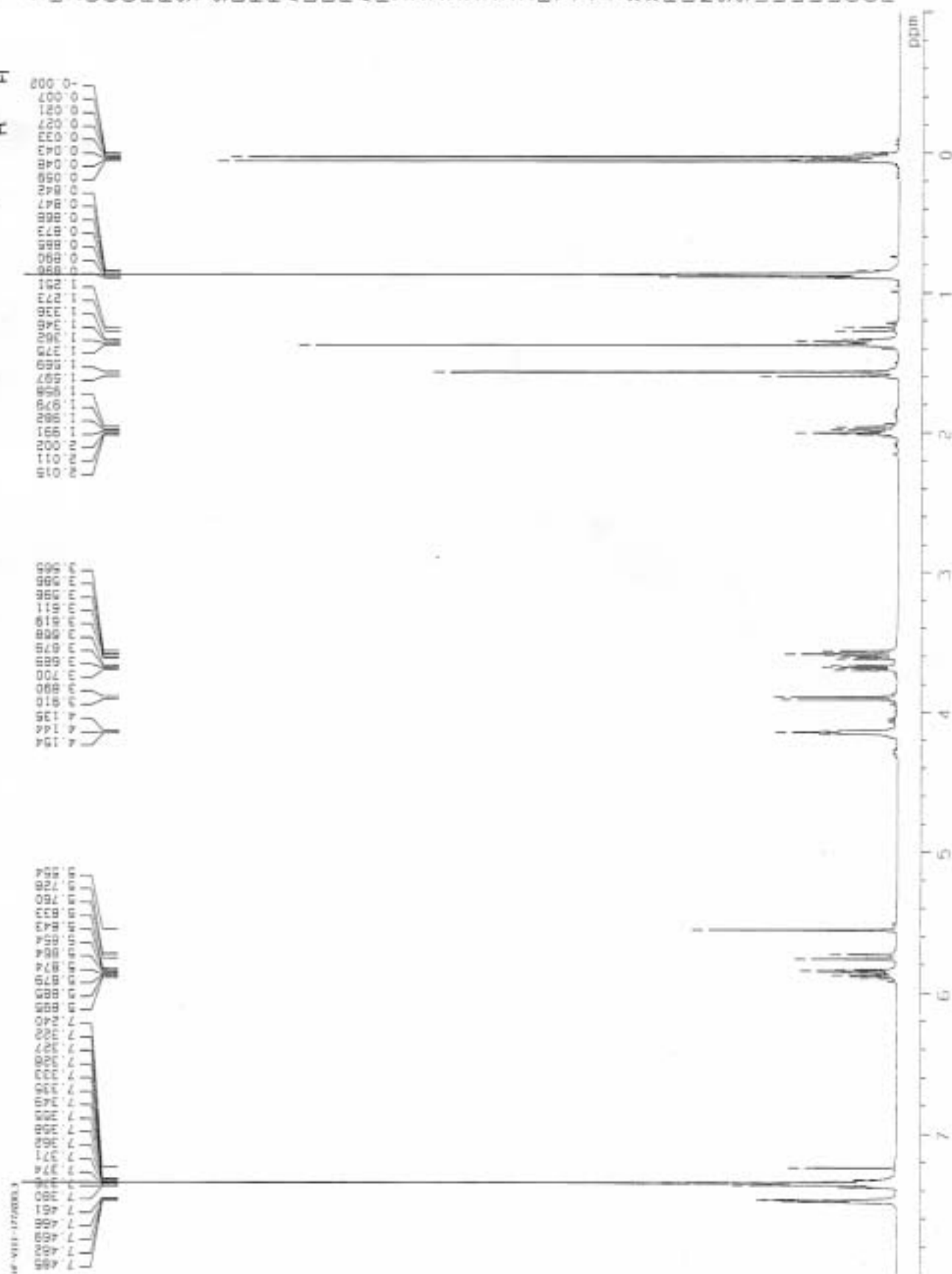
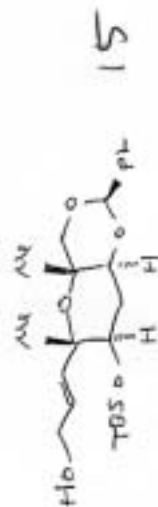
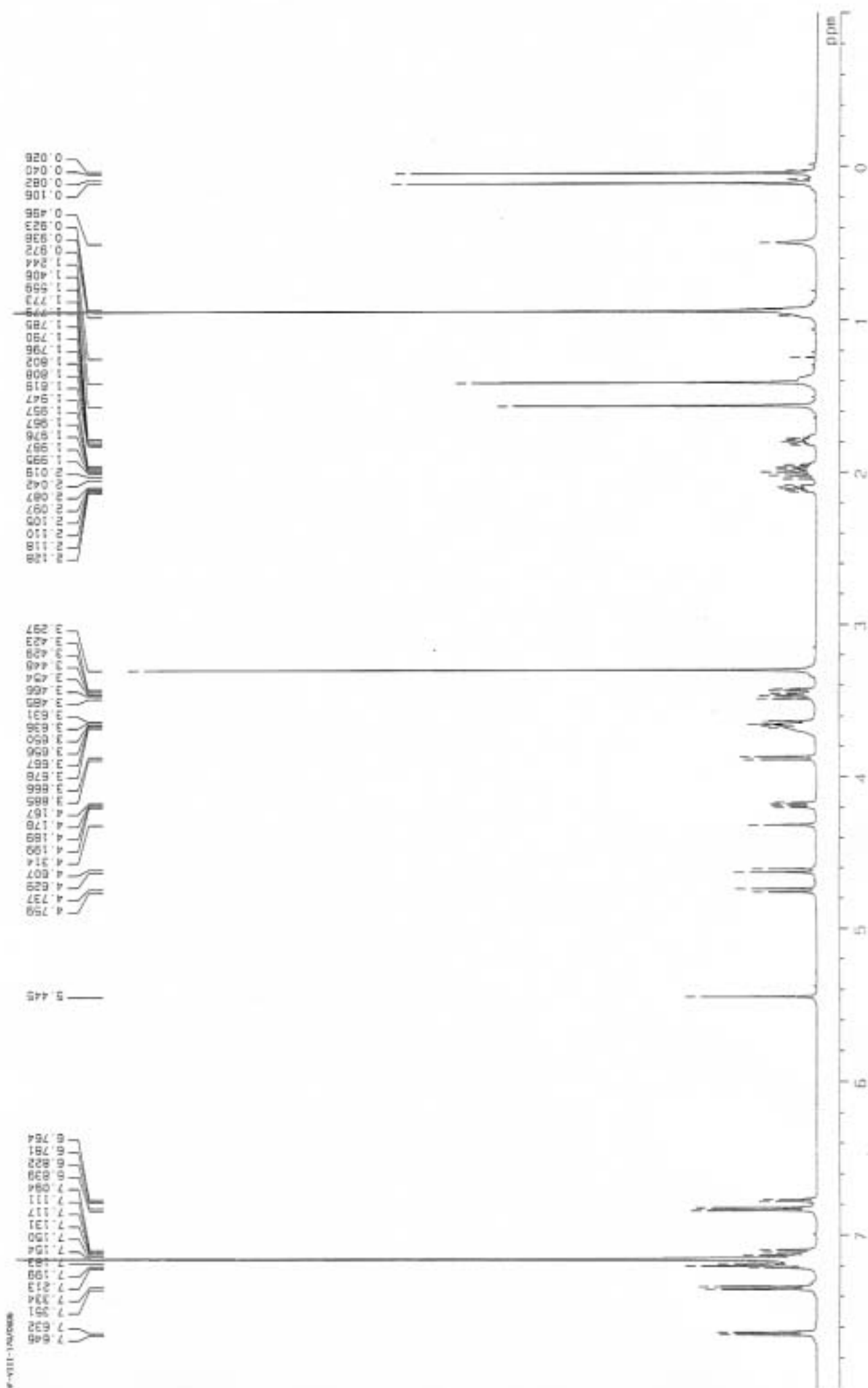
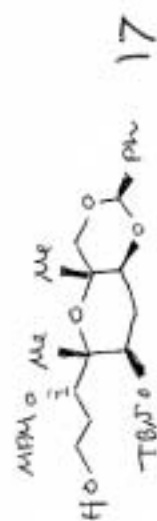
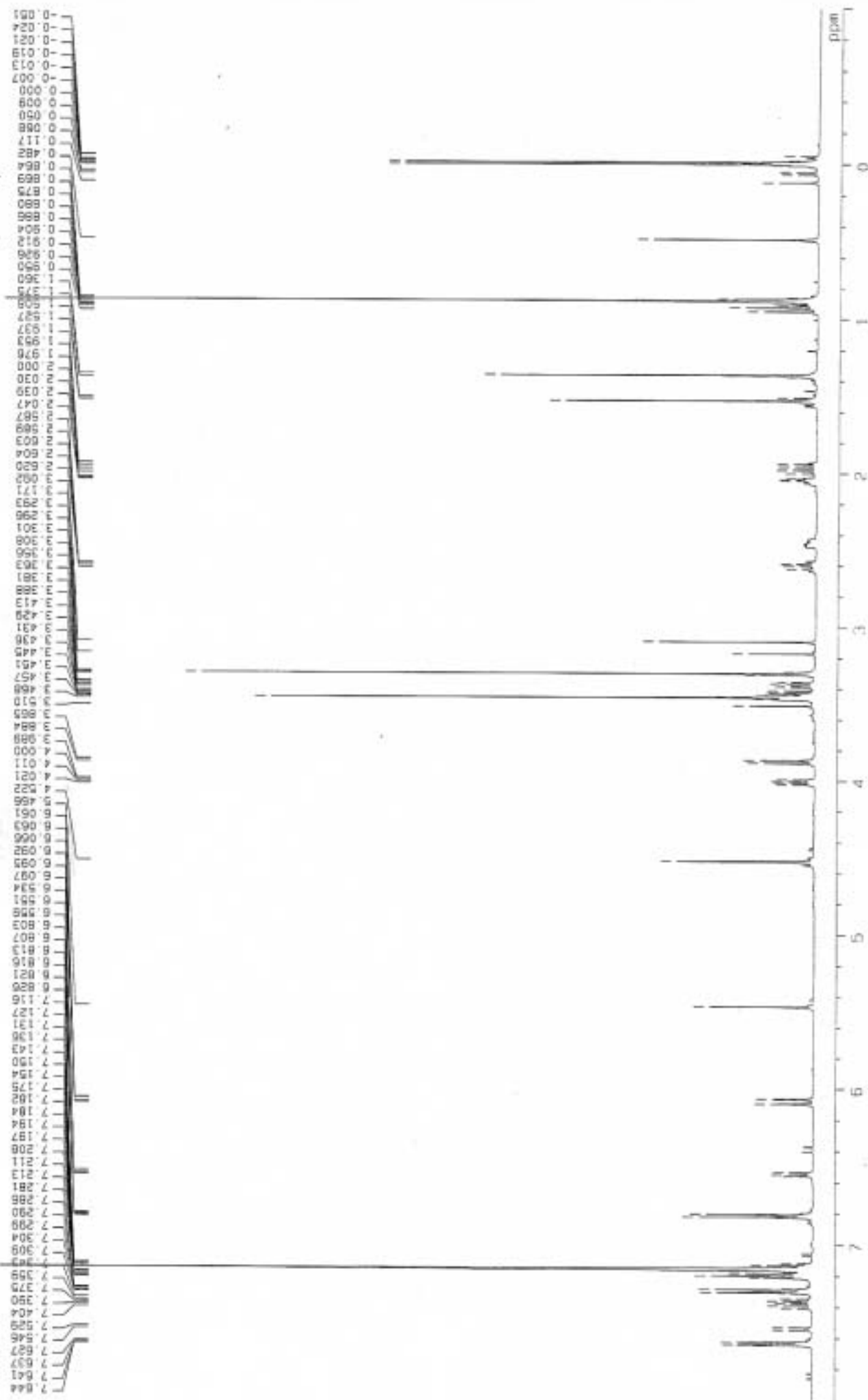
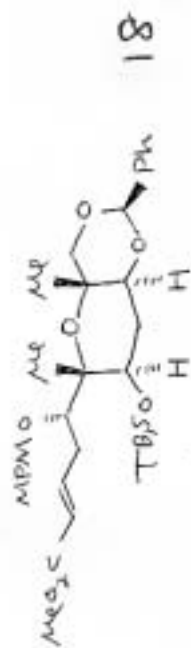
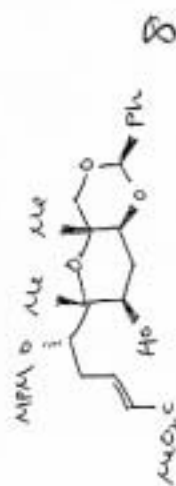
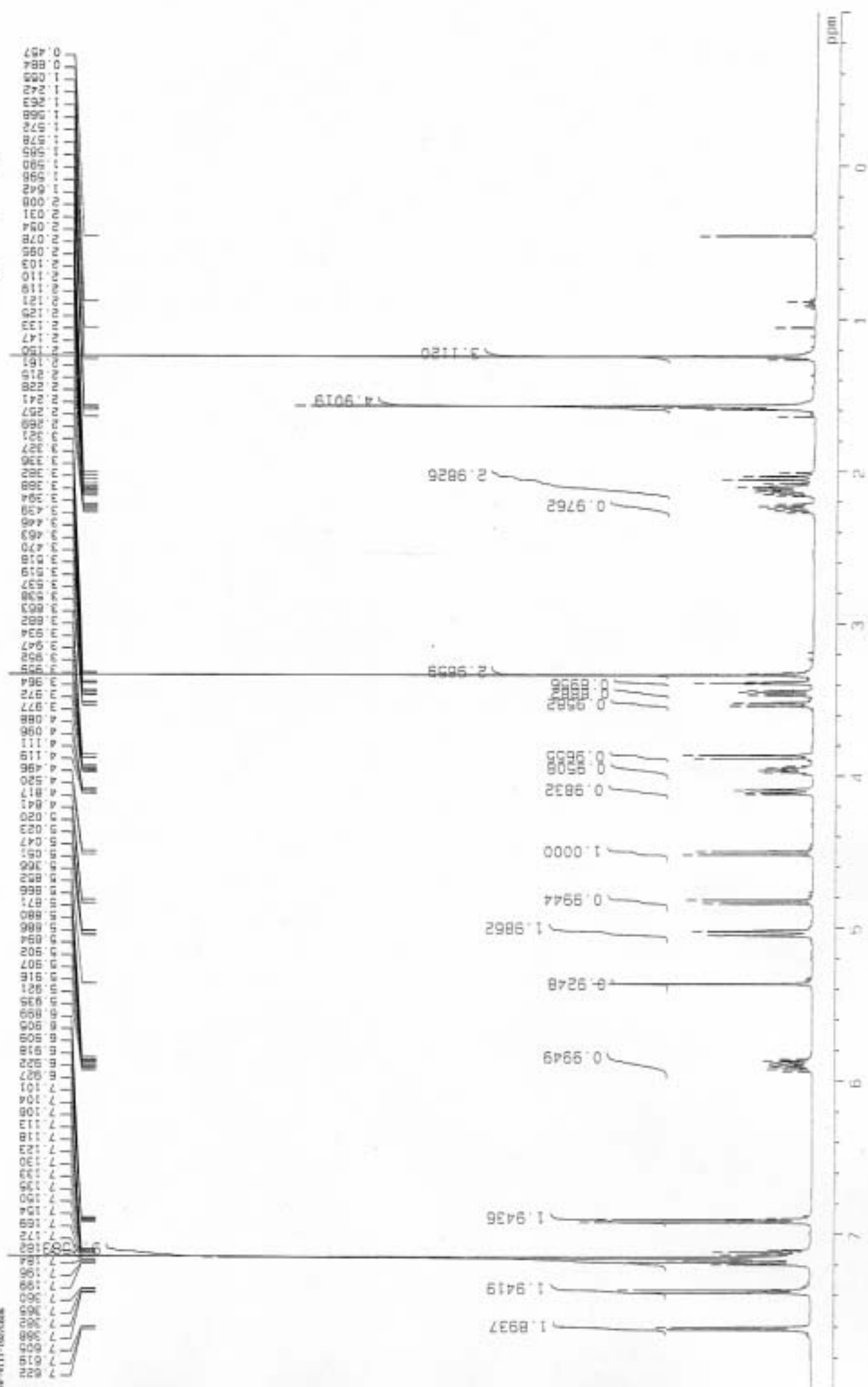
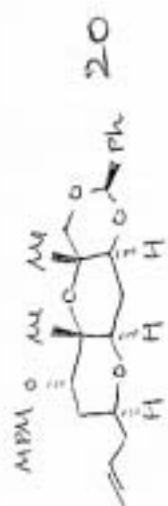


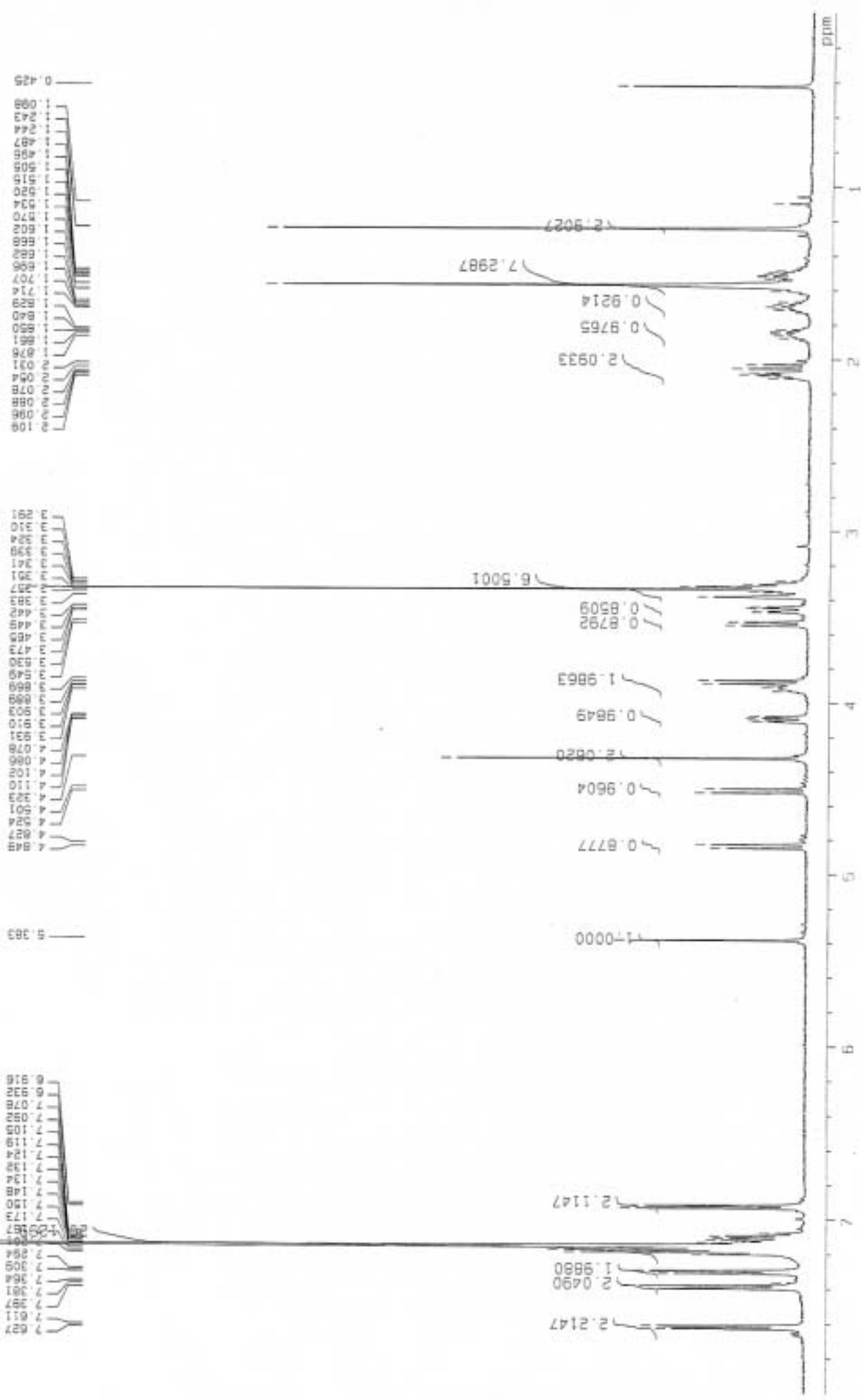
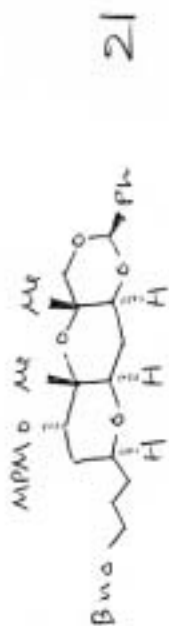






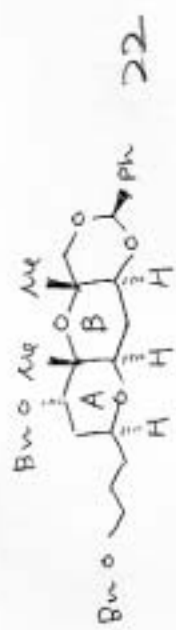




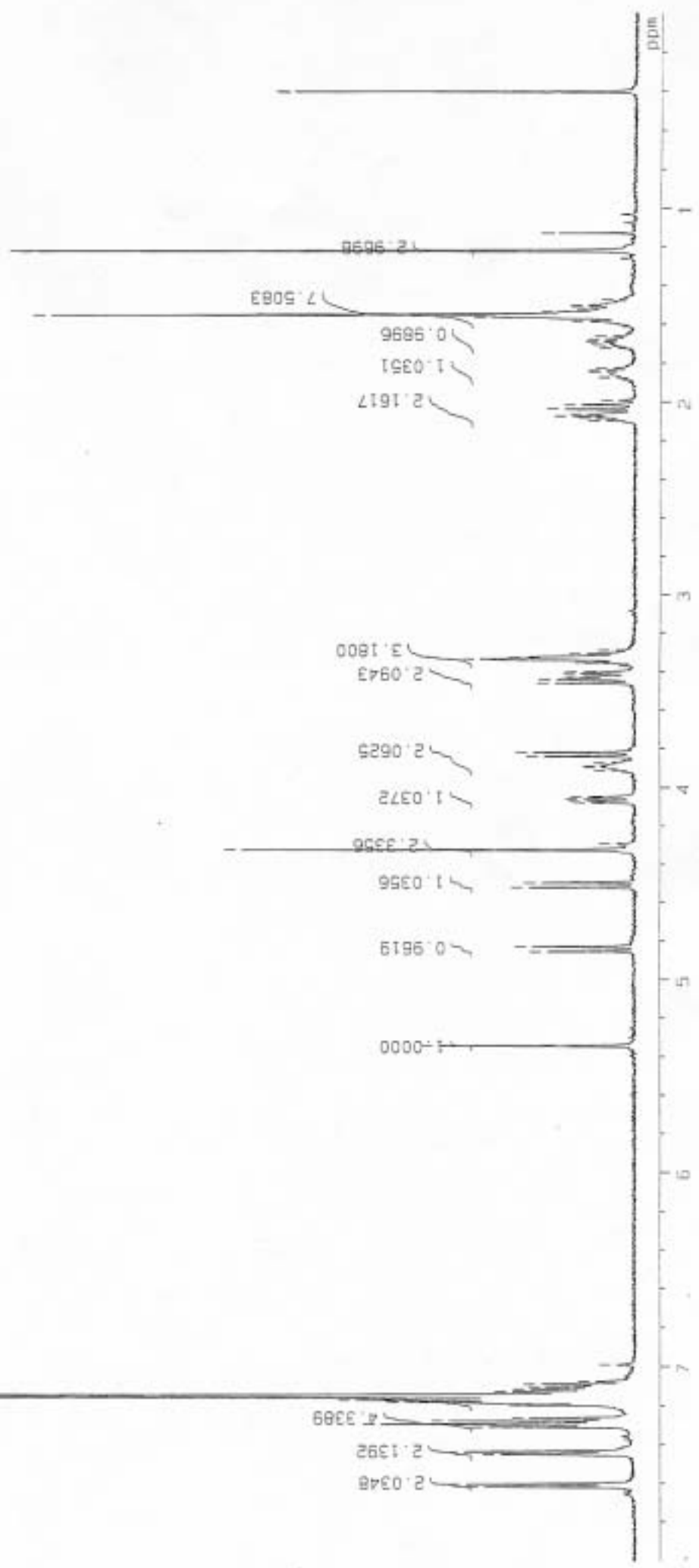




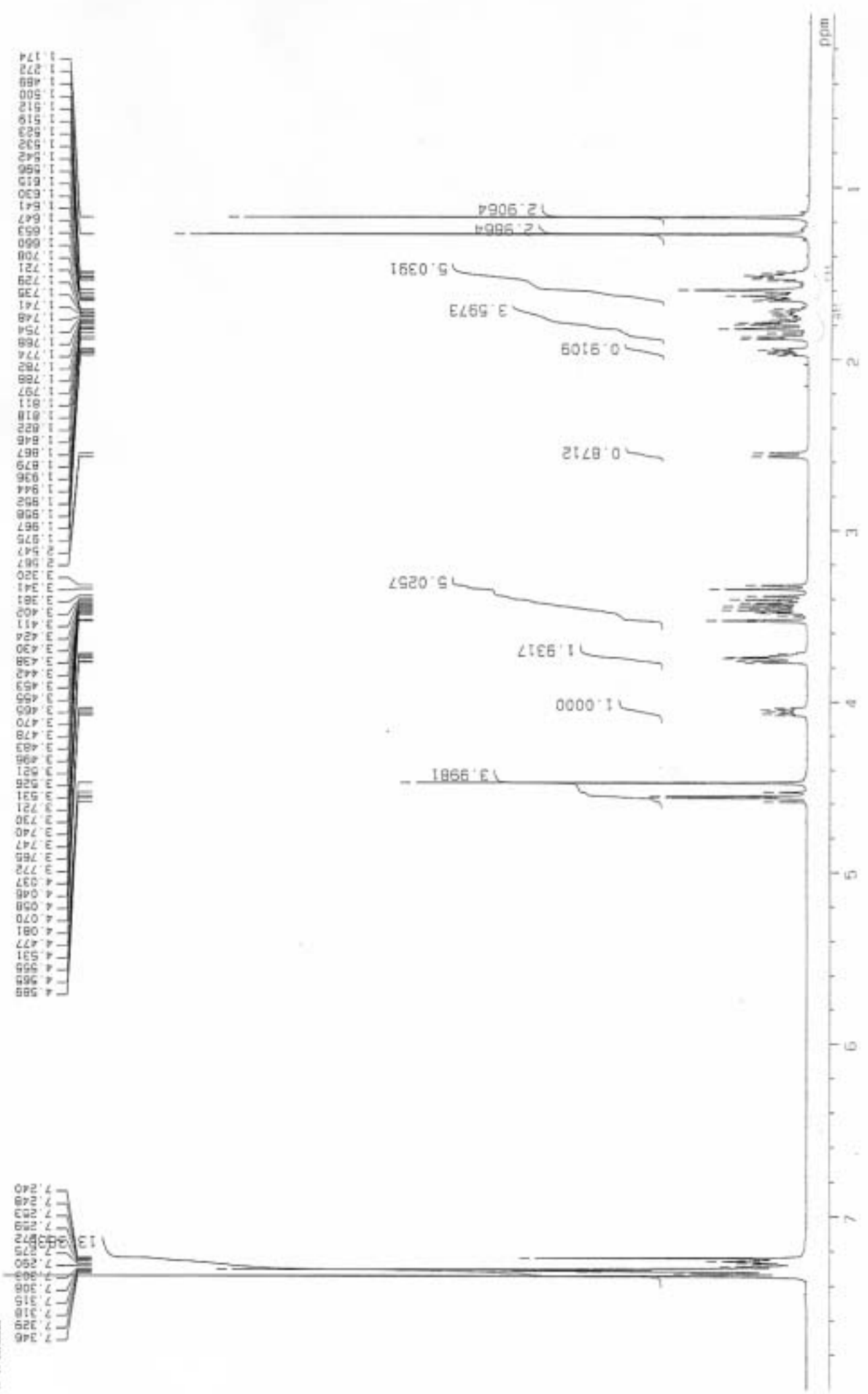
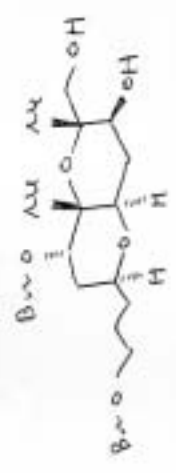
0.345



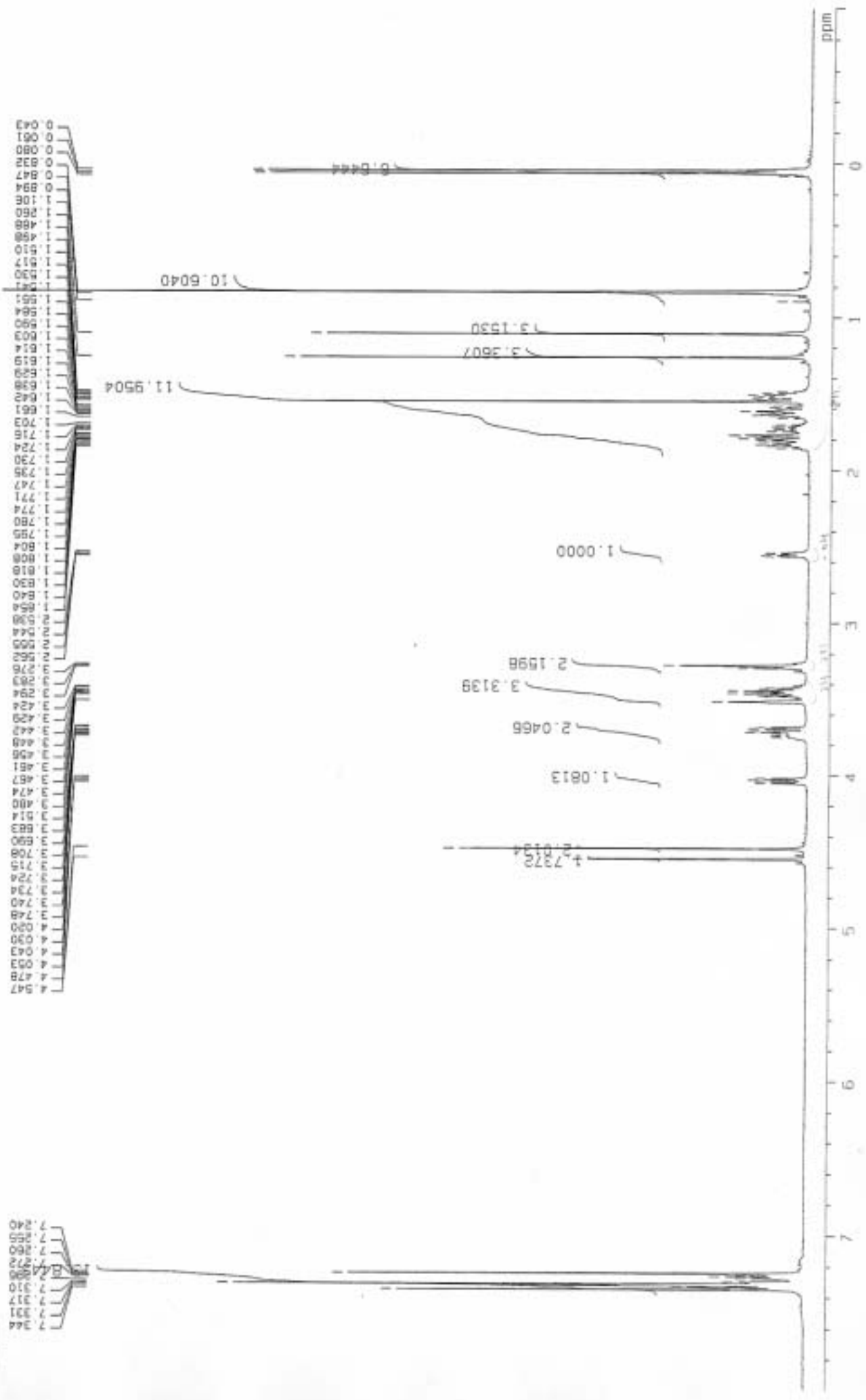
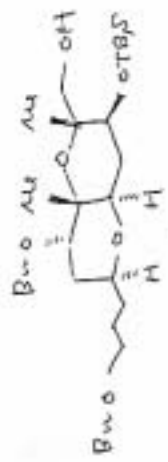
22

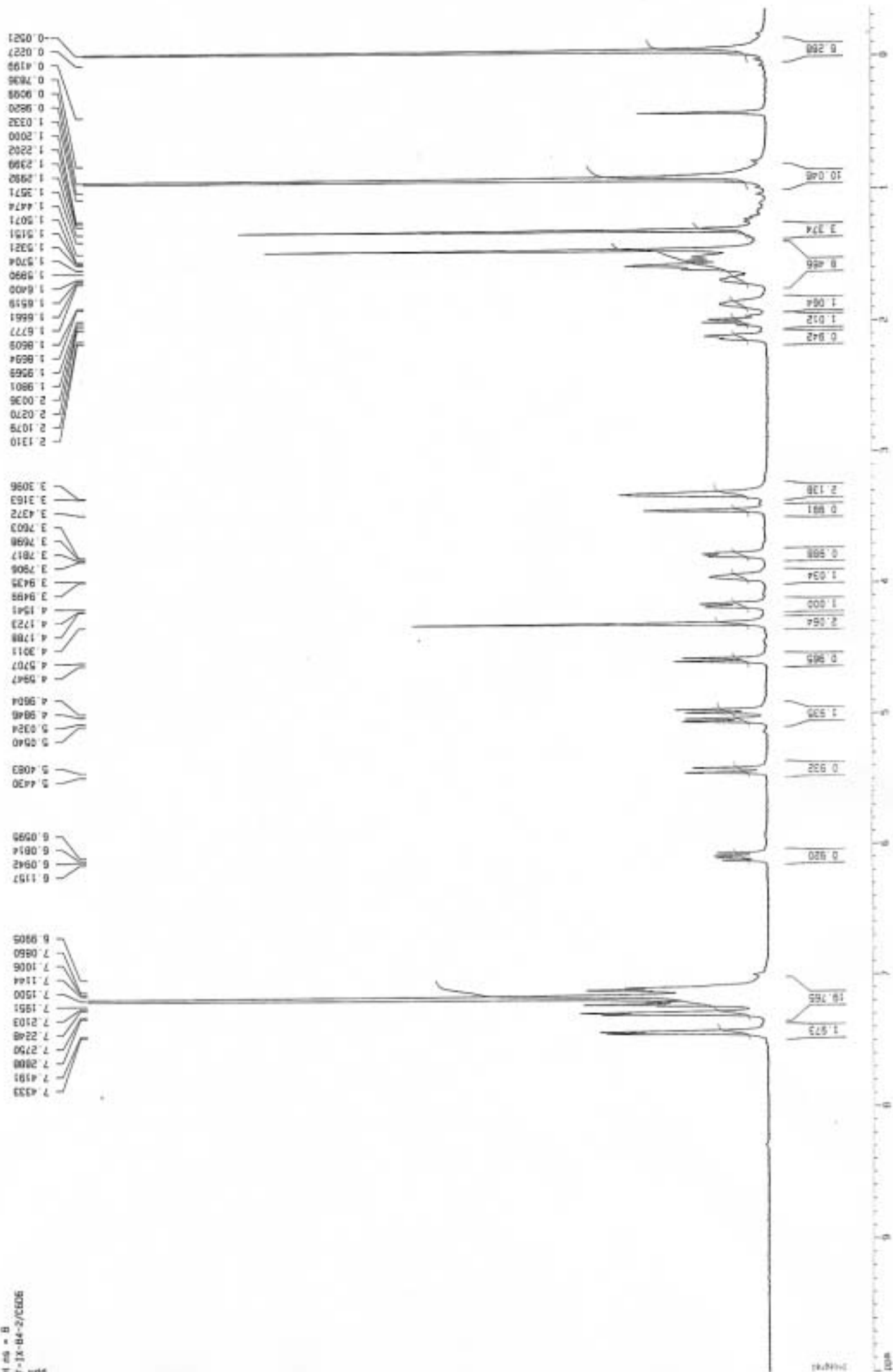


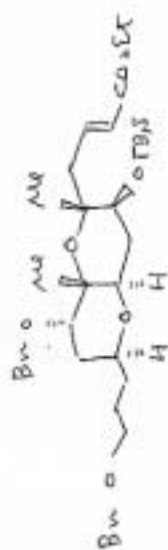
23



24

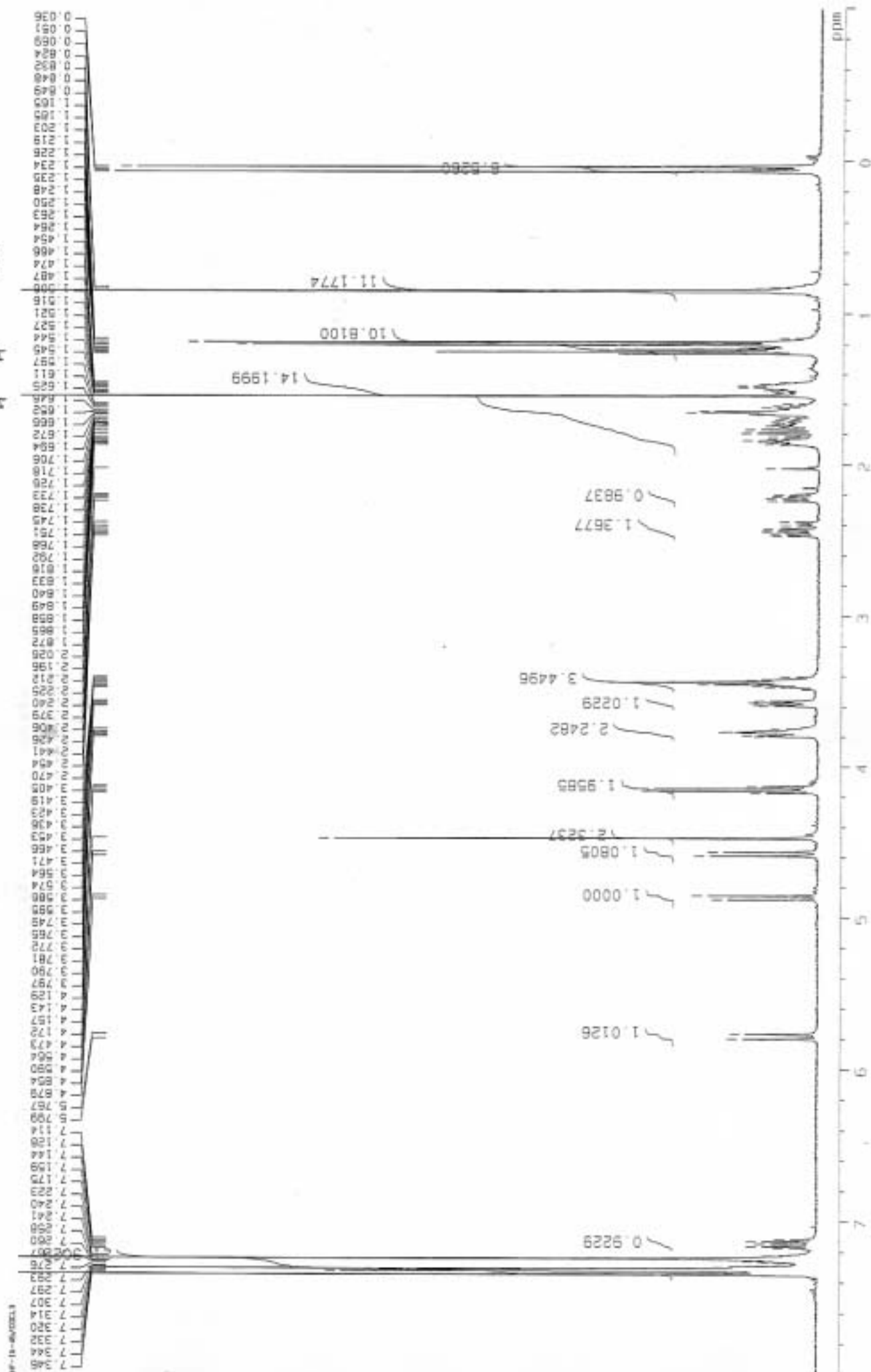


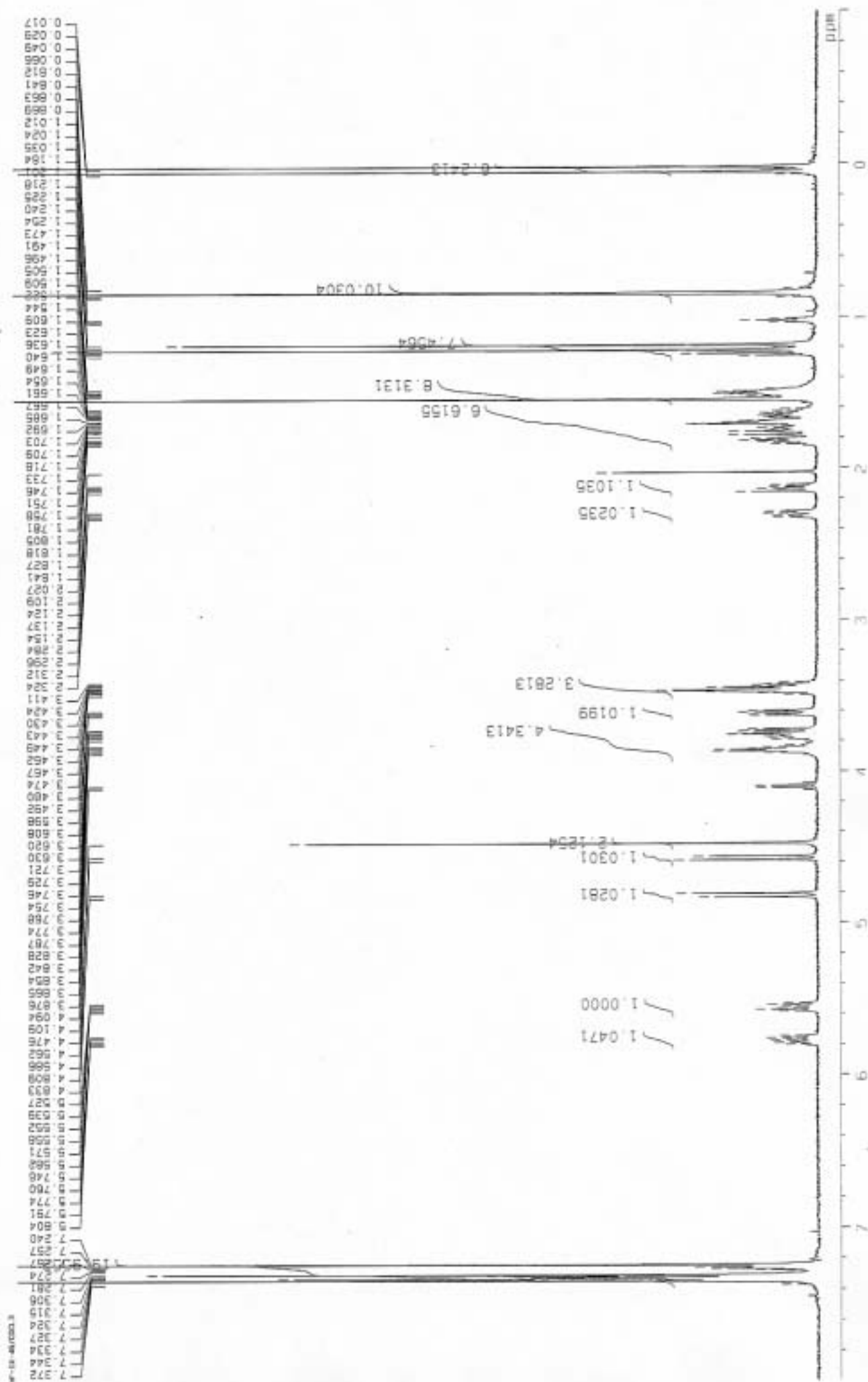
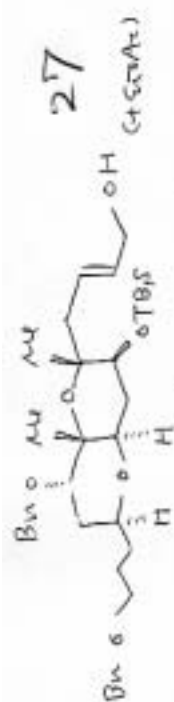


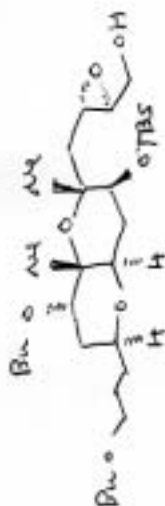


26

OK





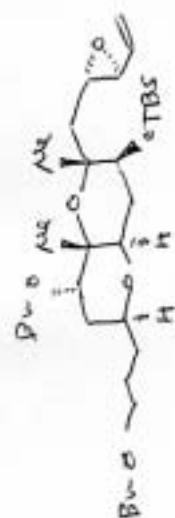


28

HP-XI-75/CDC13 (mCPBA epoxidation)

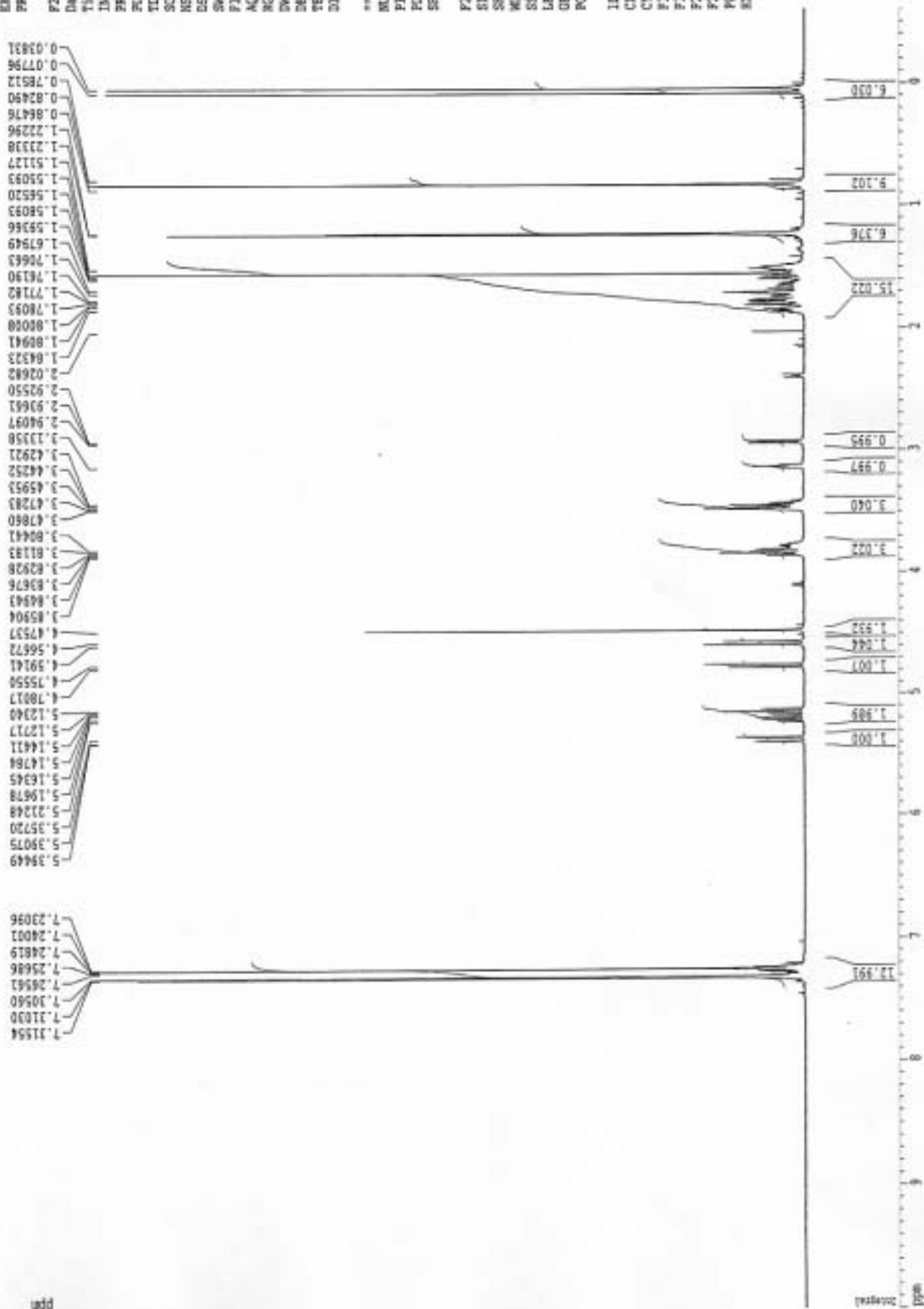


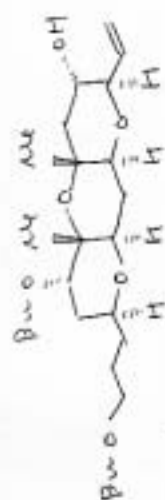
29



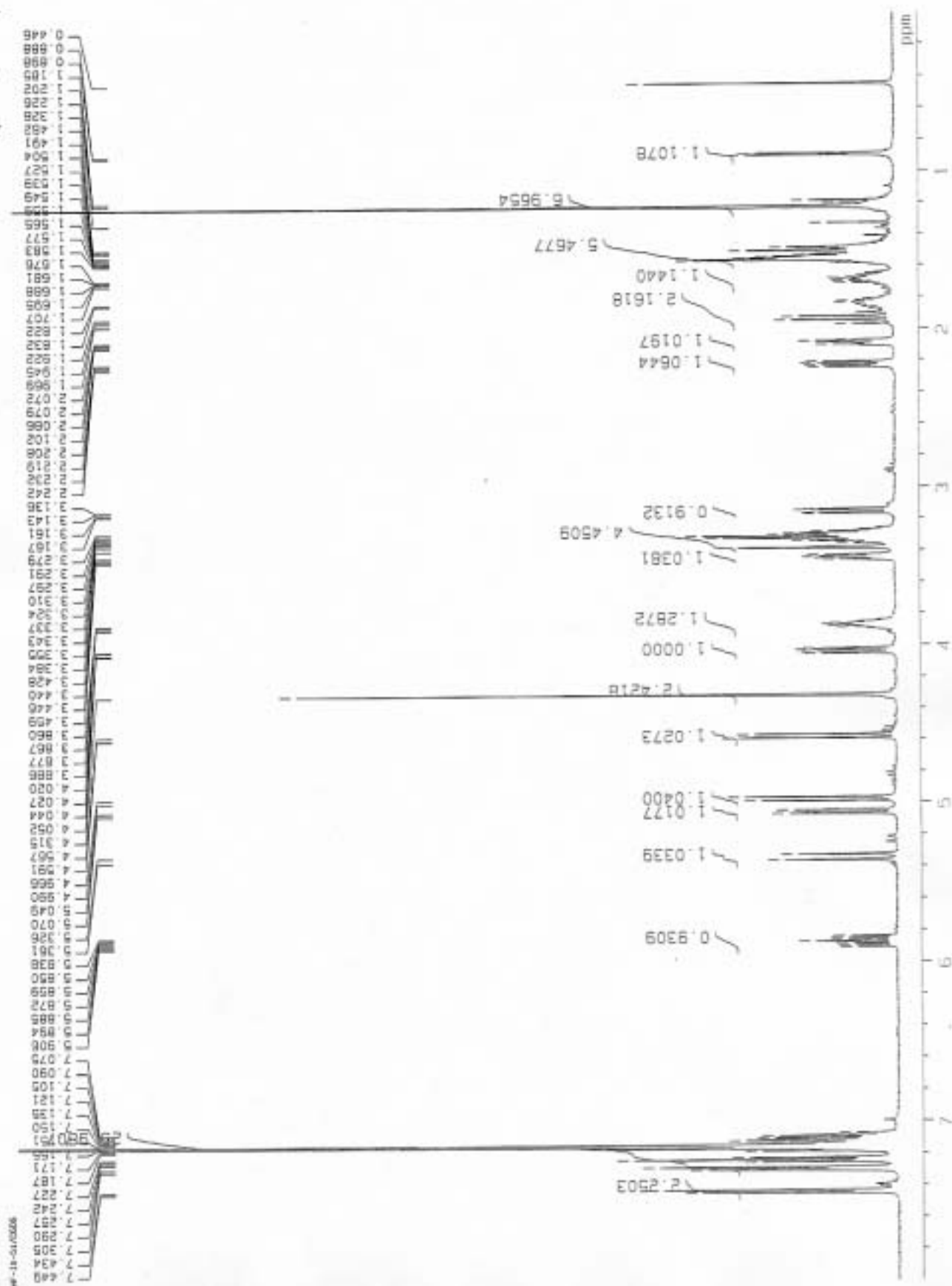
HF-XI-80/CDC13

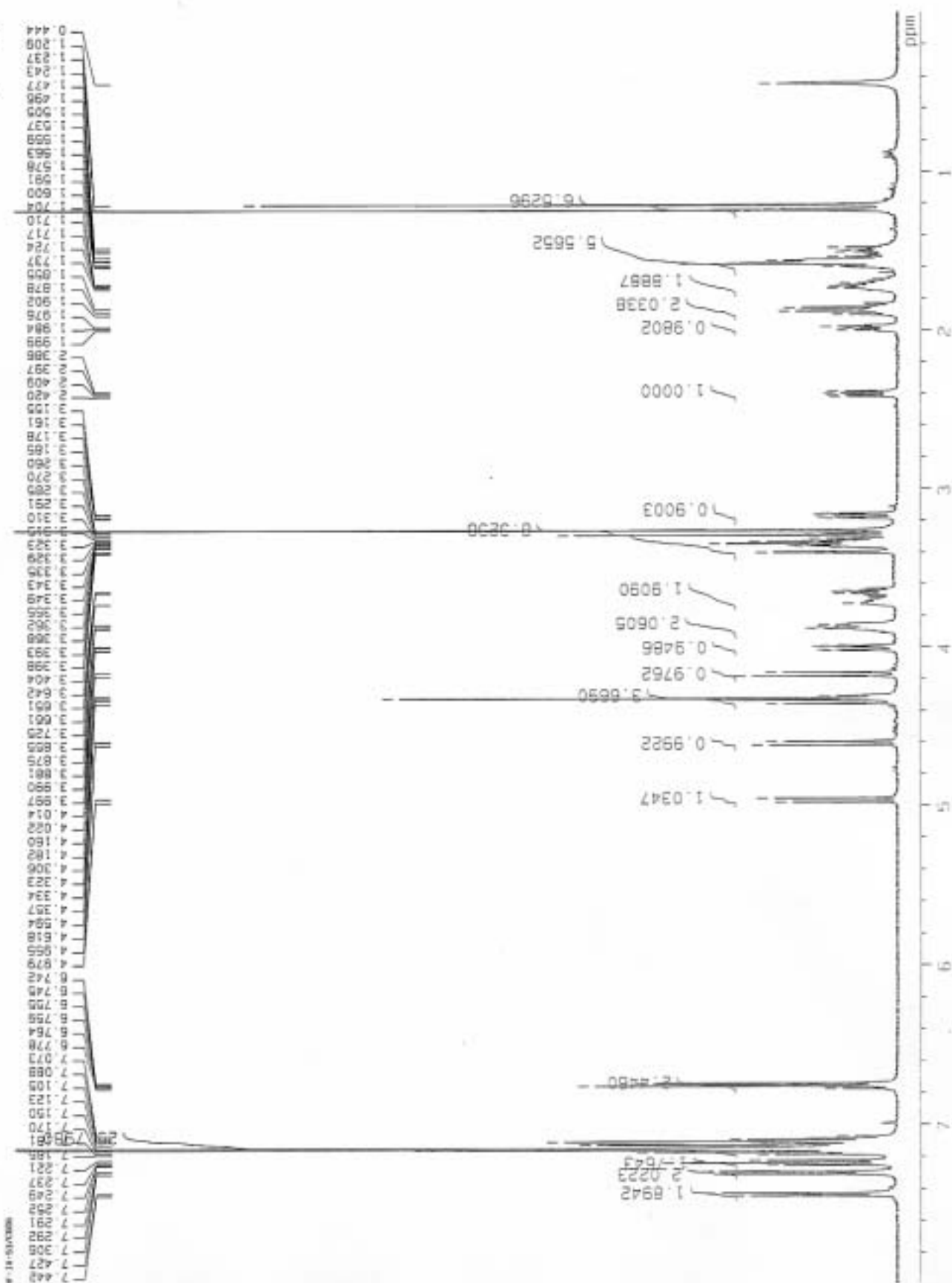
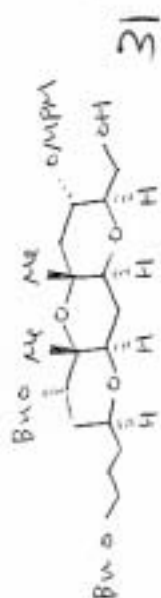
Current Data Parameters
NAME a
EXPNO 1
PROCNO 1
F2 - Acquisition Parameters
Date_ 20020416
Time 15.32
INSTRUM av500
PROBHD 5 mm HMQP Sol
PULPROG zgpg
TD 65536
SOLVENT CDC13
NS 8
DS 2
SWH 7507.507 Hz
FIDRES 0.114555 Hz
AQ 4.3643143 sec
RG 287.4
RW 66.600 usec
DE 6.00 usec
TE 300.0 K
D1 1.0000000 sec
***** CHANNEL f1 *****
NUC1 1H
P1 9.80 usec
PL1 -2.00 dB
SFO1 500.132568 MHz
F2 - Processing parameters
SI 32768
SF 500.1300233 MHz
WDW EM
SSB 0
LB 0.10 Hz
GB 0
PC 10.00
ID NMR plot parameters
CX 32.00 cm
CY 50.00 cm
F1P 10.000 ppm
F1 5001.30 Hz
F2P -0.600 ppm
F2 -100.08 Hz
PRCK 0.33125 ppm/cm
KSCN 165.66800 Hz/cm

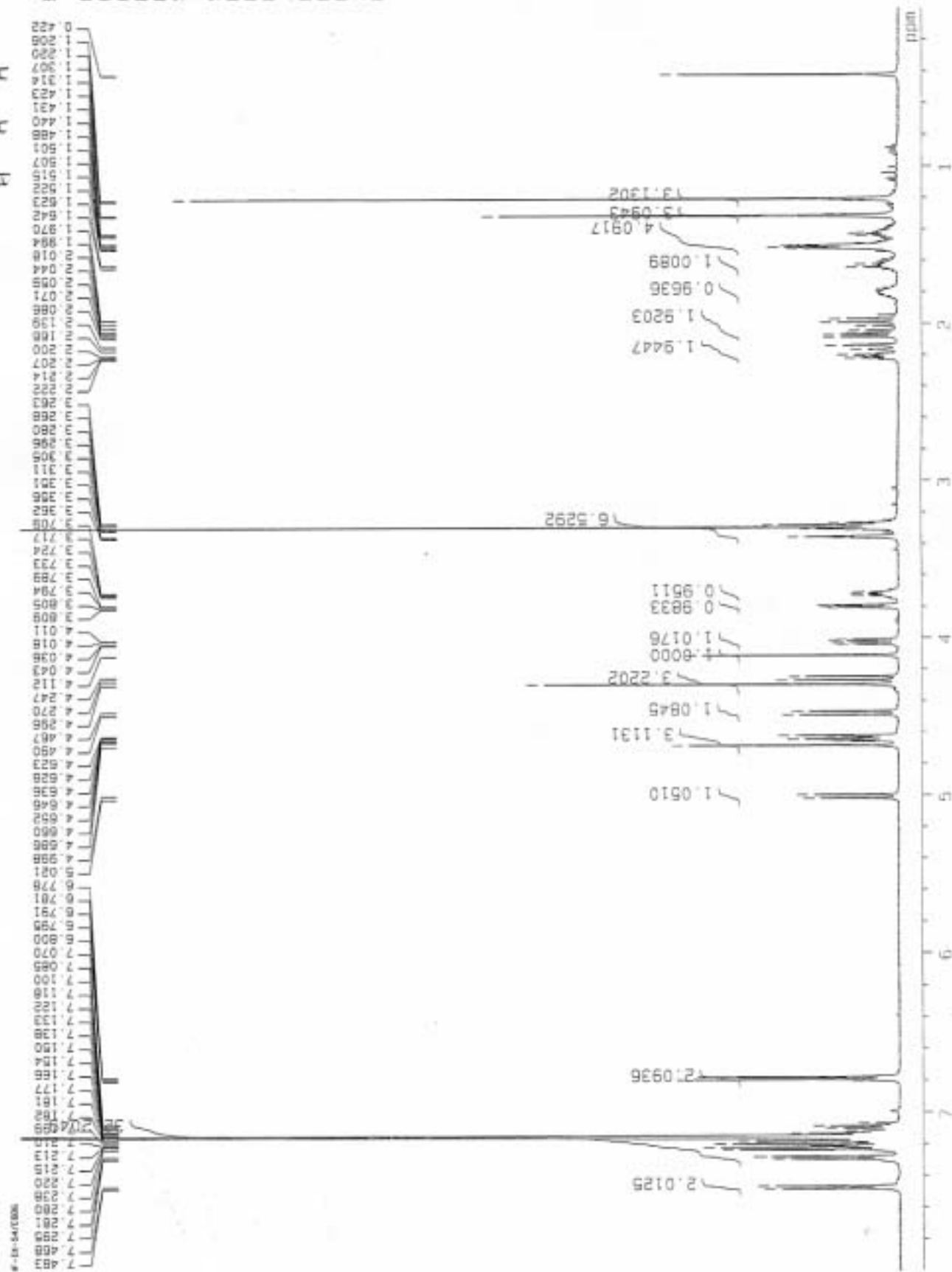
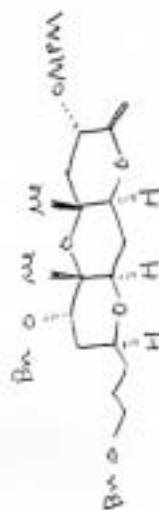


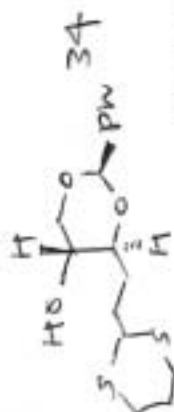


30



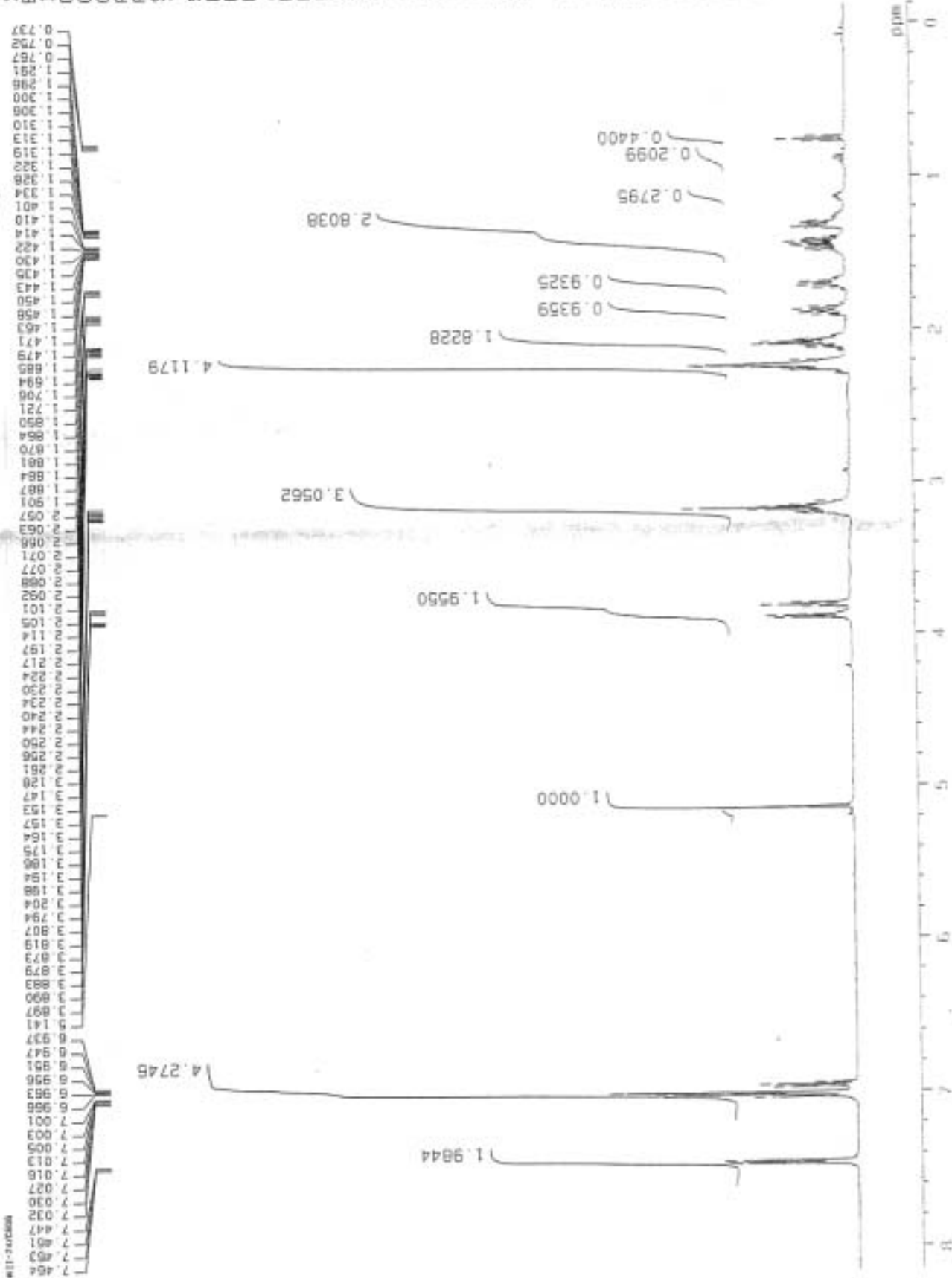


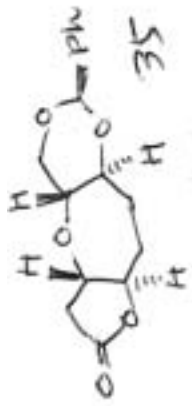




12-JUL-2002 13:04:44.34

EXMOO : SINGL
IRNUC : 1H
OBFRO : 500.00 MHz
OBSST : 162410.00 Hz
PWI : 5.75 usec
POINT : 32768
SAMPQ : 32768
TIMES : 8
SCANS : 8
DUMMY : 0
FREQU : 10000.00 Hz
FILTR : 5000 Hz
ACQTM : 3.2768 sec
DEADT : 57.12 usec
DELAY : 40.00 usec
PD : 1.0000 sec
ADBIT : 16
RGAIN : 13
IRNUC : 1H
IRFRO : 500.00 MHz
IRSET : 162410.00 Hz
IRPW : 50.0 usec
IRATN : 511
IRANS : 0
IRBP1 : 26
IRBP2 : 6
BF : 0.01 Hz
T1 : 0.00 %
T2 : 0.00 %
T3 : 90.00 %
T4 : 100.00 %
XE : 4144.29 Hz
XS : 428.16 Hz
REFVL : 7.15 ppm
DFILE : \$ALPHA1
MENUF : TH5_H_SN
SHWFL : TH5
SLVNT : C6D6
LKSET : 70327.1 Hz
LKLEV : 180
LGAIN : 20
LKPHS : 0.00 deg
LKSTG : 1579
CTEMP : 27.1 C
CSPED : 15 Hz
FIELD : 2718





35

35

20-APR-2002 17:14:52.15

EXMCD: SINGL
IRMOD: NON

OBNUC: 1H
OBFRQ: 500.00 MHz
OBSET: 162410.00 Hz

PW1: 5.75 usec
POINT: 32768
SAMP0: 32768

TIMES: 8
SCANS: 8
DUMMY: 0

FREQU: 1000.00 Hz
FILTR: 5000 Hz

ACQTH: 3.2768 sec
DEADT: 57.12 usec
DELAY: 40.00 usec

PD: 1.0000 sec
ADBIT: 16
RGAIN: 17

IRNUC: 1H
IRFRQ: 500.00 MHz
IRSET: 162410.00 Hz

IRPWN: 50.0 usec
IRATN: 511
IRNS: 0

IRBP1: 26
IRBP2: 6
BF: 0.01 Hz

T1: 0.00 %
T2: 0.00 %
T3: 0.00 %

T4: 90.00 %
XE: 100.00 %
XS: 3913.27 Hz

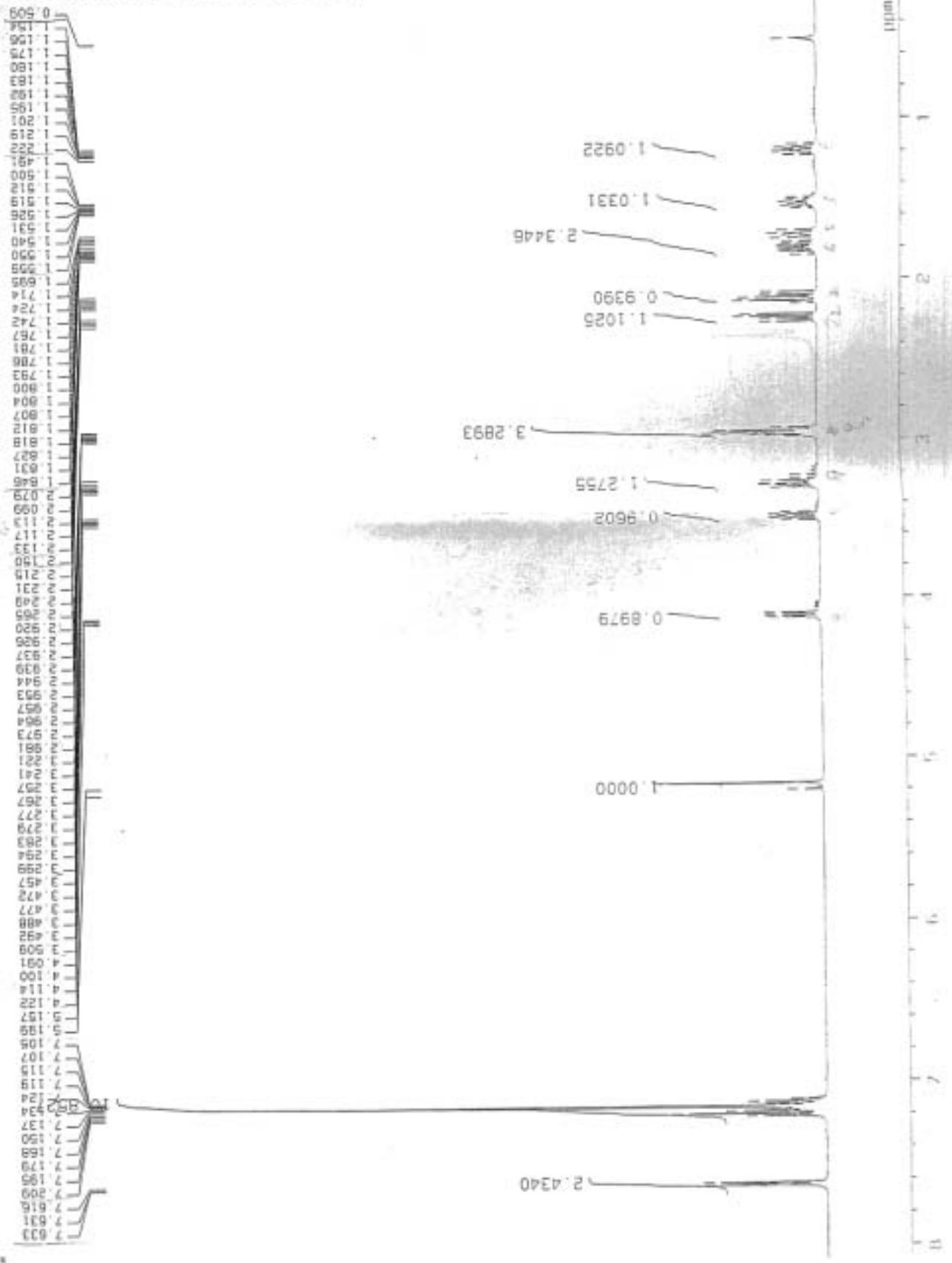
REFVL: 421.30 Hz
MNO: [ALPHA] ALPHA
DFILE: TH5_H_5N

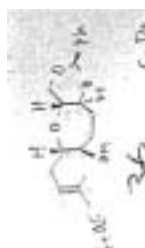
MENUF: TH5
SIMP1: TH5
SLVNT: C6D6

LKSET: 70327.1 Hz
LKLEV: 180
LGAIN: 22

LKPHS: 8.44 deg
LKSTG: 17.42
CUEMP: 21.1 C

CSPED: 12 Hz
FIELD: 1618





9-MAY-2002 14:12:07.68

EXMOD SINGL

IRMOD NON

DEINUC 1H

OBFRQ 500.00 MHz

OBSET 162410.00 Hz

PW1 5.75 usec

POINT 32768

SAMP0 32768

TIMES 8

SCANS 8

DUMMY 0

FREQU 10000.00 Hz

FILTR 5000 Hz

ACQTM 3.2768 sec

DEADT 57.12 usec

DELAY 40.00 usec

PO 1.0000 sec

AOBIT 16

RGAIN 18

IRNUC 1H

IRFRQ 500.00 MHz

IRSET 162410.00 Hz

IRPW 50.0 usec

IRATN 511

IRRNS 0

IRBP1 26

IRBP2 6

BF 0.01 Hz

T1 0.00 %

T2 0.00 %

T3 90.00 %

T4 100.00 %

XE 3994.75 Hz

XS 489.20 Hz

REFVL 7.15 ppm

DFILE \$ALPHA1

MENUF TH5_H_5N

SHMFL TH5

SLVNT C6D6

LKSET 70327.1 Hz

LKLEV 180

LGAIN 22

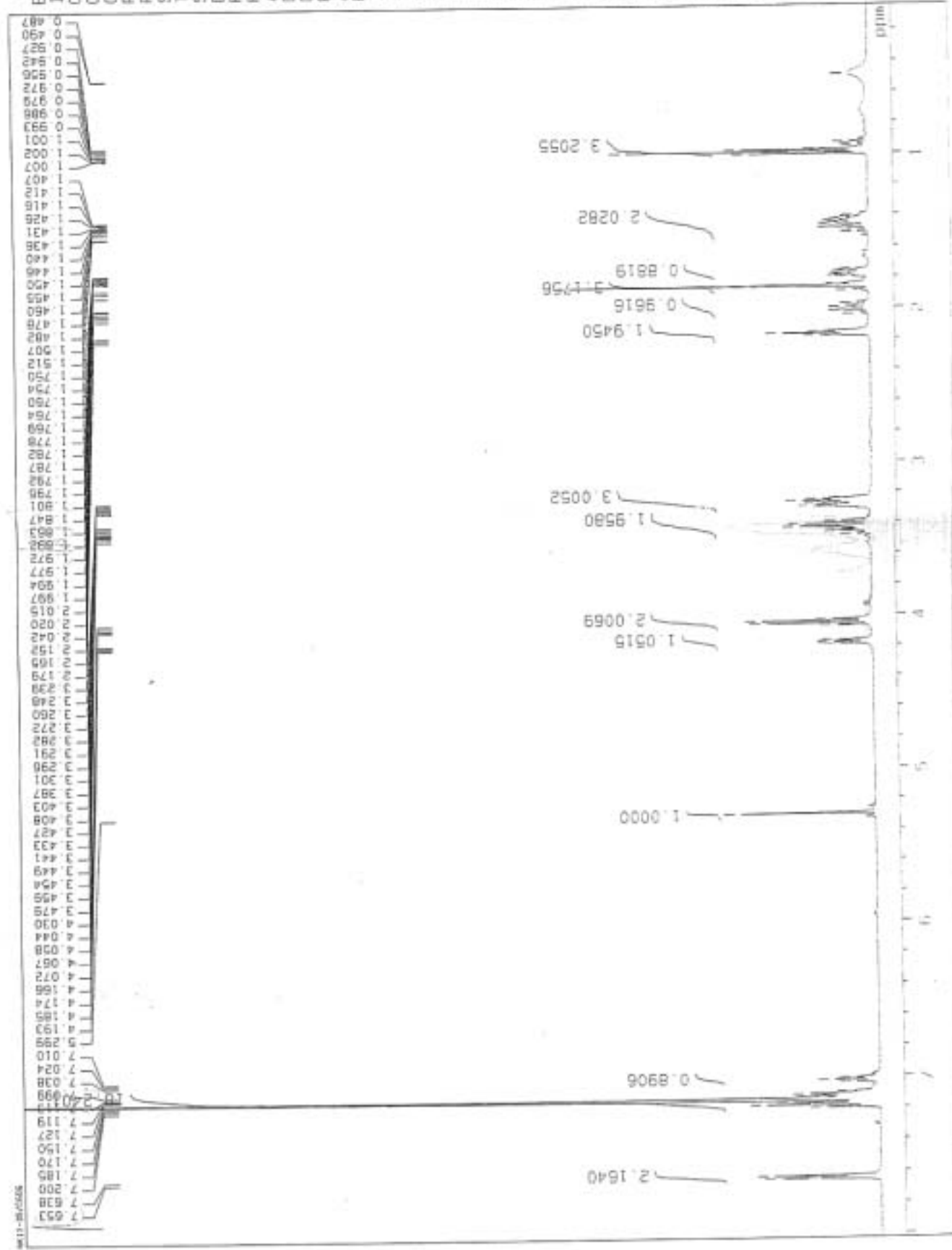
LKPHS 8.44 deg

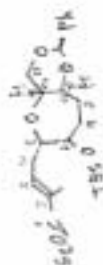
LKSI6 1347

CTEMP 20.0 C

CSPCH 14 Hz

FIELD 1008





37 C6D6

23-APR-2002 22:00:41.66

EXMOD: SINGL

IRMOD: NON

OBNUC: 1H

OBFRQ: 500.00 MHz

OBSET: 162410.00 Hz

PW1: 5.75 usec

POINT: 32768

SAMPO: 32768

TIMES: 8

SCANS: 8

DUMMY: 0

FREQ: 10000.00 Hz

FILTR: 5000 Hz

ACQIM: 3.2768 sec

DEADT: 57.12 usec

DELAY: 40.00 usec

PD: 1.0000 sec

ADBIT: 16

RGAIN: 18

IRNUC: 1H

IRFRQ: 500.00 MHz

IRSET: 162410.00 Hz

IRBPW: 50.0 usec

IRATN: 511

IRRNS: 0

IRBP1: 26

IRBP2: 6

BF: 0.01 Hz

T1: 0.00 %

T2: 0.00 %

T3: 90.00 %

T4: 100.00 %

XE: 4113.16 Hz

XS: 555.11 Hz

REFVL: 7.15 ppm

OFIL: MDA0: [ALPHA] ALPHA

MENUF: TH5_H_SN

SHMFL: TH5

SLVNT: C6D6

LKSET: 70327.1 Hz

LKLEV: 180

LGAIN: 22

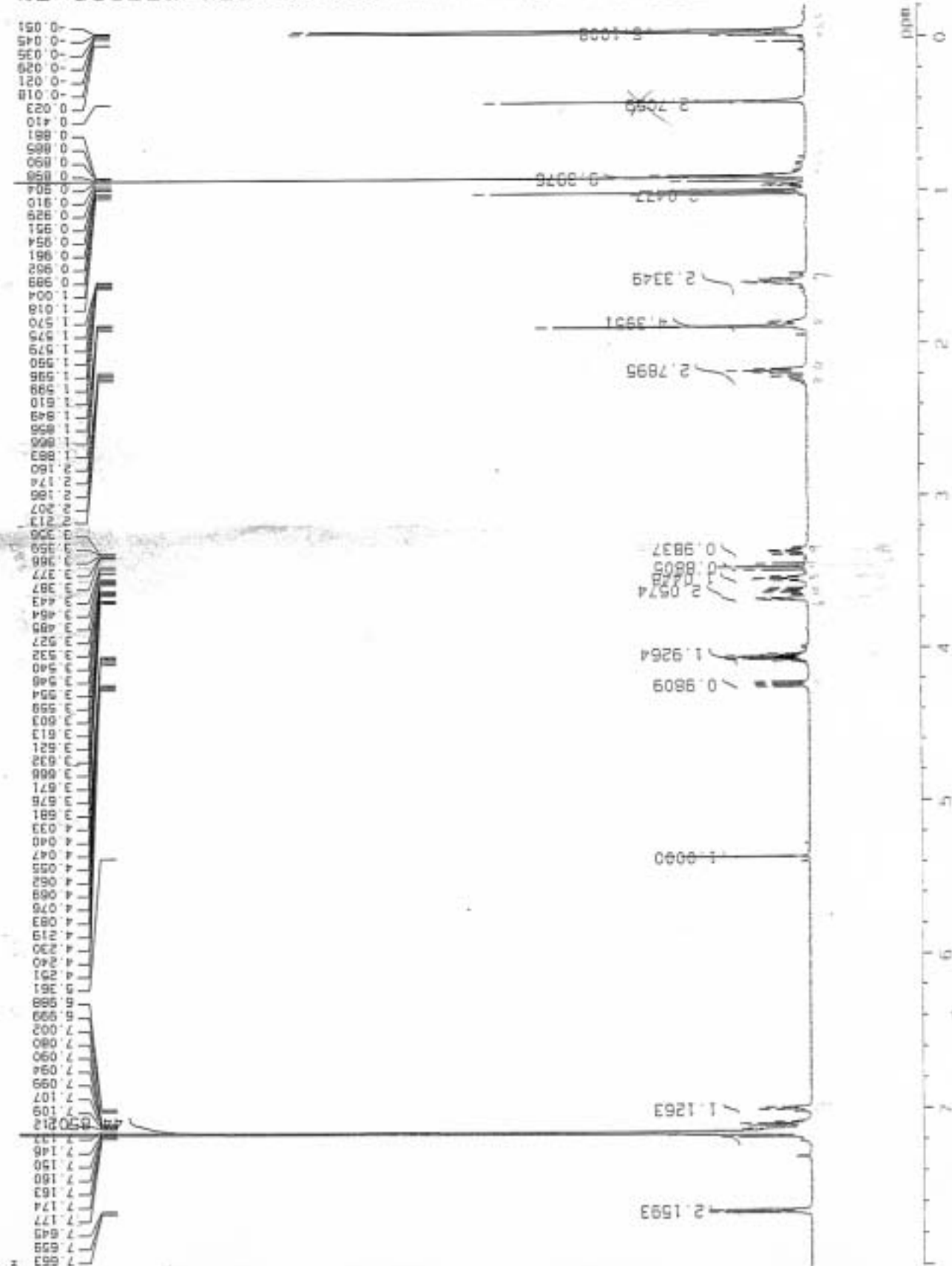
LKPHS: 8.44 deg

LKSTG: 1943

CTEMP: 21.8 C

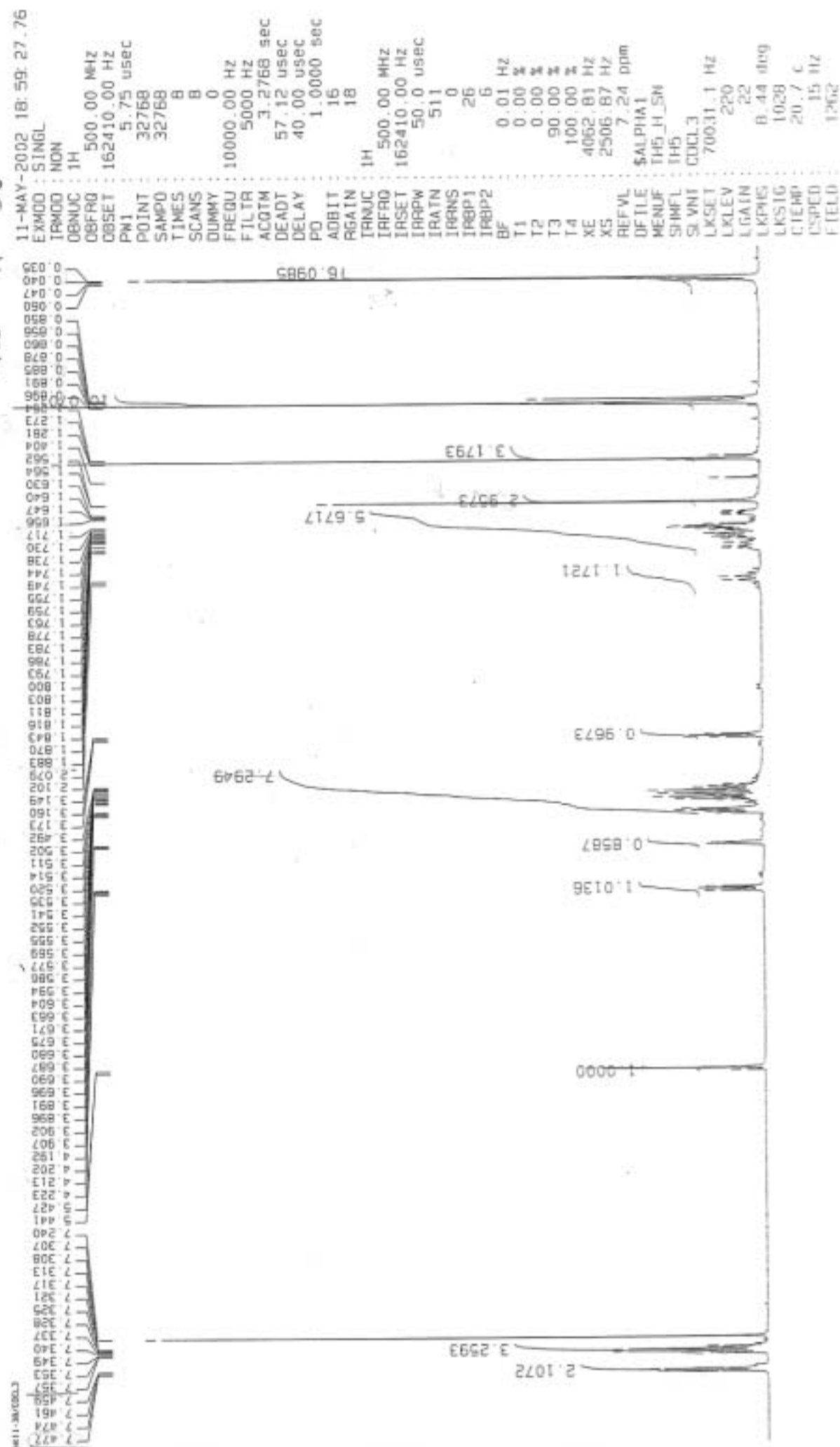
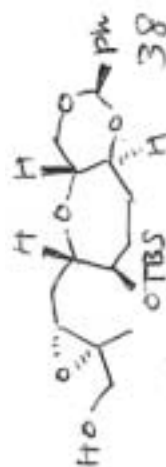
CSPED: 13 Hz

FIELD: 1575

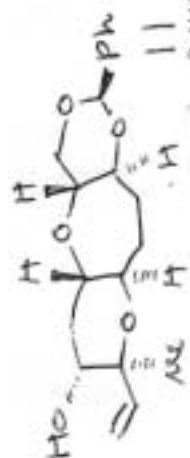


ppm

0 1 2 3 4 5 6 7

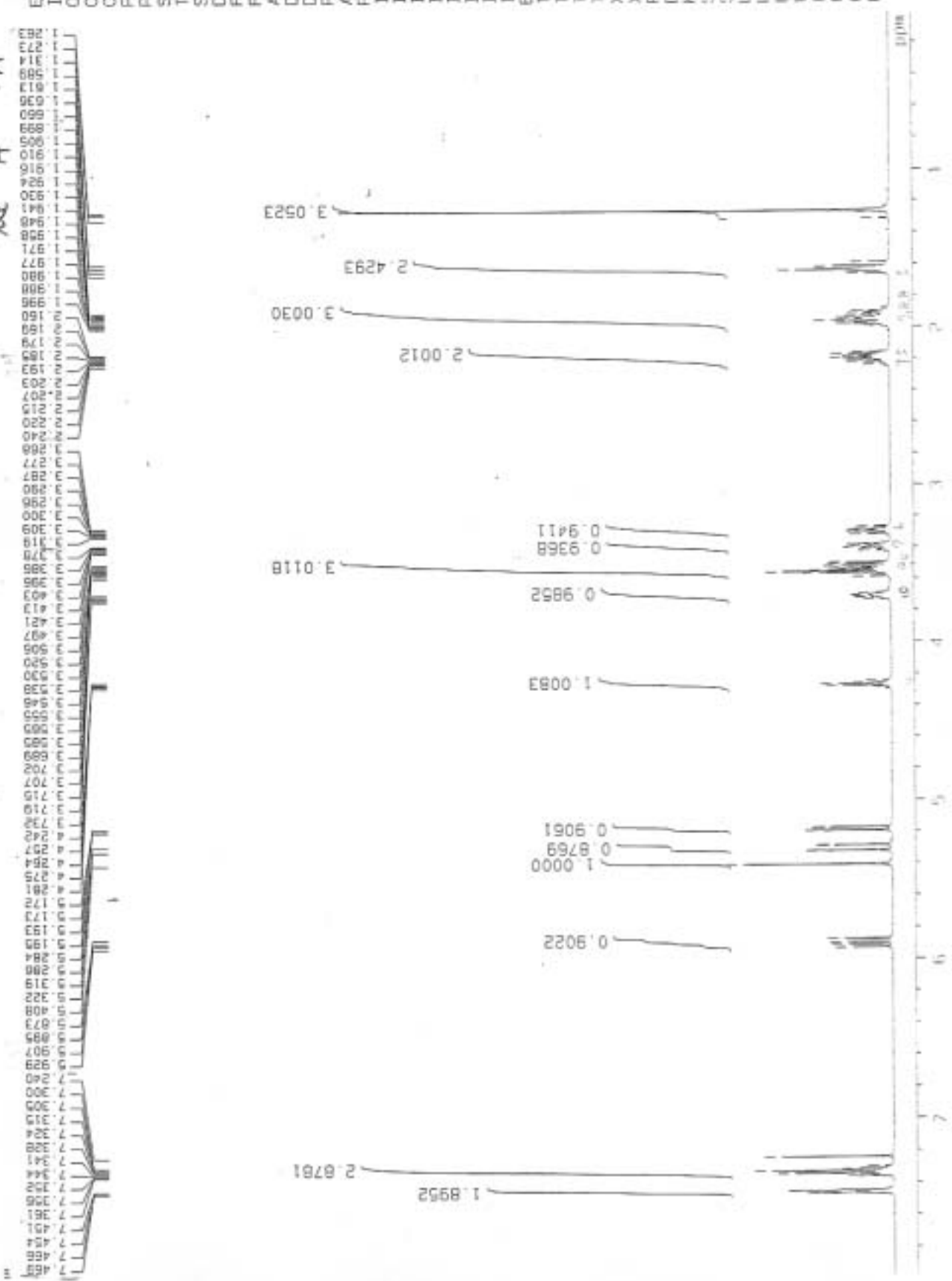


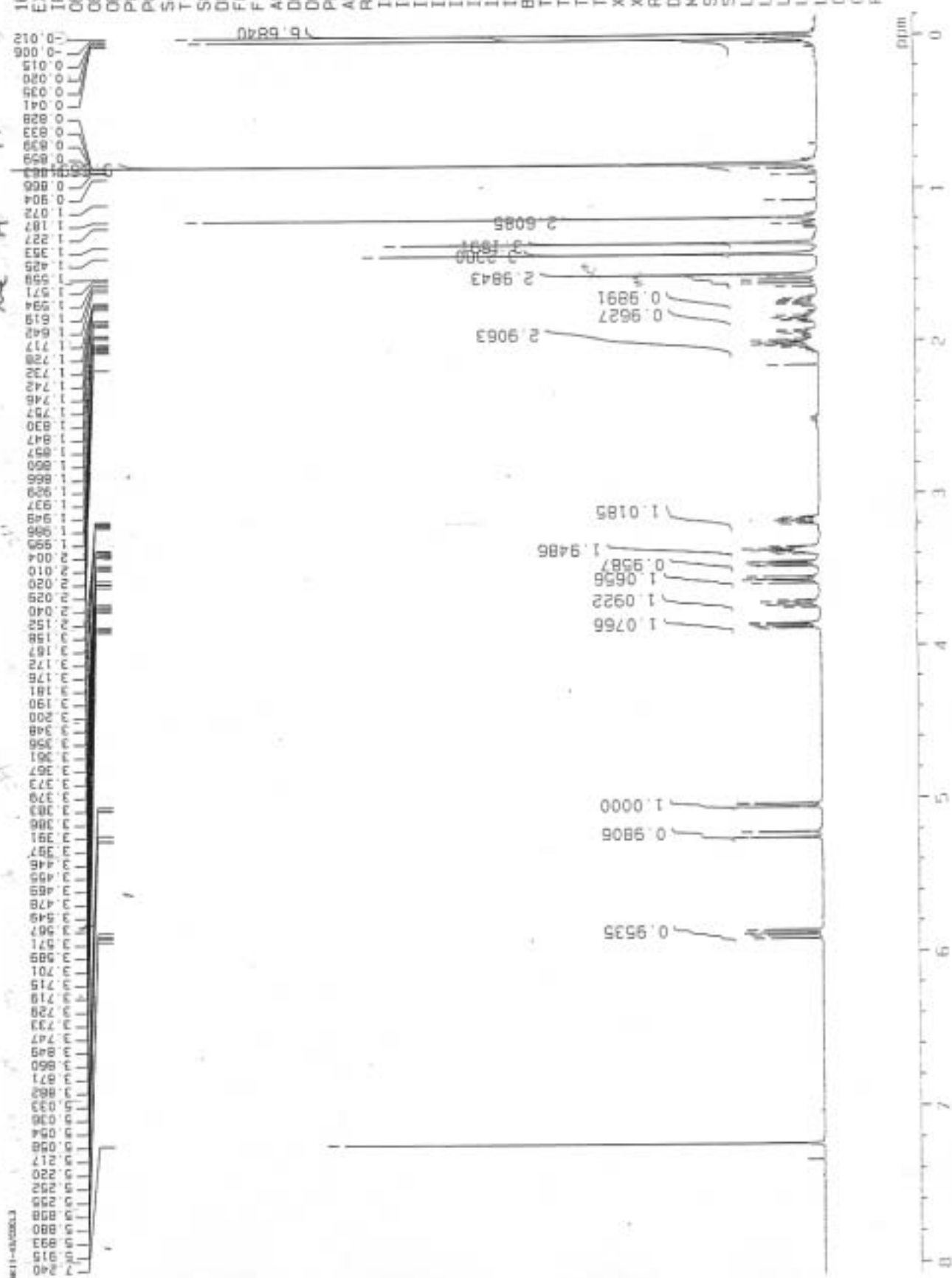




2-MAY-2002 14:36:09.56

EXMOD : SINDL
 IRMOD : NDN
 OBNUC : 1H
 OBFREQ : 500.00 MHz
 OBSET : 162410.00 Hz
 PW1 : 5.75 usec
 SAMP0 : 32768
 TIMES : 8
 SCANS : 8
 DUMMY : 0
 FREQU : 1000.00 Hz
 FILTH : 5000 Hz
 ACQTH : 3.2768 sec
 DEADT : 57.12 usec
 DELAY : 40.00 usec
 PD : 1.0000 sec
 ADBIT : 16
 RGAIN : 15
 IRNUC : 1H
 IRFREQ : 500.00 MHz
 IRSET : 162410.00 Hz
 IRRPW : 50.0 usec
 IRRATN : 511
 IRRNS : 0
 IRBP1 : 26
 IRBP2 : 6
 BF : 0.01 Hz
 T1 : 0.00 %
 T2 : 0.00 %
 T3 : 90.00 %
 T4 : 100.00 %
 XE : 3981.02 Hz
 XS : 482.94 Hz
 REFVL : 7.24 ppm
 DEFLE : \$ALPHA1
 MENUF : TH5_H_SN
 SHMFL : TH5
 SLVNT : CDCL3
 LKSET : 70334.0 Hz
 LKLEV : 200
 LGAIN : 24
 LKPHS : 8.44 deg
 LKSTG : 1056
 CTEMP : 20.3 c
 CTEMP : 1.4 Hz
 FIELD : 1811

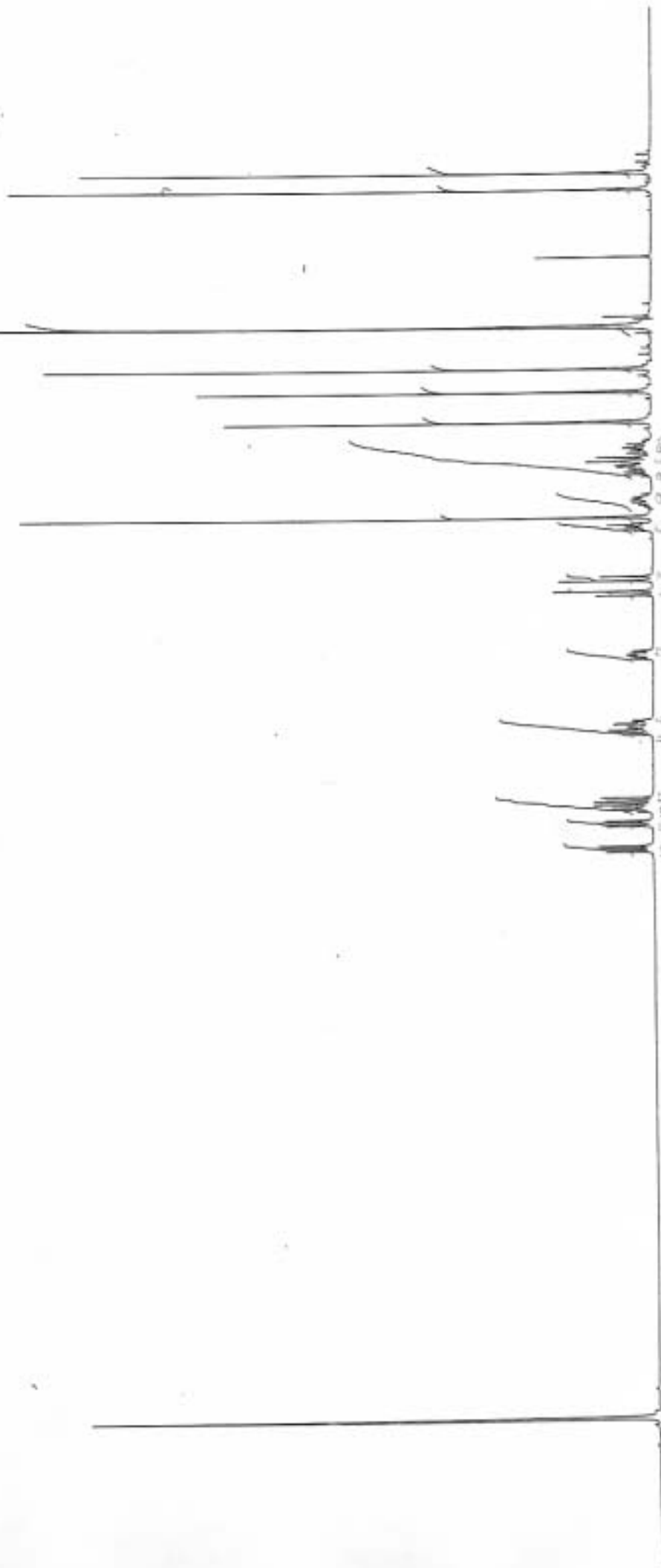




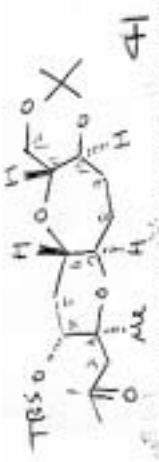
ppm

Integrations

1.0000	0.9570	1.9981	1.9292	0.9523	0.9274	0.9328	1.0745	2.7852	1.9870	4.1187	3.0337	3.0535	2.9057	8.9180	2.7985	2.9424
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

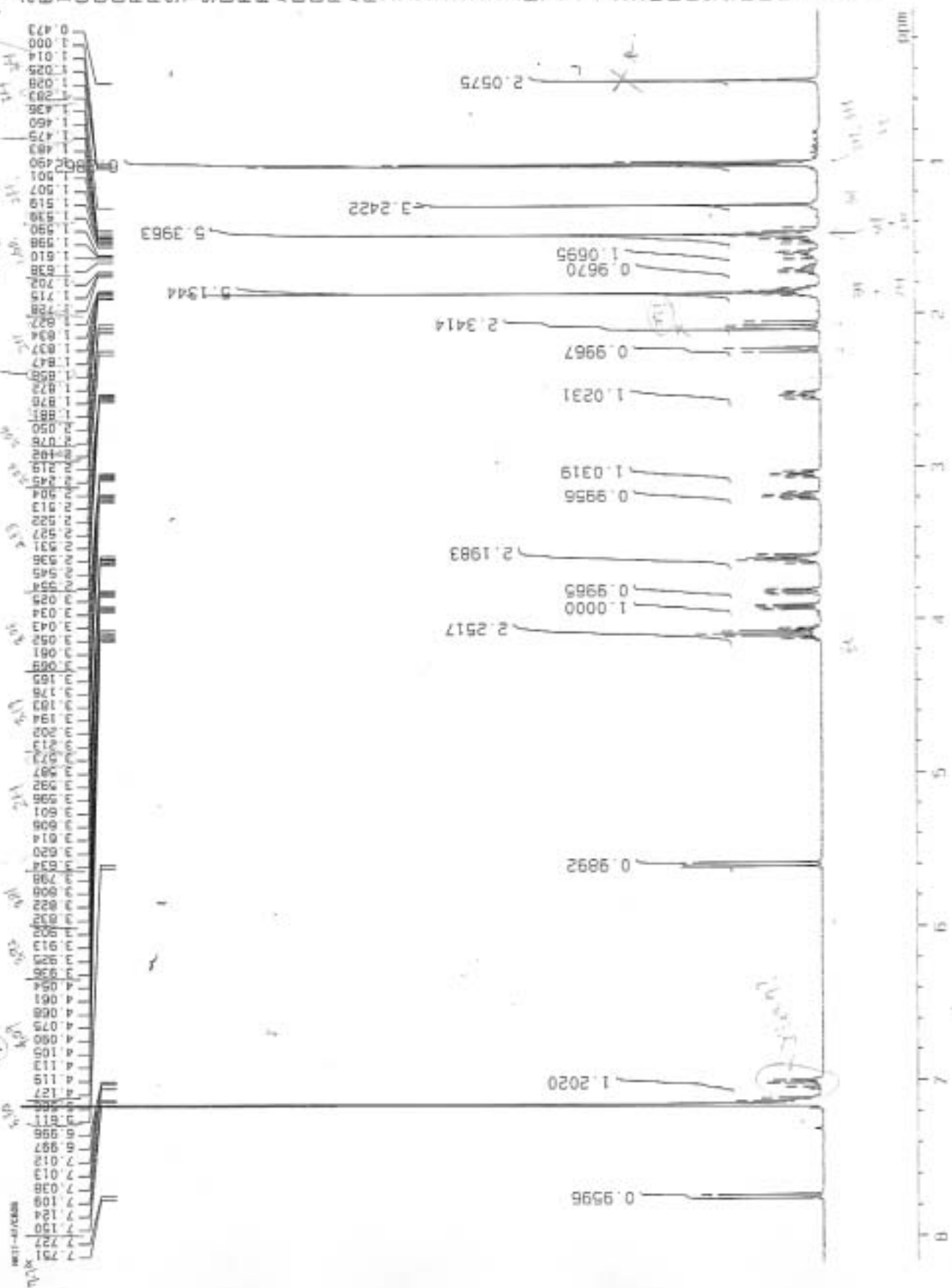
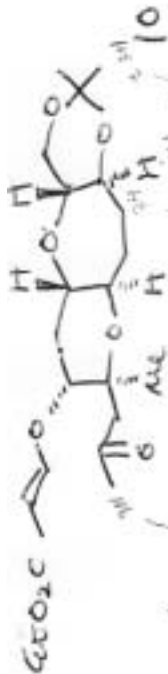


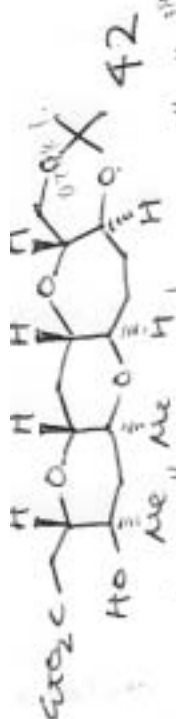
3.9219	3.9166	3.8983	3.8860	3.7773	3.7675	3.7539	3.7442	3.6812	3.6671	3.6627	3.6505	3.6328	3.6200	3.6102	3.2873	3.2813	3.2700	3.2130	3.2016	3.1864	3.1806	2.7950	2.4901	2.4261	2.3654	2.0726	2.0573	2.0470	2.0033	1.7528	1.7487	1.7192	1.7171	1.7088	1.6952	1.6803	1.6075	1.4564	1.2856	1.1546	0.9206	0.9192	0.9096	0.8763	0.8595	0.7885	0.5229	0.1909	0.1454	0.1400	0.0981	0.0141	0.0030	0.0096	0.0522
--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------



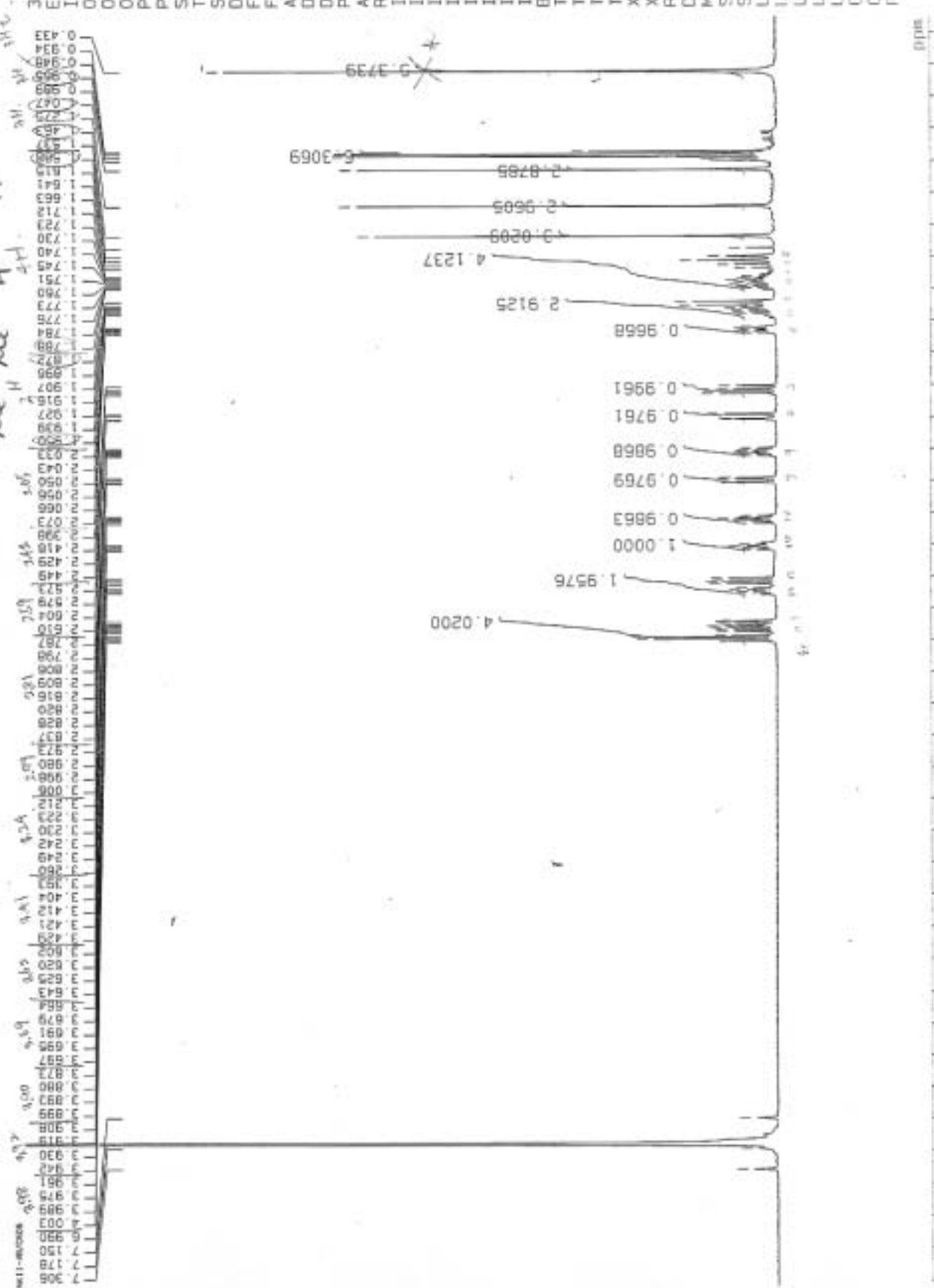
HF-X-104/DS06
M NS = 8

pos

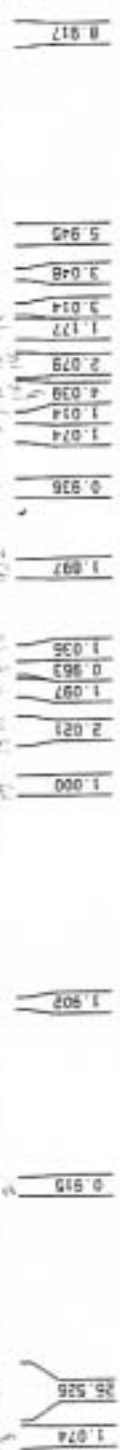




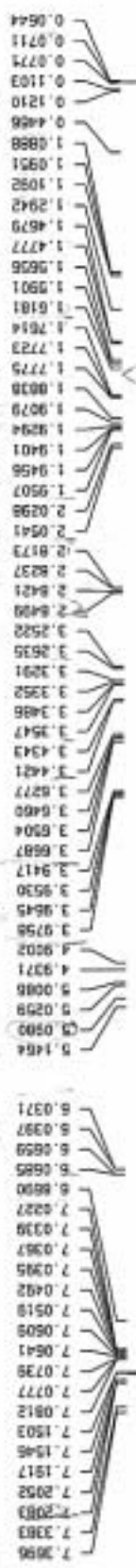
30-MAY-2002 18:12:02.74
 EXMOD: SINGL
 IRMOD: NON
 OBNUC: 1H
 OBFRQ: 500.00 MHz
 OBSET: 162410.00 Hz
 PM1: 5.75 usec
 POINT: 32768
 SAMPD: 32768
 TIMES: 8
 SCANS: 8
 DUMMY: 0
 FREQU: 10000.00 Hz
 FILTR: 5000 Hz
 ACQTM: 3.2768 sec
 DEADT: 57.12 usec
 DELAY: 40.00 usec
 PD: 1.0000 sec
 ADBIT: 16
 RGAIN: 18
 IRNUC: 1H
 IRFRQ: 500.00 MHz
 IRSET: 162410.00 Hz
 IRRPM: 50.0 usec
 IRATN: 511
 IRNS: 0
 IRBP1: 26
 IRBP2: 6
 BF: 0.01 Hz
 T1: 0.00 %
 T2: 0.00 %
 T3: 90.00 %
 T4: 100.00 %
 XE: 3967.59 Hz
 XS: 475.62 Hz
 REFVL: 7.15 ppm
 OFILE: \$ALPHA1
 MENUF: TH5_H_SN
 SHMFL: TH5
 SLVNT: C6D6
 LKSET: 70327.1 Hz
 LKLEV: 180
 LGAIN: 20
 LKPHS: 345.94 deg
 LKSLG: 1153
 CTMP: 21.4 C
 CSPEO: 14 Hz
 FIELD: 2180



31.009

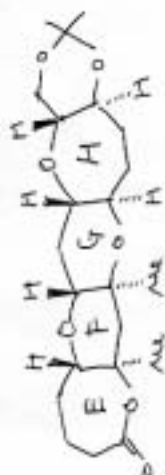


9.1/1

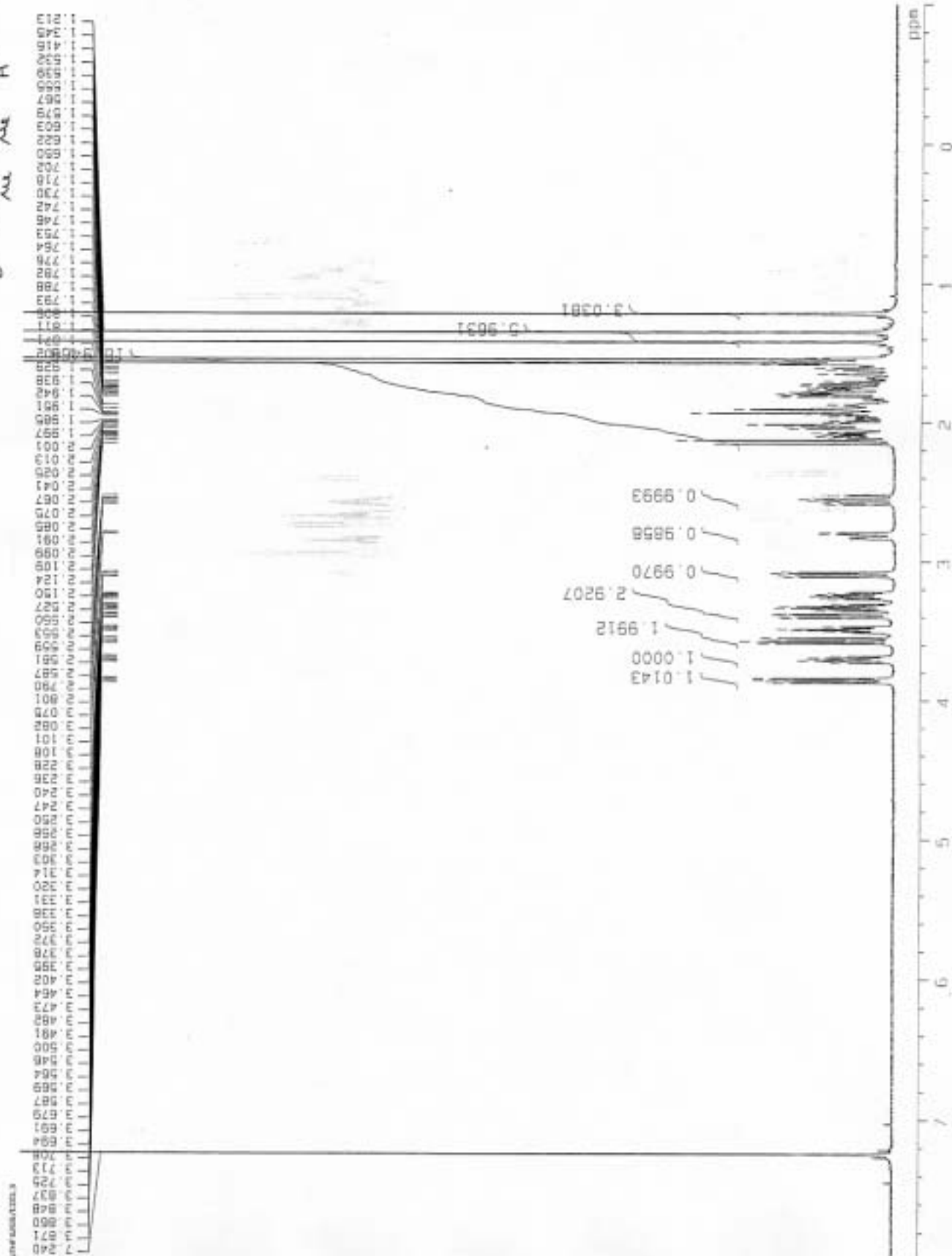


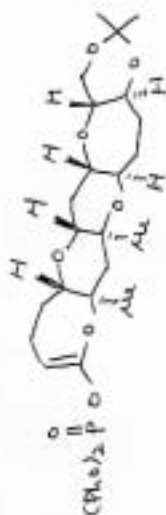
43





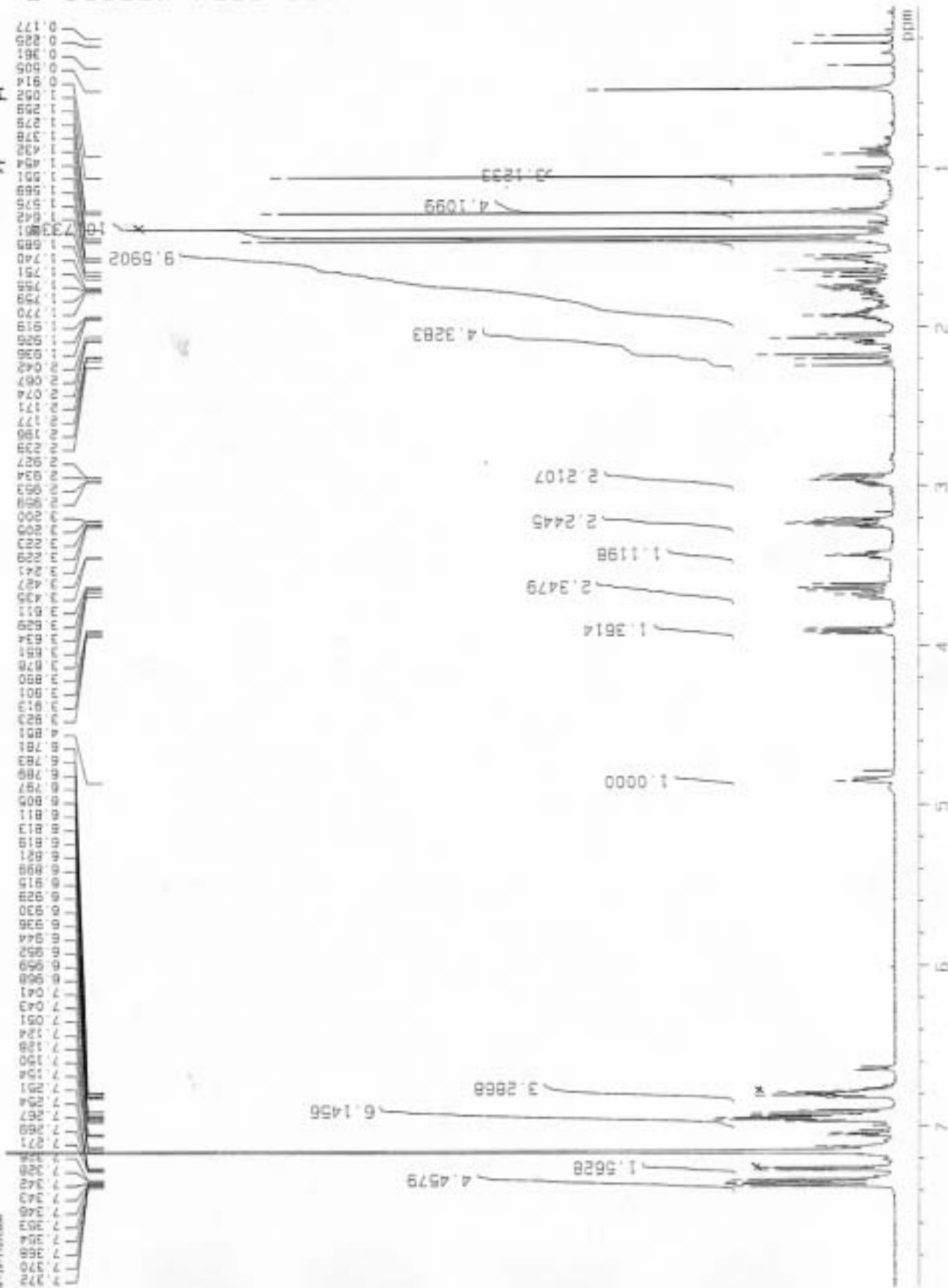
44



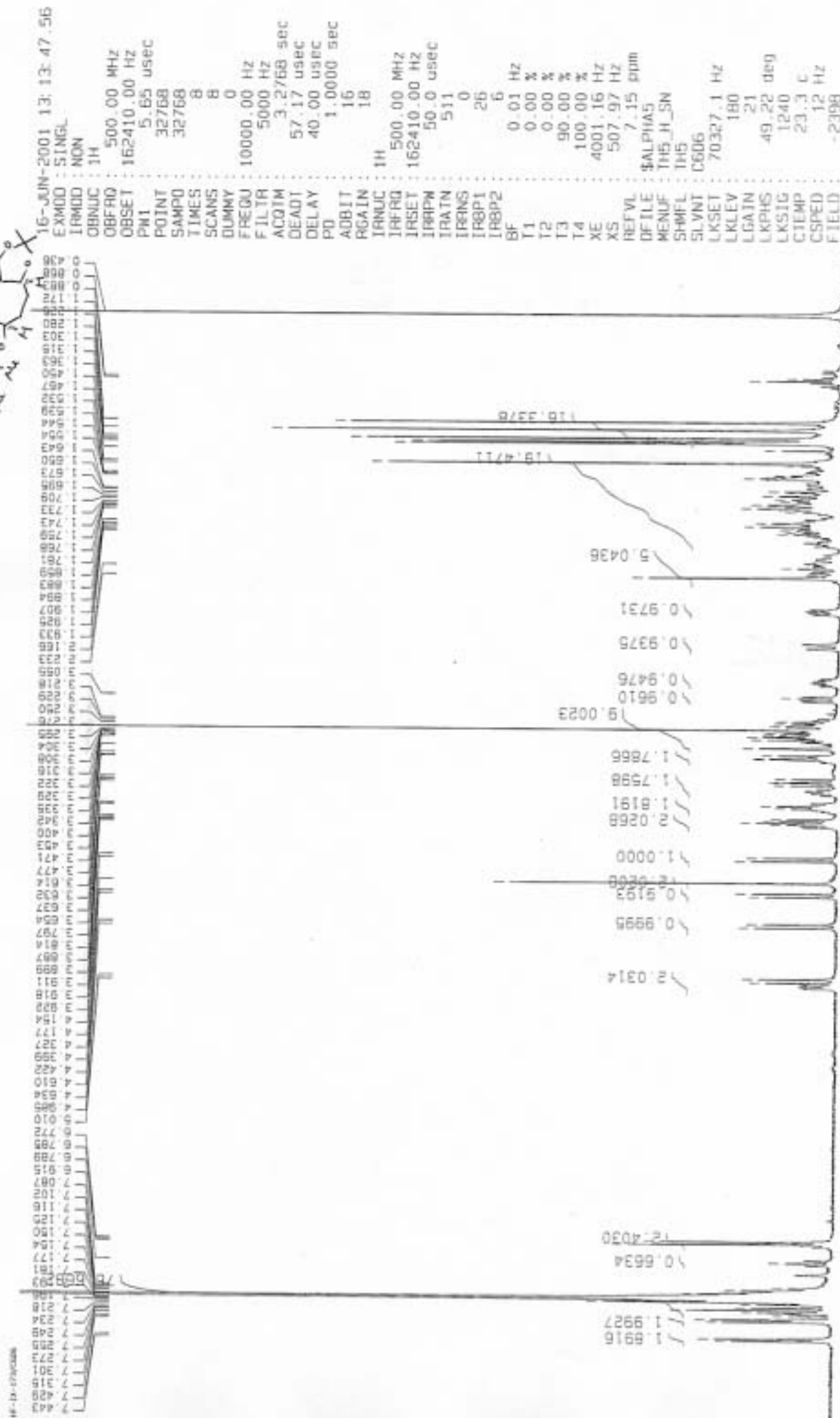
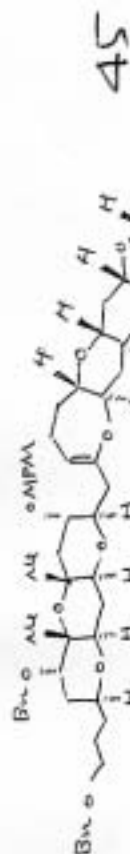


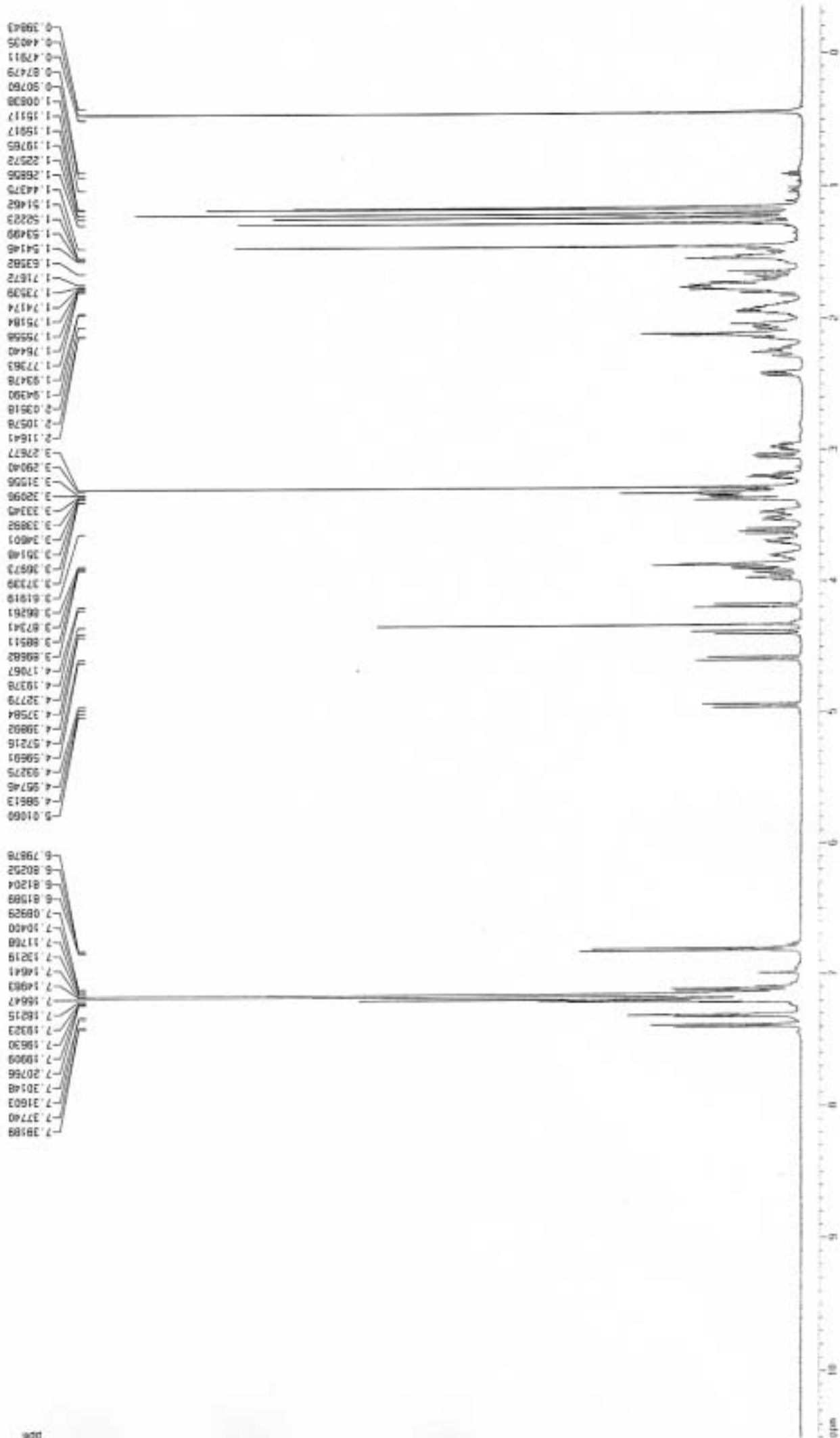
6

14-JUN-2001 15:10:42.83

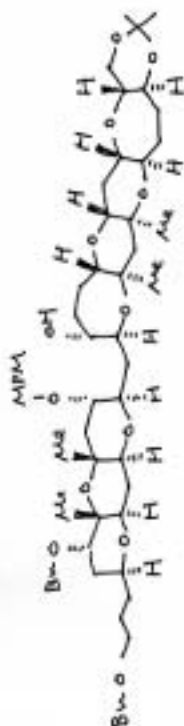


14-JUN-2001 15:10:42.83
 EXMOD : SINGL
 IRMOD : NON
 IRENUC : 1H
 OBSFREQ : 500.00 MHz
 OBSSET : 162410.00 Hz
 PW1 : 5.65 usec
 POINT : 32768
 SAMPO : 32768
 TIMES : B
 SCANS : B
 DUMMY : 0
 FREQ : 10000.00 Hz
 FILTR : 5000 Hz
 ACGTM : 3.2768 sec
 DEAT : 57.17 usec
 DELAY : 40.00 usec
 PD : 1.0000 sec
 AOBIT : 16
 RGAIN : 17
 IRENUC : 1H
 IRFREQ : 500.00 MHz
 IRSET : 162410.00 Hz
 IRRPW : 50.0 usec
 IRATN : 511
 IRNS : 0
 IRBP1 : 26
 IRBP2 : 6
 BF : 0.01 Hz
 T1 : 0.00 %
 T2 : 0.00 %
 T3 : 90.00 %
 T4 : 100.00 %
 XE : 4001.16 Hz
 XS : 507.35 Hz
 REFVL : 7.15 ppm
 OFILE : \$ALPHA5
 MENUF : TH5_H_SN
 SHMFL : TH5
 SLVNT : CDCl₃
 LKSET : 70327.1 Hz
 LKLEV : 180
 LGAIN : 21
 LKPHS : 57.66 deg
 LKSTG : 1009
 CTEMP : 23.0 C
 CSPED : 13 Hz
 FIELD : -2412





ppm

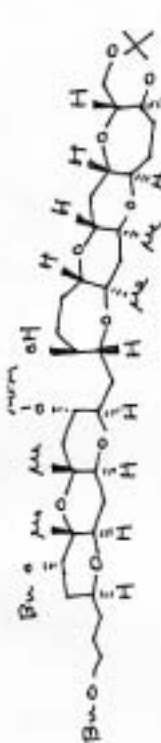


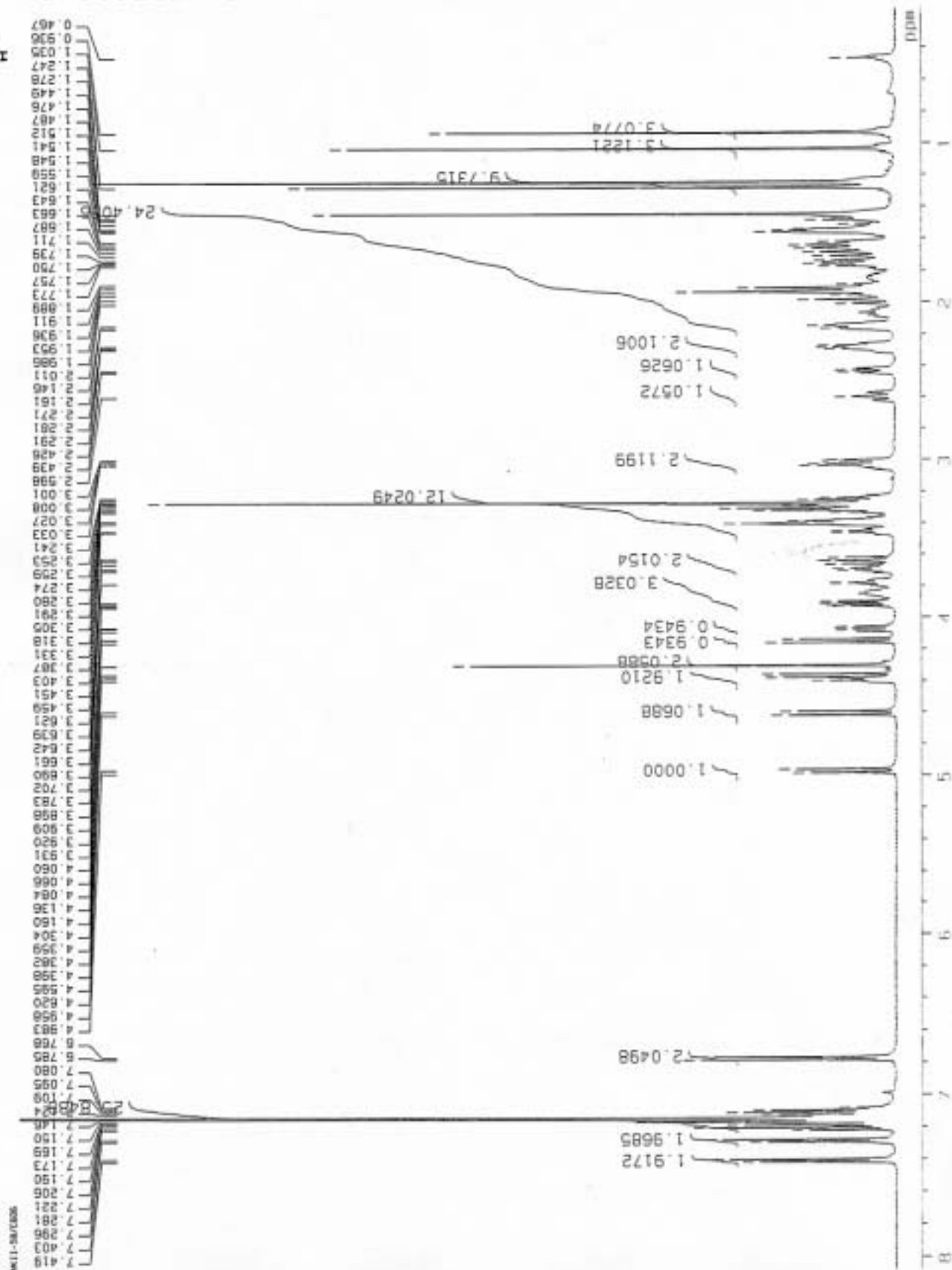
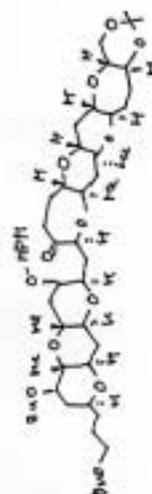
2.162
2.133
2.108
2.072

1.039
1.000
3.164
3.181
8.802
1.319
2.220
10.714
2.218
1.982
6.055
3.788
20.442
15.285
3.620

7.43010
7.41560
7.35737
7.34319
7.30552
7.22460
7.20959
7.19427
7.17903
7.16354
7.14890
7.14556
7.13802
7.10452
7.08995
7.07476
6.98960
6.75613
6.75224
6.74292
6.73903

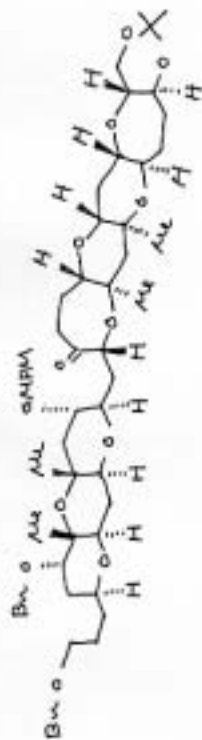
5.09301
4.97807
4.95774
4.66370
4.63870
4.43904
4.41607
4.40035
4.22356
4.20043
3.90627
3.88804
3.85231
3.65188
3.53676
3.53288
3.51584
3.44676
3.44180
3.43642
3.42673
3.37277
3.36098
3.27633
3.26980
2.1725
2.16773
2.16165
2.15438
1.86945
1.85851
1.83380
1.83021
1.77395
1.76741
1.75285
1.74471
1.63050
1.62229
1.56141
1.55573
1.53385
1.46601
1.43326
1.35876
1.32859
1.30548
1.27231
1.15879
1.04036
0.90720
0.57878
0.52991
0.44187
0.28885





HF-XI-95-4/C6D6

47β



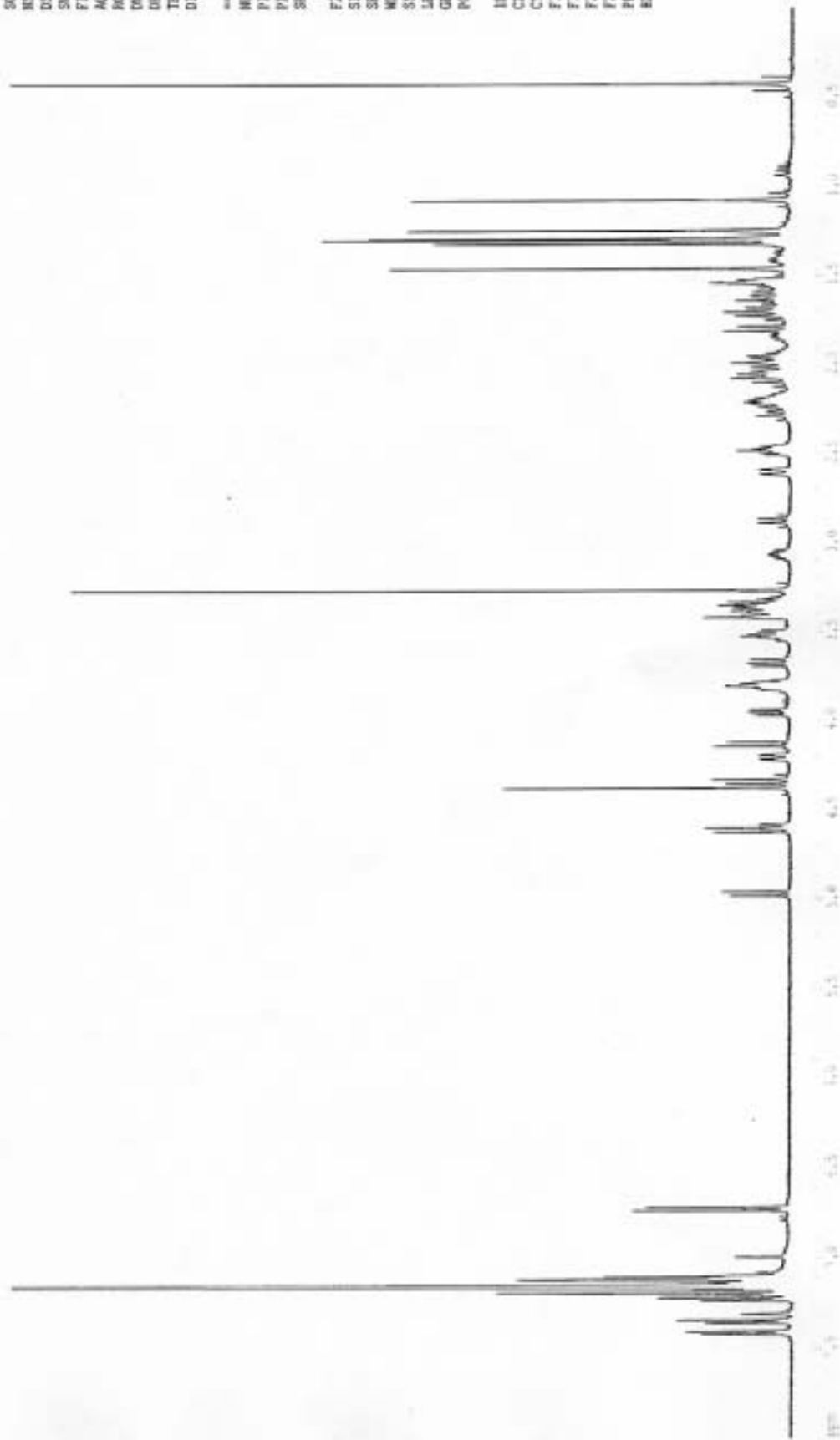
Current Data Parameters
 NAME 4
 EXPNO 2
 PROCNO 1

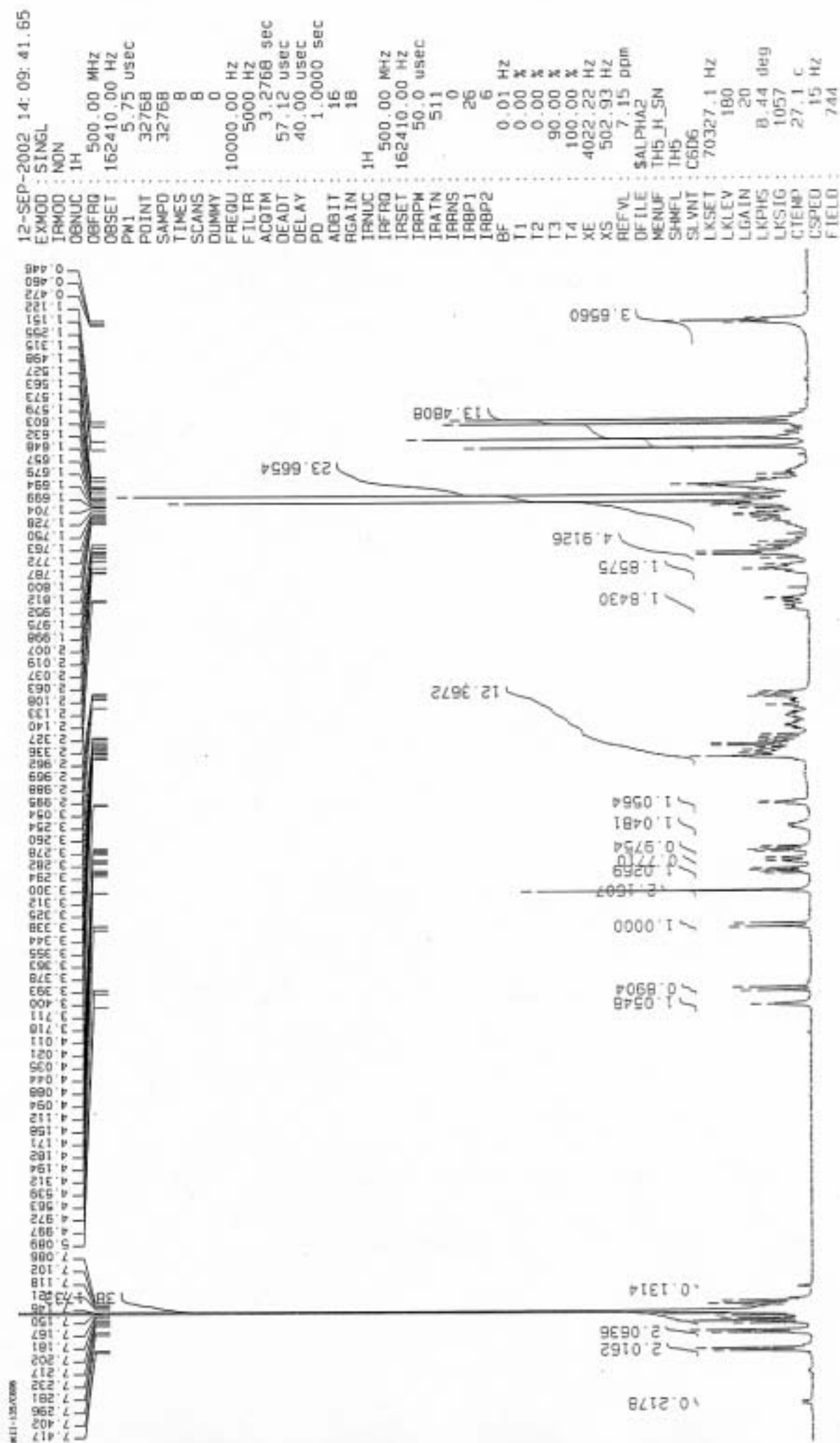
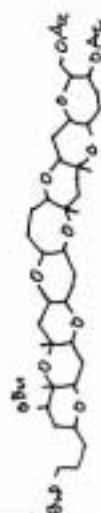
F2 - Acquisition Parameters
 Date_ 20020303
 Time_ 13.14
 INSTRUM av500
 PROCD 5 mm PICHOP Swi
 PULPROG zg30
 TD 65536
 SOLVENT C6D6
 NS 16
 DS 2
 SWH 7507.507 Hz
 FIDRES 0.114555 Hz
 AQ 4.3648143 sec
 RG 256
 DW 66.600 usec
 DE 6.00 usec
 TE 300.2 K
 D1 1.08010800 sec

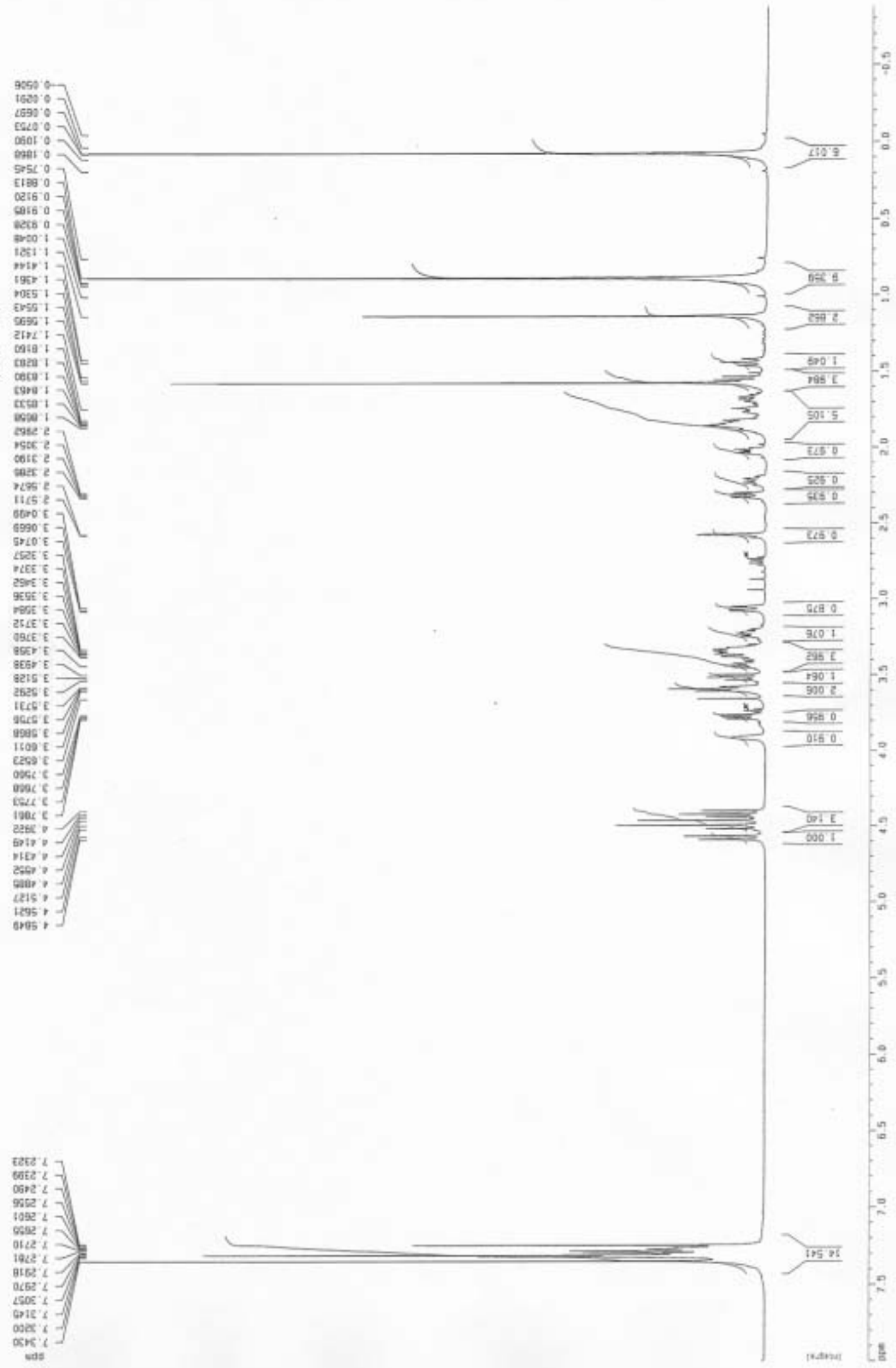
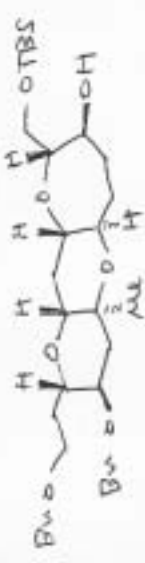
===== CHANNEL f1 =====
 NUC1 1H
 P1 9.80 usec
 PL1 -2.00 dB
 SFO1 500.132508 MHz

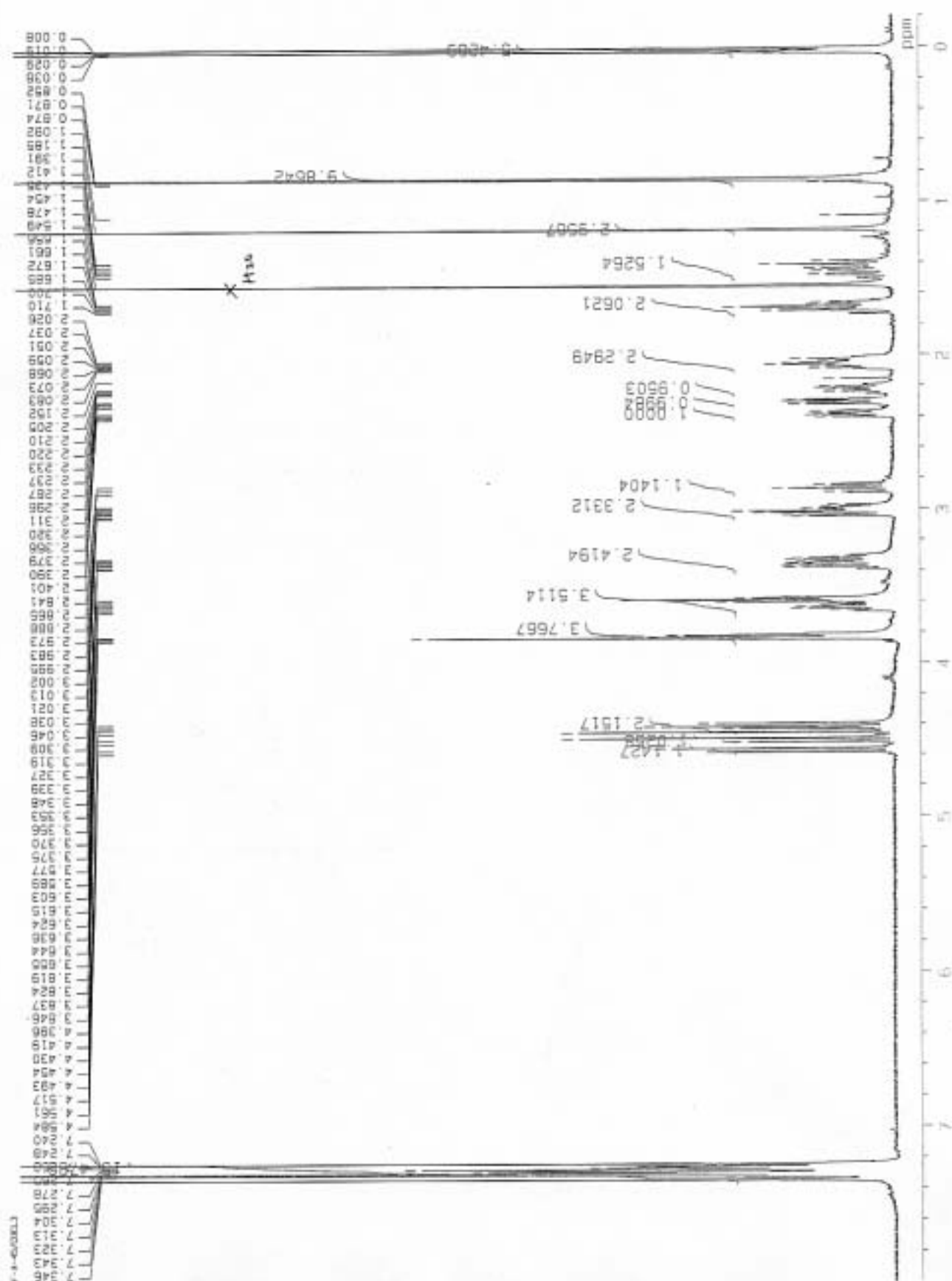
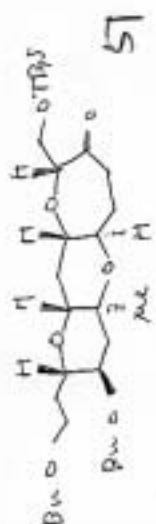
F2 - Processing parameters
 SI 32768
 SF 500.130603 MHz
 NCH 8H
 SSB 0
 LB 0.10 Hz
 GB 0
 PC 10.00

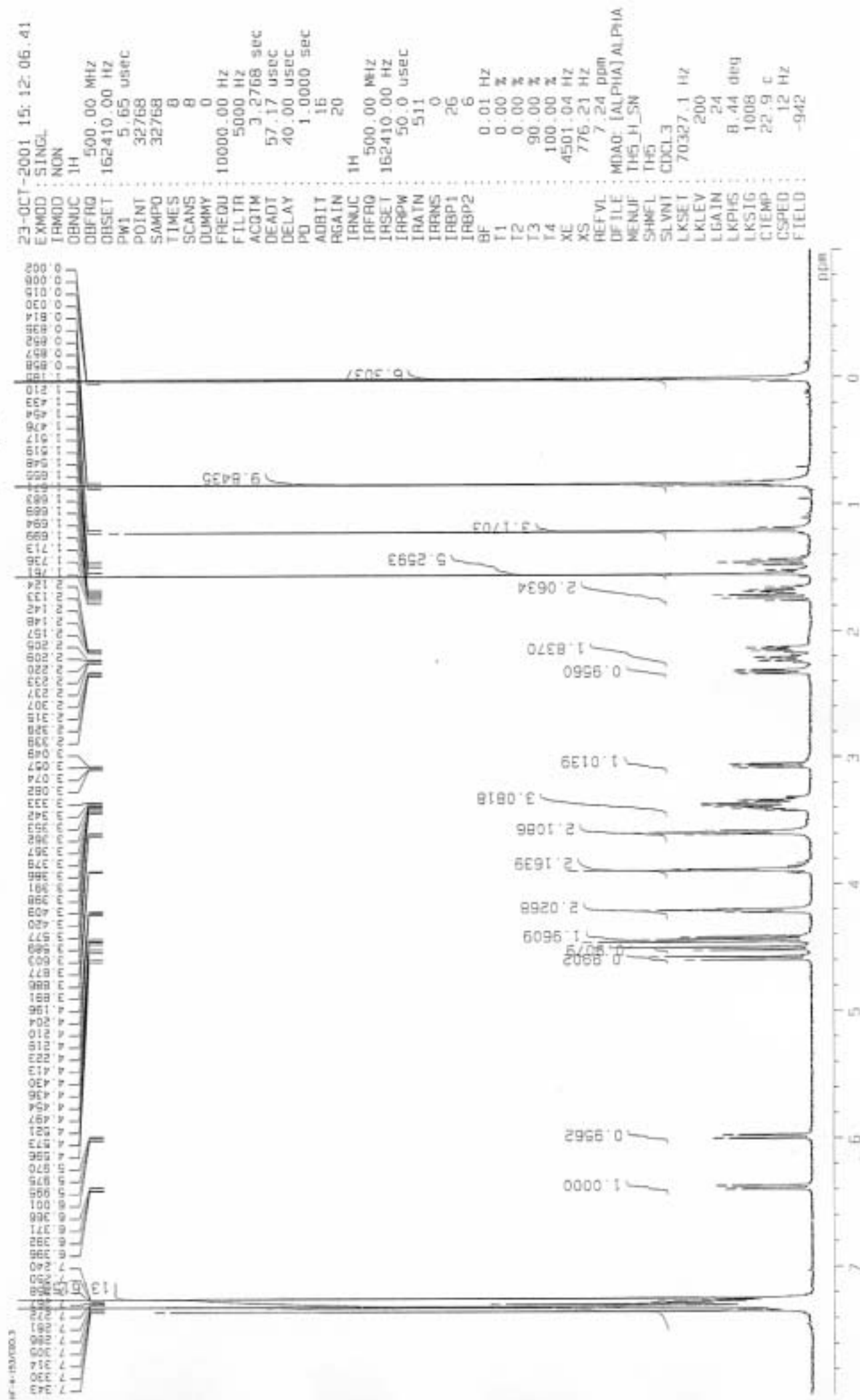
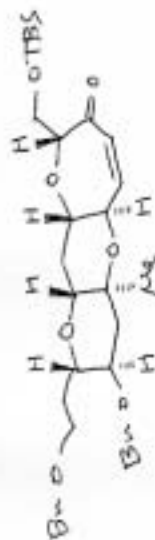
1D NMR plot parameters
 CX 32.00 cm
 CY 200.00 cm
 FIP 8.000 ppm
 F1 4001.04 Hz
 F2 0.030 ppm
 F2 0.40 Hz
 FPCN 0.25010 ppm/cm
 BOCN 125.03252 Hz/cm

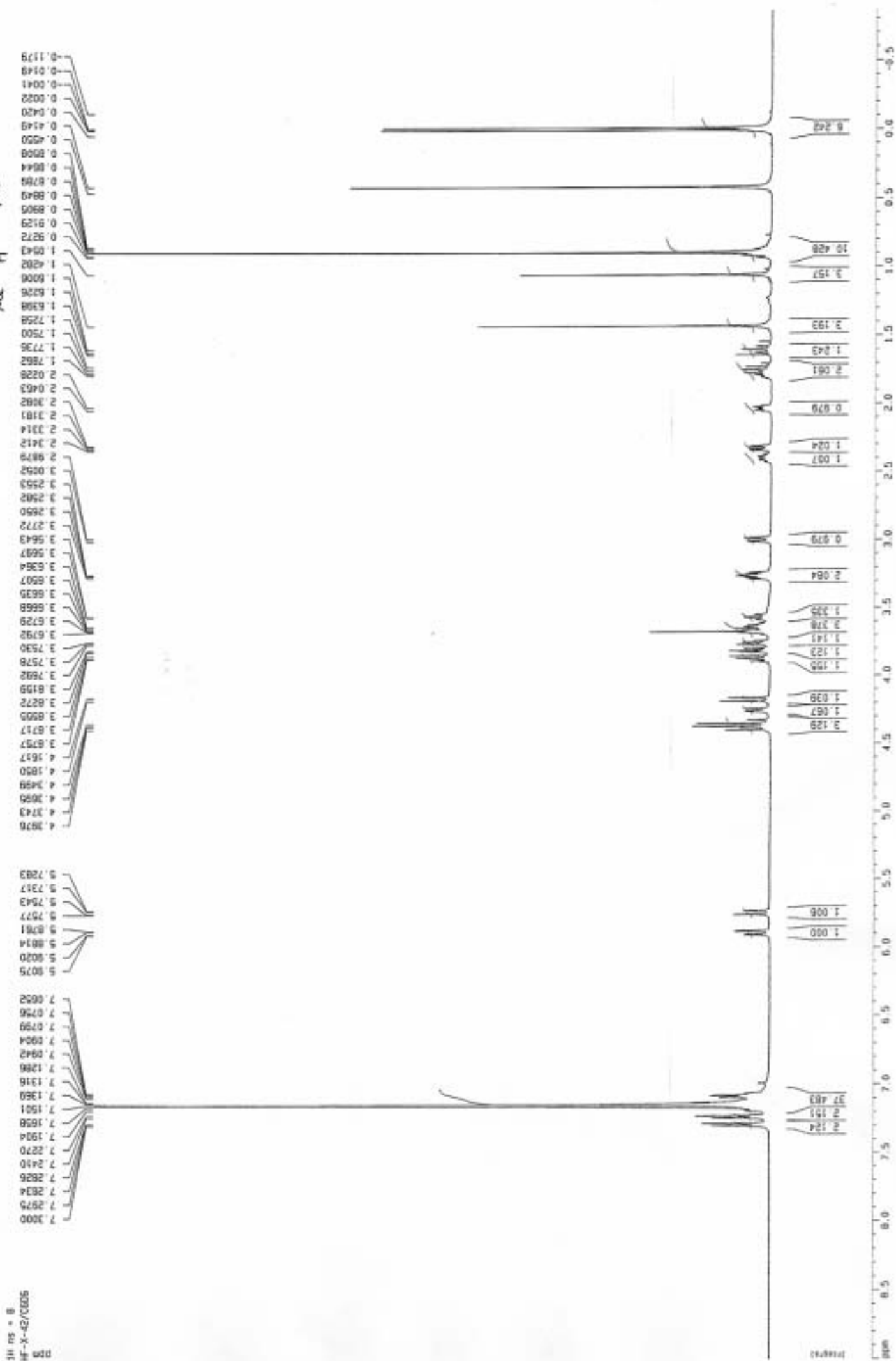
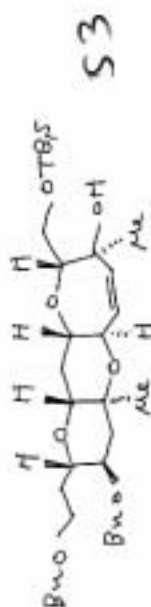


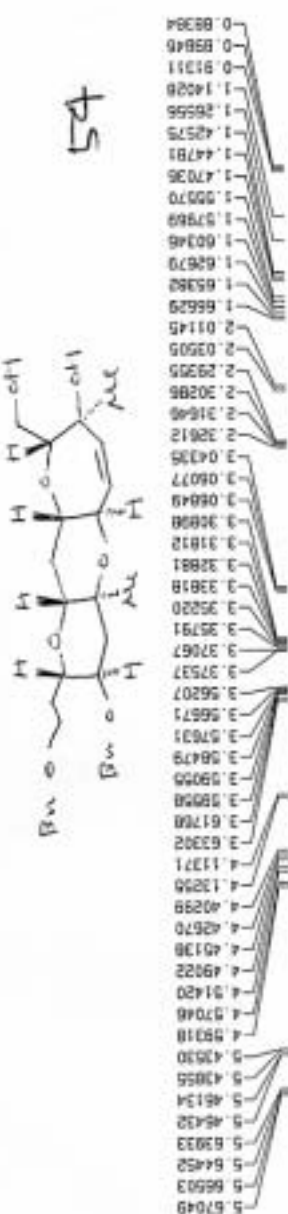
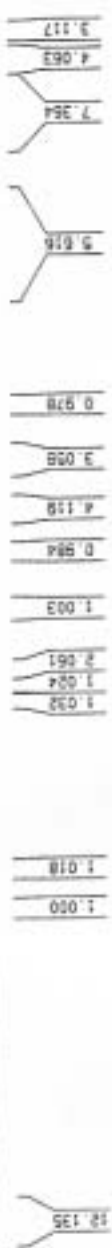


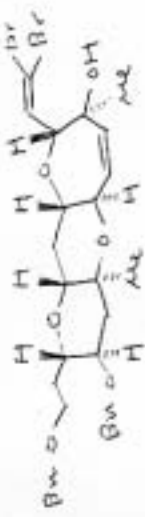












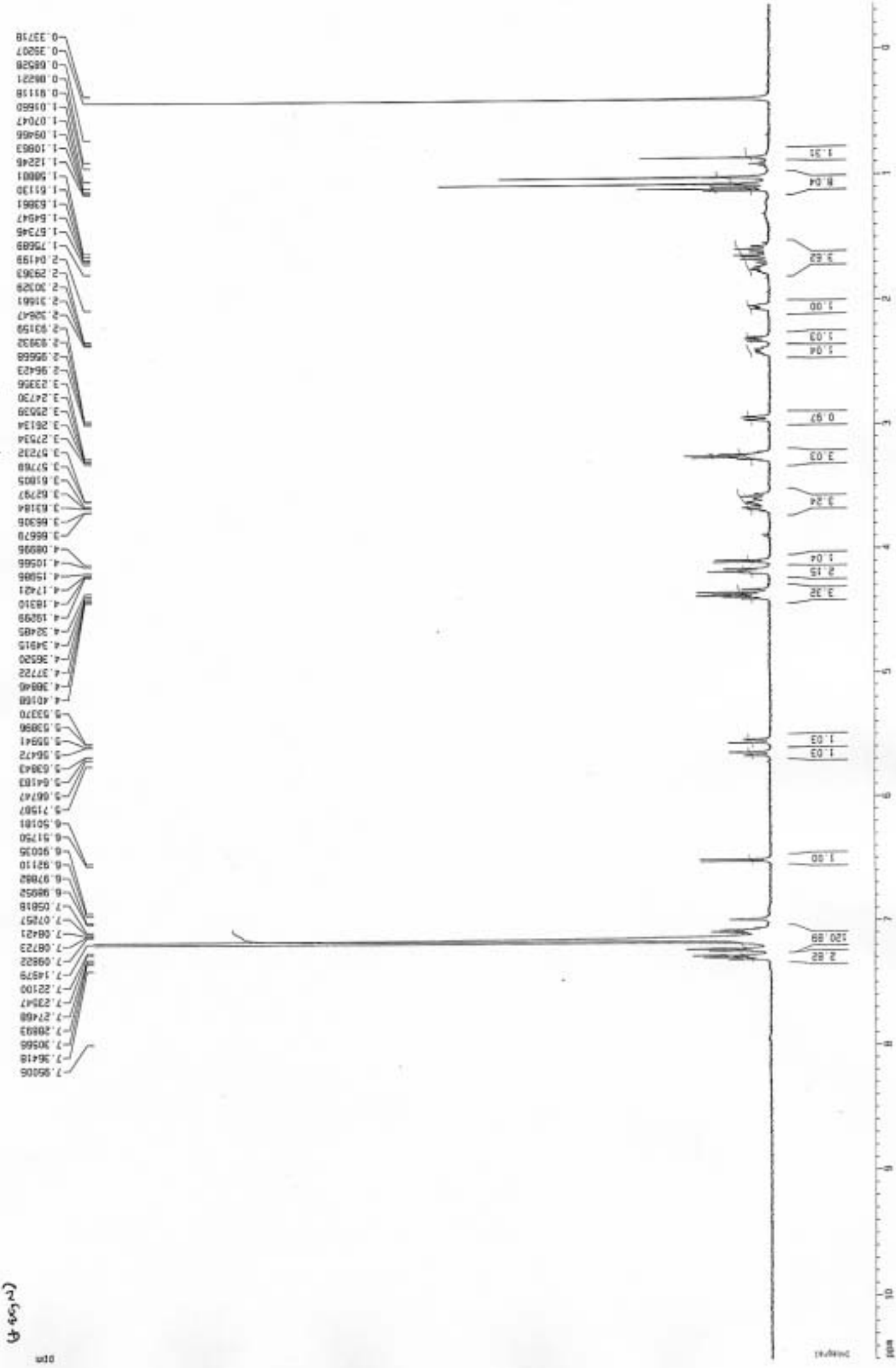
55

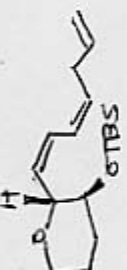
(1500 Hz)

9000/861-X-JH

8

0.00

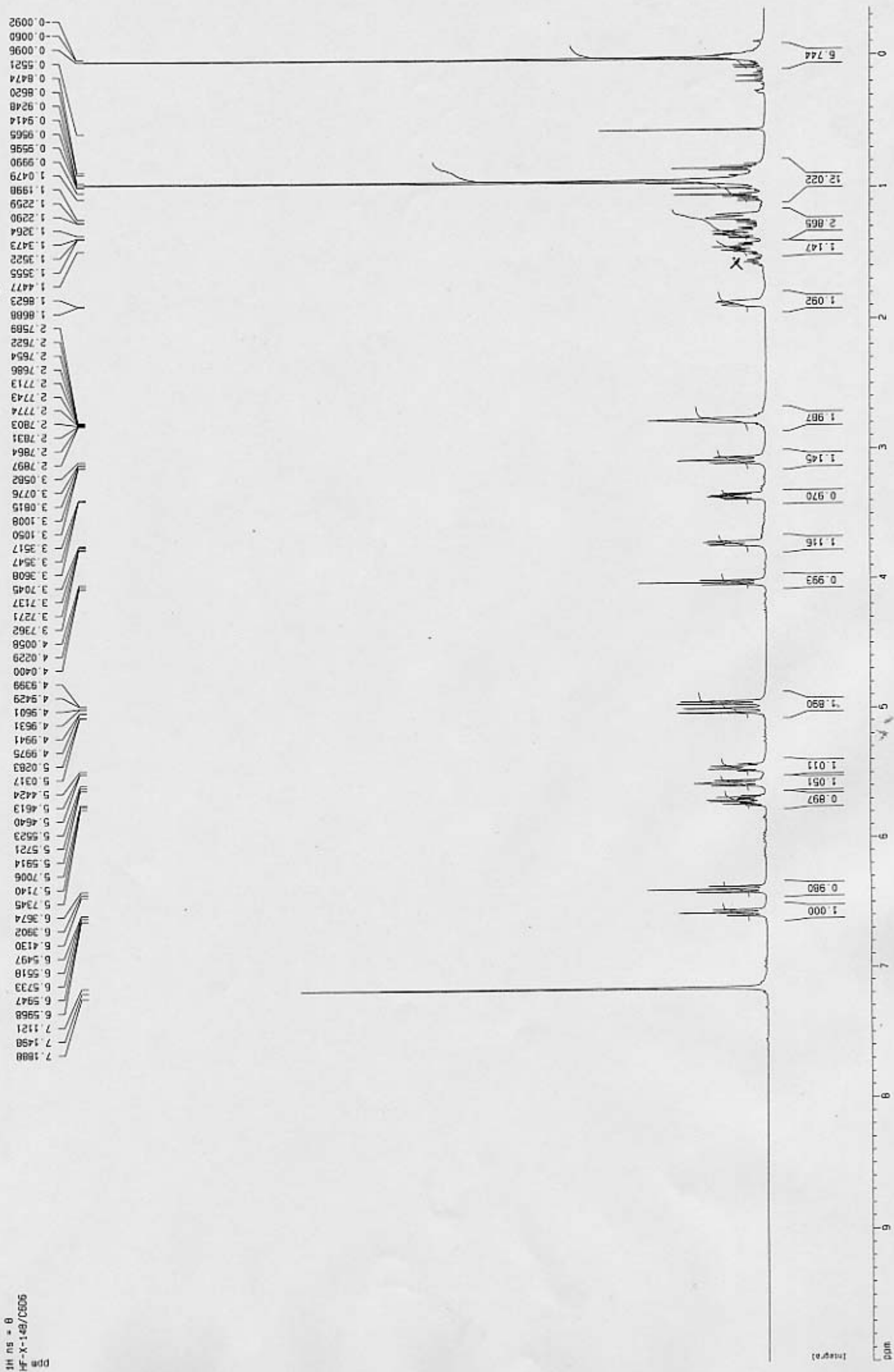


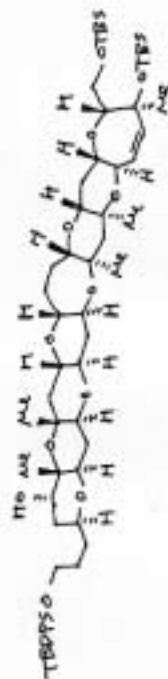


Pd(PPh₃)₄ 0.2 eq
 CuCl 10 eq
 LiCl 12 eq

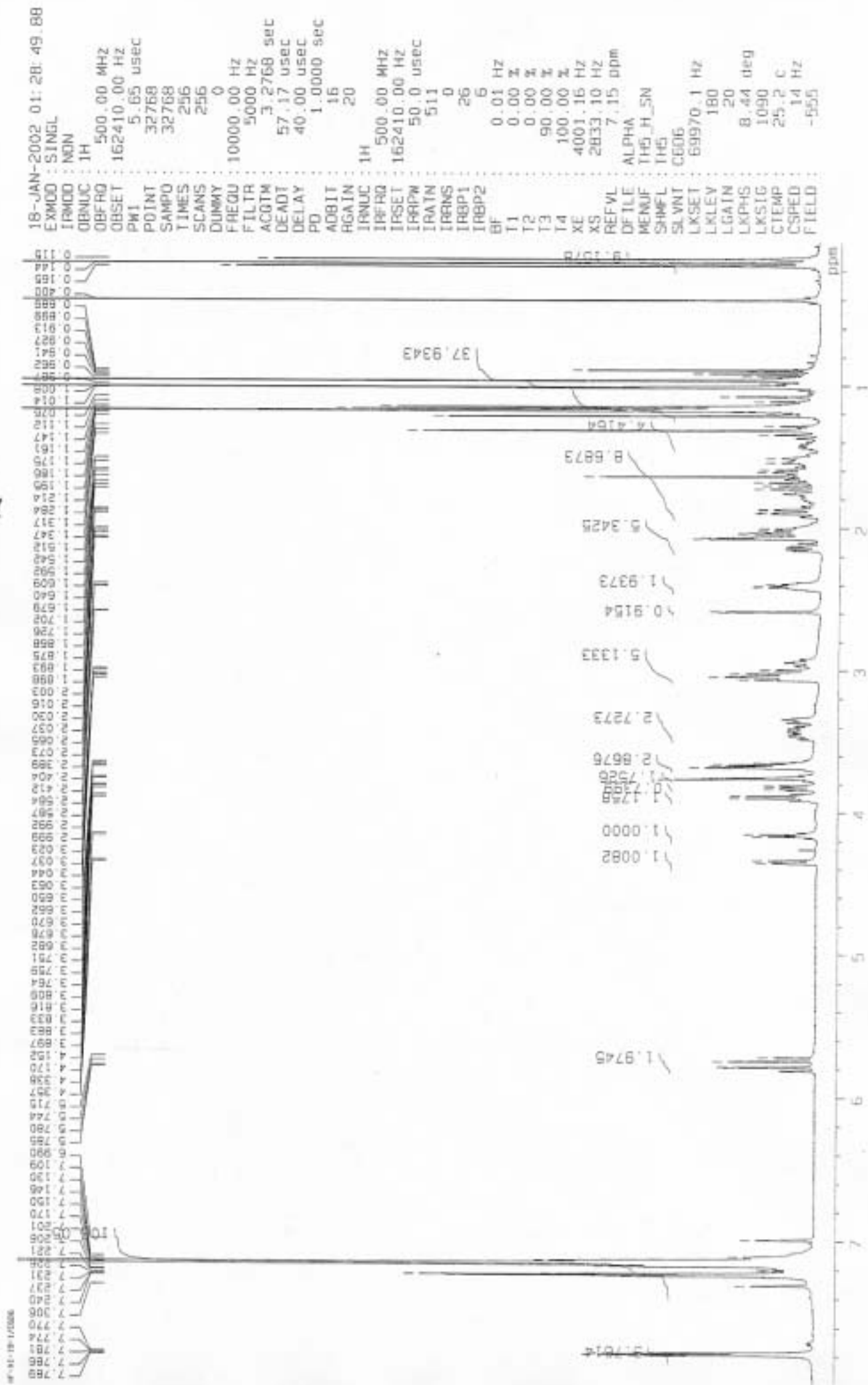
58 DM50, 60°C, 2 days 81% (100% conv.)

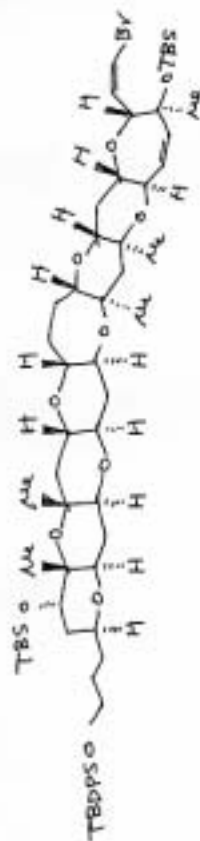
1H NMR
 400 MHz
 CDCl₃



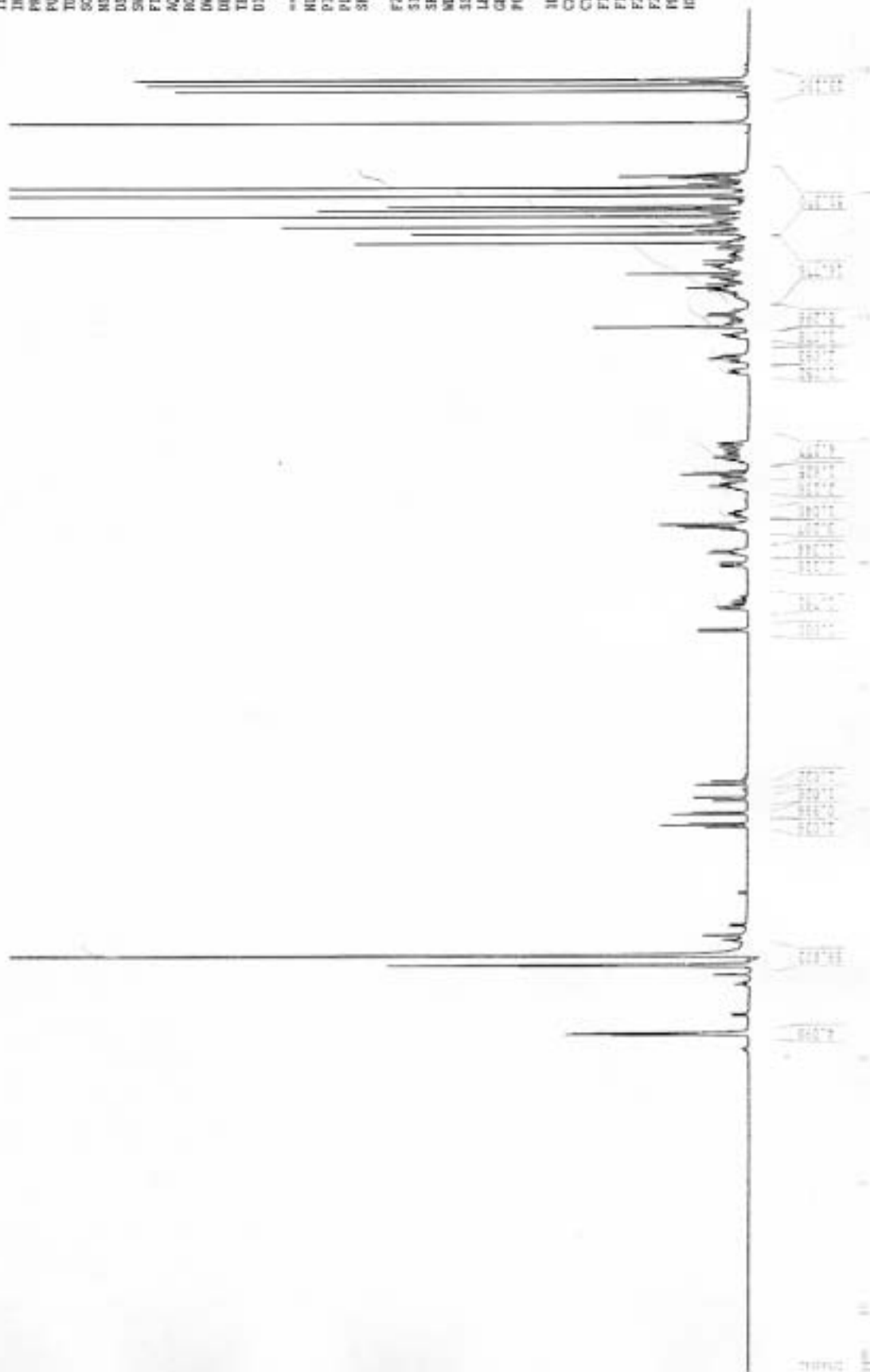


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HF-XI-112/C6D6



Current Data Parameters	α
WANG	1
COFNO	1
FB-CMO	1

F2 - Acquisition Parameters

Data_	25020521
TIME	17.10
INSTRUM	AV500
PROBHD	5 mm PMMP Sol.
POLY ROG	zg30
TD	65536
COLVERT	C606
NS	32
DS	2
SWH	7507.507 Hz
FIDRES	0.134555 Hz
AQ	4.3548143 sec
RG	203.2
LOW	56.603 usec
WE	6.03 usec
TE	308.8 K
DT	1.06000803 sec

```

***** CHANNEL F1 *****
NUC1      1#
P1      9.80 sec
P4      -2.00 dB
3F01      500.132506 MHz

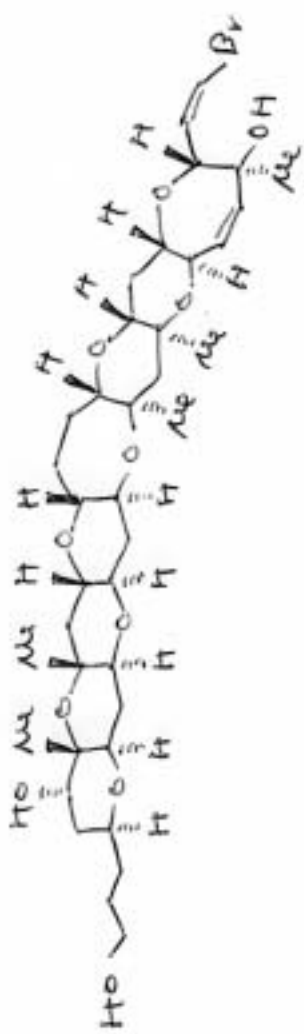
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F2 - Processing parameters
 SI 32768
 SF 540.1103621 MHz

3D mesh plot parameters	
CX	32.60 cm
CY	156.60 cm
FIP	10.560 ppm
F1	5251.37 Hz
F2P	-0.560 ppm
F2	-250.07 Hz
FONCH	0.34375 ppm/cm
FOHCH	171.91372 Hz/cm

21

HF-XI-131/CDCl3



Current Data Parameters
 NAME 4
 EXPNO 2
 PROCNO 1
 F2 - Acquisition Parameters
 Date_ 20020603
 Time 14.47
 INSTRUM av560
 PROBRD 5 mm PEGAP Sqi
 PULPROG zg30
 TD 65536
 SOLVENT CDCl3
 NS 16
 DS 2
 SNR 7587.597 Hz
 FTRES 0.114555 Hz
 AQ 4.3148143 sec
 RG 456.1
 SW 66.600 MHz
 BK 5.00 MHz
 TE 300.0 K
 D1 1.40100000 sec
 ===== CHANNEL f1 =====
 NUC1 1H
 P1 9.80 MHz
 PL1 -2.00 dB
 SFO1 500.132508 MHz
 F2 - Processing parameters
 SI 32768
 SF 500.1300233 MHz
 NI 655
 SSF 0
 LB 0.18 Hz
 GB 0
 PC 2.00
 ID MR plot parameters
 CX 32.08 cm
 CT 100.08 cm
 F1P 10.508 ppm
 F1 5251.31 Hz
 F2P -0.508 ppm
 F2 -250.07 Hz
 PPMCM 0.34375 ppm/cm
 HZCM 171.91971 Hz/cm

