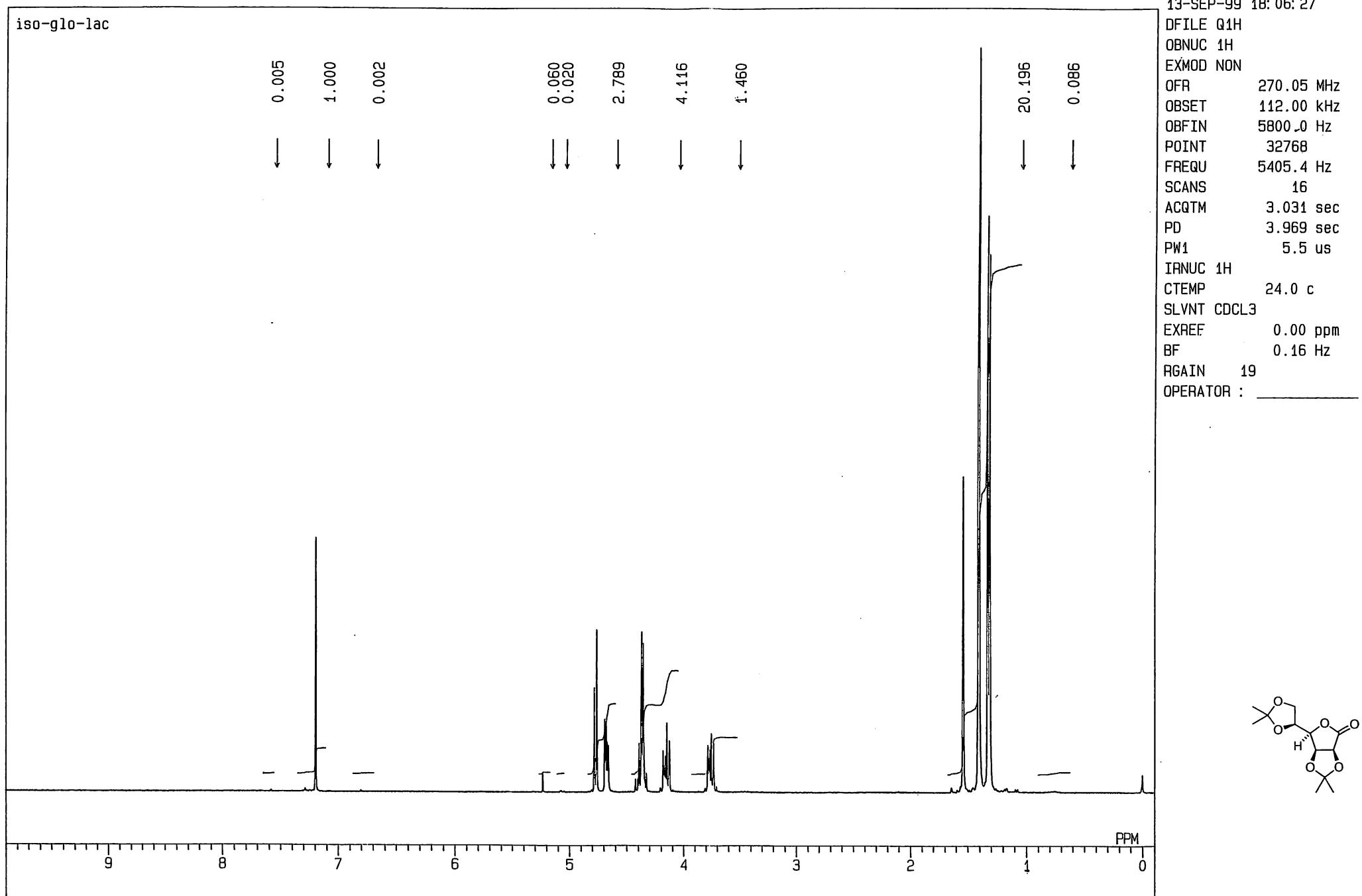


Supplementary Information

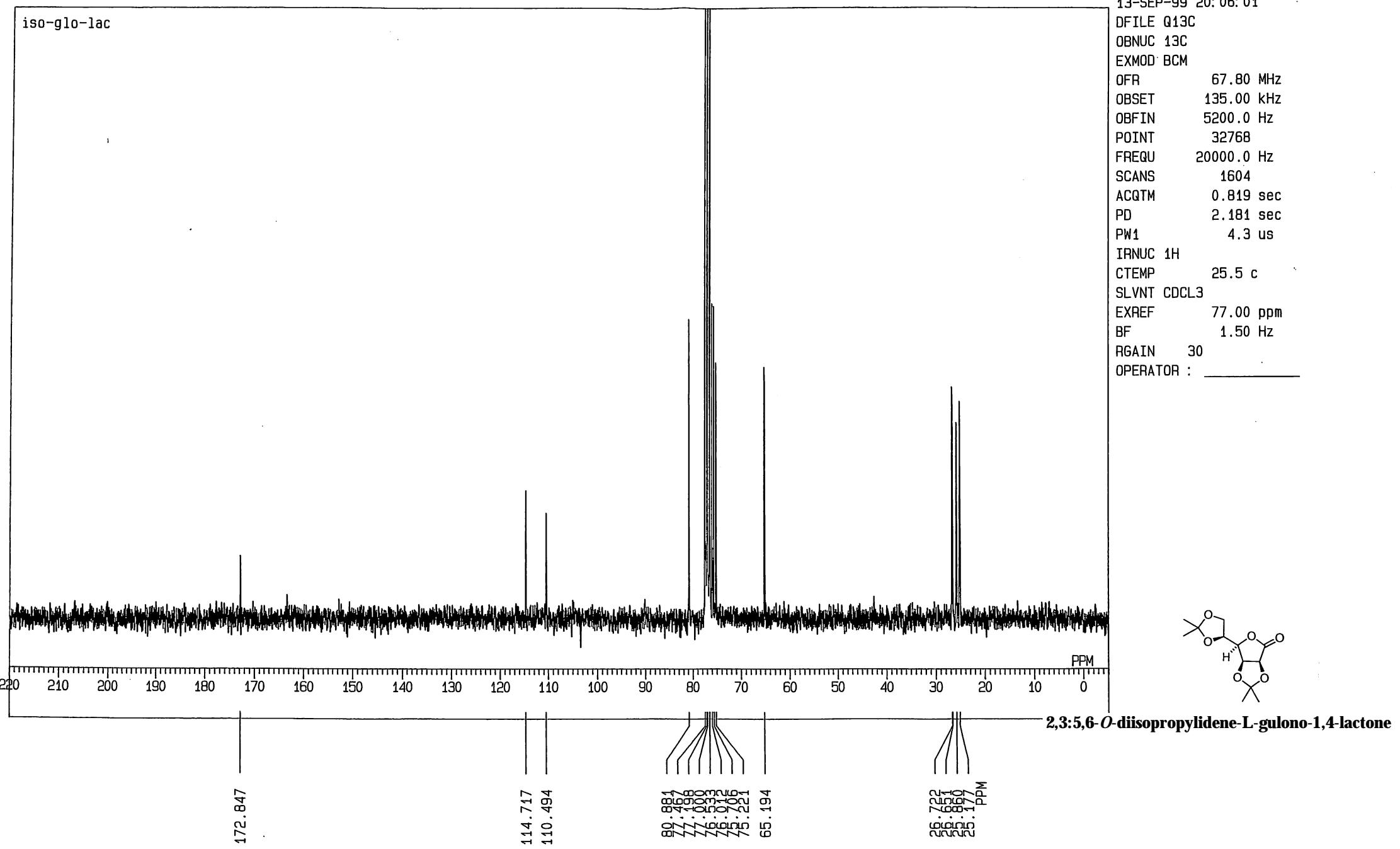
**Stereoselective Vinylogous Mannich Reaction of  
2-Trimethylsilyloxyfuran with *N*-Gulosyl Nitrones**

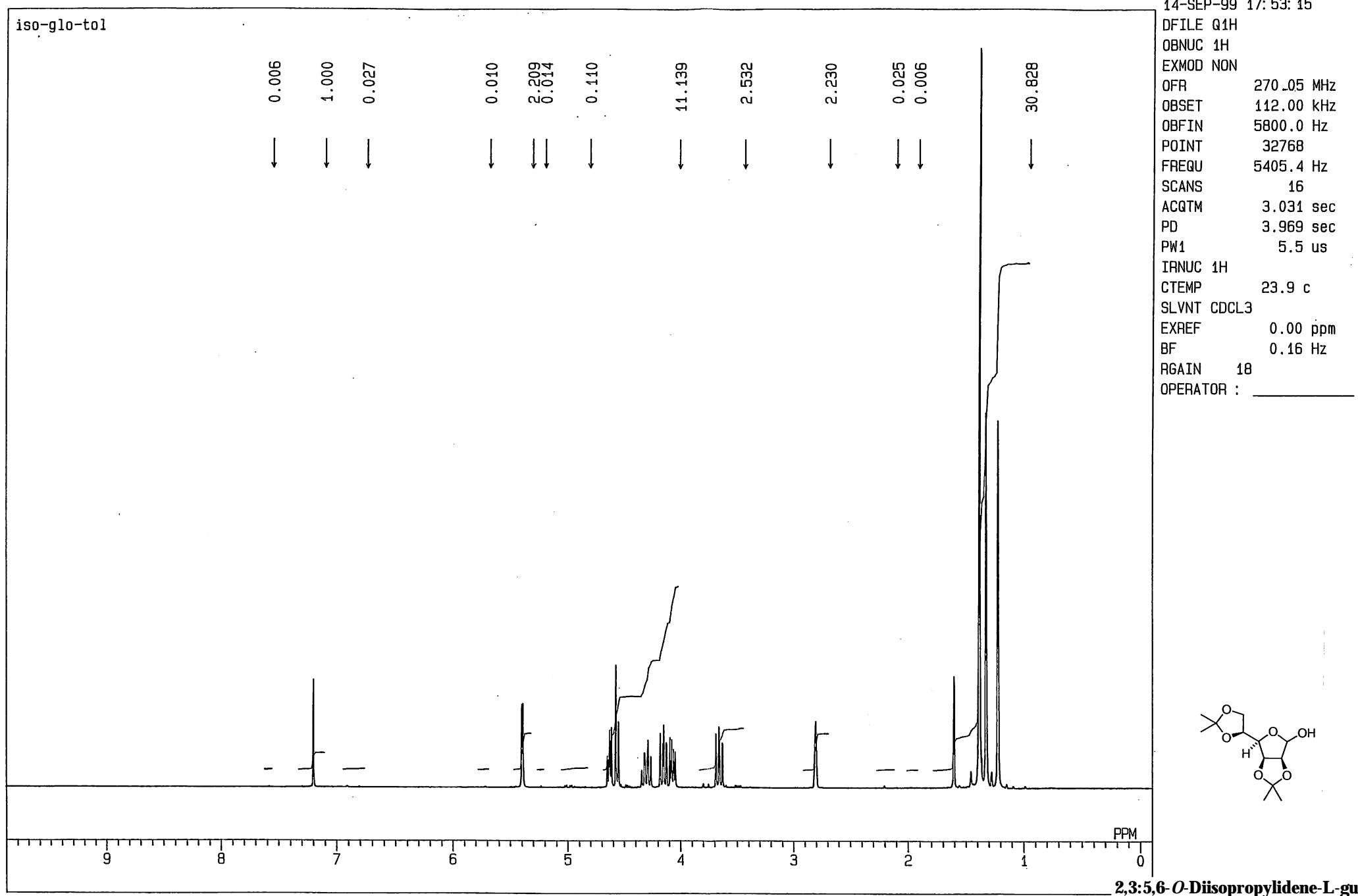
**Osamu Tamura,\* Kodai Takeda, Naka Mita, Masanori Sakamoto,  
Iwao Okamoto, Nobuyoshi Morita, Hiroyuki Ishibashi**

**$^1\text{H}$  and  $^{13}\text{C}$  NMR Spectra**



2,3:5,6-O-Diisopropylidene-L-gulono-1,4-lactone





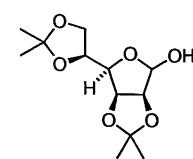
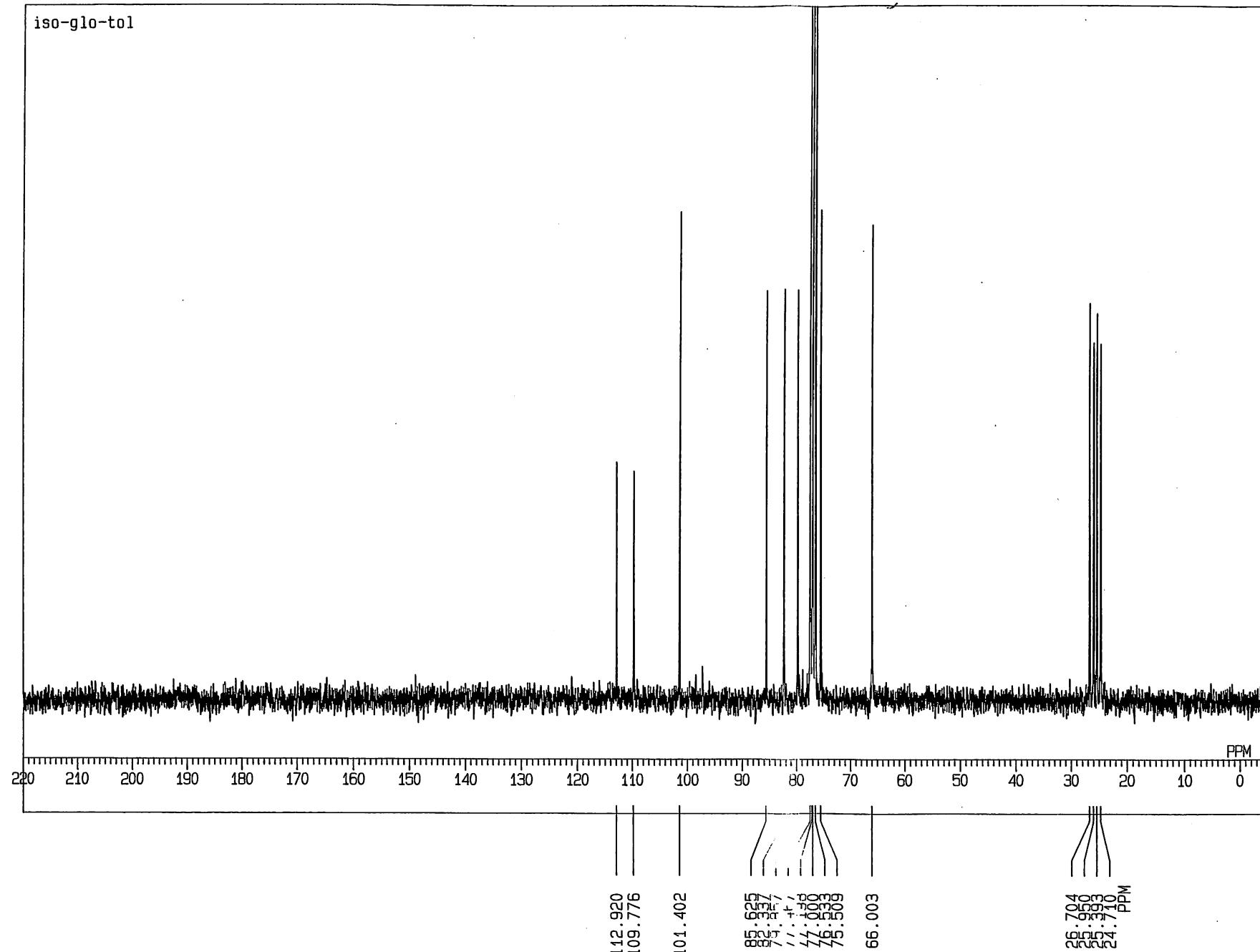
iso-glo-tol

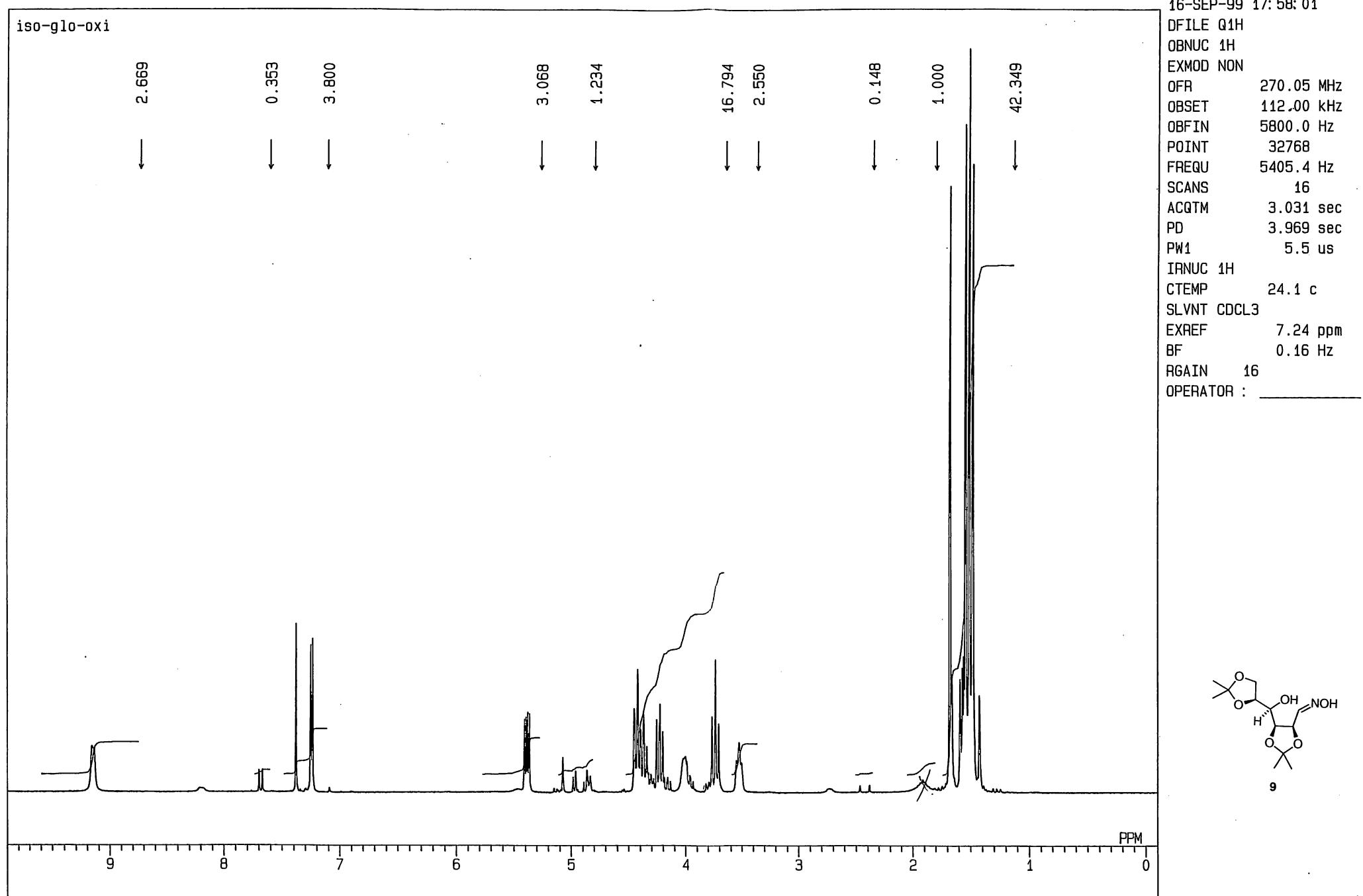
14-SEP-99 19:58:13

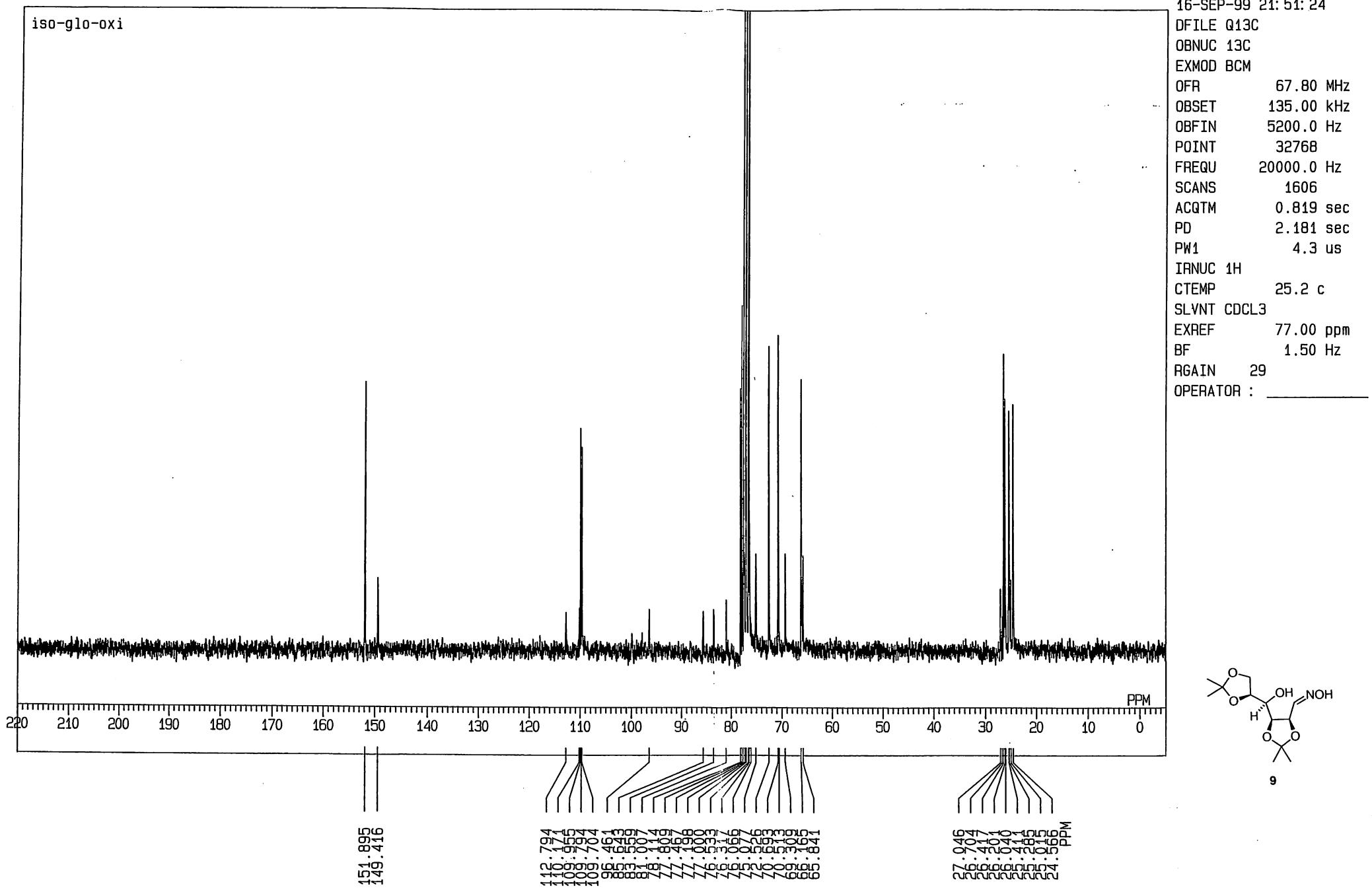
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DFILE Q13C
OBNUC 13C
EXMOD BCM
OFR      67.80 MHz
OBSET    135.00 kHz
OBFIN    5200.0 Hz
POINT    32768
FREQU   20000.0 Hz
SCANS    1597
ACQTM    0.819 sec
PD       2.181 sec
PW1      4.3 us
IRNUC 1H
CTEMP    25.1 c
SLVNT CDCL3
EXREF    77.00 ppm
BF       1.50 Hz
RGAIN    30
OPERATOR :

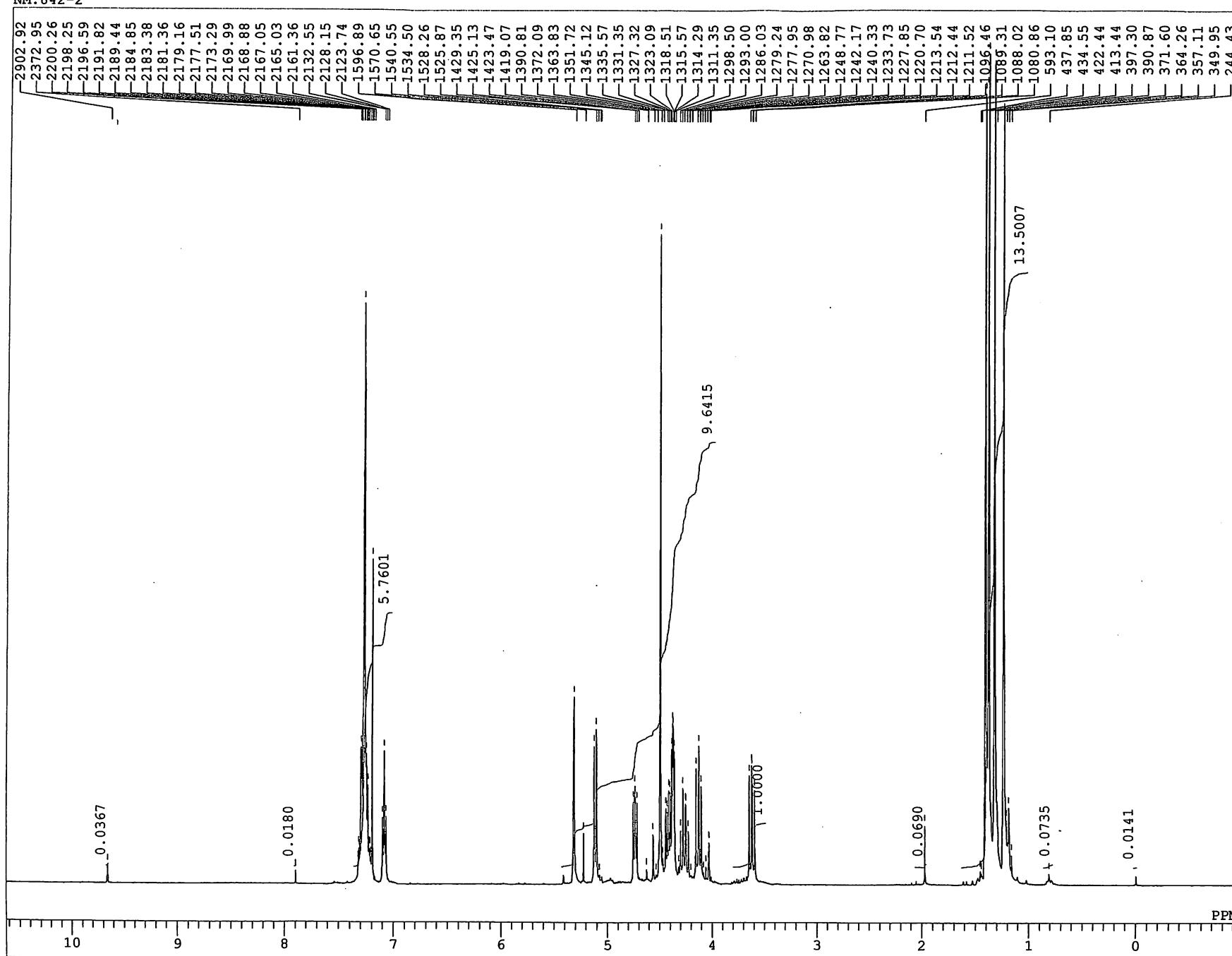
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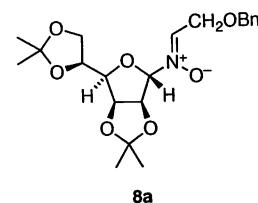
D:\842\2-non.als  
NM.842-2



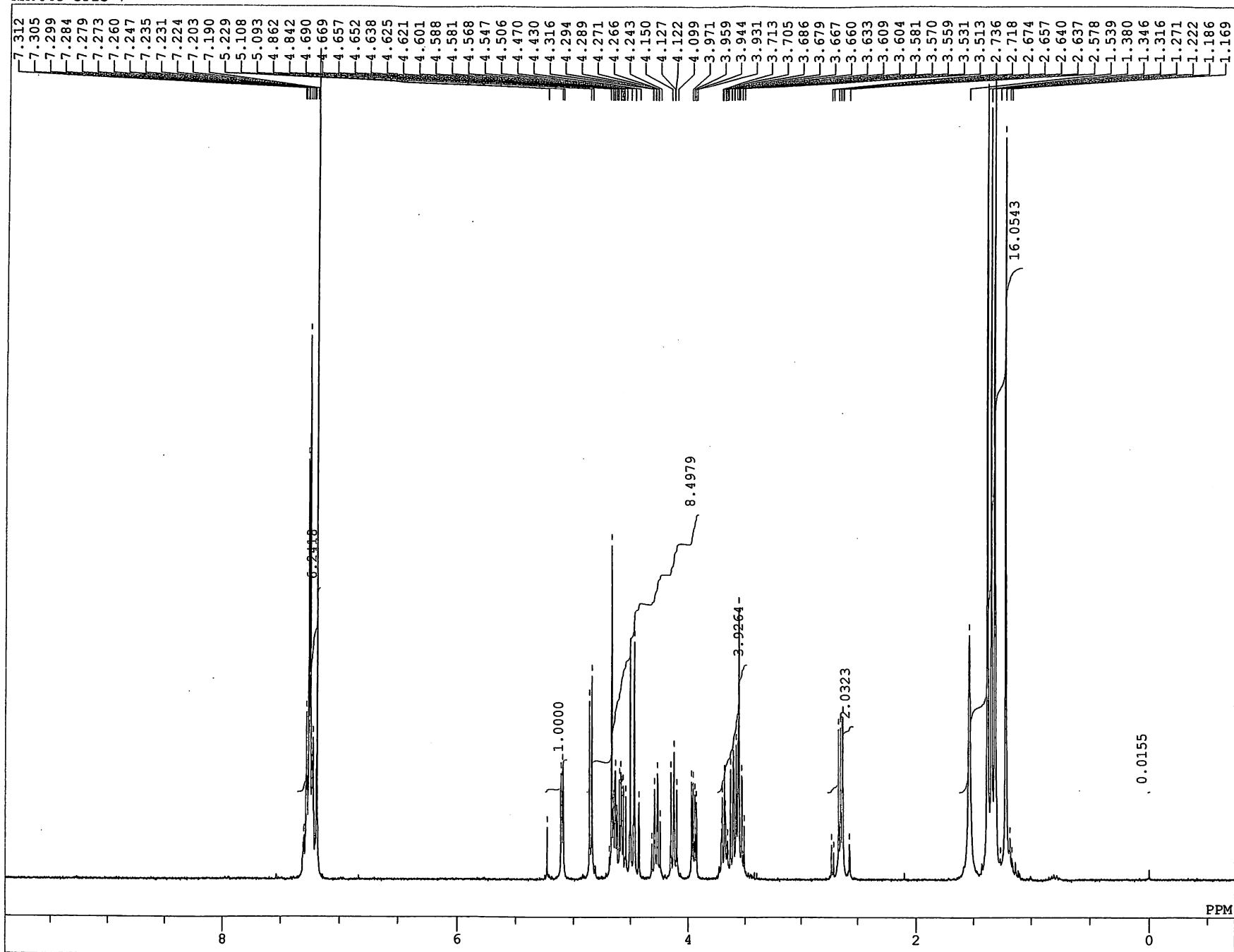
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DFILE D:\842\2-non.als
COMNT NM.842-2
DATIM Thu Jan 21 13:36:42 1995
OBNUC 1H
EXMOD NON
OBFRQ      300.40 MHz
OBSET      130.00 KHz
OBFIN      1150.0 Hz
POINT      32768
FREQU      6013.2 Hz
SCANS      16
ACQTM      5.449 sec
PD         1.551 sec
PW1         5.8 us
IRNUC      1H
CTEMP      24.3 c
SLVNT      CDCL3
EXREF      0.00 ppm
BF          0.09 Hz
RGAIN      15

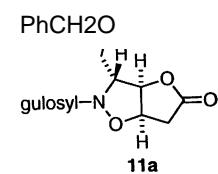
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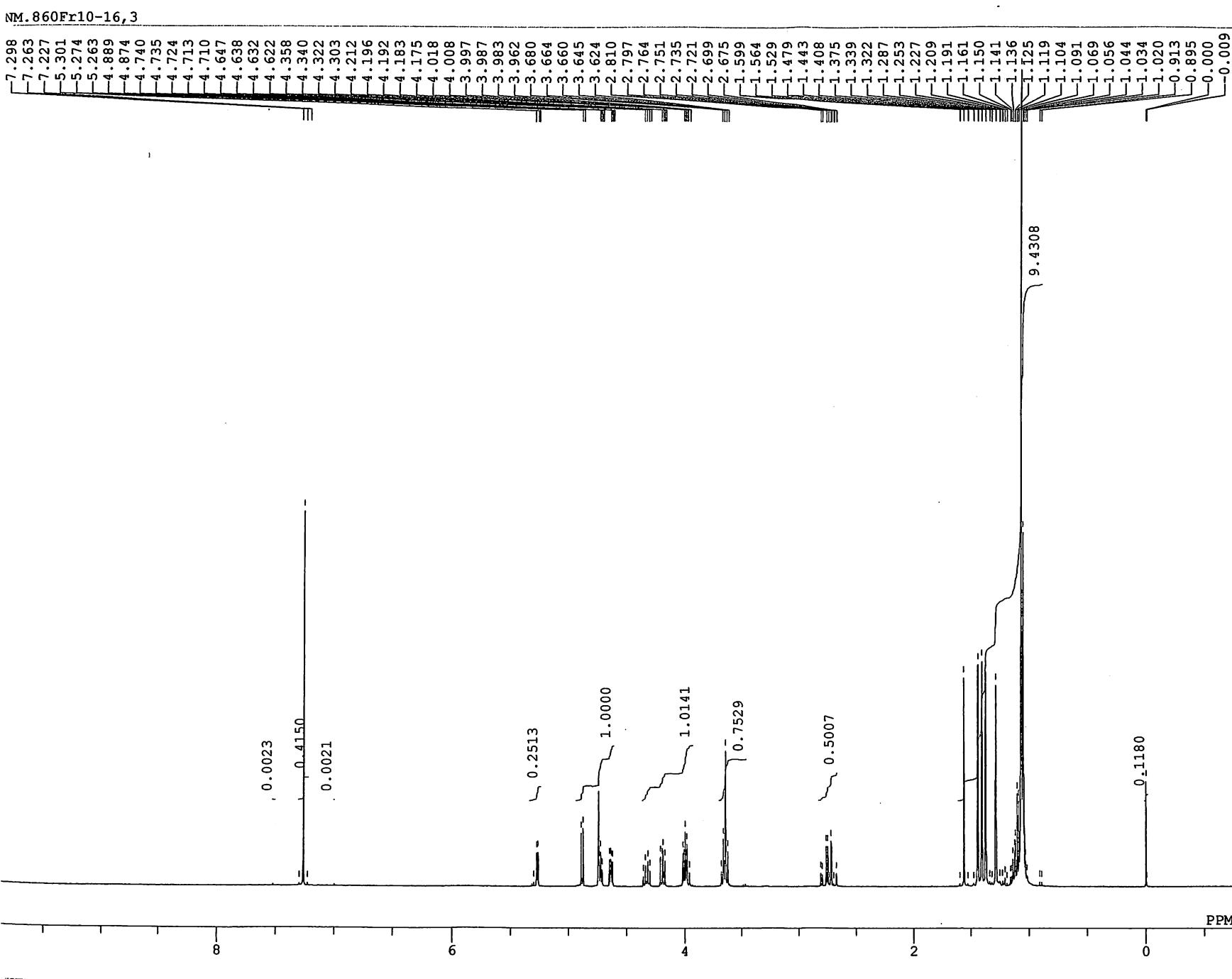


NM.845-3Fr5-7

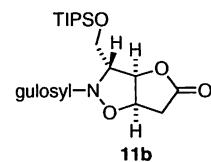


DFILE C:\WINNMR95\COMMON\\_DEFF  
COMNT NM.845-3Fr5-7  
DATIM Wed Mar 03 21:22:35 1995  
OBNUC 1H  
EXMOD NON  
OBFRQ 300.40 MHz  
OBSET 130.00 KHz  
OBFIN 1150.0 Hz  
POINT 32768  
FREQU 6013.2 Hz  
SCANS 16  
ACQTM 5.449 sec  
PD 1.551 sec  
PW1 5.8 us  
IRNUC 1H  
CTEMP 23.8 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.09 Hz  
RGAIN 20

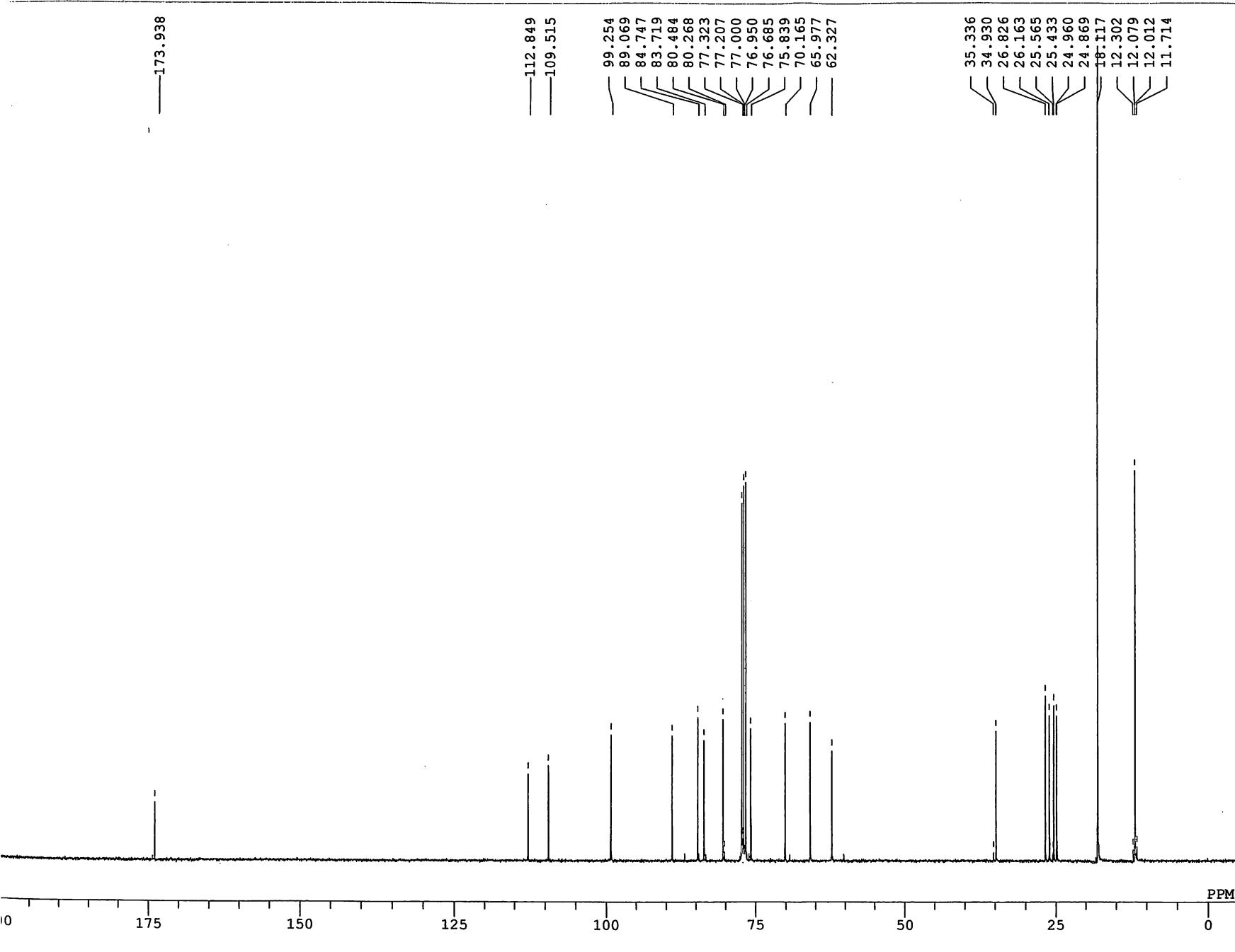




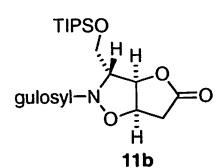
DFILE C:\WINNMR95\COMMON\\_DEFAULT.  
COMNT NM.860Fr10-16, 3  
DATIM Thu Jan 27 18:52:47 2000  
OBNUC 1H  
EXMOD NON  
OBFRQ 399.65 MHz  
OBSET 124.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 8000.0 Hz  
SCANS 16  
ACQTM 4.096 sec  
PD 3.967 sec  
PW1 5.0 us  
IRNUC 1H  
CTEMP 25.0 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.12 Hz  
RGAIN 19



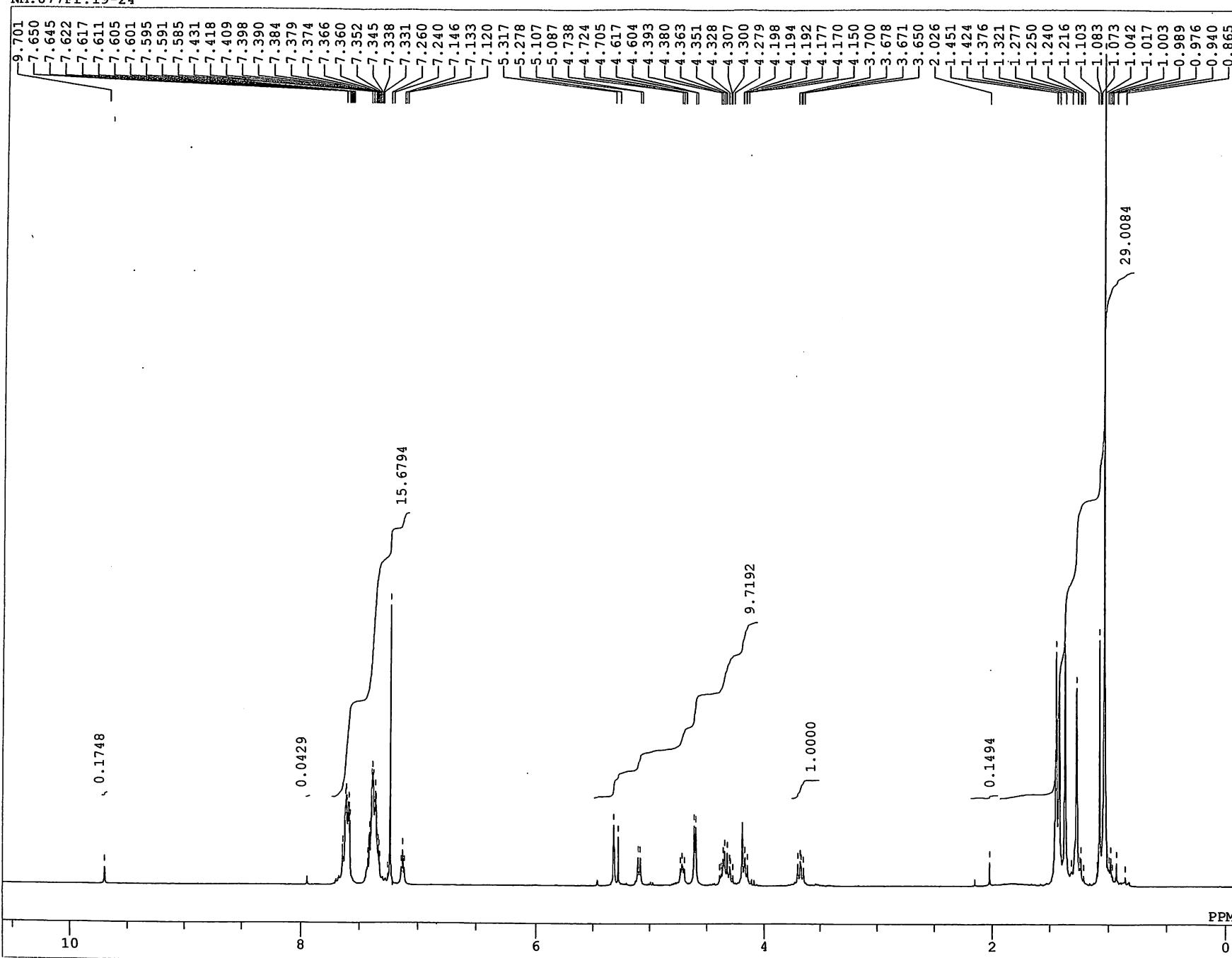
NM.860Fr10-16, 3



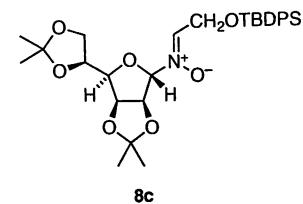
DFILE C:\WINNMR95\TEMPDATA\AUTO2BC  
COMNT NM.860Fr10-16, 3  
DATIM Fri Jan 28 00:04:37 2000  
OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 4096  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC 1H  
CTEMP 30.0 c  
SLVNT CDCL3  
EXREF 77.00 ppm  
BF 1.20 Hz  
RGAIN 26



NM.877Fr.19-24

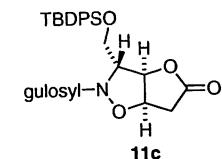
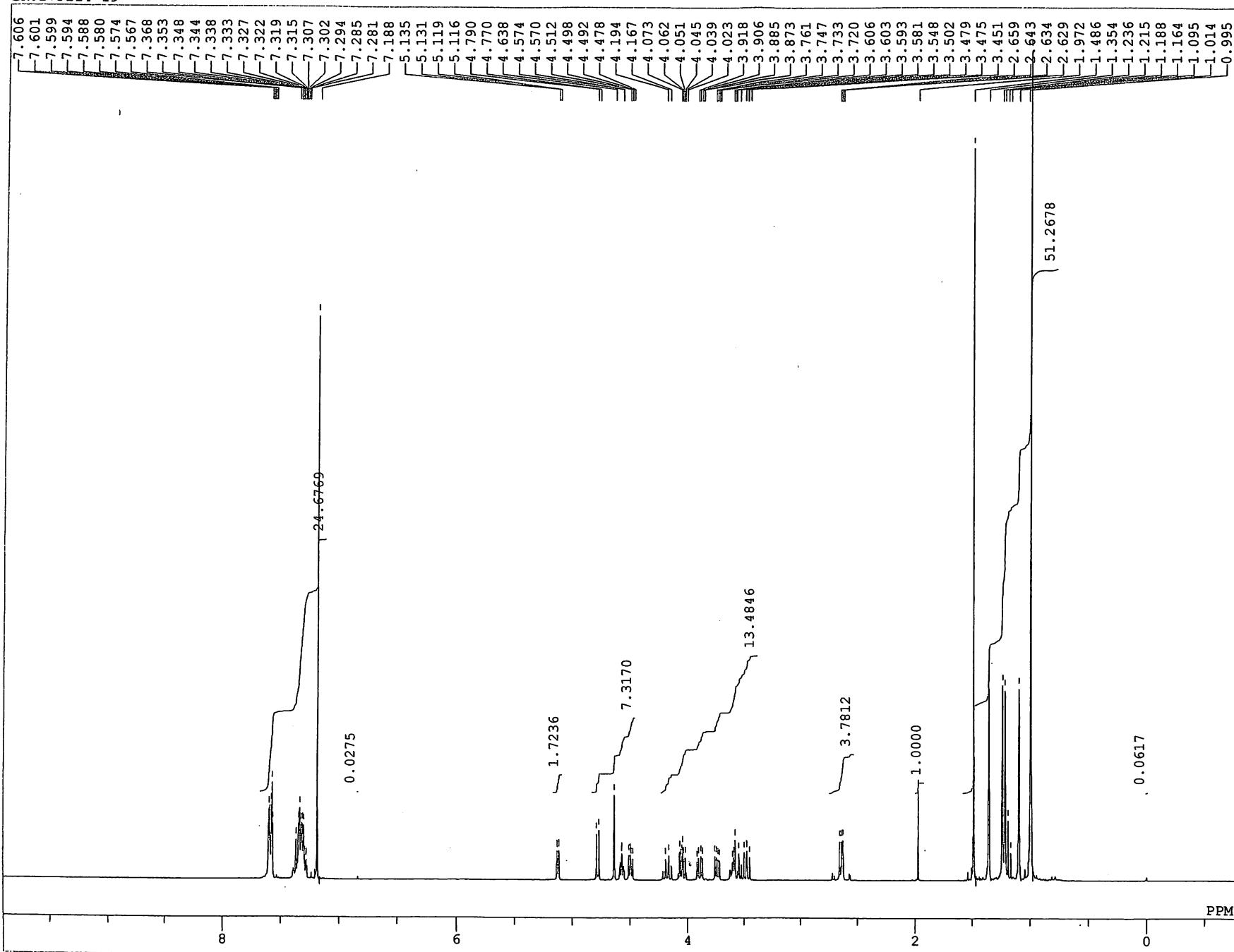


DFILE C:\WINNMR95\COMMON\\_DEFF  
COMNT NM.877Fr.19-24  
DATIM Wed Mar 03 14:53:39 1995  
OBNUC 1H  
EXMOD NON  
OBFRQ 300.40 MHz  
OBSET 130.00 kHz  
OBFIN 1150.0 Hz  
POINT 32768  
FREQU 6013.2 Hz  
SCANS 16  
ACQTM 5.449 sec  
PD 1.551 sec  
PW1 5.8 us  
IRNUC 1H  
CTEMP 24.5 c  
S1VNT CDCL3  
EXREF 7.24 ppm  
BF 0.12 Hz  
RGAIN 18

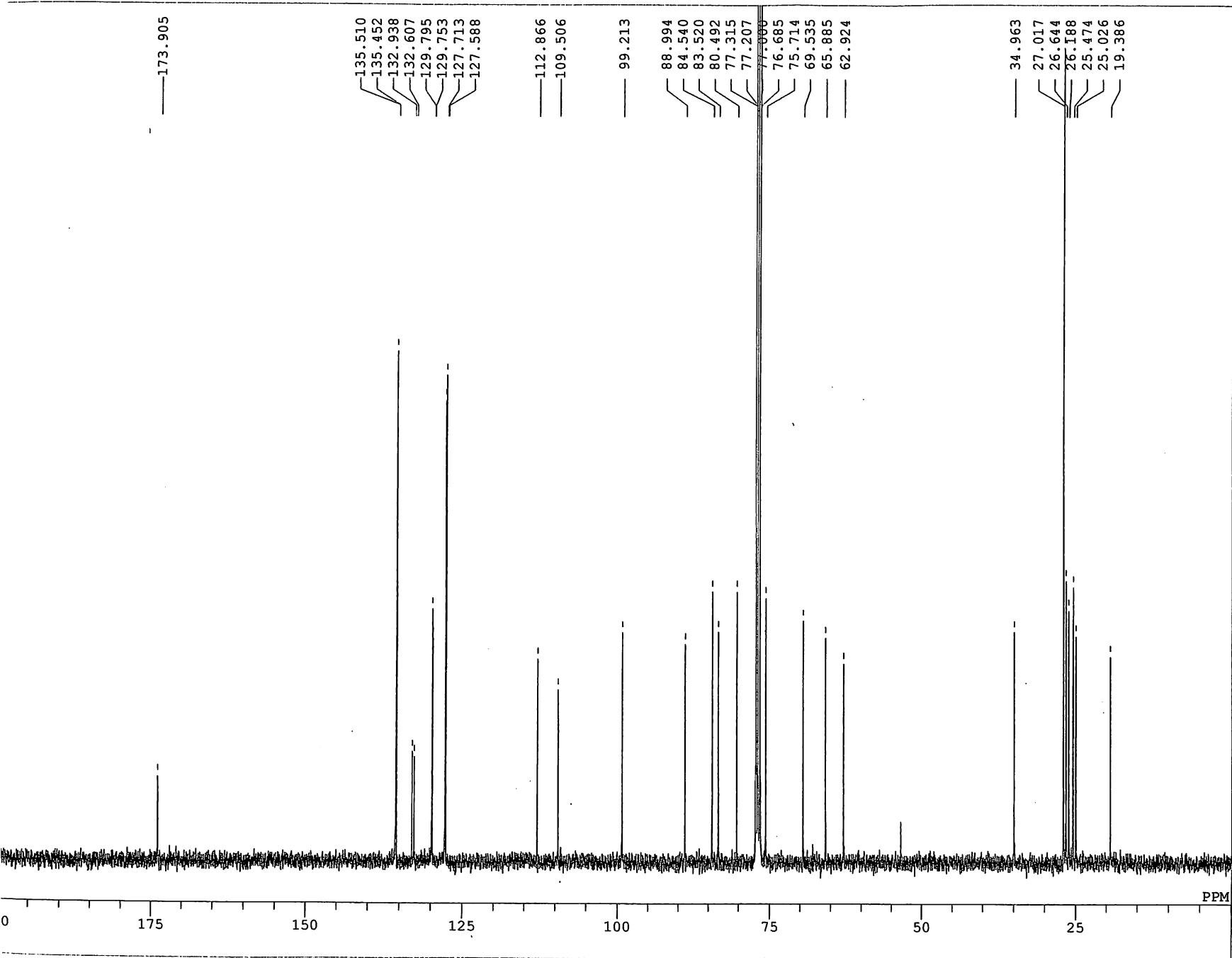


8c

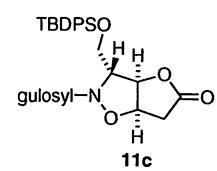
SK.27Fr14-19



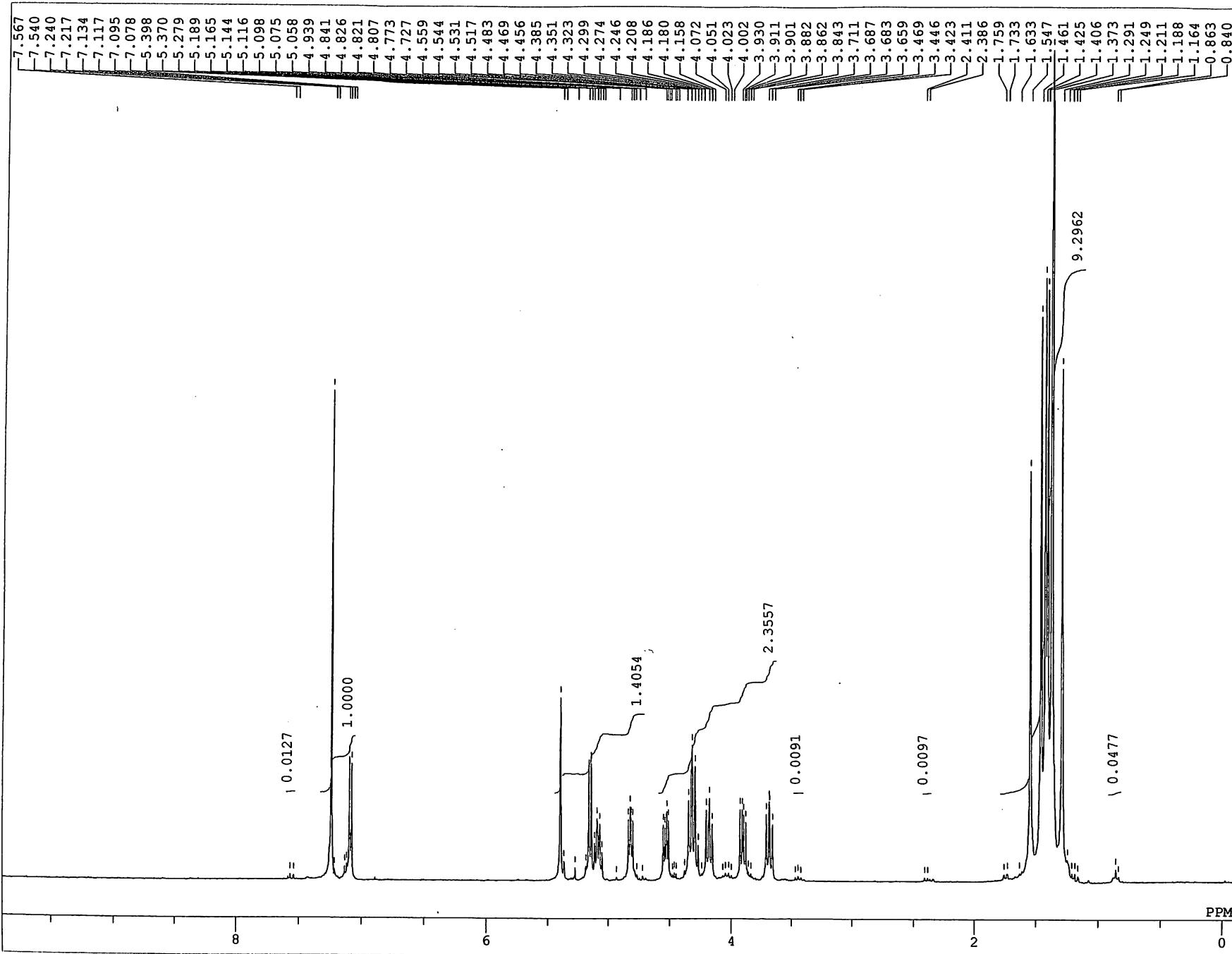
DFILE C:\WINNMR95\COMMON\DEFF  
COMNT SK.27Fr14-19  
DATIM Tue Aug 24 19:09:05 1995  
OBNUC 1H  
EXMOD NON  $\delta^{1H}, \delta^3J$   
OBFRQ  $\nu = 300.40$  MHz  
OBSET 130.00 KHz  
OBFIN 1150.0 Hz  
POINT 32768  
FREQU 6013.2 Hz  
SCANS 16  
ACQTM 5.449 sec  
PD 1.551 sec  
PW1 5.8 us  
IRNUC 1H  
CTEMP 28.7 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.12 Hz  
RGAIN 18



DFILE C:\WINNMR95\TEMPDATA\AUTO2BC  
COMNT SK.27  
DATIM Tue Sep 07 22:36:16 1999  
OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 2048  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC 1H  
CTEMP 29.8 c  
SLVNT CDCL3  
EXREF 77.00 ppm  
BF 1.20 Hz  
RGAIN 26



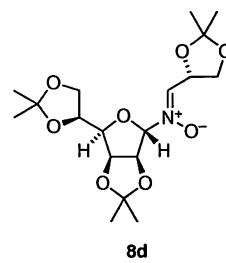
NM. 858



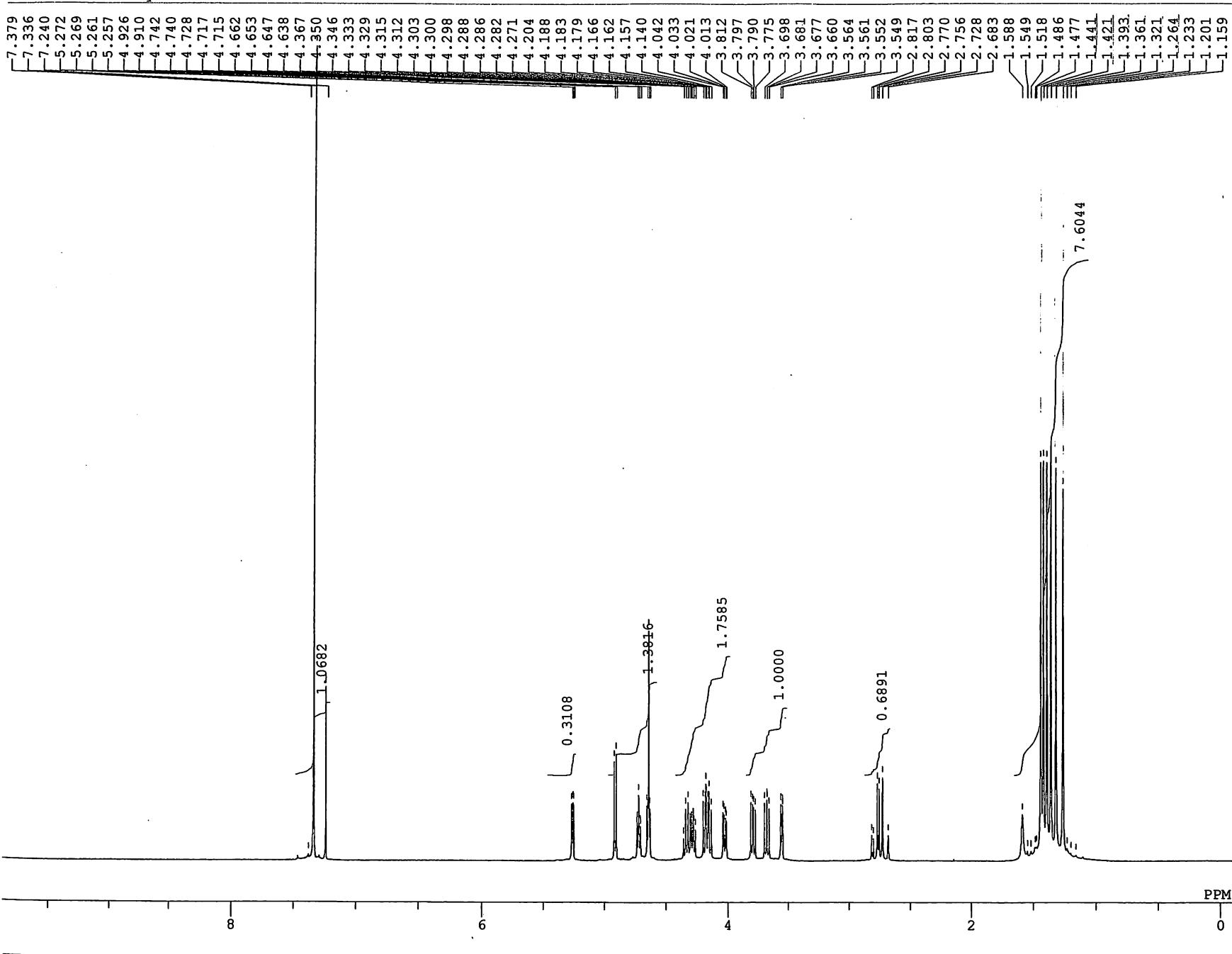
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DFILE C:\WINNMR95\COMMON\_DEFF
COMNT NM.858
DATIM Sat Jan 30 15:04:30 1999
OBNUC 1H
EXMOD NON
OBFRQ      300.40 MHz
OBSET      130.00 KHz
OBFIN      1150.0 Hz
POINT      32768
FREQU      6013.2 Hz
SCANS      16
ACQTM      5.449 sec
PD          1.551 sec
PW1          5.8 us
IRNUC      1H
CTEMP      23.8 c
SLVNT      CDCL3
EXREF      7.24 ppm
BF          0.62 Hz
RGAIN      20

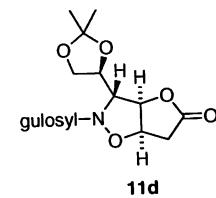
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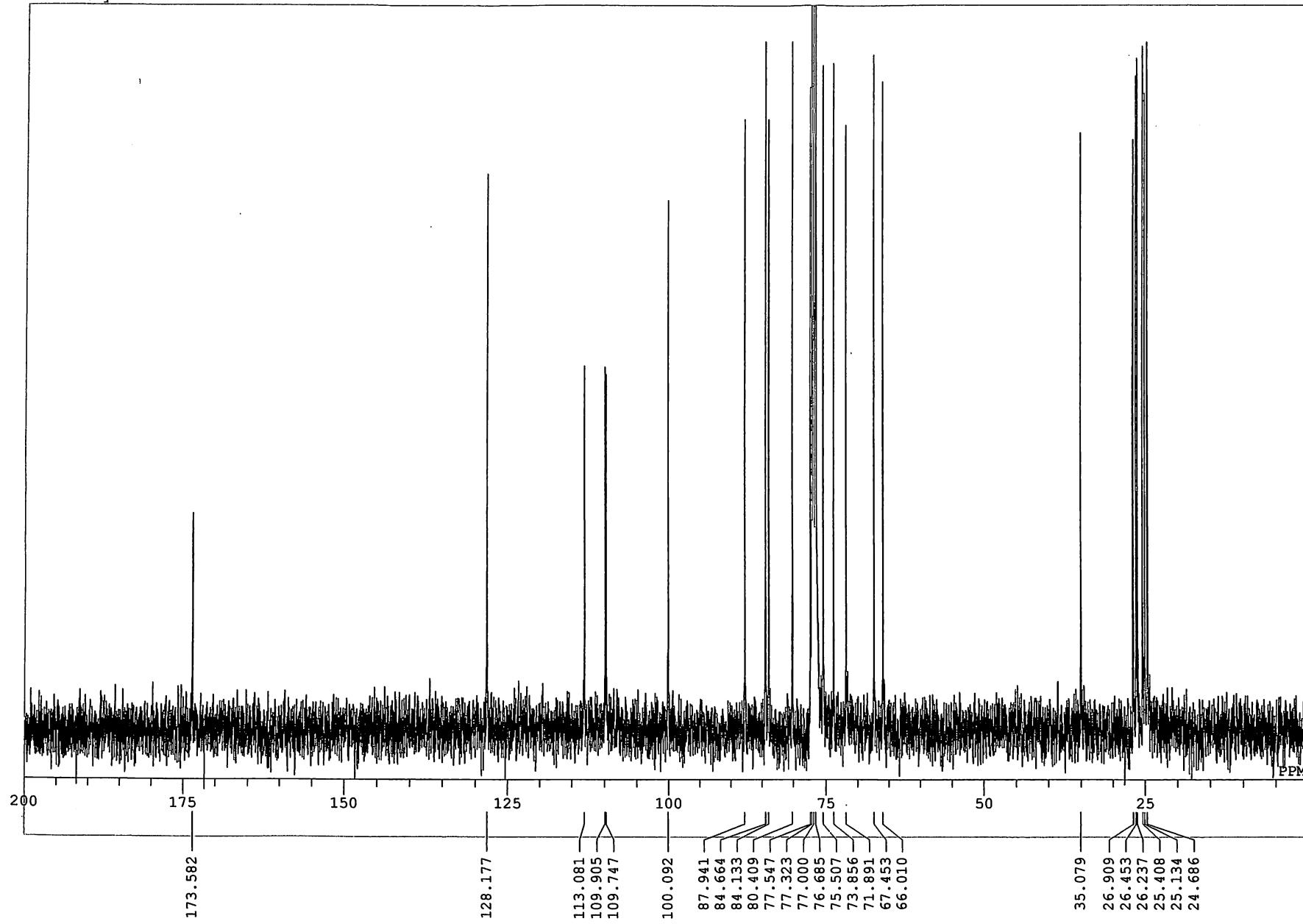
NM.832Fr9-14recry



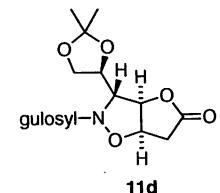
FILE C:\WINNMR95\COMMON\\_DEFAULT.  
COMNT NM.832Fr9-14recry  
DATIM Tue Dec 22 15:43:18 1998  
OENUC 1H  
EXMOD NON  
OBFQ 399.65 MHz  
OBSET 124.00 KHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 8000.0 Hz  
SCANS 16  
ACQTM 4.096 sec  
PD 3.967 sec  
PW1 5.0  $\mu$ s  
IRNUC 1H  
CTEMP 25.0 c  
SLVNT CDCL<sub>3</sub>  
EXREF 7.24 ppm  
BF 0.12 Hz  
RGAIN 18



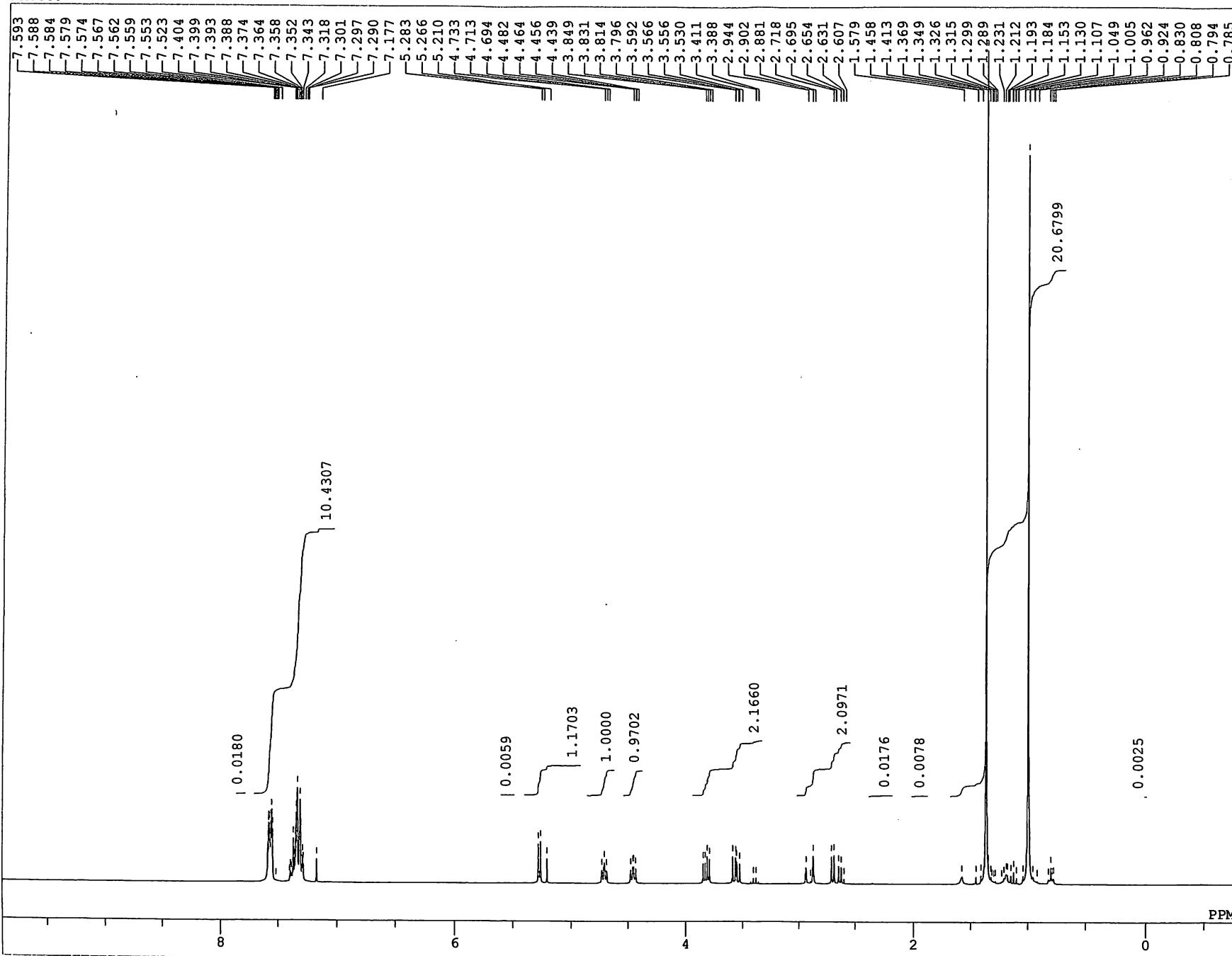
NM.832cry



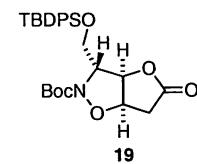
DFILE C:\WINNMR95\TEMPDATA\AU1  
COMNT NM.832cry  
DATIM Tue Dec 22 22:58:37 1996  
OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 2056  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC 1H  
CTEMP 30.0 c  
SLVNT CDCL3  
EXREF 77.00 ppm  
BF 1.20 Hz  
RGAIN 26



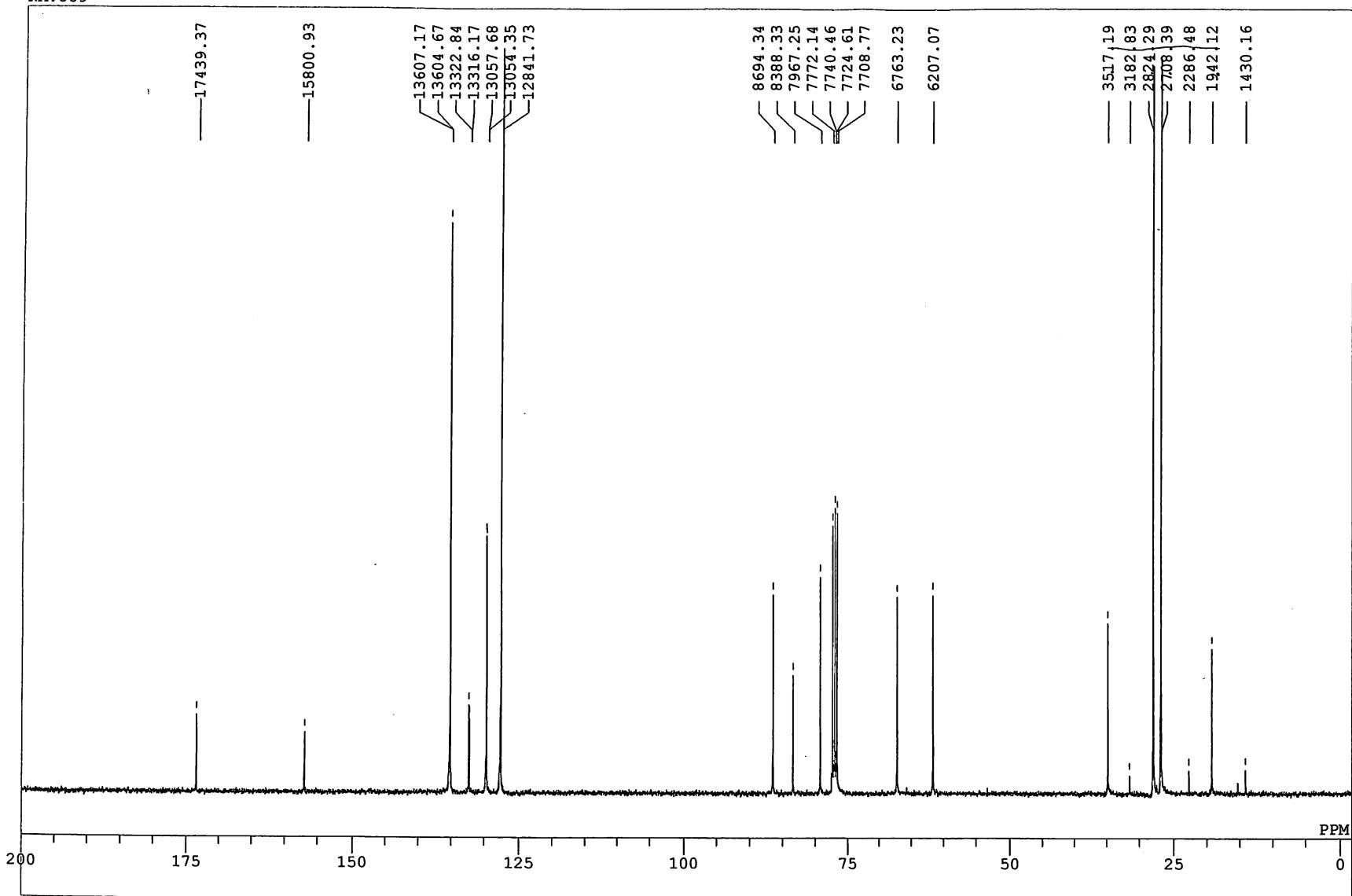
NM.889



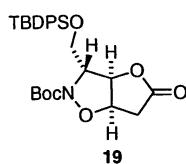
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COMNT NM.889  
DATIM Wed Apr 07 14:08:42 1995  
OBNUC 1H  
EXMOD NON  
OBFRQ 300.40 MHz  
OBSET 130.00 KHz  
OBFIN 1150.0 Hz  
POINT 32768  
FREQU 6002.4 Hz  
SCANS 16  
ACQTM 5.459 sec  
PD 1.551 sec  
PW1 5.8 us  
IRNUC 1H  
CTEMP 25.7 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.09 Hz  
RGAIN 12



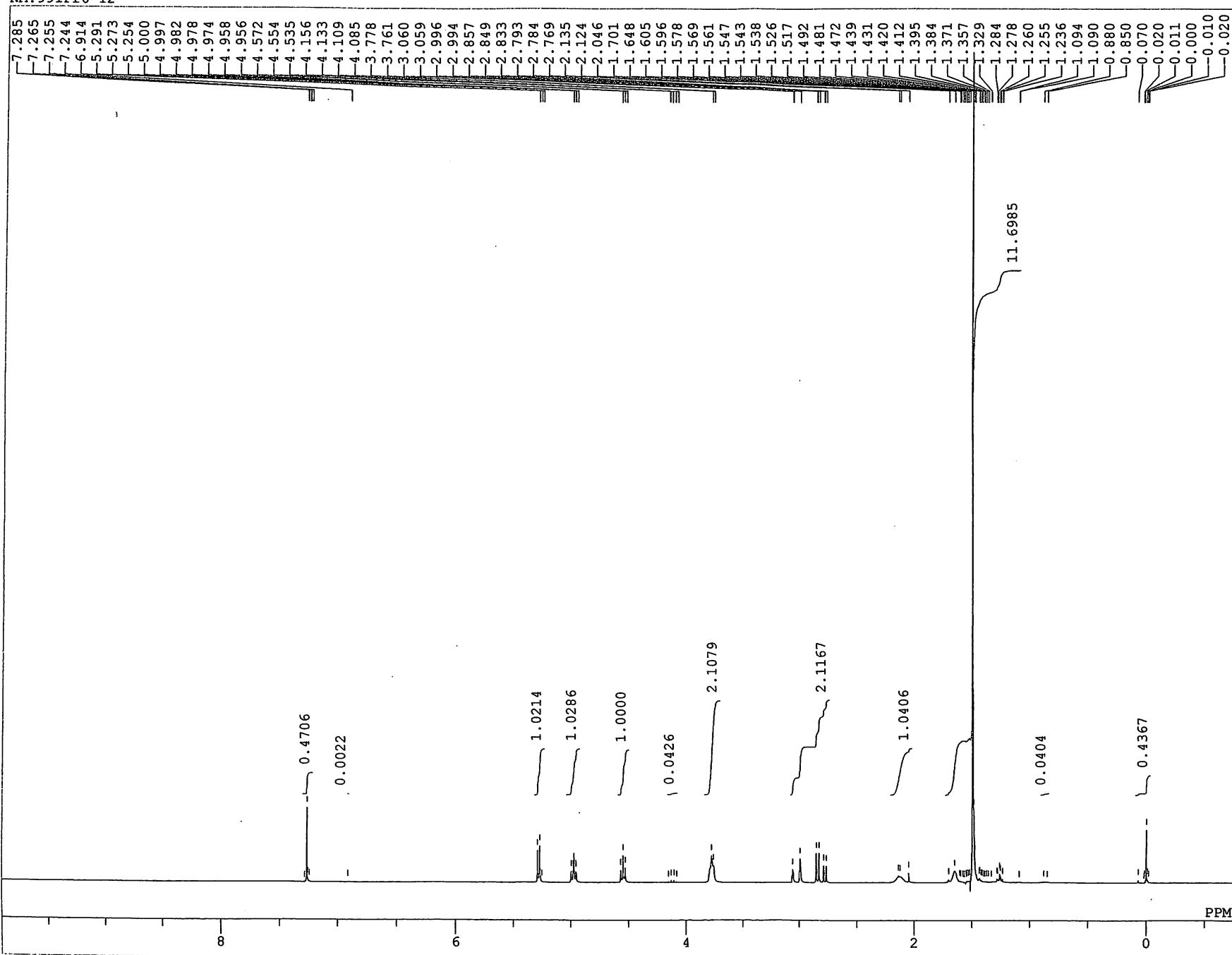
NM.889



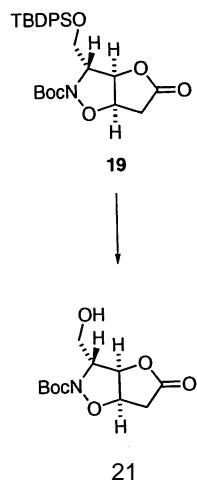
DFILE C:\WINNMR95\TEMPDATA\AUTO2BC  
COMNT NM.889  
DATIM Wed Apr 07 22:57:52 1999  
OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 2048  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC 1H  
CTEMP 29.5 c  
SLVNT CDCL3  
EXREF 77.00 ppm  
BF 1.20 Hz  
RGAIN 24



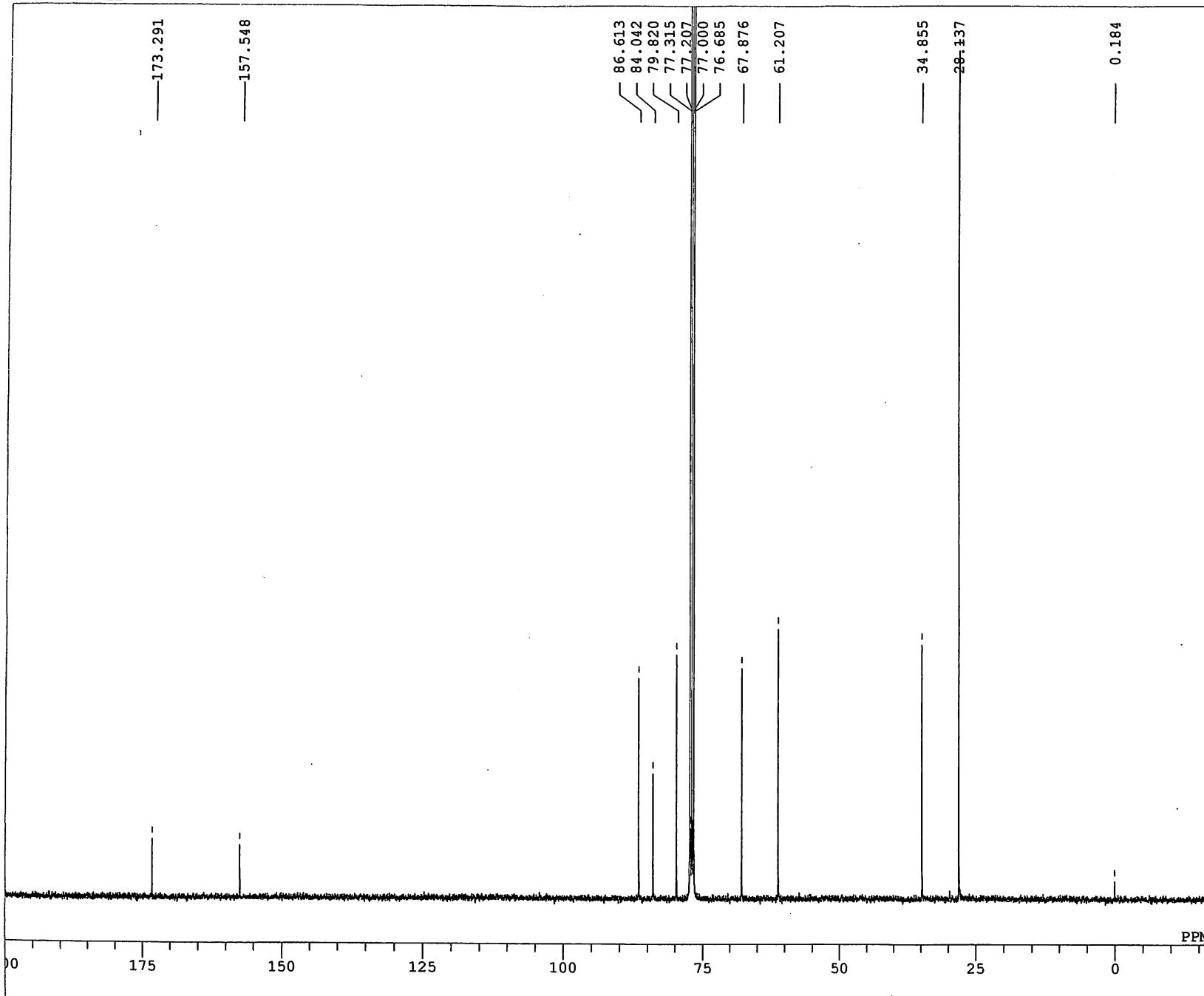
NM.991Fr6-12



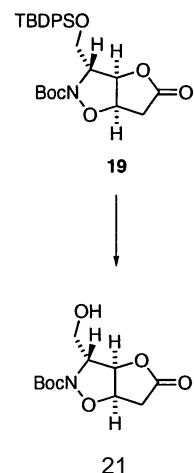
DFILE C:\WINNMR95\COMMON\\_DEFY  
 COMNT NM.991Fr6-12  
 DATIM Wed Oct 20 18:13:55 1995  
 OBNUC 1H  
 EXMOD NON  
 OBFRQ 300.40 MHz  
 OBSET 130.00 KHz  
 OBFIN 1150.0 Hz  
 POINT 32768  
 FREQU 6013.2 Hz  
 SCANS 16  
 ACQTM 5.449 sec  
 PD 1.551 sec  
 PW1 5.8 us  
 IRNUC 1H  
 CTEMP 24.4 c  
 SLVNT CDCL3  
 EXREF 0.00 ppm  
 BF 0.09 Hz  
 RGAIN 16

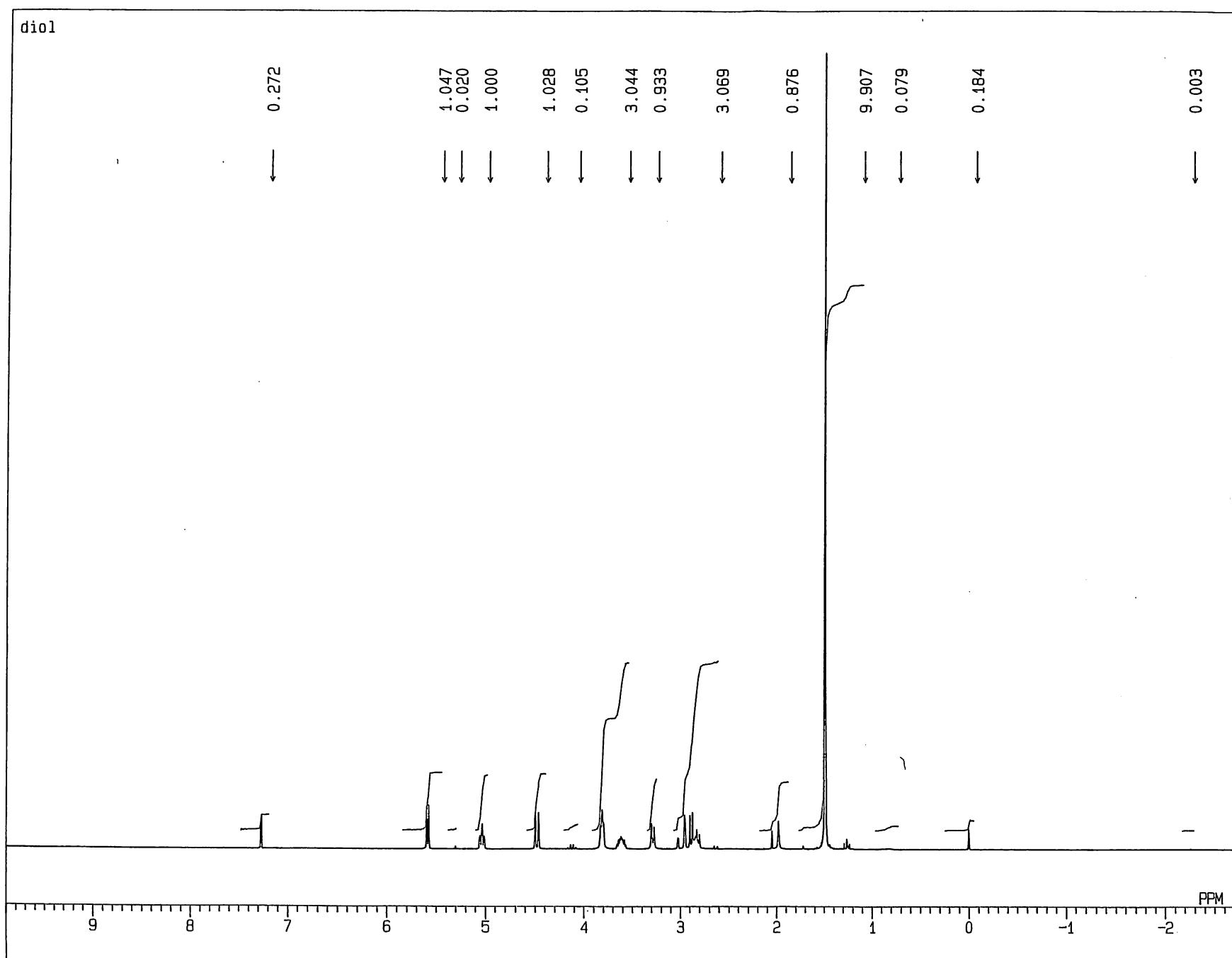


NM.991Fr6-12

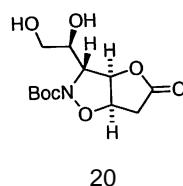


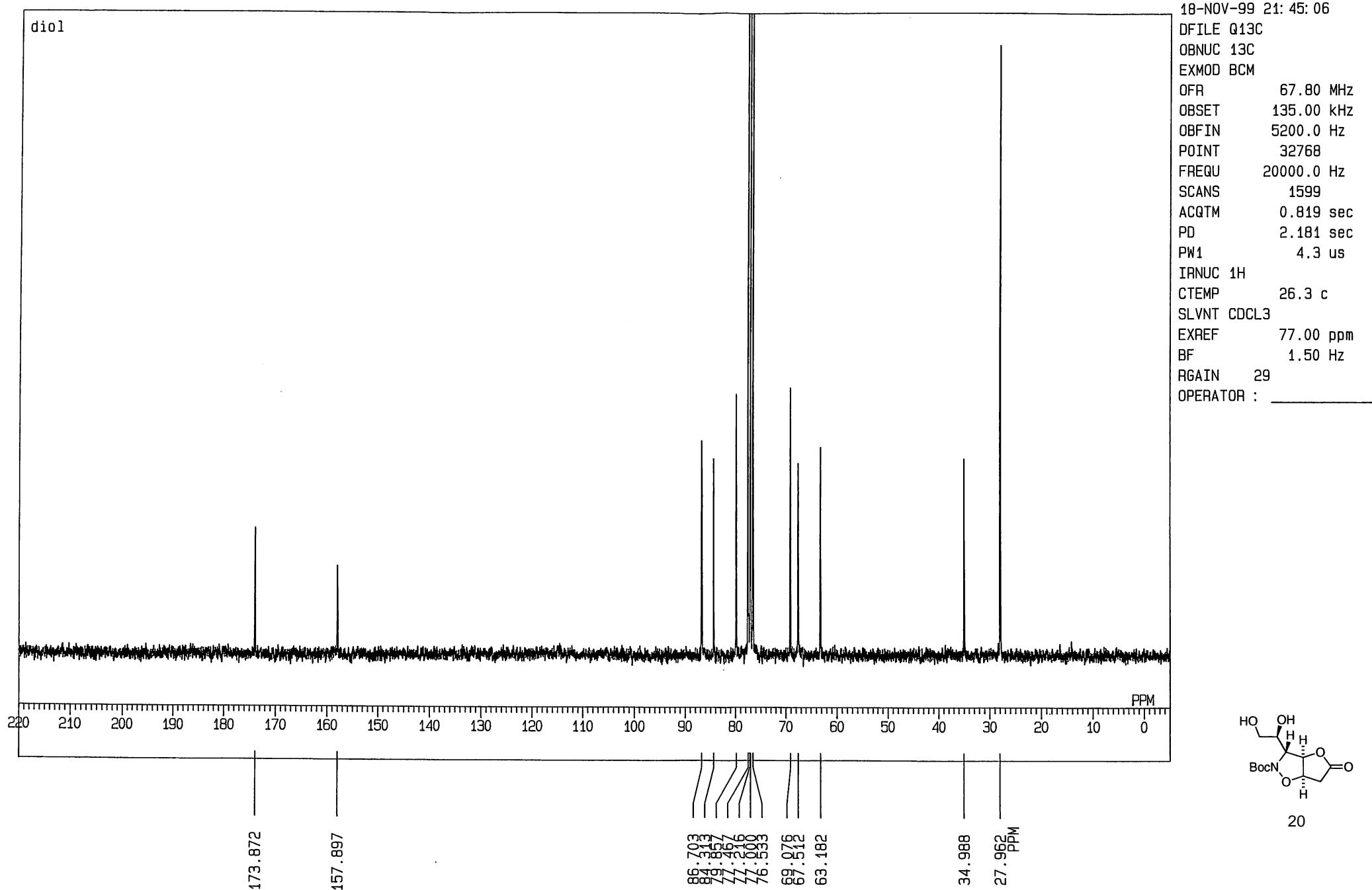
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COMNT NM.991Fr6-12  
DATIM Sat Oct 23 05:26:08 1999  
OBNUC <sup>13</sup>C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 KHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 10000  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC <sup>1H</sup>  
CTEMP 30.2 c  
SLVNT CDCL<sub>3</sub>  
EXREF 77.00 ppm  
BF 1.20 Hz  
RGAIN 26



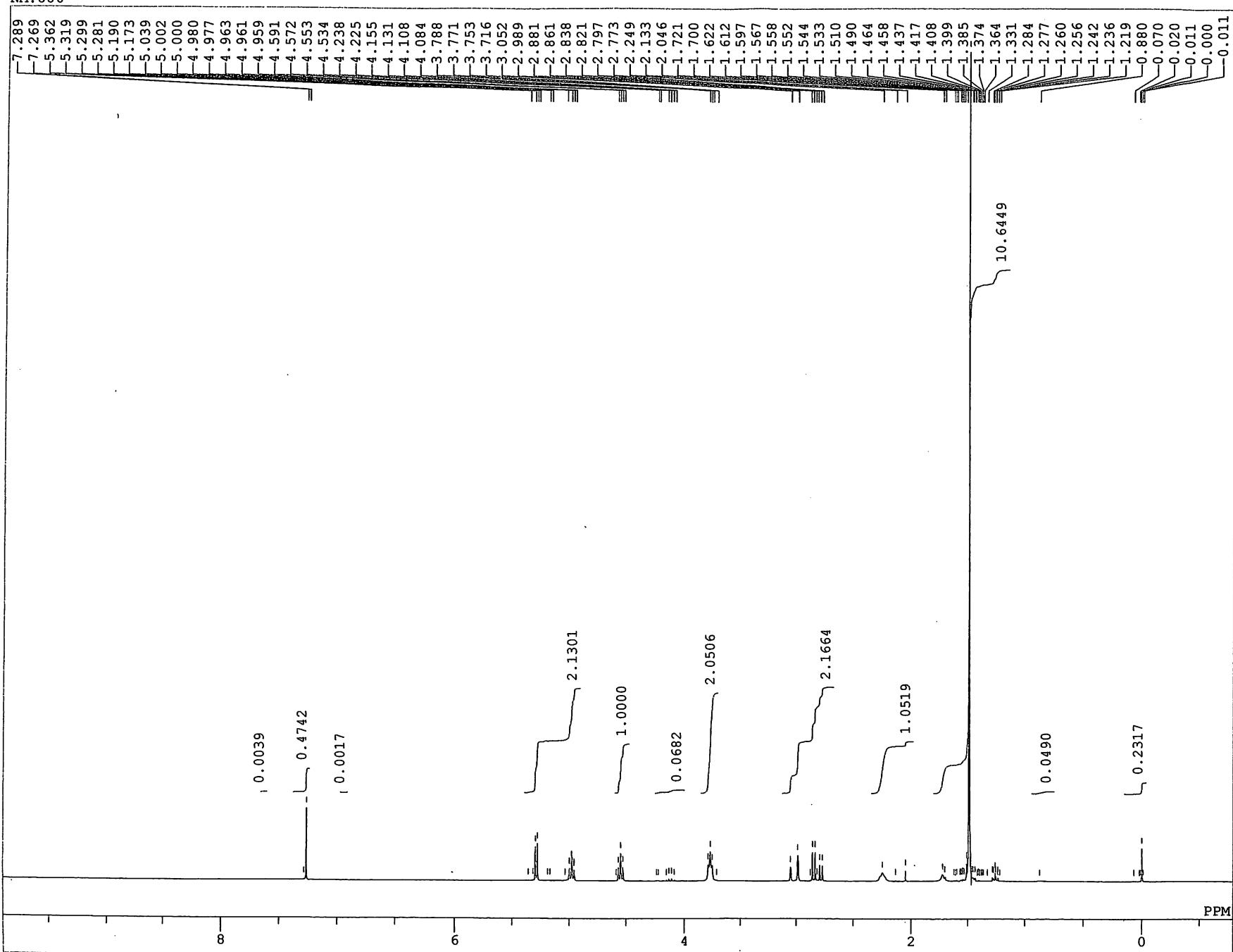


18-NOV-99 18: 09: 20  
DFILE Q1H  
OBNUC 1H  
EXMOD NON  
OFR 270.05 MHz  
OBSET 112.00 kHz  
OBFIN 5800.0 Hz  
POINT 32768  
FREQU 5405.4 Hz  
SCANS 16  
ACQTM 3.031 sec  
PD 3.969 sec  
PW1 5.5 us  
IRNUC 1H  
CTEMP 24.8 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.16 Hz  
RGAIN 17  
OPERATOR : \_\_\_\_\_

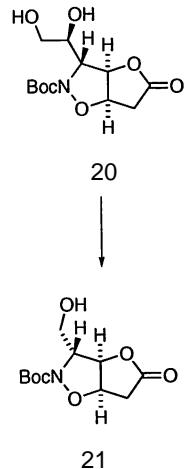




NM.886



DFILE C:\WINNMR95\COMMON\\_DEFF  
COMNT NM.886  
DATIM Thu Oct 21 11:43:29 1995  
OBNUC 1H  
EXMOD NON  
OBFRQ 300.40 MHz  
OBSET 130.00 KHz  
OBFIN 1150.0 Hz  
POINT 32768  
FREQU 6013.2 Hz  
SCANS 16  
ACQTM 5.449 sec  
PD 1.551 sec  
PW1 5.8 us  
IRNUC 1H  
CTEMP 24.4 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.09 Hz  
RGAIN 15



NM.886

21-OCT-99 20: 44: 19

DFILE Q13C

OBNUC 13C

EXMOD BCM

OFR 67.80 MHz

OBSET 135.00 kHz

OBFIN 5200.0 Hz

POINT 32768

FREQU 20000.0 Hz

SCANS 1600

ACQTM 0.819 sec

PD 2.181 sec

PW1 4.3 us

IRNUC 1H

CTEMP 25.7 c

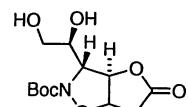
SLVNT CDCL3

EXREF 77.00 ppm

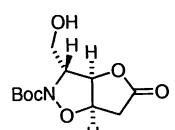
BF 1.50 Hz

RGAIN 30

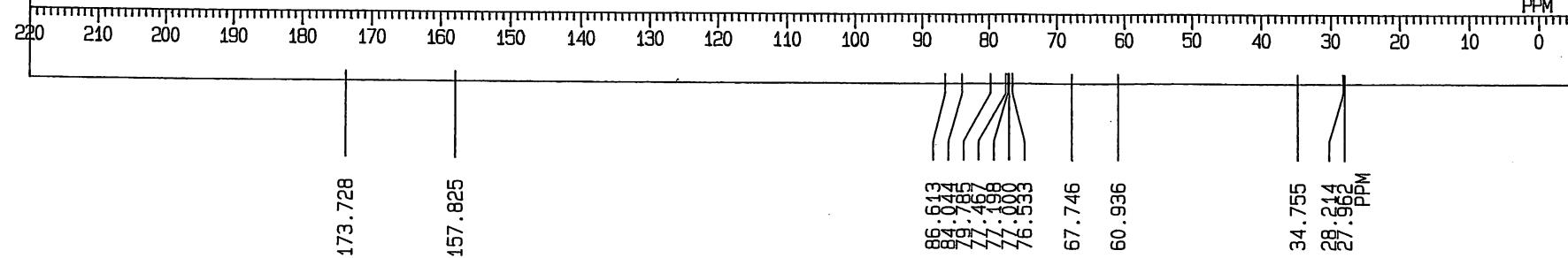
OPERATOR : \_\_\_\_\_



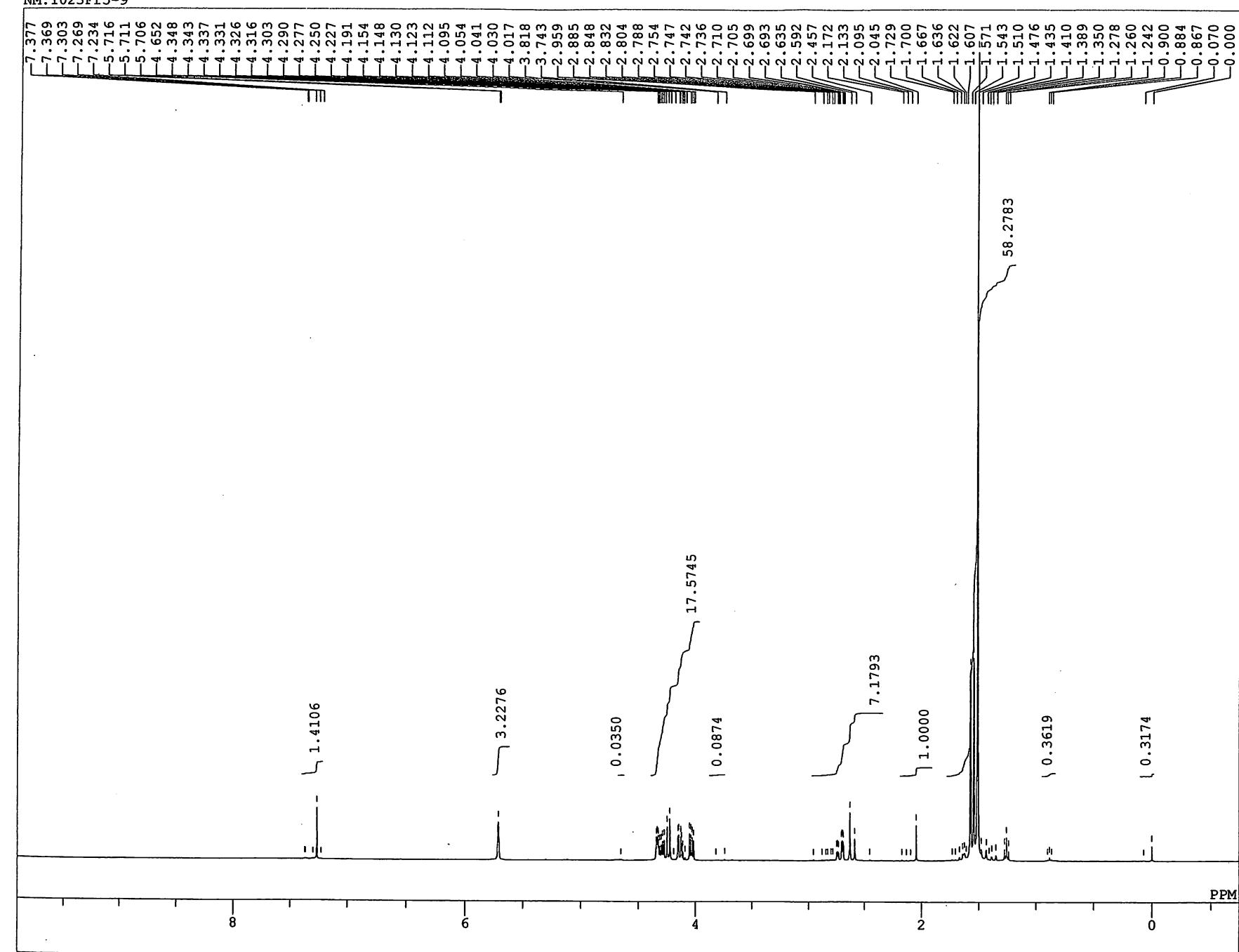
20



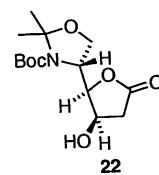
21



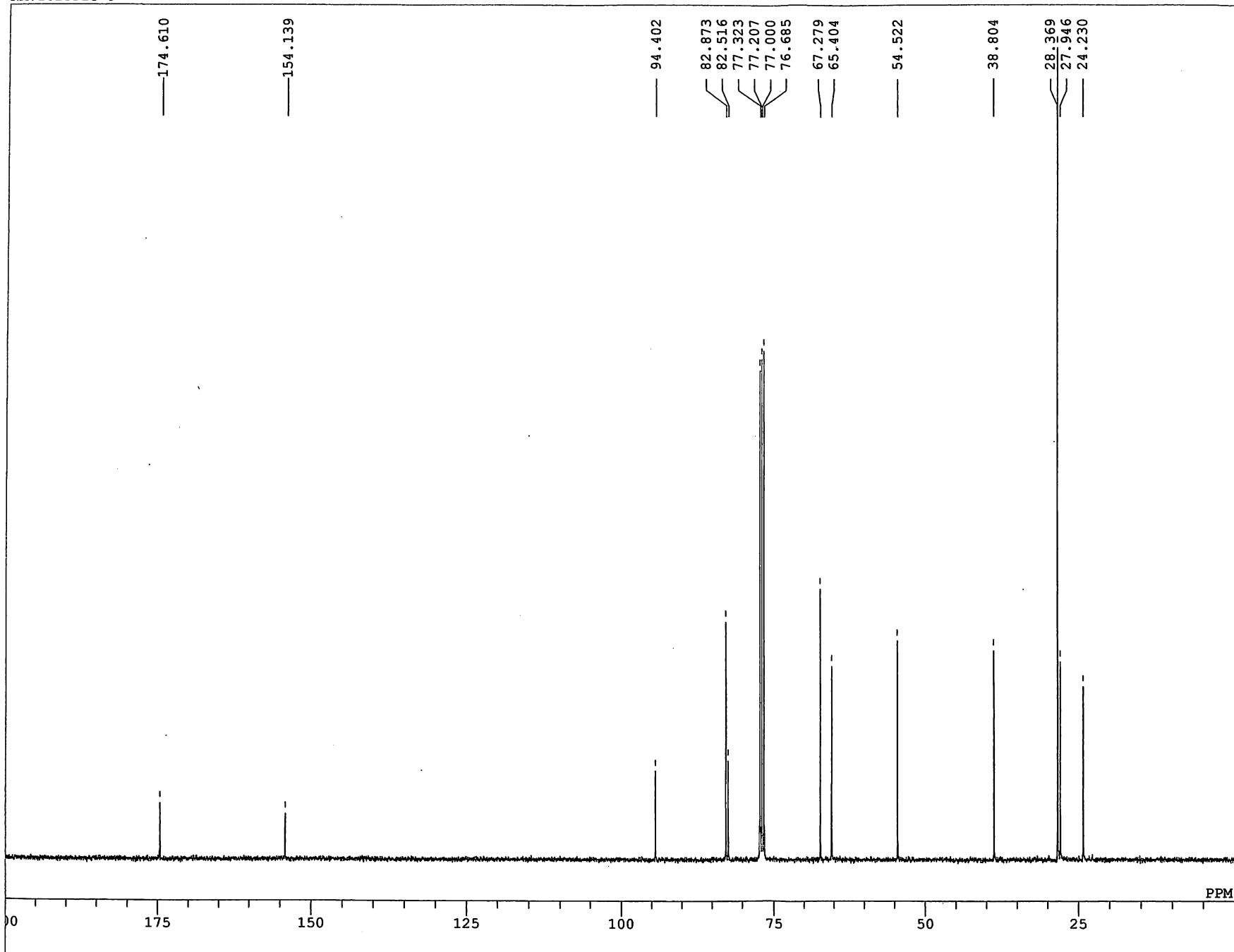
NM.1023Fr5-9



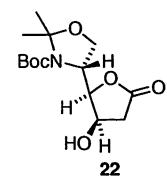
DFILE C:\WINNMR95\COMMON\\_DEFAULT.  
COMNT NM.1023Fr5-9  
DATIM Fri Jan 21 10:27:27 2000  
OBNUC 1H  
EXMOD NON  
OBFRQ 399.65 MHz  
OBSET 124.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 8000.0 Hz  
SCANS 16  
ACQTM 4.096 sec  
PD 3.967 sec  
PW1 5.0 us  
IRNUC 1H  
CTEMP 25.0 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.12 Hz  
RGAIN 16

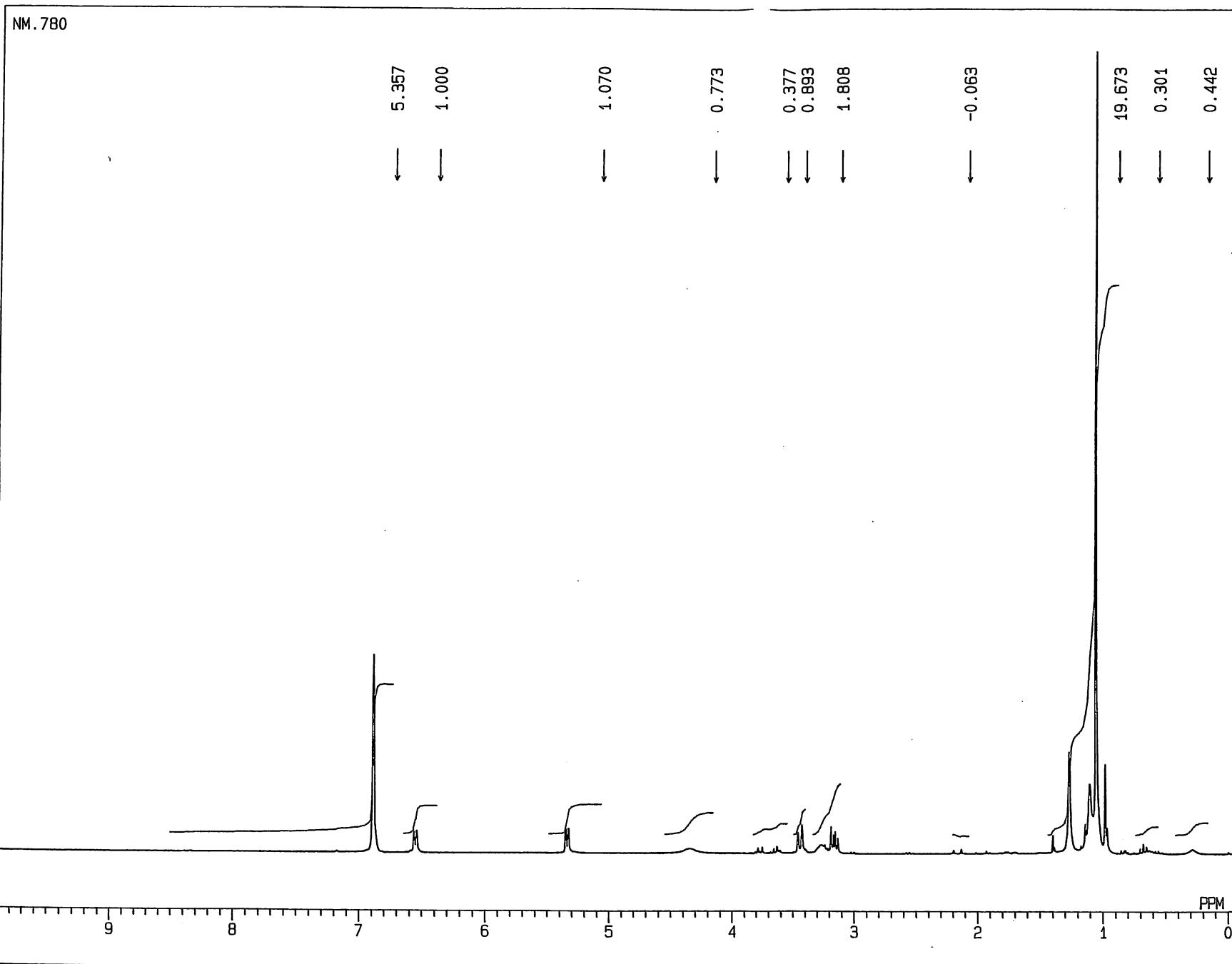


NM.1023Fr5-9

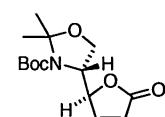


DFILE C:\WINNMR95\TEMPDATA\AUTO2BC  
COMNT NM.1023Fr5-9  
DATIM Sat Jan 22 00:06:16 2000  
OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 4096  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC 1H  
CTEMP 30.2 c  
SLVNT CDCL3  
EXREF 77.00 ppm  
BF 1.20 Hz  
RGAIN 26



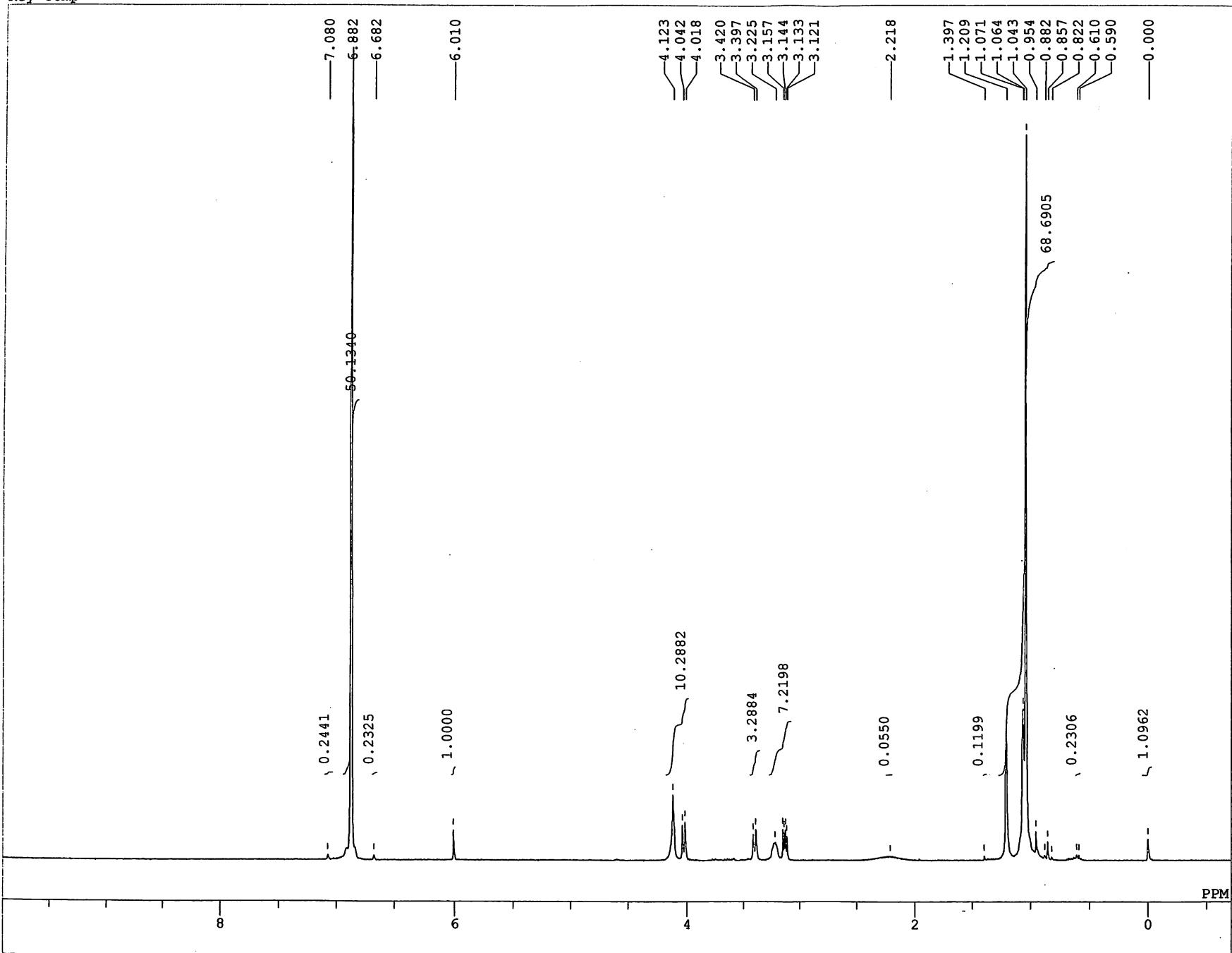


04-NOV-98 19: 41: 11  
DFILE Q1H  
OBNUC 1H  
EXMOD NON  
OFR 270.05 MHz  
OBSET 112.00 kHz  
OBFIN 5800.0 Hz  
POINT 32768  
FREQU 5405.4 Hz  
SCANS 16  
ACQTM 3.031 sec  
PD 3.969 sec  
PW1 5.5 us  
IRNUC 1H  
CTEMP 59.9 c  
SLVNT C6D6  
EXREF 0.00 ppm  
BF 0.16 Hz  
RGAIN 18  
OPERATOR : \_\_\_\_\_

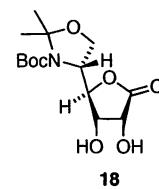


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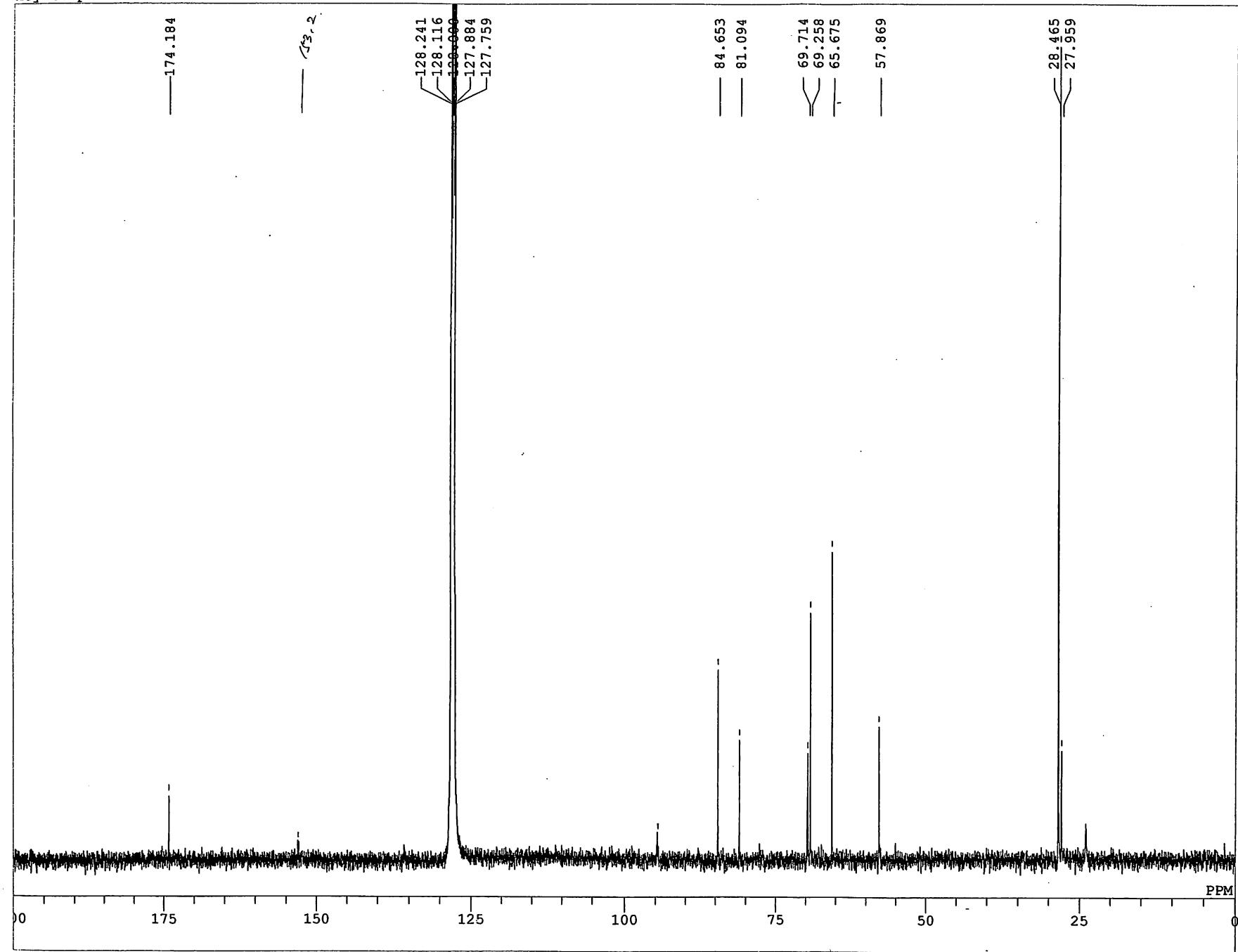
Key Comp



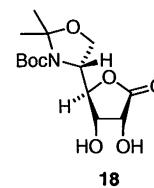
DFILE C:\WINNMR95\TEMPDATA\AUTO1NC  
COMNT Key Comp  
DATIM Fri Jan 28 17:29:29 2000  
OBNUC 1H  
EXMOD NON  
OBFRQ 399.65 MHz  
OBSET 124.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 8000.0 Hz  
SCANS 16  
ACQTM 4.096 sec  
PD 3.967 sec  
PW1 5.0 us  
IRNUC 1H  
CTEMP 60.2 c  
SLVNT C6D6  
EXREF 0.00 ppm  
BF 0.12 Hz  
RGAIN 20

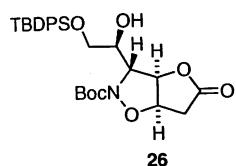
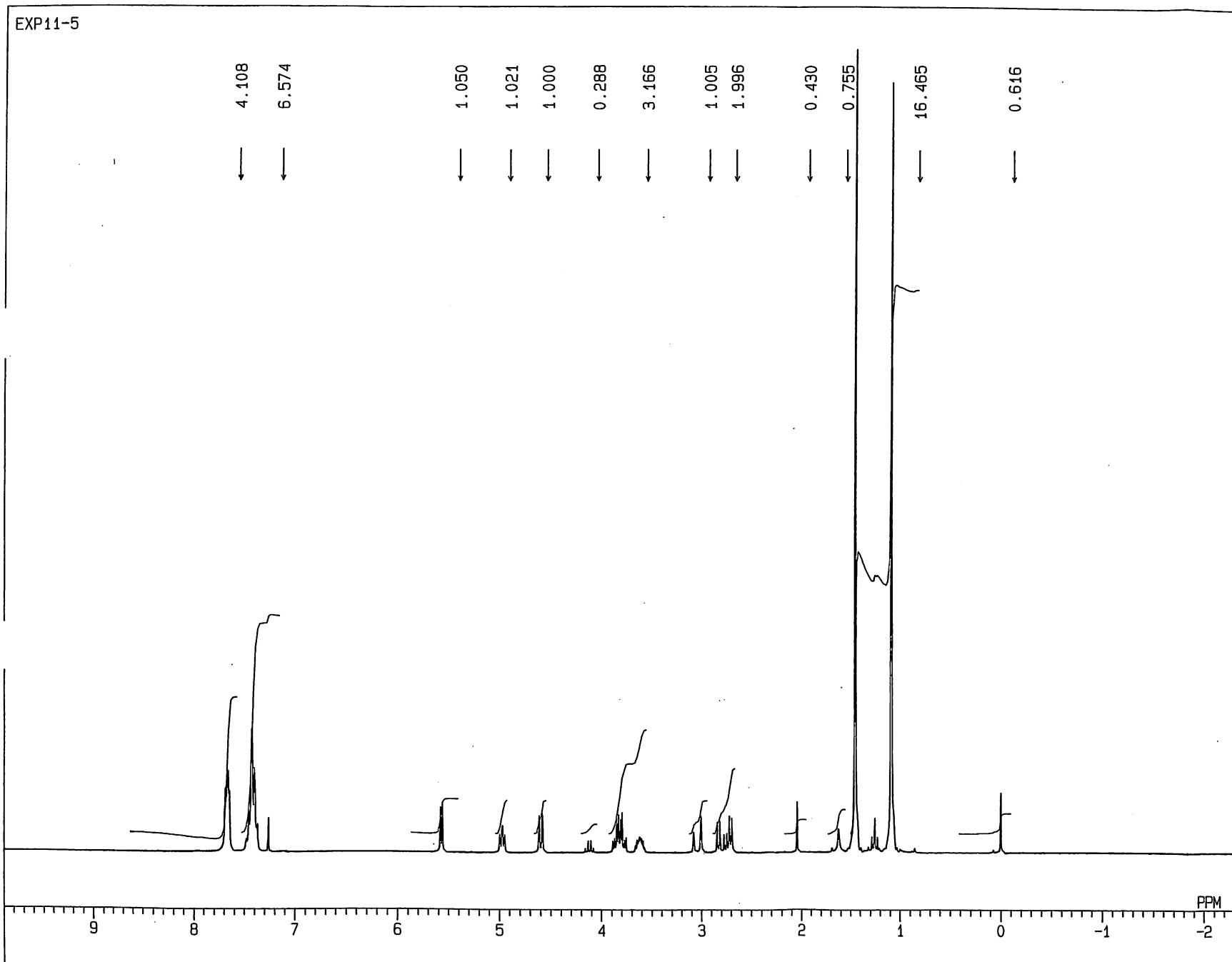


key Comp



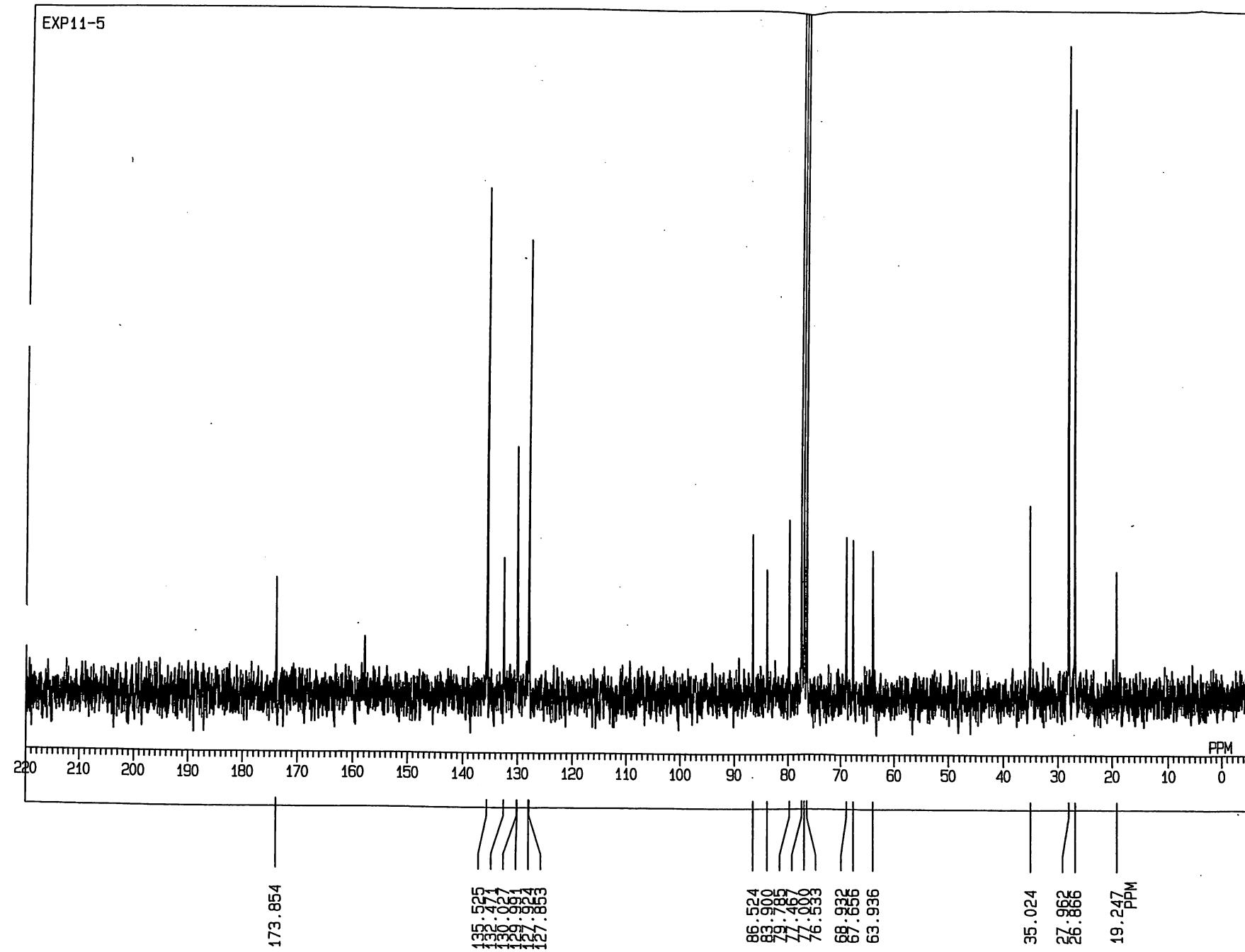
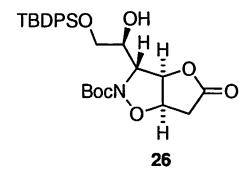
DFILE C:\WINNMR95\TEMPDATA\AUTO2BC  
COMNT key Comp  
DATIM Sat Jan 29 05:29:03 2000  
OBNUC 13C  
EXMOD BCM  
OBFRQ 100.40 MHz  
OBSET 125.00 kHz  
OBFIN 10500.0 Hz  
POINT 32768  
FREQU 27322.4 Hz  
SCANS 12000  
ACQTM 1.199 sec  
PD 1.797 sec  
PW1 4.8 us  
IRNUC 1H  
CTEMP 60.3 c  
SLVNT C6D6  
EXREF 128.00 ppm  
BF 1.20 Hz  
RGAIN 22

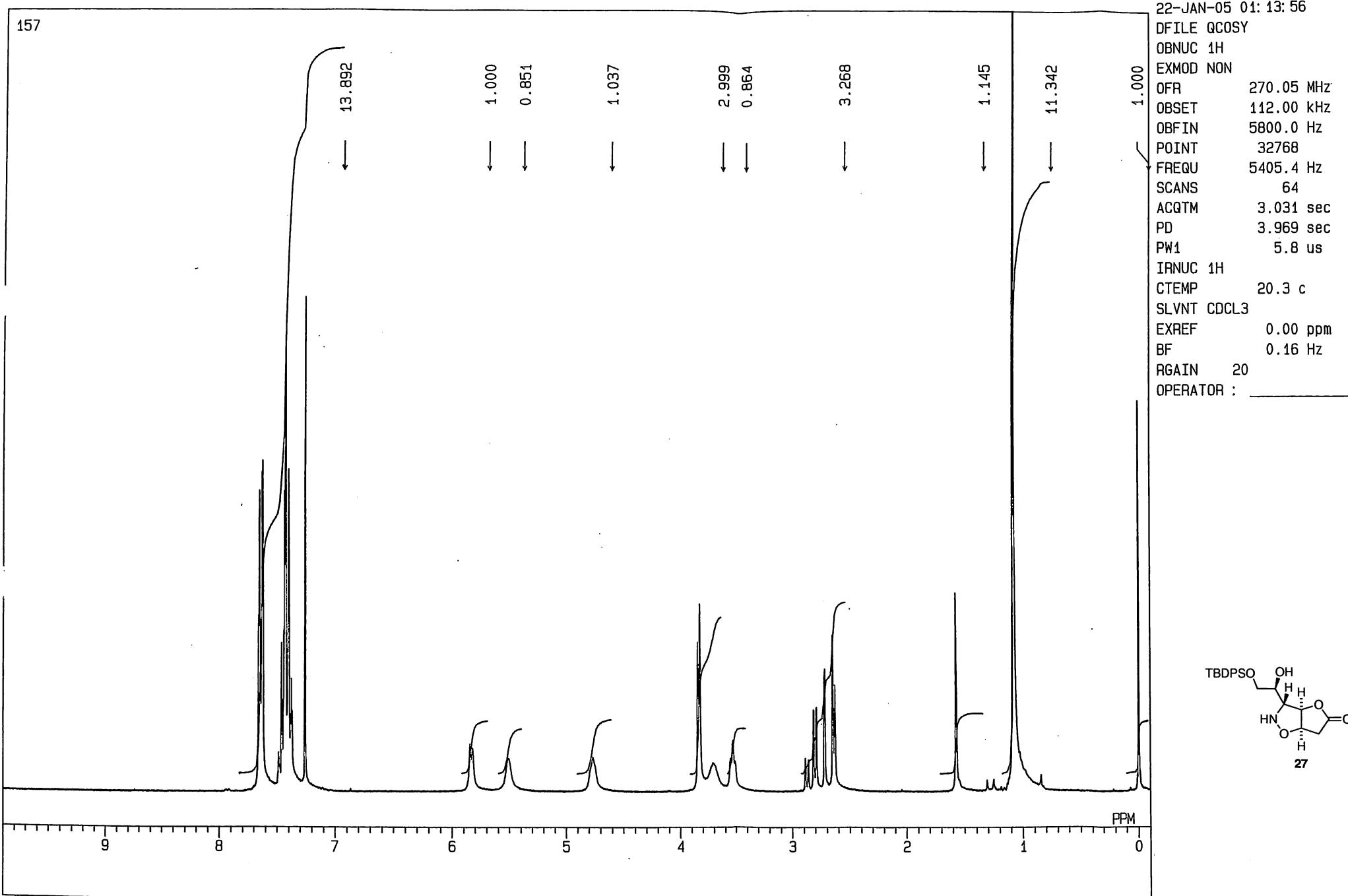




EXP11-5

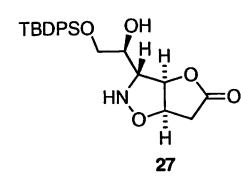
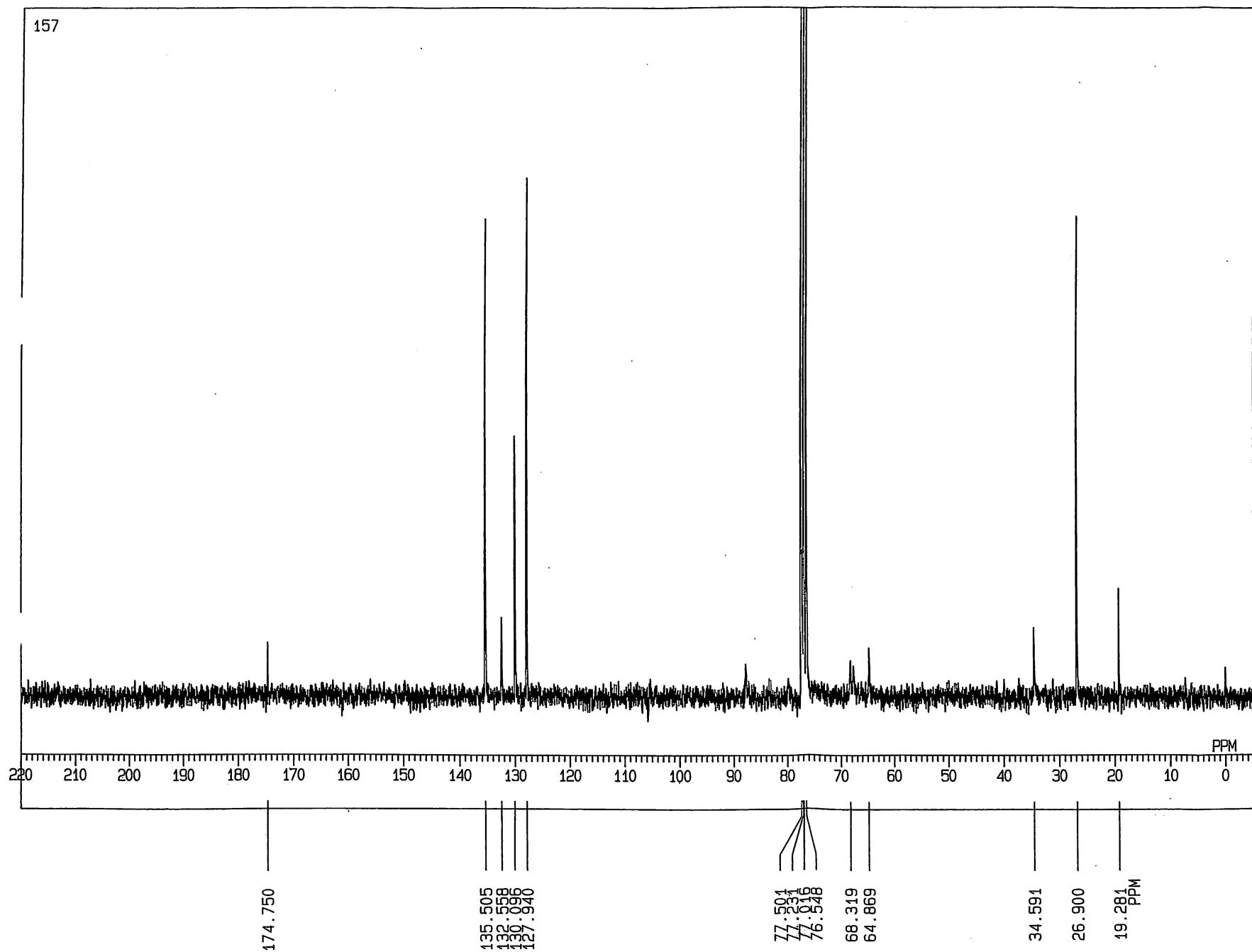
28-APR-03 23: 18: 44  
 DFILE Q13C  
 OBNUC 13C  
 EXMOD BCM  
 OFR 67.80 MHz  
 OBSET 135.00 kHz  
 OBFIN 5200.0 Hz  
 POINT 32768  
 FREQU 20000.0 Hz  
 SCANS 159  
 ACQTM 0.819 sec  
 PD 2.181 sec  
 PW1 3.8 us  
 IRNUC 1H  
 CTEMP 23.0 c  
 SLVNT CDCL3  
 EXREF 77.00 ppm  
 BF 1.50 Hz  
 RGAIN 27  
 OPERATOR :

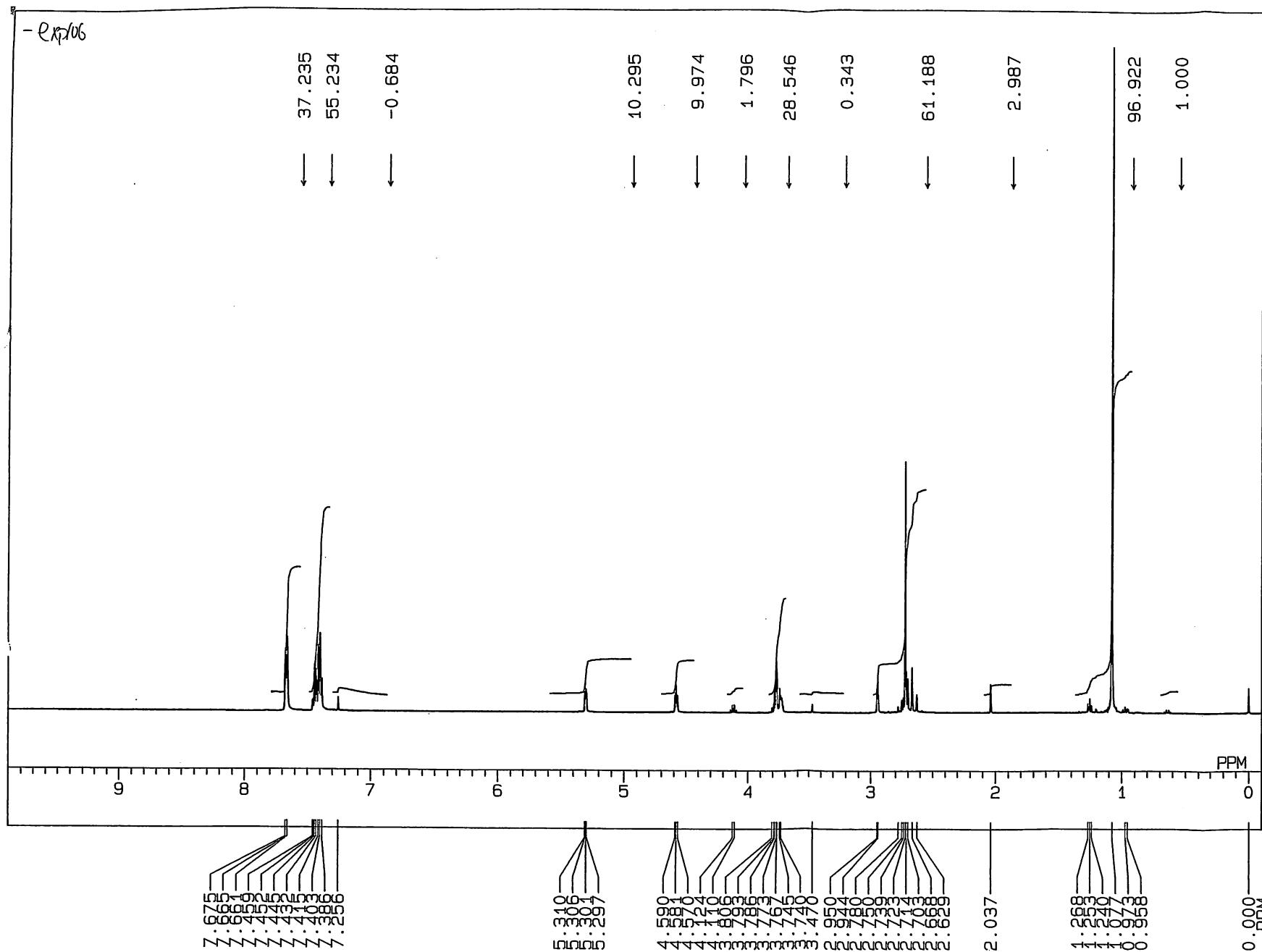




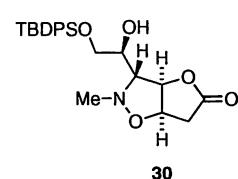
22-JAN-05 03: 24: 47

DFILE Q13C  
OBNUC 13C  
EXMOD BCM  
OFR 67.80 MHz  
OBSET 135.00 kHz  
OBFIN 5200.0 Hz  
POINT 32768  
FREQU 20000.0 Hz  
SCANS 1980  
ACQTM 0.819 sec  
PD 2.181 sec  
PW1 4.2 us  
IRNUC 1H  
CTEMP 21.5 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 1.50 Hz  
RGAIN 27  
OPERATOR : \_\_\_\_\_



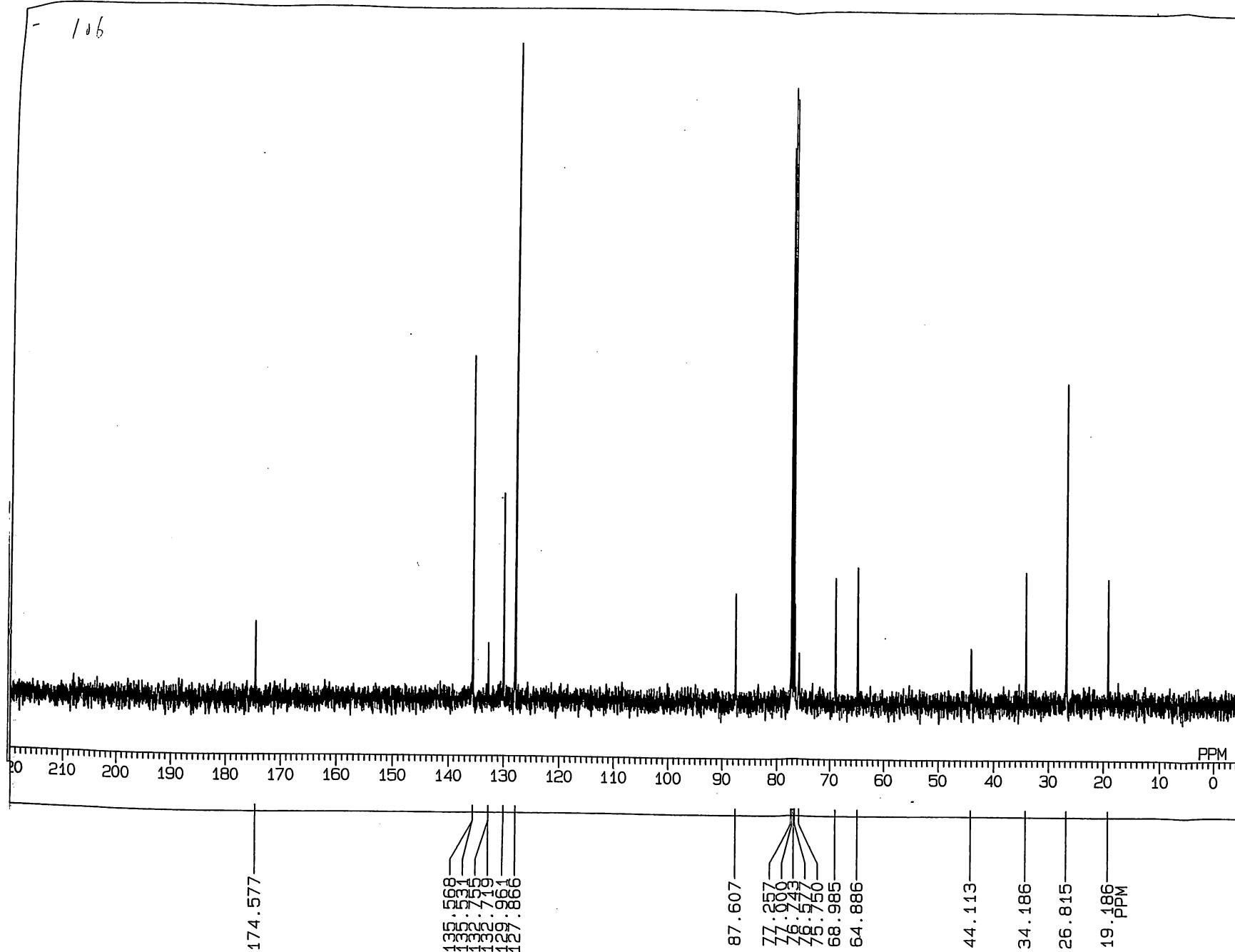


05-OCT-03 16:41:48  
DFILE Q1H  
COMNT -  
EXMOD SGNON  
OBNUC 1H  
OBFIN 9852.7 Hz  
POINT 32768  
FREQU 15015.0 Hz  
SCANS 16  
ACQTM 1.091 sec  
PD 3.909 sec  
PW1 7.0 us  
IRFIN 10157.0 Hz  
IRATN 15  
IRRPW 60 us  
TEMP. 22.0 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.46 Hz  
RGAIN 14  
XE 5001.5990 Hz  
XS -518.9199 Hz

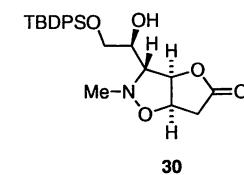


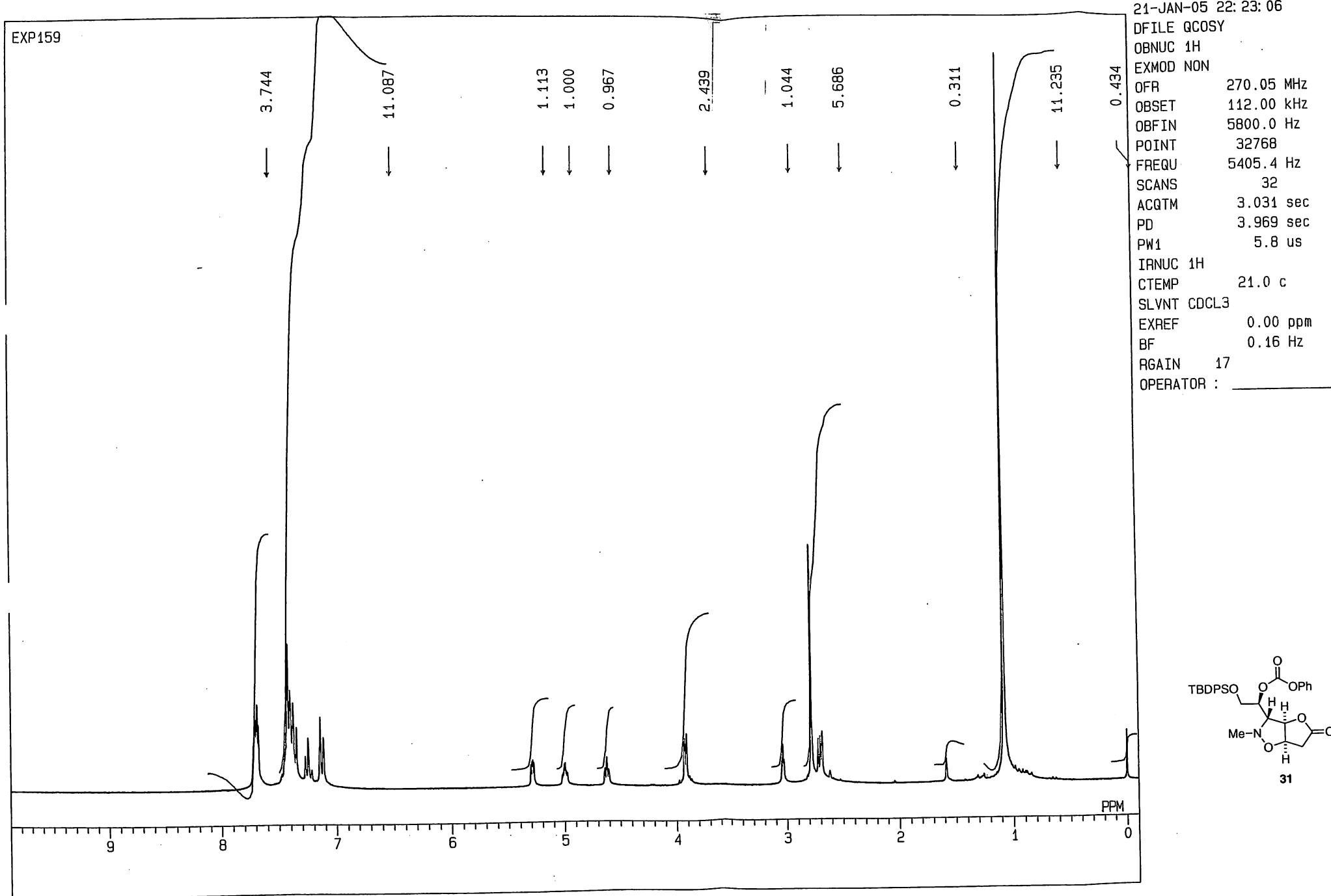
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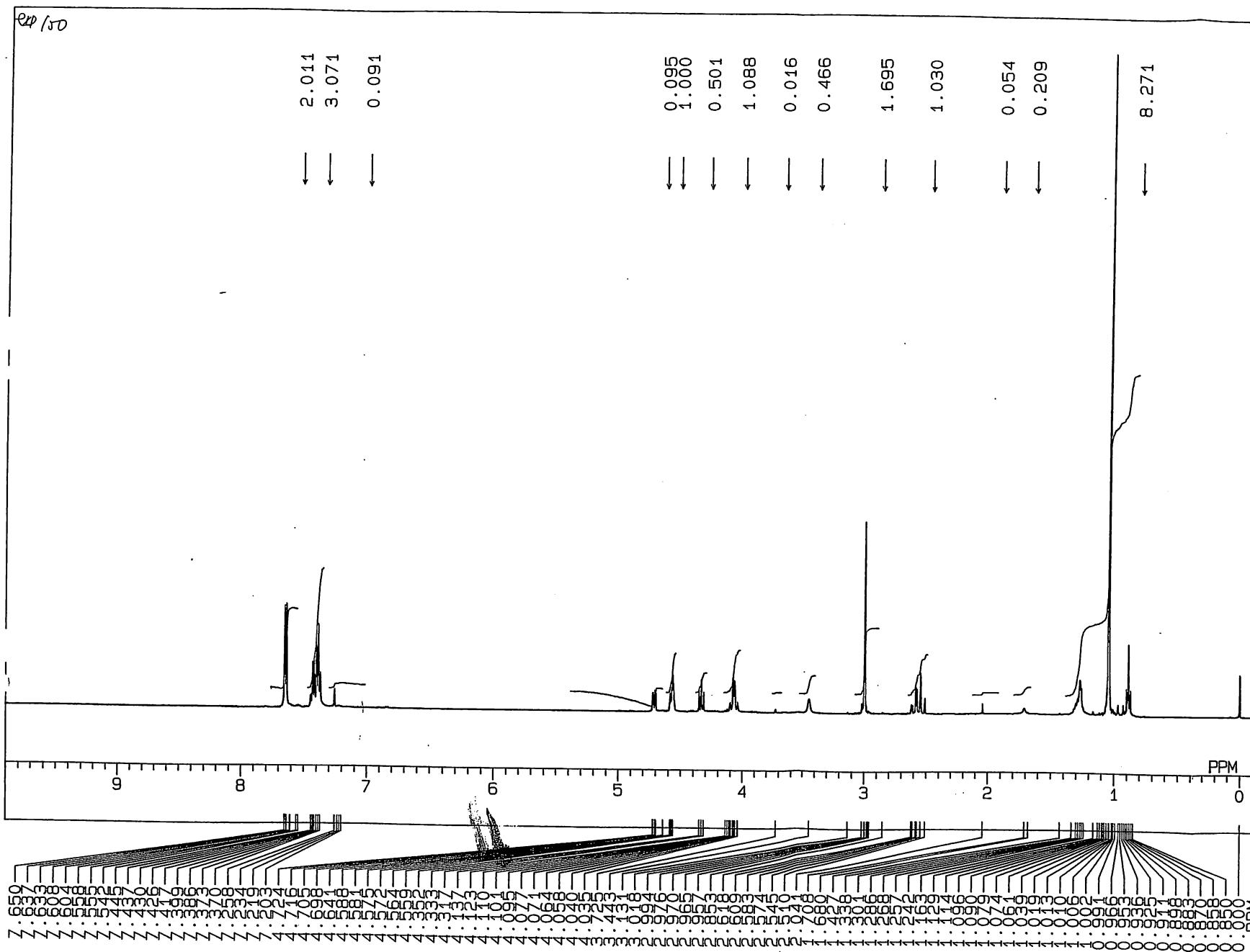
JEOL



05-OCT-03 18:15:36  
 DFILE Q13C  
 COMNT -  
 EXMOD SGBCM  
 OBNUC 13C  
 OBFIN 10404.0 Hz  
 POINT 32768  
 FREQU 37878.8 Hz  
 SCANS 158  
 ACQTM 0.433 sec  
 PD 1.567 sec  
 PW1 6.0 us  
 IRFIN 10157.0 Hz  
 IRATN 33  
 IRRPW 50 us  
 TEMP. 22.0 c  
 SLVNT CDCL3  
 EXREF 77.00 ppm  
 BF 1.50 Hz  
 RGAIN 29  
 XE 28297.2000 Hz  
 XS -3428.9400 Hz

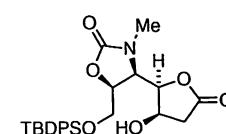






JEOL

10-JAN-04 00:13:18  
DFILE Q1H  
COMNT -  
EXMOD SGNON  
OBNUC 1H  
OBFIN 9870.6 Hz  
POINT 32768  
FREQU 15015.0 Hz  
SCANS 16  
ACQTM 1.091 sec  
PD 3.909 sec  
PW1 7.0 us  
IRFIN 10157.0 Hz  
IRATN 15  
IRRPW 60 us  
TEMP. 22.0 c  
SLVNT CDCL3  
EXREF 0.00 ppm  
BF 0.46 Hz  
RGAIN 14  
XE 5001.5990 Hz  
XS -498.7588 Hz



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