

NMR Spectra

for

Synthesis of Hydrazinoheterocycles from Morita-Baylis-Hillman Adducts of Nitroalkenes with Azodicarboxylates

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sw      6006.0      FLAGS
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np      23888      in      n
fb      not used   dp      y
bs      4          hs      nn
d1      1.000      PROCESSING
nt      400       lb      8.10
ct      48        fn      not used
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tpwr    55        rfp     2903.1
pw      4.250     rp      -59.9
      DECOUPLER   lp      29.9
dn      C13      PLOT
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ds      nnn      SC      0
dsa     c        vs     99
dpwr    51       th     30
dwt     17100    nm      ph

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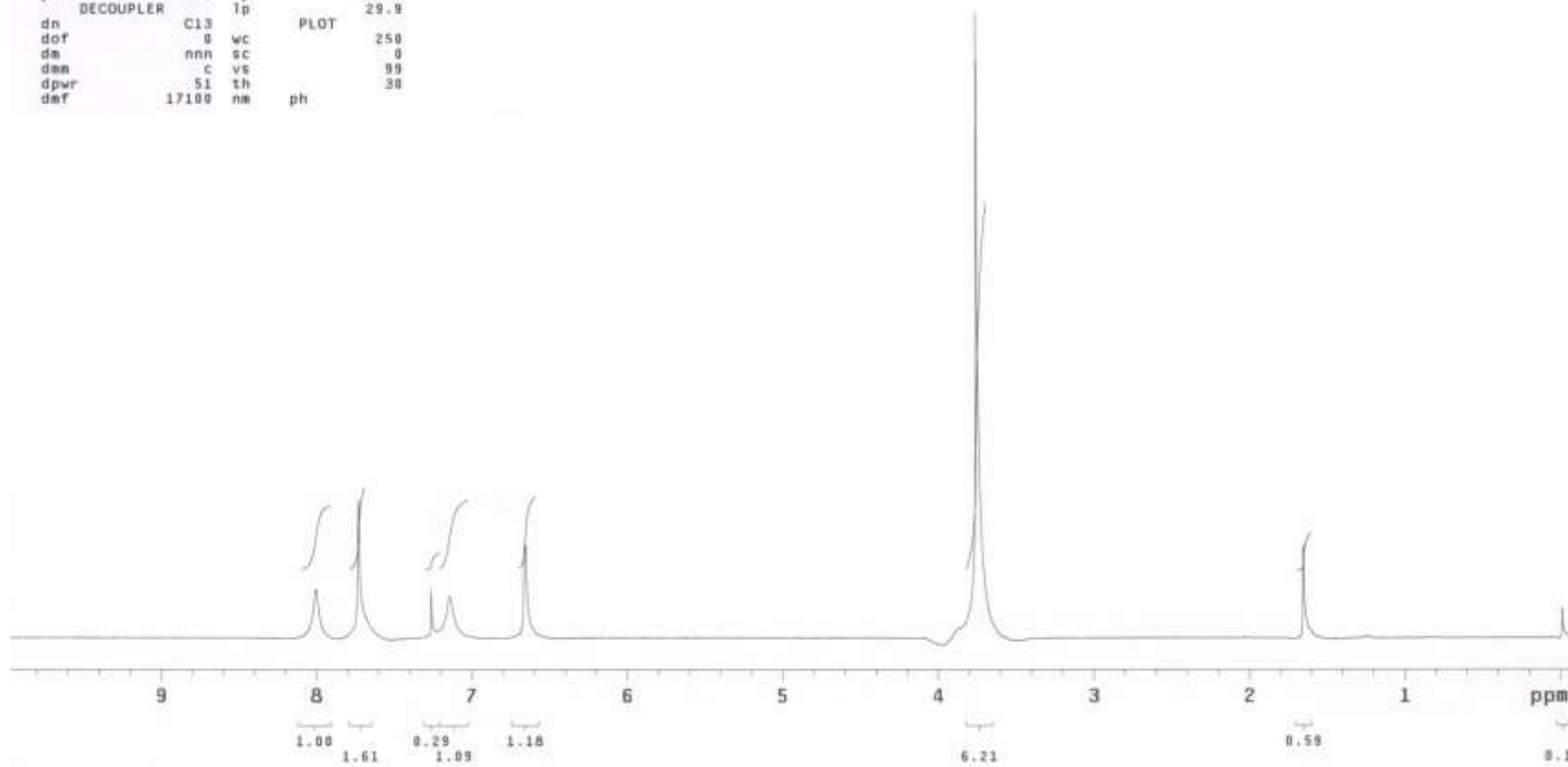
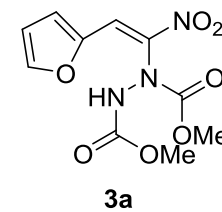


Figure S1. ^1H NMR Spectrum of **3a**

3BH-DMAD-1-C13

exp16 CARBON

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solvent CDCl3 gain      34
file exp spin      not used
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sw 25125.6 pw90     14.000
at 1.199 alfa     20.000
np 60270
fb 13800
bs 4
dl 1.000 dp
nt 50000 hs
ct 156
TRANSMITTER     lb      2.00
tn C13 fn      not used
sfrq 100.561
tof 1554.3
tpwr 56 wp      22153.5
pw 7.000 rfl     9262.9
DECOUPLER      rfp     7742.3
dn HI rp      137.9
dof 0 lp     -336.9
dm yyy
dmw w
dpwr 41 sc
def 11900 vs     51
th
nm ph     2
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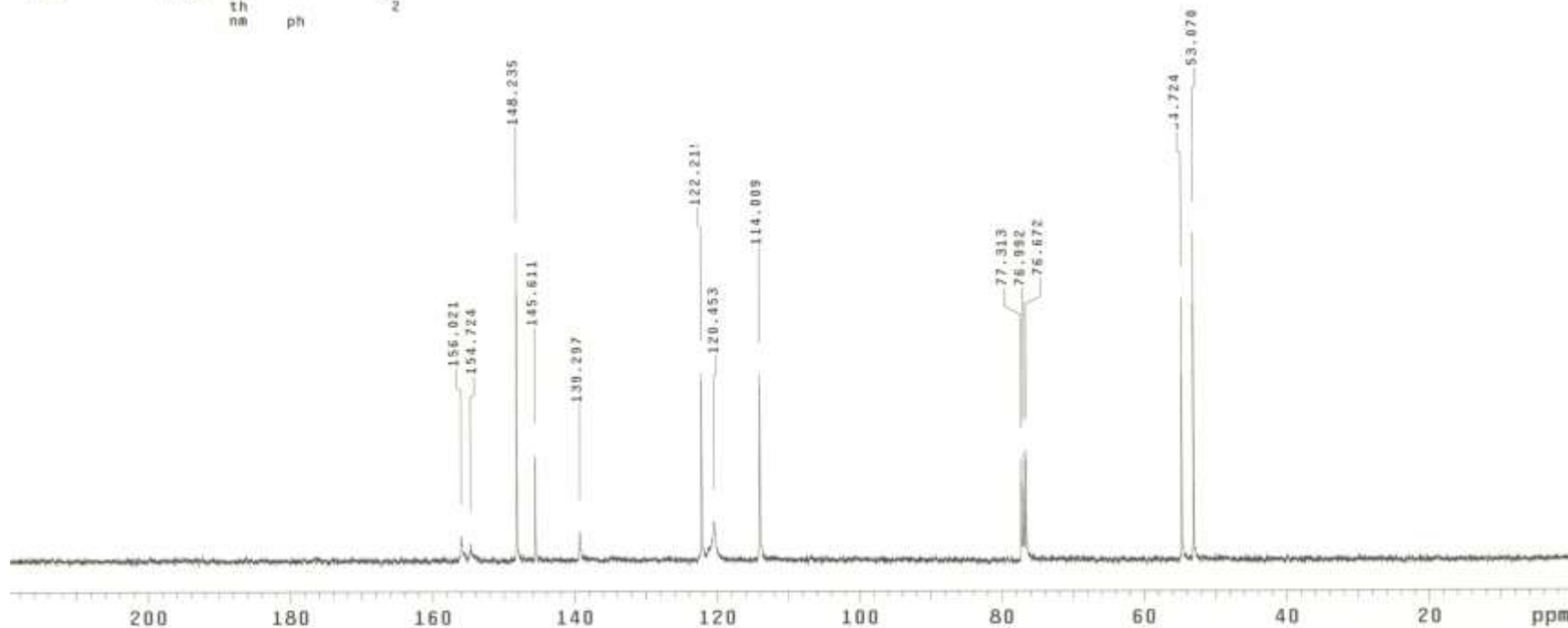
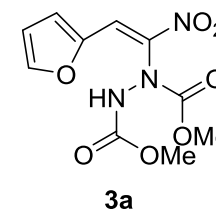


Figure S2. ¹³C NMR Spectrum of **3a**

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EXFNO 1
PROCNO 1

F2 - Acquisition Parameters
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PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 12
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767899 sec
RG 30.72
DW 50.000 usec
DE 6.50 usec
TE 299.8 K
D1 1.00000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 500.1330885 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300125 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

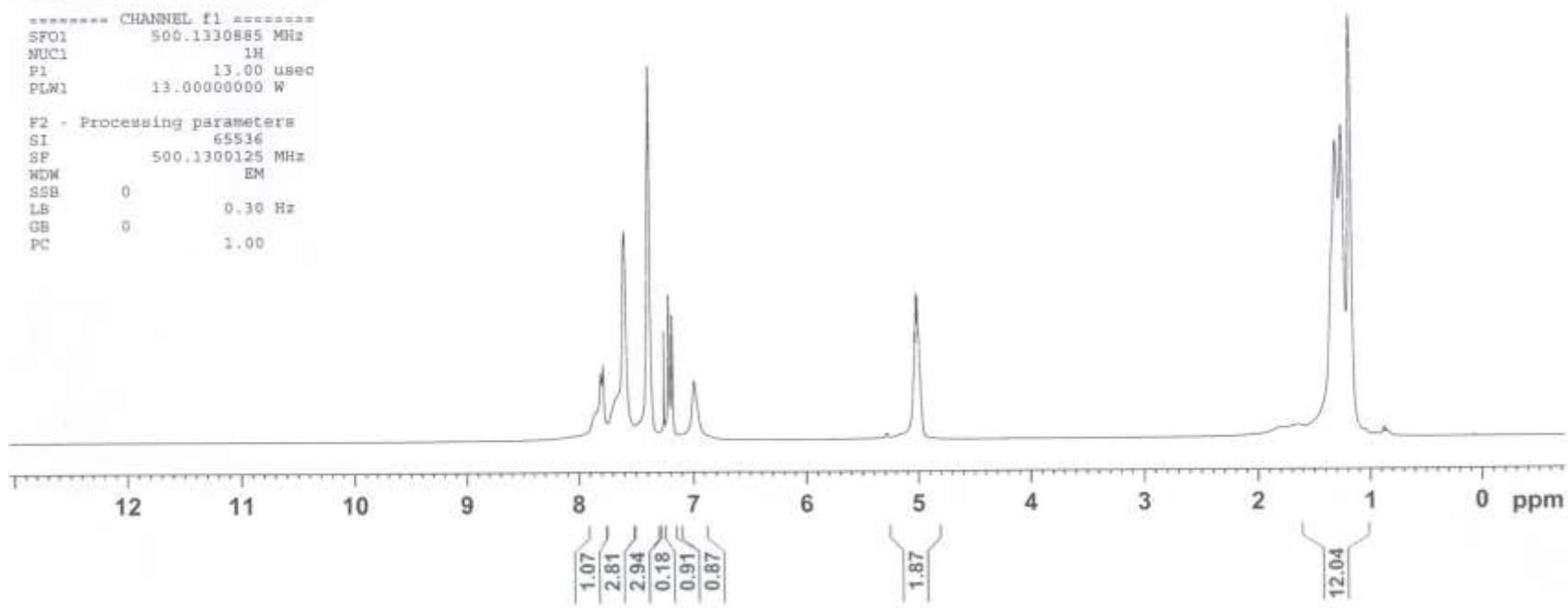
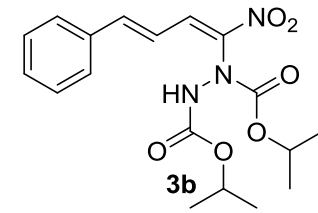
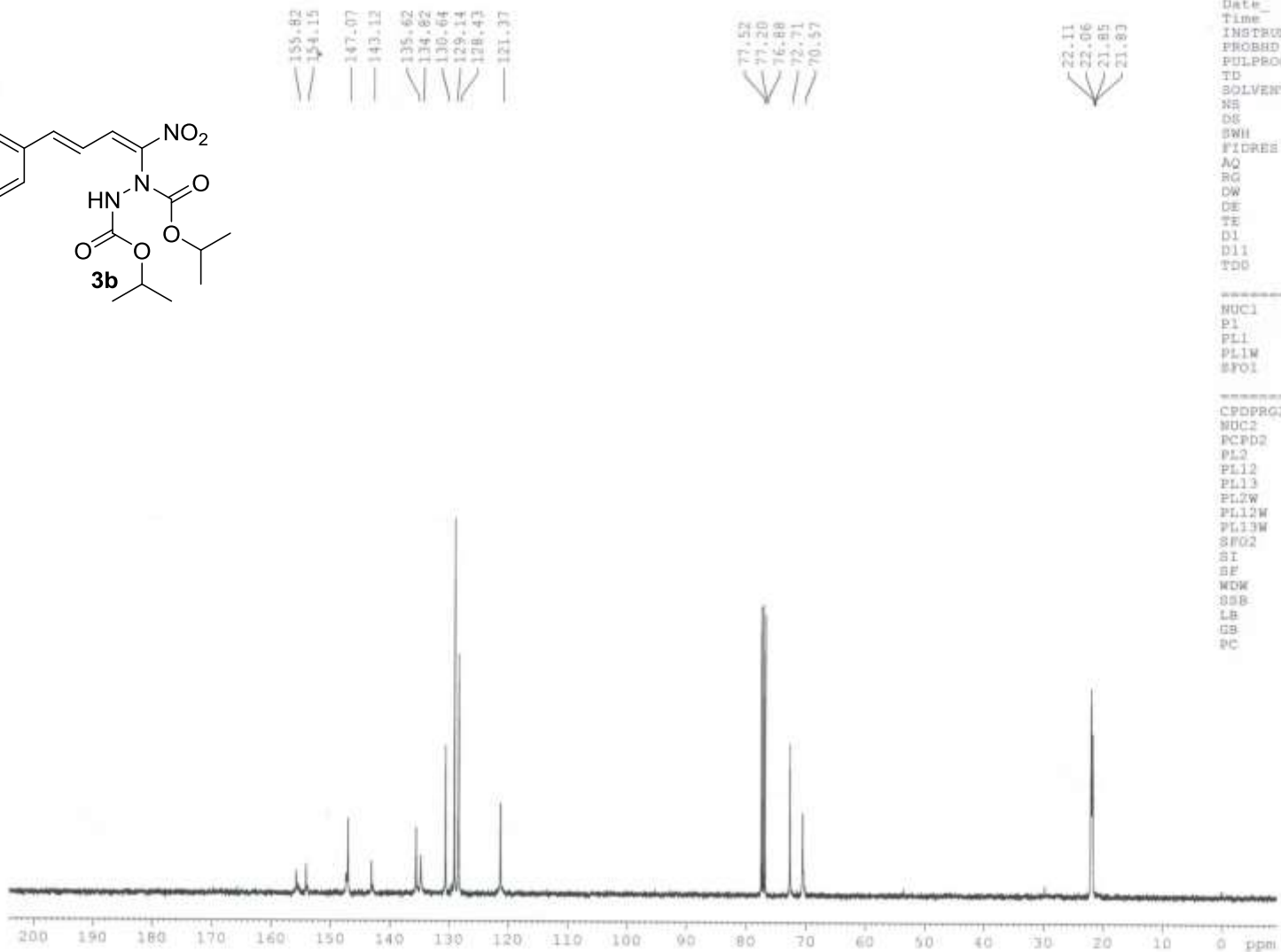
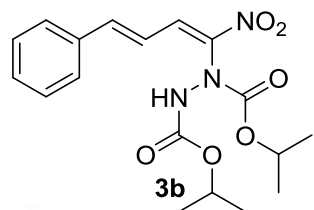


Figure S3. ¹H NMR Spectrum of **3b**



```

NAME      INN-JYP-84-C13
EXPNO     27
PROCNO    1
Date_     20110218
Time      16.47
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         061
DS         1
SWH        27777.777 Hz
FIDRES     0.423855 Hz
AQ         1.1796980 sec
RG         912
DW         18.000 usec
DE         6.50 usec
TE         294.7 K
D1         1.00000000 sec
D11        0.03000000 sec
TDD        1
  
```

```

----- CHANNEL f1 -----
NUC1       13C
P1         8.75 usec
PL1        -2.00 dB
PL1W       56.53121948 W
SFO1       100.6240376 MHz
  
```

```

----- CHANNEL f2 -----
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2        -1.00 dB
PL12       14.50 dB
PL13       14.50 dB
PL12W     10.56200695 W
PL12W     0.29767781 W
PL13W     0.29767781 W
SFO2       400.1316005 MHz
SI         32768
SF         100.6127581 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.00
  
```

Figure S4. ^{13}C NMR Spectrum of **3b**

```

Current Data Parameters
NAME      INN-RRK-33-1H
EXPNO     11
PROCNO    1

F2 - Acquisition Parameters
Date_     20131004
Time      22.13
INSTRUM   spect
PROBHD    5 mm PABBO BB/
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         14
DS         2
SWH        10000.000 Hz
FIDRES     0.152588 Hz
AQ         3.2767999 sec
RG         30.72
DW         50.000 usec
DE         6.50 usec
TE         296.9 K
D1         1.00000000 sec
TD0        1

----- CHANNEL f1 -----
SFO1      500.1330885 MHz
NUC1       1H
P1         13.00 usec
PLW1       13.00000000 W

F2 - Processing parameters
SI         65536
SF         500.1300000 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

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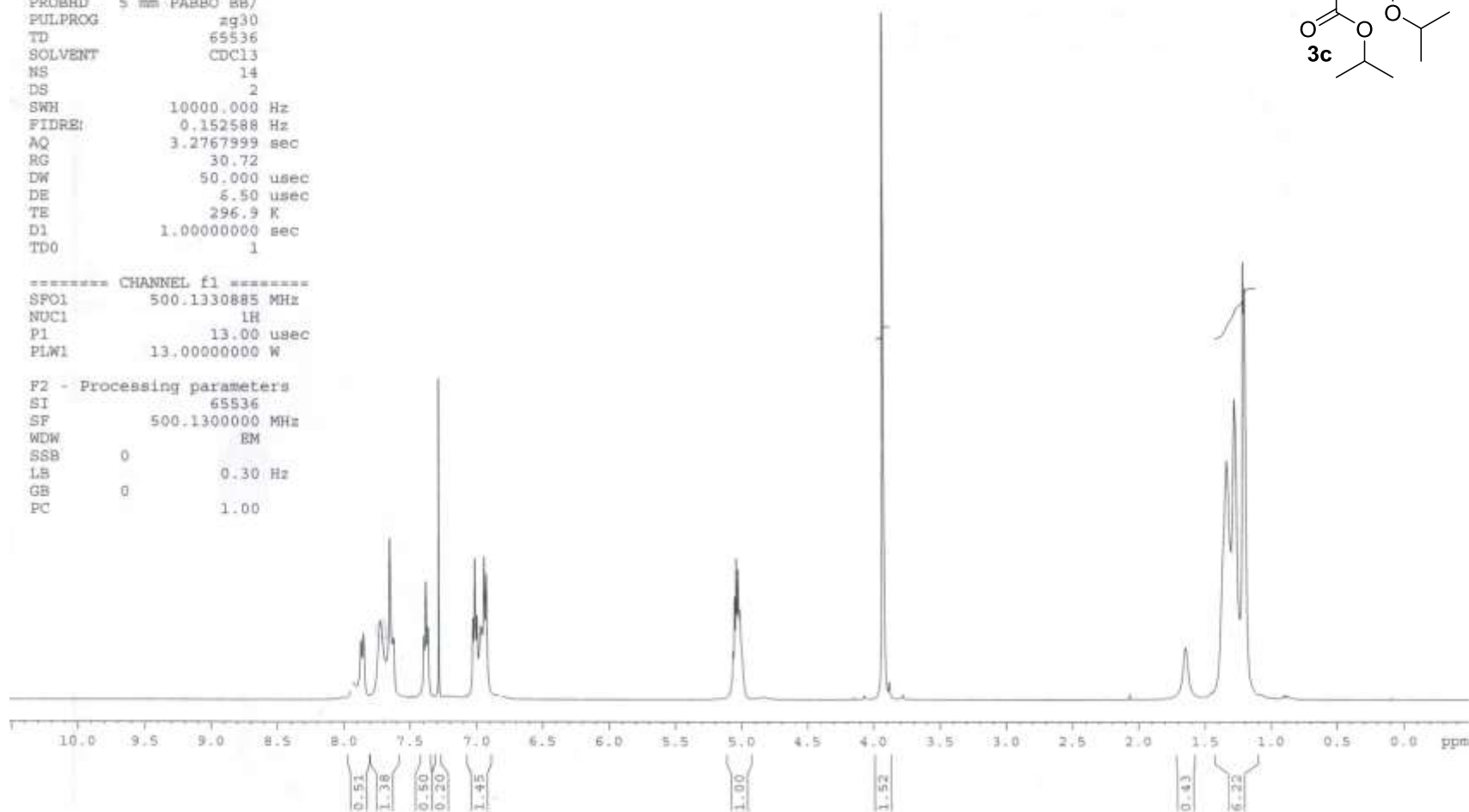
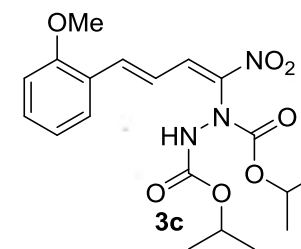


Figure S5. ¹H NMR Spectrum of **3c**

NAME INN-JYP-103-13C
 EXPNO 8
 PROCNO 1
 Date_ 20110404
 Time_ 10.47
 INSTRUM spect
 PROBHD 5 mm rABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT CDCl3
 NS 112
 DS 4
 SWH 24038.461 Hz
 FIDRES 0.366798 Hz
 AQ 1.3631988 sec
 RG 2050
 DW 20.800 usec
 DE 6.50 usec
 TE 300.0 K
 D1 2.00000000 sec
 D11 0.03000000 sec
 TDO 1

----- CHANNEL f1 -----
 NUC1 13C
 P1 8.75 usec
 PL1 -2.00 dB
 PL1W 56.53121948 W
 SFO1 100.6228298 MHz

----- CHANNEL f2 -----
 CPDPRG2 waltz16
 NUC2 1H
 PCPD2 80.00 usec
 PL2 -1.00 dB
 PL12 14.50 dB
 PL13 14.50 dB
 PL2W 10.56200695 W
 PL12W 0.29767781 W
 PL13W 0.29767781 W
 SFO2 400.1316005 MHz
 SI 32768
 SF 100.6127566 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

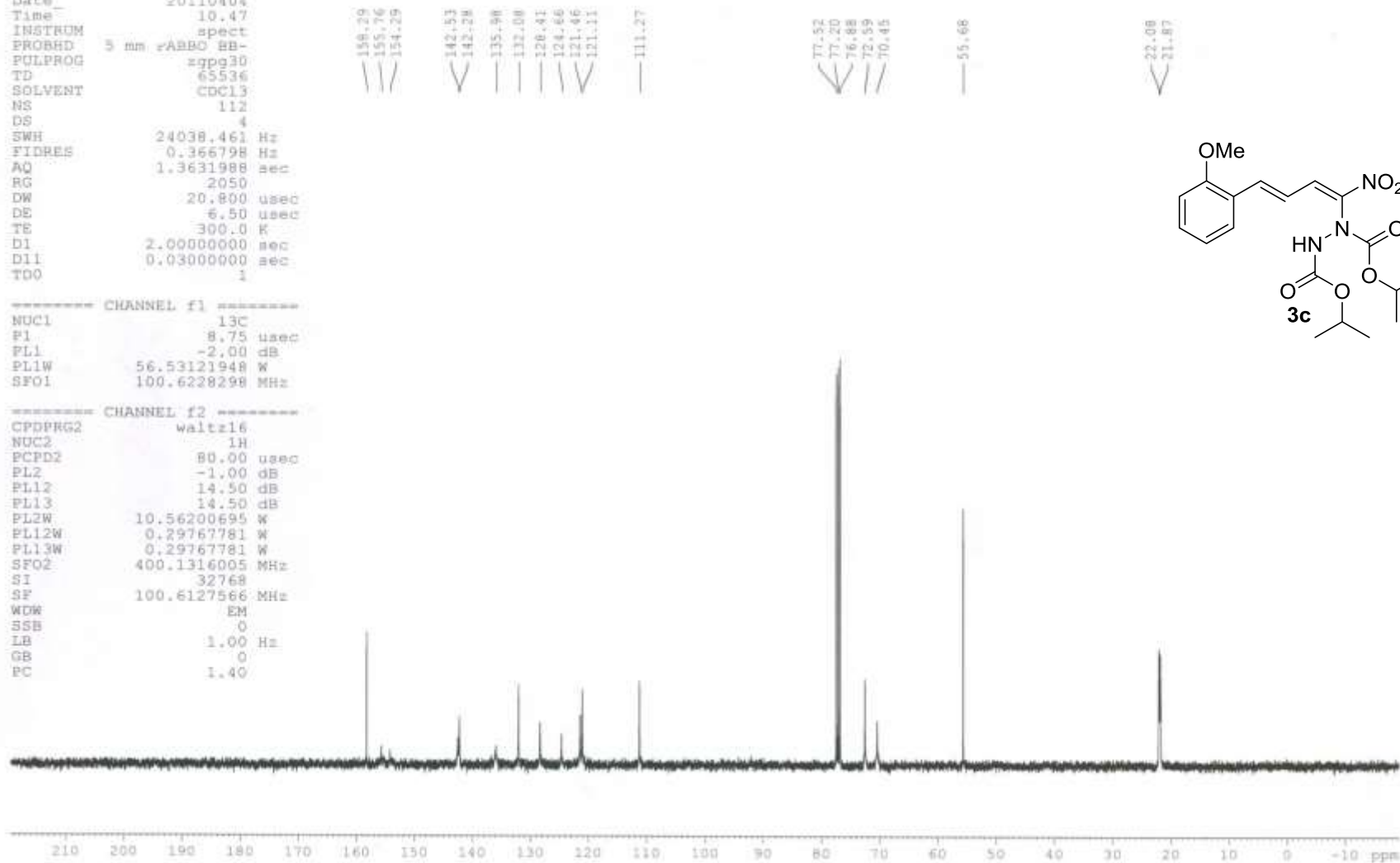


Figure S6. ¹³C NMR Spectrum of **3c**

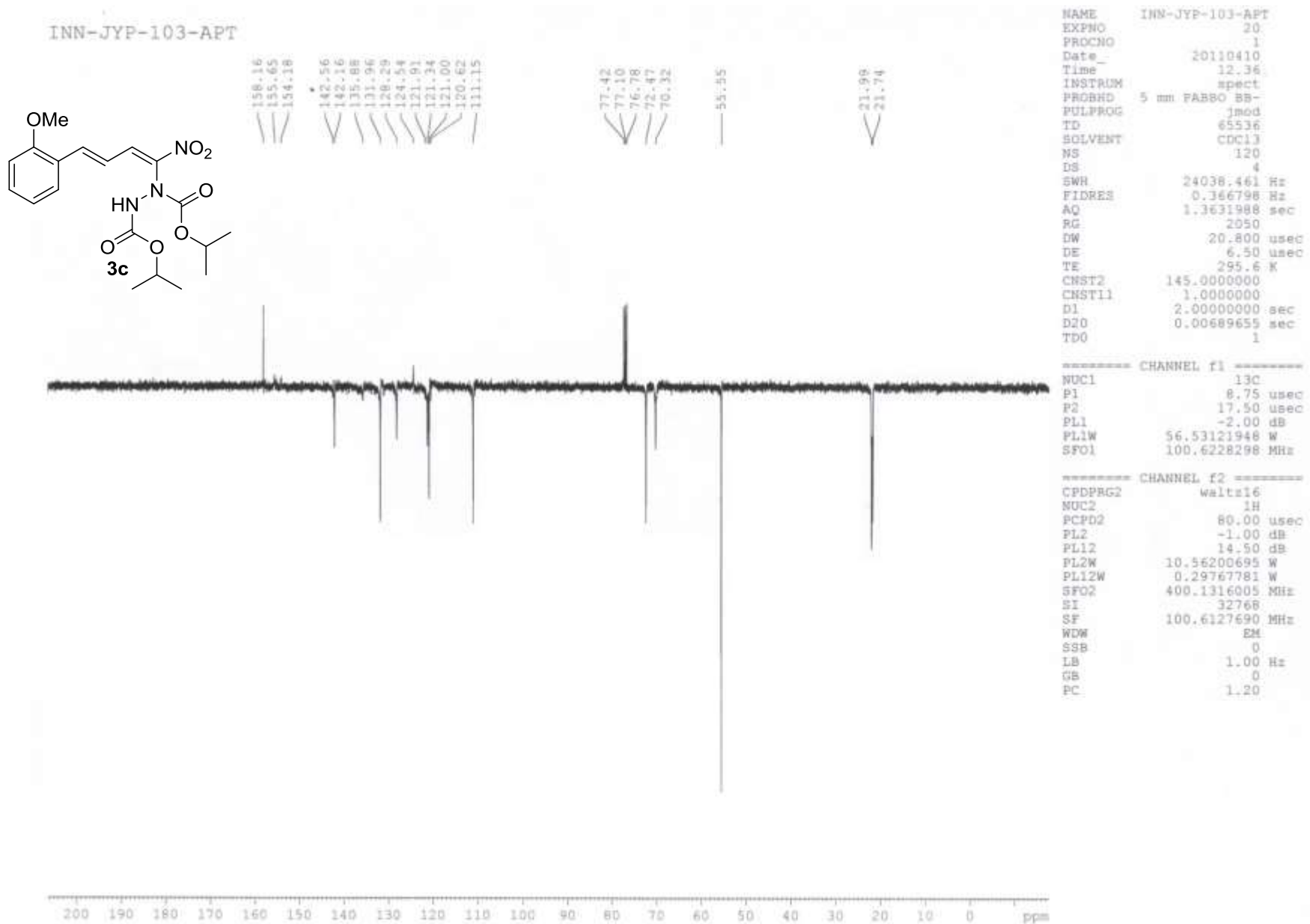


Figure S7. ¹³C-APT Spectrum of **3c**

IMN-CD-23

Data Collected on: quanta-mercury300
Archive directory: /export/home/vnmr1/vnmrsys/data
Sample directory: IMN-CD-23_2008-04-11
File: gCOSY_01

Pulse Sequence: gCOSY

Solvent: CDCl3

Relax. delay 1.000 sec
Acq. time 0.150 sec
Width 3273.3 Hz
2D Width 3273.3 Hz
2 repetitions
256 increments
OBSERVE H1, 299.9475008 MHz
DATA PROCESSING
Sq. sine bell 0.075 sec
F1 DATA PROCESSING
Sq. sine bell 0.078 sec
FT size 2048 x 2048
Total time 12 min

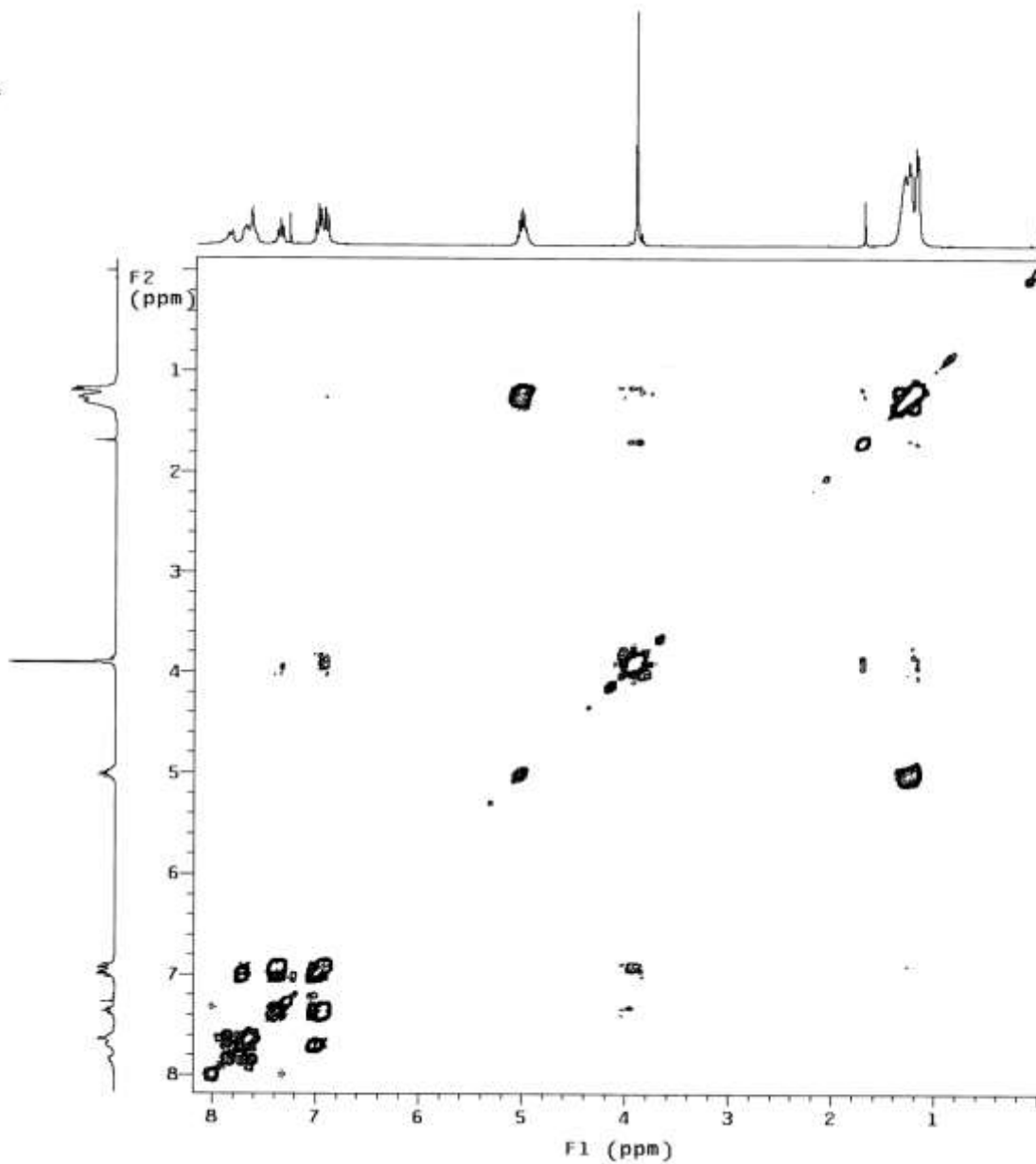
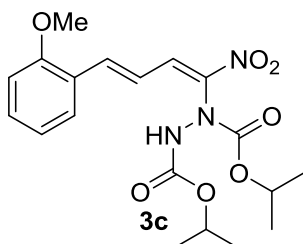


Figure S8. ^1H - ^1H -COSY Spectrum of **3c**

3Mn-CD-23-NOESY
Data Collected on: Quanta-mercuryH1freq
Archive directory: /export/home/vmr1/vmr5ys/data
Sample directory:
File: 3Mn-1D-23-NOESY
Pulse Sequence: NOESY

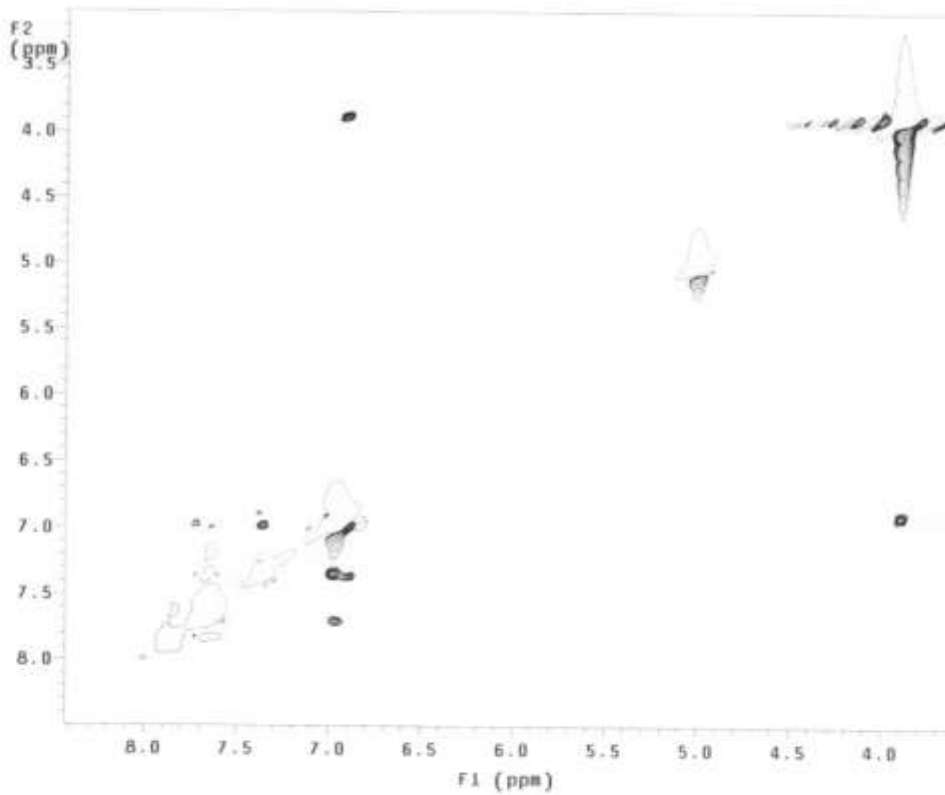
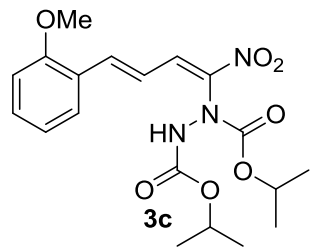


Figure S9. ^1H - ^1H -NOESY Spectrum of **3c** Figure S10. ^1H NMR Spectrum of **3d**

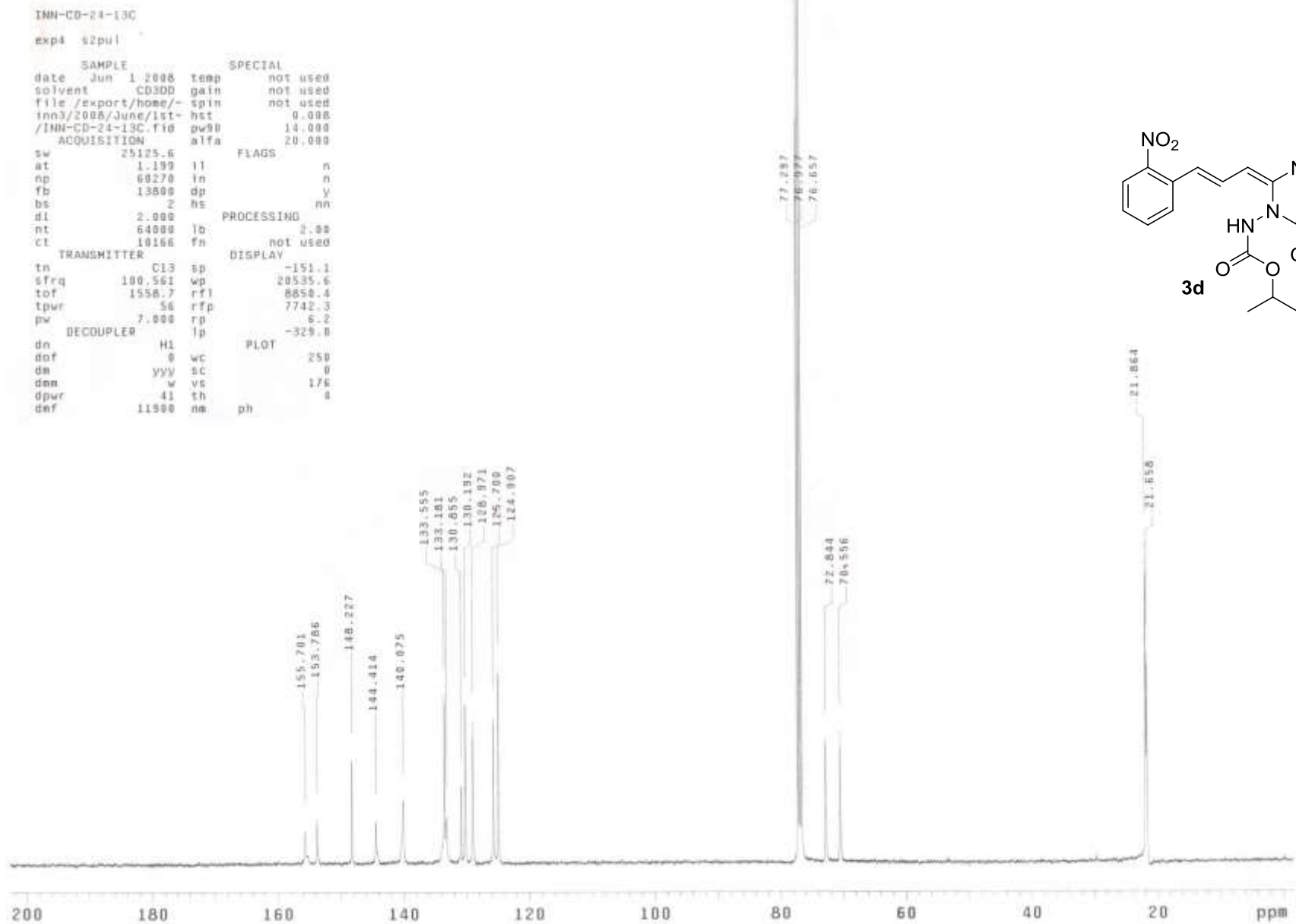


Figure S11. ^{13}C NMR Spectrum of **3d**

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EXPNO 1
PROCNO 1

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Time_ 0.38
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PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDC13
NS 50
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 30.72
DW 50.000 usec
DE 6.50 usec
TE 293.9 K
D1 1.00000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 500.1330885 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300118 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

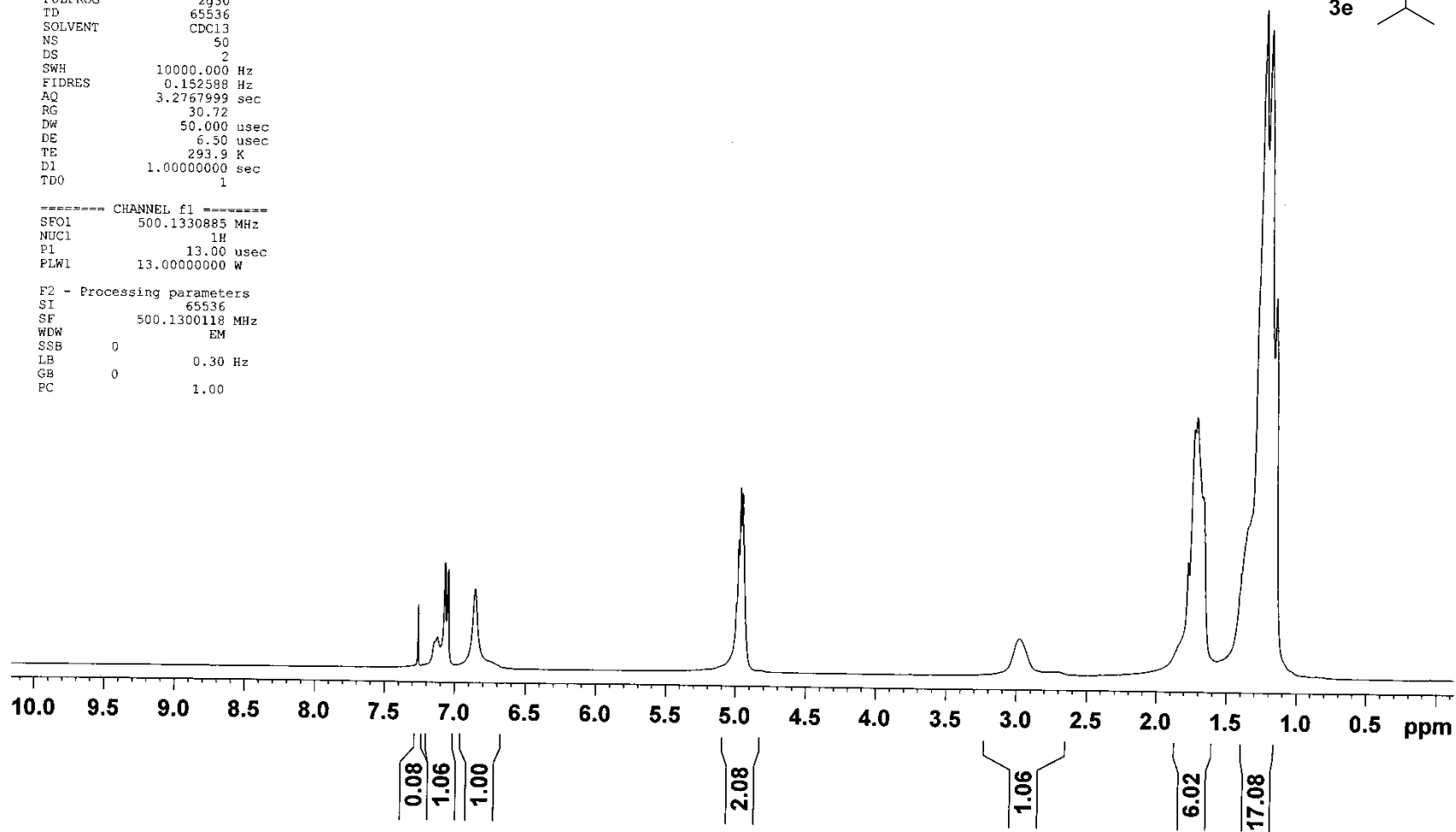
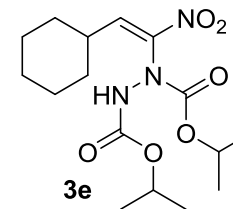


Figure S12. ¹H NMR Spectrum of 3e

```

NAME      INN-JYP-89-13C
EXPNO     19
PROCNO    1
Date_     20110402
Time      13.27
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         104
DS         4
SWH        26041.666 Hz
FIDRES     0.397364 Hz
AQ         1.2583412 sec
RG         2050
DW         19.200 usec
DE         6.50 usec
TE         295.5 K
DI         1.00000000 sec
DI1        0.03000000 sec
TDO        1

```

```

----- CHANNEL f1 -----
NUC1       13C
P1         8.75 usec
PL1        -2.00 dB
PL1W       56.53121948 W
SFO1       100.6238364 MHz

```

```

----- CHANNEL f2 -----
CPDPRG2    waltz16
NUC2        1H
PCPD2       80.00 usec
PL2         -1.00 dB
PL12        14.50 dB
PL13        14.50 dB
PL2W        10.56200695 W
PL12W       0.29767781 W
PL13W       0.29767781 W
SFO2       400.1316005 MHz
SI          32768
SF         100.6127564 MHz
WDW         EM
SSB         0
LB          1.00 Hz
GB          0
PC          1.40

```

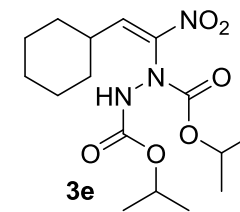
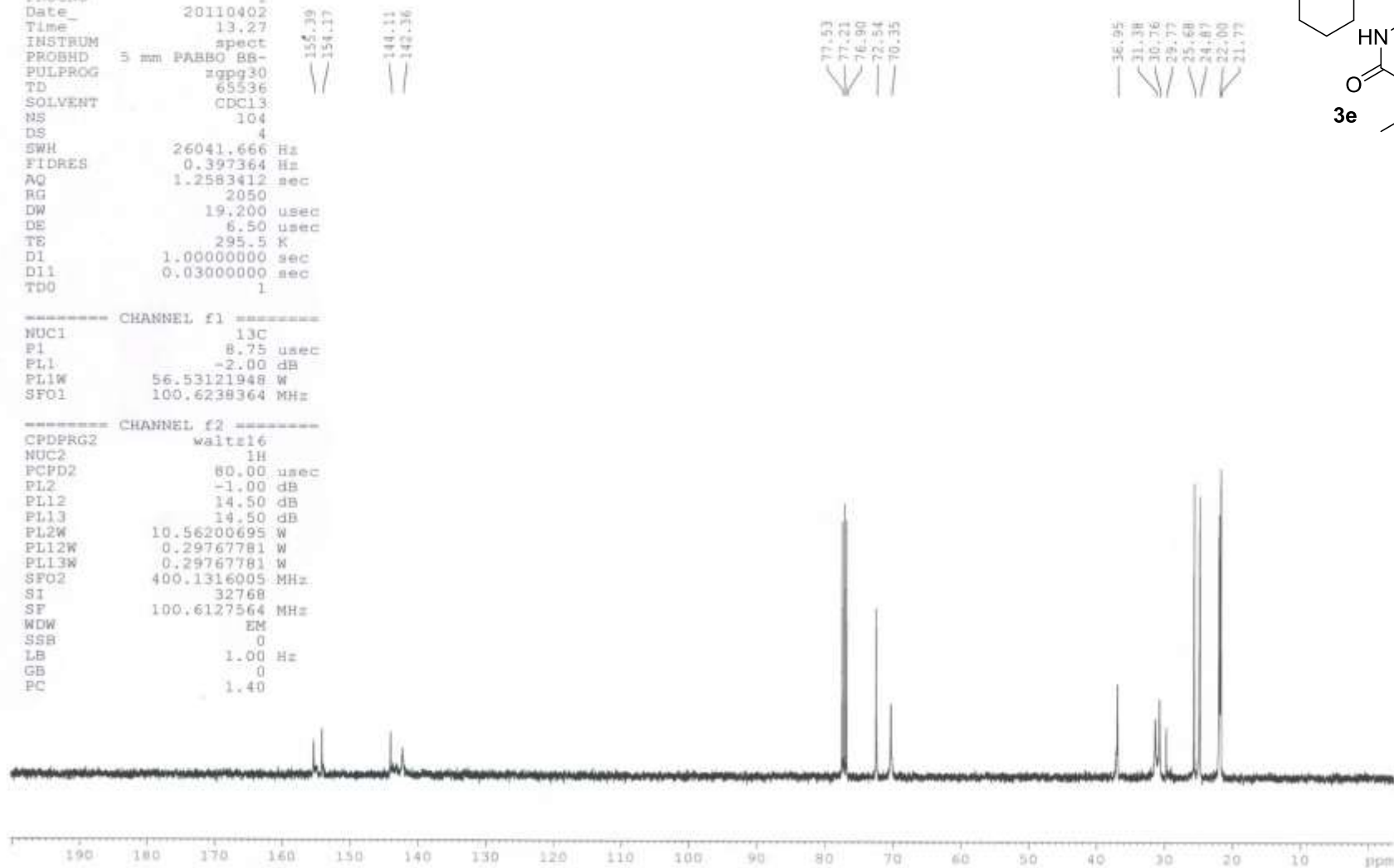


Figure S13. ^{13}C NMR Spectrum of **3e**

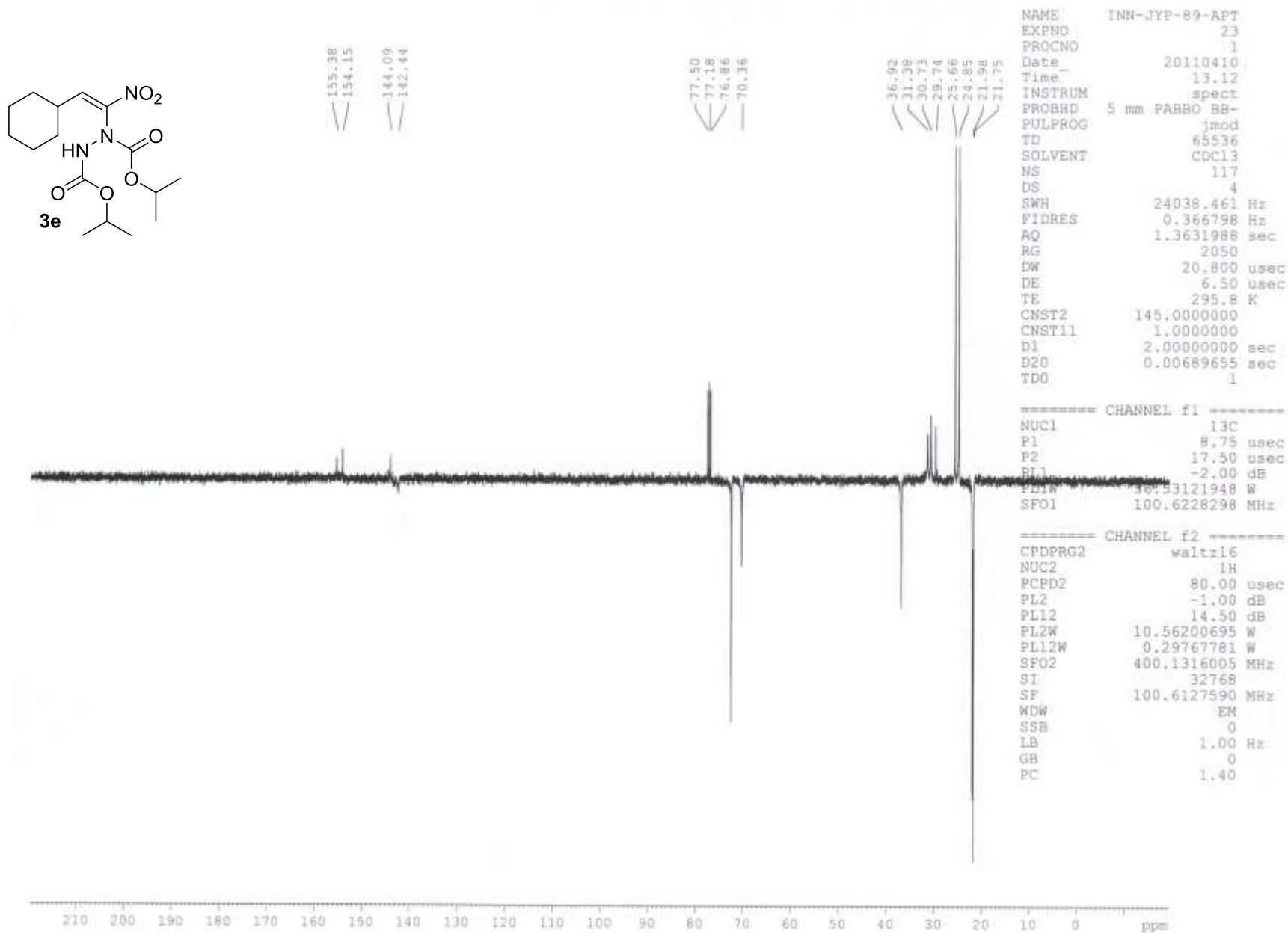
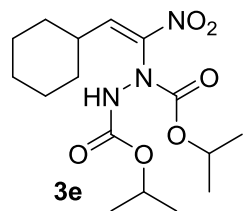
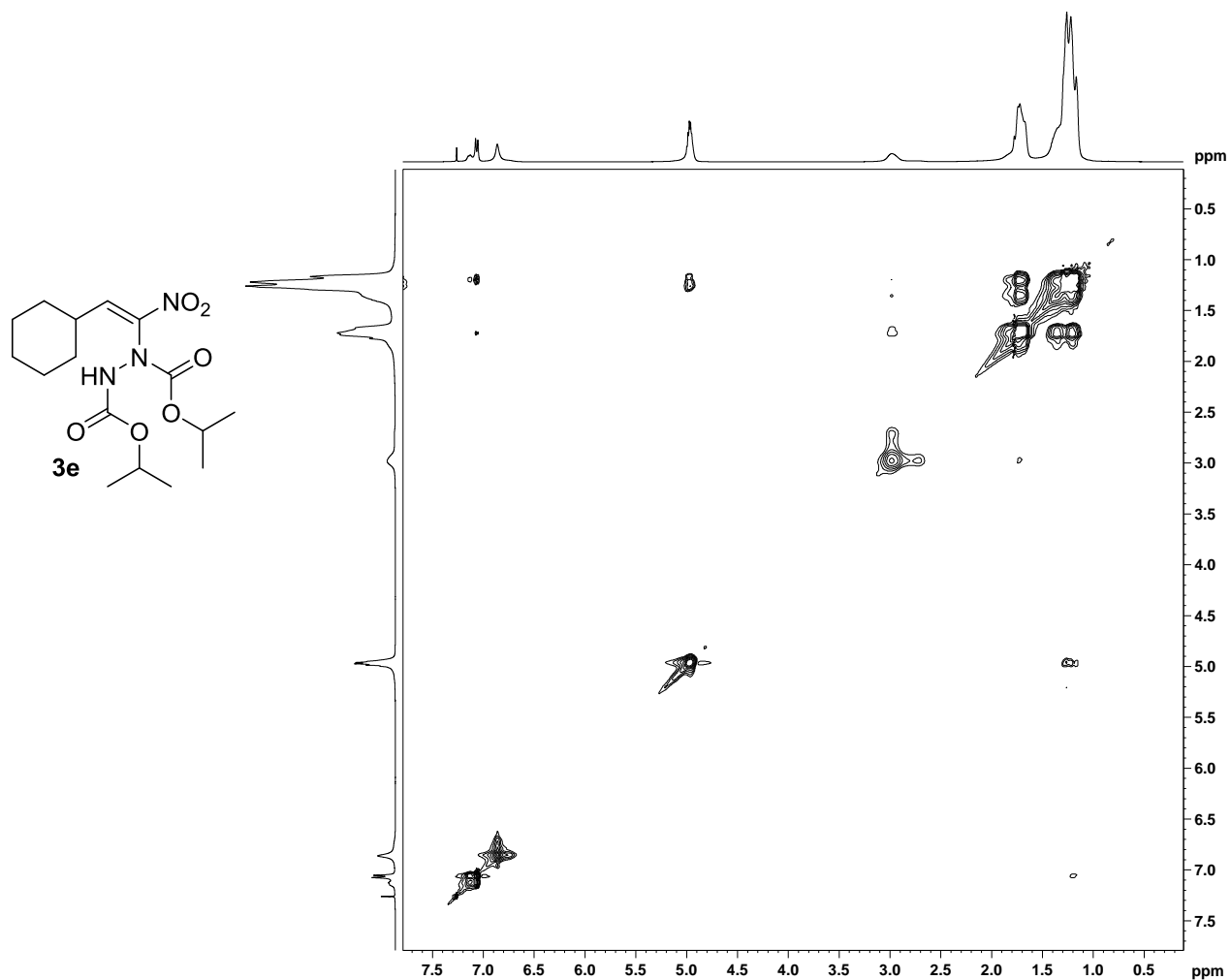


Figure S14. ^{13}C -APT Spectrum of **3e**



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 PROCNO 1

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 PULPROG noesygpph
 TD 2048
 SOLVENT CDCl3
 NS 16
 DS 32
 SWH 3840.246 Hz
 FIDRES 1.875120 Hz
 AQ 0.2666496 sec
 RG 85.91
 DW 130.200 usec
 DE 6.50 usec
 TE 293.9 K
 D0 0.00011365 sec
 D1 1.00000000 sec
 D8 0.60000002 sec
 D16 0.00020000 sec
 IN0 0.00026040 sec

===== CHANNEL f1 =====
 SF01 500.1319879 MHz
 NUC1 1H
 P1 13.00 usec
 P2 26.00 usec
 PLW1 13.00000000 W

===== GRADIENT CHANNEL =====
 GPNAM[1] SMSQ10.100
 GPZ1 40.00 %
 P16 1000.00 usec

F1 - Acquisition parameters
 TD 915
 SF01 500.132 MHz
 FIDRES 4.196990 Hz
 SW 7.678 ppm
 F1MODE TPPI

F2 - Processing parameters
 SI 1024
 SF 500.1300116 MHz
 WDW QSINE
 SSB 2
 LB 0 Hz
 GB 0
 PC 1.00

F1 - Processing parameters
 SI 1024
 MC2 TPPI
 SF 500.1300116 MHz
 WDW QSINE
 SSB 2
 LB 0 Hz
 GB 0

Figure S15. ¹H-¹H NOESY Spectrum of **3e**

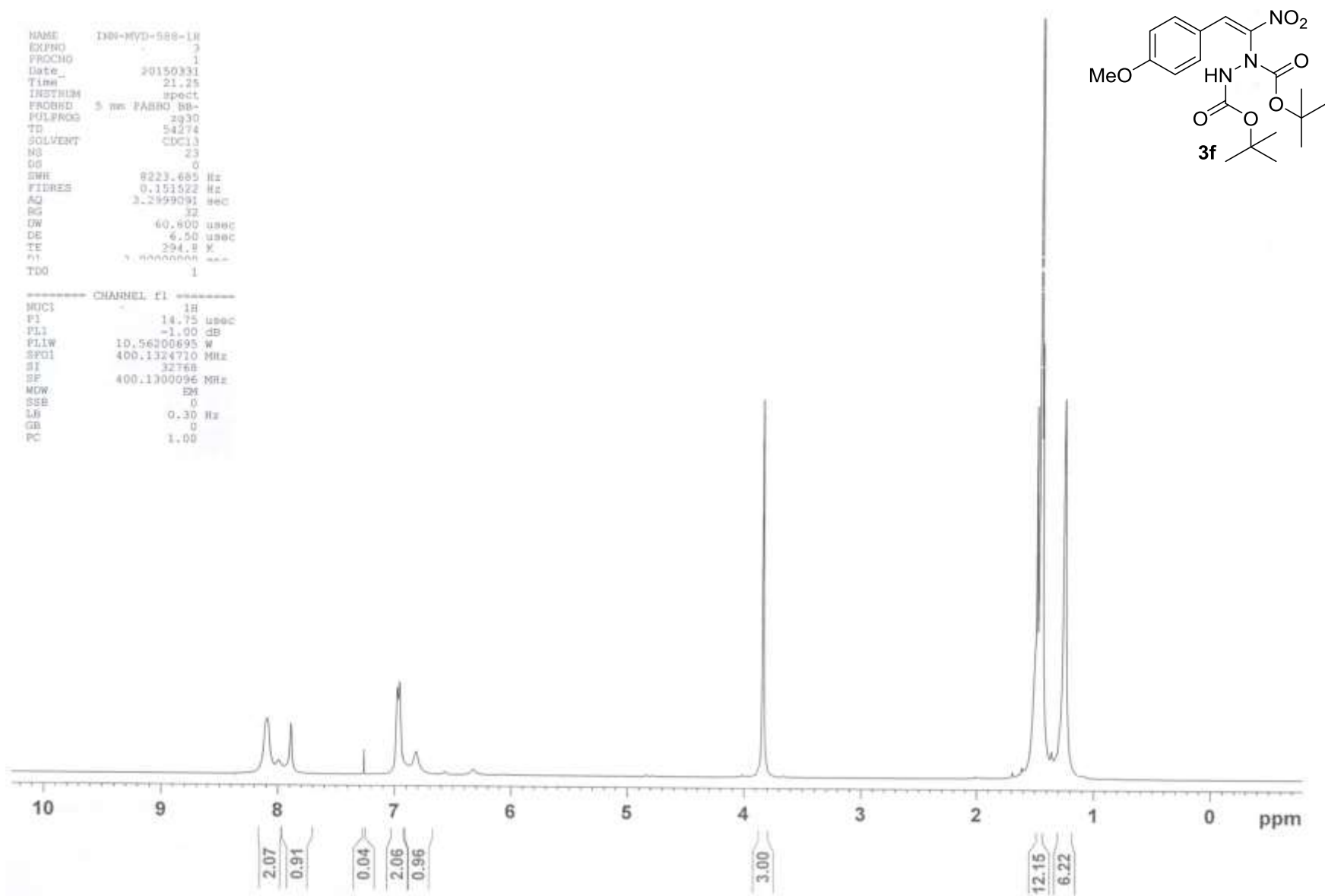


Figure S16. ^1H NMR Spectrum of **3f**

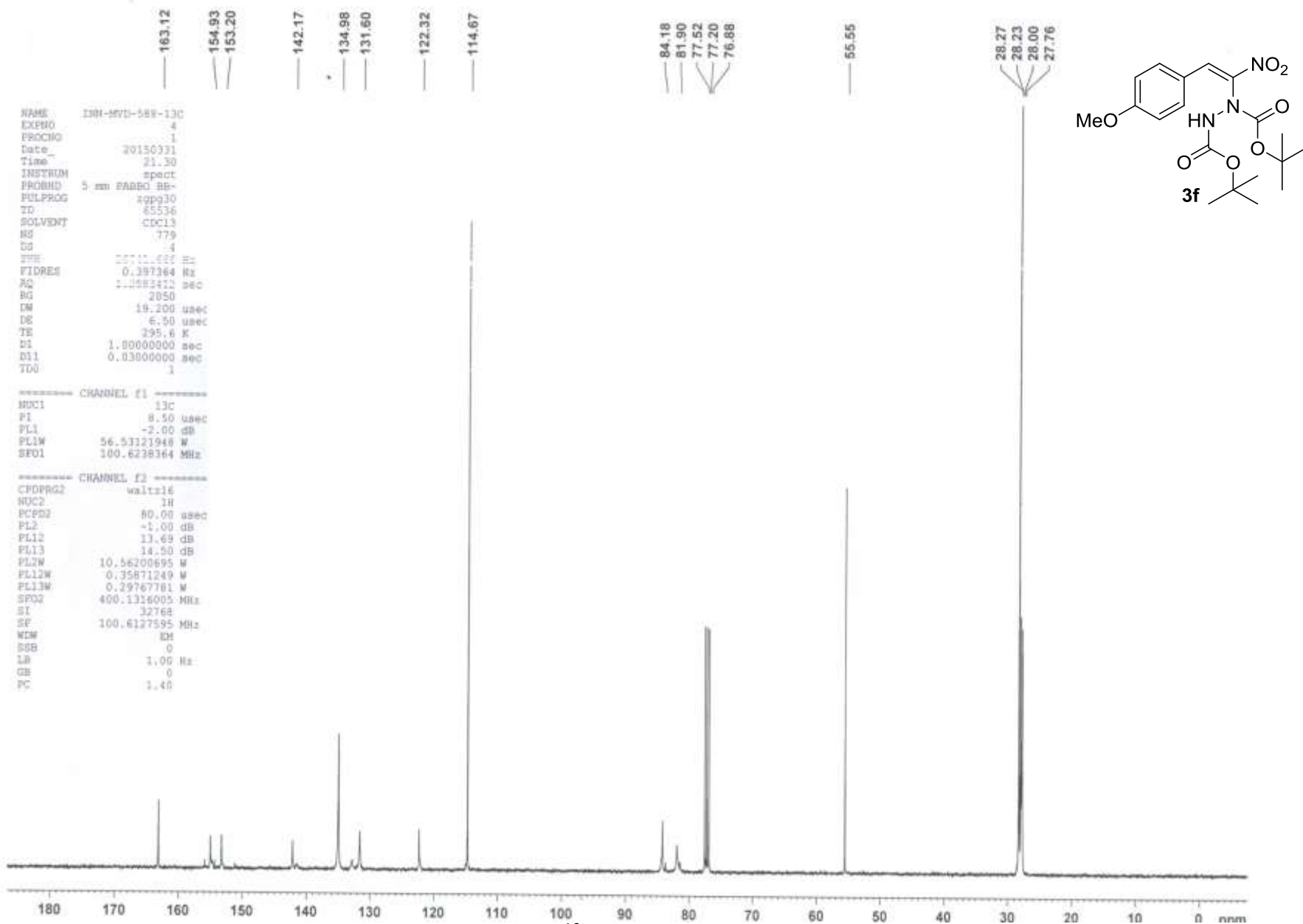


Figure S17. ¹³C NMR Spectrum of **3f**

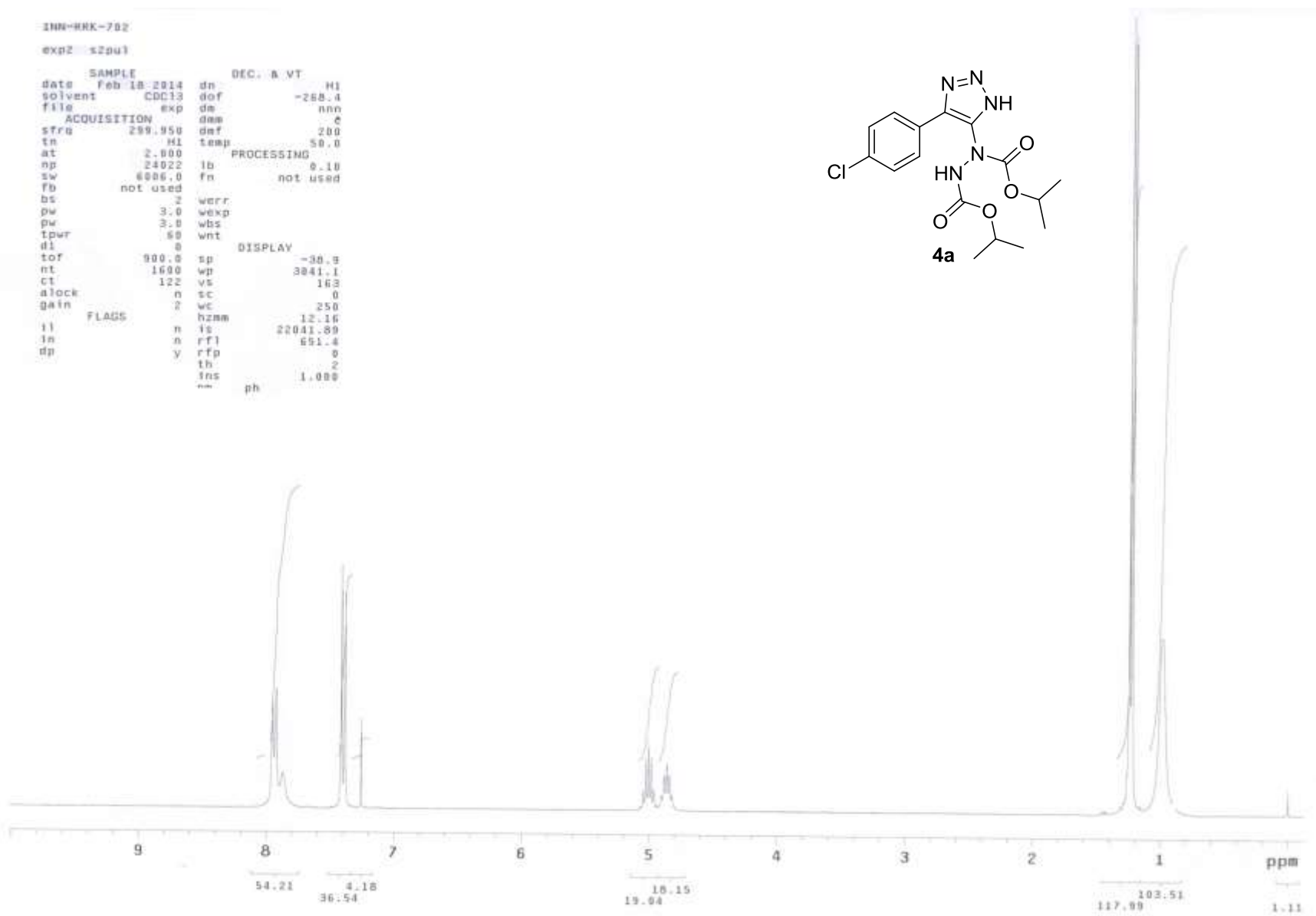


Figure S18. ^1H NMR Spectrum of **4a**

INN-RRK-702

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at	1.280	alfa	20.000
np	64000	FLAGS	
fb	13000	ll	n
bs	4	fn	n
dl	3.000	dp	y
nt	4800	hs	nn
ct	780	PROCESSING	
TRANSMITTER		lb	2.00
tn	C13	fn	not used
sfrq	75.427	DISPLAY	
tof	-2000.0	sp	-36.0
tpwr	59	wp	15148.2
pw	4.750	rfl	12773.1
DECOUPLER		rfp	\$815.0
dn	H1	rp	-156.6
dof	0	lp	-327.8
dm	yyy	PLOT	
dmm	w	wc	250
dpwr	39	sc	0
daf	10300	vs	64
		th	
		nm	cdc ph

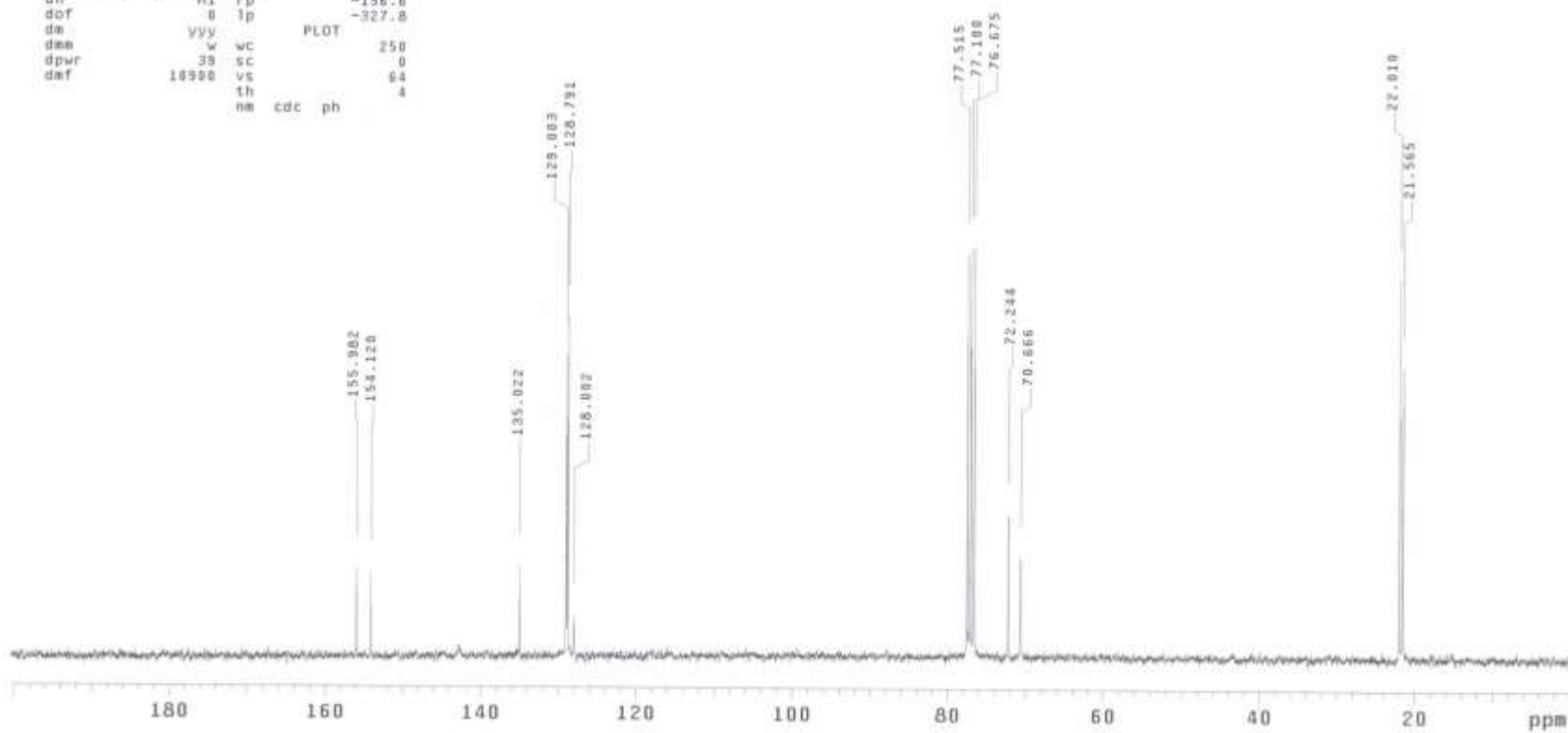
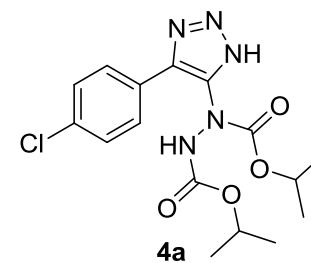


Figure S19. ^{13}C NMR Spectrum of **4a**

```

INN-MVD-528
exp1 s2pu1
SAMPLE          DEC. & VT
date   May 27 2015   dn
solvent  CDCl3      dof   -268.4
file  /export/home/ dn
vnmr1/2015/May/Int- dnm
ernal/INN-Mane/INN- dmf   200
-MVD-528.fid      temp  55.0
ACQUISITION      PROCESSING
sFrg  299.950     lb      0.10
In     H1         fn      not used
at     1.395
ap     23948      verr
sw     6006.0     wexp
fb     not used   wbs
ds     2          wnt
pw     3.0       DISPLAY
pw     3.0       sp      -62.7
tpwr   60        wp      3044.8
d1     0         vt      139
tof     900.0    sc      0
nt     3200      wc      250
ct     630      hzmm   24.02
dlock  n         ls     19575.86
gain   2         rfi    644.8
      FLAGS     rfp    0
il     n         th     2
in     n         ins   1.088
dp     y         nm     ph

```

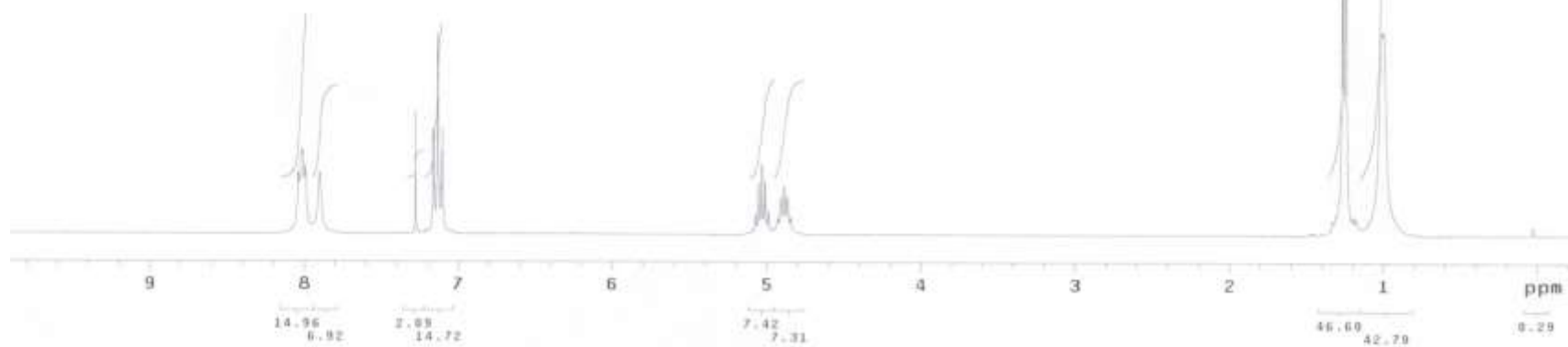
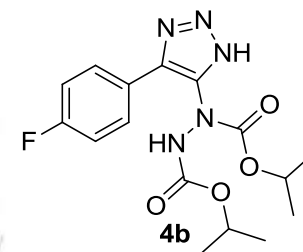


Figure S20. ¹H NMR Spectrum of **4b**

INN-MVD-529

exp3 s2pu1

SAMPLE		SPECIAL	
date	May 27 2015	temp	55.0
solvent	CDCl3	gain	2
file	exp	spin	not used
ACQUISITION		SPECIAL	
sw	25000.0	pw90	11.500
at	1.815	alfa	20.000
np	90752	FLAGS	
fb	13800	ll	n
bs	4	lh	n
d1	3.000	dp	y
nt	8000	hs	nn
ct	884	PROCESSING	
tn	C13	lb	3.00
sfrq	75.430	fn	not used
tof	748.9	DISPLAY	
tpwr	56	sp	-232.0
pw	4.750	wp	15308.4
DECOUPLER		rfl	18022.4
dn	H1	rfg	5615.0
dof	0	rp	-126.6
dm	VVY	lp	-396.2
dma	w	PLOT	
dpwr	39	vc	250
daf	11300	sc	0
		vs	91
		th	3
		nm	ph

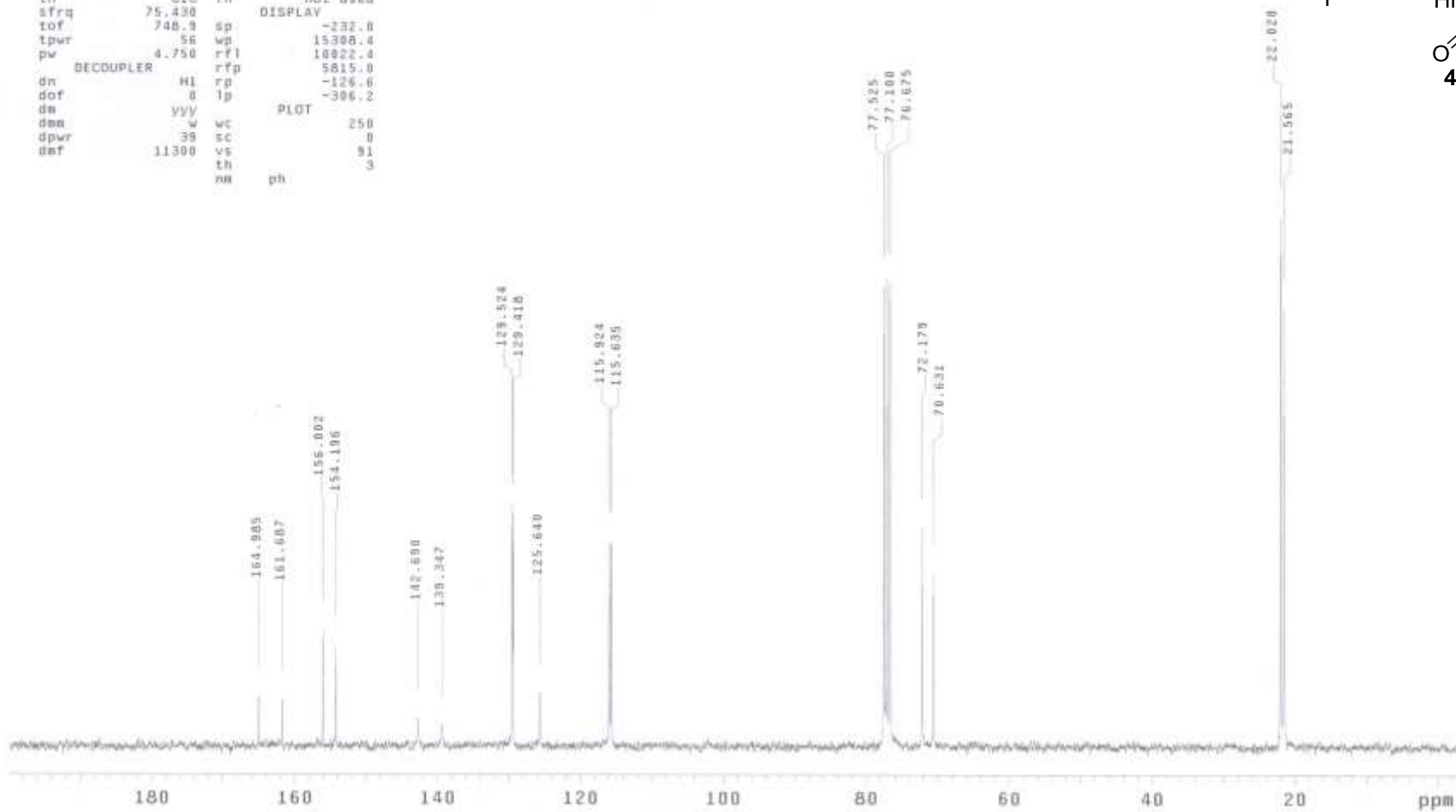
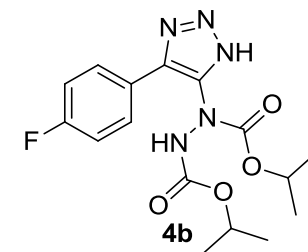


Figure S21. ^{13}C NMR Spectrum of **4b**

```

NAME      2180-MVD-529-19F
EXPNO     3
PROCNO    1
Date_     20150428
Time      22.58
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD        131072
SOLVENT   CDCl3
NS         41
DS         4
SWH        89285.711 Hz
FIDRES     0.681196 Hz
AQ         0.7340532 sec
RG         724
DW         5.600 usec
DE         6.30 usec
TE         296.2 K
D1         1.0000000 sec
TDO        1

----- CHANNEL f1 -----
NUC1       19F
P1         12.00 usec
PL1        -3.00 dB
PL1M       17.04036522 W
SFO1       376.4607164 MHz
SI         65536
SF         376.4983660 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

```

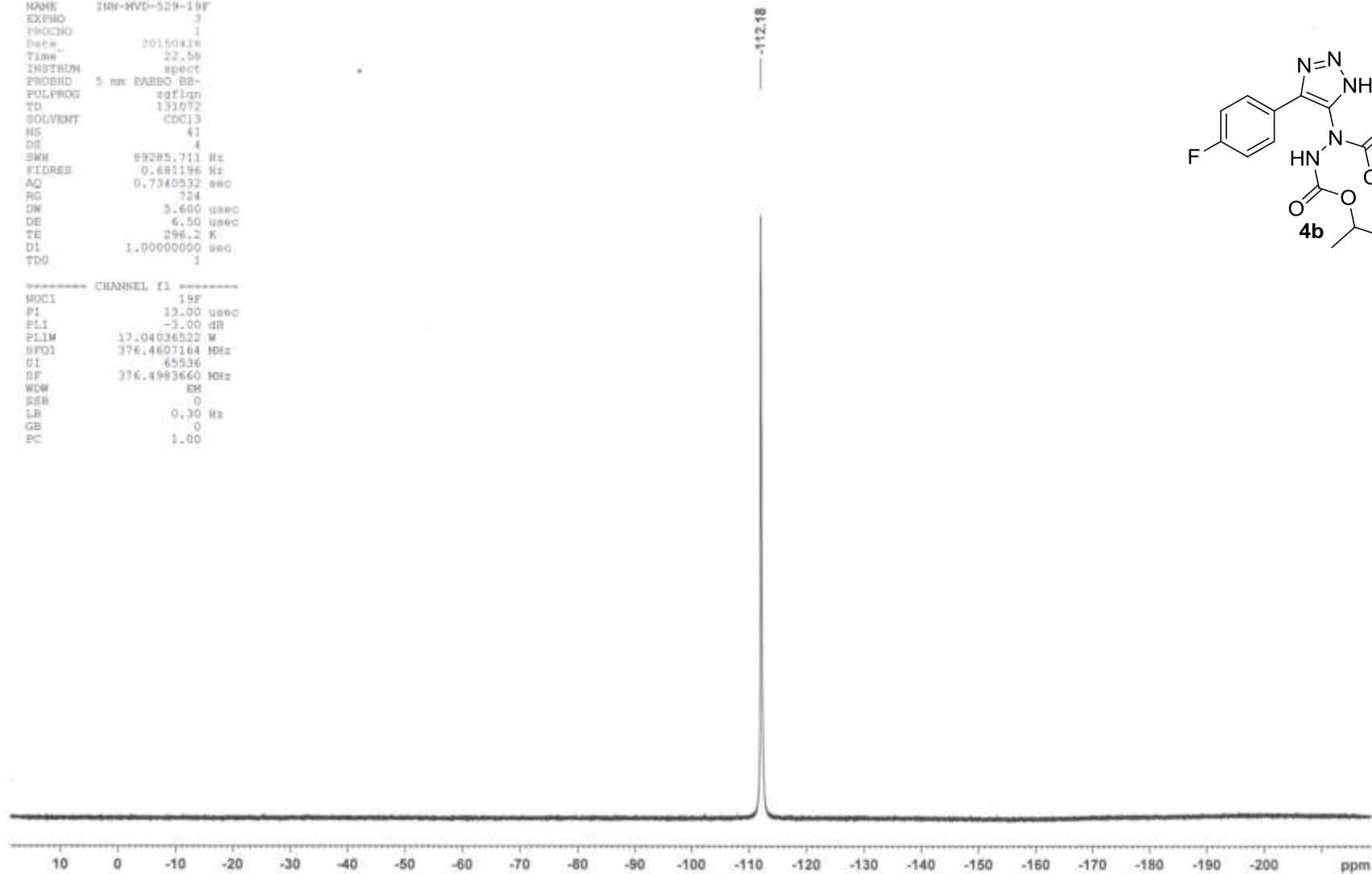
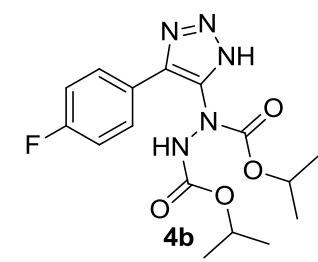


Figure S22. ¹⁹F NMR Spectrum of **4b**


```

INN-RRK-701
exp2 szau1

SAMPLE          DEC. A VT
date Feb 18 2014 dn
solvent CD3OD  dof -288.4
file          exp  dm
ACQUISITION    exp  dm
sfrq 299.951  dmf 200
in      H1      temp 50.0
at      2.000   PROCESSING
np      24022  lb  0.10
sw      6686.0  fn  not used
fb      not used
bs      2      werr
pw      3.0   wexp
pw      3.0   wbs
tpwr    60    wnt
d1      0
tof      900.0  sp
nt      1600  wp 3622.2
ct      318   vs 107
elock   n    sc  0
gain    2    wc 250
          hzmm 14.49
          n    ts 10053.40
          n    rfl 1642.3
          y    rfp 992.0
          th  2
          lns 1.000
          nm  ph

```

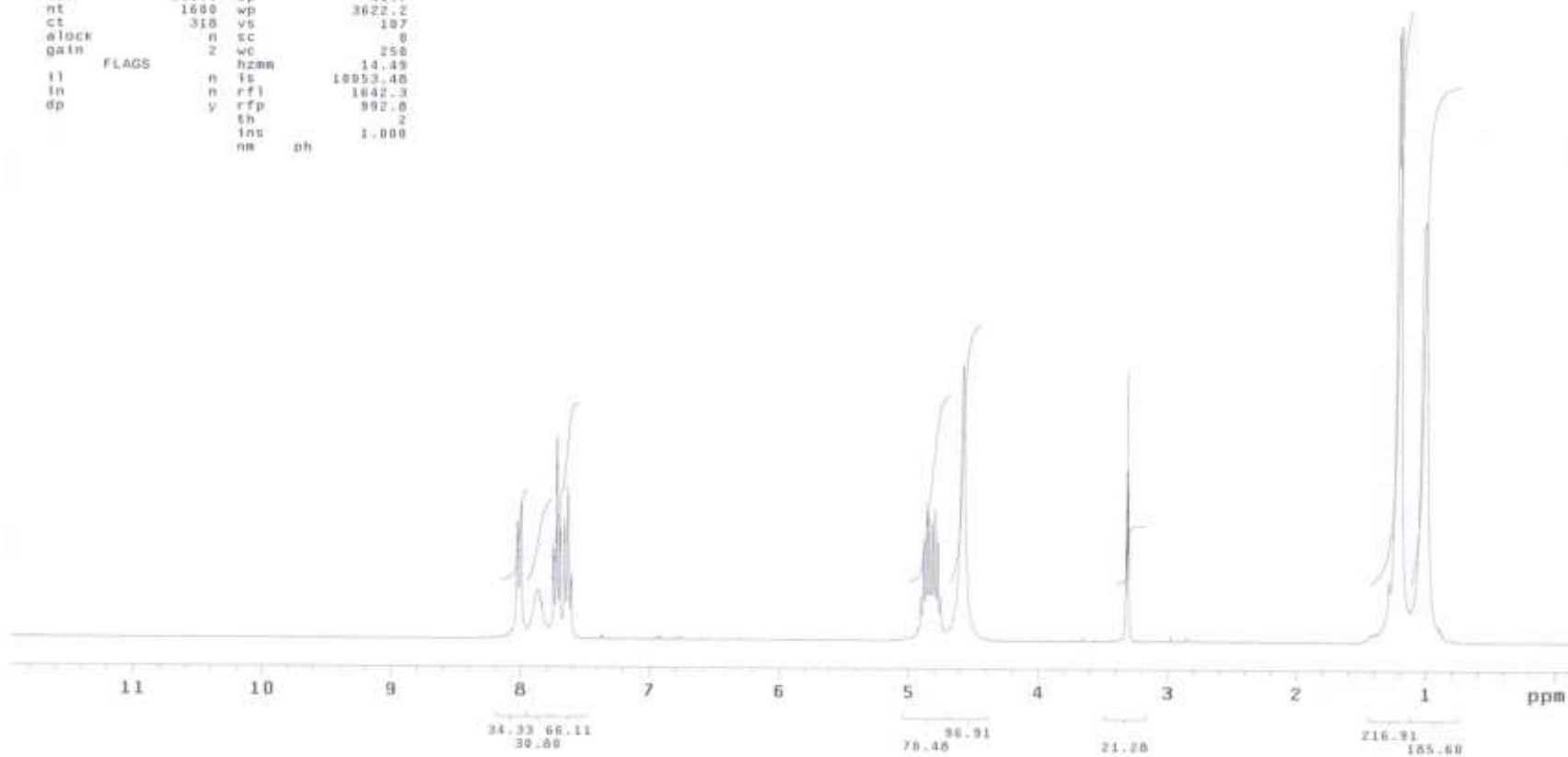
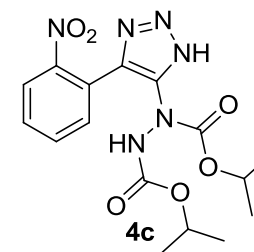


Figure S23. ¹H NMR Spectrum of **4c**

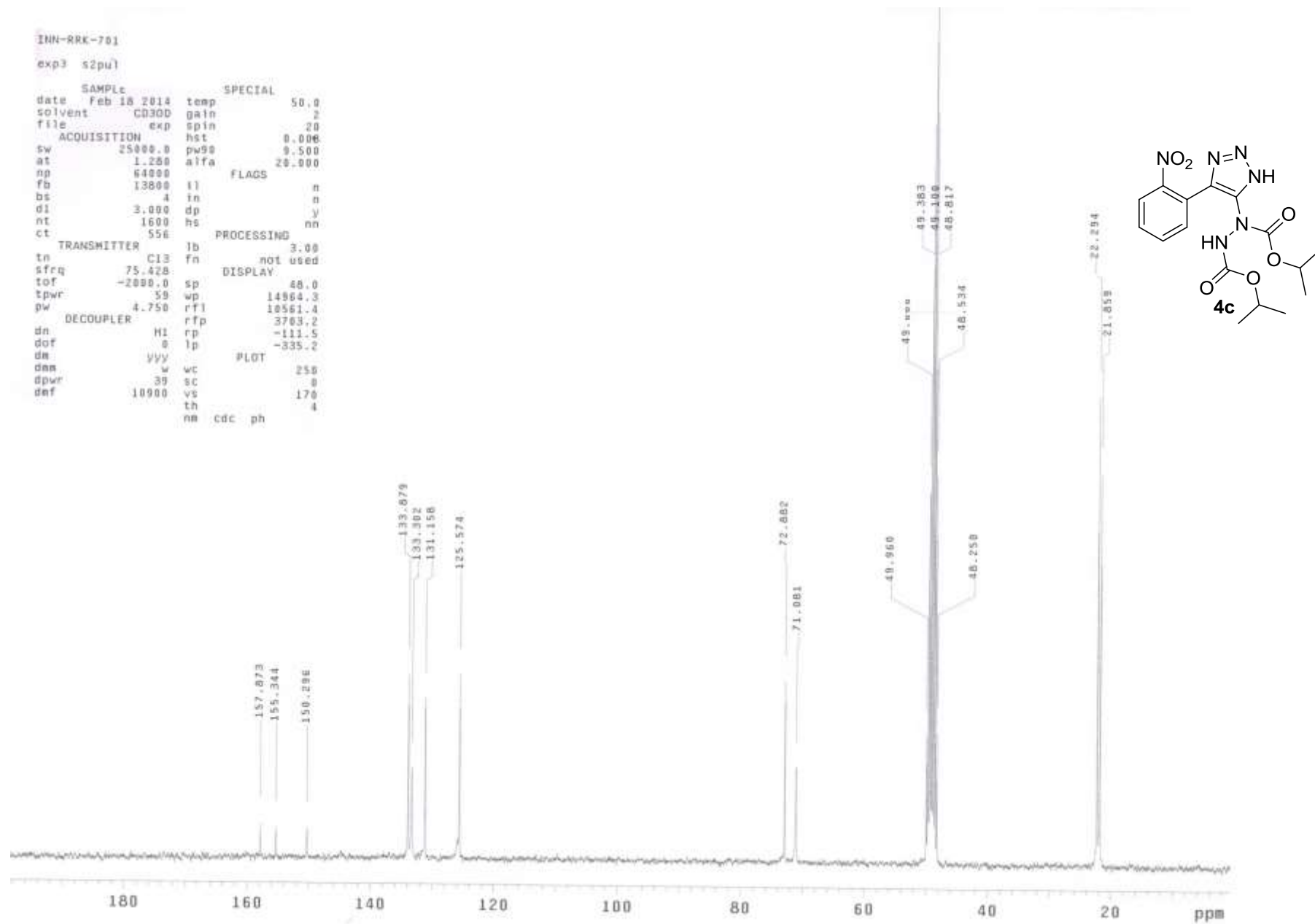


Figure S24. ^{13}C NMR Spectrum of **4c**

Current Data Parameters
NAME INN-RKC-69B-1H@50°C
EXPNO 18
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140124
Time 16.20
INSTRUM spect
PROBHD 5 mm FABBO BB/
PULPROG zg30
TD 33086
SOLVENT CDCl3
NS 50
DS 0
SWH 11029.412 Hz
FIDRES 0.333356 Hz
AQ 1.4998987 sec
RG 30.72
DW 45.333 usec
DE 6.50 usec
TE 323.0 K
D1 1.0000000 sec
TD0 1

==== CHANNEL f1 =====
SFO1 500.1335009 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300111 MHz
WDW EM
SSB 0
LB 0 Hz
GB 0
PC 1.00

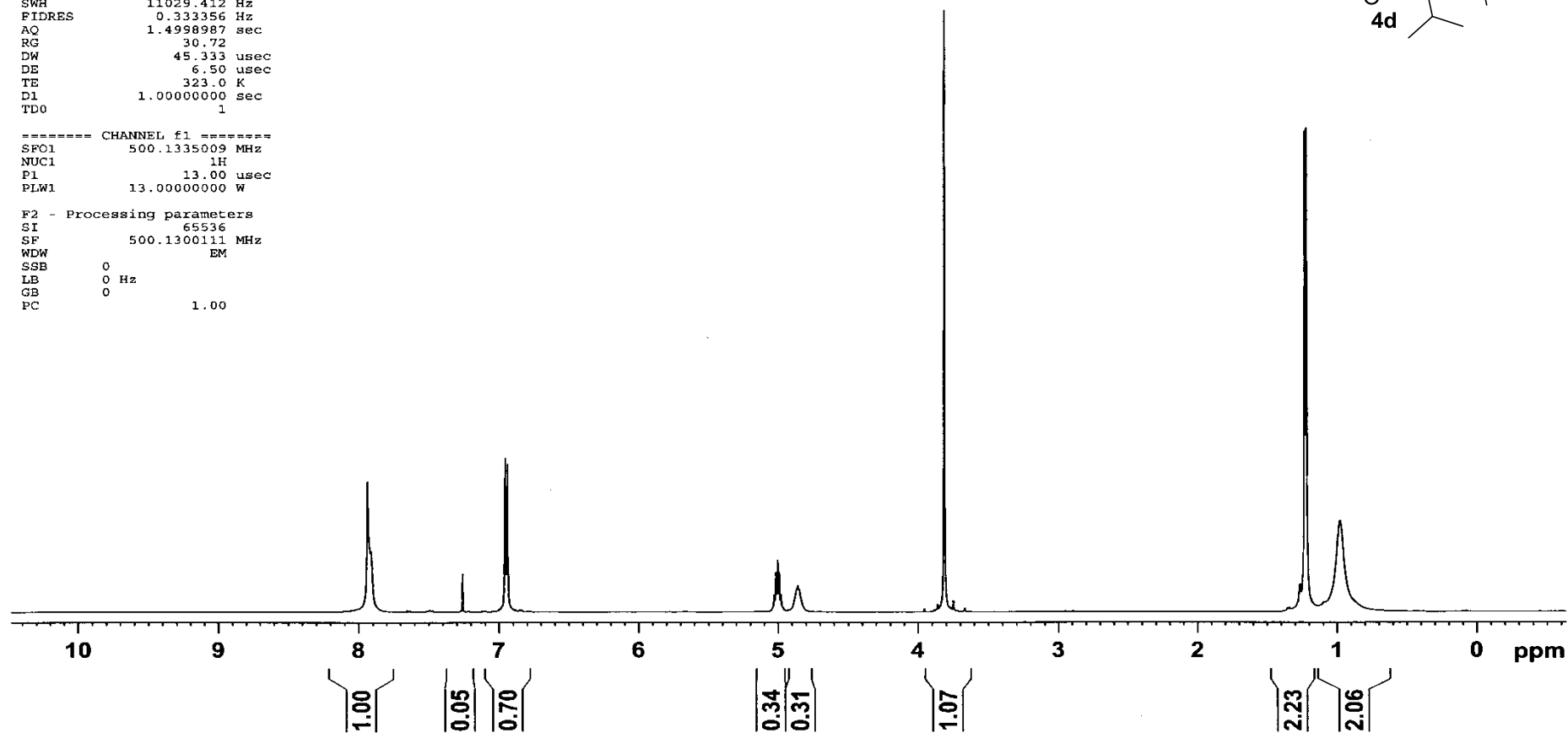
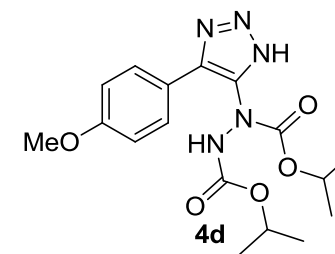


Figure S25. ¹H NMR Spectrum of 4d

Current Data Parameters
NAME INN-RPK-698-13C@50°C
EXPNO 20
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140124
Time 16.26
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1100
DS 2
SWH 34722.223 Hz
FIDRES 0.529819 Hz
AQ 0.9437184 sec
RG 197.27
DW 14.400 usec
DE 6.50 usec
TE 323.1 K
D1 1.00000000 sec
D11 0.03000000 sec
TD0 1

----- CHANNEL f1 -----
SFO1 125.7721254 MHz
NUC1 13C
P1 8.90 usec
PLW1 103.00000000 W

----- CHANNEL f2 -----
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG(2) waltz16
PCPD2 80.00 usec
PLW2 13.00000000 W
PLW12 0.34327999 W
PLW13 0.21969999 W

F2 - Processing parameters
SI 32768
SF 125.7577593 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

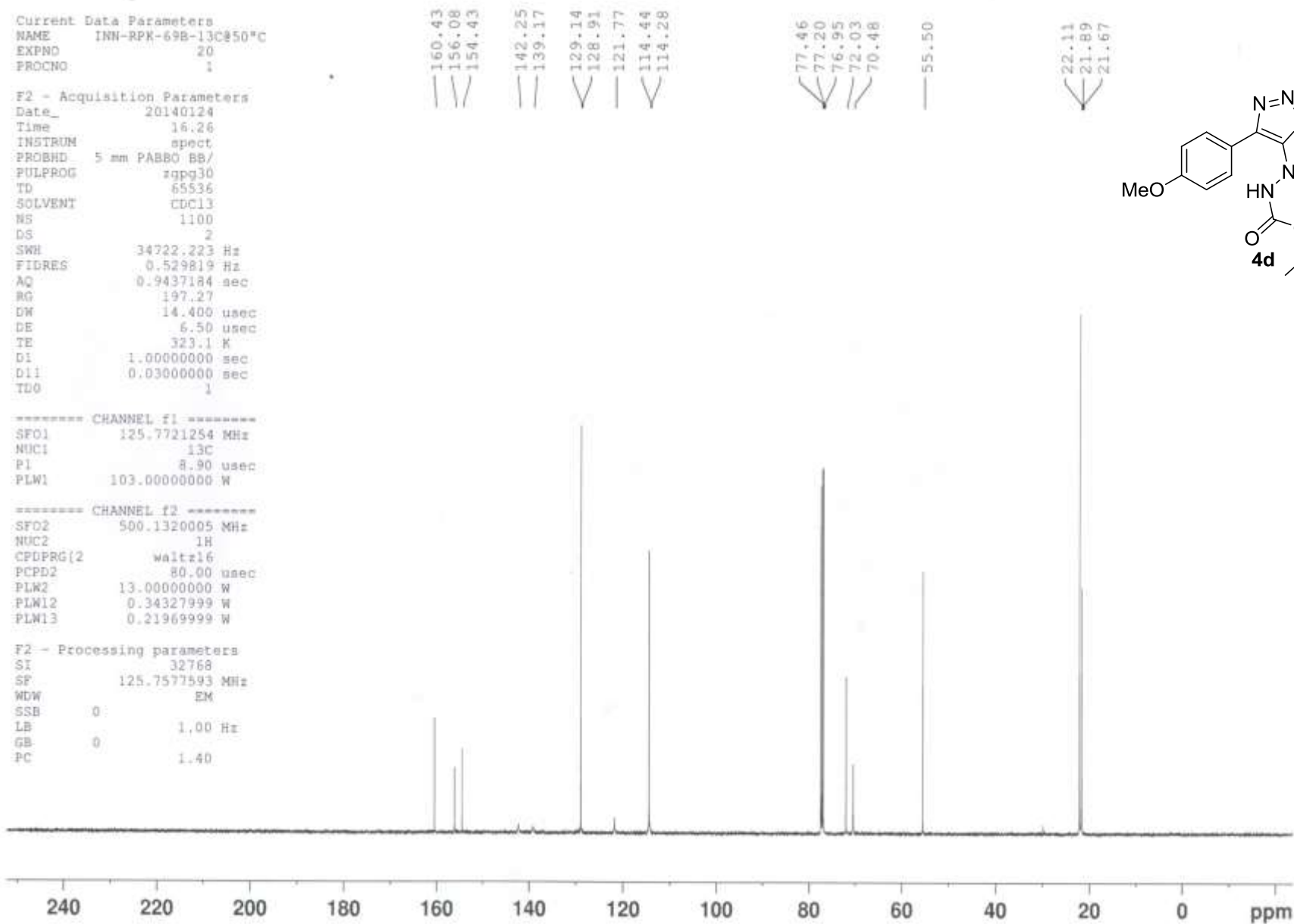


Figure 26. ¹³C NMR Spectrum of **4d**

INN-MVD-52 523

exp1 s2pu1

SAMPLE		DEC. & VT	
date	May 28 2015	dn	H1
solvent	CDCl3	dof	-268.4
file	/export/home/~	dn	nnn
vnmr1	2015/May/Int-	dan	C
ernal	/INN-Manc/INN-	daf	200
	-MVD-522.f1d	temp	55.0
ACQUISITION		PROCESSING	
sfrq	299.959	fn	not used
tn	H1		
at	1.995	werr	
np	23968	wexp	
sw	6006.0	wbs	
fb	not used	wnt	
bs	2		
pw	3.0	sp	-62.7
pw	3.0	wp	3044.6
tpwr	60	vs	157
di	0	sc	0
tof	900.0	wc	250
nt	3200	hzm	2.04
ct	180	is	6323.99
alock	n	rfl	639.7
gain	2	rtp	0
	FLAGS	th	2
il	n	ins	1.000
in	n	nm	
dp	y	ph	

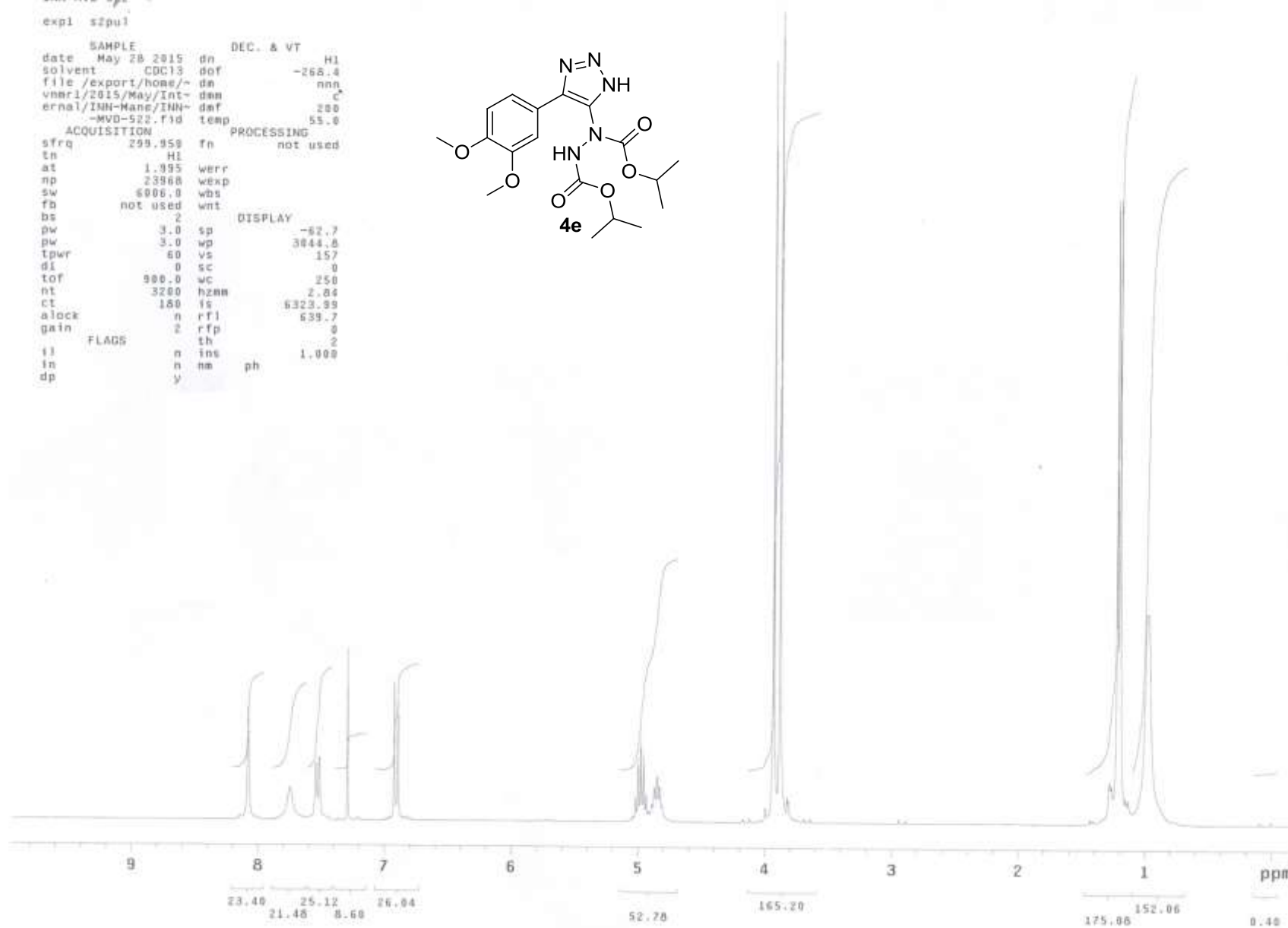
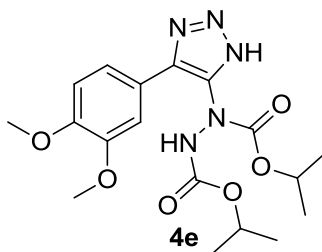


Figure S27. ¹H NMR Spectrum of **4e**

INN-MVB-5J2 S28

exp3 s2pu1

SAMPLE		SPECIAL	
date	May 28 2015	temp	55.0
solvent	CDCl3	gain	2
file		spin	not used
ACQUISITION			
exp	hsl	hsl	0.000
sw	25000.0	pw90	11.500
at	1.815	altA	20.000
ap	80752	FLAGS	
fb	13800	sl	n
bs	4	hn	n
dl	3.000	dp	y
nt	1600	hg	nn
ct	520	PROCESSING	
TRANSMITTER			
tn	C13	tb	3.00
sfrq	75.430	tn	not used
tof	748.0	DISPLAY	
tpw	50	sp	-272.9
pw	4.750	wp	15538.1
DECOUPLER			
dn	H1	rfd	10032.4
dof	0	rp	5815.0
da	VVV	lp	-126.6
das	w	PLOT	
sdw	30	wc	250
daf	11300	vs	0
		tn	90
		ph	3

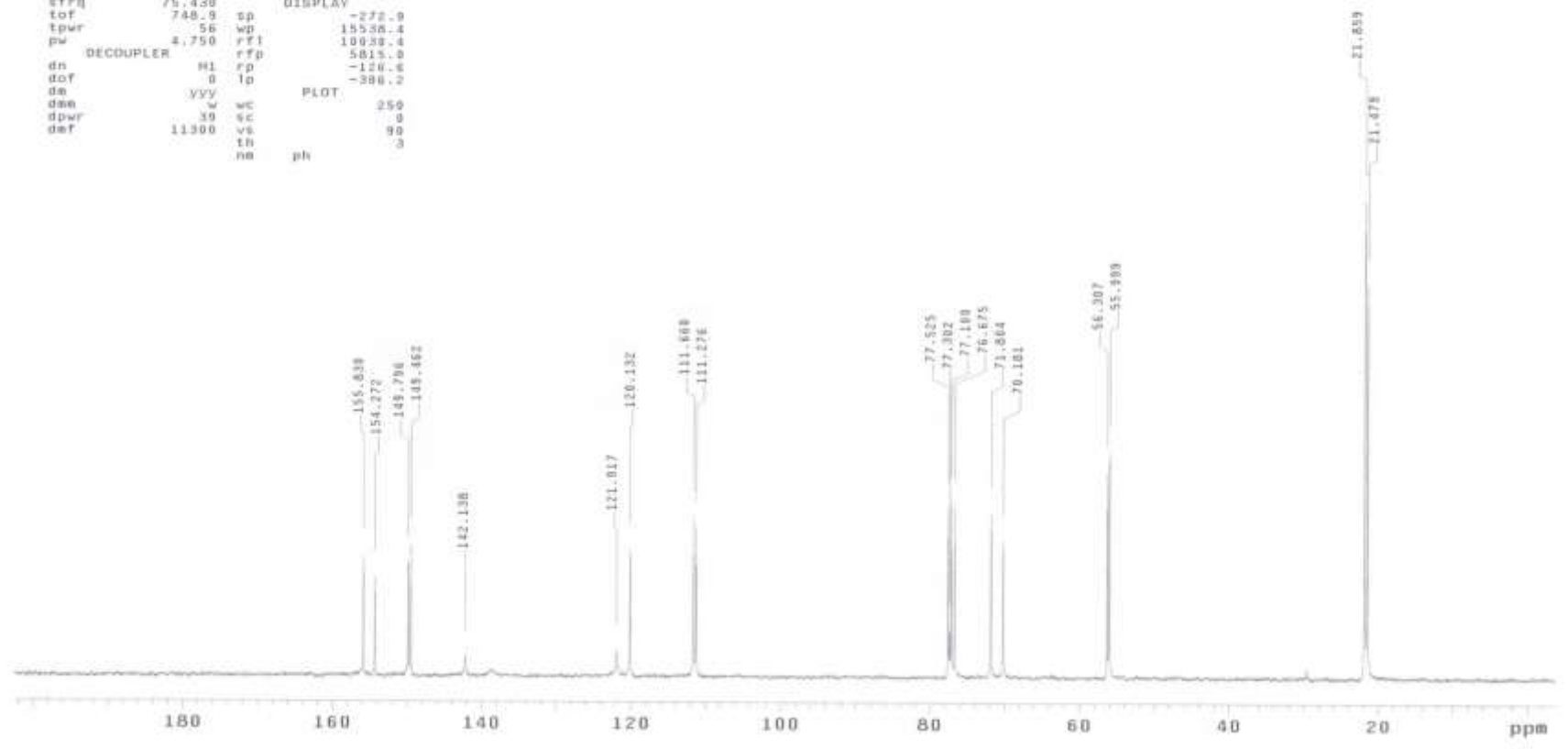
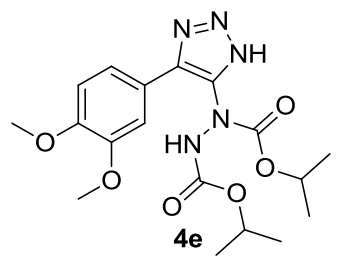


Figure S28. ¹³C NMR Spectrum of 4e

INN-RRK-705

exp2 s2pu1

SAMPLE		DEC. & VT	
date	Feb 18 2014	dn	H1
solvent	C0300	dof	-268.4
file	exp	dm	nnn
ACQUISITION		PROCESSING	
sfrq	299.951	dmm	C
tn	H1	dmf	200
at	2.000	temp	50.0
np	24022	fn	not used
sw	6006.0	werr	
fb	not used	wexp	2
bs	2	wbs	3.0
pw	3.0	wnt	3.0
tpwr	60	DISPLAY	
dl	0	sp	-1.7
tof	900.0	wp	3605.7
nt	800	vs	155
ct	800	sc	0
alock	n	wc	250
gain	2	hzmm	14.42
FLACS		ls	16301.77
il	n	rfl	649.4
in	n	rfp	0
dp	y	th	2
		ins	1.000
		nm	ph

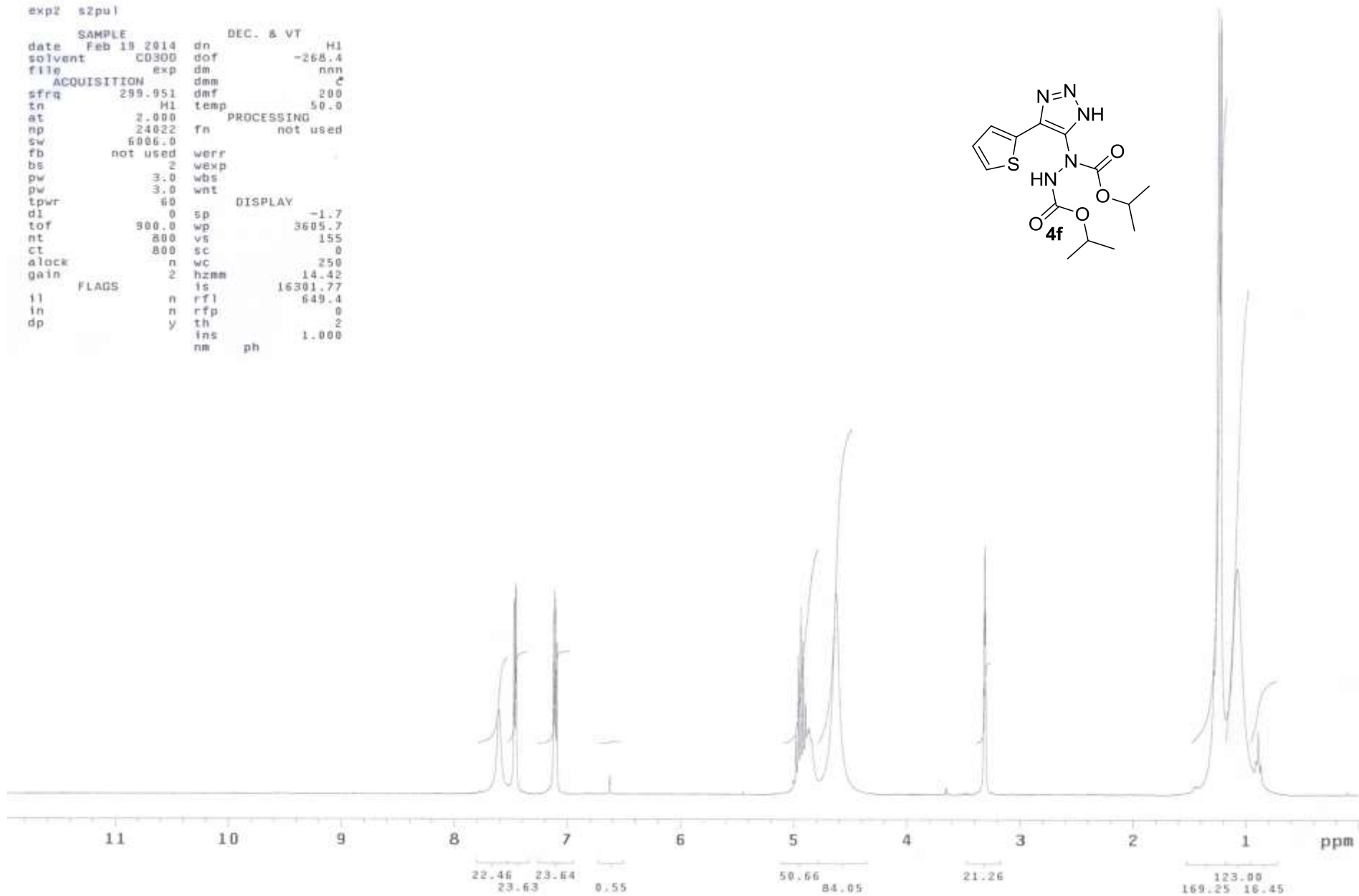
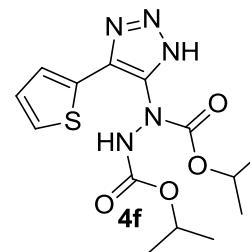


Figure S29. ¹H NMR Spectrum of **4f**

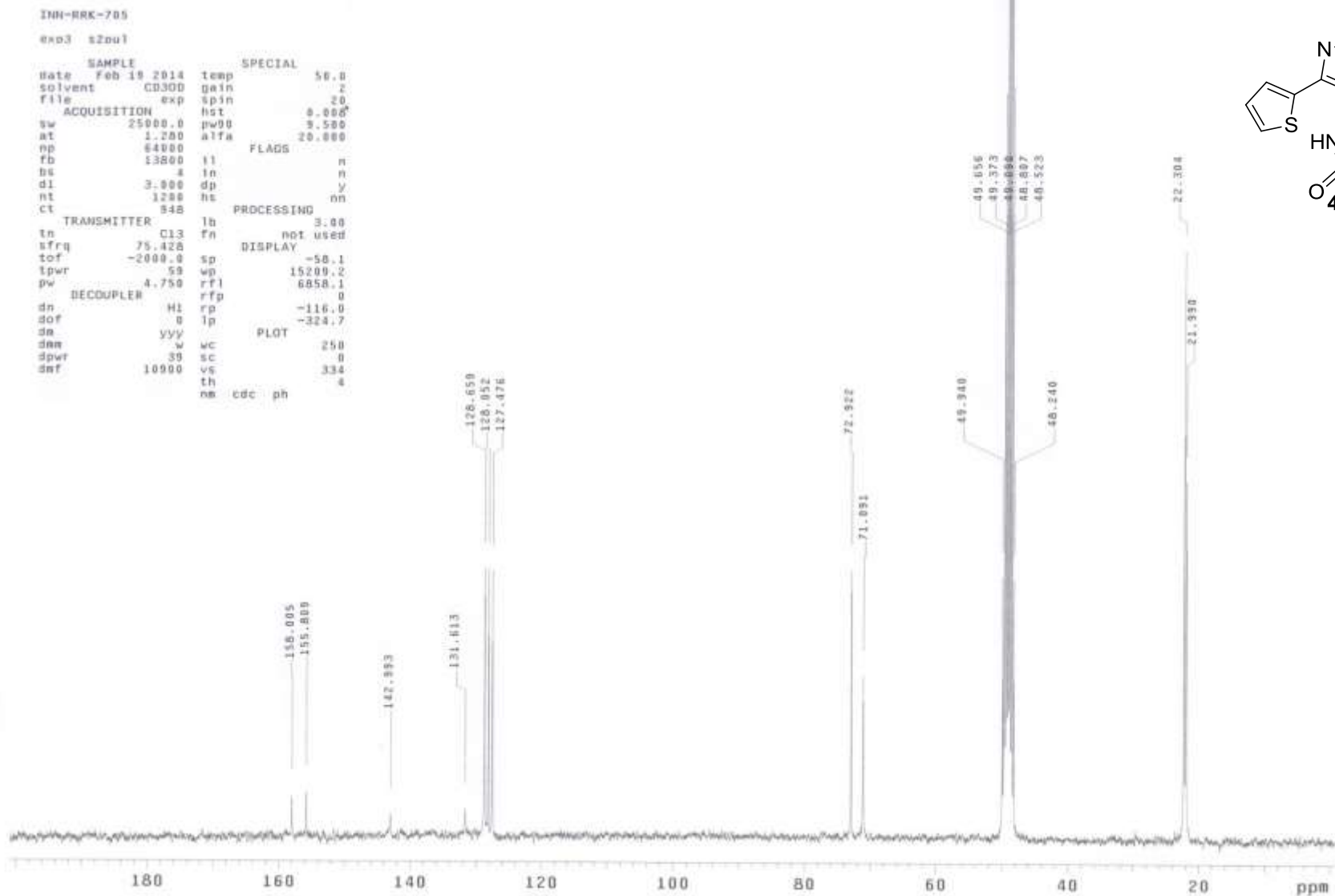


Figure S30. ^{13}C NMR Spectrum of **4f**

INN-MVD-528

exp1 s2pu1

```
SAMPLE          DEC. & VT
date    May 27 2015  dn          H1
solvent  CDC13      dof          -268.4
file     /export/home/  ds
vnmr1/2015/May/Int-  dnm
ernal/INN-Mars/528-  daf
-55deg-fid  temp          55.0
ACQUISITION      PROCESSING
sfrq      299.958  lb          0.10
in         H1      fn          not used
at         1.095
np         23868  werr
sw         6006.0  wexp
fb         not used  wbs
bs         2      wnt
pw         3.0
pw         3.0  sp          DISPLAY
tpwr       60  wp          -56.1
dl         0  vs          3973.0
tof        900.0  %c          154
nt         3200  wc          0
ct         872  hzmm       250
alock      n  fs          12.29
gain       2  rfi          55259.60
          rfp          844.8
          th          0
          tm          2
          nm          1.000
          ph
```

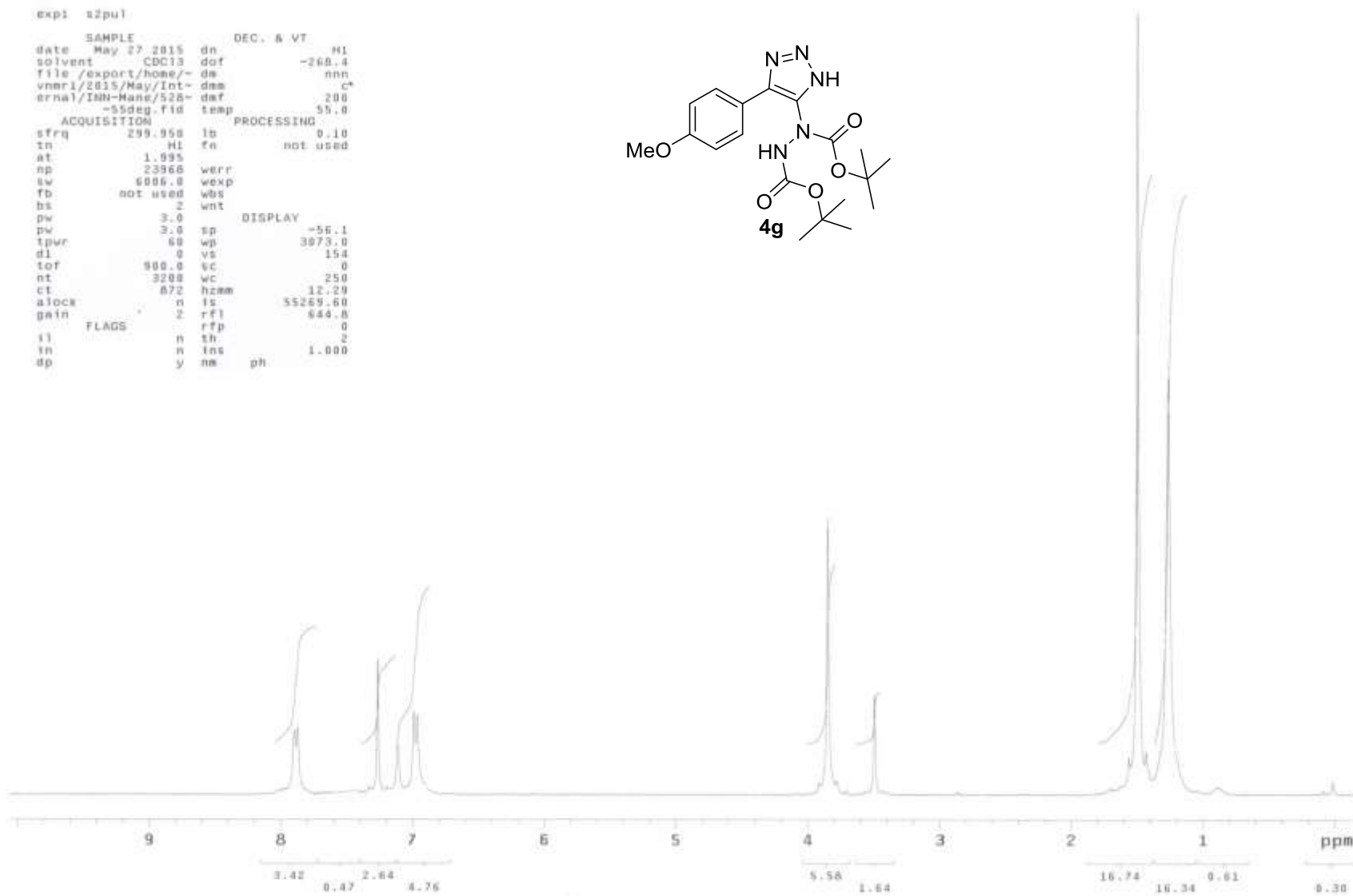
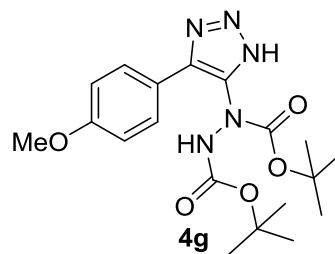


Figure S31. ¹H NMR Spectrum of **4g**

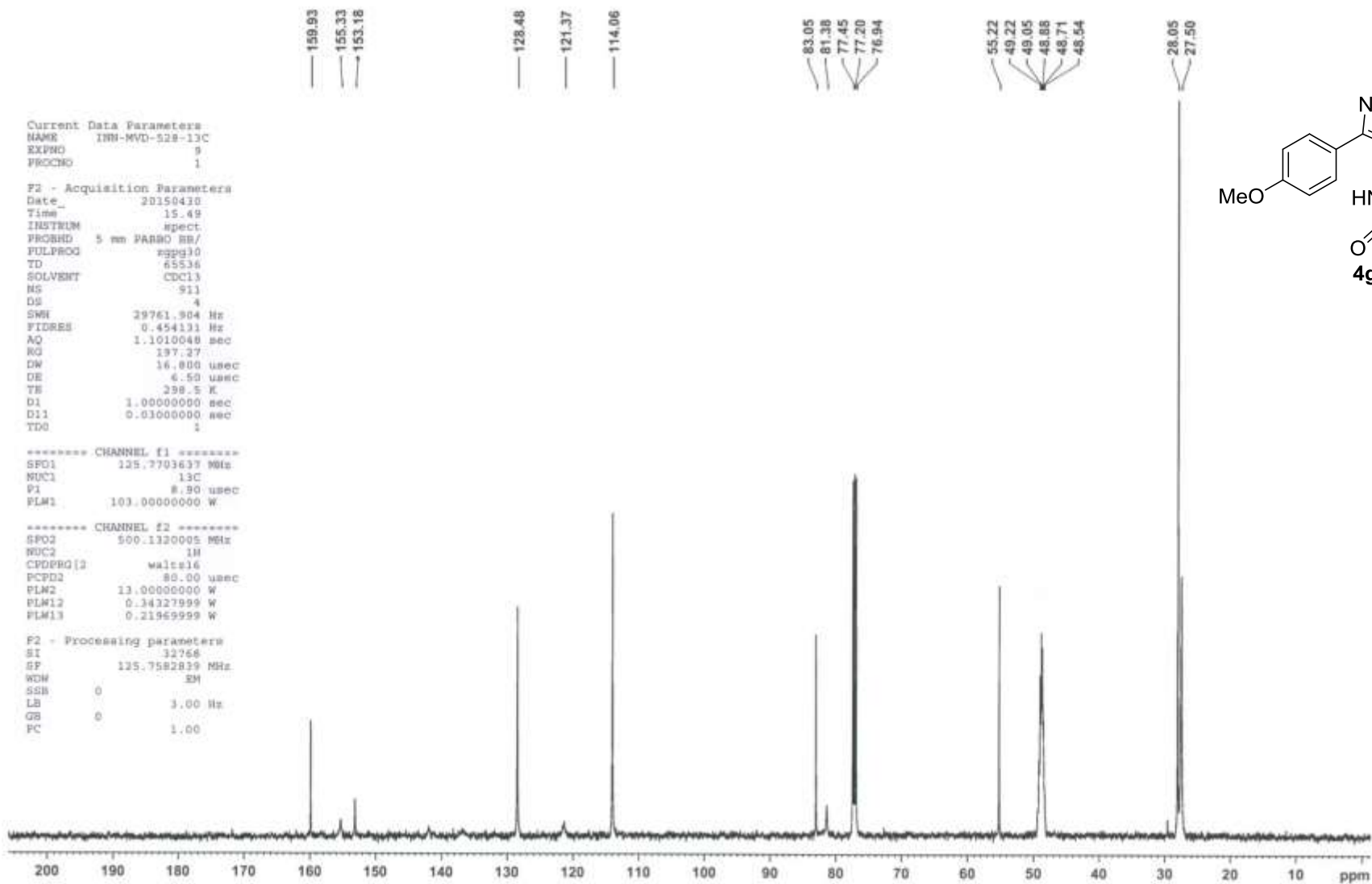


Figure S32. ^{13}C NMR Spectrum of **4g**

```

Current Data Parameters
NAME      INN-MVD-166-1H
EXPNO     1
PROCNO    1

F2 - Acquisition Parameters
Date_     20131220
Time      18.03
INSTRUM   spect
PROBHD    5 mm PABBO BB/
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS        12
DS        2
SWH       10000.000 Hz
FIDRES    0.152588 Hz
AQ        3.2767999 sec
RG        48.36
DW        50.000 usec
DE        6.50 usec
TE        295.3 K
D1        1.00000000 sec
TDO       1

```

```

----- CHANNEL f1 -----
SFO1     500.1330885 MHz
NUC1     1H
P1       13.00 usec
PLW1     13.00000000 W

```

```

F2 - Processing parameters
SI       65536
SF       500.1300116 MHz
MDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00

```

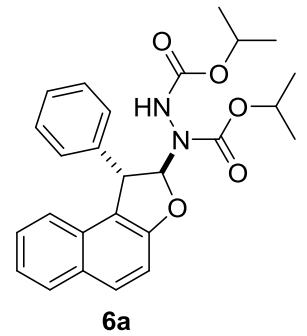
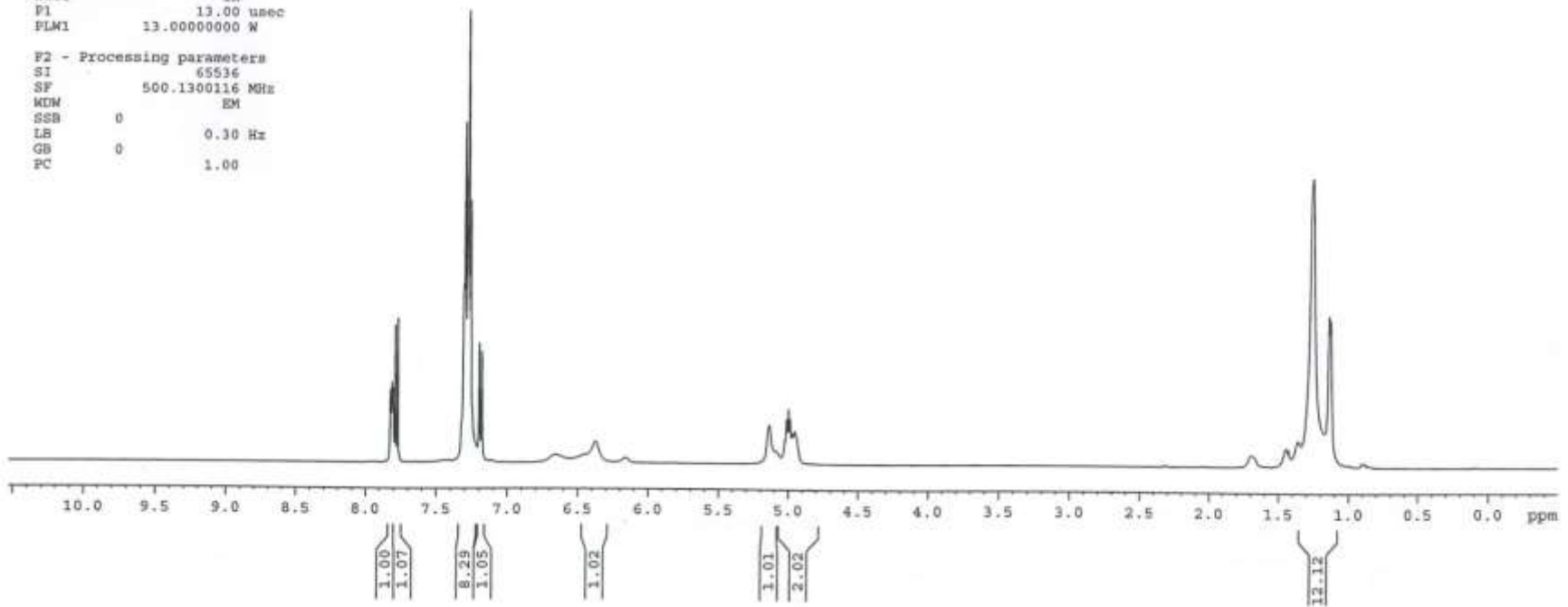


Figure S33. ¹H NMR Spectrum of **6a**

INN-MVD-166-13C

Current Data Parameters
NAME INN-MVD-166-13C
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131225
Time 17.56
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 509
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010048 sec
RG 197.27
DW 16.800 usec
DE 6.50 usec
TE 299.9 K
D1 1.00000000 sec
D11 0.03000000 sec
TDO 1

***** CHANNEL f1 *****
SFO1 125.7703637 MHz
NUC1 13C
P1 8.90 usec
PLW1 193.00000000 W

***** CHANNEL f2 *****
SFO2 500.1320005 MHz
NUC2 1H
CPDPRG[2] waltz16
PCPD2 80.00 usec
PLW2 13.00000000 W
PLW12 0.34327999 W
PLW13 0.21969999 W

F2 - Processing parameters
SI 32768
SF 125.7577738 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40

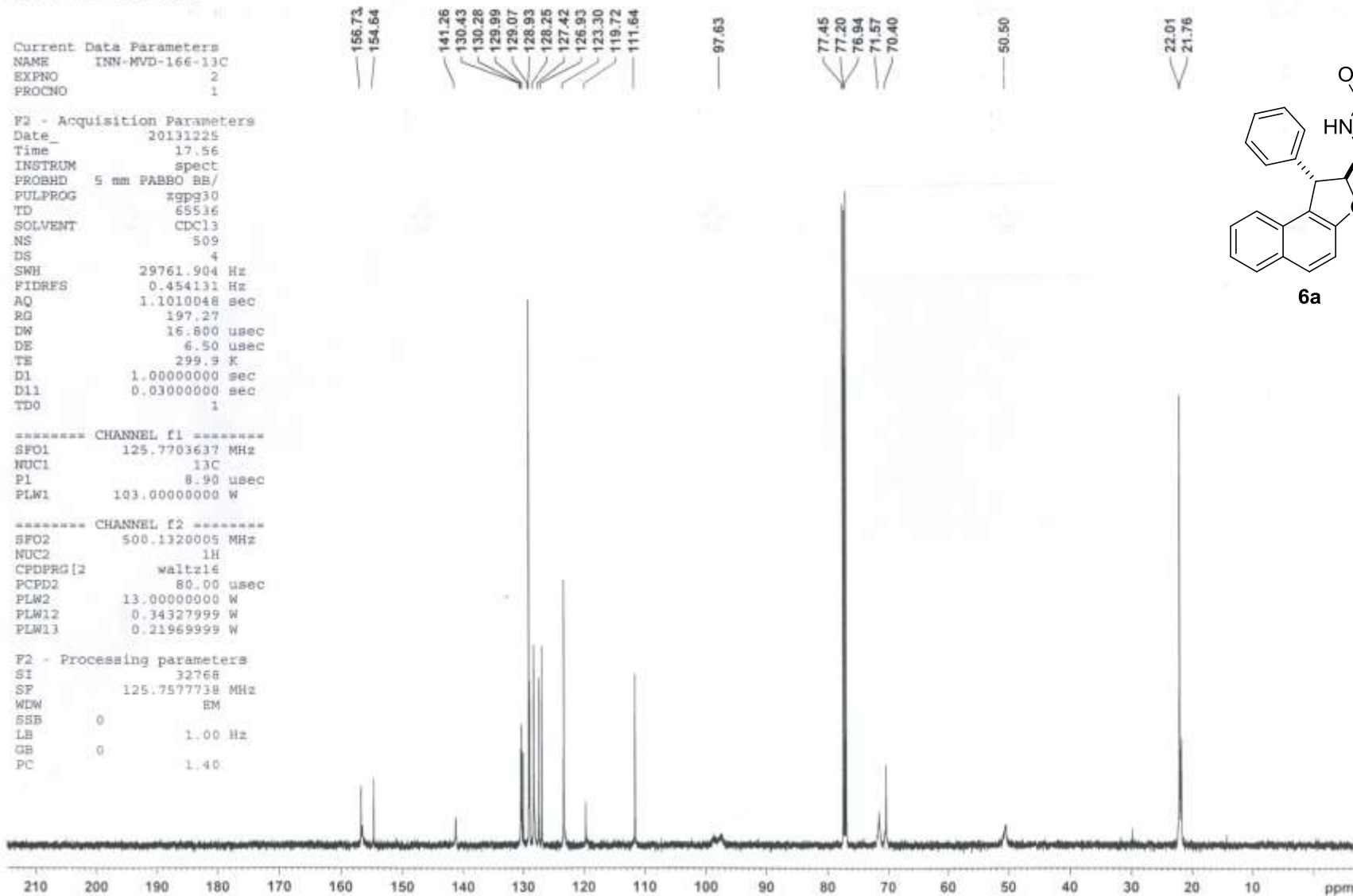


Figure S34. ¹³C NMR Spectrum of 6a

```

Current Data Parameters
NAME      INN-MVD-164-1H
EXPNO    9
PROCNO   1

F2 - Acquisition Parameters
Date_    20131225
Time     21.30
INSTRUM  spect
PROBHD   5 mm PABBO BH/
PULPROG  zg30
TD       65536
SOLVENT  CDCl3
NS       11
DS       2
SWH      10000.000 Hz
FIDRES   0.152588 Hz
AQ       3.2767999 sec
RG       30.72
EW       50.000 usec
DK       6.50 usec
TE       296.9 K
D1       1.00000000 sec
TD0      1

***** CHANNEL f1 *****
SFO1     500.1330885 MHz
NUC1     1H
P1       13.00 usec
PLW1     13.00000000 W

F2 - Processing parameters
SI       65536
SF       500.1300000 MHz
WDW      EM
ESB      0
LB       0.30 Hz
GB       0
PC       1.00

```

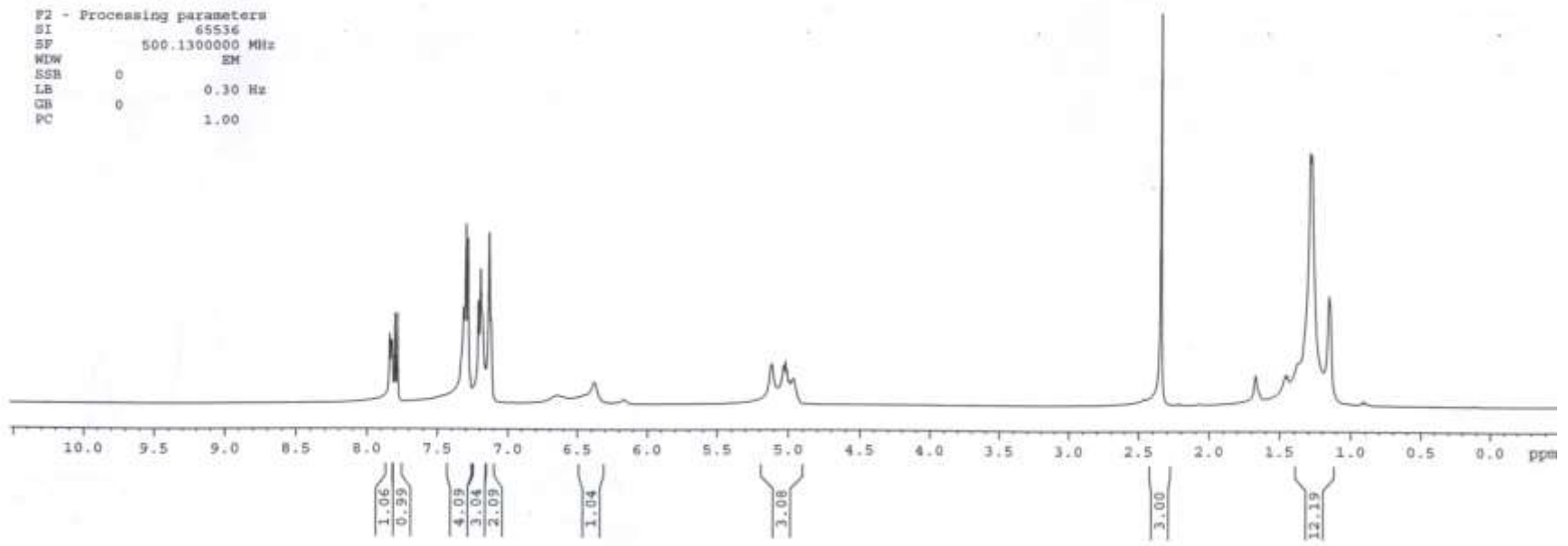
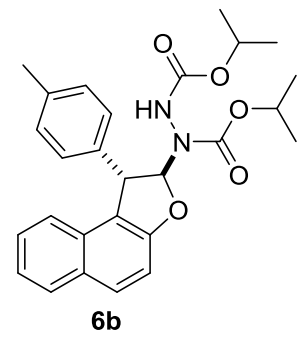


Figure S35. ¹H NMR Spectrum of **6b**

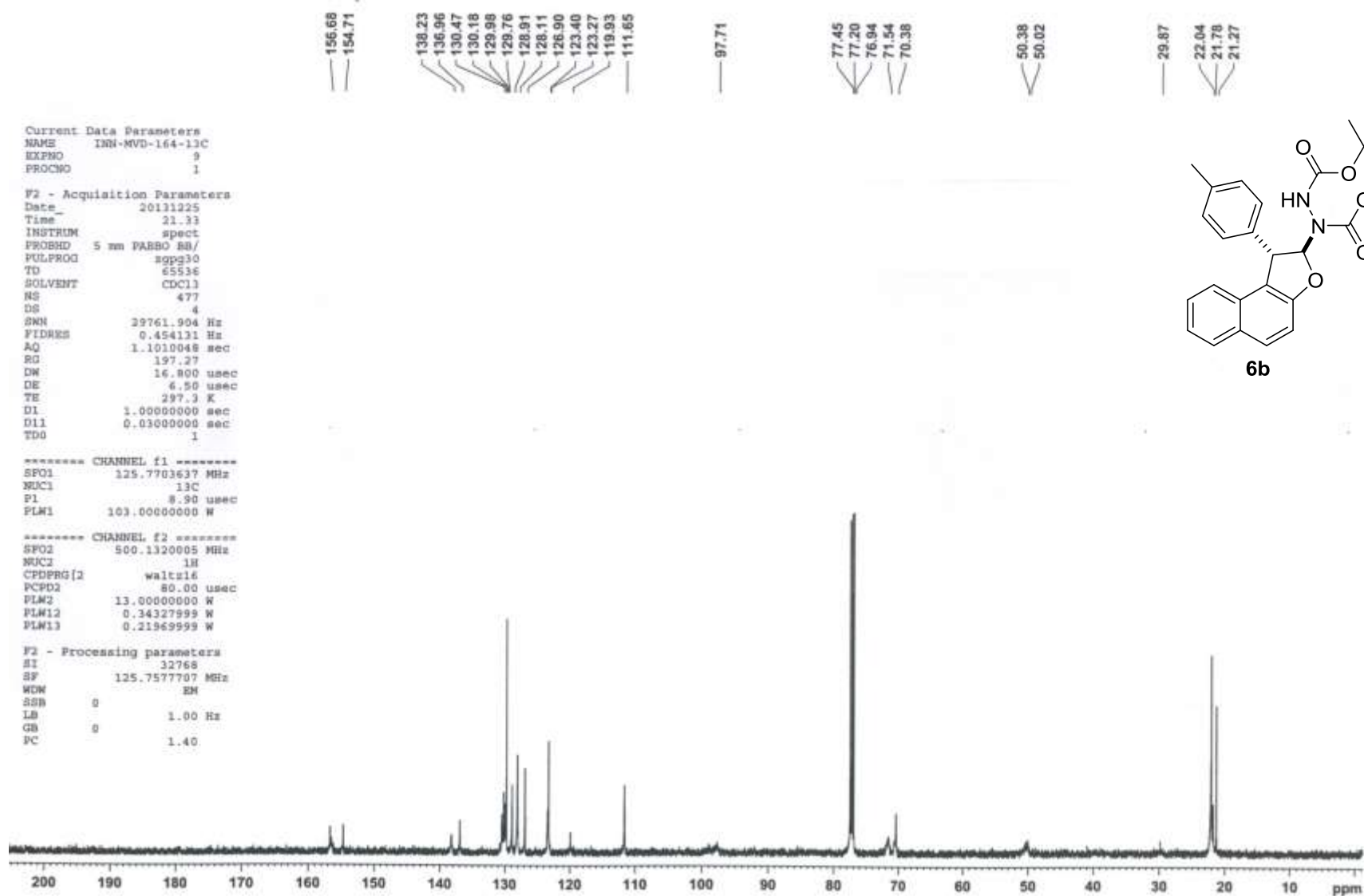


Figure S36. ¹³C NMR Spectrum of **6b**

```

Current Data Parameters
NAME      189-MVD-191-1H
EXPNO     5
PROCNO    1

F2 - Acquisition Parameters
Date_     20140923
Time      15.21
INSTRUM   spect
PROBHD    5 mm PABBO BB/
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         12
DS         4
SWH        10000.000 Hz
FIDRES     0.152586 Hz
AQ         1.2767999 sec
RG         10.65
DM         50.000 usec
DE         6.50 usec
TE         297.1 K
D1         1.00000000 sec
D12        0.00002000 sec
D16        0.00020000 sec
YD0        1

```

```

----- CHANNEL f1 -----
SFO1      500.1330885 MHz
NUC1       1H
P1         13.00 usec
P2         26.00 usec
P12        2000.00 usec
PLNO       0 W
PLW1       13.00000000 W
SFO1A1     0.500
SFO1P1     -2144.93 Hz
SFO1W1     0.00219700 W

```

```

----- GRADIENT CHANNEL -----
GPNAM[1]   SMSQ10.100
GPNAM[2]   SMSQ10.100
GPE1       31.00 %
GPE2       11.00 %
P16         1000.00 usec

```

```

F2 - Processing parameters
SI          65536
SF          500.1300245 MHz
WMW         RM
SBB         0
LB          0.30 Hz
GB          0
PC          1.00

```

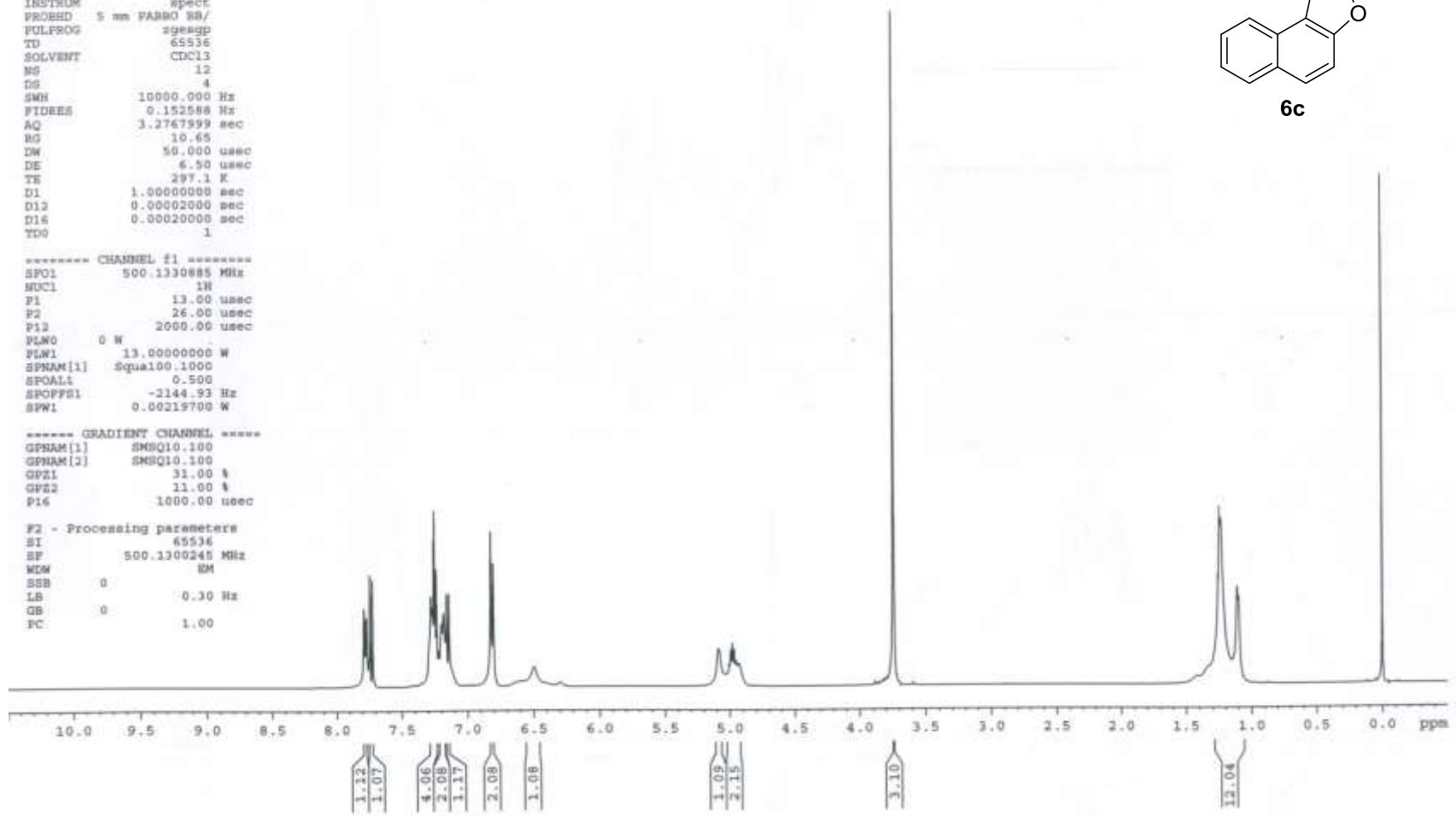
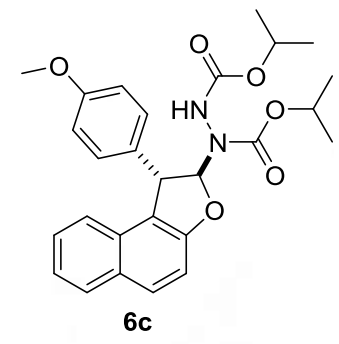


Figure S37. ¹H NMR Spectrum of **6c**

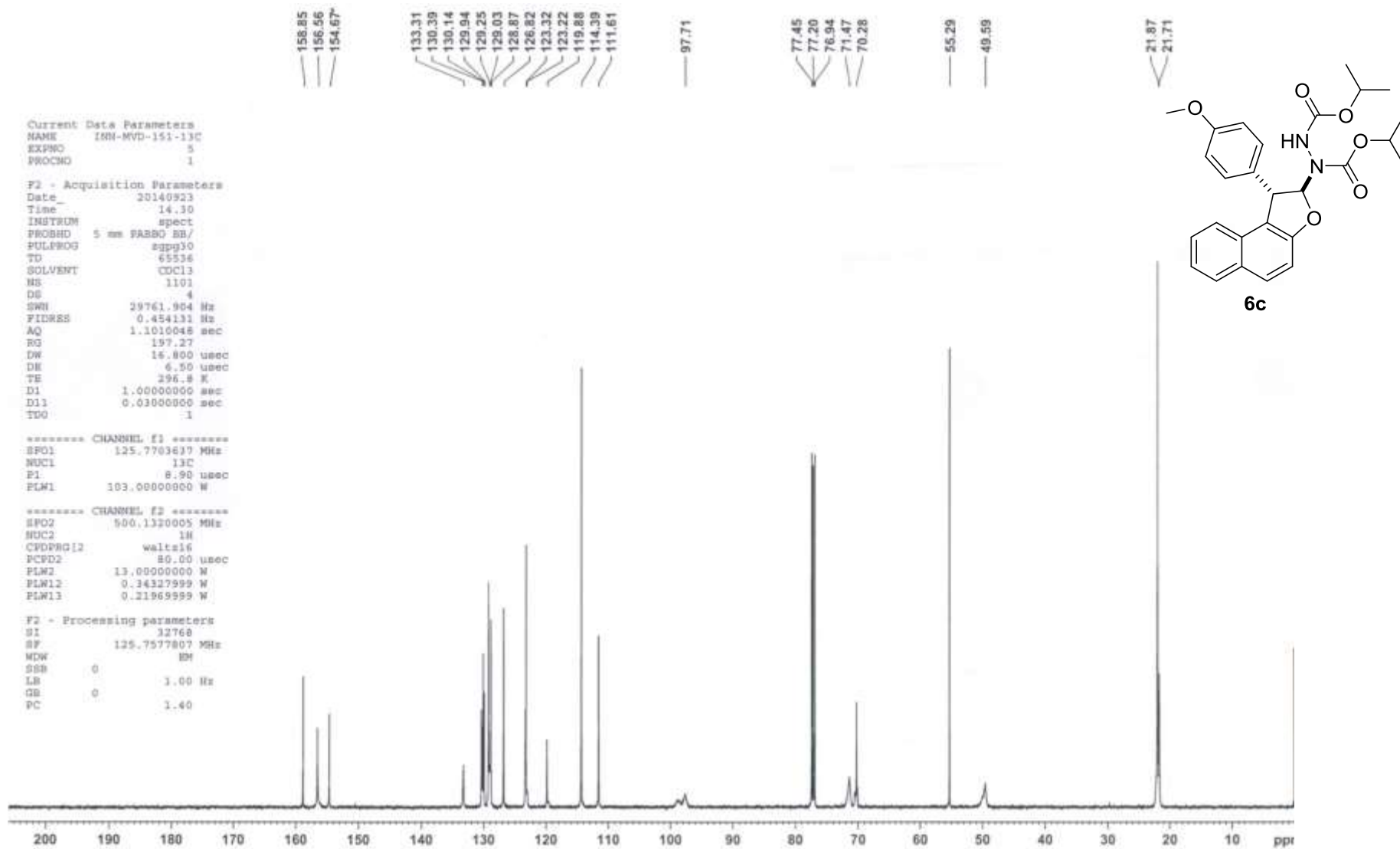


Figure S38. ¹³C NMR Spectrum of **6c**

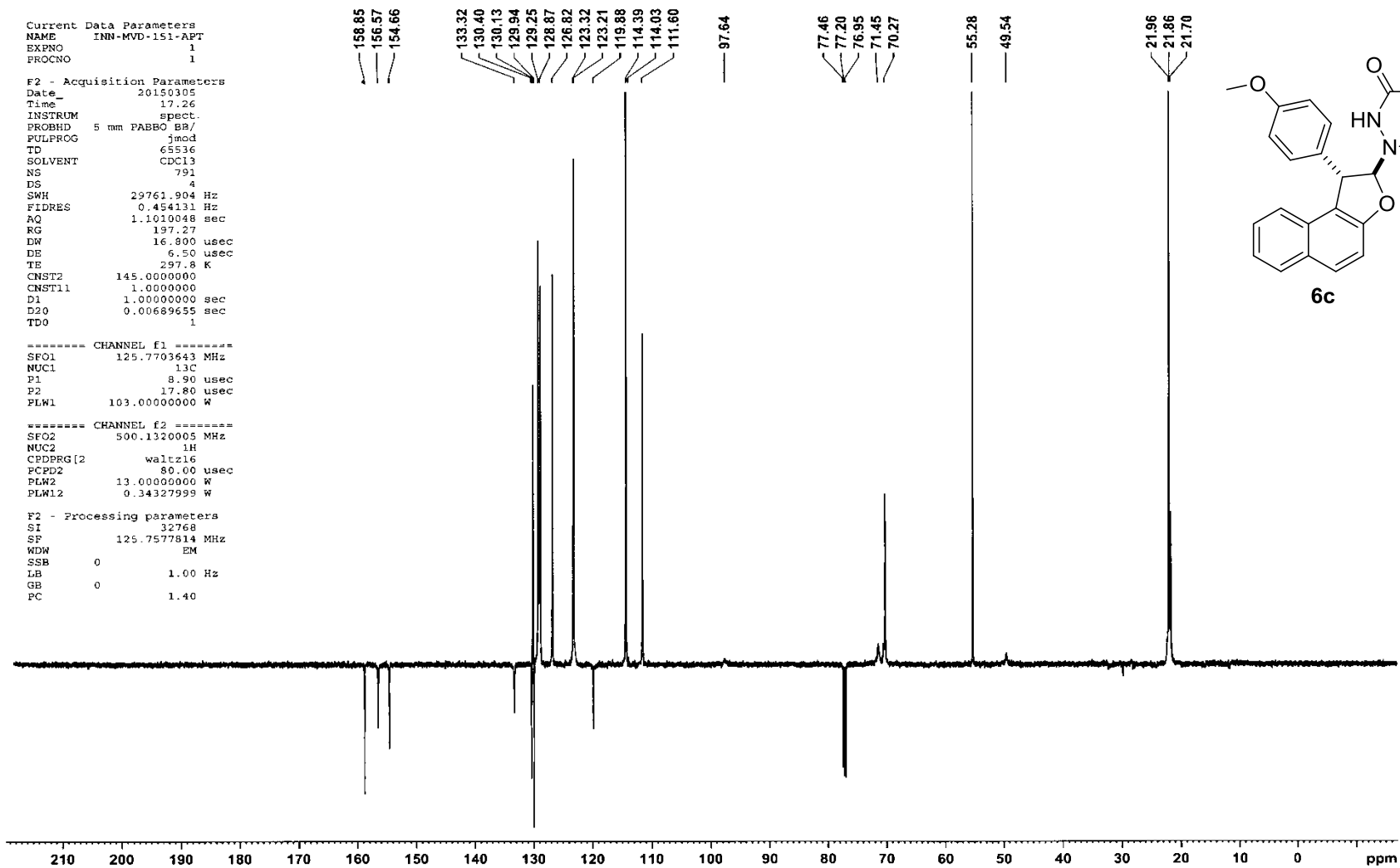
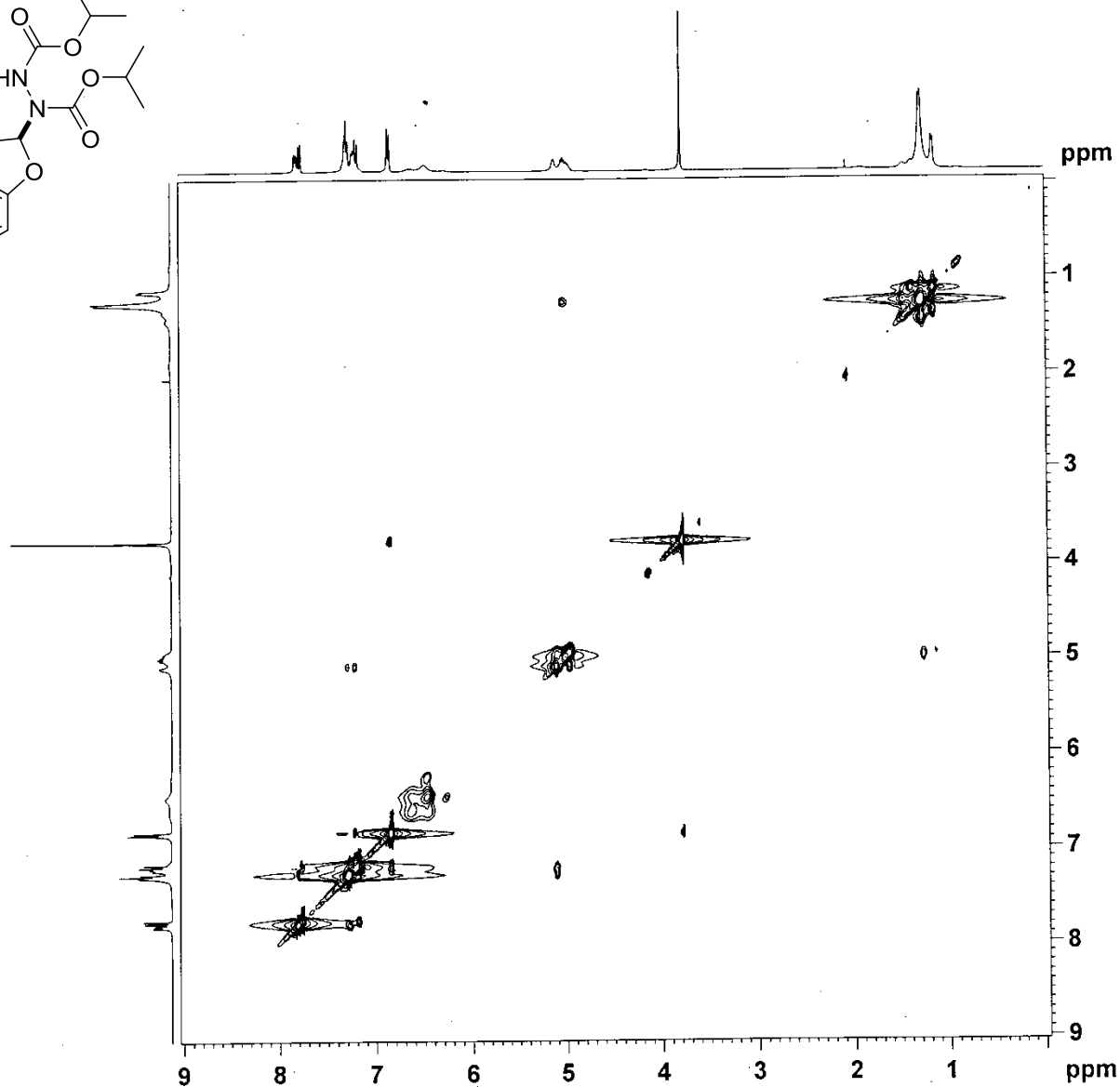
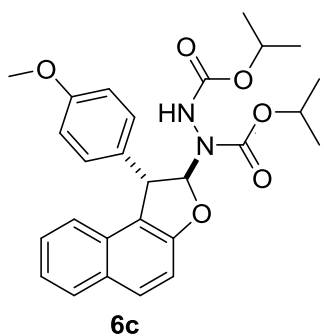


Figure S39. ¹³C-APT NMR Spectrum of **6c**



Current Data Parameters
 NAME INN-MVD-151-NOESY
 EXPNO 7
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20151203
 Time_ 17.45
 INSTRUM spect
 PROBHD 5 mm SEI 1H/D-
 PULPROG noesyph
 TD 2048
 SOLVENT CDC13
 NS 32
 DS 16
 SWH 3633.721 Hz
 FIDRES 1.774278 Hz
 AQ 0.2818048 sec
 RG 50.8
 DW 137.600 usec
 DE 6.50 usec
 TE 295.6 K
 D0 0.00012901 sec
 D1 1.90374398 sec
 D8 0.60000002 sec
 IN0 0.00027520 sec

===== CHANNEL f1 =====
 NUC1 1H
 P1 6.75 usec
 PL1 -3.00 dB
 PL1W 16.73965454 W
 SFO1 400.1318090 MHz

F1 - Acquisition parameters
 TD 324
 SFO1 400.1318 MHz
 FIDRES 11.215176 Hz
 SW 9.081 ppm
 FnMODE States-TPPI

F2 - Processing parameters
 SI 2048
 SF 400.1300095 MHz
 WDW QSINE
 SSB 2
 LB 0 Hz
 GB 0
 PC 1.00

F1 - Processing parameters
 SI 512
 MC2 States-TPPI
 SF 400.1300095 MHz
 WDW QSINE
 SSB 2
 LB 0 Hz
 GB 0

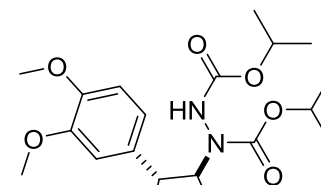
Figure S40. ^1H - $^1\text{HNOESY}$ NMR Spectrum of **6c**

Current Data Parameters
 NAME INN-MVD-157-1H
 KXPNO 5
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20140921
 Time 17.25
 INSTRUM spect
 PROBHD 5 mm FAPBO BB/
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 20
 DS 2
 SWH 10000.000 Hz
 FIDRES 0.152588 Hz
 AQ 3.2767999 sec
 RG 30.72
 DR 50.000 usec
 DE 6.50 usec
 TE 298.5 K
 DI 1.00000000 sec
 TDO 1

----- CHANNEL f1 -----
 SFO1 500.1330885 MHz
 NUC1 1H
 P1 13.00 usec
 PLW1 13.00000000 W

F2 - Processing parameters
 SI 65536
 SF 500.1300053 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00



6d

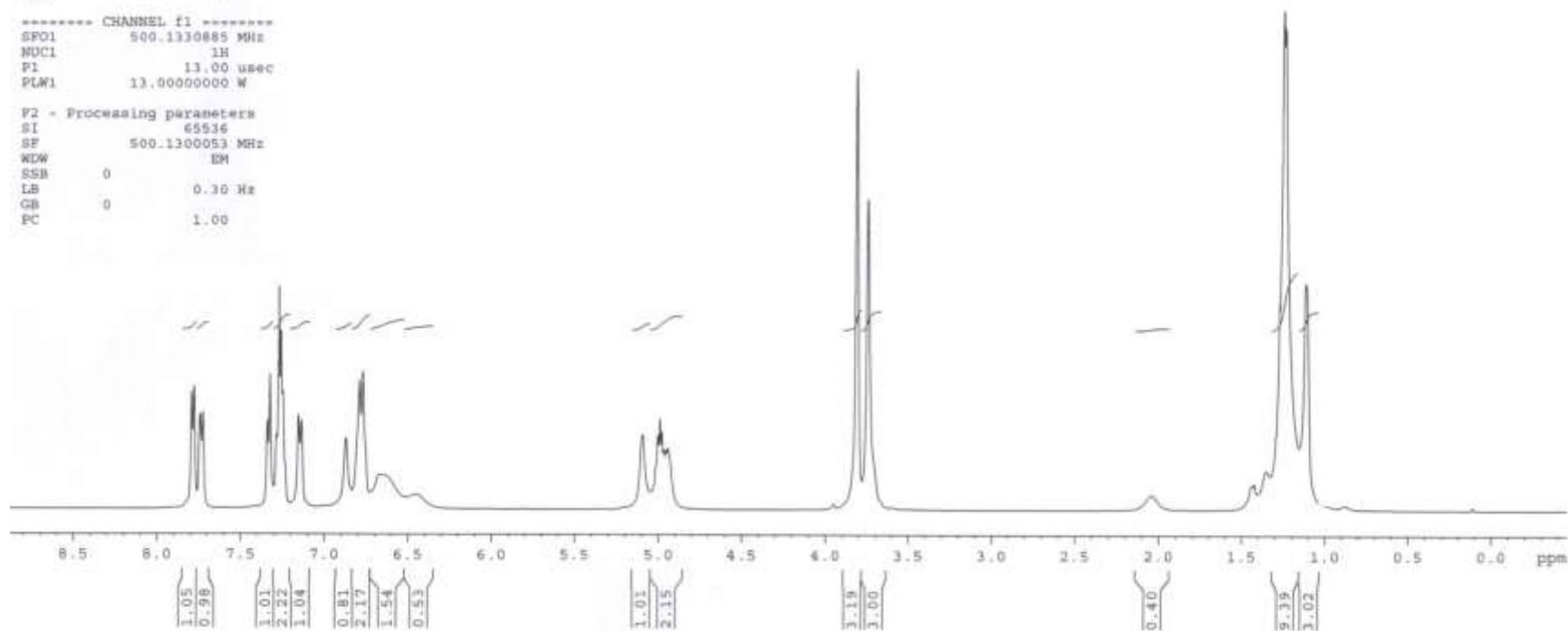


Figure S41. ¹H NMR Spectrum of **6d**

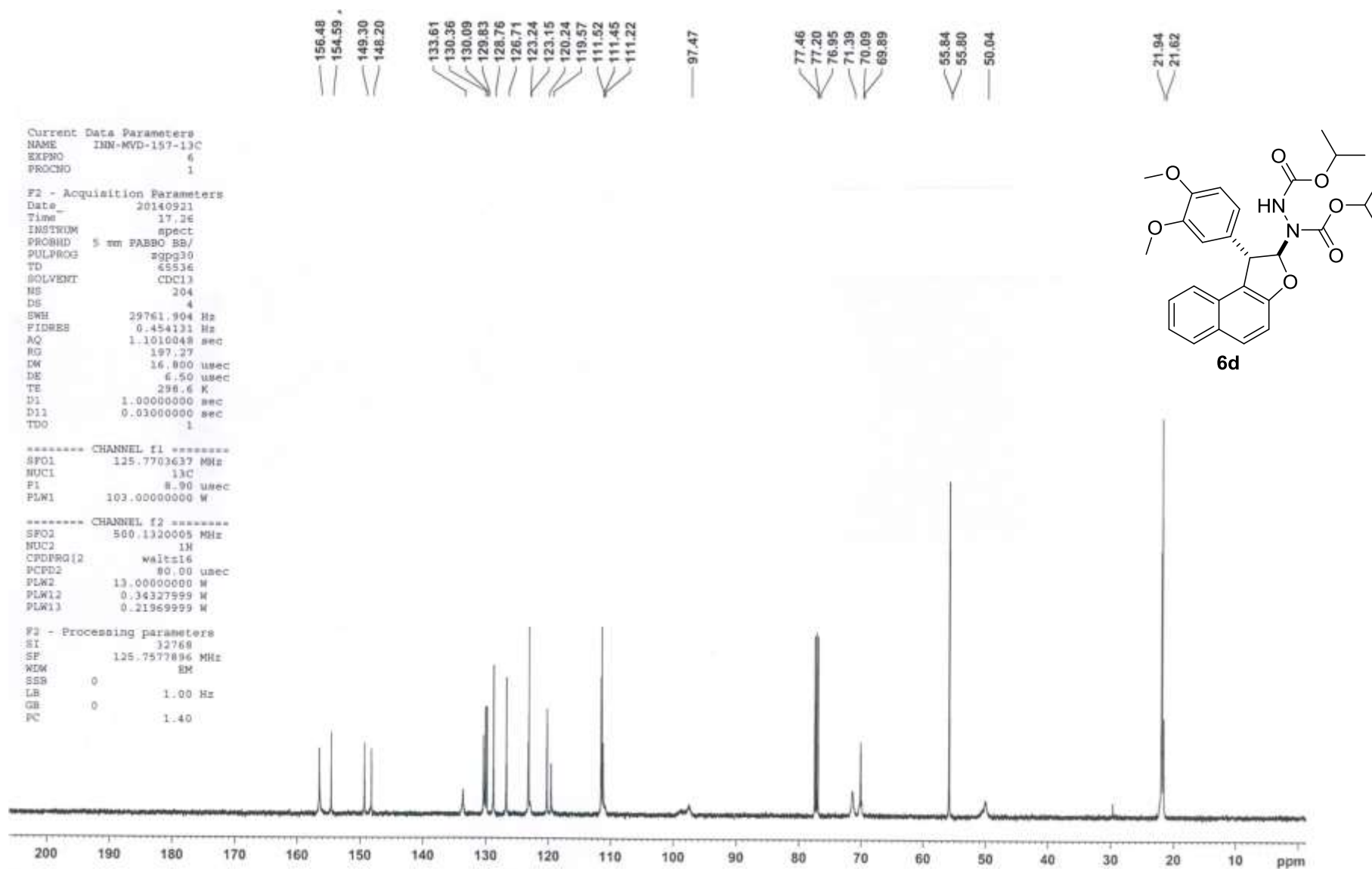
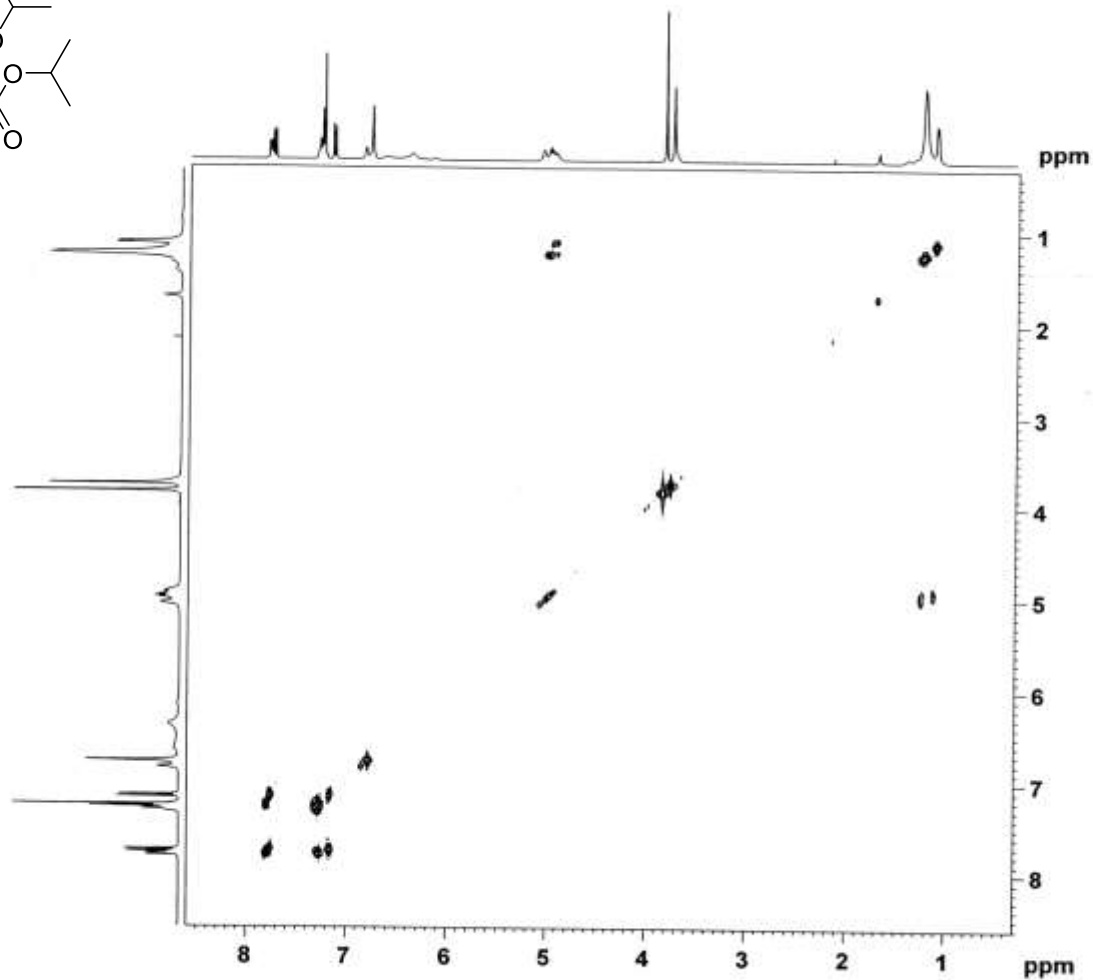
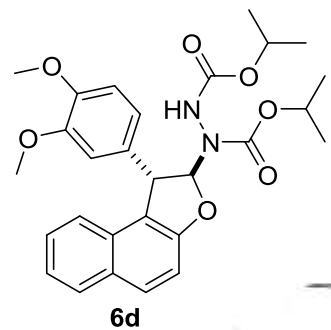


Figure S42. ¹³C NMR Spectrum of **6d**



```

NAME      INN-MVD-157-cosy
EXPNO     2
PROCNO    1
Date_     20140101
Time      16.45
INSTRUM   spect
PROBHD    5 mm SSI 1H/D-
PULPROG   cosygpczf
TD         2048
SOLVENT   CDCl3
NS         4
DS         16
SWH        3318.584 Hz
FIDRES     1.620402 Hz
AQ         0.3086153 sec
RG         32
DW         150.667 usec
DE         6.50 usec
TE         295.5 K
D0         0.00000300 sec
D1         1.00000000 sec
D13        0.00000400 sec
D16        0.00020000 sec
INO        0.00030110 sec

----- CHANNEL f1 -----
NUC1       1H
P0         6.75 usec
P1         6.75 usec
PL1        -3.00 dB
PL1W       16.73965454 W
SFO1       400.1317914 MHz

----- GRADIENT CHANNEL -----
GPNAM1     SINE.100
GPZ1       10.00 %
P16        1000.00 usec
NDO        1
TD         129
SFO1       400.1318 MHz
FIDRES     25.744913 Hz
SW         8.300 ppm
F0MODE     QF
SI         2048
SF         400.1300098 MHz
WDW        SINE
SSB        0
LB         0.00 Hz
GB         0
PC         1.40
SI         512
MC2        QF
SF         400.1300098 MHz
WDW        SINE
SSB        0
LB         0.00 Hz
GB         0

```

Figure S43. ^1H - ^1H COSY NMR Spectrum of **6d**

```

Current Data Parameters
NAME      INN-MVD-163-1H
EXPNO    2
PROCNO    1

F2 - Acquisition Parameters
Date_     20140923
Time      13.28
INSTRUM   spect
PROBHD    5 mm PABBO BB/
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS         20
DS         2
SFO1      10000.000 Hz
FIDRES    0.152588 Hz
AQ         3.2767999 sec
RG         30.72
DW         50.000 usec
DE         6.50 usec
TE         296.1 K
D1         1.00000000 sec
TDO        1

```

```

***** CHANNEL f1 *****
SFO1      500.1330885 MHz
NUC1       1H
P1         13.00 usec
PLW1      13.00000000 W

```

```

F2 - Processing parameters
SI         65536
SF         500.1300119 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

```

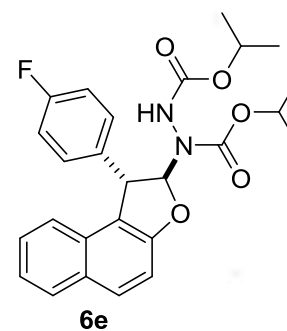
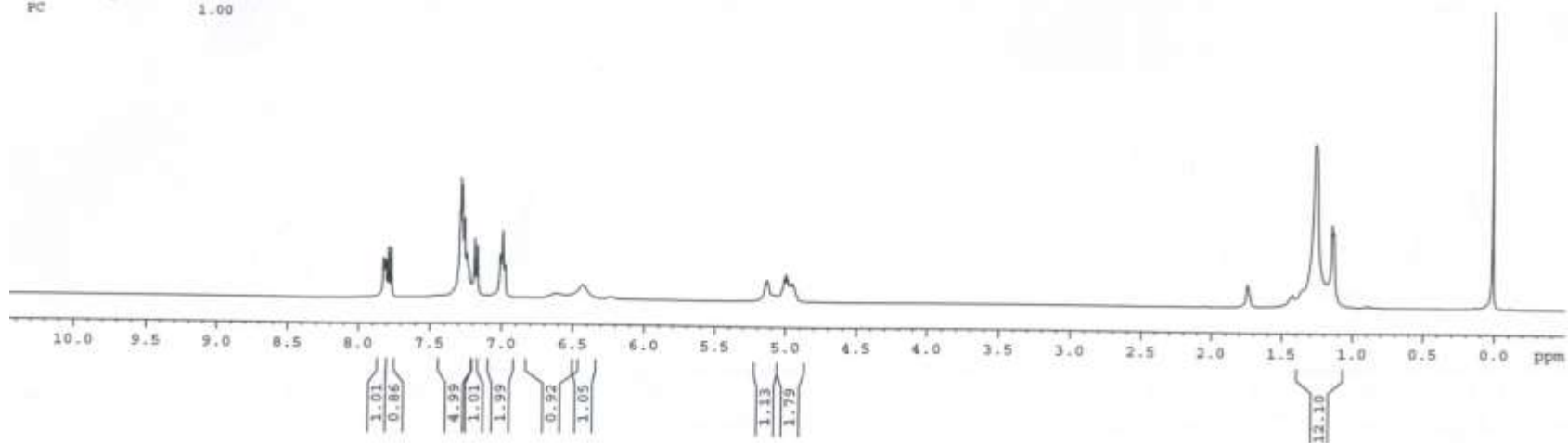


Figure S44. ¹H NMR Spectrum of **6e**

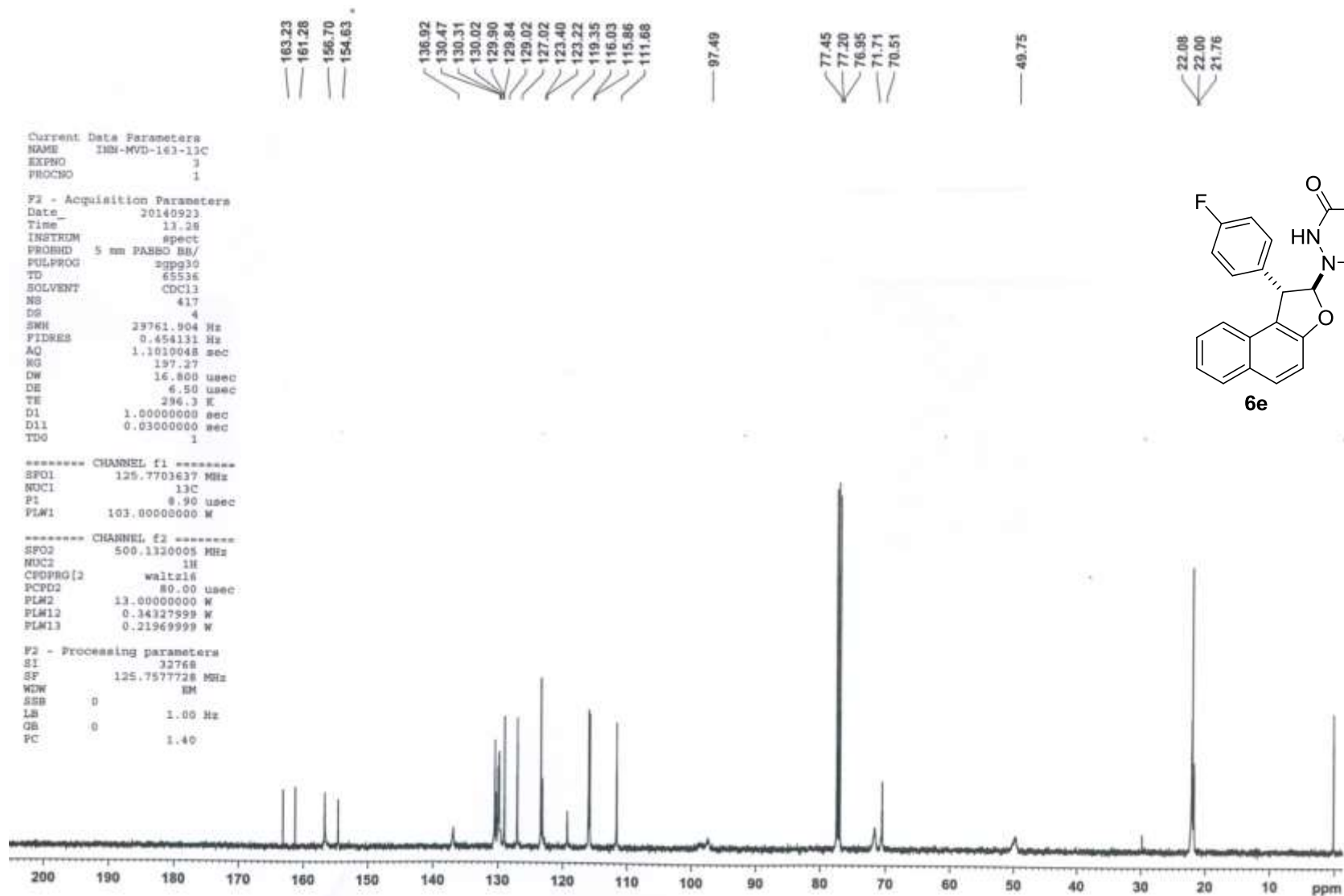


Figure S45. ^{13}C NMR Spectrum of **6e**

```

Current Data Parameters
NAME      INN-MVD-163-19F
EXPNO     1
PROCNO    1

F2 - Acquisition Parameters
Date_     20140924
Time      19.12
INSTRUM   spect
PROBHD    5 mm PABBO BH/
PULPROG   zgpg30
TD         131072
SOLVENT   CDCl3
NS         50
DS         4
SWH        113636.367 Hz
FIDRES     0.866977 Hz
AQ         0.5767168 sec
RG         197.27
DW         4.400 usec
DE         6.50 usec
TE         297.8 K
D1         1.00000000 sec
TDS        1

----- CHANNEL f1 -----
SFO1      470.5453186 MHz
NUC1       19F
P1         13.50 usec
PLW1       40.00000000 W

F2 - Processing parameters
SI         65536
SF         470.5933770 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

```

-115.00
 -115.44

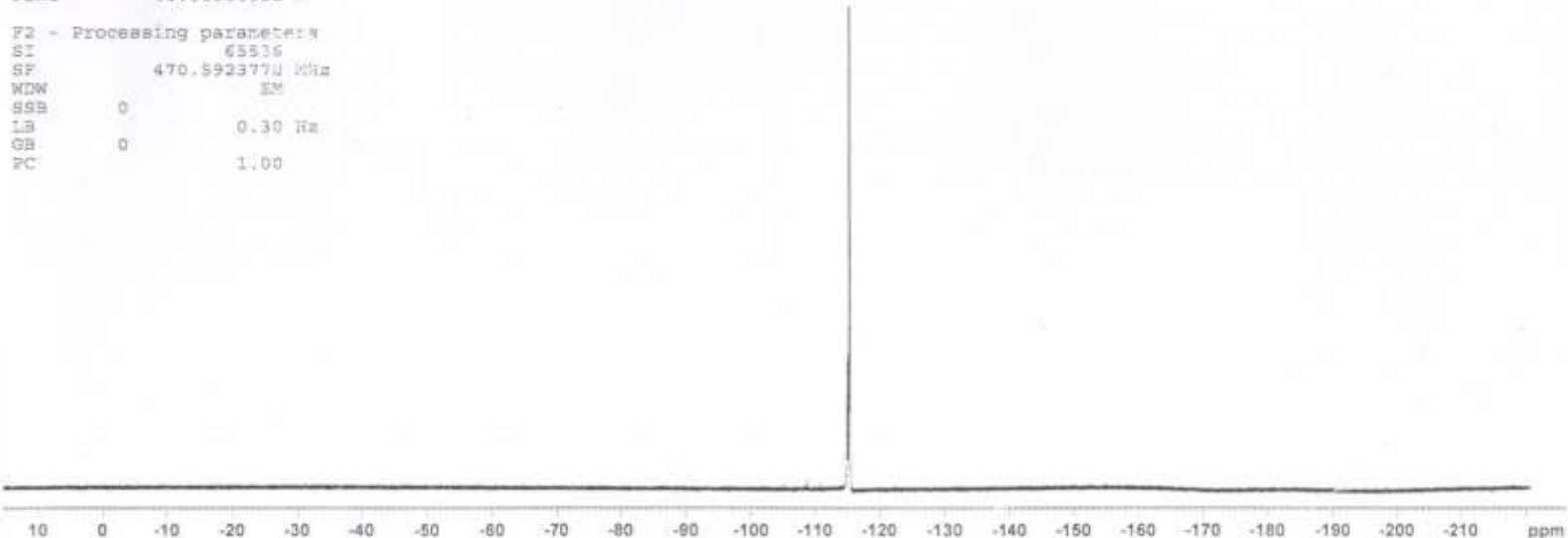
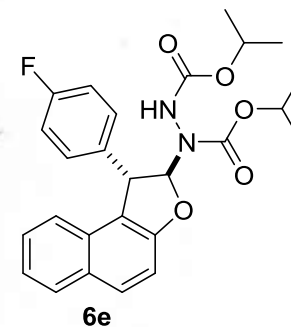


Figure S46. ¹⁹F NMR Spectrum of **6e**


```

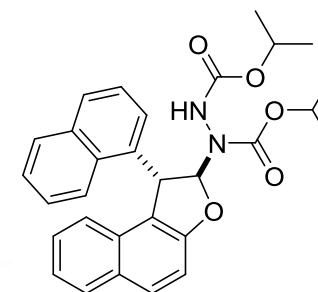
Current Data Parameters
NAME      INH-MVD-153-1H
EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
Date_    20140406
Time     10.33
INSTRUM  spect
PROBHD   5 mm PABBO BB/
PULPROG  zg30
TD       65536
SOLVENT  CDCl3
NS       30
DS       2
SWH      10080.000 Hz
FIDRES   0.152588 Hz
AQ       3.2767899 sec
RG       30.72
DM       50.000 usec
DE       6.50 usec
TE       294.4 K
D1       1.00000000 sec
TD0      1

***** CHANNEL f1 *****
SFO1     500.1330885 MHz
NUC1      1H
P1       13.00 usec
PLM1     13.00000000 W

F2 - Processing parameters
SI       65536
SF       500.1330880 MHz
WDW      RM
SSB      0
LE       0.30 Hz
GB       0
PC       1.00

```



6f

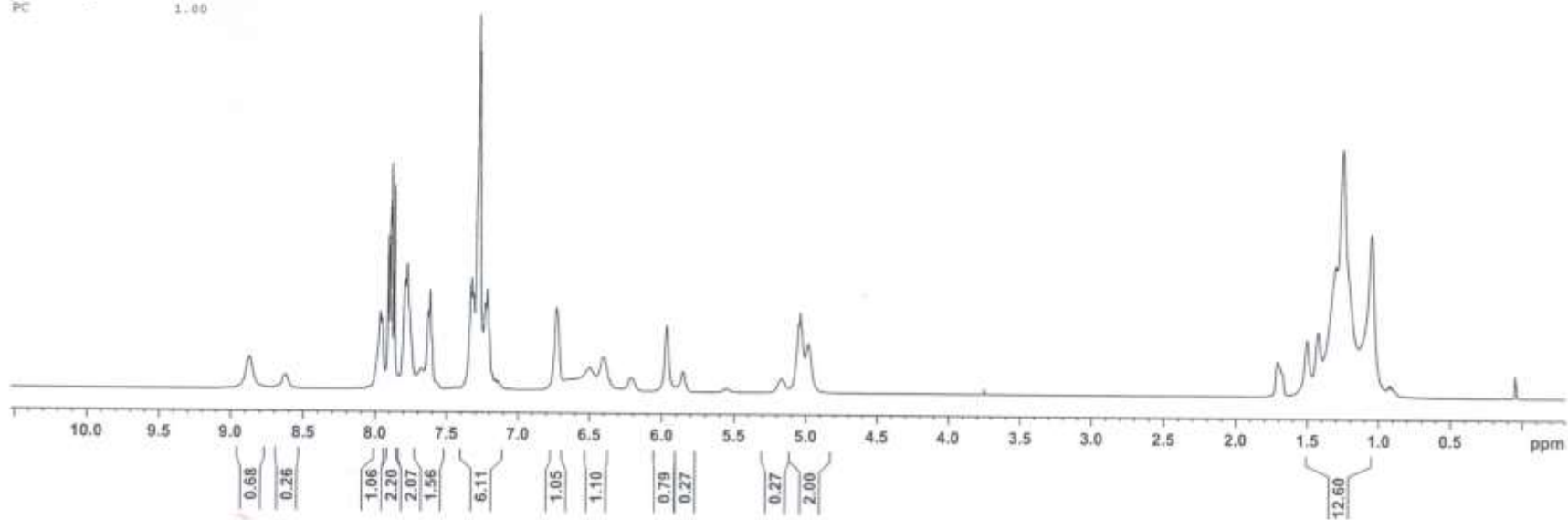


Figure S47. ^1H NMR Spectrum of **6f**

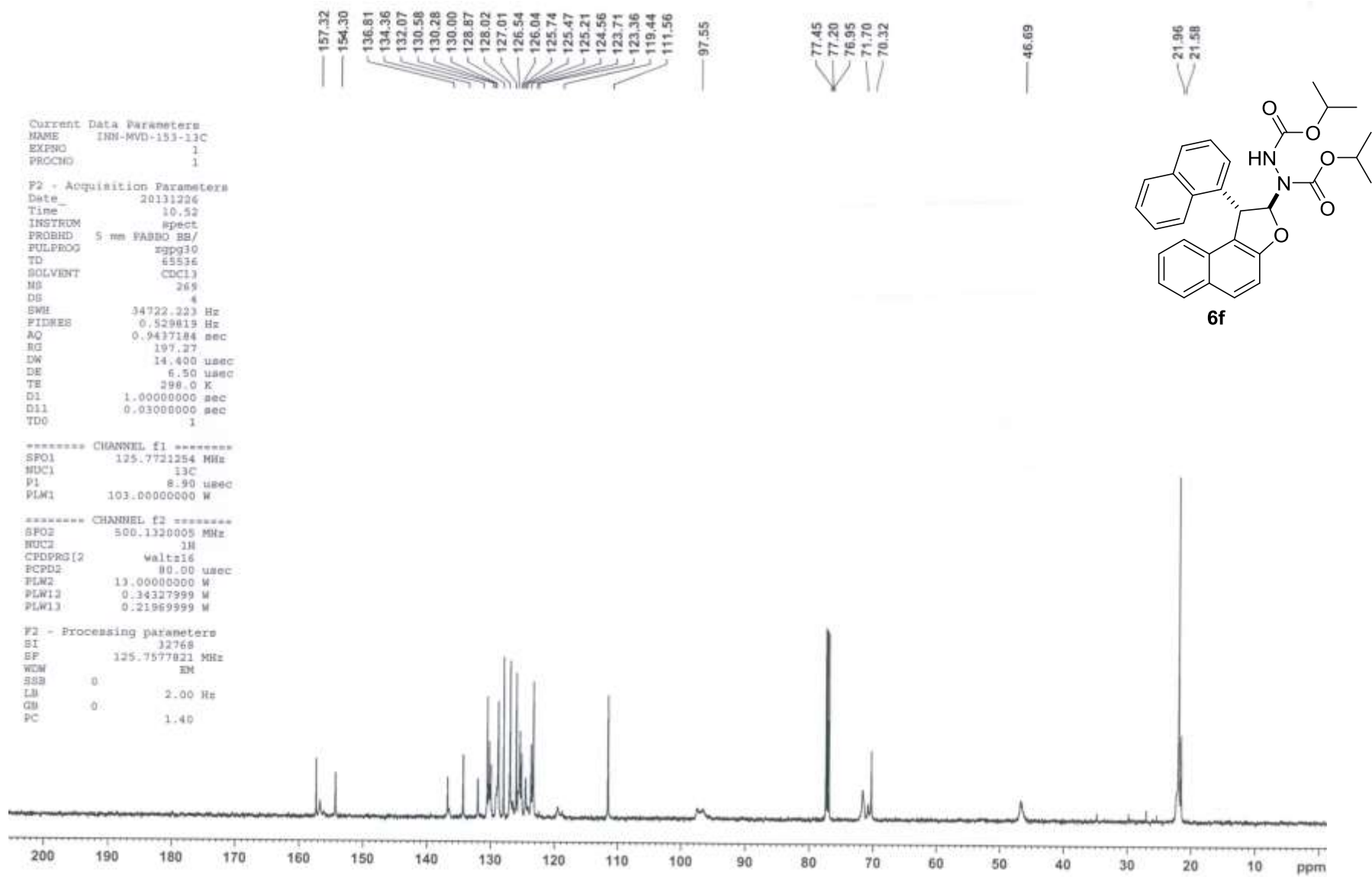


Figure S48. ^{13}C NMR Spectrum of **6f**

```

Current Data Parameters
NAME      1MN-MVD-152-1H
EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
Date_    20140921
Time     17.01
INSTRUM  spect
PROBHD   5 mm BABB0 BB/
PULPROG  zg30
TD       65536
SOLVENT  CDCl3
HS       20
DS       2
SWH      10000.000 Hz
FIDRES   0.152588 Hz
AQ       3.2767599 sec
RG       30.72
DW       50.000 usec
DE       6.50 usec
TE       298.4 K
D1       1.00000000 sec
TDO      1

```

```

***** CHANNEL f1 *****
SFO1    500.1330885 MHz
NUC1     1H
P1      13.00 usec
PLW1    13.00000000 W

```

```

F2 - Processing parameters
SI      65536
SF      500.1300215 MHz
WDW     RM
SSB     0
LB      0.30 Hz
GB      0
PC      1.00

```

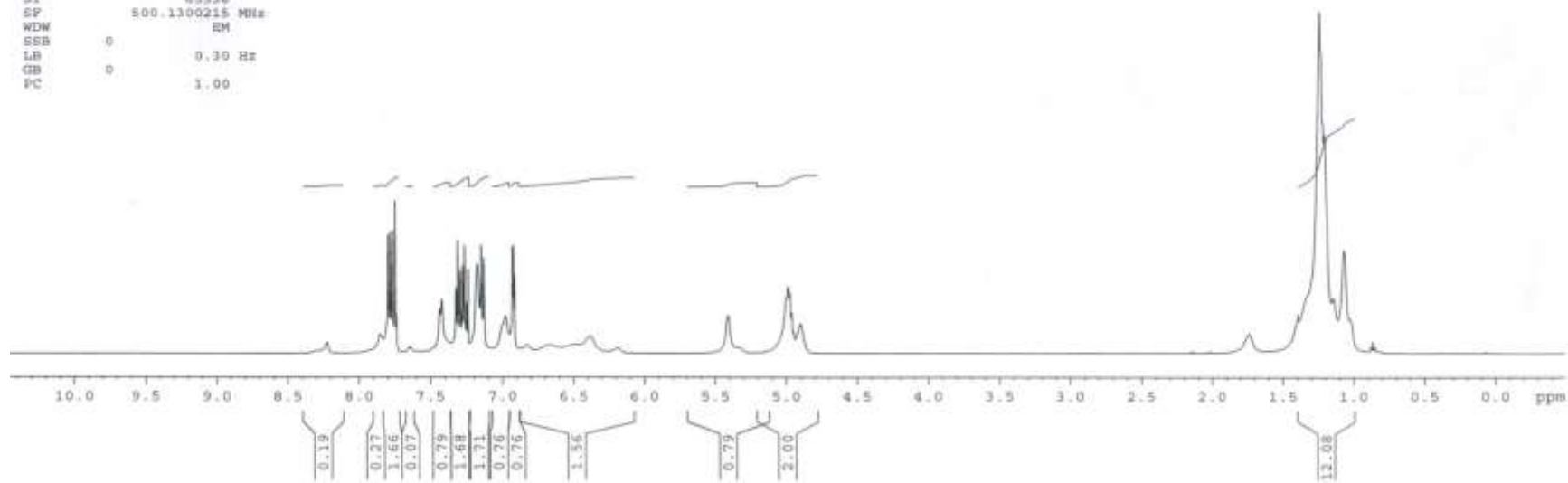
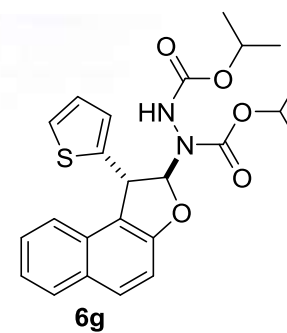


Figure S49. ¹H NMR Spectrum of **6g**

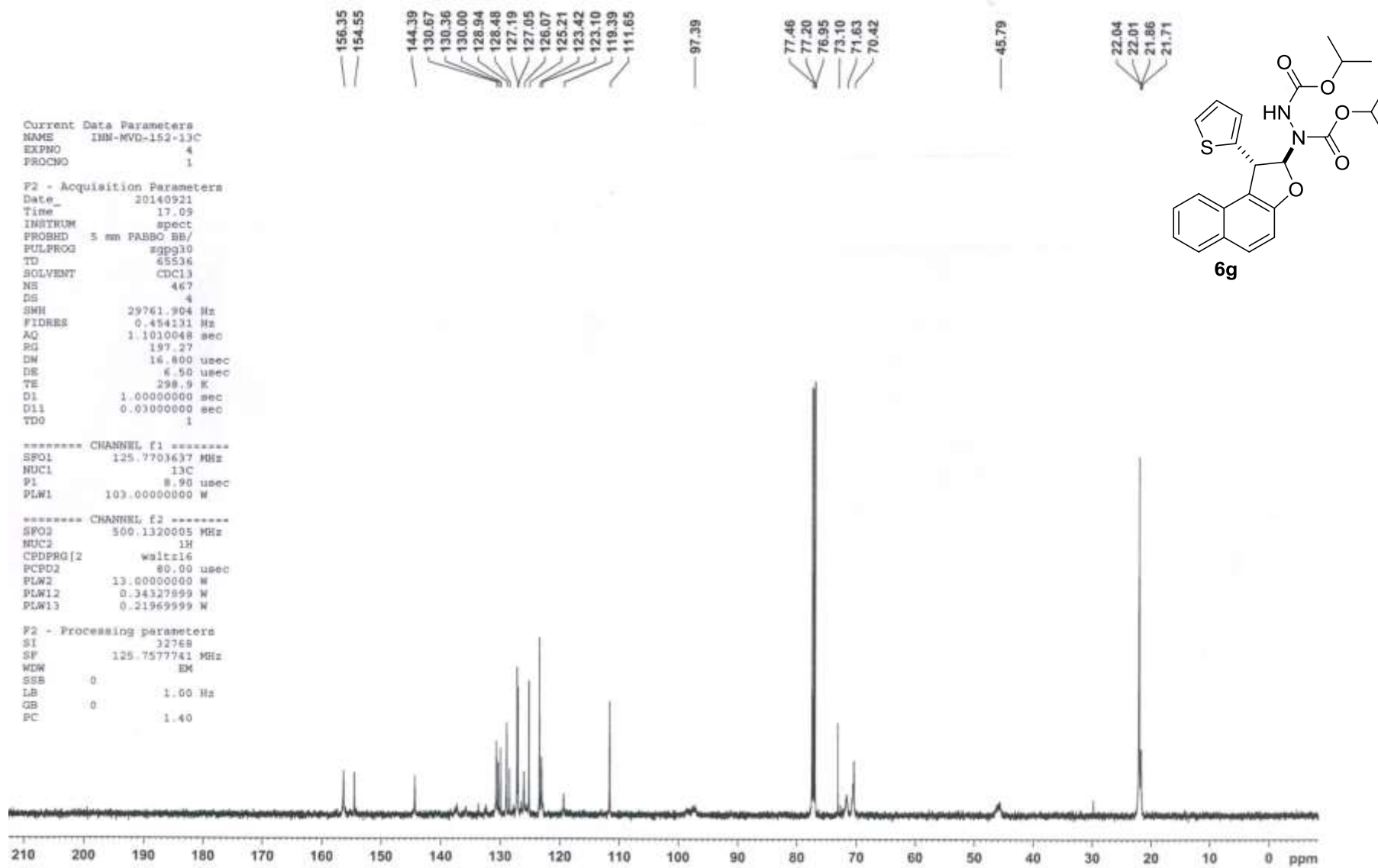


Figure S50. ^{13}C NMR Spectrum of **6g**

```

NAME      INN-MVD-165-1H
EXPNO     7
PROCNO    1
Date_     20131219
Time      10.25
INSTRUM   spect
PROBHD    5 mm SEI 1H/0-
PULPROG   sg30
TD        65536
SOLVENT   CDCl3
NS        16
DS        0
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        90.5
DW        60.800 usec
DE        6.50 usec
TE        295.6 K
D1        1.00000000 sec
TD0       1

```

```

===== CHANNEL f1 =====
NUC1      1H
P1        6.75 usec
PL1       -3.00 dB
PL1W      16.73965454 W
SFO1      400.1324710 MHz
SI        32768
SF        400.1300106 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

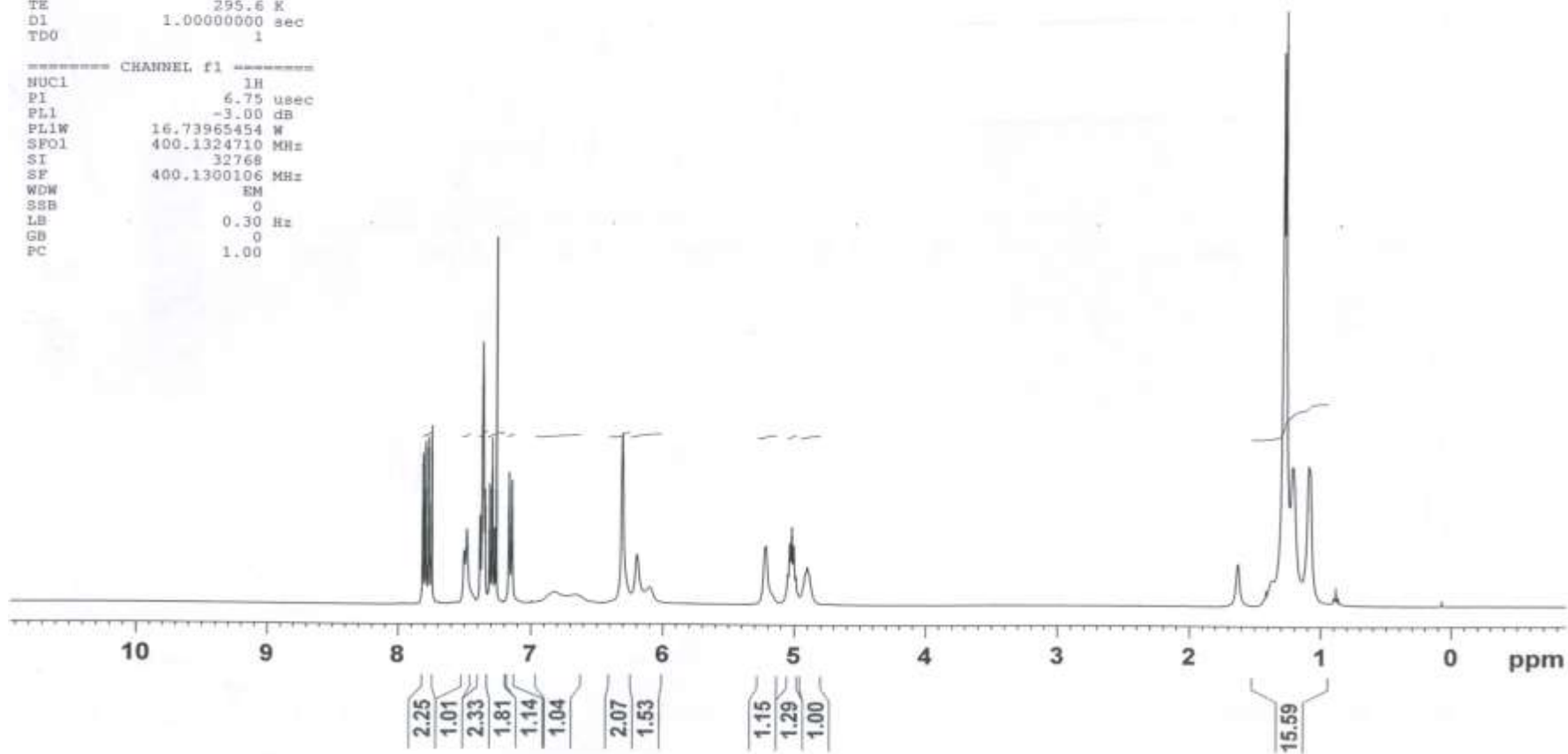
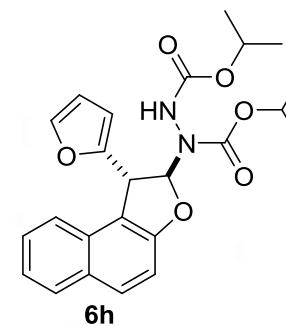


Figure S51. ¹H NMR Spectrum of **6h**

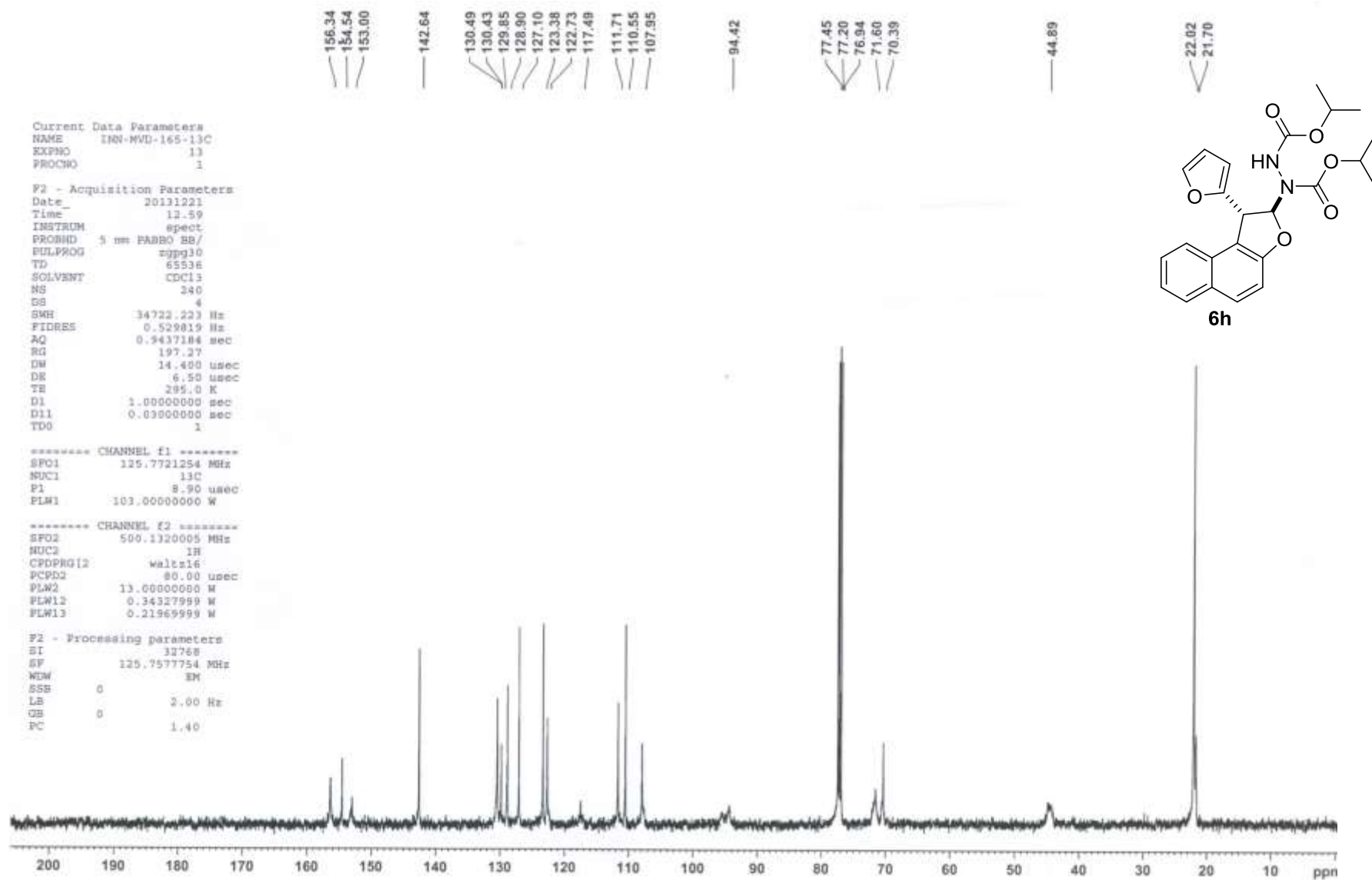


Figure S52. ^{13}C NMR Spectrum of **6h**

```

NAME      INN-MVD-320-1R
EXPNO     1
PROCNO    1
Date_     20140930
Time      18.23
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         54274
SOLVENT   CDCl3
NS         20
DS         0
SWH        8223.685 Hz
FIDRES     0.151522 Hz
AQ         3.2999091 sec
RG         32
DW         60.800 usec
DE         6.50 usec
TE         297.9 K
D1         1.00000000 sec
TDO        1

```

```

===== CHANNEL f1 =====
NOC1      1H
F1         14.75 usec
FL1        -1.00 dB
PL1W       18.56200695 W
SFO1       400.1324710 MHz
SI         32768
SF         400.1300268 MHz
WDW        EM
SSB         0
LB         0.30 Hz
GB         0
PC         1.00

```

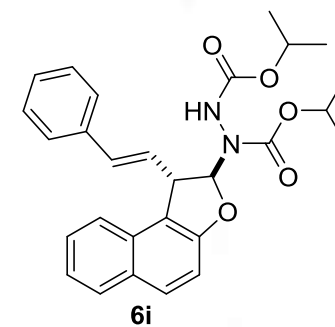


Figure S53. ¹H NMR Spectrum of **6i**

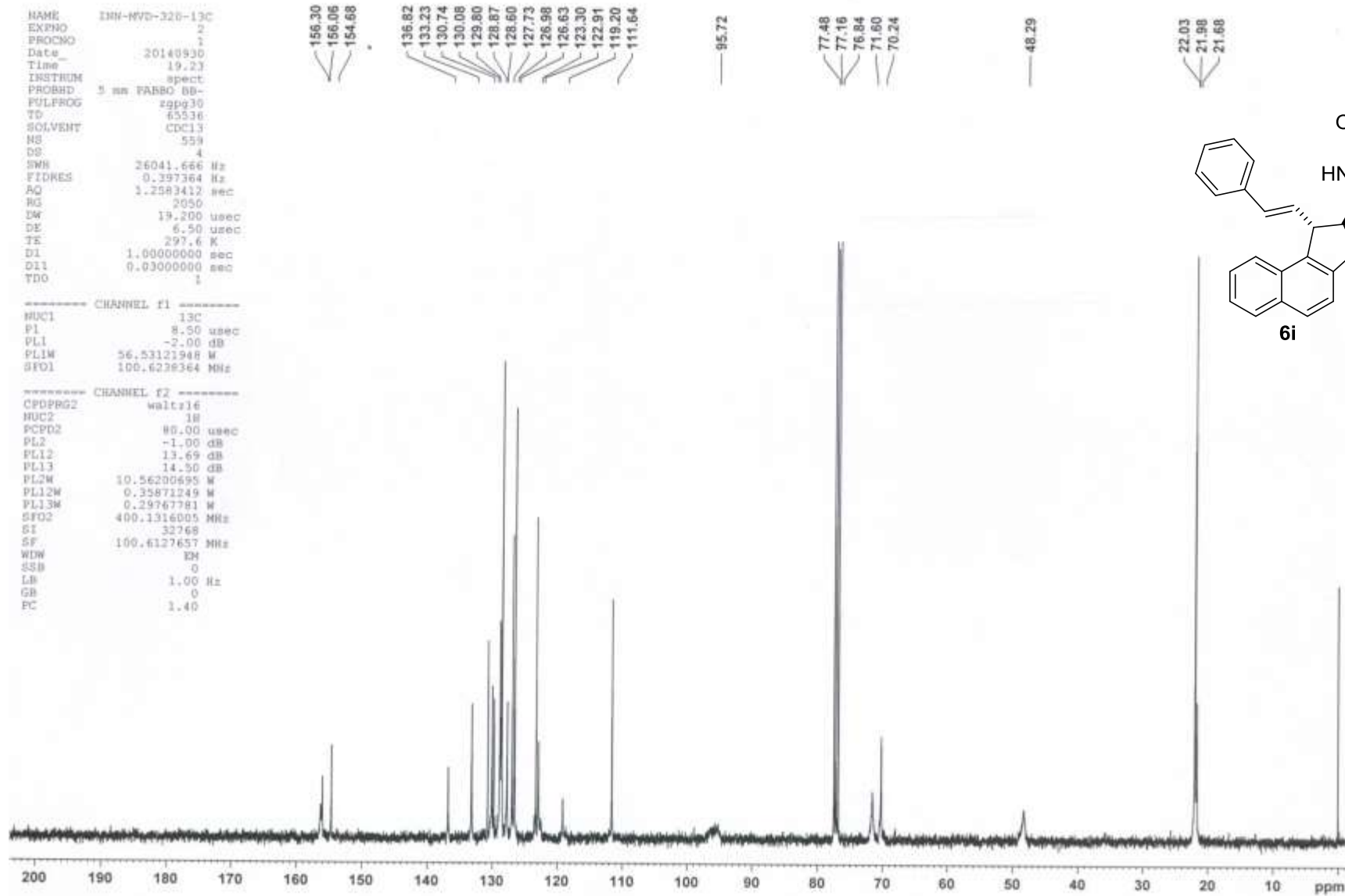


Figure S54. ^{13}C NMR Spectrum of **6i**

Current Data Parameters
NAME INH-MVD-155-1H
EXPNO 9
PROCNO 1

F2 - Acquisition Parameters
Date_ 20131225
Time 21.53
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TU 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 10.72
DW 50.000 usec
DE 6.50 usec
TE 296.6 K
D1 1.00000000 sec
TDO 1

----- CHANNEL f1 -----
SFO1 500.1330885 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1330000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

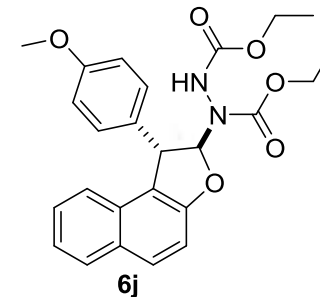
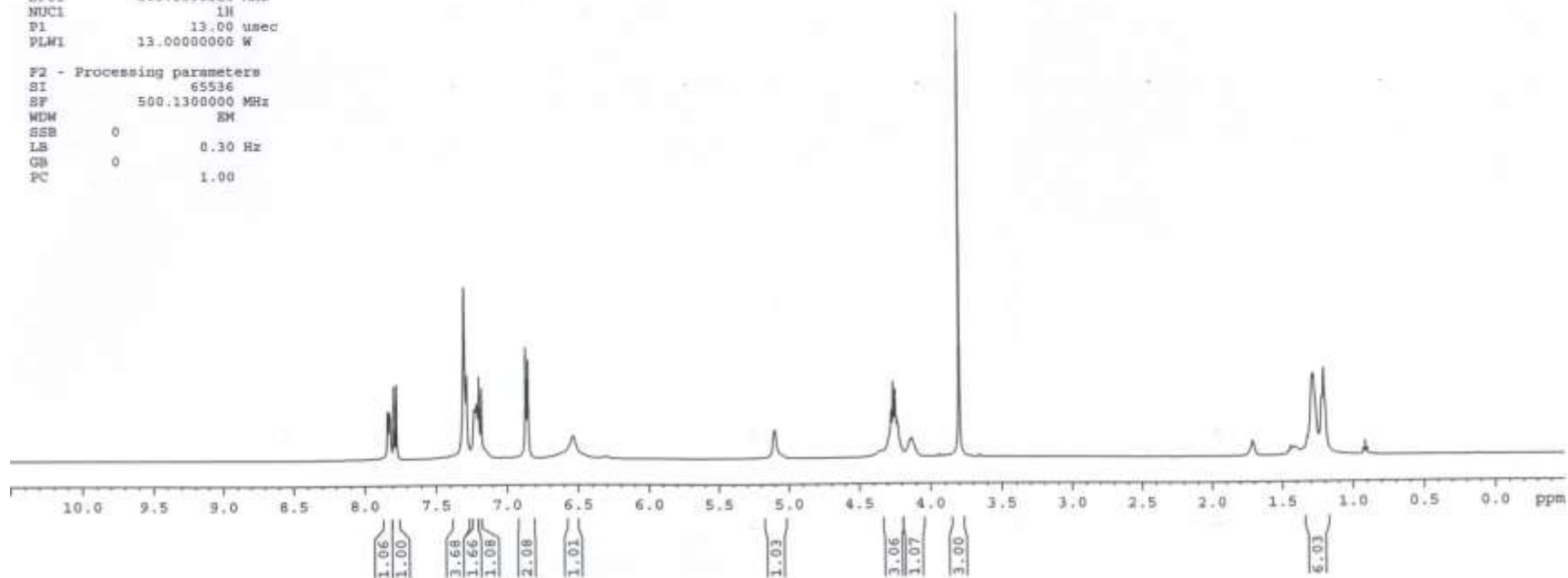


Figure S55. ¹H NMR Spectrum of **6j**

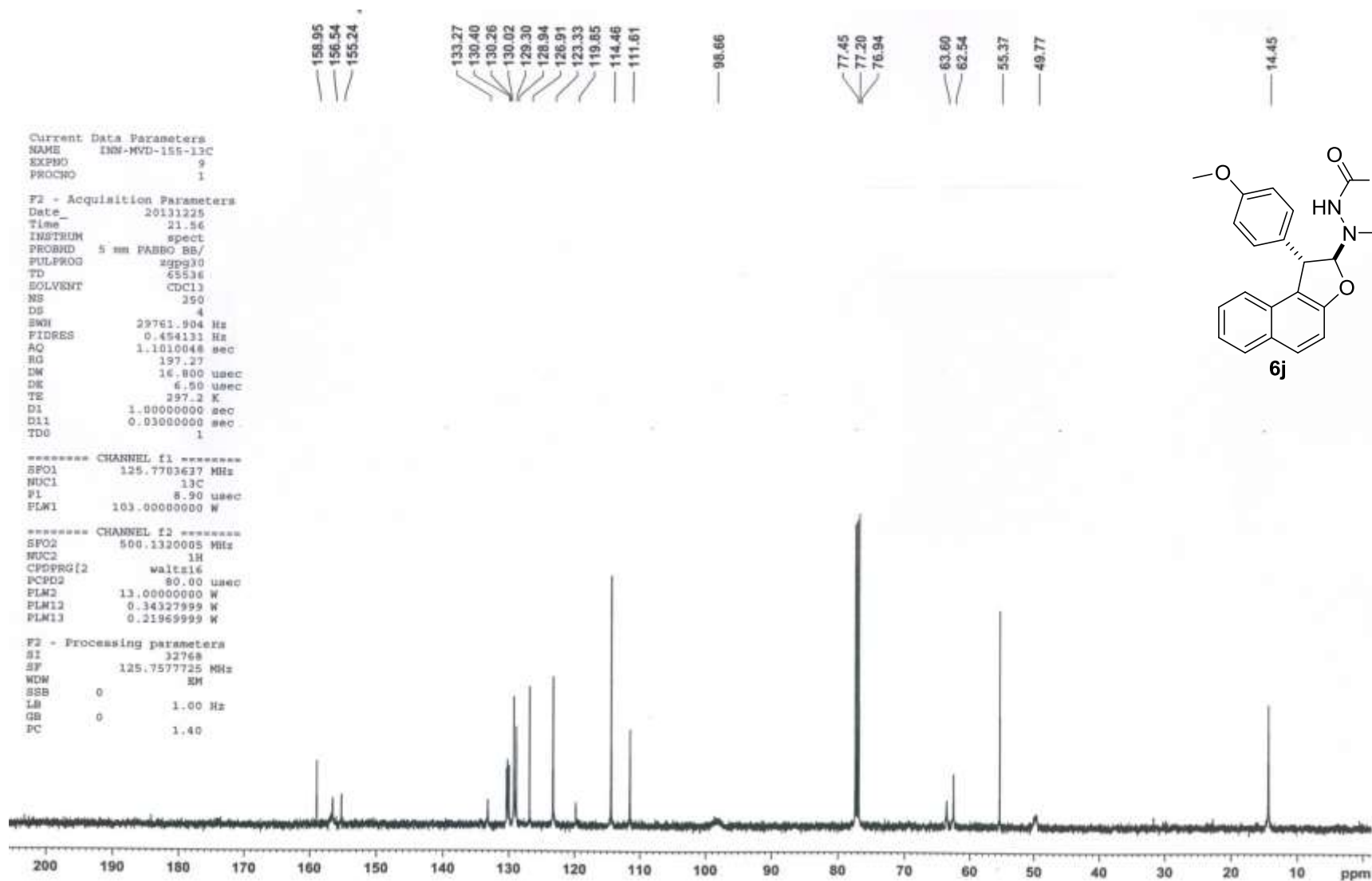


Figure S56. ^{13}C NMR Spectrum of **6j**

```

NAME      INN-MVD-169-1H
EXPNO     4
PROCNO    1
Date_     20141014
Time      18.25
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD        54274
SOLVENT   CDCl3
NS        14
DS        0
SWH       12019.230 Hz
FIDRES    0.221455 Hz
AQ        2.2578483 sec
RG        32
DM        41.600 usec
DE        6.50 usec
TE        297.3 K
D1        1.00000000 sec
D12       0.00002000 sec
TDO       1

```

```

===== CHANNEL f1 =====
NUC1      1H
P1        14.75 usec
PL1       -1.00 dB
PL19      38.23 dB
PL1W      10.56200595 W
PL19W     0.00126109 W
SFO1      400.1300279 MHz
SI        32768
SF        400.1300167 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

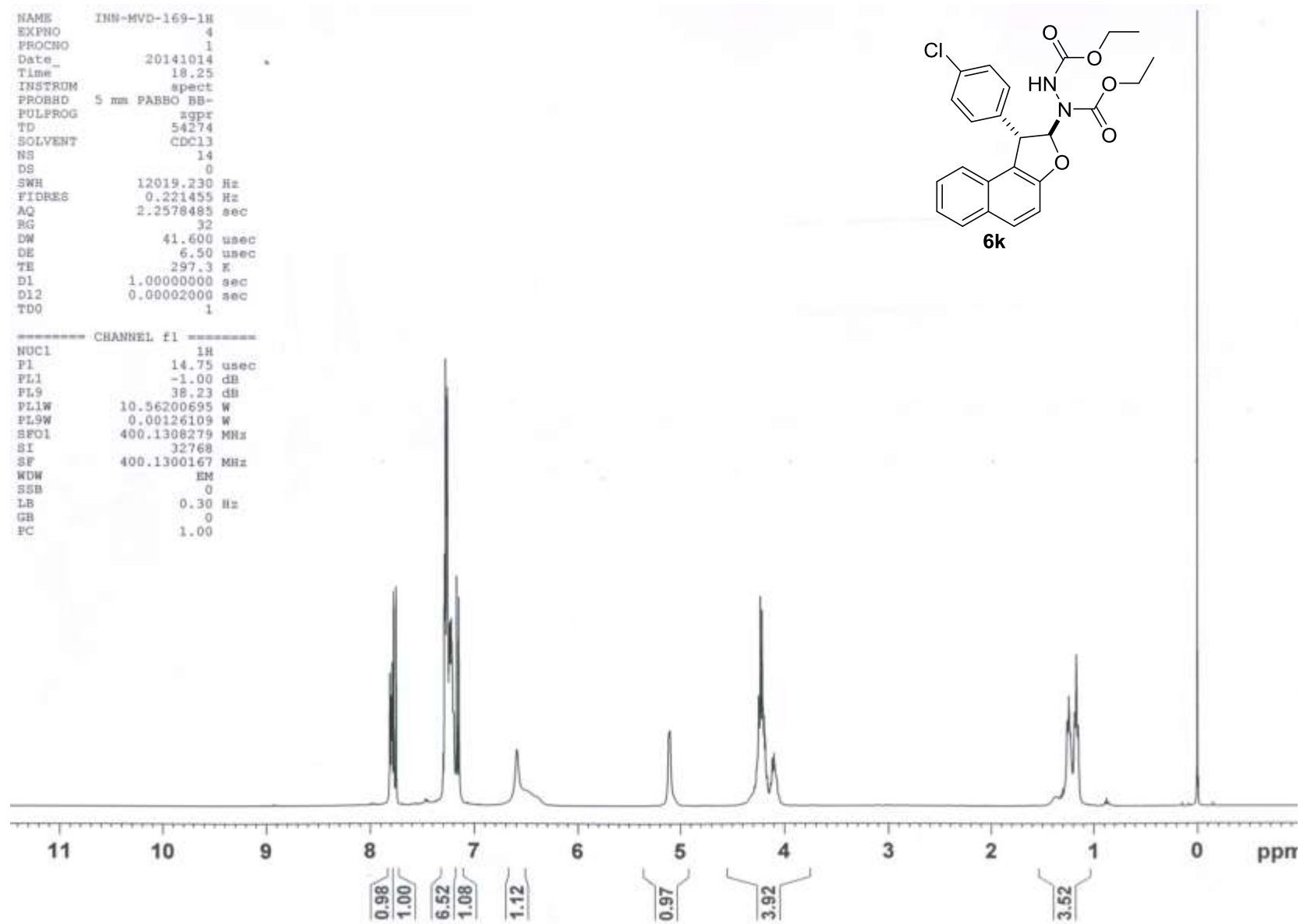


Figure S57. ¹H NMR Spectrum of **6k**

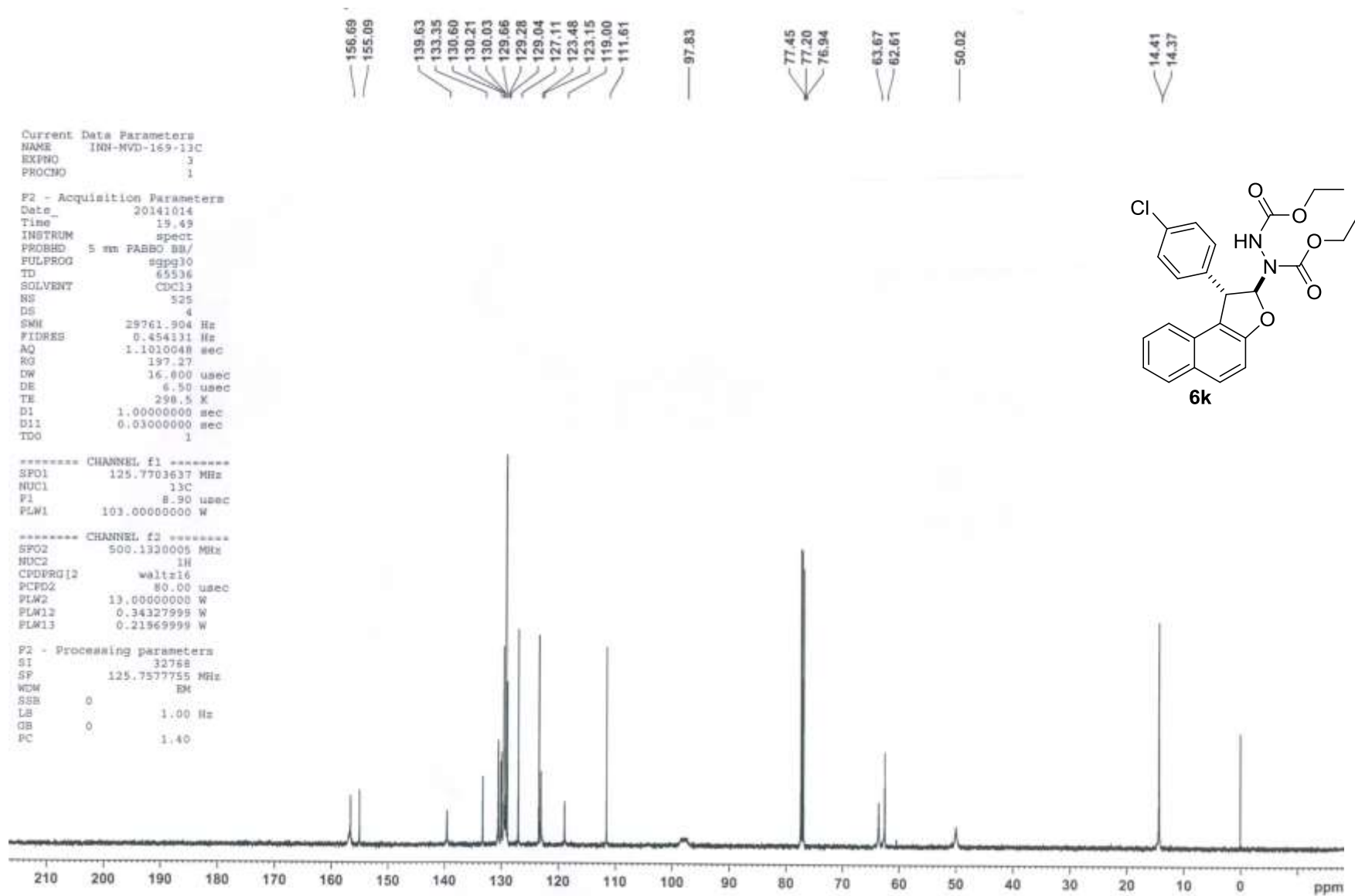


Figure S58. ¹³C NMR Spectrum of **6k**

Current Data Parameters
NAME INN-MVD-162-1H
EXPSO 6
PROCNO 1

F2 - Acquisition Parameters:
Date_ 20131210
Time 19.33
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 10
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 30.72
RW 50.000 usec
DE 6.50 usec
TE 297.6 K
D1 1.00000000 sec
TD0 1

***** CHANNEL f1 *****
SFO1 500.1330885 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300000 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

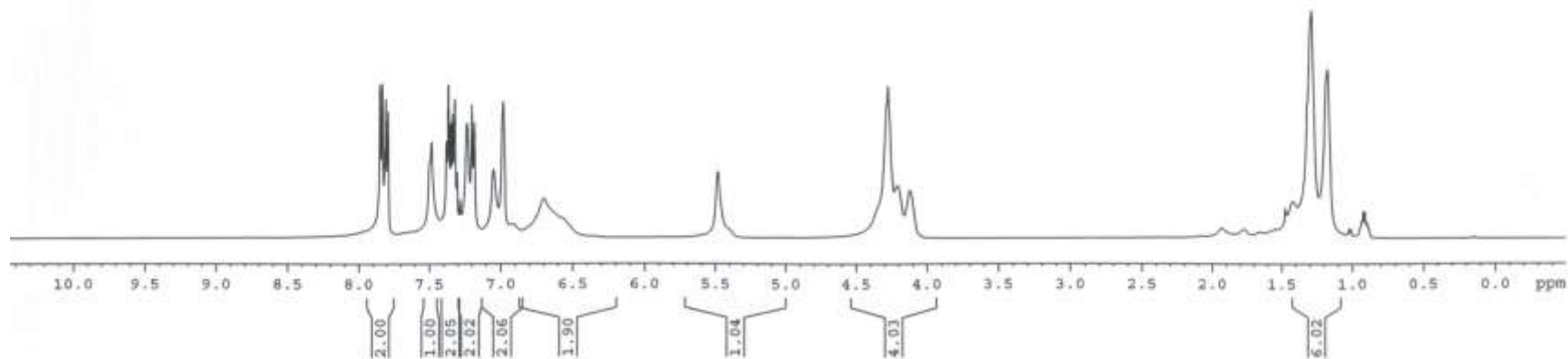
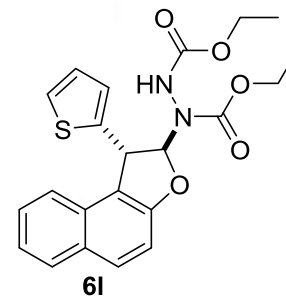


Figure S59. ¹H NMR Spectrum of **61**

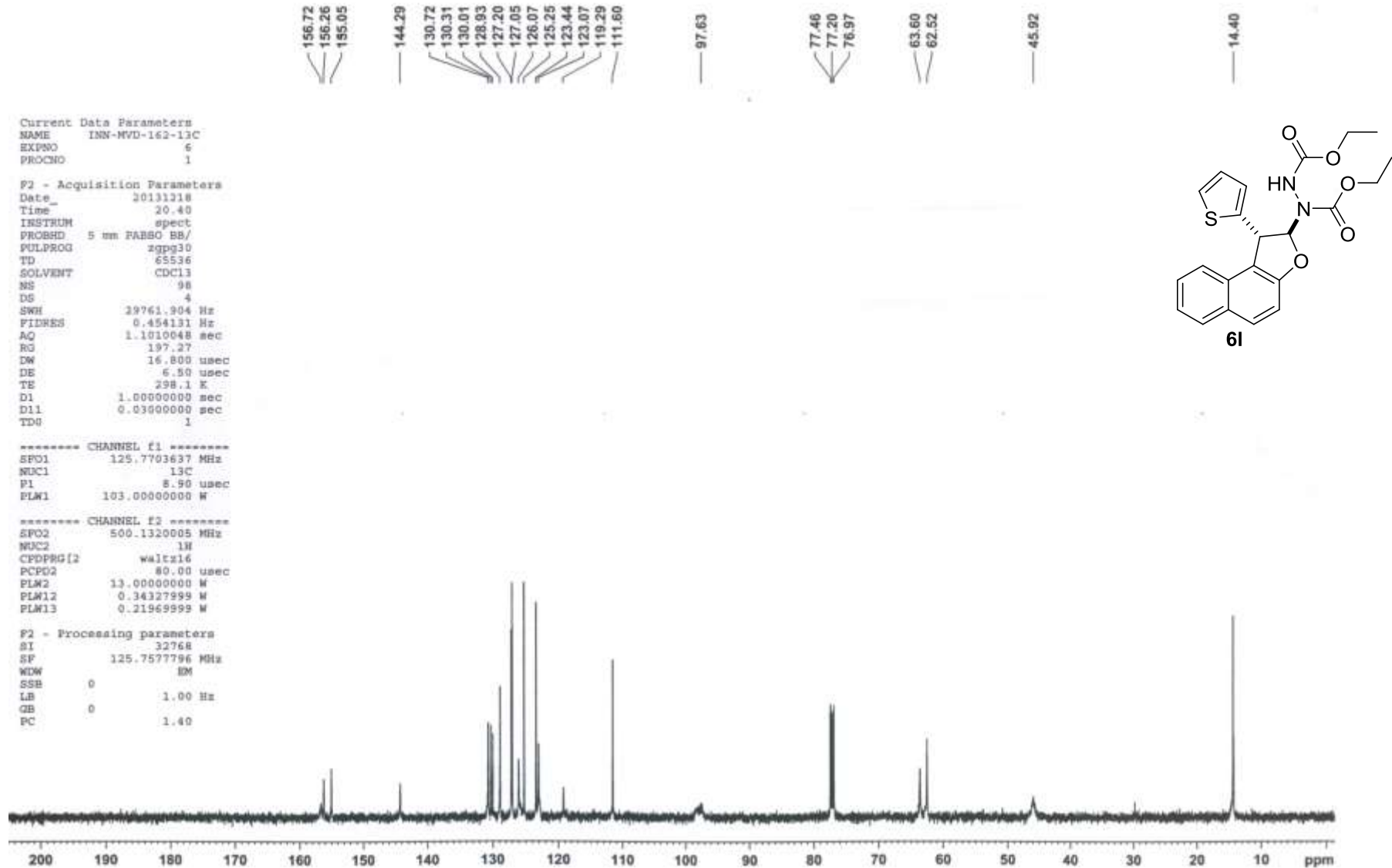


Figure S60. ¹³C NMR Spectrum of **6l**

```

NAME      INN-MVD-444-1H
EXPNO     8
PROCNO    1
Date_     20150210
Time      21.25
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD        54274
SOLVENT   CDCl3
NS        16
DS        0
SWH       8223.665 Hz
FIDRES    0.151522 Hz
AQ        3.2999091 sec
RG        32
CW        60.800 usec
DE        6.50 usec
TE        295.9 K
D1        1.0000000 sec
TDO       1

```

```

----- CHANNEL f1 -----
NUC1      1H
P1        14.75 usec
PL1       -1.00 dB
PL1W      10.56200695 W
SFO1      400.1324710 MHz
SI        32768
SF        400.1300095 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

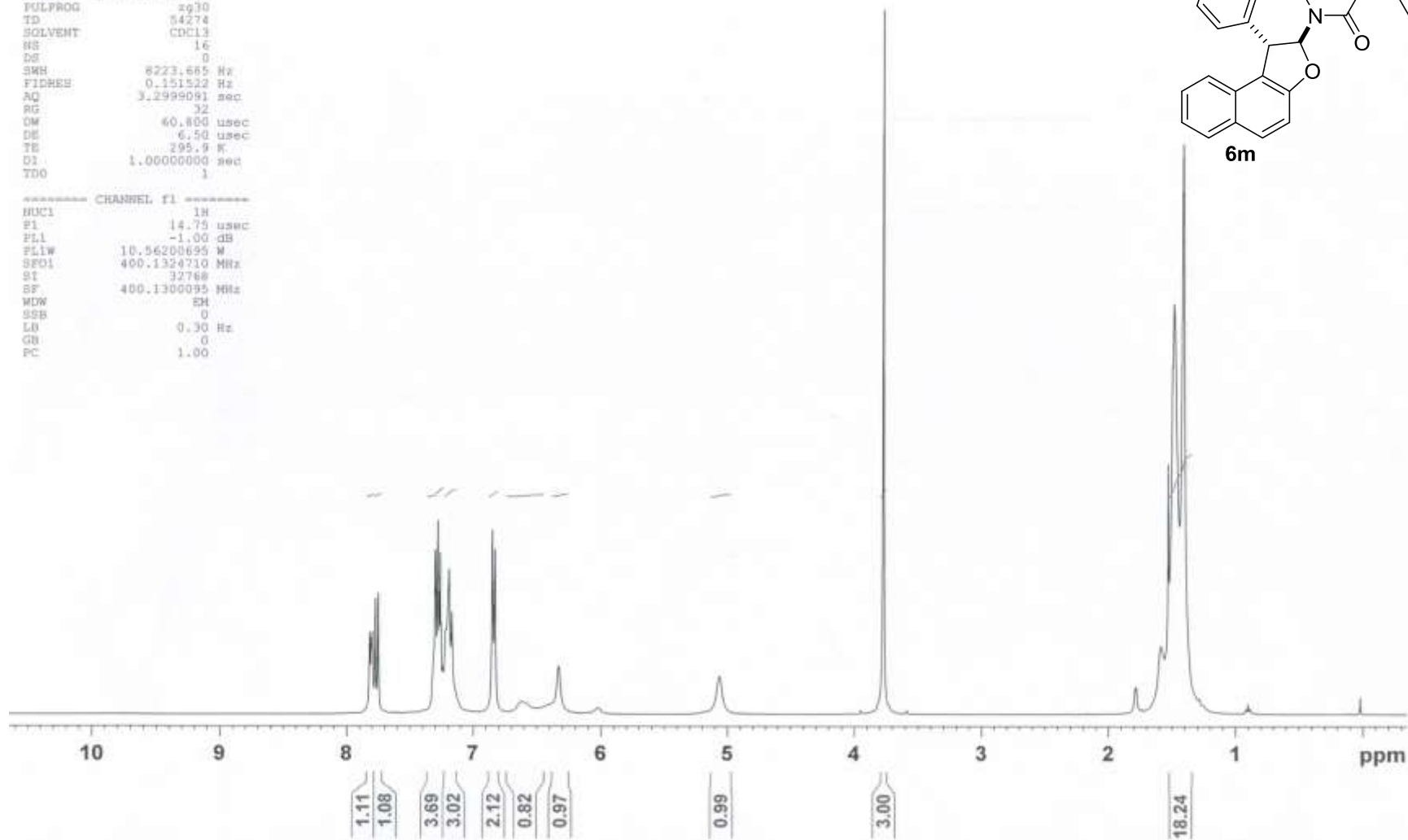


Figure S61. ¹H NMR Spectrum of **6m**

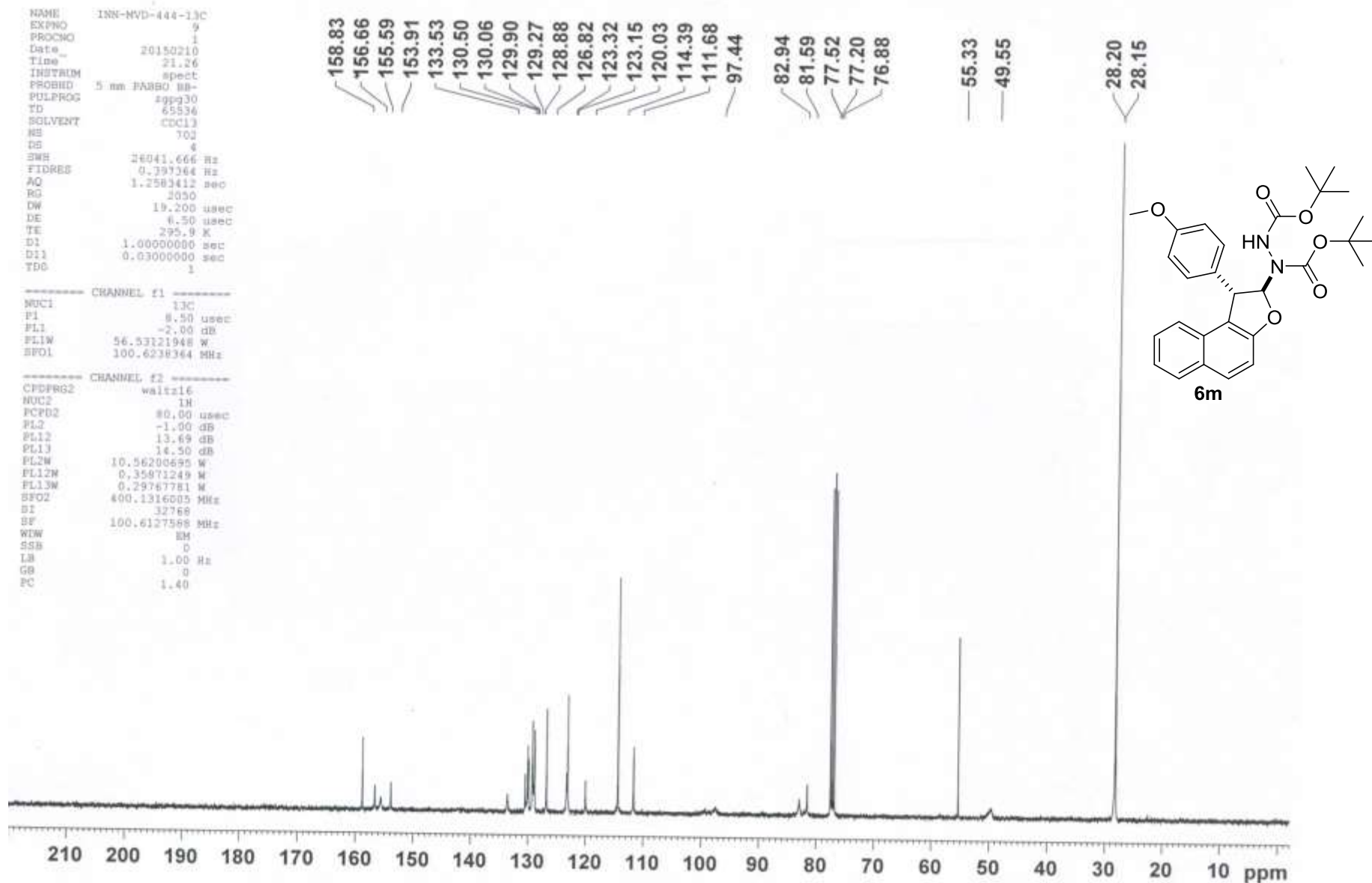


Figure S62. ^{13}C NMR Spectrum of **6m**


```

NAME      INN-MVD-179-1H
EXPNO     1
PROCNO    1
Date_     20140111
Time      11.38
INSTRUM   spect
PROBHD    5 mm SEI 1H/D-
PULPROG   zg30
TD        65536
SOLVENT   CDCl3
NS        11
DS        0
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        32
DW        60.800 usec
DE        6.50 usec
TE        295.1 K
D1        1.00000000 sec
TD0       1

```

```

----- CHANNEL f1 -----
NUC1      1H
P1        6.75 usec
PL1       -3.00 dB
PL1W      16.73969454 W
SF01      400.1324710 MHz
SI        32768
SF        400.1300103 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

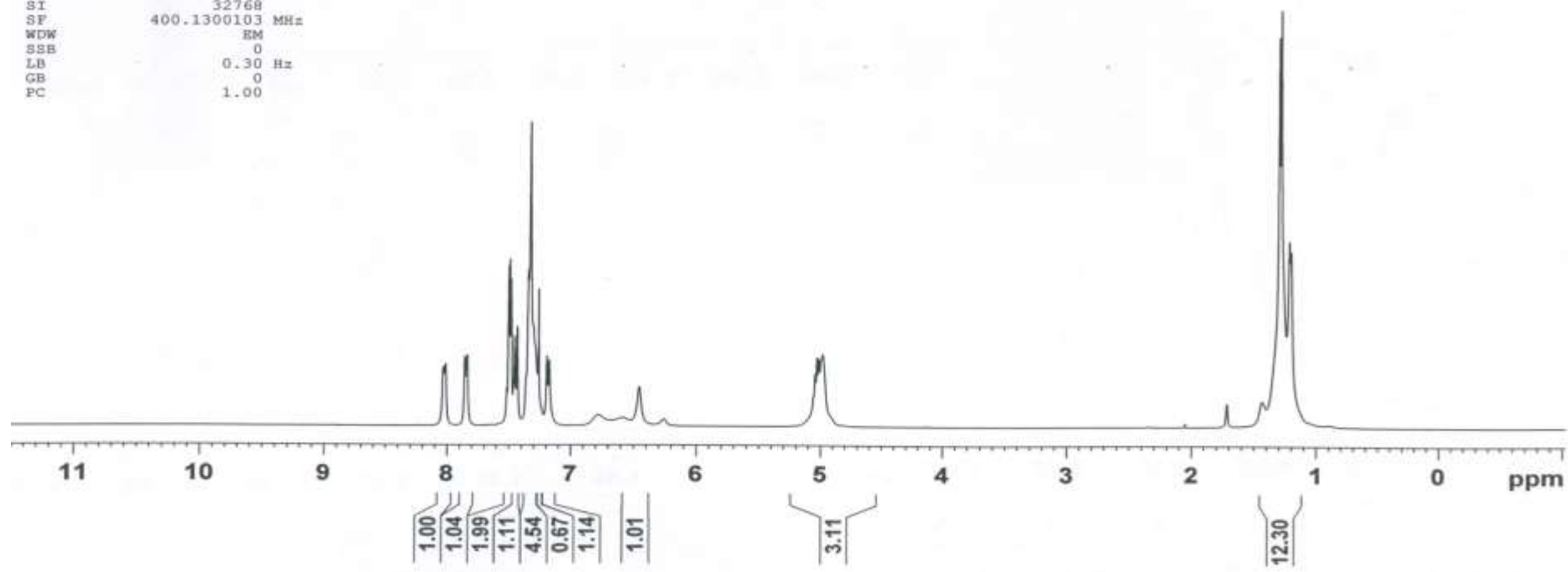
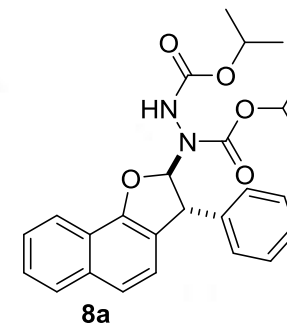


Figure S63. ¹H NMR Spectrum of **8a**

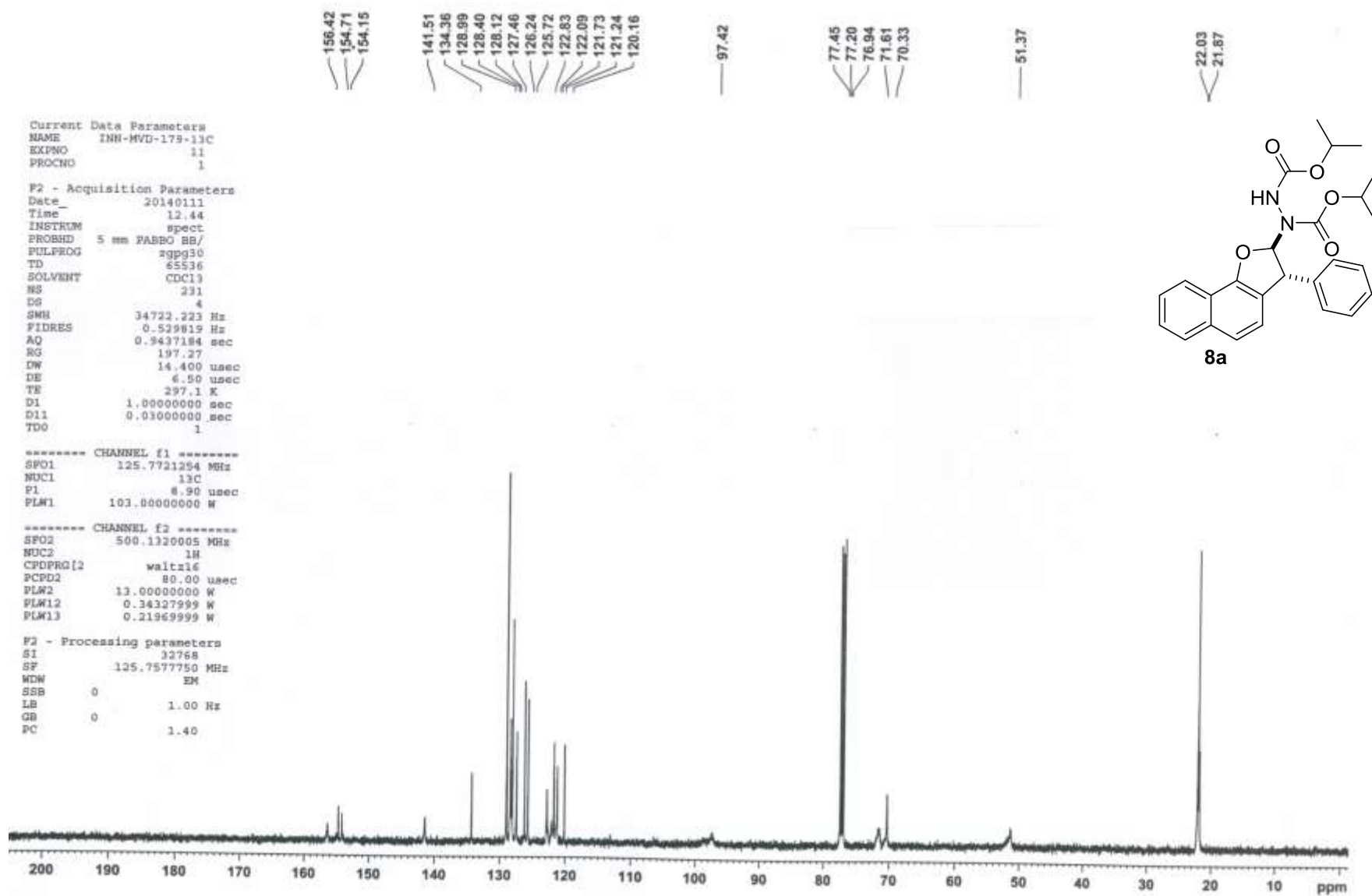


Figure S64. ^{13}C NMR Spectrum of **8a**

```

NAME      INN-MVD-154--1H
EXPNO     1
PROCNO    1
Date_     20140104
Time      0.51
INSTRUM   spect
PROBHD    5 mm SRE 1H/D-
PULPROG   sg30
TD        65536
SOLVENT   CDCl3
NS        14
DS        0
SWH       8223.685 Hz
FIDRES    0.125483 Hz
AQ        3.9846387 sec
RG        90.5
DW        60.800 usec
DE        6.50 usec
TE        296.8 K
D1        1.00000000 sec
TD0       1

```

```

===== CHANNEL f1 =====
NUC1      1H
P1        6.75 usec
PL1       -3.00 dB
PL1W      16.73965454 W
SFO1      400.1324710 MHz
SI        32768
SF        400.1300102 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

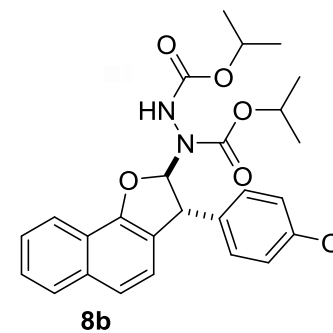
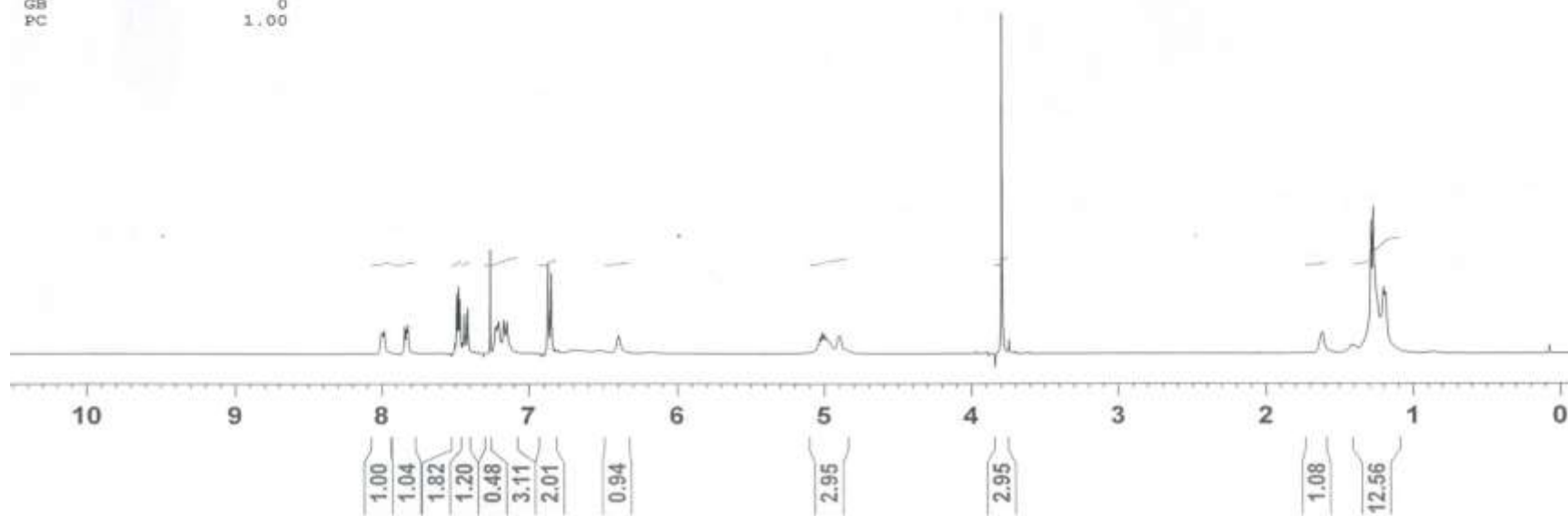


Figure S65. ¹H NMR Spectrum of **8b**

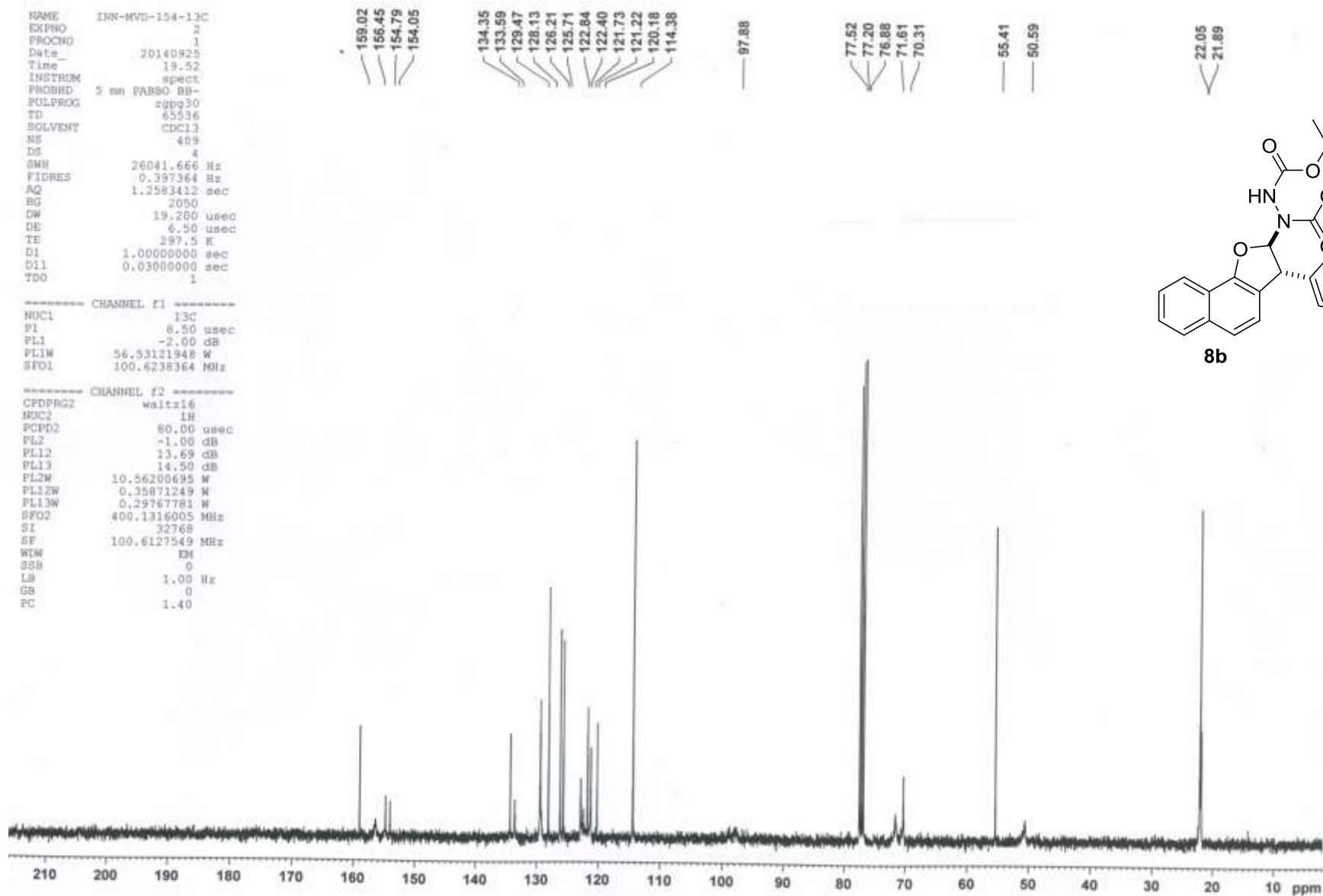


Figure S66. ¹³C NMR Spectrum of **8b**

Current Data Parameters
NAME INN-MVD-158-1H
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140921
Time 16.45
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 19
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 30.72
DW 50.000 usec
DE 6.50 usec
TE 298.2 K
D1 1.00000000 sec
TDO 1

----- CHANNEL f1 -----
SFO1 500.1330885 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300114 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

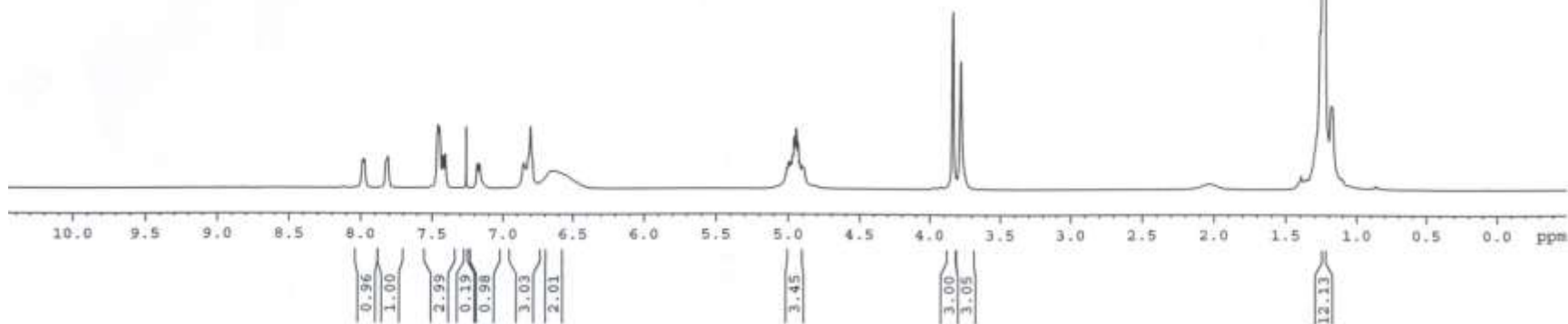
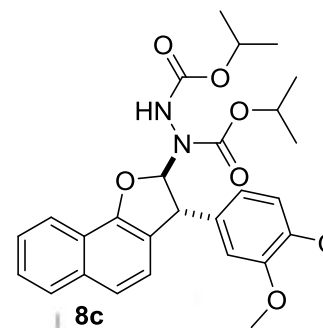


Figure S67. ¹H NMR Spectrum of **8c**

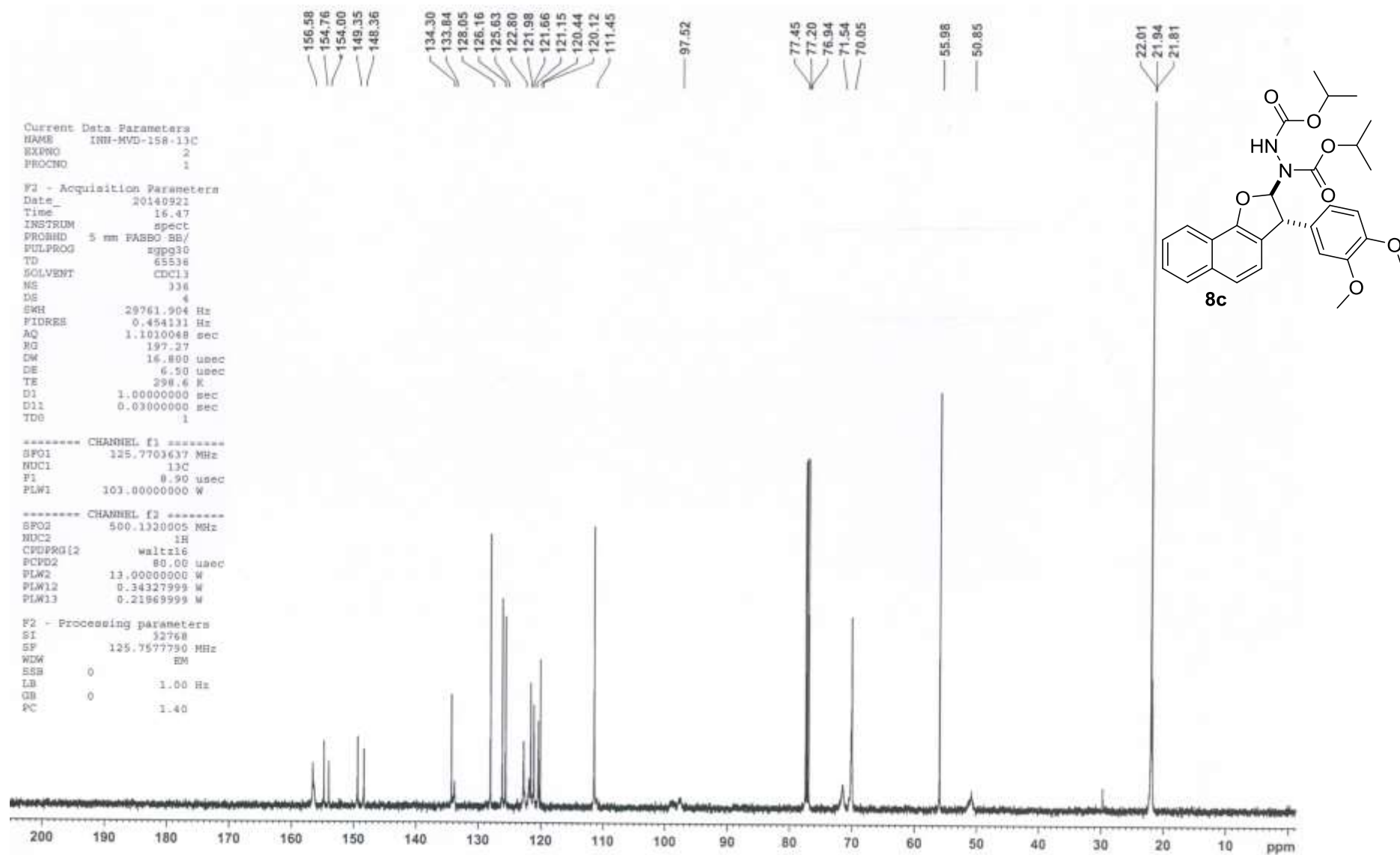


Figure S68. ^{13}C NMR Spectrum of **8c**

```

Current Data Parameters
NAME      INN-MVD-100-1H
EXPNO     1
PROCNO    1

F2 - Acquisition Parameters
Date_     20140923
Time      13.21
INSTRUM   spect
PROBHD    5 mm PABBO BB/
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         15
DS         2
SWH        10000.000 Hz
FIDRES     0.152580 Hz
AQ         3.2767999 sec
RG         30.72
DW         50.000 usec
DE         6.50 usec
TE         296.1 K
D1         1.00000000 sec
TDO        1

***** CHANNEL f1 *****
SFO1      500.1330885 MHz
NUC1       1H
P1         13.00 usec
PLW1       13.00000000 W

F2 - Processing parameters
SI         65536
SF         500.1300123 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

```

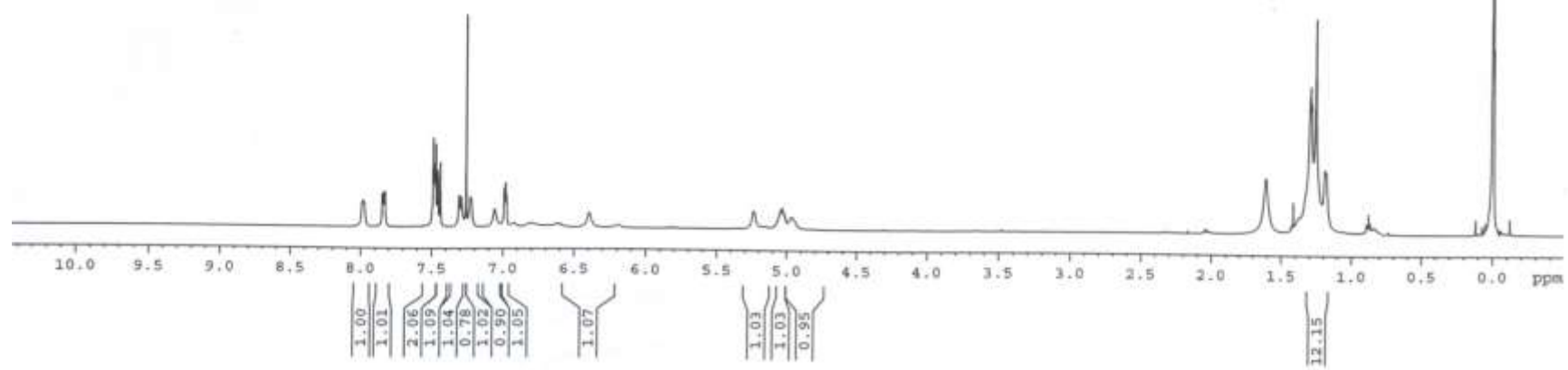
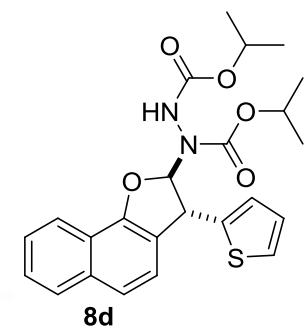


Figure S69. ¹H NMR Spectrum of **8d**

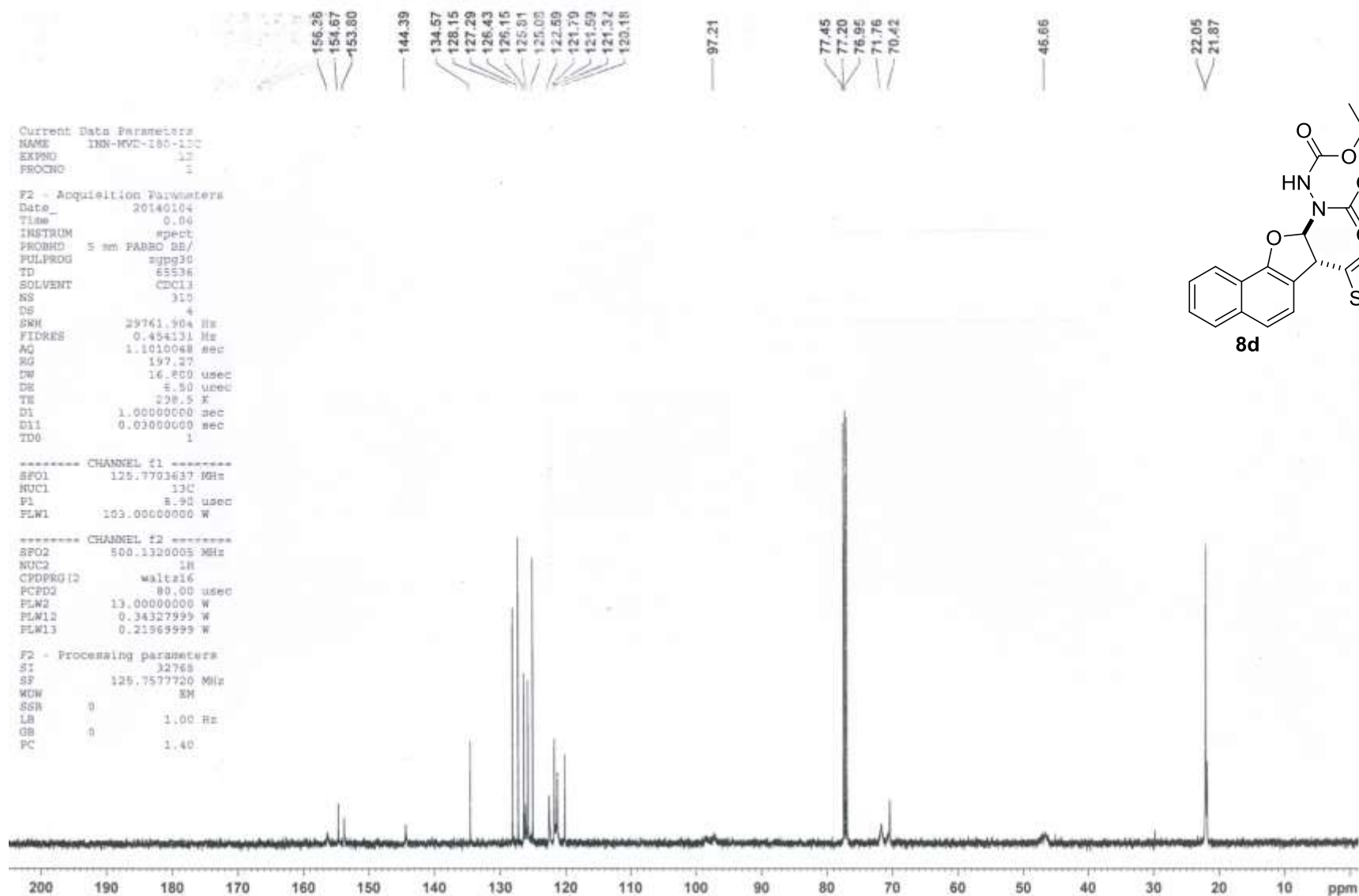


Figure S70. ¹³C NMR Spectrum of **8d**


```

NAME      INN-MVD-161-1H
EXPNO     7
PROCNO    1
Date_     20141014
Time      18.51
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD        54274
SOLVENT   CDCl3
NS        30
DS        0
SWH       8223.685 Hz
FIDRES    0.151522 Hz
AQ        3.2999091 sec
RG        32
DW        60.800 usec
DE        6.50 usec
TE        297.3 K
D1        1.00000000 sec
TDO      1

```

```

----- CHANNEL f1 -----
NUC1      1H
P1        14.75 usec
PL1       -1.00 dB
PL1W      10.56200695 W
SFO1      400.1324710 MHz
SI        32768
SF        400.1300172 MHz
WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

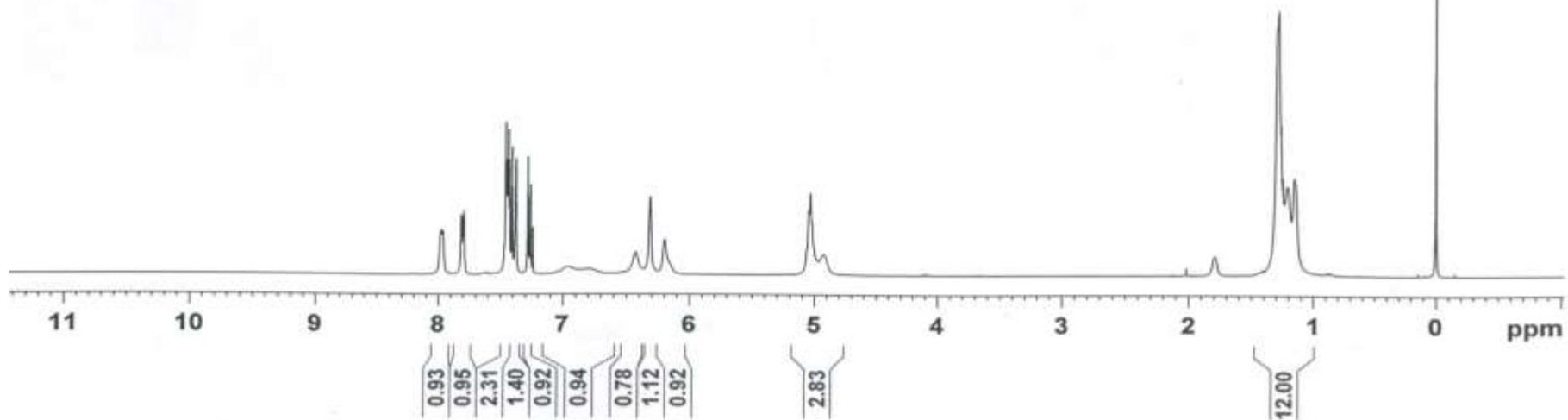
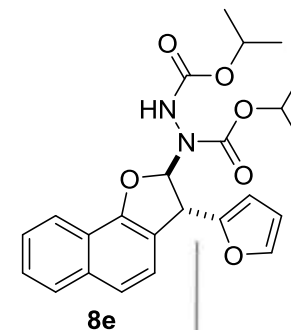


Figure S71. ^1H NMR Spectrum of **8e**

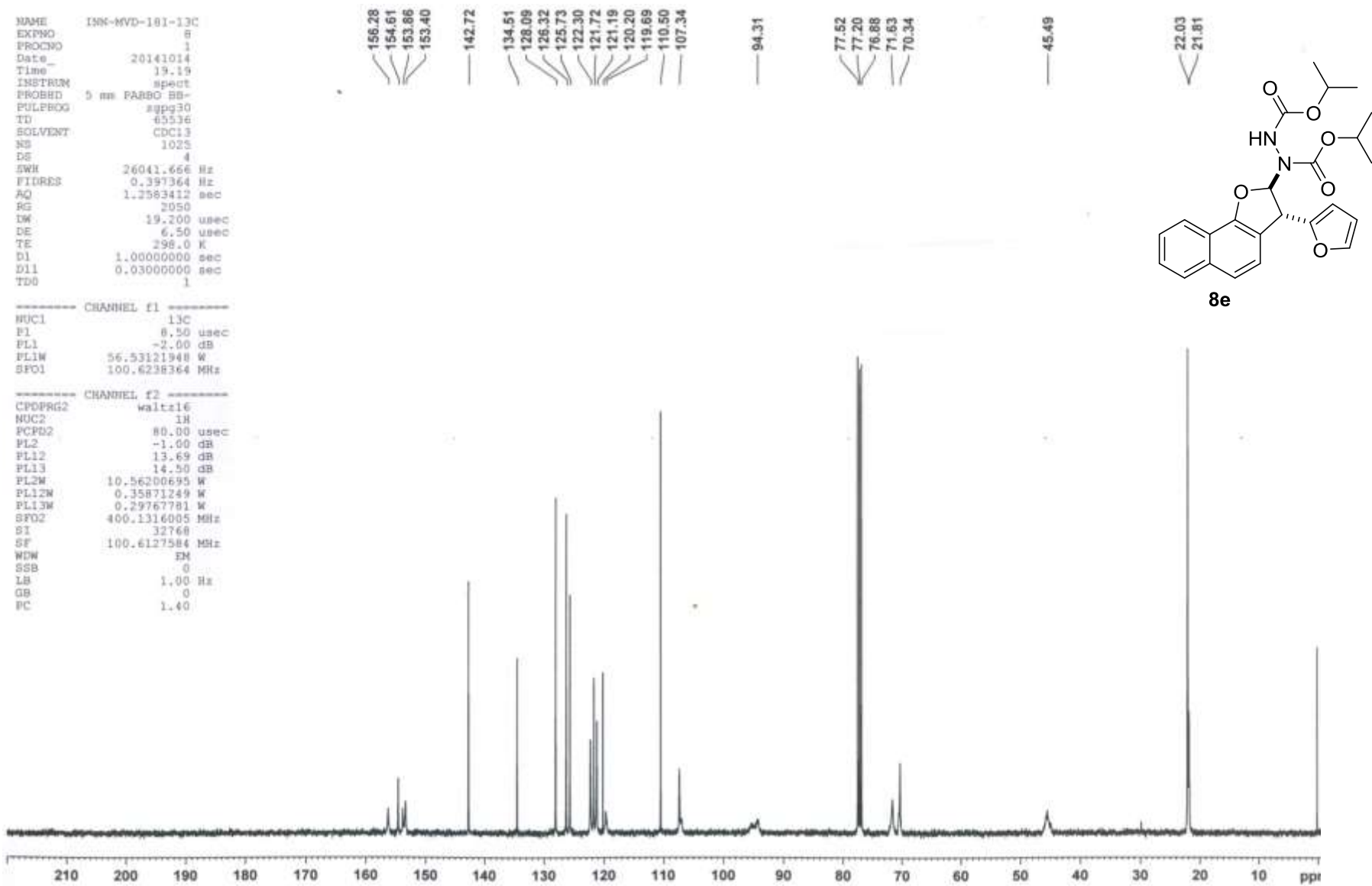


Figure S72. ¹³C NMR Spectrum of **8e**

```

Current Data Parameters
NAME      INN-MVD-182-1H
EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
Date_    20141014
Time     19.08
INSTRUM  spect
PROBHD   5 mm PABBO BB/
PULPROG  zg30
TD       65536
SOLVENT  CDCl3
NS       25
DS       2
SWH      10000.000 Hz
FIDRES   0.152588 Hz
AQ       3.2767999 sec
RG       30.72
DW       50.000 usec
DE       6.50 usec
TE       297.2 K
D1       1.00000000 sec
TDO      1

***** CHANNEL f1 *****
SFO1    500.1330885 MHz
NUC1     1H
P1      13.00 usec
PL1     13.00000000 W

F2 - Processing parameters
SI      65536
SF      500.1330117 MHz
WDW     EM
SSB     0
LB      0.30 Hz
GB      0
PC      1.00

```

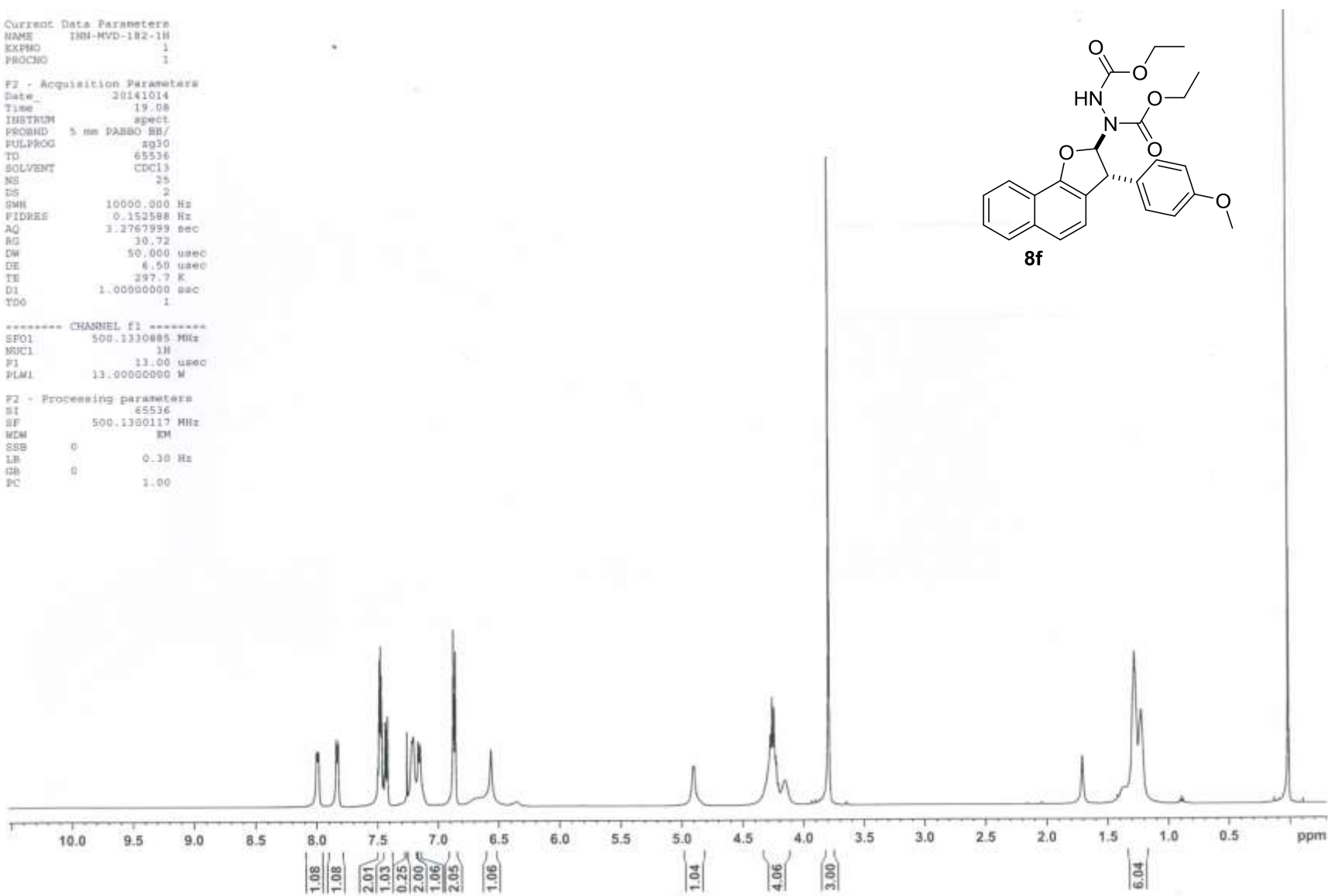


Figure S73. ¹H NMR Spectrum of **8f**

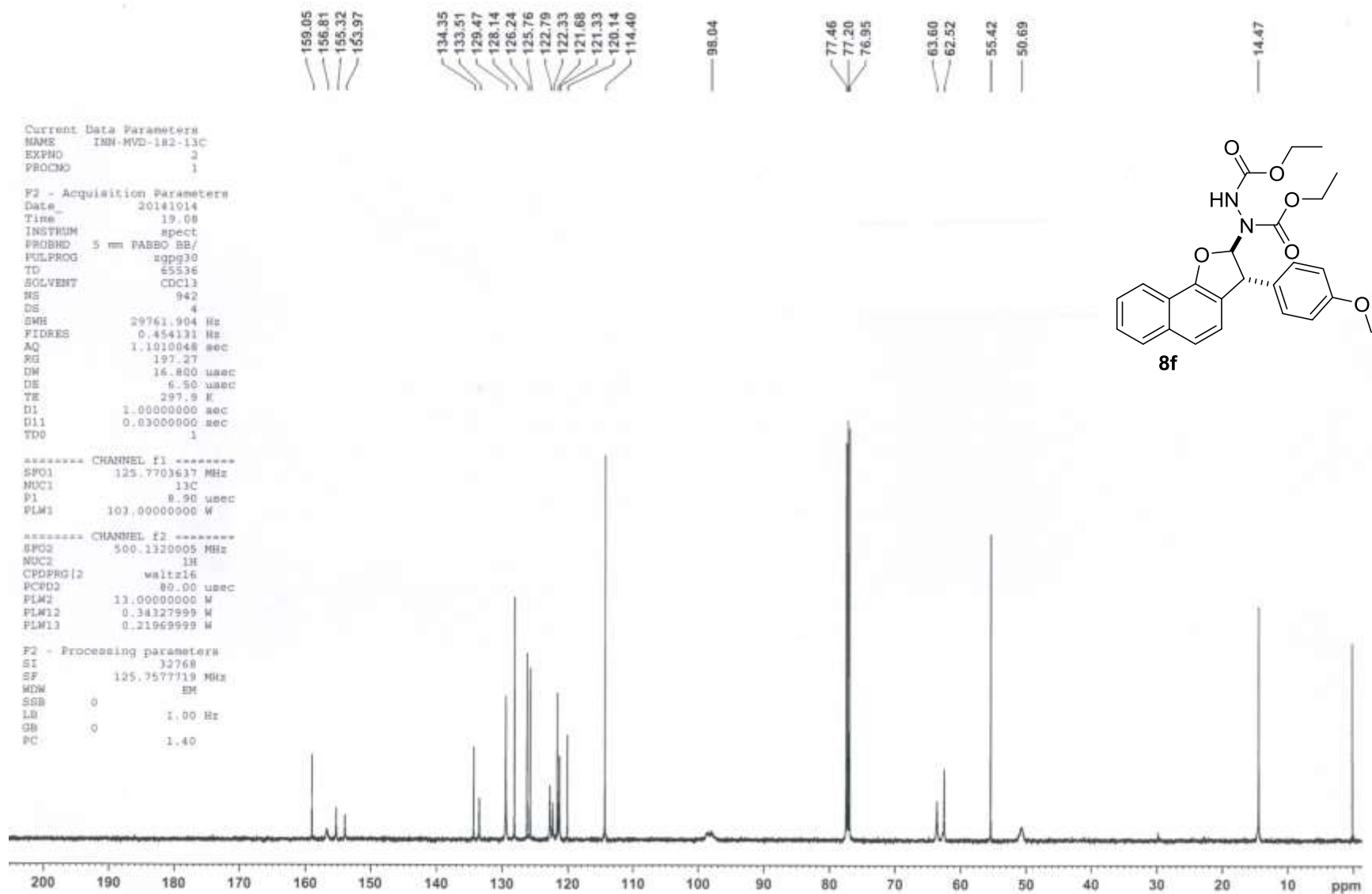


Figure S74. ^{13}C NMR Spectrum of **8f**

```

NAME      INB-MVD-173-1H
EXPNO     4
PROCNO    1
Date_     20150305
Time      19.07
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD        54274
SOLVENT   CDCl3
NS        30
DS        0
SWH       8223.685 Hz
FIDRES    0.151522 Hz
AQ        3.2999091 sec
RG        32
DW        60.800 usec
DE        6.50 usec
TE        295.7 K
D1        1.00000000 sec
ZDO       1

```

```

----- CHANNEL f1 -----
NUC1      1H
P1        14.75 usec
PL1       -1.00 dB
PL1W      10.56200695 W
SFO1      400.1324710 MHz
SI        32768
SF        400.1300097 MHz
MDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

```

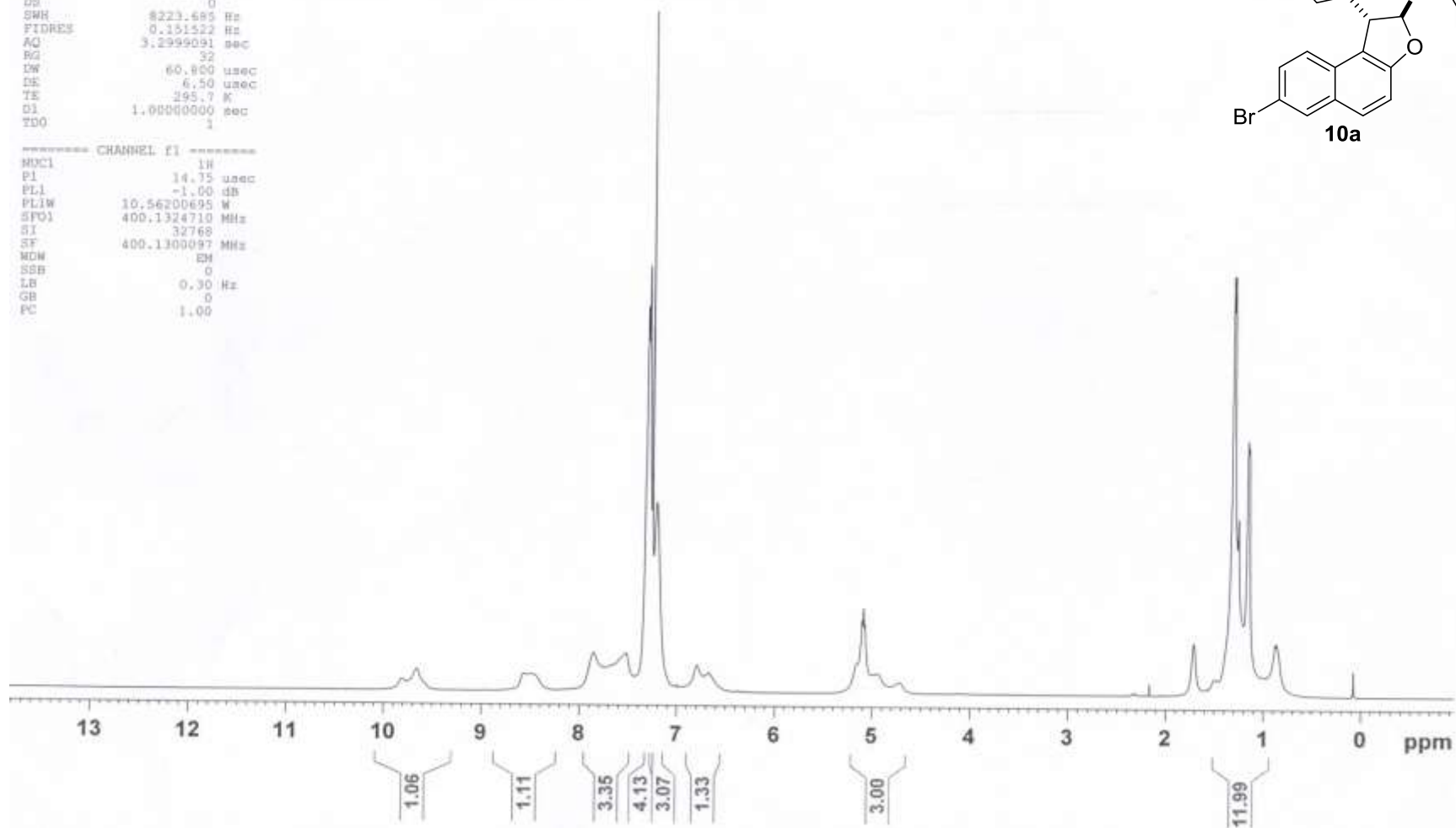


Figure S75. ¹H NMR Spectrum of **10a**

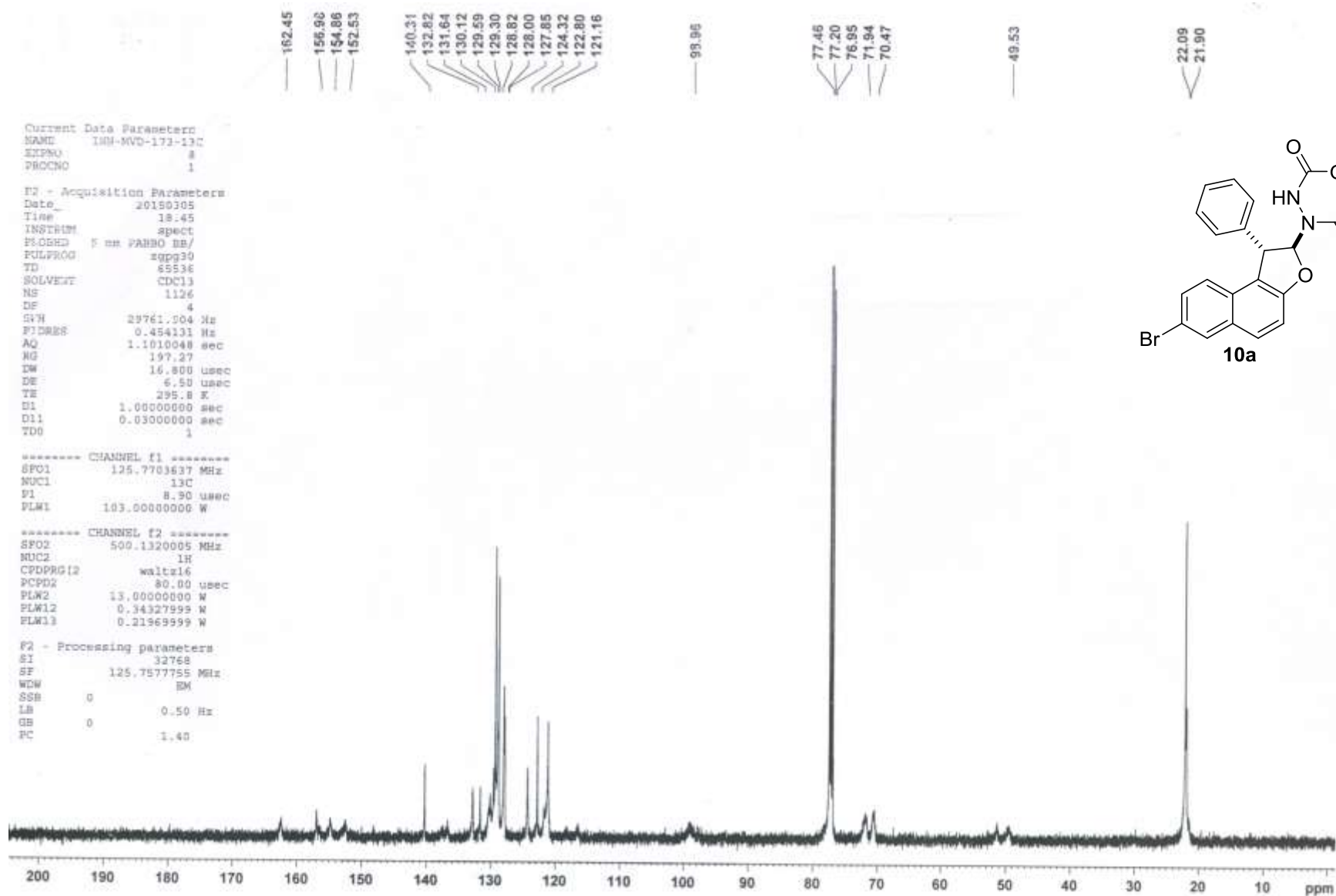


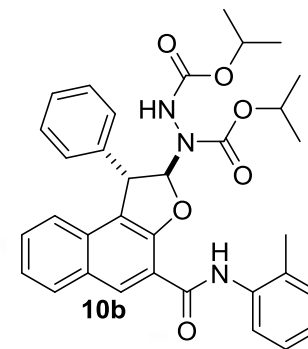
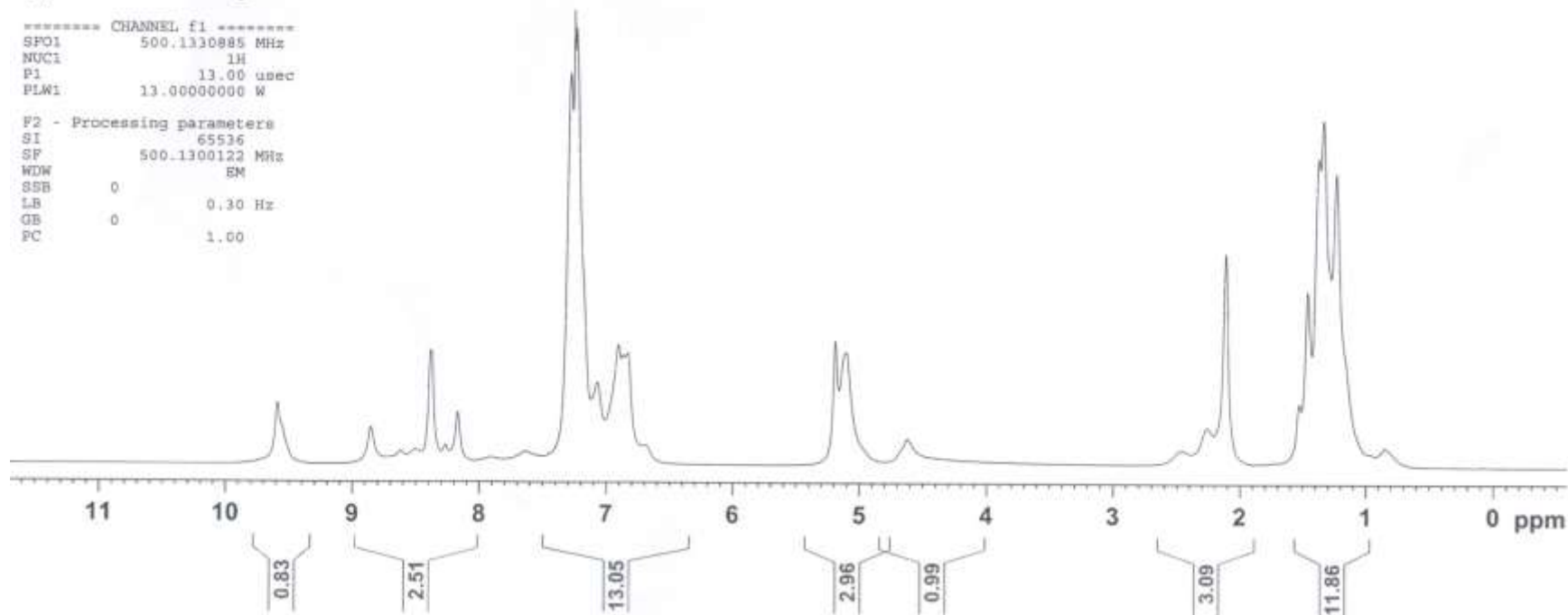
Figure S76. ^{13}C NMR Spectrum of 10a

Current Data Parameters
NAME INN-MVD-172-1H
EXPNO 4
PROCNO 1

F2 - Acquisition Parameters
Date_ 20150307
Time_ 16.56
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 40
DS 2
SWH 10000.000 Hz
FIDRES 0.152588 Hz
AQ 3.2767999 sec
RG 30.72
DW 50.000 usec
DE 6.50 usec
TE 294.1 K
D1 1.00000000 sec
TDC 1

***** CHANNEL f1 *****
SFO1 500.1330885 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300122 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00



Current Data Parameters
NAME INX-MVD-172-189223K
EXPNO 2
PROCNO 1

F2 - Acquisition Parameters
Date_ 20140930
Time 15.39
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 50
DS 2
SMH 11029.412 Hz
FIDRES 0.168295 Hz
AQ 2.9709654 sec
RG 53.37
DM 45.333 usec
DE 6.50 usec
TE 323.0 K
D1 1.00000000 sec
TDO 1

----- CHANNEL f1 -----
SFO1 500.1340010 Mhz
NUC1 1H
P1 13.00 usec
PLM1 13.00000000 W

F2 - Processing parameters
SI 65536
SF 500.1300211 Mhz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

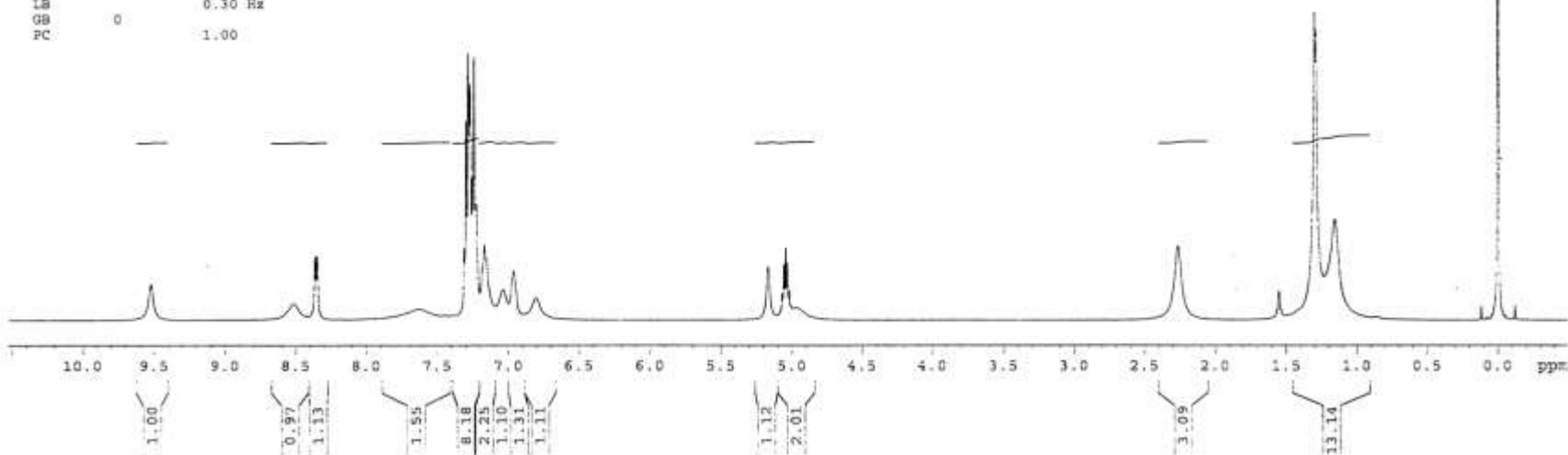
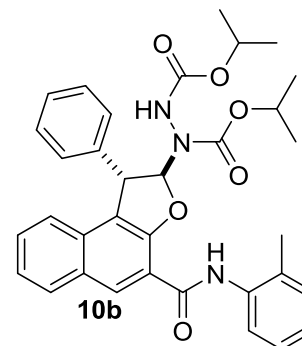


Figure S78. ¹H NMR Spectrum of **10b** at 323 k

Current Data Parameters
NAME INN-MVD-272-1H@333K
EXPNO 12
PROCNO 1

F2 - Acquisition Parameters
Date_ 20141001
Time 17.23
INSTRUM spect
PROBHD 5 mm PABBO BB/
PULPROG zg30
TD 65536
SOLVENT DMSO
NS 20
DS 0
SWH 11029.412 Hz
FIDRES 0.168295 Hz
AQ 2.9709654 sec
RG 48.36
DW 45.333 usec
DE 6.50 usec
TE 333.0 K
SI 1.00000000 sec
TDO 1

***** CHANNEL f1 *****
SFO1 500.1335009 MHz
NUC1 1H
P1 13.00 usec
PLW1 13.00000000 W

F2 Processing parameters
SI 65536
SF 500.1300039 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

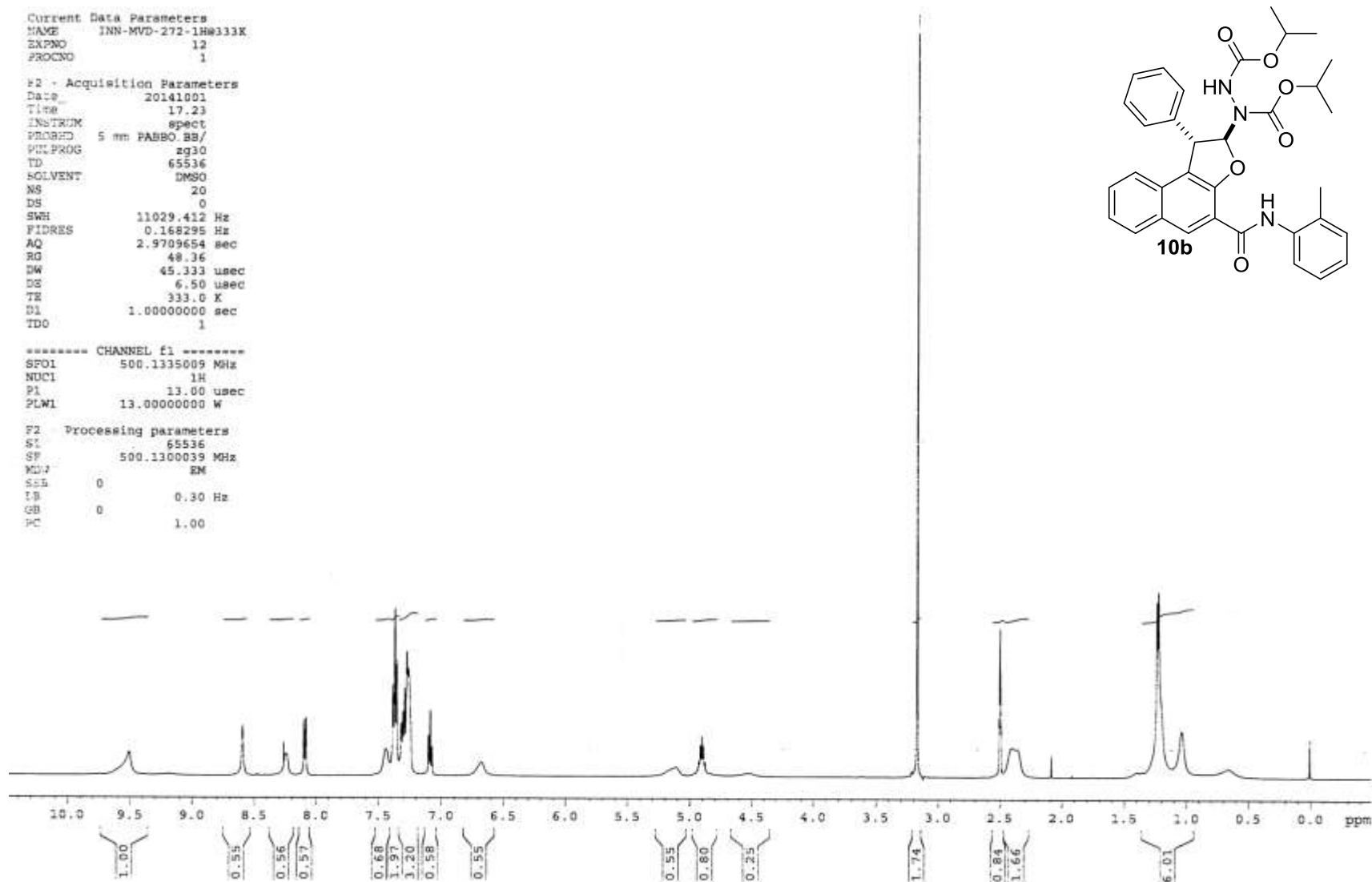


Figure S79. ¹H NMR Spectrum of **10b** at 333 k

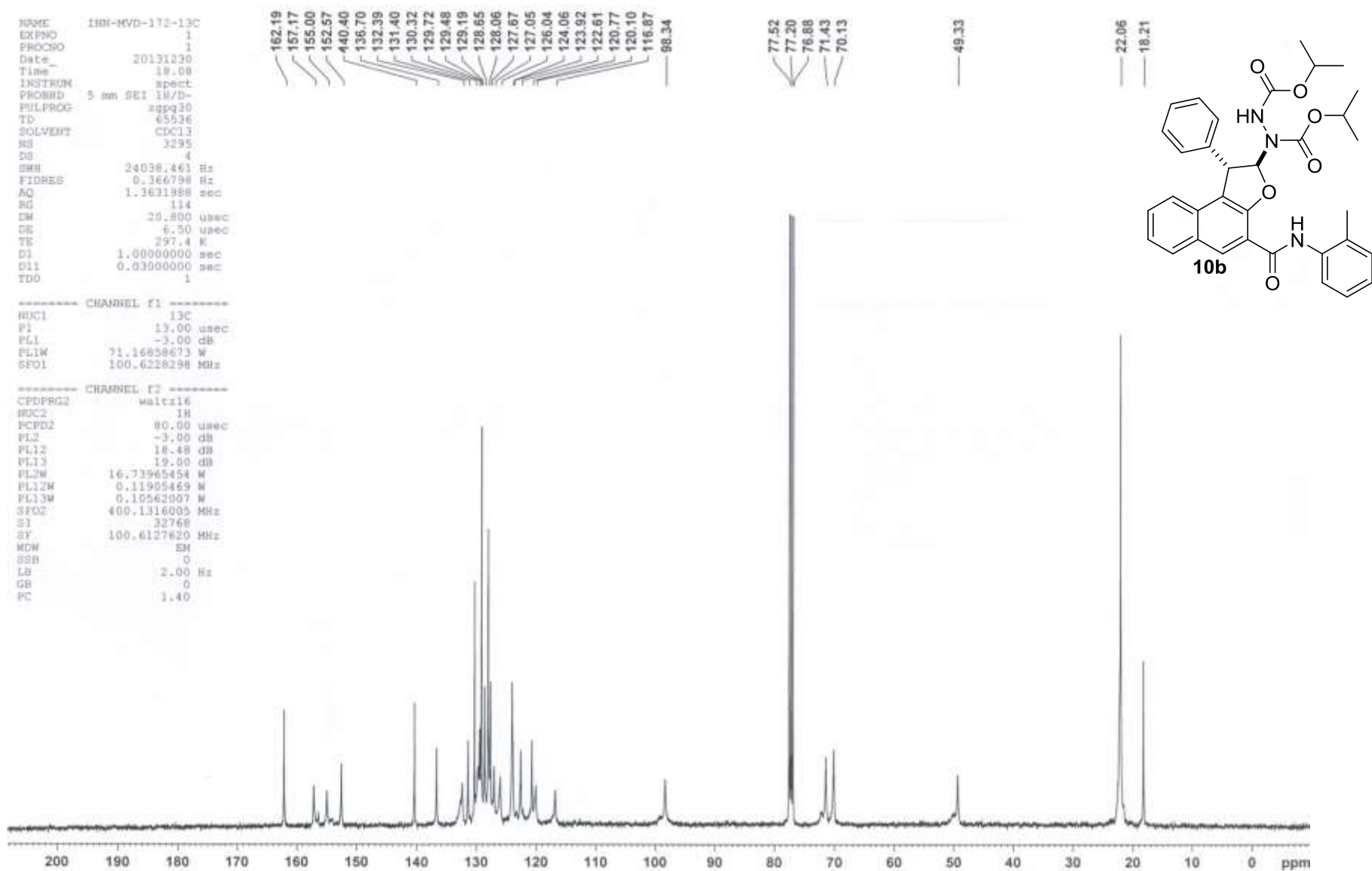


Figure S80. ^{13}C NMR Spectrum of **10b**

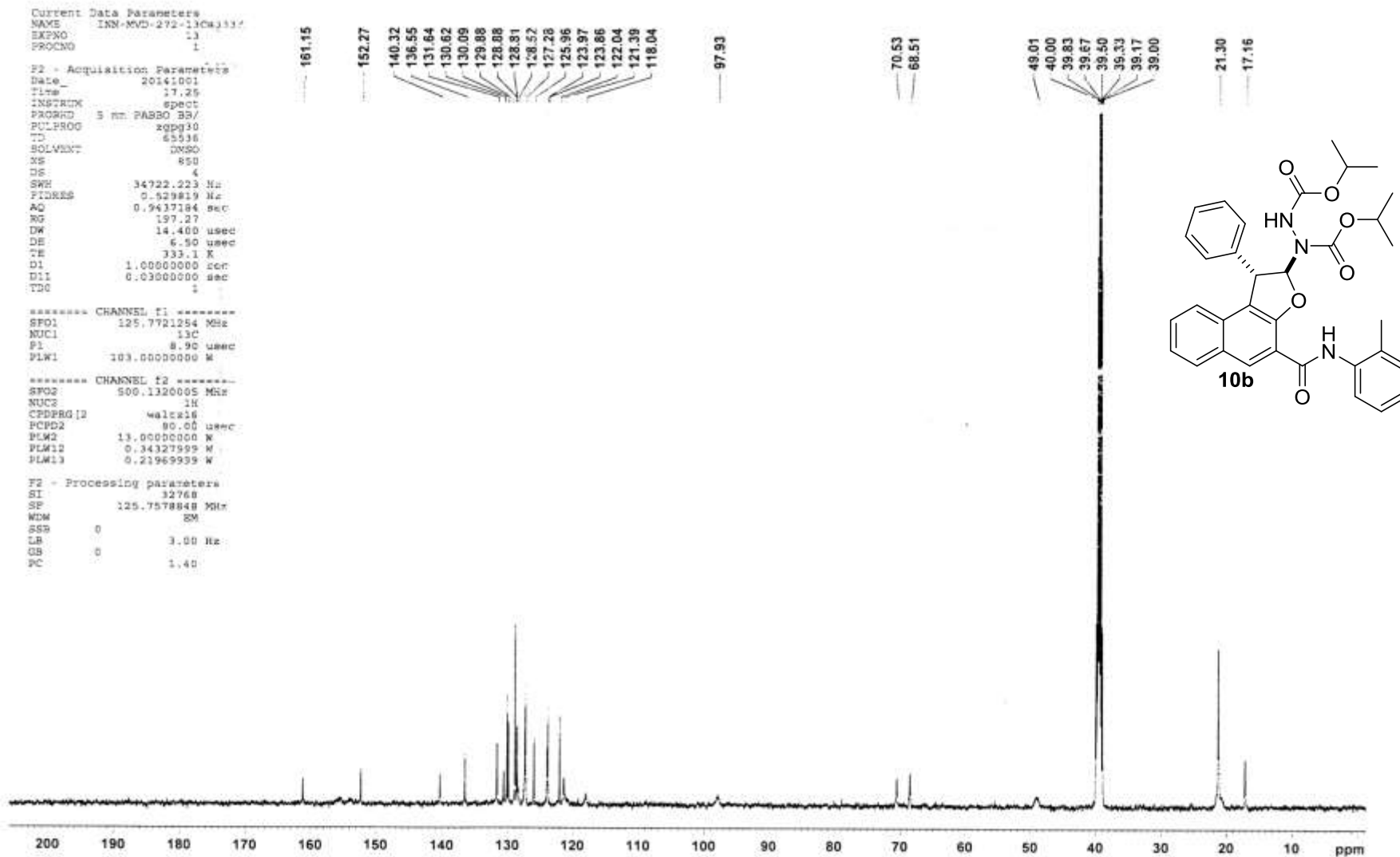


Figure S81. ^{13}C NMR Spectrum of **10b** at 333 k

```

Current Data Parameters
NAME      inn-svd-167-1h
EXPNO     2
PROCNO    1

F2 - Acquisition Parameters
Date_     20131230
Time      21.33
INSTRUM   spect
PROBHD    5 mm PABBO BB/
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         6
DS         2
SWH        10000.000 Hz
FIDRES     0.152588 Hz
AQ         3.276799 sec
RG         30.72
DW         50.000 usec
DE         6.50 usec
TE         298.9 K
D1         1.00000000 sec
TDO        1

----- CHANNEL f1 -----
SFO1      500.1330885 MHz
NUC1       1H
P1         13.00 usec
PLW1       13.00000000 W

F2 - Processing parameters
SI         65536
SF         500.1300000 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

```

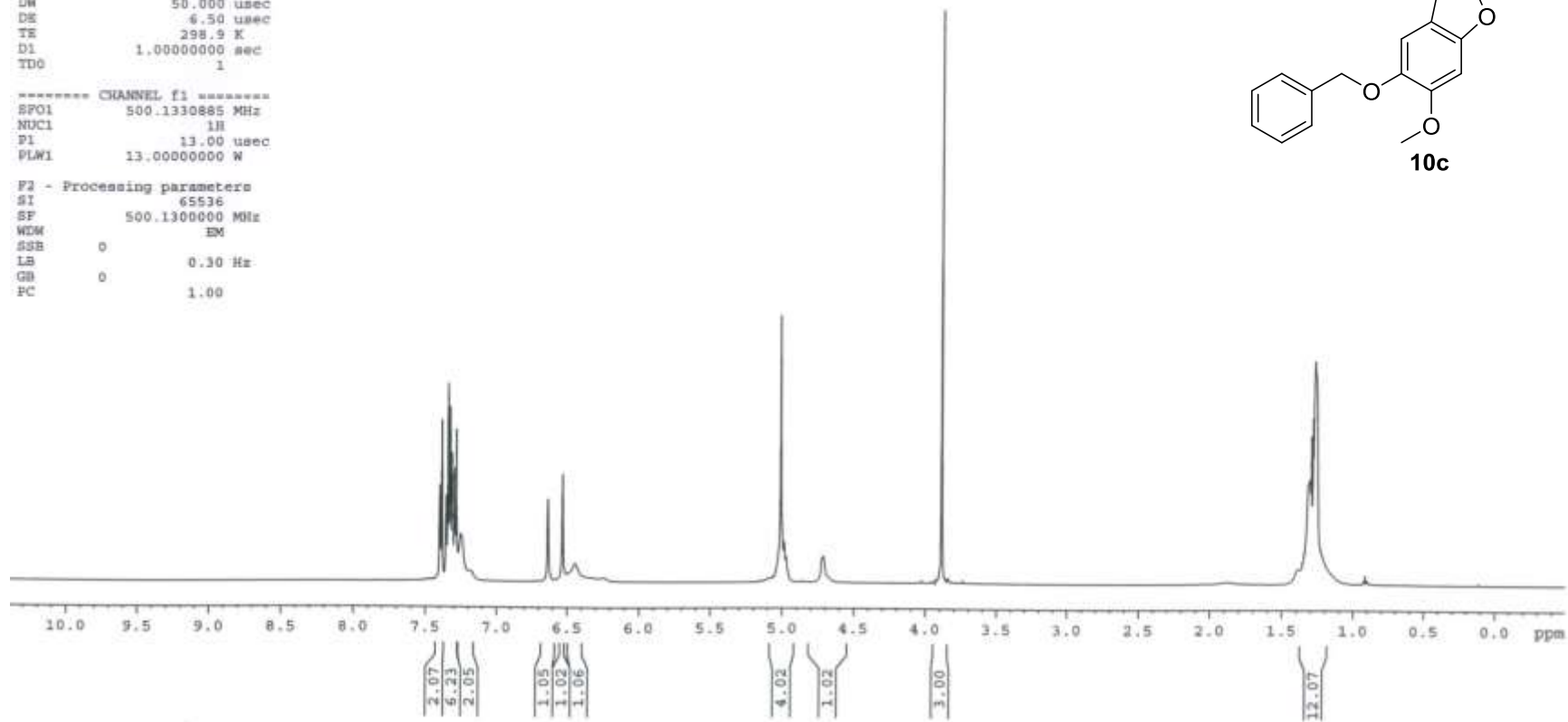
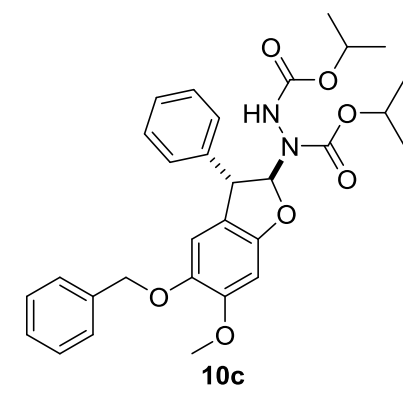


Figure S82. ¹H NMR Spectrum of **10c**

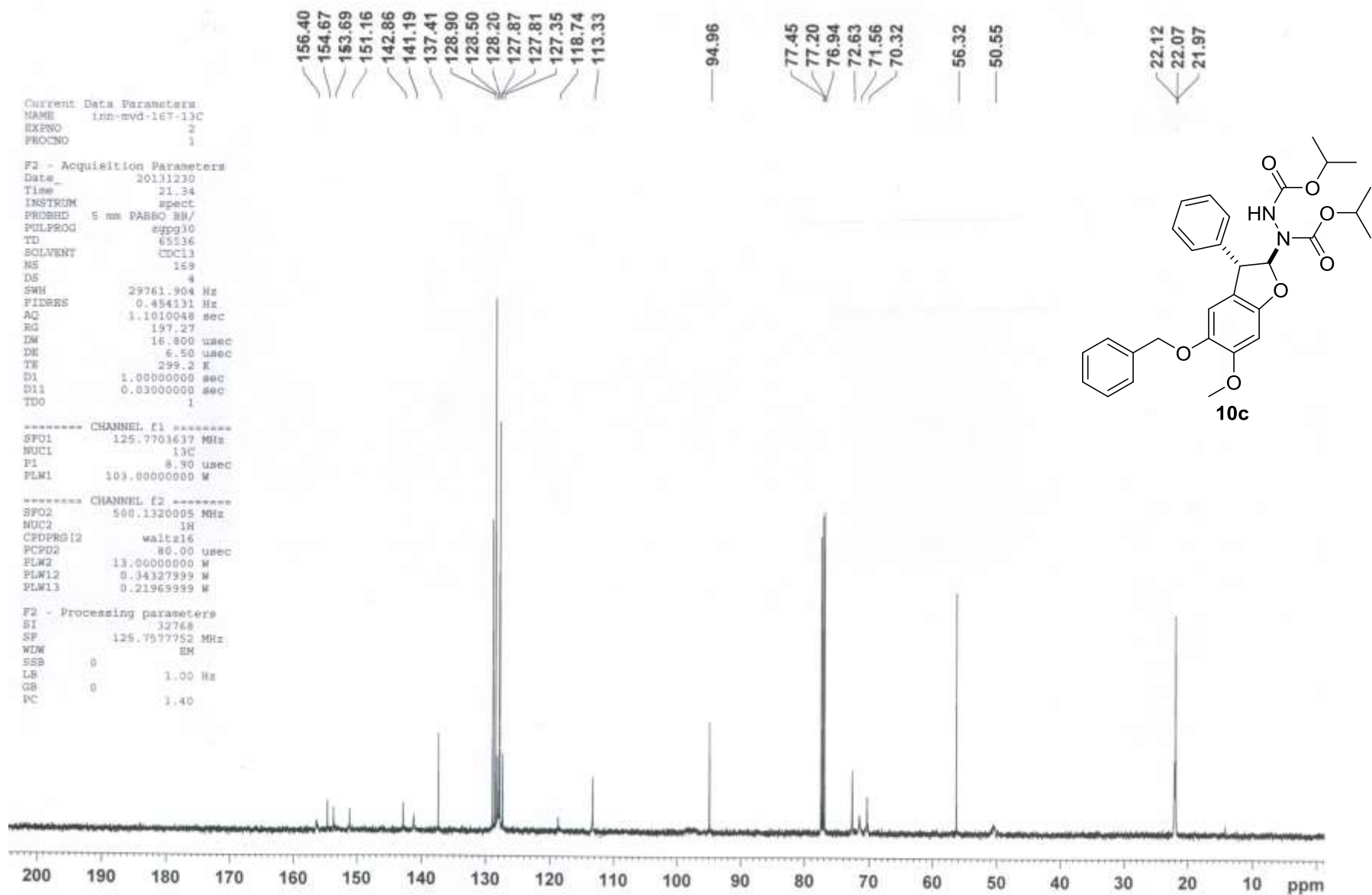


Figure S83. ^{13}C NMR Spectrum of 10c