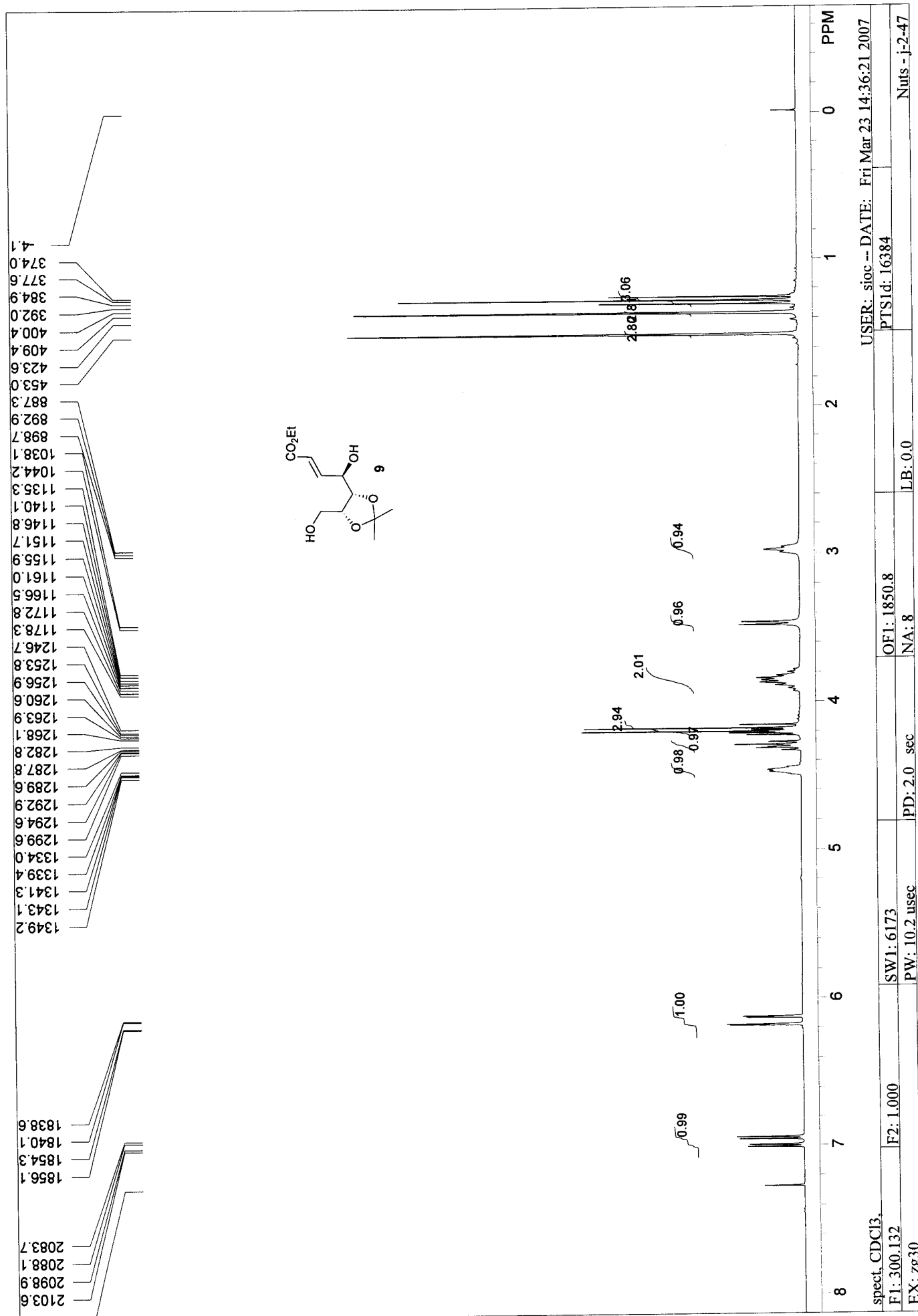


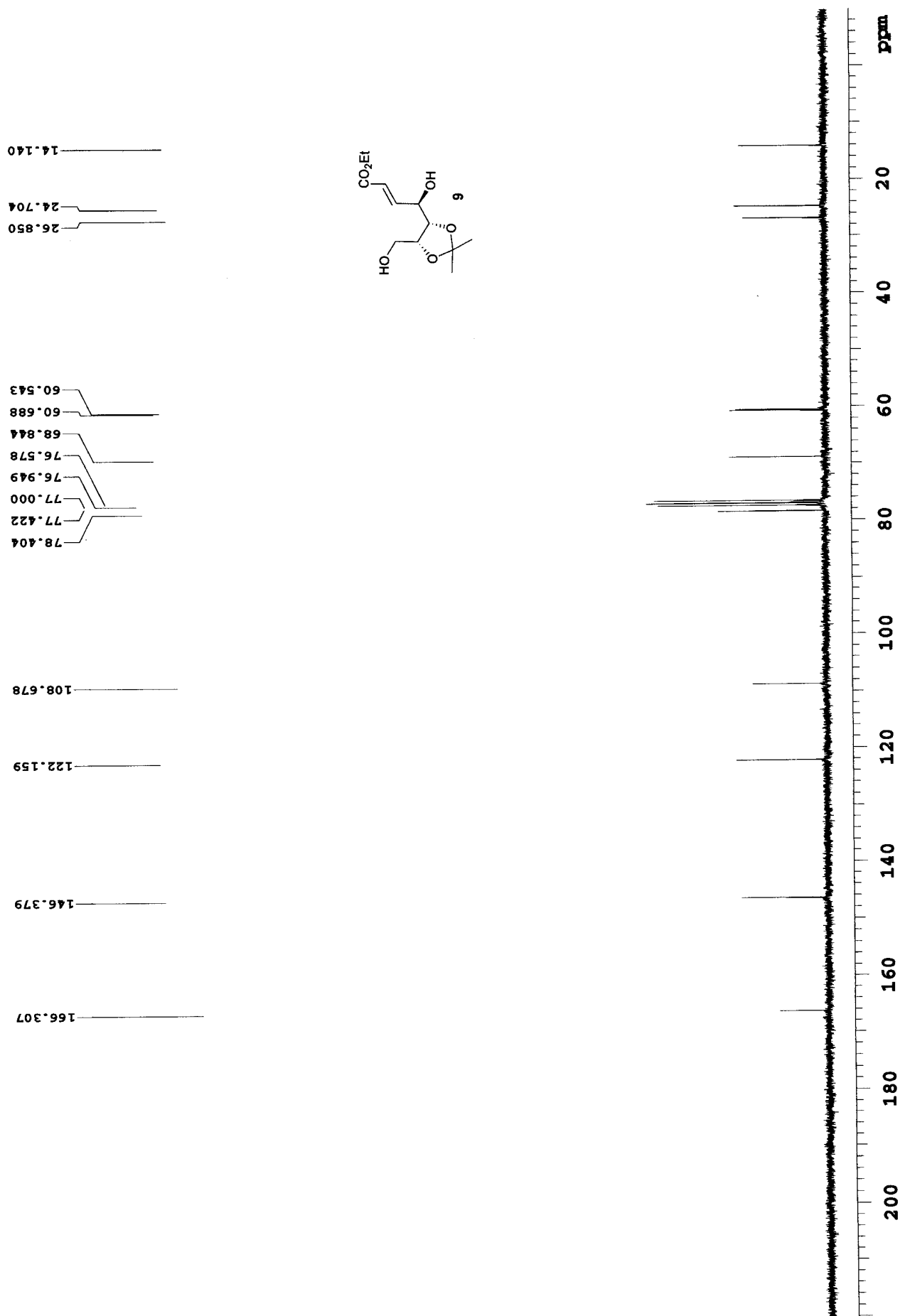
*Electronic Supplementary Information***The Enantioselective Total Synthesis of Nemotin**

Ya-Jun Jian and Yikang Wu\*

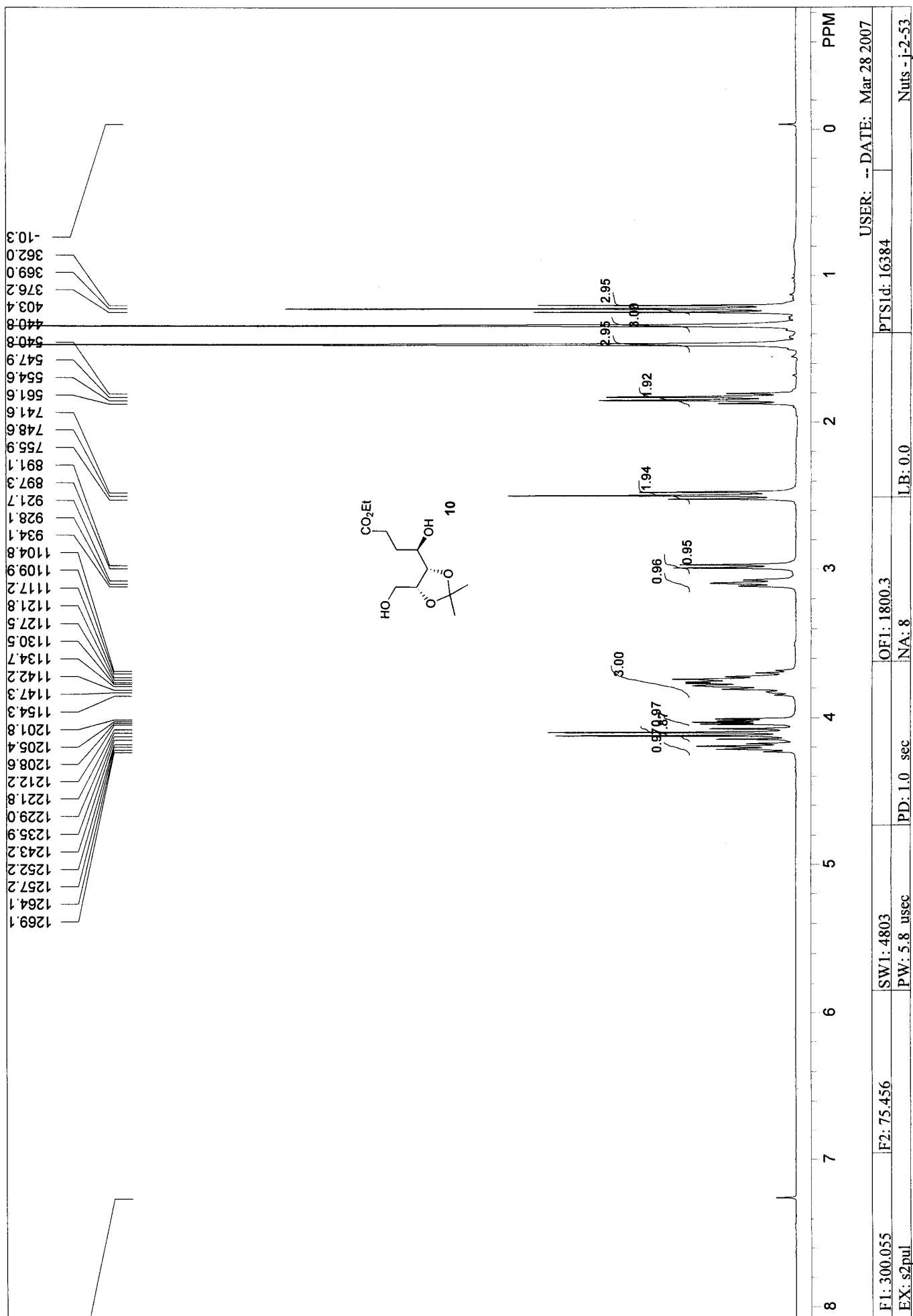
*E-mail: yikangwu@mail.sioc.ac.cn***Table of Contents**

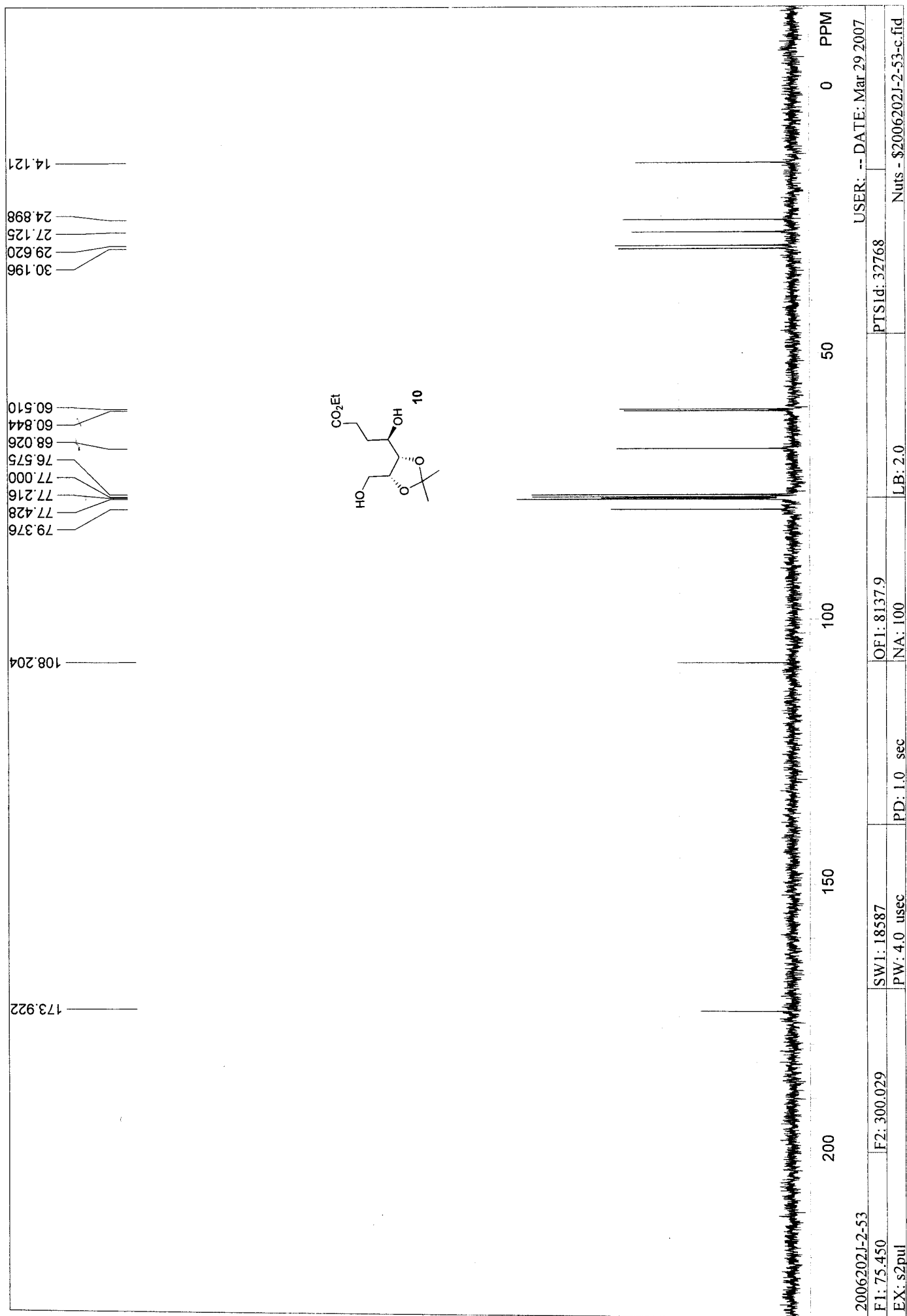
NMR for <b>9</b> .....	S 2
NMR for <b>10</b> .....	S 4
NMR for <b>11</b> .....	S 6
NMR for <b>12</b> .....	S 8
NMR for <b>13</b> .....	S 10
NMR for <b>14</b> .....	S 12
NMR for <b>15</b> .....	S 14
NMR for <b>16</b> .....	S 16
NMR for <b>18</b> .....	S 18
NMR for <b>21</b> .....	S 19
NMR for <b>22</b> .....	S 20
NMR for <b>24</b> .....	S 21
NMR for <b>25</b> .....	S 23
NMR for <b>27</b> .....	S 24
NMR for <b>28</b> .....	S 26
NMR for <b>29</b> .....	S 28
NMR for <b>30</b> .....	S 32
NMR for <b>31</b> .....	S 34
NMR for <b>35</b> .....	S 36
NMR for <b>36</b> .....	S 38
NMR for <b>42</b> .....	S 40
NMR for <b>47</b> .....	S 42
NMR for <b>1</b> .....	S 44
NMR for <b>48</b> .....	S 46
NMR for <b>51</b> .....	S 47
HPLC for <b>48+51</b> (mixture) .....	S 48
HPLC for <b>48</b> .....	S 49
HPLC for <b>51</b> .....	S 50





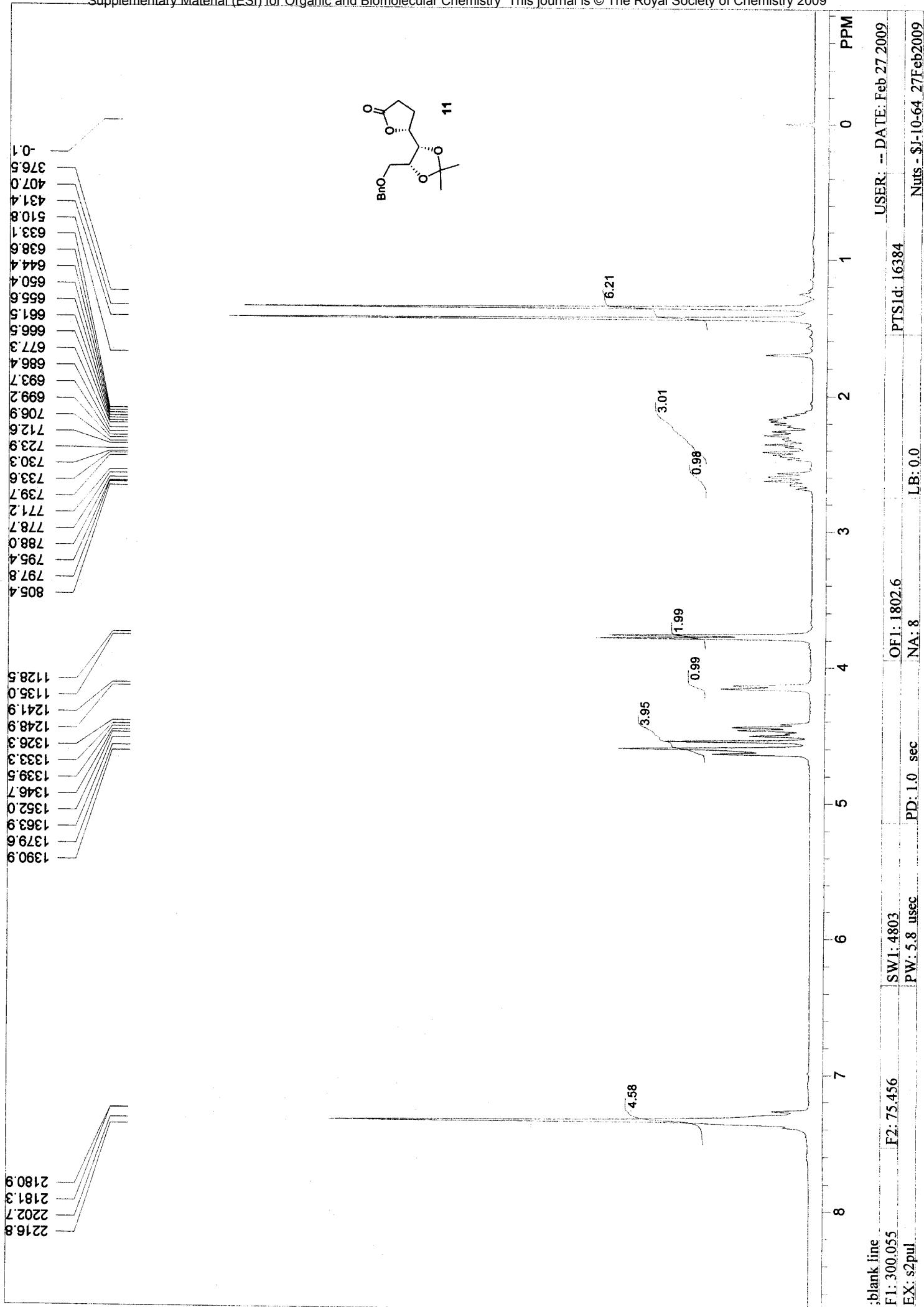
20062025-3-62





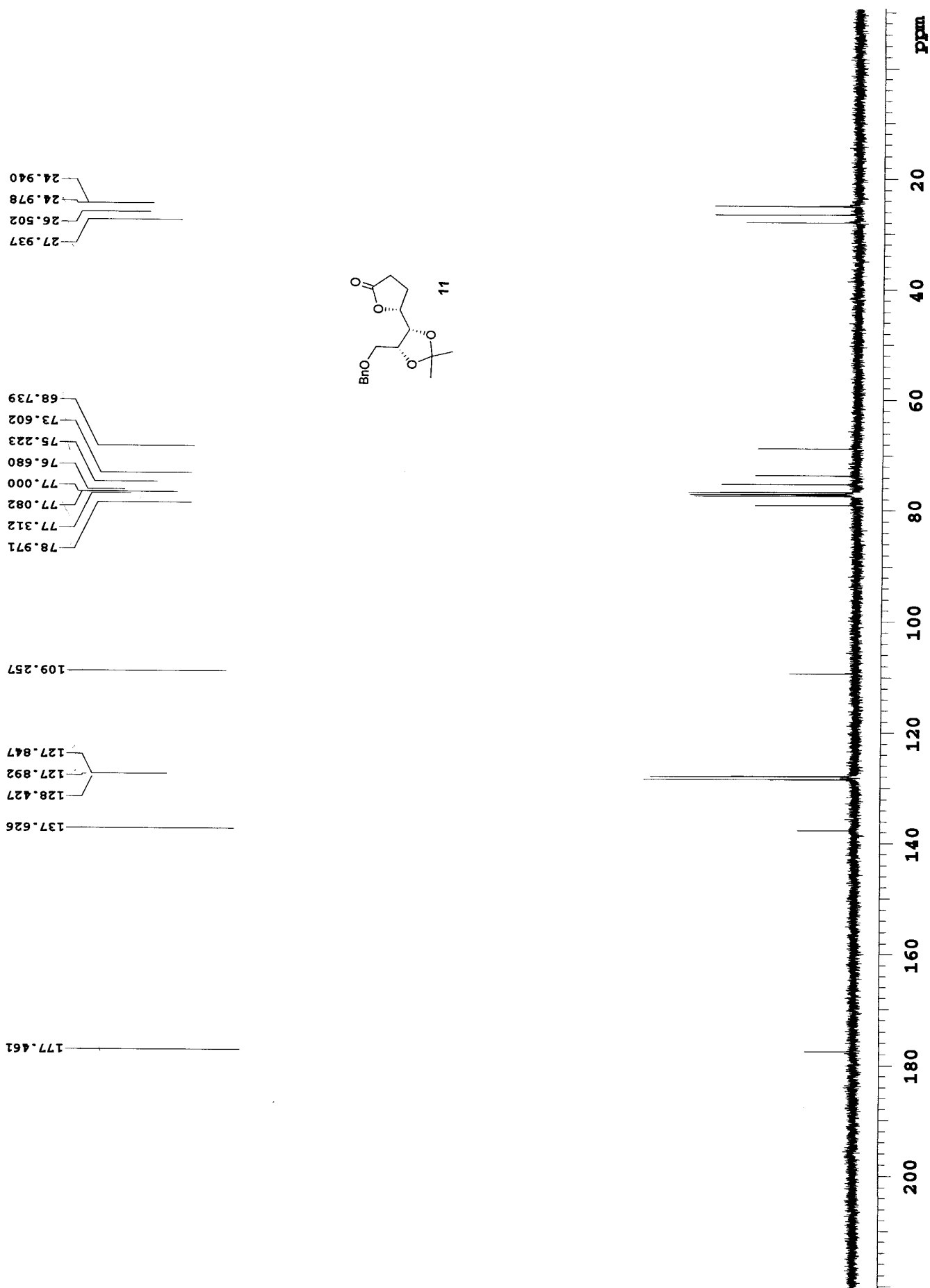
S 5

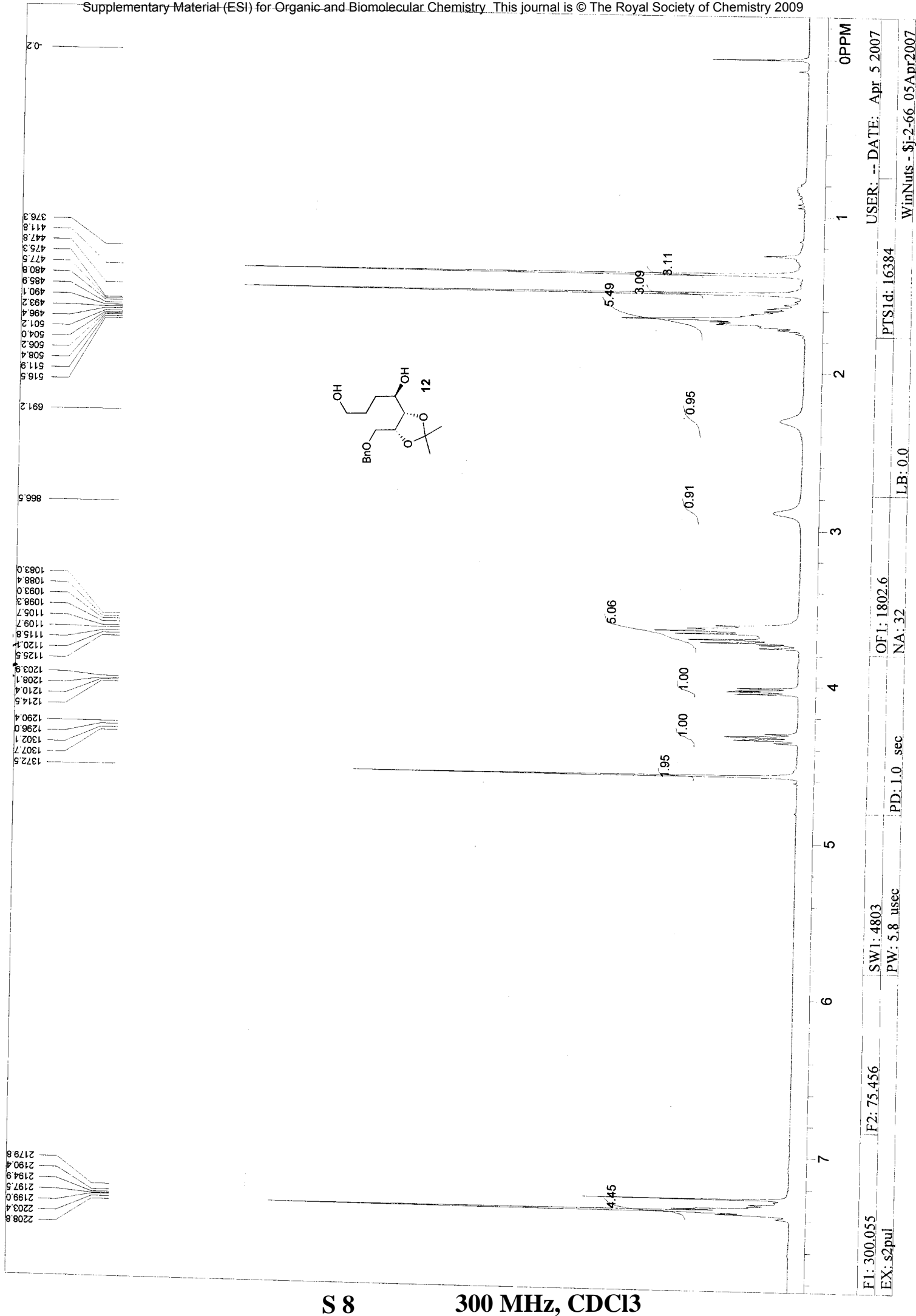
75 MHz, CDCl<sub>3</sub>



S 6

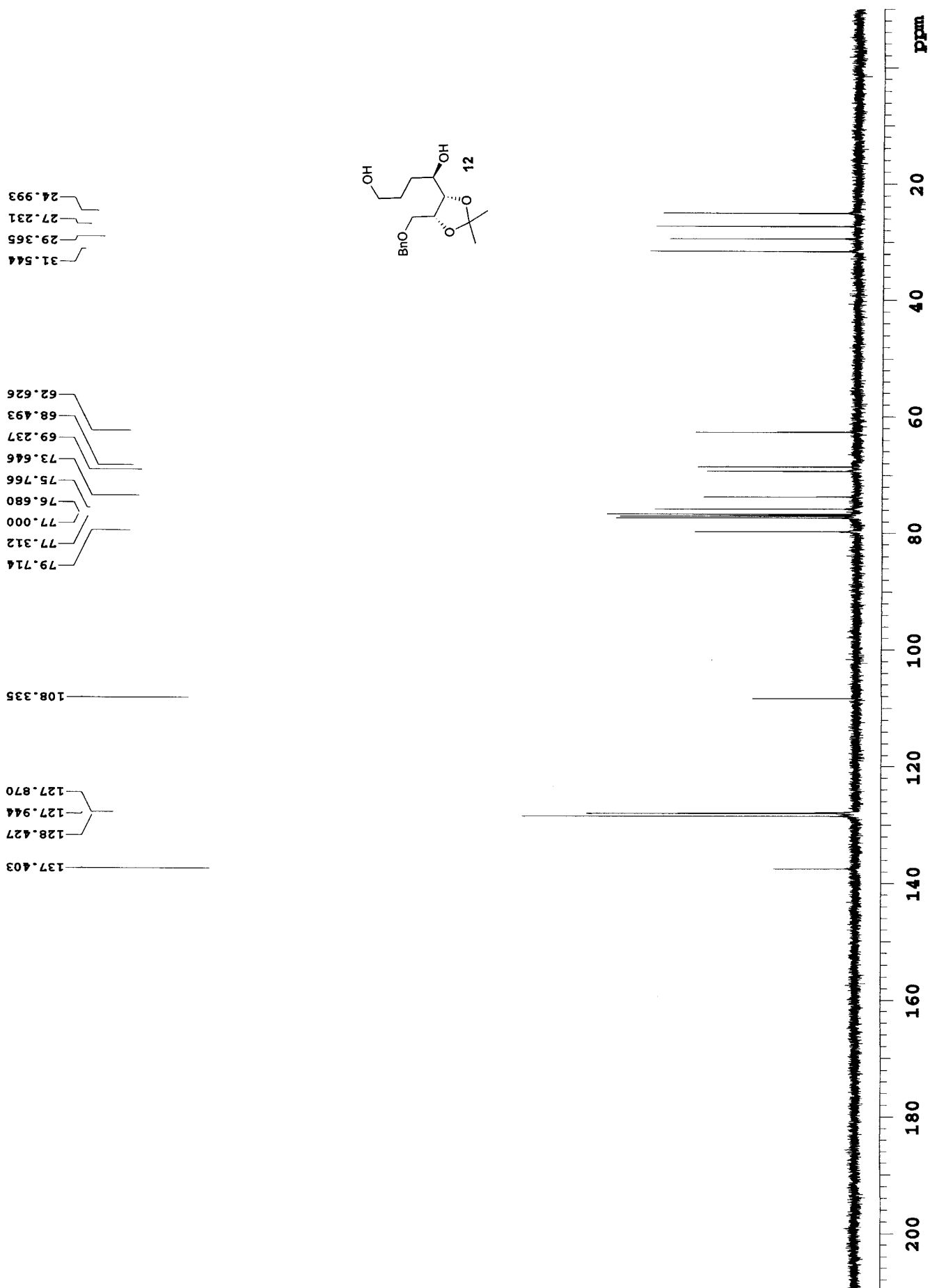
300 MHz, CDCl<sub>3</sub>

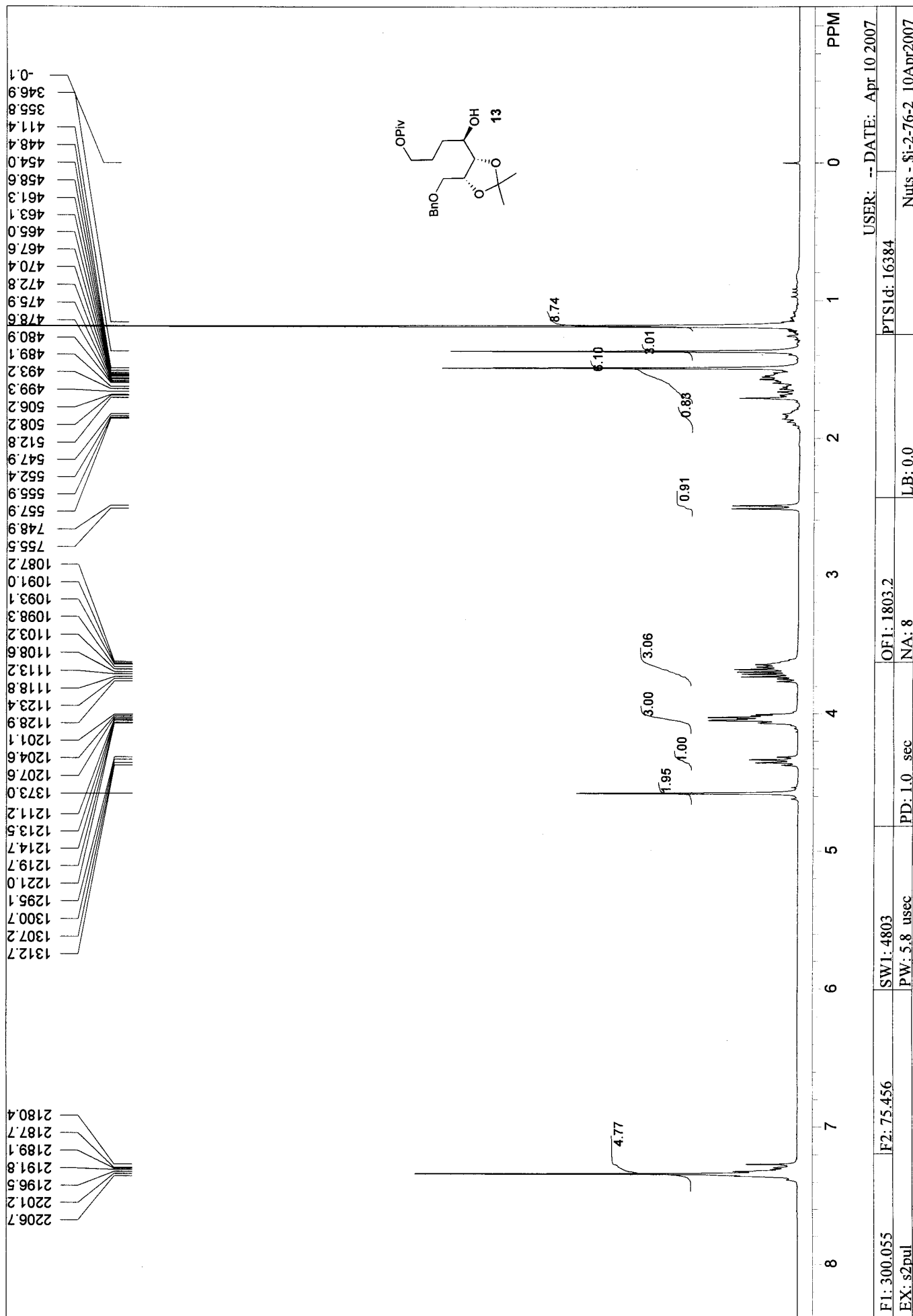


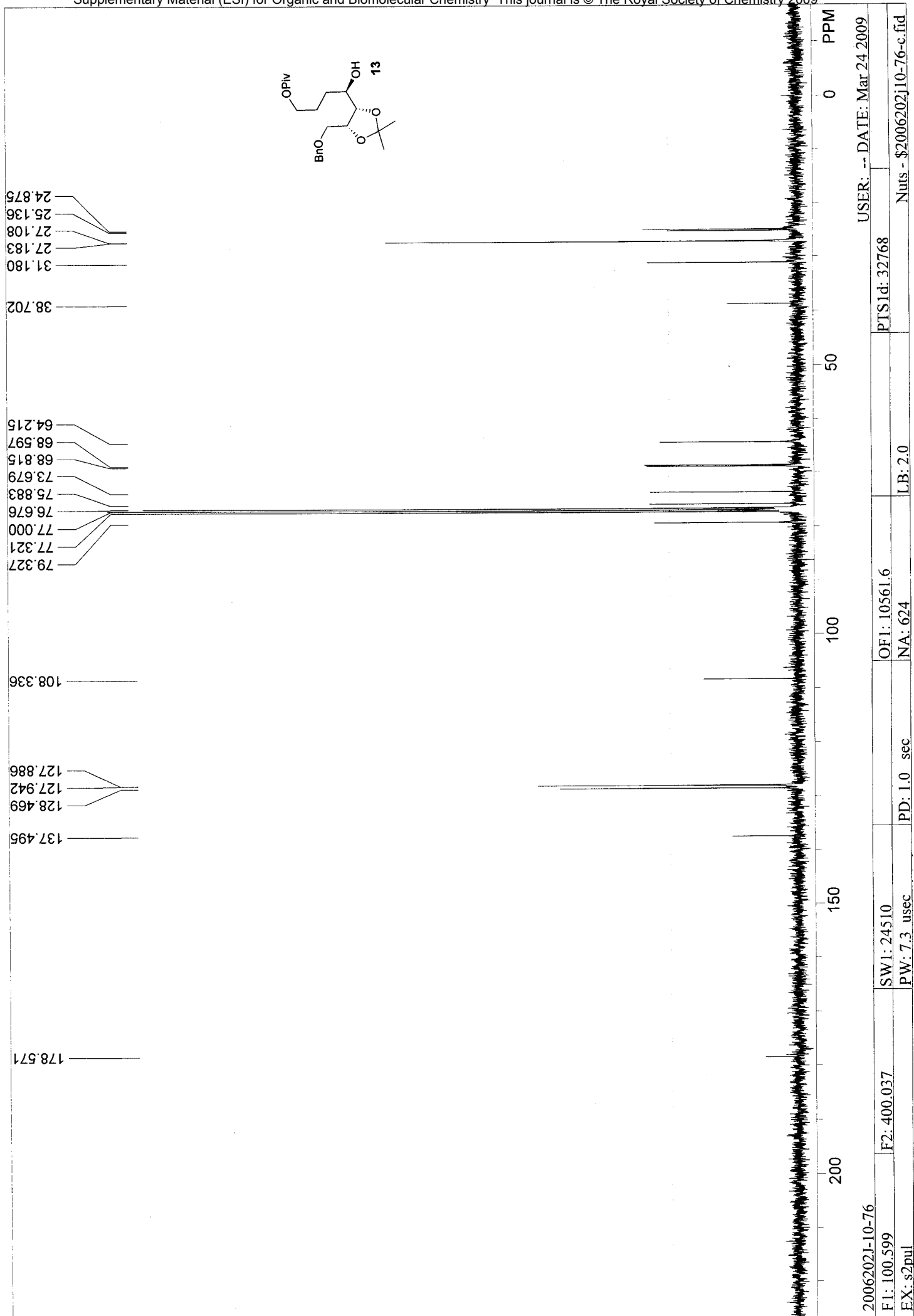


F1: 300.055 | F2: 75.456 | SW1: 4803 | OF1: 1802.6 | USER: -- DATE: Apr. 5 2007  
 EX: s2pul | PD: 1.0 sec | NA: 32 | LB: 0.0 | PTS1d: 16384 | WinNuts - \$j-2-66\_05Apr2007



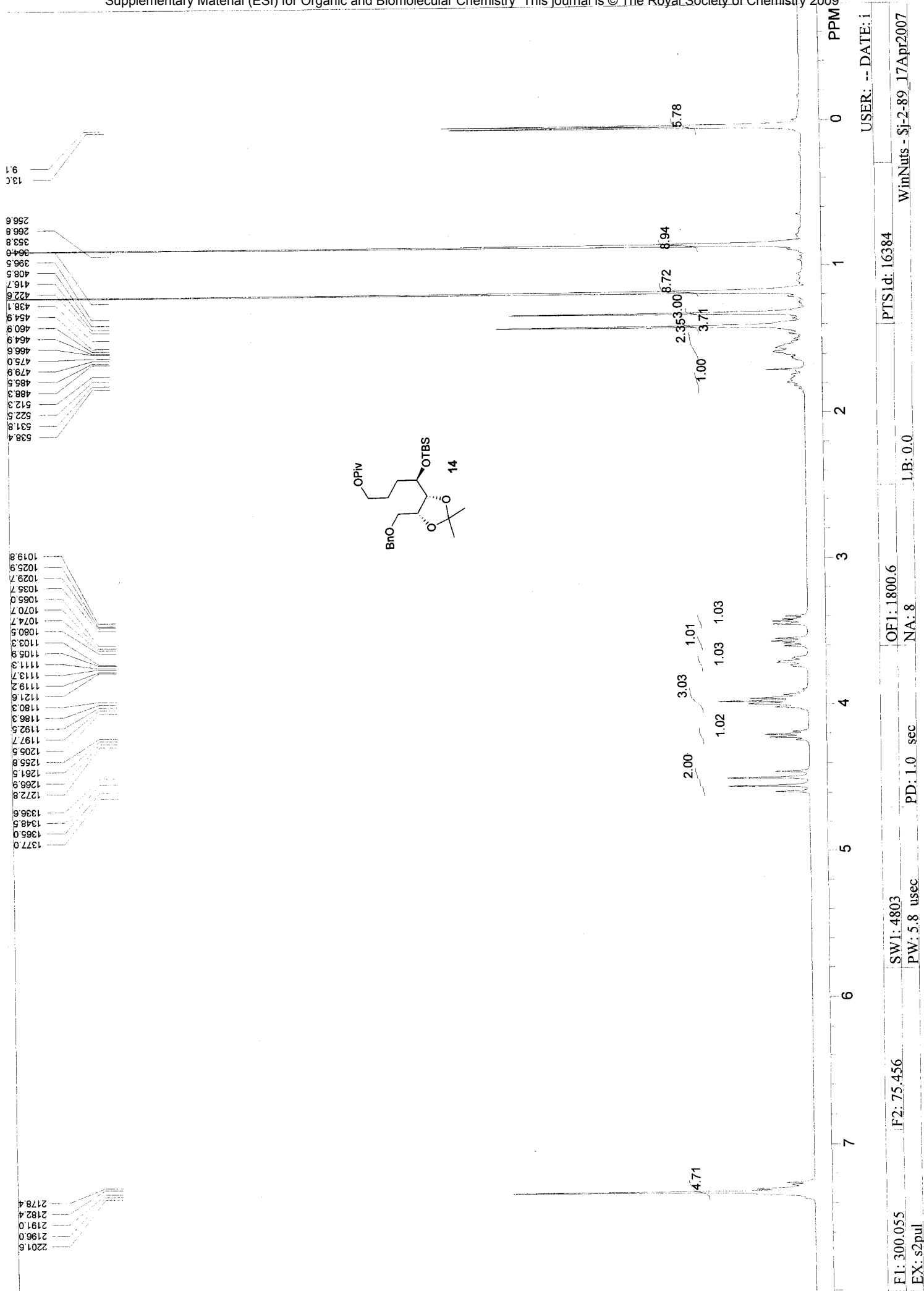






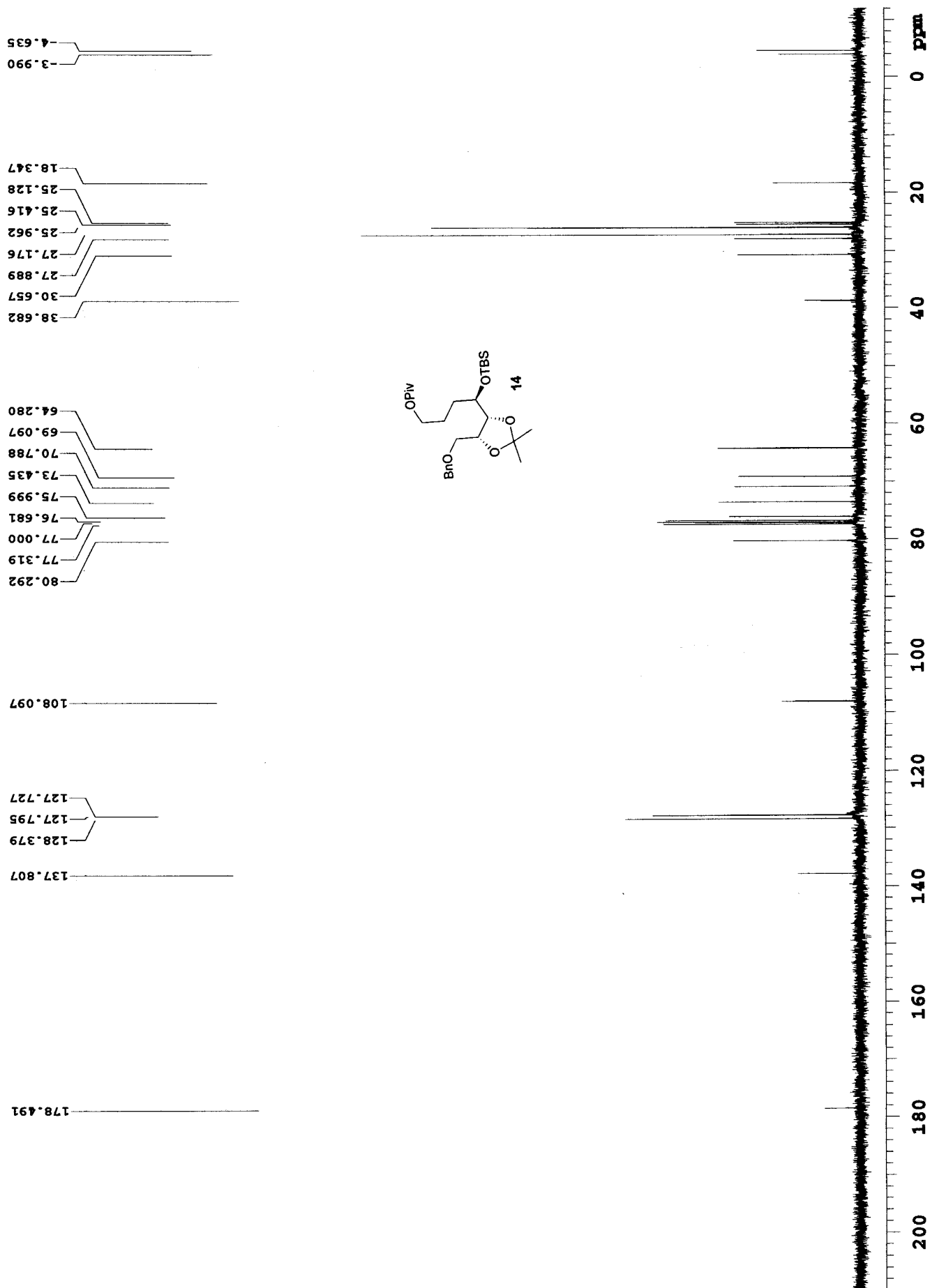
S 11

75 MHz, CDCl3

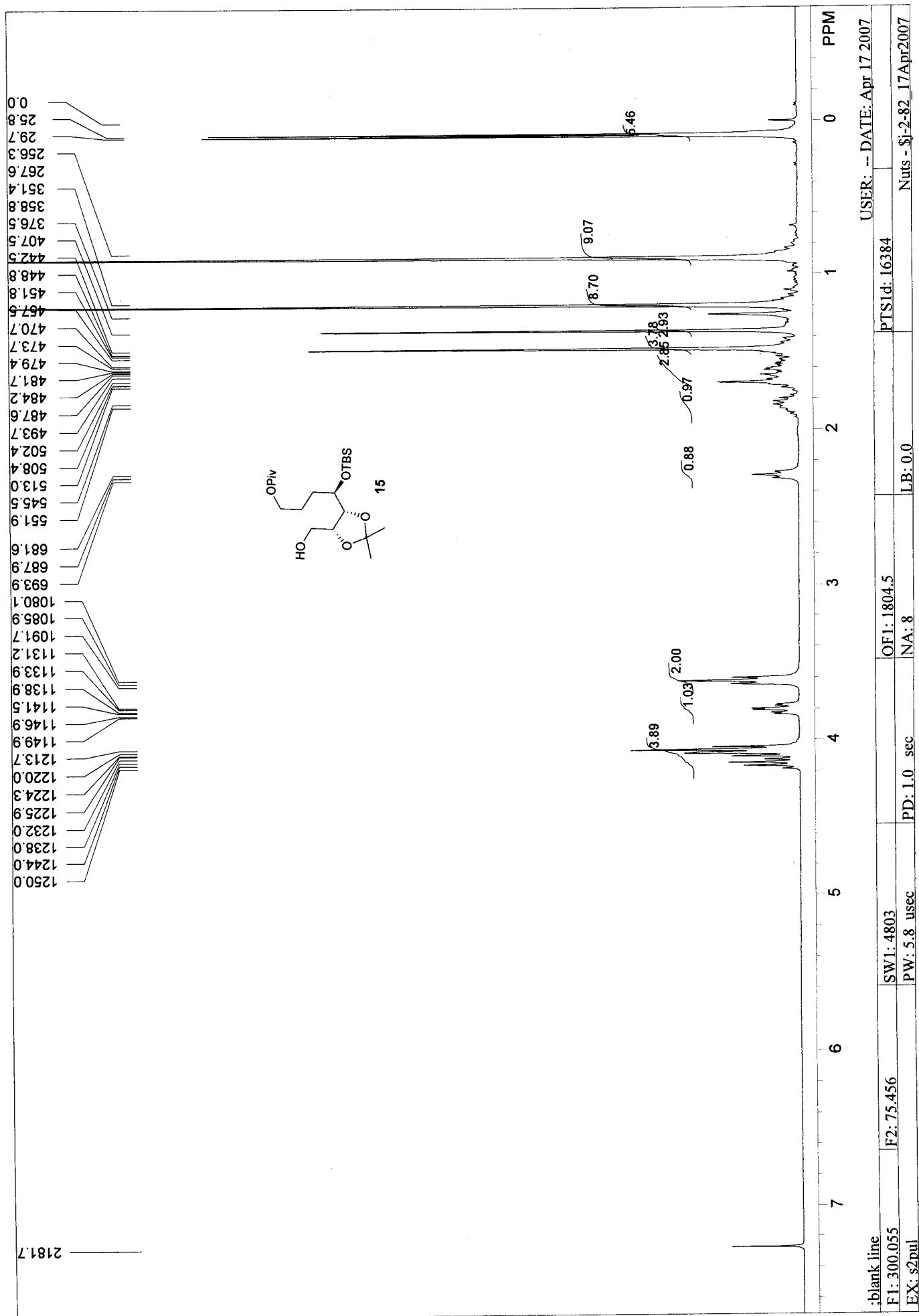


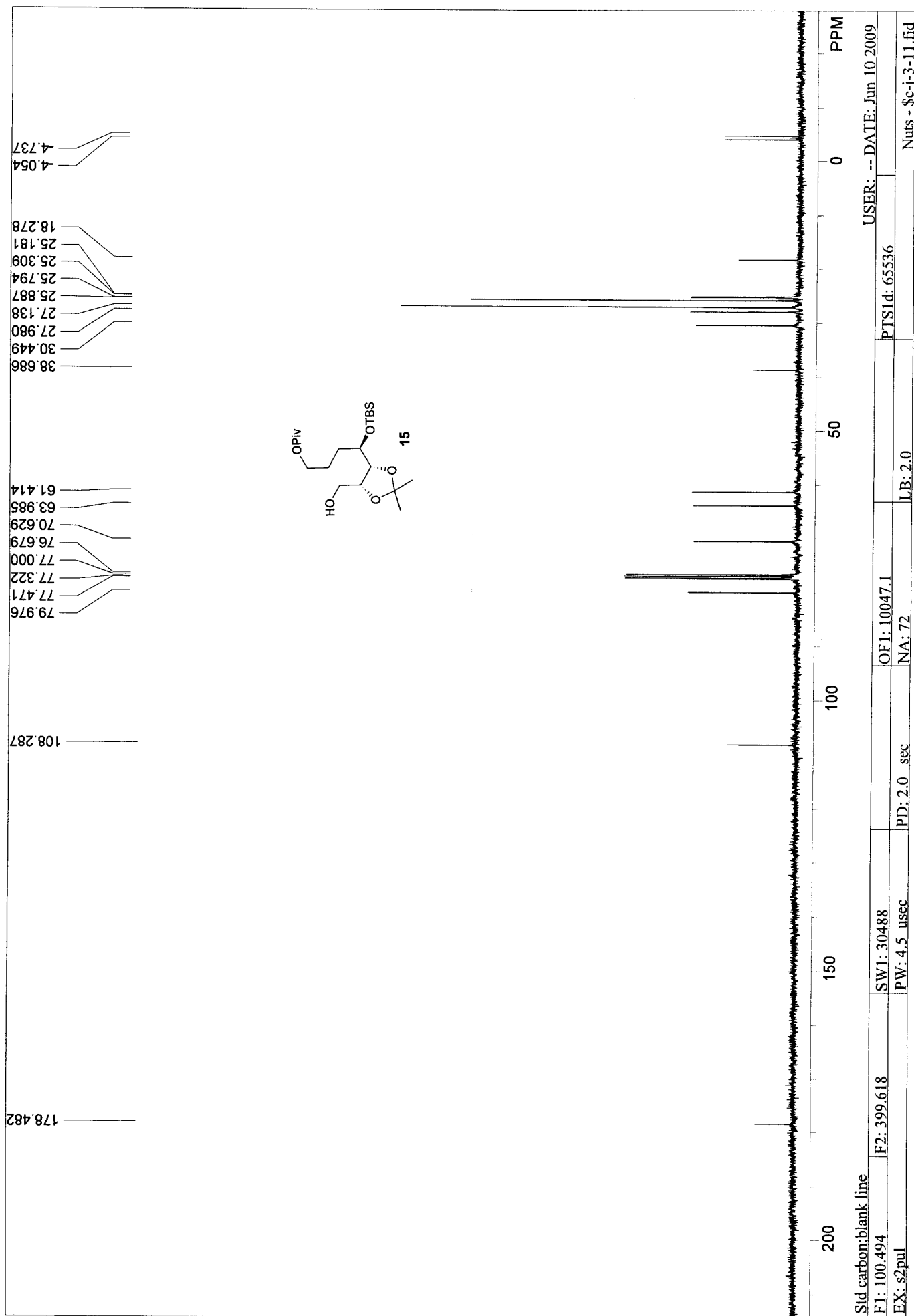
137.0  
1365.0  
1348.5  
1336.6  
1272.8  
1266.9  
1261.5  
1255.8  
1205.5  
1197.7  
1192.5  
1186.3  
1180.3  
1121.6  
1119.2  
1113.7  
1111.3  
1105.9  
1103.3  
1080.5  
1074.7  
1070.7  
1065.0  
1035.7  
1029.7  
1025.9  
1019.8  
538.4  
531.8  
522.5  
512.3  
488.3  
485.5  
479.9  
475.0  
466.6  
464.9  
460.9  
454.9  
438.1  
422.6  
416.7  
408.5  
396.5  
364.0  
353.8  
266.8  
256.6

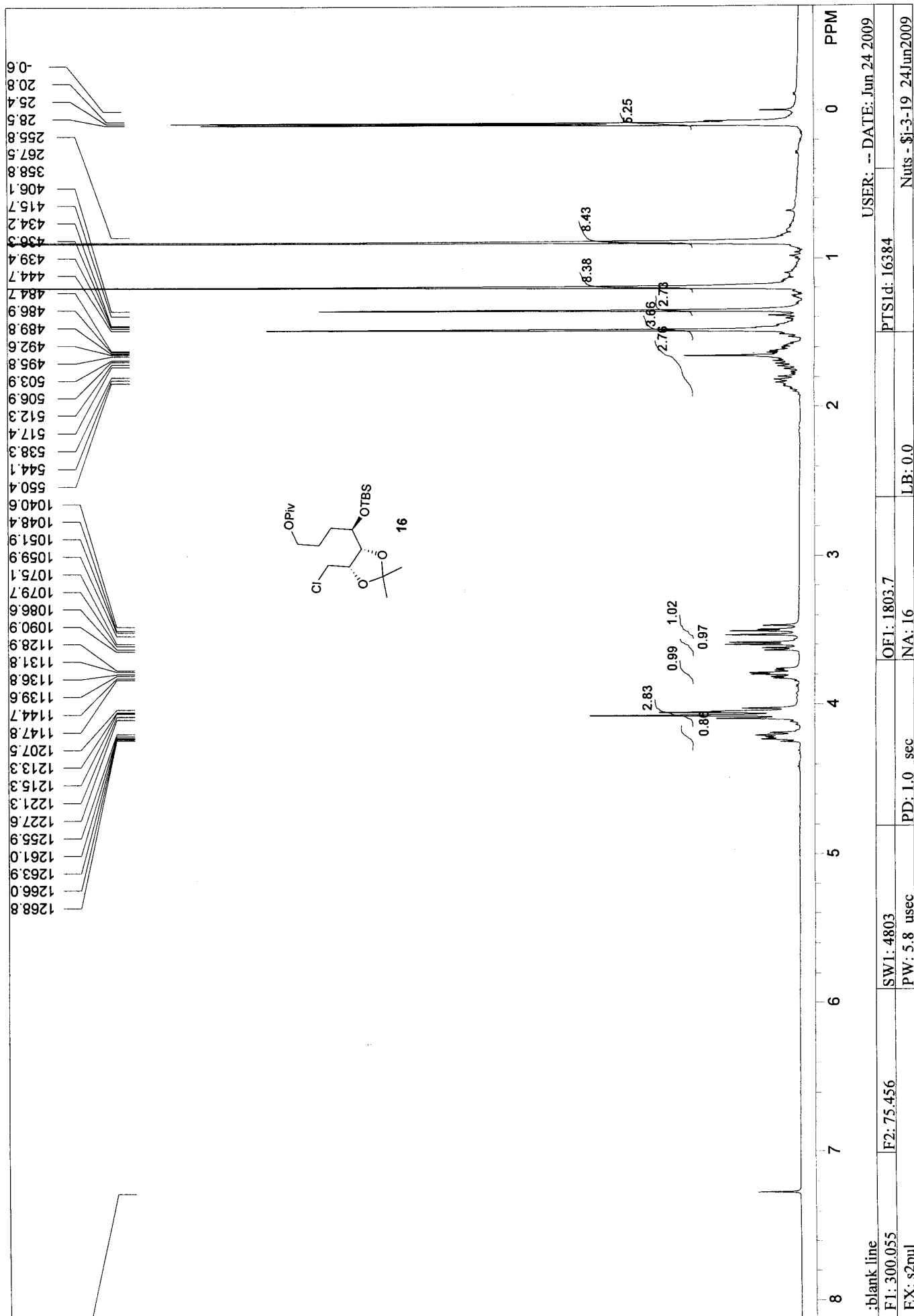
USER: -- DATE: i  
PTS id: 16384  
WinNuts - \$j-2-89\_17Apr2007  
OF1: 1800.6  
NA: 8  
PD: 1.0 sec  
SW1: 4803  
F2: 75.456  
EX: s2pul  
L.B: 0.0



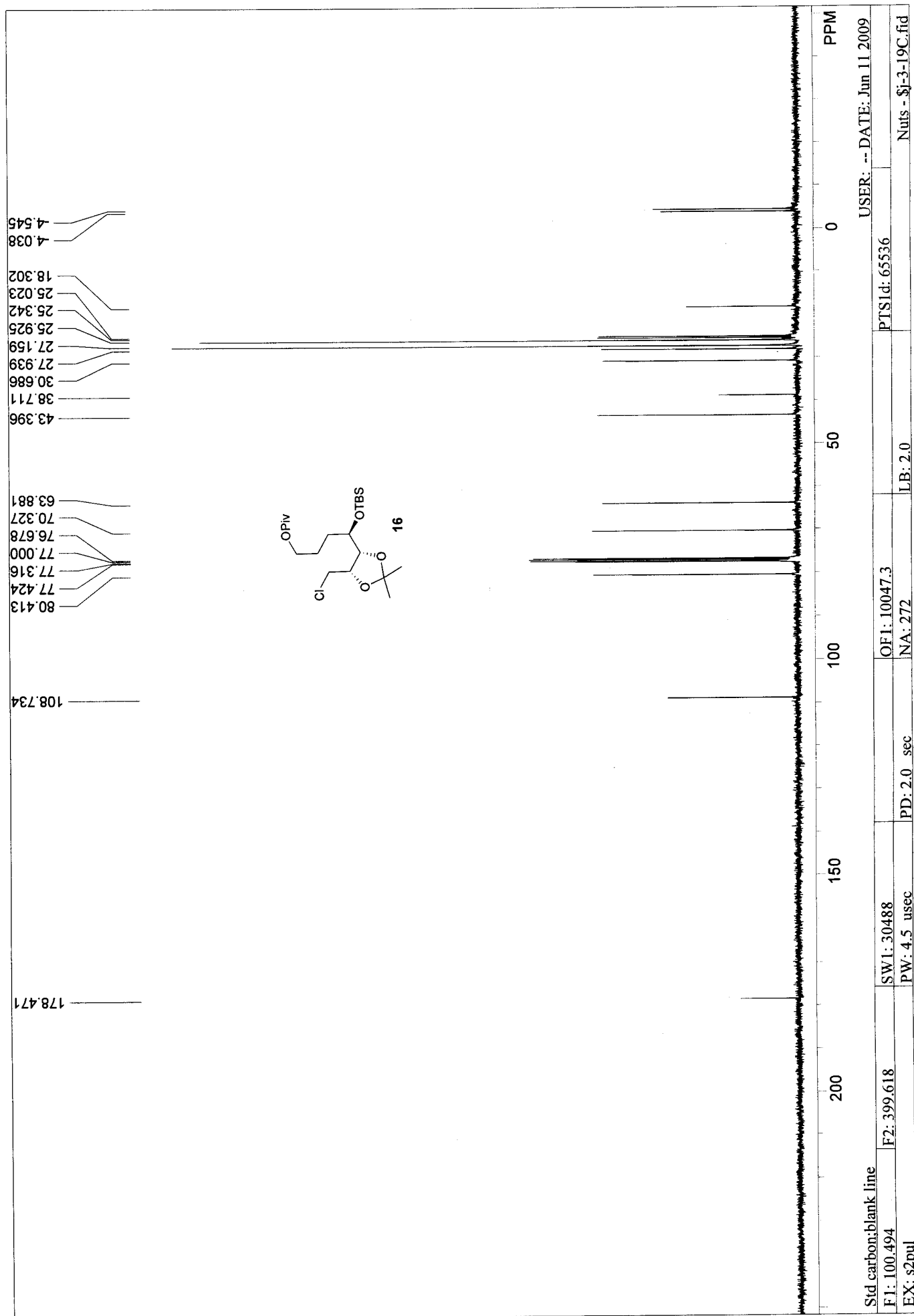
2006202J-3-9

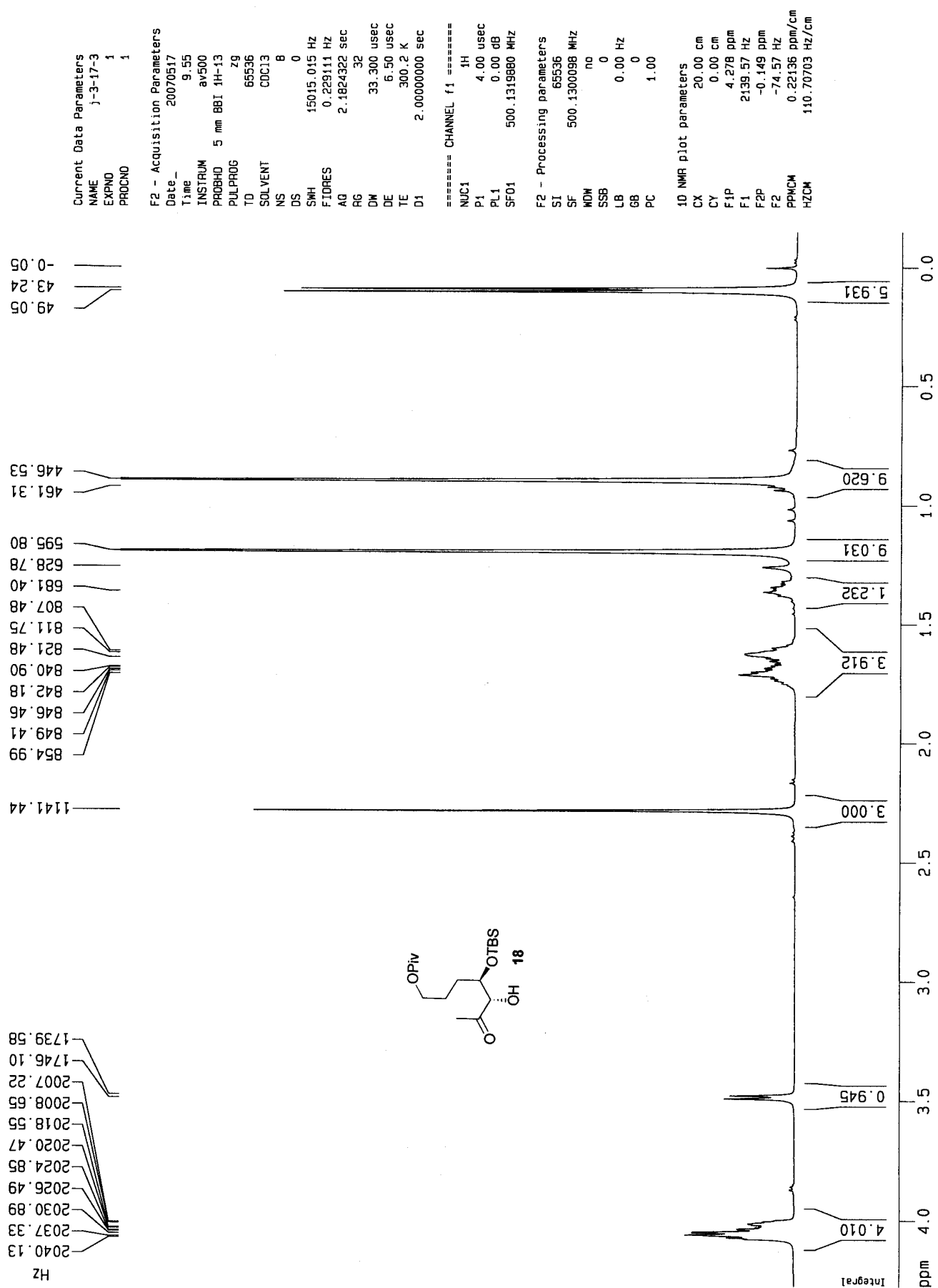












J-3-17-3

-4.408  
-4.577

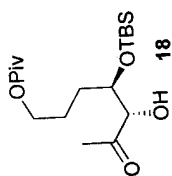
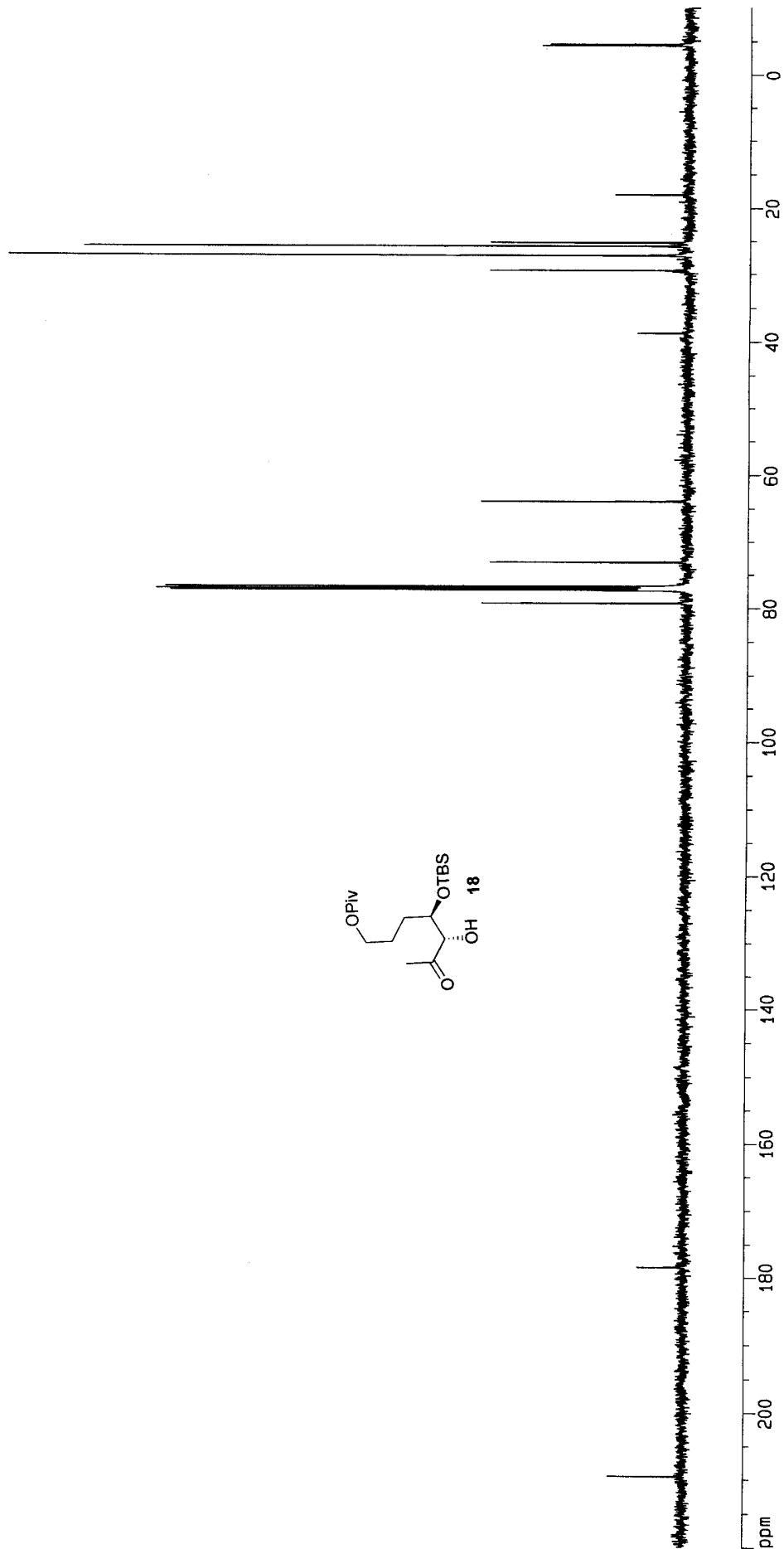
17.996  
25.214  
25.762  
27.183  
29.434  
38.739

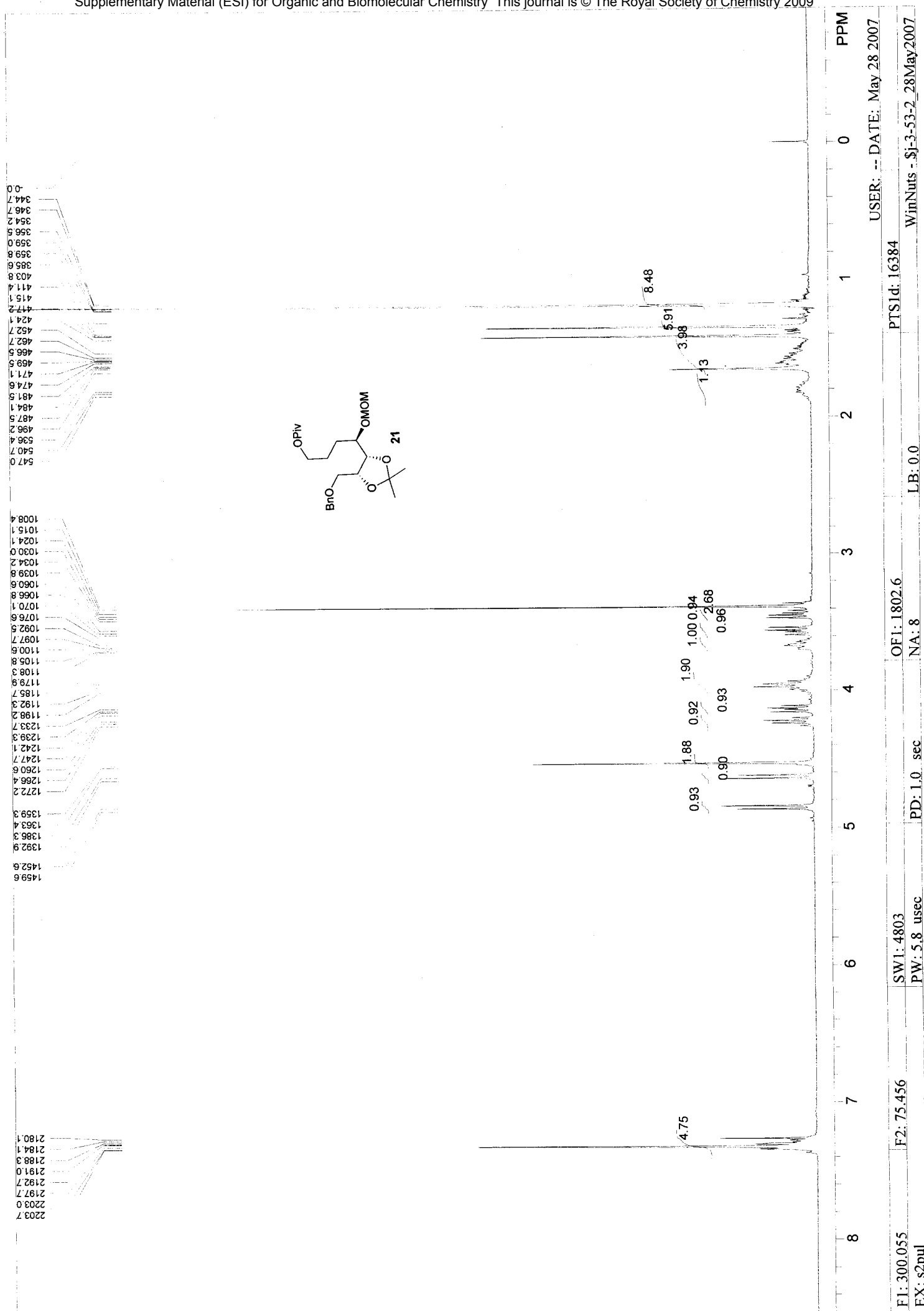
63.892  
73.094  
76.759  
77.013  
77.267  
79.237

178.449

209.553

ppm





S 20

300 MHz, CDCl<sub>3</sub>

F1: 300.055  
EX: s2pul

F2: 75.456

SW1: 4803

PW: 5.8 usec

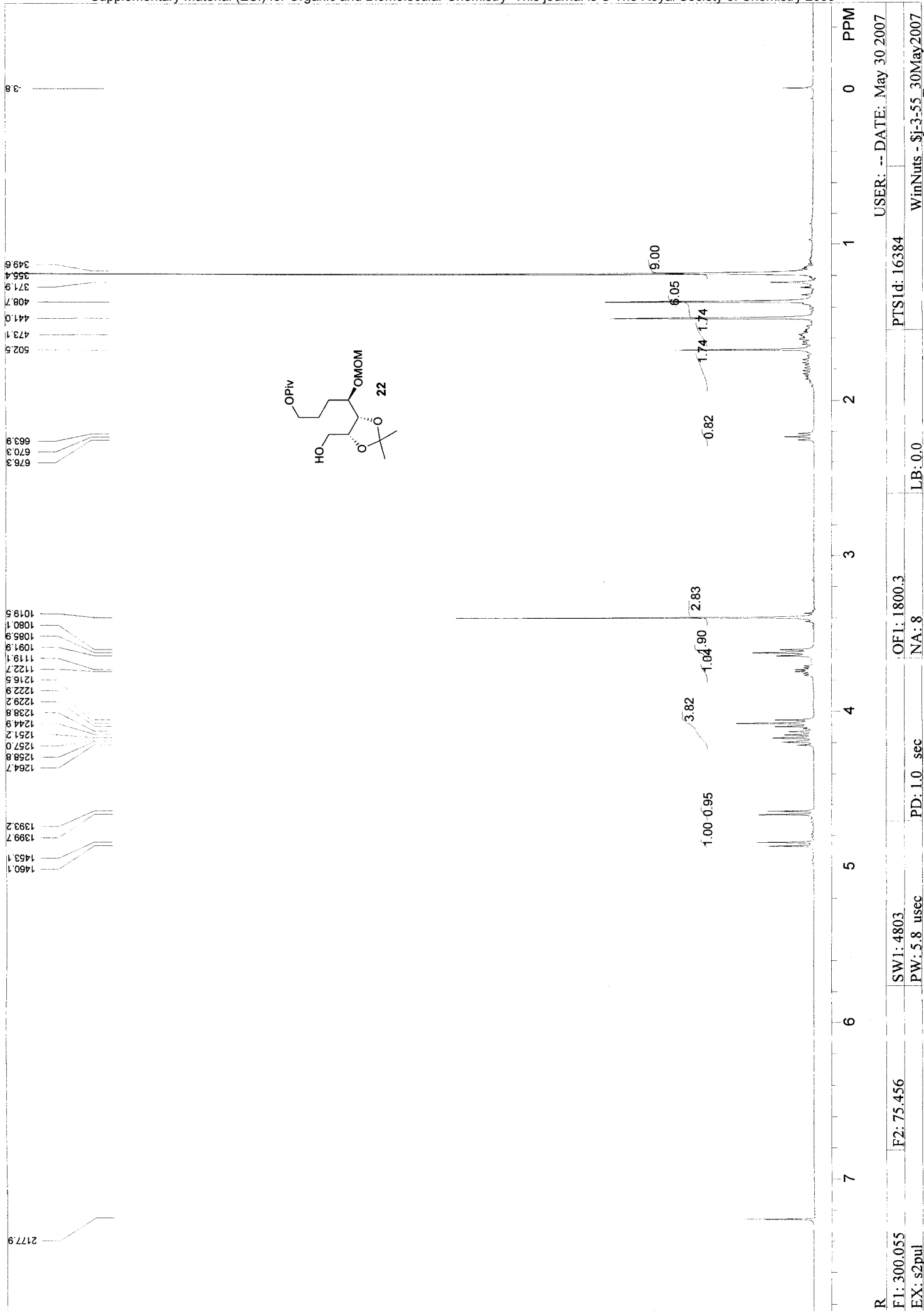
PD: 1.0 sec

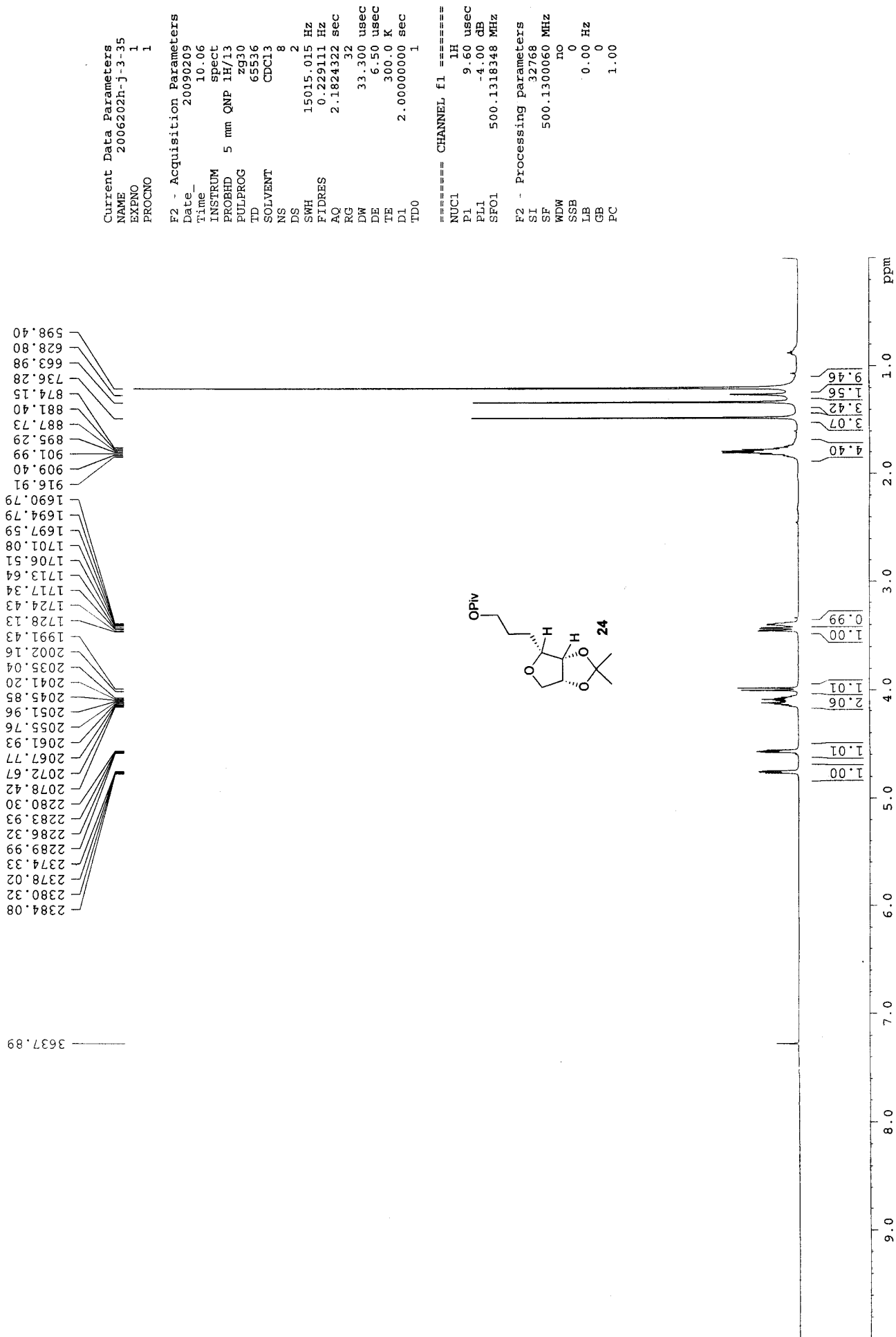
NA: 8

LB: 0.0

PTSId: 16384

USER: -- DATE: May 28 2007  
WinNuts - \$j-3-53-2\_28May2007





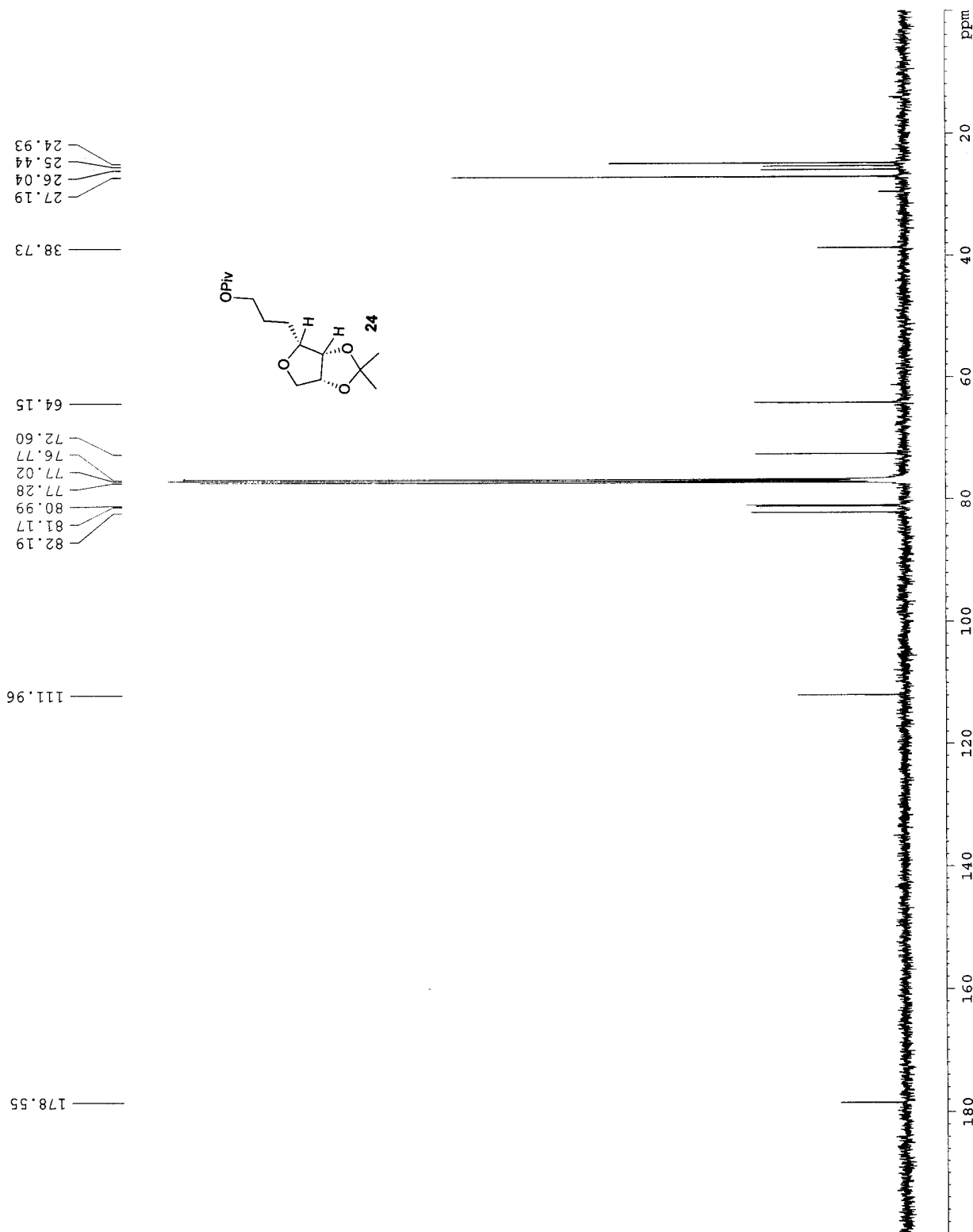
Current Data Parameters  
 NAME 2006202c-j-3-35  
 EXPNO 1  
 PROCNO 1

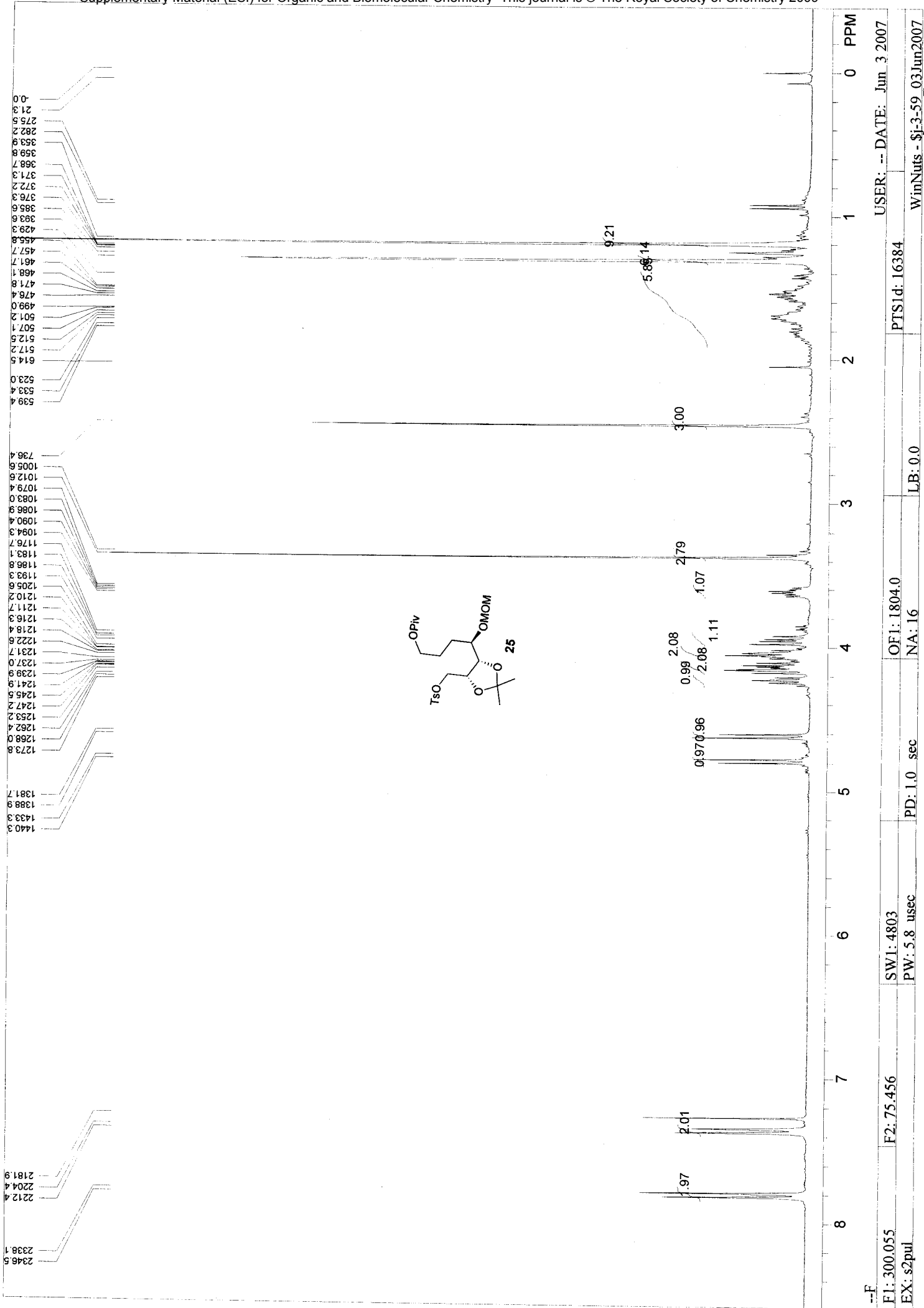
F2 - Acquisition Parameters  
 Date\_ 20090209  
 Time\_ 10.12  
 INSTRUM spect  
 PROBHD 5 mm QNP 1H/13  
 PULPROG zgpg30  
 TD 65536  
 SOLVENT CDC13  
 NS 174  
 DS 4  
 SWH 43859.648 Hz  
 FIDRES 0.669245 Hz  
 AQ 0.7471718 sec  
 RG 18390.4  
 DW 11.400 usec  
 DE 6.50 usec  
 TE 300.0 K  
 D1 2.0000000 sec  
 d11 0.0300000 sec  
 DELTA 1.8999999 sec  
 TDO 1

==== CHANNEL f1 =====  
 NUC1 13C  
 P1 7.90 usec  
 PL1 1.00 dB  
 SFO1 125.7779102 MHz

==== CHANNEL f2 =====  
 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 82.00 usec  
 PL12 15.00 dB  
 PL13 13.36 dB  
 PL2 -4.00 dB  
 SFO2 500.1320005 MHz

F2 - Processing parameters  
 SI 32768  
 SF 125.7577886 MHz  
 WDW EM  
 SSB 0  
 LB 3.00 Hz  
 GB 0  
 PC 1.40

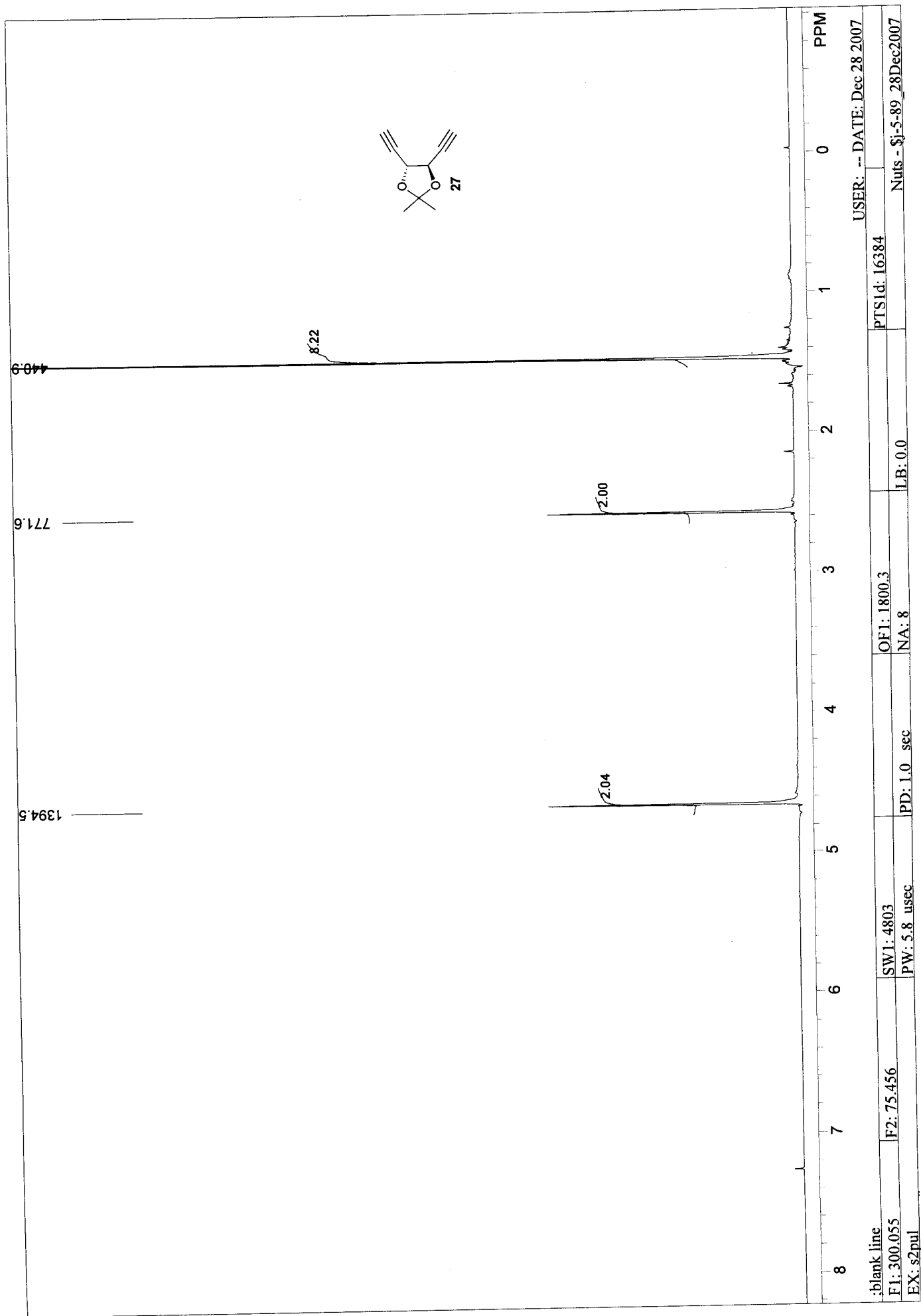


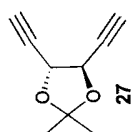


--F

E1: 300.055	F2: 75.456	SW1: 4803	OF1: 1.804.0	PTS1d: 16384	USER: -- DATE: Jun_3_2007
EX: s2pul	PD: 1.0 sec	PW: 5.8 usec	NA: 16	LB: 0.0	WinNuts - \$j-3-59_03Jun2007





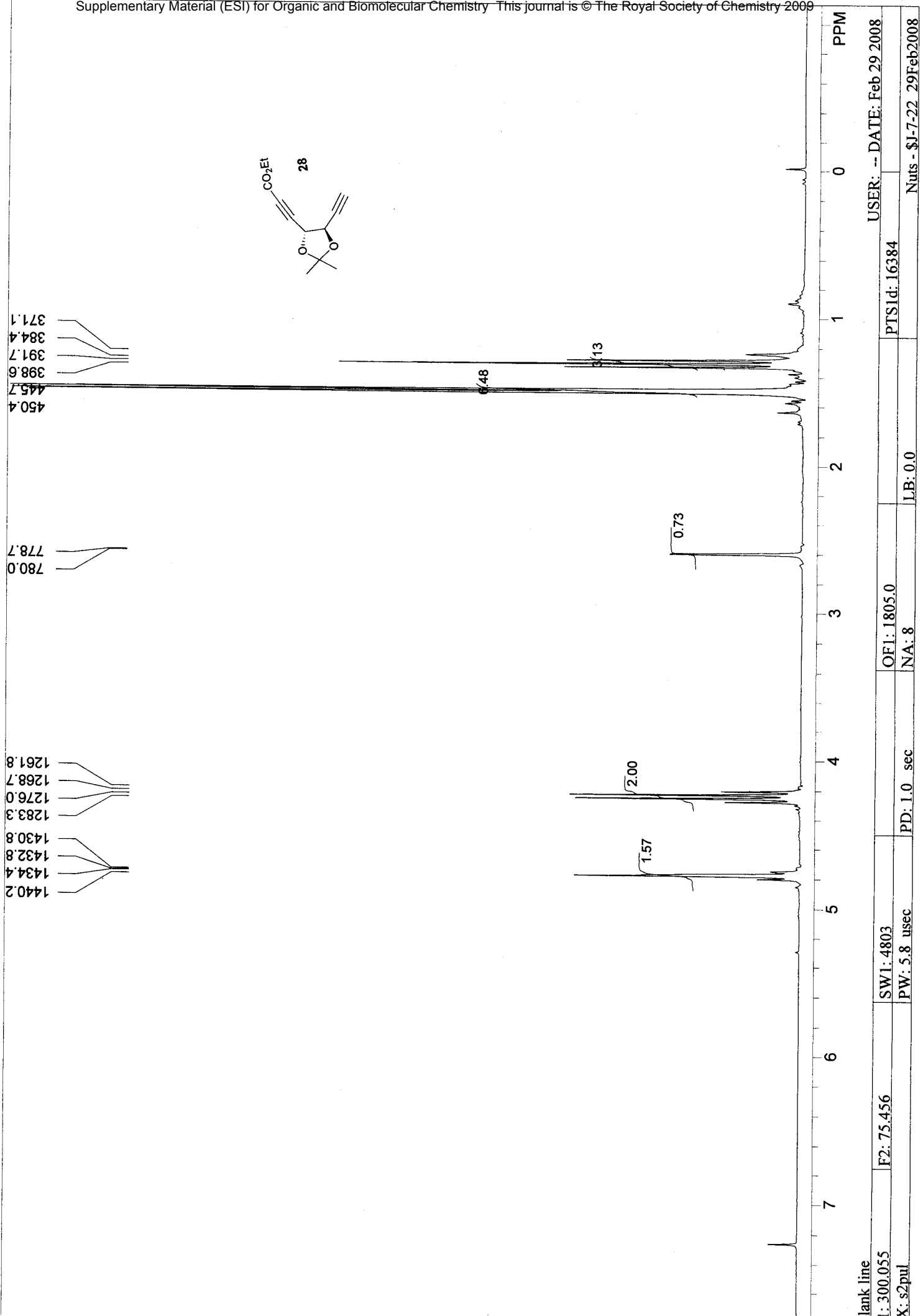


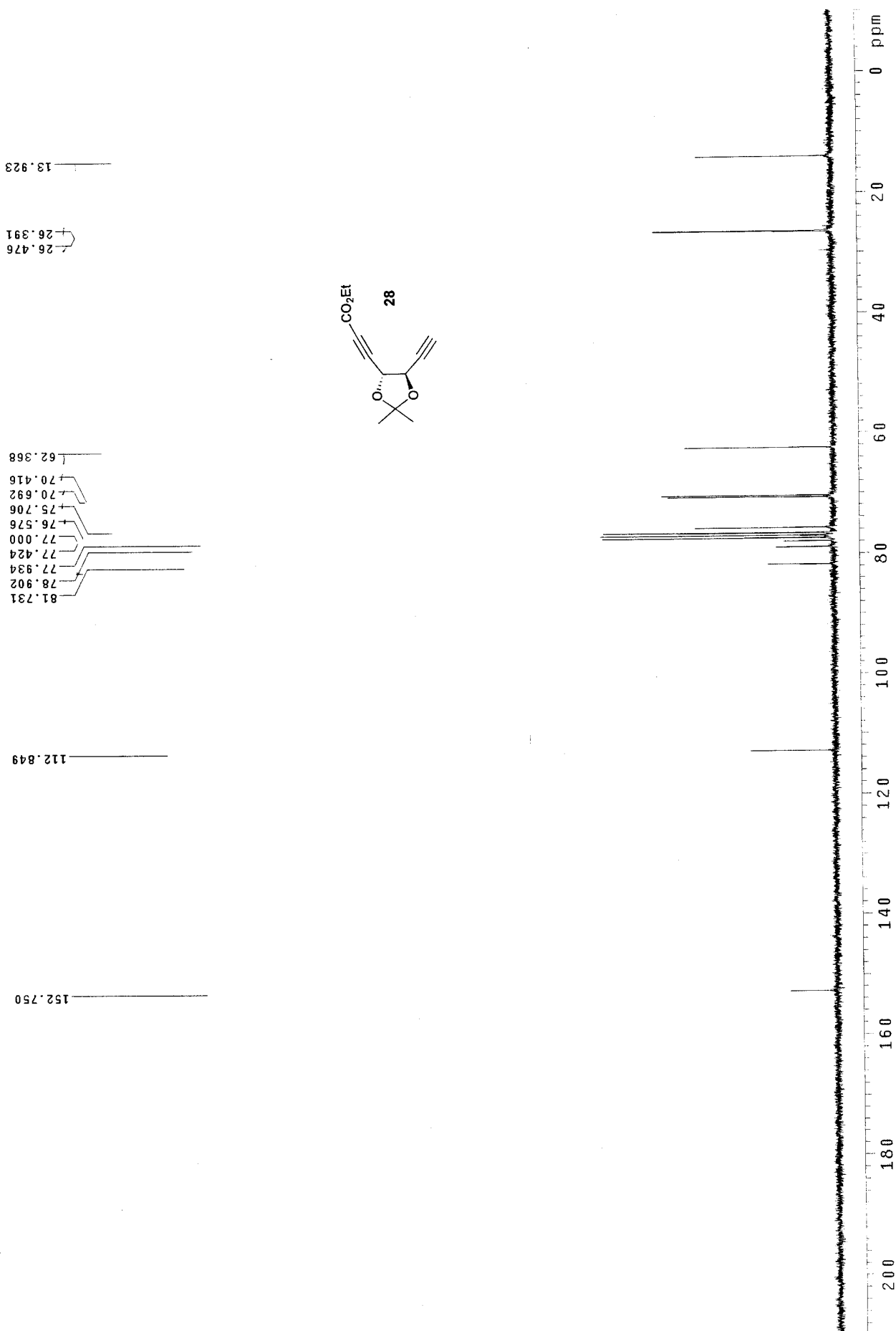
26.441

79.023  
77.419  
77.000  
76.574  
75.302  
70.802

111.963

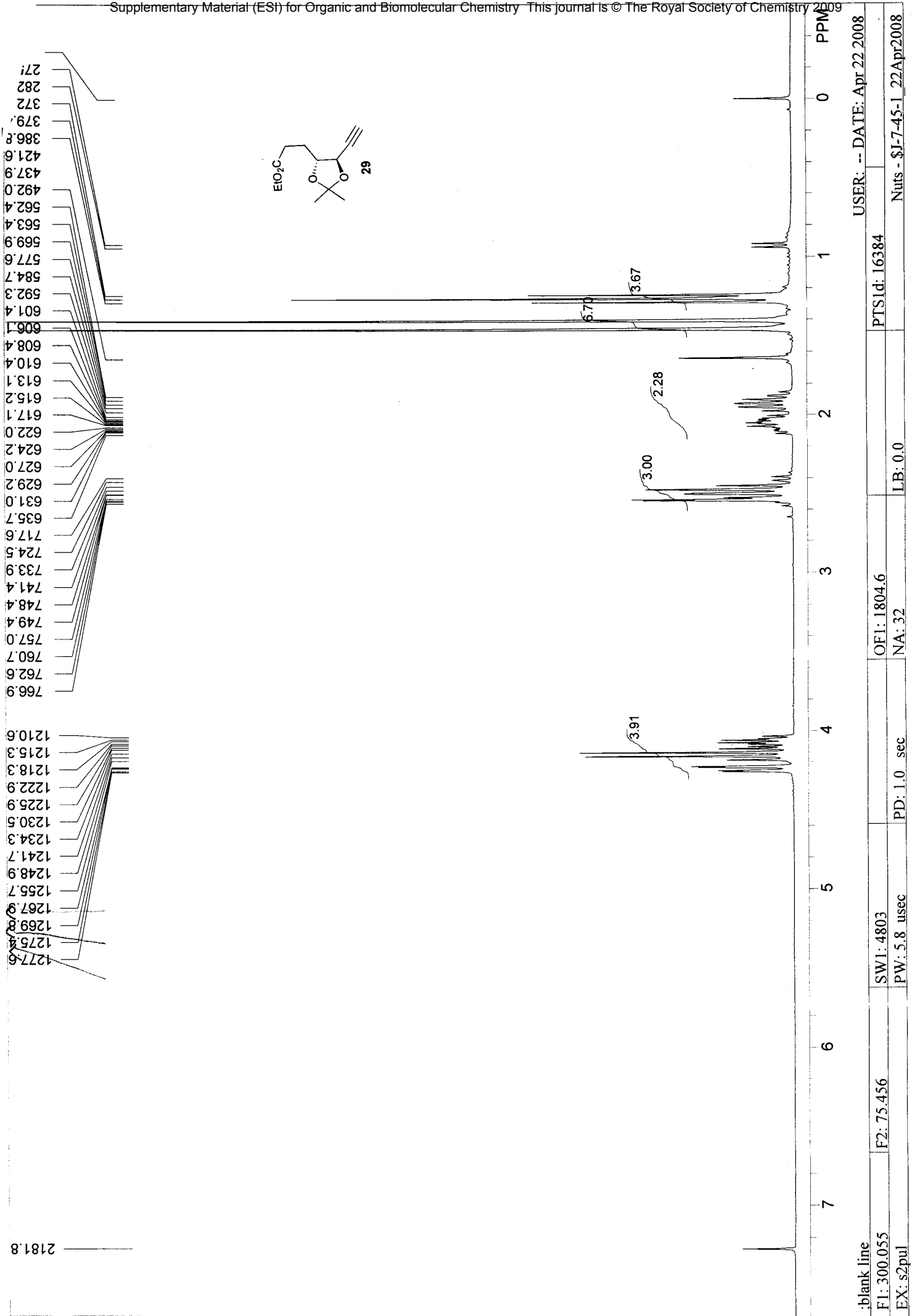






200620201-7-22

Pulse Sequence: s2pu1



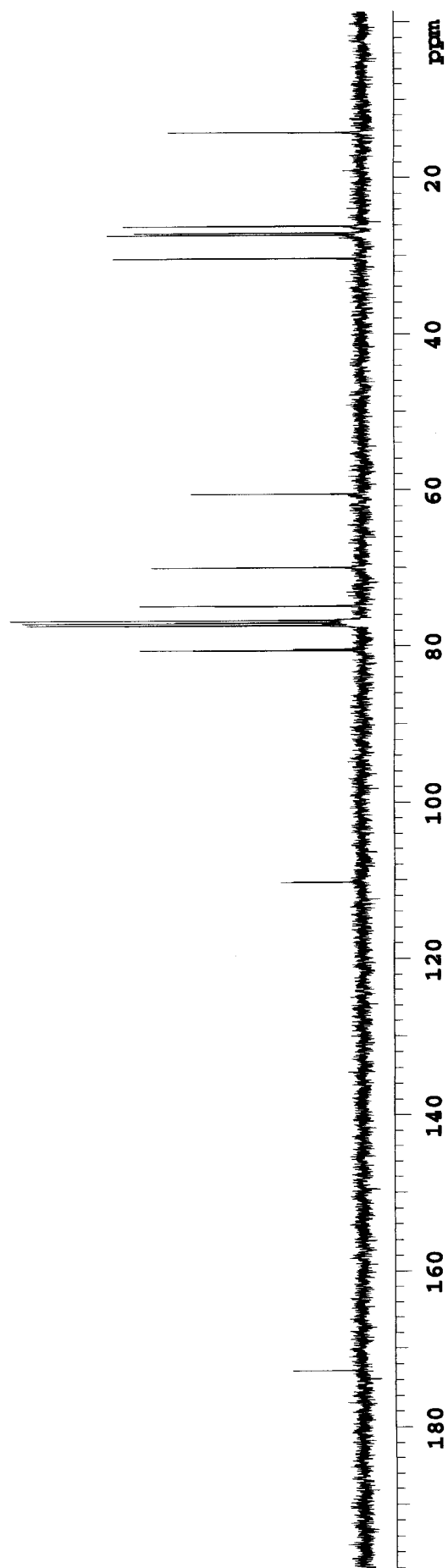
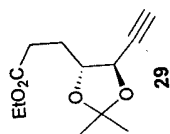
.blank line	OF1: 1804.6	NA: 32	LB: 0.0	PTSl: 16384	USER: -- DATE: Apr 22 2008
F1: 300.055	SW1: 4803	PD: 1.0 sec			
F2: 75.456	PW: 5.8 usec				
EX: s2pul					Nuts - \$J-7-45-1 22Apr2008

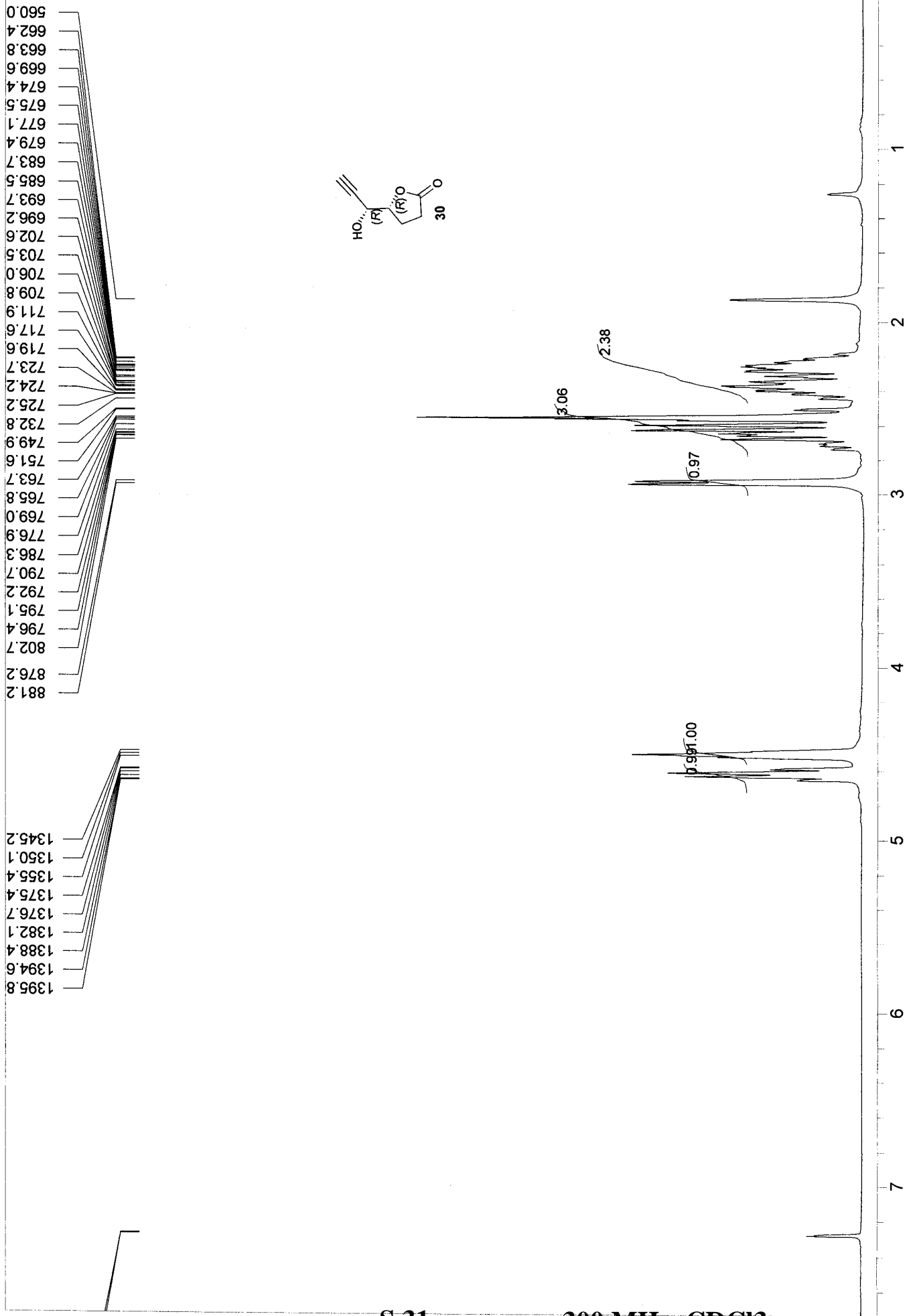
14.195  
26.143  
27.021  
27.289  
30.334

60.504  
69.958  
74.886  
76.687  
77.000  
77.320  
80.342  
80.514

110.245

172.789

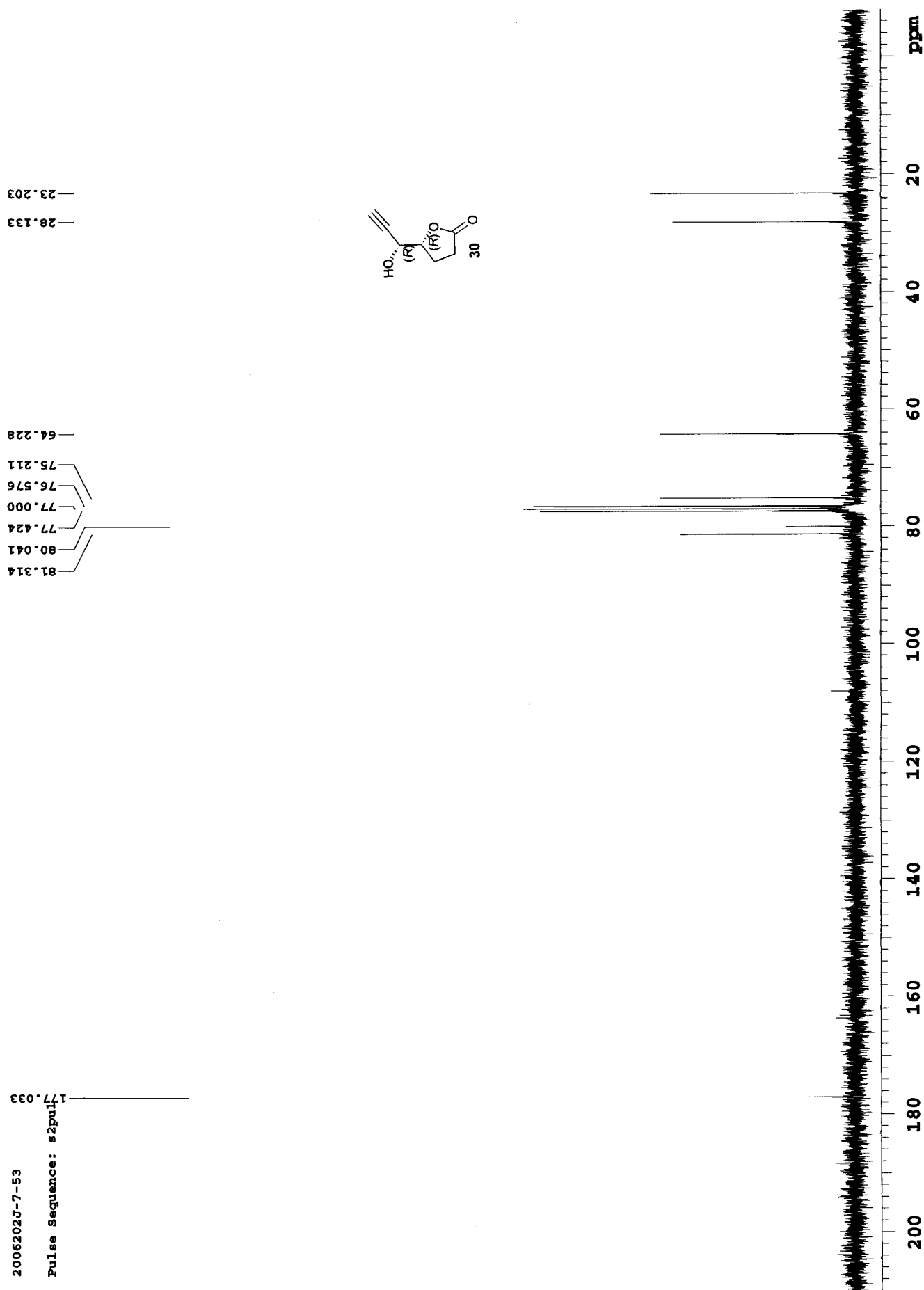




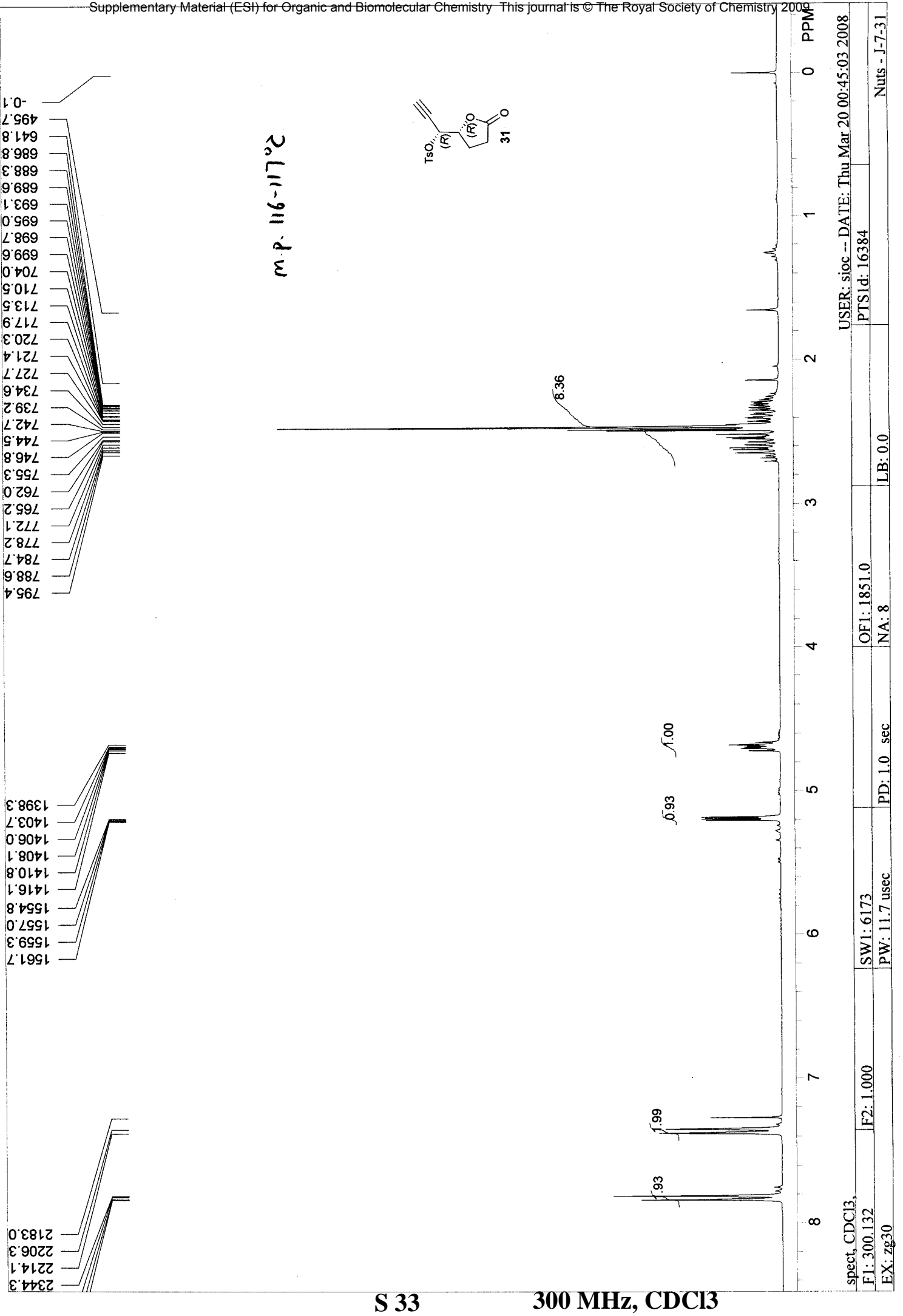
881.2  
876.2  
802.7  
796.4  
795.1  
792.2  
790.7  
786.3  
776.9  
769.0  
765.8  
763.7  
751.6  
749.9  
732.8  
725.2  
724.2  
723.7  
719.6  
717.6  
711.9  
709.8  
706.0  
703.5  
702.6  
696.2  
693.7  
685.5  
683.7  
679.4  
677.1  
675.5  
674.4  
669.6  
663.8  
662.4  
560.0

1395.8  
1394.6  
1388.4  
1382.1  
1376.7  
1375.4  
1355.4  
1350.1  
1345.2

blank line  
F1: 300.055 F2: 75.456 SW1: 4803  
EX: s2pul PW: 5.8 usec PD: 1.0 sec NA: 32 OF1: 1807.9 LB: 0.0  
PTSD: 16384  
USER: -- DATE: May 14 2008  
Nuts - \$J-7-53\_14May2008





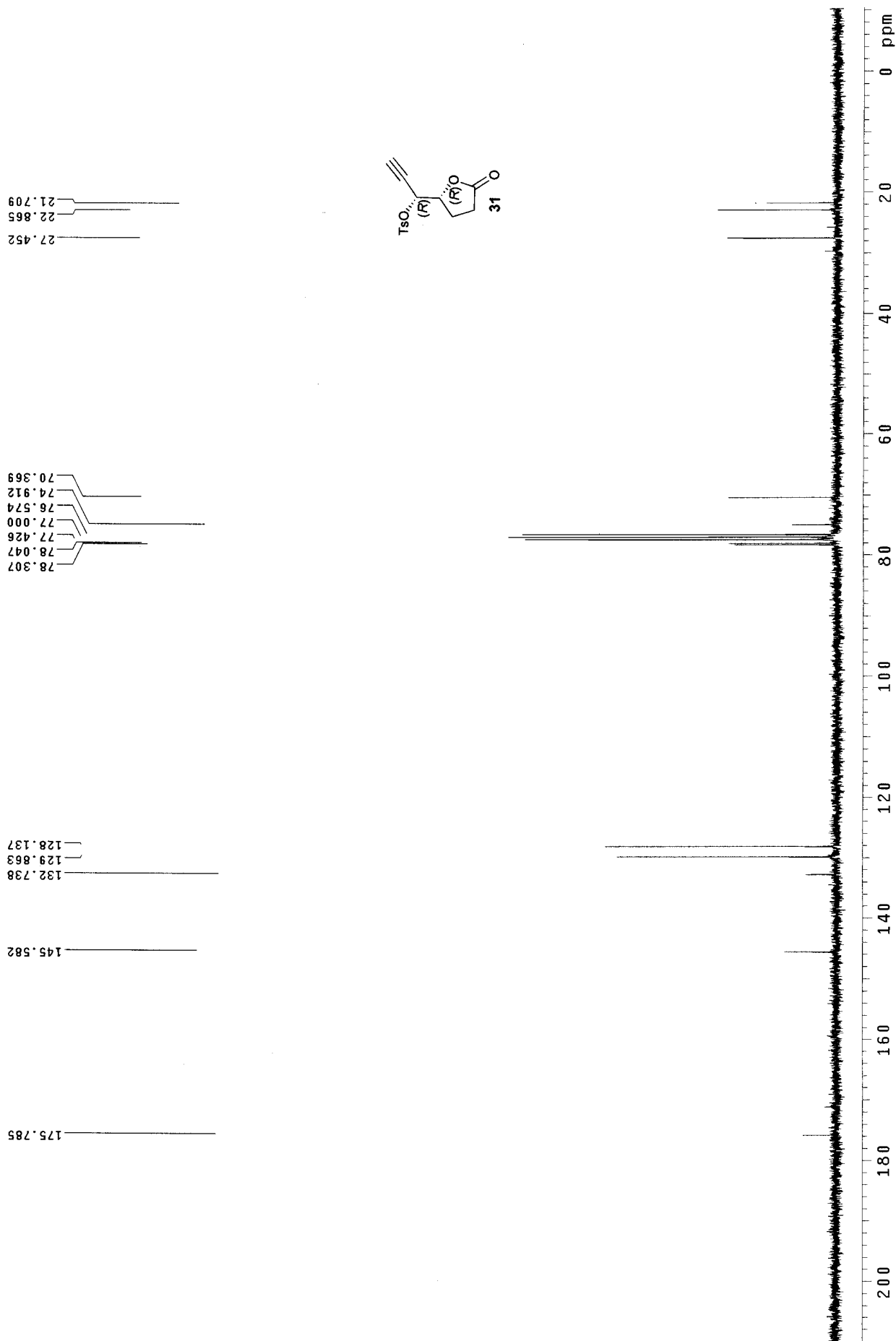
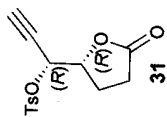


795.4  
788.6  
784.7  
778.2  
772.1  
765.2  
762.0  
755.3  
746.8  
744.5  
742.7  
739.2  
734.6  
727.7  
721.4  
720.3  
717.9  
713.5  
710.5  
704.0  
699.6  
698.7  
695.0  
693.1  
689.6  
688.3  
686.8  
641.8  
495.7  
-0.1

1561.7  
1559.3  
1557.0  
1554.8  
1416.1  
1410.8  
1408.1  
1406.0  
1403.7  
1398.3

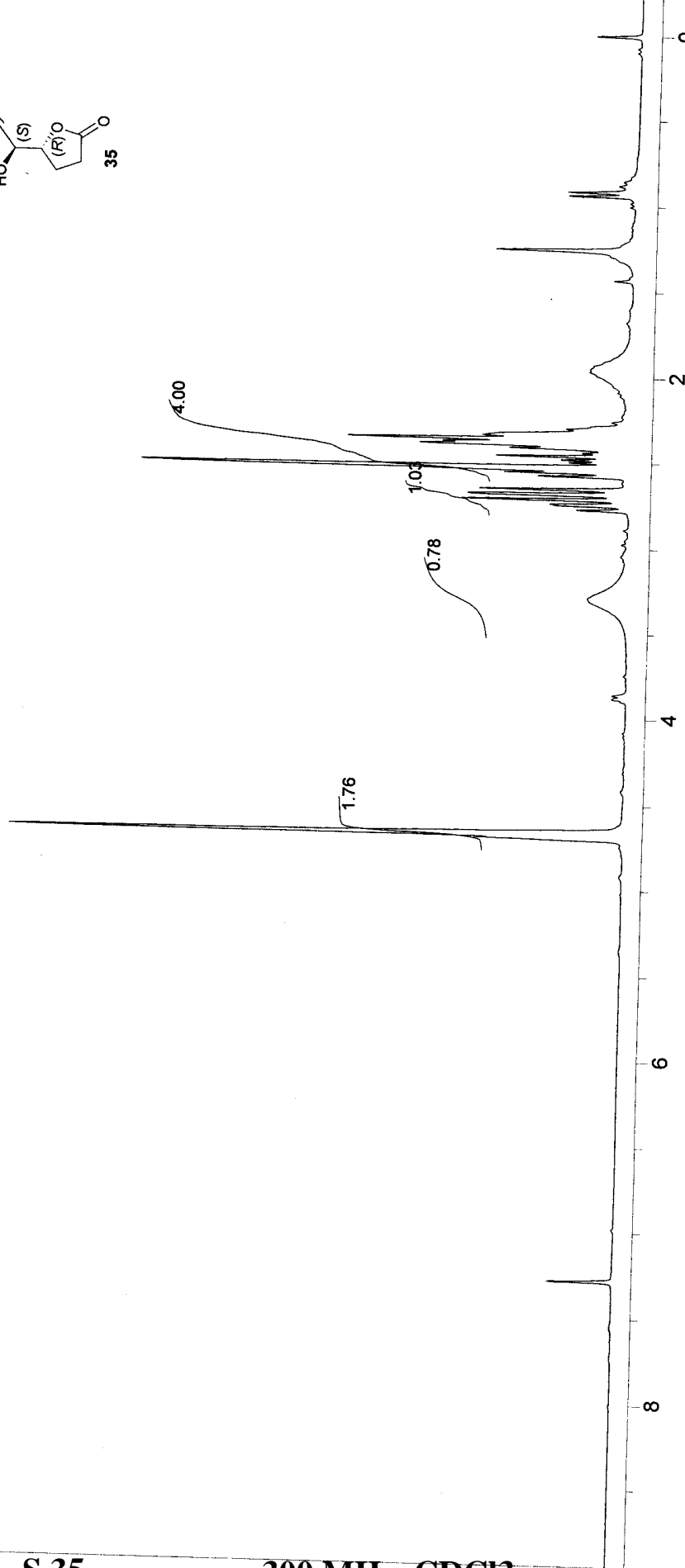
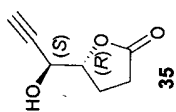
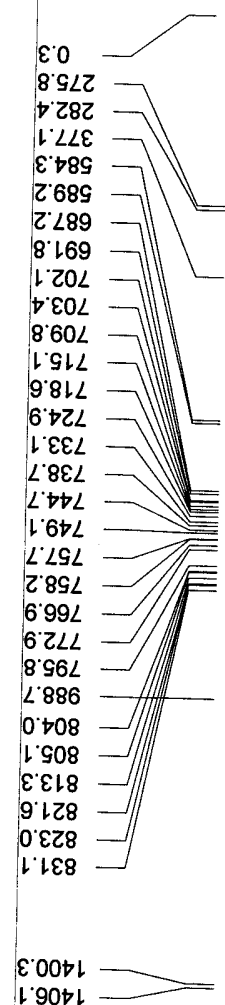
2344.3  
2214.1  
2206.3  
2183.0

spectrum, CDCl <sub>3</sub>		USER: stoc -- DATE: Thu Mar 20 00:45:03 2008
F1: 300.132	F2: 1.000	PTSId: 16384
EX: zg30	SW1: 6173	LB: 0.0
	PW: 11.7 usec	NA: 8
	PD: 1.0 sec	



J-7-4

Pulse Sequence: s2pul



.blank line		USER: -- DATE: May 29 2008	
F1: 300.055	F2: 75.456	PTSID: 16384	LB: 0.0
EX: s2pul	SW1: 4803	OF1: 1807.0	NA: 32
	PW: 5.8 usec	PD: 1.0 sec	
Nuts - \$J-7-57_29May2008			

S 35

300 MHz, CDCl3

2006202J-7-57

File: xp

Pulse Sequence: s2pul

177.632

81.253

79.777

77.320

77.000

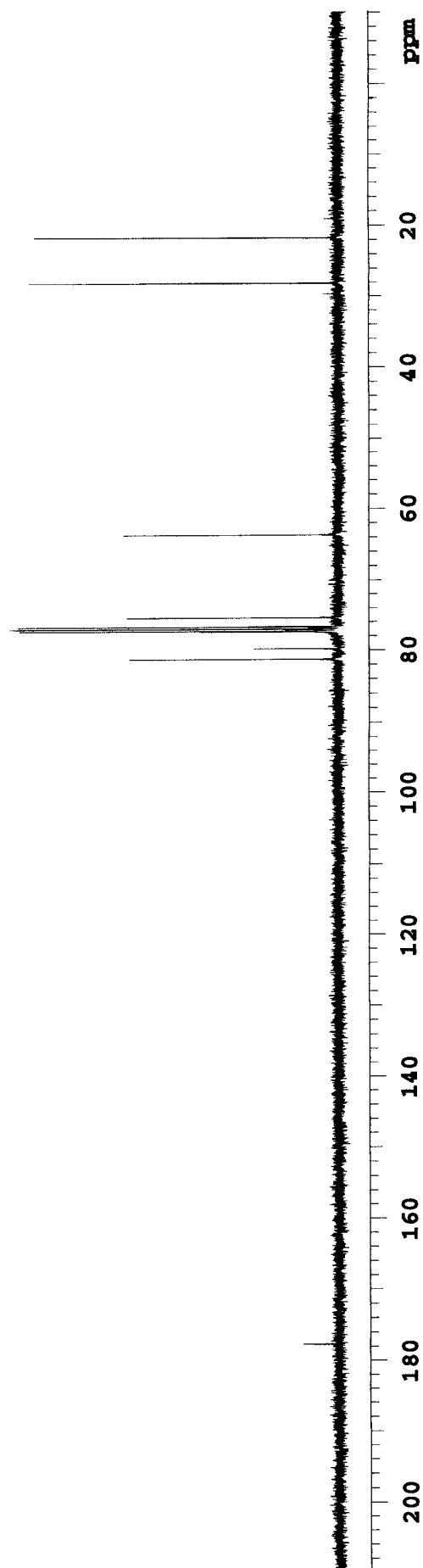
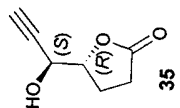
76.684

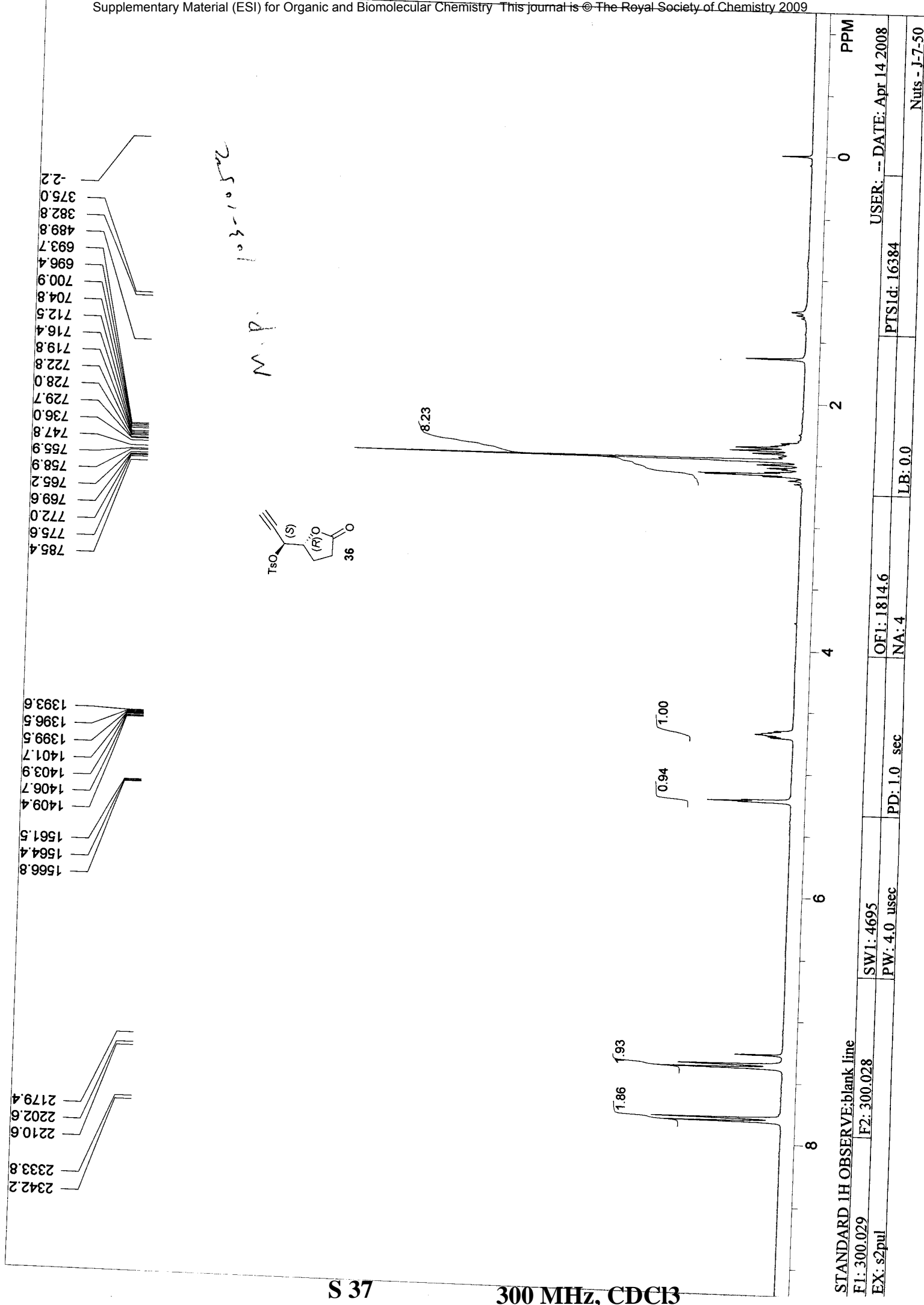
75.353

63.652

28.108

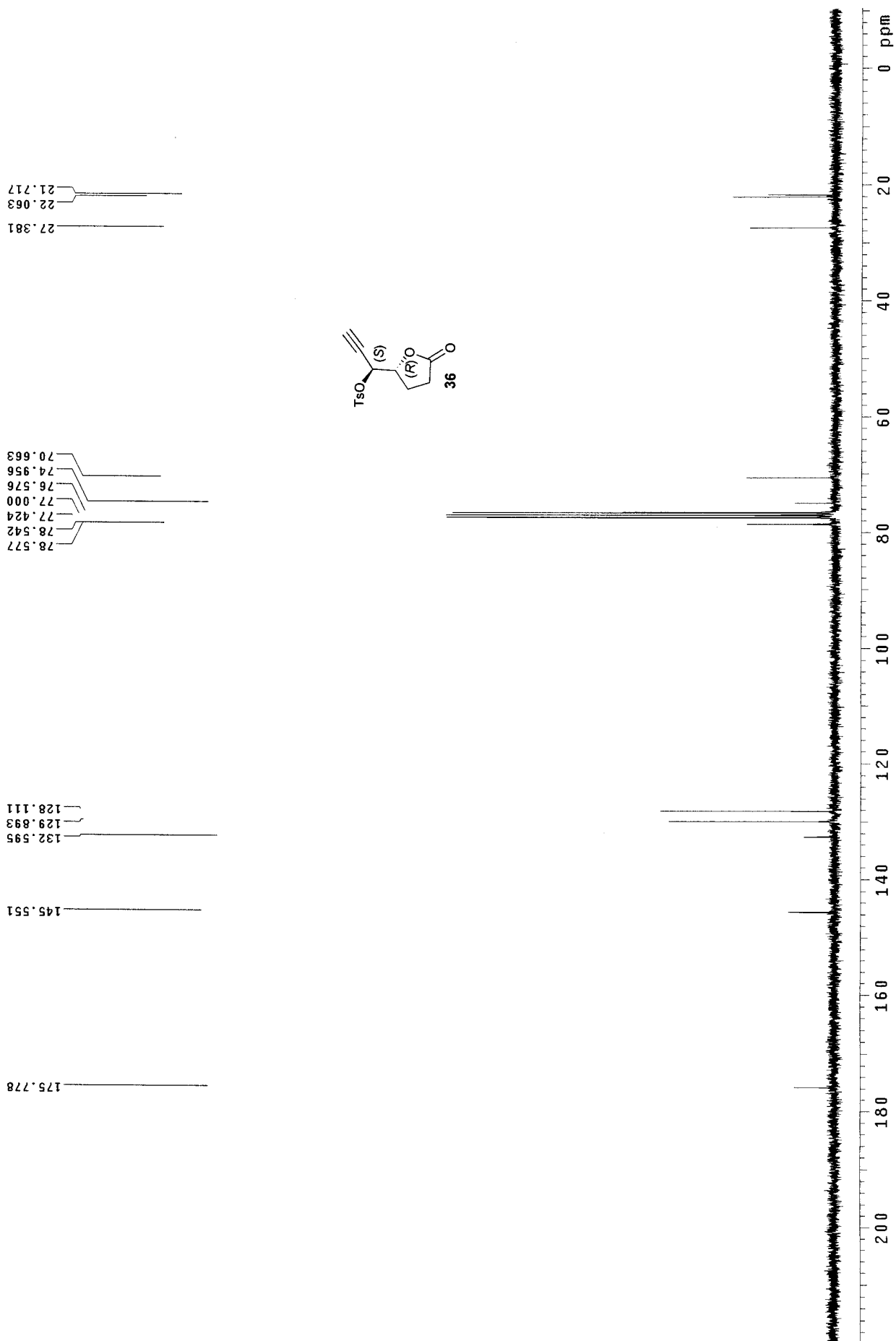
21.676

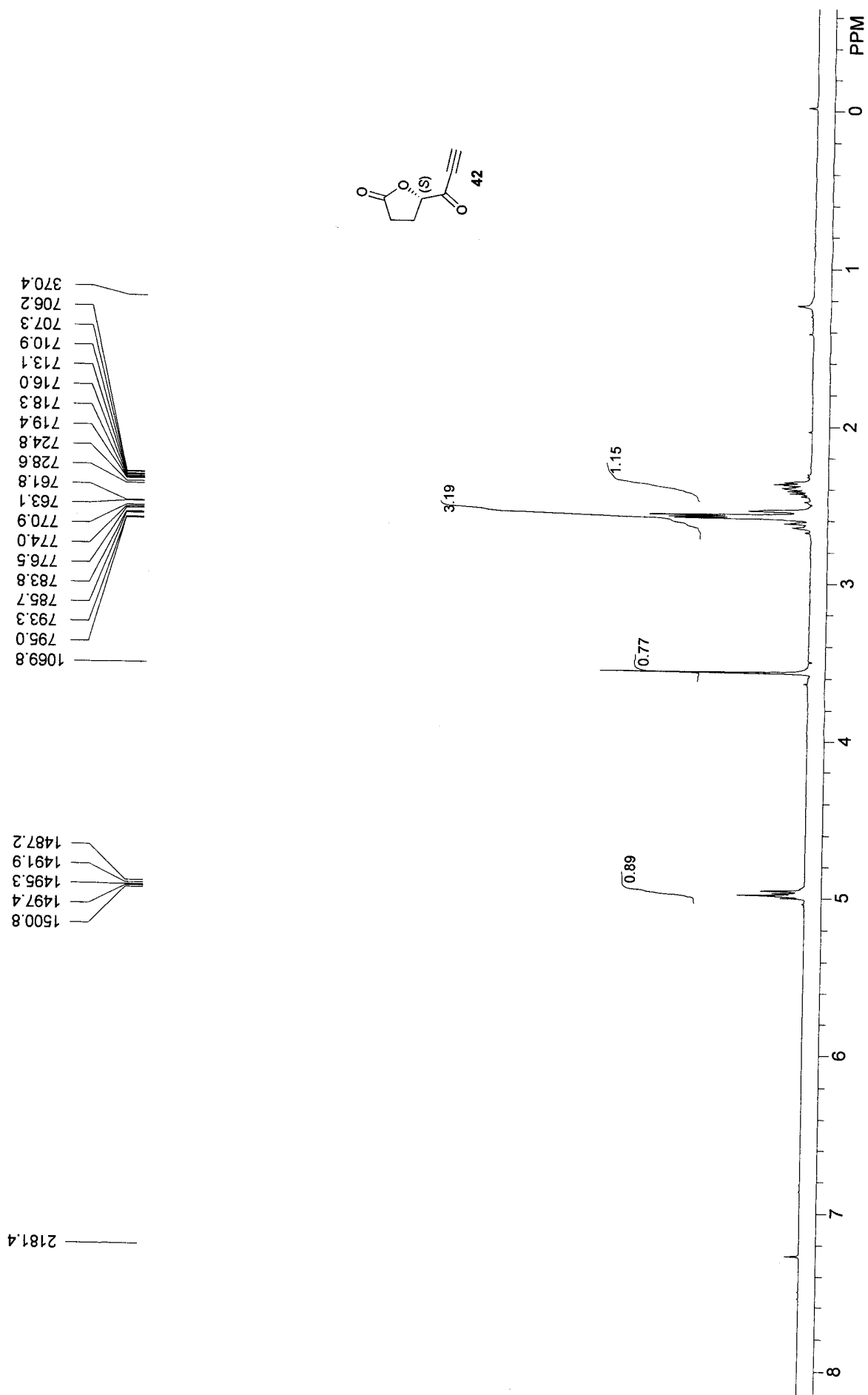


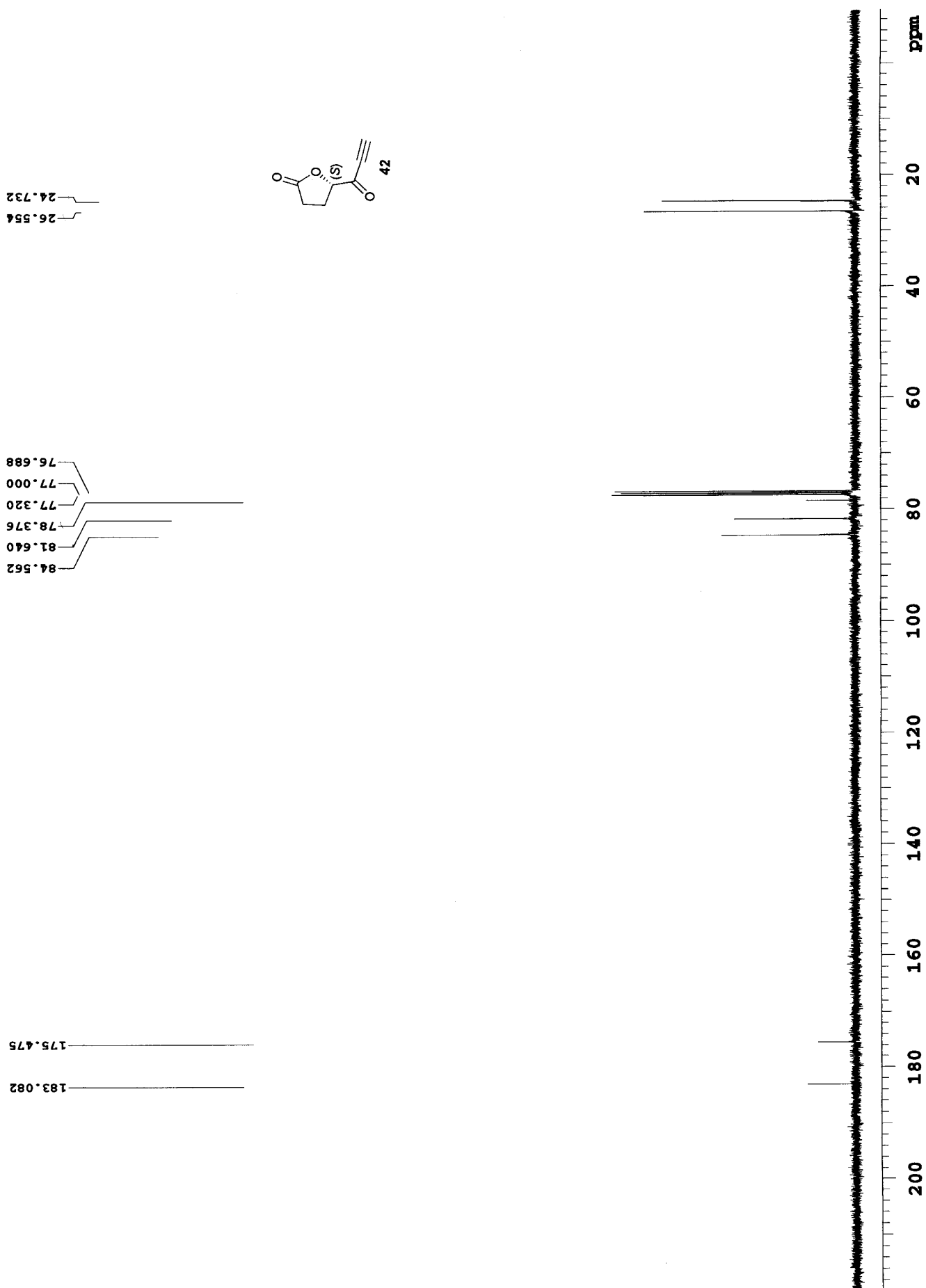


2006202J-7-50

Pulse Sequence: s2pul1

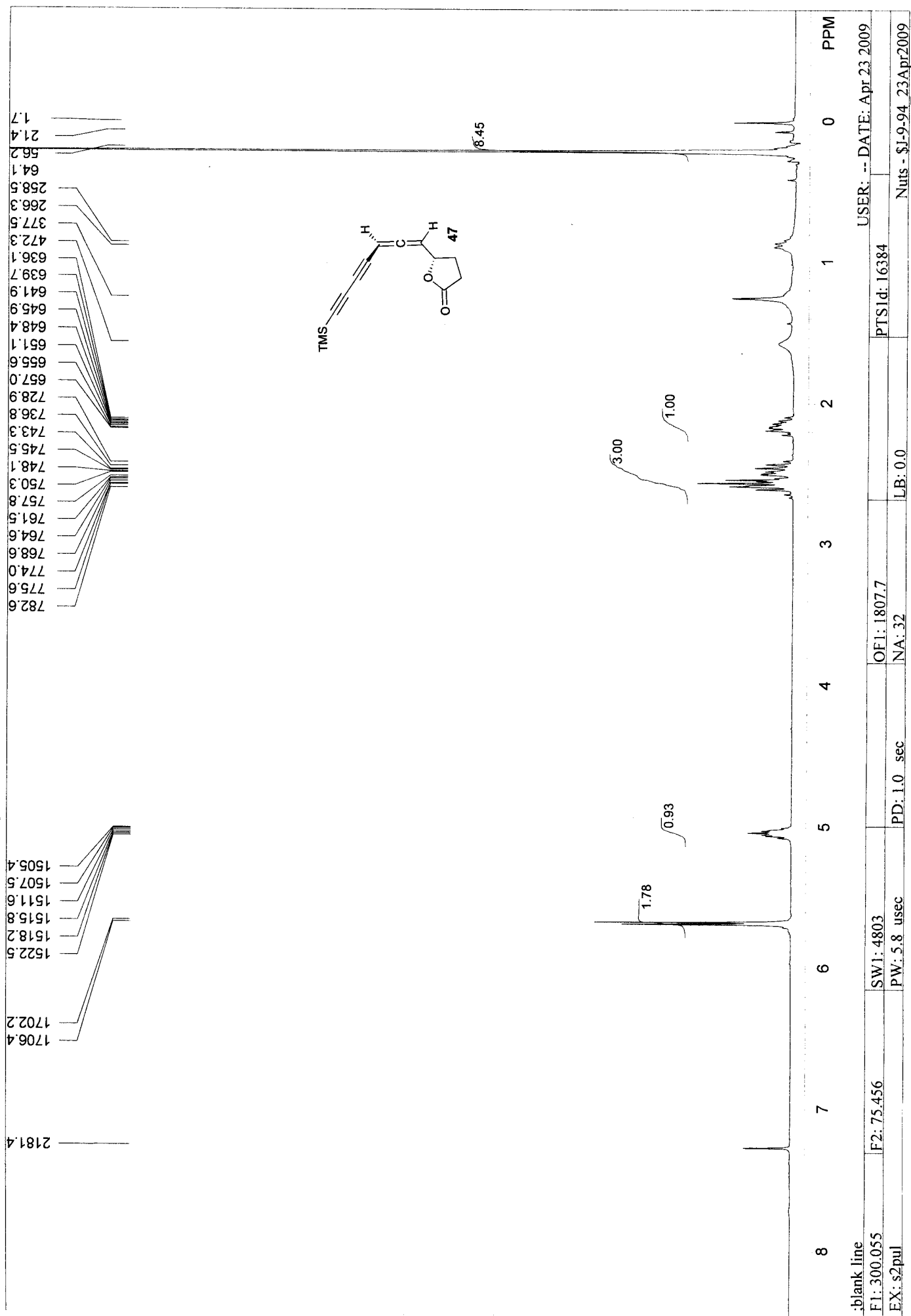


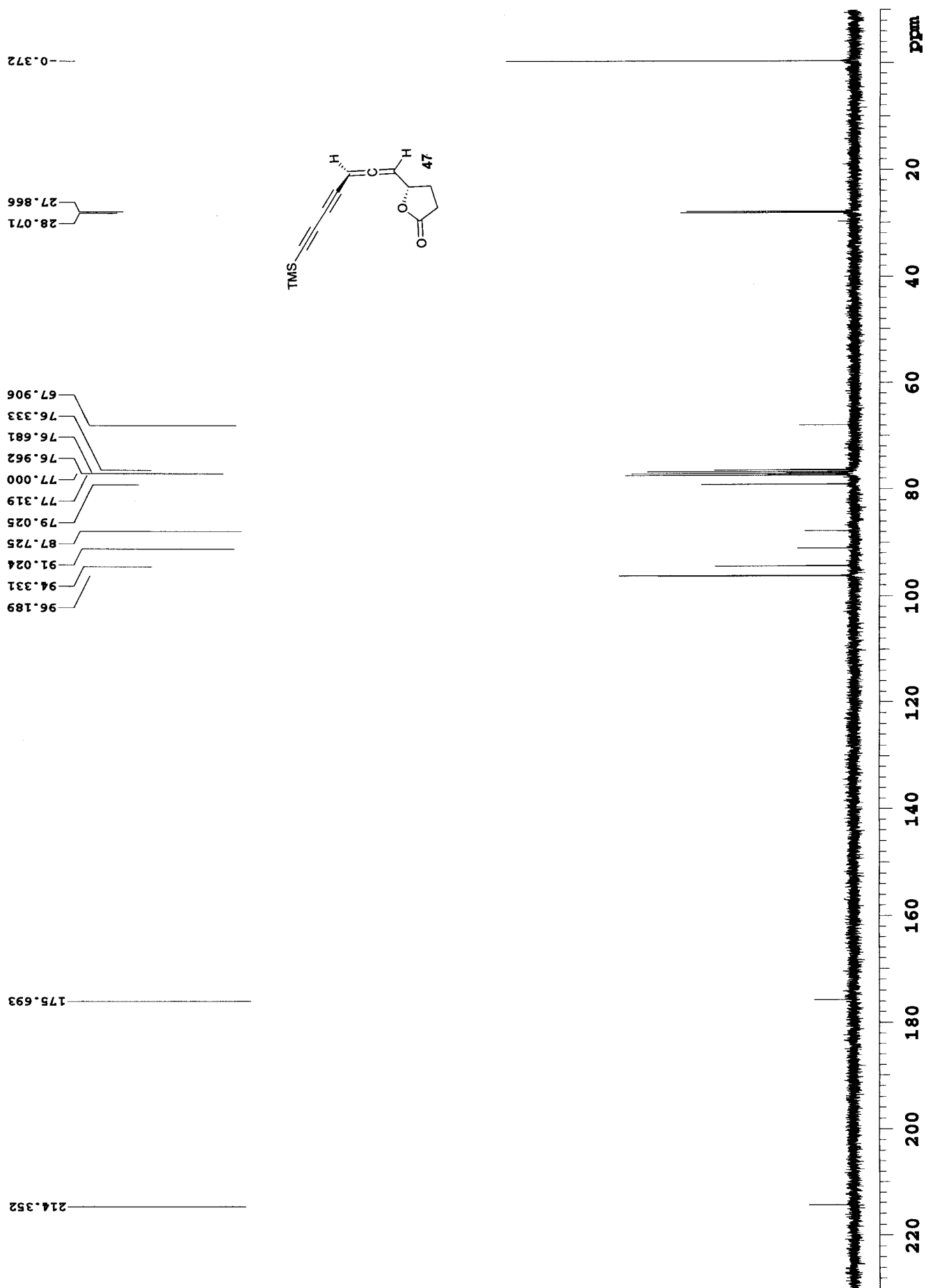




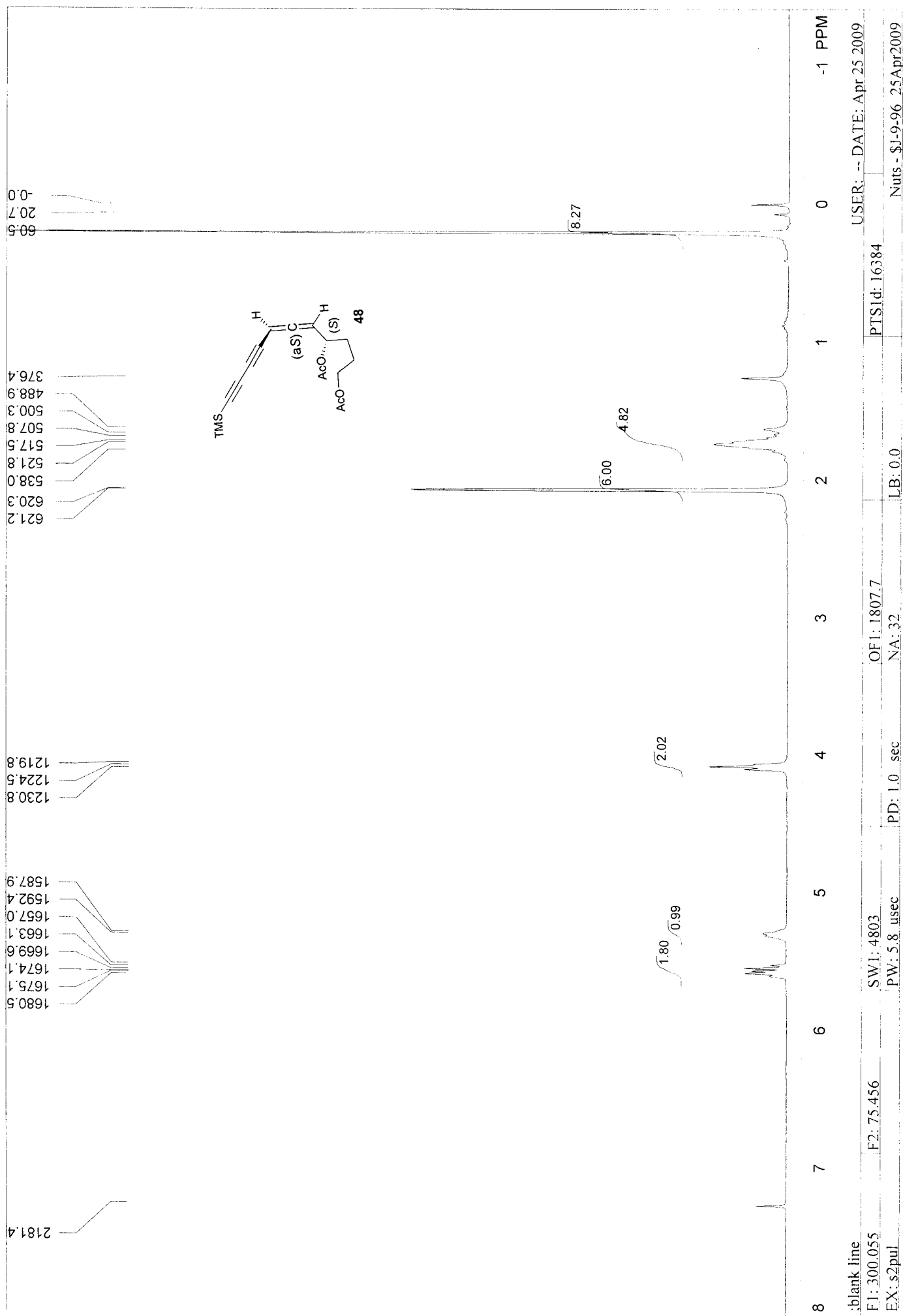
2006202J-9-81

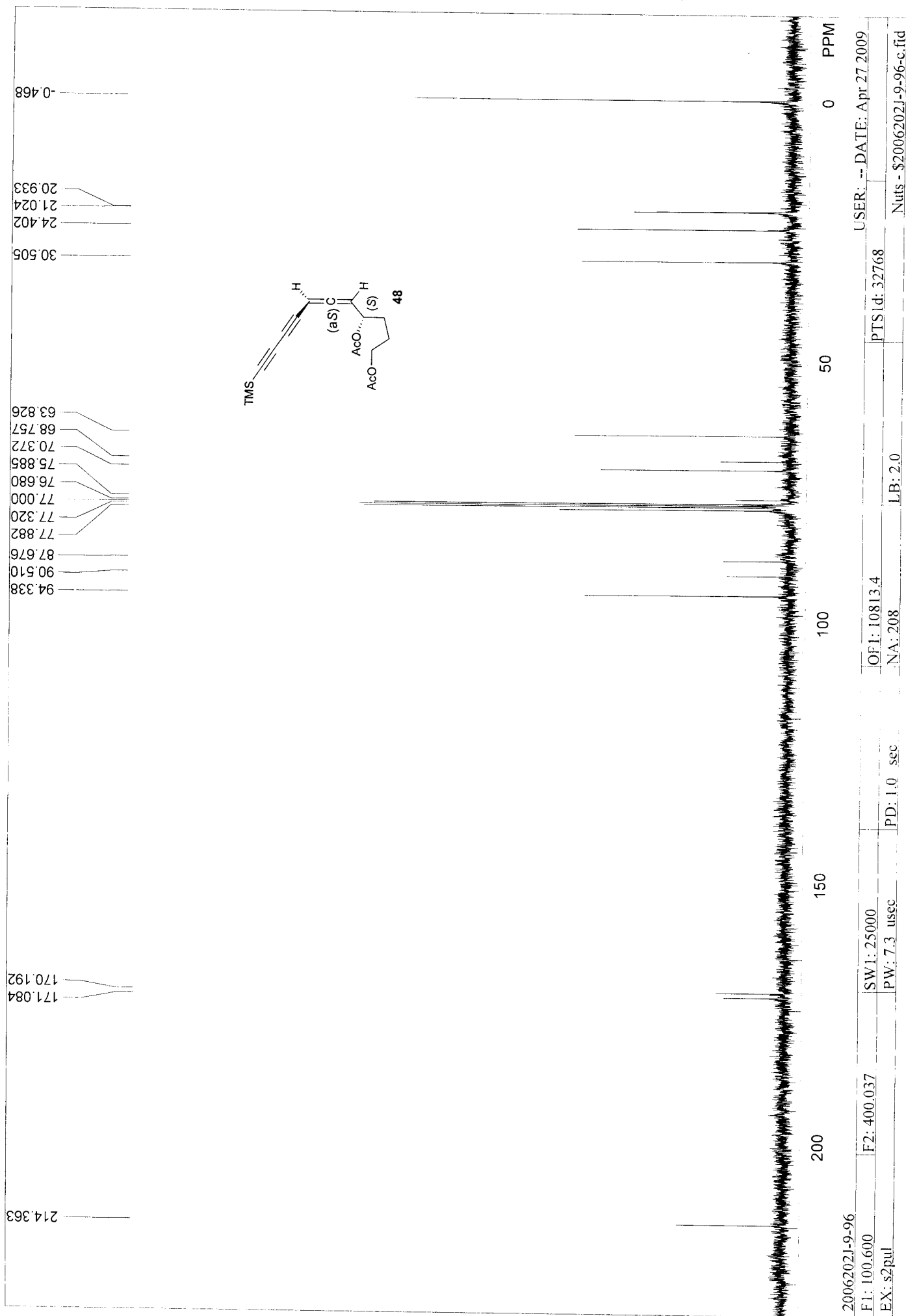


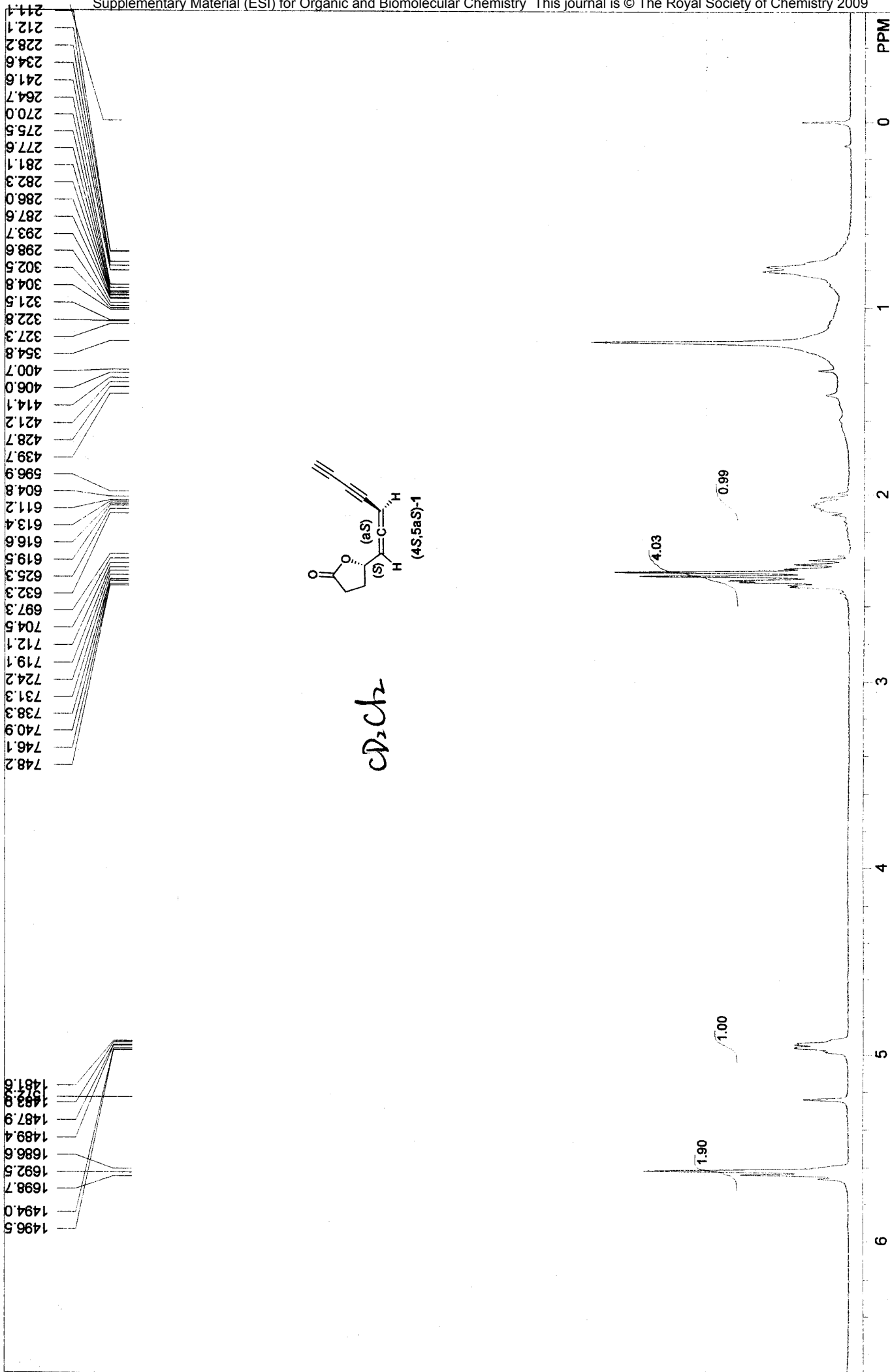




2006202J-9-94



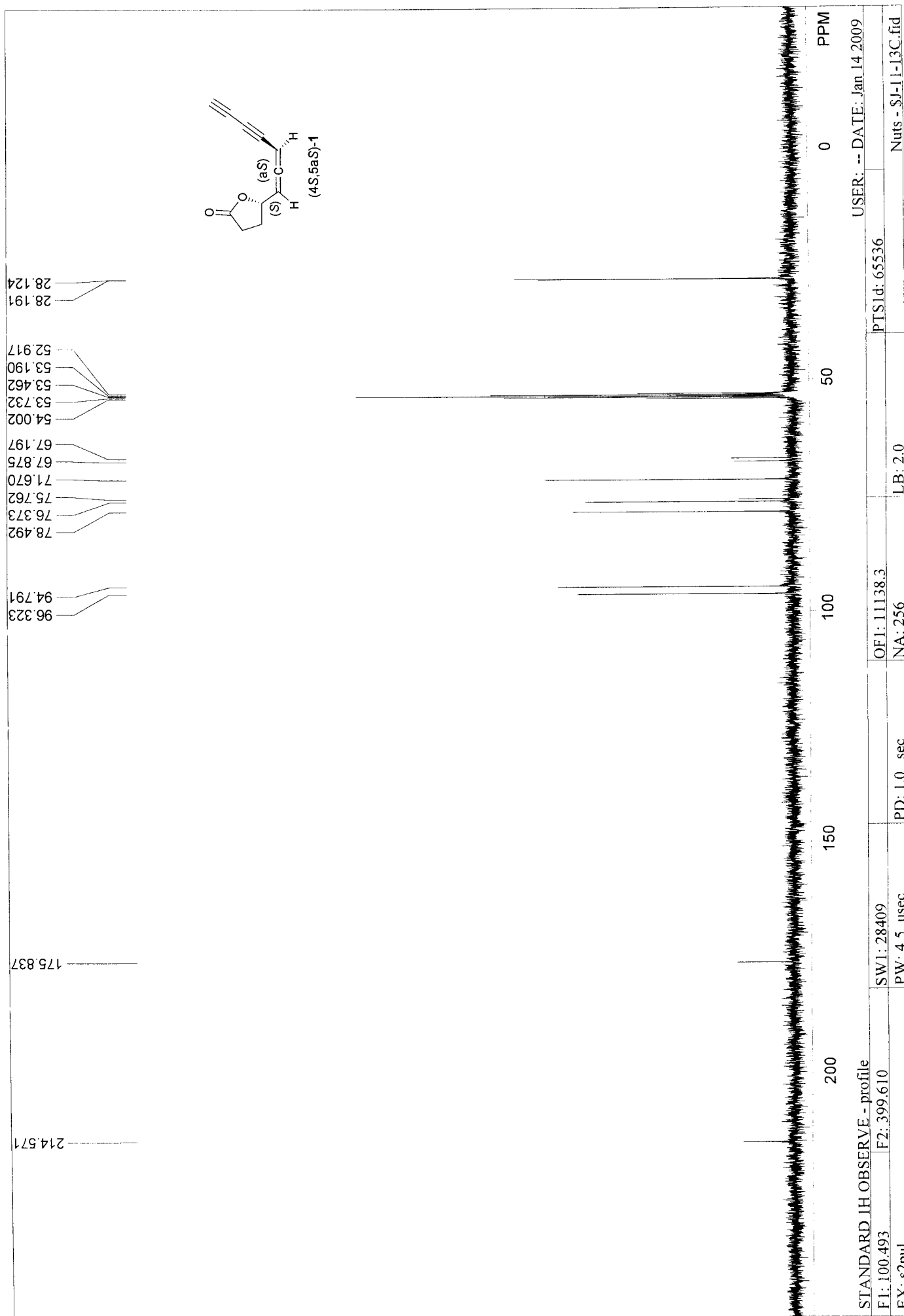


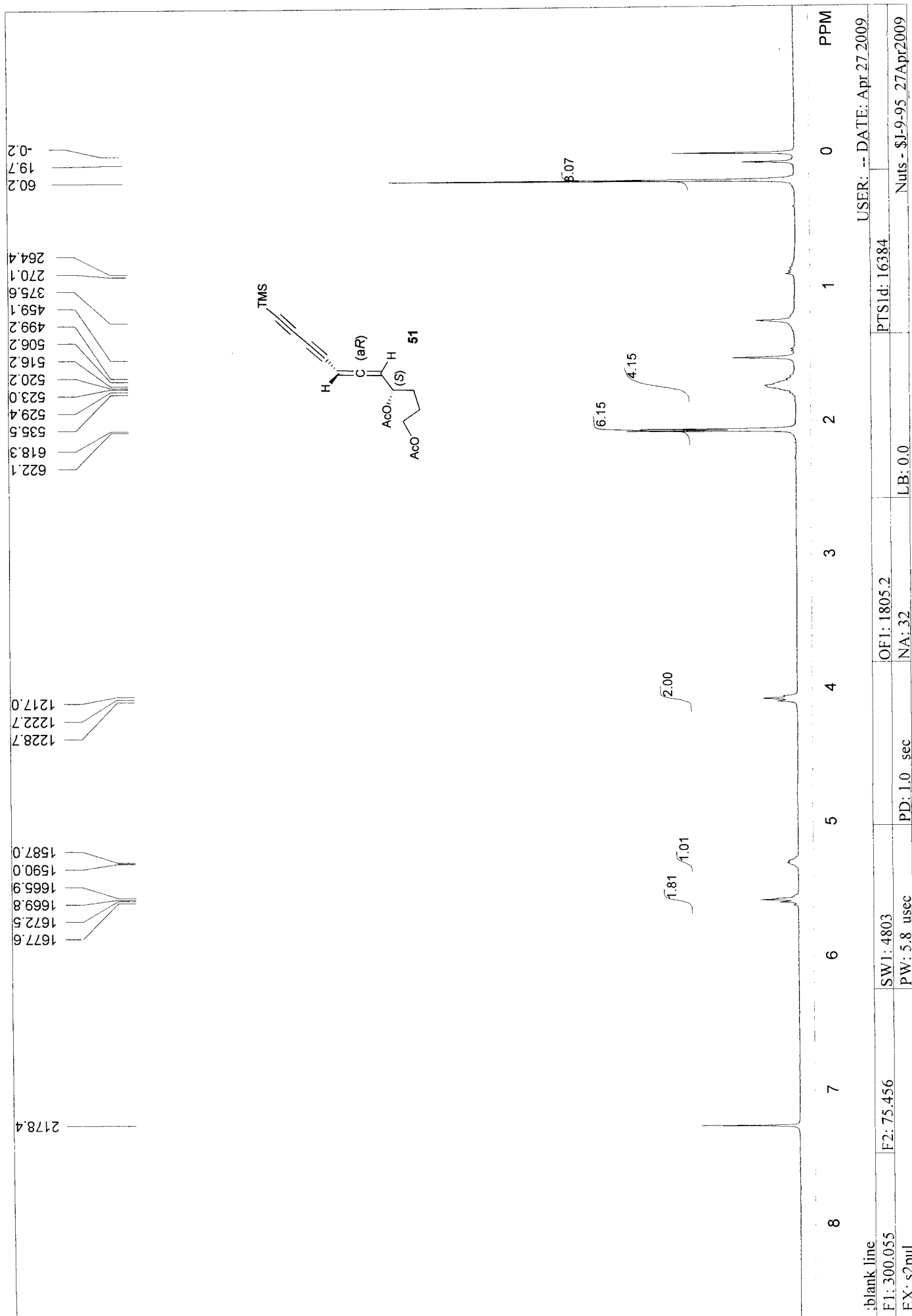


748.2  
746.1  
740.9  
738.3  
731.3  
724.2  
719.1  
712.1  
704.5  
697.3  
632.3  
625.3  
619.5  
616.6  
613.4  
611.2  
604.8  
596.9  
439.7  
428.7  
421.2  
414.1  
406.0  
400.7  
354.8  
327.3  
322.8  
321.5  
304.8  
302.5  
298.6  
293.7  
287.6  
286.0  
282.3  
281.1  
277.6  
275.5  
270.0  
264.7  
241.6  
234.6  
228.2  
212.1  
211.1

1496.5  
1494.0  
1698.7  
1692.5  
1686.6  
1489.4  
1487.9  
1482.9  
1481.6

blank line  
F1: 300.055  
EX: s2pul  
F2: 75.456  
SW1: 4803  
PD: 1.0 sec  
OF1: 1774.7  
NA: 32  
PTSID: 16384  
LB: 0.0  
USER: -- DATE: Jan 14 2009  
Nuts - \$J-11-13\_14Jan2009





Software Version: 4.1&lt;2F12&gt;

Date: 08-12-1 10:26

Sample Name : J-9-97+/-

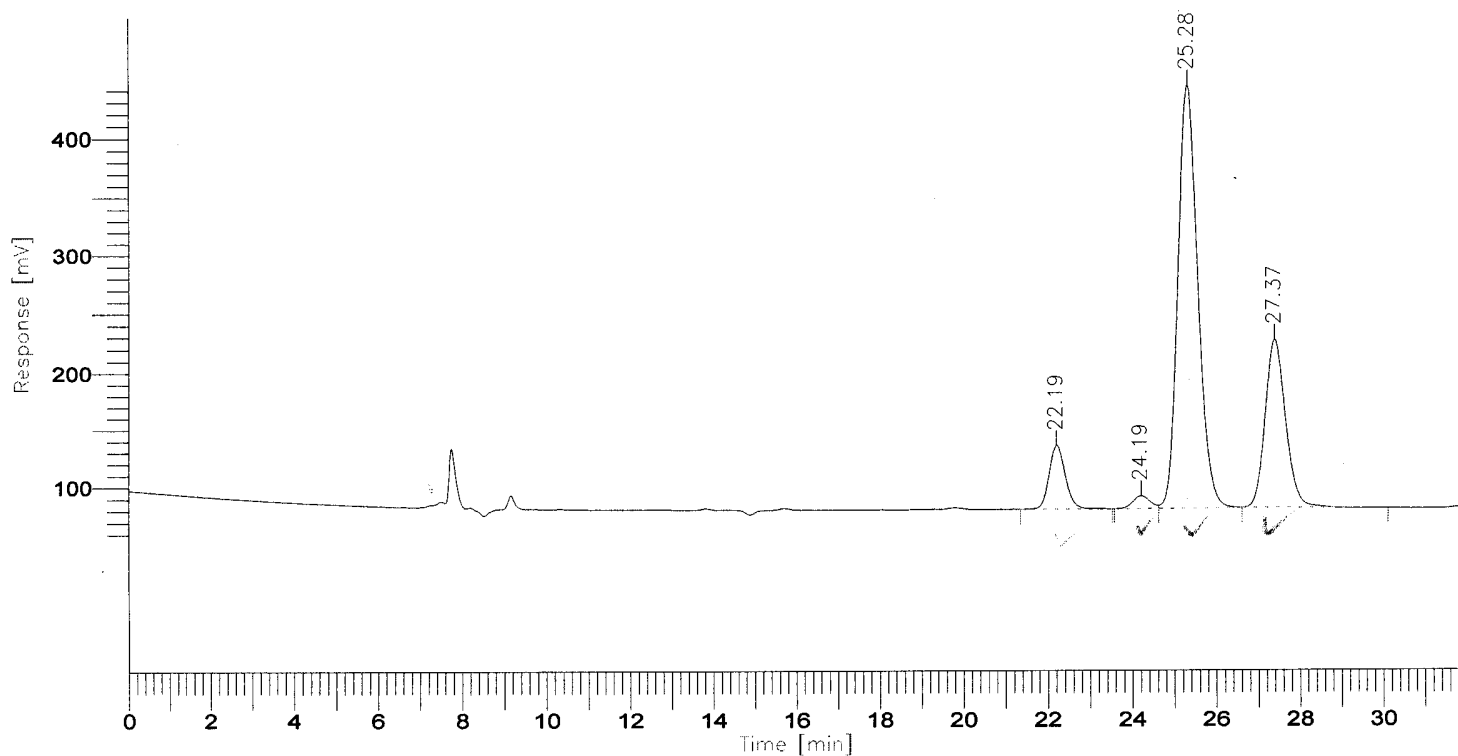
Data File : D:\YZR\YZR\_364A.RAW Date: 08-12-1 9:53

Sequence File: D:\YZR\YZR.SEQ Cycle: 1 Channel : A

Instrument : 970A - 0 Rack/Vial: 0/0 Operator: YZR-1

Sample Amount : 1.0000

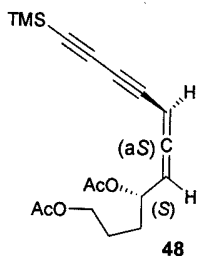
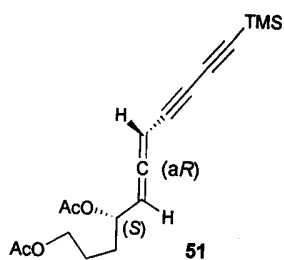
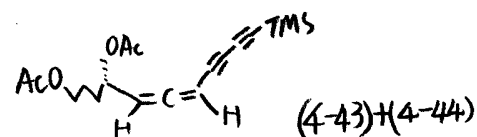
Dilution Factor : 1.00



## DEFAULT REPORT

Peak #	Time [min]	Area [uv*sec]	Height [uv]	Area [%]	BL
1	22.192	1441700.00	54910.06	7.77	BB
2	24.189	298673.98	10564.73	1.61	BV
3	25.281	11912660.02	362400.37	64.16	VB
4	27.366	4913121.00	145237.02	26.46	BB

18566155.00 573112.18 100.00

mixture of 48 & 51

Mixture of 48 and 51

S 48



Software Version: 4.1&lt;2F12&gt;

Date: 08-12-1 13:09

Sample Name : J-9-96

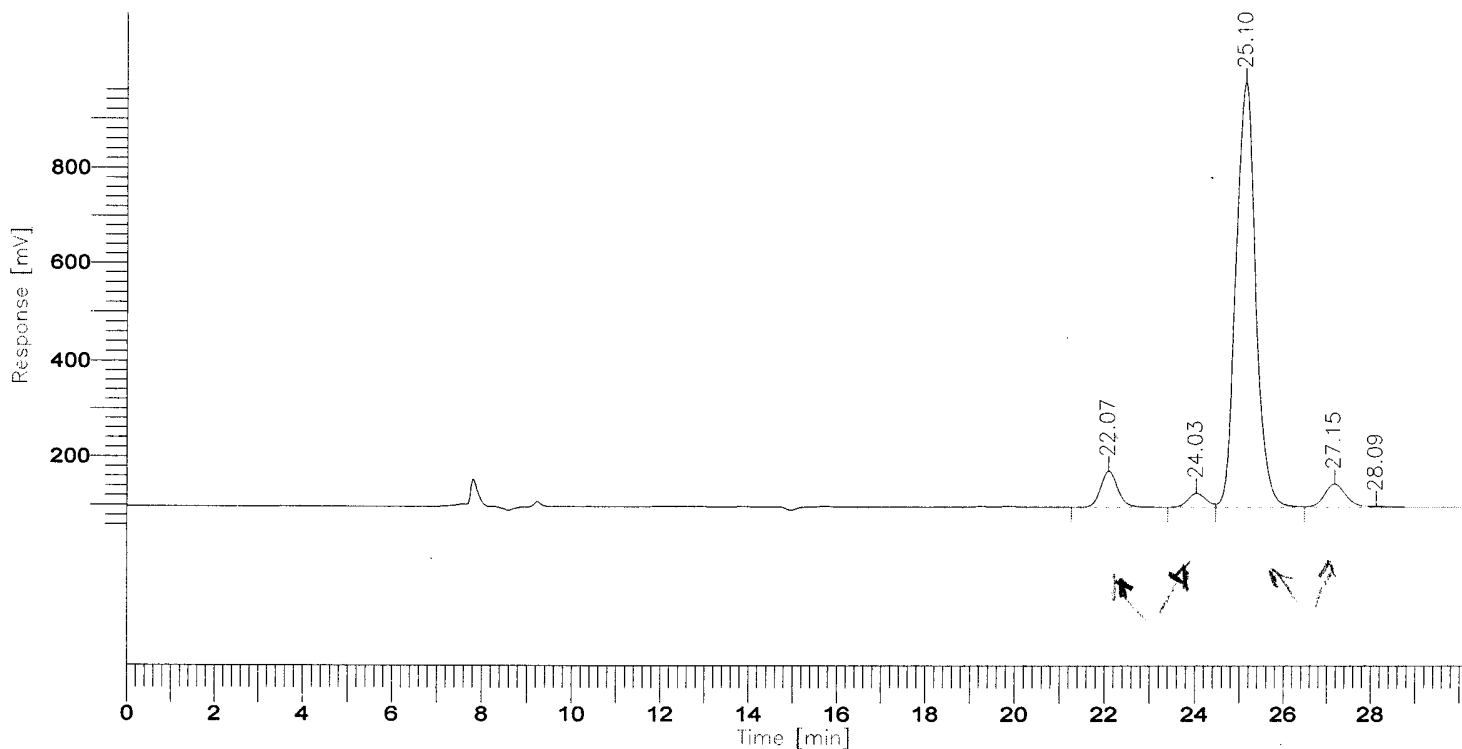
Data File : D:\YZR\YZR\_365.RAW Date: 08-12-1 10:28

Sequence File: D:\YZR\YZR.SEQ Cycle: 1 Channel : A

Instrument : 970A\_0 Rack/Vial: 0/0 Operator: YZR-1

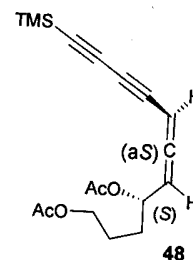
Sample Amount : 1.0000

Dilution Factor : 1.00

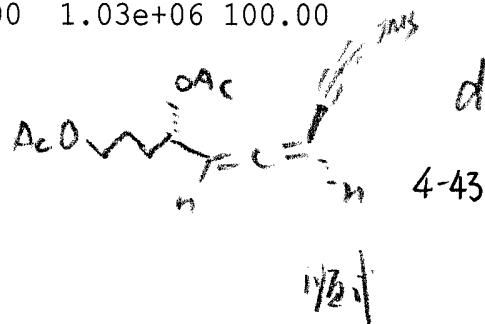


## DEFAULT REPORT

Peak #	Time [min]	Area [uv*sec]	Height [uv]	Area [%]	BL
1	22.068	1953273.00	73934.28	6.15	BB
2	24.026	790348.99	27932.54	2.49	BV
3	25.104	27296910.39	880160.28	86.00	VV ✓
4	27.151	1637610.62	47480.17	5.16	VE ✓
5	28.092	62753.00	1372.30	0.20	EB



31740896.00 1.03e+06 100.00



$$d.e = \frac{86.00 - 5.16}{86.00 + 5.16} = 88.68\% \text{ ee}$$

(6.67=)

Software Version: 4.1<2F12>

Date: 08-12-1 13:07

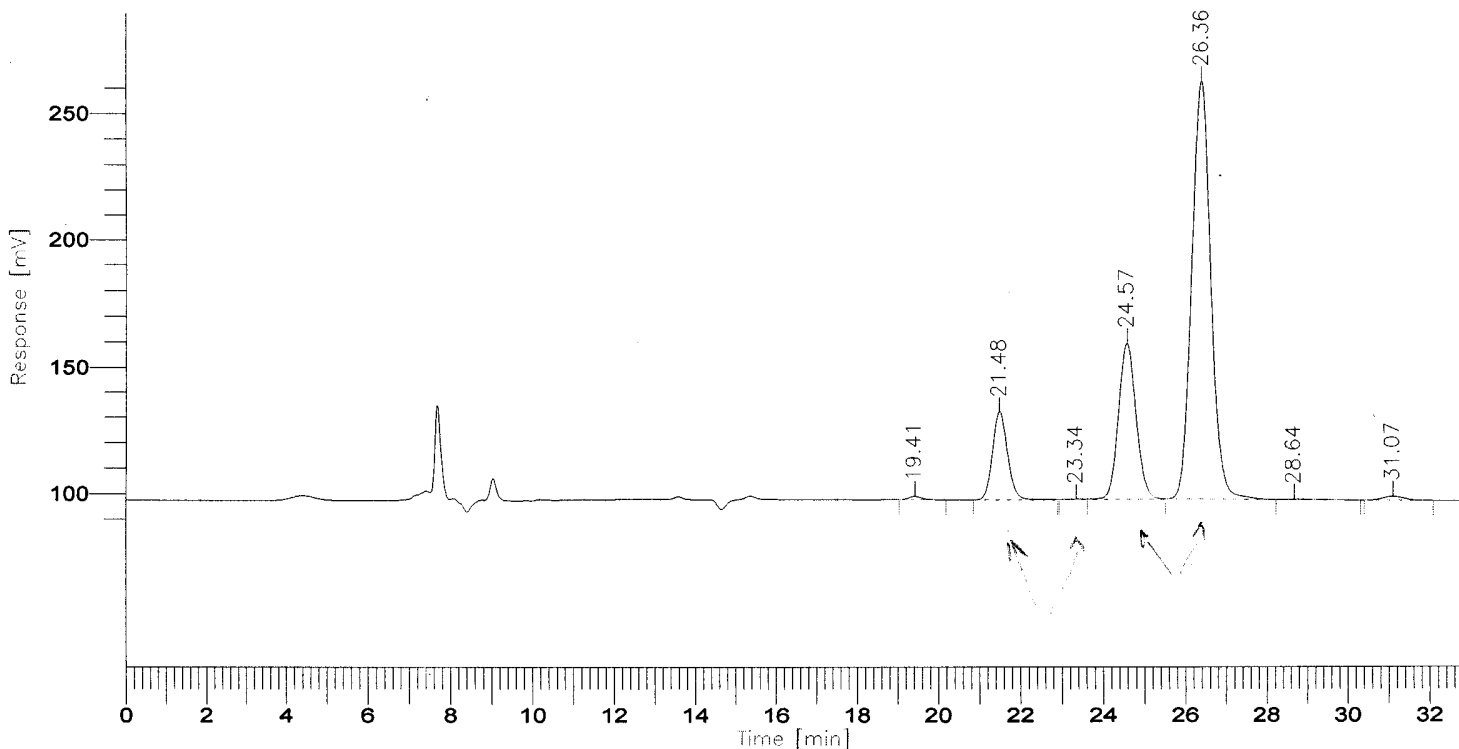
Sample Name : J-9-95

Data File : D:\YZR\YZR\_366.RAW Date: 08-12-1 11:02

Sequence File: D:\YZR\YZR.SEQ Cycle: 1 Channel : A

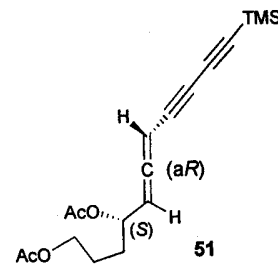
Instrument : 970A - 0 Rack/Vial: 0/0 Operator: YZR-1

Sample Amount : 1.0000 Dilution Factor : 1.00

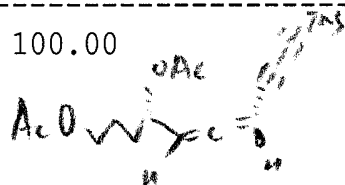


DEFAULT REPORT

Peak #	Time [min]	Area [uv*sec]	Height [uv]	Area [%]	BL
1	19.410	27773.00	1293.81	0.34	*BB
2	21.475	868533.00	34573.98	10.71	BB
3	23.337	4247.82	195.07	0.05	BV
4	24.566	1816865.68	61555.86	22.40	VB ←
5	26.355	5331134.06	164993.55	65.73	BV ←
6	28.642	9483.94	132.20	0.12	VB
7	31.068	52902.50	1526.47	0.65	BB



8110940.00 264270.94 100.00



$$d.e = \frac{65.73 - 22.40}{65.73 + 22.40} = 49.7\%$$

2.93:1