

Supporting Information

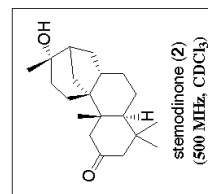
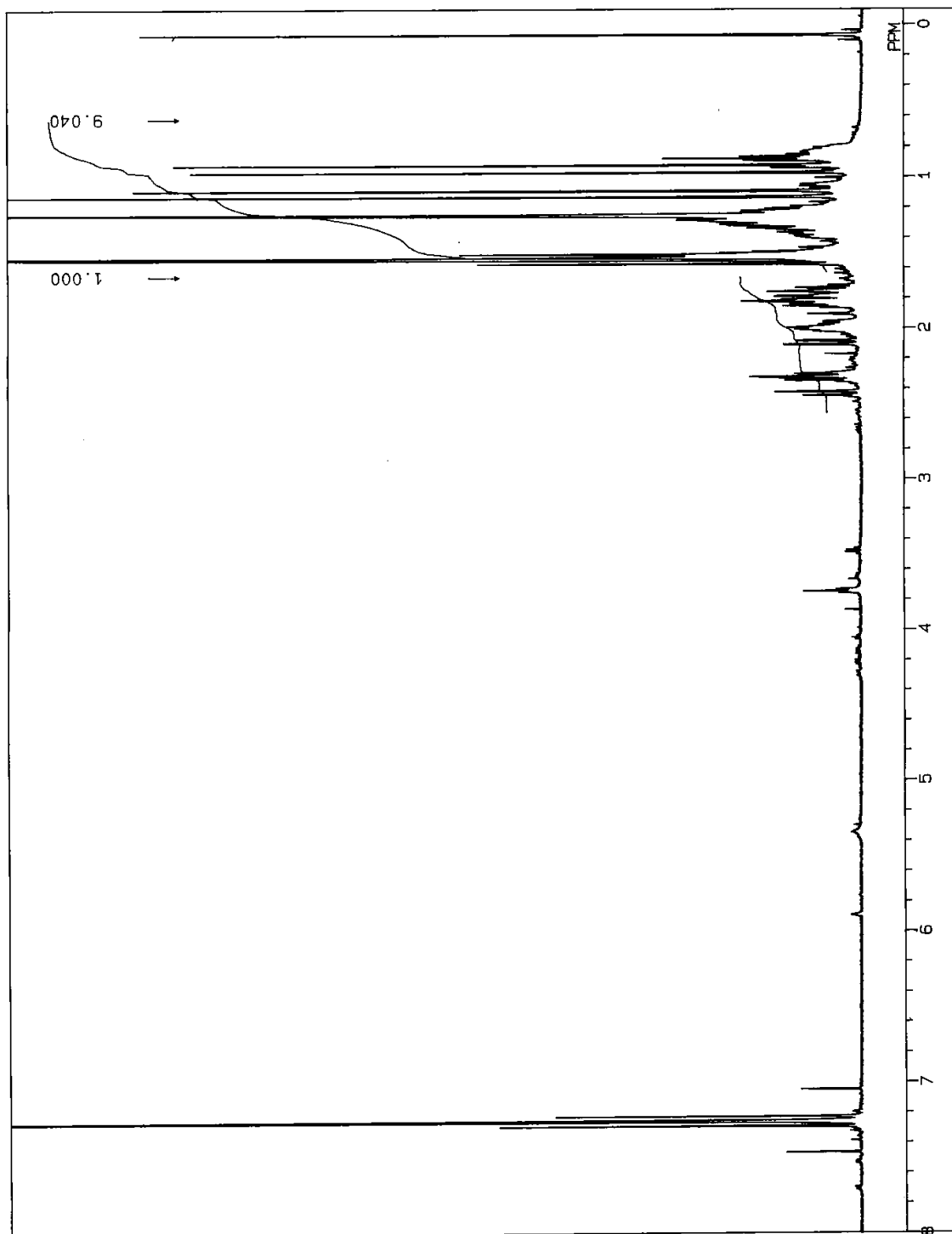
Total Synthesis of (±)-Stemodinone *via* an Efficient Ring-Exchange Strategy

Tetsuaki Tanaka,^{a,*} Kazuo Murakami,^a Atsushi Kanda,^a Debasis Patra,^a Sachiko Yamamoto,^a
Norifumi Satoh,^a Sang-Won Kim,^b S. M. Abdur Rahman,^a Hiroaki Ohno,^a and Chuzo Iwata^a

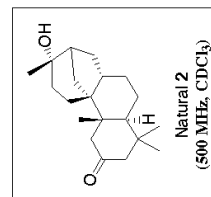
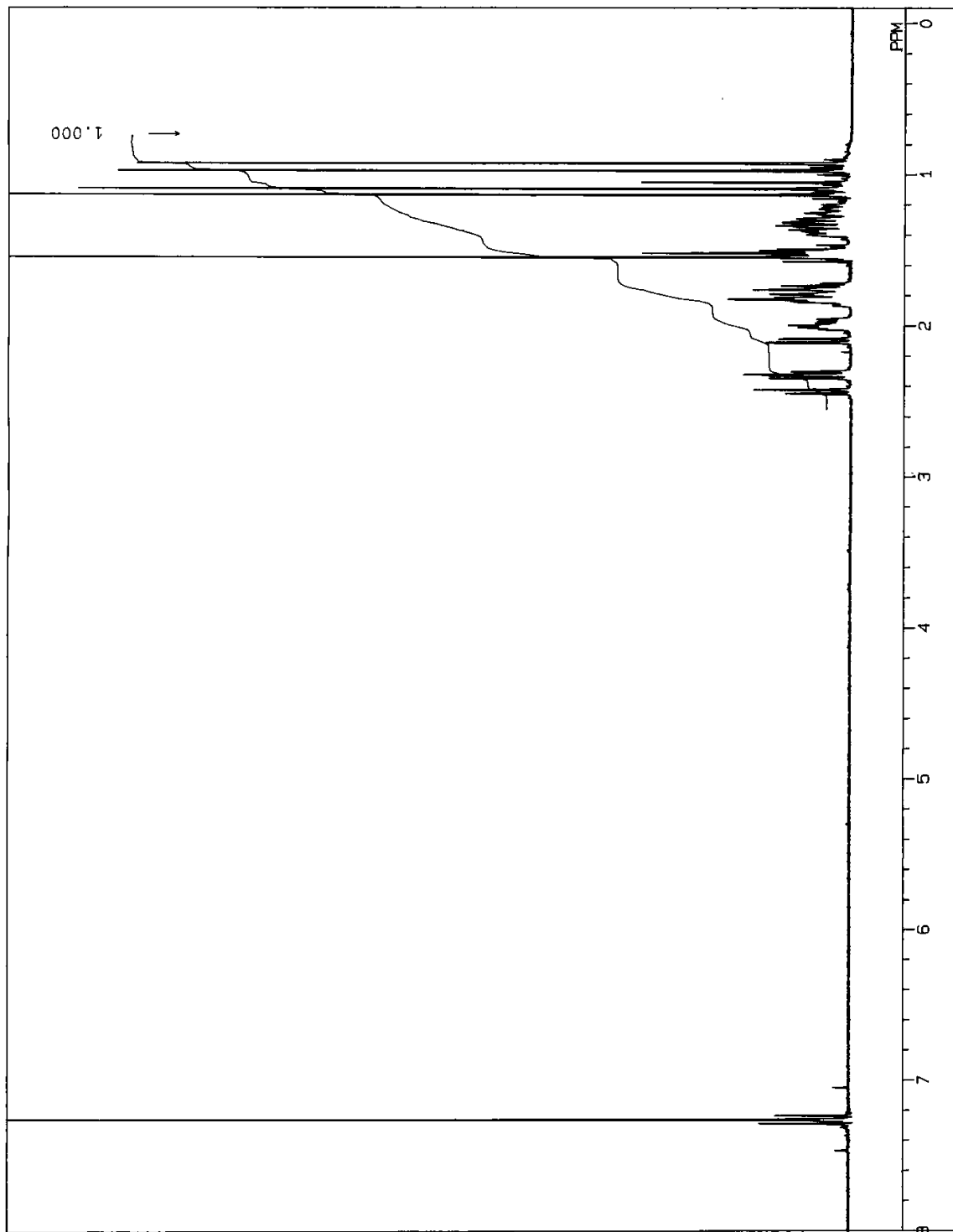
^a*Graduate School of Pharmaceutical Sciences, Osaka University, 1-6 Yamadaoka, Suita, Osaka 565-0871, Japan*

^b*Faculty of Pharmaceutical Sciences, Josai University, 1-1 Keyakidai, Sakado, Saitama 350-0295, Japan*

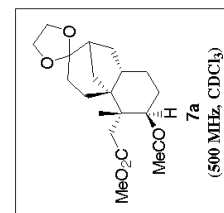
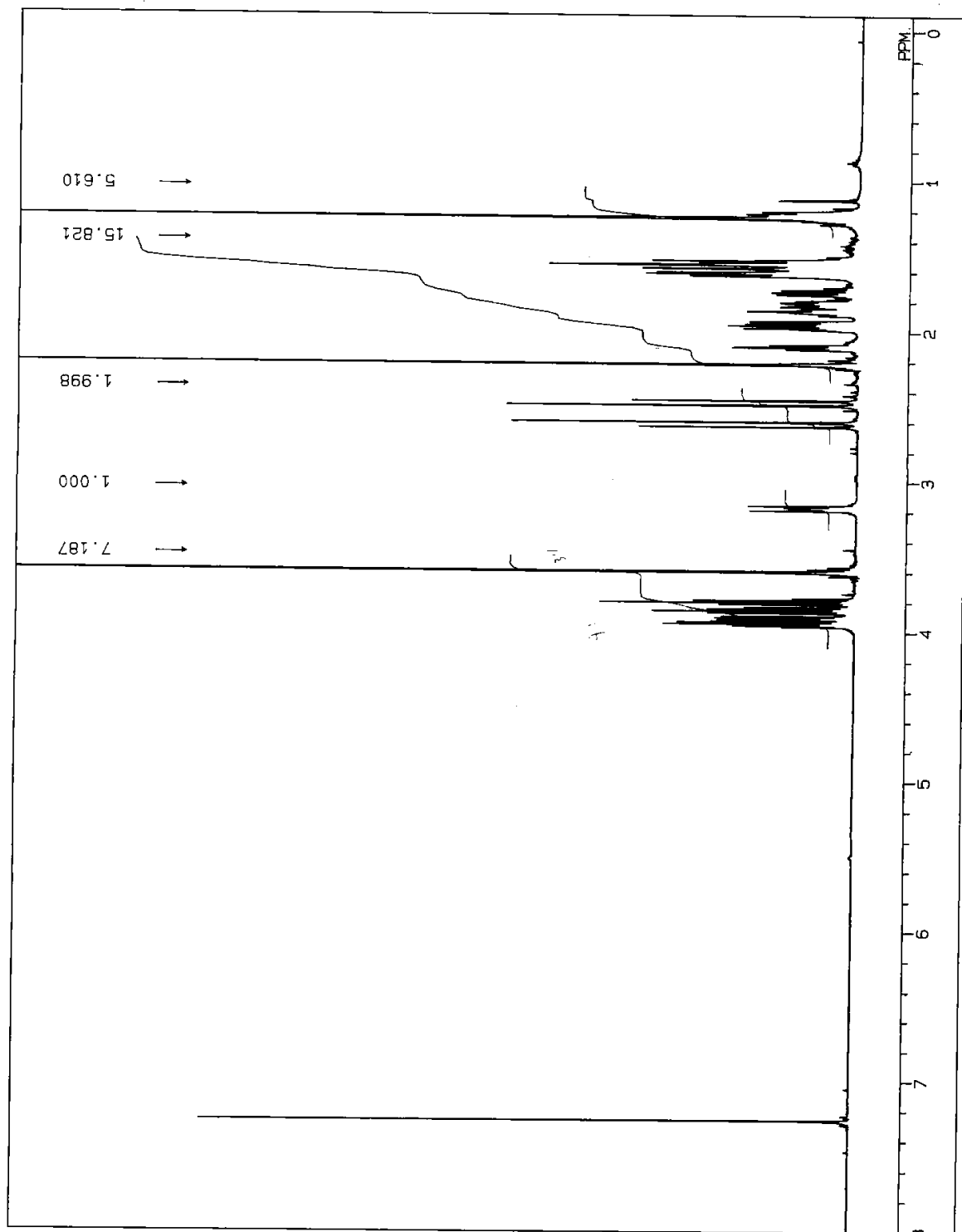
14-FEB-96 15: 57: 59
 MENUF SA1H
 OBNUC 1H
 OBFRQ 500.00 MHz
 OBSET 152.00 kHz
 OBFIN 10157.0 Hz
 PW1 5.0 us
 DEADT 83.2 us
 PREDL 0.2000 ms
 INIWT 1.0 sec
 POINT 32768
 SAMPO 32768
 TIMES 1024
 DUMMY 1
 FREQU 7002.8 Hz
 FILTR 3500 Hz
 DELAY 57.1 us
 ACGTM 2.340 sec
 PD 3.909 sec
 ADBIT 16
 RGAIN 24
 BF 0.10 Hz
 T1 0.0 %
 T2 0.0 %
 T3 90.0 %
 T4 100.0 %
 EXMOD SGNON
 IRNUC 1H
 IRFRQ 500.00 MHz
 IRSET 152.00 kHz
 IRFIN 10157.0 Hz
 IRRPW 60 us
 IRATN 15
 DFILE Q1H
 SHMFL HX5
 LKSET 70.2 kHz
 LKFIN 134.0 Hz



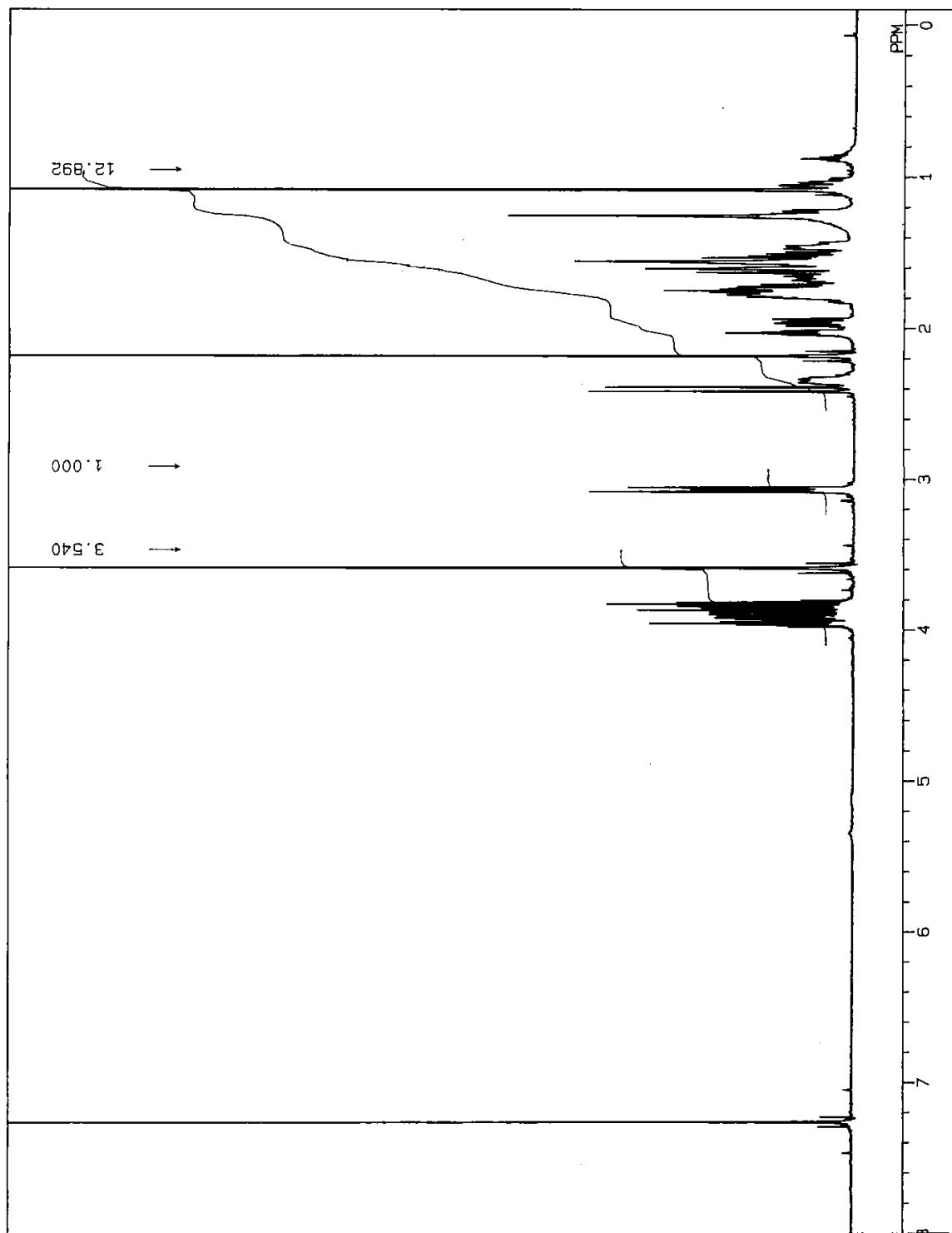
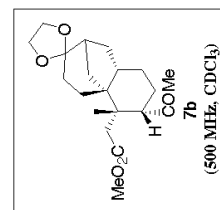
07-FEB-96 18:42:36
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 OBNUC 1H 500.00 MHz
 OBFRQ 152.00 kHz
 OBSET 10157.0 Hz
 OBFIN 5.0 us
 PW1 83.2 us
 DEADT 0.2000 ms
 PREDL 1.0 sec
 INIWT 32768
 POINT 32768
 SAMPO 48
 TIMES 1
 DUMMY 7002.8 Hz
 FREQU 3500 Hz
 FILTR 57.1 us
 DELAY 2.340 sec
 ACQTM 3.909 sec
 PD 16
 ADBIT 24
 RGAIN 0.10 Hz
 BF T1 0.0 %
 T2 0.0 %
 T3 90.0 %
 T4 100.0 %
 EXMOD SGNON
 IRNUC 1H 500.00 MHz
 IRFRQ 152.00 kHz
 IRSET 10157.0 Hz
 IRRPW 60 us
 IRATN 15
 DFILE Q1H
 SHMFL SAHX5SPI
 LKSET 70.2 kHz
 LKFIN 134.0 Hz



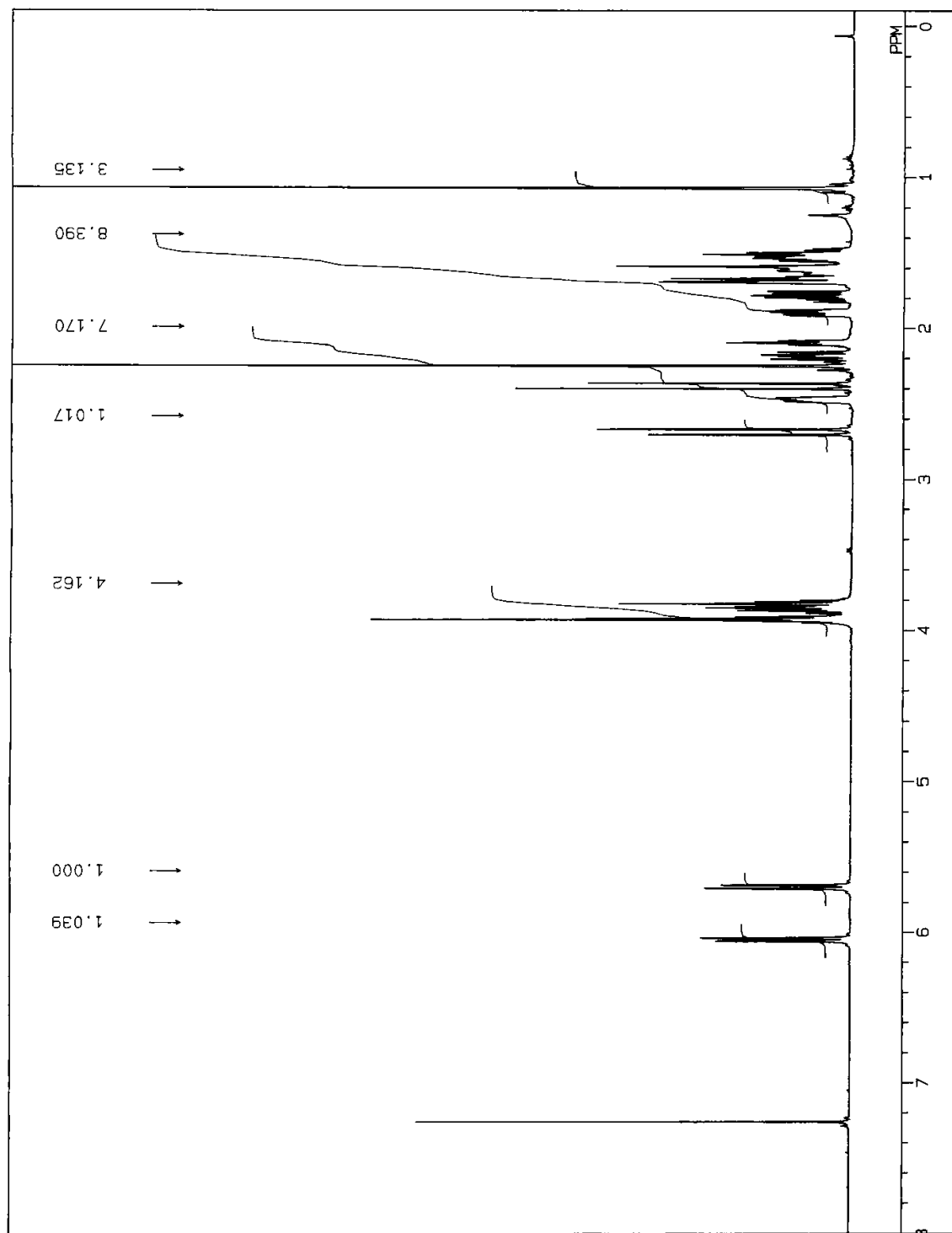
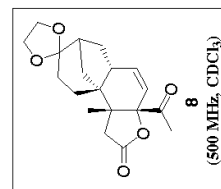
27-NOV-95 17: 19: 03
 DFILE Q1H
 COMNT Pd (0) -CH2N2/Maj
 EXMOD SGNON
 OBNUC 1H
 OBFIN 10157.0 Hz
 POINT 32768
 FREQU 7002.8 Hz
 SCANS 32
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TEMP. 27.0 c
 SLVNT CDCL3
 EXREF 7.26 ppm
 BF 0.10 Hz
 RGAIN 14
 XE 4051.2960 Hz
 XS 263.8595 Hz



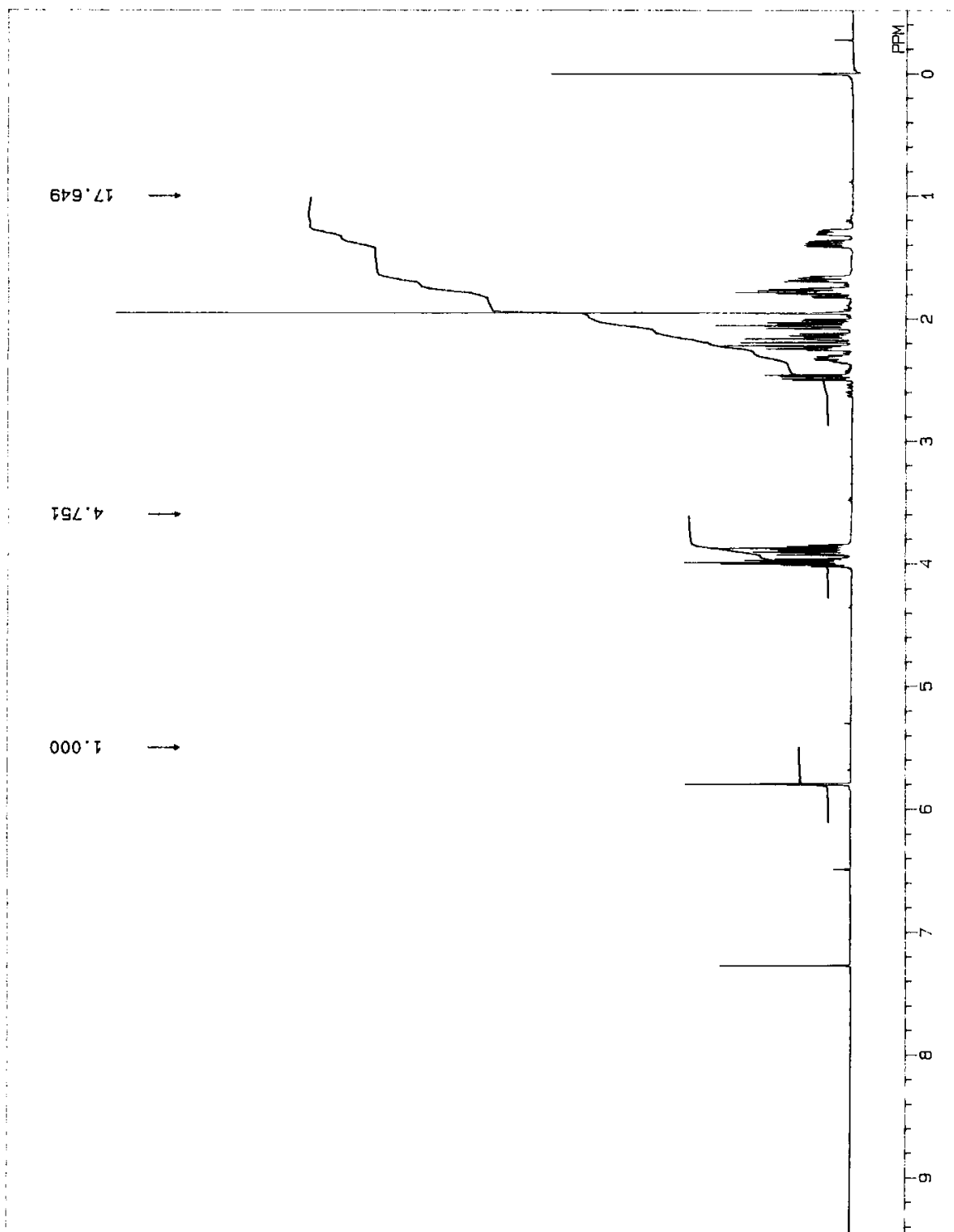
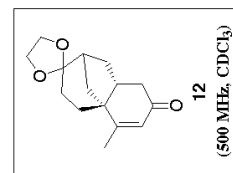
28-NOV-95 11:29:09
 DFILE Q1H
 COMNT Pd (0) -CH2N2/Ma i
 EXMOD SGNON
 OBNUC 1H
 OBFIN 10157.0 Hz
 POINT 32768
 FREQU 7002.8 Hz
 SCANS 48
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TEMP. 27.0 c
 SLVNT CDCL3
 EXREF 7.26 ppm
 BF 0.10 Hz
 RGAIN 19
 XE 4051.2960 Hz
 XS 263.4323 Hz



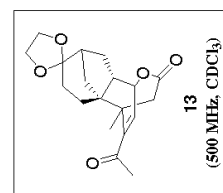
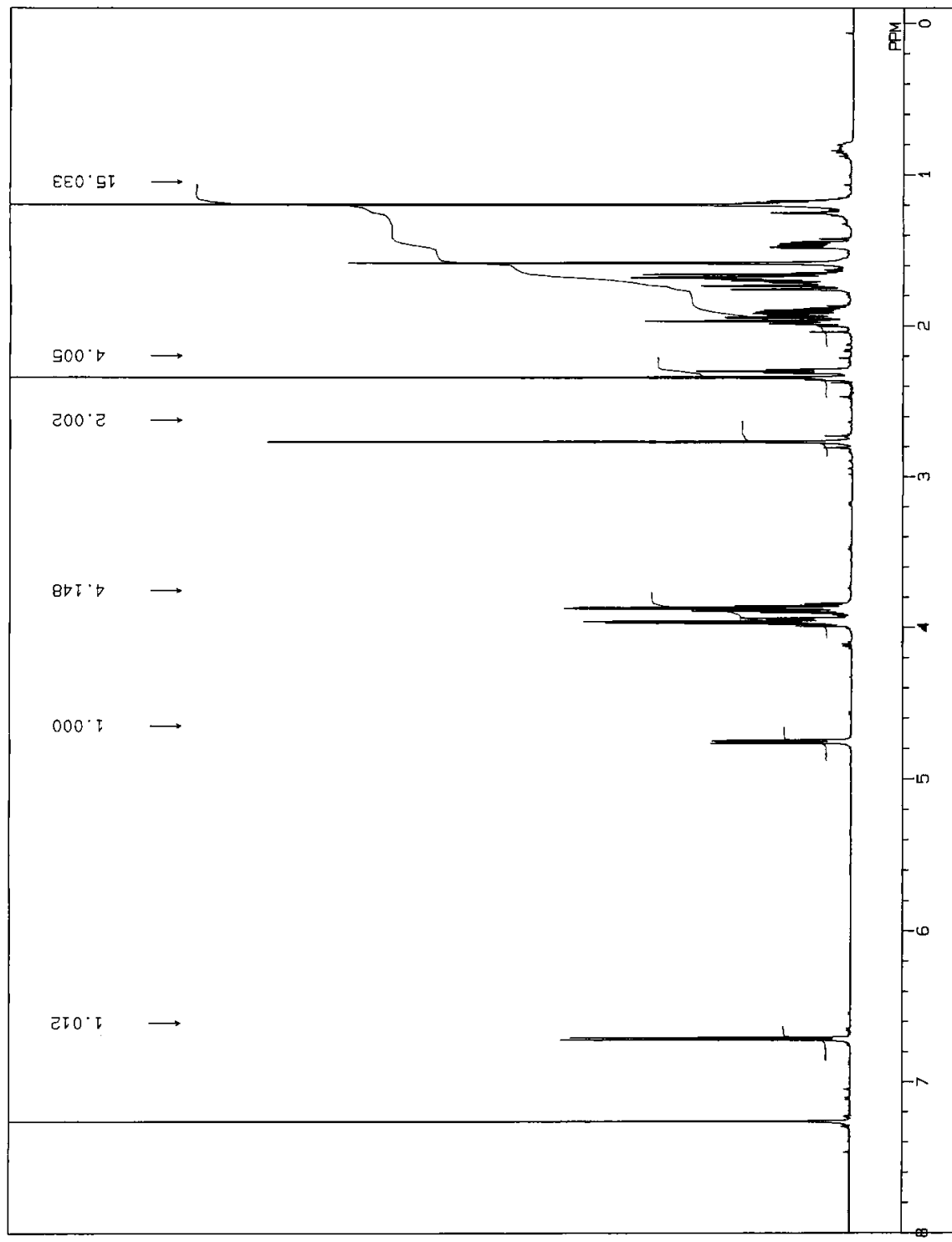
11-SEP-95 20:22:30
 DFILE Q1H
 EXMOD SGNON
 COMNT PD (0) -PRODUCT
 OBNUC 1H
 OBFIN 10157.0 Hz
 OBATN 0
 POINT 32768
 FREQU 7002.8 Hz
 CLPNT 256
 TODAT 256
 CLFRQ 100.0 Hz
 SCANS 32
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 PW2 10.0 us
 PW3 20.0 us
 PI1 1.000 ms
 PI2 1000.000 ms
 PI3 10.000 ms
 IRNUC 1H
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TRNUC 1H
 TRFIN 0.0 Hz
 TRATN 0
 TRRPW 50 us
 TEMP. 27.0 c
 SPEED 15 Hz
 SLVNT CDCL3
 LOOP1 1
 XS 262.1500 Hz
 CXS 0.0000 Hz
 XE 4051.2960 Hz



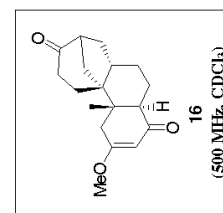
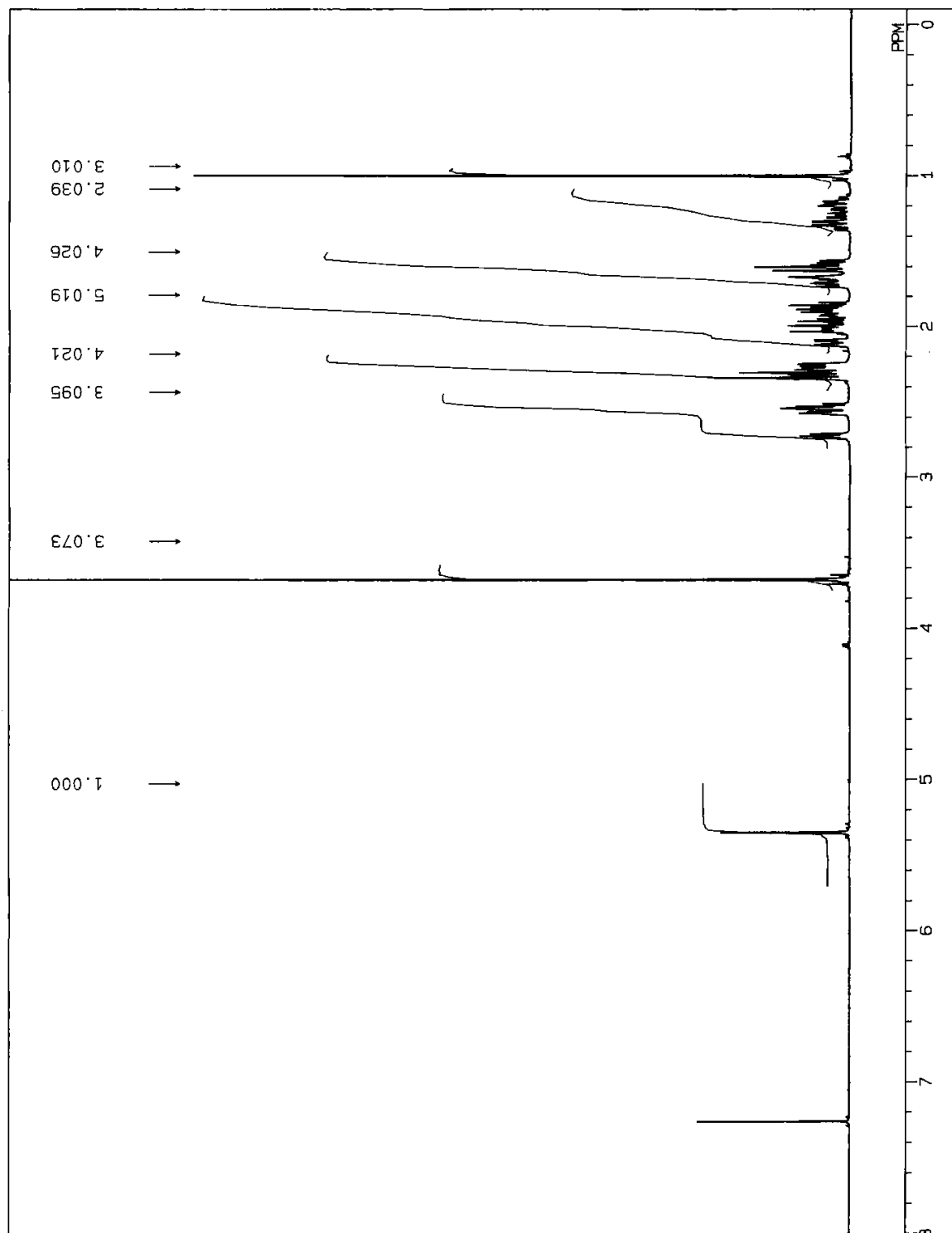
16-FEB-94 15:06:16
 DFILE Q1H
 COMNT S3
 EXMOD SGNON
 OBNUC 1H
 OFIN 10157.0 Hz
 POINT 16384
 FREQ 5000.0 Hz
 SCANS 32
 ACQTM 1.638 sec
 PD 3.909 sec
 PW1 5.0 us
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TEMP. 27.0 c
 SLVNT CDCL3
 EXREF 0.00 ppm
 BF 0.10 Hz
 RGAIN 16
 XE 5000.0000 Hz
 XS 0.0000 Hz



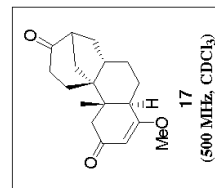
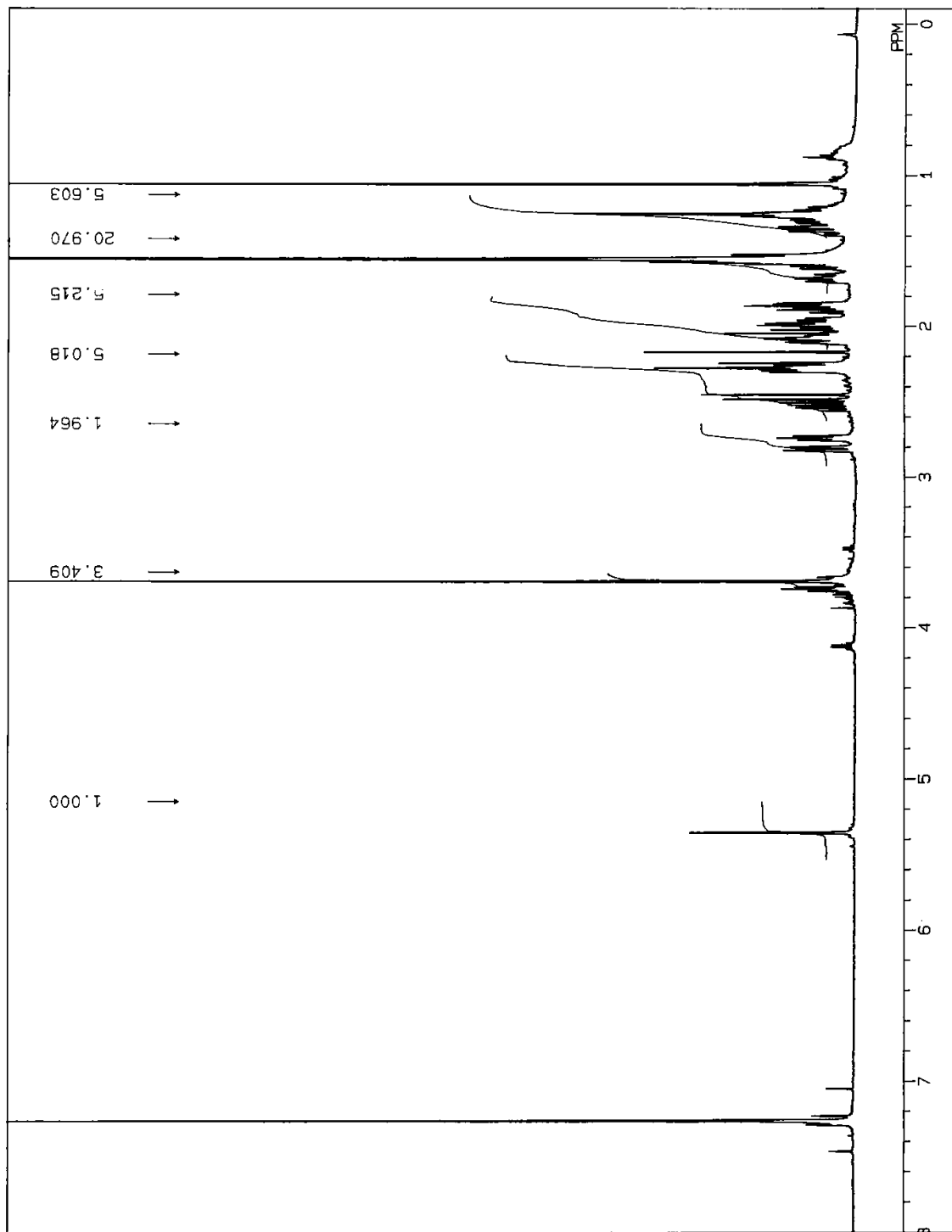
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 DFILE Q1H
 EXMOD SGNON
 COMNT Automatic..meas
 OBNUC 1H
 OBFIN 10157.0 Hz
 OBATN 0
 POINT 32768
 FREQU 7002.8 Hz
 CLPNT 256
 TODAT 256
 CLFRQ 100.0 Hz
 SCANS 48
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 PW2 10.0 us
 PW3 20.0 us
 PI1 1.000 ms
 PI2 1000.000 ms
 PI3 10.000 ms
 IRNUC 1H
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TRNUC 1H
 TRFIN 0.0 Hz
 TRATN 0
 TRRPW 50 us
 TEMP. 27.0 c
 SPEED 15 Hz
 SLVNT CDCL3
 LOOP1 1
 XS 262.5773 Hz
 CXS 0.0000 Hz



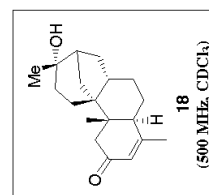
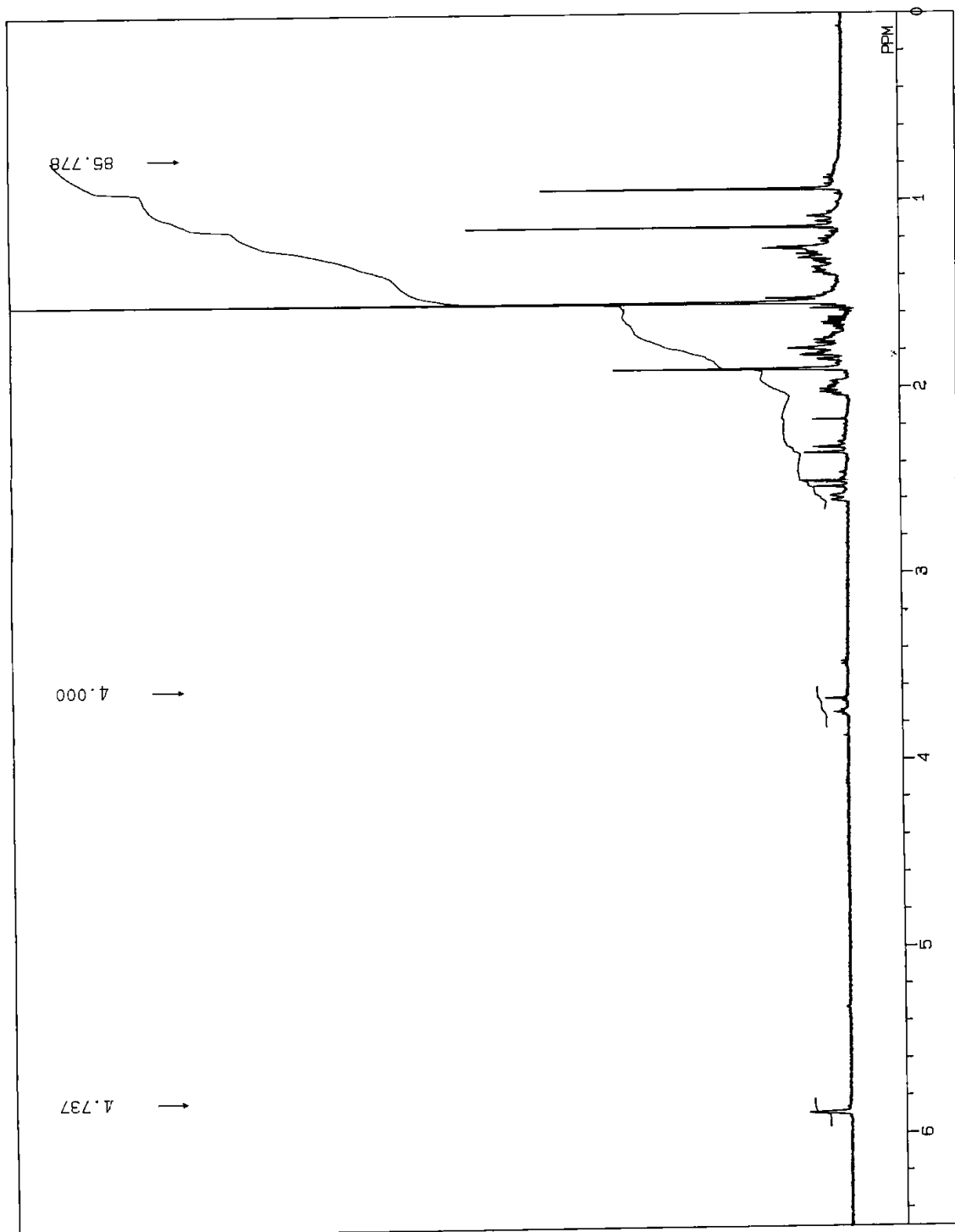
19-JUN-96 13:57:52
 DFILE KOH
 COMNT Automatic...meas
 EXMOD SGNON
 OBNUC 1H
 OBFIN 10157.0 Hz
 POINT 32768
 FREQU 7002.8 Hz
 SCANS 48
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TEMP. 27.0 C
 SLVNT CDCL3
 EXREF 7.26 ppm
 BF 0.10 Hz
 RGAIN 14
 XE 4051.2960 Hz
 XS 263.4323 Hz

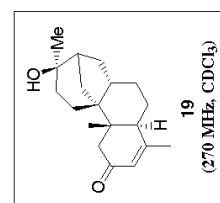
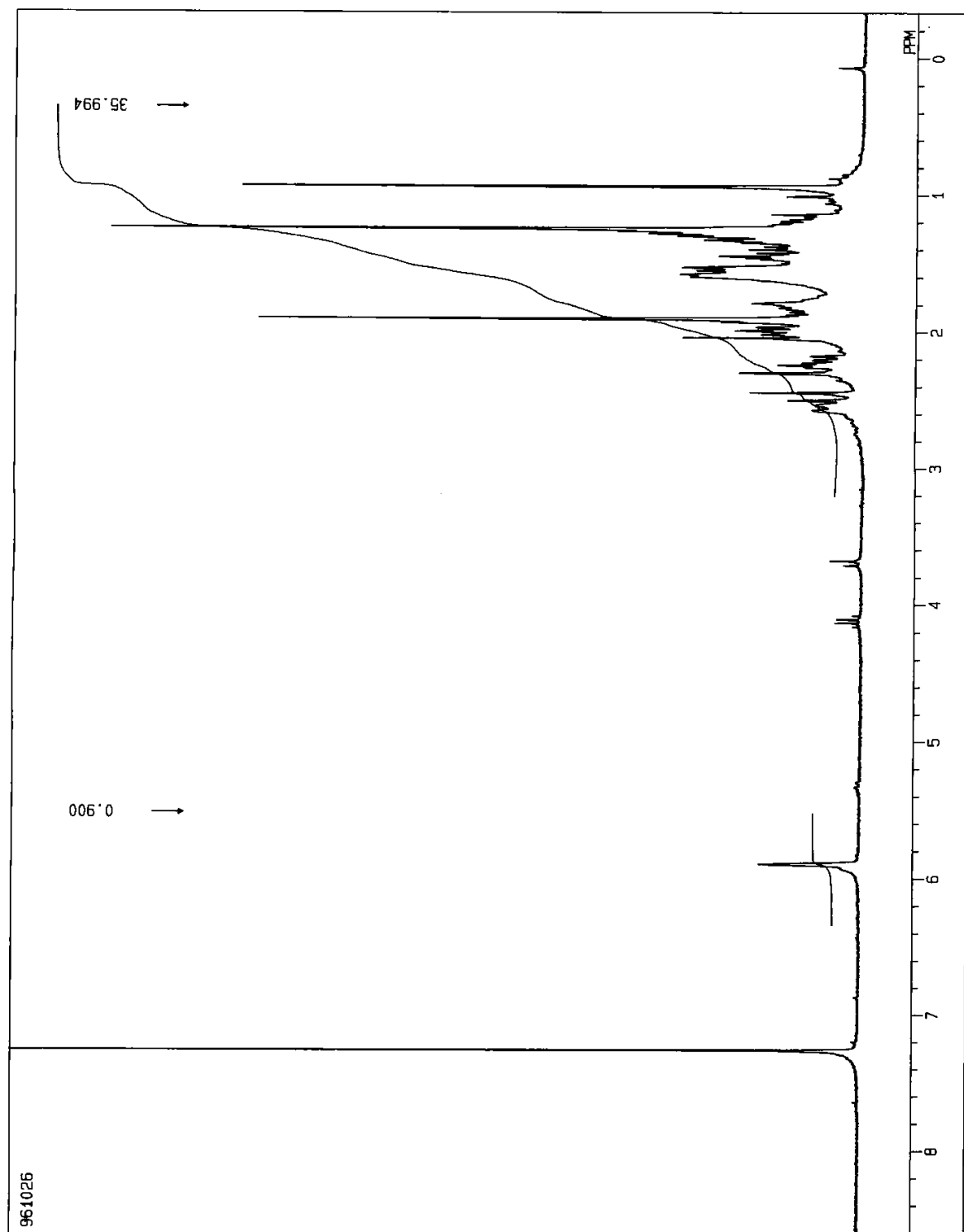


19-JUN-96 13:27:19
 DFILE KOH
 COMNT Automatic...meas
 EXMOD SGNON
 OBNUC 1H
 OBFIN 10157.0 Hz
 POINT 32768
 FREQU 7002.8 Hz
 SCANS 1120
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TEMP. 27.0 c
 SLVNT CDCL3
 EXREF 7.26 ppm
 BF 0.10 Hz
 RGAIN 24
 XE 4051.2960 Hz
 XS 263.4323 Hz



05-JUN-96 10:59:49
 DFILE KOH
 COMINT MURA1
 EXMOD SGNON
 OBNUC 1H
 OBFIN 10157.0 Hz
 POINT 32768
 FREQU 7002.8 Hz
 SCANS 16
 ACQTM 2.340 sec
 PD 3.909 sec
 PW1 5.0 us
 IRFIN 10157.0 Hz
 IRATN 15
 IRRPW 60 us
 TEMP. 27.0 c
 SLVNT CDCL3
 EXREF 7.26 ppm
 BF 0.10 Hz
 RGAIN 24
 XE 3251.0400 Hz
 XS 613.1167 Hz





STEMODINONE.002



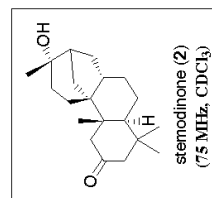
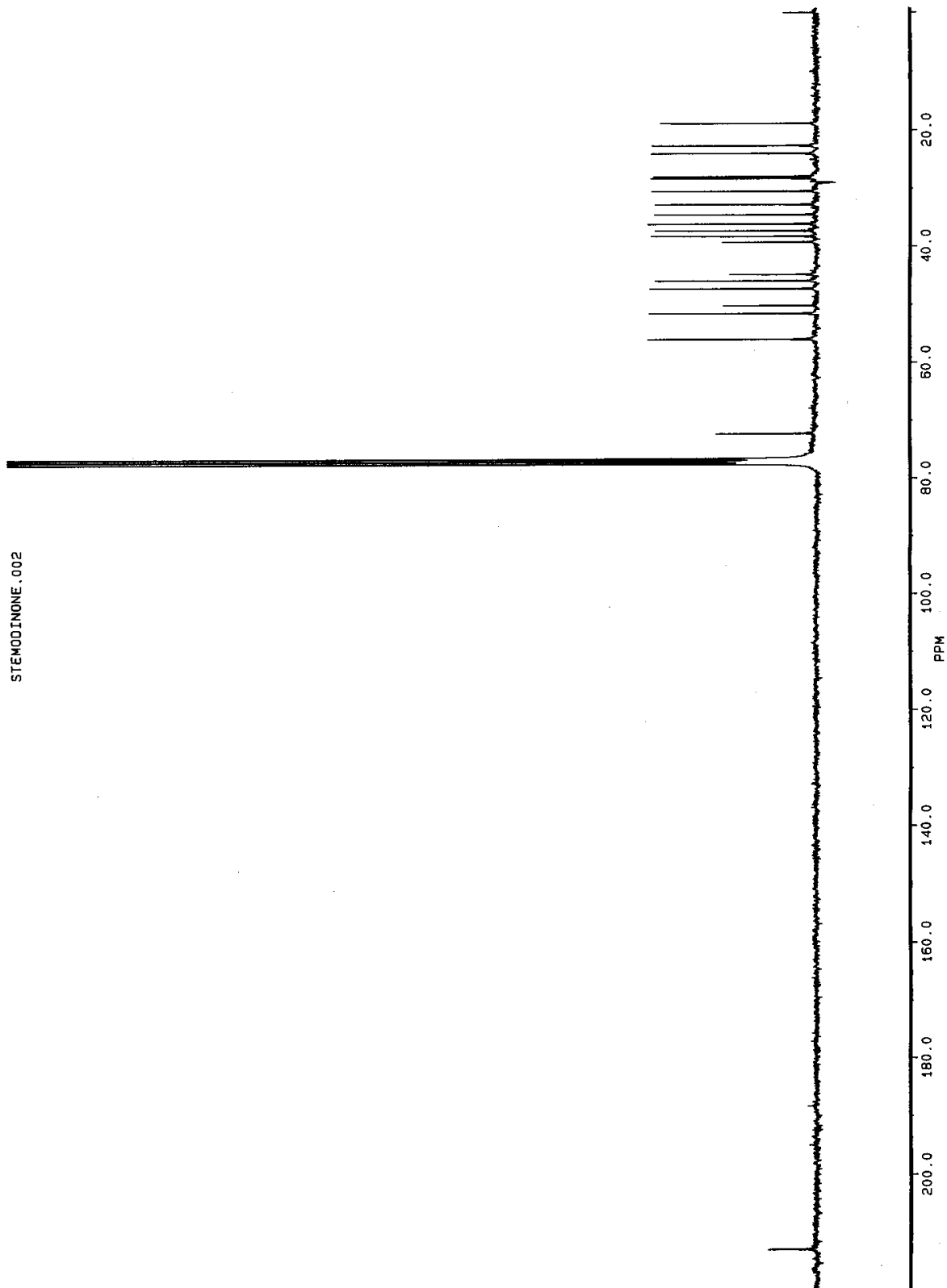
STEMODIN.002
DATE 30-1-96

SF 75.469
SY 75.0
O1 16600.000
SI 65536
TD 65536
SW 18518.519
HZ/PT .565

PW 2.3
RD 0.0
AQ 1.769
RG 400
NS 22147
TE 297

FW 23200
OZ 6000.000
DP 15H CPD

LB 3.000
GB 0.0
CX 35.00
CY 30.00
F1 219.9999P
F2 -.790P
HZ/CM 476.074
PPM/CM 6.308
SR 8596.74



13-DEC-95 19: 41: 30

DFILE Q13C

QNUC 13C

EXMOD BCM

QFR 67.80 MHz

QBSF 135.00 KHz

QBFN 5200.0 Hz

POINT 32768

FREQ 20000.0 Hz

SCANS 166

ACQTM 0.819 sec

PD 2.181 sec

PW1 3.8 us

IRNUC 1H

CTEMP 21.6 c

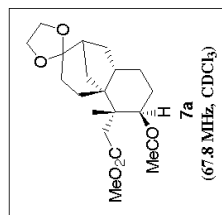
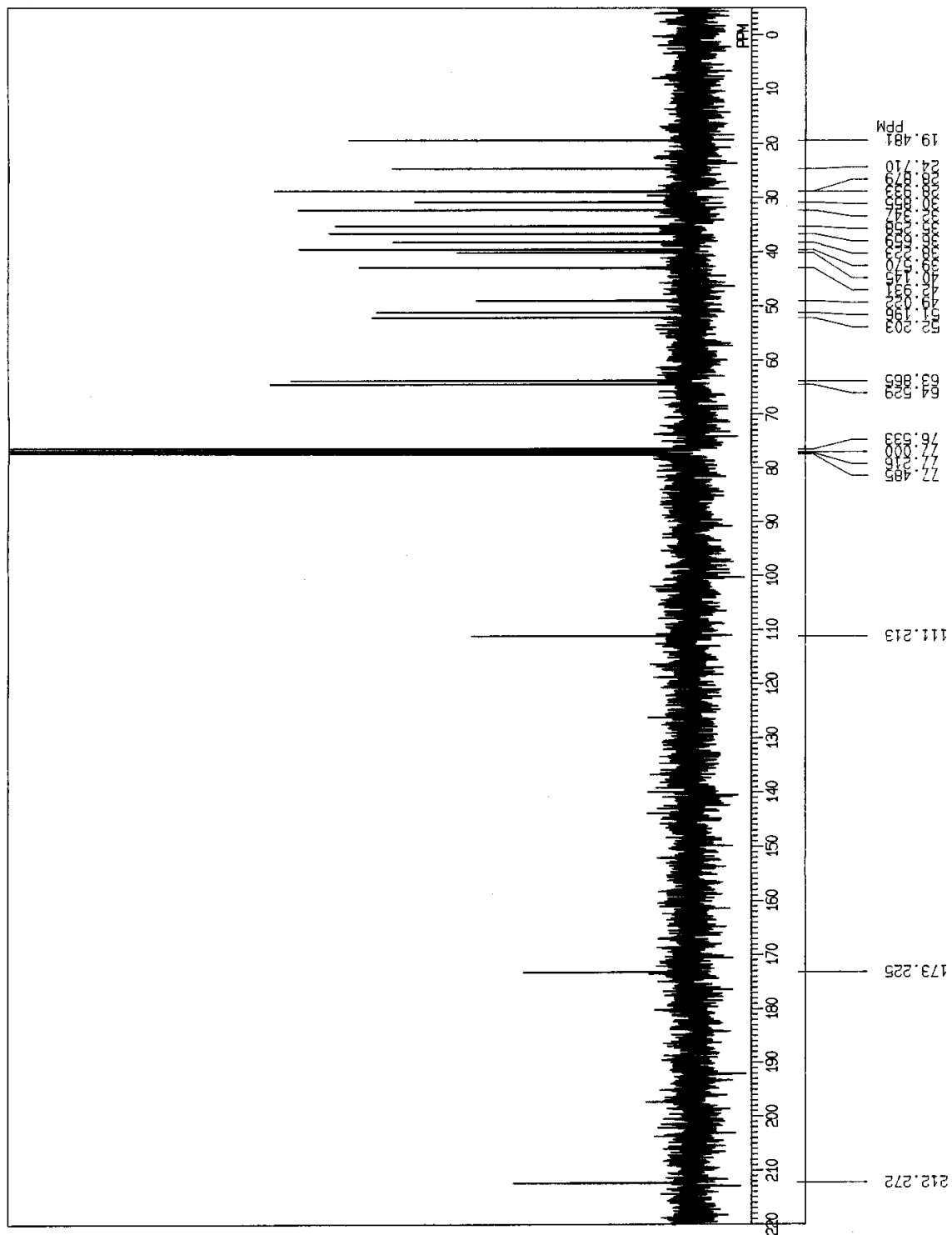
SLVNT CDCL3

EXREF 77.00 ppm

BF 1.50 Hz

RGAIN 27

OPERATOR :



01-NOV-95 12:06:54

DFILE Q13C

OBNUC 13C

EXMOD BCM

QPR 67.80 MHz

QBSF 135.00 kHz

QBFN 5200.0 Hz

POINT 32768

FREQ 20000.0 Hz

SCANS 164

ACQTM 0.819 sec

PD 2.181 sec

PW1 3.8 us

IRNUC 1H

CTEMP 22.8 C

SLVNT CDCL3

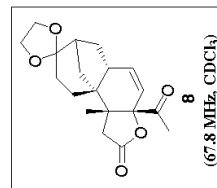
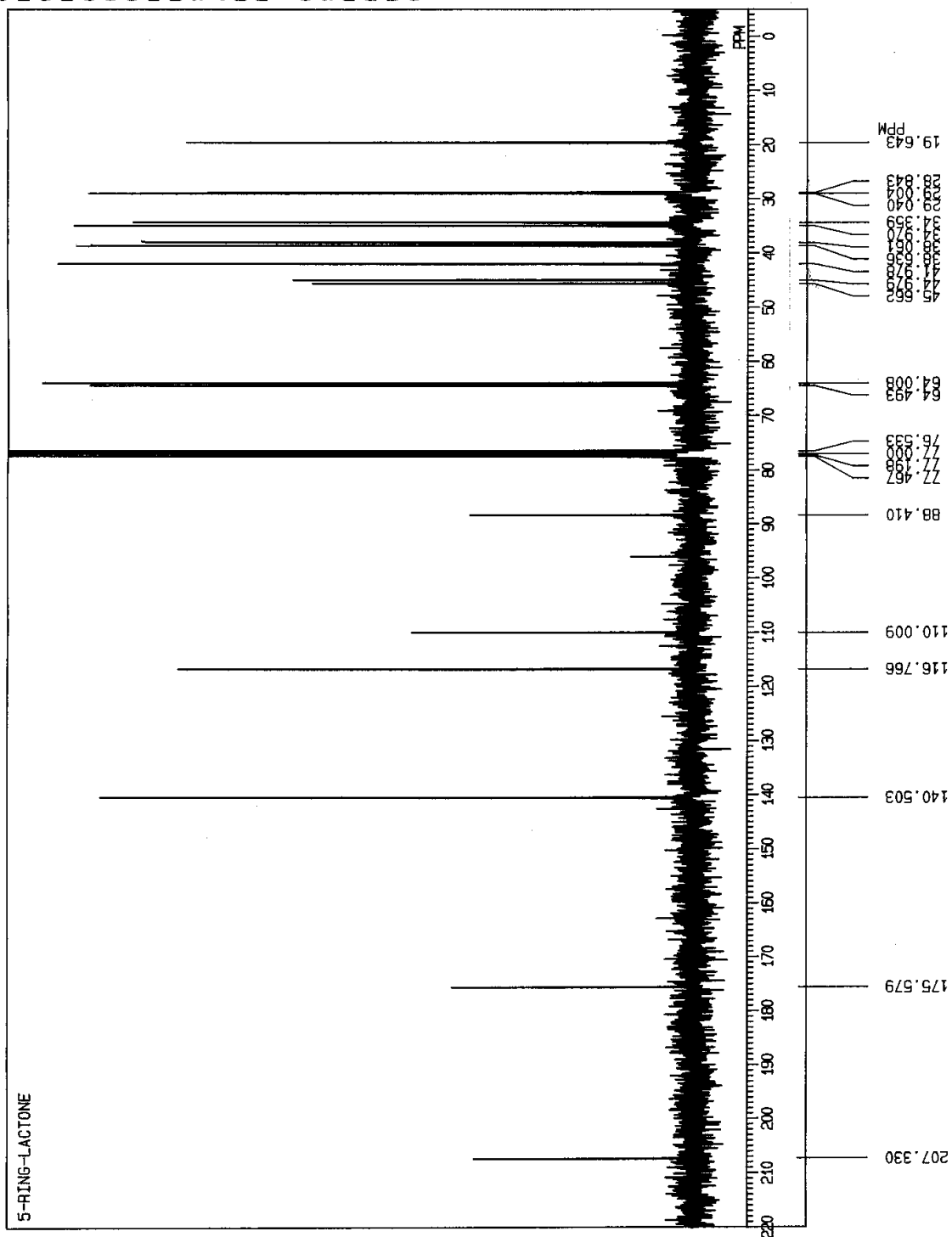
EXREF 77.00 ppm

BF 1.50 Hz

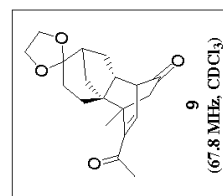
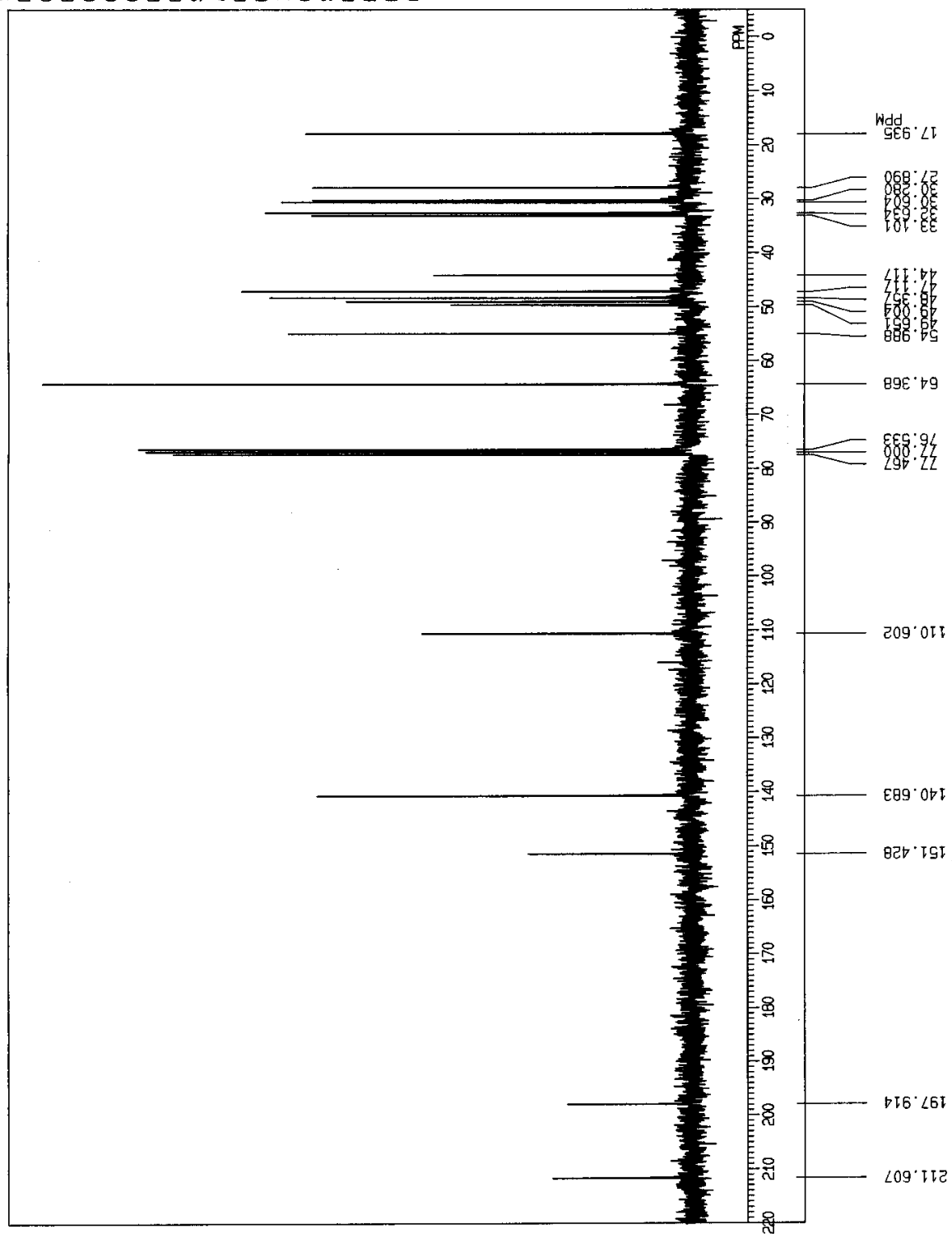
RGAIN 27

OPERATOR :

5-RING-LACTONE



REGAIN 20



11-DEC-95 20:13:50

DFILE Q13C

OBNUC 13C

EXMOD BCM

QFIR 67.80 MHz

OBSET 135.00 kHz

OBFIN 5200.0 Hz

POINT 32768

FREQU 20000.0 Hz

SCANS 167

ACQTM 0.819 sec

PD 2.181 sec

PW1 3.8 us

IRNUC 1H

CTEMP 21.3 C

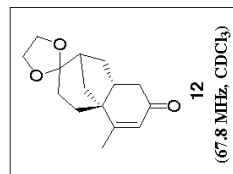
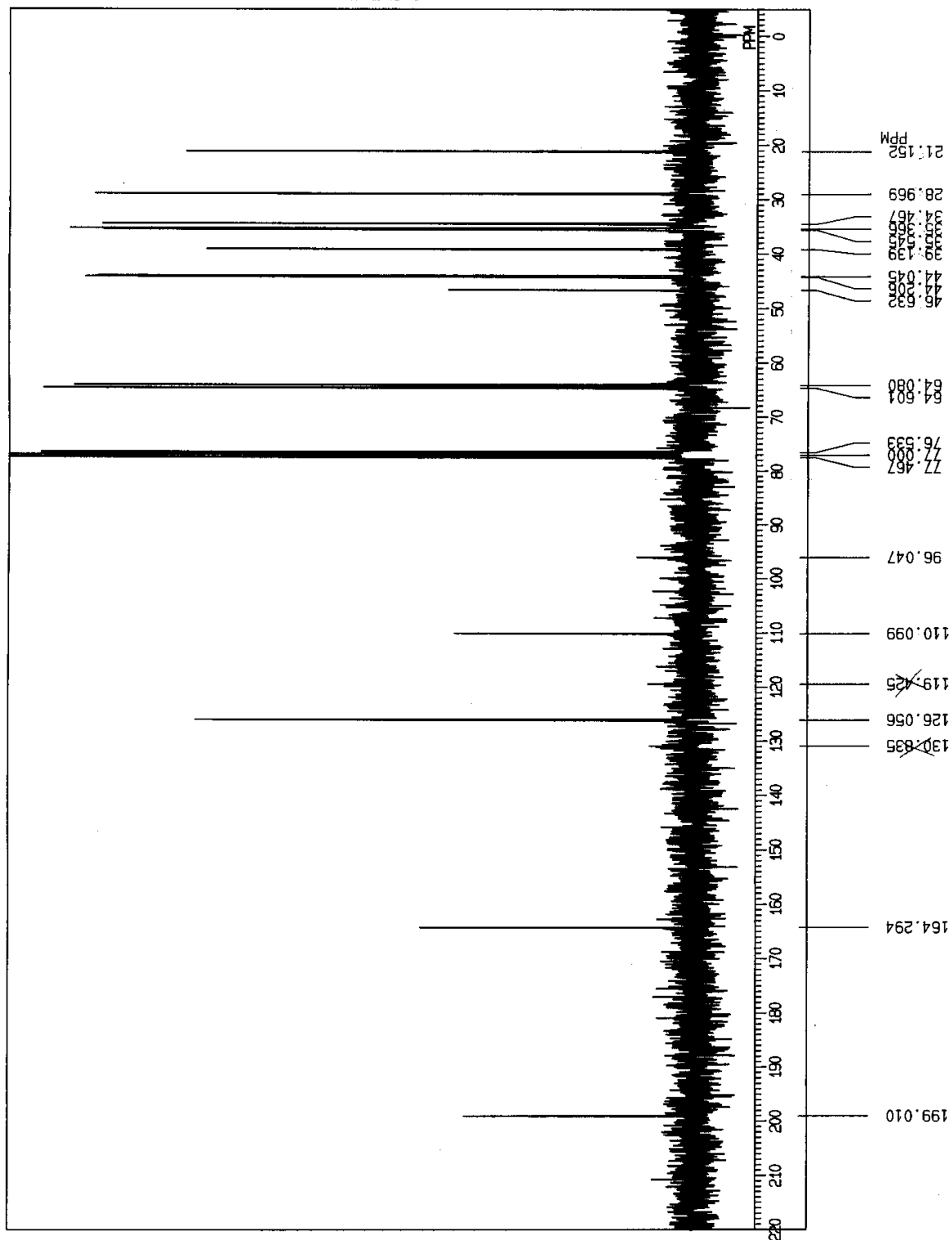
SLVNT CDCL3

EXREF 77.00 ppm

BF 1.50 Hz

RGAIN 27

OPERATOR :



27-OCT-95 14: 41: 38

DFILE Q13C

OBNUC 13C

EXMOD BCM

OFR 67.80 MHz

OBSET 135.00 KHz

OBFIN 5200.0 Hz

POINT 32768

FREQ 20000.0 Hz

SCANS 166

ACQTM 0.819 sec

PD 2.181 sec

PW1 3.8 us

IRNUC 1H

CTEMP 24.9 C

SLVNT CDCL3

EXREF 77.00 ppm

BF 4.50 Hz

RGAIN 27

OPERATOR :

