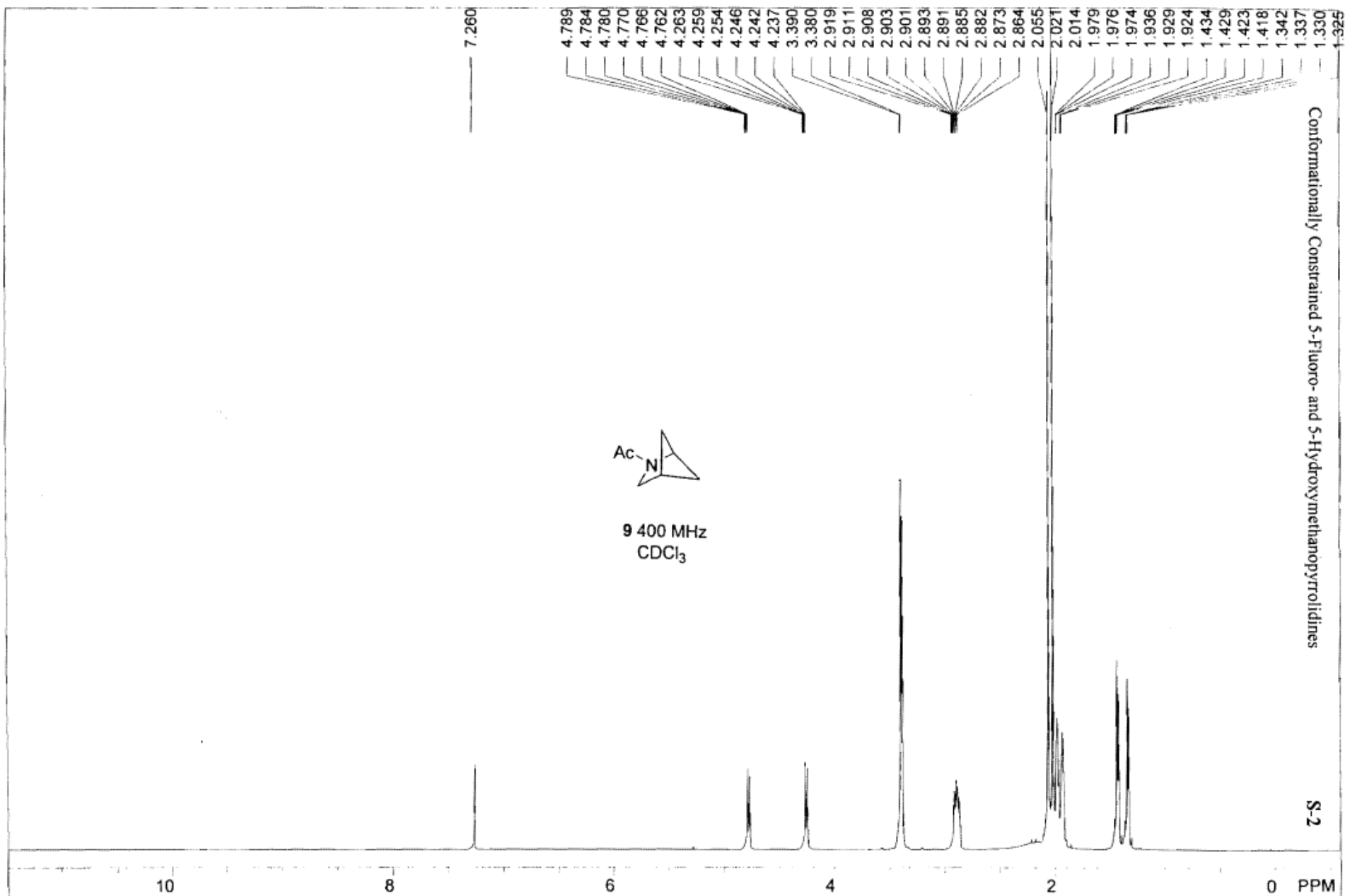


Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines. Ring Puckered Mimics of *Gauche* and *anti*-3-Fluoro- and 3-Hydroxypyrrolidines.

Supplemental Section

Page

S-2 to S-26	Spectra for <i>N</i> -Boc and <i>N</i> -Ac compounds 7, 10a-b, 11a-b, 12b, 13a-b.
S-27 to S-34	Spectra for fluoride precursors 19-23.
S-35 to S-49	Spectra for <i>syn</i> -alcohol precursors 25-31.
S-50 to S-55	Spectra for <i>anti</i> -alcohol precursors 33-35.
S-56 to S-60	Spectra for benzoate 36 and acetate 37.

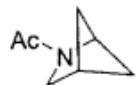


NAC[2.1.1], proton.atm.

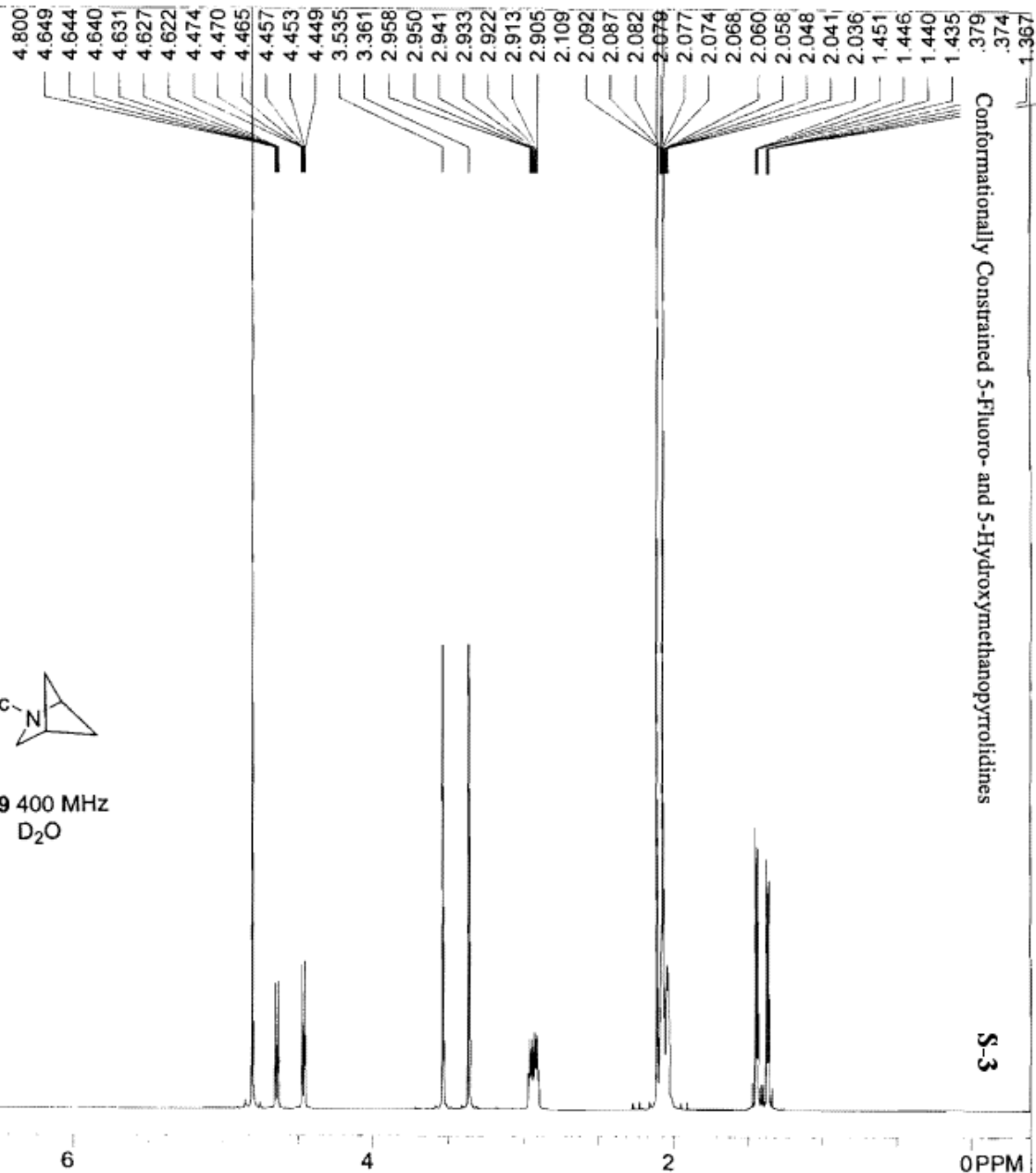
USER: temple -- DATE: Sep 7 20:37:38 2007 EDT (UT-4h) temp.

F1: 400.191	F2: 1.000	SW1: 8278	OF1: 2003.3	PTS1d: 32768
EX:	PW: 9.8 usec	PD: 1.0 sec	NA: 16	LB: 0.1

WinNuts - NAC[2.1.1]--(692) H1--CDCl3



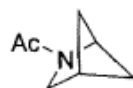
9 400 MHz
D₂O



NAC[2.1.1].proton.atm		USER: temple -- DATE: Sep 11 12:29:02 2007 EDT (UT-4h) templ			
F1: 400.191	F2: 1.000	SW1: 8278	OF1: 2038.3	PTS1d: 32768	
EX:		PW: 9.8 usec	PD: 1.0 sec	NA: 16	LB: 0.1
WinNuts - NAC[2.1.1]-(700) H1 {D2O}					

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-4



9 100 MHz
CDCl₃

168.960
168.428

77.717
77.597
77.395
77.083

62.875
59.498

50.472
48.642

41.487
40.579
39.047
38.301

21.988
21.872
21.248

200

150

100

50

0 PPM

NAC[2.1.1].carbonOVNTE.atm.

USER: temple -- DATE: Sep 8 06:10:28 2007 EDT (UT-4h) templ

F1: 100.628

F2: 1.000

SW1: 23148

OF1: 10621.8

PTS1d: 32768

EX:

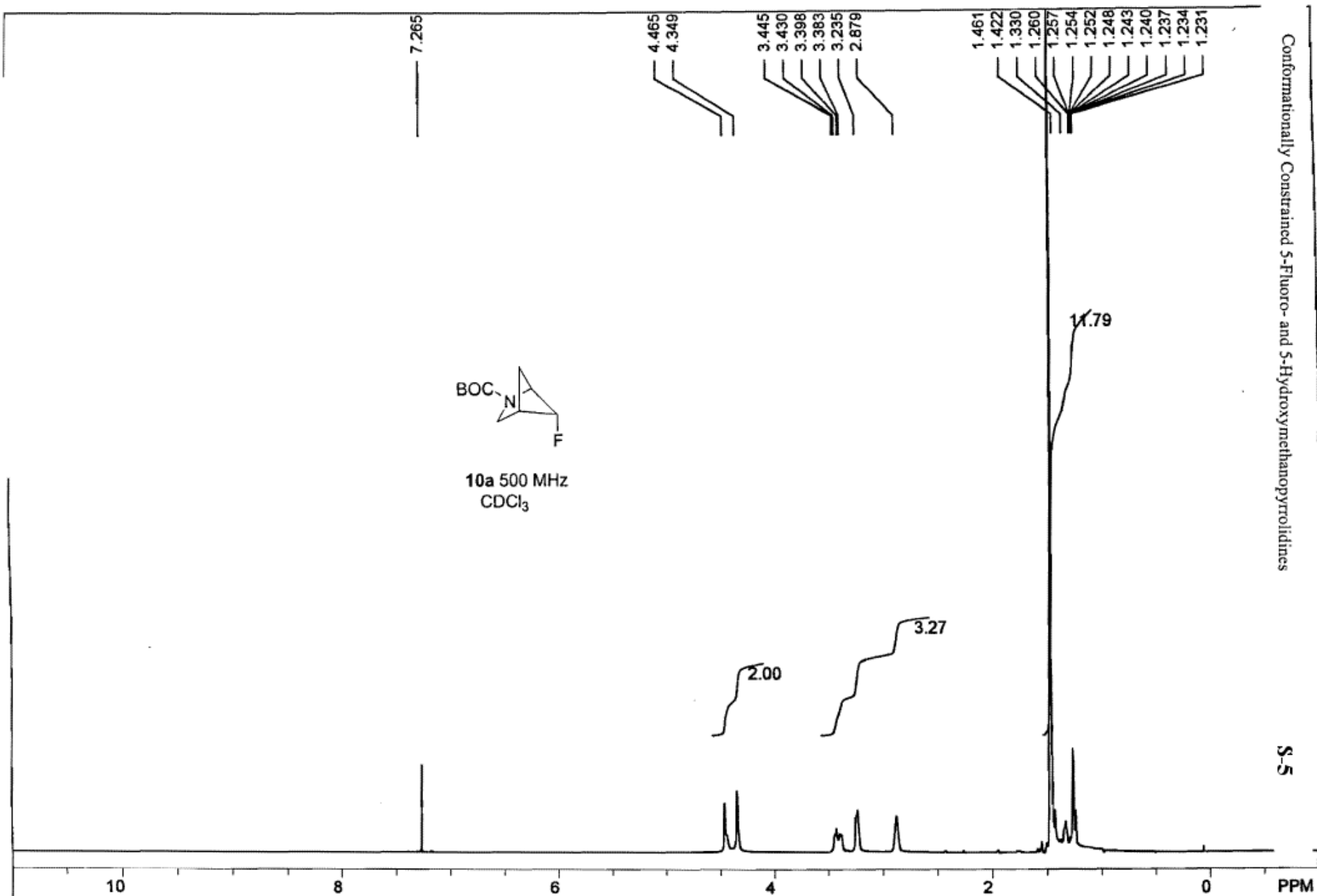
PW: 5.7 usec

PD: 2.0 sec

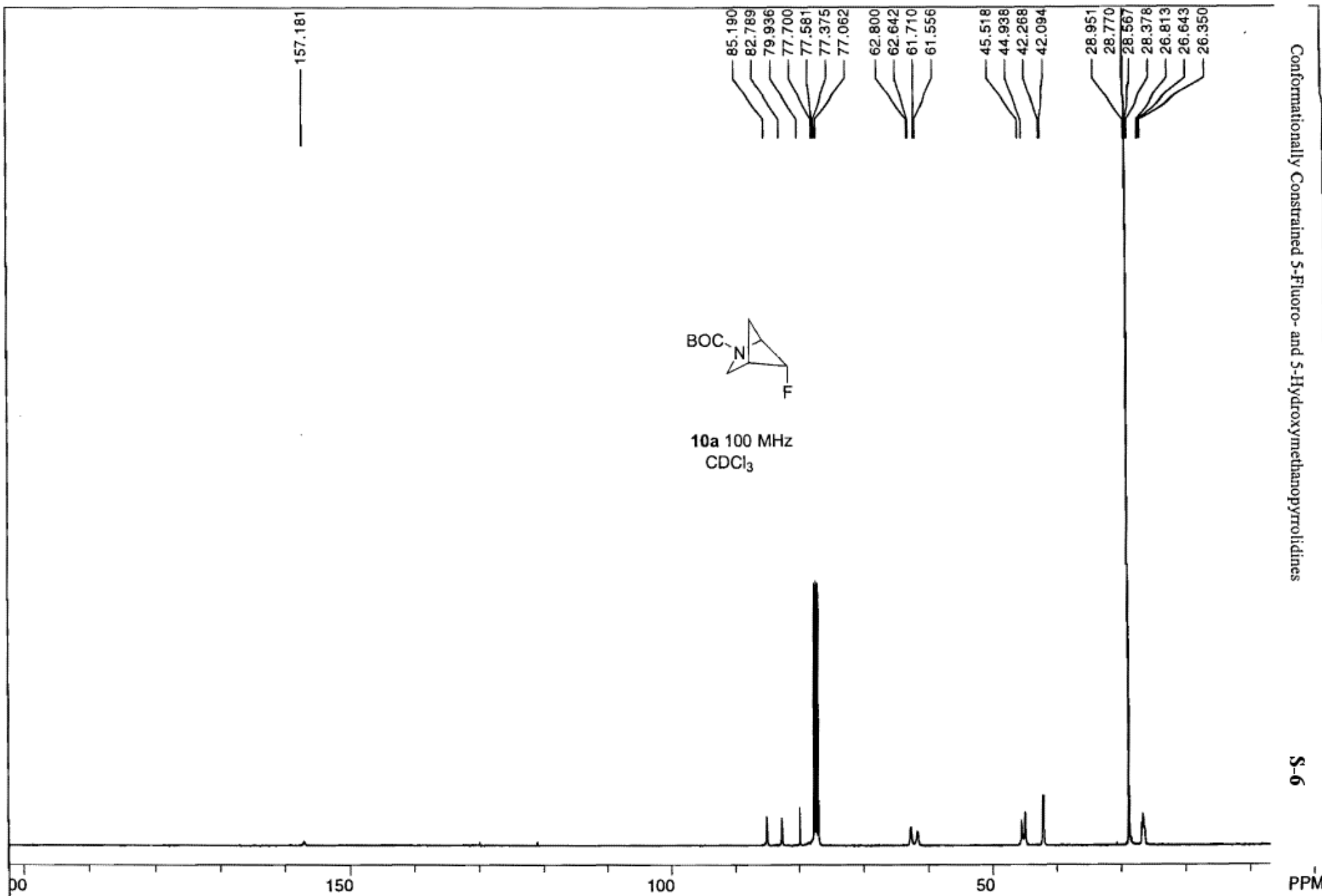
NA: 10000

LB: 3.0

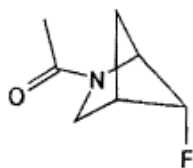
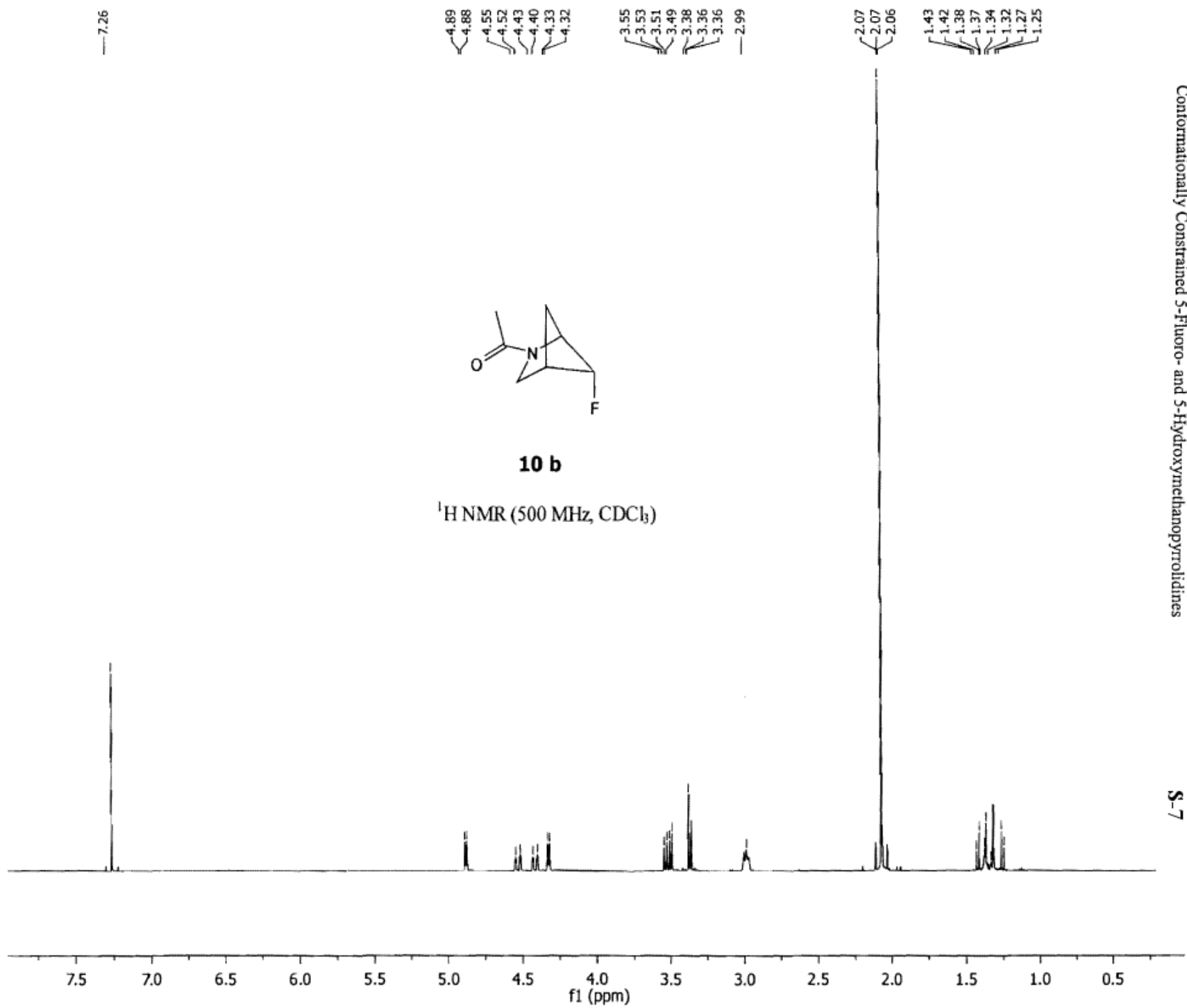
WinNuts - NAC[2.1.1]-(693)C

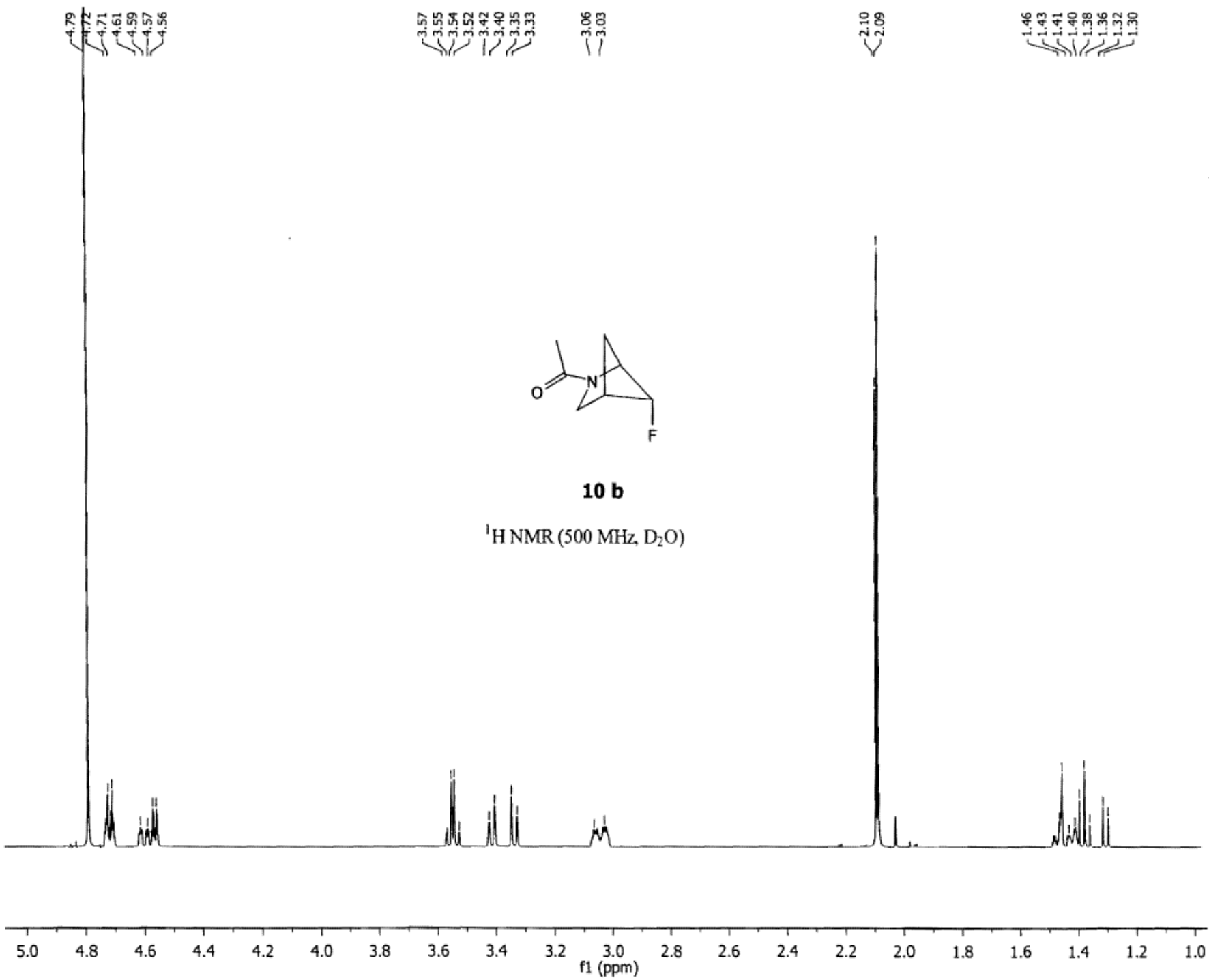


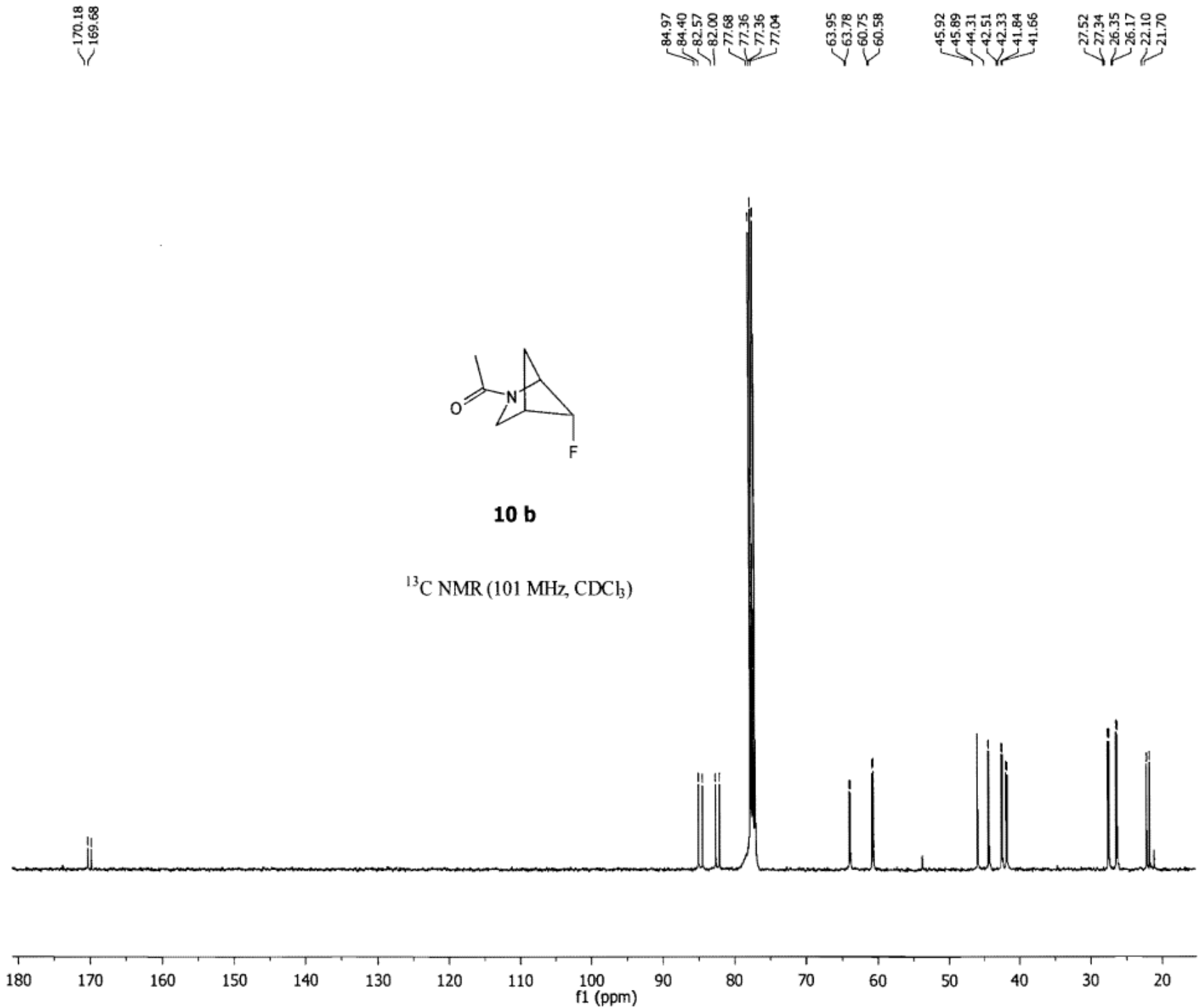
F1: 500.130		F2: 500.130		SW1: 6006		OF1: 2500.6		PTS1d: 16384		USER: -- DATE: Fri Feb 9 13:11:40	
EX: 1puls		PW: 8.0 usec		PD: 1.0 sec		NA: 8		LB: 0.0		WinNuts - \$expFang29051	

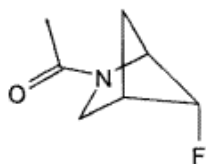


Boc-F syn. carbonOVNTE.atm.		USER: temple -- DATE: Feb 12 04:08:37 2005 EST (UT-5h) templ					
F1: 100.585	F2: 1.000	SW1: 25126		OF1: 10057.2		PTS1d: 32768	
EX:		PW: 5.7 usec	PD: 2.0 sec	NA: 12000	LB: 2.0		WinNuts - \$WS FTP.1

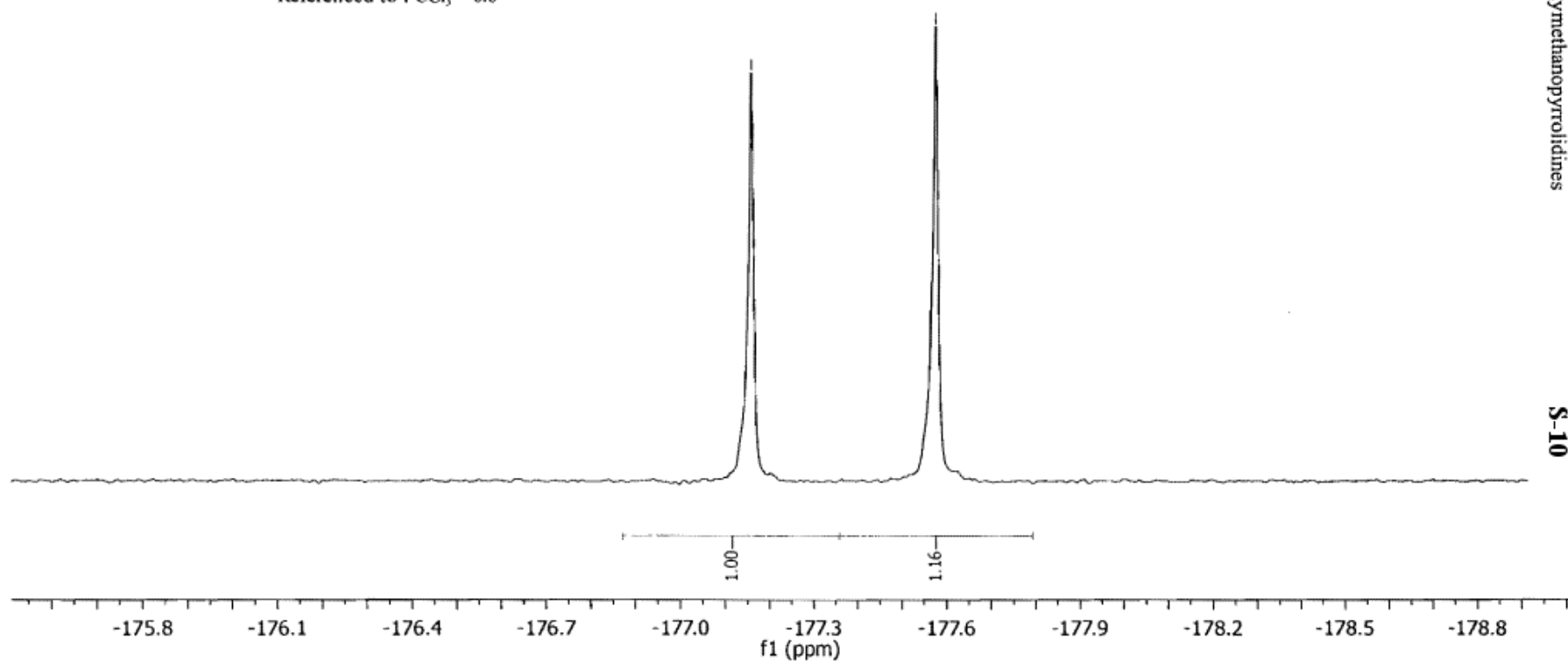
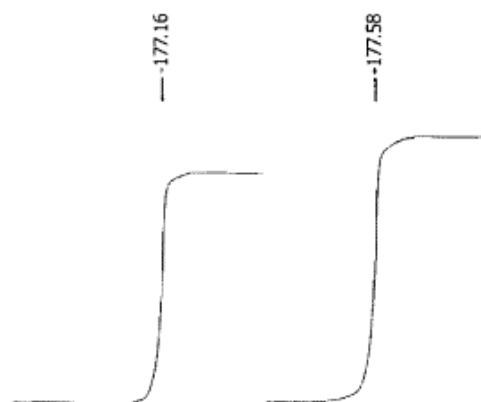
**10 b** $^1\text{H NMR}$ (500 MHz, CDCl_3)

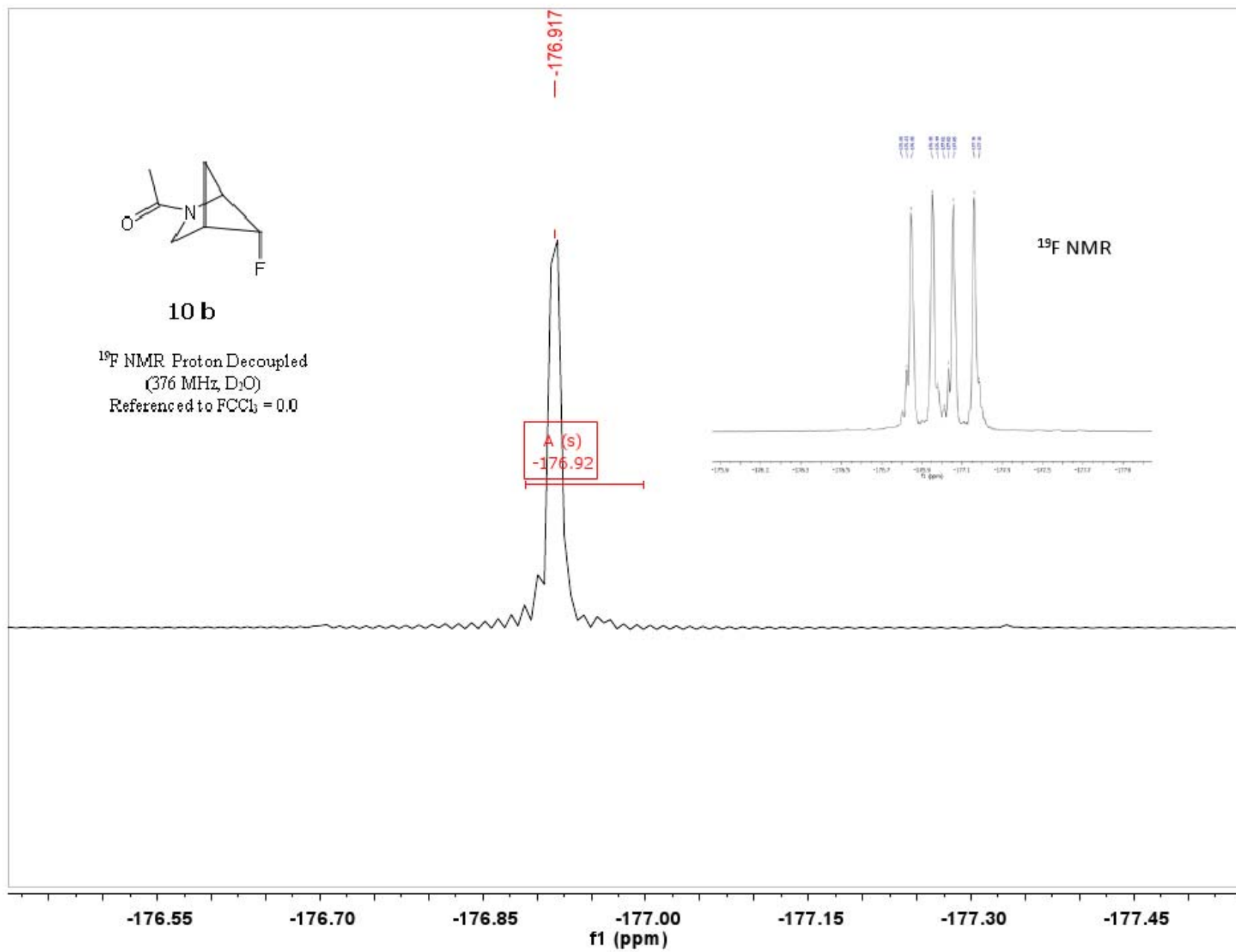




**10 b**

^{19}F NMR Proton Decoupled
(376 MHz, CDCl_3)
Referenced to $\text{FCCl}_3 = 0.0$

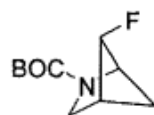




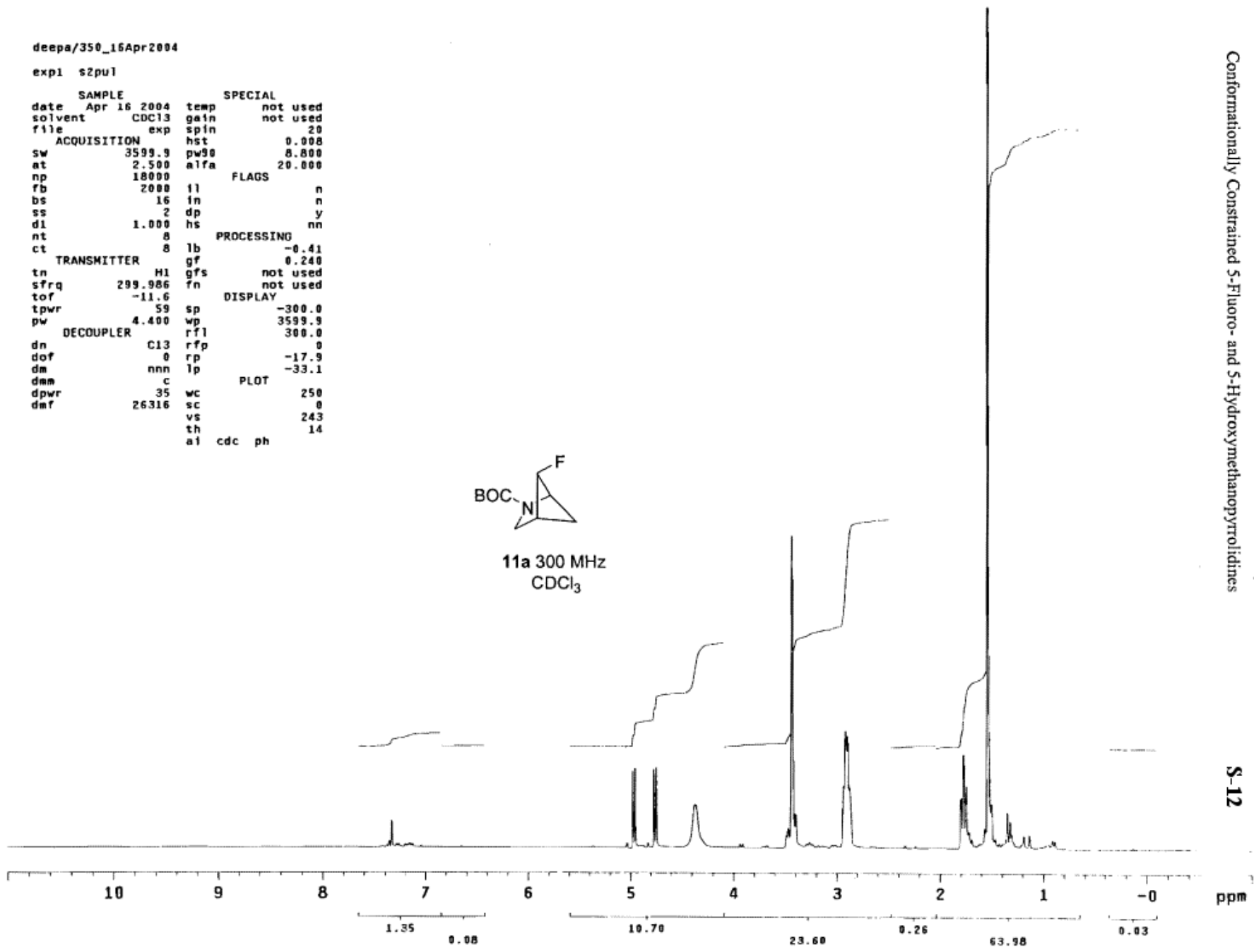
deepa/350_15Apr2004

exp1 s2pu1

SAMPLE		SPECIAL	
date	Apr 16 2004	temp	not used
solvent	CDC13	gain	not used
file	exp	spin	20
ACQUISITION		hst	0.008
sw	3599.9	pw90	8.800
at	2.500	alpha	20.000
np	18000	FLAGS	
fb	2000	ll	n
bs	16	in	n
ss	2	dp	y
d1	1.000	hs	nn
nt	8	PROCESSING	
ct	8	lb	-0.41
TRANSMITTER		gf	0.240
tn	H1	gfs	not used
sfrq	299.986	fn	not used
tof	-11.6	DISPLAY	
tpwr	59	sp	-300.0
pw	4.400	wp	3599.9
DECOUPLER		rfl	300.0
dn	C13	rfp	0
dof	0	rp	-17.9
dm	nnn	lp	-33.1
dmm	c	PLOT	
dpwr	35	wc	250
dmf	26316	sc	0
		vs	243
		th	14
		al	cdc ph



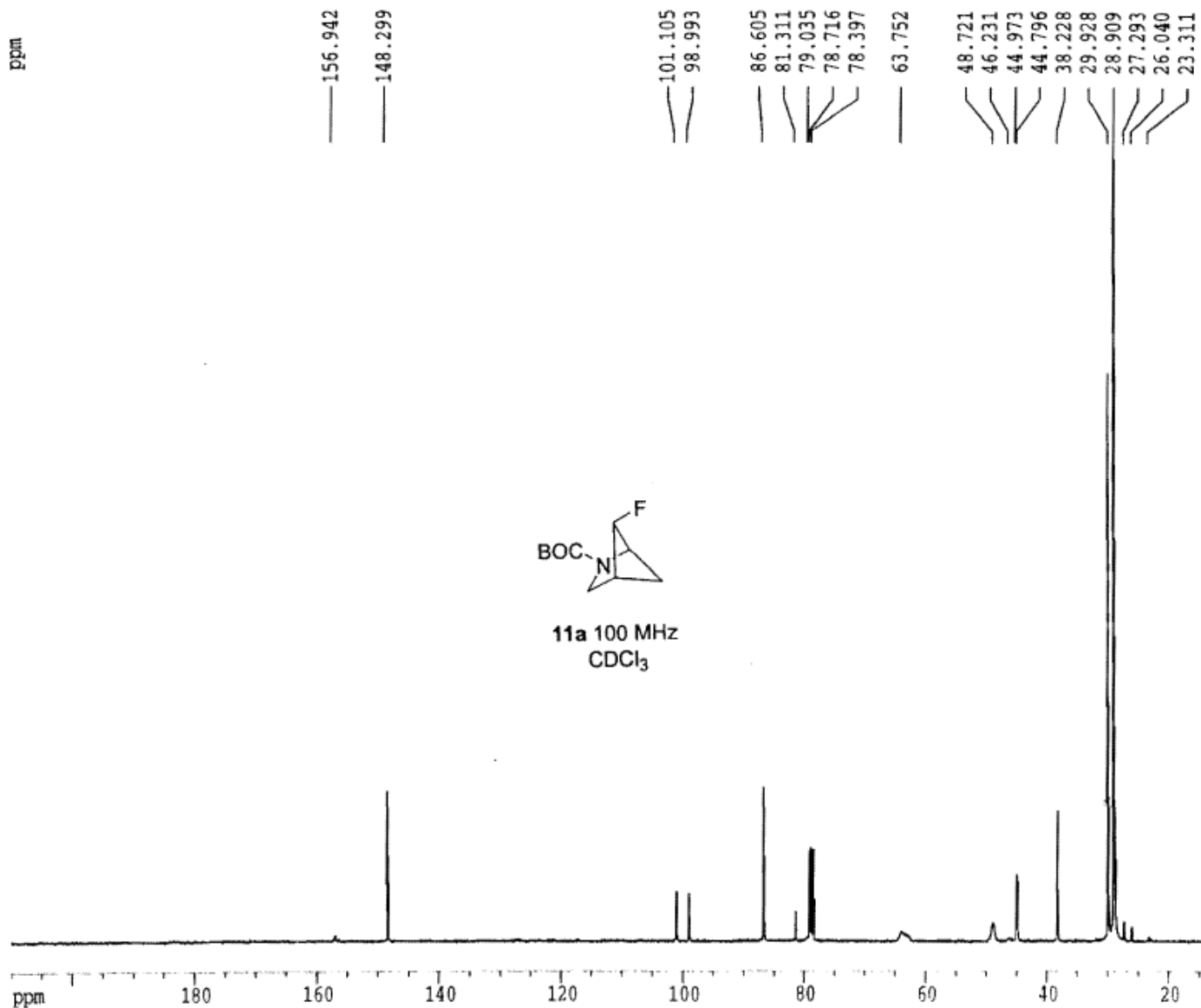
11a 300 MHz
CDCl₃



Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-12

N-Boc-[2.1.1]-5-anti-F
carbon2HR.atm



Current Data Parameters
NAME deepa03
EXPNO 40
PROCNO 1

F2 - Acquisition Parameters
Date_ 20050110
Time 10.40
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zgpgg50
TD 65536
SOLVENT CDCl3
NS 1042
DS 2
SWH 25125.629 Hz
FIDRES 0.383387 Hz
AQ 1.3042164 sec
RG 18390.4
DW 19.900 use
DE 6.00 use
TE 300.0 K
D1 2.00000000 sec
d11 0.03000000 sec
d12 0.00002000 sec

===== CHANNEL f1 =====
NUC1 13C
P1 5.70 use
PL1 2.00 dB
SFO1 100.5951275 MHz

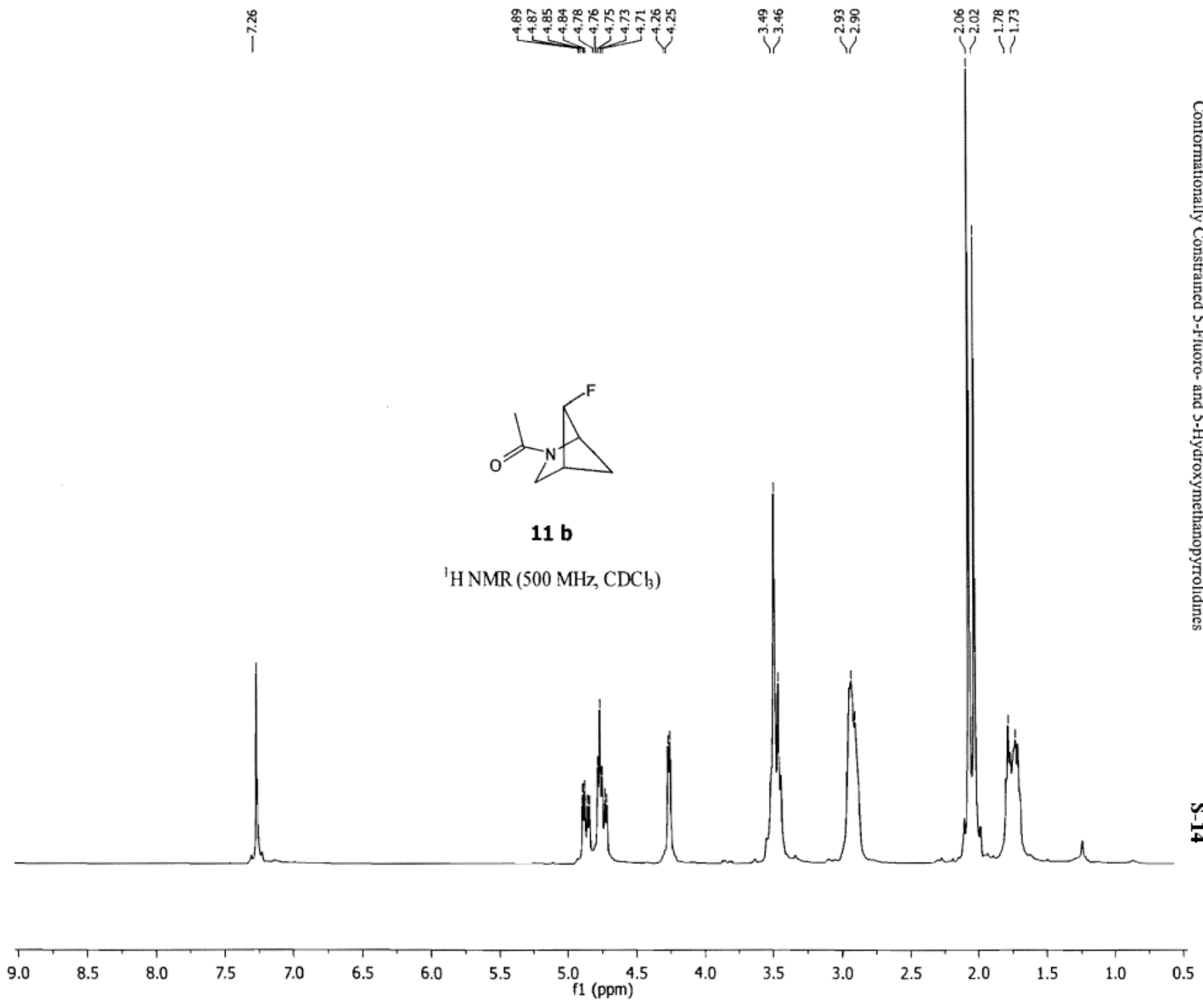
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 92.00 use
PL2 0.00 dB
PL12 11.00 dB
PL13 120.00 dB
SFO2 400.0216001 MHz

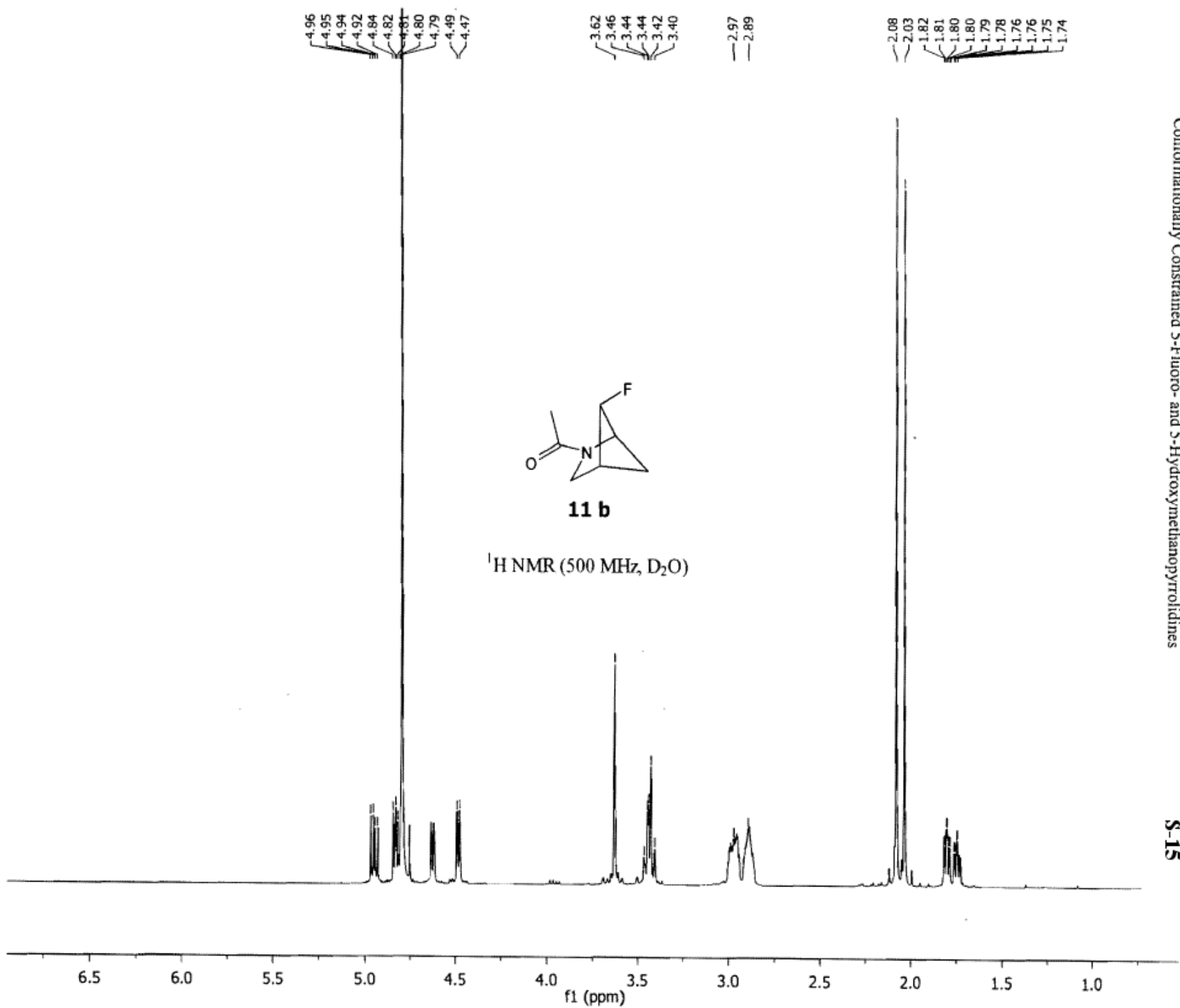
F2 - Processing parameters
SI 32768
SF 100.5949428 MHz
WDW EM
SSB 0
LB 3.00 Hz
GB 0
PC 1.40

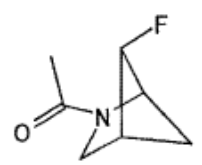
1D NMR plot parameters
CX 22.00 cm
F1P 210.000 ppm
F1 21122.84 Hz
F2P -10.000 ppm
F2 -1005.85 Hz
PPMCM 10.00000 ppm/cm
HZCM 1005.84949 Hz/cm

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-13

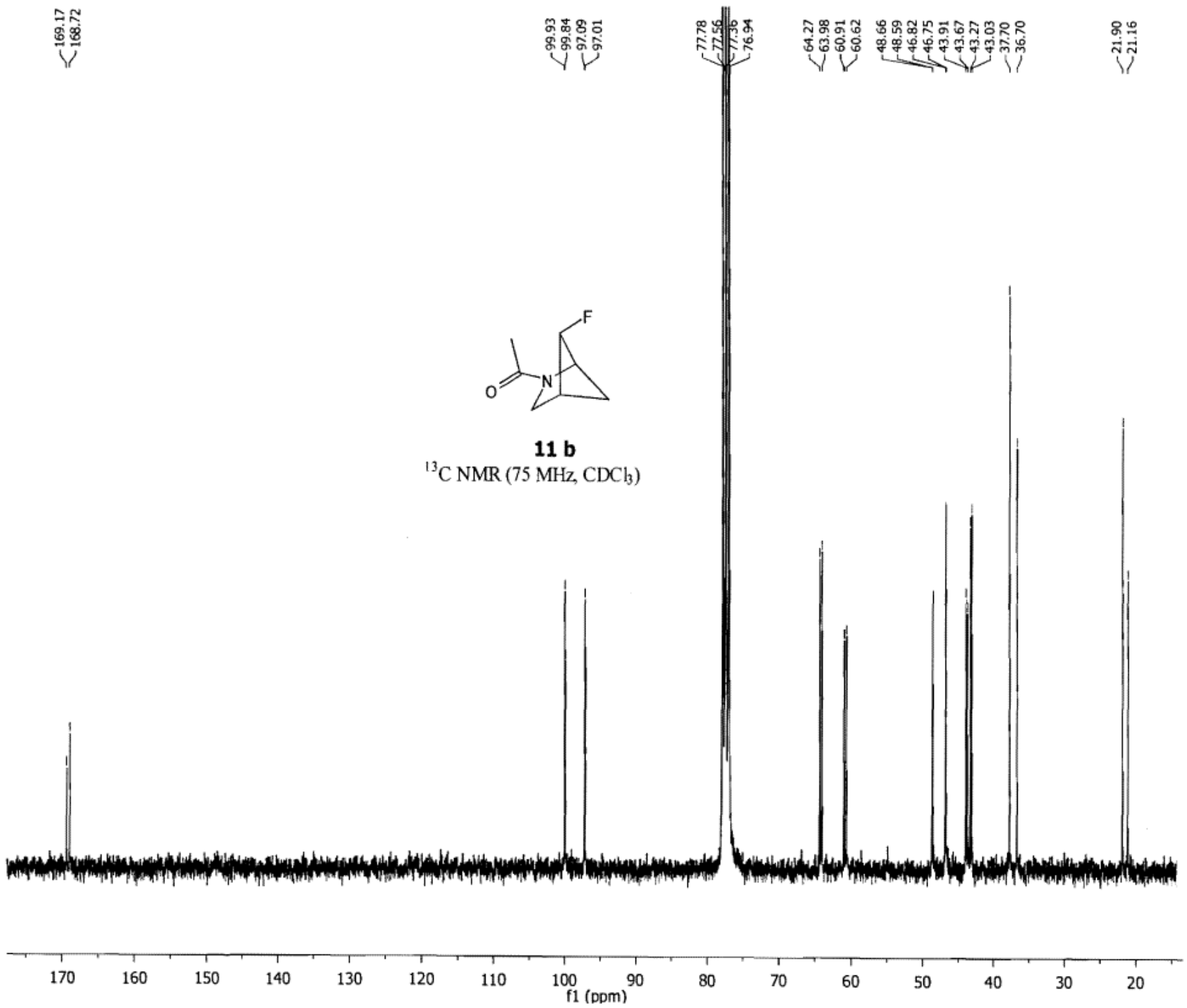


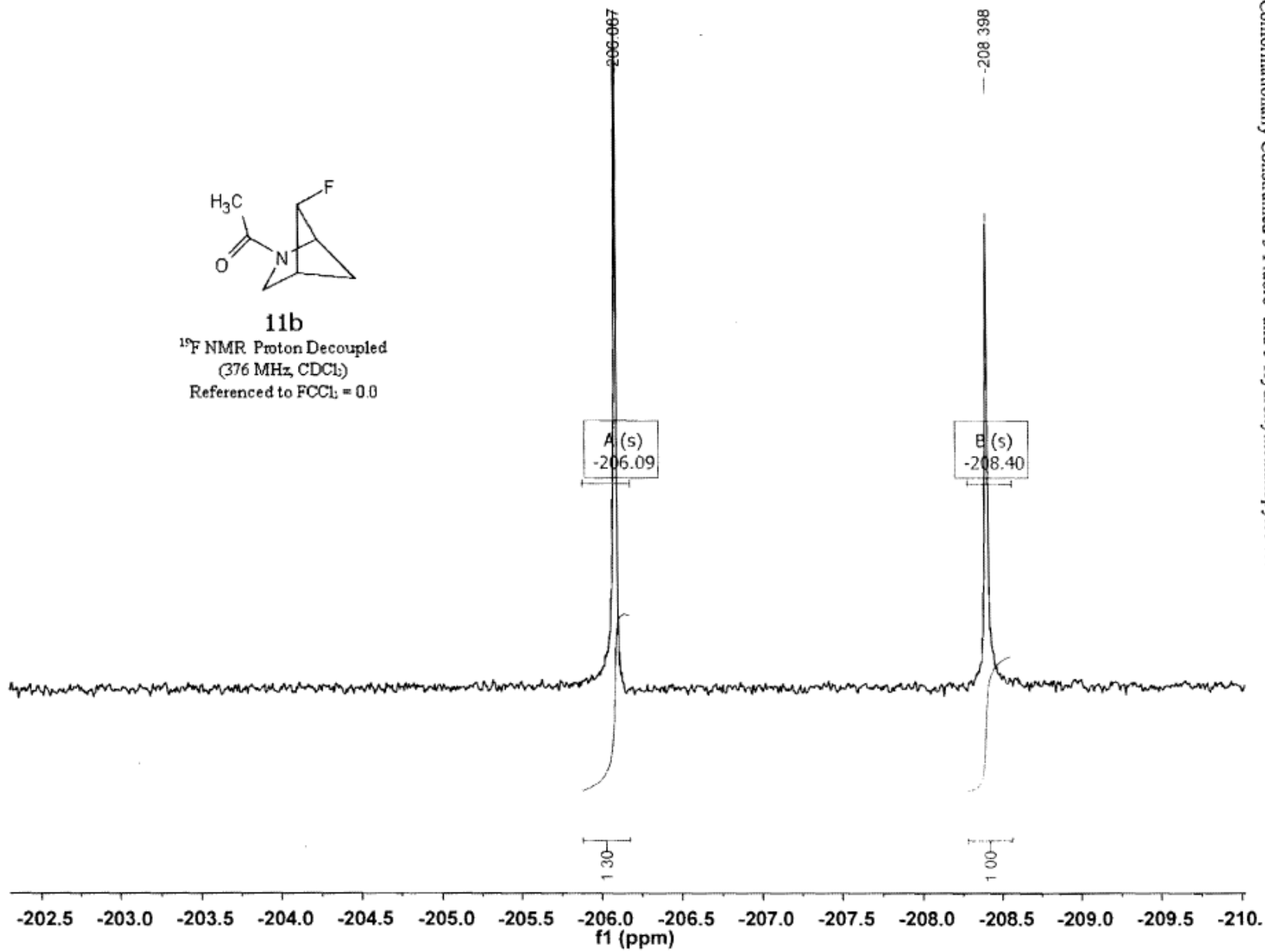


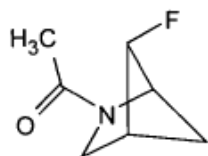


11 b

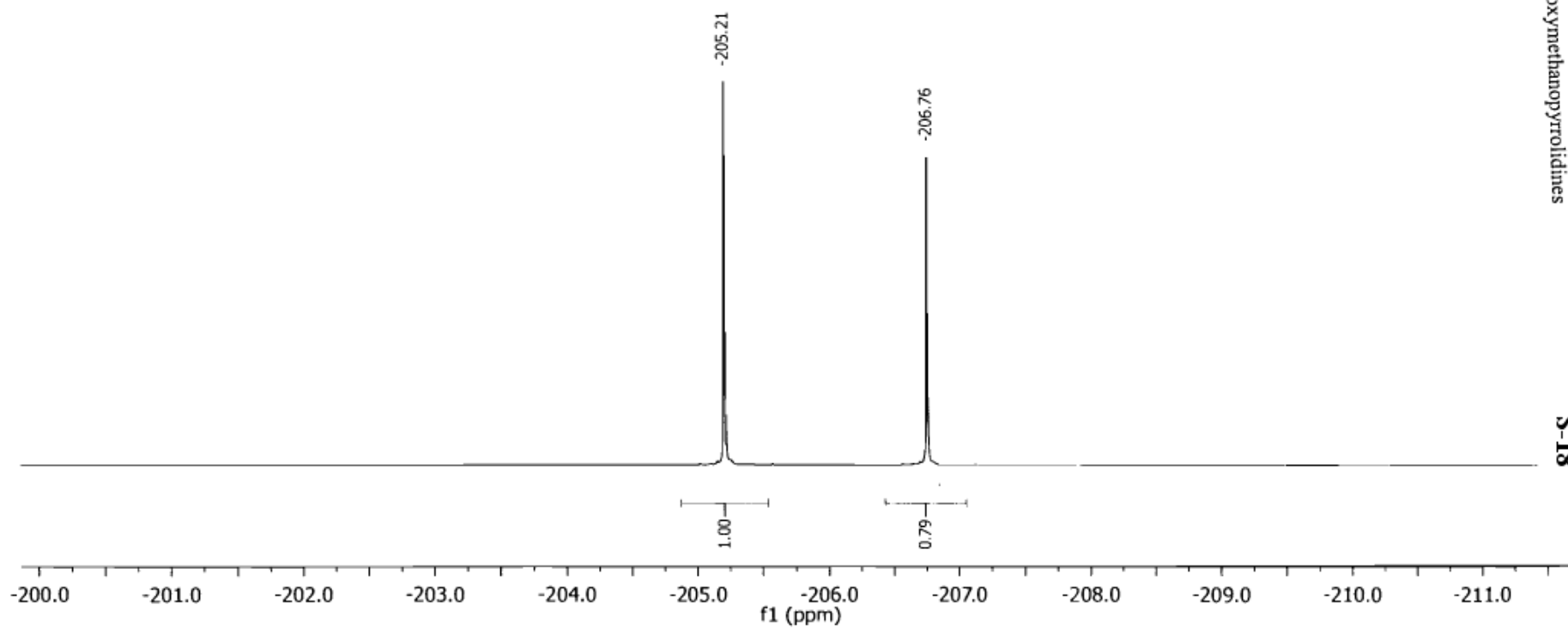
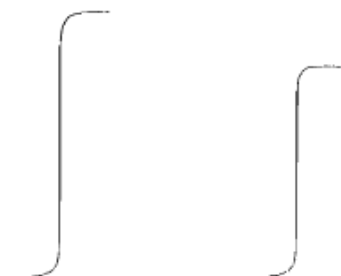
¹³C NMR (75 MHz, CDCl₃)

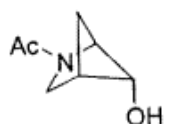




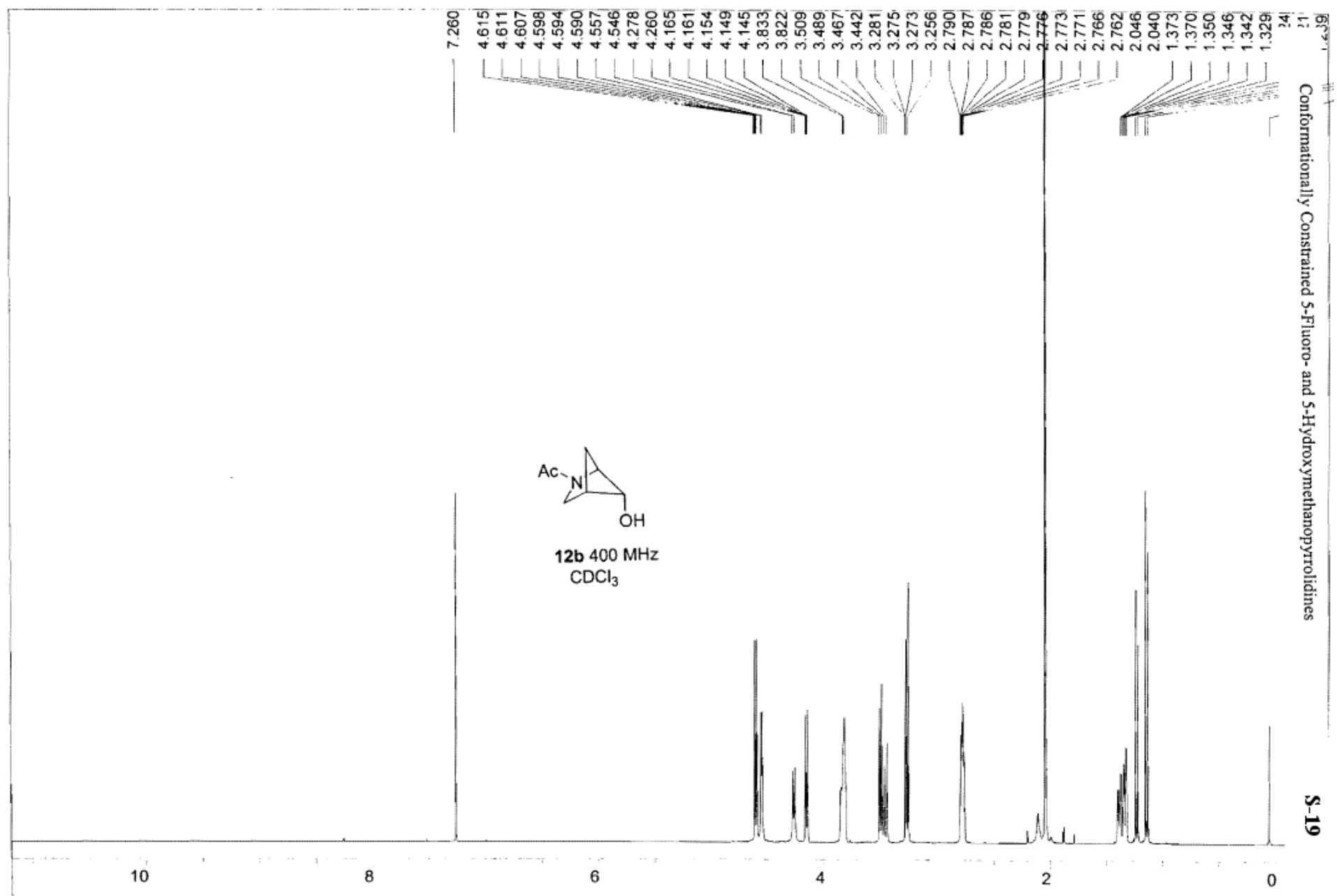
**11b**

^{19}F NMR Proton Decoupled
(376 MHz, D_2O)
Referenced to $\text{FCCl}_3 = 0.0$





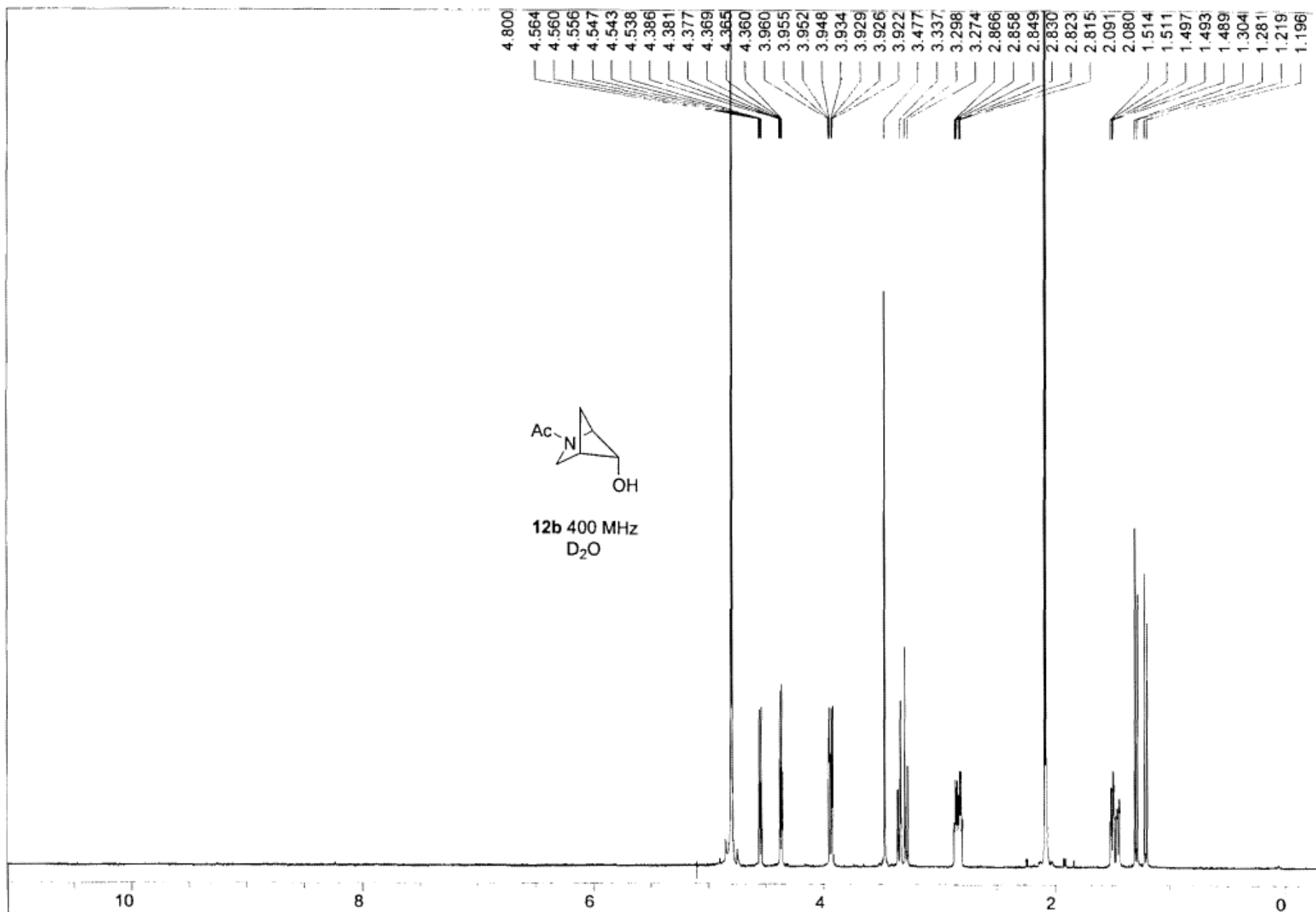
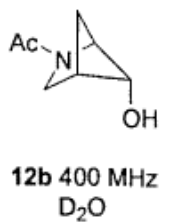
12b 400 MHz
CDCl₃



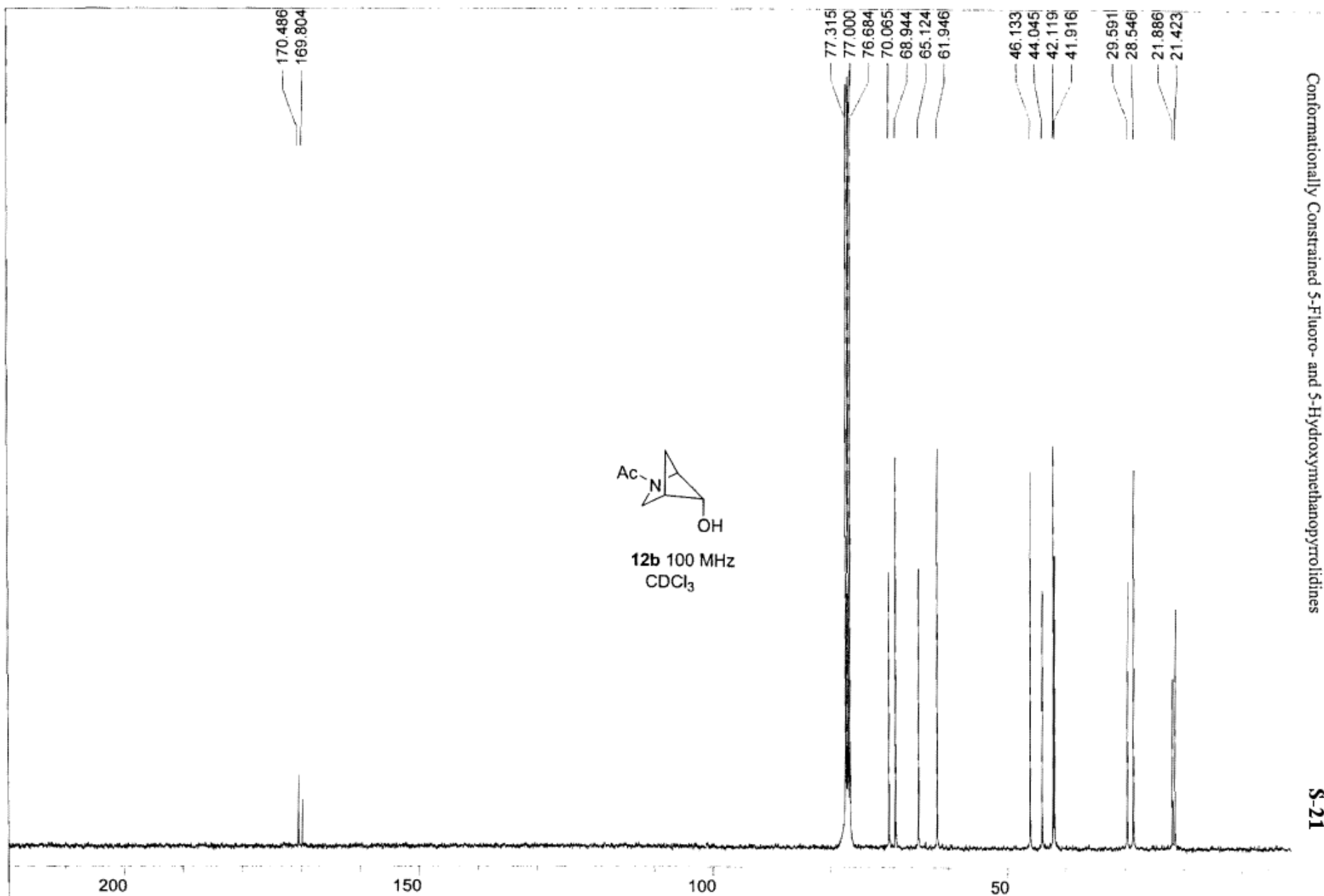
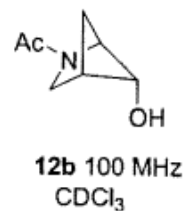
Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-19

NAc[2.1.1] syn-OH, proton10MIN,atm,		USER: temple -- DATE: Nov 22 23:08:55 2008 EST (UT-5h) templ			
F1: 400.130	F2: 1.000	SW1: 8278		OF1: 2004.2	PTS1d: 32768
EX:		PW: 9.8 usec	PD: 1.0 sec	NA: 128	LB: 0.1
WinNuts - NAc[2.1.1] syn-OH--H--eram-1681					



NAC[2.1.1] syn-OH, proton10MIN.atm,			USER: temple -- DATE: Dec 12 10:19:09 2008 EST (UT-5h) templ		
F1: 400.130	F2: 1.000	SW1: 8278	OF1: 2041.3	PTS1d: 32768	
EX:	PW: 9.8 usec	PD: 1.0 sec	NA: 228	LB: 0.1	WinNuts - NAC[2.1.1] syn-OH-H-eram-1689 (D2O)



NAC[2.1.1] syn-OH, carbonOVNTE,all,

F1: 100.613

F2: 1.000

SW1: 25126

OF1: 10021.1

USER: temple -- DATE: Nov 23 09:18:27 2008 EST (UT-5h) templ

PTS1d: 32768

EX:

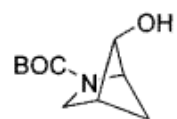
PW: 5.7 usec

PD: 2.0 sec

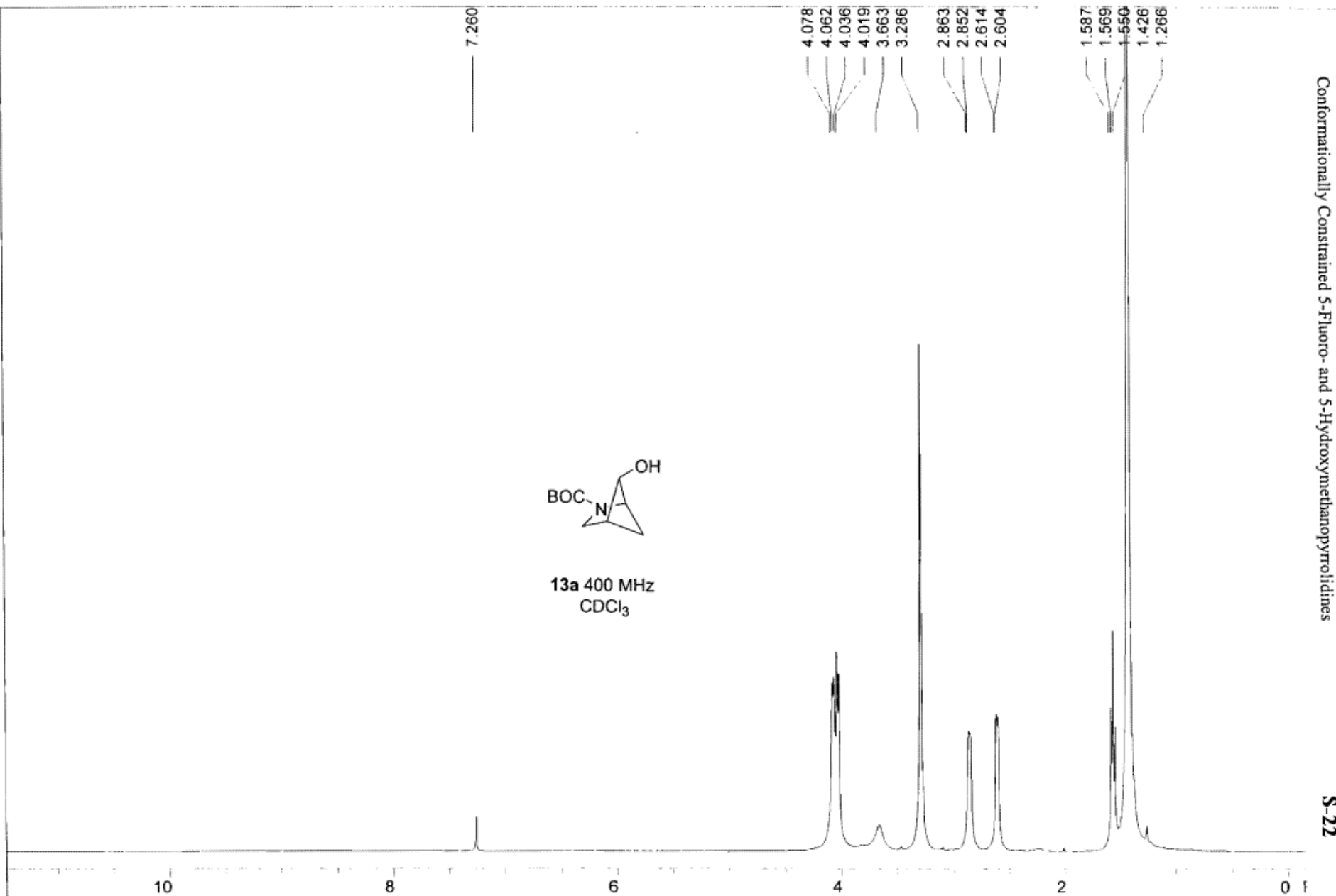
NA: 11000

LB: 3.0

WinNuts - NAC[2.1.1] syn-OH--C--eram-1682



13a 400 MHz
CDCl₃



NBoc[2.1.1] OH, proton.atm.

USER: temple -- DATE: Nov 17 23:15:59 2007 EST (UT-5h) temp1

F1: 400.191

F2: 1.000

SW1: 8278

OF1: 2003.2

PTS1d: 32768

EX:

PW: 9.8 usec

PD: 1.0 sec

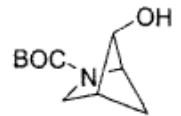
NA: 16

LB: 0.1

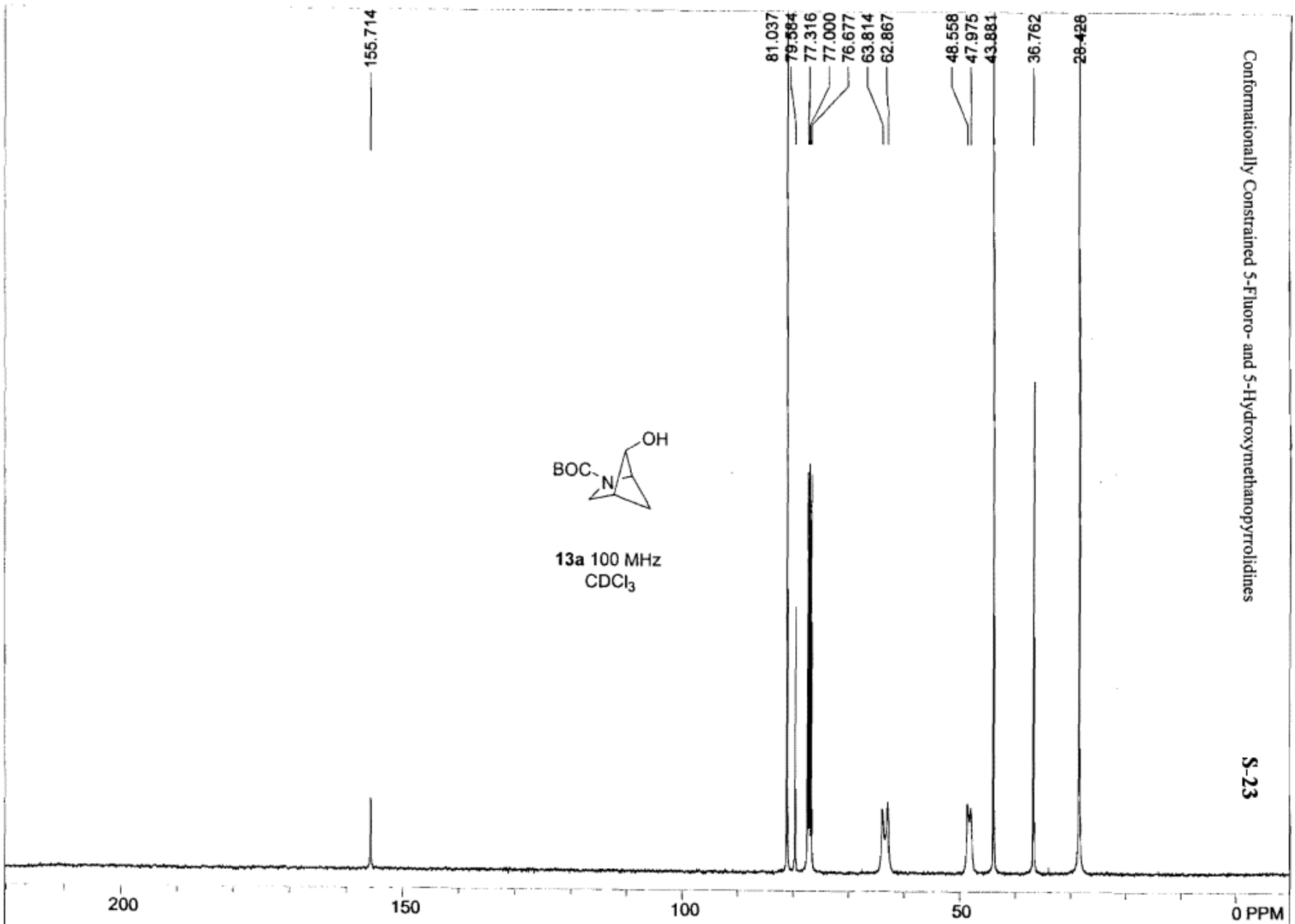
WinNuts - NBoc[2.1.1] anti-OH---H---eram-800

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

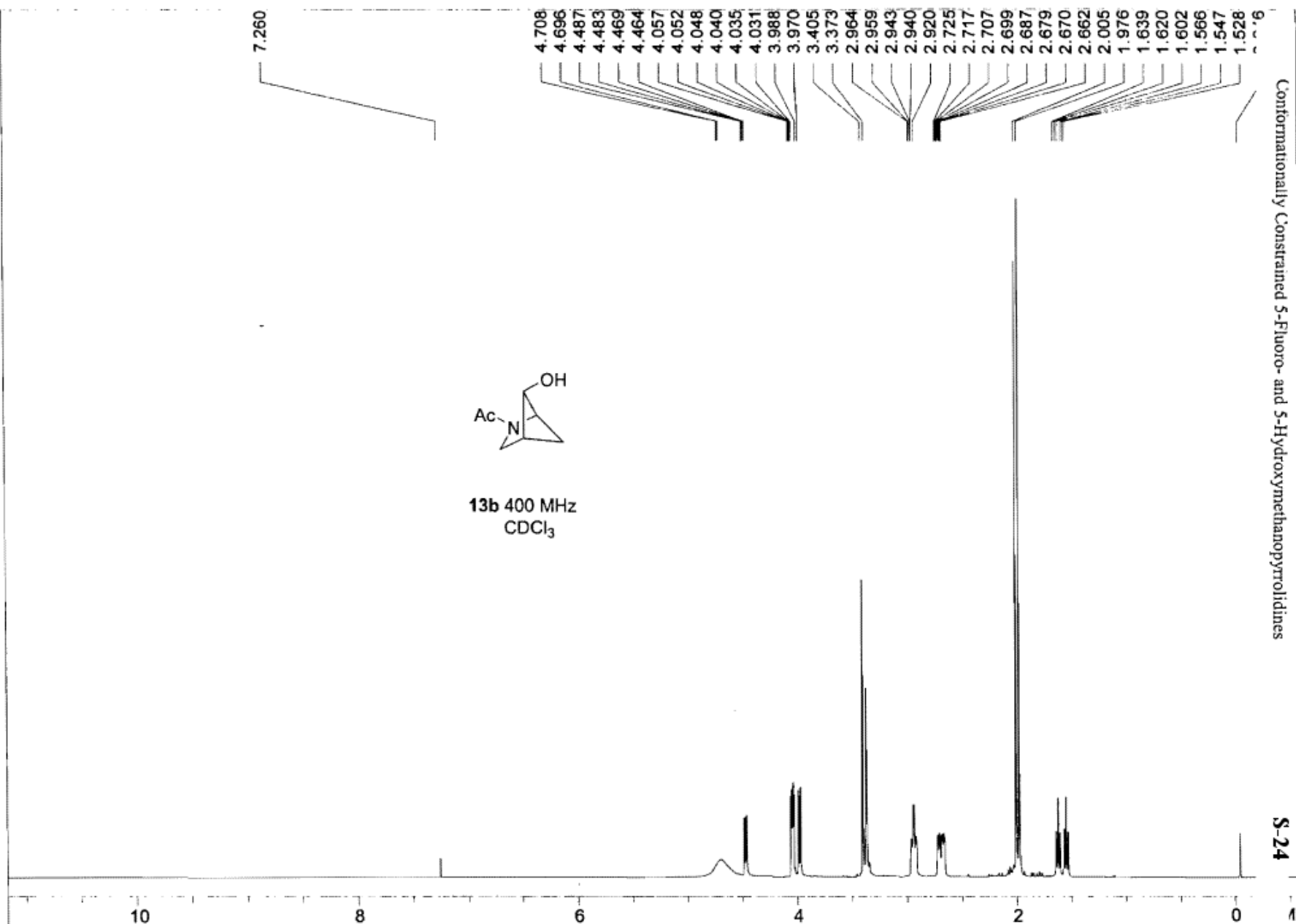
S-23



13a 100 MHz
CDCl₃



NBoc[2.1.1] OH, carbon2HR, atm,		USER: temple -- DATE: Nov 18 07:55:18 2007 EST (UT-5h) templ					
F1: 100.628	F2: 1.000	SW1: 23148		OF1: 10581.5		PTS1d: 32768	
EX:		PW: 5.7 us	PD: 2.0 sec	NA: 9048	LB: 3.0	Nuts - NBoc[2.1.1] anti-OH--C--eram-801	

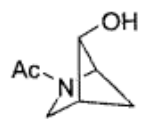


NAc[2.1.1]OH, proton atm.

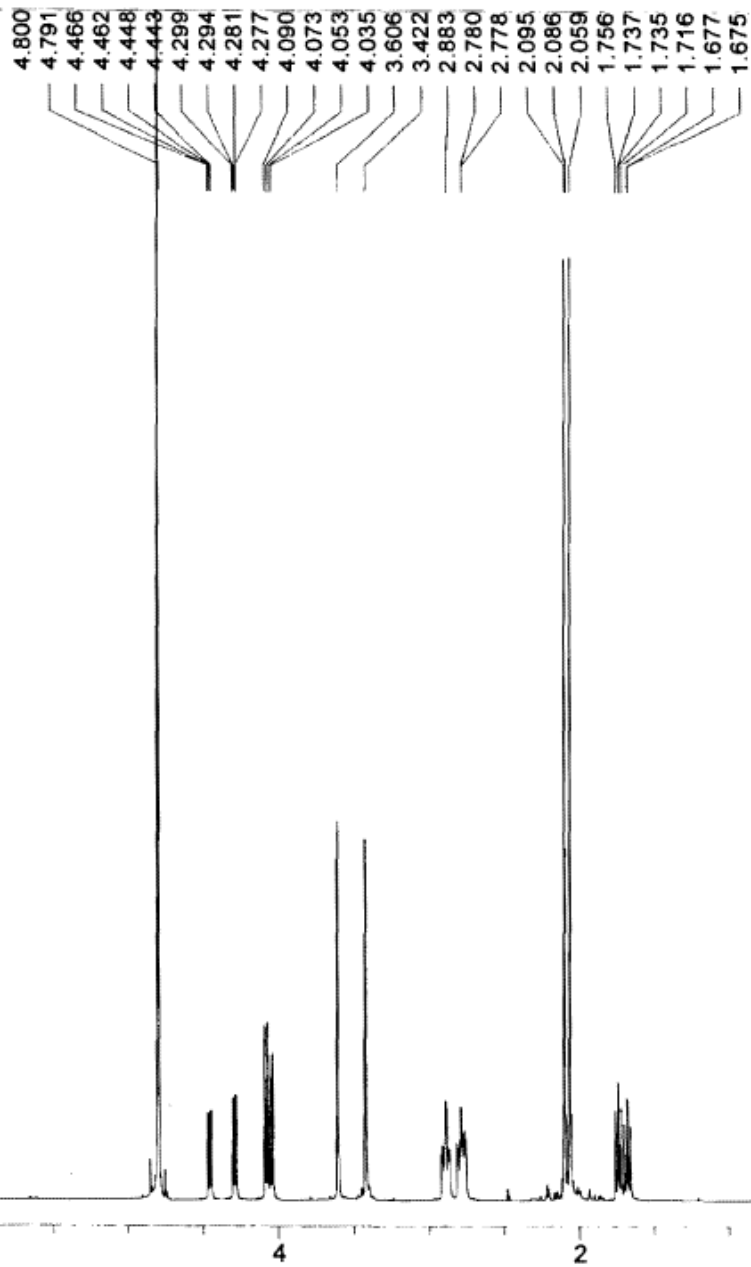
USER: temple -- DATE: Jan 26 01:24:49 2008 EST (UT-5h) temp1

F1: 400.130	F2: 1.000	SW1: 8278	OF1: 2004.2	PTS1d: 32768
EX:	PW: 9.8 us	PD: 1.0 sec	NA: 16	LB: 0.1

Nuts - NAc[2.1.1] anti-OH--H--CDCl₃--eram-824



13b 400 MHz
D₂O



NAc[2.1.1] anti-OH, proton10MIN.atm.

USER: temple -- DATE: Jul 16 16:00:11 2008 EDT (UT-4h) templ

F1: 400.130

F2: 1.000

SW1: 8278

OF1: 2040.5

PTS1d: 32768

EX:

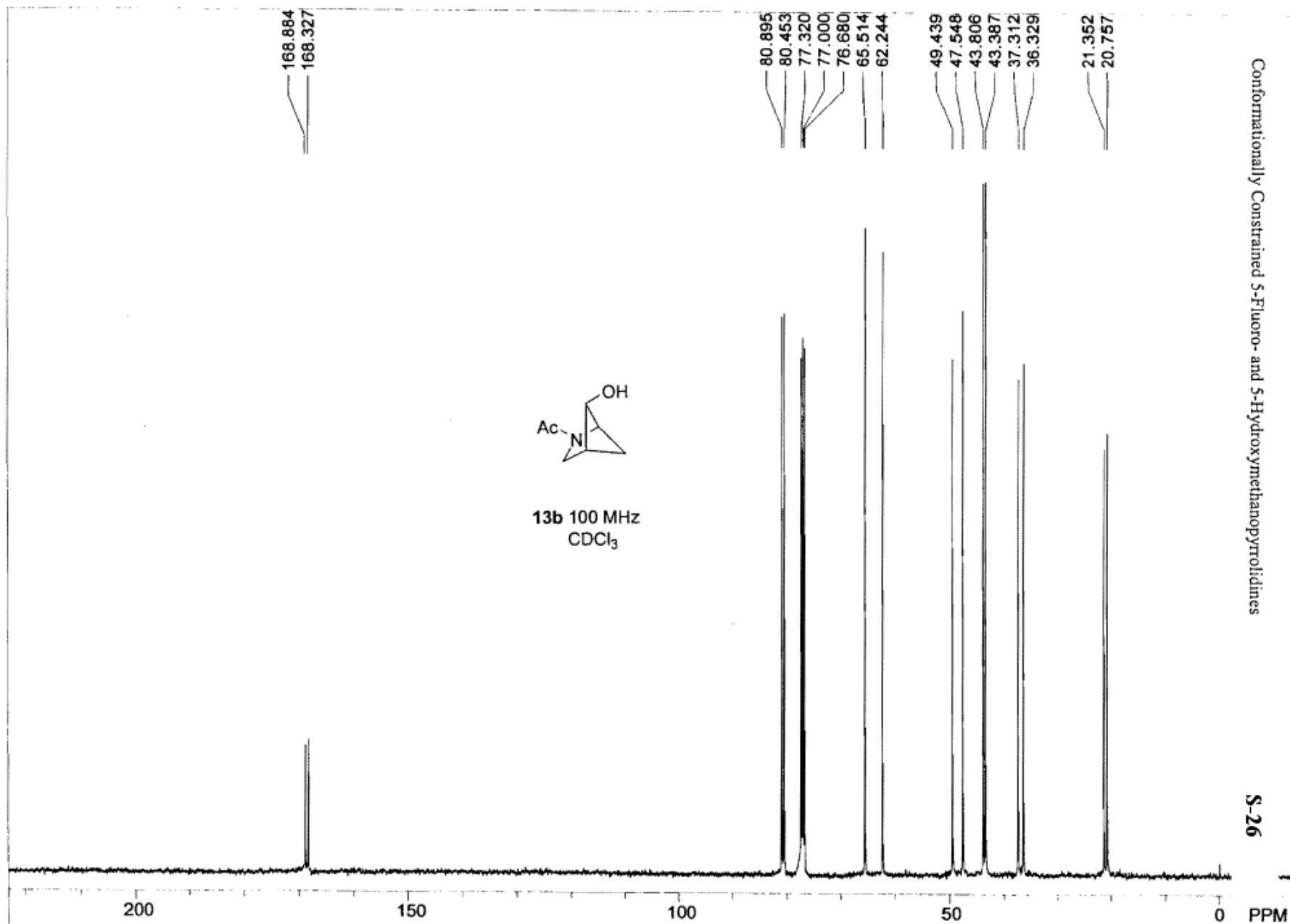
PW: 9.8 us

PD: 1.0 sec

NA: 228

LB: 0.1

Nuts - NAc[2.1.1] anti-OH--H--D2O--eram-1400



NAc[2.1.1]OH, carbon2HR.atm.

USER: temple - DATE: Jan 26 06:06:30 2008 EST (UT-5h) templ

F1: 100.613

F2: 1.000

SW1: 25126

OF1: 10015.7

PTS1d: 32768

EX:

PW: 5.7 us

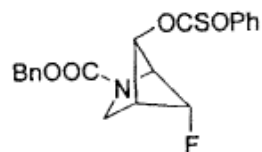
PD: 2.0 sec

NA: 5048

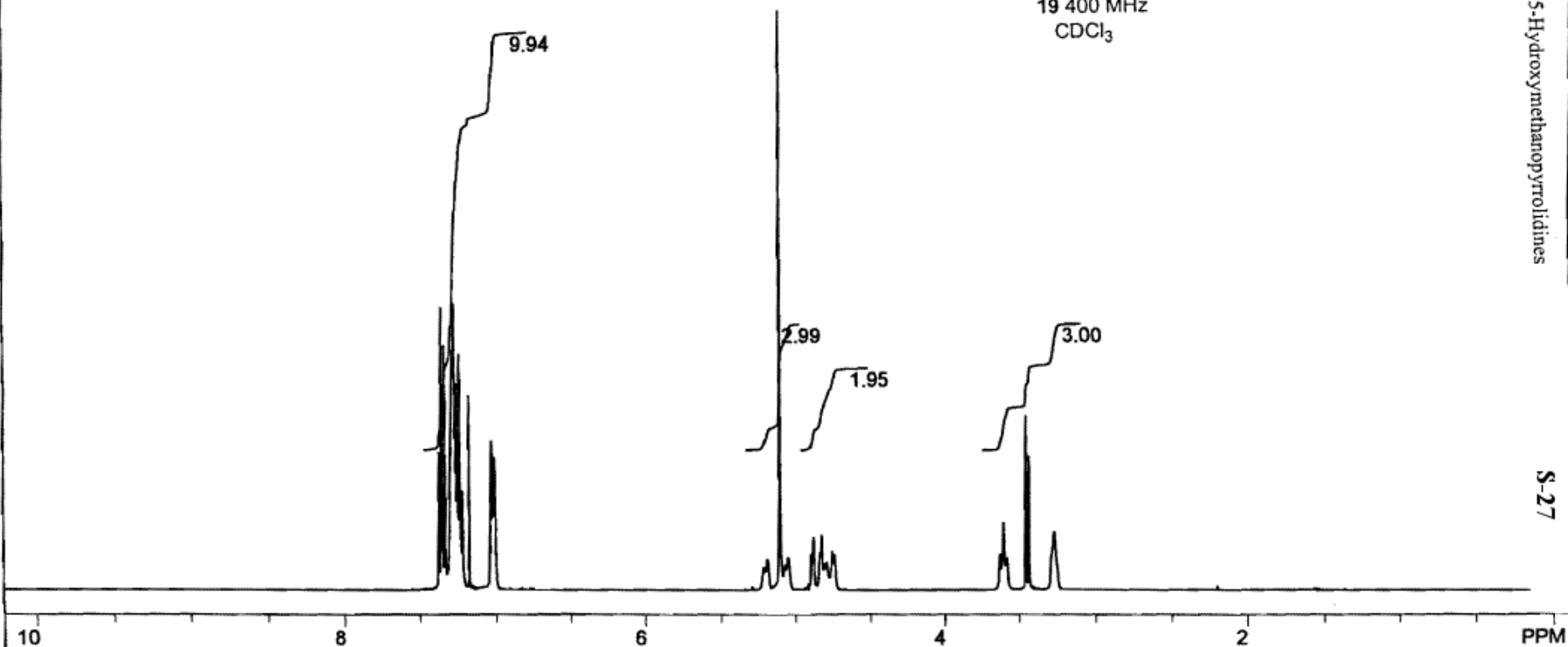
LB: 3.0

Nuts - NAc[2.1.1] anti-OH--C--eram-825

7.375
7.370
7.362
7.356
7.353
7.348
7.340
7.335
7.330
7.284
7.273
7.259
7.255
7.253
7.241
7.237
7.232
7.221
7.218
7.215
7.174
7.028
7.009
5.190
5.108
5.049
4.881
4.829
4.758
4.741
3.632
3.608
3.585
3.460
3.439
3.271



19 400 MHz
CDCl₃

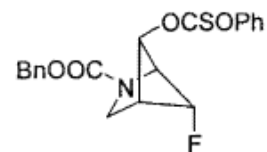


F-OSOPh spot2 TLC2. proton.atm.

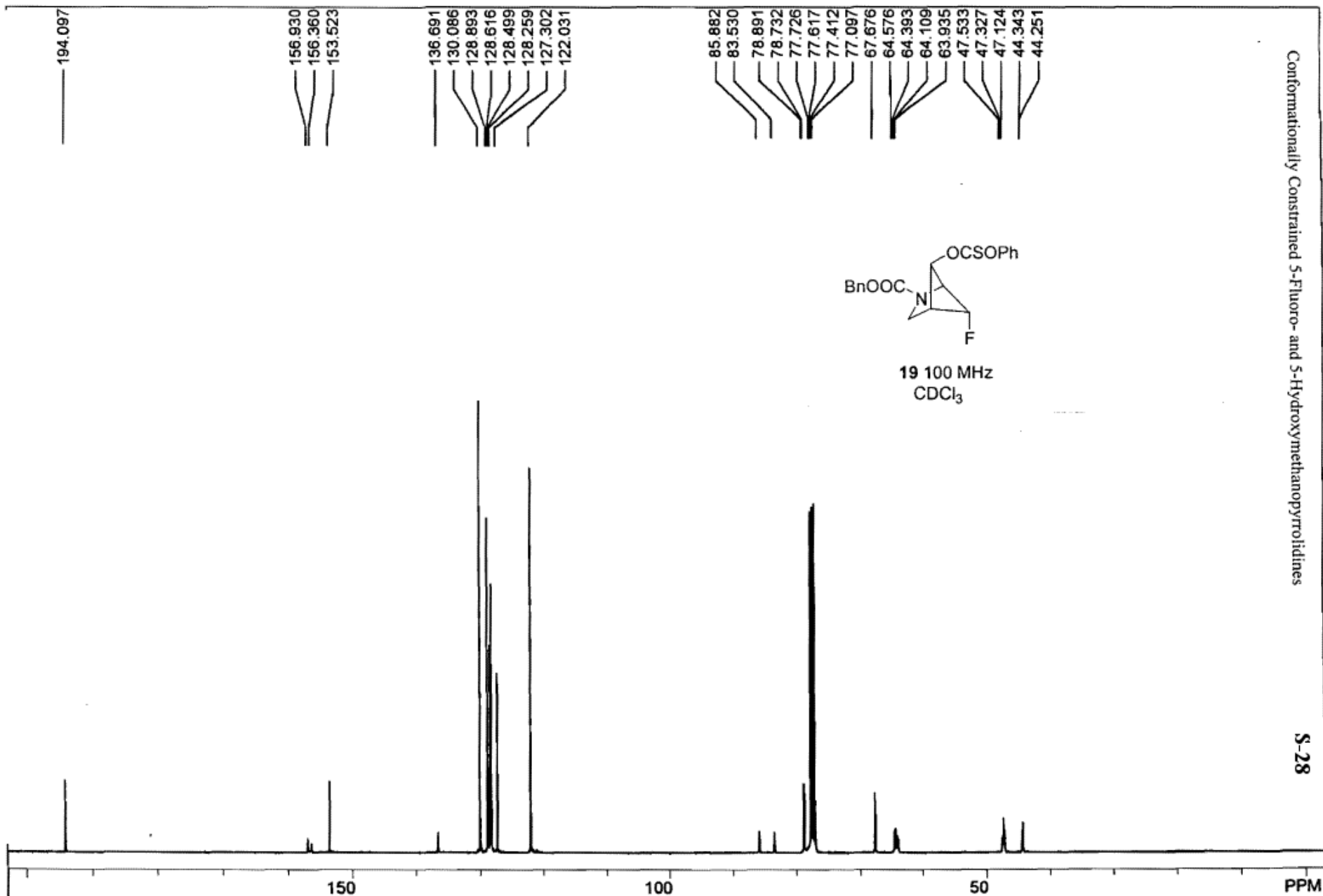
USER: temple -- DATE: Nov 4 08:58:27 2004 EST (UT-5h) templ

F1: 400.020	F2: 1.000	SW1: 8278	OF1: 1965.7	PTS1d: 32768
EX:	PW: 9.8 usec	PD: 1.0 sec	NA: 16	LB: 0.1

WinNuts - \$FangYU.1



19 100 MHz
CDCl₃



F-OSOPh Spot2, carbonOVNTE.atm.

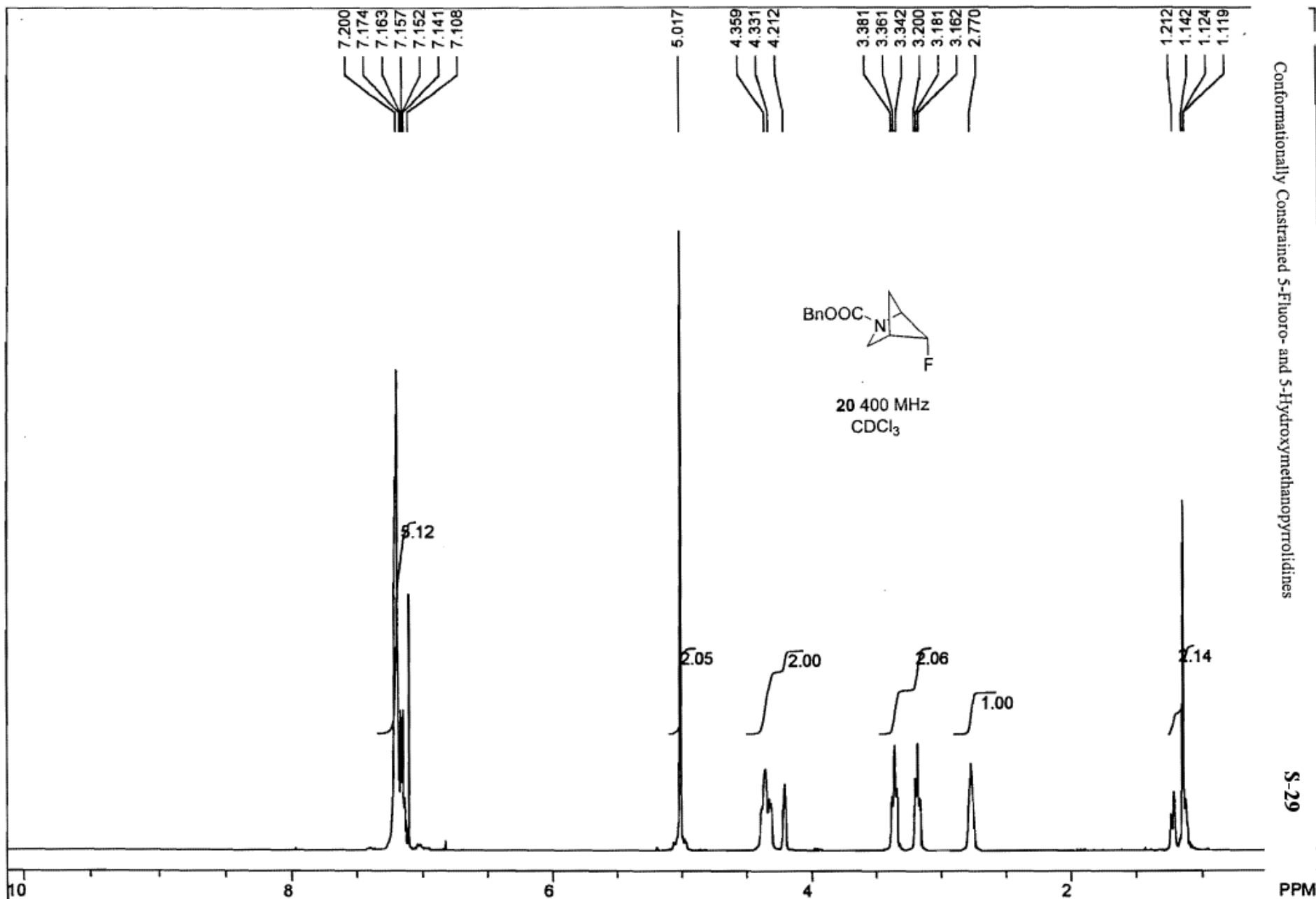
USER: temple -- DATE: Nov 5 04:48:42 2004 EST (UT-5h) templ

F1: 100.585	F2: 1.000	SW1: 25126	OF1: 10057.2	PTS1d: 32768
EX:	PW: 5.7 usec	PD: 2.0 sec	NA: 12000	LB: 2.0

WinNuts - \$FangYU.1

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-29

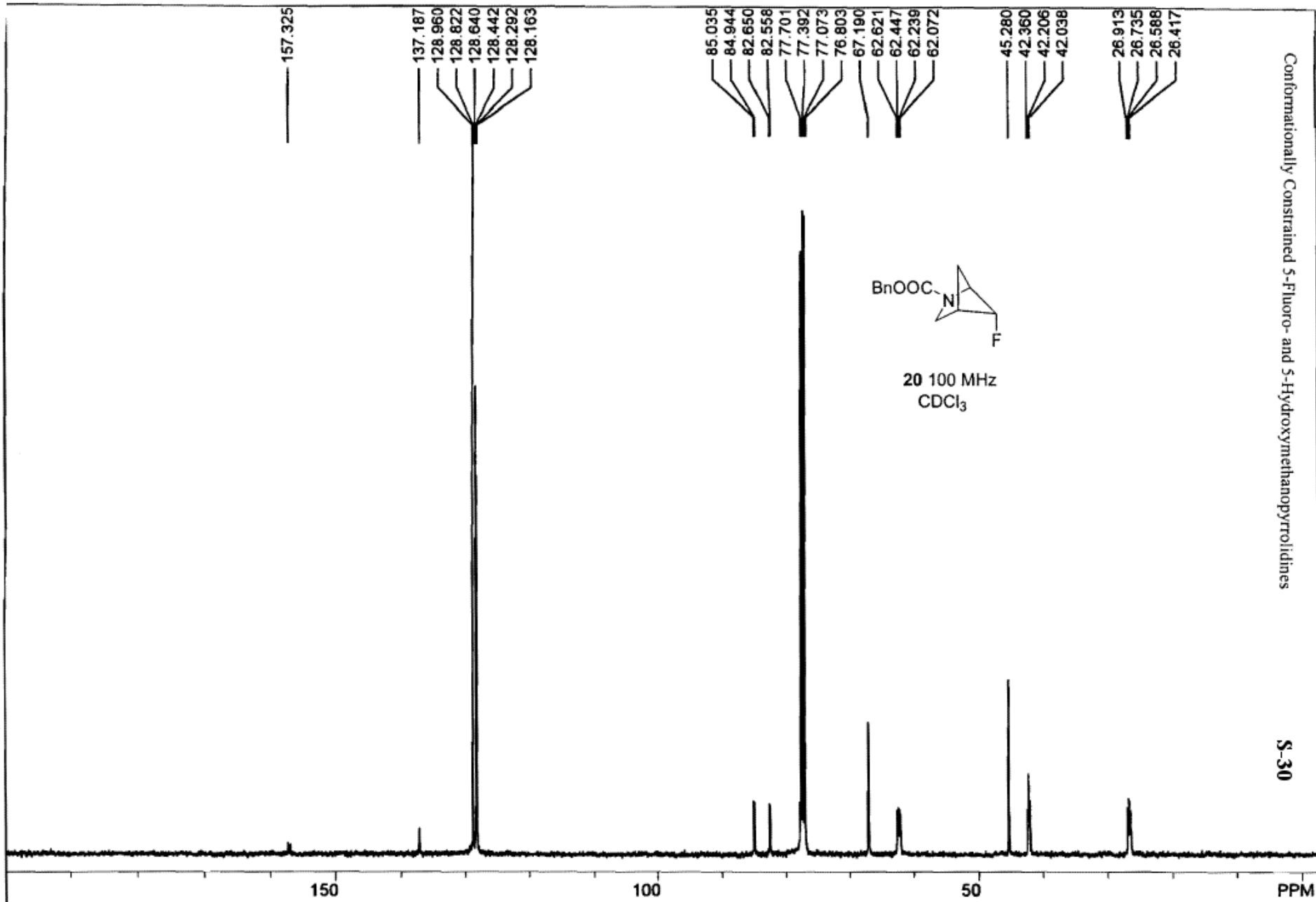


F TLC3-4, proton10MIN.atm

USER: temple -- DATE: Jan 4 13:51:10 2005 EST (UT-5h) templ

F1: 400.020	F2: 1.000	SW1: 8278	OF1: 1938.2	PTS1d: 32768
EX:	PW: 9.8 usec	PD: 1.0 sec	NA: 128	LB: 0.1

WinNuts - \$FangYU.1



F TLC3-4, carbonOVNTE.atm

USER: temple -- DATE: Jan 4 05:25:45 2005 EST (UT-5h) templ

F1: 100.585

F2: 1.000

SW1: 25126

OF1: 10057.2

PTS1d: 32768

EX:

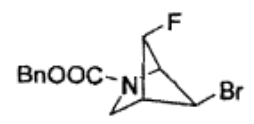
PW: 5.7 usec

PD: 2.0 sec

NA: 12000

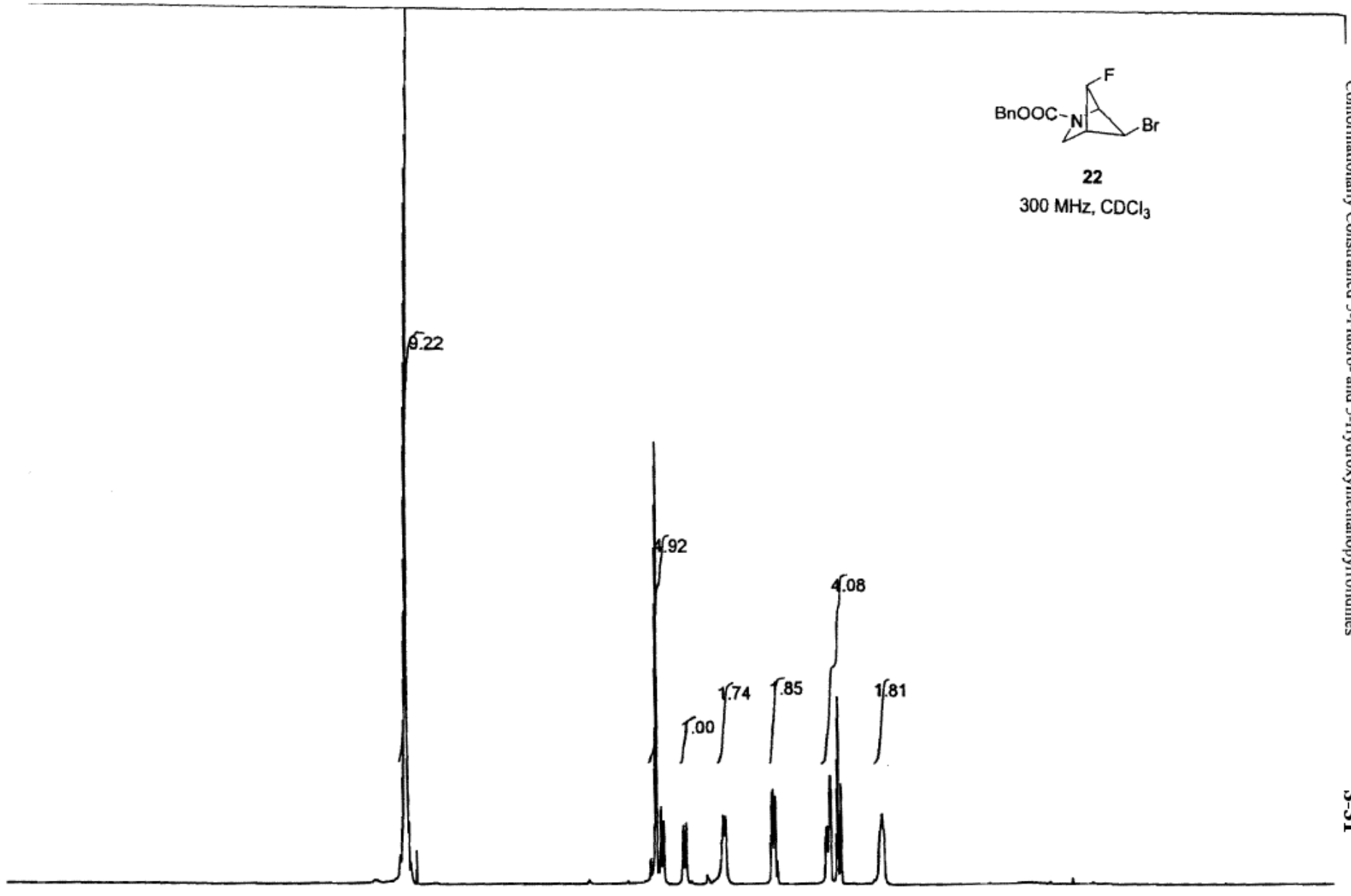
LB: 2.0

WinNuts - \$FangYU.J



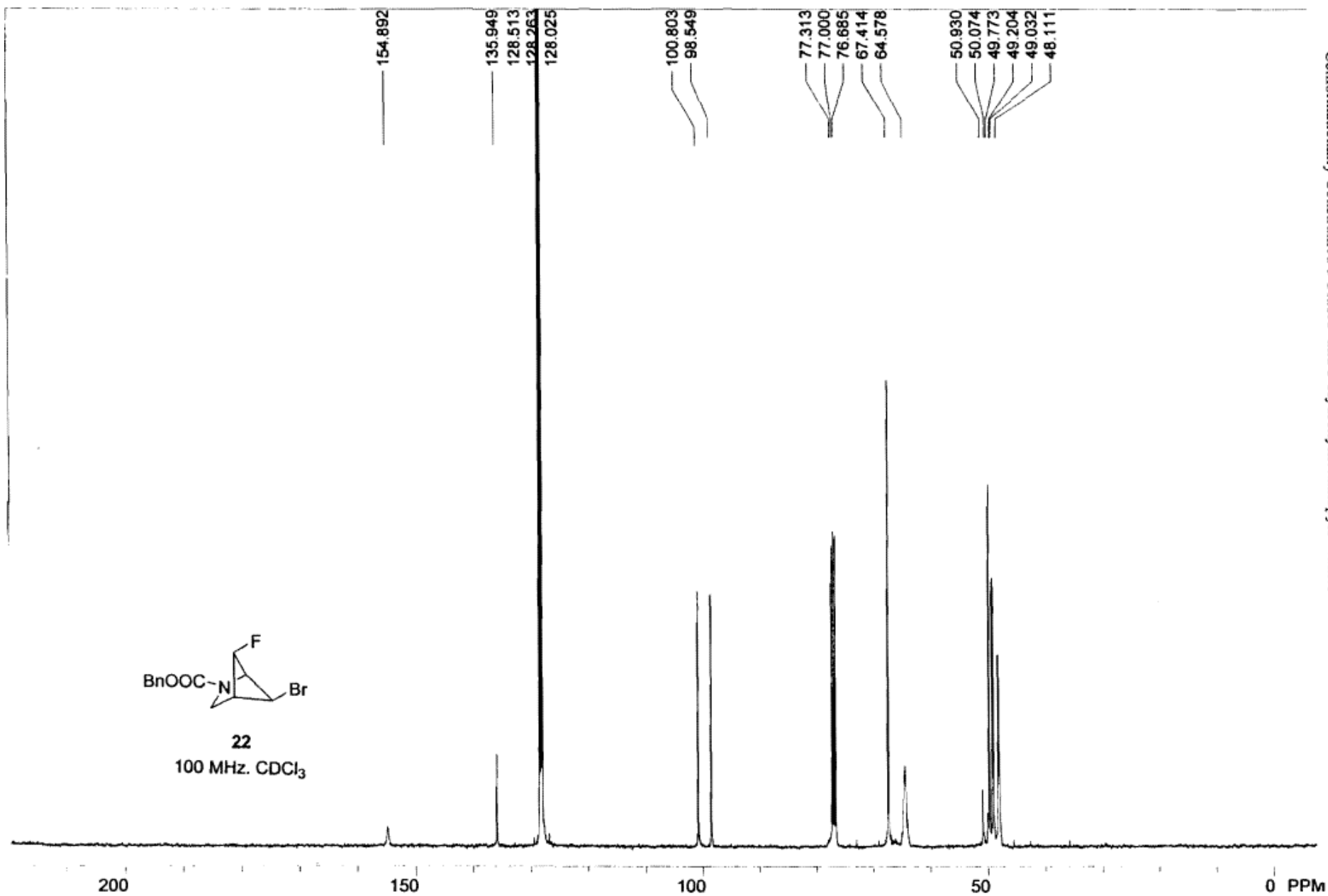
22

300 MHz, CDCl₃



10 8 6 4 2 0 PPM

xpa/100033_09Mar2004				USER: -- DATE: Mar 9 2004			
F1: 299.986	F2: 75.439	SW1: 3600	OF1: 1500.0	PTS1d: 16384			
X: s2pul	PW: 4.4 usec	PD: 1.0 sec	NA: 8	LB: 0.0	WinNuts - \$PROTON.fid		



NZ[2.1.1]F, Br, carbon2HR.atm.

USER: temple -- DATE: Apr 4 00:04:27 2007 EDT (UT-4h) templ

F1: 100.628 F2: 1.000

SW1: 23148

OF1: 10575.6

PTS1d: 32768

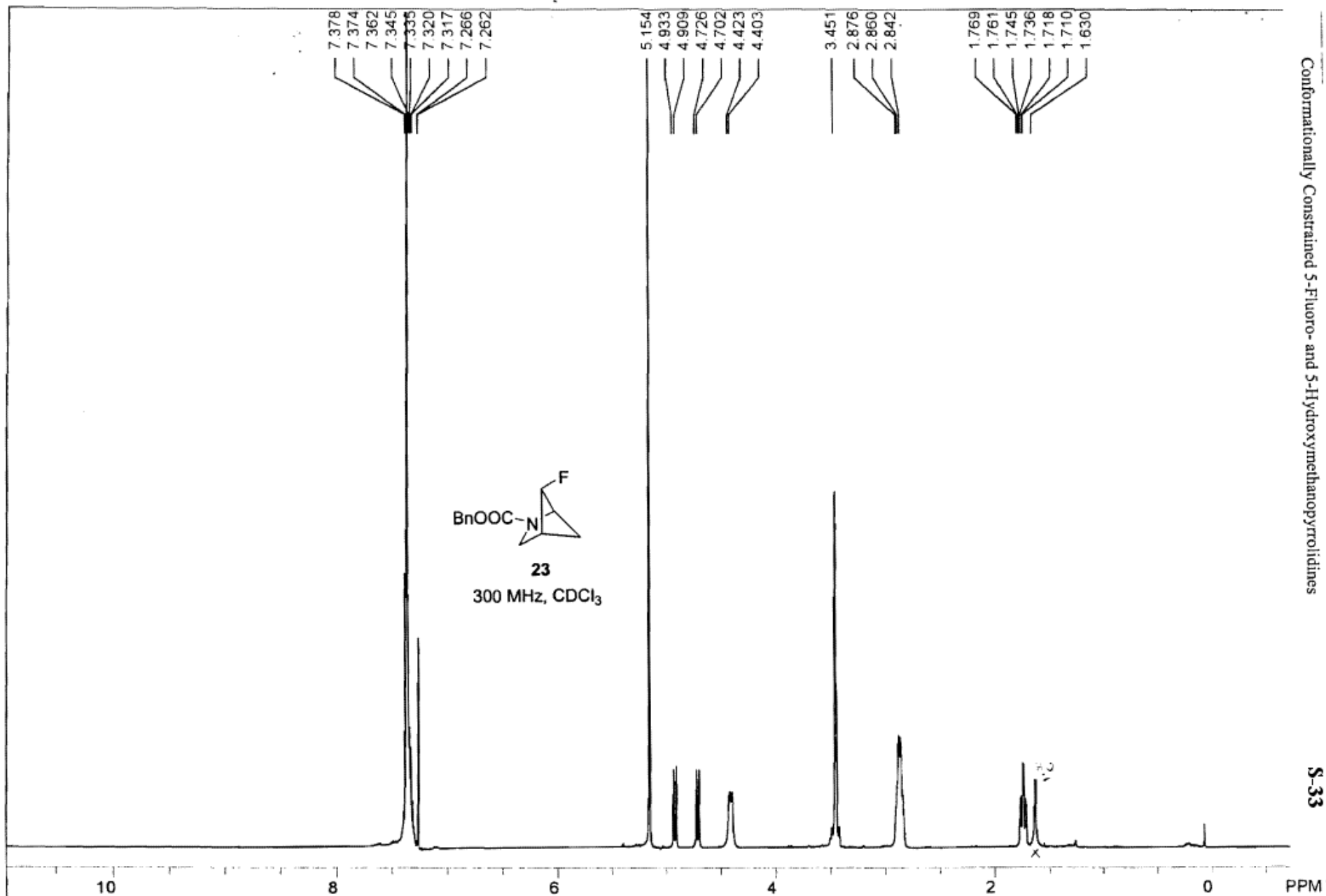
EX: PW: 5.7 usec

PD: 2.0 sec

NA: 4048

LB: 3.0

WinNuts - NZ[2.1.1]F, Br--Carbon

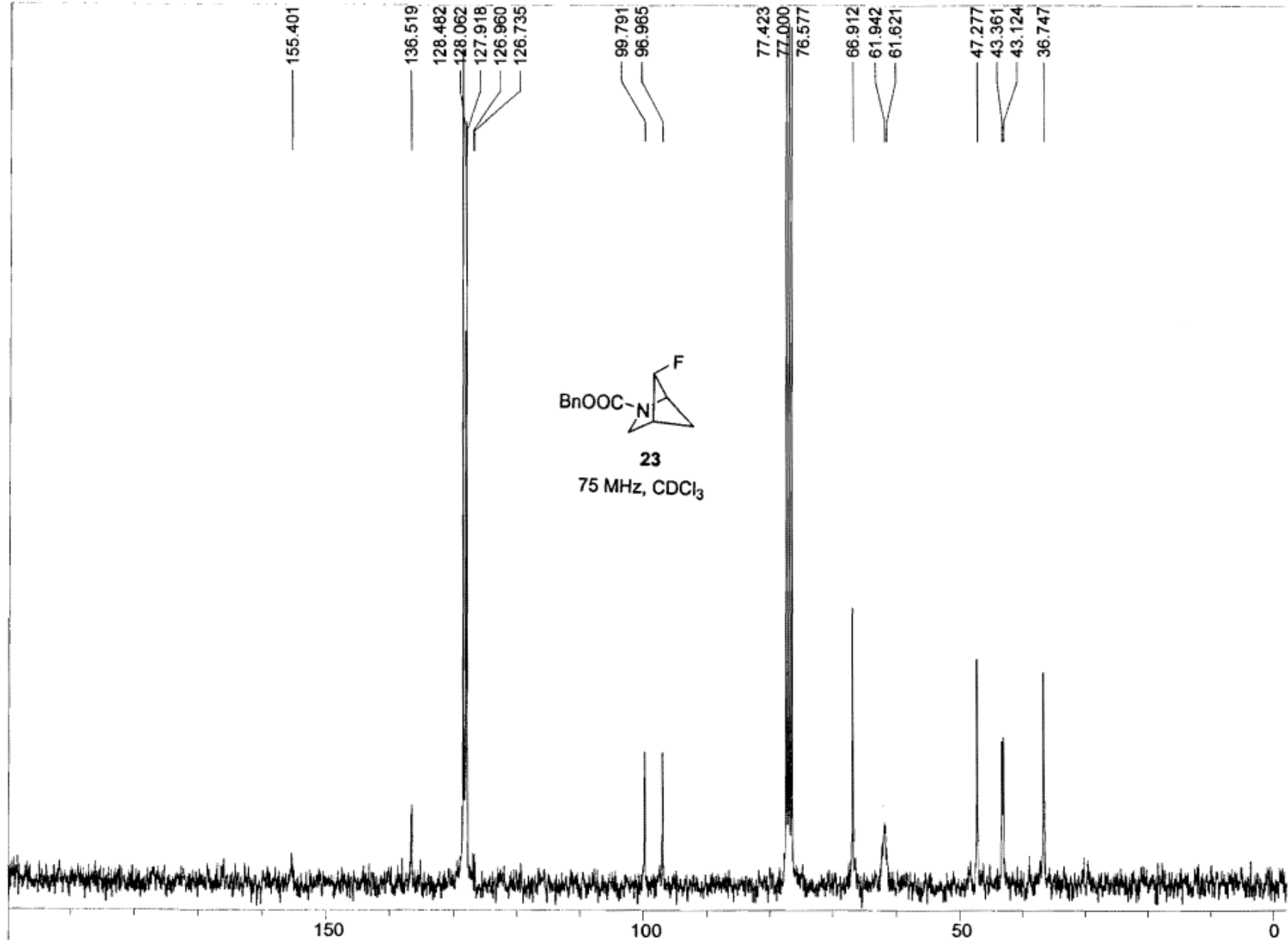


deepa/ncbzFpure_20Nov2006

USER: -- DATE: Nov 20 2006

F1: 300.018	F2: 300.018	SW1: 3600	OF1: 1483.1	PTS1d: 16384
EX: s2pul	PW: 4.0 usec	PD: 1.0 sec	NA: 8	LB: 0.2

WinNuts - ncbzF211

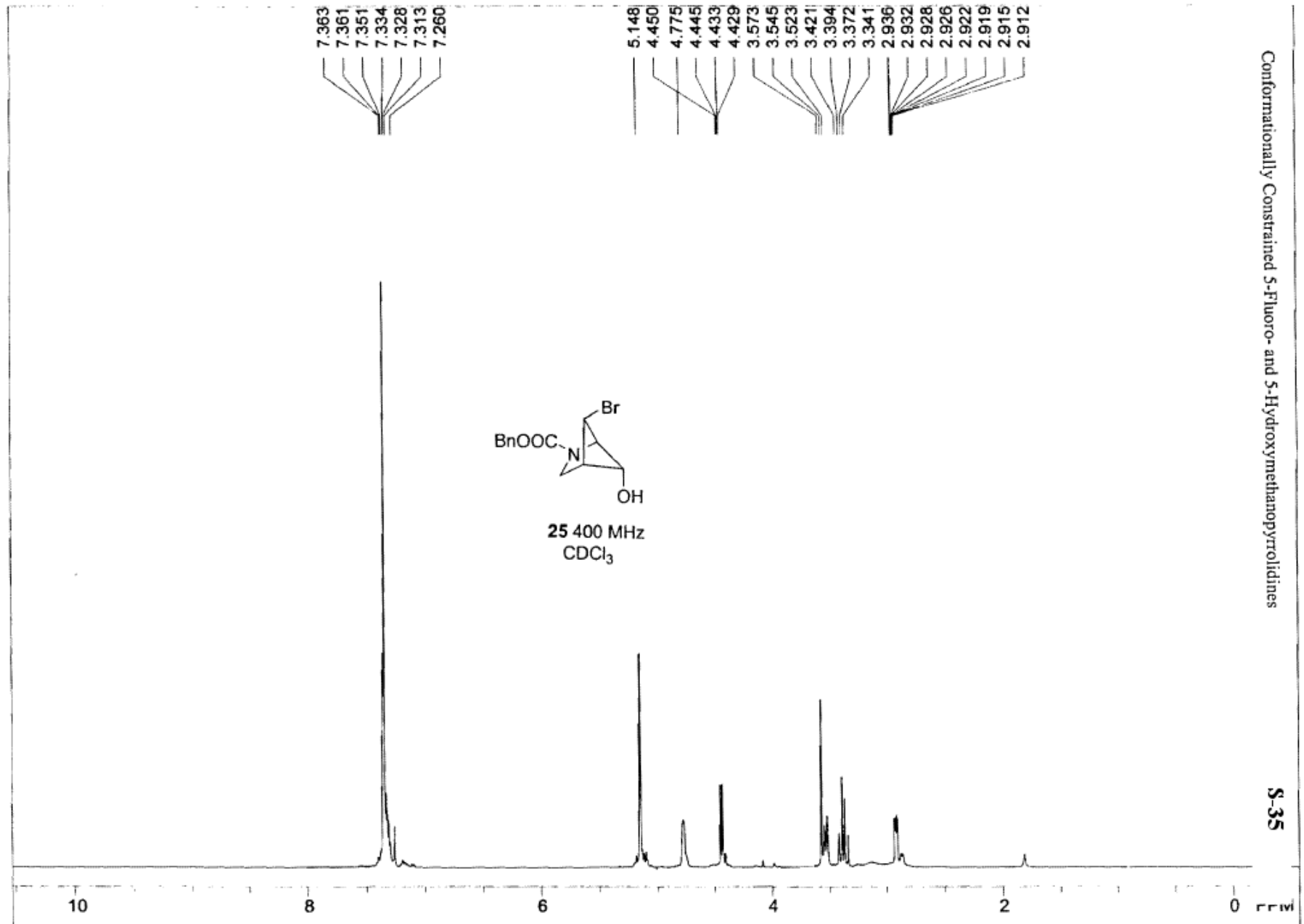


N-Benzyloxy-2-azabicyclo-5-anti-fluoro-[2.1.1]-hexane

USER: -- DATE: Nov 20 2003

F1: 75.438	F2: 299.986	SW1: 15842	OF1: 7144.1	PTS1d: 28754 , 65536
EX: s2pul	PW: 3.9 us	PD: 1.0 sec	NA: 896	LB: 3.6

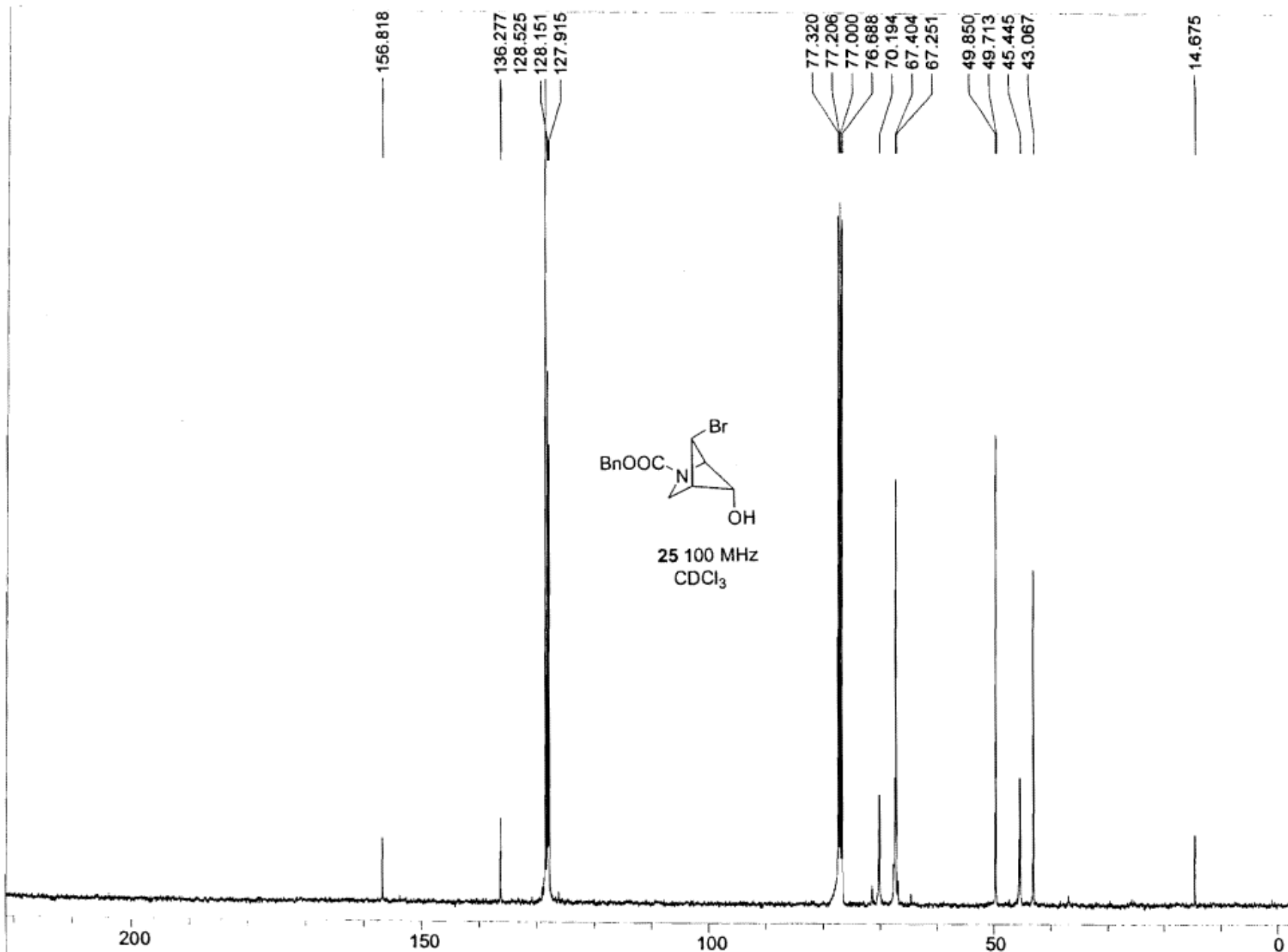
Nuts - nutsproc



NZ[2.1.1] syn-OH, anti-Br, proton, atm,			USER: temple -- DATE: Jul 13 18:01:52 2008 EDT (UT-4h) templ			
F1: 400.130	F2: 1.000	SW1: 8013		OF1: 2004.8		PTS1d: 32768
EX:	PW: 9.8 us	PD: 1.0 sec	NA: 16	LB: 0.1	Nuts - NZ[2.1.1]syn-OH, anti-Br--H--eram-1380	

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-36

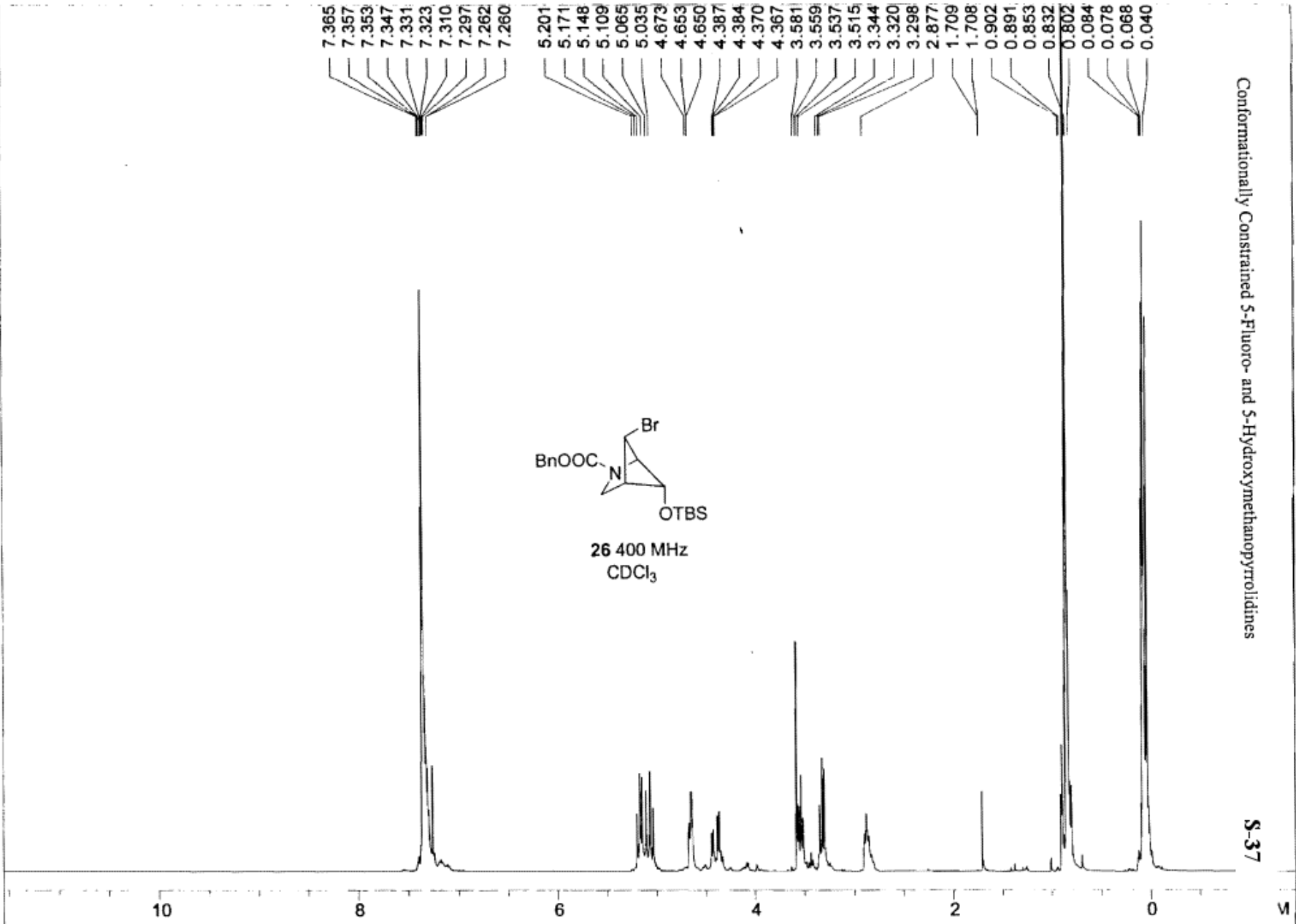
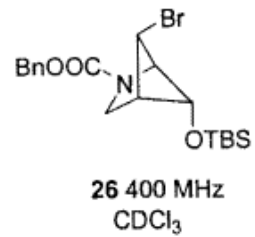


NZ[2.1.1]syn-OH, anti-Br, carbonOVNTE, atm.				USER: temple -- DATE: Mar 4 06:42:08 2008 EST (UT-5h) templ			
F1: 100.613	F2: 1.000	SW1: 25126		OF1: 10019.6		PTS1d: 32768	
EX:	PW: 5.7 us	PD: 2.0 sec	NA: 8000	LB: 3.0	Nuts - NZ[2.1.1]syn-OH, anti-Br--C--eram-962		

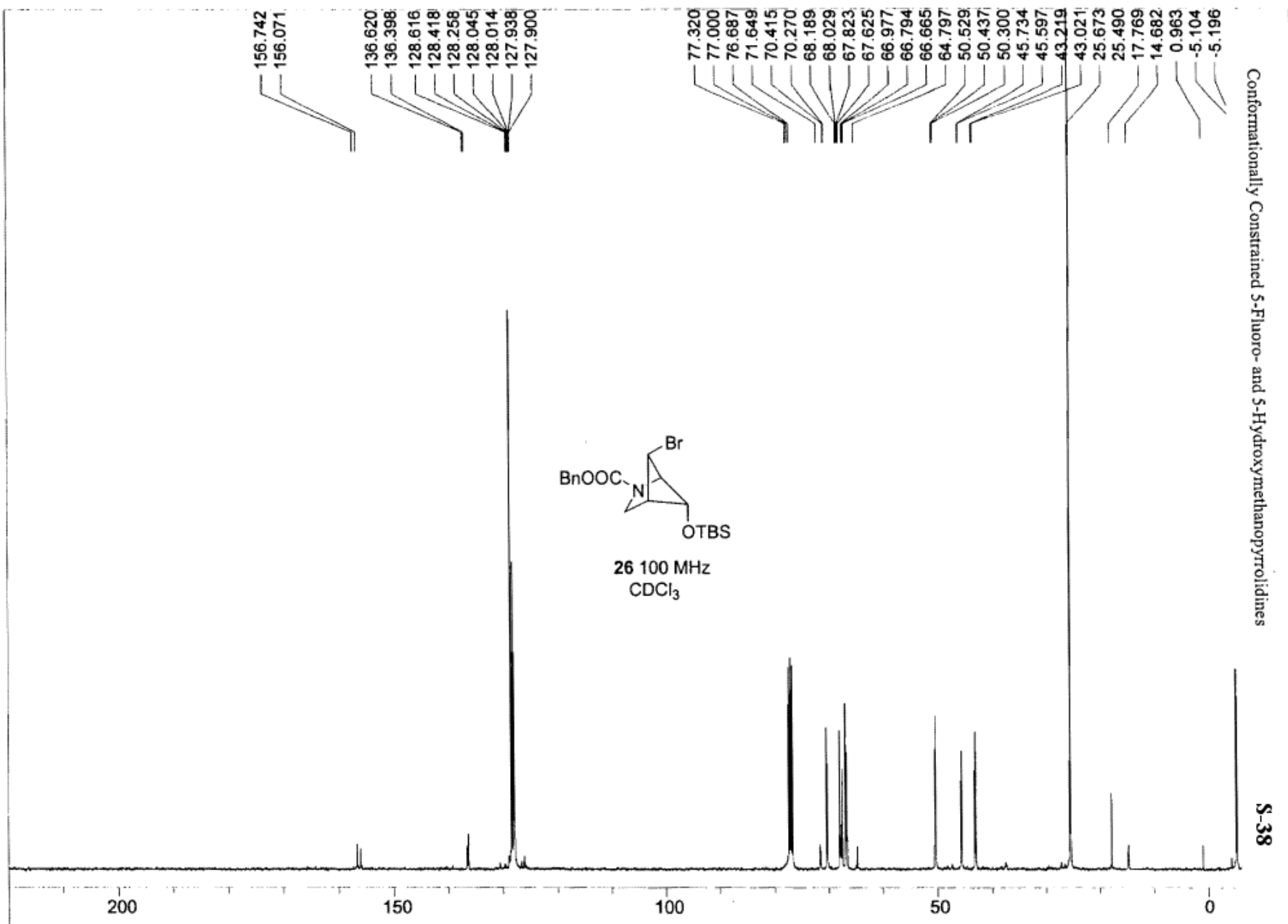
Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-37

7.365
7.357
7.353
7.347
7.331
7.323
7.310
7.297
7.262
7.260
5.201
5.171
5.148
5.109
5.065
5.035
4.673
4.653
4.650
4.387
4.384
4.370
4.367
3.581
3.559
3.537
3.515
3.344
3.320
3.298
2.877
1.709
1.708
0.902
0.891
0.853
0.832
0.802
0.084
0.078
0.068
0.040



NZ[2.1.1]anti-Br, syn-OTBS, proton.atm.				USER: temple -- DATE: Apr 16 23:24:29 2008 EDT (UT-4h) templ			
F1: 400.130	F2: 1.000	SW1: 8013		OF1: 2004.6		PTS1d: 32768	
EX:		PW: 9.8 us	PD: 1.0 sec	NA: 16	LB: 0.1	Nuts - NZ[2.1.1]syn-OTBS, anti-Br--H--eram-1072	



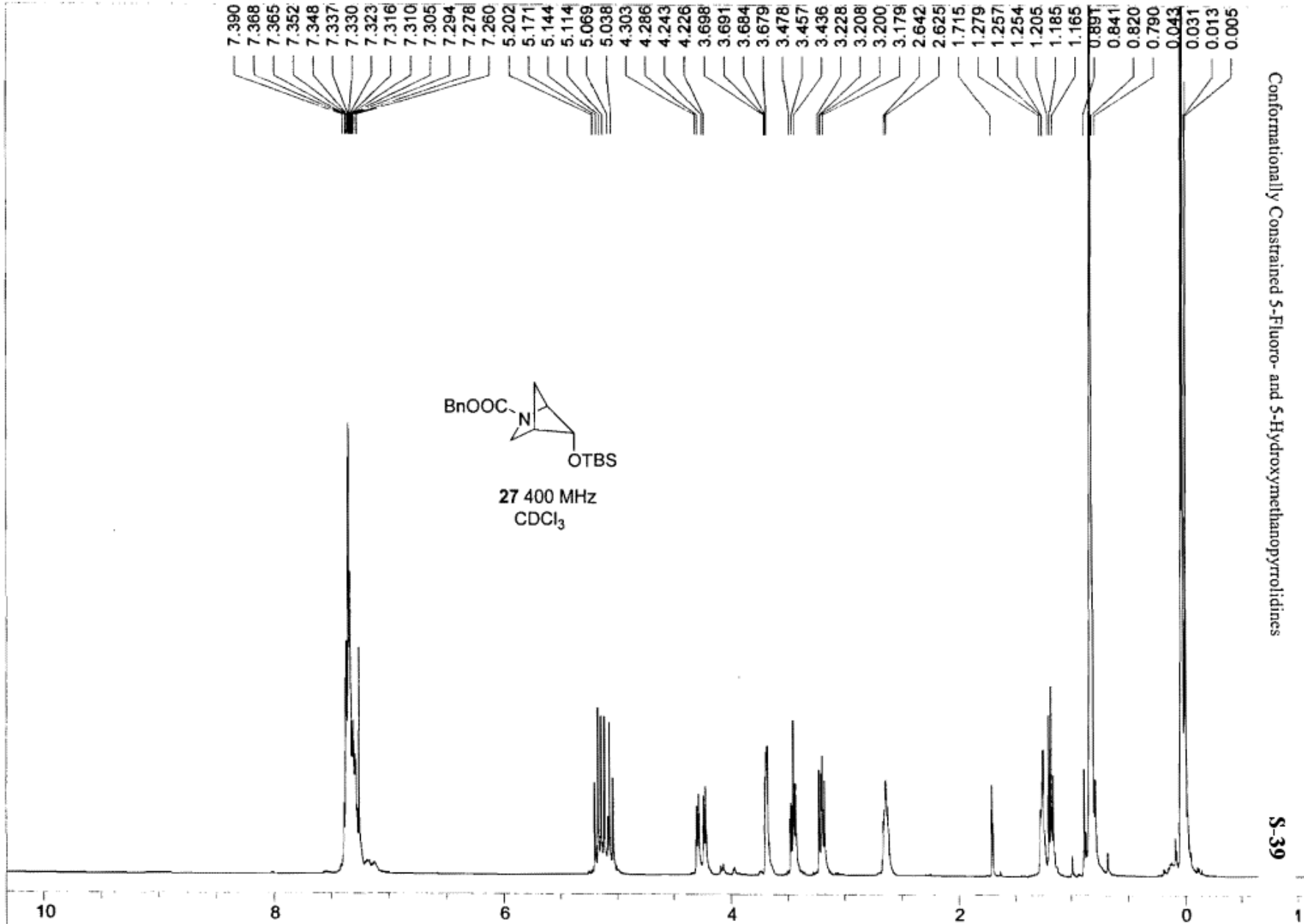
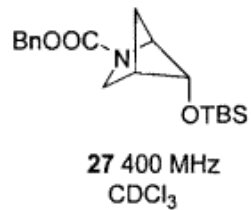
Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

Ncbz[2.1.1]syn-OTBS, anti-Br, carbon1 HR atm.				USER: temple -- DATE: Jun 28 23:07:43 2008 EDT (UT-4h) templ			
F1: 100.613	F2: 1.000	SWI: 25126		OF1: 10017.3		PTS1d: 32768	
EX:		PW: 5.7 us	PD: 2.0 sec	NA: 3200	LB: 3.0	Nuts - NZ[2.1.1]syn-OTBS, anti-Br--C--eram-1320	

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-39

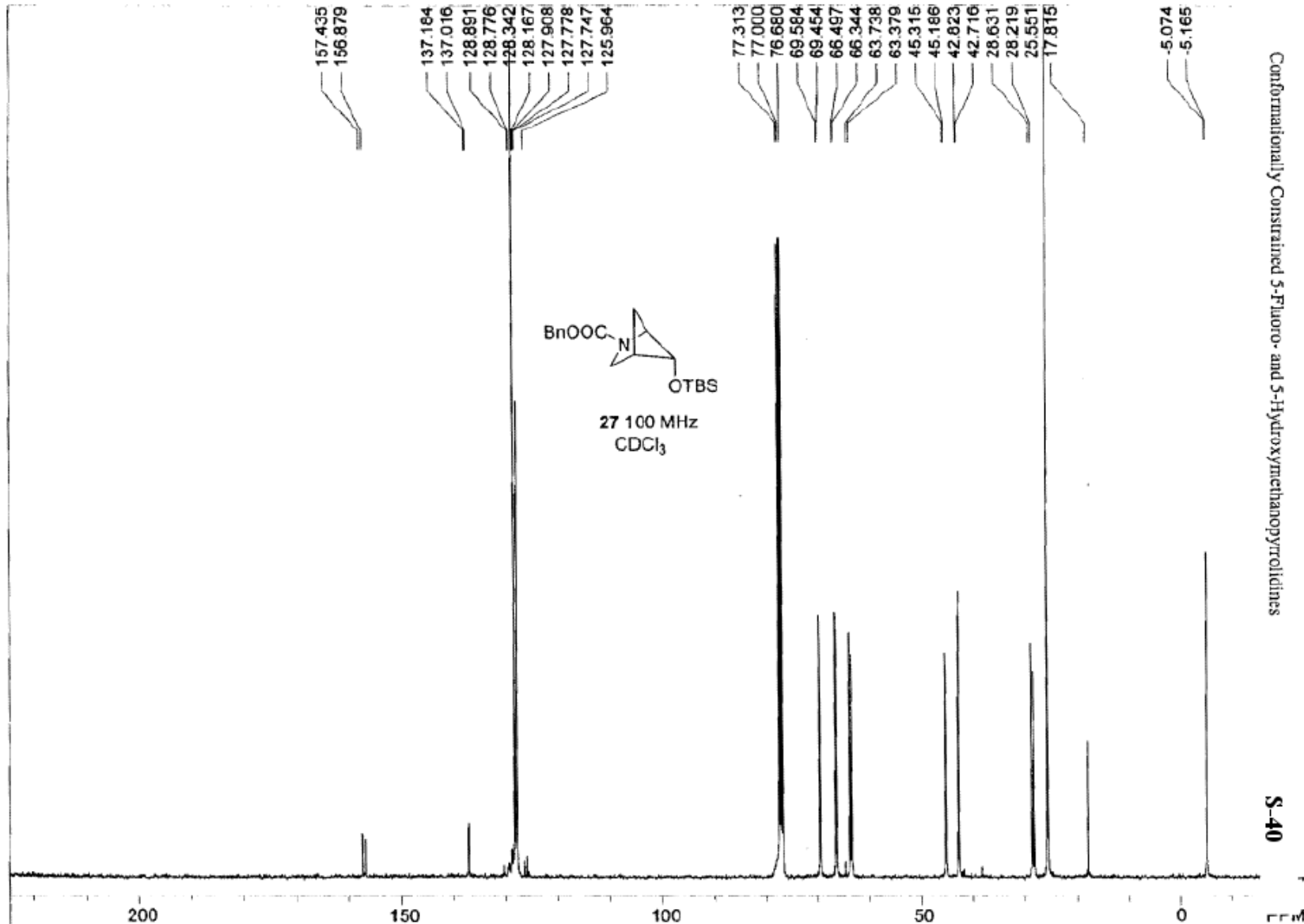
7.390
7.368
7.365
7.352
7.348
7.337
7.330
7.323
7.316
7.310
7.305
7.294
7.278
7.260
5.202
5.171
5.144
5.114
5.069
5.038
4.303
4.286
4.243
4.226
3.698
3.691
3.684
3.679
3.478
3.457
3.436
3.228
3.208
3.200
3.179
2.642
2.625
1.715
1.279
1.257
1.254
1.205
1.185
1.165
0.891
0.841
0.820
0.790
0.043
0.031
0.013
0.005



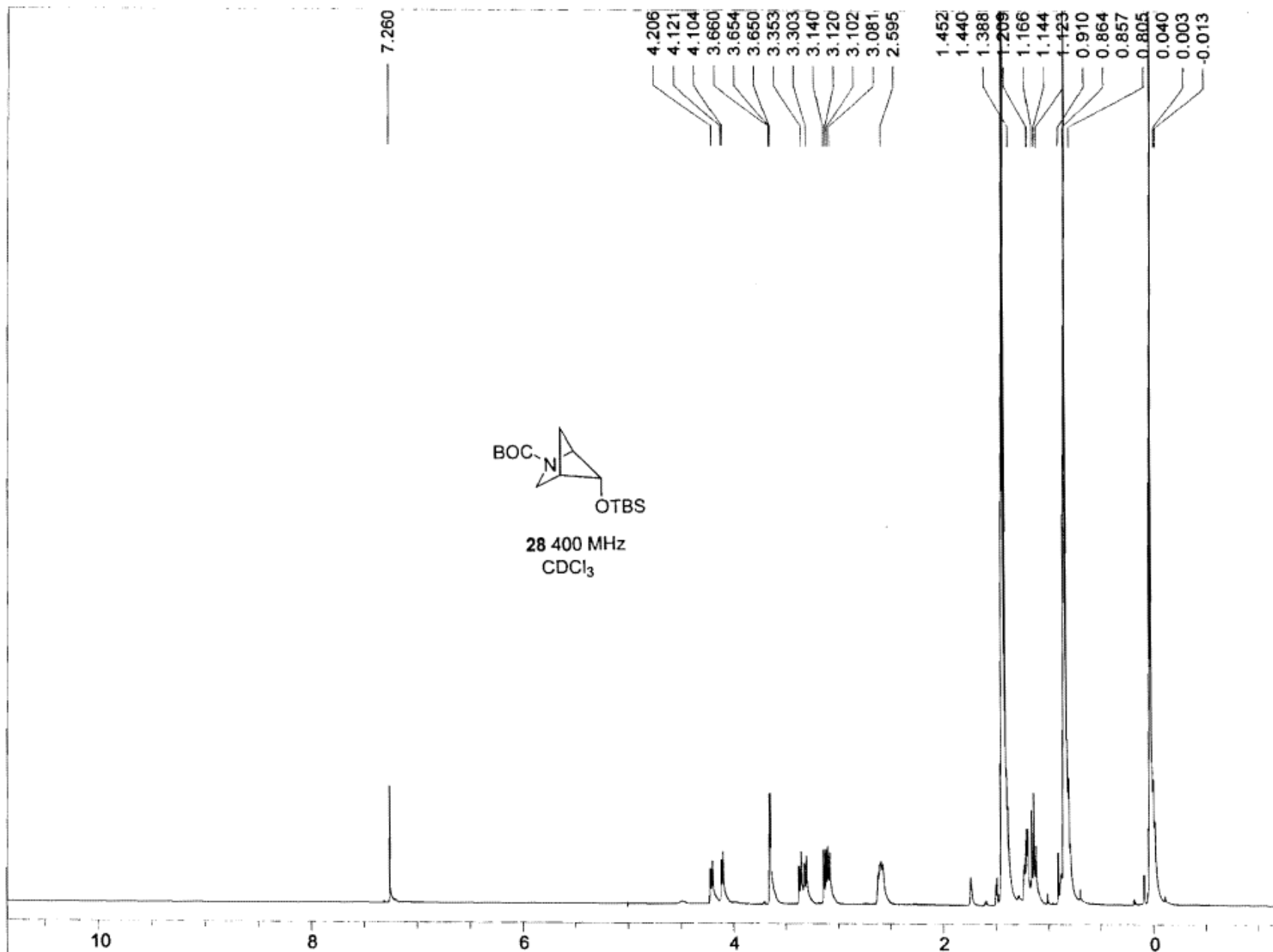
NZ[2.1.1]syn-OTBS, proton.atm.				USER: temple -- DATE: Apr 16 22:54:39 2008 EDT (UT-4h) templ			
F1: 400.130	F2: 1.000	SW1: 8013		OF1: 2004.0		PTS1d: 32768	
EX:		PW: 9.8 us	PD: 1.0 sec	NA: 16	LB: 0.1	Nuts - NZ[2.1.1]syn-OTBS-H-eram-1071	

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-40



NCbz[2.1.1]syn-OTBS, carbonOVNTE.all				USER: temple -- DATE: Jun 29 06:46:43 2008 EDT (UT-4h) temp1			
F1: 100.613	F2: 1.000	SW1: 25126		OF1: 10019.6		PTS[d: 32768	
EX:		PW: 5.7 us	PD: 2.0 sec	NA: 8000	LB: 3.0	Nuts - NZ[2.1.1]syn-OTBS--C--eram-1322	



NBoc[2.1.1]syn-OTBS, proton.atm,

USER: temple -- DATE: Apr 16 22:43:50 2008 EDT (UT-4h) templ

F1: 400.130

F2: 1.000

SW1: 8013

OF1: 2004.0

PTS1d: 32768

EX:

PW: 9.8 us

PD: 1.0 sec

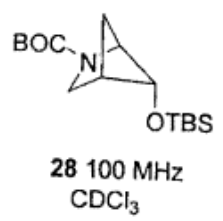
NA: 16

LB: 0.1

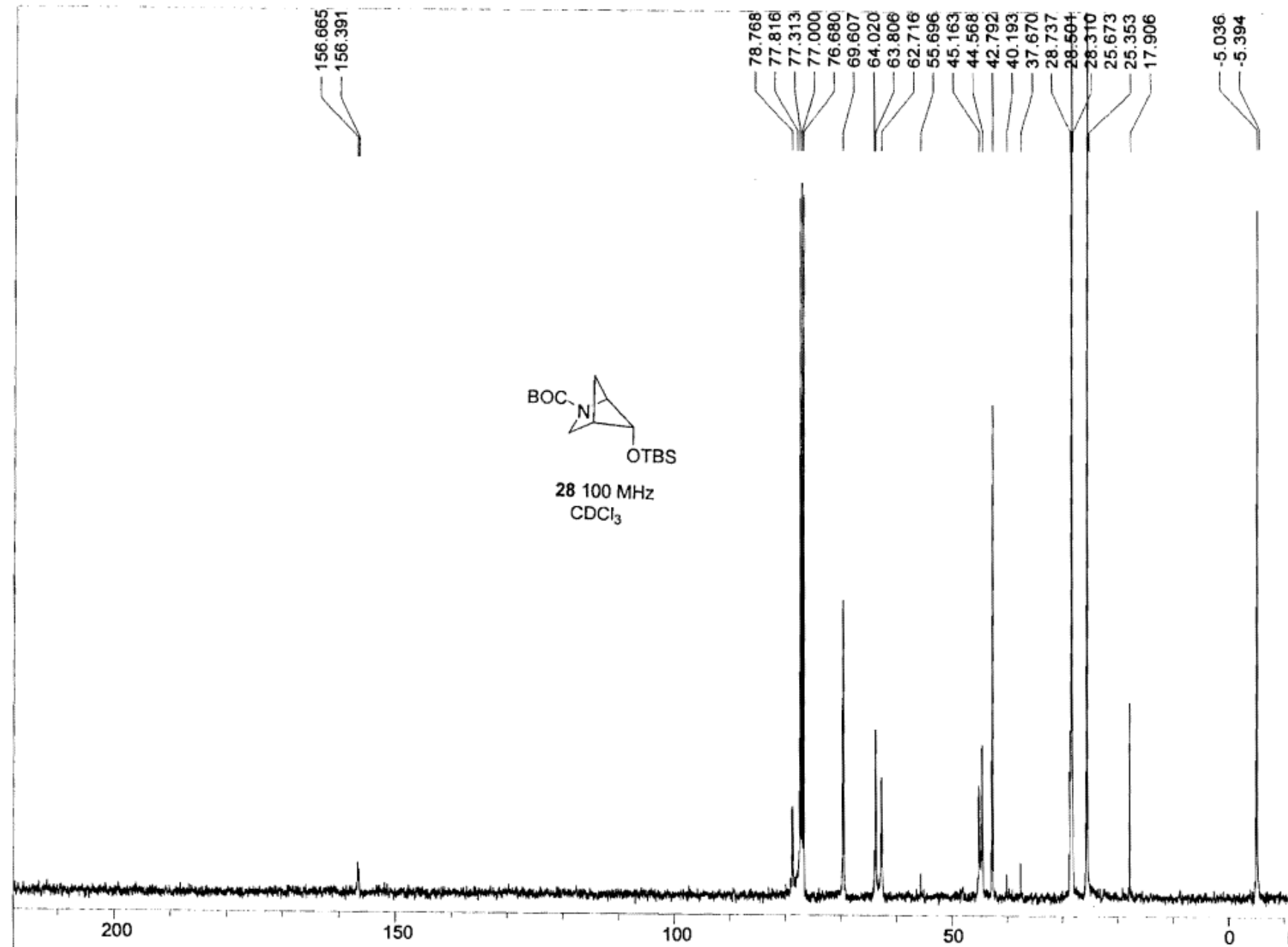
Nuts - NBoc[2.1.1] syn-OTBS--H--eram-1070

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

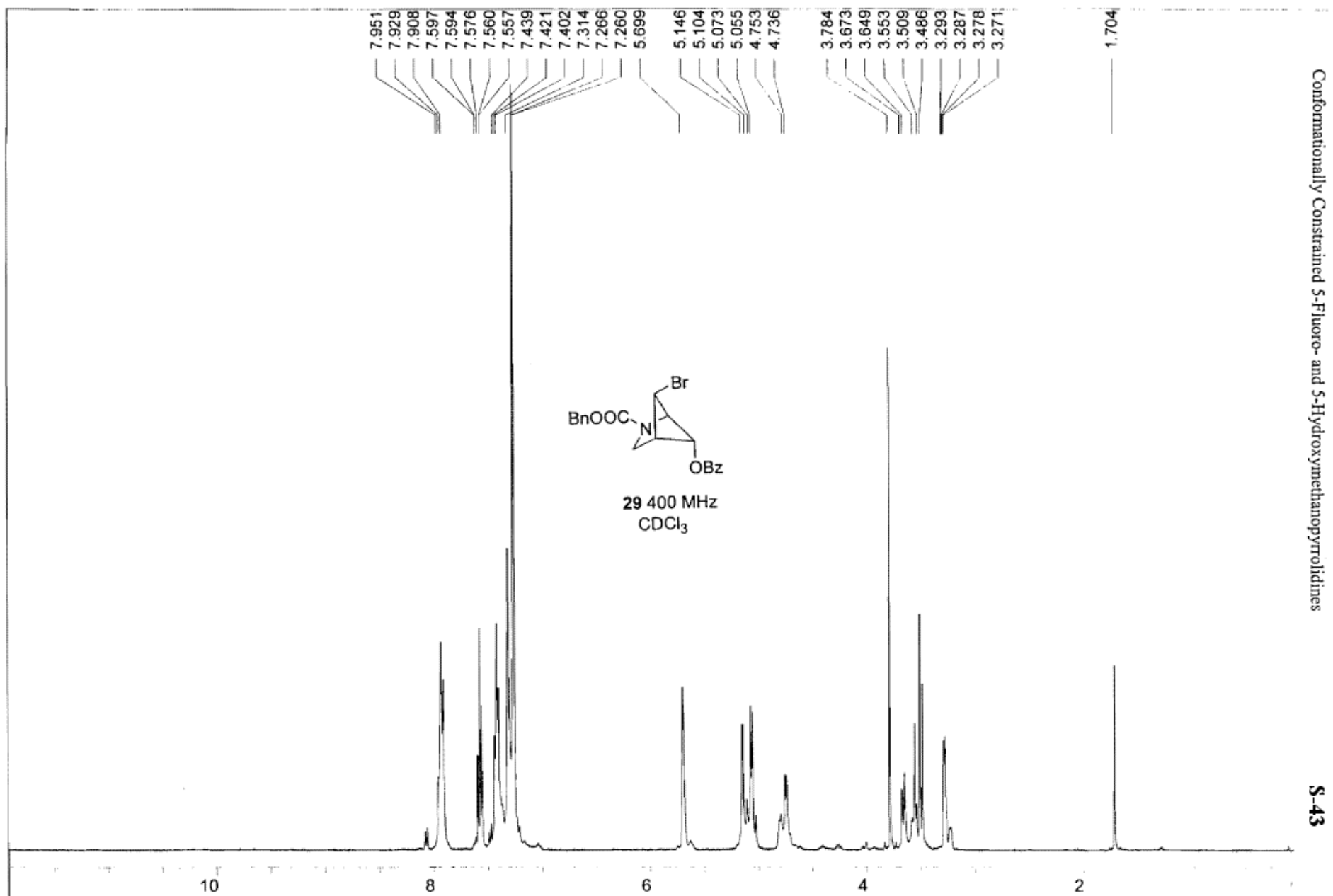
S-42



- 156.665
- 156.391
- 78.768
- 77.816
- 77.313
- 77.000
- 76.680
- 69.607
- 64.020
- 63.806
- 62.716
- 55.696
- 45.163
- 44.568
- 42.792
- 40.193
- 37.670
- 28.737
- 28.504
- 28.310
- 25.673
- 25.353
- 17.906
- 5.036
- 5.394



NBoc[2.1.1] syn-OTBS, carbon1HR.atm.				USER: temple -- DATE: Jun 27 23:05:38 2008 EDT (UT-4h) templ			
FI: 100.613	F2: 1.000	SW1: 25126		OF1: 10021.1		PTS1d: 32768	
EX:		PW: 5.7 us	PD: 2.0 sec	NA: 2200	LB: 3.0	Nuts - NBoc[2.1.1] syn-OTBS---C--eram-1312	



NZ[2.1.1] syn-OBz, anti-Br, proton.atm,

USER: temple -- DATE: Jul 24 21:08:48 2008 EDT (UT-4h) templ

F1: 400.130

F2: 1.000

SW1: 8013

OF1: 2007.2

PTS1d: 32768

EX:

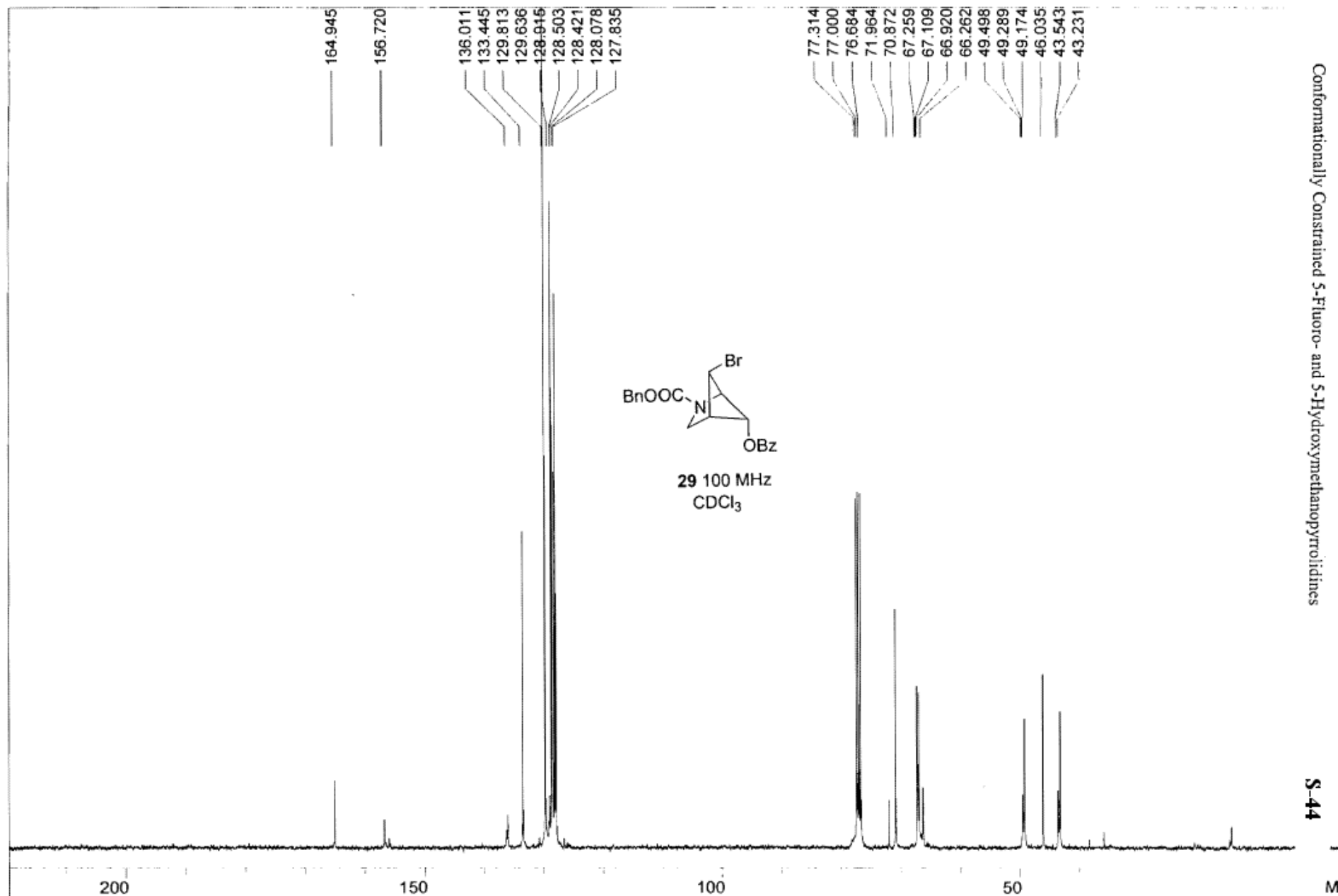
PW: 9.8 usec

PD: 1.0 sec

NA: 16

LB: 0.1

WinNuts - NZ[2.1.1]syn-OBz, anti-Br-H-eram-1425



NZ[2.1.1] syn-OBz, anti-Br, carbon1HR.atm,

USER: temple -- DATE: Jul 25 00:27:02 2008 EDT (UT-4h) templ

F1: 100.613

F2: 1.000

SW1: 25126

QF1: 10017.9

PTS1d: 32768

EX:

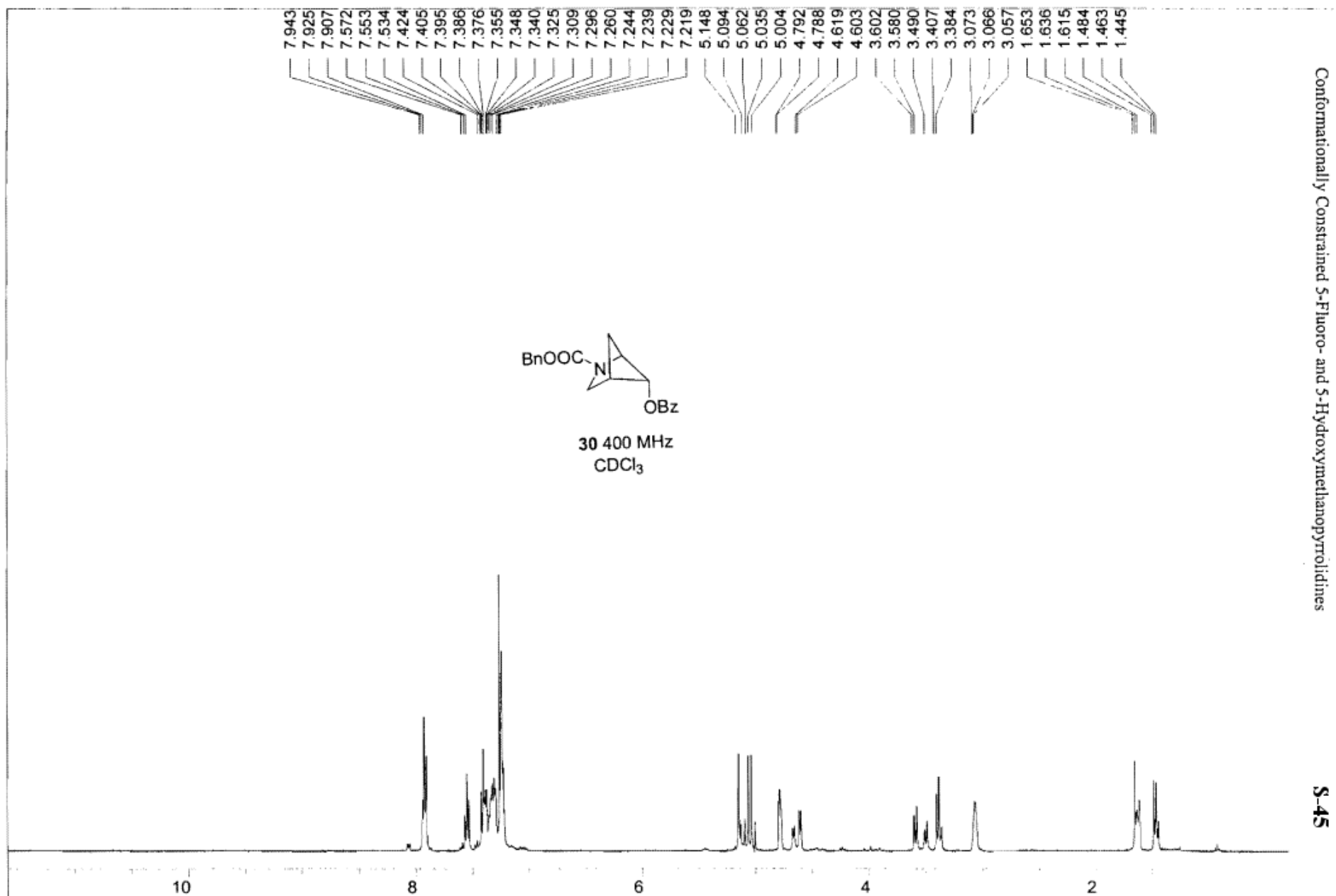
PW: 5.7 usec

PD: 2.0 sec

NA: 3524

LB: 3.0

WinNuts - \$RAM.1



NZ[2.1.1] syn-OBz, proton, atm.

USER: temple -- DATE: Nov_16 18:44:01 2008 EST (UT-5h) templ

F1: 400.130 F2: 1.000

SW1: 8013

OF1: 2004.6

PTS1d: 32768

EX:

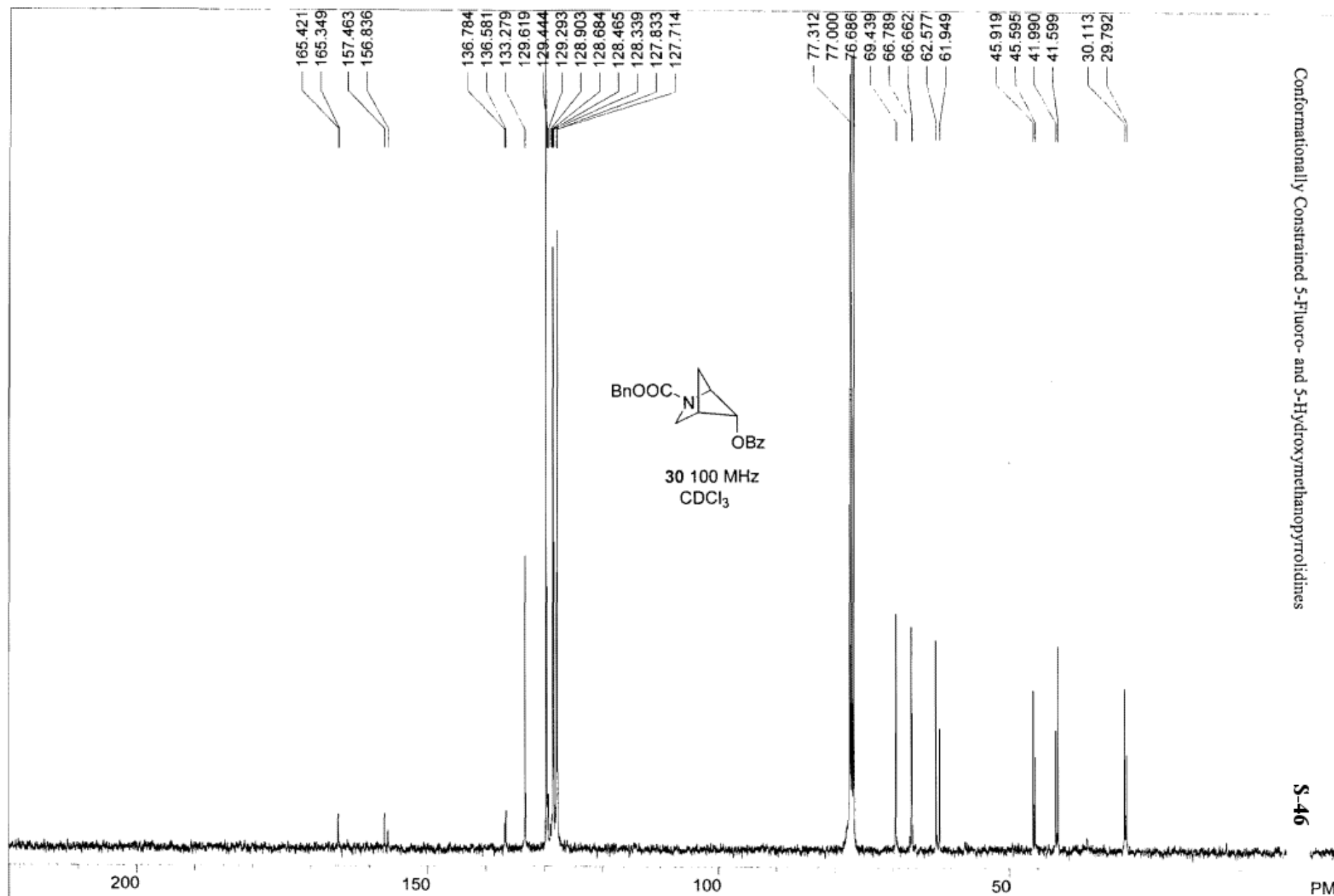
PW: 9.8 usec

PD: 1.0 sec

NA: 16

LB: 0.1

WinNuts - NZ[2.1.1]syn-OBz--H--eram-1668



NZ[2.1.1] syn-OBz, carbon1HR.atm,

USER: temple -- DATE: Nov 16 21:35:15 2008 EST (UT-5h) templ

F1: 100.613

F2: 1.000

SW1: 25126

OF1: 10020.9

PTS1d: 32768

EX:

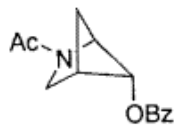
PW: 5.7 usec

PD: 2.0 sec

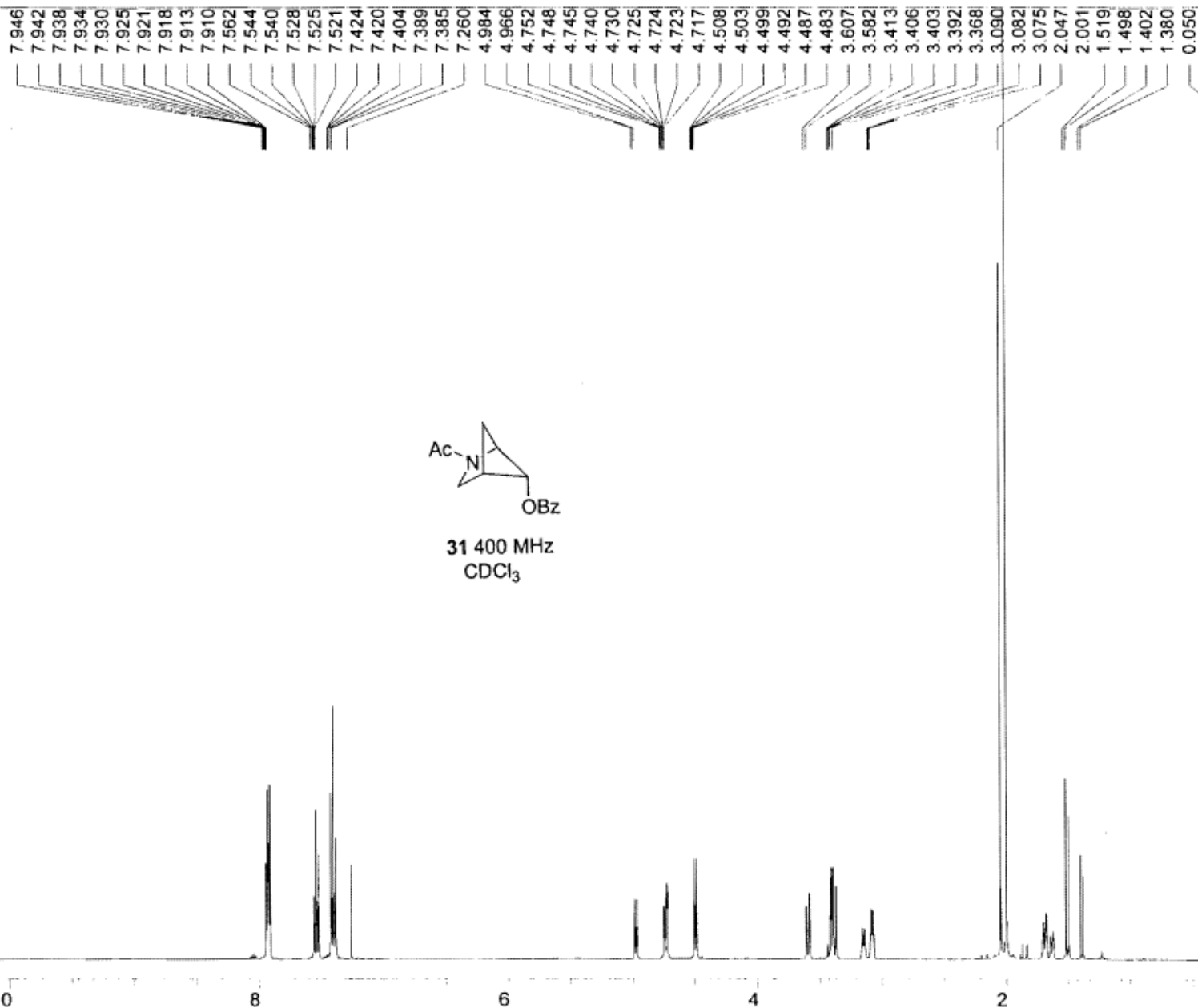
NA: 3024

LB: 3.0

WinNuts - NZ[2.1.1] syn-OBz--C--eram-1669



31 400 MHz
CDCl₃



NAC[2.1.1]syn-OBz, proton.atm,

USER: temple -- DATE: Nov 15 12:11:49 2008 EST (UT-5h) temp!

F1: 400.130

F2: 1.000

SW1: 8013

OF1: 2004.6

PTS1d: 32768

EX:

PW: 9.8 usec

PD: 1.0 sec

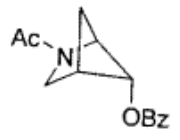
NA: 160

LB: 0.1

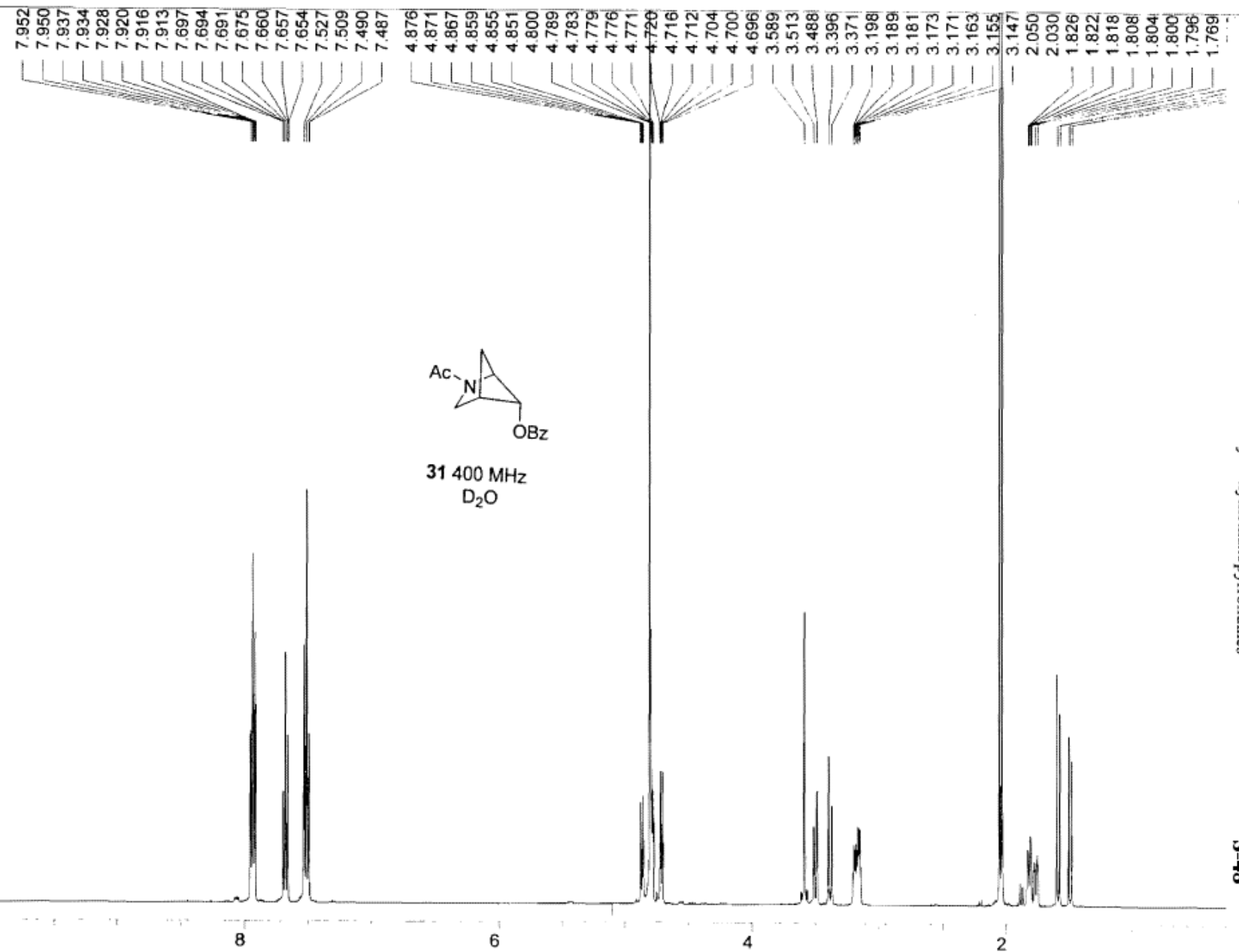
WinNuts - NAC[2.1.1]syn-OBz---H--cram-1665

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

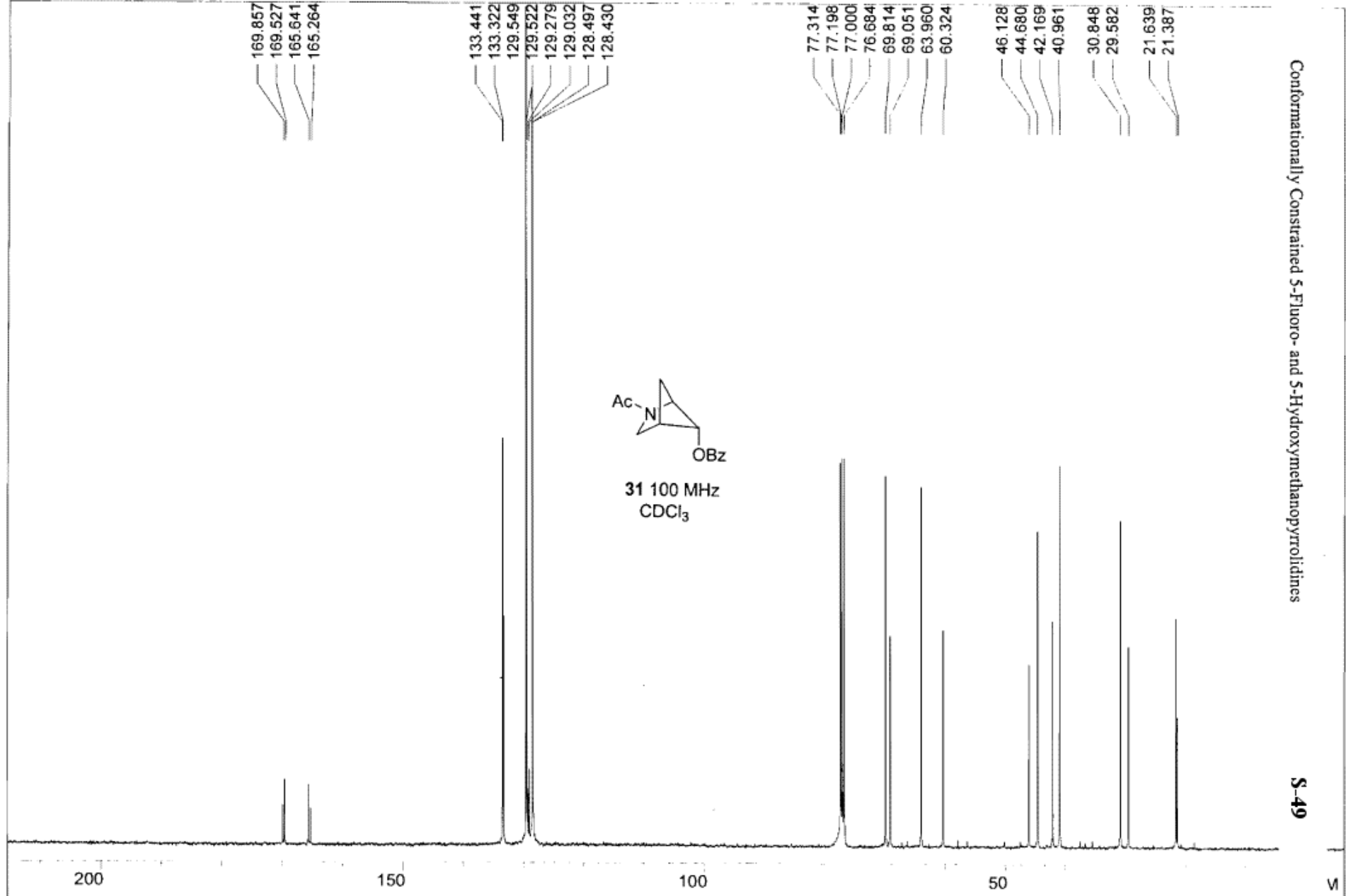
S-48



31 400 MHz
D₂O



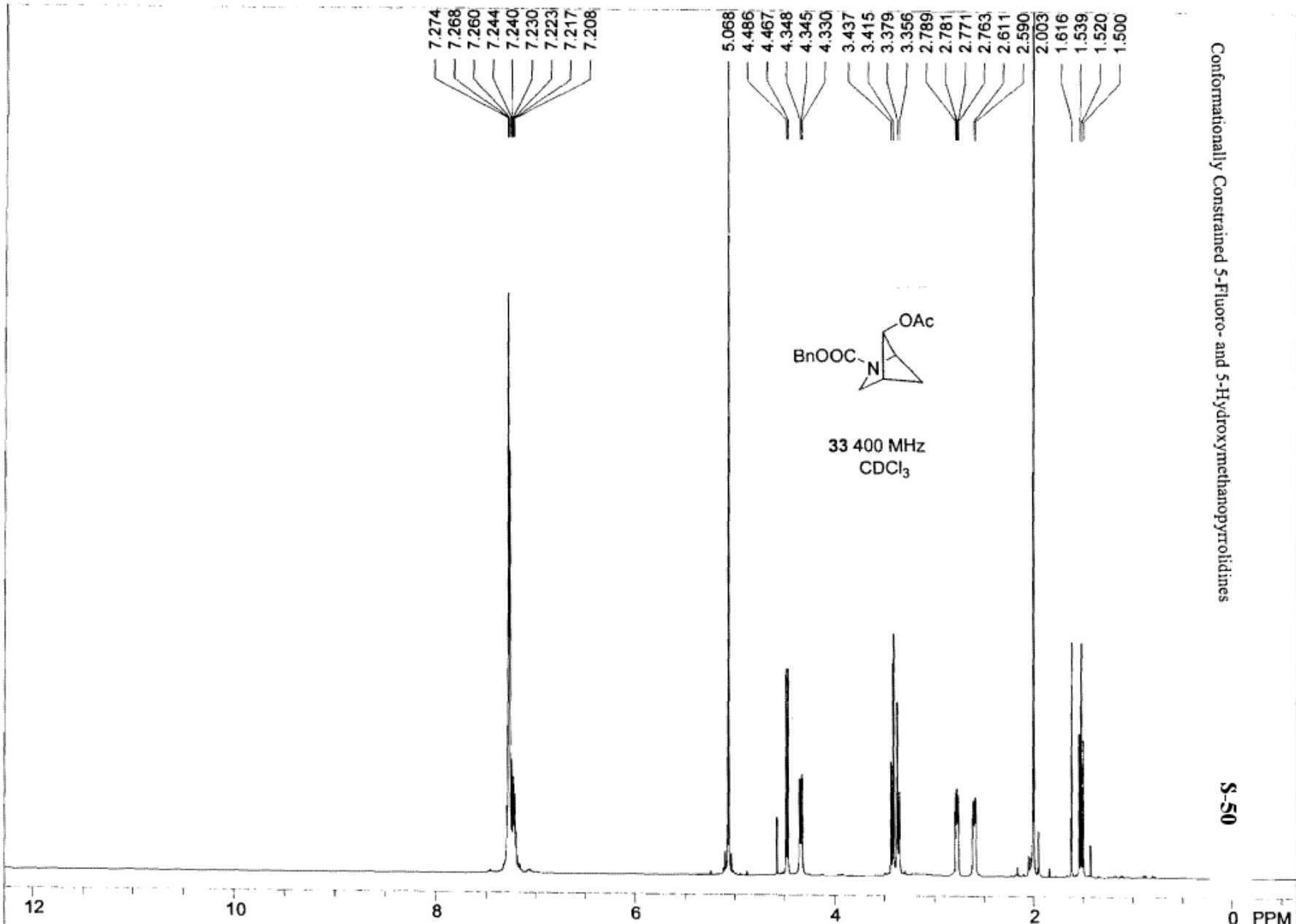
NAC[2.1.1] syn-OBz, proton10MIN.atm,		USER: temple -- DATE: Nov 22 22:17:52 2008 EST (UT-5h) templ			
F1: 400.130	F2: 1.000	SW1: 8278	OF1: 2041.5	PTS1d: 32768	
EX:	PW: 9.8 usec	PD: 1.0 sec	NA: 428	LB: 0.1	WinNuts NAC[2.1.1].syn-OBz---H--eram-1680 (D2O)



NAC[2.1.1] syn-OBz. carbonOVNTE.all.		USER: temple -- DATE: Nov 15 05:17:21 2008 EST (UT-5h) templ			
F1: 100.613	F2: 1.000	SW1: 25126	OF1: 10017.2	PTS1d: 32768	
EX:		PW: 5.7 usec	PD: 2.0 sec	NA: 8000	LB: 3.0
WinNuts - NAC[2.1.1] syn-OBz--C--eram-1664					

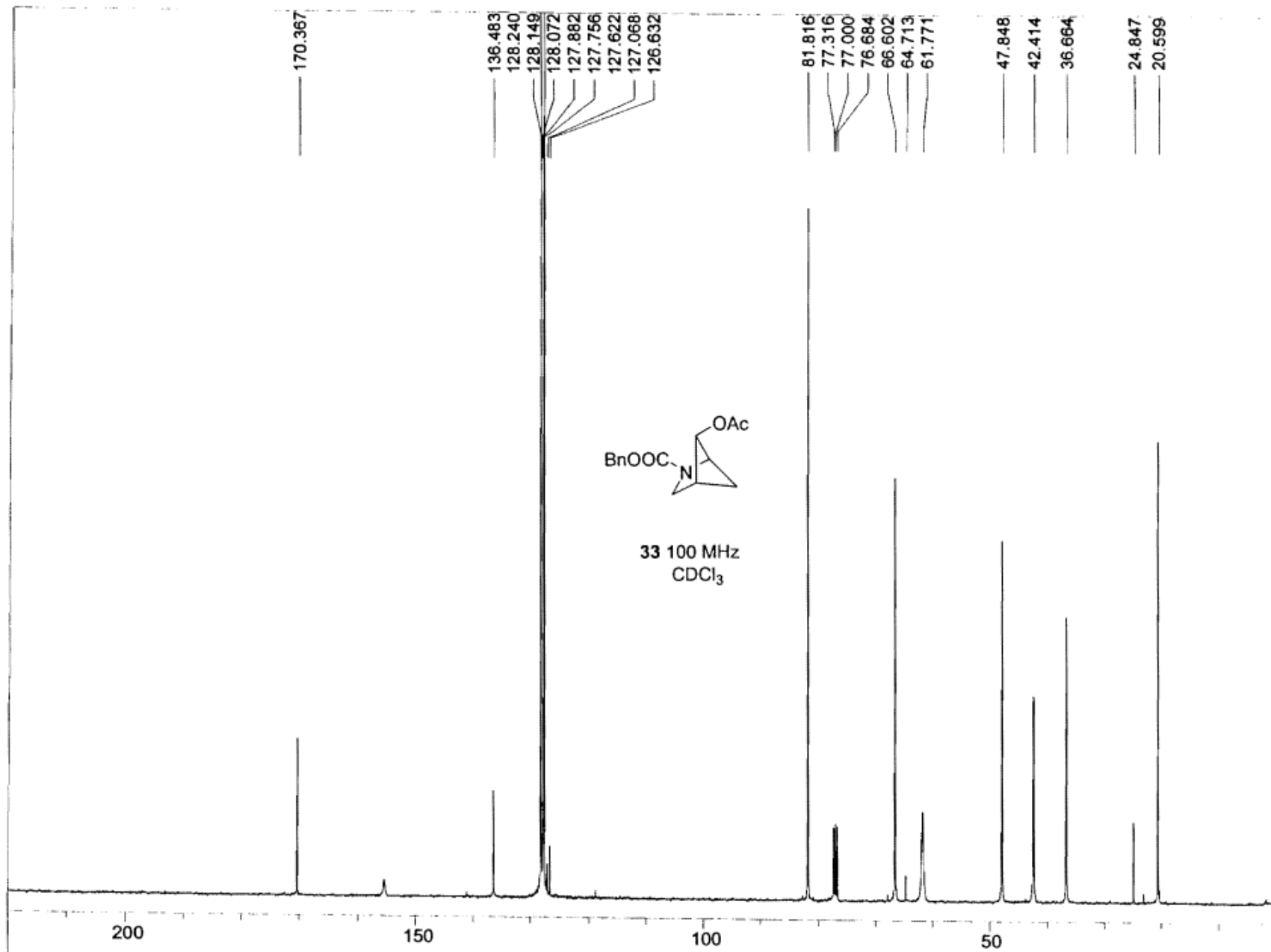
Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-50

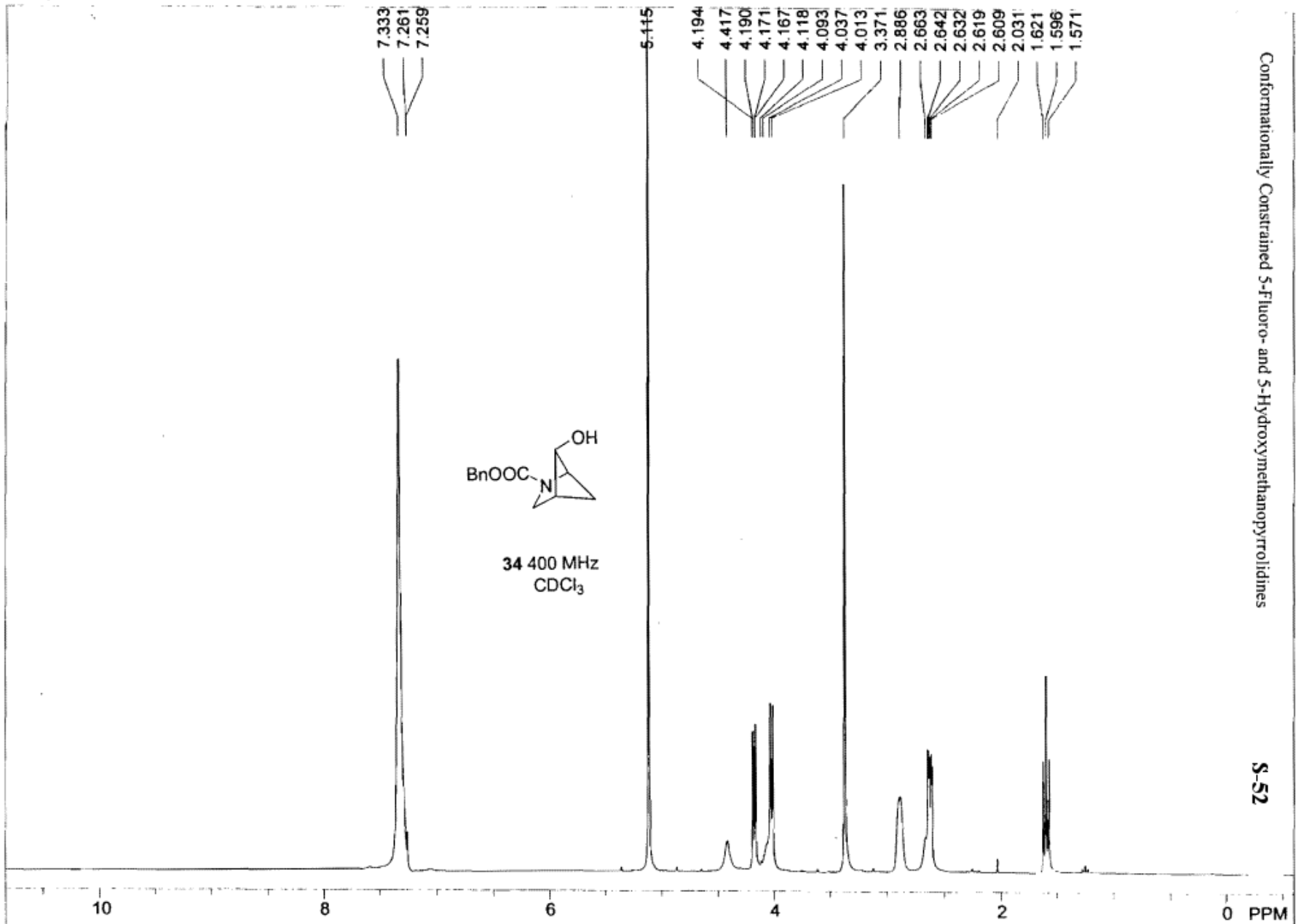


- 7.274
- 7.268
- 7.260
- 7.244
- 7.240
- 7.230
- 7.223
- 7.217
- 7.208
- 5.068
- 4.486
- 4.467
- 4.348
- 4.345
- 4.330
- 3.437
- 3.415
- 3.379
- 3.356
- 2.789
- 2.781
- 2.771
- 2.763
- 2.611
- 2.590
- 2.003
- 1.616
- 1.539
- 1.520
- 1.500

NZ[2.1.1]OAc, proton.atm.		USER: temple -- DATE: Oct 12 23:23:34 2007 EDT (UT-4h) templ			
F1: 400.191	F2: 1.000	SW1: 8278	OF1: 1980.4	PTS1d: 32768	
EX:		PW: 9.8 us	PD: 1.0 sec	NA: 16	LB: 0.1
Nuts - NZ[2.1.1] anti-OAc--H--eram-756					



NZ[2.1.1]OAc, carbon30MIN.atm.				USER: temple -- DATE: Oct 12 23:16:18 2007 EDT (UT-4h) templ			
F1: 100.628	F2: 1.000	SW1: 23148		OF1: 10562.4		PTS1d: 32768	
EX:		PW: 5.7 us	PD: 2.0 sec	NA: 1112	LB: 3.0	Nuts - NZ[2.1.1] anti-OAc--C--eram-755	

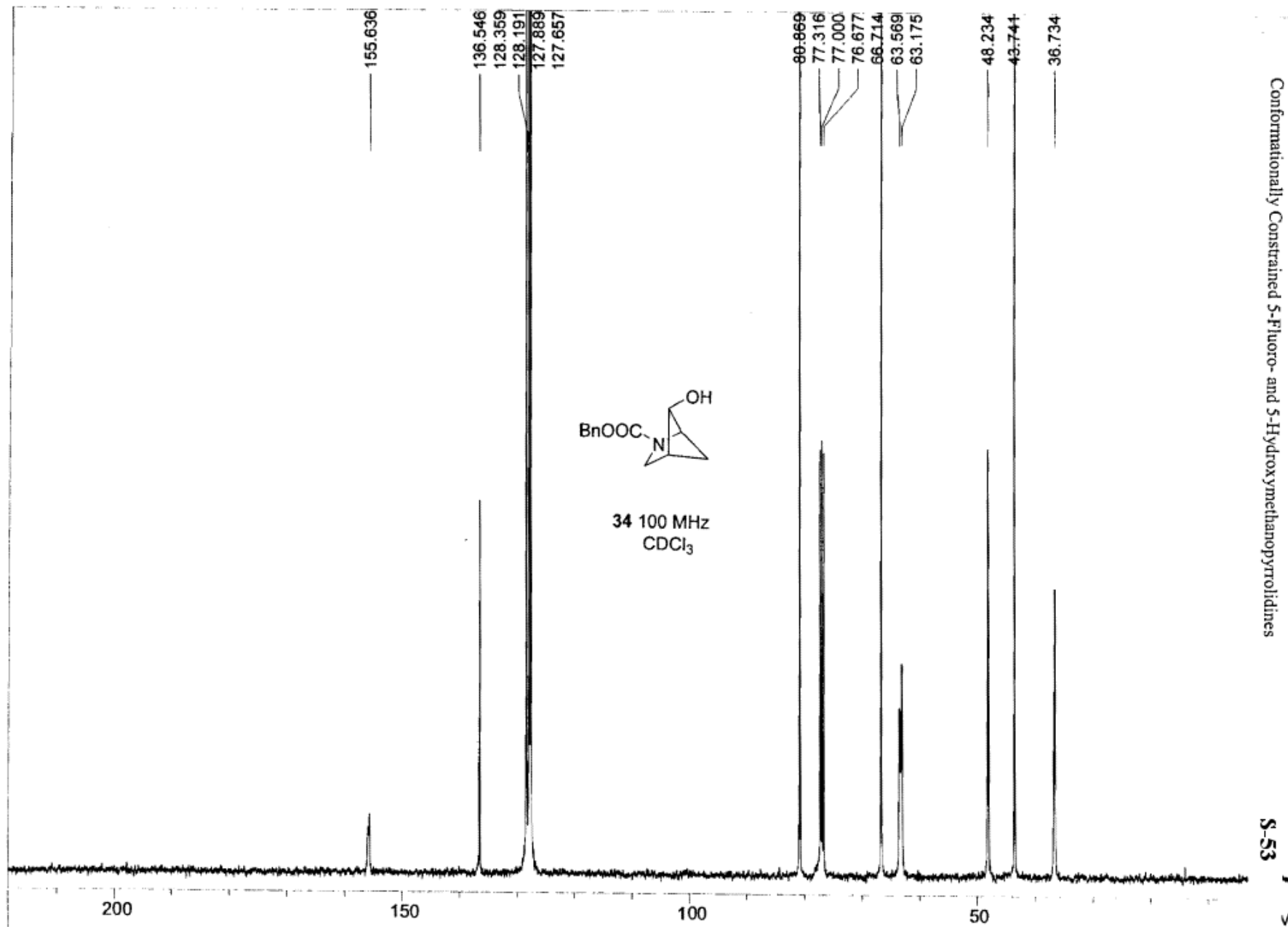


eram/12-53-2_13Oct2007

USER: -- DATE: Oct 13 2007

F1: 300.018	F2: 300.018	SW1: 4800	OF1: 1782.0	PTS1d: 16384
EX: s2pul	PW: 4.0 us	PD: 1.0 sec	NA: 8	LB: 0.000 - NZ[2.1.1].anti-OH---H---eram-12-53-2 on_300 NMR

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines



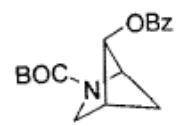
S-53

NZ[2.1.1]OH, carbon30MIN.atm,			USER: temple -- DATE: Oct 13 00:37:19 2007 EDT (UT-4h) templ			
FI: 100.628	F2: 1.000	SW1: 23148		OF1: 10570.2		PTS1d: 32768
EX:	PW: 5.7 us	PD: 2.0 sec	NA: 1112	LB: 3.0	Nuts - NZ[2.1.1] anti-OH--C--eram-757	

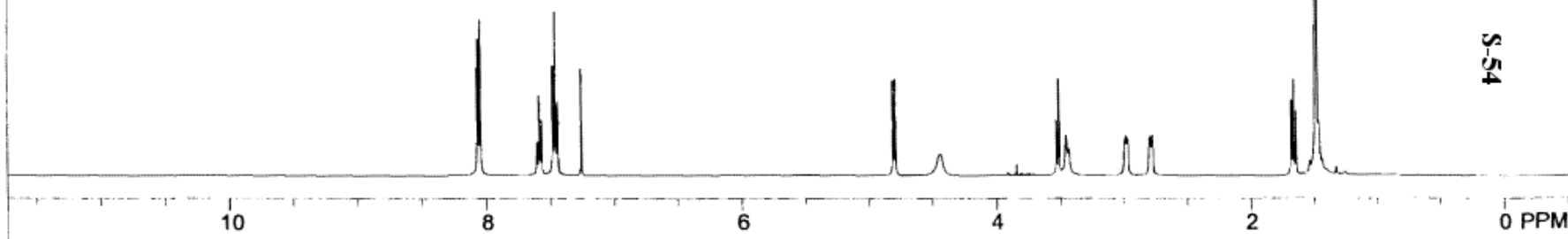
Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-54

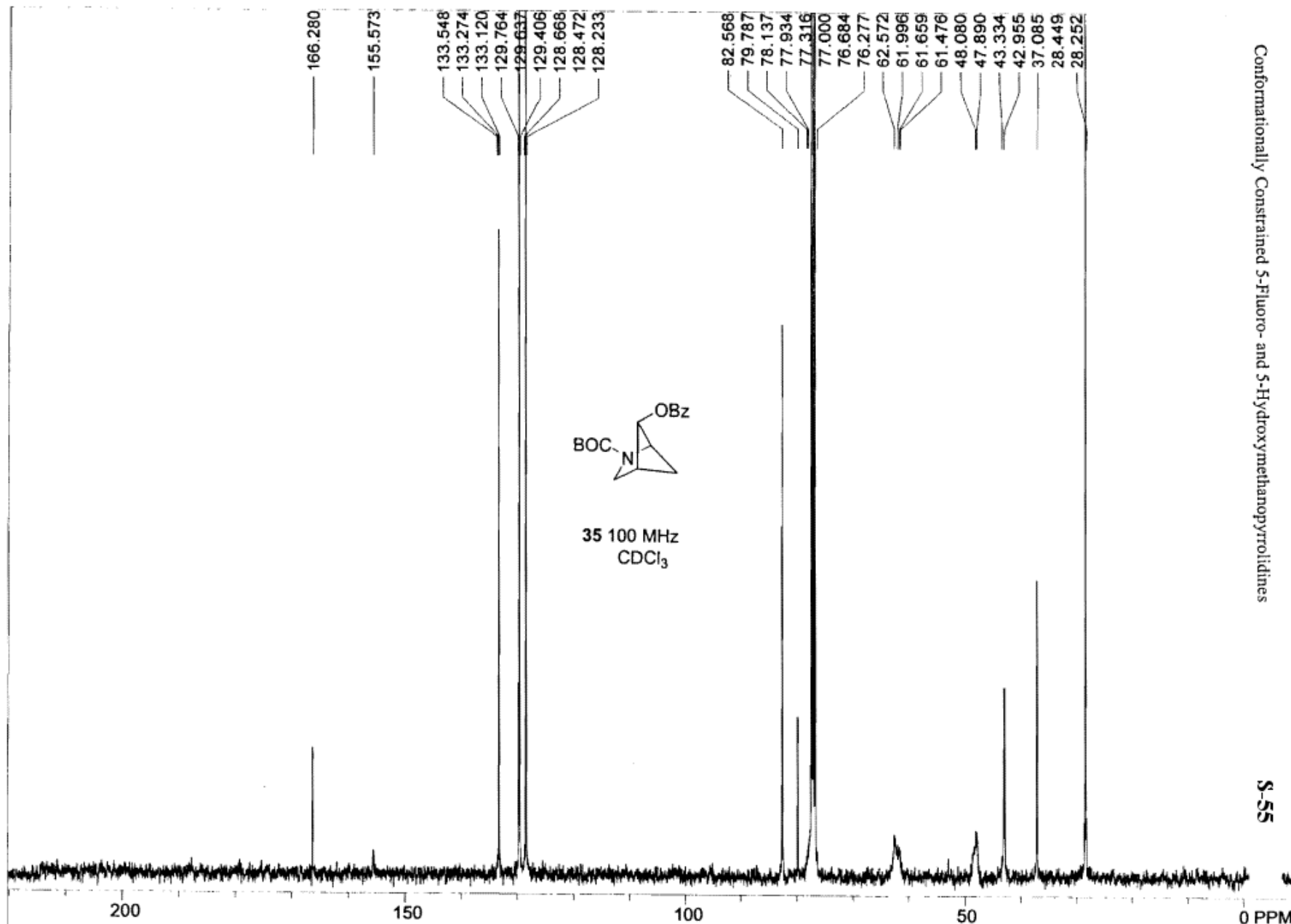
8.072
8.069
8.056
8.052
8.048
7.611
7.608
7.605
7.590
7.574
7.571
7.567
7.483
7.464
7.449
7.444
7.260
4.816
4.797
4.446
3.537
3.515
3.458
3.437
2.989
2.979
2.973
2.797
2.780
2.777
1.684
1.665
1.645
1.486



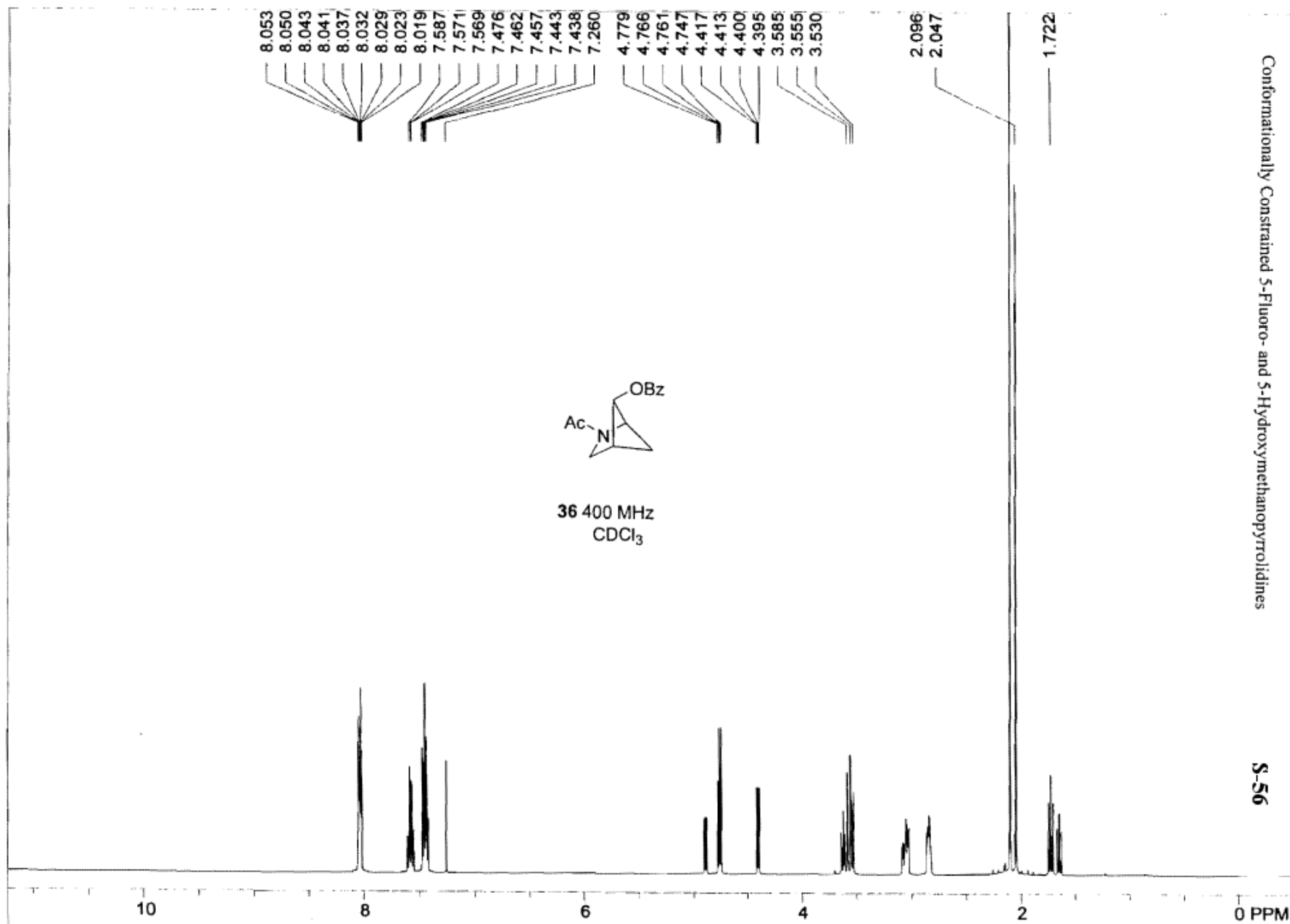
35 400 MHz
CDCl₃



proton.atm.		USER: temple -- DATE: Nov. 3 23:37:03 2007 EST (UT-5h) templ					
F1: 400.191	F2: 1.000	SW1: 8278		OF1: 2002.6		PTS1d: 32768	
EX:		PW: 9.8 us	PD: 1.0 sec	NA: 16	LB: 0.1	Nuts - NBoc[2.1.1] anti-OBz--H--eram-790	



carbon2HR.atm		USER: temple -- DATE: Nov 3 23:19:54 2007 EST (UT-5h) templ					
F1: 100.628	F2: 1.000	SW1: 23148		OF1: 10583.6		PTS1d: 32768	
EX:		PW: 5.7 us	PD: 2.0 sec	NA: 2048	LB: 3.0	Nuts - NBoc[2.1.1] anti-OBz--C---cram-789	



NAc[2.1.1]anti-OBz, proton.atm.

USER: temple -- DATE: Feb 1 23:25:52 2008 EST (UT-5h) templ

F1: 400.130

F2: 1.000

SW1: 8278

OF1: 2004.2

PTS1d: 32768

EX:

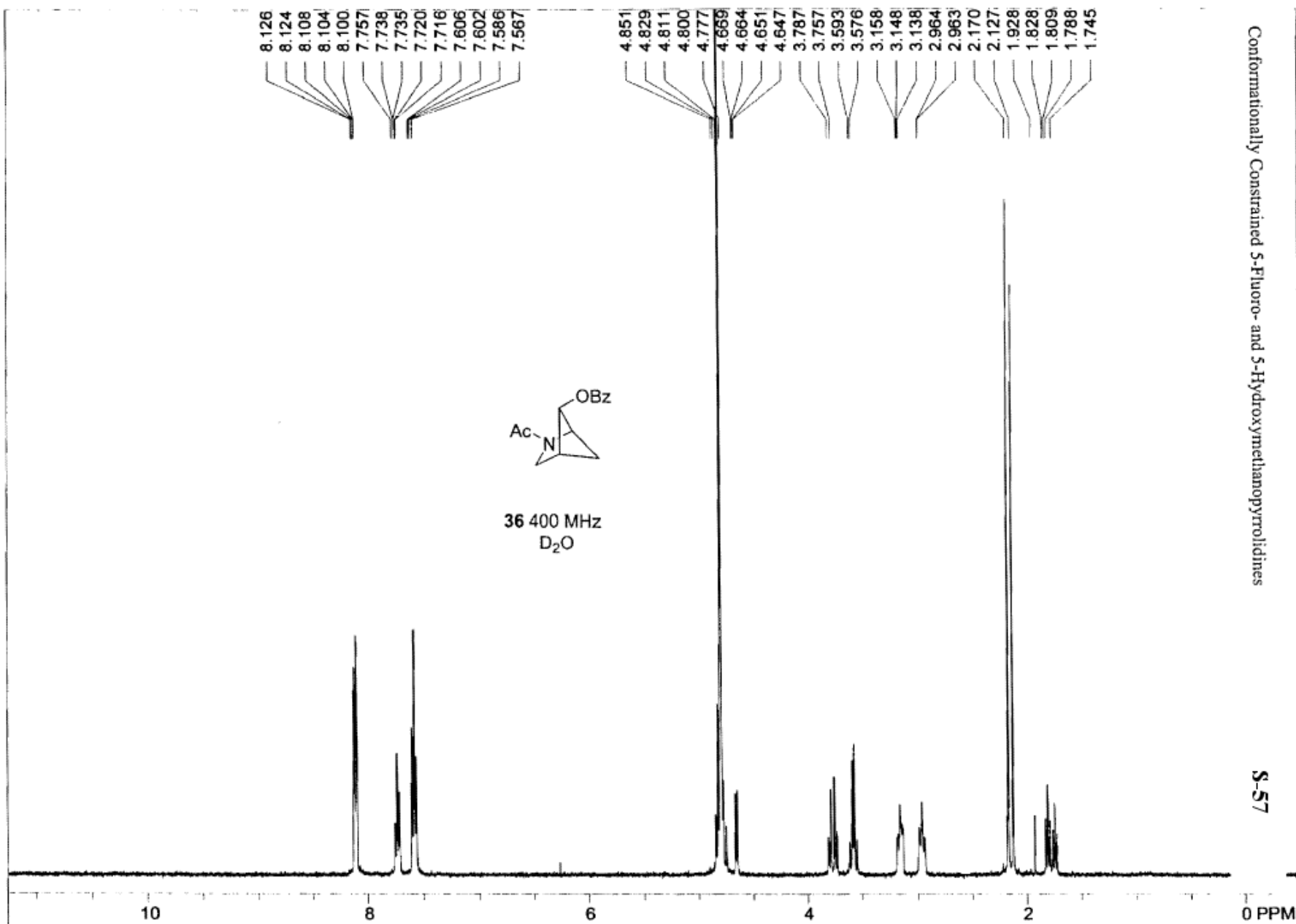
PW: 9.8 us

PD: 1.0 sec

NA: 16

LB: 0.1

Nuts - NAc[2.1.1] anti-OBz--H--CDCl3--eram-851

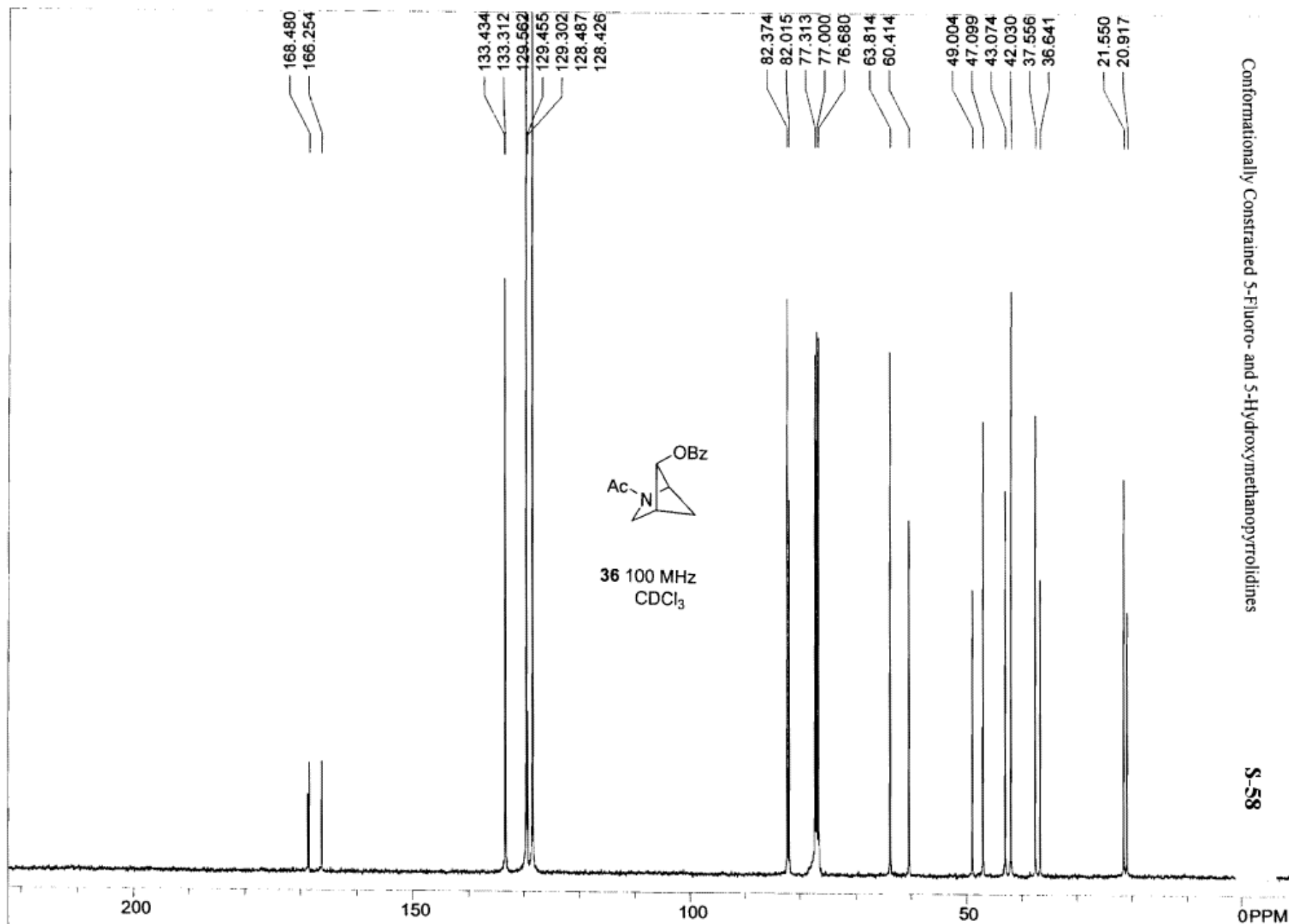


- 8.126
- 4.851
- 8.124
- 4.829
- 8.108
- 4.811
- 8.104
- 4.800
- 8.100
- 4.777
- 7.757
- 4.669
- 7.738
- 4.664
- 7.735
- 4.651
- 7.720
- 4.647
- 7.716
- 3.787
- 7.606
- 3.757
- 7.602
- 3.593
- 7.586
- 3.576
- 7.567
- 3.158
- 2.964
- 3.148
- 2.963
- 3.138
- 2.170
- 2.127
- 1.928
- 1.828
- 1.809
- 1.788
- 1.745

NAC[2.1.1] anti-OBz, proton10MIN.atm,				USER: temple -- DATE: Jul 16 20:12:15 2008 EDT (UT-4h) temp1			
F1: 400.130	F2: 1.000	SW1: 8278		OF1: 2040.7		PTS1d: 32768	
EX:		PW: 9.8 us	PD: 1.0 sec	NA: 228	LB: 0.1	Nuts - NAC[2.1.1] anti-OBz--H--D2O--eram1402	

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines

S-58



NAc[2.1.1]anti-OBz, carbon2HR, atm.

USER: temple -- DATE: Feb 2 06:25:06 2008 EST (UT-5h) templ

F1: 100.613

F2: 1.000

SW1: 25126

OF1: 10015.0

PTSId: 32768

EX:

PW: 5.7 us

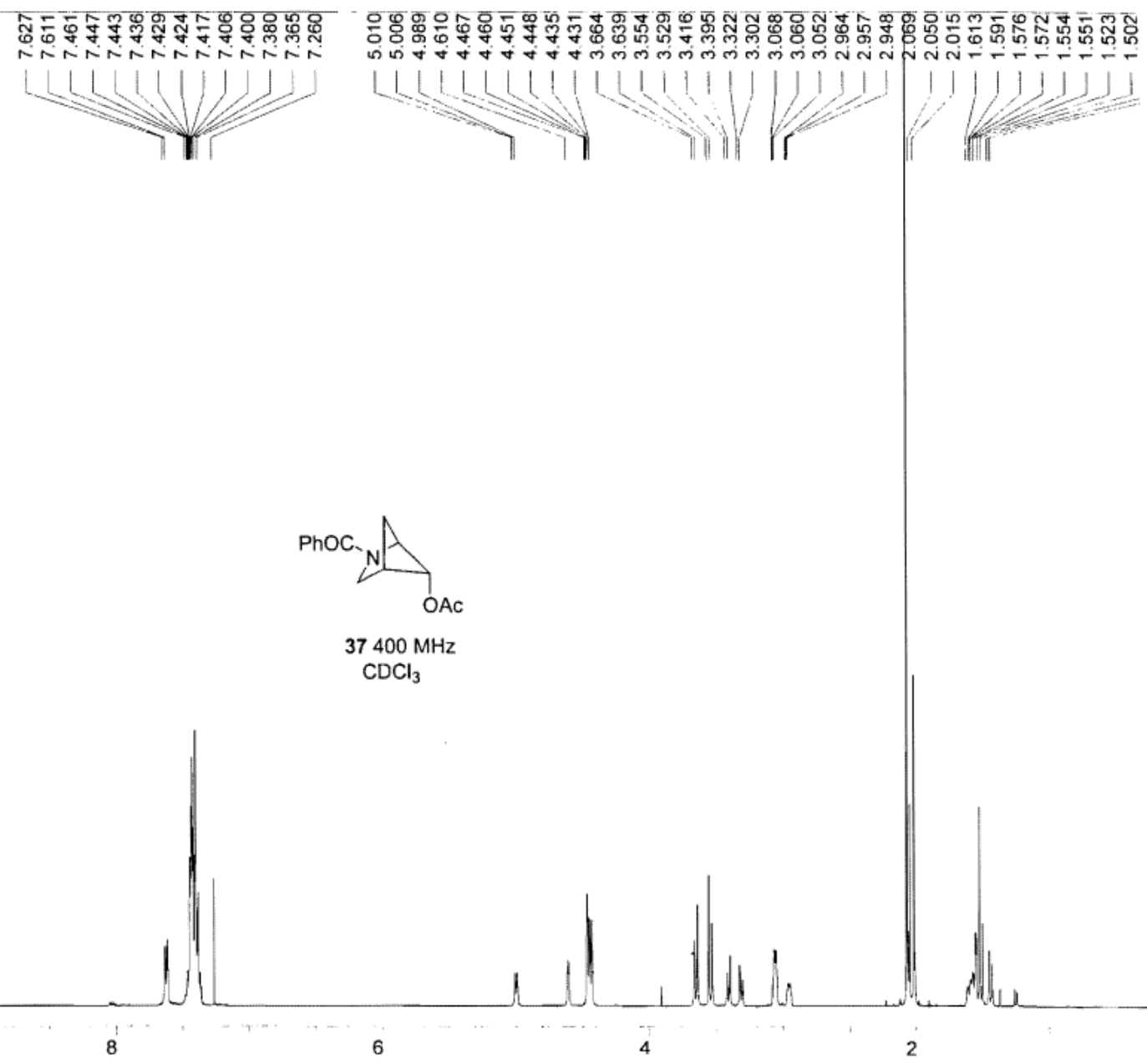
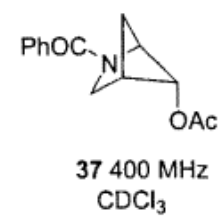
PD: 2.0 sec

NA: 7548

LB: 3.0

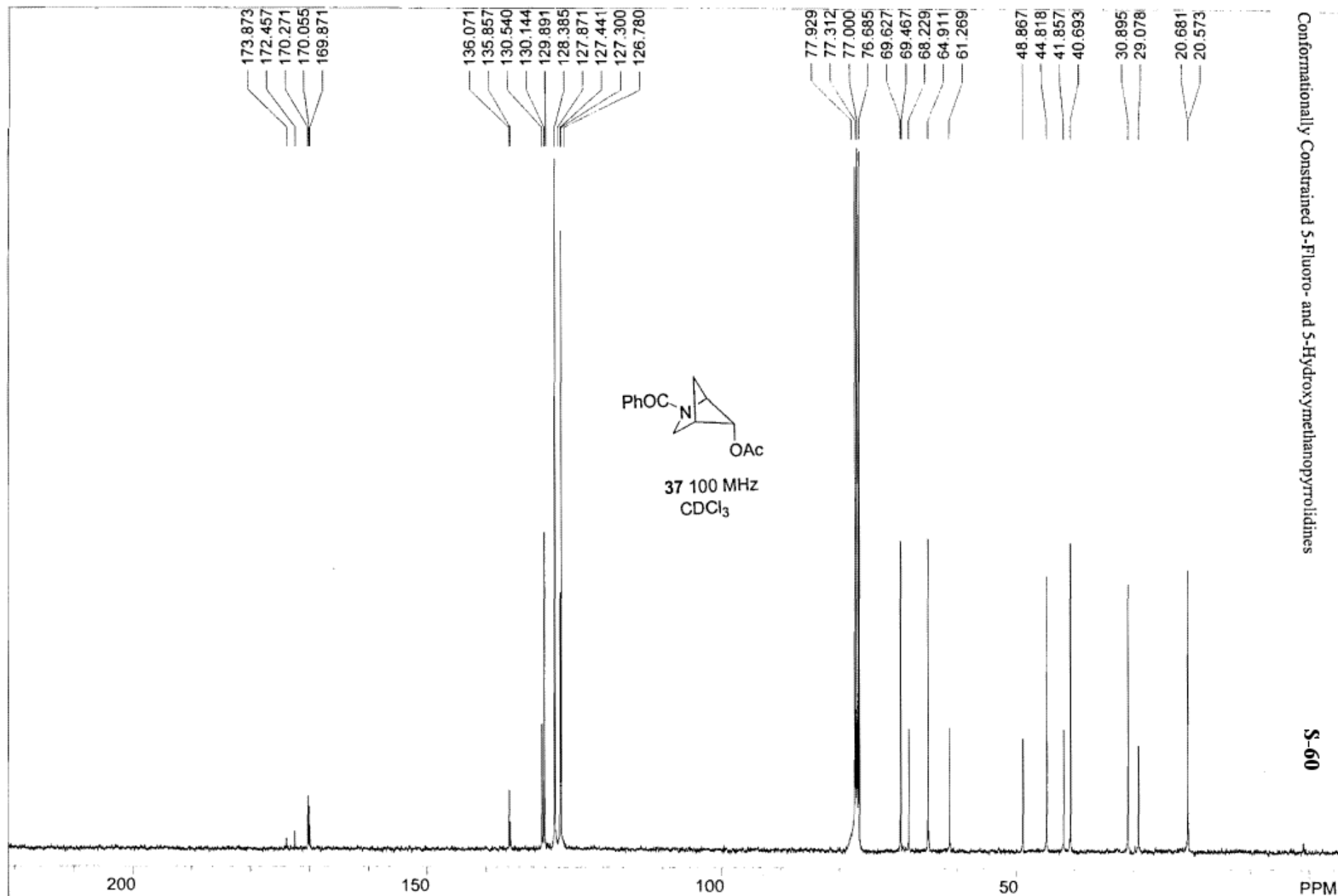
Nuts - NAc[2.1.1]anti-OBz--C--CDCl₃--eram-852

Conformationally Constrained 5-Fluoro- and 5-Hydroxymethanopyrrolidines



S-59

syn-OBz acetylation side pdt. proton.atm.				USER: temple -- DATE: Nov 19 22:41:08 2008 EST (UT-5h) templ			
F1: 400.130	F2: 1.000	SW1: 8013		OF1: 2004.8		PTS1d: 32768	
EX:		PW: 9.8 usec	PD: 1.0 sec	NA: 16	LB: 0.1	WjnNuts - NCOPh[2.1.1] syn-OAc --H--eram-1678	



syn-OBz acetylation side pdt_carbonOVNTE.all

USER: temple -- DATE: Nov 20 06:03:36 2008 EST (UT-5h) templ

F1: 100.613 F2: 1.000

SW1: 25126

OF1: 10020.2

PTS1d: 32768

EX:

PW: 5.7 usec

PD: 2.0 sec

NA: 8000

LB: 3.0

WinNuts - NCOPh[2.1.1] syn-OAc --C--eram-1679