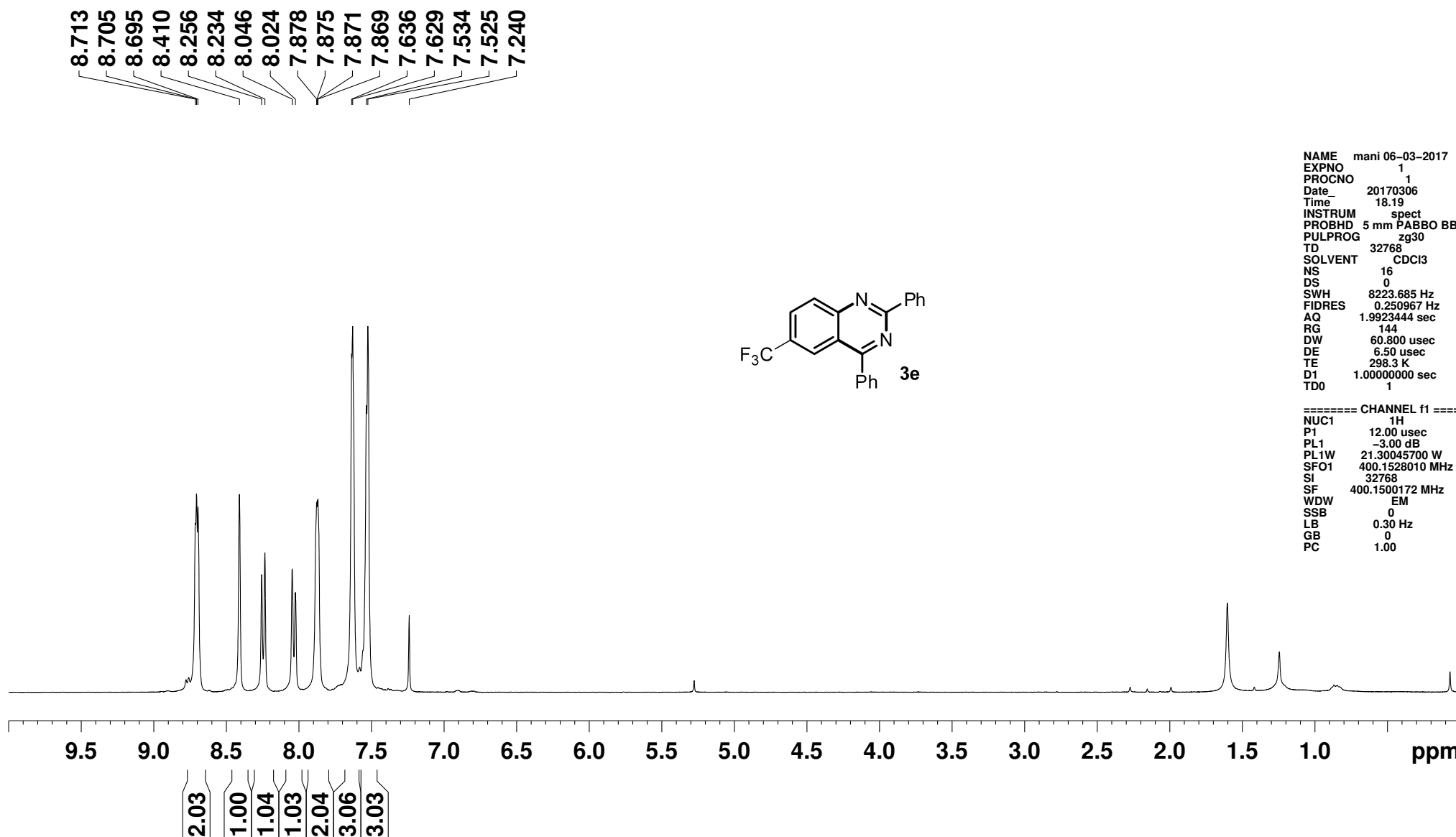
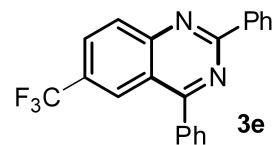
4-CNPh-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid



4-CF<sub>3</sub> Phdiazonium salt, Dry PhCN, 110deg, 3h, purified

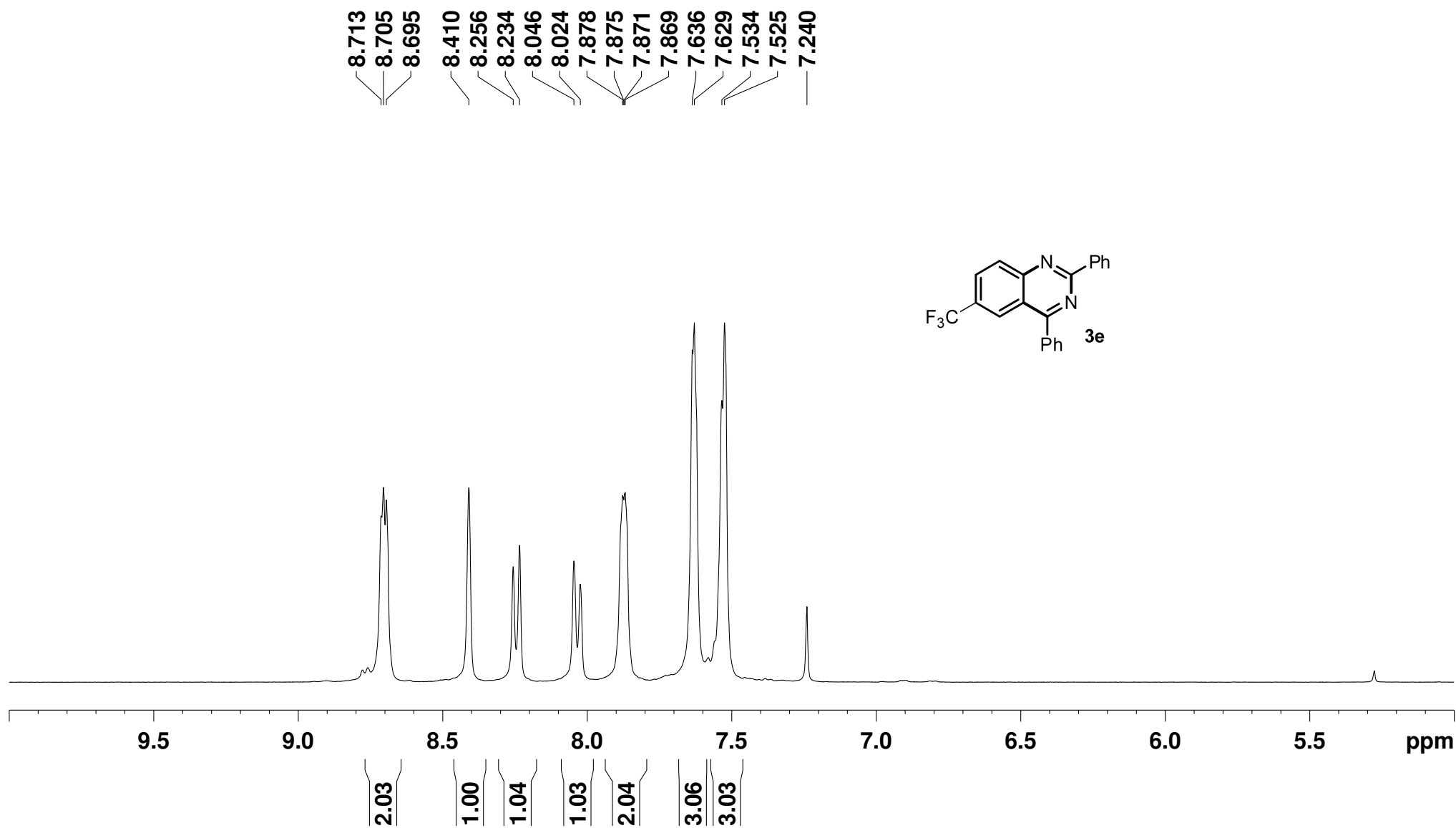
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PULPROG zg30  
TD 32768  
SOLVENT CDCl<sub>3</sub>  
NS 16  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 144  
DW 60.800 usec  
DE 6.50 usec  
TE 298.3 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 12.00 usec  
PL1 -3.00 dB  
PL1W 21.30045700 W  
SFO1 400.1528010 MHz  
SI 32768  
SF 400.1500172 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



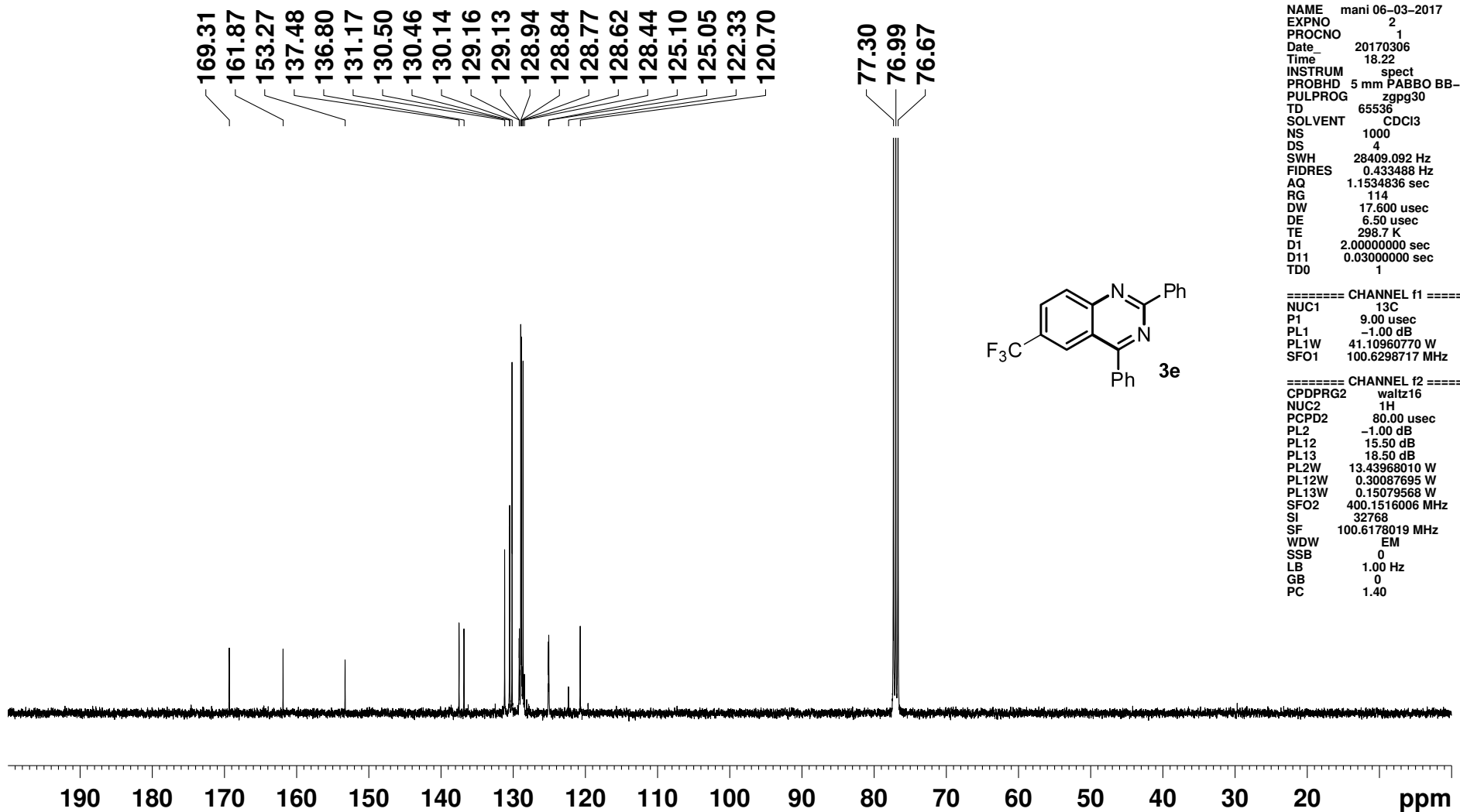
S12

4-CF<sub>3</sub> Phdiazonium salt, Dry PhCN, 110deg, 3h, purified

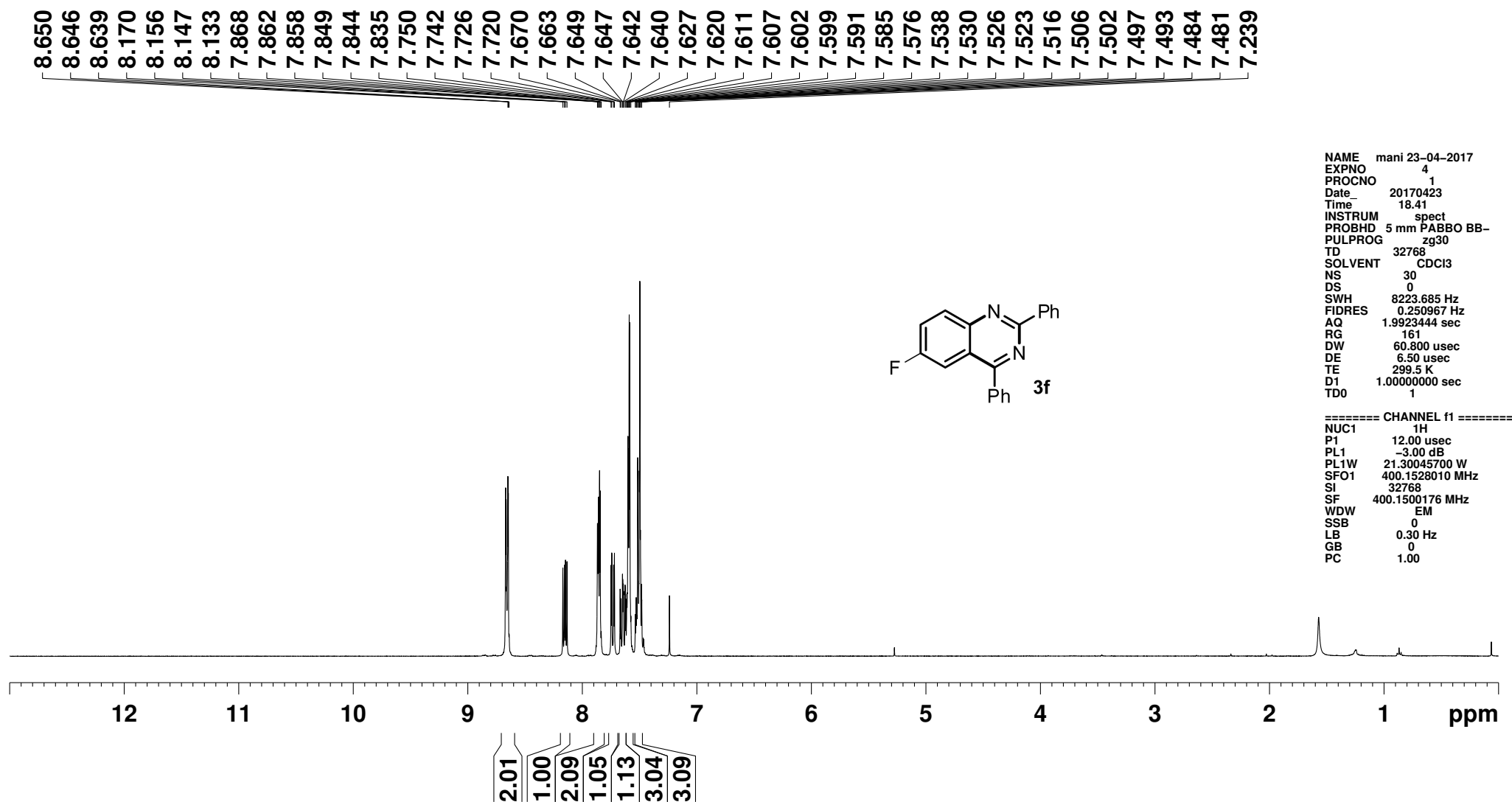


S13

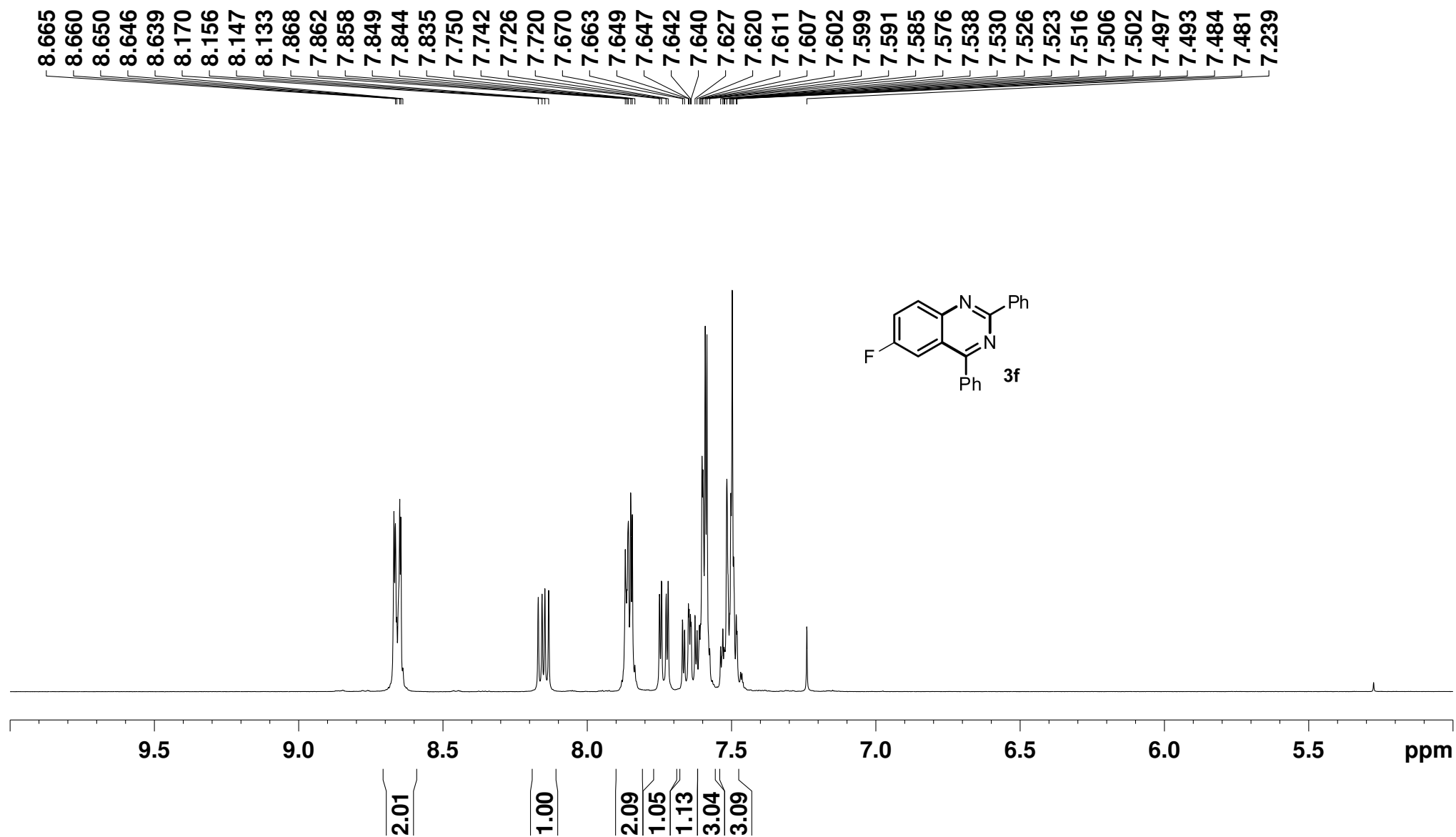
4-CF<sub>3</sub> Phdiazonium salt, Dry PhCN, 110deg, 3h, purified



4-F Ph diazonium salt, Dry PhCN, 110deg, 3h, purified white solid

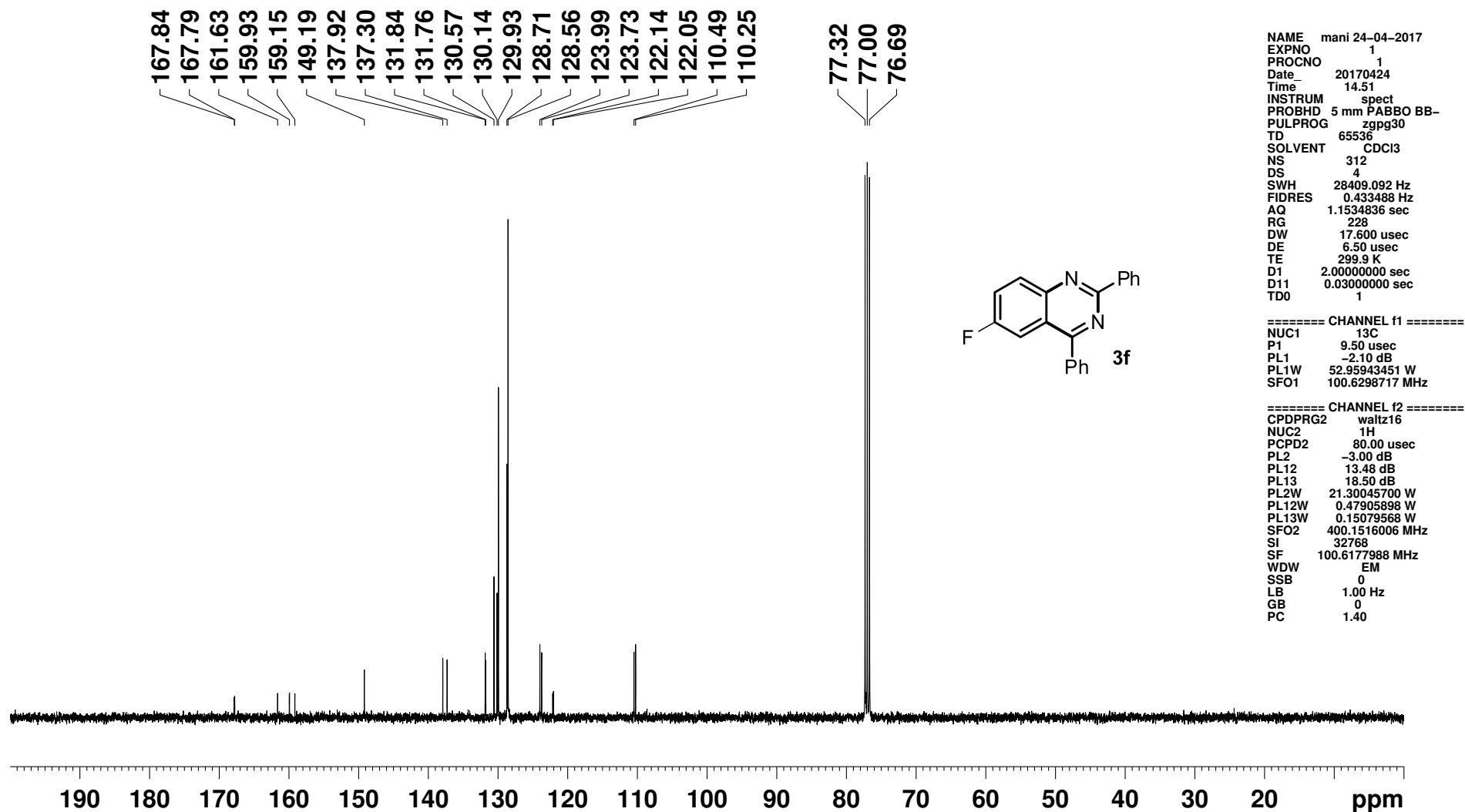


4-F Ph diazonium salt, Dry PhCN, 110deg, 3h, purified white solid

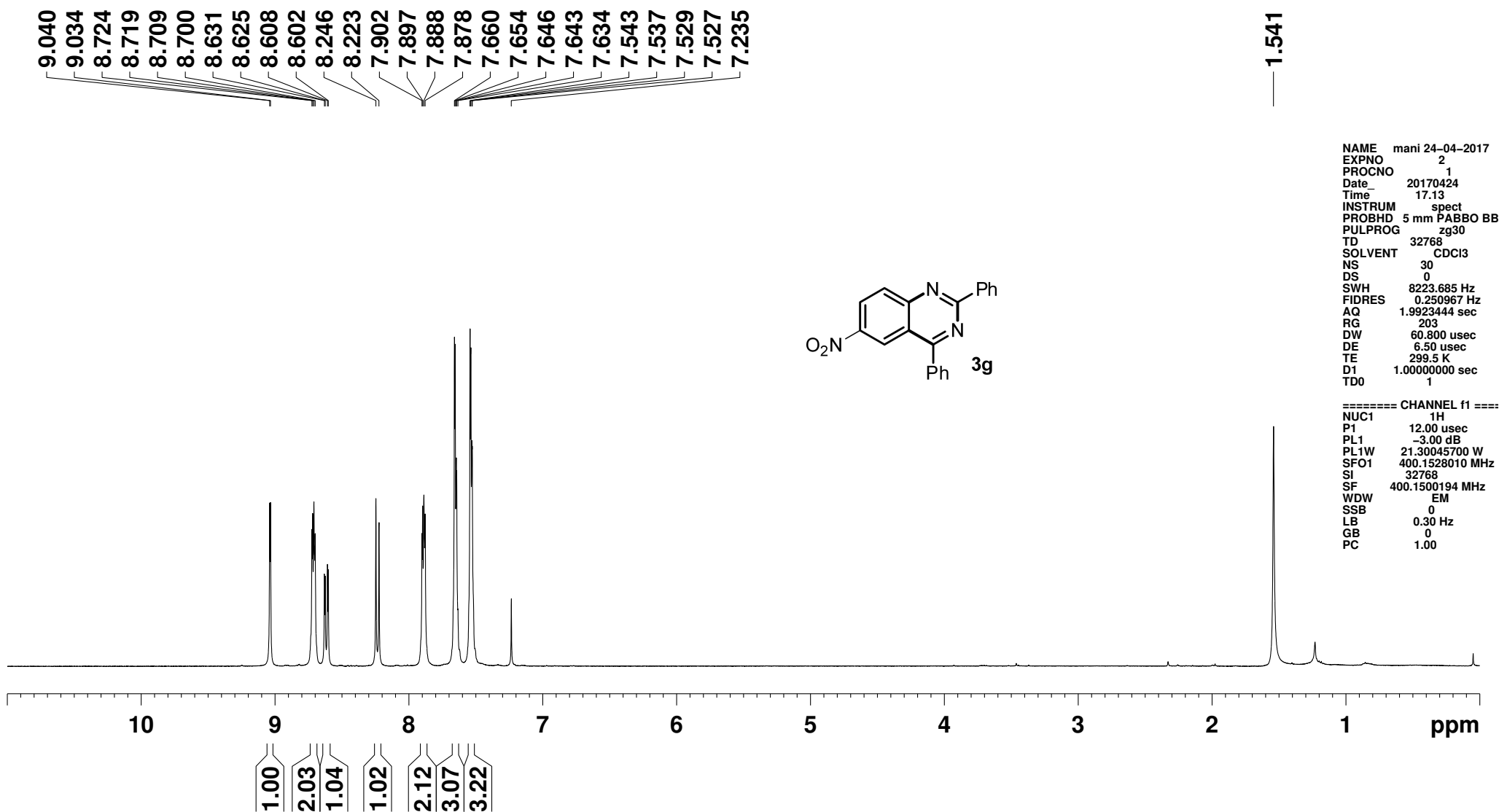


S16

4-F Ph diazonium salt, Dry PhCN, 110deg, 3h, purified white solid



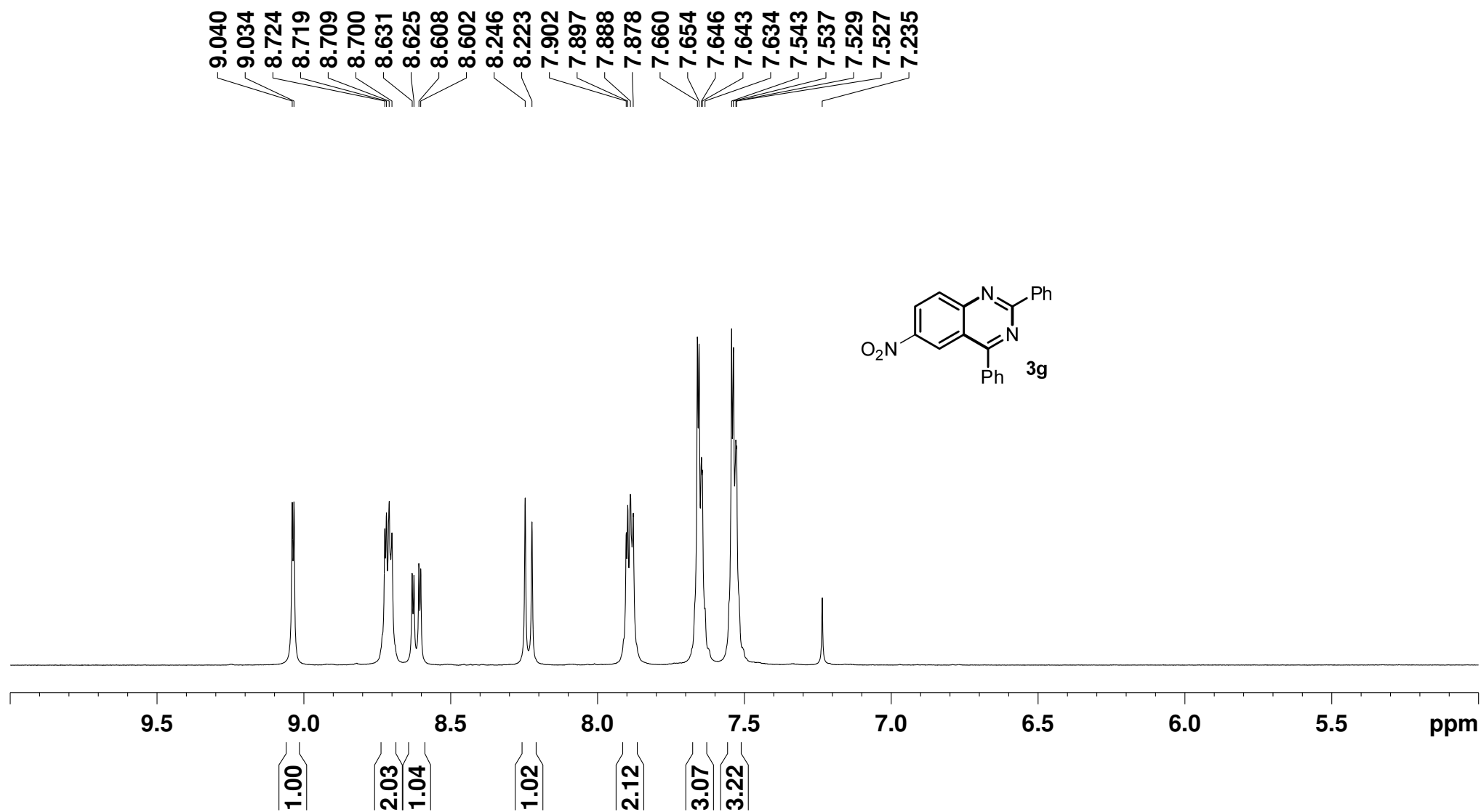
4-NO<sub>2</sub> Ph diazonium salt, Dry PhCN, 110deg, 3h, purified off-white solid



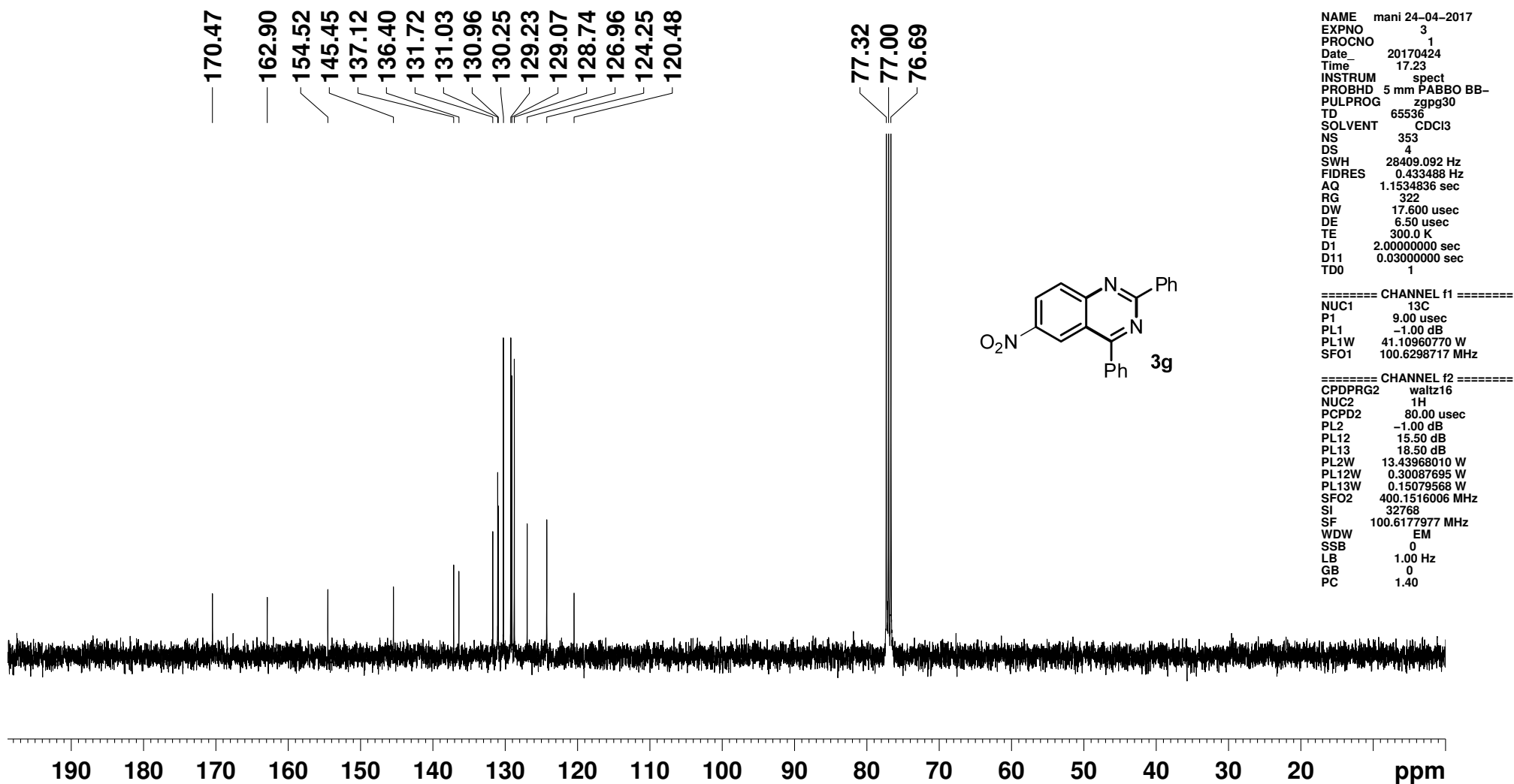
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PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 30  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 203  
DW 60.800 usec  
DE 6.50 usec  
TE 299.5 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 12.00 usec  
PL1 -3.00 dB  
PL1W 21.30045700 W  
SFO1 400.1528010 MHz  
SI 32768  
SF 400.1500194 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

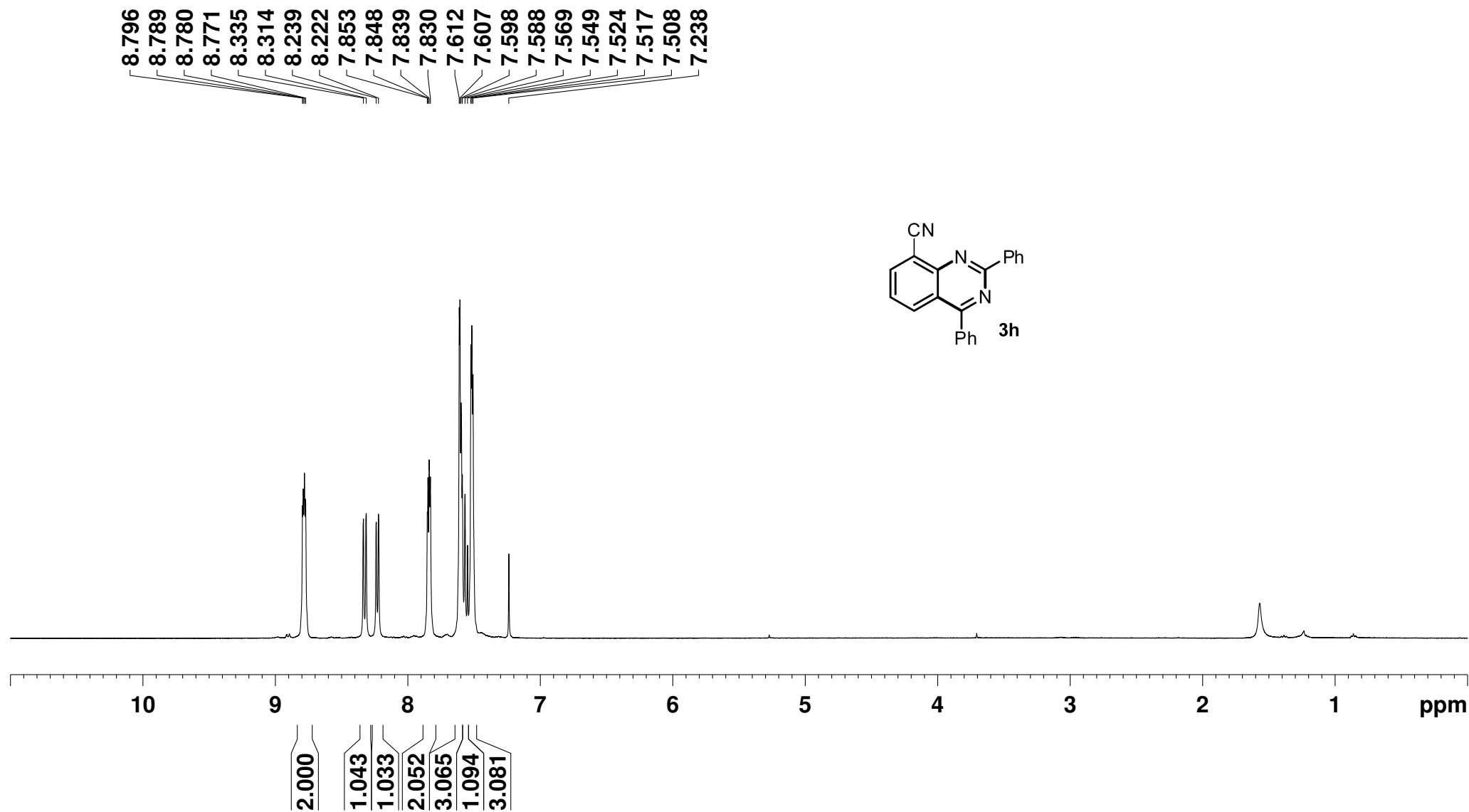
4-NO<sub>2</sub> Ph diazonium salt, Dry PhCN, 110deg, 3h, purified off-white solid



4-NO<sub>2</sub> Ph diazonium salt, Dry PhCN, 110deg, 3h, purified off-white solid

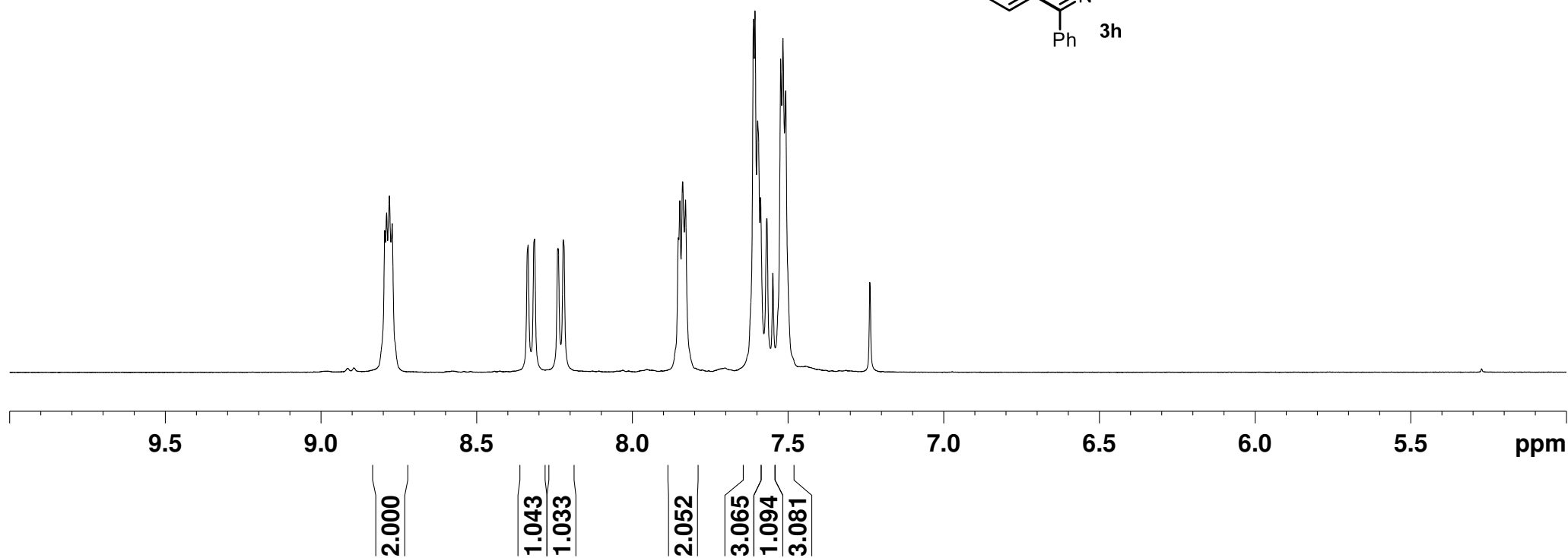
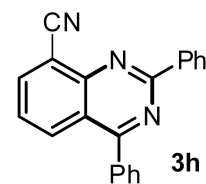


2-CN-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid



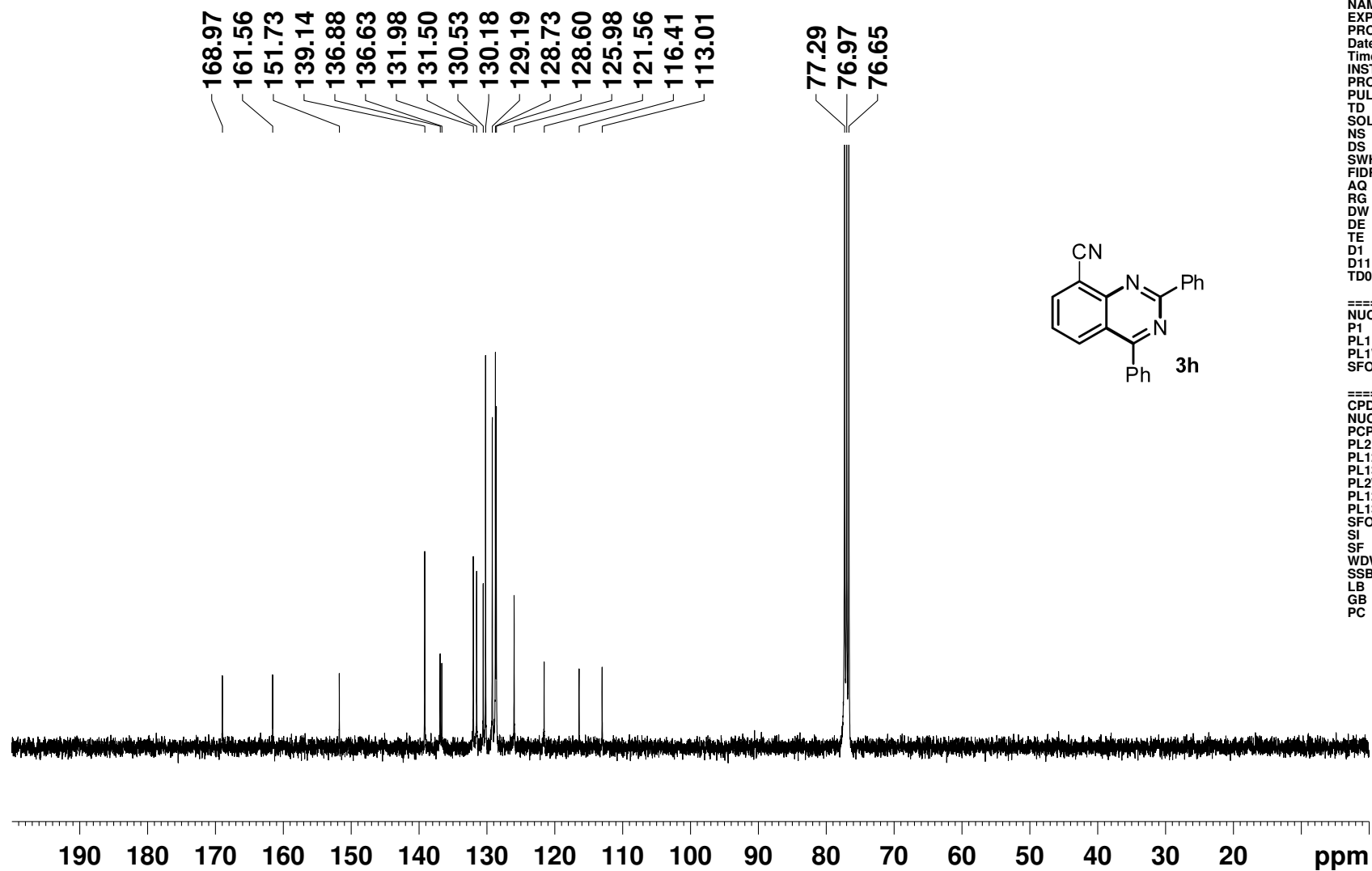
2-CN-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid

8.796  
8.789  
8.780  
8.771  
8.335  
8.314  
8.239  
8.222  
7.853  
7.848  
7.839  
7.830  
7.612  
7.607  
7.598  
7.588  
7.569  
7.549  
7.524  
7.517  
7.508  
7.238



S22

2-CNPh-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified pale yellow solid

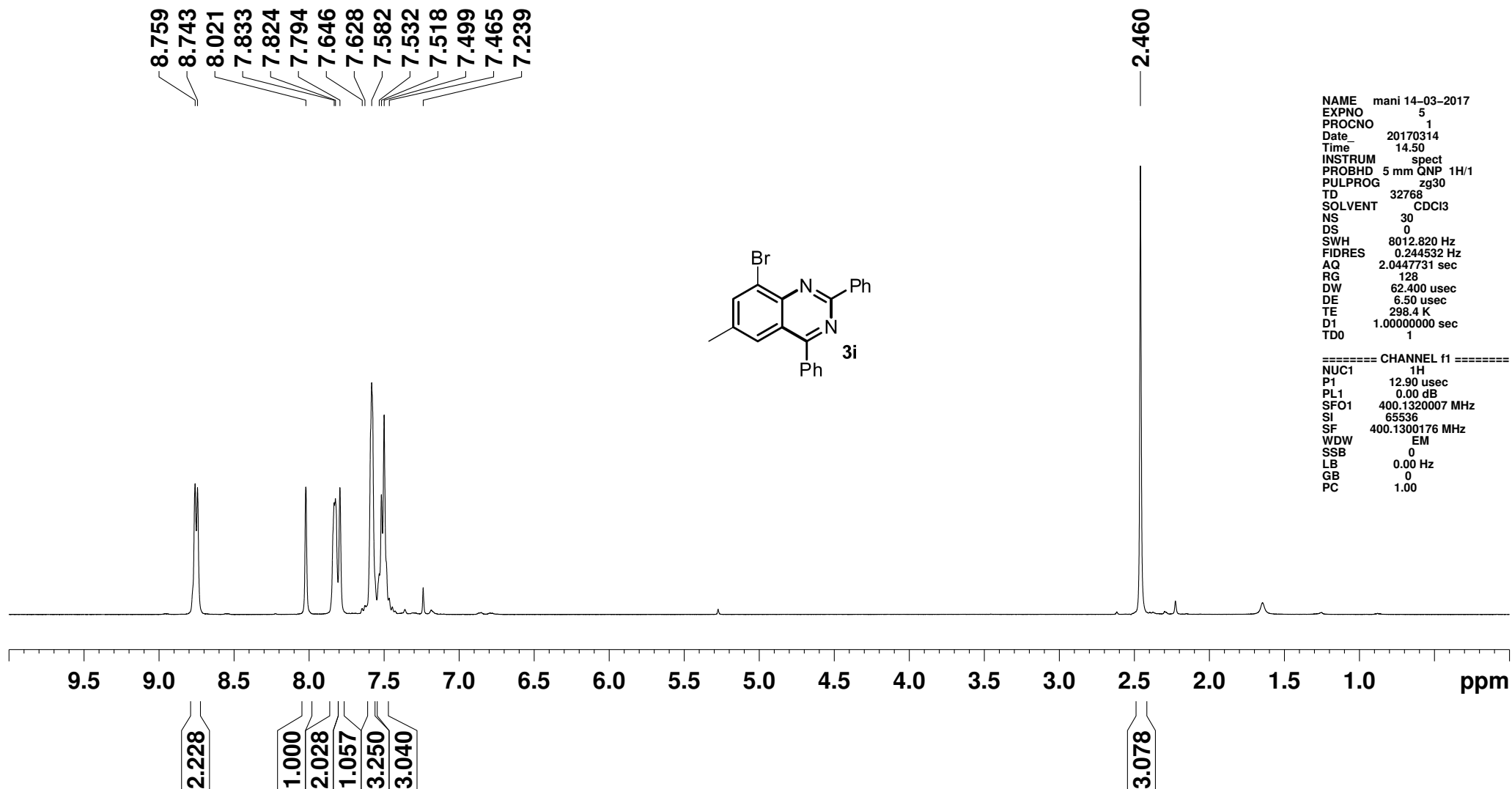


NAME mani 05-04-2017  
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 PROCNO 1  
 Date\_ 20170405  
 Time 18.54  
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 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 591  
 DS 4  
 SWH 28409.092 Hz  
 FIDRES 0.433488 Hz  
 AQ 1.1534836 sec  
 RG 287  
 DW 17.600 usec  
 DE 6.50 usec  
 TE 303.0 K  
 D1 2.00000000 sec  
 D11 0.03000000 sec  
 TD0 1

===== CHANNEL f1 =====  
 NUC1 13C  
 P1 9.00 usec  
 PL1 -1.00 dB  
 PL1W 41.10960770 W  
 SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 -1.00 dB  
 PL12 15.50 dB  
 PL13 18.50 dB  
 PL2W 13.43968010 W  
 PL12W 0.30087695 W  
 PL13W 0.15079568 W  
 SFO2 400.1516006 MHz  
 SI 32768  
 SF 100.6178043 MHz  
 WDW EM  
 SSB 0  
 LB 1.00 Hz  
 GB 0  
 PC 1.40

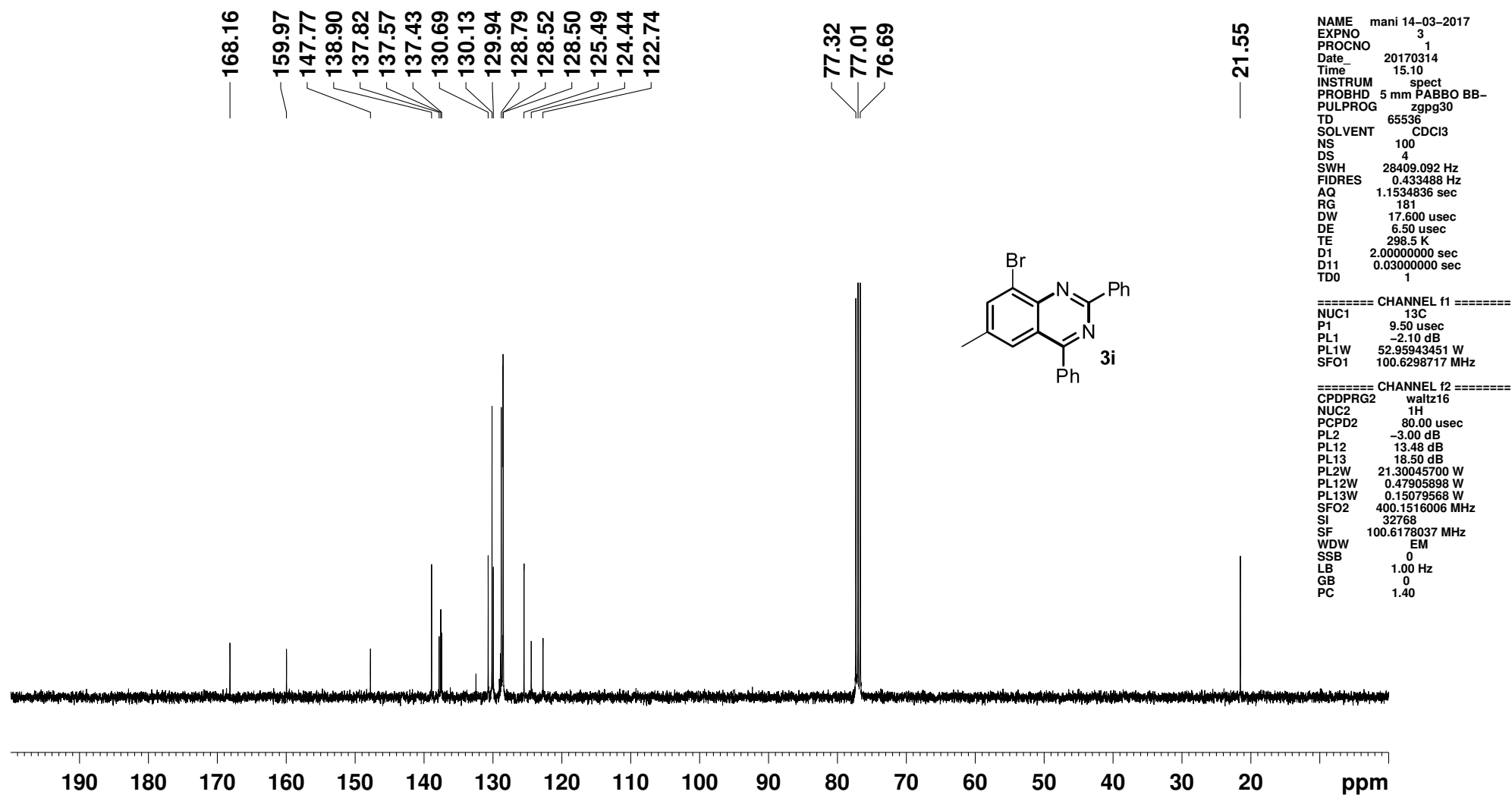
2-Br-4-Me-Phdiazonium salt, dry Benzoitrile, 110deg, 3h, purified off-white solid



NAME mani 14-03-2017  
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PROCNO 1  
Date\_ 20170314  
Time 14.50  
INSTRUM spect  
PROBHD 5 mm QNP 1H/1  
PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 30  
DS 0  
SWH 8012.820 Hz  
FIDRES 0.244532 Hz  
AQ 2.0447731 sec  
RG 128  
DW 62.400 usec  
DE 6.50 usec  
TE 298.4 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 12.90 usec  
PL1 0.00 dB  
SFO1 400.1320007 MHz  
SI 65536  
SF 400.1300176 MHz  
WDW EM  
SSB 0  
LB 0.00 Hz  
GB 0  
PC 1.00

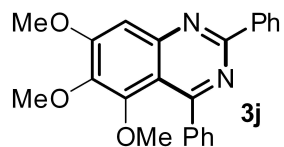
2-Br-4-Me-Phdiazonium salt, Dry Benzonitrile, 110deg, 3h, purified off-white solid



3,4,5-triOMe Ph diazonium salt, Dry PhCN, 110 deg, 3h, purified

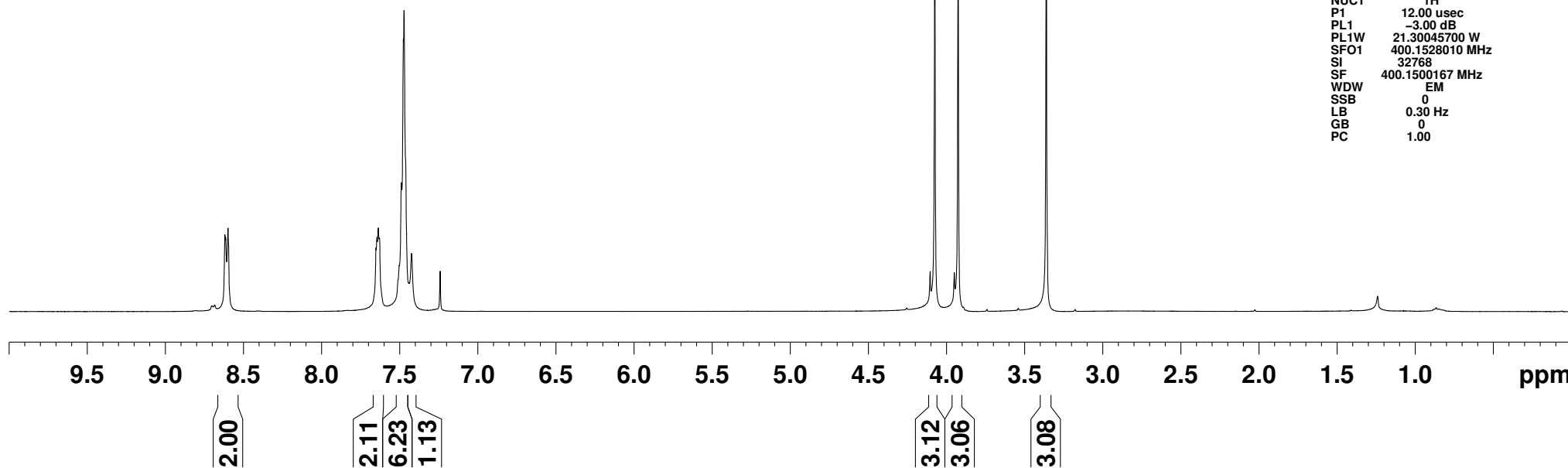
8.618  
8.614  
8.599  
7.651  
7.645  
7.637  
7.629  
7.503  
7.489  
7.476  
7.472  
7.424  
7.241

4.074  
3.925  
3.361

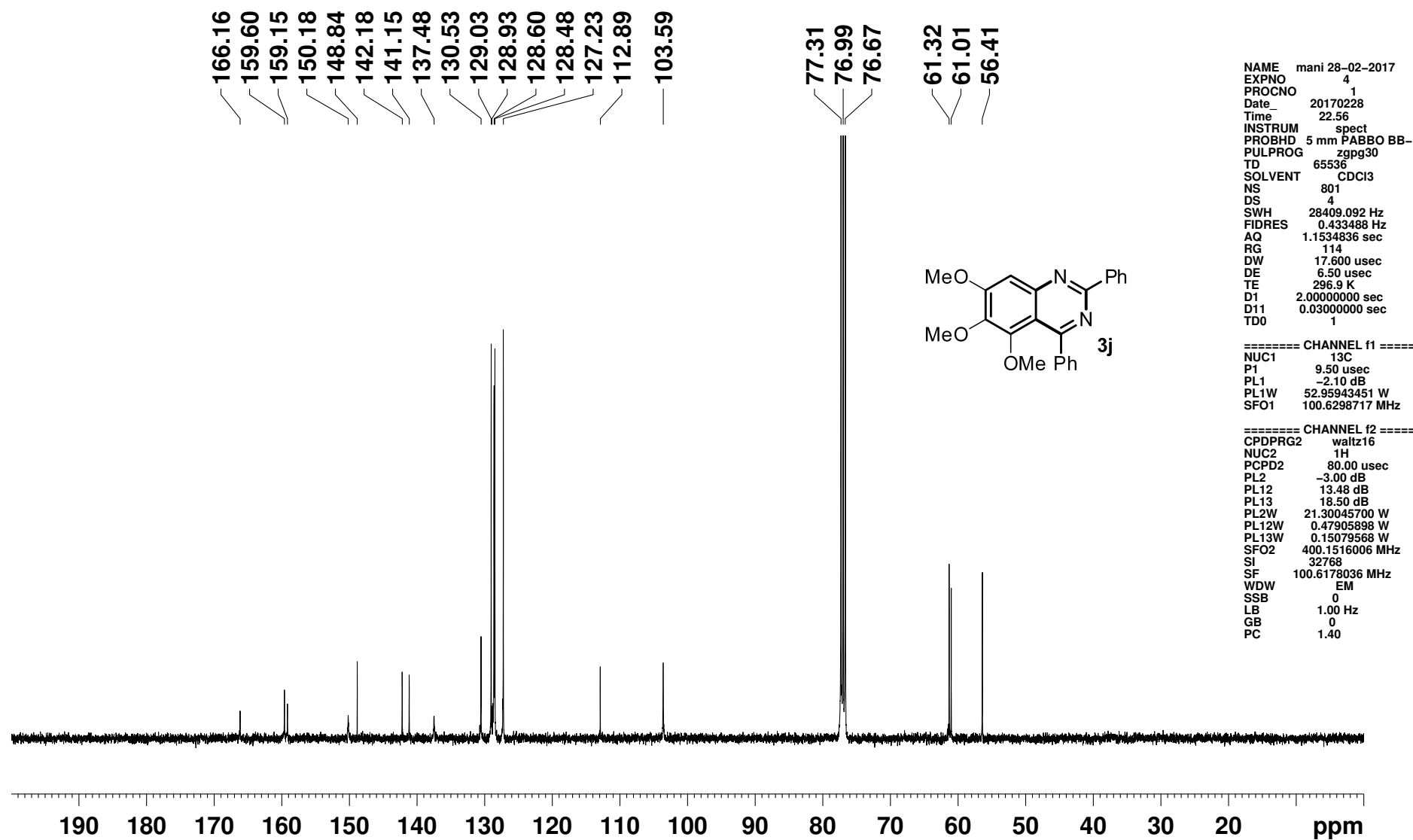


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PROCNO 1  
Date\_ 20170228  
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PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 30  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 90.5  
DW 60.800 usec  
DE 6.50 usec  
TE 296.2 K  
D1 1.00000000 sec  
TD0 1

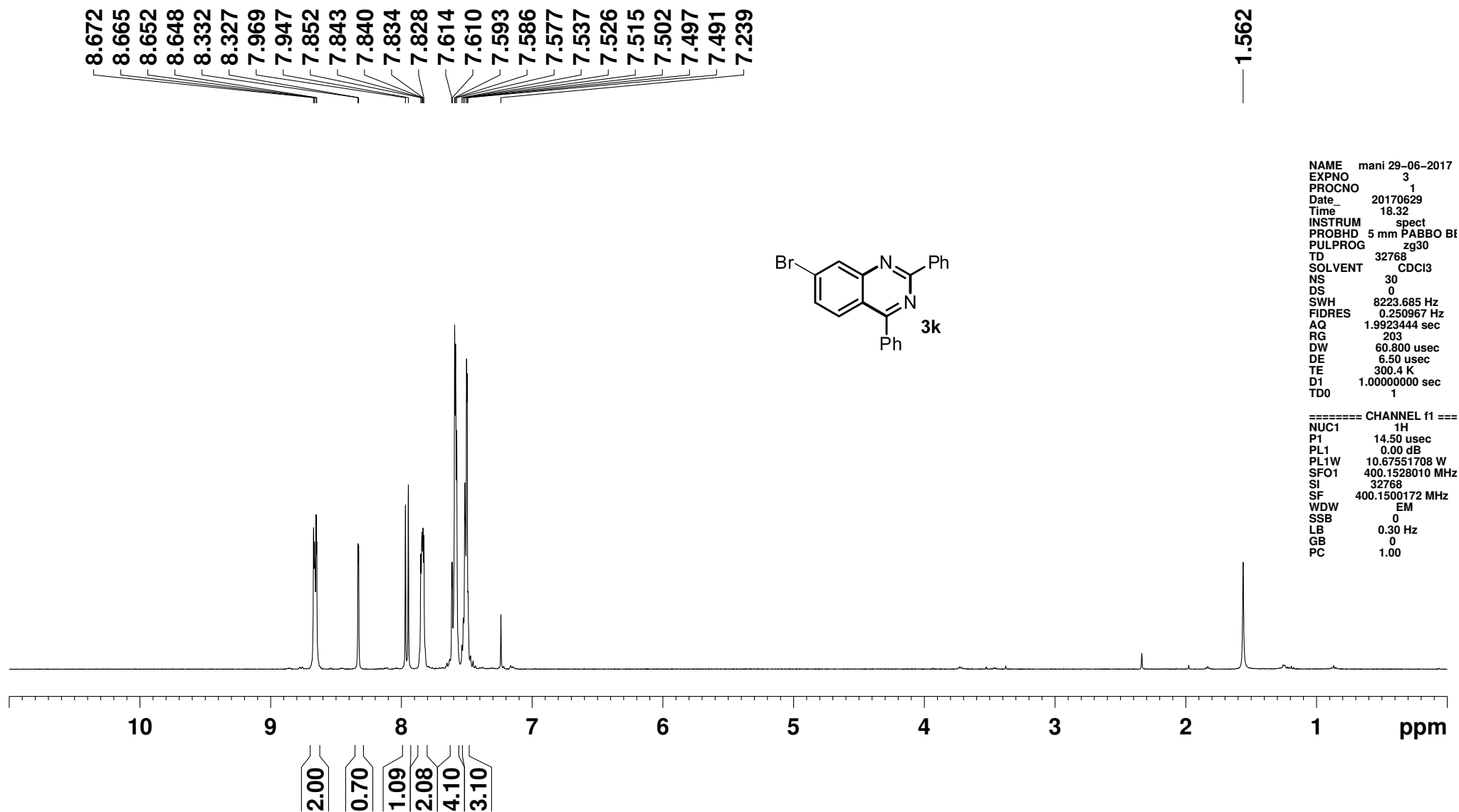
===== CHANNEL f1 =====  
NUC1 1H  
P1 12.00 usec  
PL1 -3.00 dB  
PL1W 21.30045700 W  
SFO1 400.1528010 MHz  
SI 32768  
SF 400.1500167 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



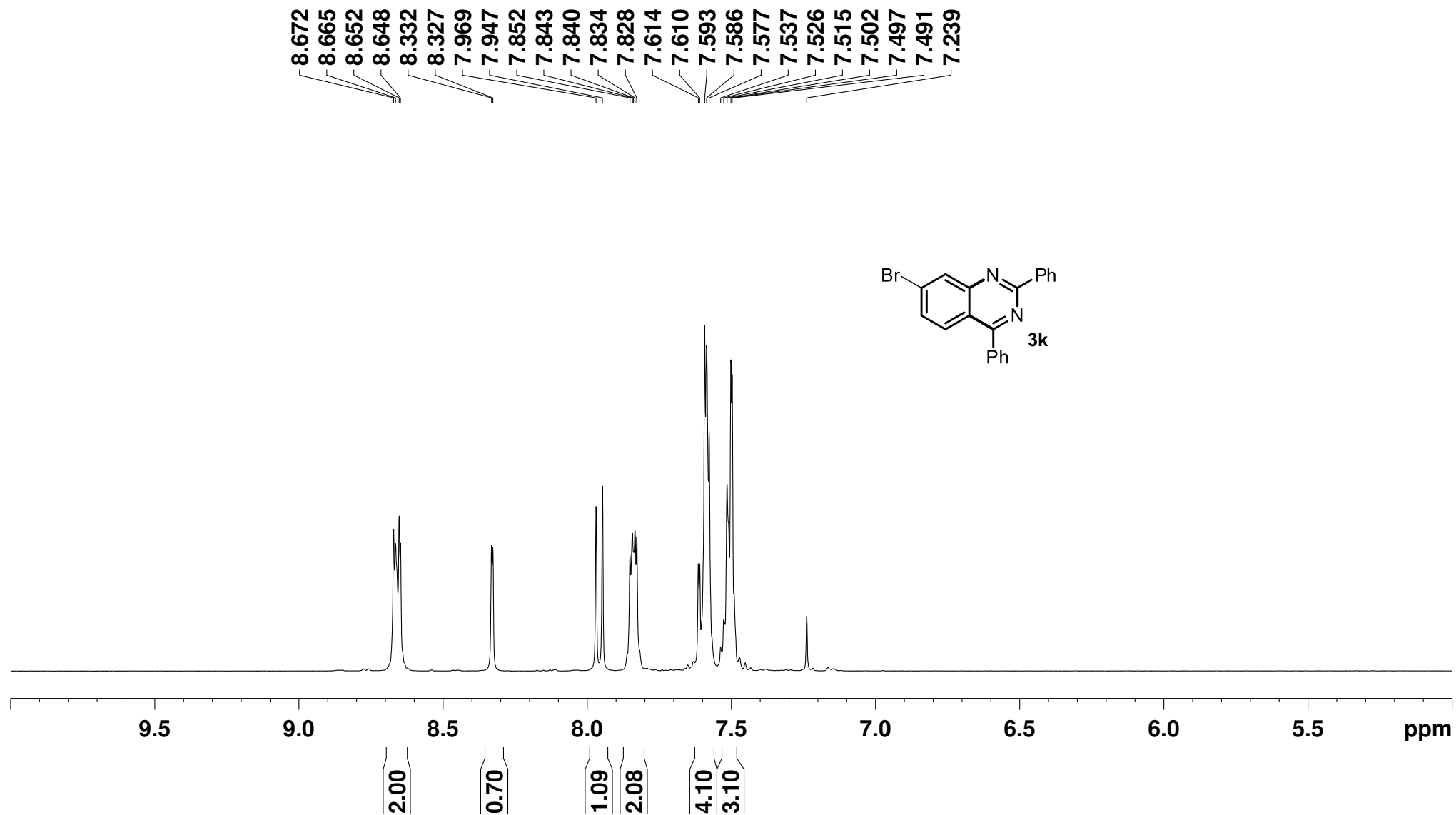
3,4,5-triOMe Ph diazonium salt, Dry PhCN, 110 deg, 3h, purified



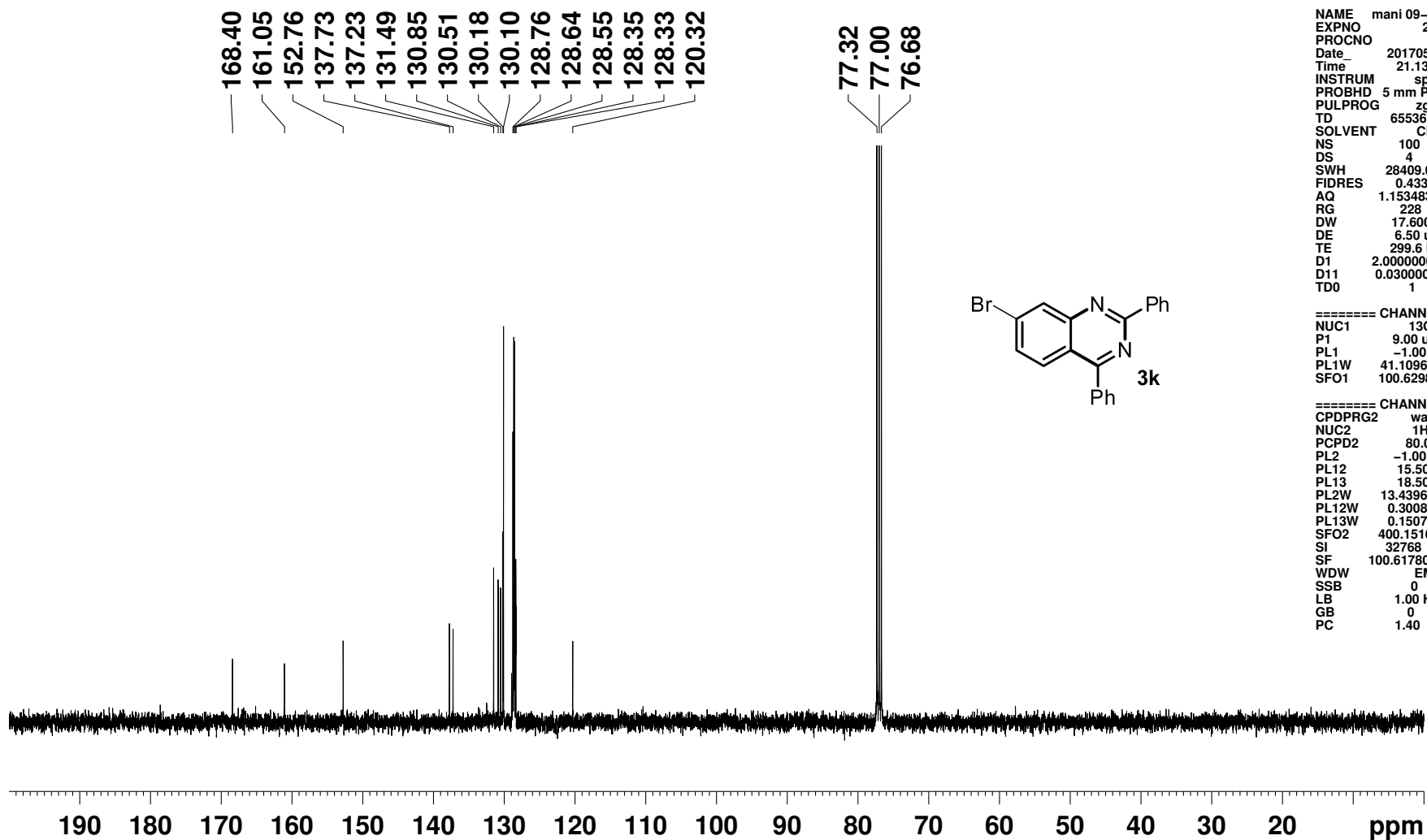
3-Br Phdiazonium salt, Dry PhCN, 110deg, 3h, purified topspot



3-Br Phdiazonium salt, Dry PhCN, 110deg, 3h, purified topspot



3-Br Phdiazonium salt, Dry PhCN, 110deg, 3h, purified topospot



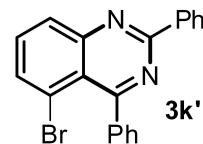
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PROCNO 1  
Date\_ 20170509  
Time 21.13  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 100  
DS 4  
SWH 28409.092 Hz  
FIDRES 0.433488 Hz  
AQ 1.1534836 sec  
RG 228  
DW 17.600 usec  
DE 6.50 usec  
TE 299.6 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.10960770 W  
SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL2W 13.43968010 W  
PL12W 0.30087695 W  
PL13W 0.15079568 W  
SFO2 400.1516006 MHz  
SI 32768  
SF 100.6178015 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

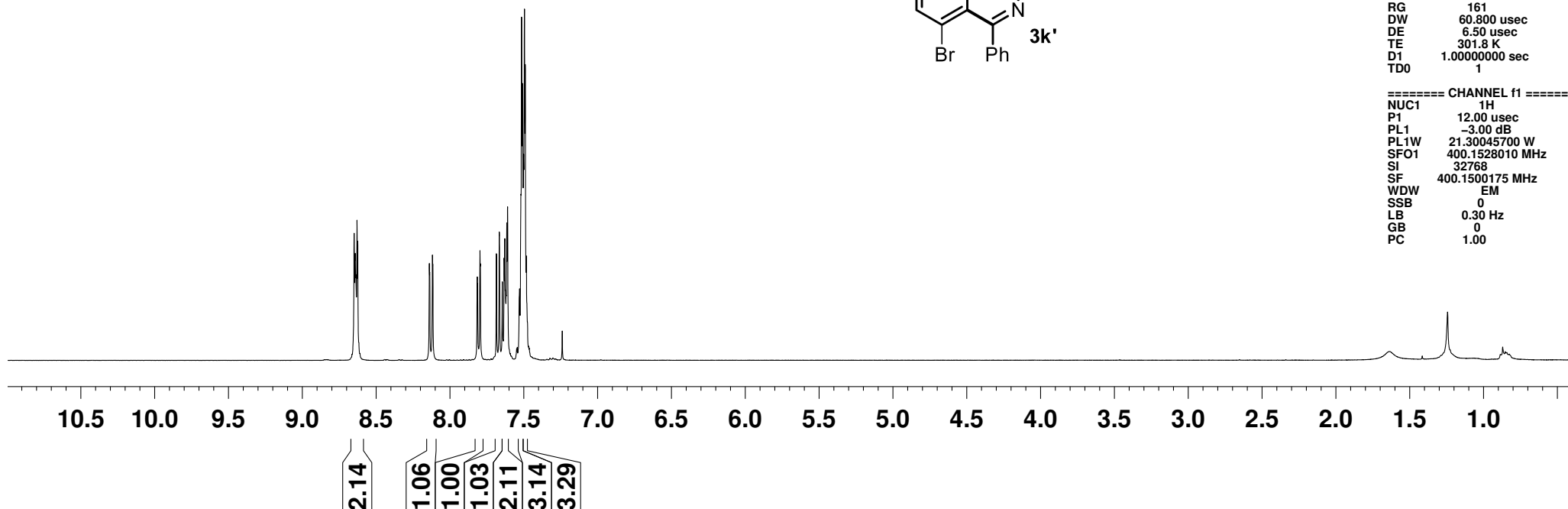
3-Br-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid (bottom spot)

8.649  
8.642  
8.638  
8.629  
8.625  
8.140  
8.137  
8.119  
8.116  
7.815  
7.813  
7.797  
7.794  
7.685  
7.666  
7.646  
7.633  
7.629  
7.625  
7.620  
7.615  
7.610  
7.529  
7.519  
7.515  
7.509  
7.501  
7.495  
7.490  
7.483  
7.476  
7.239

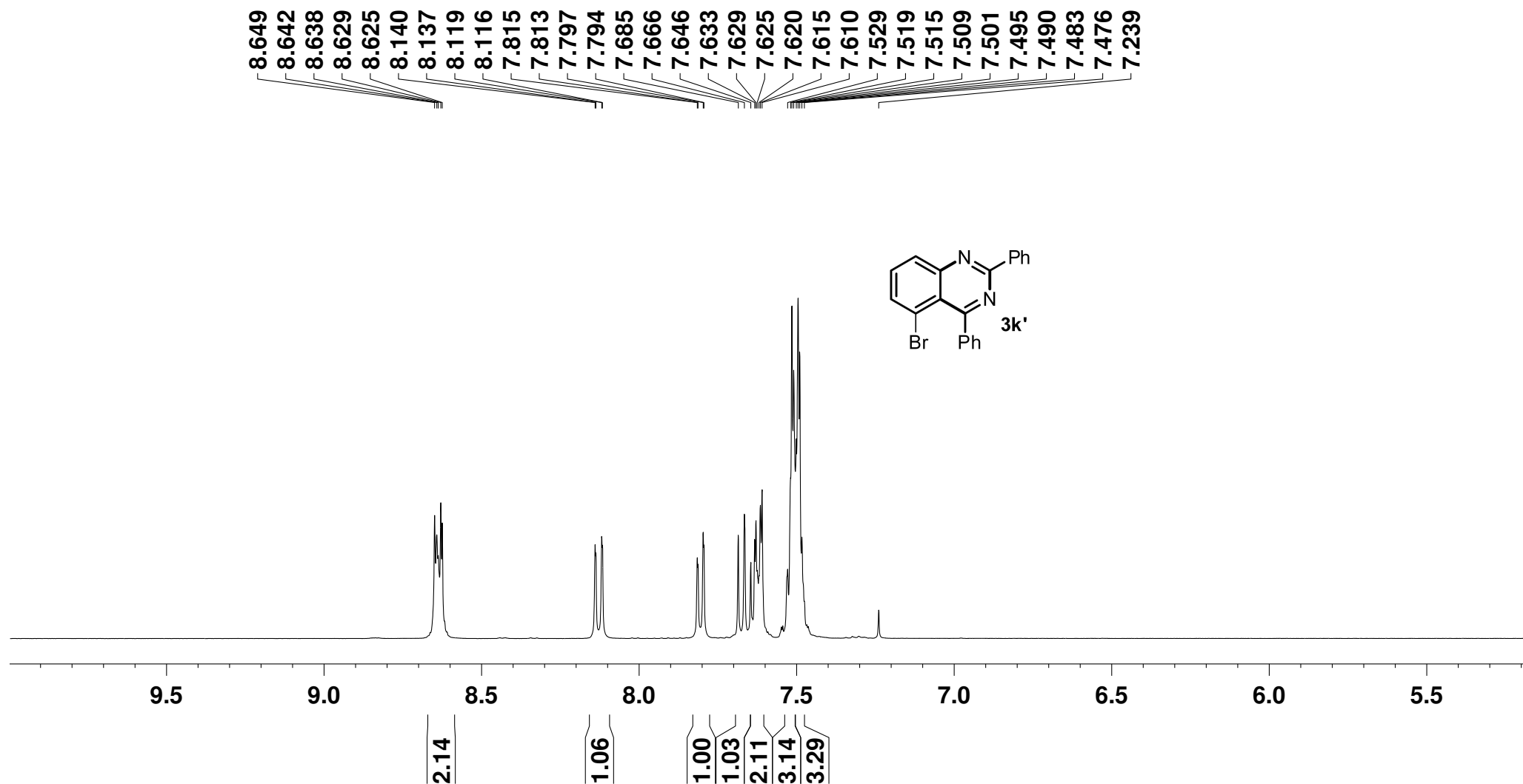


NAME mani 11-04-2017  
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PROCNO 1  
Date\_ 20170411  
Time\_ 16.10  
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PROBHD 5 mm PABBO BB-  
PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 30  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 161  
DW 60.800 usec  
DE 6.50 usec  
TE 301.8 K  
D1 1.00000000 sec  
TD0 1

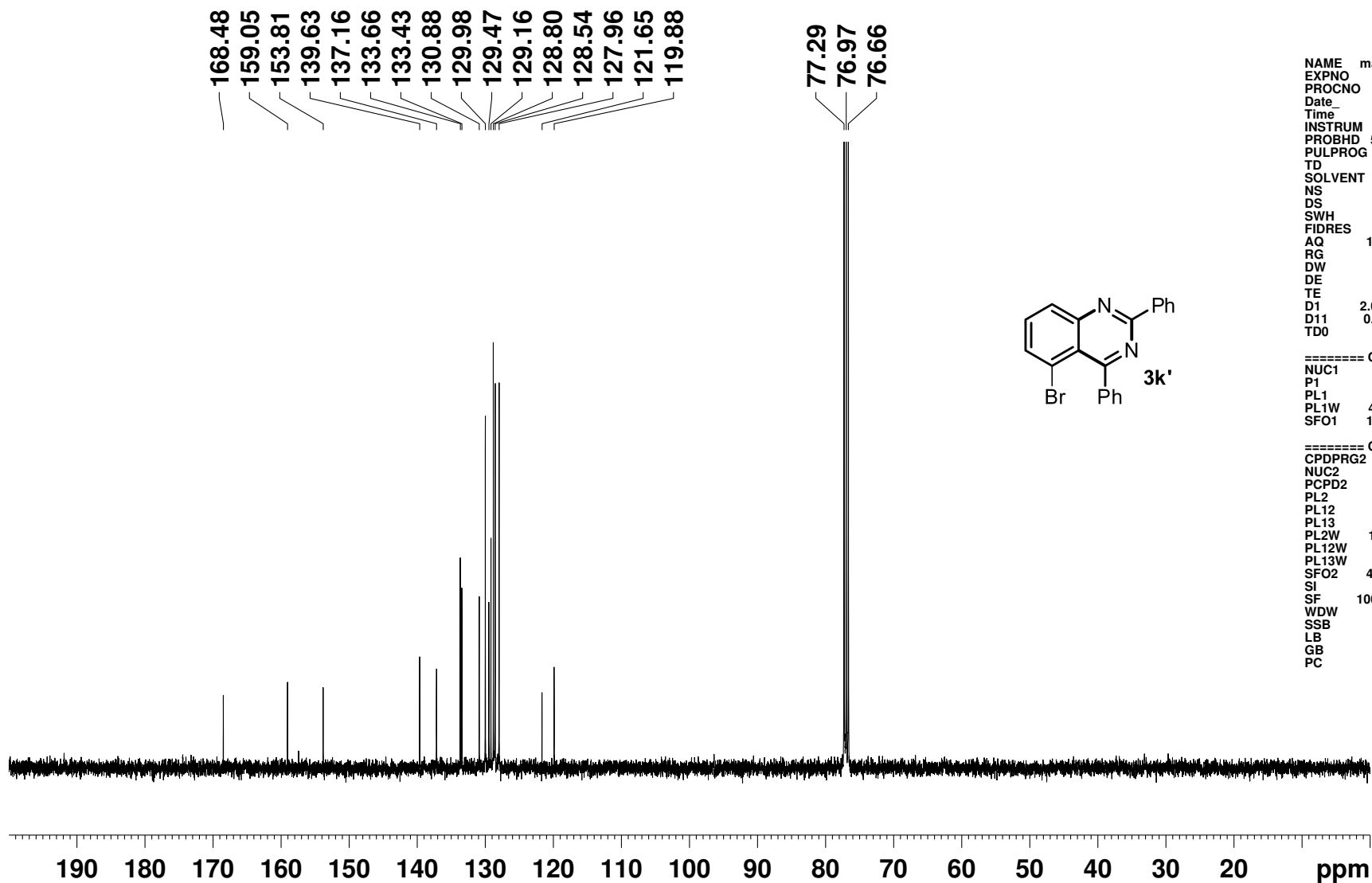
===== CHANNEL f1 =====  
NUC1 1H  
P1 12.00 usec  
PL1 -3.00 dB  
PL1W 21.30045700 W  
SFO1 400.1528010 MHz  
SI 32768  
SF 400.1500175 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



3-Br-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid (bottom spot)



3-Br-Phdiazonium salt, dry benzonitrile, 110deg, 3h, purified off-white solid (bottom spot)

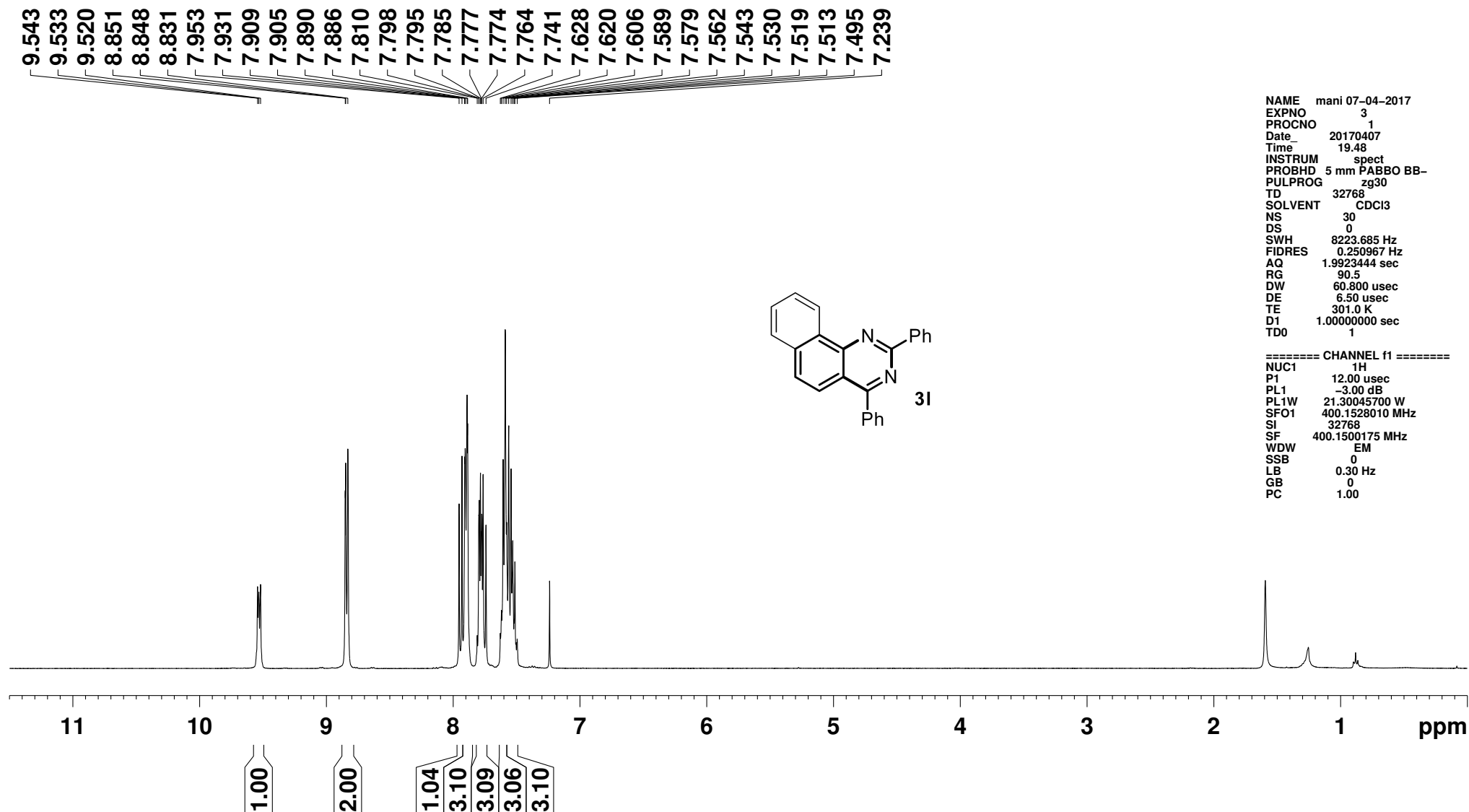


NAME mani 11-04-2017  
EXPNO 2  
PROCNO 1  
Date\_ 20170411  
Time 16.15  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 357  
DS 4  
SWH 28409.092 Hz  
FIDRES 0.433488 Hz  
AQ 1.1534836 sec  
RG 256  
DW 17.600 usec  
DE 6.50 usec  
TE 302.3 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

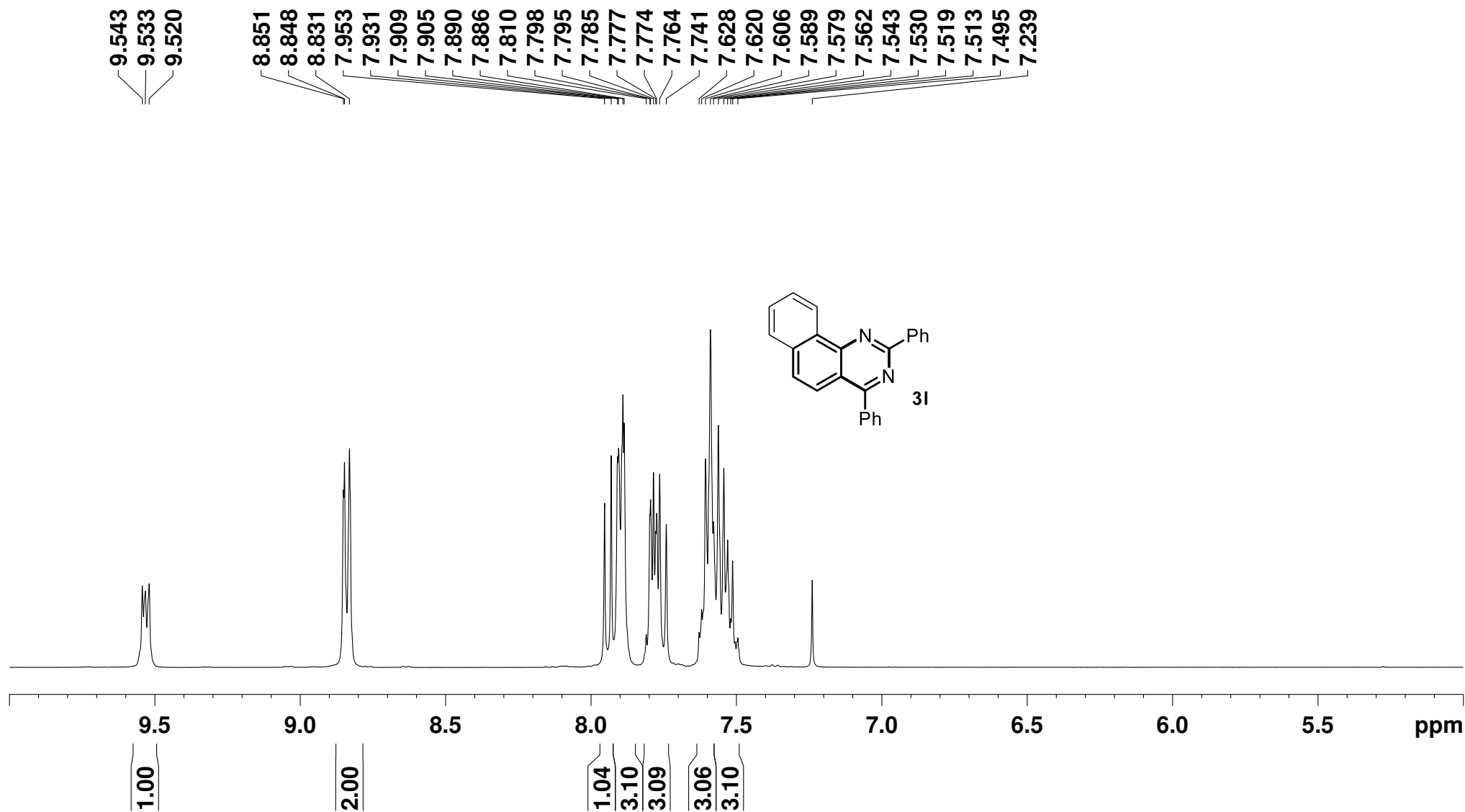
===== CHANNEL f1 =====  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.10960770 W  
SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL2W 13.43968010 W  
PL12W 0.30087695 W  
PL13W 0.15079568 W  
SFO2 400.1516006 MHz  
SI 32768  
SF 100.6178016 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

1-naphthyl diazonium salt, dry benzonitrile, 110deg, 3h, purified white solid

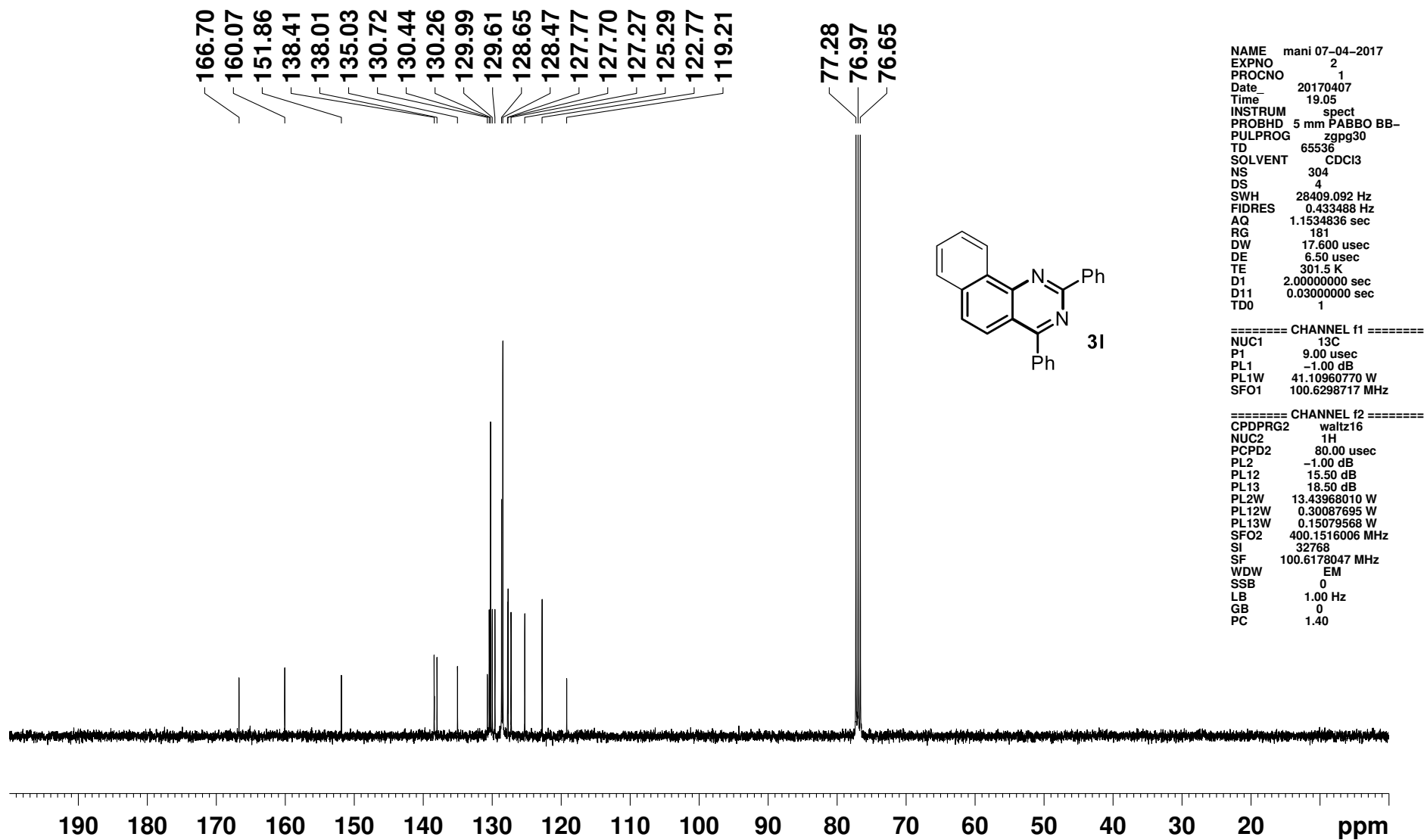


1-naphthyl diazonium salt, dry benzonitrile, 110deg, 3h, purified white solid

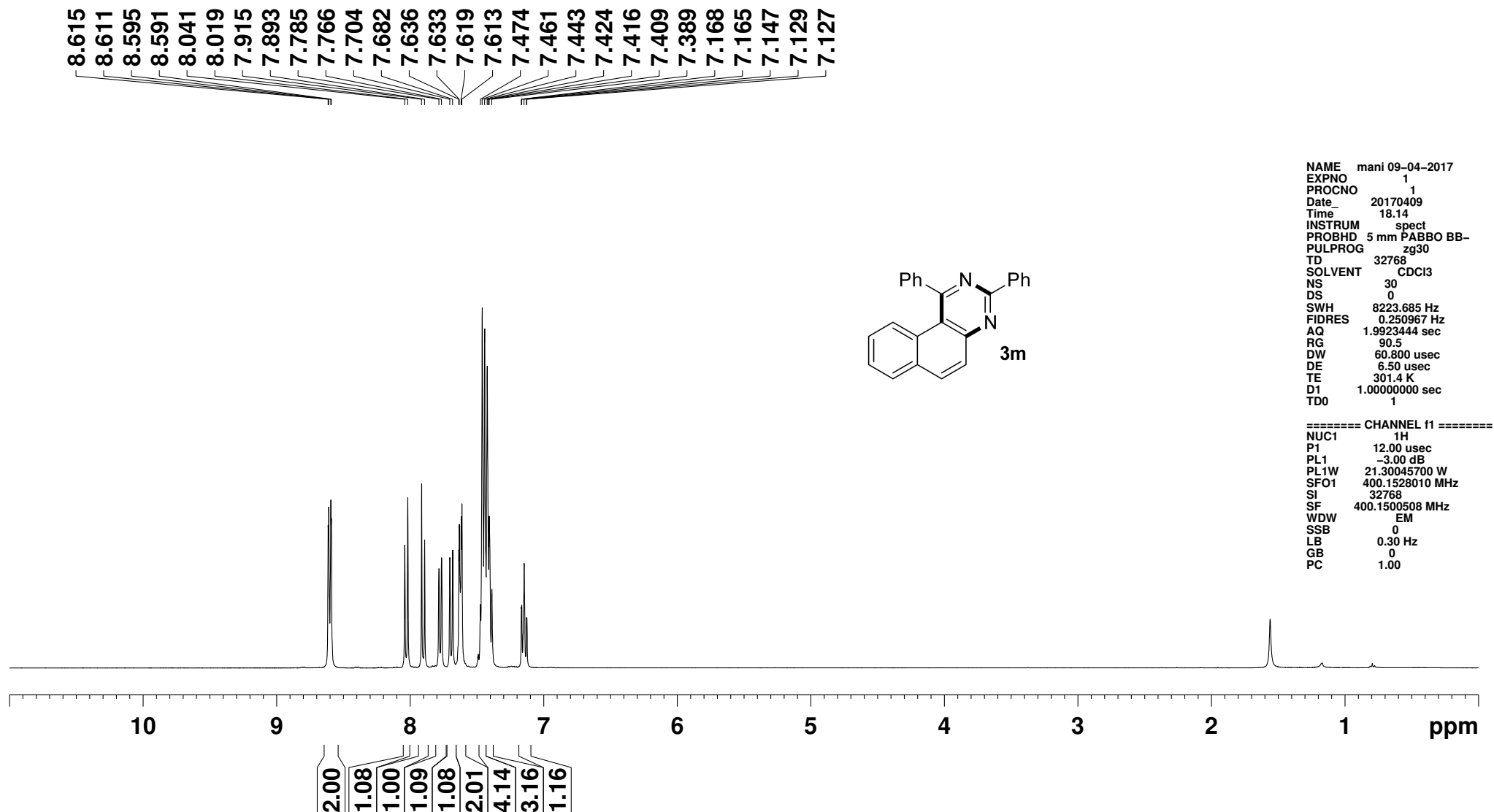


S35

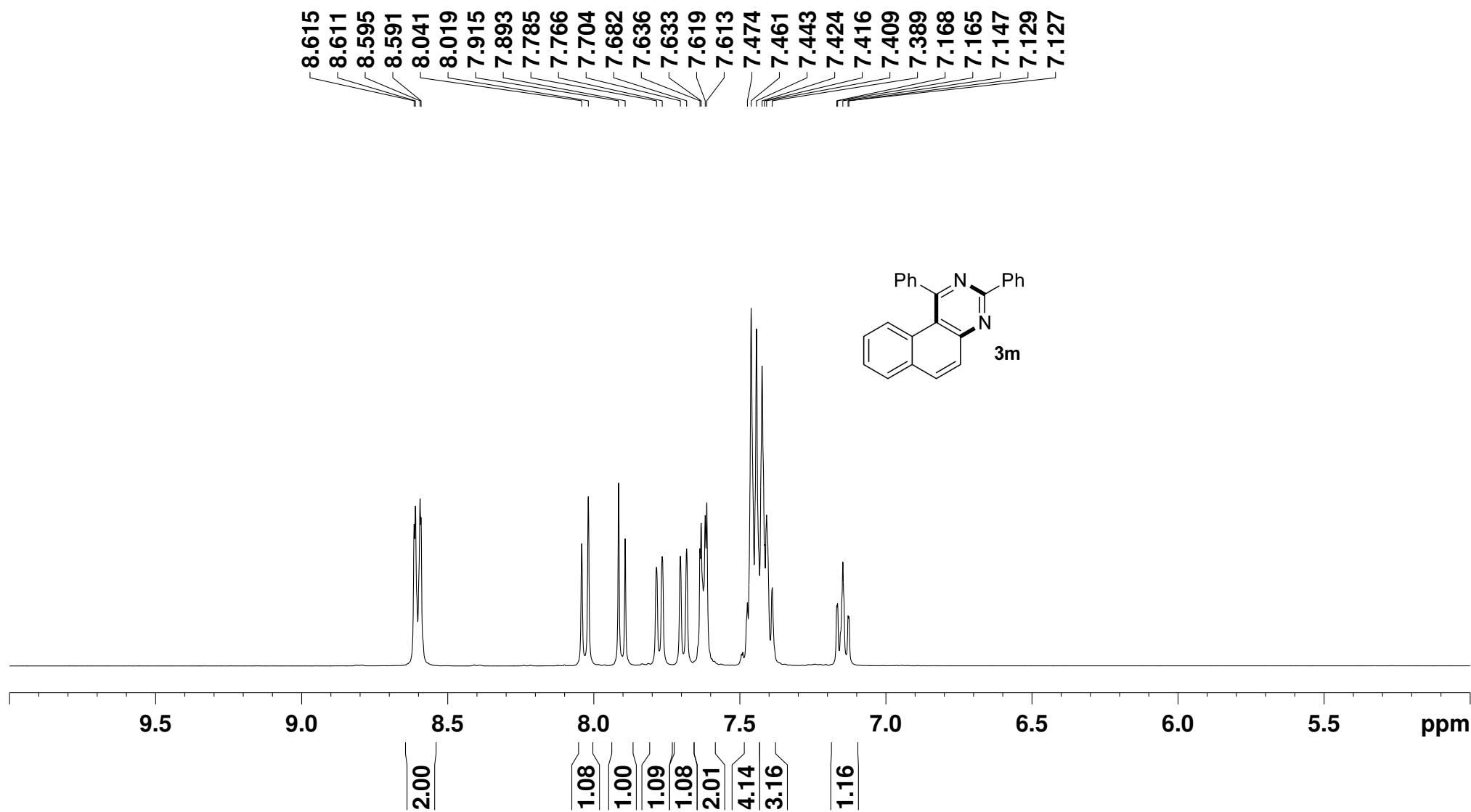
1-naphthyl diazonium salt, dry benzonitrile, 110deg, 3h, purified white solid



2-naphthyl diazonium salt, dry benzonitrile, 110deg, 3h, purified white solid

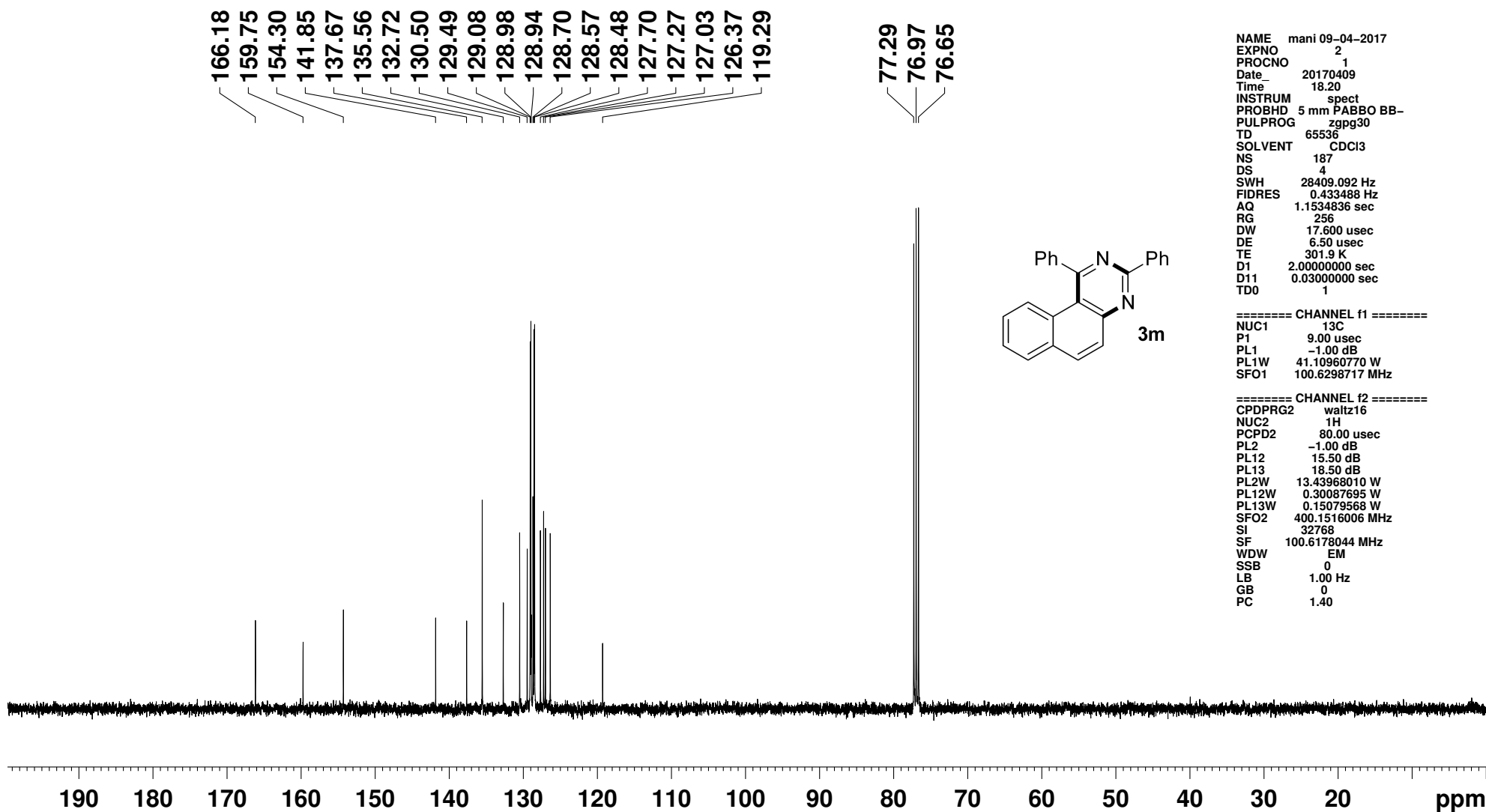


2-naphthyl diazonium salt, dry benzonitrile, 110deg, 3h, purified white solid

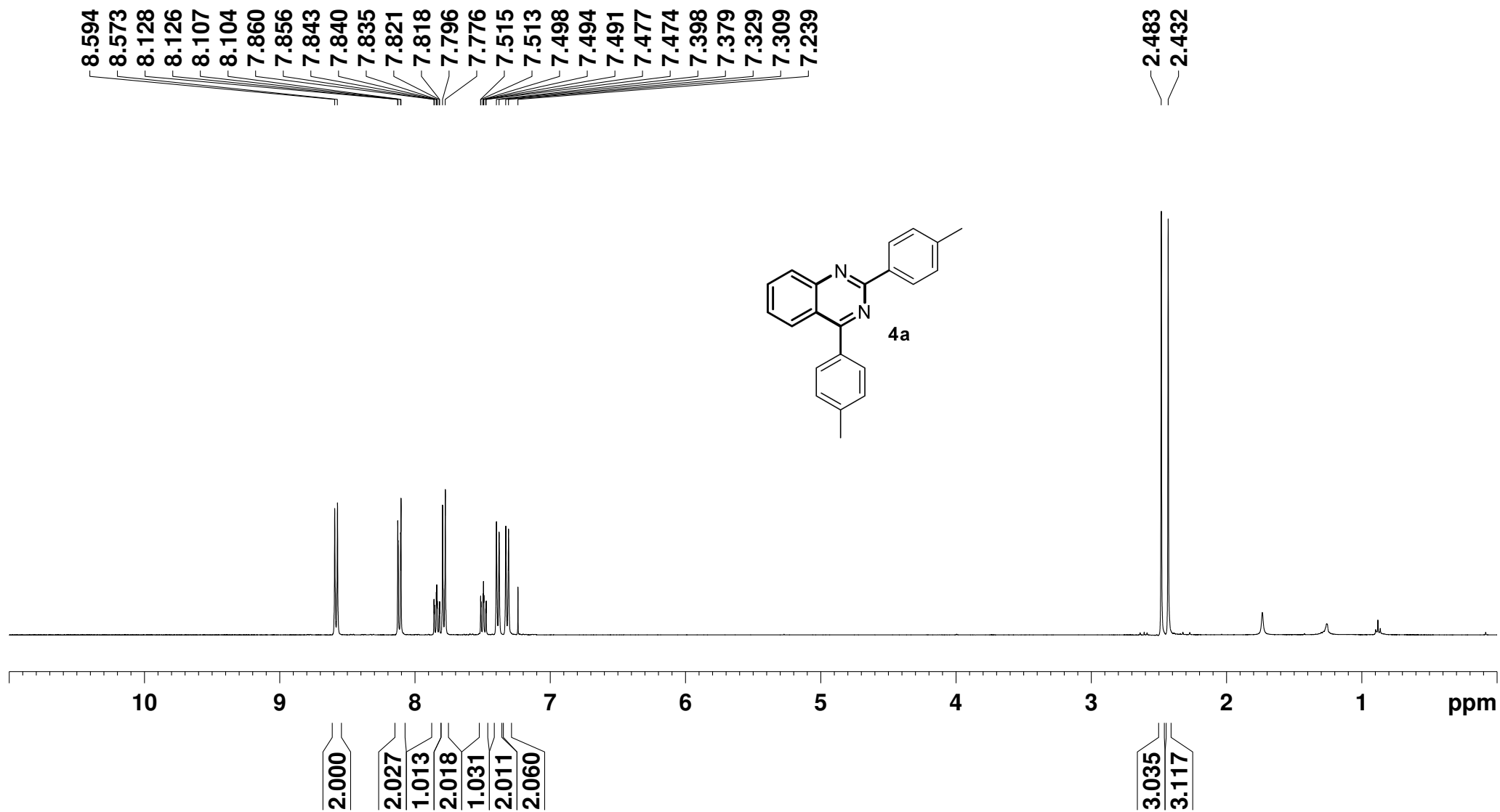


S38

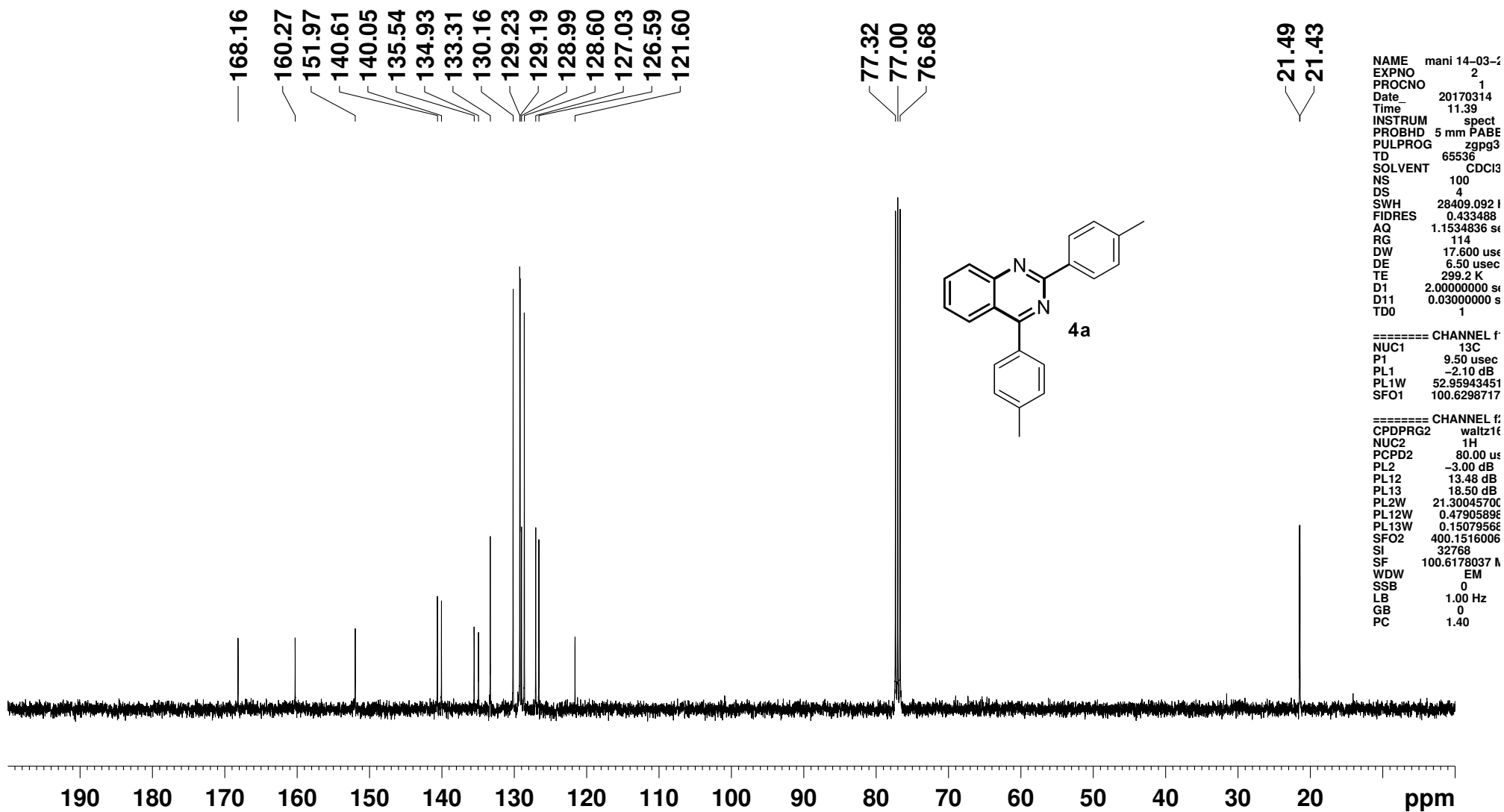
2-naphthyl diazonium salt, dry benzonitrile, 110deg, 3h, purified white solid



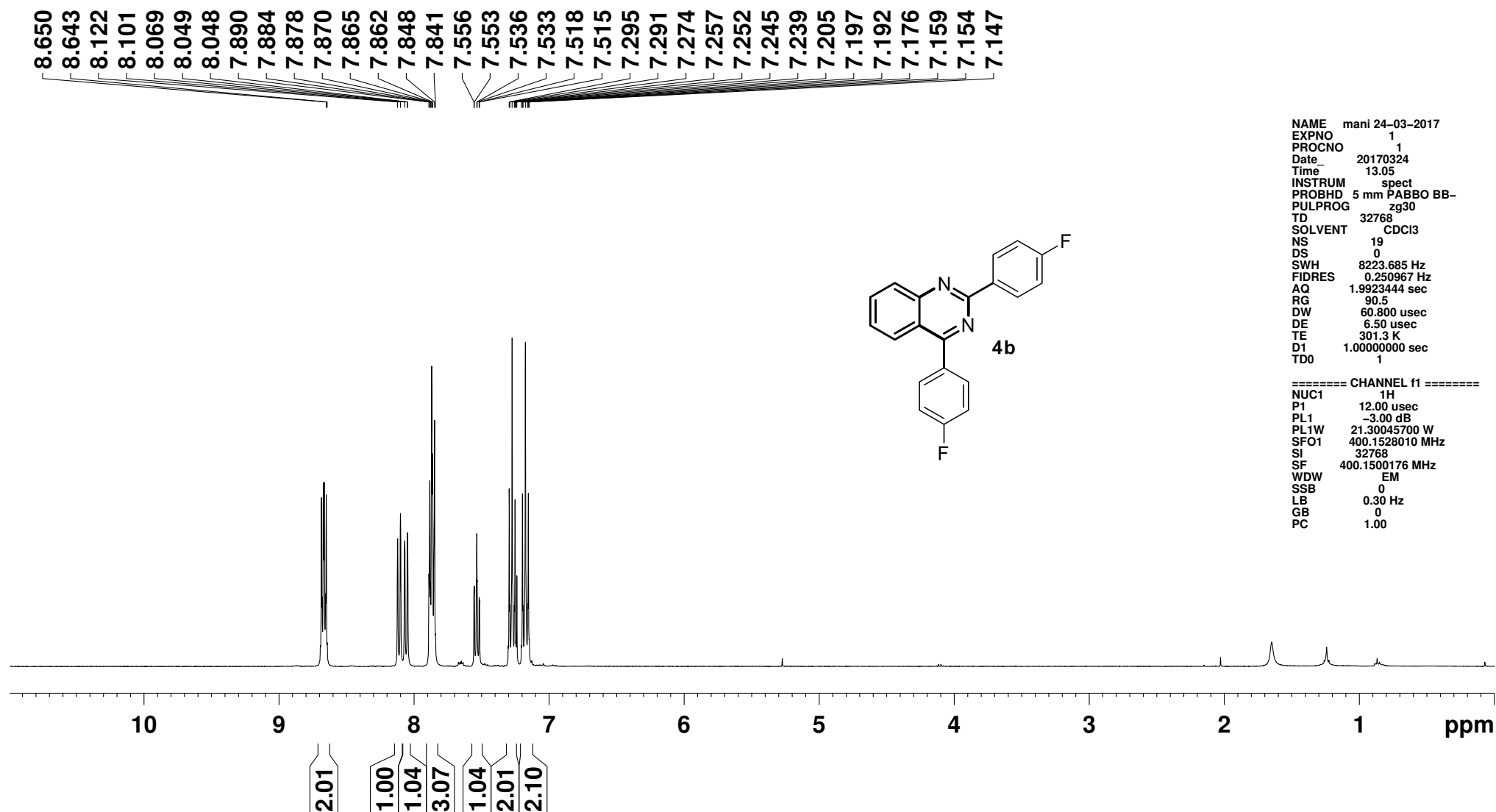
Phdiazonium salt, p-tolunitrile, 110deg, 3h, purified white solid



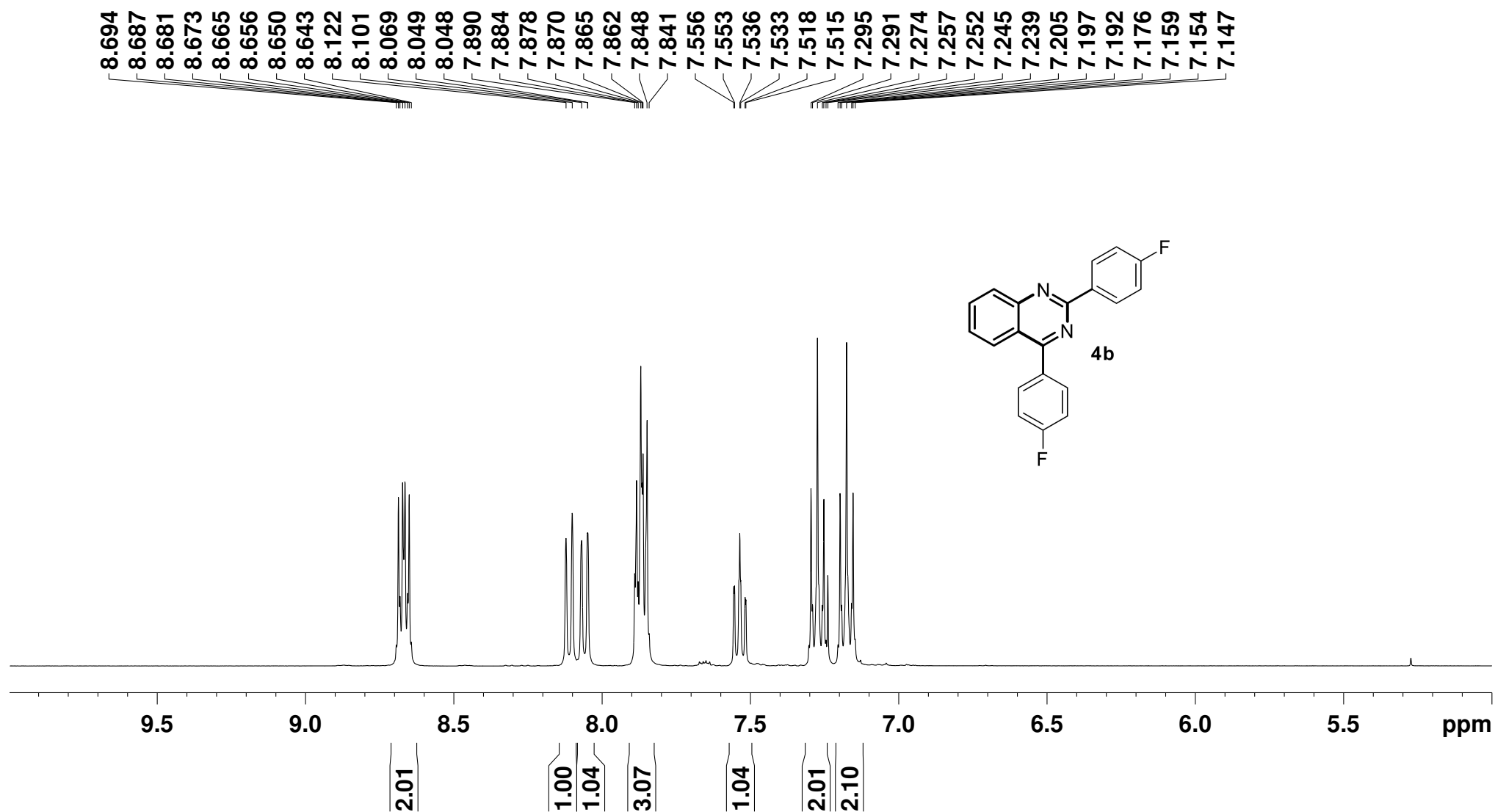
Phdiazonium salt, p-tolunitrile, 110deg, 3h, purified white solid



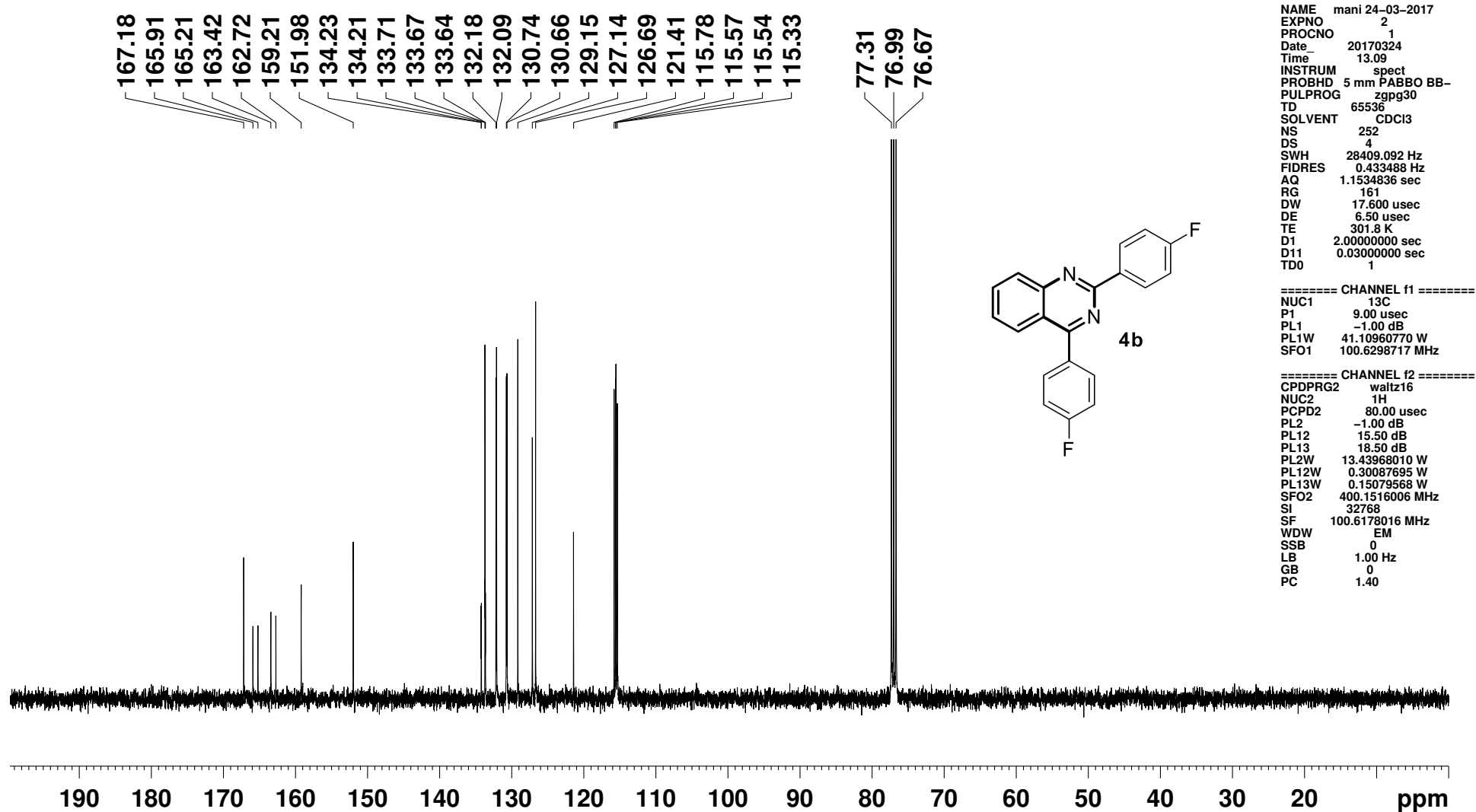
Phdiazonium salt, 4-F-benzonitrile, 110deg, 3h, purified white solid



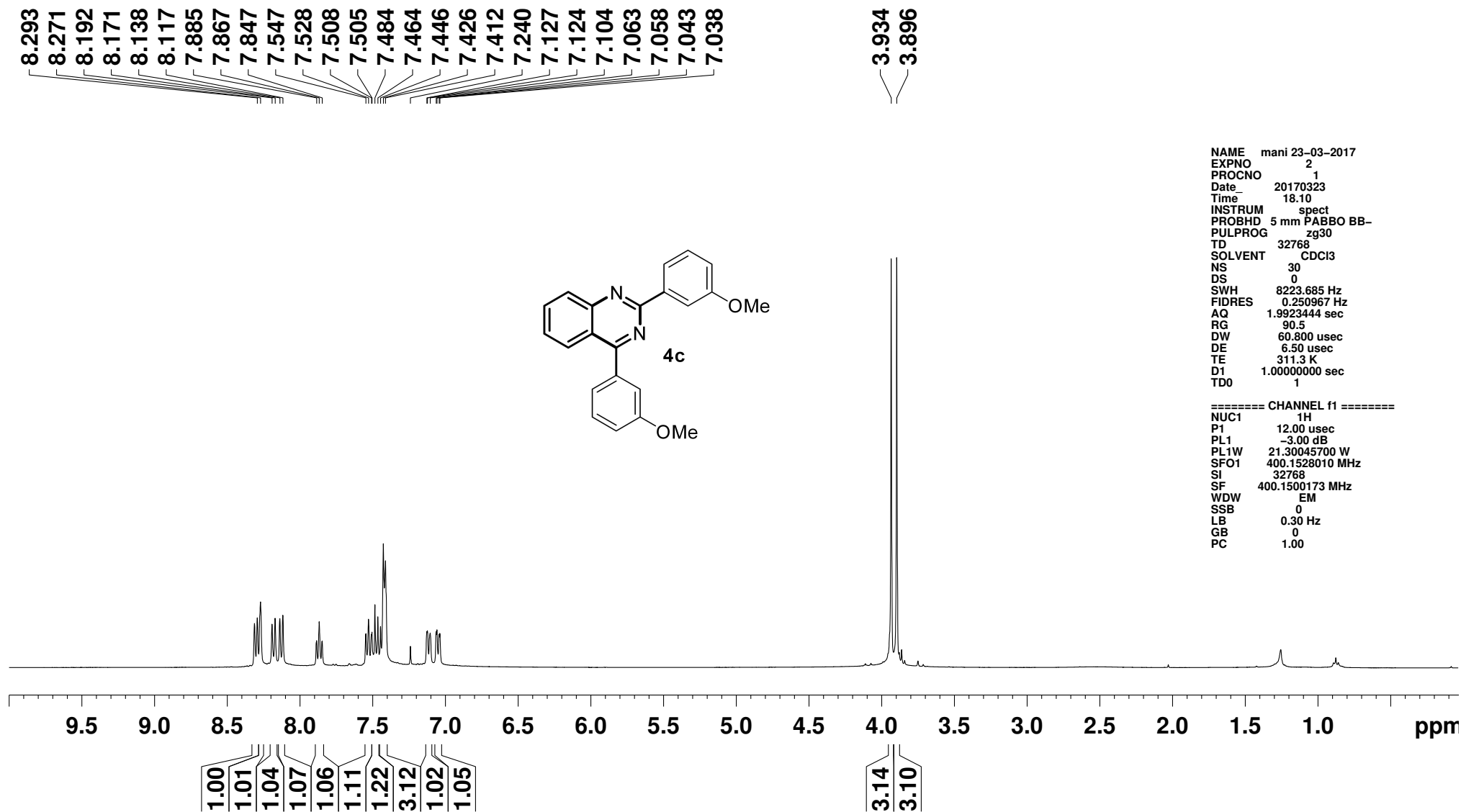
Phdiazonium salt, 4-F-benzonitrile, 110deg, 3h, purified white solid



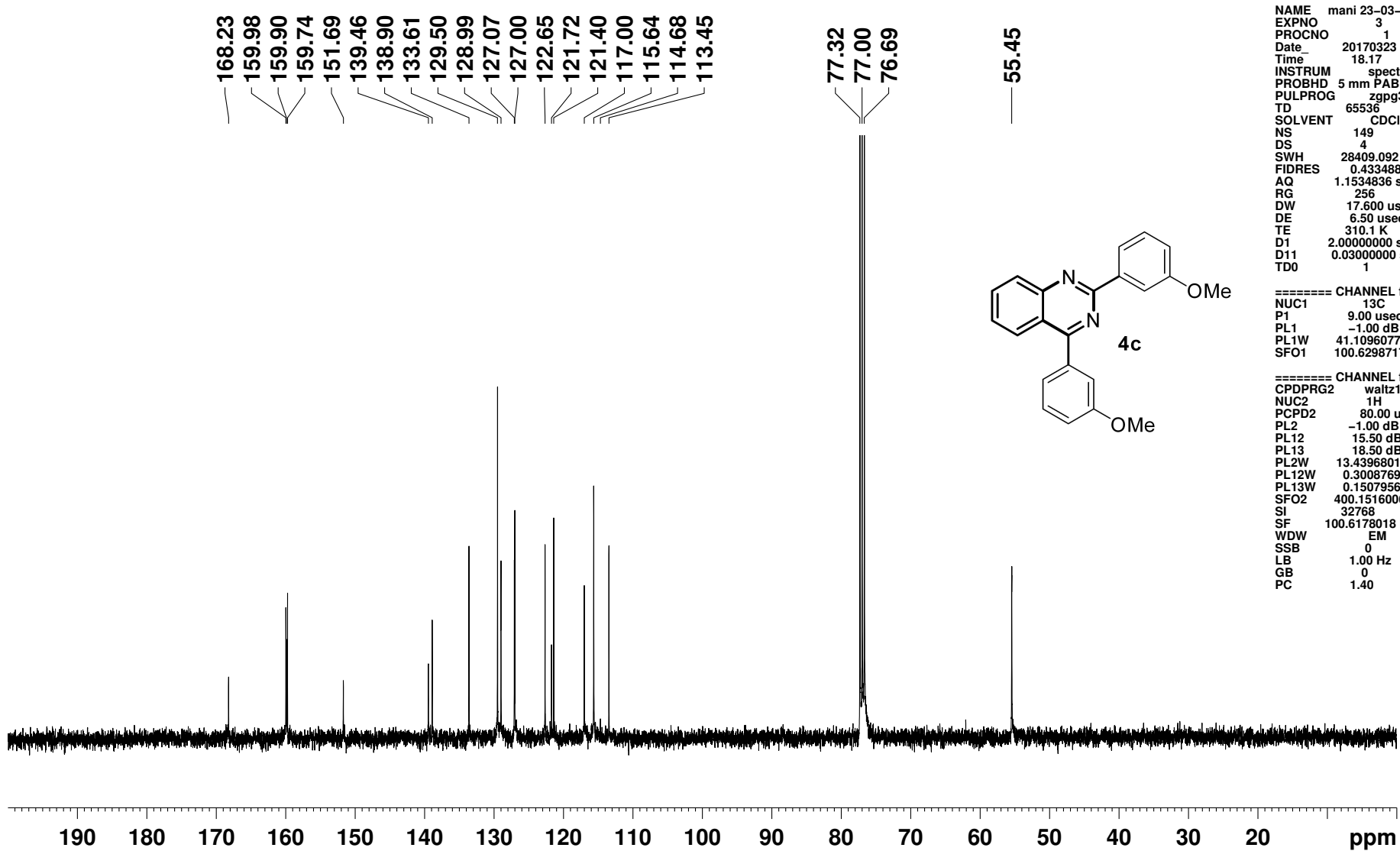
Phdiazonium salt, 4-F-benzonitrile, 110deg, 3h, purified white solid



Phdiazonium salt, 3-OMebenzonitrile, 110deg, 3h, purified



Phdiazonium salt, 3-OMebenzonitrile, 110deg, 3h, purified

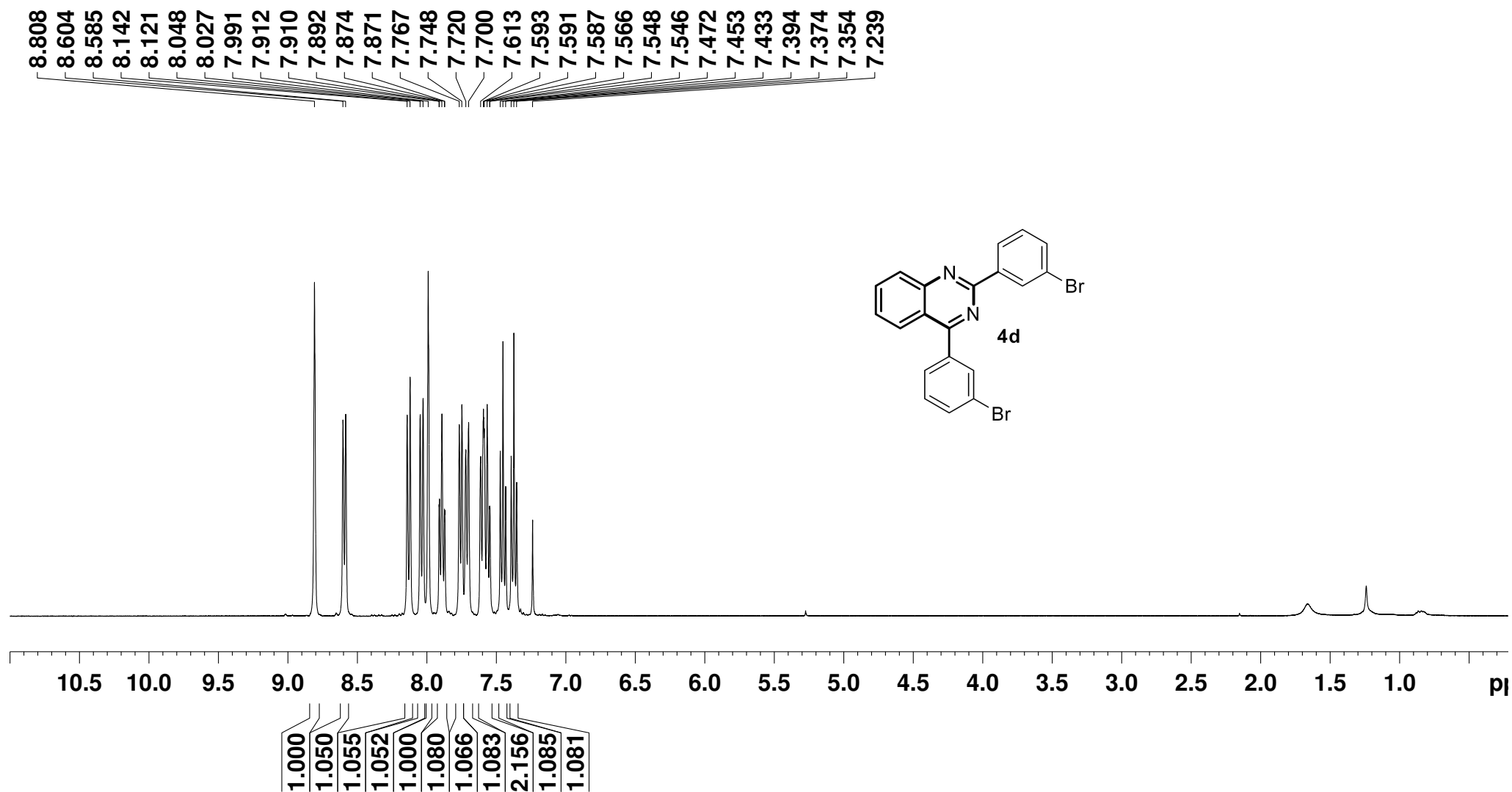


NAME mani 23-03-2017  
EXPNO 3  
PROCNO 1  
Date\_ 20170323  
Time 18.17  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 149  
DS 4  
SWH 28409.092 Hz  
FIDRES 0.433488 Hz  
AQ 1.1534836 sec  
RG 256  
DW 17.600 usec  
DE 6.50 usec  
TE 310.1 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

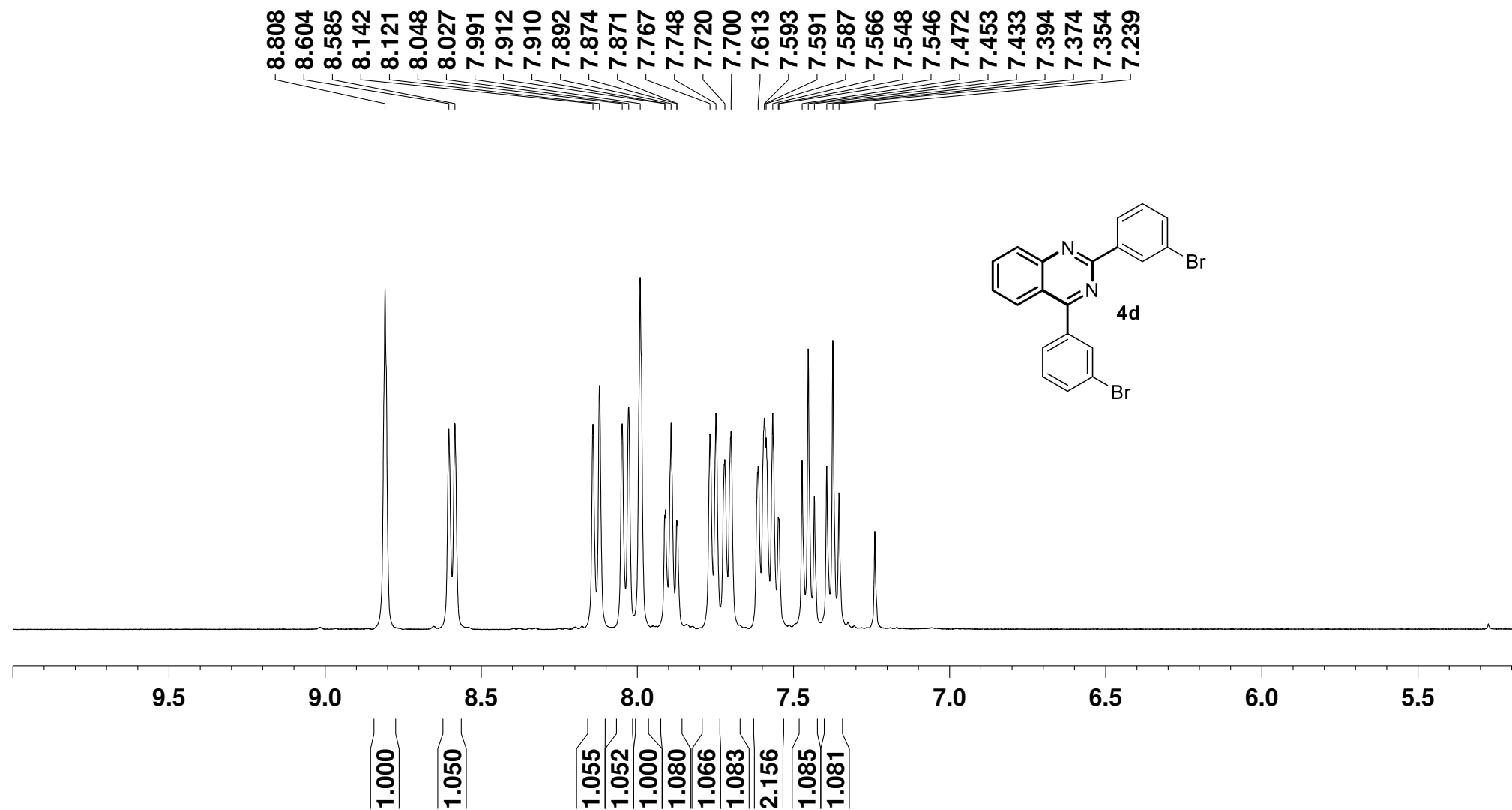
===== CHANNEL f1 =====  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.10960770 W  
SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL2W 13.43968010 W  
PL12W 0.30087695 W  
PL13W 0.15079568 W  
SFO2 400.1516006 MHz  
SI 32768  
SF 100.6178018 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

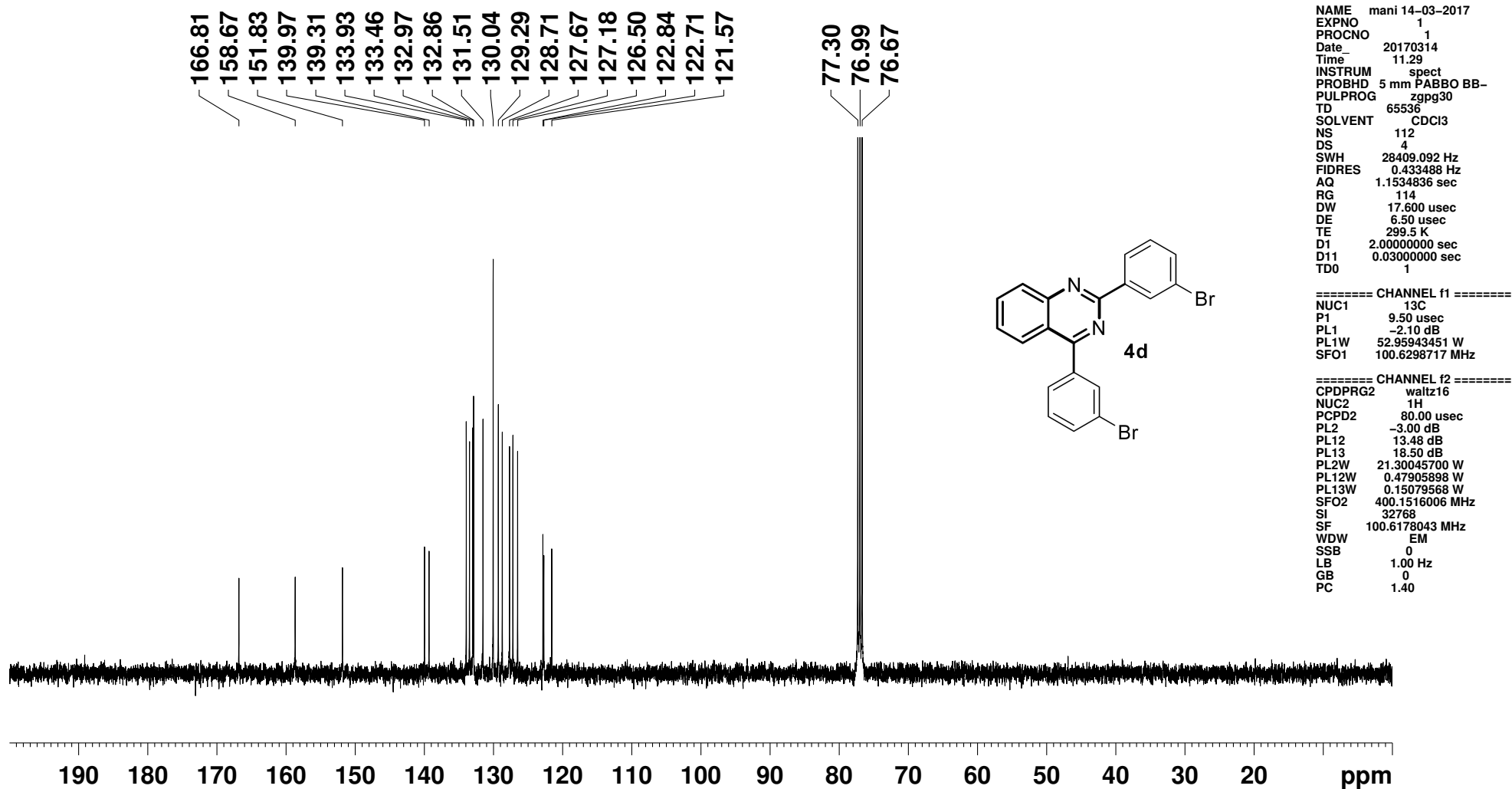
Phdiazonium salt, 3-Brbenzoitrile, 110deg, 3h, purified white solid



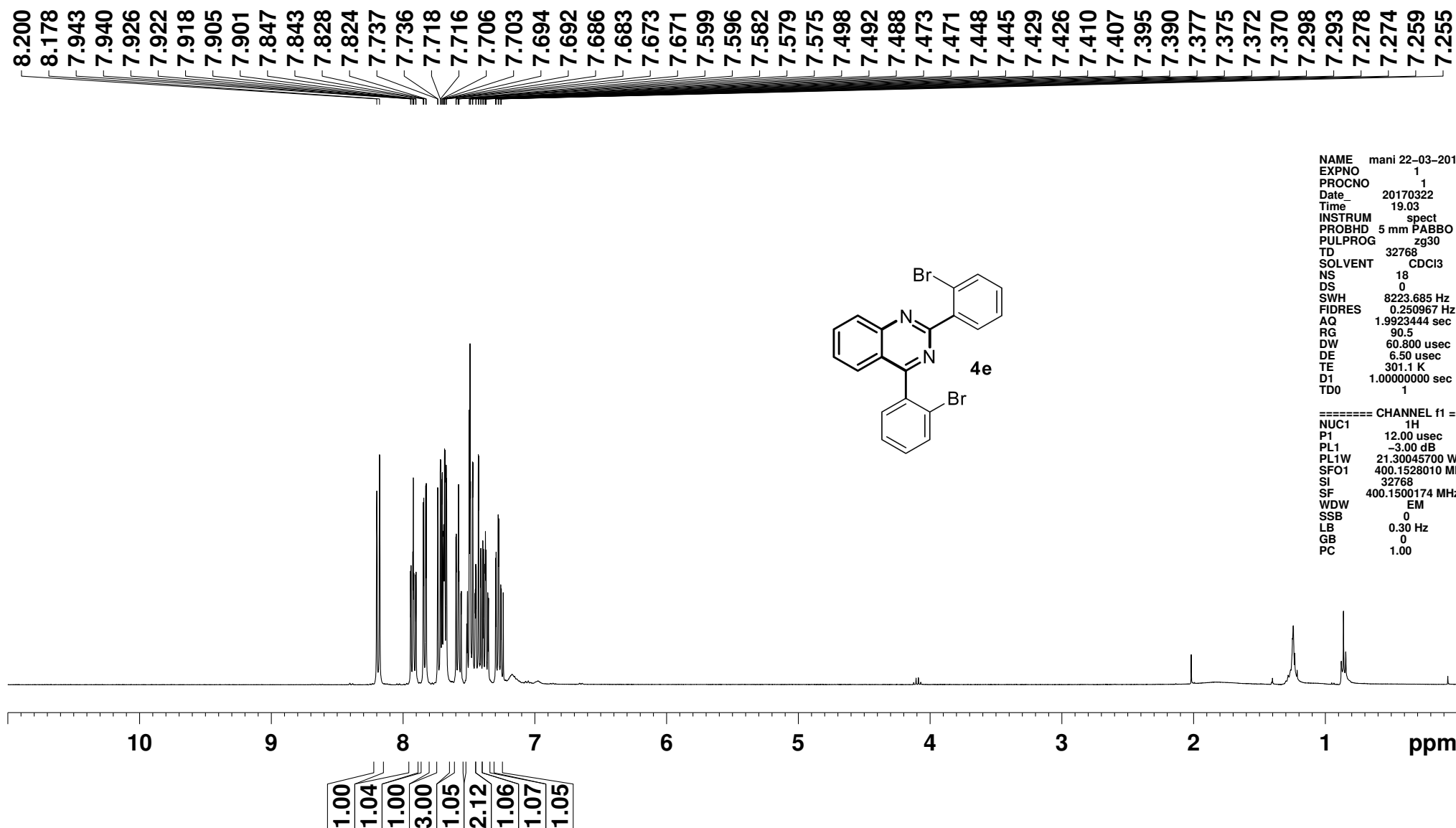
Phdiazonium salt, 3-Brbenzoitrile, 110deg, 3h, purified white solid



Phdiazonium salt, 3-Brbenzonitrile, 110deg, 3h, purified white solid



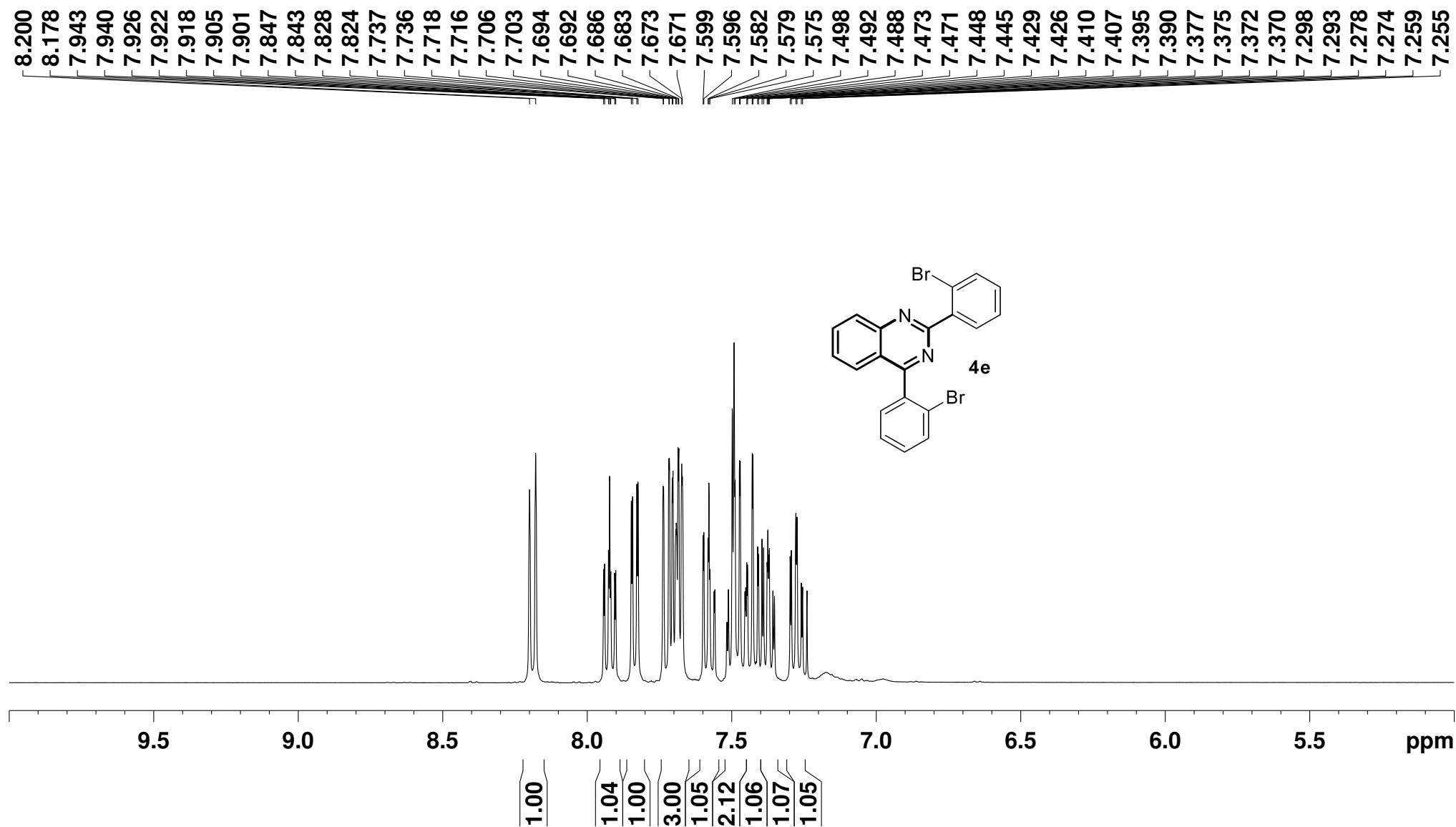
Phdiazonium salt, 2-Brbenzonitrile, 110deg, 3h, purified white solid



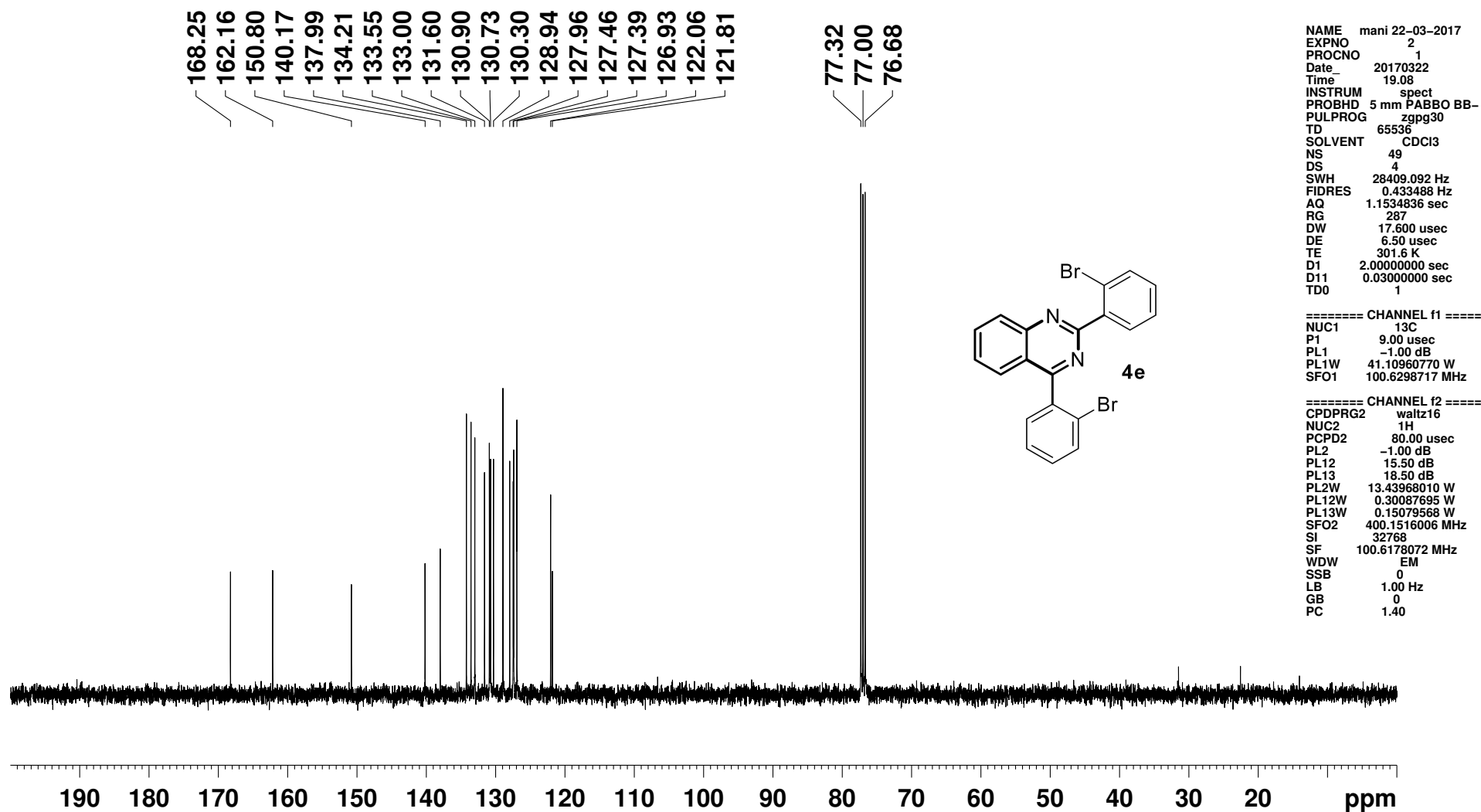
NAME mani 22-03-2017  
EXPNO 1  
PROCNO 1  
Date 20170322  
Time 19.03  
INSTRUM spect  
PROBHD 5 mm PABBO BI  
PULPROG zg30  
TD 32768  
SOLVENT CDCl<sub>3</sub>  
NS 18  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 90.5  
DW 60.800 usec  
DE 6.50 usec  
TE 301.1 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 12.00 usec  
PL1 -3.00 dB  
PL1W 21.30045700 W  
SFO1 400.1528010 MHz  
SI 32768  
SF 400.1500174 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

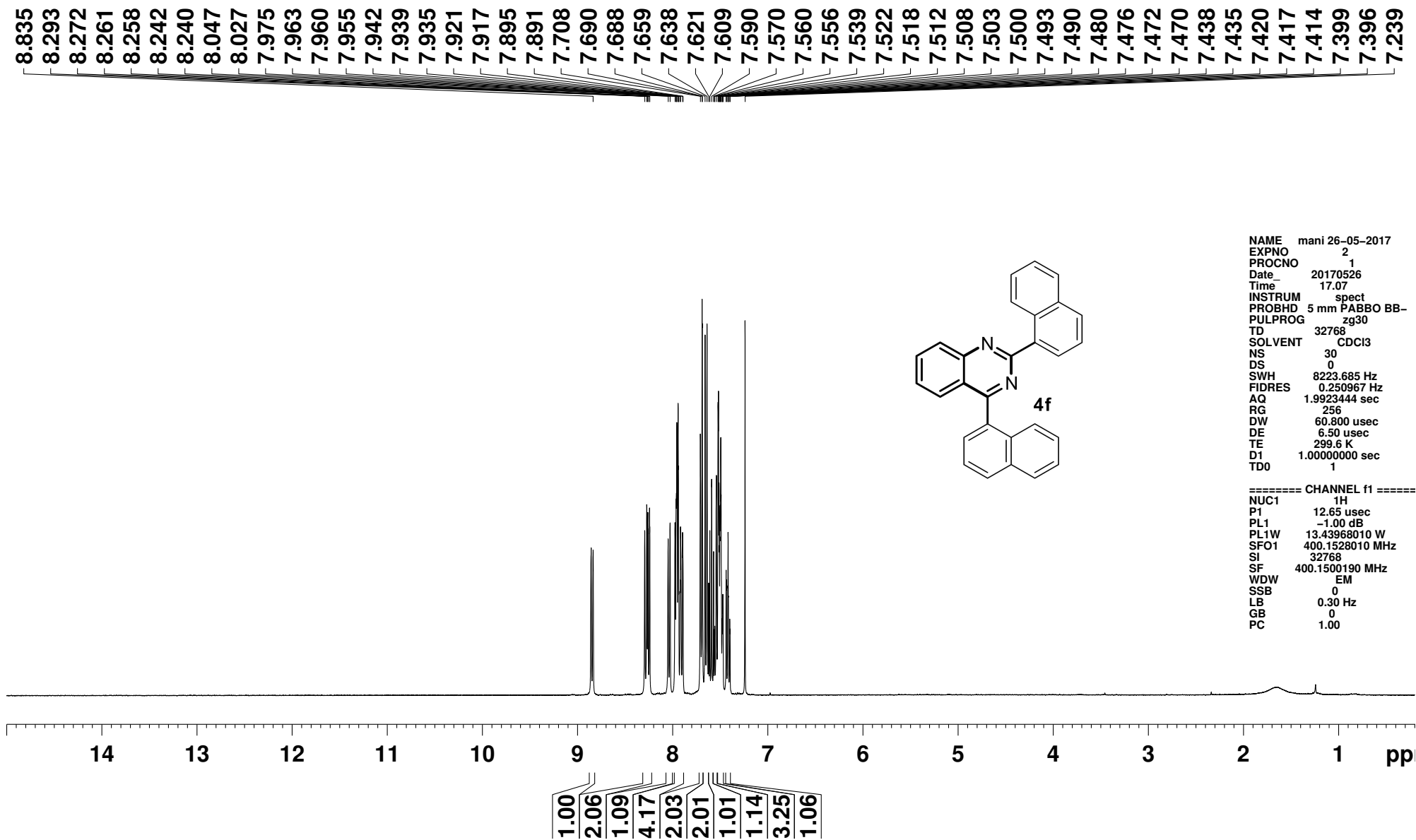
Phdiazonium salt, 2-Brbenzonitrile, 110deg, 3h, purified white solid



Phdiazonium salt, 2-Brbenzonitrile, 110deg, 3h, purified white solid



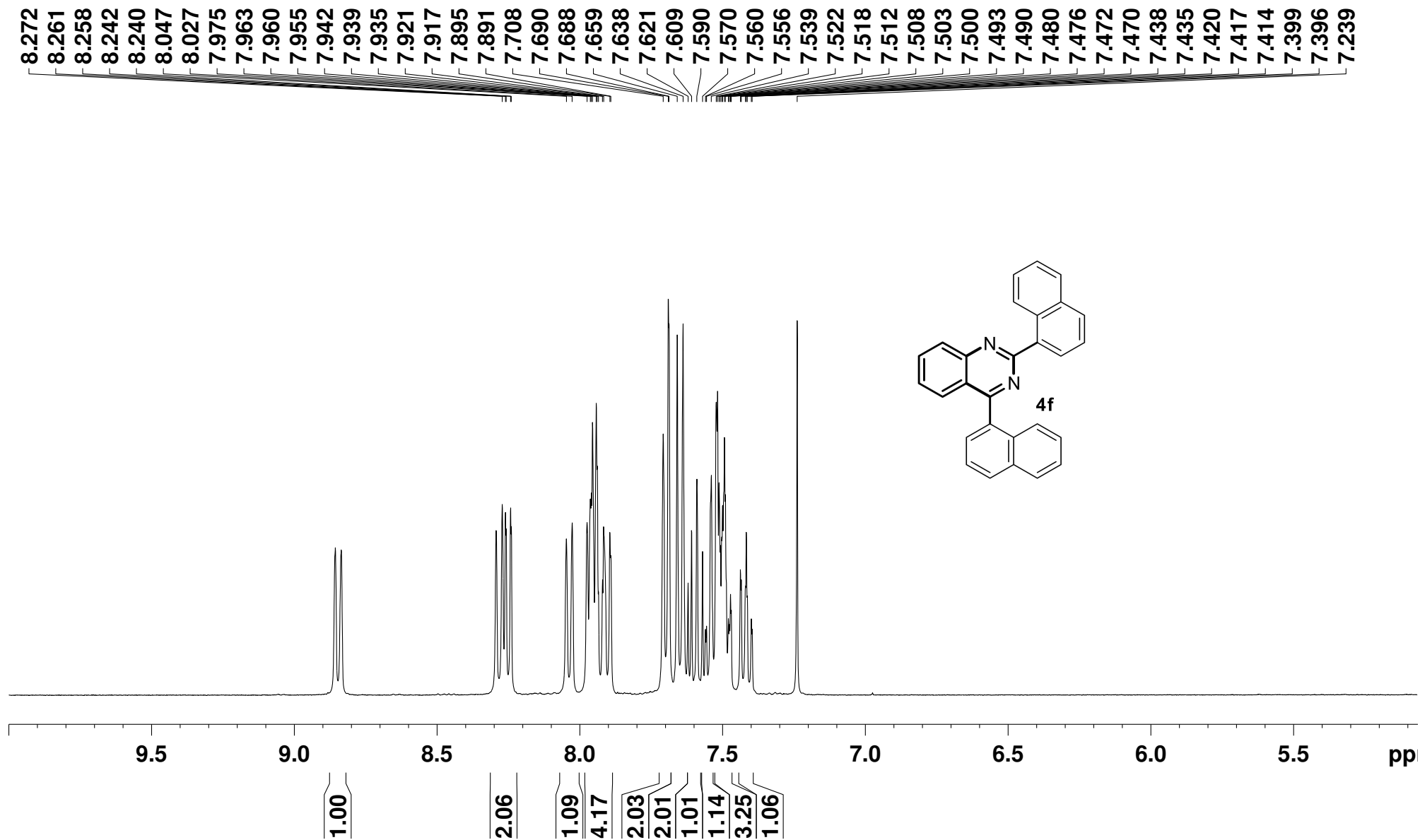
Ph diazonium salt, 1-naphthylCN, 110deg, 3h, purified



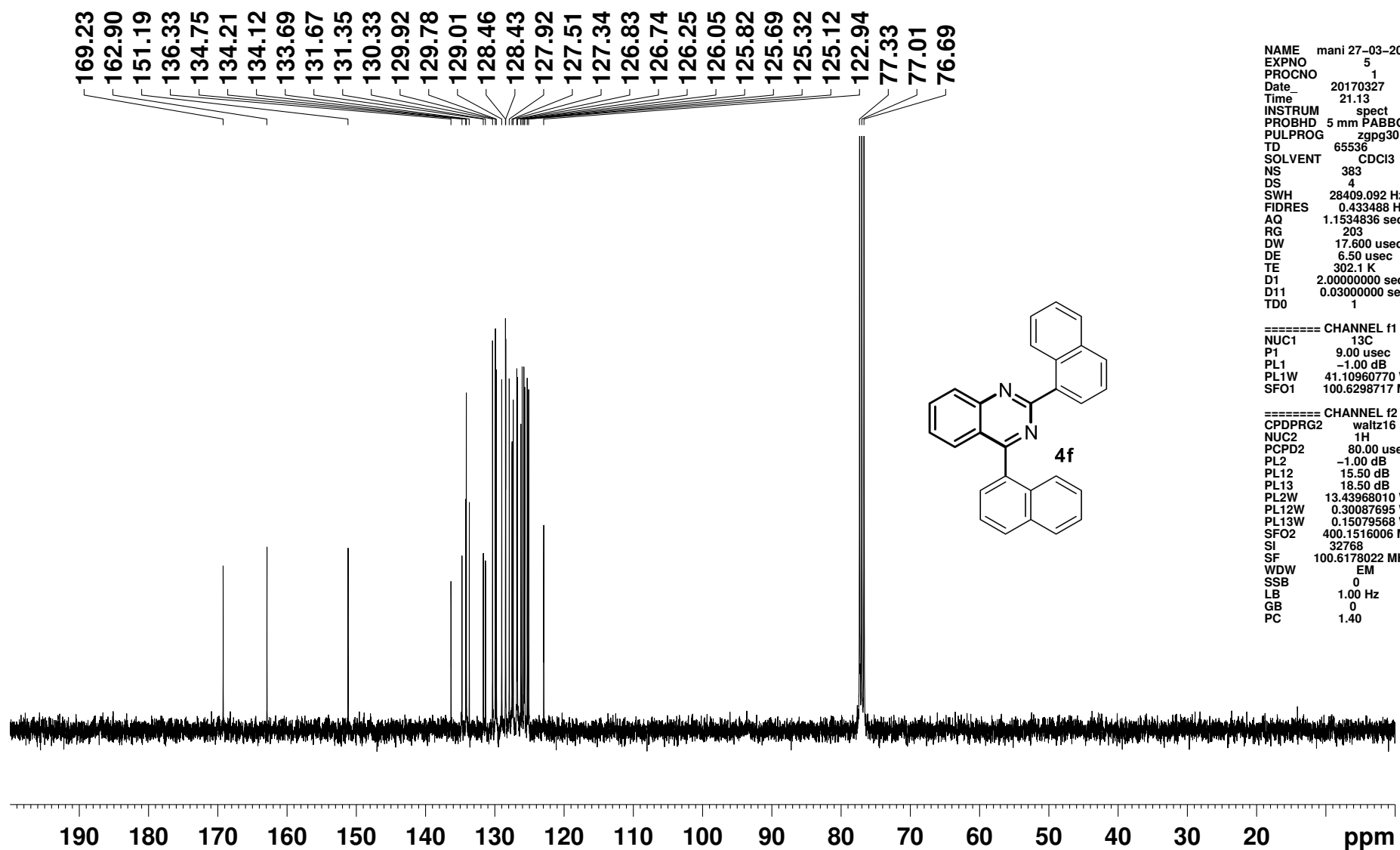
NAME mani 26-05-2017  
EXPNO 2  
PROCNO 1  
Date\_ 20170526  
Time 17.07  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 30  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.250967 Hz  
AQ 1.9923444 sec  
RG 256  
DW 60.800 usec  
DE 6.50 usec  
TE 299.6 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 12.65 usec  
PL1 -1.00 dB  
PL1W 13.43968010 W  
SFO1 400.1528010 MHz  
SI 32768  
SF 400.1500190 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

Ph diazonium salt, 1-naphthylCN, 110deg, 3h, purified



Phdiazonium salt, 1-naphthonitrile, 110deg, 3h, purified pale yellow solid

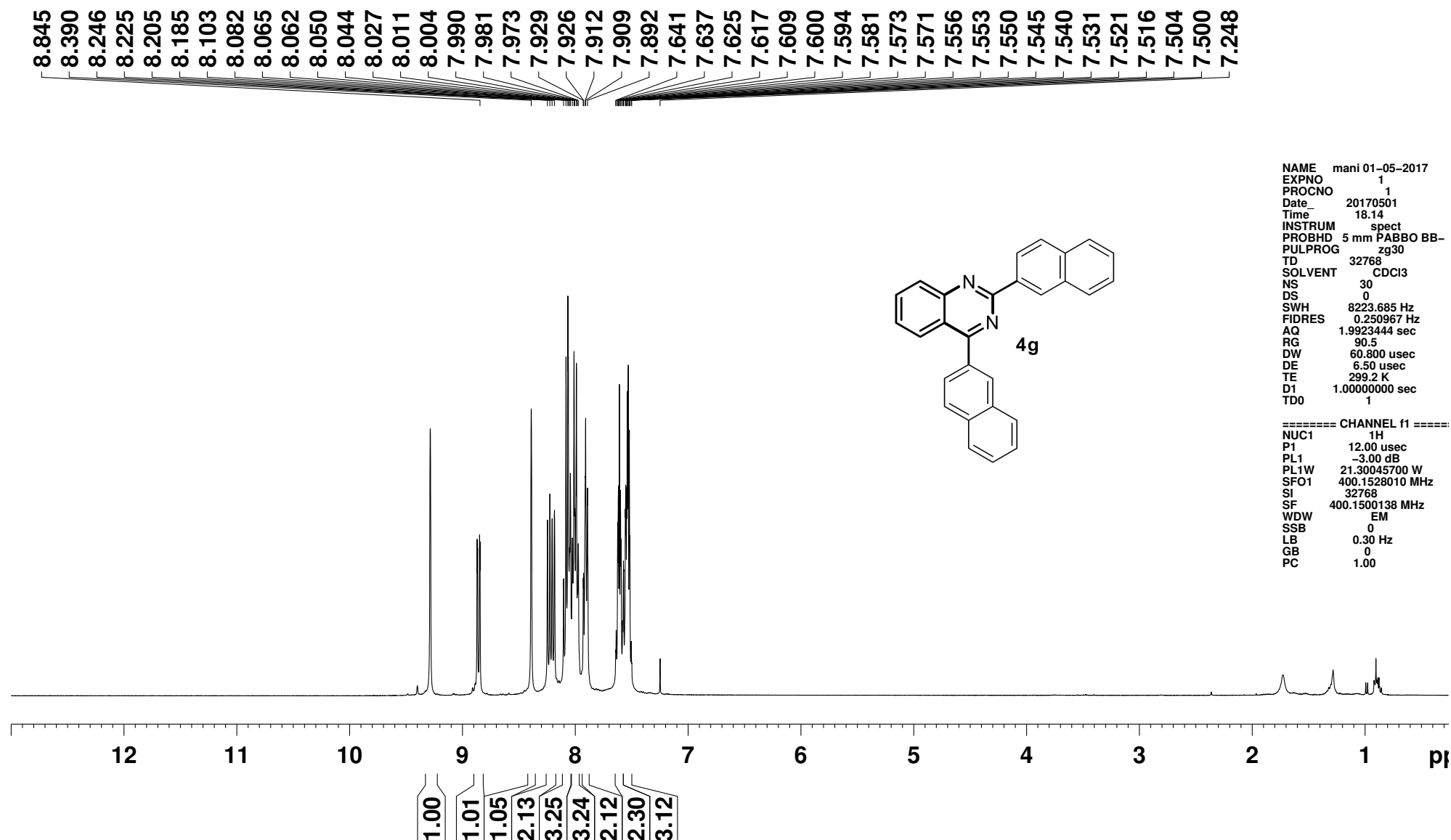


NAME mani 27-03-2017  
EXPNO 5  
PROCNO 1  
Date\_ 20170327  
Time 21.13  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 383  
DS 4  
SWH 28409.092 Hz  
FIDRES 0.433488 Hz  
AQ 1.1534836 sec  
RG 203  
DW 17.600 usec  
DE 6.50 usec  
TE 302.1 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

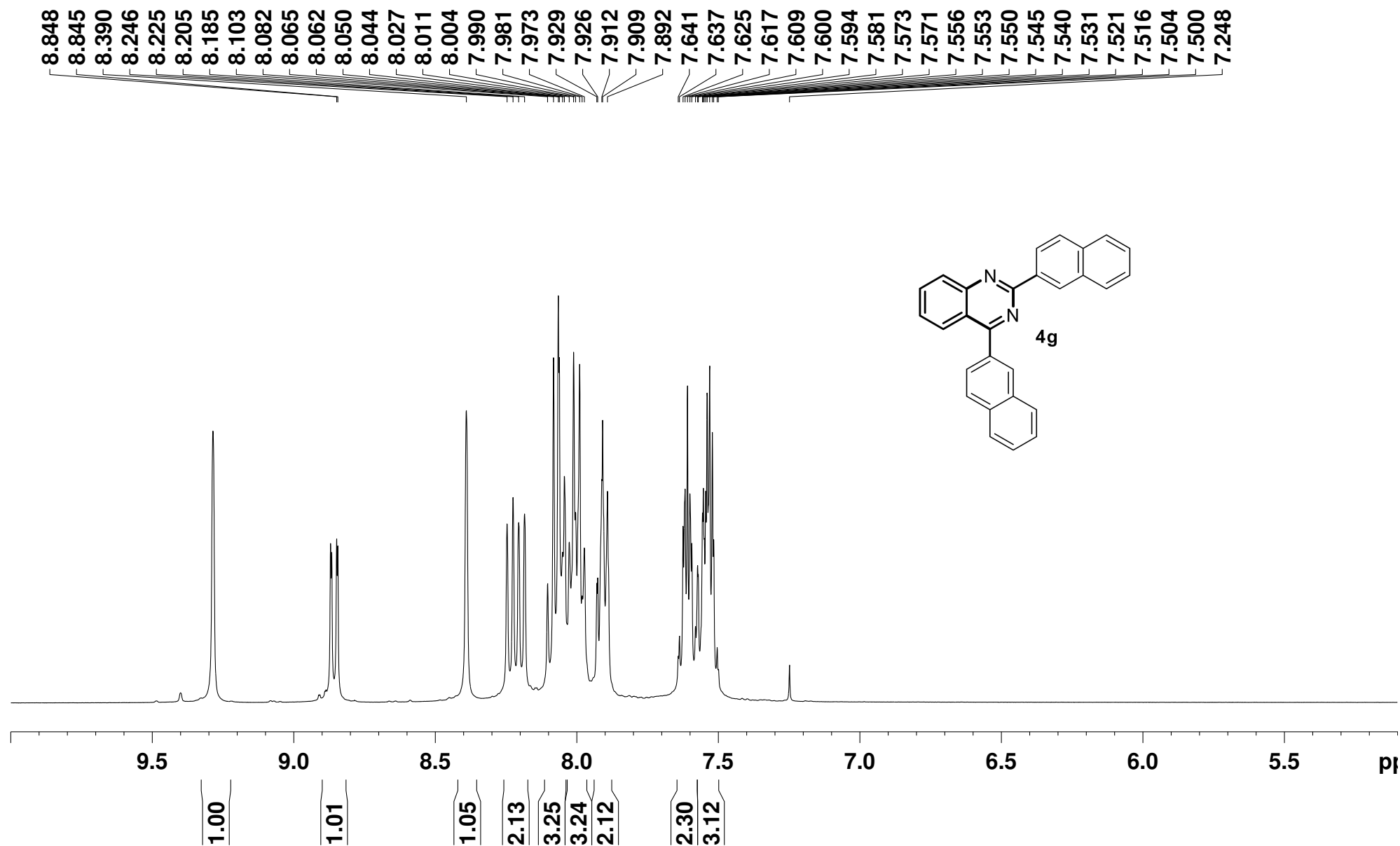
===== CHANNEL f1 =====  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.10960770 W  
SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL2W 13.43968010 W  
PL12W 0.30087695 W  
PL13W 0.15079568 W  
SFO2 400.1516006 MHz  
SI 32768  
SF 100.6178022 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

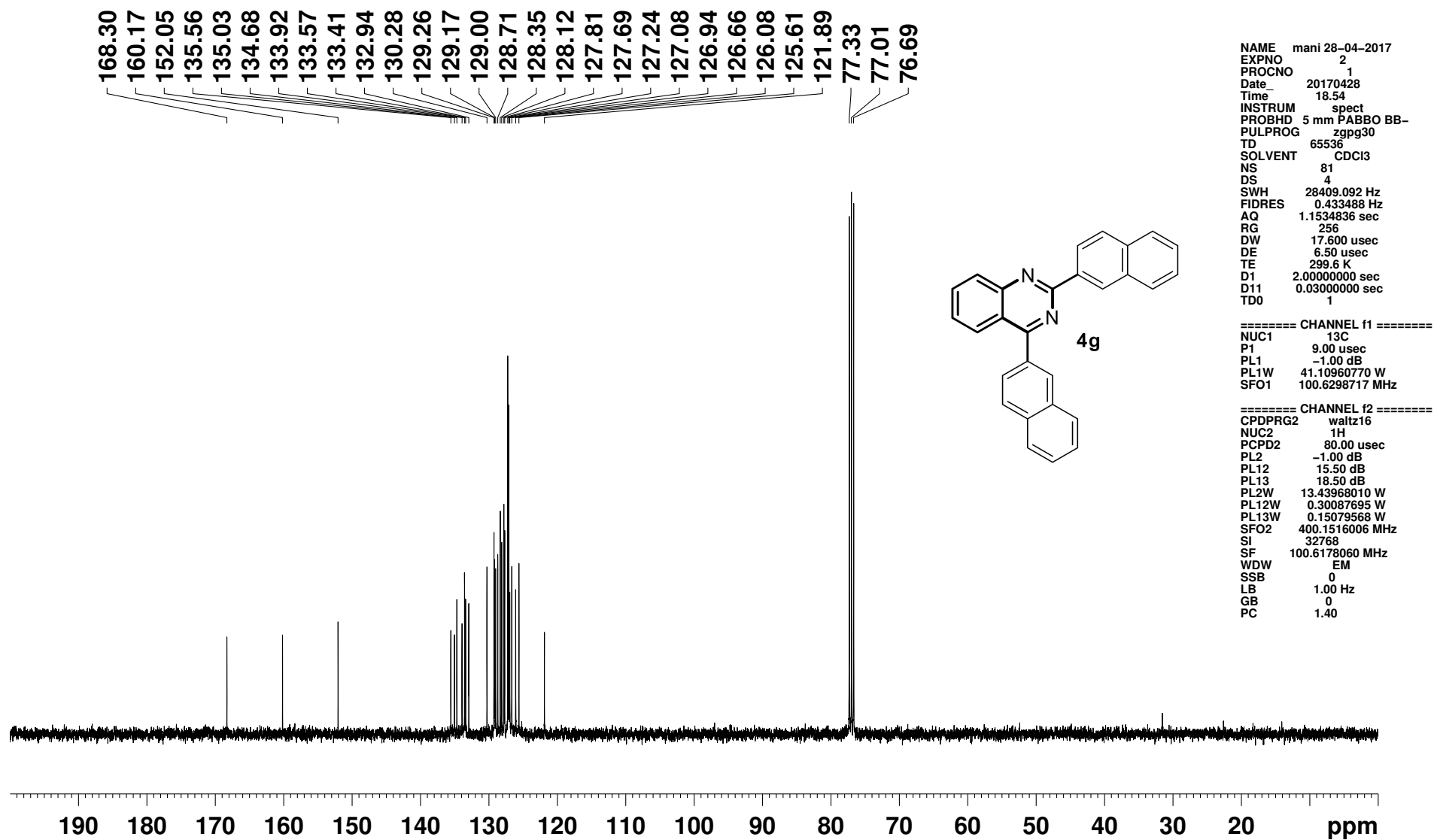
Ph diazonium salt, 2-naphthyl nitrile, 110deg, purified off-white solid



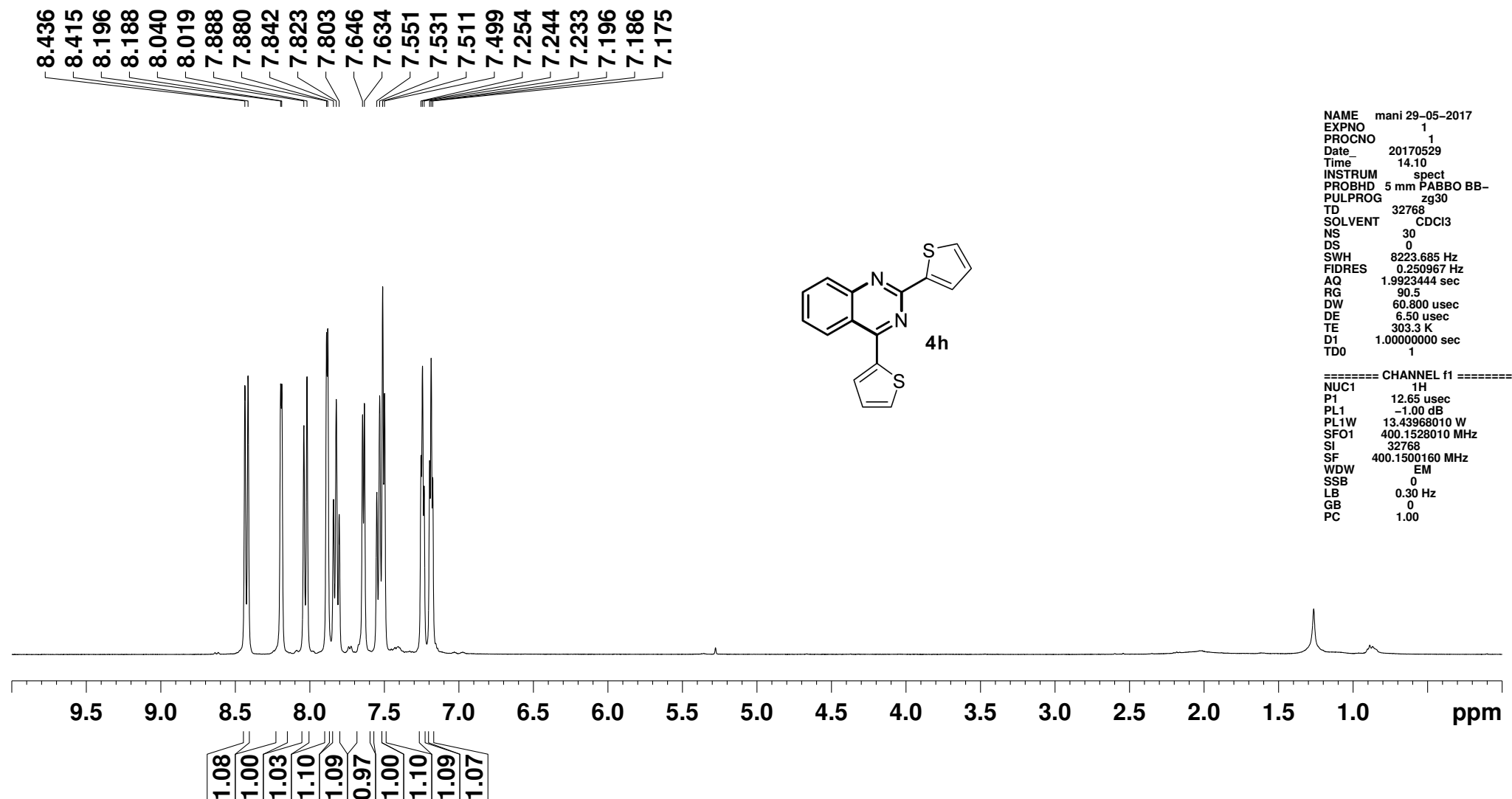
Ph diazonium salt, 2-naphthyl nitrile, 110deg, purified off-white solid



Ph diazonium salt, 2-naphthyl nitrile, 110deg, purified off-white solid



Phdiazonium salt, Dry Thiophene-2-nitrile, 110deg, 3h, purified

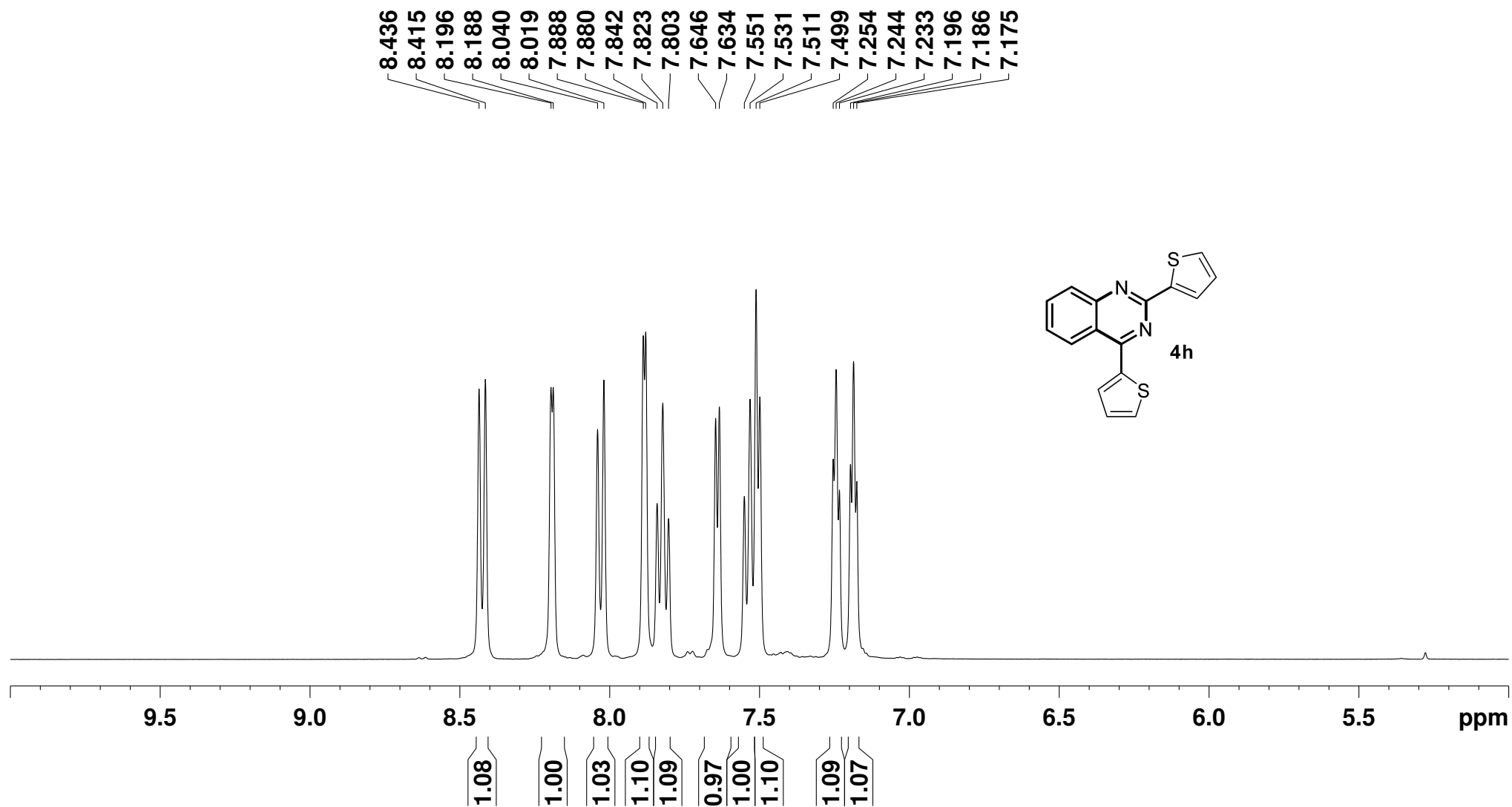


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NAME  mani 29-05-2017
EXPNO  1
PROCNO  1
Date_   20170529
Time    14.10
INSTRUM spect
PROBHD  5 mm PABBO BB-
PULPROG zg30
TD       32768
SOLVENT  CDCl3
NS       30
DS       0
SWH      8223.685 Hz
FIDRES   0.250967 Hz
AQ       1.9923444 sec
RG       90.5
DW       60.800 usec
DE       6.50 usec
TE       303.3 K
D1       1.0000000 sec
TD0      1

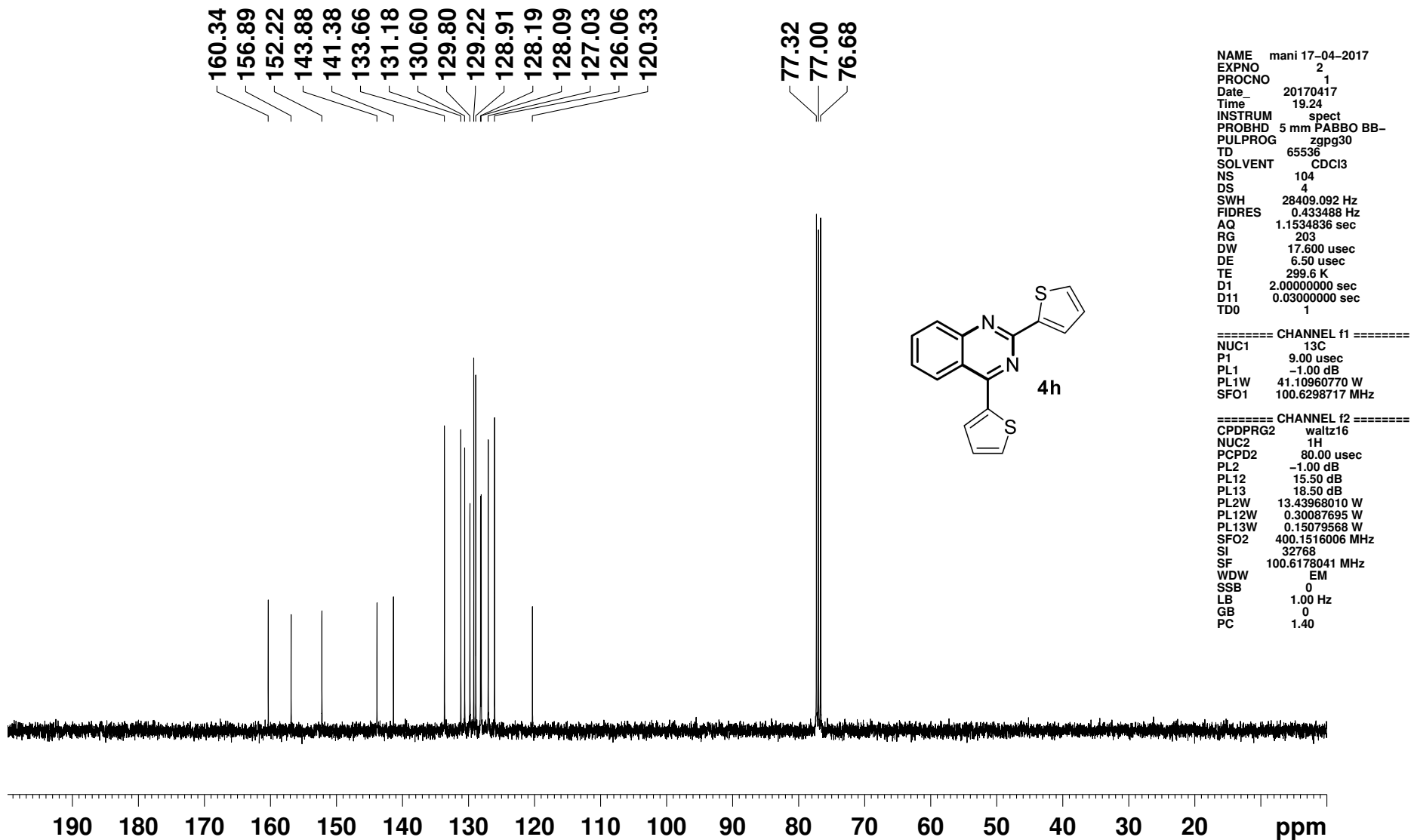
===== CHANNEL f1 =====
NUC1     1H
P1       12.65 usec
PL1      -1.00 dB
PL1W     13.43968010 W
SFO1     400.1528010 MHz
SI       32768
SF       400.1500160 MHz
WDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00
    
```

Phdiazonium salt, Dry Thiophene-2-nitrile, 110deg, 3h, purified

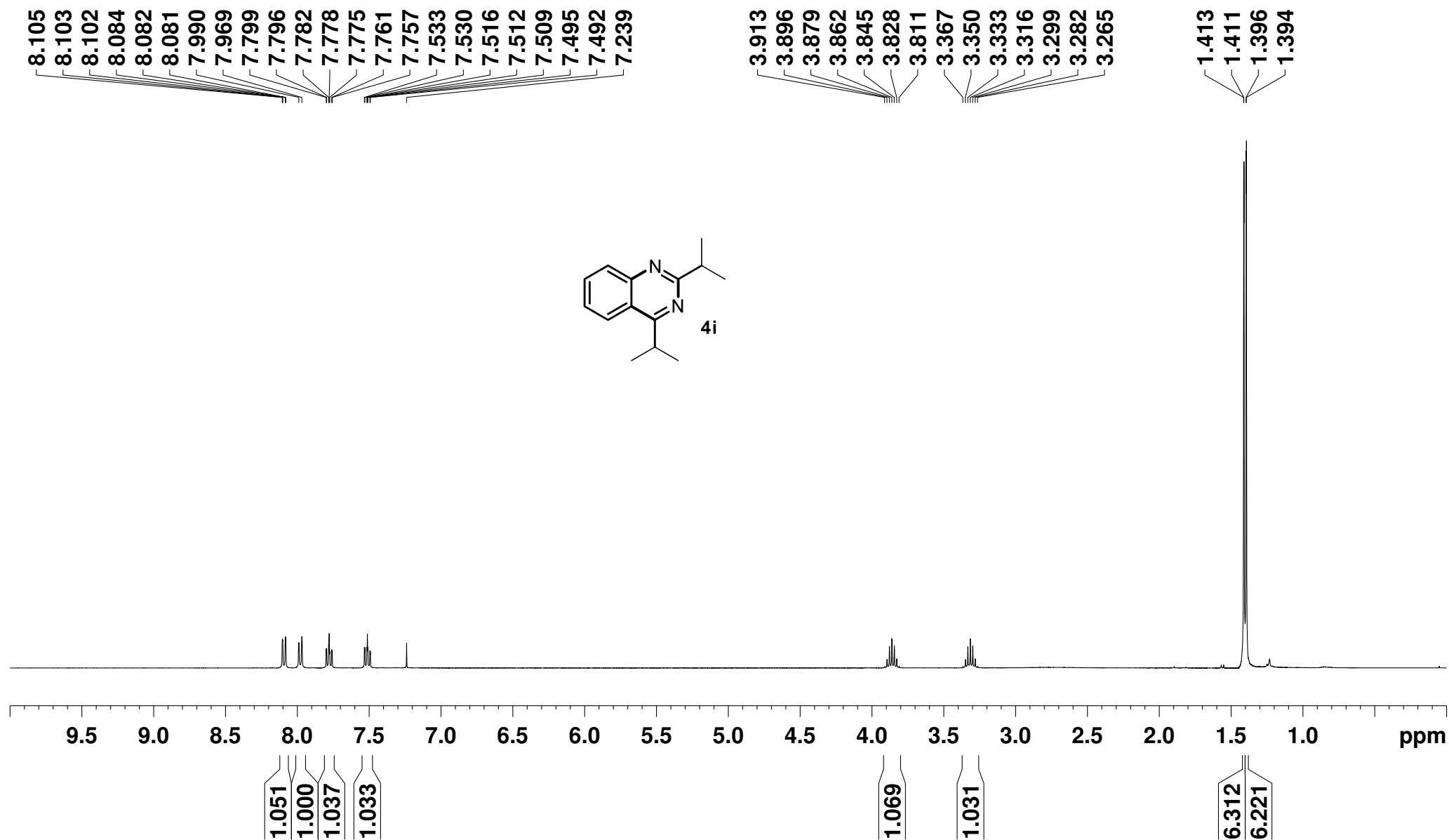


S60

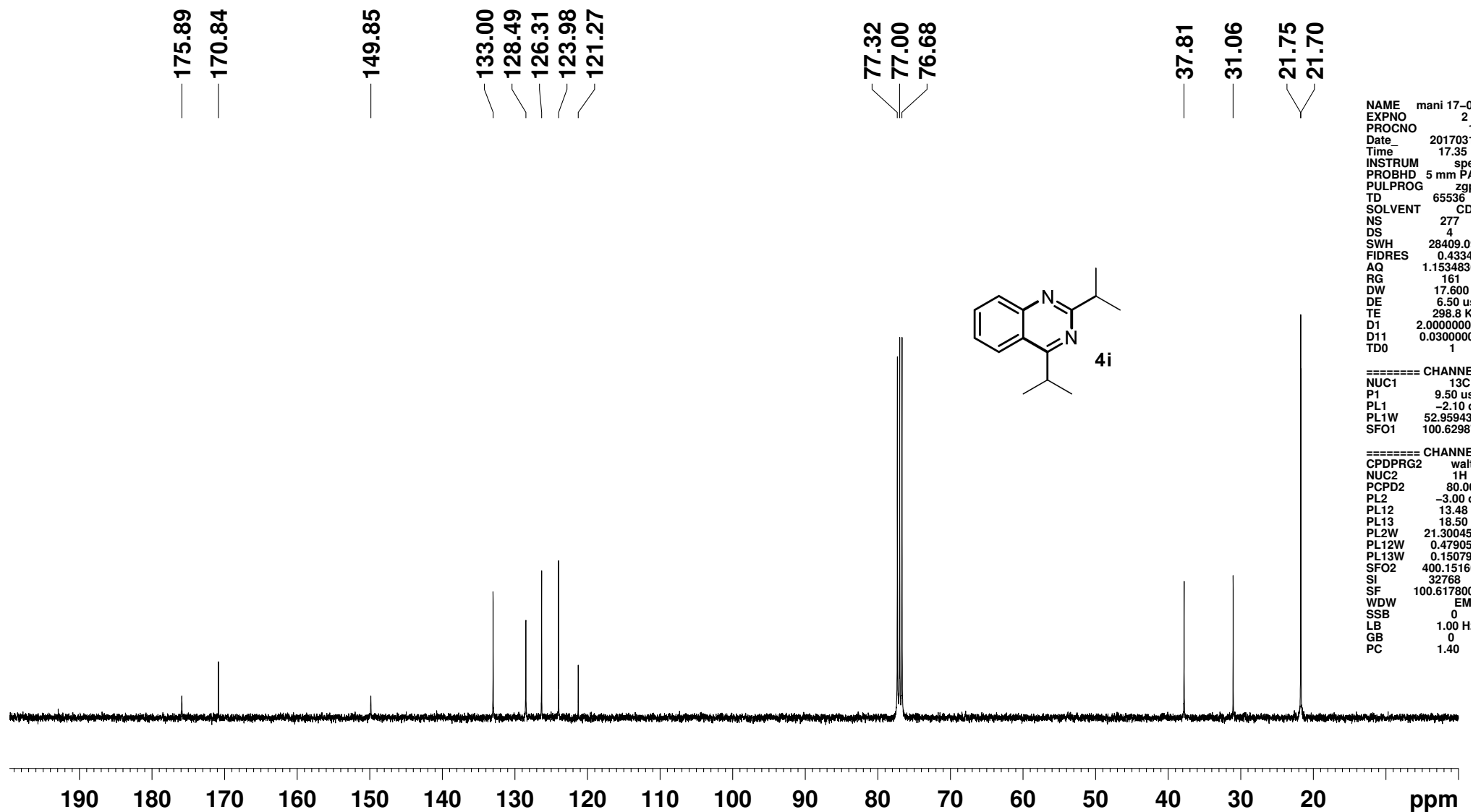
diazonium salt, Dry thiophene-2-nitrile, 110deg, 3h, purified pale yellow solid



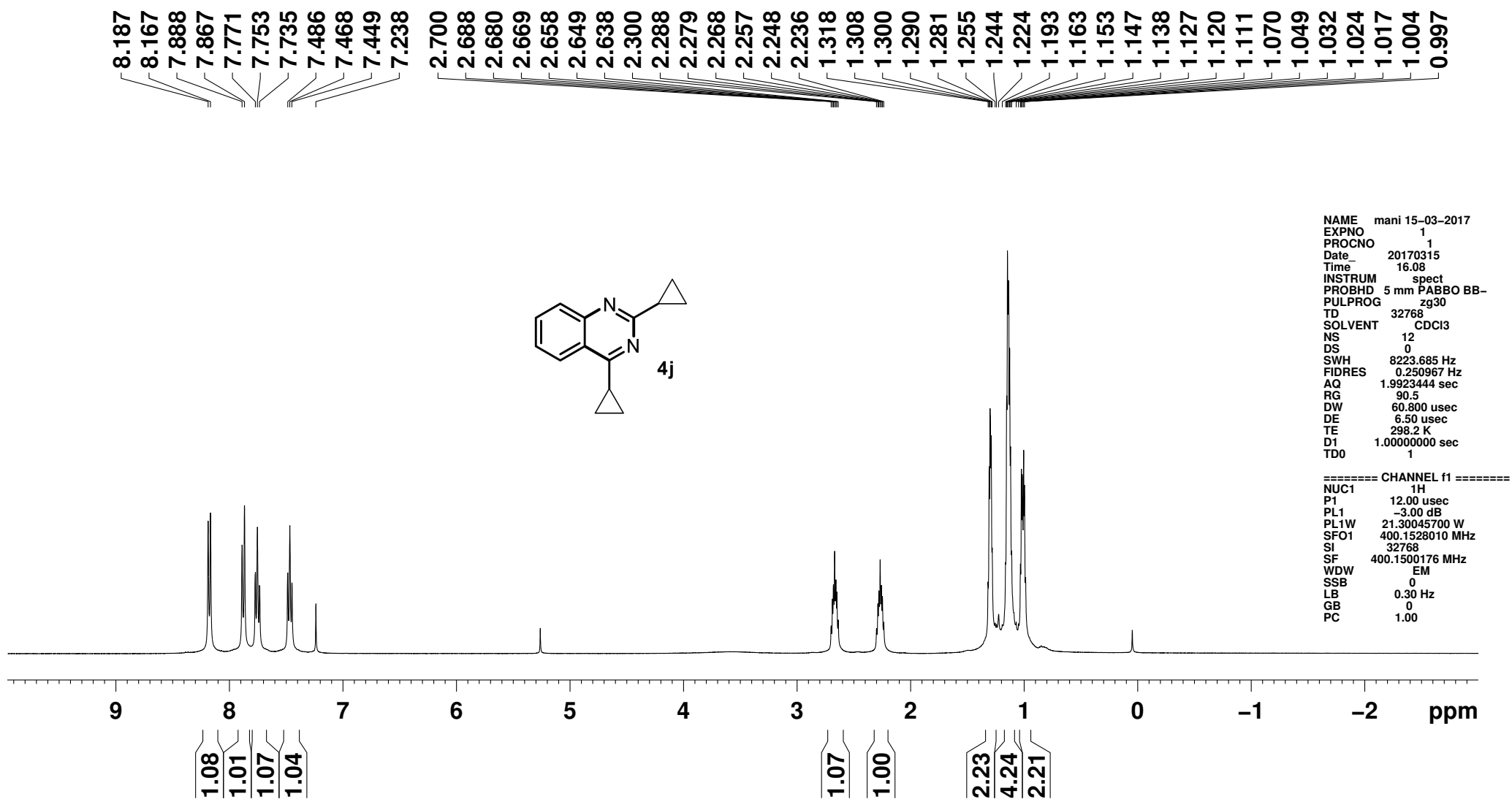
Phdiazonium salt, dry isobutyronitrile, 110deg, 3h, purified viscous oil



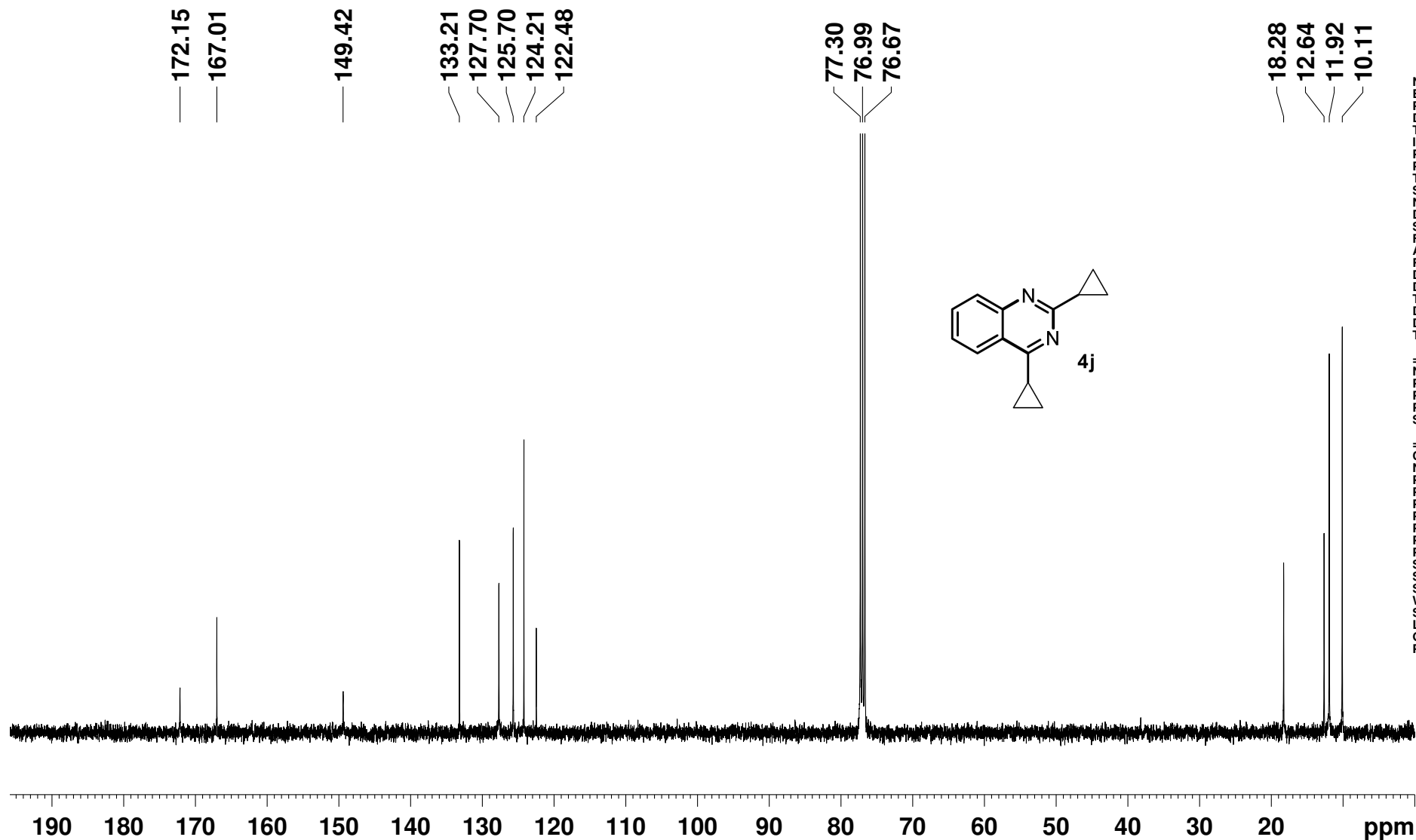
Phdiazonium salt, Dry isoutyronitrile, 110deg, 3h, purified viscous oil



Phdiazonium salt, Dry CyPrCN, 110deg, 3h, purified viscous oil



Phdiazonium salt, Dry CyPrCN, 110deg, 3h, purified viscous oil

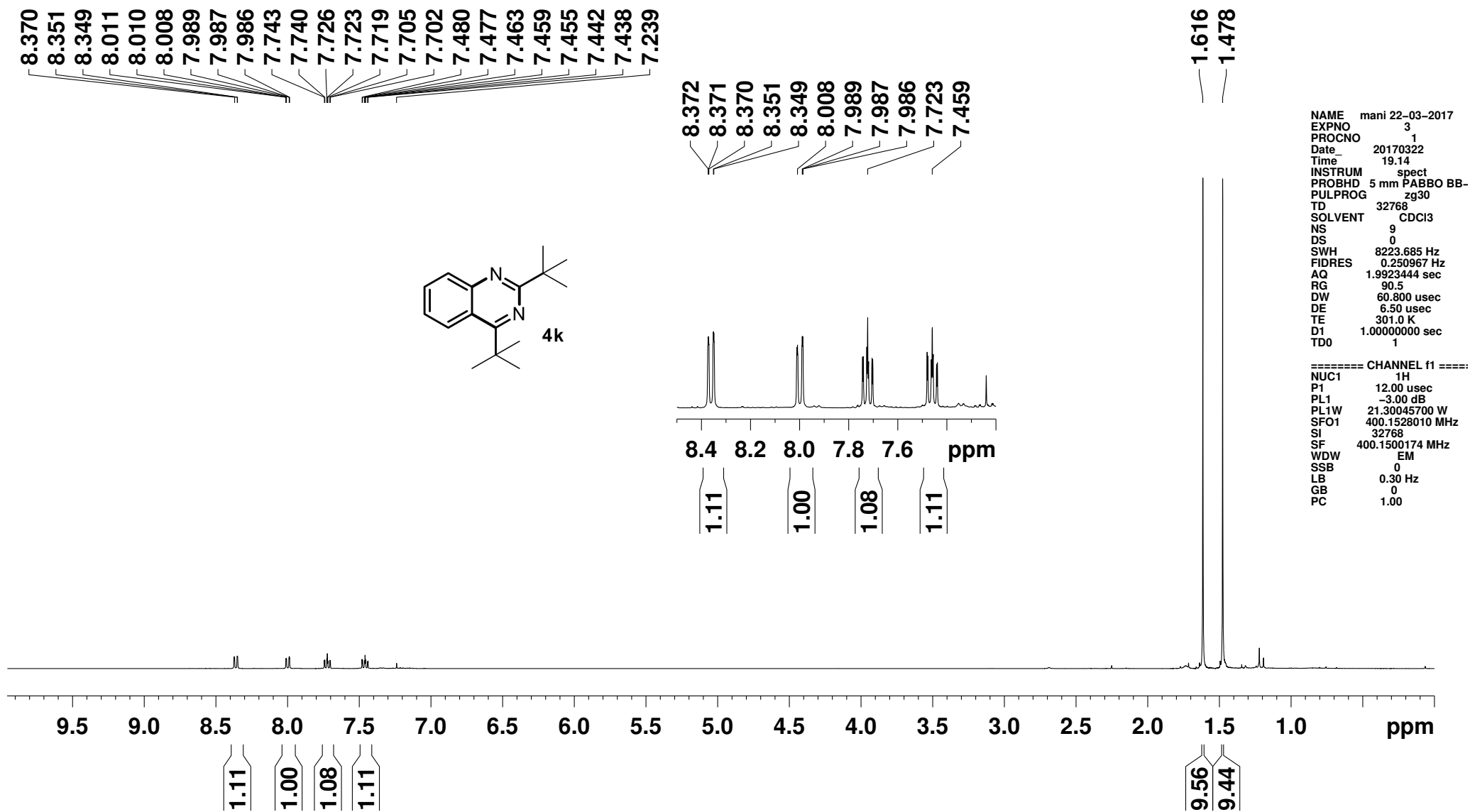


NAME mani 15-03-  
EXPNO 2  
PROCNO 1  
Date\_ 20170315  
Time 16.12  
INSTRUM spec  
PROBHD 5 mm PAB  
PULPROG zgpg  
TD 65536  
SOLVENT CDC  
NS 237  
DS 4  
SWH 28409.092  
FIDRES 0.433488  
AQ 1.1534836 :  
RG 181  
DW 17.600 us  
DE 6.50 use  
TE 298.5 K  
D1 2.00000000 :  
D11 0.03000000  
TDO 1

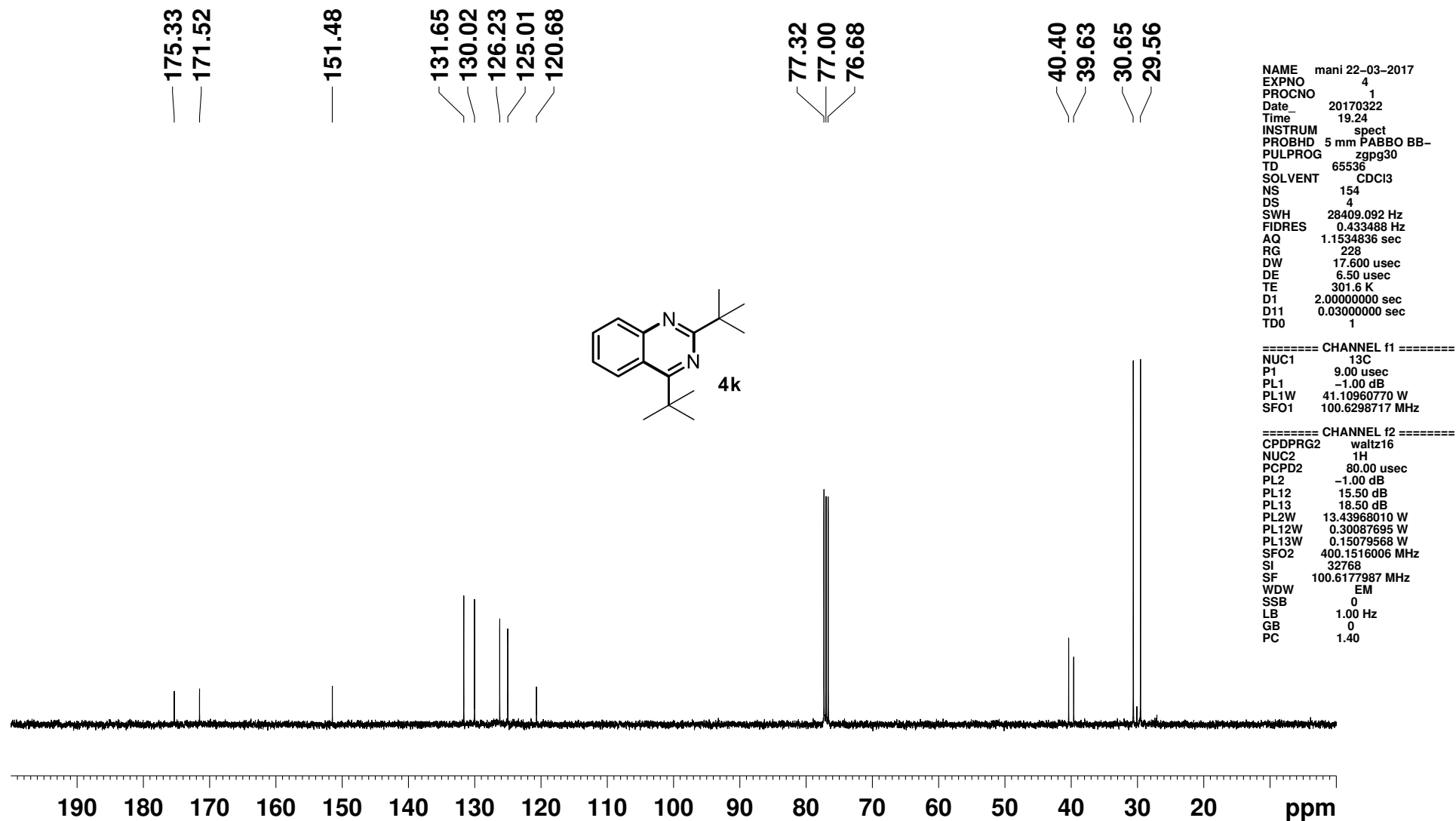
===== CHANNEL  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.1096077  
SFO1 100.629871

===== CHANNEL  
CPDPRG2 waltz  
NUC2 1H  
PCPD2 80.00 t  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL12W 13.4396801  
PL13W 0.3008765  
SFO2 400.151600  
SI 32768  
SF 100.6178032  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

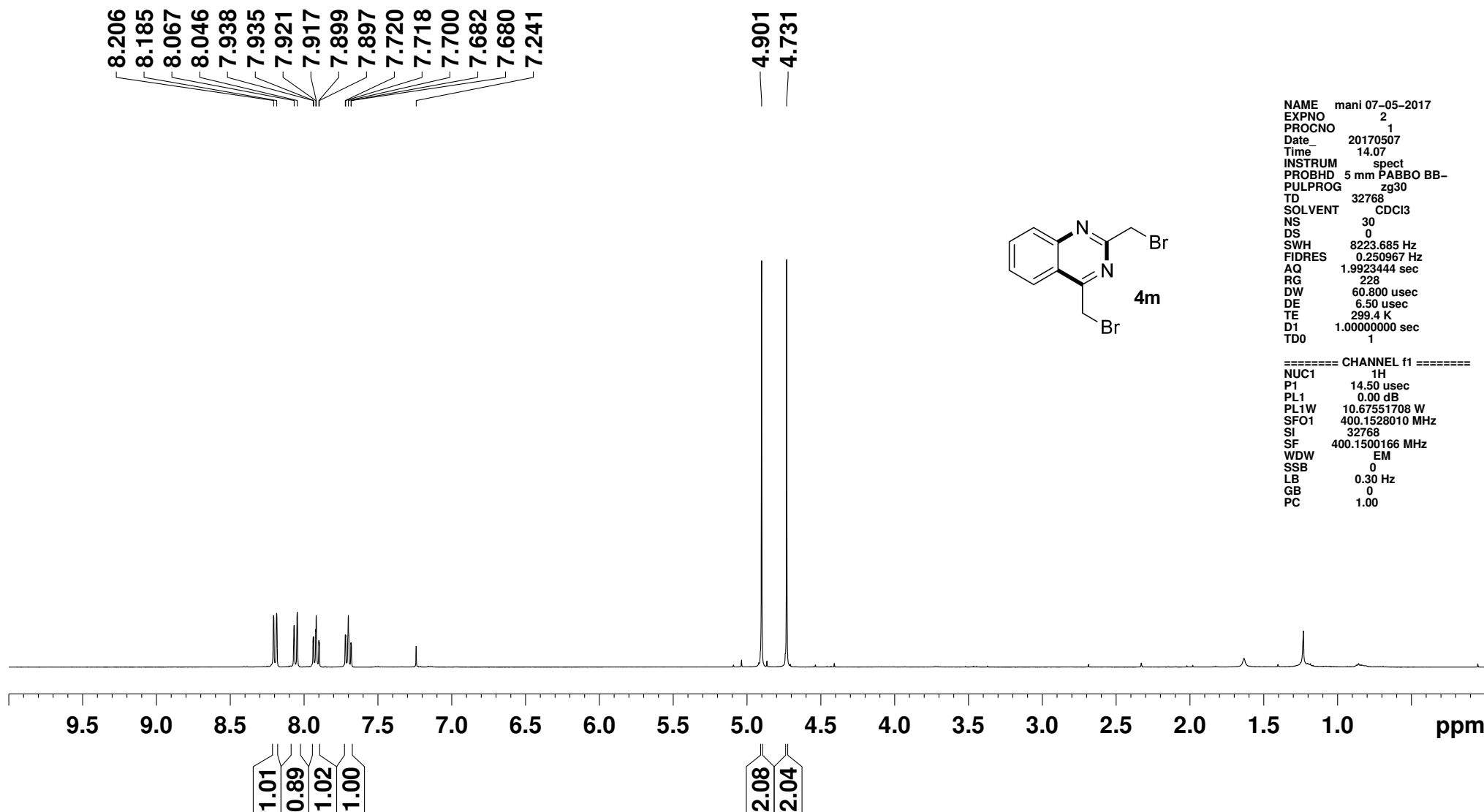
Phdiazonium salt, dry tBuCN, 110deg, 3h, purified colourless oil



Phdiazonium salt, dry tBuCN, 110deg, 3h, purified colourless oil

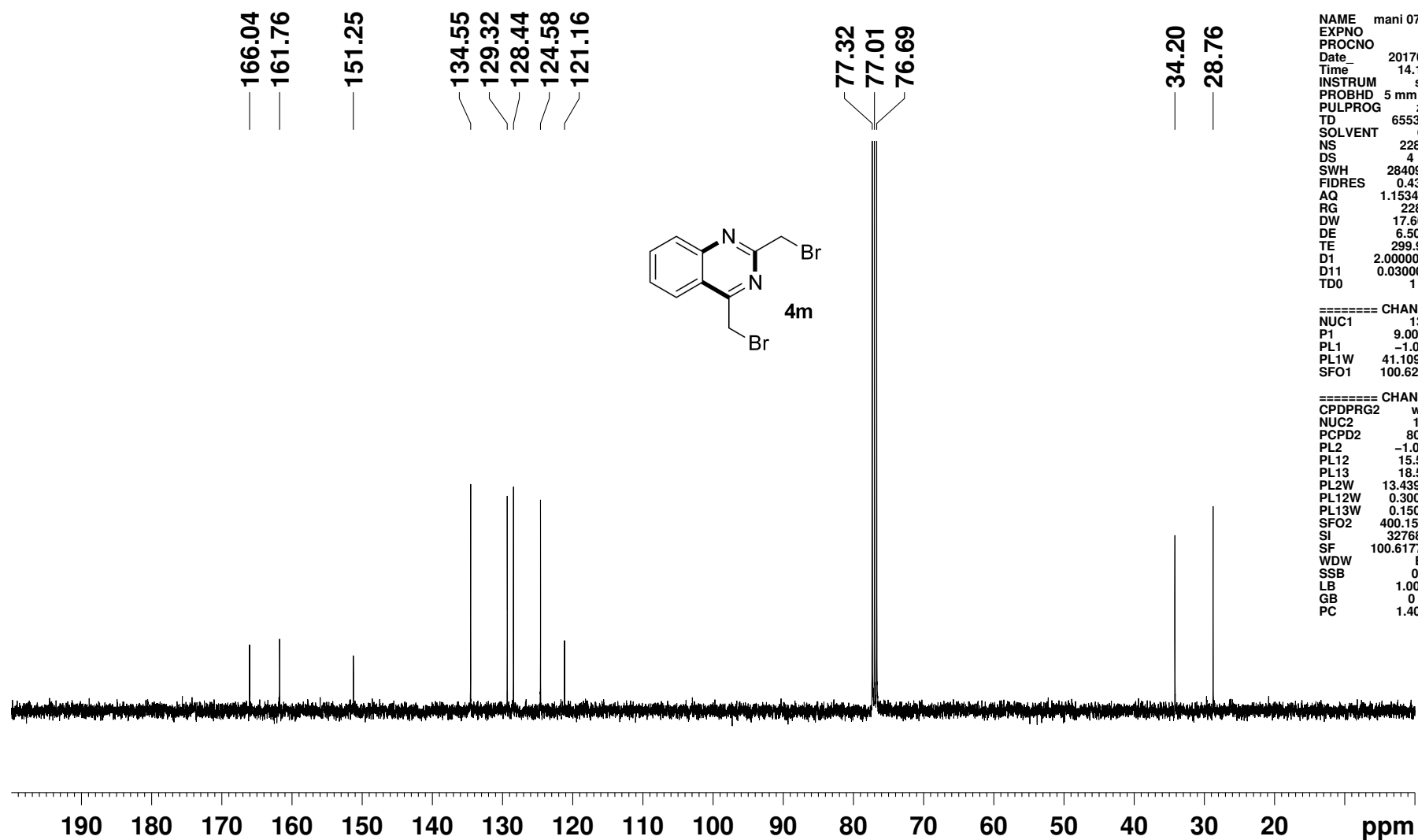


Phdiazonium salt, Dry Bromoacetonitrile, 110deg, 3h, purified



S68

Phdiazonium salt, Dry Bromoacetonitrile, 110deg, 3h, purified

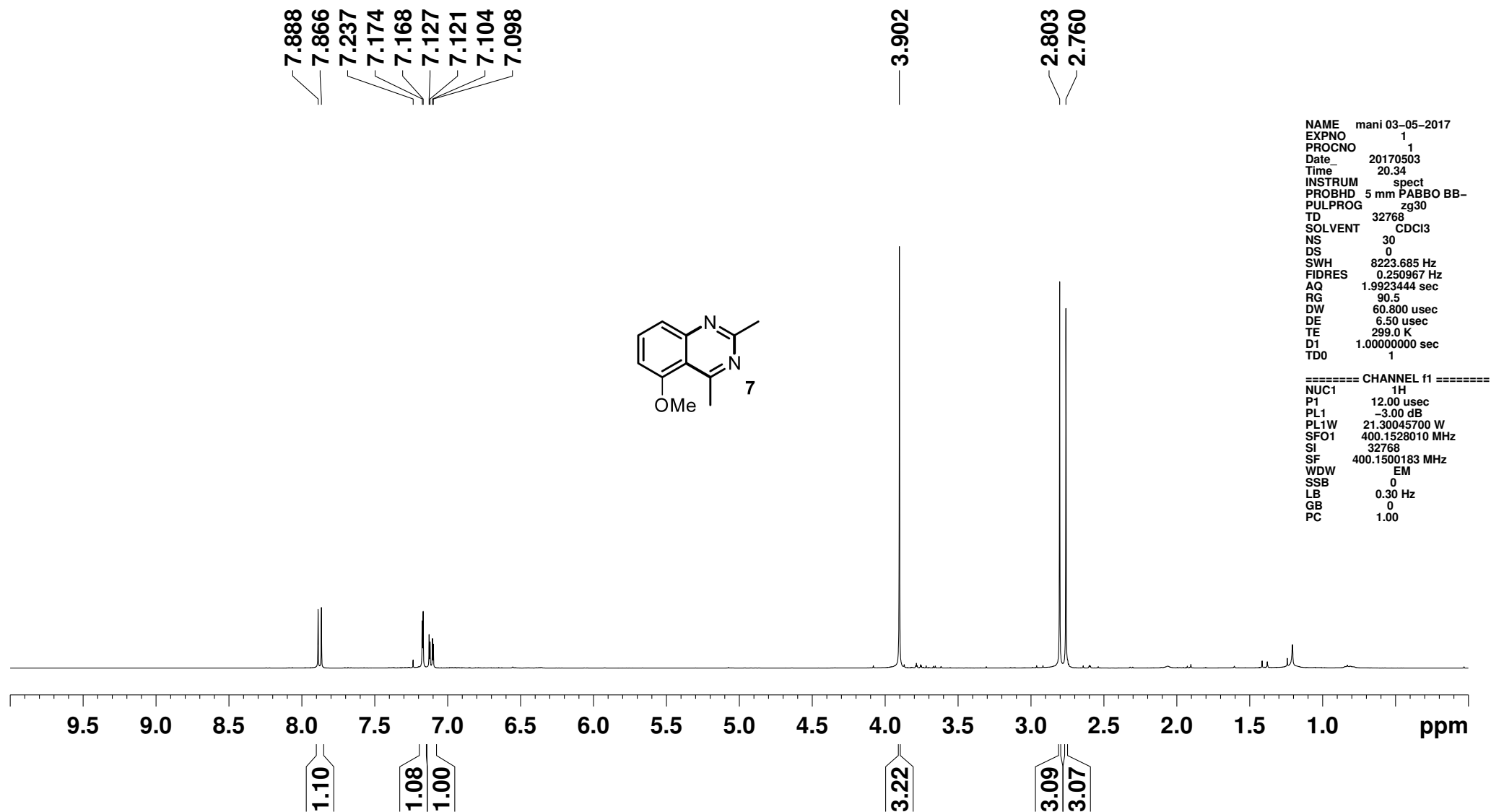


NAME mani 07-05-2017  
EXPNO 3  
PROCNO 1  
Date\_ 20170507  
Time 14.13  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 228  
DS 4  
SWH 28409.092 Hz  
FIDRES 0.433488 Hz  
AQ 1.1534836 sec  
RG 228  
DW 17.600 usec  
DE 6.50 usec  
TE 299.9 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

===== CHANNEL f1 =====  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.10960770 W  
SFO1 100.6298717 MHz

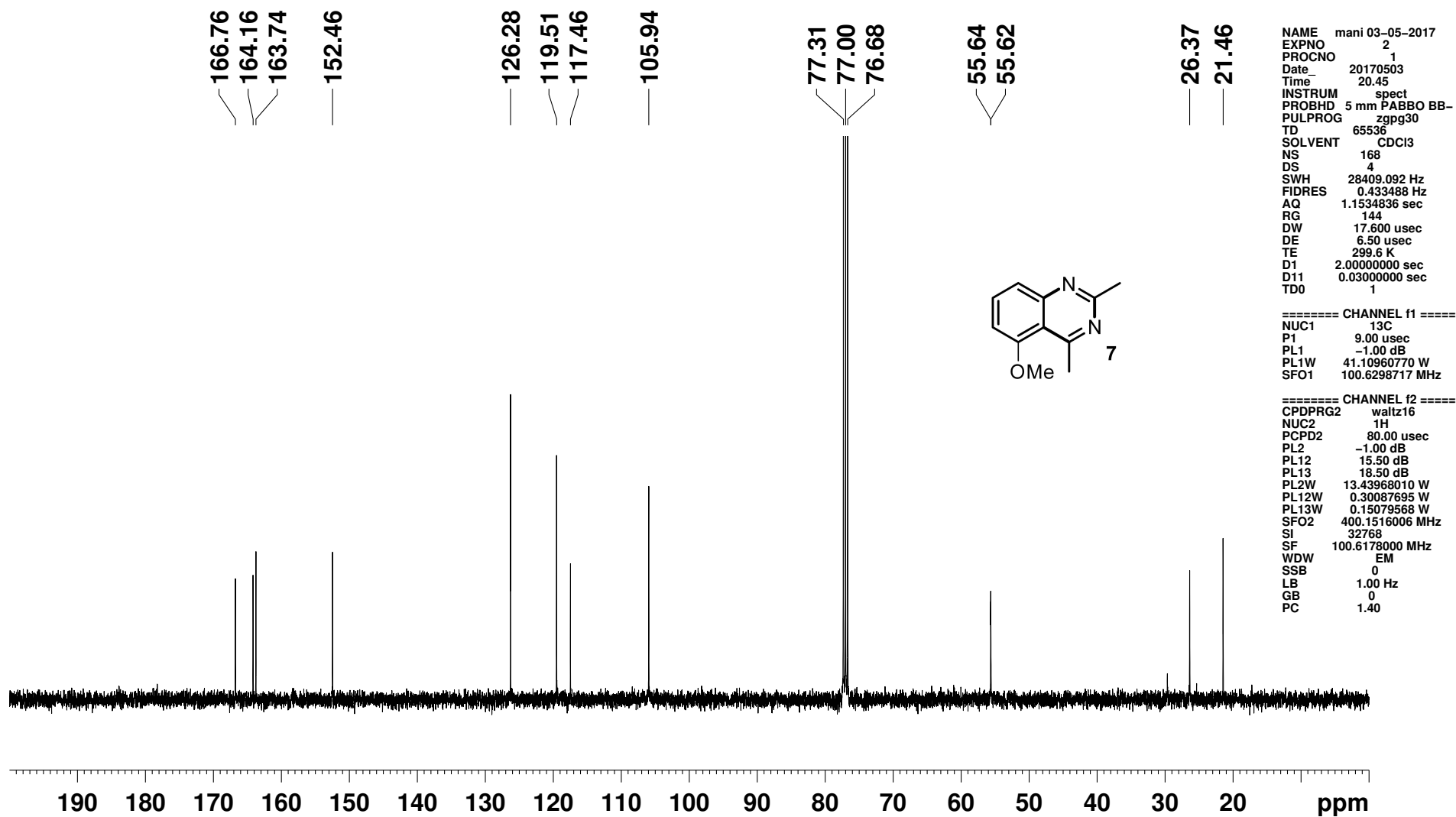
===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL2W 13.43968010 W  
PL12W 0.30087695 W  
PL13W 0.15079568 W  
SFO2 400.1516006 MHz  
SI 32768  
SF 100.6177978 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

3-OMe Phdiazonium salt, Dry MeCN, 110deg, 3h, purified



S70

3-OMe Phdiazonium salt, Dry MeCN, 110deg, 3h, purified

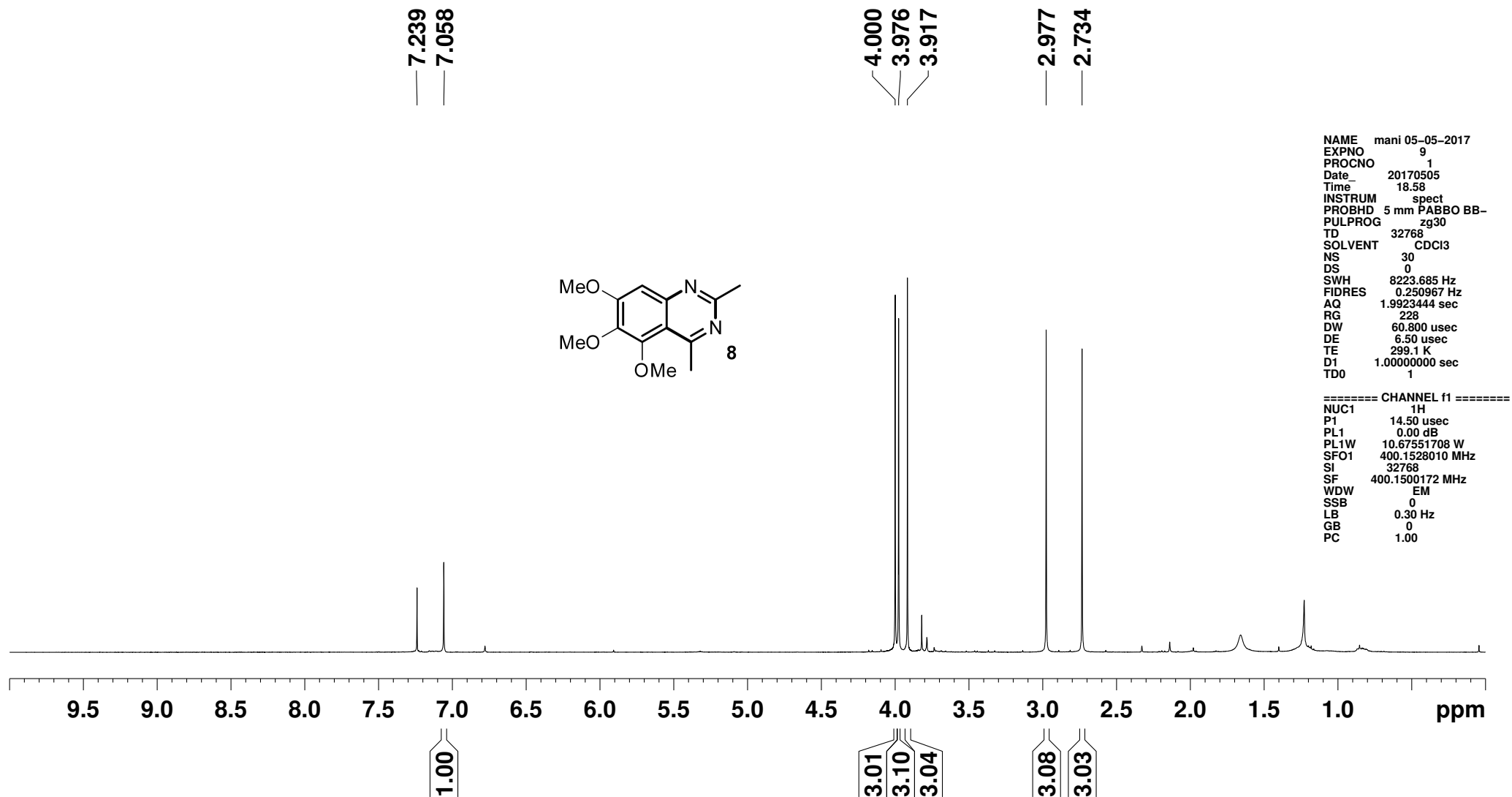


NAME mani 03-05-2017  
EXPNO 2  
PROCNO 1  
Date\_ 20170503  
Time 20.45  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT CDCl3  
NS 168  
DS 4  
SWH 28409.092 Hz  
FIDRES 0.433488 Hz  
AQ 1.1534636 sec  
RG 144  
DW 17.600 usec  
DE 6.50 usec  
TE 299.6 K  
D1 2.00000000 sec  
D11 0.03000000 sec  
TD0 1

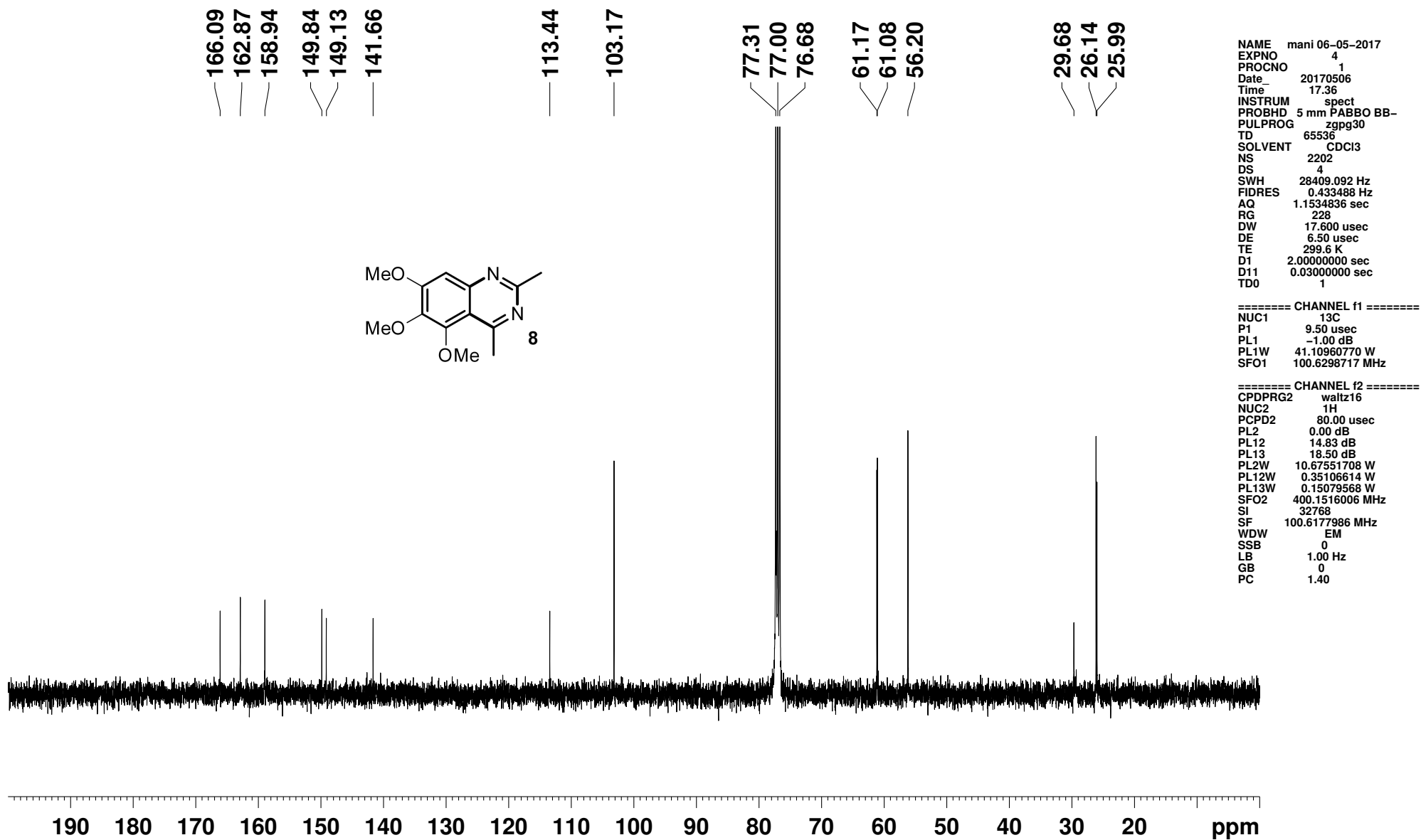
===== CHANNEL f1 =====  
NUC1 13C  
P1 9.00 usec  
PL1 -1.00 dB  
PL1W 41.10960770 W  
SFO1 100.6298717 MHz

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 80.00 usec  
PL2 -1.00 dB  
PL12 15.50 dB  
PL13 18.50 dB  
PL2W 13.43968010 W  
PL12W 0.30087695 W  
PL13W 0.15079568 W  
SFO2 400.1516006 MHz  
SI 32768  
SF 100.6178000 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

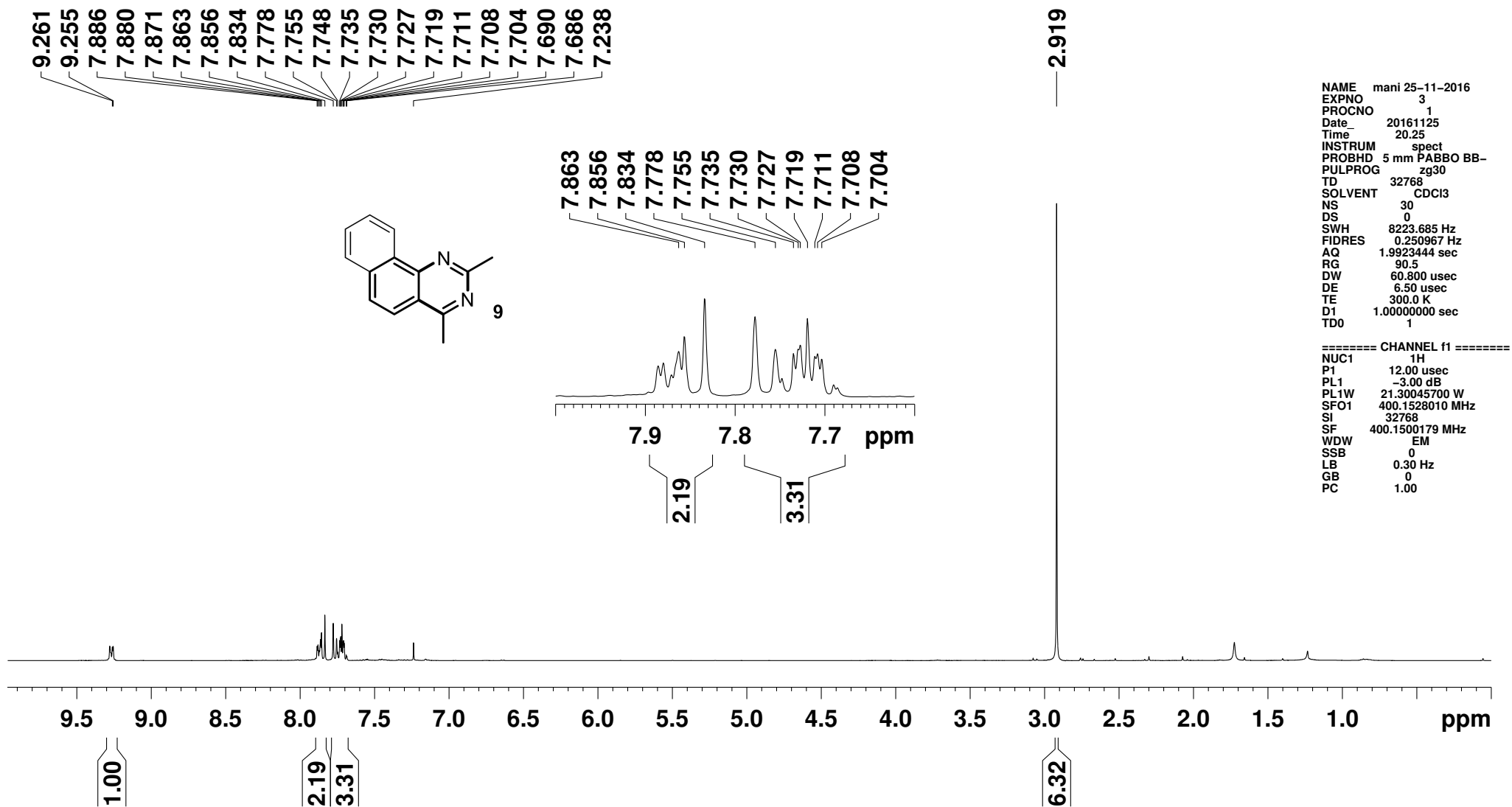
3,4,5-OMe Phdiazonium salt, Dry MeCN, 110deg, 3h, purified



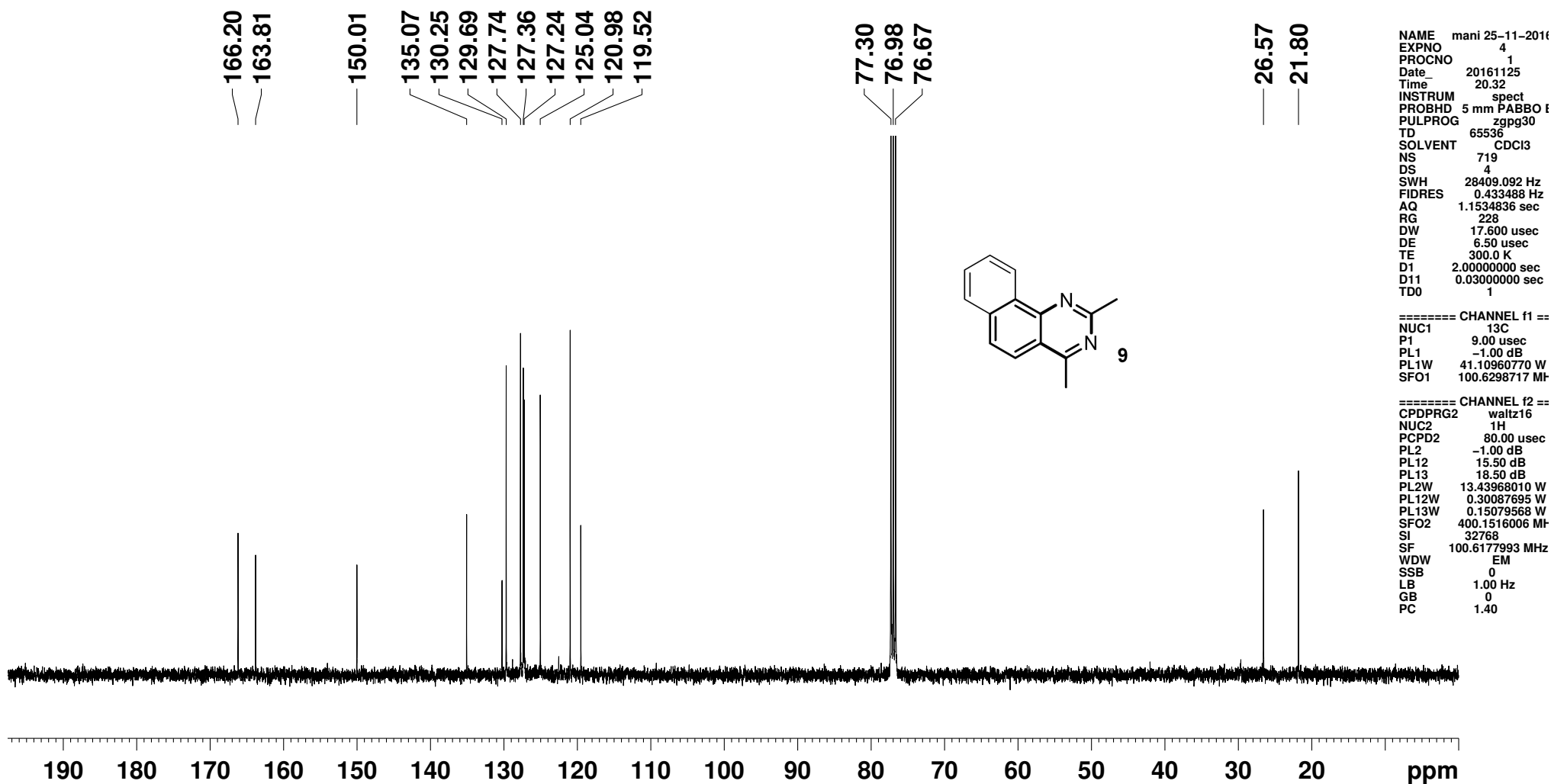
3,4,5-OMe Phdiazonium salt, Dry MeCN, 110deg, 3h, purified



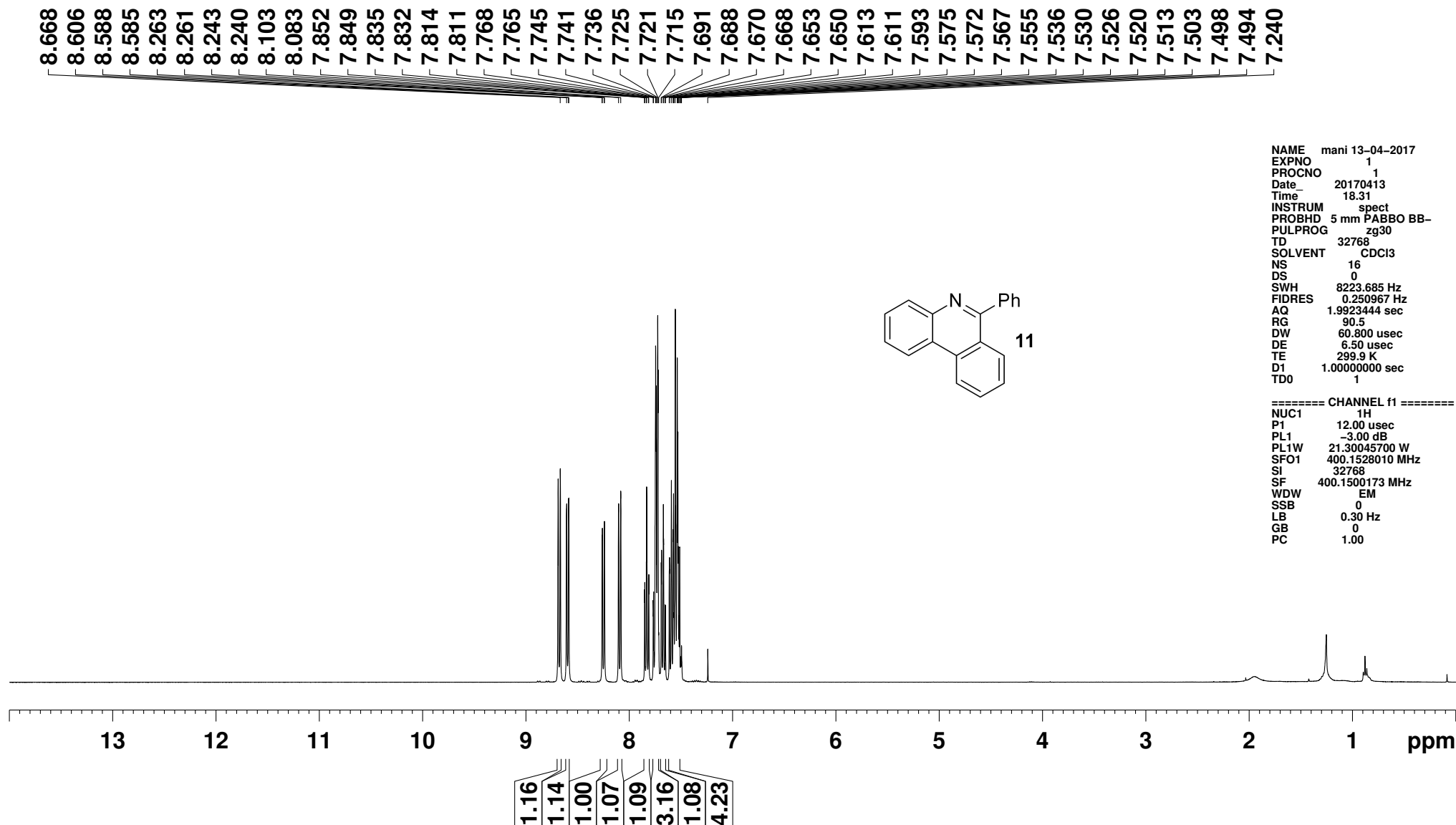
1-naphthyl diazonium salt, Dry MeCN, 110deg, 3h, purified



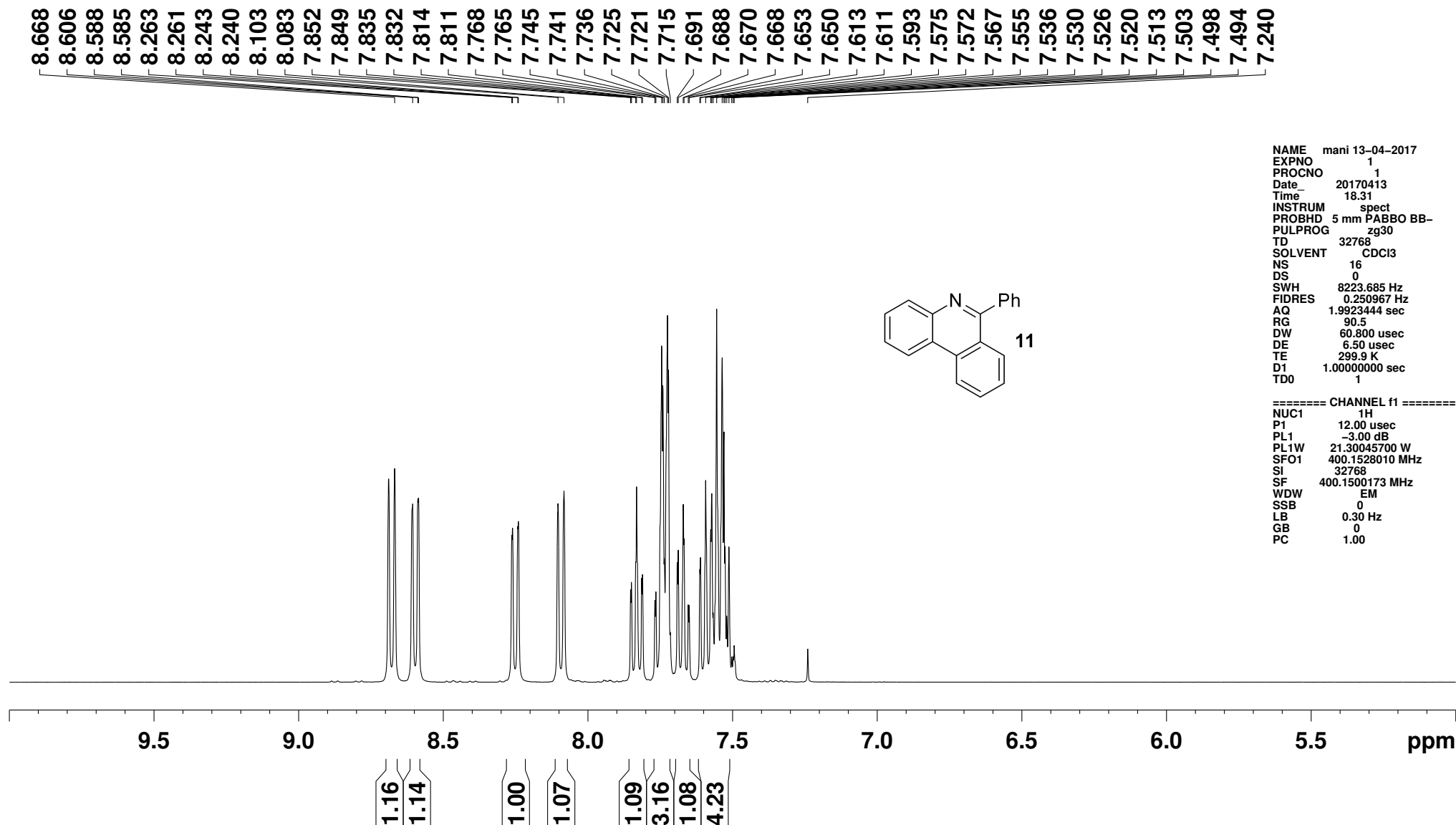
1-naphthyl diazonium salt, Dry MeCN, 110deg, 3h, purified



2-Phdiazonium salt, Dry PhCN, 110deg, 3h, purified white solid



2-Phdiazonium salt, Dry PhCN, 110deg, 3h, purified white solid



2-Phdiazonium salt, Dry PhCN, 110deg, 3h, purified white solid

