

# Synthesis of the ABCD and ABCDE Ring Systems of Azaspiracid.

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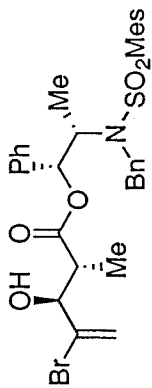
**Electronic Supplementary Information:  $^1\text{H}$  and  $^{13}\text{C}$  Spectra**

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**Synthesis of the ABCD and ABCDE Ring Systems of Azaspiracid.****Table of Contents**

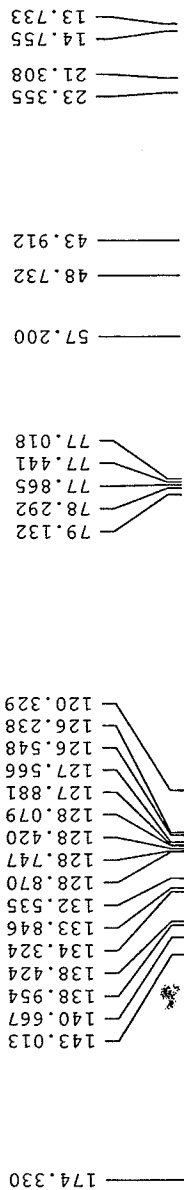
<b>Compound #</b>	<b>Page Number</b>
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<b>55</b>	S45
<b>56</b>	S47
<b>57</b>	S49
<b>26</b>	S51
<b>28</b>	S53
<b>29</b>	S55
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<b>61</b>	S59
<b>32</b>	S61
<b>33</b>	S63
<b>34</b>	S65





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C13/CDC13



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 USER xzhou

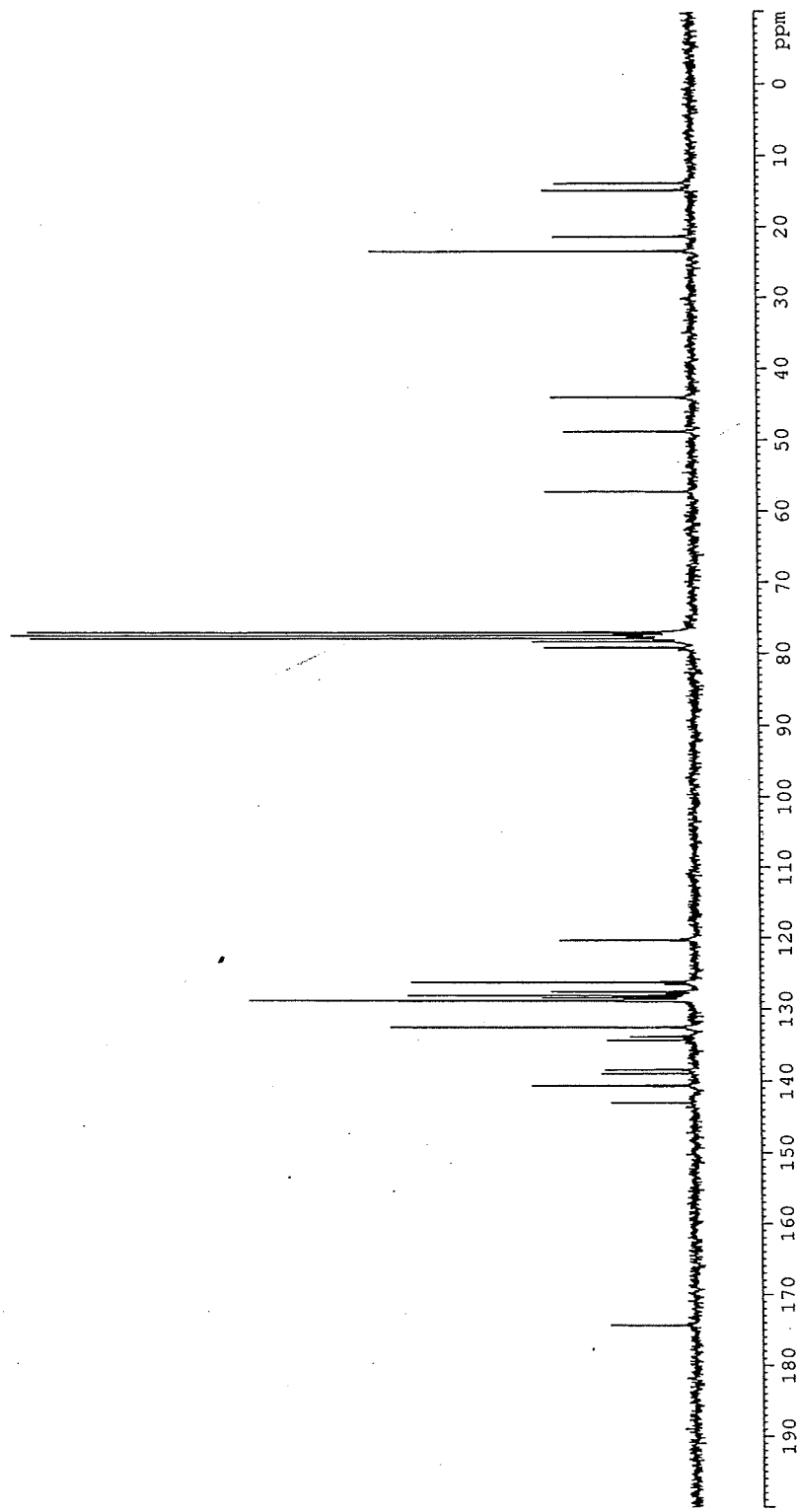
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 SWH 0.287360 Hz  
 FIDRES 1.7400308 sec  
 AQ 8192  
 RG 26.950 usec  
 DW 6.00 usec  
 DE 300.0 K  
 TE 0.00300000 sec  
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 D11 0.00002000 sec  
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 PL1 -2.00 dB  
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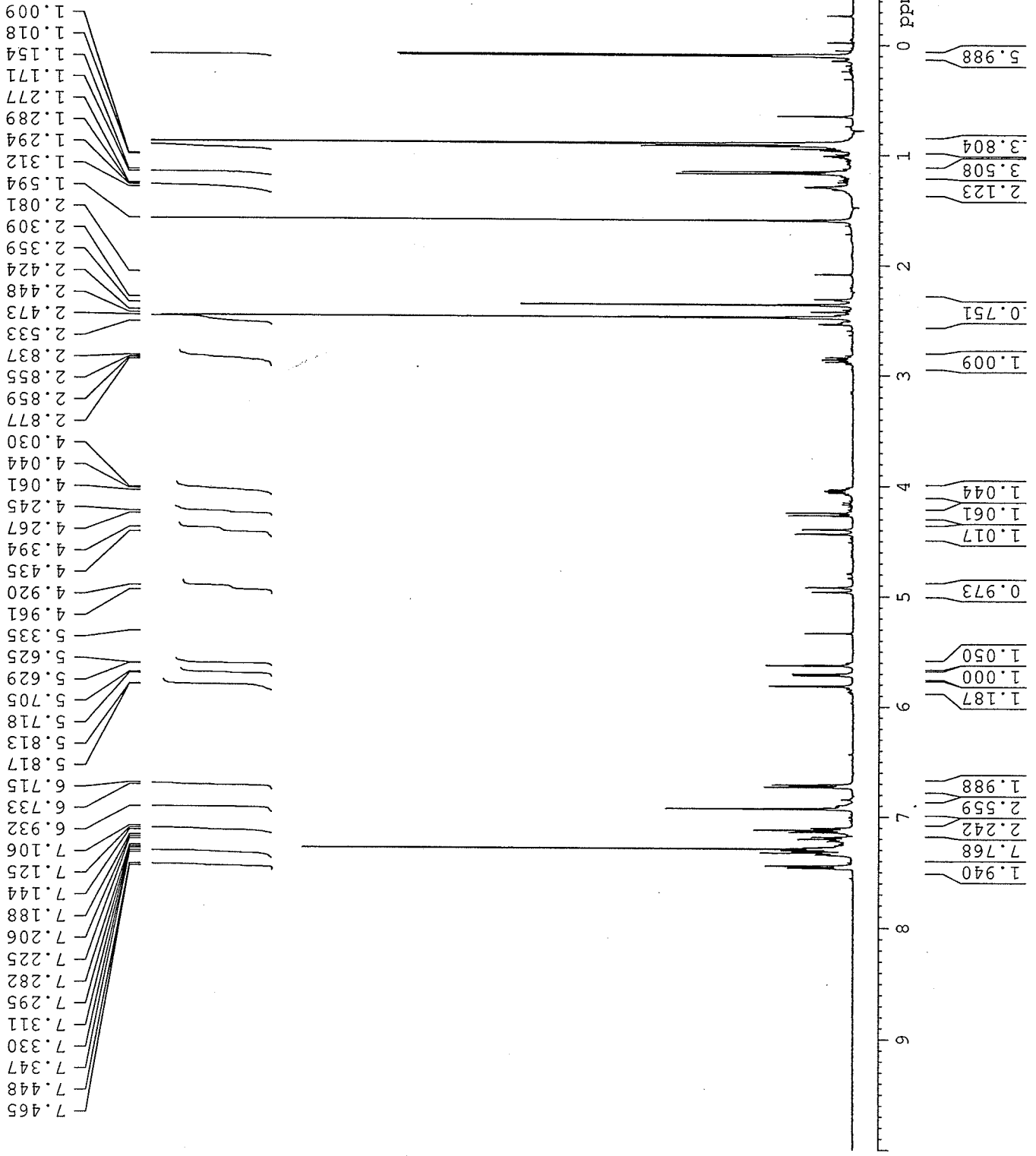
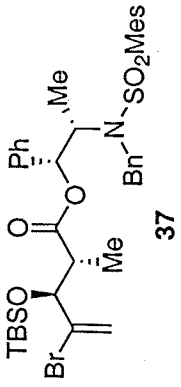
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1D NMR plot parameters  
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TBSprotection



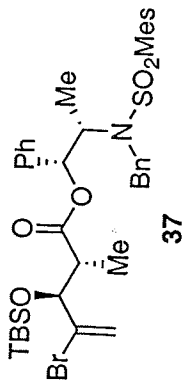
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 AQ 2.7329011 sec  
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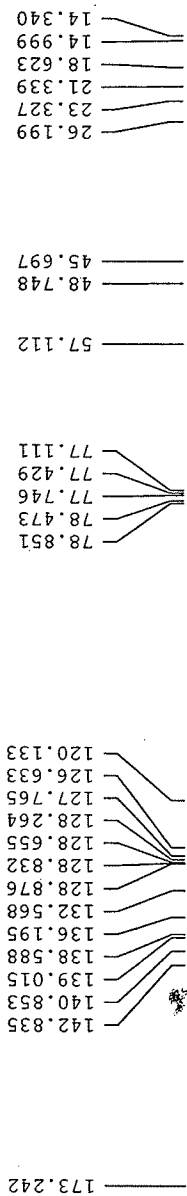
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 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



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C13/CDCl3



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 USER xzhou

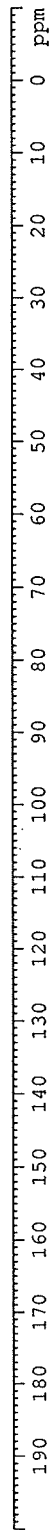
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 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
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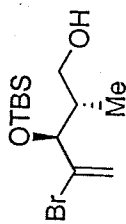
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 SFO1 100.5936186 MHz

CHANNEL f2  
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 NU2 1H  
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 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

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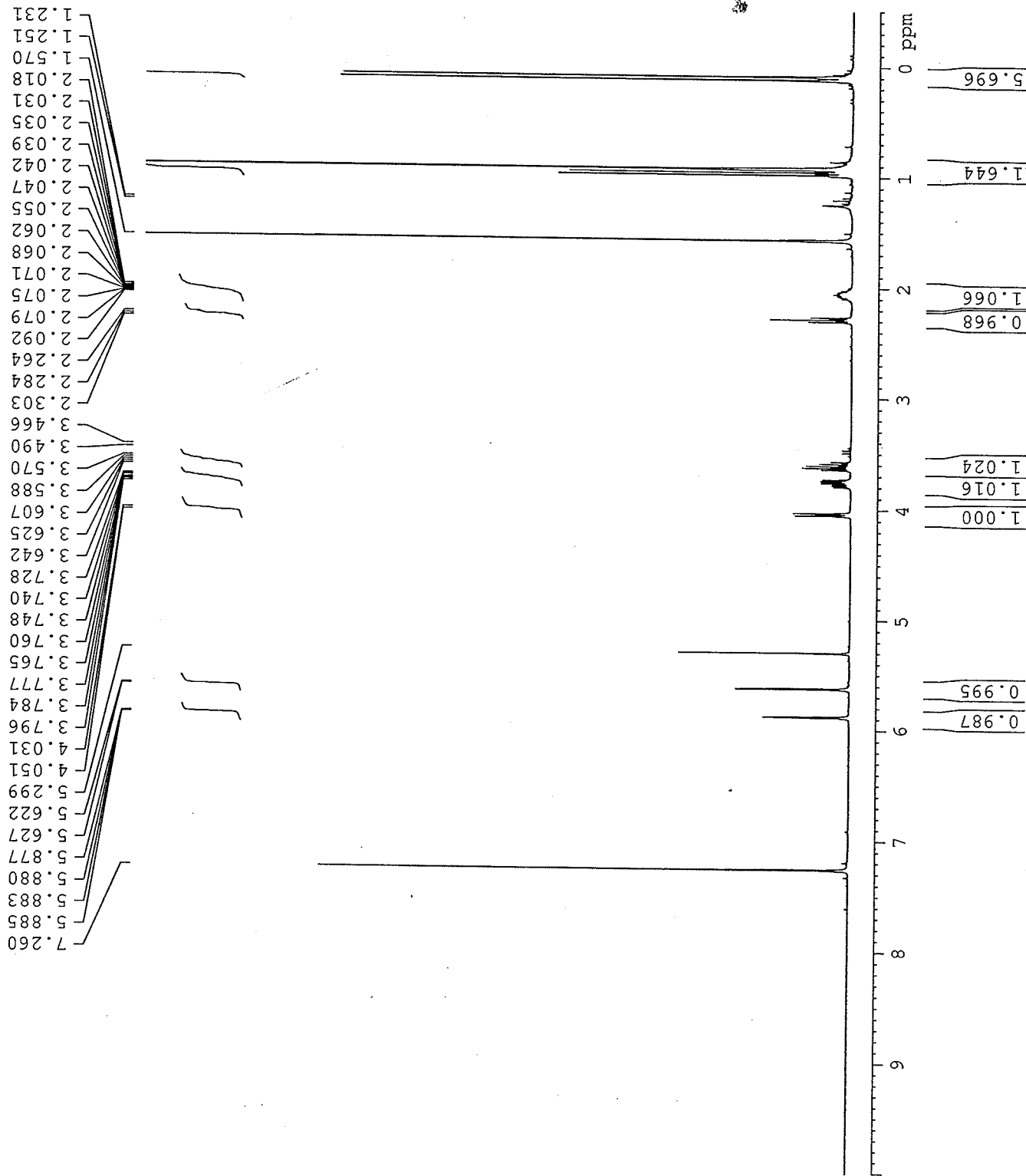
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H1/alcohol



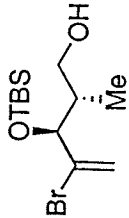
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 PULPROG zg30  
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 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 4496.403 Hz  
 FIDRES 0.137219 Hz  
 AQ 3.6438515 sec  
 RG 1149.4  
 DW 111.200 usec  
 DE 6.00 usec  
 TE 300.0 K  
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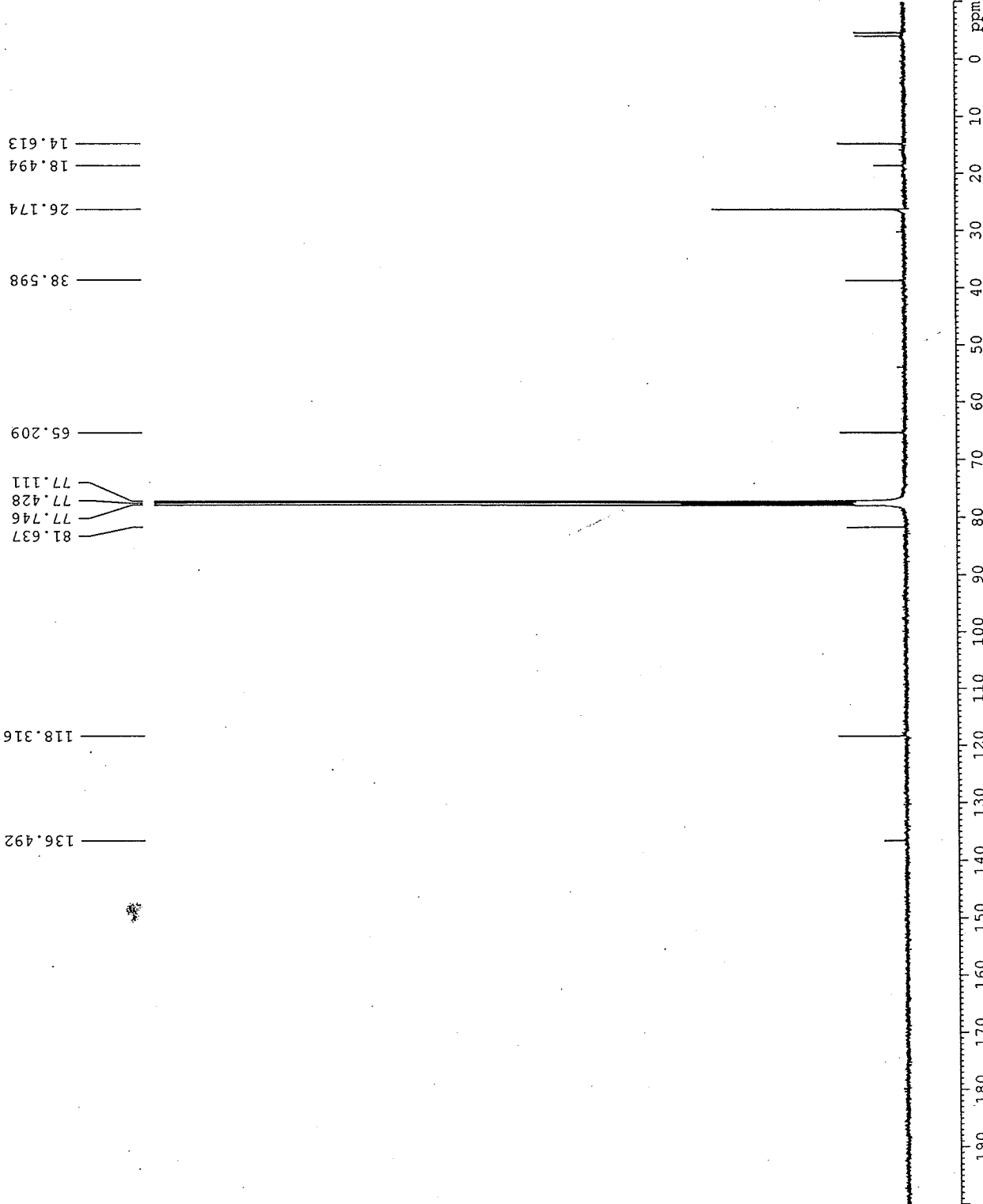
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ID NMR plot parameters  
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 F1 3001.30 Hz  
 F2P -0.500 ppm  
 F2 -150.07 Hz  
 PPMCM 0.52500 ppm/cm  
 HZCM 157.56825 Hz/cm



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C13/CDC13



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 USER xzhou

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 TD 65536  
 SOLVENT CDCl3  
 NS 27000  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
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 D11 0.03000000 sec  
 D12 0.00002000 sec

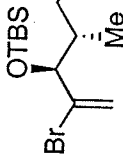
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 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

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 NUC2 1H  
 FCPD2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

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 GB 0  
 PC 1.40

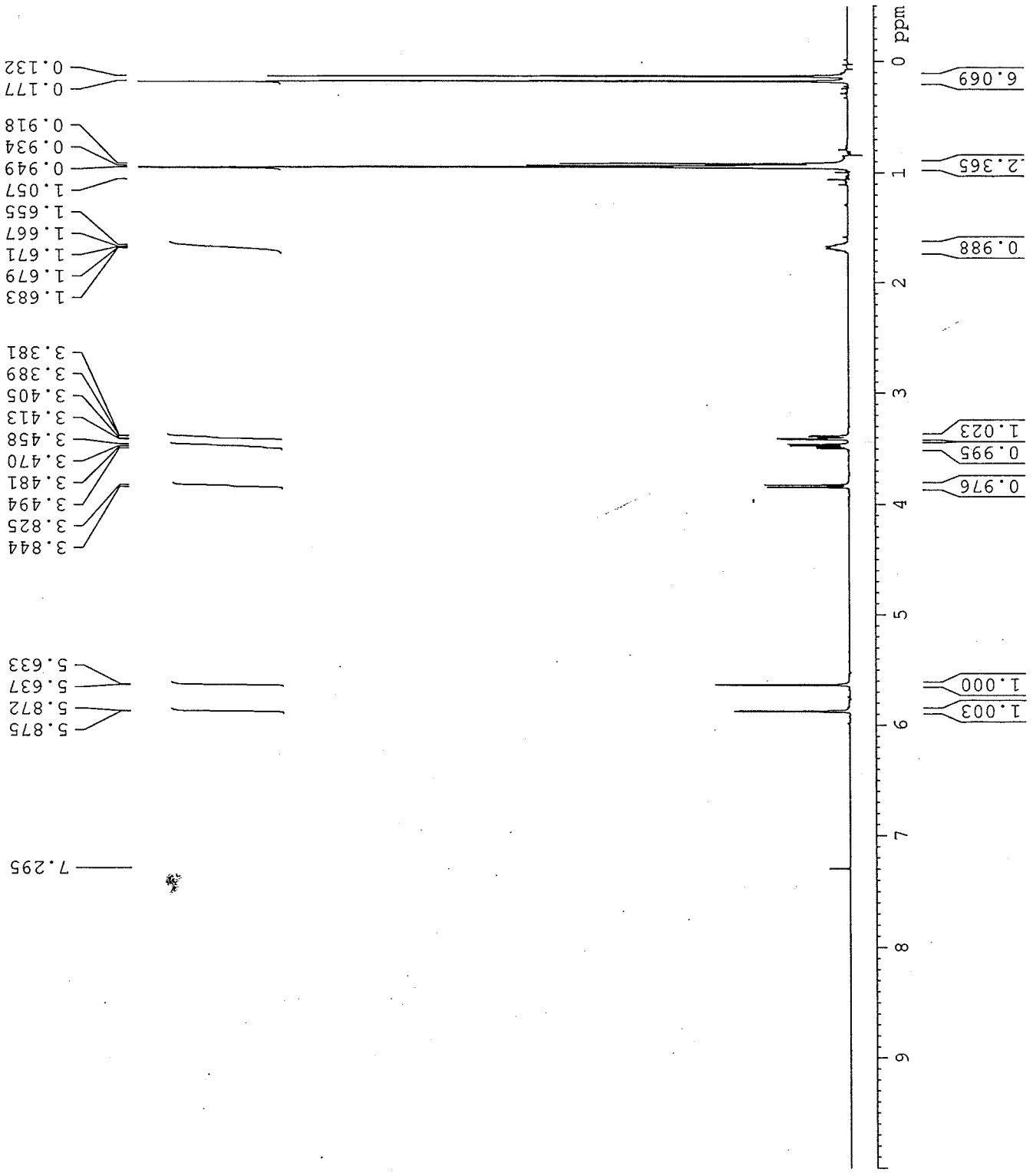
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H1/iodide



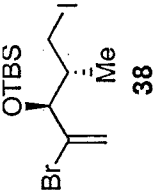
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 PULPROG zg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 64  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.0000000 sec

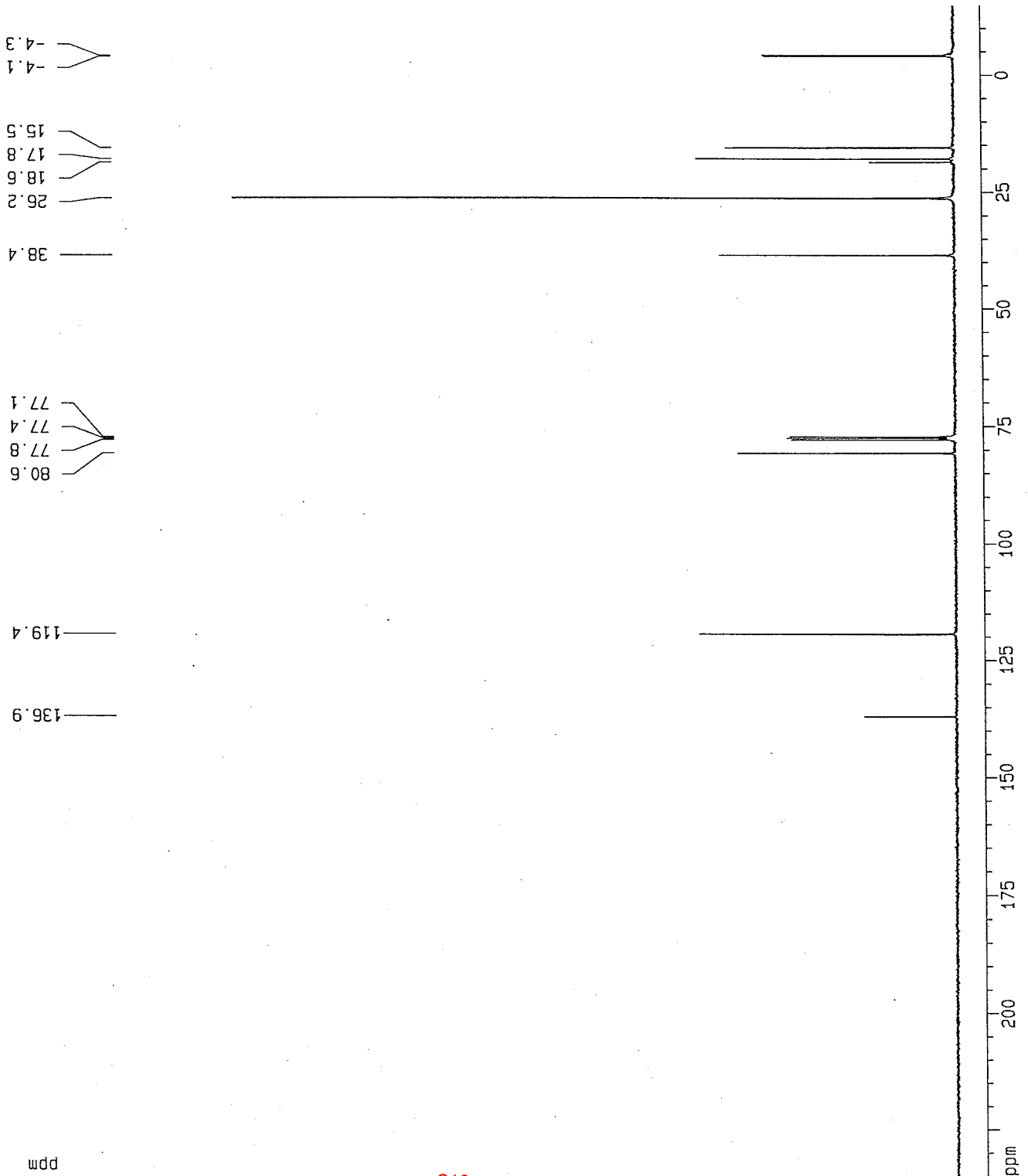
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 PL1 0.00 dB  
 SFO1 400.0126001 MHz

F2 - Processing parameters  
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 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

ID NMR plot parameters  
 CX 21.00 cm  
 FIP 10.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



ppm



Current Data Parameters  
 NAME XZ-III-88  
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 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20031102  
 Time 15.14  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 1631  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 2048  
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 DE 6.00 usec  
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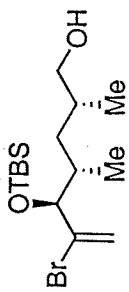
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\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPOPRG2 waltz16  
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 PCPD2 80.00 usec  
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 PL12 17.40 dB  
 PL13 18.00 dB  
 SF02 400.0116000 MHz

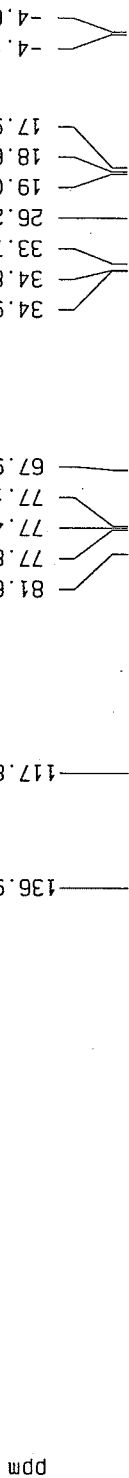
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 F1 23626.40 Hz  
 F2P -14.905 ppm  
 F2 -1499.23 Hz  
 PPMCM 12.49005 ppm/cm  
 HZCM 1256.26137 Hz/cm





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Current Data Parameters

NAME XZ-III-90

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PROCNO 1

DU /m

USER xzhou

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Time 21.50

INSTRUM dpx400

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PULPROG zgpg30

TD 65536

SOLVENT CDC13

NS 2908

DS 4

SWH 25125.629 Hz

FIDRES 0.383387 Hz

AQ 1.3042164 sec

RG 574.7

DW 19.900 usec

DE 5.00 usec

TE 300.0 K

D1 0.00300000 sec

D11 0.03000000 sec

D12 0.00002000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*

NUC1 13C

P1 7.50 usec

PL1 -3.00 dB

SFO1 100.5936186 MHz

\*\*\*\*\* CHANNEL f2 \*\*\*\*\*

CPDPRG2 waltz16

NUC2 1H

PCPD2 80.00 usec

PL2 0.00 dB

PL12 17.40 dB

PL13 18.00 dB

SFO2 400.0116000 MHz

F2 - Processing parameters

SF 65536

SF 100.5825550 MHz

WDW EM

SSB 0

LB 3.00 Hz

GB 0

PC 1.40

1D NMR plot parameters

CX 20.00 cm

F1P 234.896 ppm

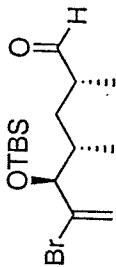
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F2P -14.905 ppm

F2 -1499.23 Hz

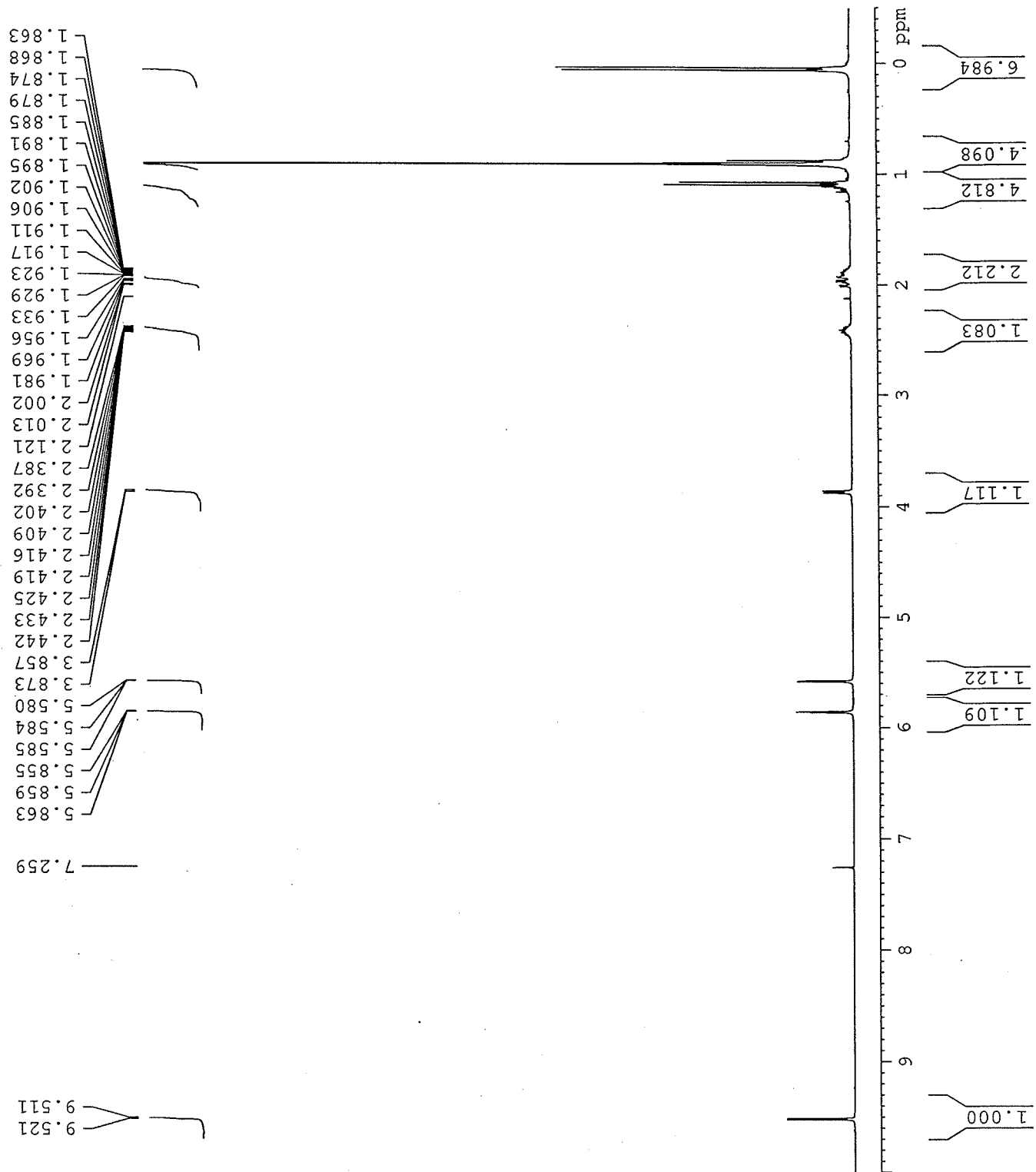
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HZCM 1256.28137 Hz/cm



41

H1/aldehyde



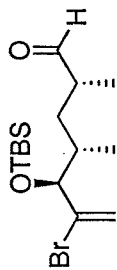
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 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 12  
 DS 2  
 SWH 4496.403 Hz  
 FIDRES 0.137219 Hz  
 AQ 3.6438515 sec  
 RG 128  
 DW 111.200 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 1.5000000 sec

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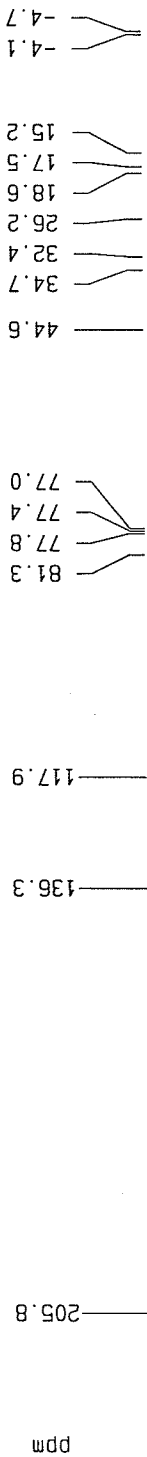
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1D NMR plot parameters  
 CX 20.00 cm  
 F1p 10.000 ppm  
 F1 3001.30 Hz  
 F2p -0.500 ppm  
 F2 -150.07 Hz  
 PPMCM 0.52500 ppm/cm  
 HZCM 157.56825 Hz/cm



41

C13/aldehyde



Current Data Parameters  
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 USER xzhou

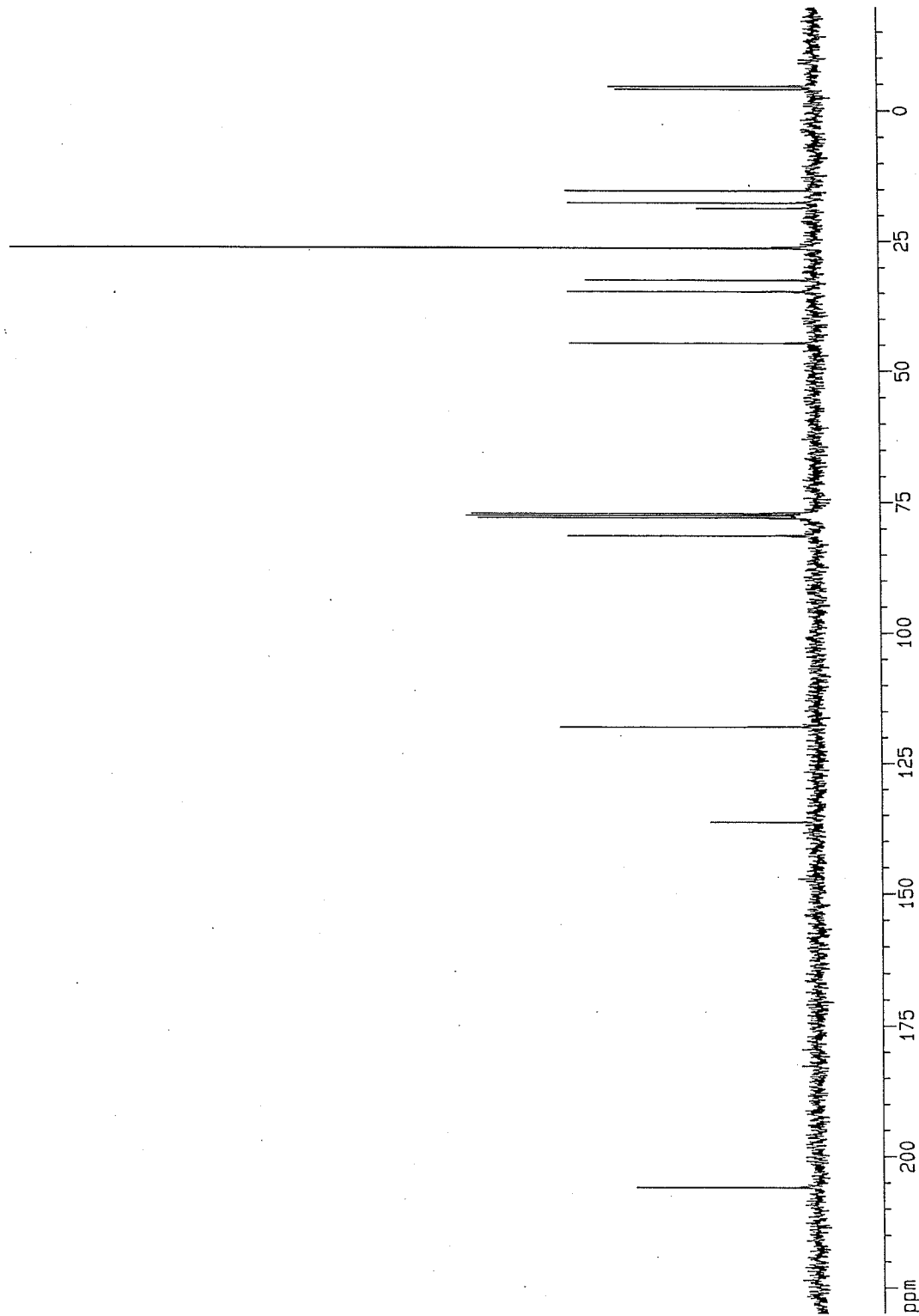
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 SOLVENT  
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 DS 2  
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 FIDRES 0.287360 Hz  
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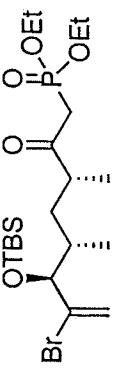
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\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 2.00 dB  
 PL12 17.55 dB  
 PL13 19.00 dB  
 SF02 300.1315007 MHz

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 LB 3.00 Hz  
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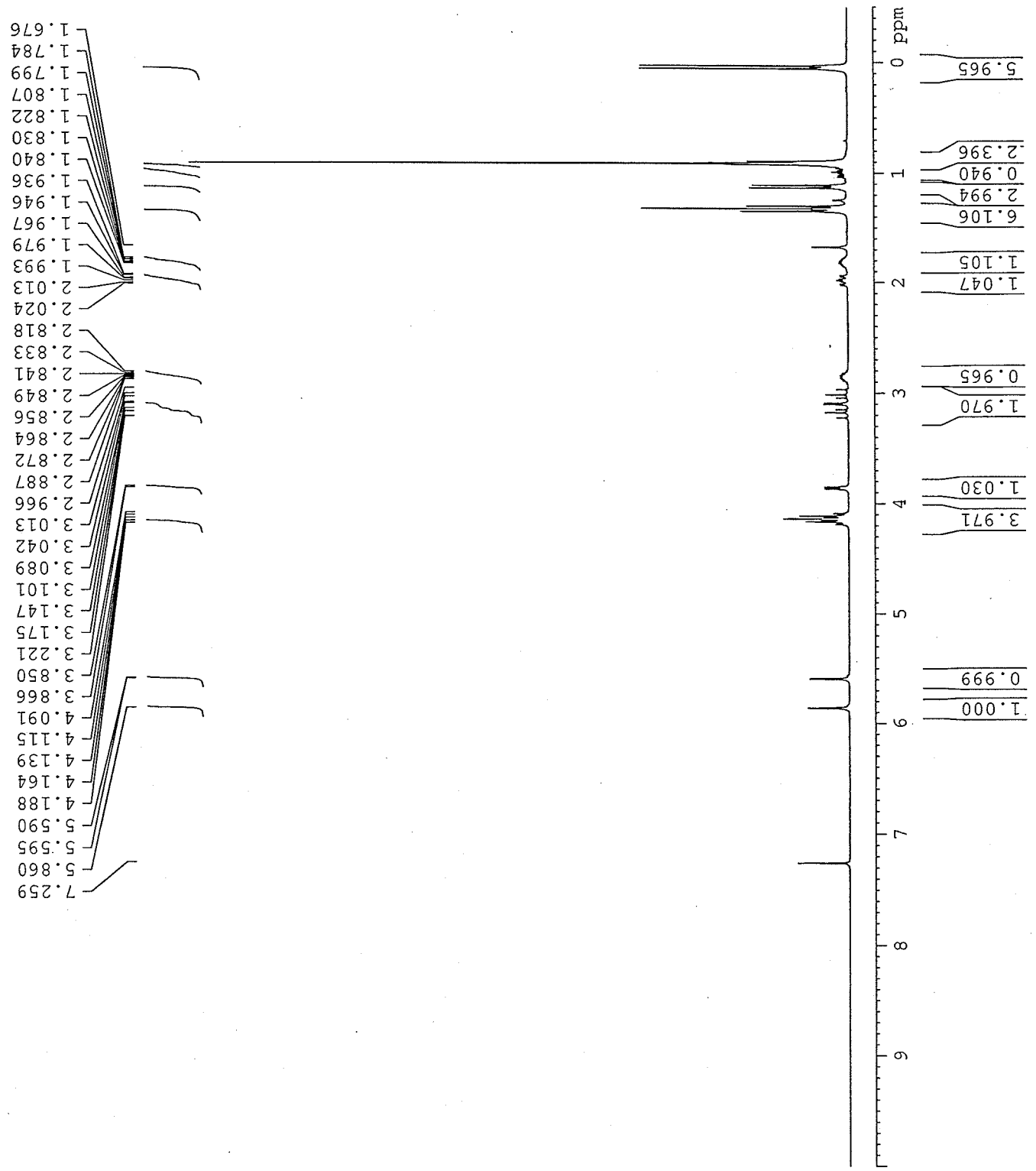
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H1



```

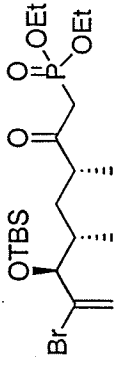
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PROCNO   1
DU       /m
USER     xzheu

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PROBHD   5 mm QNP 1H
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D1        1.50000000 sec

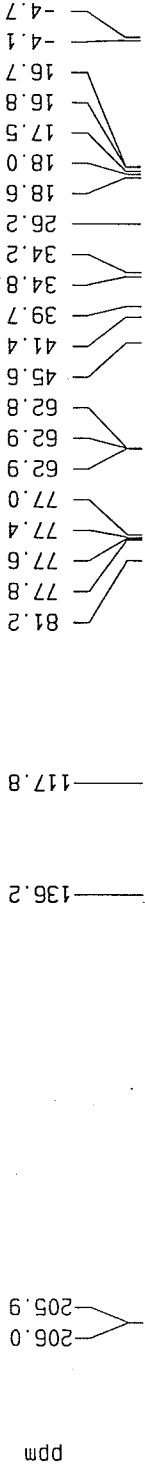
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PL1       -3.00 dB
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WDW       EM
SSB       0
LB        0.30 Hz
GB        0
PC        1.00

1D NMR plot parameters
CX        20.00 cm
F1p       10.000 ppm
F1        3001.30 Hz
F2p       -0.500 ppm
F2        -150.07 Hz
PPMCM    0.52500 ppm/cm
HZCM     157.56825 Hz/cm
  
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C13

Current Data Parameters  
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 PROCNO 1  
 DU /m  
 USER xzhou

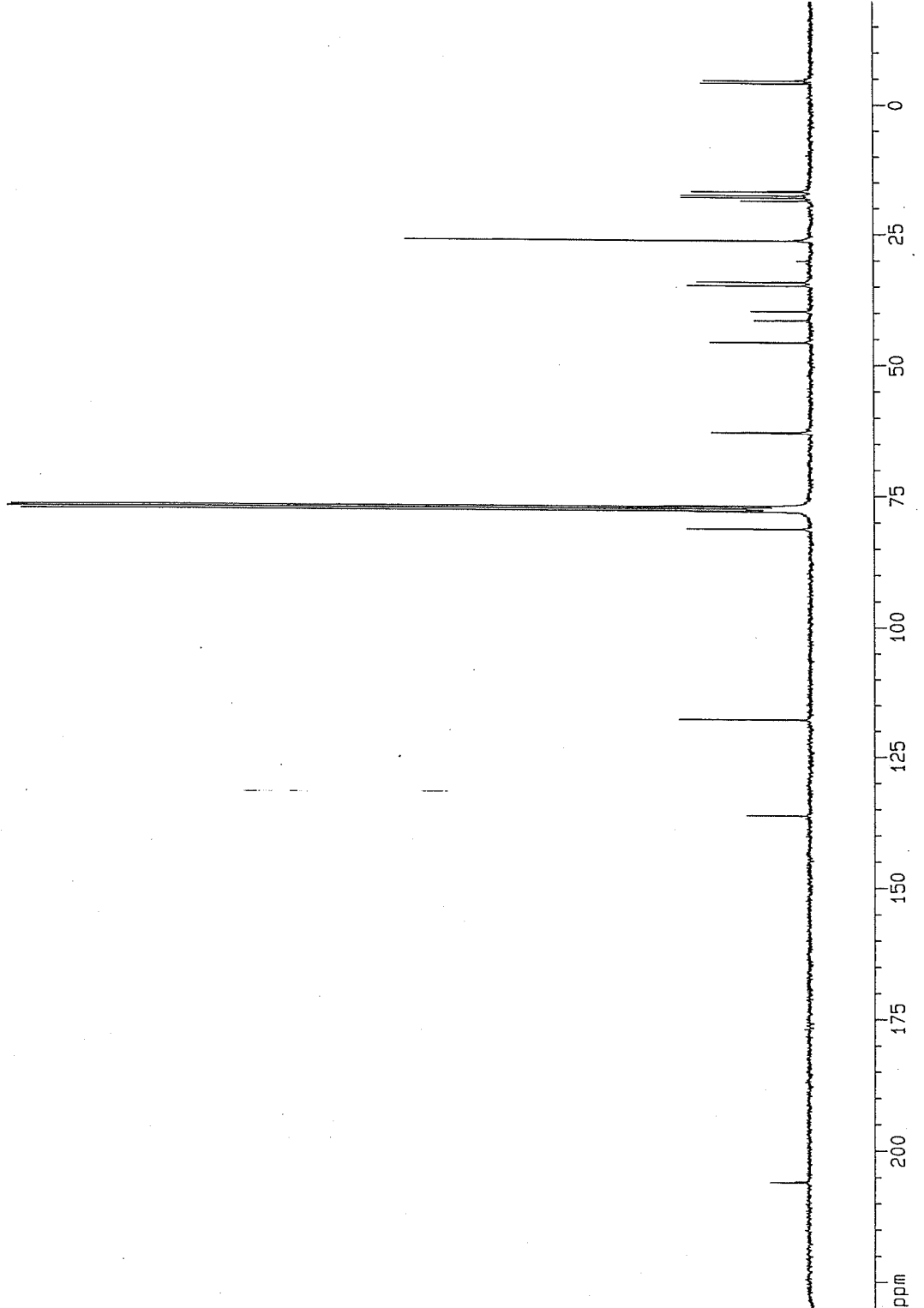
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 SOLVENT  
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 FIDRES 0.287360 Hz  
 AQ 1.7400308 sec  
 RG 16384  
 DN 26.550 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 13C  
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 PL1 -3.00 dB  
 SFO1 75.4756431 MHz

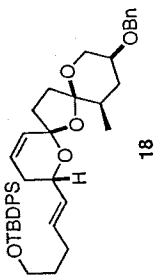
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 PCPD2 60.00 usec  
 PL2 2.00 dB  
 PL12 17.55 dB  
 PL13 19.00 dB  
 SF02 300.1315007 MHz

F2 - Processing parameters  
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 SF 75.4677190 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

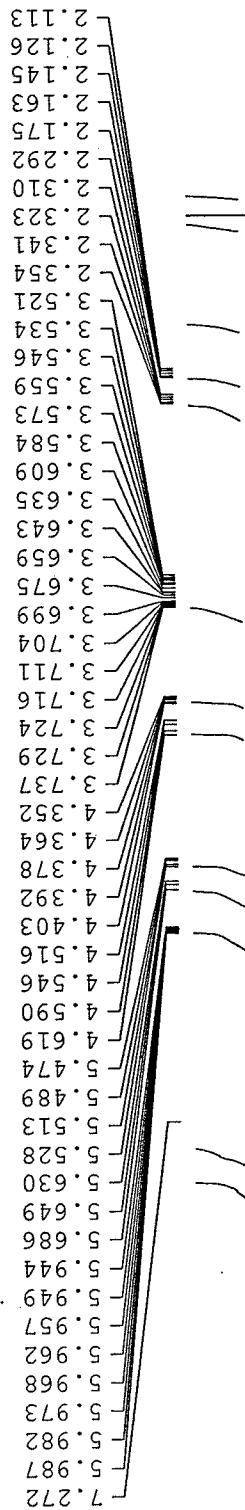
1D NMR plot parameters  
 CX 20.00 cm  
 F1P 228.771 ppm  
 F1 17340.31 Hz  
 F2P -19.771 ppm  
 F2 -1482.08 Hz  
 PPMCM 12.47712 ppm/cm  
 HZCM 941.61951 Hz/cm







XZ-I-99/H1-trans



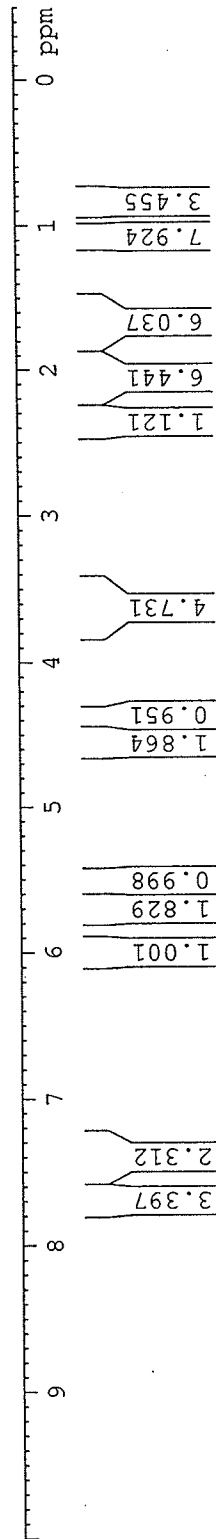
Current Data Parameters  
 NAME XZ-I-99  
 EXPNO 9  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20030206  
 Time 19.43  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 574.7  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

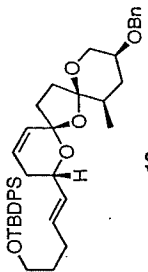
===== CHANNEL f1 =====  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SF01 400.0126001 MHz

F2 - Processing parameters  
 SI 6536  
 SF 400.0100099 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

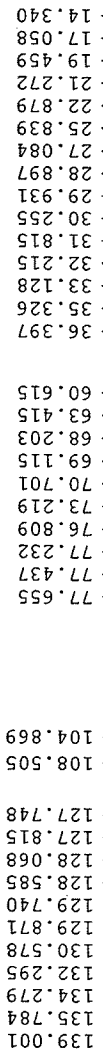
1D NMR plot parameters  
 CX 21.00 cm  
 F1P 10.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



Trimer-trans/C13/CDC:



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```

Current Data Parameters
NAME      XZ-I-99
EXPNO    55
PROCNO   1
USER      /m
          xz/ou

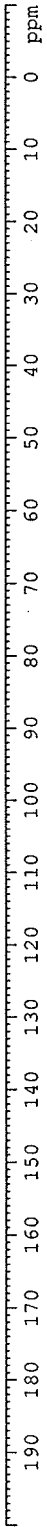
F2 - Acquisition Parameters
Date_    20030214
Time     8.02
INSTRUM  dpx300
PROBHD   5 mm QNP 1H
PULPROG  zgpg30
ID       65536
SOLVENT  21000
NS       2
DS       18832.393 Hz
SWH      0.287360 Hz
FIDRES   1.7400306 sec
AQ       9.522
RG       26.550 usec
DE       6.000 usec
TE       300.0 K
D1       0.00300000 sec
D11      0.03000000 sec
D12      0.00002000 sec

===== CHANNEL f1 =====
NUC1     13C
P1       7.60 usec
PL1     -3.00 dB
SFO1    75.4758431 MHz

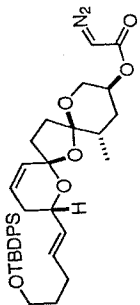
===== CHANNEL f2 =====
CPDPRG2  waltz16
NUC2     13C
PCPD2    80.00 usec
PL2     19.00 dB
PL12    17.55 dB
PL13    16.00 dB
SFO2    300.1315007 MHz

F2 - Processing parameters
SI       131072
SF       75.4677330 MHz
WDW      EM
SSB      0
LB       3.00 Hz
GB       0
PC       1.40

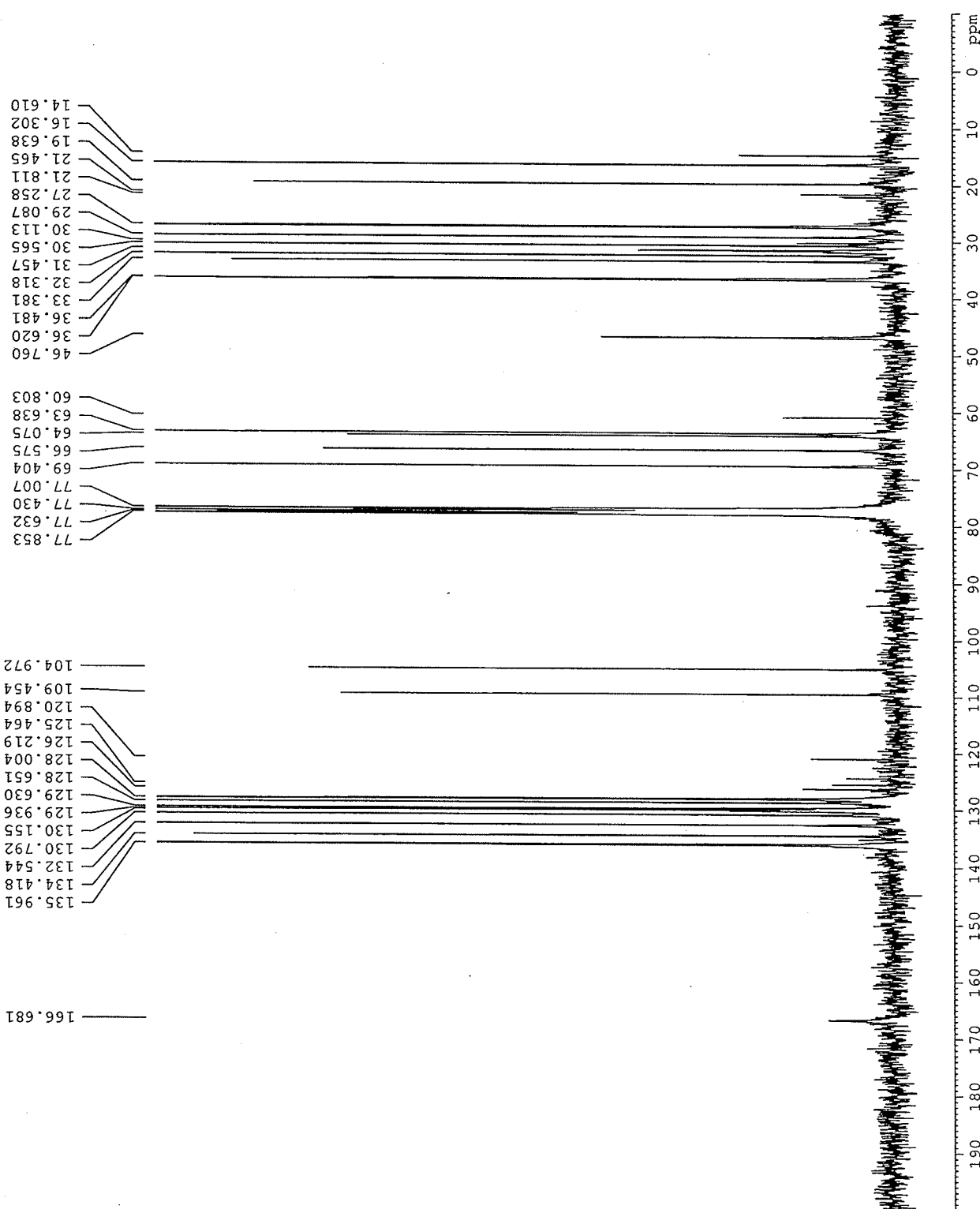
ID NMR plot parameters
CX       20.00 cm
F1P     200.000 ppm
F1      15093.55 Hz
F2P    -10.000 ppm
F2     -754.68 Hz
PMMCM   10.50000 ppm/cm
HZCM    792.41119 Hz/cm
    
```







C13/diazoester



Current Data Parameters  
 NAME XZ-111-54  
 EXPNO 8  
 PROCNO 1  
 DU /m  
 USER xzhu

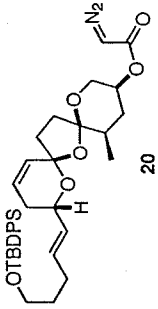
F2 - Acquisition Parameters  
 Date\_ 20030917  
 Time 21:49  
 INSTRUM gpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zgpg30rep1rk  
 ID 6S36  
 SOLVENT CDCl3  
 NS 22670  
 DS 2  
 SWH 18832.393 Hz  
 FIDRES 0.287360 Hz  
 AQ 1.7400308 sec  
 RG 312  
 DW 26.350 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec  
 L2 45

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 13C  
 P1 1.60 usec  
 PL1 -3.00 dB  
 SFO1 75.4756431 MHz

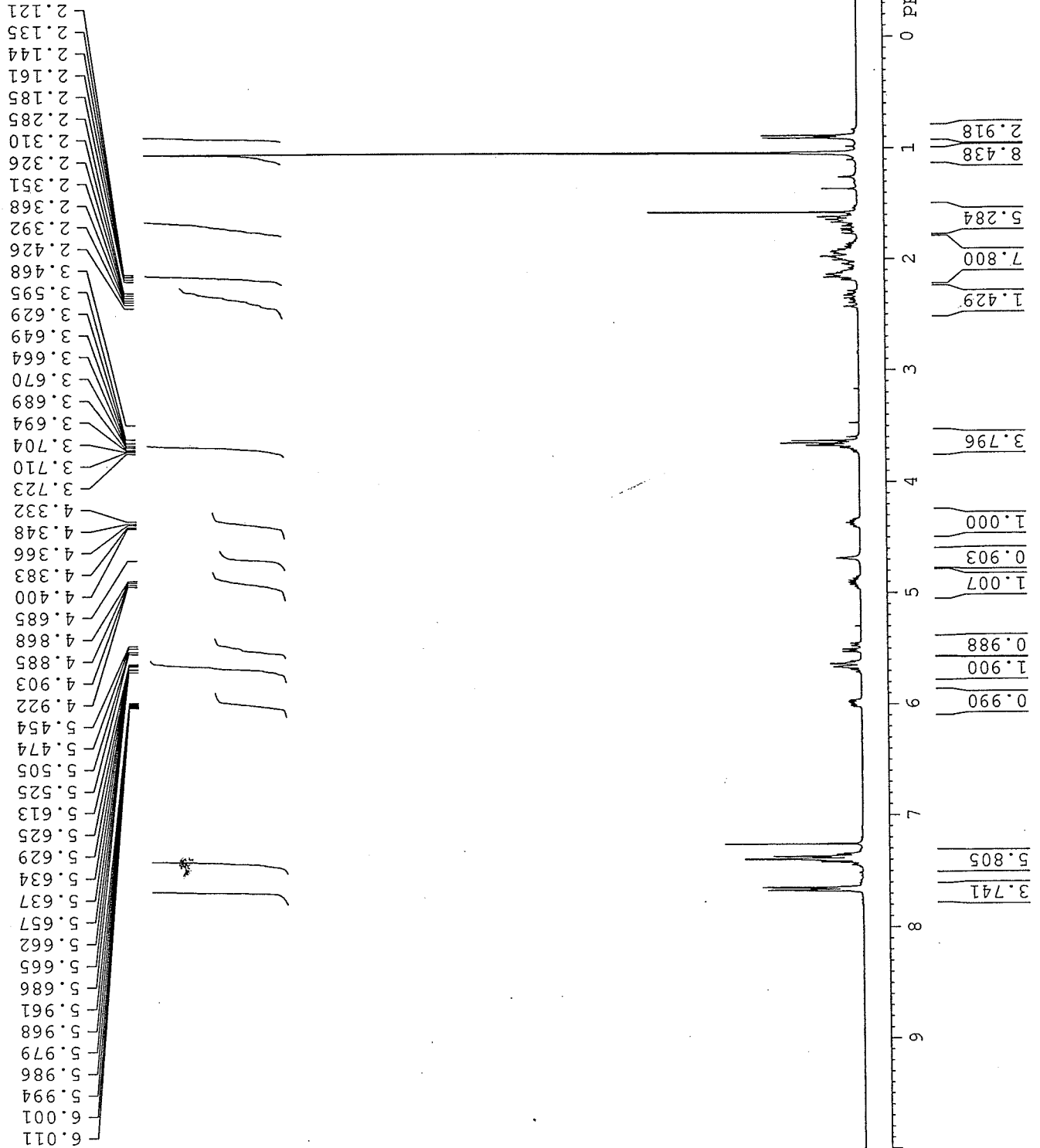
\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPDPRG2 waltz16  
 NUC2 13C  
 P2 80.00 usec  
 PL2 2.00 dB  
 PL12 17.50 dB  
 PL13 19.00 dB  
 SFO2 300.1315007 MHz

F2 - Processing parameters  
 SI 131072  
 SF 75.4677196 MHz  
 MDW 0  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

ID NMR plot parameters  
 CX 20.00 cm  
 F1P 200.000 ppm  
 F1 15093.54 Hz  
 F2P -10.000 ppm  
 F2 -754.68 Hz  
 PPMCM 10.50000 ppm/cm  
 HZCM 792.41107 Hz/cm



H1/diazoester



```

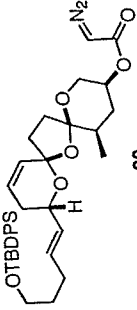
Current Data Parameters
NAME XZ-III-61
EXPNO 3
PROCNO 1
DU /m
USER xzbou

F2 - Acquisition Parameters
Date_ 20030930
Time_ 21.38
INSTRUM dpx300
PROBHD 5 mm QNP 1H
PULPROG zg30
TD 32768
SOLVENT CDCl3
NS 32
DS 2
SWH 4496.403 Hz
FIDRES 0.137219 Hz
AQ 3.6438515 sec
RG 574.7
DM 111.200 usec
DE 6.00 usec
TE 300.0 K
D1 1.50000000 sec

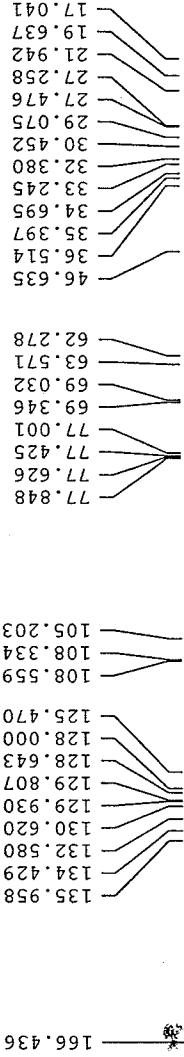
===== CHANNEL f1 =====
NUC1 1H
P1 8.20 usec
PL1 -3.00 dB
SFO1 300.1319000 MHz

F2 - Processing Parameters
SI 32768
SF 300.1300063 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

ID NMR plot parameters
CX 20.00 cm
F1P 10.000 ppm
F1 3001.30 Hz
F2P -0.500 ppm
F2 -150.07 Hz
PPMCM 0.52500 ppm/cm
HZCM 157.56825 Hz/cm
  
```



C13/diazoester



```

Current Data Parameters
NAME      XZ-III-61
EXPNO    7
PROCNO   1
DU       /m
USER     xzhou

F2 - Acquisition Parameters
Date_    20031002
Time     22.14
INSTRUM  dpk300
PROBHD   5 mm QNP 1H
PULPROG  zgpg30rep.tk
TD       65536
SOLVENT  22622
NS       2
DS       2
SMH      18832.393 Hz
FIDRES   0.287360 Hz
AQ       1.7400308 sec
RG       8192
DW       26.550 usec
DE       6.00 usec
TE       300.0 K
D1       0.00300000 sec
D11      0.03000000 sec
D12      0.00002000 sec
L2       45

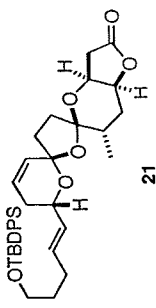
===== CHANNEL f1 =====
NUC1     13C
P1       7.60 usec
PL1      -3.00 dB
SFO1     75.4756431 MHz

===== CHANNEL f2 =====
CPDPRG2  waltz16
NUC2     1H
PCPD2    80.00 usec
PL2      2.00 dB
PL12     17.55 dB
PL13     19.00 dB
SFO2     300.1315007 MHz

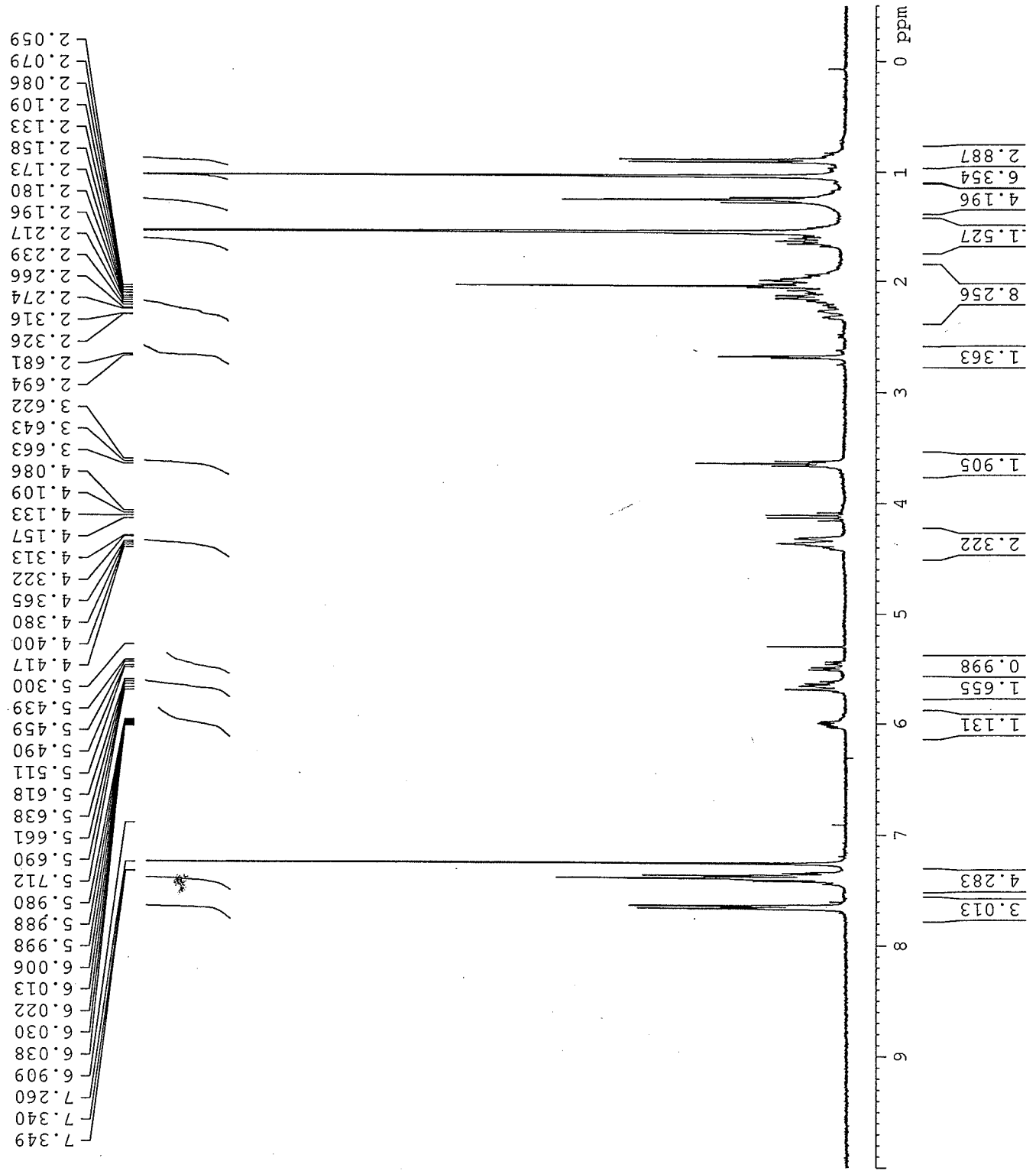
F2 - Processing Parameters
SI       131072
SF       75.4677190 MHz
WDW      EM
SSB      0
LB       3.00 Hz
GB       0
PC       1.40

ID NMR plot parameters
CX       20.00 cm
FIP      200.000 ppm
F1       15093.34 Hz
F2P      -10.000 ppm
F2       -754.86 Hz
PENCM    10.50000 ppm/cm
HZCM     792.41107 Hz/cm
  
```

210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 ppm



H1



Current Data Parameters  
 NAME XZ-III-41  
 EXPNO 4  
 PROCNO 1  
 DU /m  
 USER xzhou

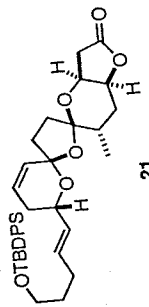
F2 - Acquisition Parameters  
 Date\_ 20030804  
 Time 9.43  
 INSTRUM dpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 64  
 DS 2  
 SWH 4496.403 Hz  
 FIDRES 0.137219 Hz  
 AQ 3.6438515 sec  
 RG 1149.4  
 DW 111.200 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 1.5000000 sec

===== CHANNEL f1 =====  
 NUC1 1H  
 P1 8.20 usec  
 PL1 -3.00 dB  
 SF01 300.1319000 MHz

F2 - Processing Parameters  
 SI 32768  
 SF 300.1300063 MHz  
 WDW EM  
 SSB 0  
 LB 0.30 Hz  
 GB 0  
 PC 1.00

ID NMR plot parameters  
 CX 20.00 cm  
 F1P 10.000 ppm  
 F1 3001.30 Hz  
 F2P -0.500 ppm  
 F2 -150.07 Hz  
 PPMCM 0.52500 ppm/cm  
 HZCM 157.56825 Hz/cm

C13/benzene



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Current Data Parameters  
 NAME X2-111-55  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

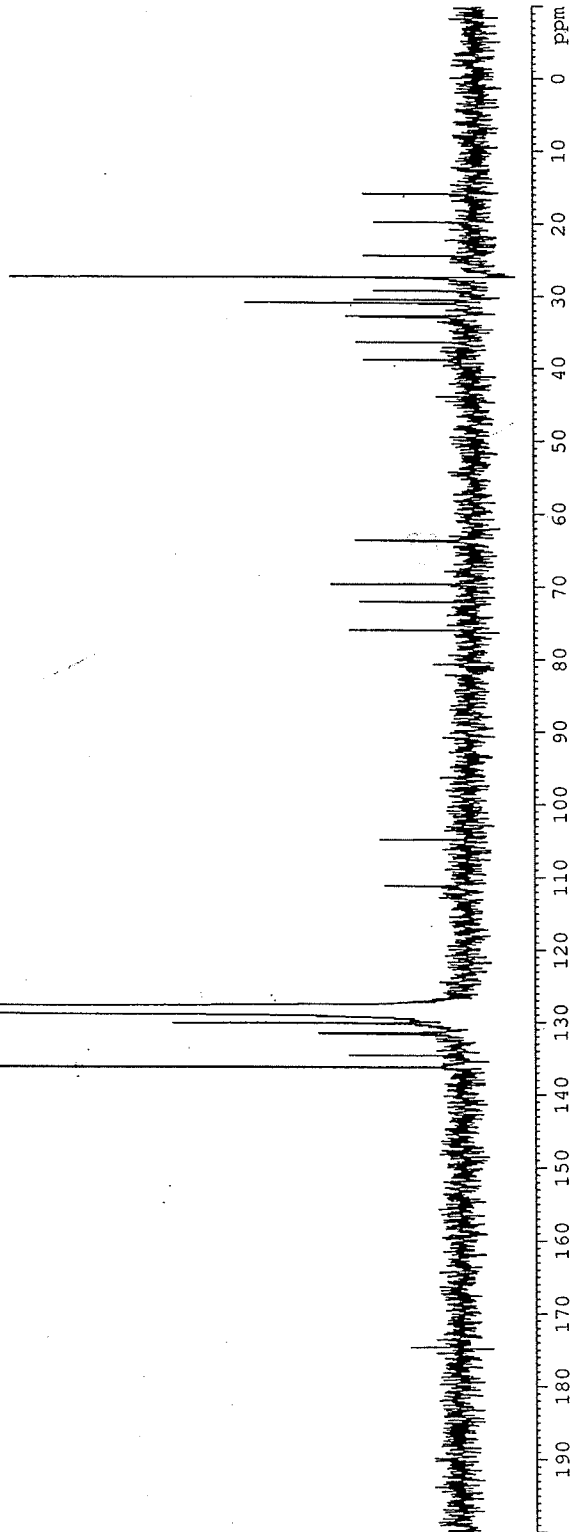
F2 - Acquisition Parameters  
 Date\_ 20030919  
 Time 11.37  
 INSTRUM dpx400  
 PROBHD 5 mm BBO 2-G  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 23811  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 812.7  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

==== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

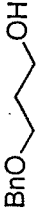
==== CHANNEL f2 =====  
 CpDFRG2 waitz16  
 NUC2 1H  
 P2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

F2 - Processing parameters  
 SI 65836  
 SF 100.5825550 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

ID NMR plot parameters  
 CX 20.00 cm  
 F1P 200.000 ppm  
 F1 20116.51 Hz  
 F2P 0.000 ppm  
 F2 0.00 Hz  
 PPMCM 10.00000 ppm/cm  
 HZCM 1005.823556 Hz/cm

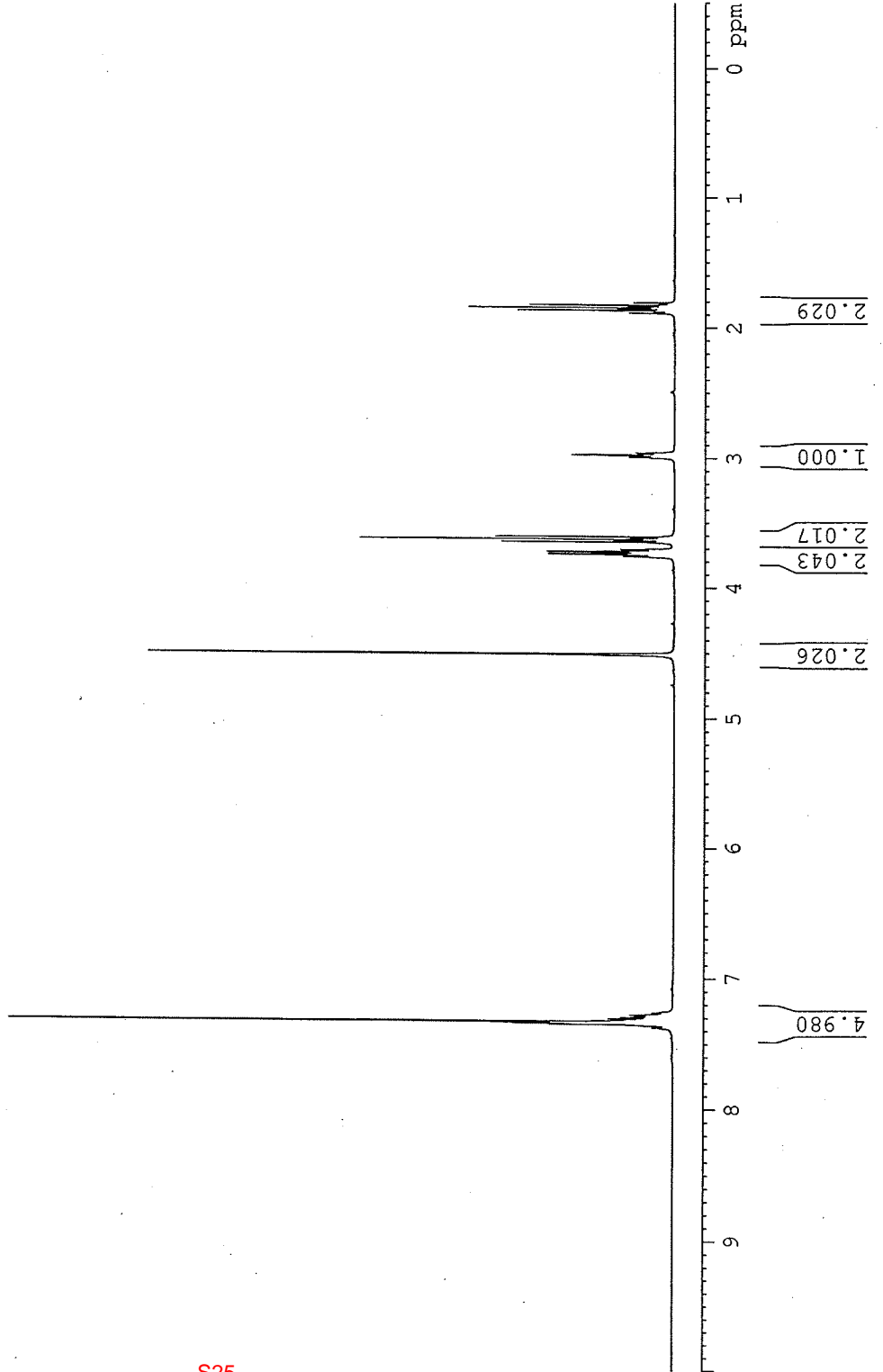
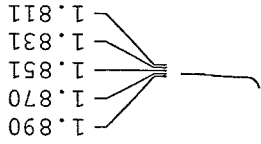
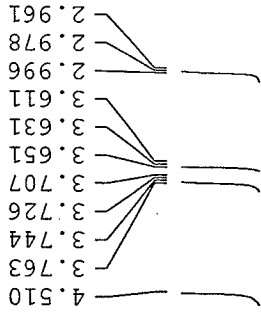
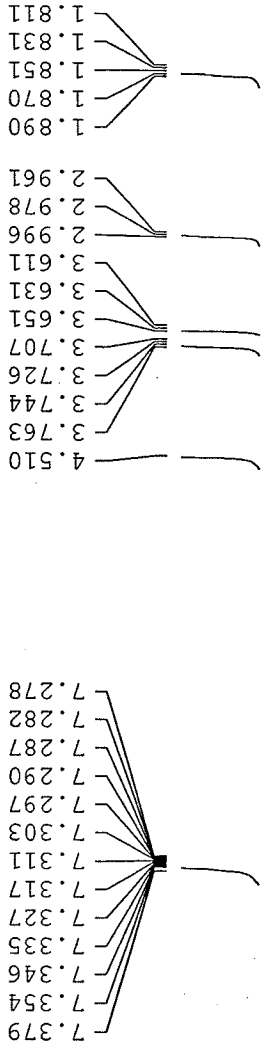






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alcohol/H1



```

Current Data Parameters
NAME      X2-V-44
EXPNO    3
PROCNO   1
DU       /m
USER     xzhou

F2 - Acquisition Parameters
Date_    20040215
Time     13.46
INSTRUM  gpcx300
PROBHD   5 mm QNP 1H
PULPROG  zg30
TD       32768
SOLVENT  CDCl3
NS       32
DS       2
SWH      4496.403 Hz
FIDRES   0.137219 Hz
AQ       3.6438515 sec
RG       50.8
DW       111.200 usec
DE       6.00 usec
TE       300.0 K
D1       1.50000000 sec

===== CHANNEL f1 =====
NUC1     1H
P1       8.20 usec
PL1     -3.00 dB
SFO1    300.1319000 MHz

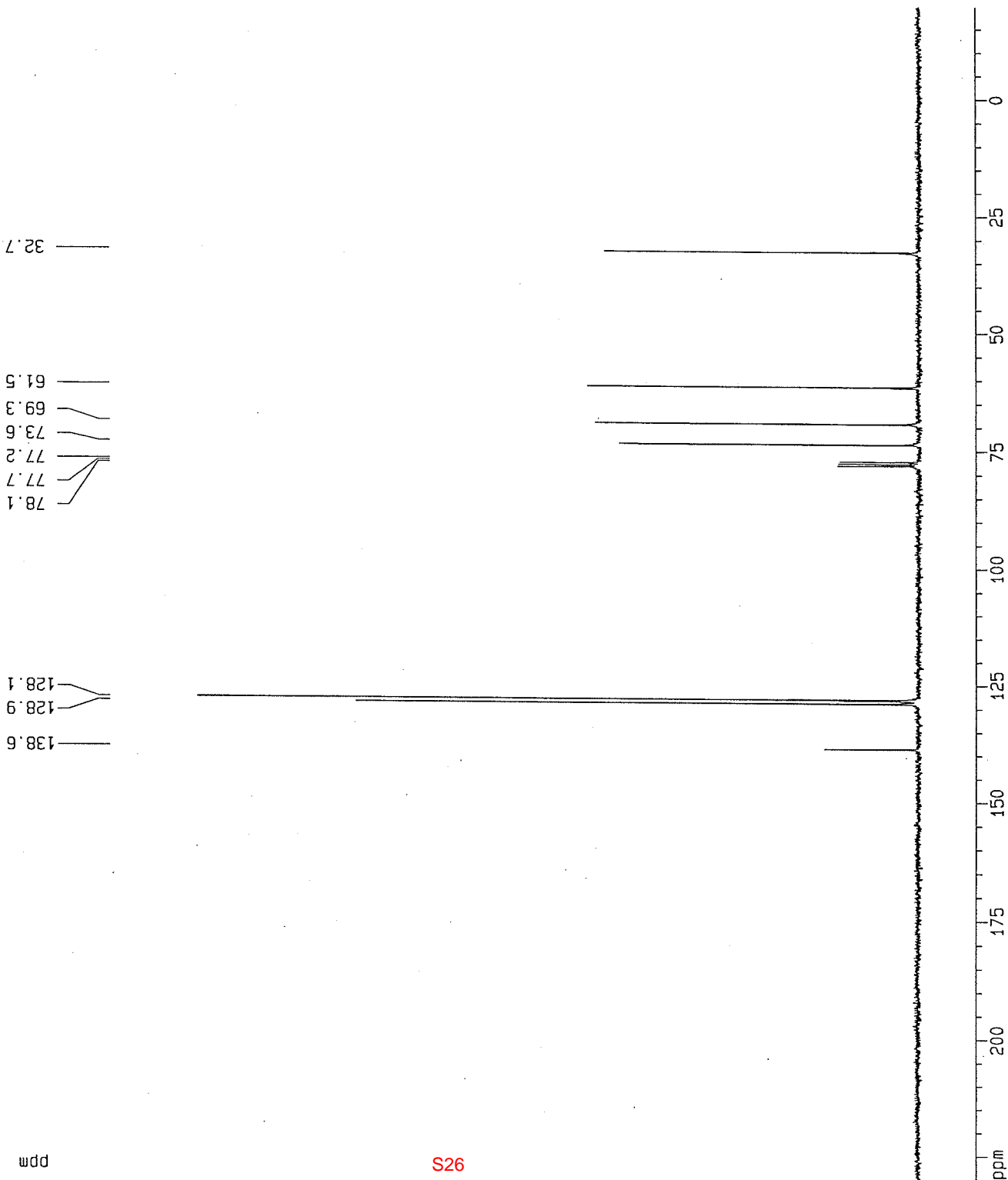
F2 - Processing parameters
SI       32768
SF       300.1300063 MHz
WDW      EM
SSB      0
LB       0.30 Hz
GB       0
PC       1.00

ID NMR plot parameters
CX       120.00 cm
FLP     10.000 ppm
F1      3001.30 Hz
F2      -6.500 ppm
FZ      -159.07 Hz
FMCN    0.32300 ppm/cm
HZCN    157.58625 Hz/cm
  
```



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C13/alcohol



ppm

S26

Current Data Parameters  
 NAME XZ-V-44  
 EXPNO 4  
 PROCNO 1  
 DU /m  
 USER xzhou

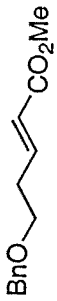
F2 - Acquisition Parameters  
 Date\_ 20040215  
 Time 14.10  
 INSTRUM dpx300  
 PROBHD 5 mm GNP 1H  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 130  
 DS 2  
 SWH 10832.393 Hz  
 FIDRES 0.287360 Hz  
 AQ 1.7400308 sec  
 RG 14596.5  
 DM 26.550 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 13C  
 P1 7.60 usec  
 PL1 -3.00 dB  
 SF01 75.4756431 MHz

\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 2.00 dB  
 PL12 17.55 dB  
 PL13 19.00 dB  
 SF02 300.1315007 MHz

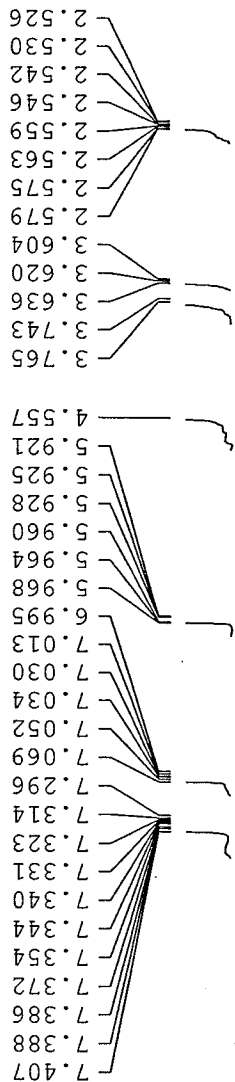
F2 - Processing parameters  
 SI 131072  
 SF 75.4677190 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

1D NMR plot parameters  
 CX 20.00 cm  
 F1P 229.771 ppm  
 F1 17340.31 Hz  
 F2P -19.771 ppm  
 F2 -1482.08 Hz  
 PPMCM 12.47712 ppm/cm  
 HZCM 941.61951 Hz/cm



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methy ester/H1



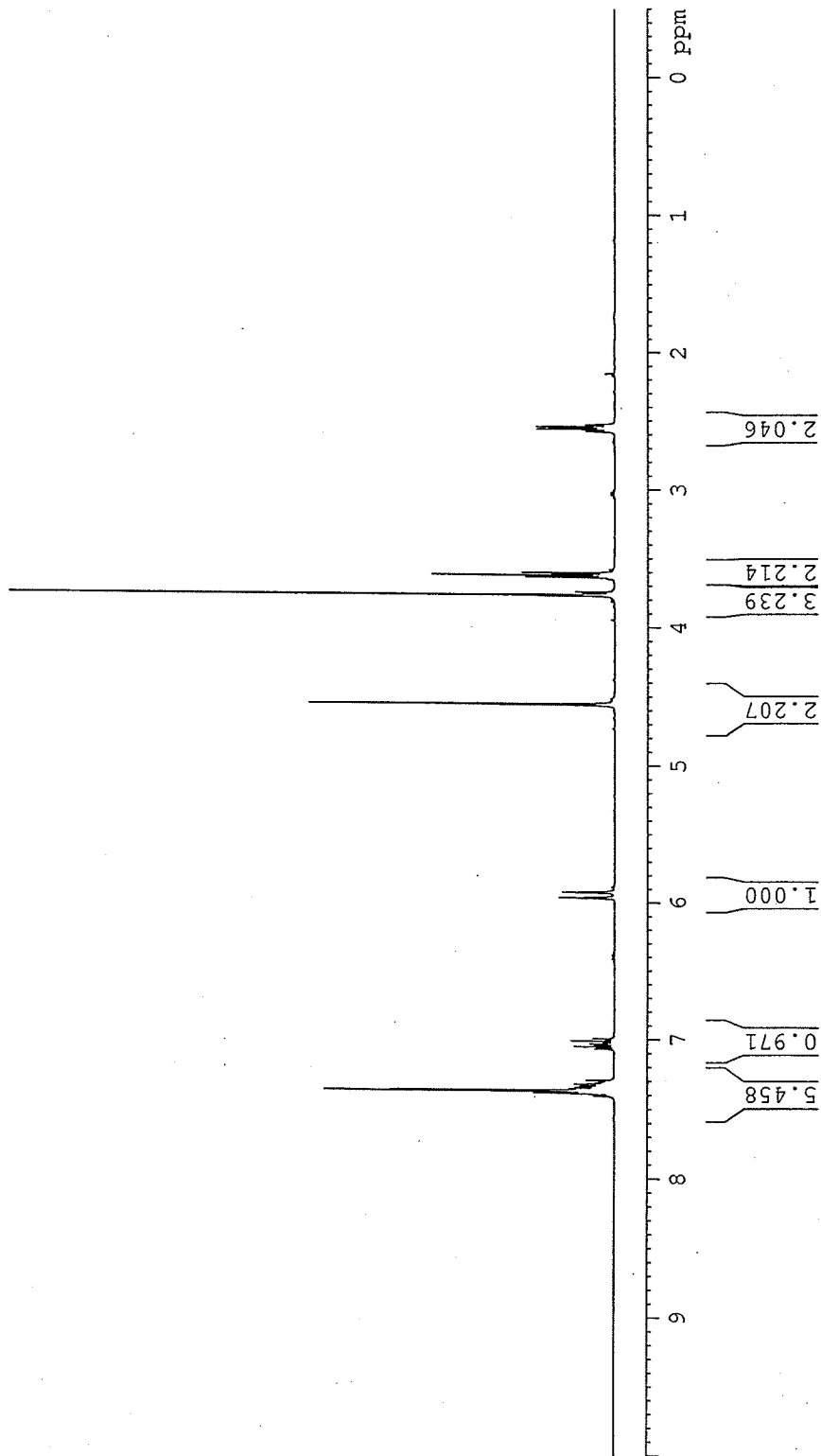
Current Data Parameters  
 NAME XZ-IV-16  
 EXPNO 6  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040216  
 Time 17.12  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 9  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 128  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.0000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1  
 P1 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

F2 - Processing Parameters  
 SI 65536  
 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

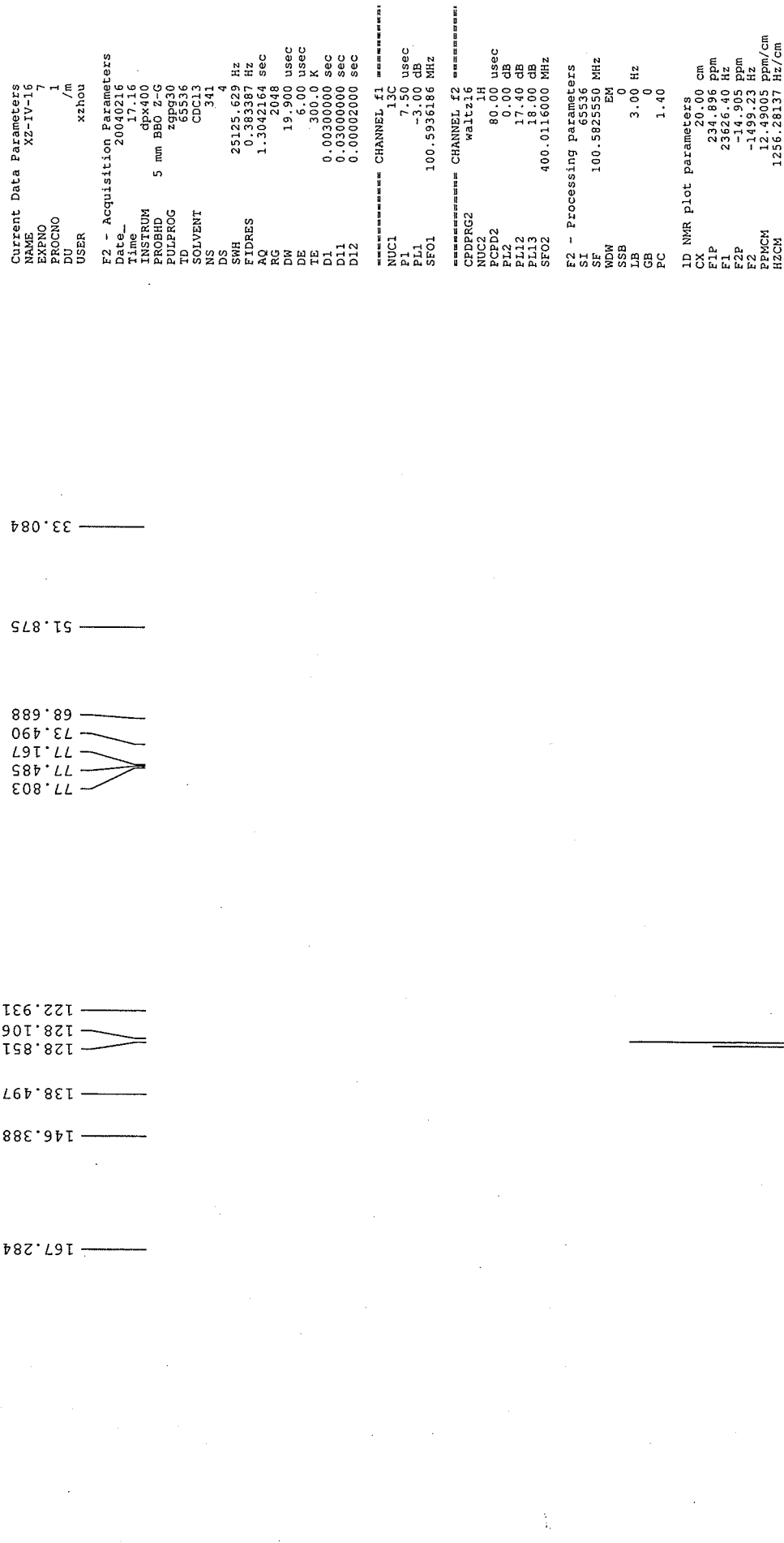
ID NMR plot parameters  
 CX 21.00 cm  
 FIP 10.000 ppm  
 F1 4000.10 Hz  
 F2 -0.500 ppm  
 FZ -20.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm





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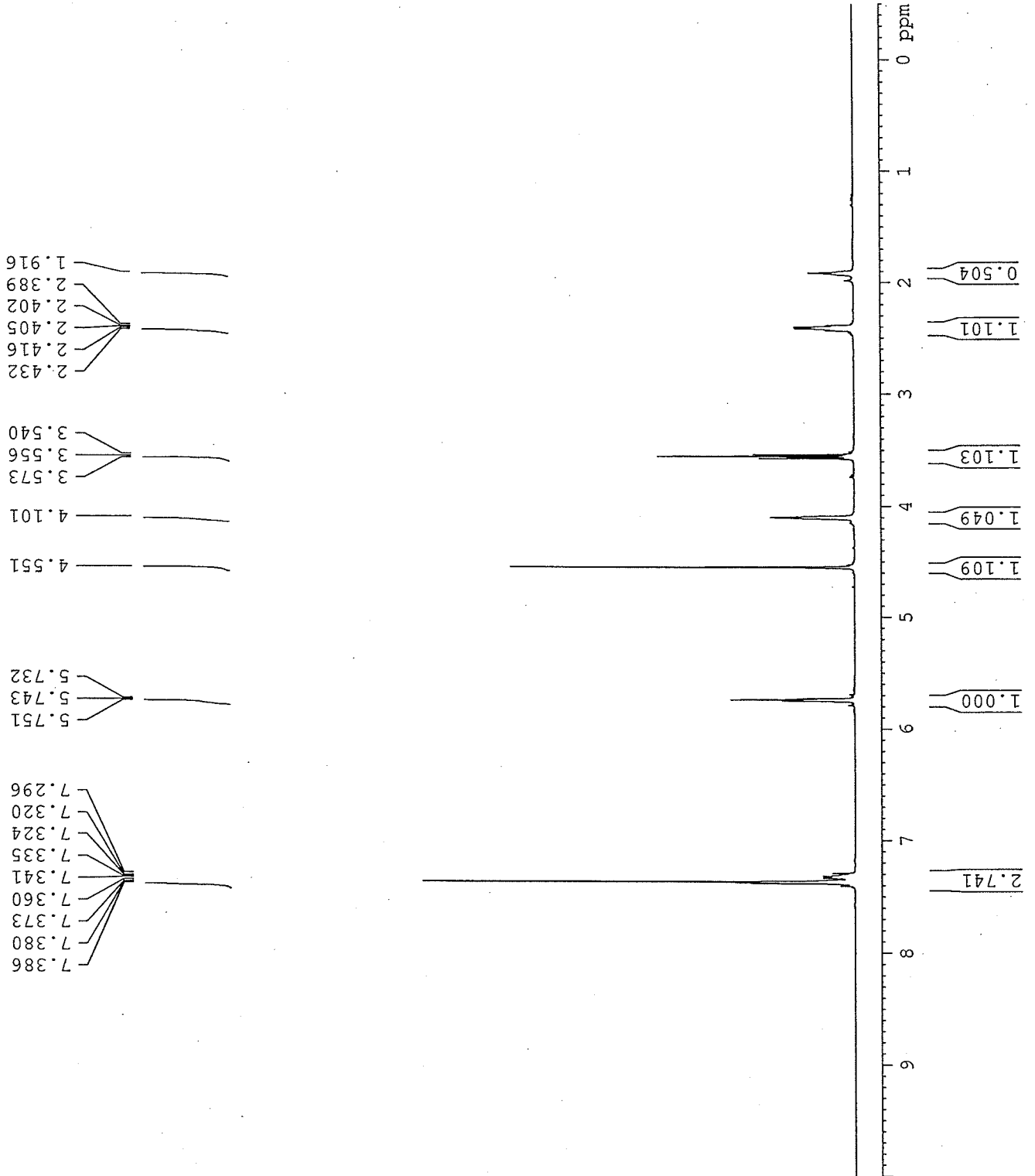
C13/methyl ester





48

allyl alcohol



Current Data Parameters  
 NAME XZ-IV-18  
 EXPNO 3  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040216  
 Time\_ 21:22  
 INSTRUM dp400  
 PROSHD 5 mm BBO 2-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 64  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

===== CHANNEL f1 =====  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

F2 - Processing parameters  
 SI 65536  
 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

1D NMR plot parameters  
 CX 21.00 cm  
 FIP 13.994 ppm  
 F1 5597.67 Hz  
 F2P -0.994 ppm  
 F2 -397.54 Hz  
 PPMCM 0.71370 ppm/cm  
 HZCM 285.48593 Hz/cm



C13/allyl alcohol

138.728  
131.482  
129.537  
128.821  
128.143  
128.056

77.835  
77.517  
77.199  
73.339  
70.043  
63.945

33.068

```

Current Data Parameters
NAME XZ-IV-18
EXPNO 4
PROCNO 1
DU /m
USER xzhou

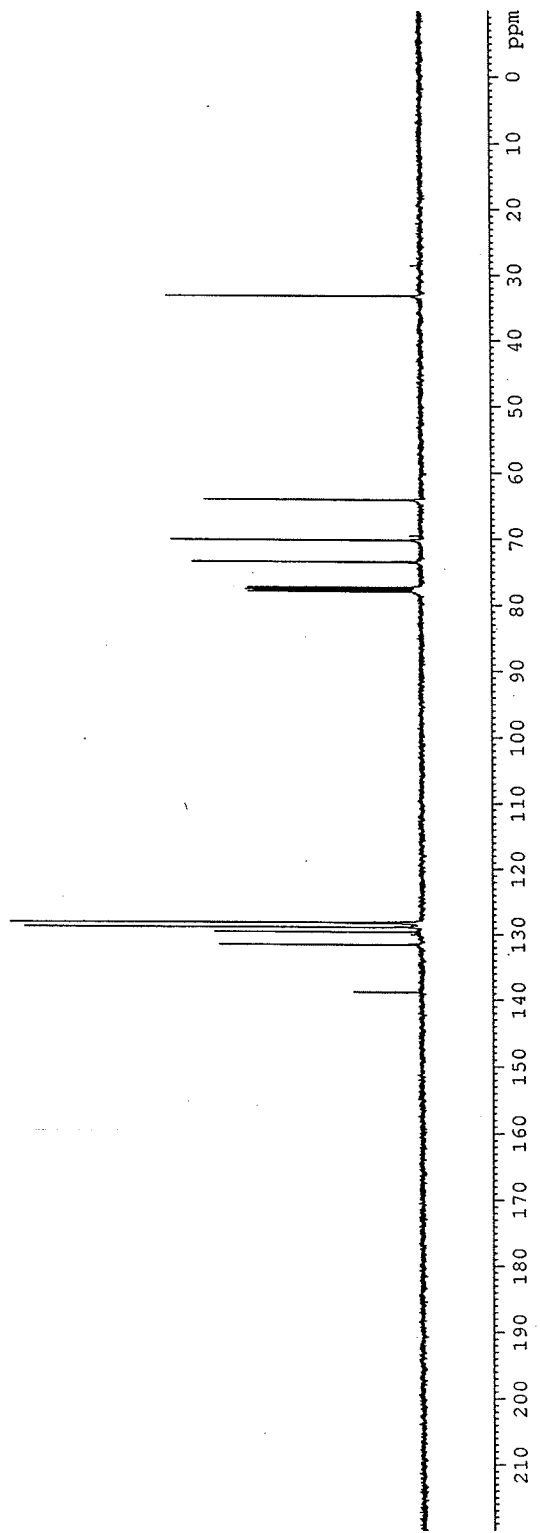
F2 - Acquisition Parameters
Date_ 20040216
Time 21.29
INSTRUM dpx400
PROBHD 5 mm BBO Z-G
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 374
DS 4
SWH 25125.629 Hz
FIDRES 0.383387 Hz
AQ 1.3042164 sec
RG 2048
DM 19.900 usec
DE 6.00 usec
TE 300.0 K
D1 0.00300000 sec
D11 0.03000000 sec
D12 0.00002000 sec

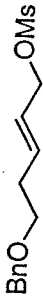
===== CHANNEL f1 =====
NUC1 13C
P1 7.50 usec
PL1 -3.00 dB
SFO1 100.5936186 MHz

===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 0.00 dB
PL12 17.40 dB
PL13 18.00 dB
SFO2 400.0116000 MHz

F2 - Processing Parameters
SI 6536
SF 100.5825550 MHz
WDW EM
SSB 0
LB 3.00 Hz
GB 0
PC 1.40

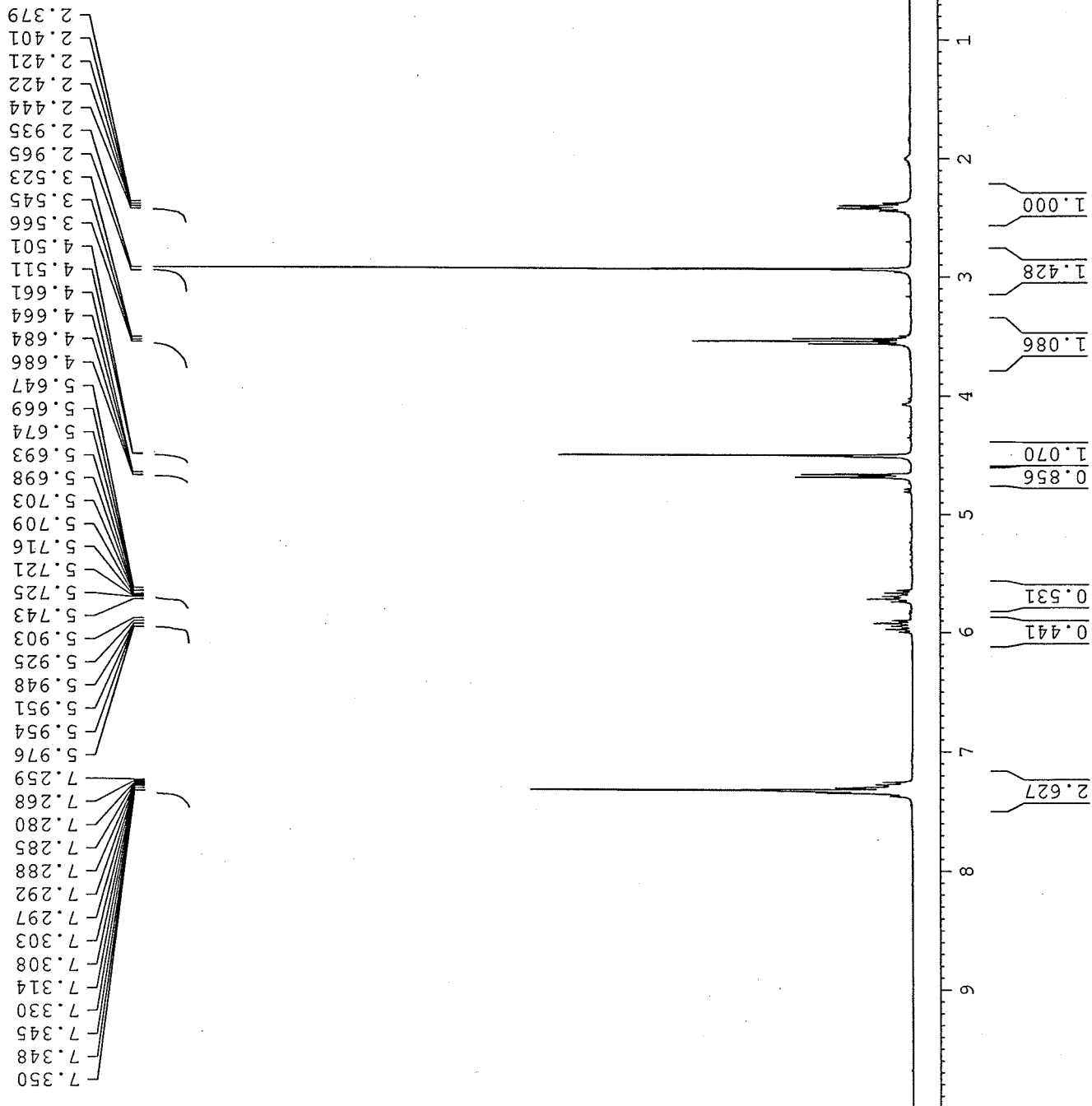
ID NMR plot parameters
CX 20.00 cm
FLP 200.000 ppm
F1 20116.51 Hz
F2 0.000 ppm
F2 0.00 Hz
P1MCM 10.00000 ppm/cm
HZCM 1005.82356 Hz/cm
  
```





H1/OMS ester

49



```

Current Data Parameters
NAME      XZ-V-44
EXPNO     6
PROCNO    1
DU         /m
USER      xzhou

F2 - Acquisition Parameters
Date_     20040218
Time      19.06
INSTRUM   dp*300
PROBHD    5 mm QNP 1H
PULPROG   zg30
TD         32768
SOLVENT   CDCl3
NS         32
DS         2
SWH        4496.403 Hz
FIDRES     0.137219 Hz
AQ         3.6438515 sec
RG         64
DW         111.200 usec
DE         6.00 usec
TE         300.0 K
D1         1.50000000 sec

===== CHANNEL f1 =====
NUC1       1H
P1         8.20 usec
PL1        -3.00 dB
SFO1       300.1319000 MHz

F2 - Processing parameters
SI         32768
SF         300.1300063 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

ID NMR plot parameters
CX         20.00 cm
FlP        10.000 ppm
Fl         3001.30 Hz
F2P        -0.500 ppm
F2         -150.07 Hz
PPMCM      0.52500 ppm/cm
HZCM       157.56825 Hz/cm
  
```

```

Current Data Parameters
NAME      XZ-V-44
EXPNO     7
PROCNO    1
DU        /m
USER      xzhou

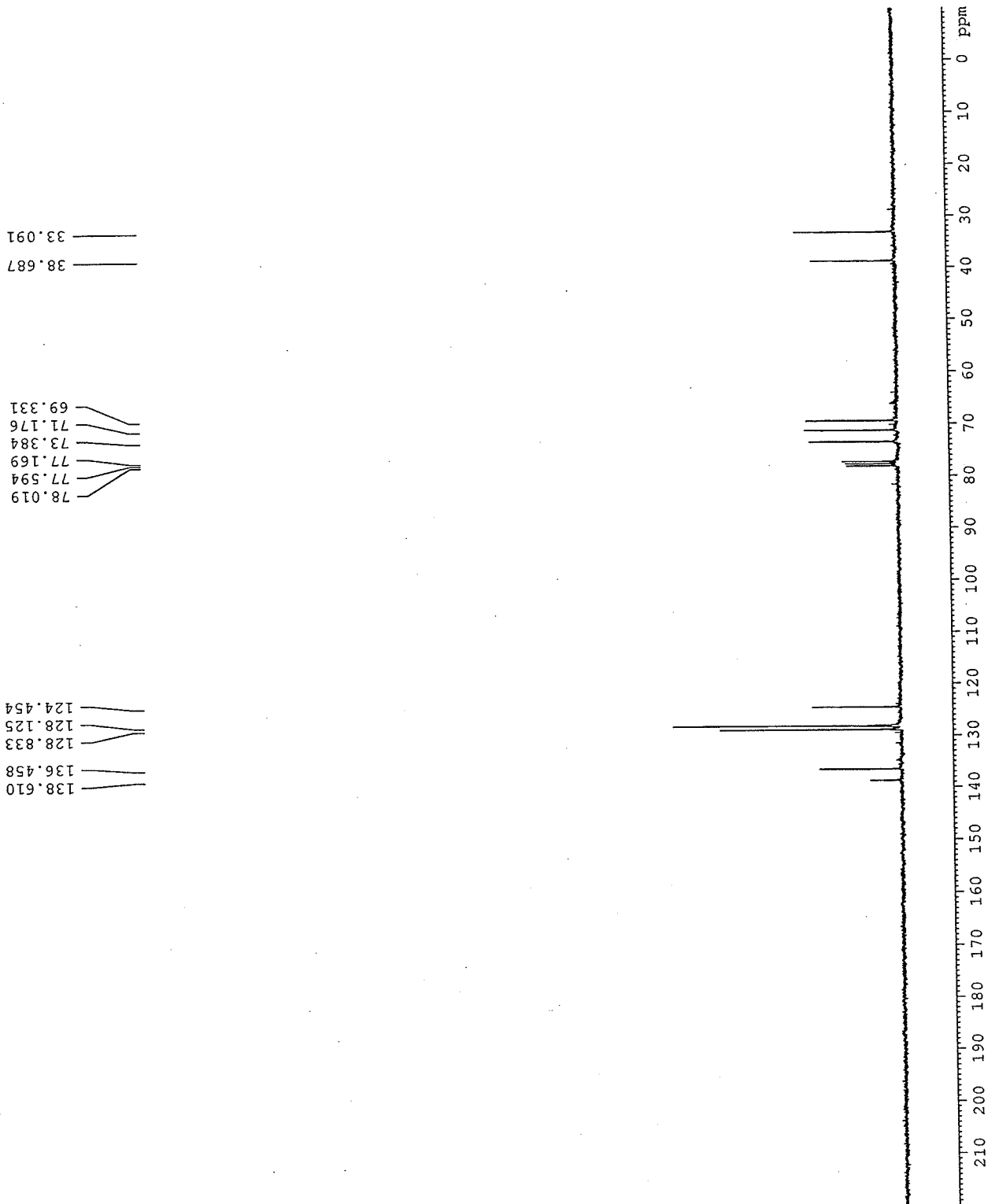
F2 - Acquisition Parameters
Date_    20040219
Time     21.42
INSTRUM  dpx300
PROBHD   5 mm QNP 1H
PULPROG  zgpg30
TD        65536
SOLVENT  CDCl3
NS        152
DS        2
SWH       18832.393 Hz
FIDRES    0.287360 Hz
AQ         1.7400308 sec
RG         11585.2
DW         26.550 usec
DE         6.00 usec
TE         300.0 K
D1         0.00300000 sec
D11        0.03000000 sec
D12        0.0002000 sec

===== CHANNEL f1 =====
NUC1       13C
P1         7.60 usec
PL1        -3.00 dB
SFO1       75.4756431 MHz

===== CHANNEL f2 =====
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2        2.00 dB
PL12       17.55 dB
PL13       19.00 dB
SFO2       300.1315007 MHz

F2 - Processing Parameters
SI         131072
SF         75.4677190 MHz
WDW        EM
SSB        0
LB         3.00 Hz
GB         0
PC         1.40

ID NMR plot parameters
CX         20.00 cm
F1P        200.000 PPM
F1         15093.54 Hz
F2P        -10.000 PPM
F2         -754.68 Hz
PPNMC      10.50000 PPM/cm
HZCM       792.41107 Hz/cm
    
```

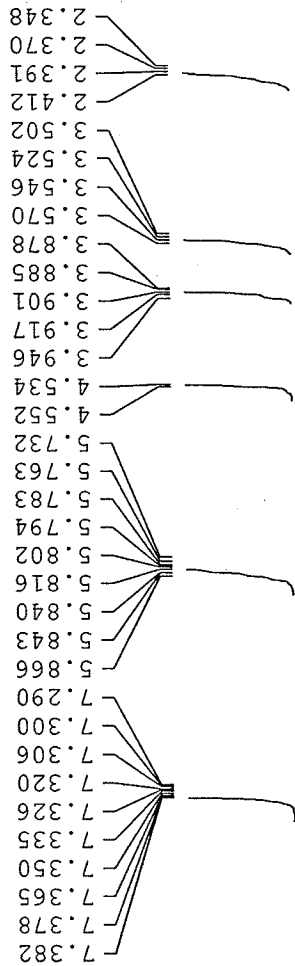






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allyl iodide



```

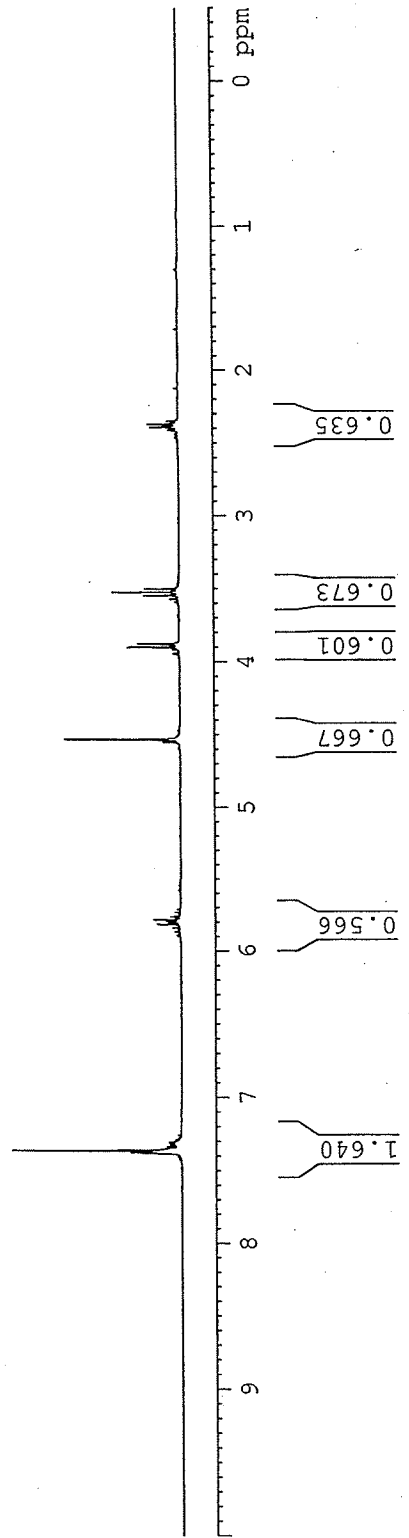
Current Data Parameters
NAME      XZ-IV-19
EXPNO     1
PROCNO    1
DU        /m
USER      xzhou

F2 - Acquisition Parameters
Date_     20031118
Time      19.09
INSTRUM   dpx300
PROBHD    5 mm QNP 1H
PULPROG   zg30
TD         32768
SOLVENT   CDCl3
NS         32
DS         2
SWH       4496.403 Hz
FIDRES    0.137219 Hz
AQ         3.6438515 sec
RG         64
DM         111.200 usec
DE         6.00 usec
TE         300.0 K
D1         1.50000000 sec

***** CHANNEL f1 *****
NUC1       1H
P1         8.20 usec
PL1        -3.00 dB
SFO1       300.1319000 MHz

F2 - Processing Parameters
SI         32768
SF         300.1300063 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

ID NMR plot parameters
CX         20.00 cm
F1P        13.800 ppm
F1         4141.87 Hz
F2P        -1.181 ppm
F2         -354.54 Hz
PPNCM      0.74508 ppm/cm
HZCM       224.82013 Hz/cm
  
```





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C13

```

Current Data Parameters
NAME      XZ-IV-19
EXPNO     2
PROCNO    1
DU         /m
USER      xzhou

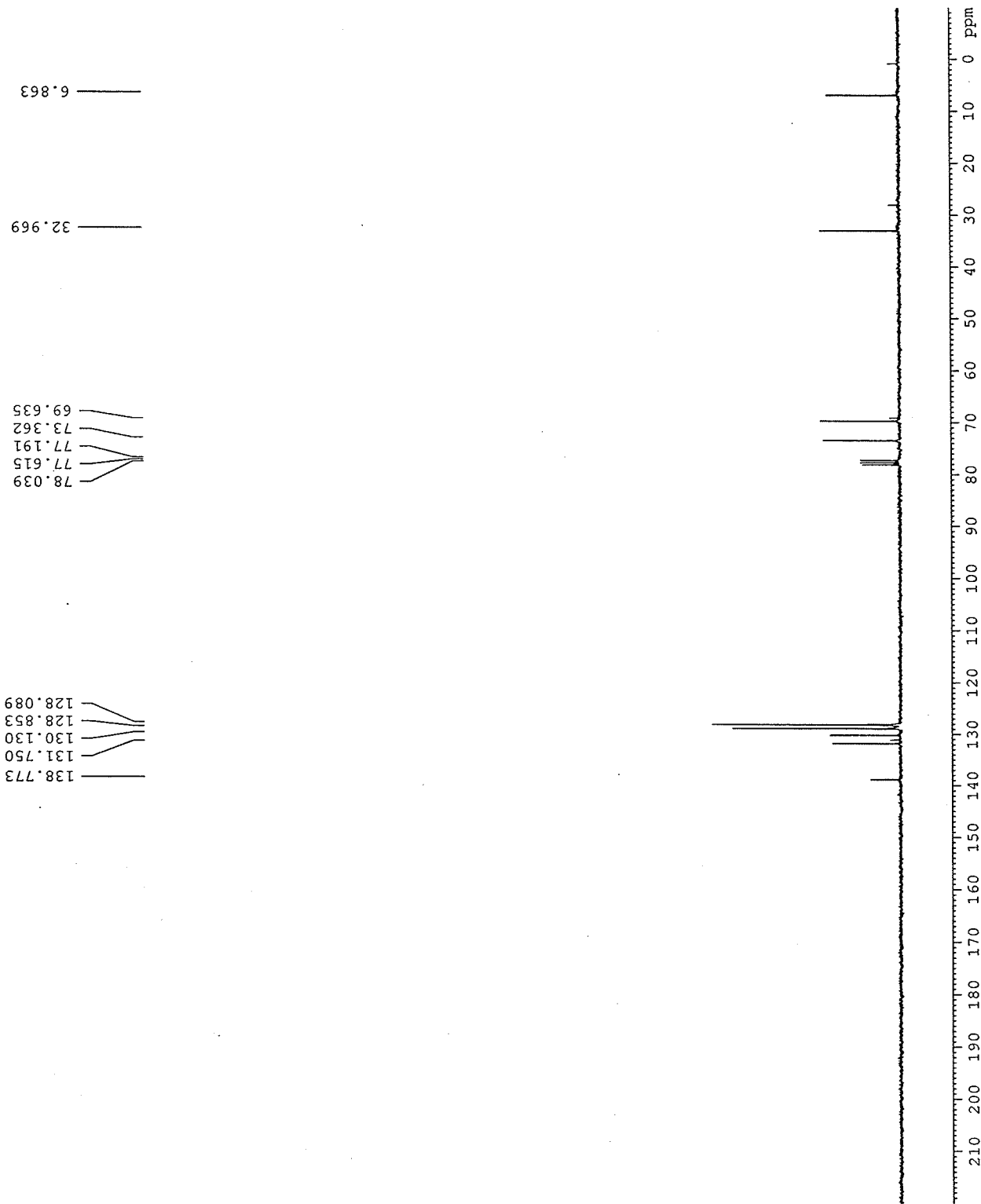
F2 - Acquisition Parameters
Date_     20031118
Time      19.14
INSTRUM   dpx300
PROBHD    5 mm QNP 1H
PULPROG   zgpg30
TD         65536
SOLVENT   NS
NS         97
DS         2
SMH        18832.393 Hz
FIDRES     0.287360 Hz
AQ         1.7400308 sec
RG         13004
DW         26.550 usec
DE         6.00 usec
TE         300.0 K
D1         0.00300000 sec
D11        0.03000000 sec
D12        0.00002000 sec

===== CHANNEL f1 =====
NUC1       13C
P1         7.60 usec
PL1        -3.00 dB
SFO1       75.4756431 MHz

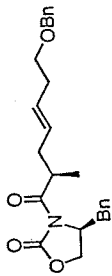
===== CHANNEL f2 =====
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2        2.00 dB
PL12       17.55 dB
PL13       19.00 dB
SFO2       300.1315007 MHz

F2 - Processing parameters
SI         131072
SF         75.4677190 MHz
WDW        EM
SSB        0
LB         3.00 Hz
GB         0
PC         1.40

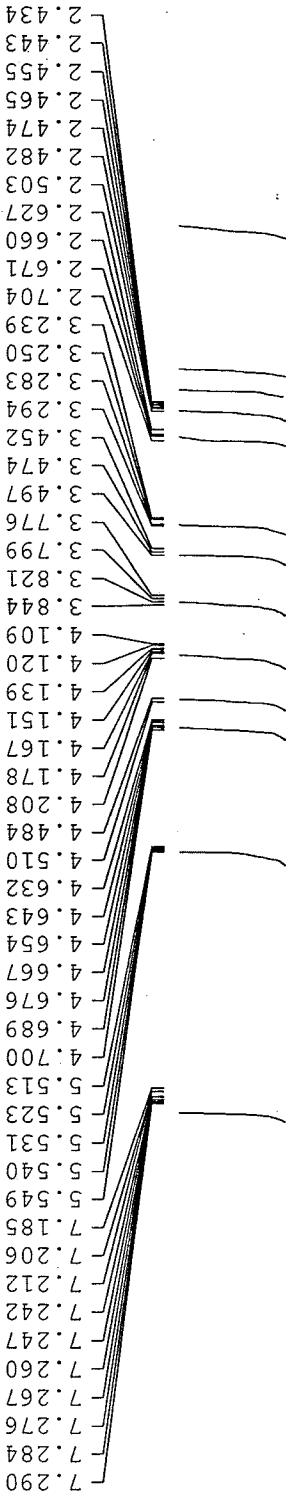
ID NMR plot parameters
CX         20.00 cm
FLP        229.771 ppm
F1         17340.31 Hz
F2P        -19.771 ppm
F2         -1492.08 Hz
PPMCM      12.47712 ppm/cm
HZCM       941.61951 Hz/cm
  
```



alkylation/H1



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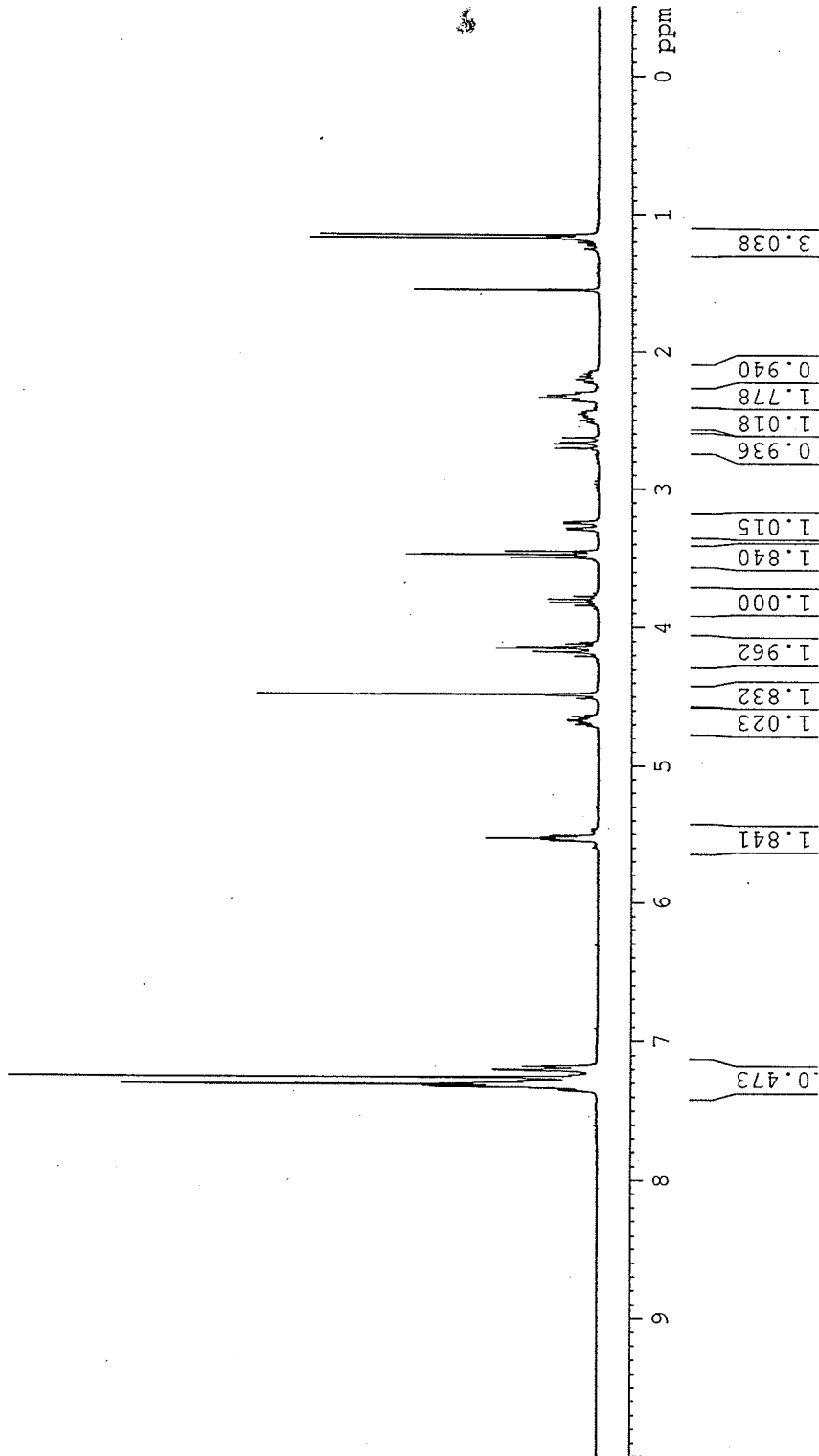
Current Data Parameters  
 NAME XZ-IV-68  
 EXPNO 4  
 PROCNO 1  
 DU /m  
 USER xzhou

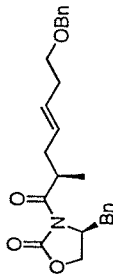
F2 - Acquisition Parameters  
 Date\_ 20040103  
 Time 16.32  
 INSTRUM dpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 4496.403 Hz  
 FIDRES 0.137219 Hz  
 AQ 3.6438515 sec  
 RG 1149.4  
 DW 111.200 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 1.50000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 8.20 usec  
 PL1 -3.00 dB  
 SFO1 300.1319000 MHz

F2 - Processing Parameters  
 SI 32768  
 SF 300.1300063 MHz  
 WDW EM  
 SSB 0  
 LB 0.30 Hz  
 GB 0  
 PC 1.00

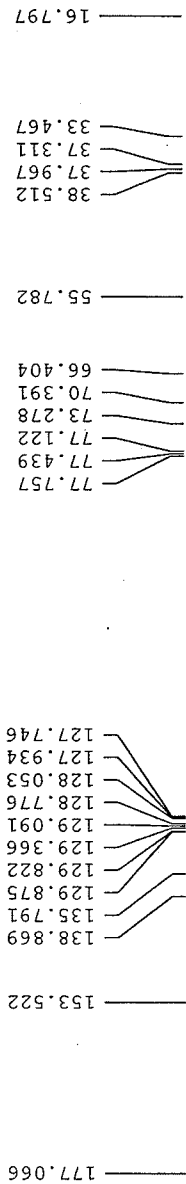
ID NMR plot parameters  
 CX 20.00 cm  
 Flp 10.000 ppm  
 Fl 3001.30 Hz  
 F2P -0.500 ppm  
 F2 -150.07 Hz  
 PPMCM 0.52500 ppm/cm  
 HZCM 157.56825 Hz/cm





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C13/alkylation



```

Current Data Parameters
NAME      XT-IV-68
EXPNO    1
PROCNO   1
DU       /m
USER     xzhou

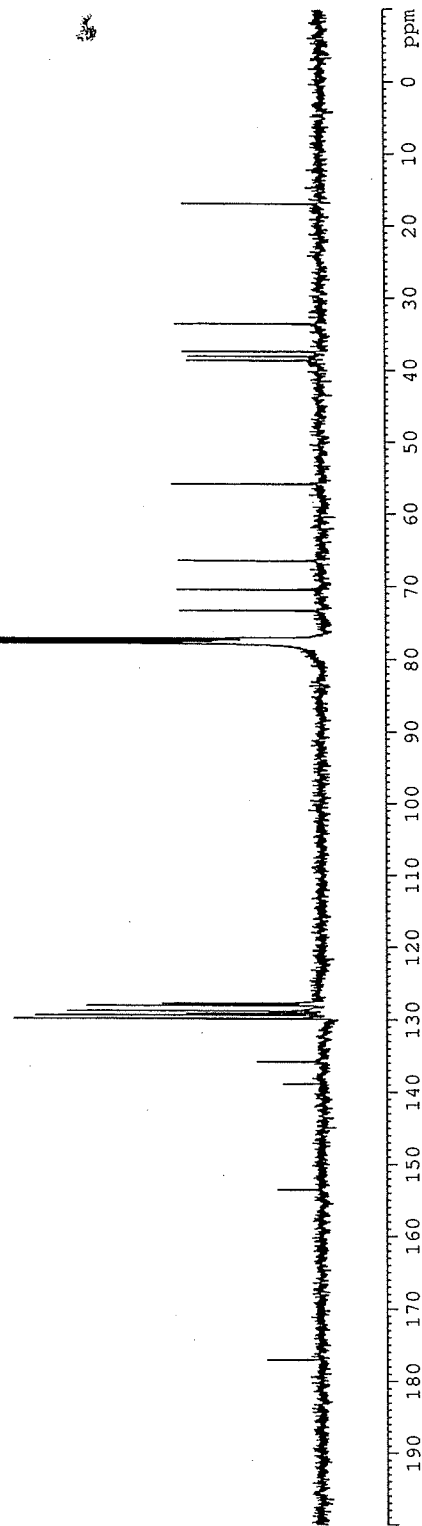
F2 - Acquisition Parameters
Date_    20040104
Time     14.26
INSTRUM  dpx400
PROBHD   5 mm BBO Z-G
PULPROG  zgpg30
ID       65336
SOLVENT  CDCl3
NS       8210
DS       25125.62 Hz
SWH      0.383387 Hz
FIDRES   1.304101 sec
AQ       374.7
RG       19.900 usec
DE       36.00 usec
TE       300.0 K
D1       0.00300000 sec
D11      0.05000000 sec
D12      0.00002000 sec

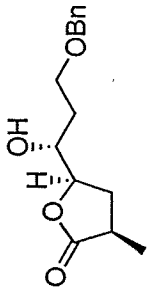
===== CHANNEL f1 =====
NUC1      13C
P1        7.50 usec
PL1       -2.00 dB
SFO1     100.5936186 MHz

===== CHANNEL f2 =====
CFDPRG2  waltz16
NUC2      1H
PCPDZ     80.00 usec
PL2       17.00 dB
PL3       17.40 dB
PL13      18.00 dB
SFO2     400.0116000 MHz

F2 - Processing parameters
SZ       65536
SF       100.5825550 MHz
RG       655
WDW      EM
SSB      0
LB       3.00 Hz
GB       0
PC       1.40

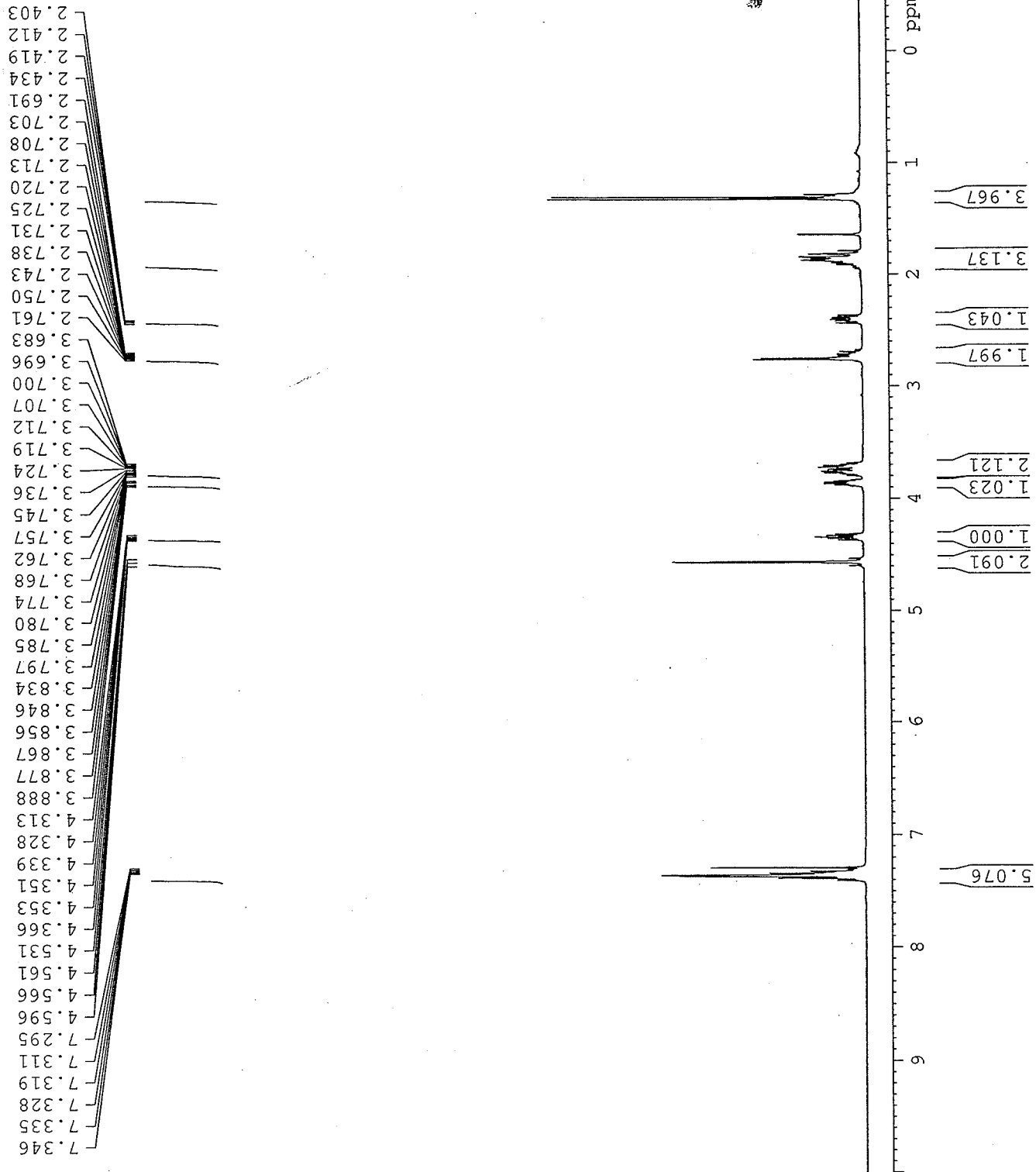
ID NMR plot parameters
CX       20.00 cm
FLF      200.000 ppm
F1F      20116.51 Hz
F2F      0.000 ppm
F3F      0.00 Hz
FAMCM    10.00000 ppm/cm
HZCM     1005.82356 Hz/cm
  
```





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lactone/H1



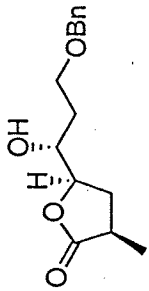
Current Data Parameters  
 NAME XZ-IV-67  
 EXPNO 4  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20031230  
 Time 12.34  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 406.4  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SF01 400.0126001 MHz

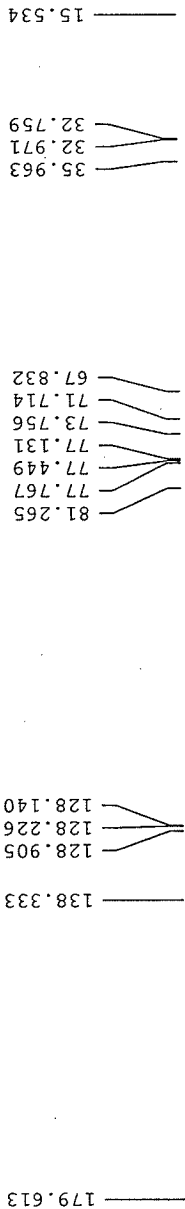
F2 - Processing parameters  
 SI 6536  
 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

LD-NMR plot parameters  
 CX 21.00 cm  
 F1P 10.000 ppm  
 F1 400.010 Hz  
 F2P -0.500 ppm  
 F2 -20.001 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



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lactone/Cl3



Current Data Parameters  
 NAME XZ-IV-67  
 EXPNO 8  
 PROCNO 1  
 DU /m  
 USER xzhou

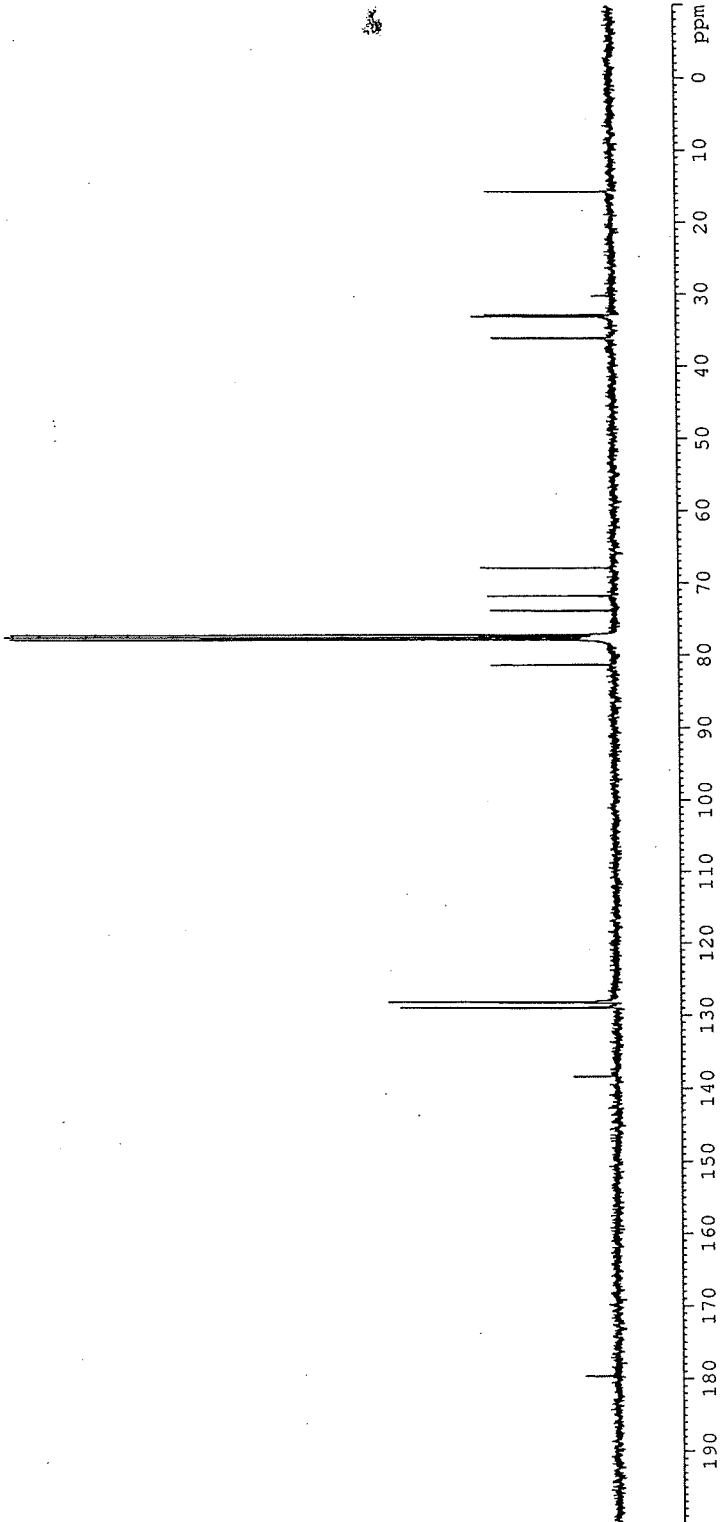
F2 - Acquisition Parameters  
 Date\_ 20031230  
 Time 14.16  
 INSTRUM dpx400  
 PROBHD 5 mm BBO 2-G  
 PULPROG zgpg30  
 ID 65536  
 SOLVENT CDCl3  
 NS 1752  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 812.7  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

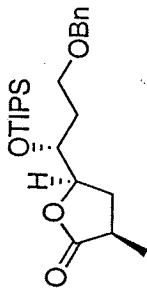
===== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

===== CHANNEL f2 =====  
 CFDPERG2 waitz16  
 NUC2 1H  
 P2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

F2 - Processing Parameters  
 SI 65536  
 SF 100.5829950 MHz  
 WDW EM  
 LB 0  
 GB 0  
 PC 1.40

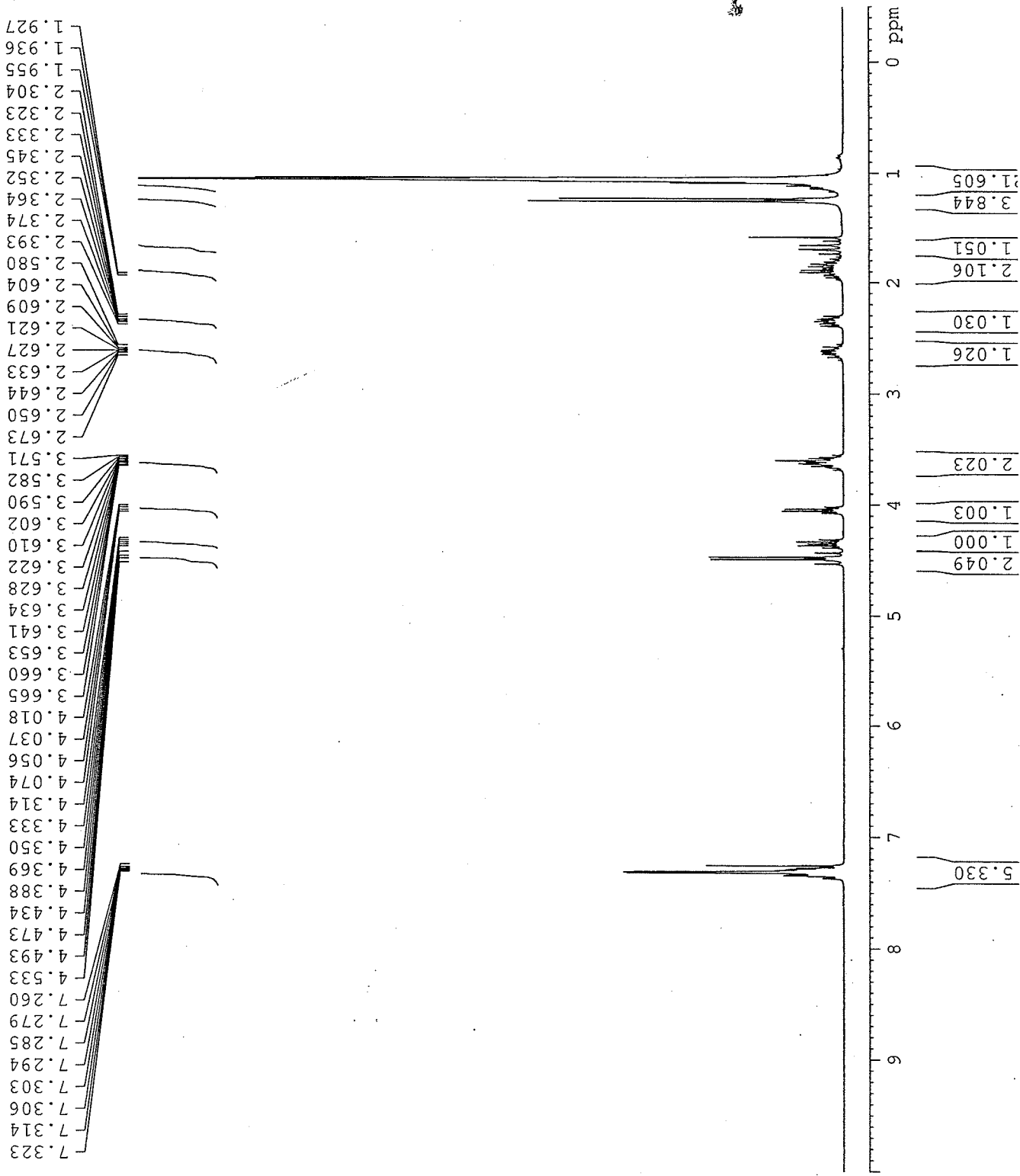
ID NMR plot parameters  
 CX 20.00 cm  
 FIP 200.000 Ppm  
 F1 20116.51 Hz  
 F2P 0.000 Ppm  
 FZ 0.00 Hz  
 PPMCM 10.0000 Ppm/cm  
 HZCM 1005.82356 Hz/cm





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H1



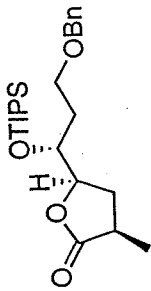
Current Data Parameters  
 NAME XZ-IV-80  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040109  
 Time 16.05  
 INSTRUM dpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 4496.403 Hz  
 FIDRES 0.137219 Hz  
 AC 3.6438515 sec  
 RG 256  
 DW 111.200 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 1.5000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 8.20 usec  
 PL1 -3.00 dB  
 SFO1 300.1319000 MHz

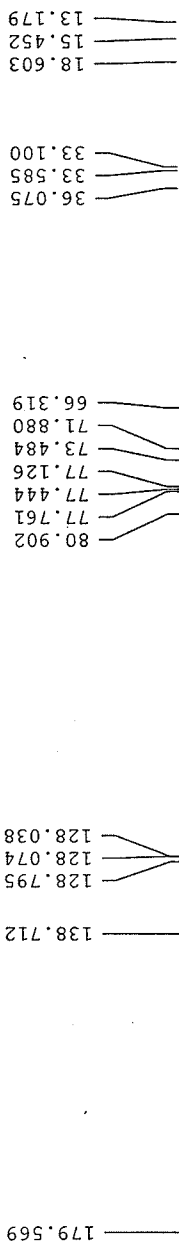
F2 - Processing parameters  
 SI 32768  
 SF 300.1300063 MHz  
 WDW EM  
 SSB 0  
 LB 0.30 Hz  
 GB 0  
 PC 1.00

ID NMR plot parameters  
 CX 20.00 cm  
 F1P 10.000 ppm  
 F1 3001.30 Hz  
 F2P -0.500 ppm  
 F2 -150.07 Hz  
 PPMCM 0.52500 ppm/cm  
 HZCM 157.56825 Hz/cm



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C13/TIPS protection



Current Data Parameters  
 NAME XZ-IV-80  
 EXPNO 4  
 PROCNO 1  
 DU /m  
 USER xzhou

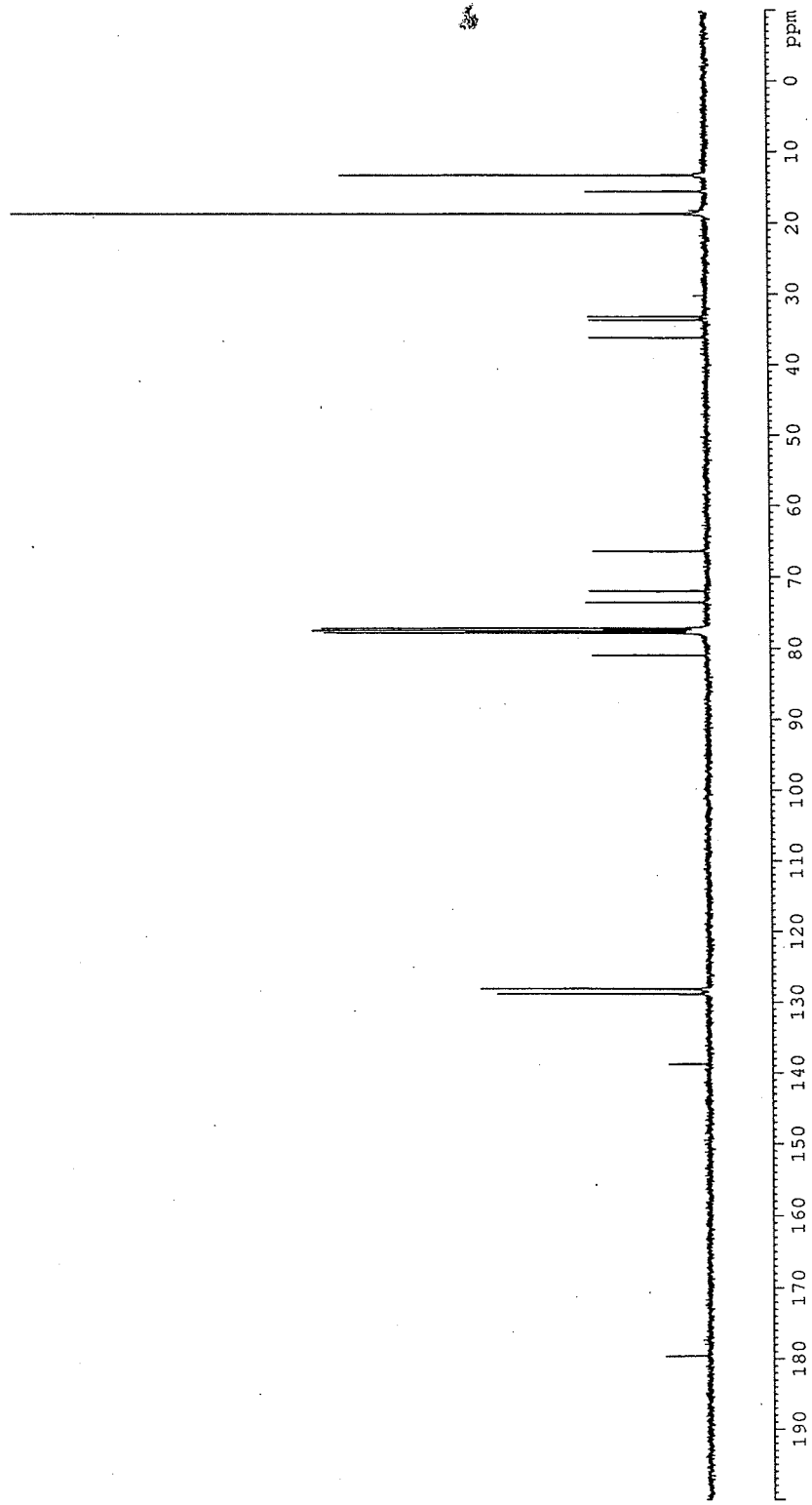
F2 - Acquisition Parameters  
 Date\_ 20040109  
 Time 16.24  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zgpg30  
 ID 65536  
 SOLVENT CDCl3  
 NS 1691  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 574.7  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 -0.03000000 sec  
 D12 0.00002000 sec

===== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

F2 - Processing Parameters  
 SI 65536  
 SF 100.5825550 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

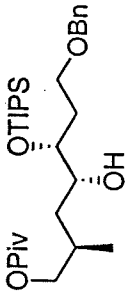
1D NMR plot parameters  
 CX 20.00 cm  
 FIP 200.000 ppm  
 F1 20116.51 Hz  
 F2P 0.000 ppm  
 F2 0.00 Hz  
 PPMCM 10.00000 ppm/cm  
 HZCM 1005.82556 Hz/cm





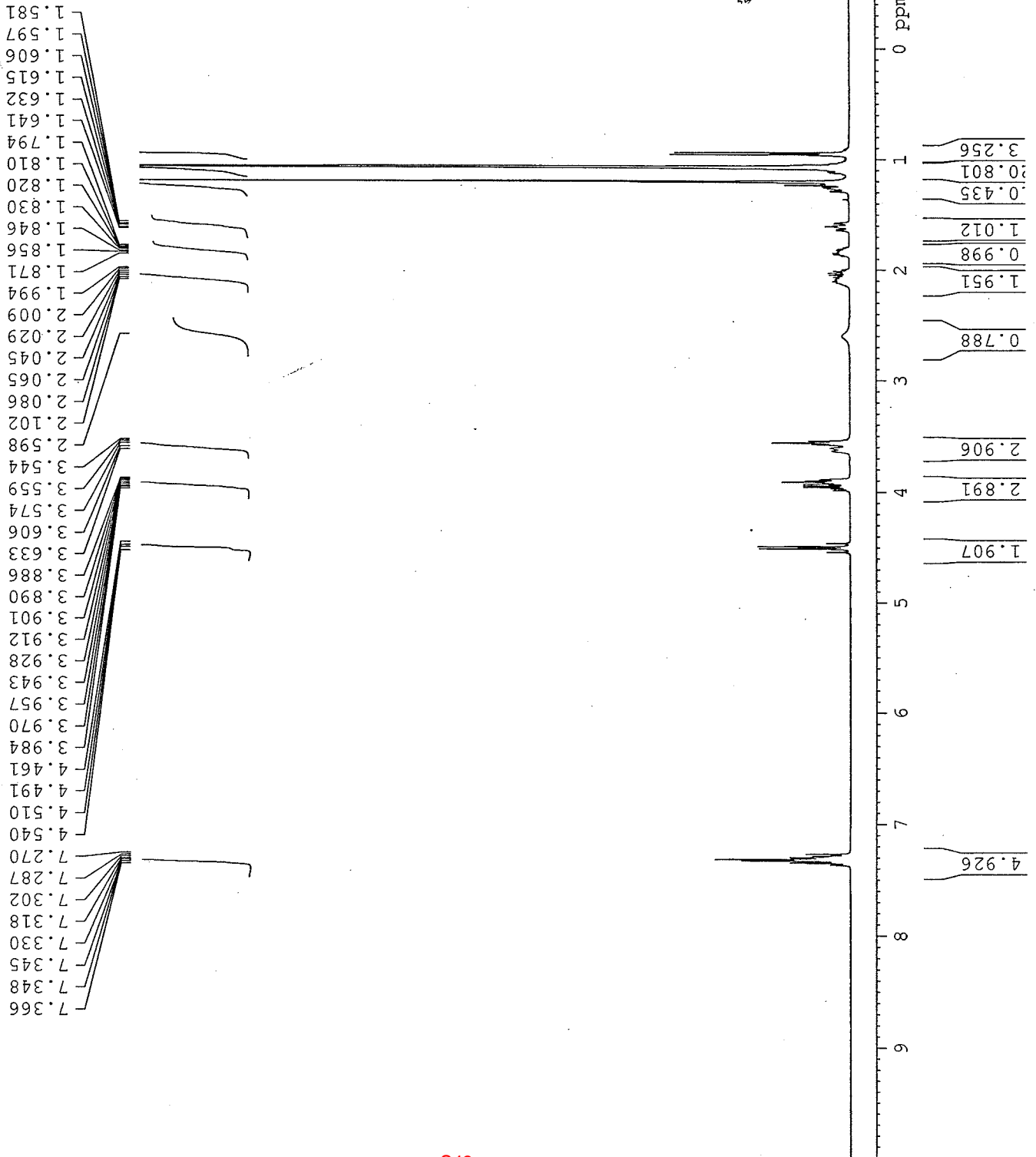






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Piv protection



Current Data Parameters  
 NAME XZ-IV-99  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

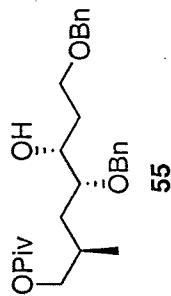
F2 - Acquisition Parameters  
 Date\_ 20040120  
 Time 23:46  
 INSTRUM gpx400  
 PROBD 5 mm BBO Z-G  
 PULPROG zgpg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 64  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

CHANNEL f1  
 NUC1 1H  
 F1 11.30 usec  
 FL1 0.00 dB  
 SF01 400.0126001 MHz

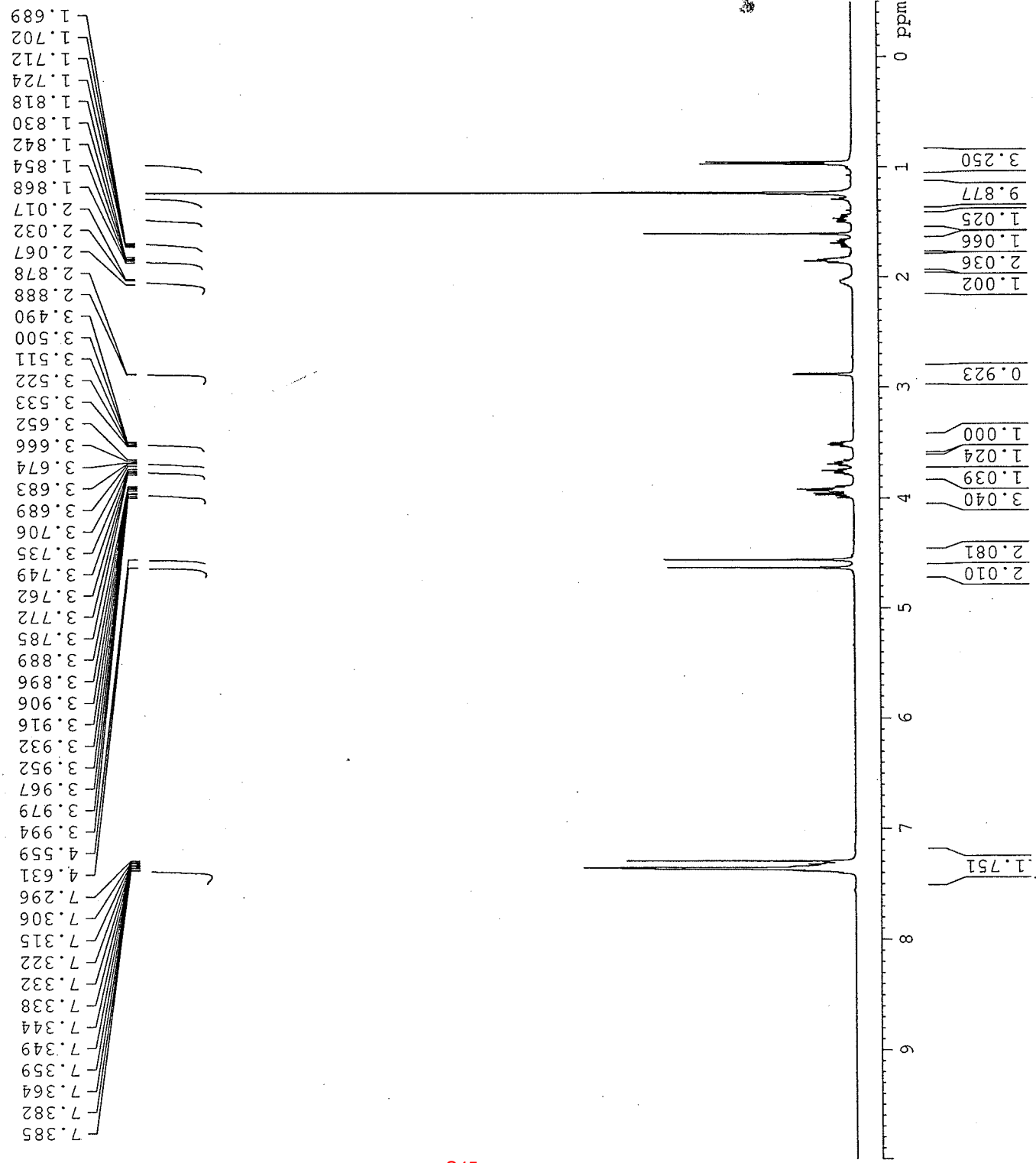
F2 - Processing Parameters  
 SI 65536  
 SF 400.0100103 MHz  
 EQ  
 WDW 0  
 SSB 0.70 Hz  
 LB 0  
 GB 0  
 PC 1.00

ID NMR plot parameters  
 CX 21.00 cm  
 FLP 10.000 ppm  
 F1 4000.10 Hz  
 F2 -0.500 ppm  
 FZ -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



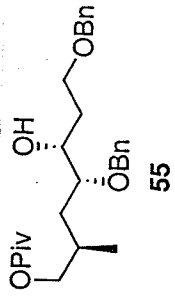


H1

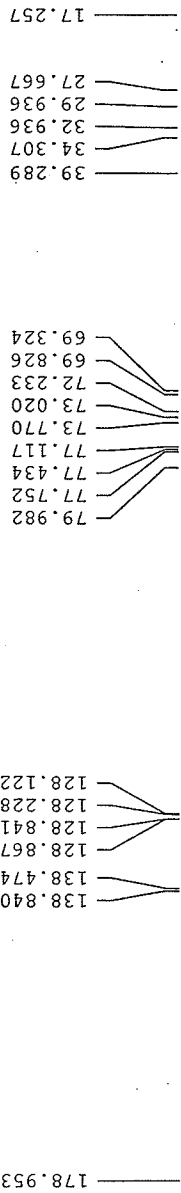


7.385  
 7.382  
 7.364  
 7.359  
 7.349  
 7.344  
 7.338  
 7.332  
 7.322  
 7.315  
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 7.296  
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 4.559  
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 3.967  
 3.952  
 3.932  
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 1.868  
 1.854  
 1.842  
 1.830  
 1.818  
 1.724  
 1.712  
 1.702  
 1.689

Current Data Parameters  
 NAME XZ-IV-92  
 EXPNO 1  
 PROCNO 1  
 F1 /m  
 USER xzhou  
 F2 - Acquisition Parameters  
 Date\_ 20040118  
 Time 10.51  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zg30  
 ID 32568  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5985.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 574.7  
 KW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec  
 \*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SF01 400.0126001 MHz  
 F2 - Processing parameters  
 SI 65536  
 SF 400.0100000 MHz  
 EM 0  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00  
 1D NMR plot parameters  
 CX 21.00 cm  
 F1 10.000 ppm  
 F2 -0.500 ppm  
 F3 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



C13



Current Data Parameters  
 NAME XZ-IV-92  
 EXPNO 8  
 PROCNO 1  
 DU /m  
 USER xzhuo

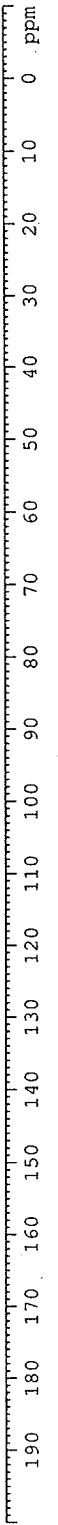
F2 - Acquisition Parameters  
 Date\_ 20040118  
 Time 12:22  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 3987  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 1024  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

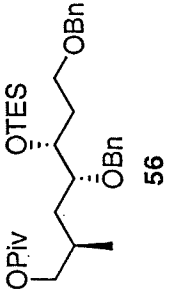
\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 13C  
 P1 7.50 usec  
 PL1 2.00 dB  
 SFO1 100.5936186 MHz

\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPDPRG2 waltz16  
 NUC2 1H  
 P2 80.00 usec  
 PL2 0.00 dB  
 PL12 9.00 dB  
 PL13 16.00 dB  
 SFO2 400.0116000 MHz

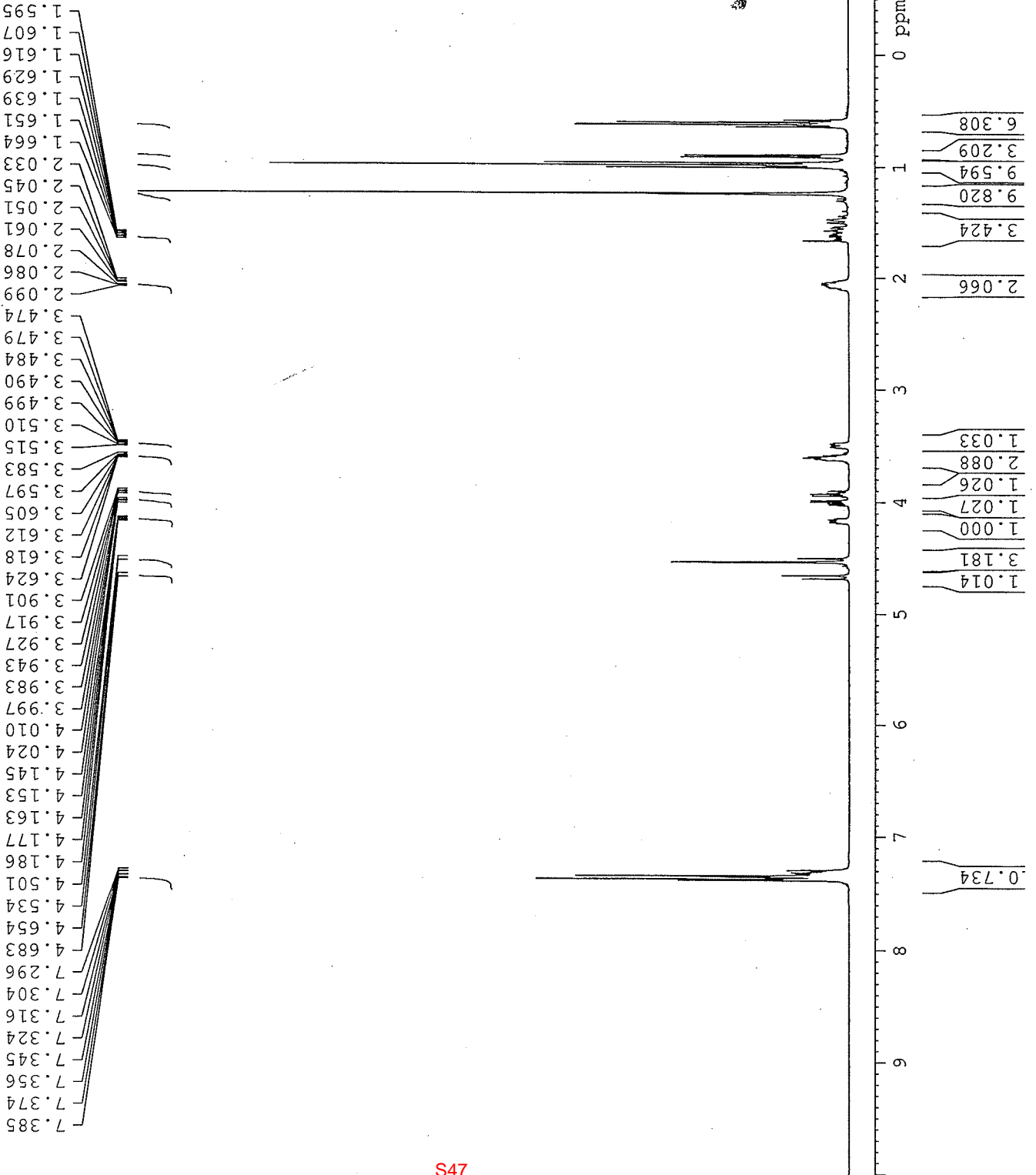
F2 - Processing parameters  
 SI 65536  
 SE 100.5925556 MHz  
 EN  
 MDW 0  
 SSB 3.00 Hz  
 LB 0  
 GB 0  
 FC 1.40

1D NMR plot parameters  
 CY 26.00 cm  
 F1P 200.000 ppm  
 F1 20116.53 Hz  
 F2P 0.000 ppm  
 F2 0.00 Hz  
 PRGCM 10.00000 ppm/cm  
 HZCM 1005.82556 Hz/cm





TES protection



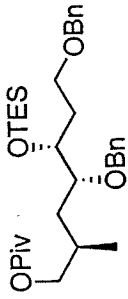
Current Data Parameters  
 NAME XZ-IV-94  
 EXPNO 2  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040119  
 Time 18.04  
 INSTRUM dpx400  
 PROBHD 5 mm BBO 2-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 90.5  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

===== CHANNEL f1 =====  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

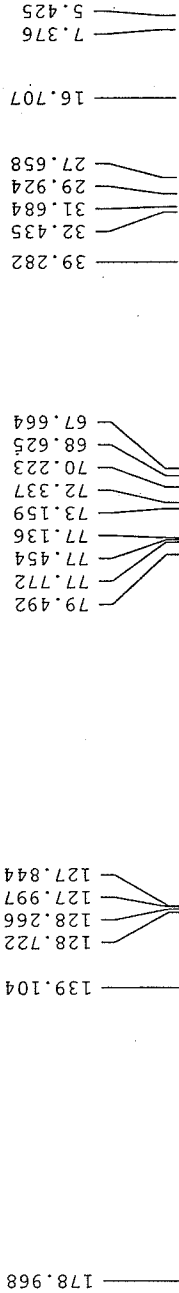
F2 - Processing parameters  
 SI 65536  
 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

ID NMR plot parameters  
 CX 21.00 cm  
 FIP 10.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



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C13/IES protection



Current Data Parameters  
 NAME XZ-TV-94  
 EXPNO 1  
 PROCNO 1  
 DS /m  
 USER xzhou

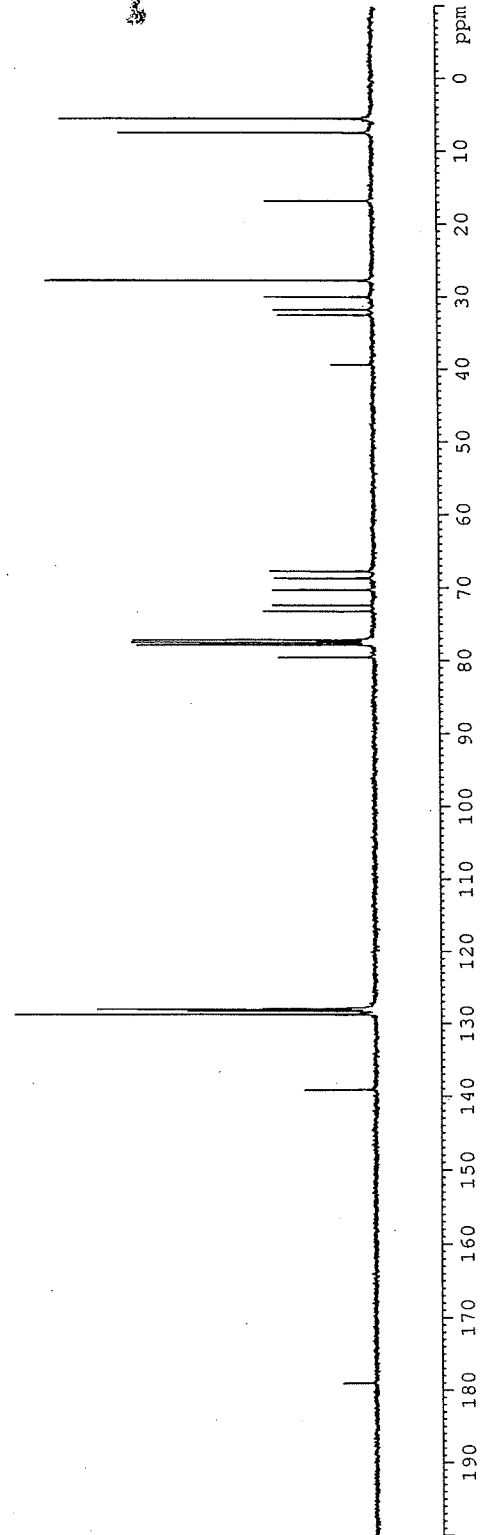
F2 - Acquisition Parameters  
 Date\_ 20040119  
 Time 18.01  
 INSTRUM dpx400  
 PROBHD 5 mm BBO ZG  
 PULPROG zgpg30  
 ID zgpg30  
 CDCL3  
 SOLVENT -1187  
 NS 4  
 DS 25125.629 Hz  
 SWH 0.383387 Hz  
 FIDRES 1.3042164 sec  
 AQ 1.3042164 sec  
 RG 2048  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 IE 0.00300000 sec  
 DI 0.03000000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

===== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.10 usec  
 PL1 -2.00 dB  
 SFO1 100.5936188 MHz

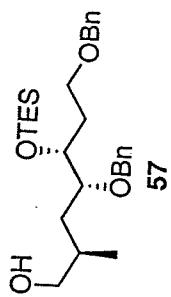
===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2  
 P2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

F2 - Processing parameters  
 SI 65536  
 SF 100.5825550 MHz  
 EM  
 MWDW 0  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

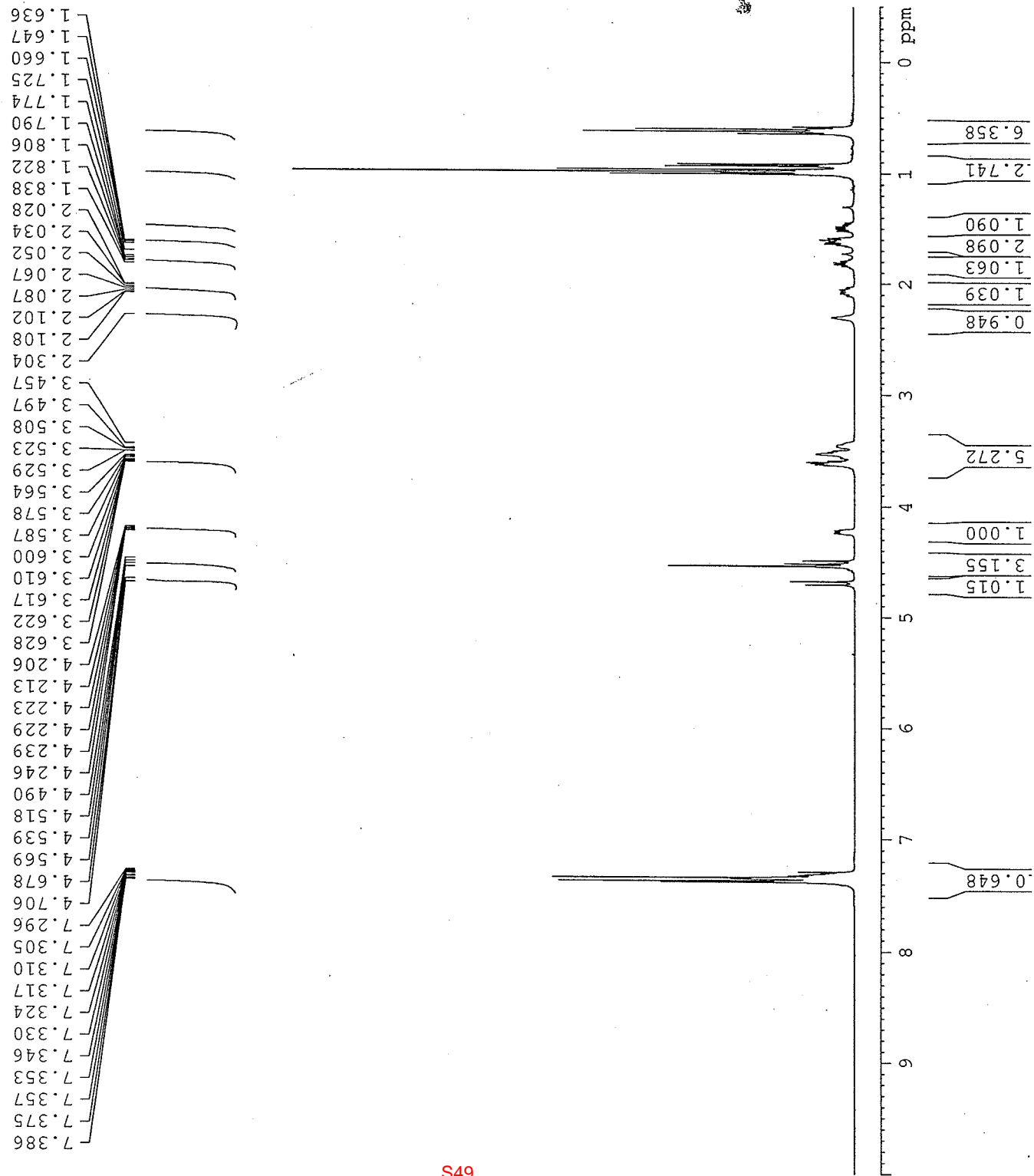
1D NMR plot parameters  
 CY 20.00 cm  
 F1P 200.000 ppm  
 F1 20116.51 Hz  
 F2P 0.000 ppm  
 F2 0.000 Hz  
 PEXCM 10.00000 ppm/cm  
 HZCM 1005.82556 Hz/cm







H1



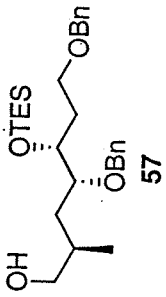
Current Data Parameters  
 NAME XZ-IV-96  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040120  
 Time\_ 14.45  
 INSTRUM dpx400  
 PROBDH 5 mm BBO Z-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 128  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

F2 - Processing Parameters  
 SI 65536  
 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

1D NMR plot parameters  
 CX 21.00 cm  
 F1P 10.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



C13

139.122  
 138.425  
 128.847  
 128.722  
 128.547  
 128.241  
 127.979  
 127.850

81.088  
 77.776  
 77.459  
 77.141  
 73.150  
 72.323  
 69.015  
 68.075  
 67.566

34.331  
 32.810  
 31.468

17.890  
 7.348  
 5.429

Current Data Parameters  
 NAME XZ-IV-96  
 EXPNO 2  
 PROCNO 1  
 DU /m  
 USER xzhou

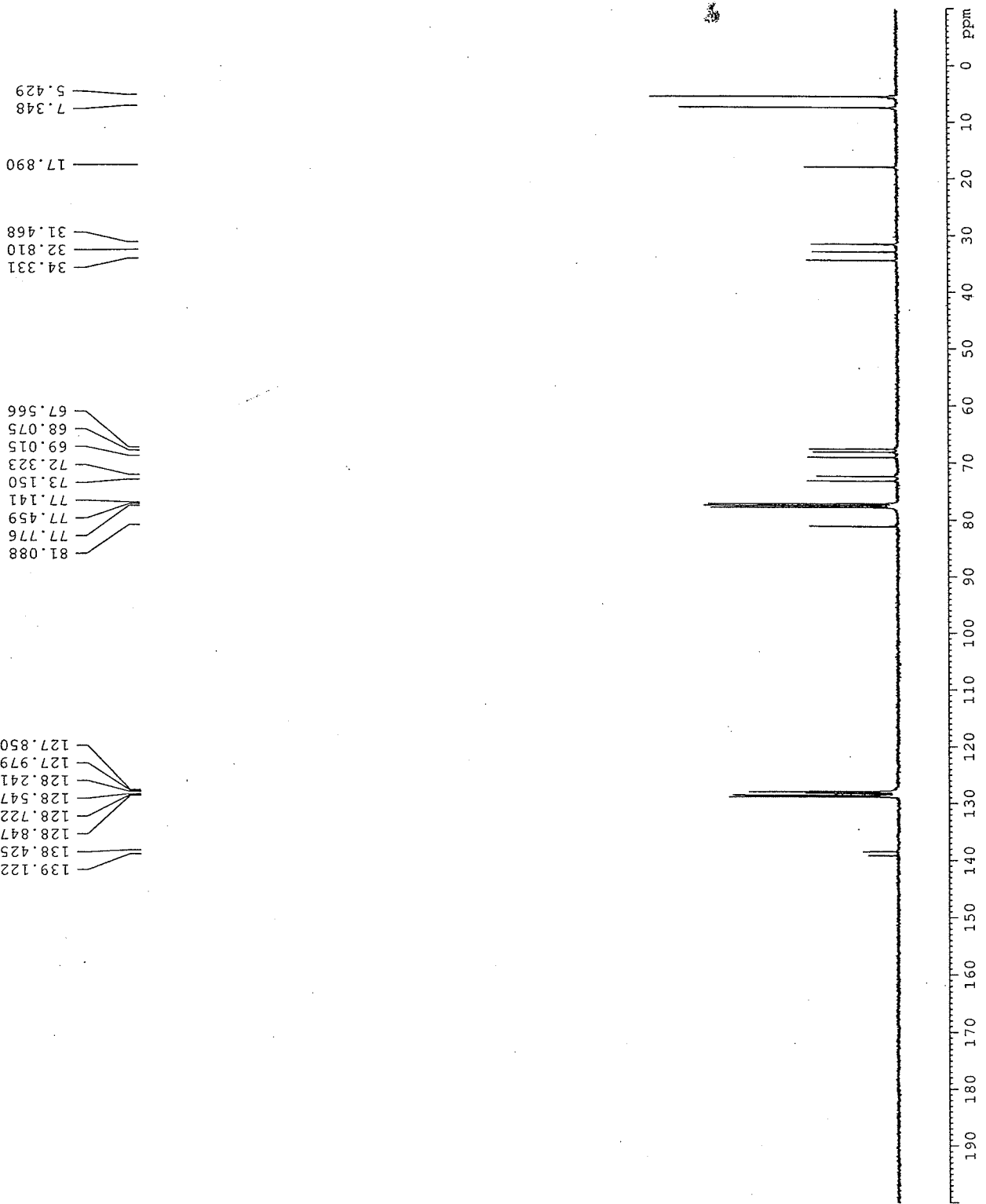
F2 - Acquisition Parameters  
 Date\_ 20040120  
 Time\_ 14:51  
 INSTRUM dp400  
 PROBHD 5 mm BBO ZG  
 PULPROG zgpg30  
 ID zgpg30  
 SOLVENT CDCl3  
 NS 1714  
 DS 4  
 SWH 25125.629 Hz  
 FWHZ 0.383387 Hz  
 FIDRES 1.3042164 sec  
 AQ 2856.3  
 RG 19.900 usec  
 DR 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

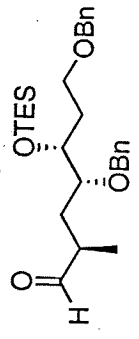
\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPDPRG2 waltz16  
 NUC2  
 P2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

F2 - Processing Parameters  
 SI 65536  
 SF 100.5825550 MHz  
 WDM EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

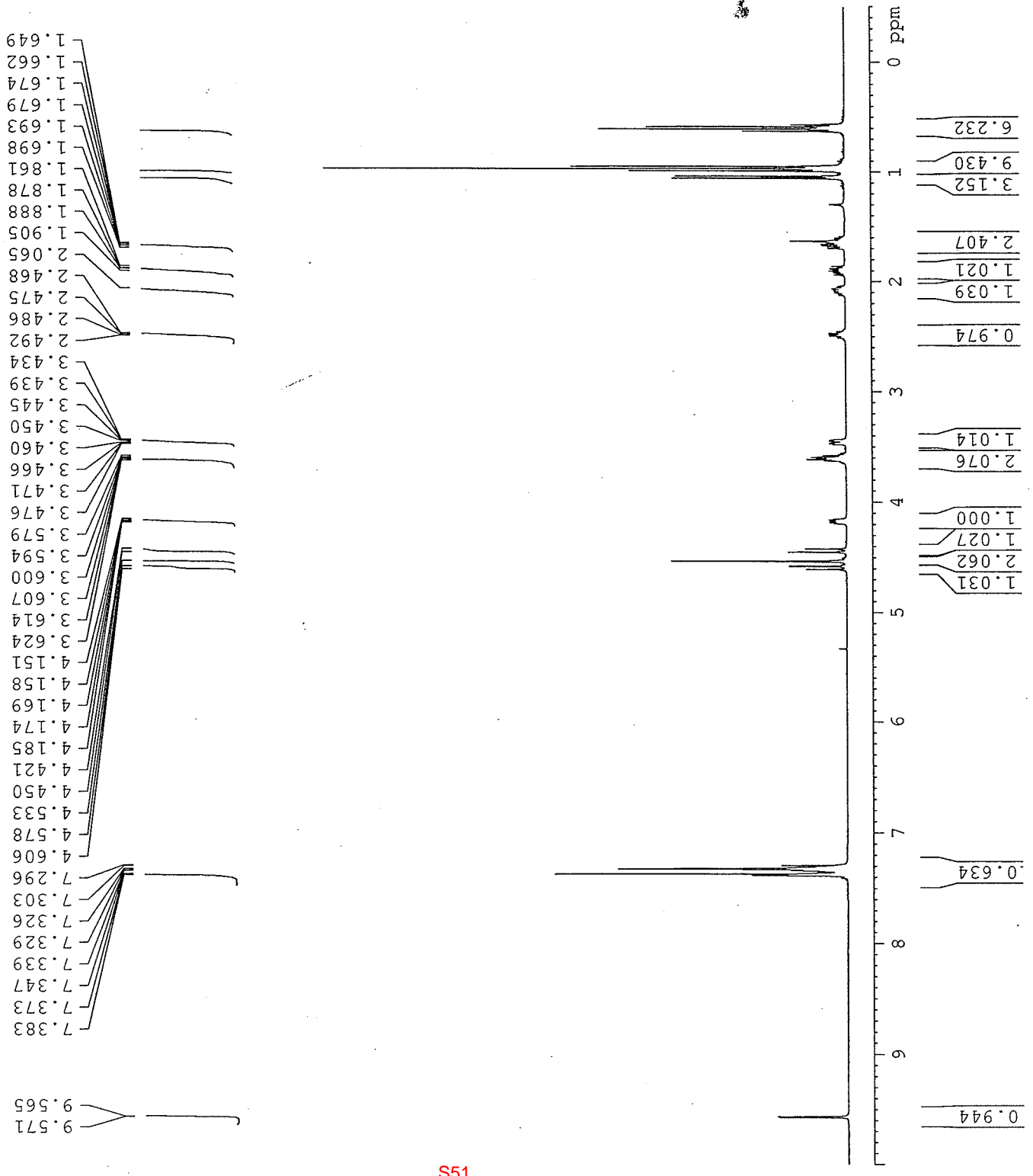
ID NMR plot parameters  
 CX 20.00 cm  
 F1P 234.896 ppm  
 F1 23626.40 Hz  
 F2P -14.905 ppm  
 F2 -1499.23 Hz  
 PPMCM 12.49005 ppm/cm  
 HZCM 1256.28137 Hz/cm





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aldehyde/H1



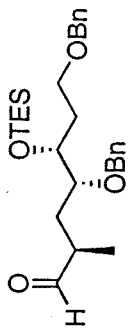
Current Data Parameters  
 NAME XZ-IV-97  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040120  
 Time 17.26  
 INSTRUM dpx400  
 PROBHD 5 mm BBO γ-G  
 PULPROG zgpg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SMH 5995.204 Hz  
 FIDRES 0.182359 Hz  
 AQ 2.7329011 sec  
 RG 128  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec.

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUCL1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

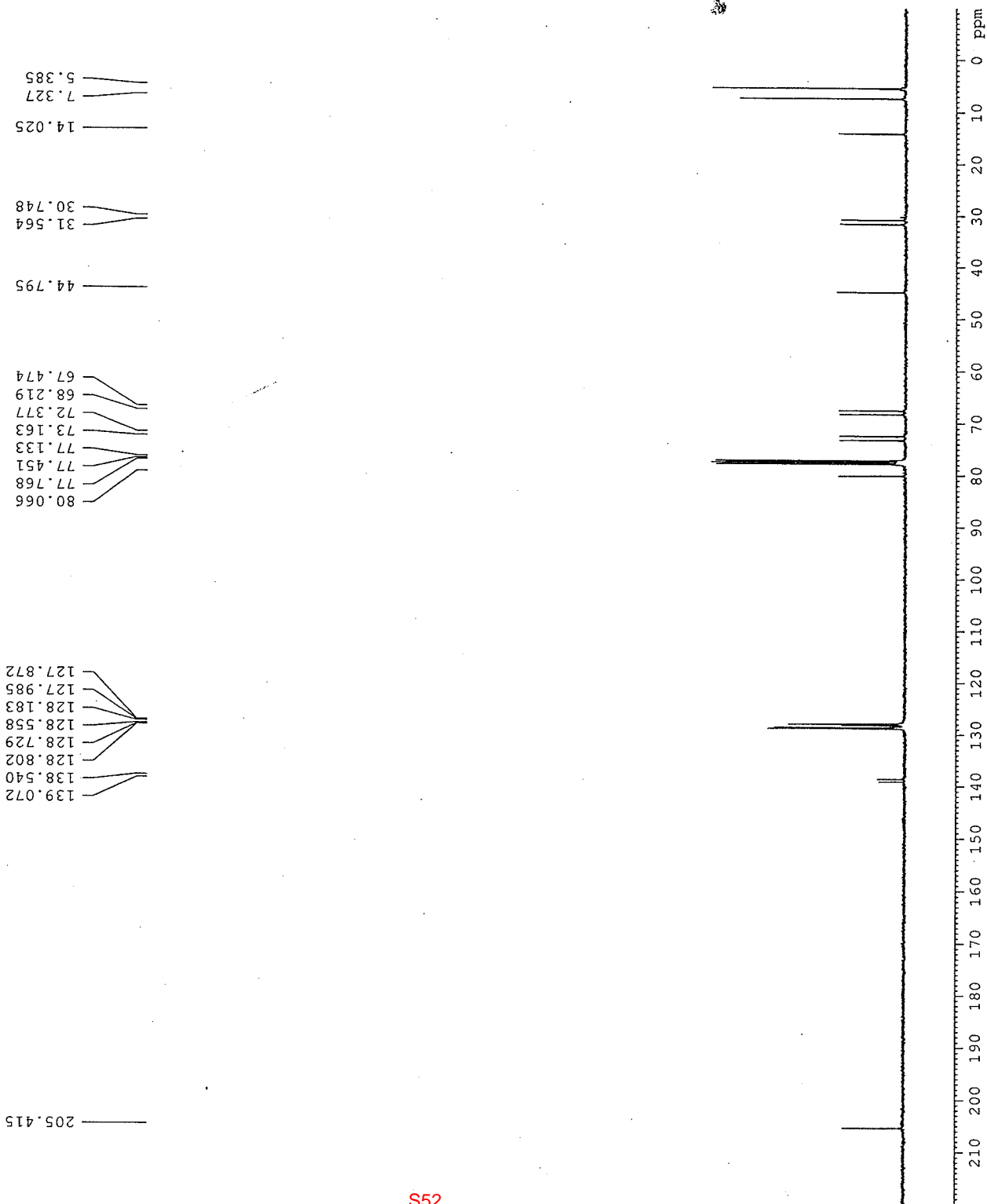
F2 - Processing parameters  
 SI 65536  
 SF 400.0100000 MHz  
 EM  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

1D NMR plot parameters  
 CA 31.00 cm  
 FIP 16.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 FZ 290.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



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aldehyde/C13



Current Data Parameters  
 NAME XZ-IV-97  
 EXPNO 2  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040120  
 Time 17.31  
 INSTRUM dpx400  
 PROBHD 5 mm BBO 2-G  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDC13  
 NS 2273  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 2048  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

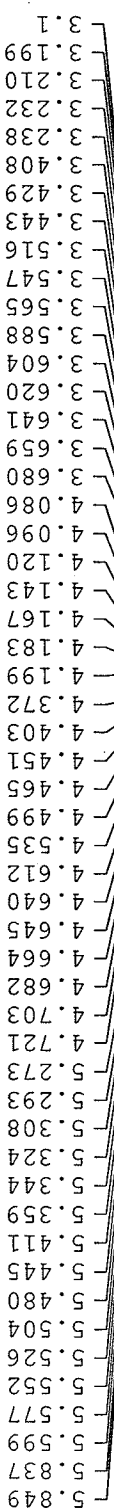
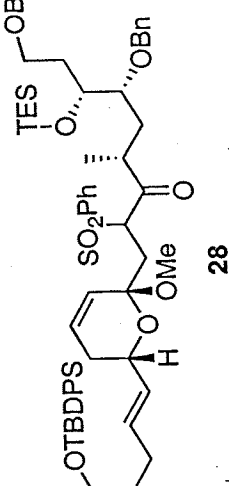
===== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

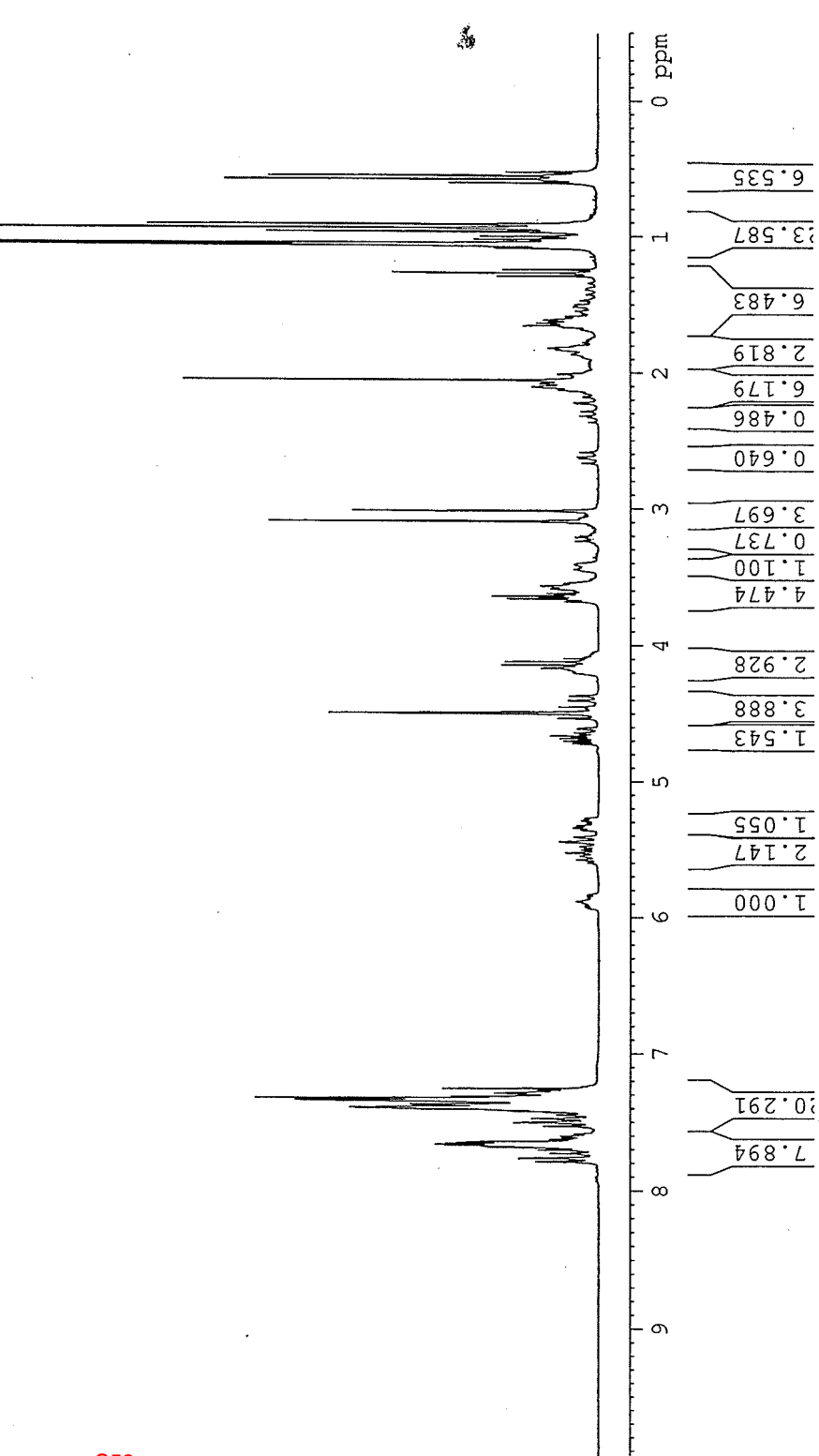
F2 - Processing Parameters  
 SI 65536  
 SF 100.5625550 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

ID NMR plot parameters  
 CX 20.00 cm  
 F1 234.896 ppm  
 F2 -14.905 ppm  
 F2 -1499.23 Hz  
 PPMCM 12.49005 ppm/cm  
 HZCM 1256.28137 Hz/cm

H1/ketone sulfone



Chemical Shift (ppm)
5.849
5.837
5.599
5.411
5.359
5.344
5.324
5.308
5.293
5.273
4.721
4.703
4.682
4.664
4.645
4.640
4.612
4.535
4.499
4.465
4.451
4.403
4.372
4.199
4.183
4.167
4.143
4.120
4.096
4.086
3.680
3.659
3.641
3.620
3.604
3.588
3.565
3.547
3.516
3.443
3.429
3.408
3.238
3.232
3.210
3.199
3.1



Chemical Shift (ppm)
7.894
7.0291
1.000
2.147
1.055
1.543
3.888
2.928
4.474
1.100
0.737
3.697
0.640
0.486
6.179
2.819
6.483
3.587
6.535

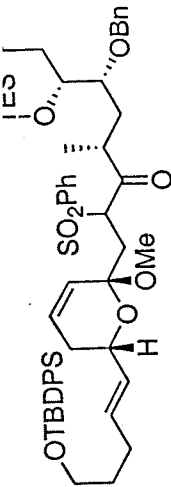
Current Data Parameters  
 NAME X2-V-43  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040213  
 Time 10.12  
 INSTRUM dpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zg30  
 ID 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SWH 4496.403 Hz  
 FIDRES 0.137219 Hz  
 AQ 3.6438515 sec  
 RG 90.5  
 DW 111.200 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 1.5000000 sec

===== CHANNEL f1 =====  
 NUC1 1H  
 P1 8.20 usec  
 PL1 -3.00 dB  
 SF01 300.1319000 MHz

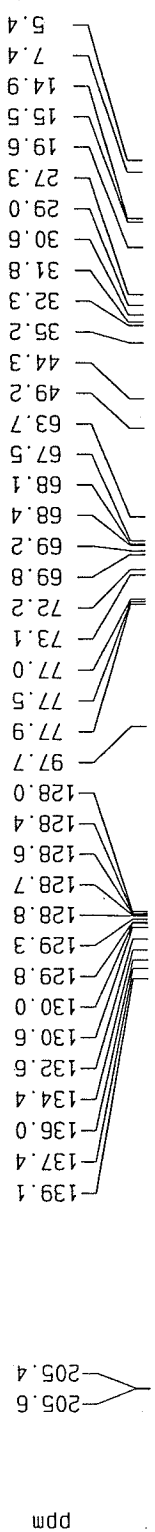
F2 - Processing parameters  
 SI 32768  
 SF 300.1300063 MHz  
 EM  
 SSB 0  
 LB 0.30 Hz  
 GB 0  
 PC 1.00

ID NMR plot parameters  
 CX 20.00 cm  
 FLIP 10.000 ppm  
 F1 3001.30 Hz  
 F2P -0.500 ppm  
 F2 -150.07 Hz  
 PPMCM 0.52500 ppm/cm  
 HZCM 157.56825 Hz/cm



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C13/ketone sulfone



ppm

Current Data Parameters  
 NAME XZ-V-43  
 EXPNO 2  
 PROCNO 1  
 DU /m  
 USER xzhou

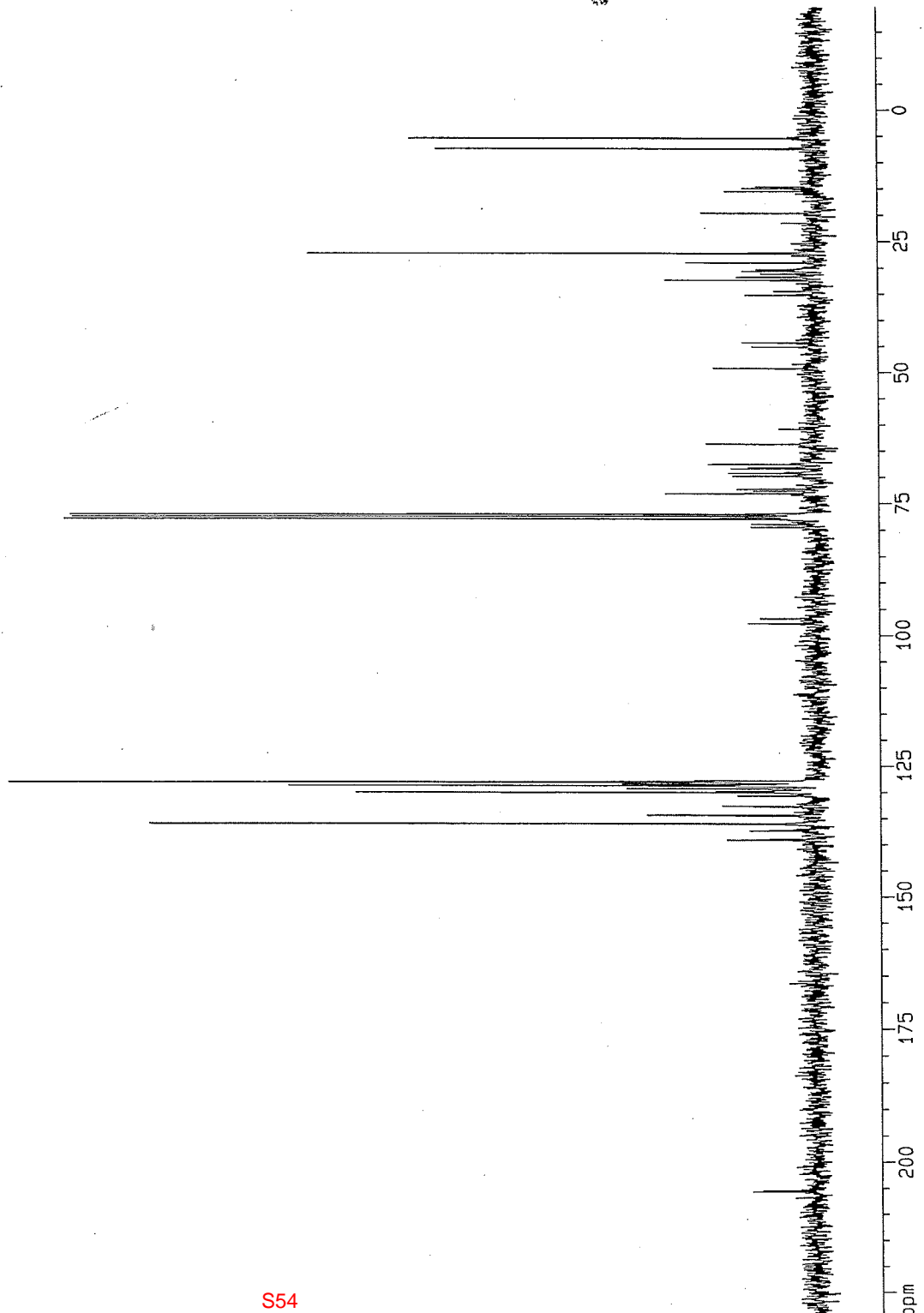
F2 - Acquisition Parameters  
 Date\_ 20040213  
 Time 10.17  
 INSTRUM dpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT  
 NS 440  
 DS 2  
 SWH 18832.393 Hz  
 FIDRES 0.287360 Hz  
 AQ 1.7400308 sec  
 RG 16384  
 DW 26.550 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

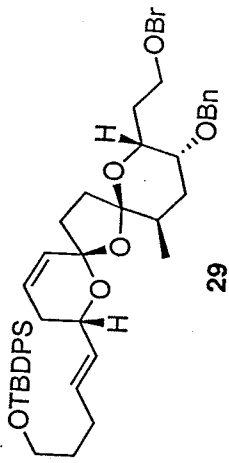
\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 13C  
 P1 7.60 usec  
 PL1 -3.00 dB  
 SF01 75.4756431 MHz

\*\*\*\*\* CHANNEL f2 \*\*\*\*\*  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 2.00 dB  
 PL12 17.55 dB  
 PL13 19.00 dB  
 SF02 300.1315007 MHz

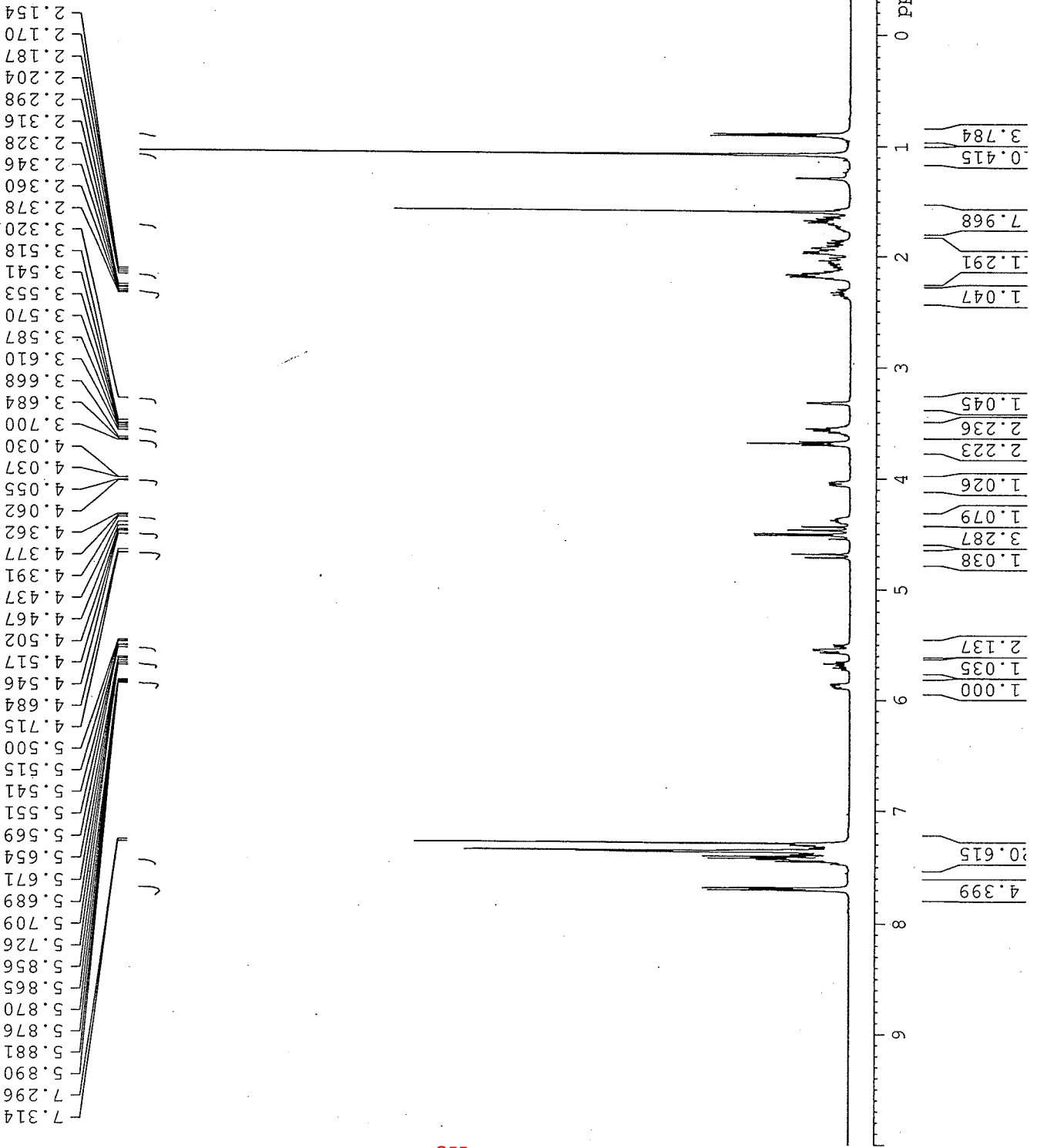
F2 - Processing parameters  
 SI 131072  
 SF 75.4677190 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

1D NMR plot parameters  
 CX 20.00 cm  
 F1P 229.771 ppm  
 F1 17340.31 Hz  
 F2P -19.771 ppm  
 F2 -1492.08 Hz  
 PPMCM 12.47712 ppm/cm  
 HZCM 941.61951 Hz/cm





spiroketal/H1



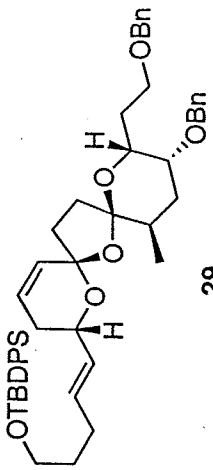
Current Data Parameters  
 NAME XZ-V-21  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date 20040128  
 Time 12.48  
 INSTRUM dpx400  
 PROBHD 5 mm BBO 2-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 32  
 DS 2  
 SMH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 574.7  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

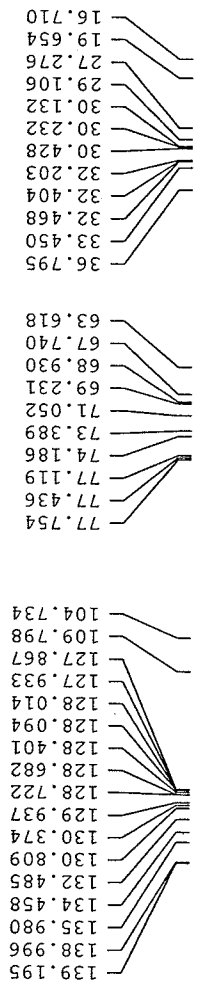
===== CHANNEL f1 =====  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SF01 400.0126001 MHz

F2 - Processing parameters  
 SI 65536  
 SF 400.0100000 MHz  
 EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

1D NMR plot parameters  
 CX 21.00 cm  
 F1P 10.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm



C13/spiroketal



Current Data Parameters  
 NAME XZ-V-21  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhu

F2 - Acquisition Parameters  
 Date\_ 20041231  
 Time 2:31  
 INSTRUM dpx-100  
 PROBD 5 mm BBO 2G  
 PULPROG zgpg30  
 TD 65530  
 F2 400.13  
 SOLVENT CDCl3  
 NS 25000  
 DS  
 SMH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AC 1.3043164 sec  
 RC 4096  
 DE 19.900 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

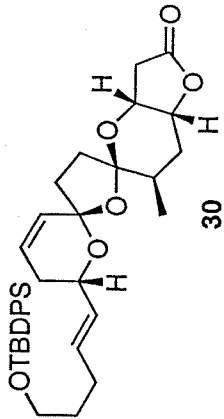
===== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2  
 PCPD2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

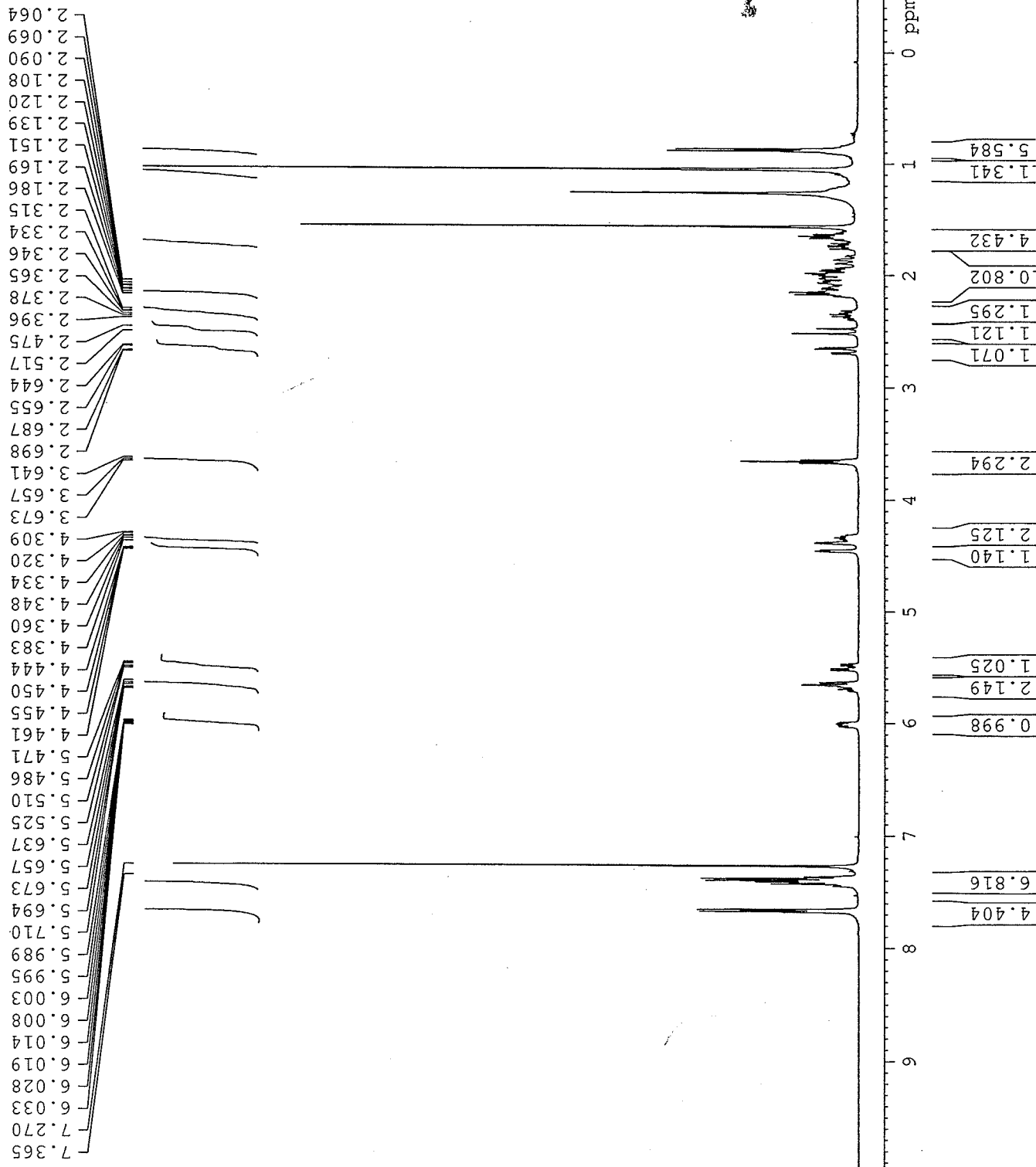
F2 - Processing parameters  
 SI 65536  
 SF 100.5825550 MHz  
 SSB 0  
 EM 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

ID NMR plot parameters  
 CX 20.00 cm  
 F1P 200.000 ppm  
 F1 20116.51 Hz  
 F2P 0.000 ppm  
 F2 0.00 Hz  
 PPMCM 10.00000 ppm/cm  
 HZCM 1005.82556 Hz/cm





lactone/H1



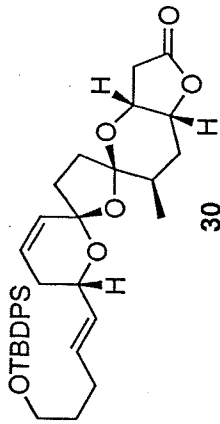
Current Data Parameters  
 NAME XZ-V-33  
 EXPNO 1  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters  
 Date\_ 20040204  
 Time 13.20  
 INSTRUM dpx400  
 PROBDH 5 mm BBO 2-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 64  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7328011 sec  
 RG 912.3  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.0000000 sec

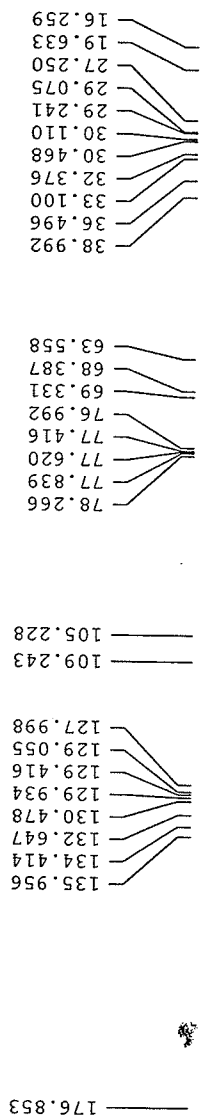
===== CHANNEL f1 =====  
 NUC1 LH  
 P1 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

F2 - Processing parameters  
 SI 65536  
 SF 400.0100104 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

1D NMR plot parameters  
 CX 21.00 cm  
 FIP 8.677 ppm  
 F1 3470.75 Hz  
 F2P 0.268 ppm  
 F2 107.30 Hz  
 PPMCM 0.40040 ppm/cm  
 HZCM 160.16435 Hz/cm



lactone/Cl3



Current Data Parameters  
 NAME XZ-V-33  
 EXPNO 17  
 PROCNO 1  
 DU /m  
 USER xzhou

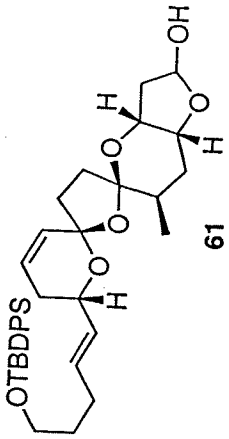
F2 - Acquisition Parameters  
 Date 20040205  
 Time 22.16  
 INSTRUM dpx300  
 PROBHD 5 mm QNP 1H  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDCl3  
 NS 20000  
 DS 2  
 SWH 18832.393 Hz  
 FIDRES 0.287360 Hz  
 AQ 1.7400308 sec  
 RG 8192  
 DE 26.550 usec  
 DW 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

===== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.60 usec  
 PL1 -3.00 dB  
 SFO1 75.4756431 MHz

===== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 2.00 dB  
 PL12 17.55 dB  
 PL13 19.00 dB  
 SFO2 300.1315007 MHz

F2 - Processing Parameters  
 SI 131072  
 SF 75.4677190 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

1D NMR plot parameters  
 CX 20.00 cm  
 F1p 229.771 ppm  
 F1 17340.31 Hz  
 F2p -19.771 ppm  
 F2 -1492.08 Hz  
 PPMCM 12.47712 ppm/cm  
 HZCM 941.61951 Hz/cm



Current Data Parameters  
 NAME XZ-V-37  
 EXPNO 2  
 PROCNO 1  
 DU /m  
 USER xzhou

F2 - Acquisition Parameters

Date\_ 20040219  
 Time 17.04  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zg30  
 TD 32768  
 SOLVENT CDC13  
 NS 32  
 DS 2  
 SMH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 406.4  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.0000000 sec

===== CHANNEL f1 =====  
 NUC1 1H  
 P1 11.30 usec  
 PL1 0.00 dB  
 SF01 400.0126001 MHz

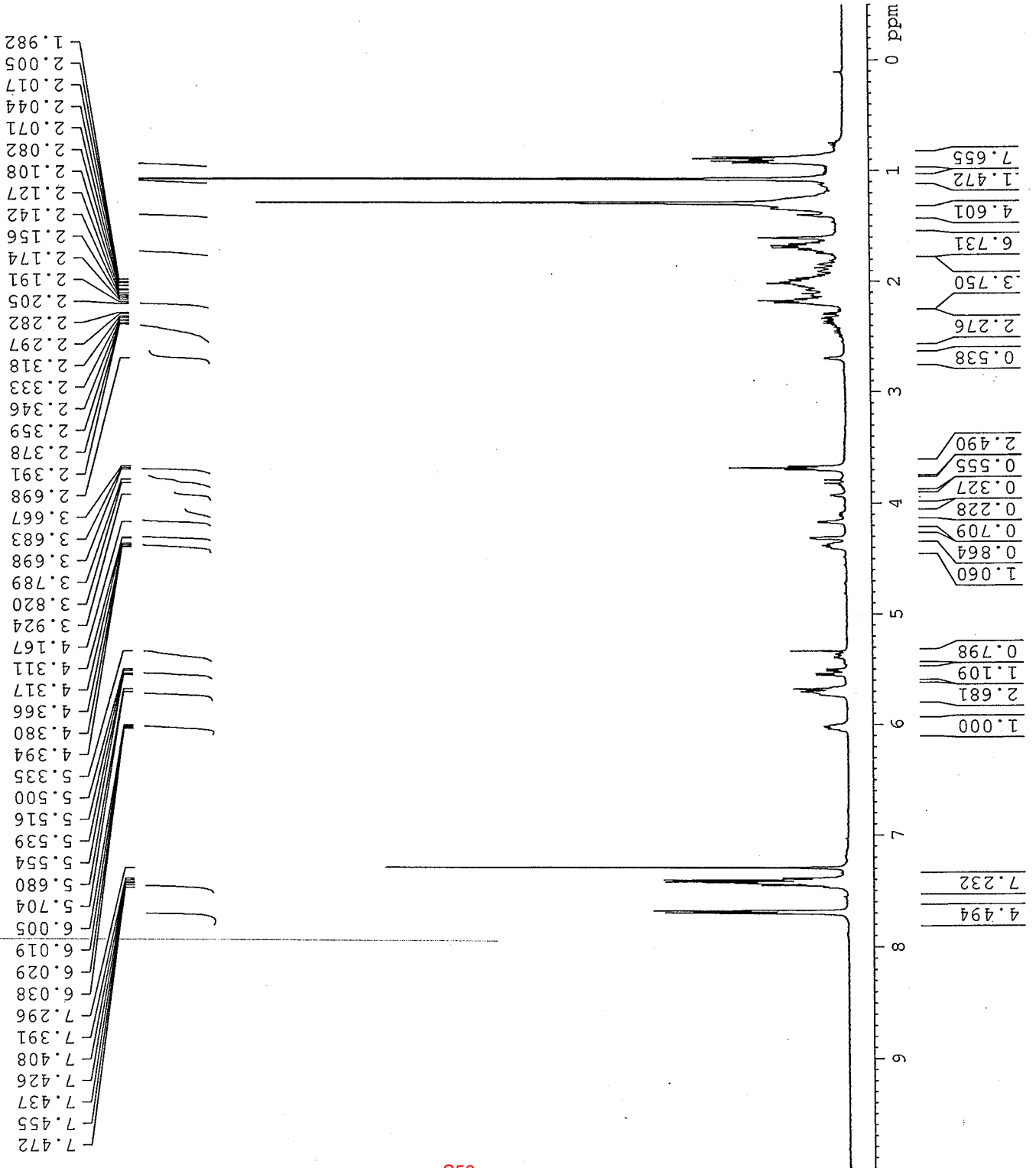
F2 - Processing parameters

SI 65536  
 SF 400.0100000 MHz  
 WDW EM  
 SSB 0  
 LB 0.70 Hz  
 GB 0  
 PC 1.00

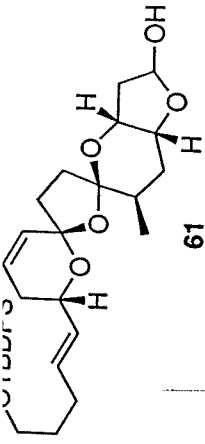
ID NMR plot parameters

CX 21.00 cm  
 FIP 10.000 ppm  
 F1 4000.10 Hz  
 F2 -0.500 ppm  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00500 Hz/cm

H1/lactol



C13/lactol



61

- 135.971
- 134.441
- 132.680
- 130.528
- 129.940
- 129.492
- 128.998
- 128.010
- 109.665
- 105.219
- 99.496
- 99.026
- 77.751
- 77.434
- 77.116
- 75.738
- 72.079
- 71.222
- 69.353
- 69.233
- 63.586
- 42.981
- 42.024
- 36.490
- 33.736
- 32.402
- 31.627
- 30.489
- 30.131
- 29.944
- 29.097
- 27.272
- 19.653
- 16.361

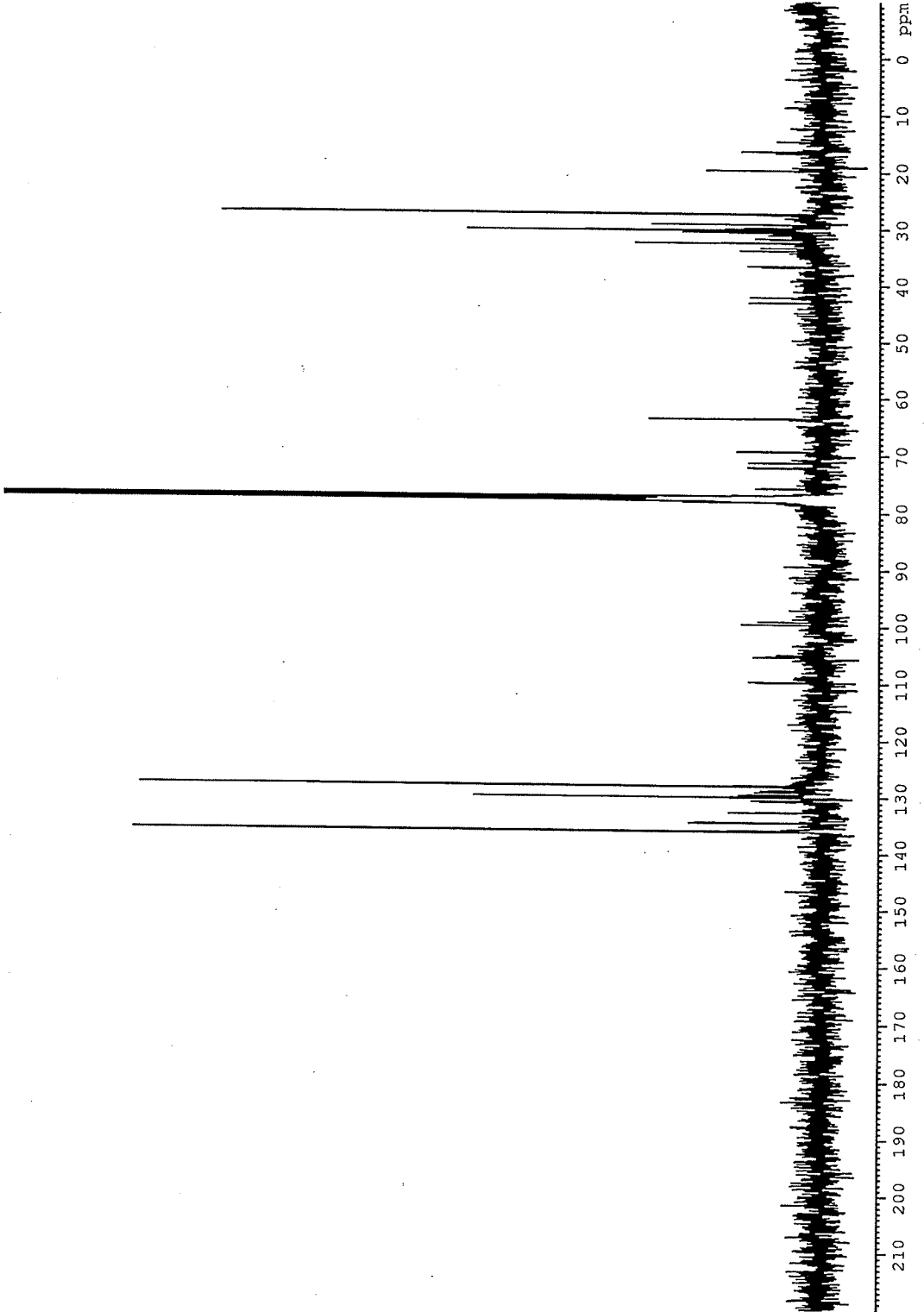
F2 - Acquisition Parameters  
 Date\_ 20040219  
 Time 17.09  
 INSTRUM dpx400  
 PROBHD 5 mm BBO Z-G  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDC13  
 NS 2384  
 DS 4  
 SWH 25125.629 Hz  
 FIDRES 0.383387 Hz  
 AQ 1.3042164 sec  
 RG 8192  
 DW 19.900 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 0.00300000 sec  
 D11 0.03000000 sec  
 D12 0.00002000 sec

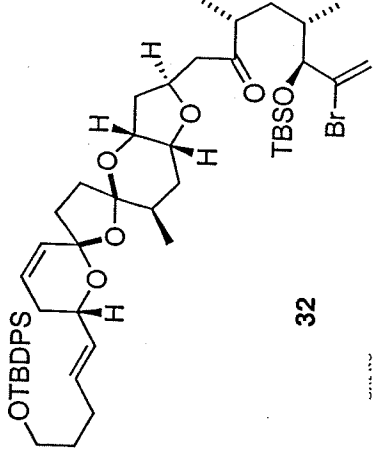
CHANNEL f1  
 NUC1 13C  
 P1 7.50 usec  
 PL1 -3.00 dB  
 SFO1 100.5936186 MHz

CHANNEL f2  
 CPDPRG2 waitz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL2 0.00 dB  
 PL12 17.40 dB  
 PL13 18.00 dB  
 SFO2 400.0116000 MHz

F2 - Processing Parameters  
 SI 65336  
 SF 100.5825550 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 FC 1.40

1D NMR Plot parameters  
 CX 20.00 cm  
 ELP 234.896 ppm  
 F1 23626.40 Hz  
 F2P -14.905 ppm  
 E2P -1499.23 Hz  
 PPKCM 12.49005 ppm/cm  
 HZCM 1256.28137 Hz/cm





PROCNO 1  
DU /m  
USER xzhou

F2 - Acquisition Parameters

Date\_ 20040221  
Time 15.51  
INSTRUM dpx400  
PROBHD 5 mm BBO 2-G  
PULPROG zg30  
TD 32768  
SOLVENT CDCl3  
NS 64  
DS 2  
SWH 5995.204 Hz  
FIDRES 0.182859 Hz  
AQ 2.7329011 sec  
RG 512  
DW 83.400 usec  
DE 6.00 usec  
TE 300.0 K  
D1 2.00000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*

NUC1 1H  
P1 11.30 usec  
PL1 0.00 dB  
SFO1 400.0126001 MHz

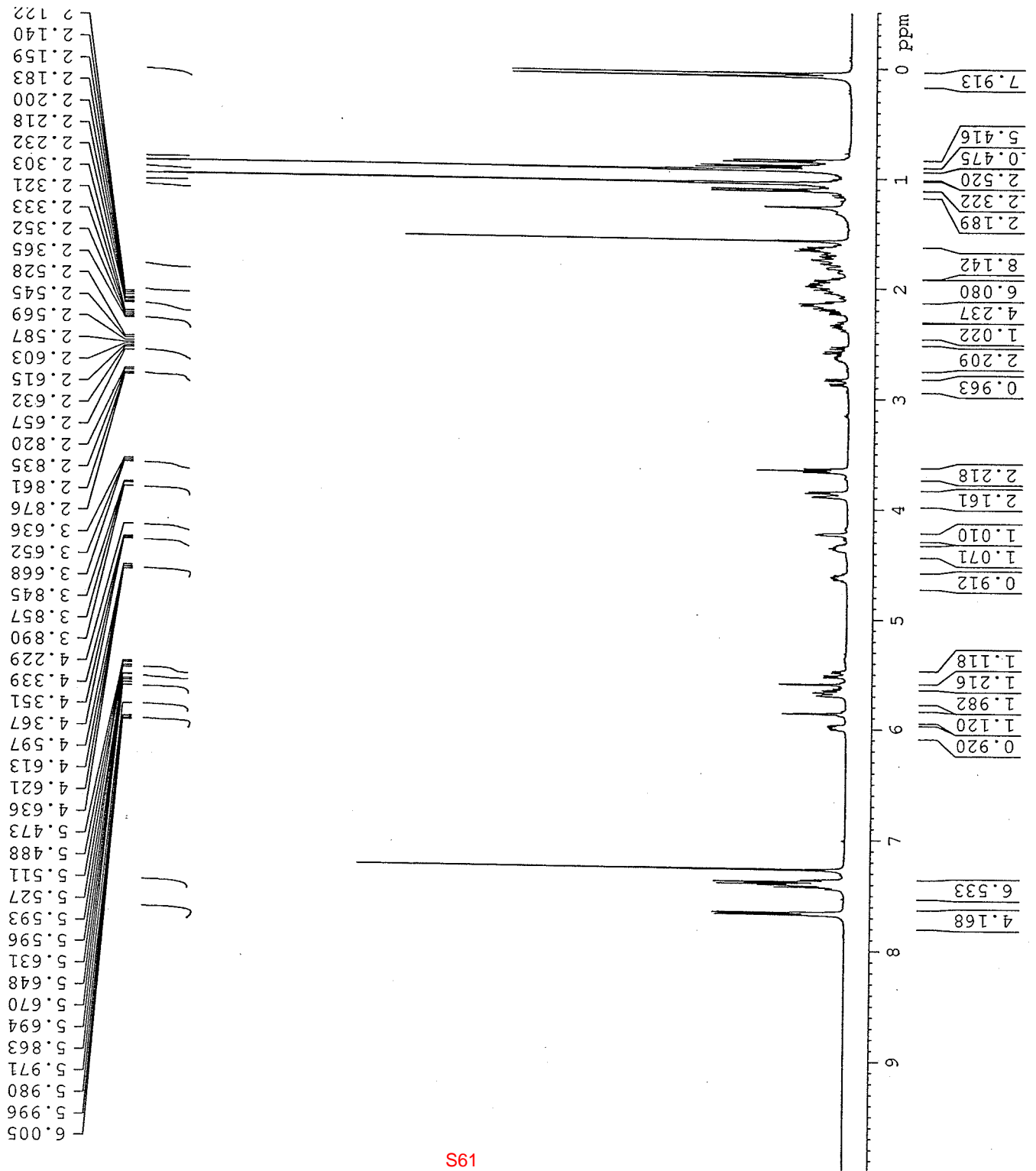
F2 - Processing parameters

SI 65536  
SF 400.0100103 MHz  
WDW EM  
SSB 0  
LB 0.70 Hz  
GB 0  
PC 1.00

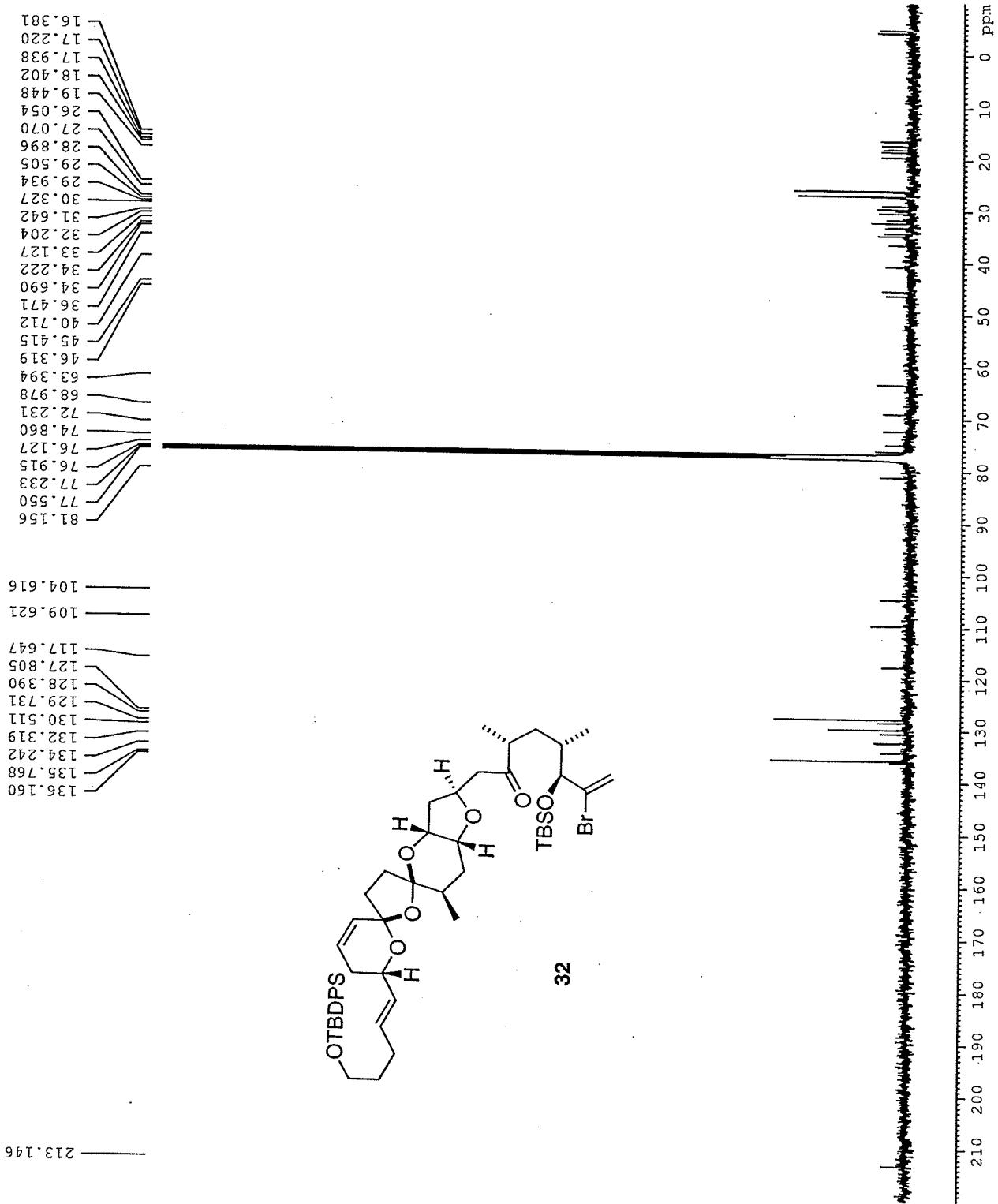
ID NMR plot parameters

CX 21.00 cm  
FIP 10.000 ppm  
F1 4000.10 Hz  
F2P -0.500 ppm  
F2 -200.01 Hz  
F2MCM 0.50000 ppm/cm  
HZCM 200.00500 Hz/cm

H1



213.146



136.160  
135.768  
134.242  
132.319  
130.511  
129.731  
128.390  
127.805  
117.647  
109.621  
104.616

81.156  
77.550  
77.233  
76.915  
76.127  
74.860  
72.231  
68.978  
63.394  
46.319  
45.415  
40.712  
36.471  
34.690  
34.222  
33.127  
32.204  
31.642  
30.327  
29.934  
29.505  
28.896  
27.070  
26.054  
19.448  
18.402  
17.938  
17.220  
16.381

```

Current Data Parameters
NAME      X2-V-52
EXPNO    1
PROCNO   1
DU       /m
USER     xzhou

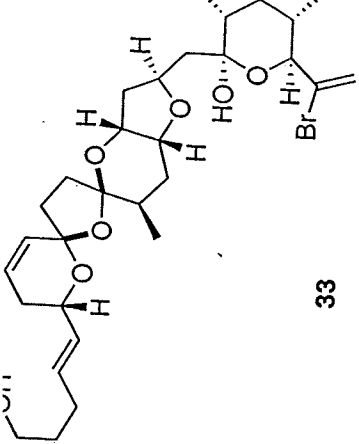
F2 - Acquisition Parameters
Date_    20040221
Time     21.44
INSTRUM  dpx400
PROBHD   5 mm BBO 2-G
PULPROG  zgpg30
TD       65536
SOLVENT  CDCl3
NS       30000
DS       4
SMH      25125.629 Hz
FIDRES   0.383387 Hz
AQ       1.3042164 sec
RG       8192
DW       19.900 usec
DE       6.00 usec
TE       300.0 K
D1       0.03000000 sec
D11      0.03000000 sec
D12      0.00002000 sec

----- CHANNEL f1 -----
NUC1     13C
P1       7.50 usec
PL1     -3.00 dB
SFO1    100.5936186 MHz

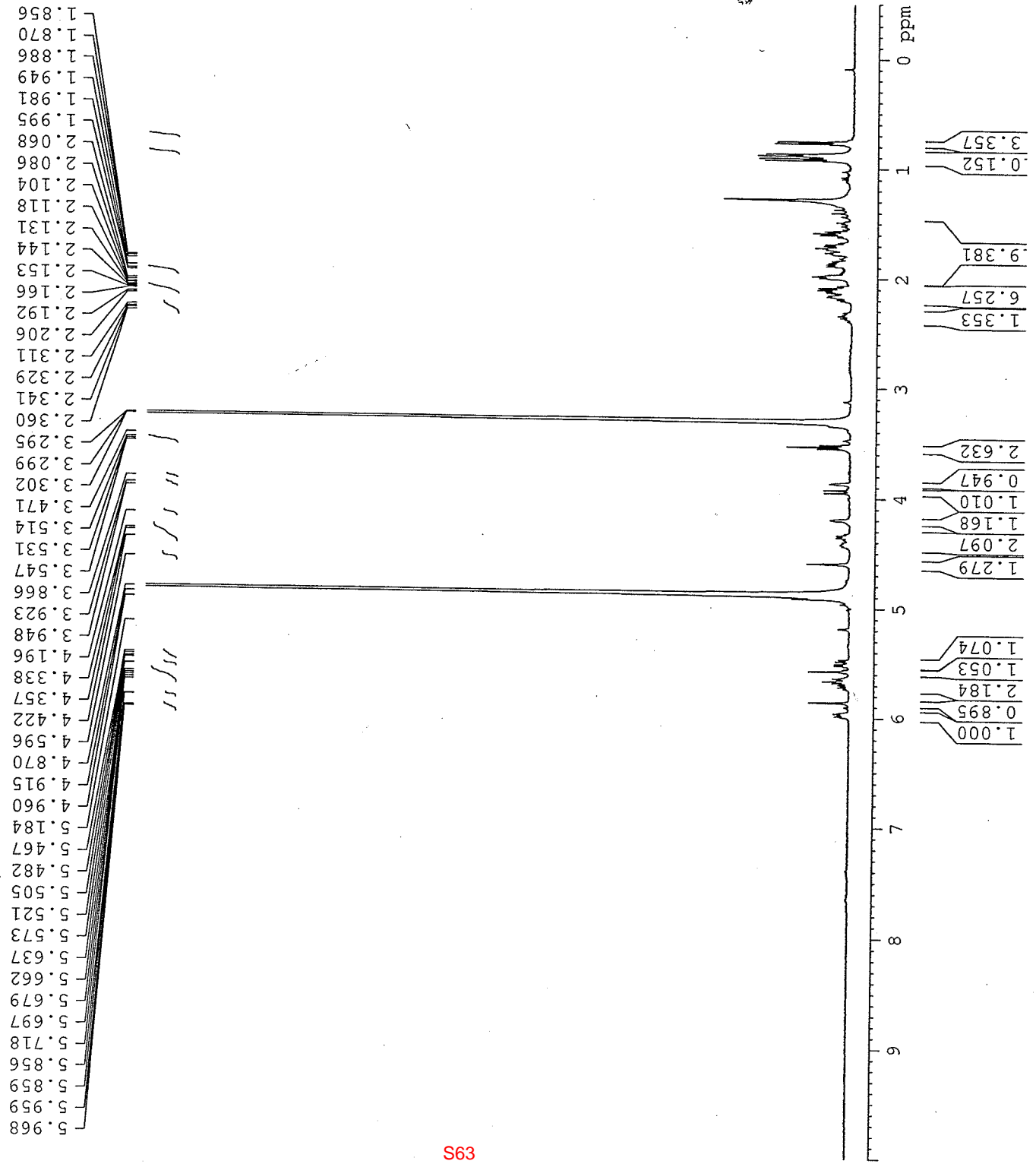
----- CHANNEL f2 -----
CFDPFG2  waltz16
NUC2     1H
PCPD2   80.00 usec
PL2     0.00 dB
PL12    17.40 dB
PL13    18.00 dB
SFO2    400.0116000 MHz

F2 - Processing parameters
SI       65536
SF      100.5825753 MHz
WDW      EM
SSB      0
LB       3.00 Hz
GB       0
PC       1.40

1D NMR plot parameters
CX       20.00 cm
FLP     234.694 ppm
F1      23606.08 Hz
F2      -15.107 ppm
PFMCM   12.49005 ppm/cm
HZCM    1256.28137 Hz/cm
    
```



alcohol/CD3OD



EXPNO 7  
 PROCNO 1  
 DU /m  
 USER xzhou

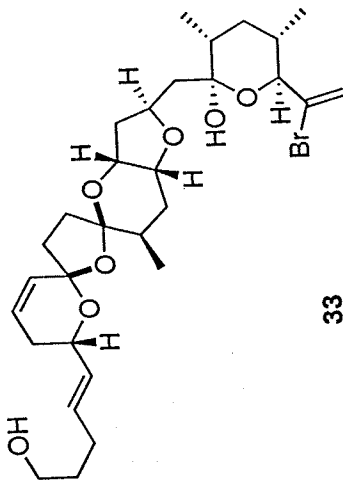
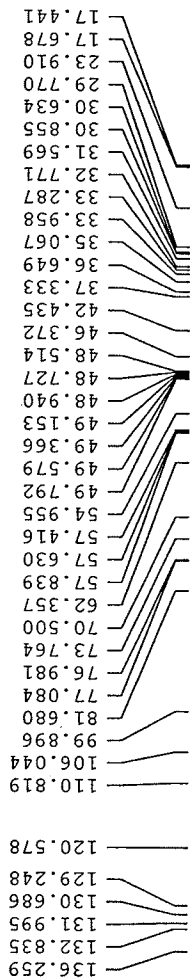
F2 - Acquisition Parameters  
 Date\_ 20040224  
 Time\_ 19.48  
 INSTRUM dpx400  
 PROBDH 5 mm BBO Z-C  
 PULPROG zg30  
 TD 32768  
 SOLVENT MeOH  
 NS 160  
 DS 2  
 SWH 5995.204 Hz  
 FIDRES 0.182959 Hz  
 AQ 2.7329011 sec  
 RG 812.7  
 DW 83.400 usec  
 DE 6.00 usec  
 TE 300.0 K  
 D1 2.00000000 sec

\*\*\*\*\* CHANNEL f1 \*\*\*\*\*  
 NUC1 1H  
 PL 11.30 usec  
 PL1 0.00 dB  
 SFO1 400.0126001 MHz

F2 - Processing parameters  
 SI 65536  
 SF 400.0100170 MHz  
 NDW EM  
 SSB 0  
 GB 0  
 LB 0.70 Hz  
 PC 1.00

1D NMR plot parameters  
 CX 21.00 cm  
 FLP 10.000 ppm  
 F1 4000.10 Hz  
 F2P -0.500 ppm  
 F2 -200.01 Hz  
 PPMCM 0.50000 ppm/cm  
 HZCM 200.00300 Hz/cm

C13/CD3OD



33

```

Current Data Parameters
NAME      XZ-V-54
EXPNO    21
PROCNO   1
DU       /m
USER     xzhou

F2 - Acquisition Parameters
Date_    20040227
Time     21.11
INSTRUM  dp4400
PROBHD   5 mm BBO Z-G
PULPROG  zgpg30
TD       65536
SOLVENT  CDCl3
NS       102000
DS       4
SWH      25125.629 Hz
FIDRES   0.583387 Hz
AQ       1.3042164 sec
RG       1024
DW       19.900 usec
DE       6.00 usec
TE       300.0 K
D1       0.03000000 sec
D11      0.03000000 sec
D12      0.00002000 sec

===== CHANNEL f1 =====
NUC1      13C
P1        7.50 usec
PL1       -3.00 dB
SFO1     100.5936186 MHz

===== CHANNEL f2 =====
CPDPRG2  waltz16
NUC2      1H
P2        80.00 usec
PL2       0.00 dB
PL12     18.40 dB
PL13     18.00 dB
SFO2     400.0116000 MHz

F2 - Processing parameters
SI        65536
SF        100.5824988 MHz
WDW       EM
SSB       0
LB        3.00 Hz
GB        0
PC        1.00

ID NMR plot parameters
CX        20.00 cm
FLP       200.000 Fpm
F1        20116.49 Hz
F2        0.000 Fpm
PPMCM     10.00000 Fpm/cm
HZCM      1005.82434 Hz/cm
    
```

