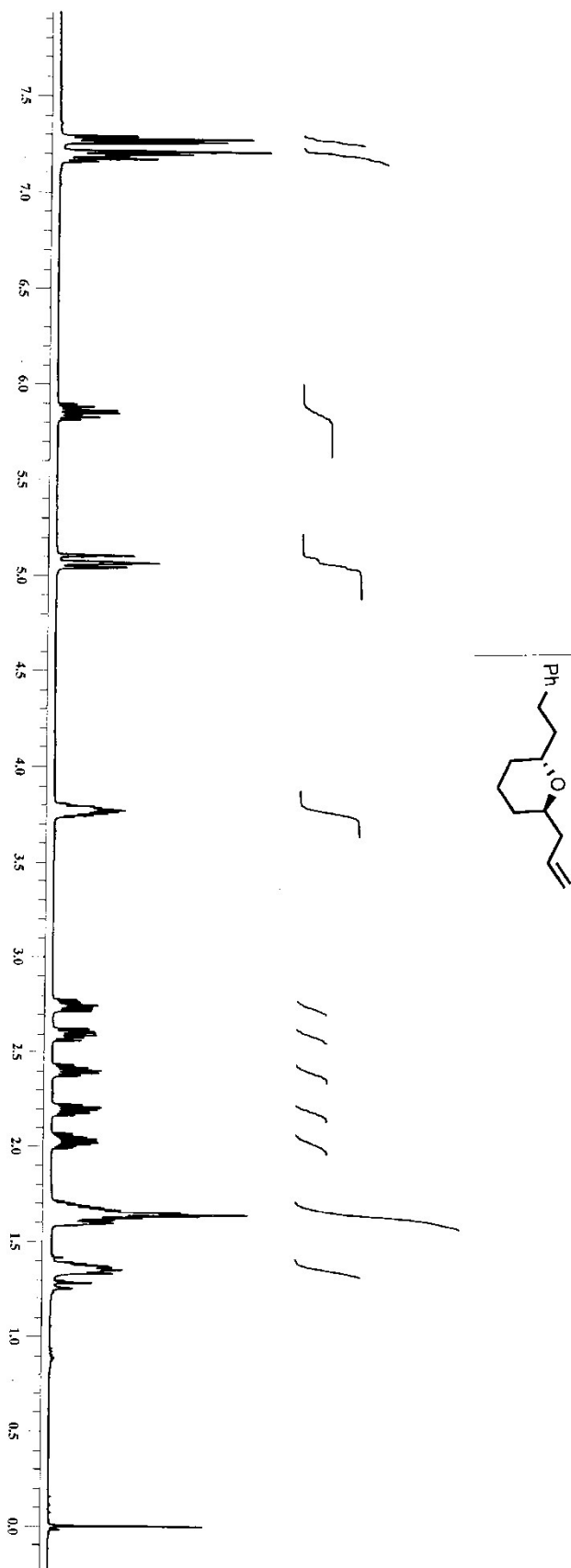
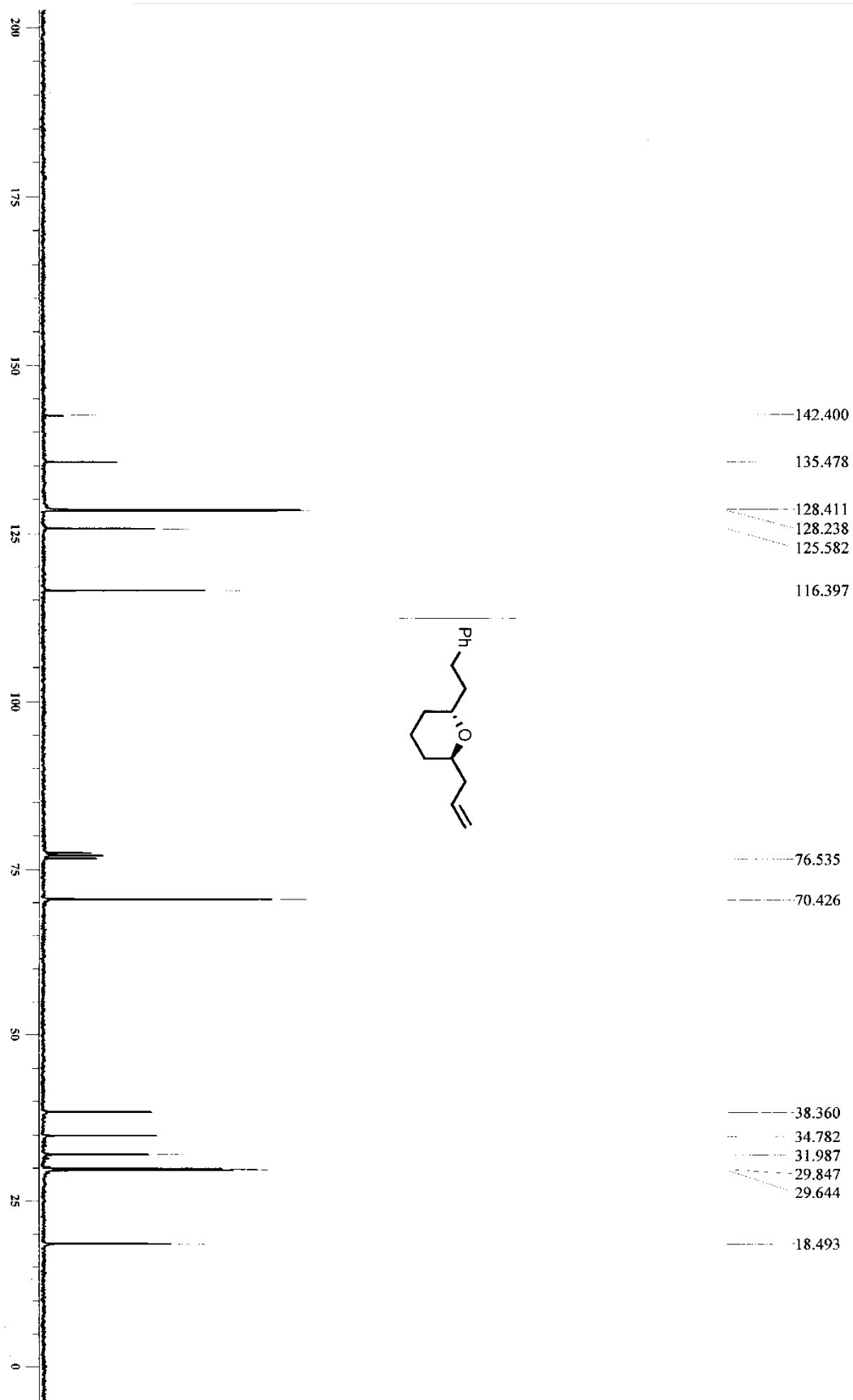


Supporting Information for

Gold-Catalyzed Diastereoselective Synthesis of 2,6-trans-Disubstituted Tetrahydropyran Derivatives: Application for the Synthesis of C1-C13 Fragment of Bistramide A and B

Birakishore Padhi, D. Srinivas Reddy and Debendra K. Mohapatra*

 ^1H NMR of 2 (300 MHz, CDCl_3)

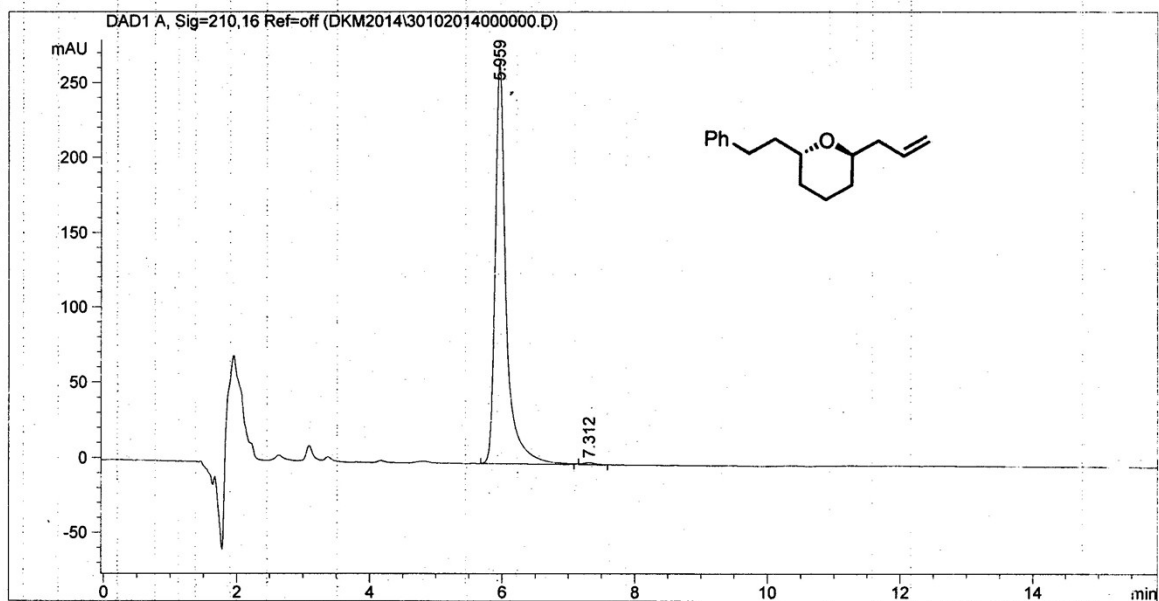
 ^{13}C NMR of 2 (75 MHz, CDCl_3)

Data File D:\DATA\DKM2014\30102014000000.D
 Sample Name: DKM-DSR-PH 230

```

=====
Acq. Operator   : V.RAJESH                      Seq. Line :    1
Acq. Instrument : Instrument 1                  Location  : Vial 31
Injection Date  : 10/30/2014 11:33:43 AM      Inj       :    1
                                           Inj Volume: 20 µl

Acq. Method     : D:\METHODS\LCM.m
Last changed    : 10/30/2014 11:31:48 AM by V.RAJESH
Analysis Method : D:\METHODS\LCM.m
Last changed    : 11/10/2014 11:06:17 AM by V.RAJESH
Method Info     : COLUMN:ATLANTIS C18,4.6 X 150MM 5U
                  MOBILE PHASE:80% ACN IN WATER(0.1% F.A)
                  DECTION:210NM
                  FLOWRATE:1ML/MIN
=====
  
```



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 Area Percent Report
 =====

```

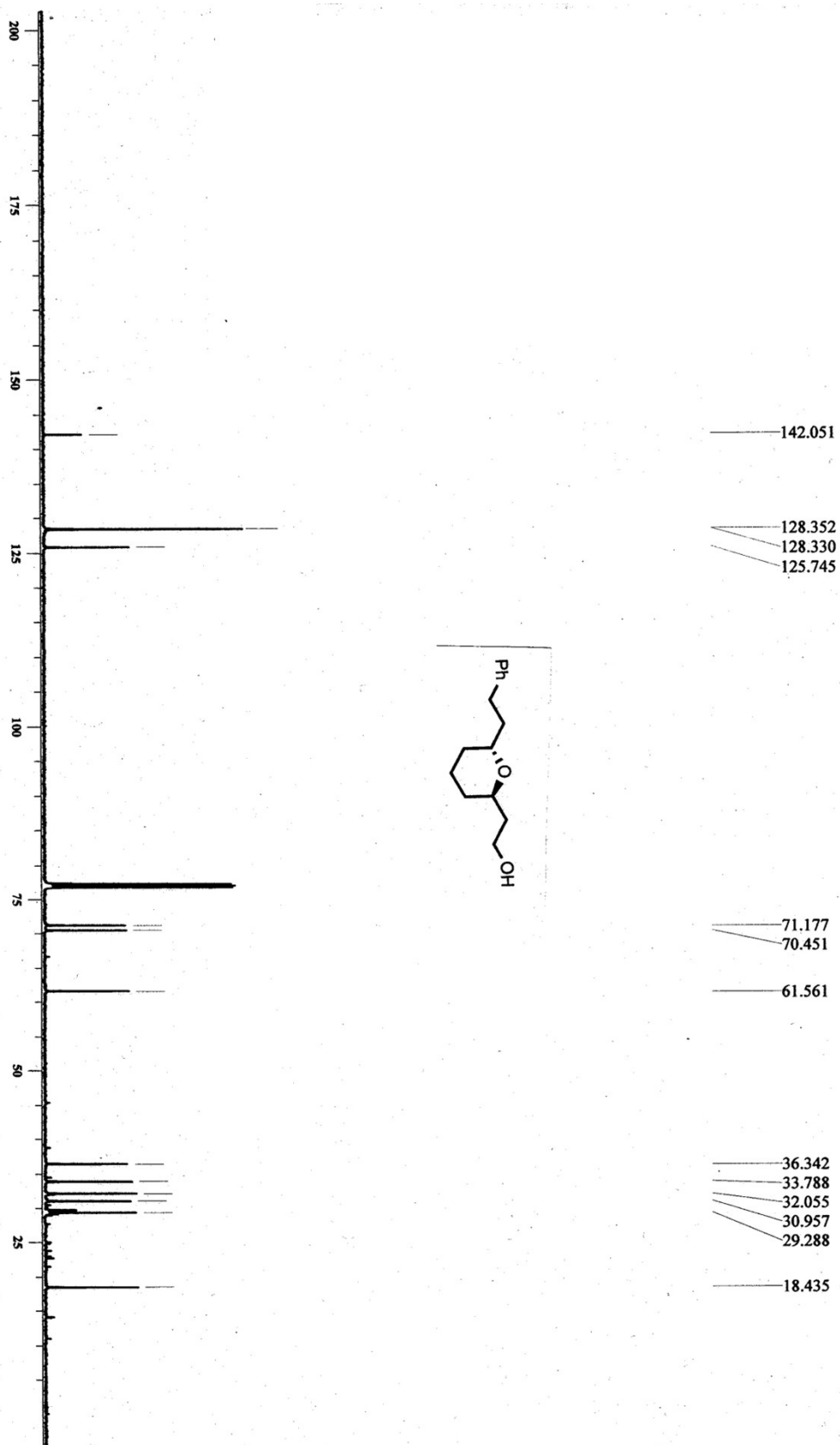
Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Use Multiplier & Dilution Factor with ISTDs
  
```

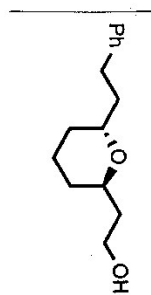
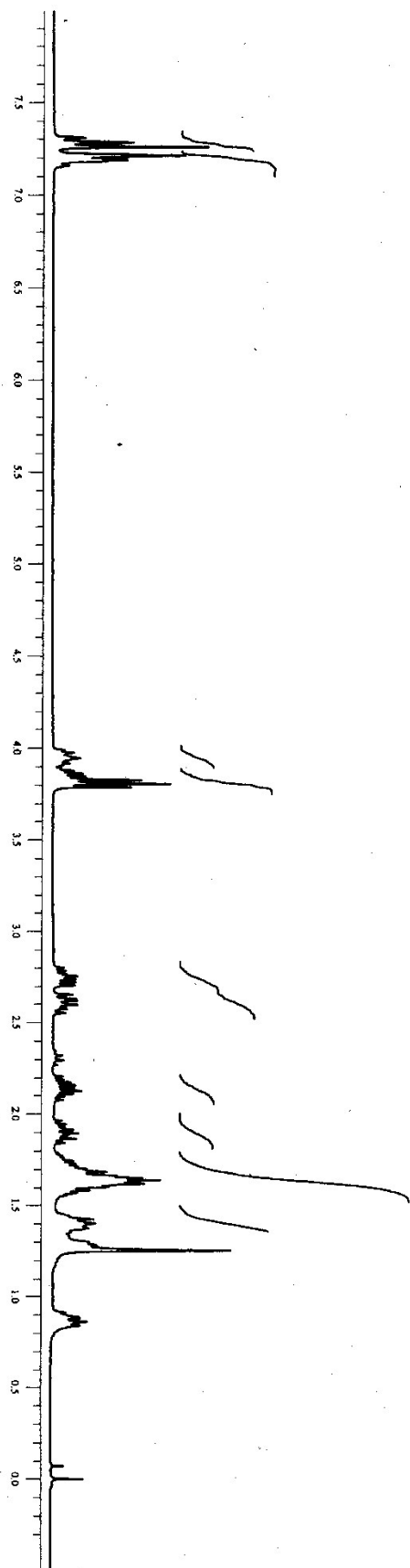
Signal 1: DAD1 A, Sig=210,16 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.959	BB	0.1699	3063.78369	266.95361	99.4472
2	7.312	BB	0.1906	17.03193	1.33744	0.5528

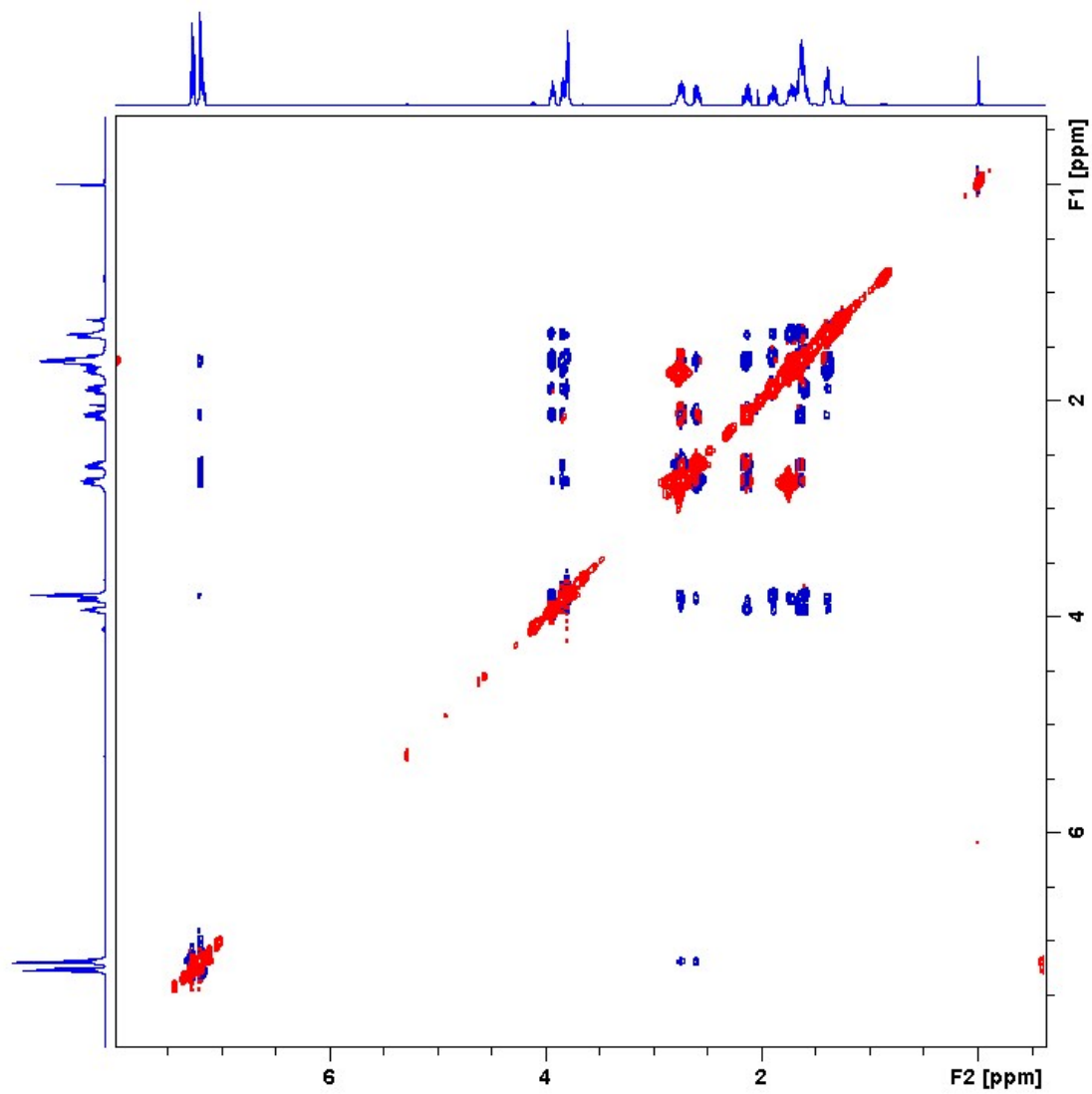
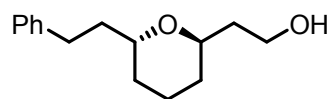
Totals : 3080.81563 268.29105

=====
 *** End of Report ***

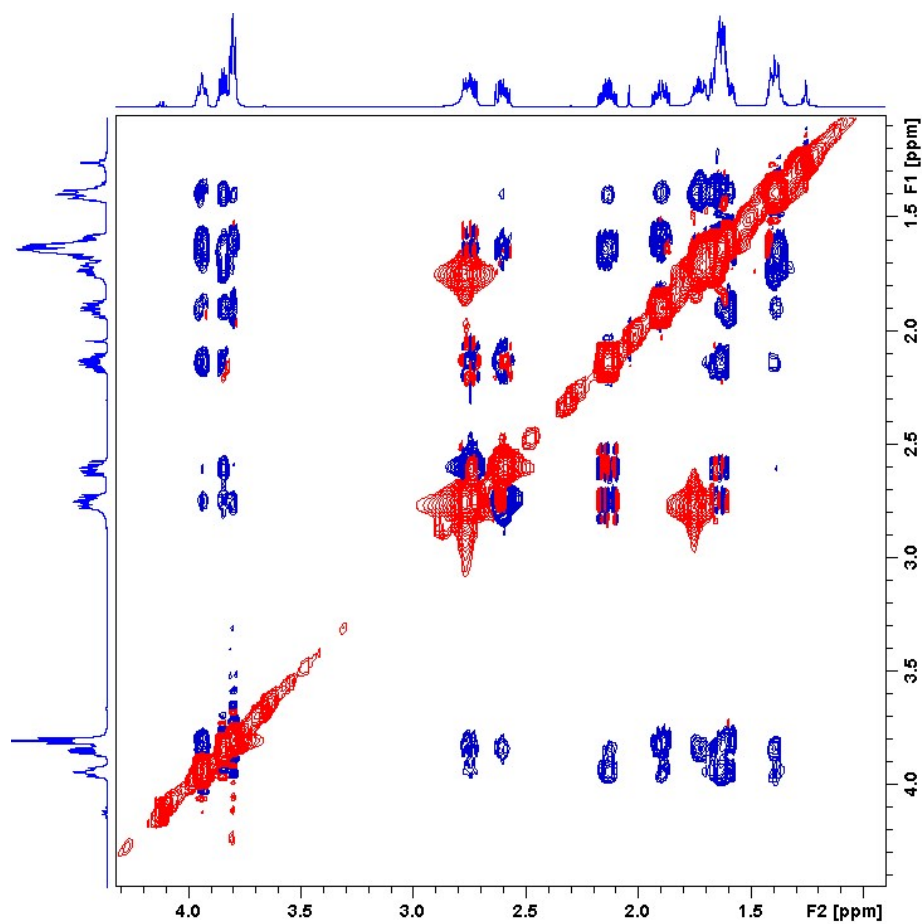
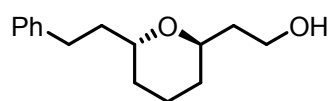
 ^1H NMR of 4 (300 MHz, CDCl_3)



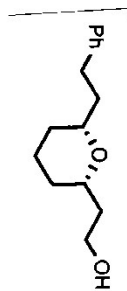
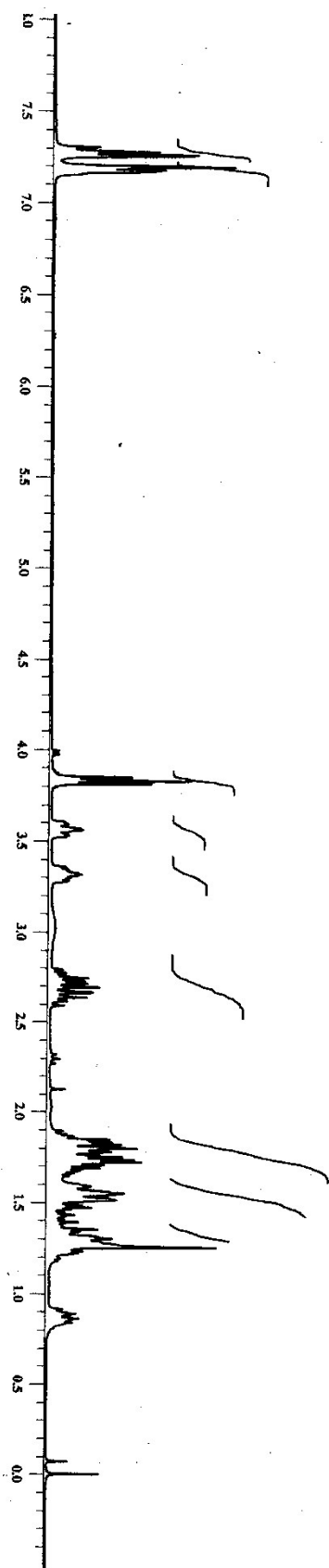
^{13}C NMR of 4 (75 MHz, CDCl_3)

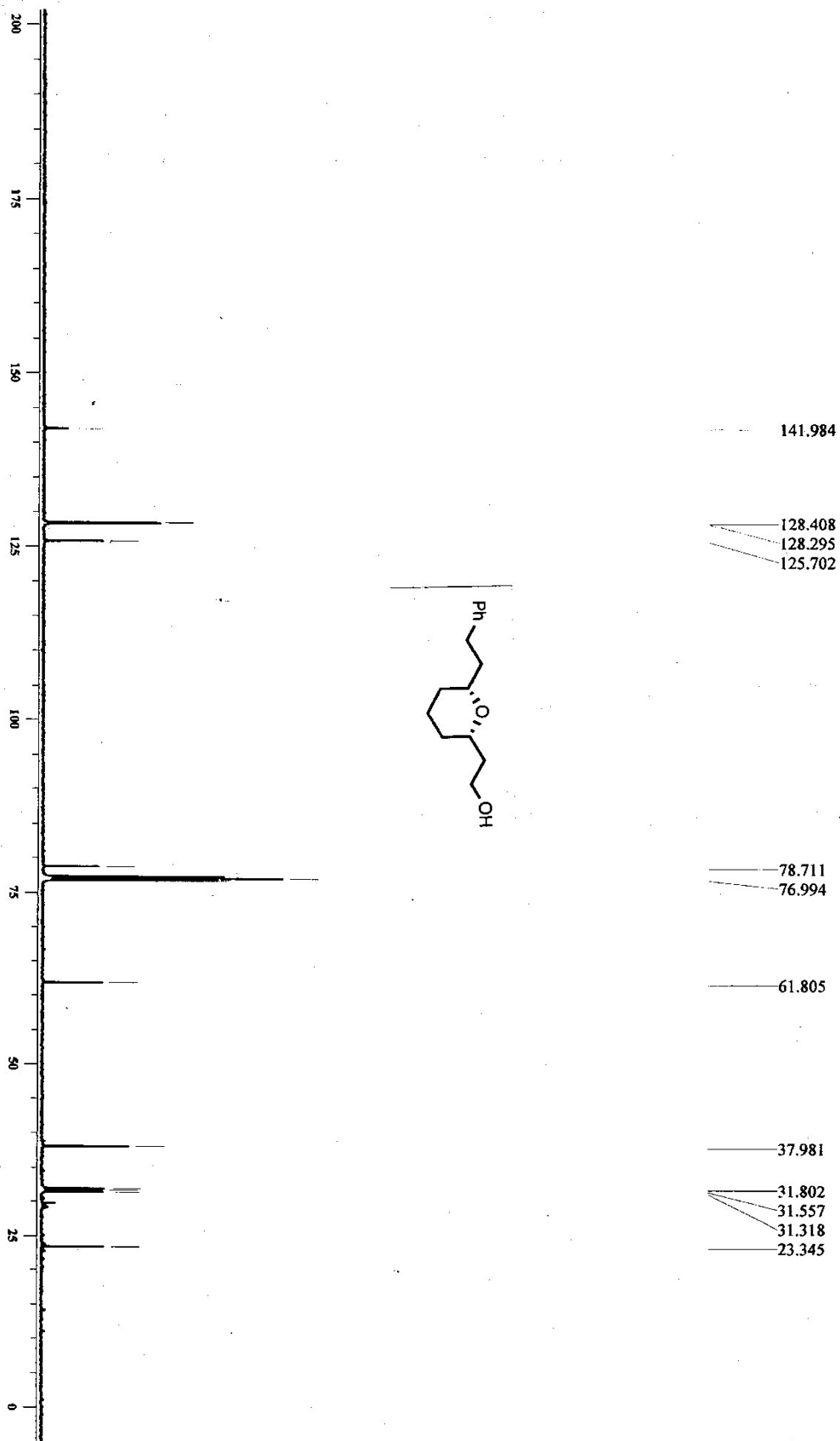


2D ¹H NOE of 4 (500 MHz, CDCl₃)

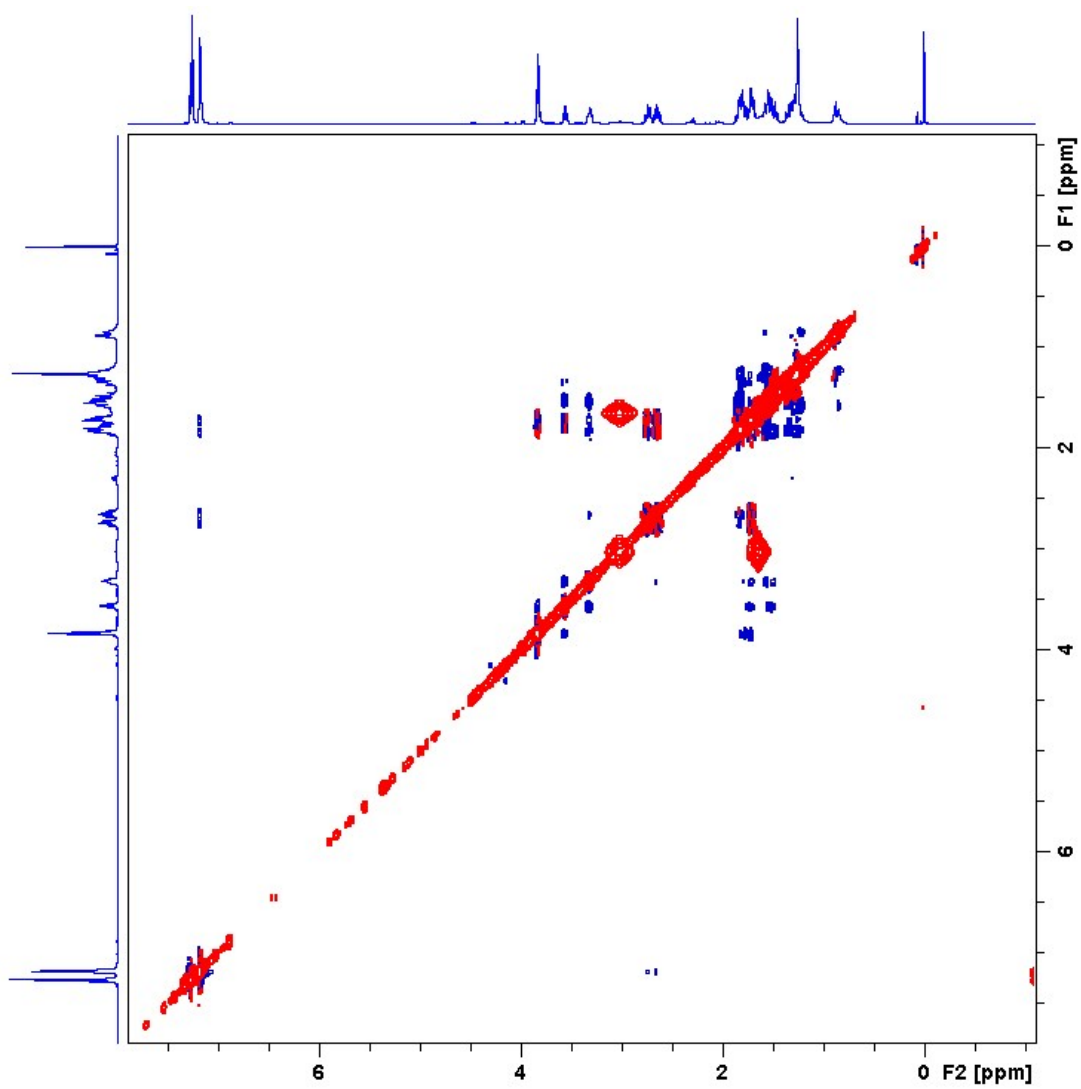
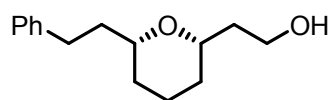


Expanded 2D ¹H NOE of 4 (500 MHz, CDCl₃)

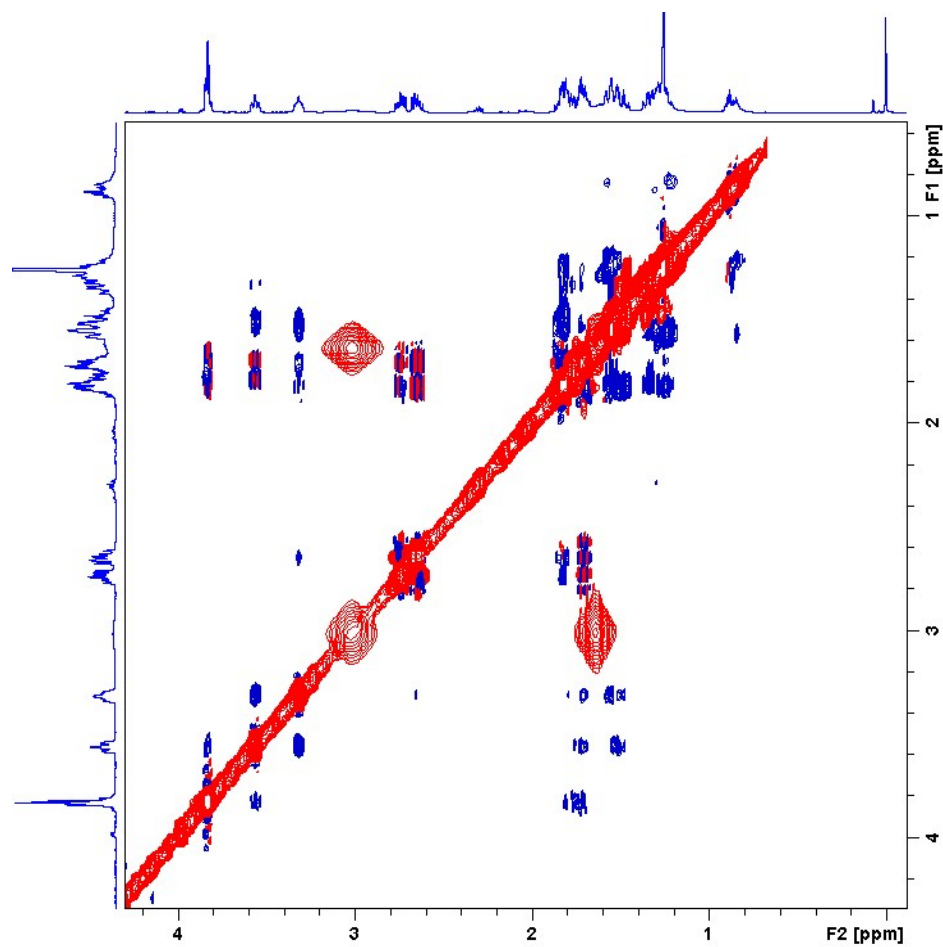
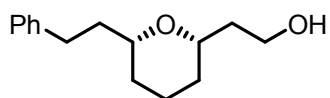
 ^1H NMR of 5 (300 MHz, CDCl_3)



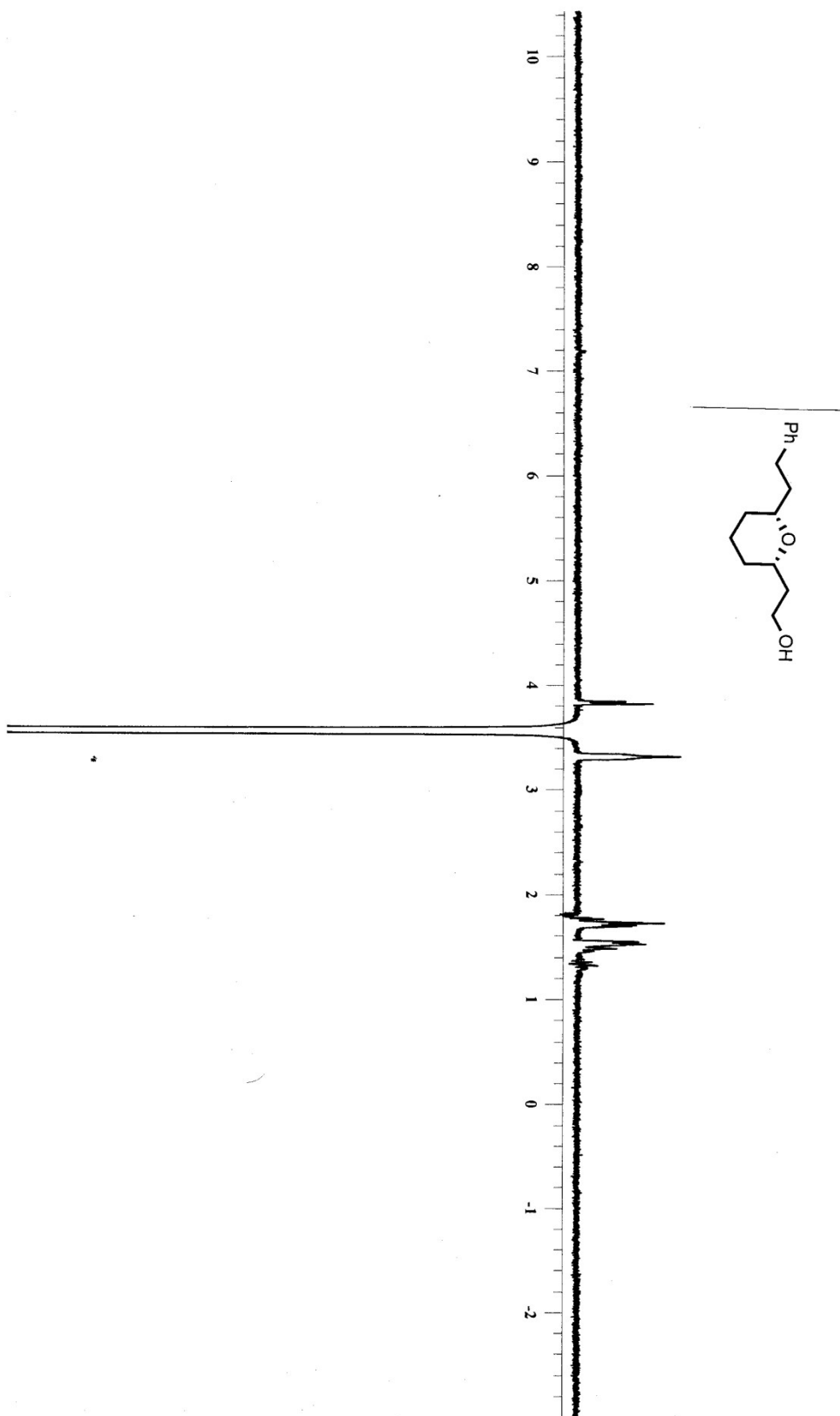
^{13}C NMR of 5 (75 MHz, CDCl_3)



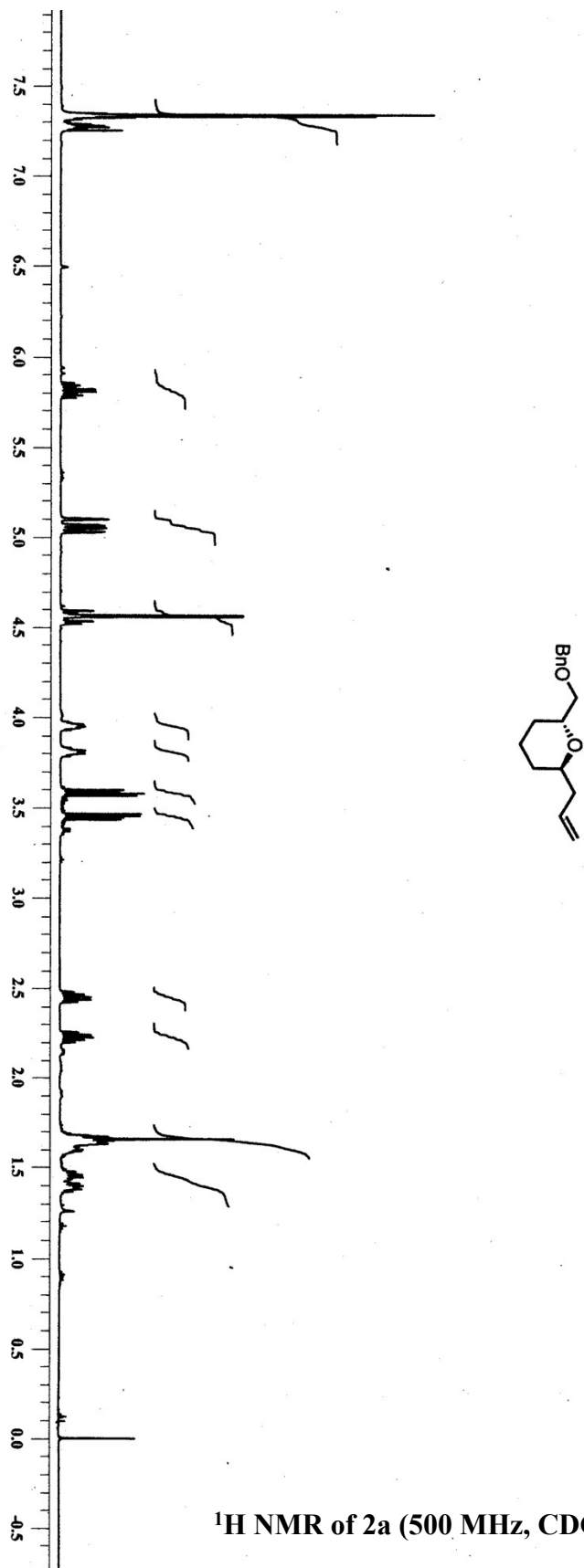
2D ¹H NOE of 5 (500 MHz, CDCl₃)

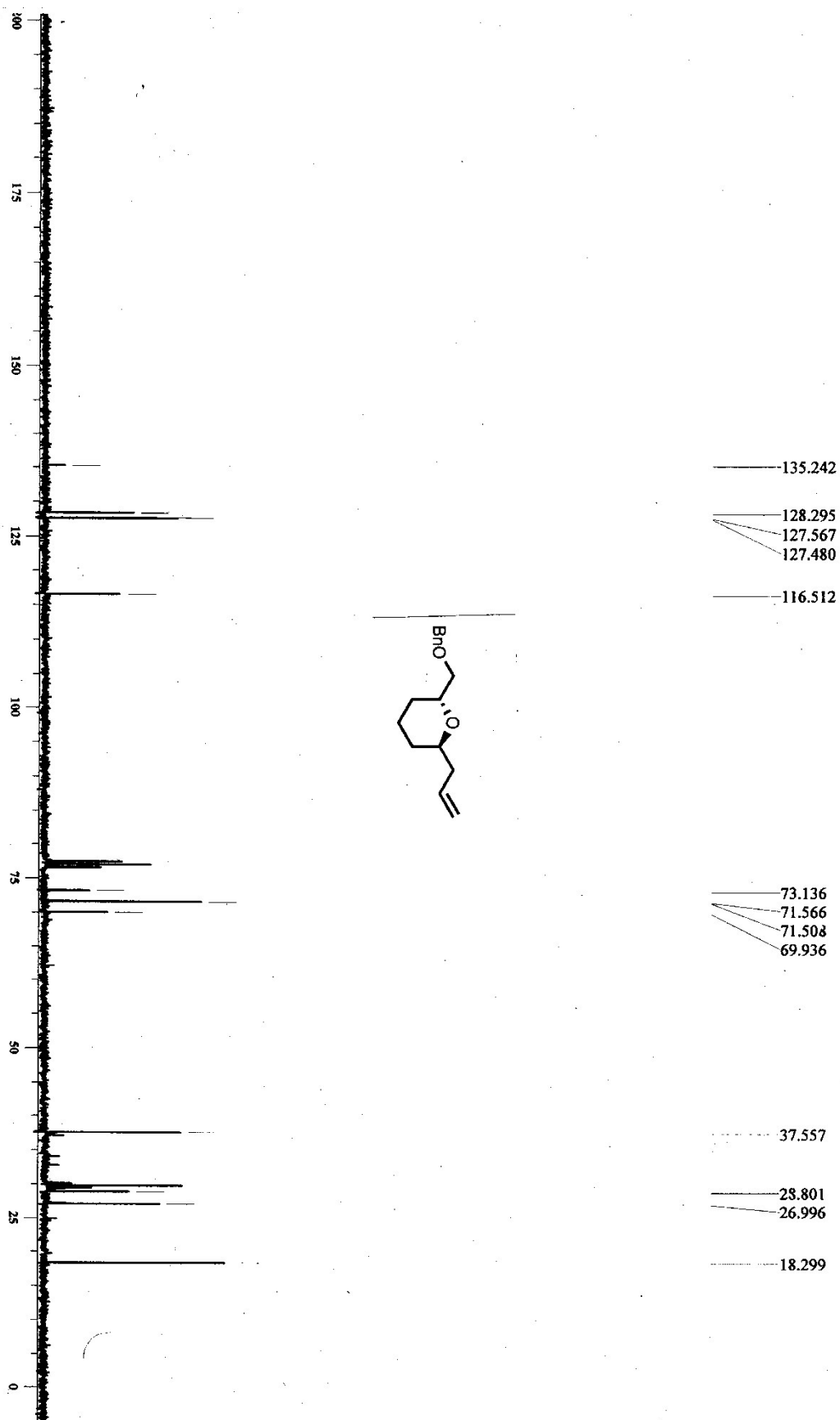


Expanded 2D ^1H NOE of 5 (500 MHz, CDCl_3)



1D ¹H NOE of 5 at 3.56 ppm





^{13}C NMR of 2a (75 MHz, CDCl_3)

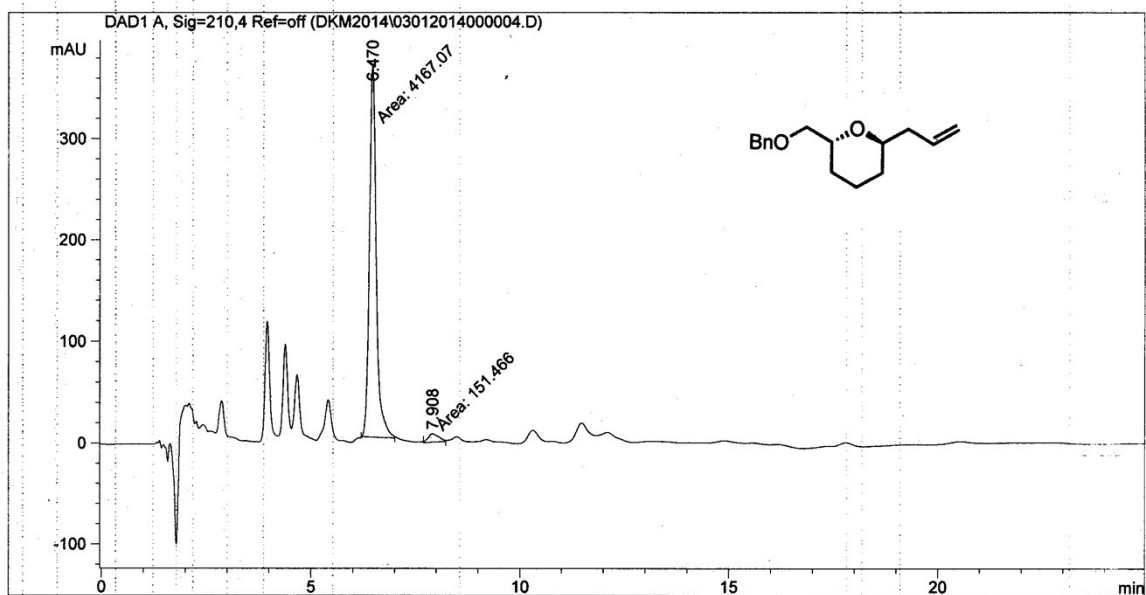
Data File D:\DATA\DKM2014\03012014000004.D
 Sample Name: DKM-DL-CYC-2 246

```

=====
Acq. Operator   : V.RAJESH
Acq. Instrument : Instrument 1                Location : Vial 22
Injection Date  : 1/3/2014 12:16:33 PM      Inj Volume : 20 µl

Acq. Method     : D:\METHODS\LCM.m
Last changed    : 1/3/2014 12:36:29 PM by V.RAJESH
Analysis Method : D:\METHODS\DATURA.m
Last changed    : 1/3/2014 12:44:04 PM by V.RAJESH
Method Info     : COLUMN:ATLANTIS C181 50 X4.6MM, 5U
                  MOBILEPHASE:70% ACN IN H2O (0.1 F.A)
                  FLOWRATE:1.0ML/MIN
                  DETECTION:210NM
  
```

Sample Info :



Area Percent Report

```

=====
Sorted By      : Signal
Multiplier     : 1.0000
Dilution       : 1.0000
Use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=210,4 Ref=off

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	6.470	MM	0.1884	4167.06836	368.72510	96.4926
2	7.908	MM	0.2983	151.46640	8.46200	3.5074

Totals : 4318.53476 377.18710

Instrument 1 1/3/2014 12:44:13 PM V.RAJESH

Page 1 of 2

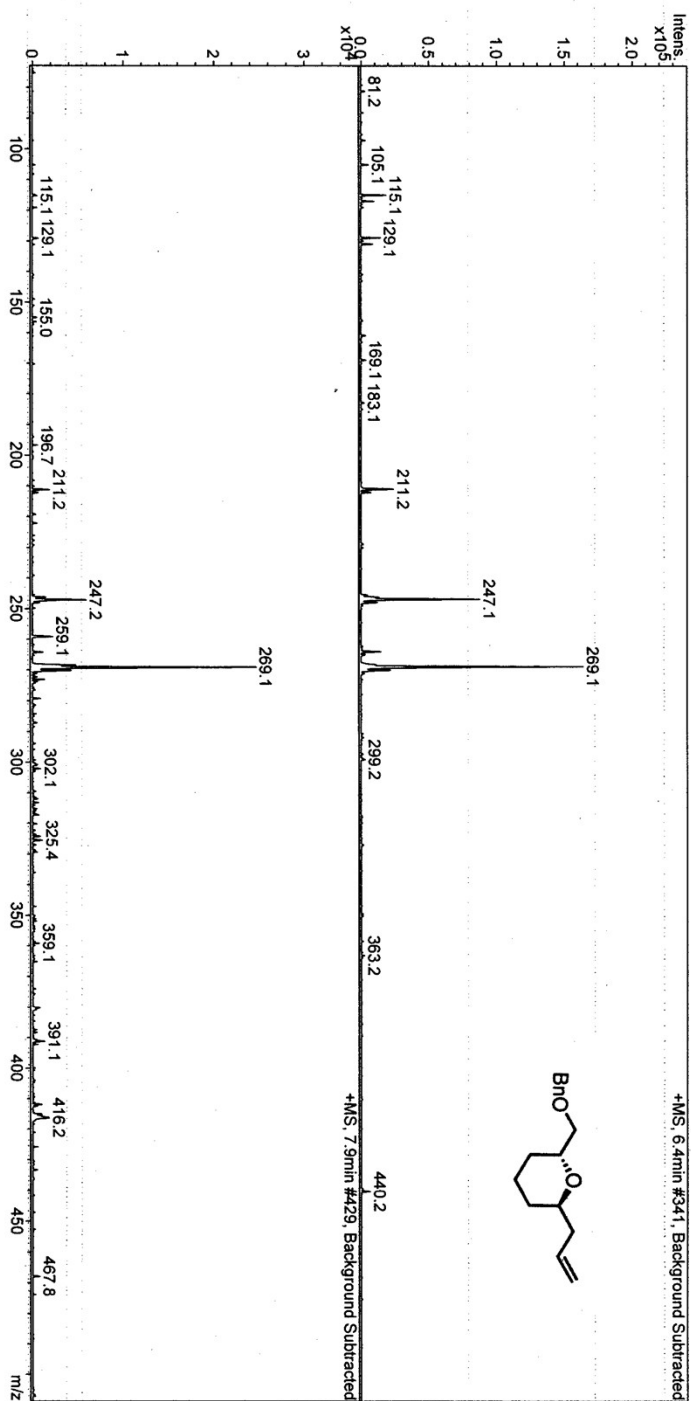
HPLC of compound 2a

Display Report - Selected Window Selected Analysis

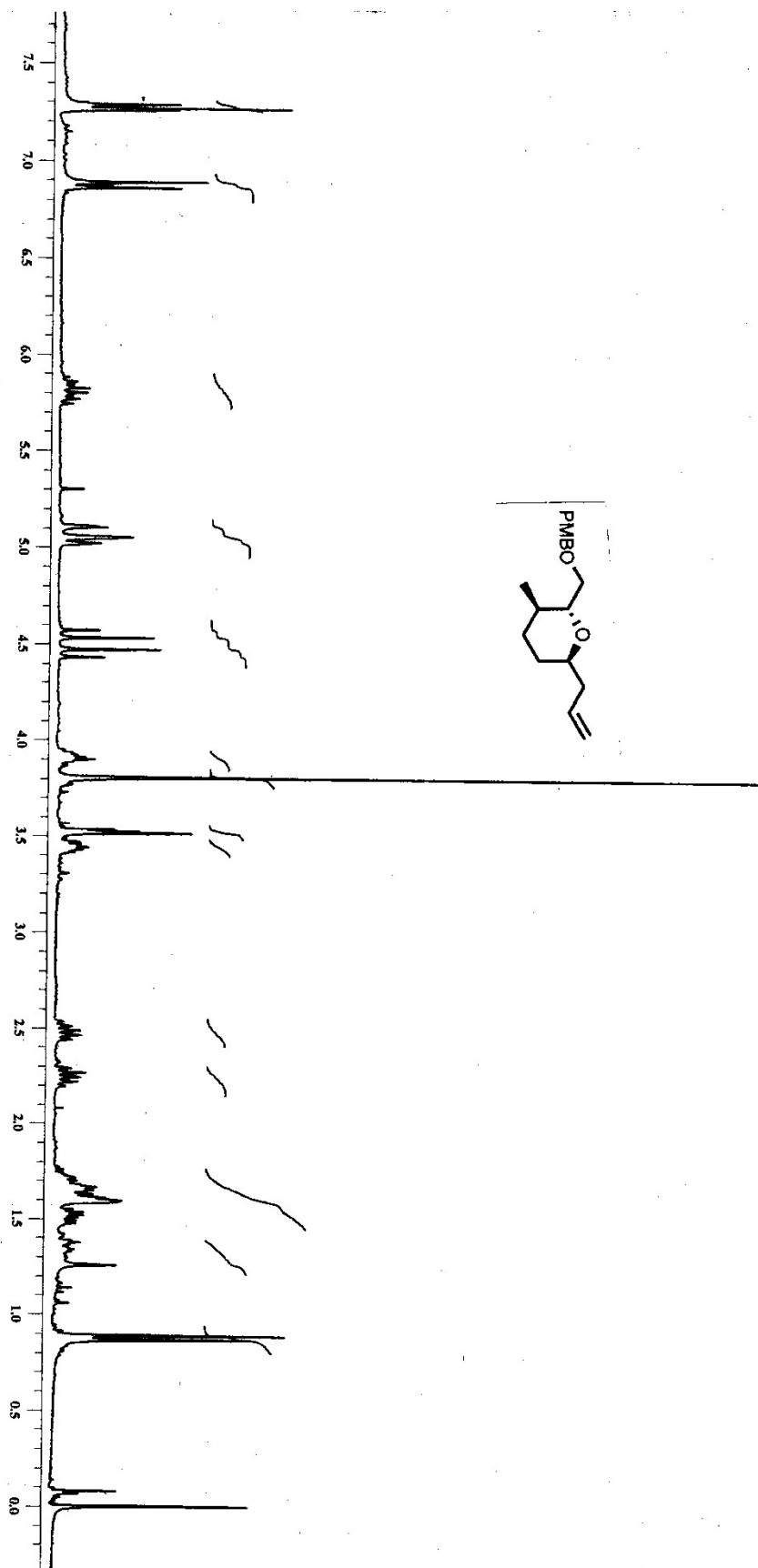
Analysis Name: 03012014000004.D
Method: LCM.M
Sample Name: DKM-DL-CYC-2-246
Analysis Info:

Instrument: LC-MSD-Trap-SL
Operator: SARMA

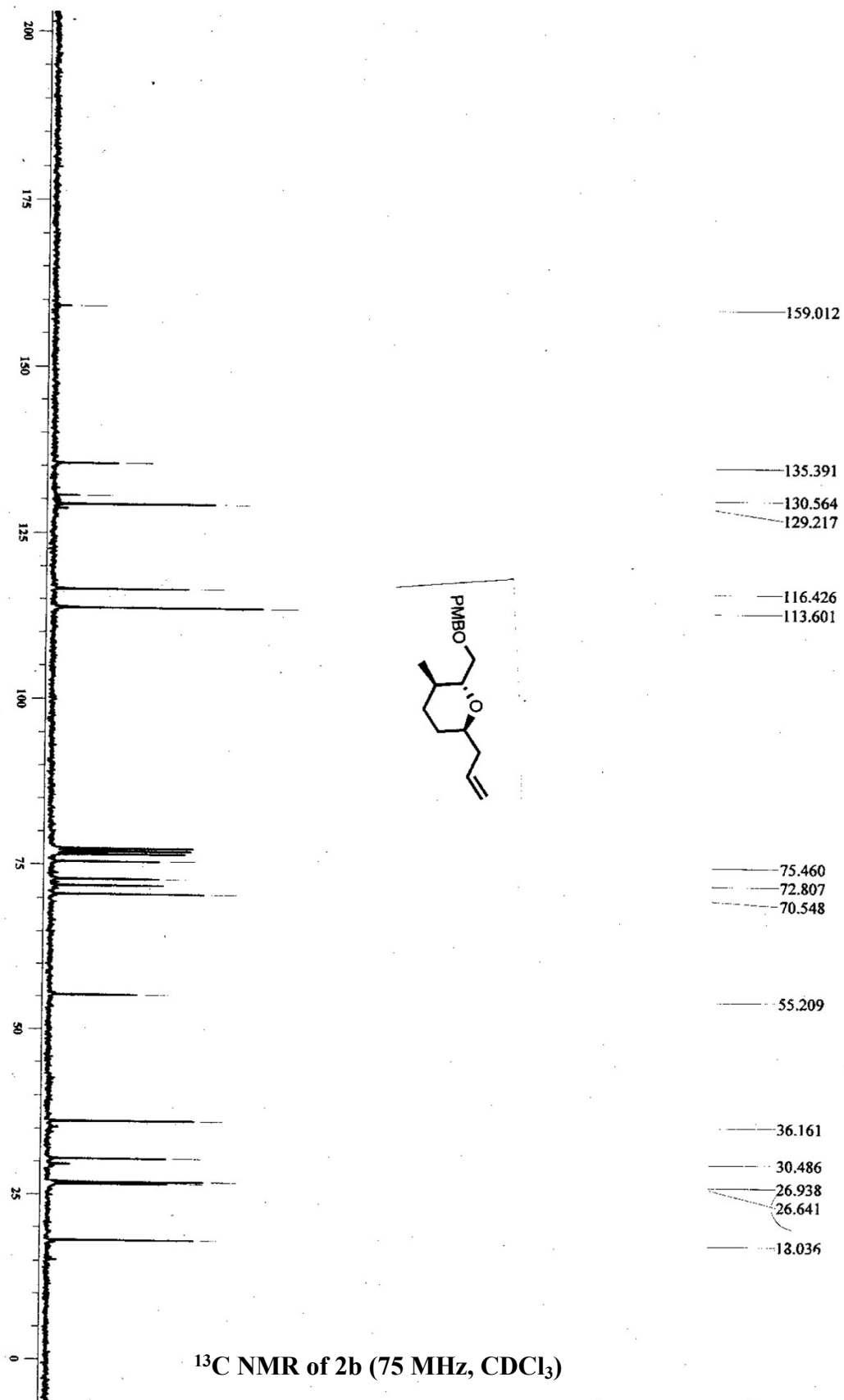
Print Date: 1/3/2014 12:49:14 PM
Acq. Date: 1/3/2014 12:16:52 PM

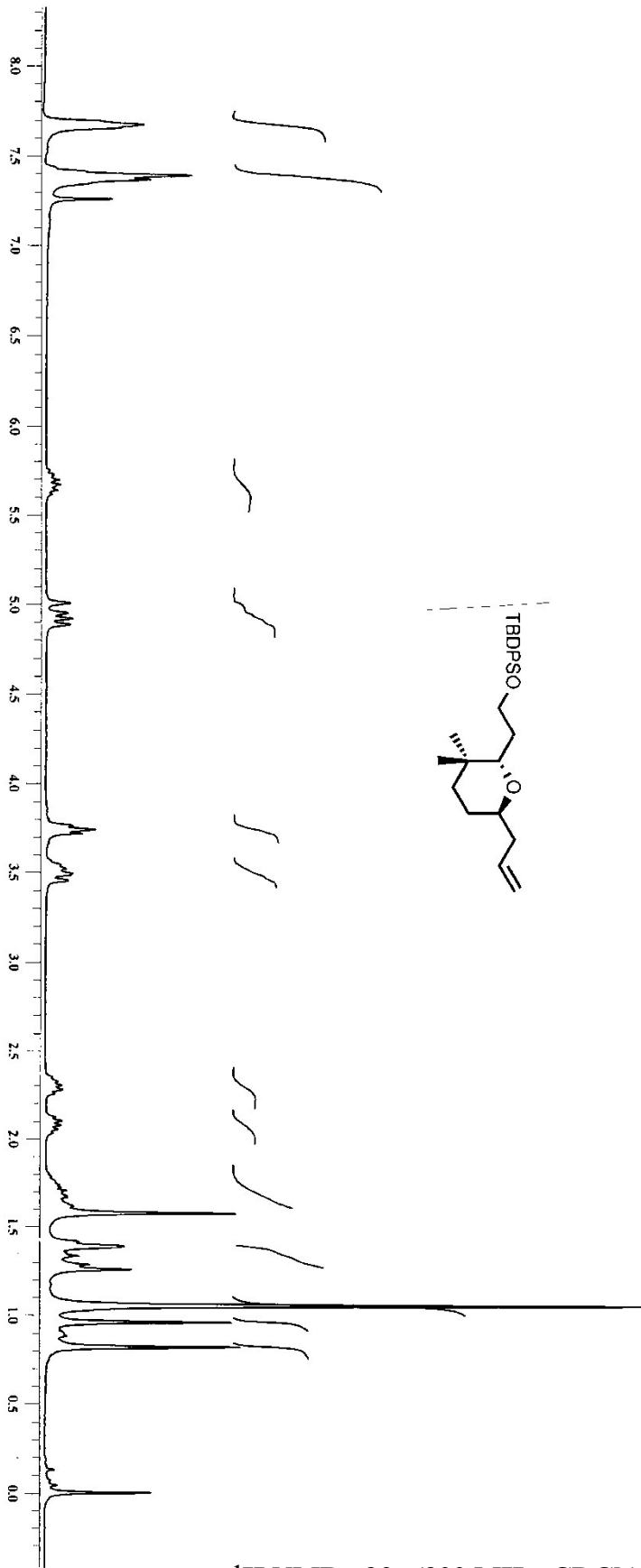


LC-MS of compound 2a

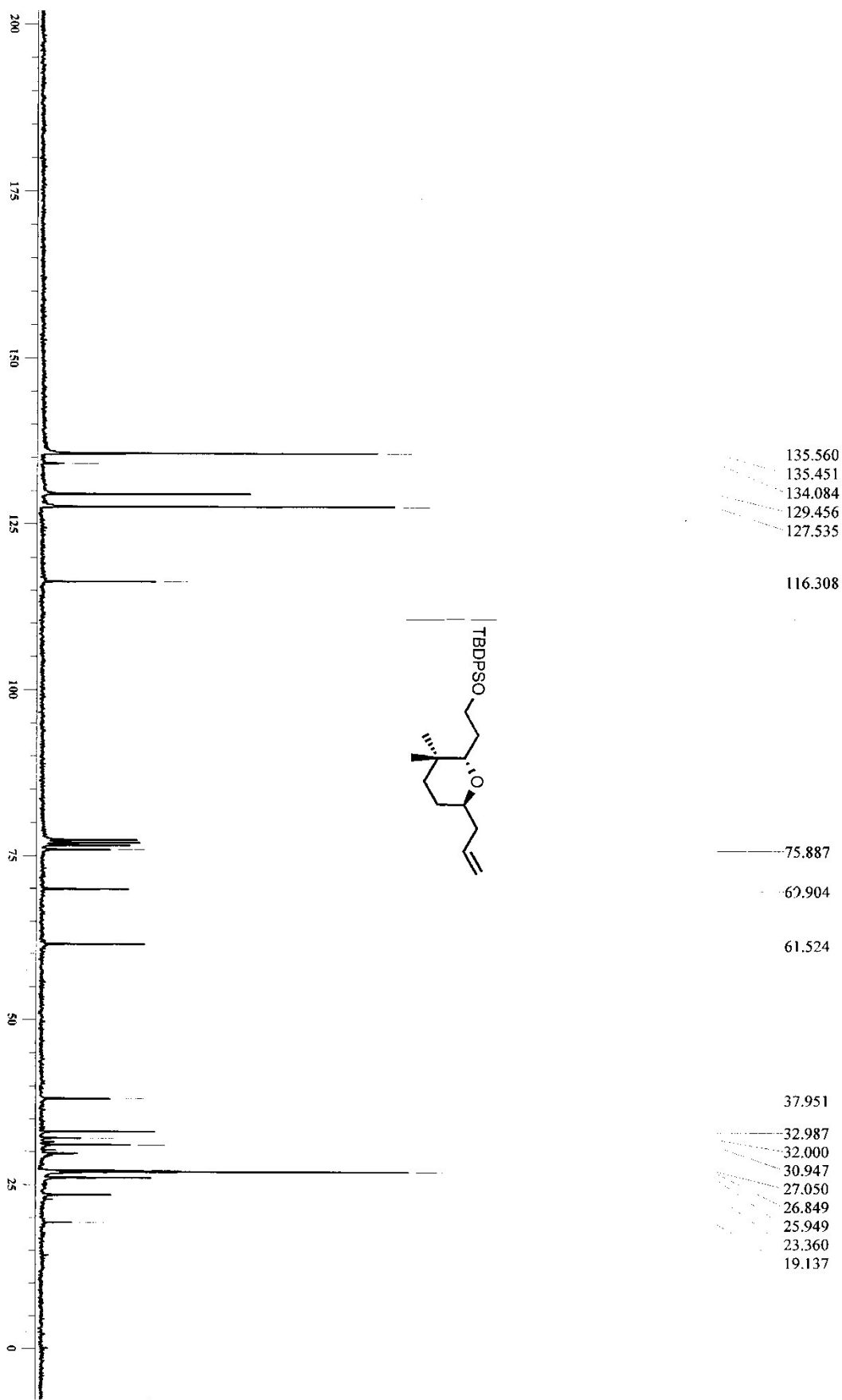


$^1\text{H NMR}$ of 2b (300 MHz, CDCl_3)





¹H NMR of 2c (300 MHz, CDCl₃)



¹³C NMR of 2c (75 MHz, CDCl₃)

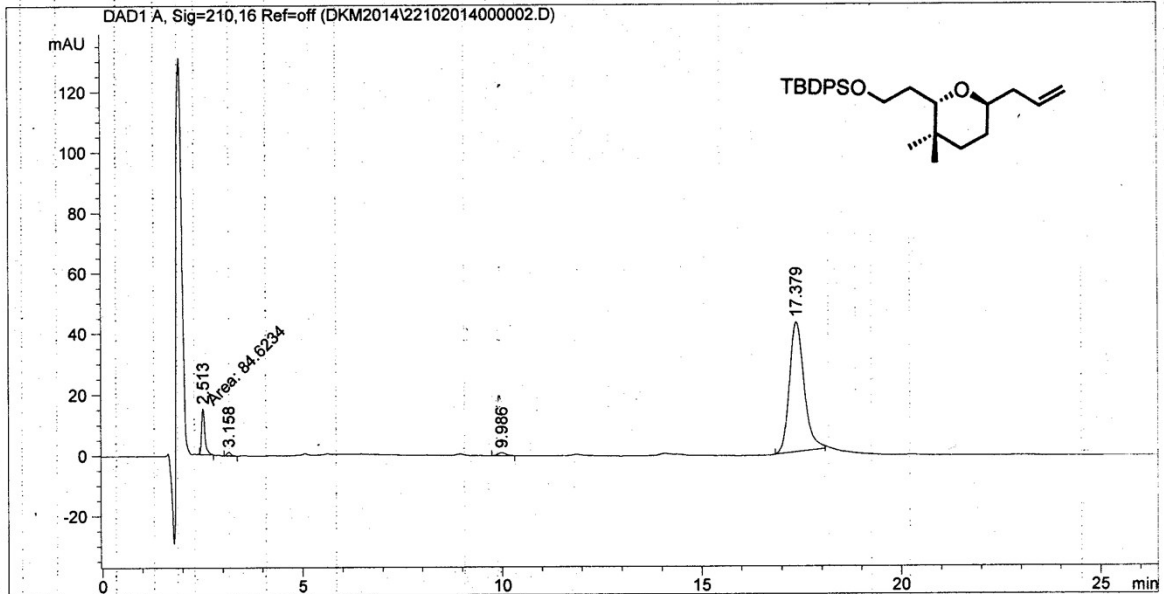
Data File D:\DATA\DKM2014\22102014000002.D
Sample Name: DKM-BKR-TBDB 436

```

=====
Acq. Operator   : V.RAJESH                      Seq. Line :    1
Acq. Instrument : Instrument 1                  Location  : Vial 32
Injection Date  : 10/22/2014 10:46:50 AM      Inj       :    1
                                                Inj Volume: 20 µl

Acq. Method    : D:\METHODS\LCM.m
Last changed   : 10/22/2014 10:59:19 AM by V.RAJESH
Analysis Method : D:\METHODS\LCM.m
Last changed   : 10/22/2014 10:05:22 AM by V.RAJESH
Method Info    : COLUMN:ATLANTIS C18,4.6 X 150MM,5U
                MOBILEPHASE:80% ACN IN WATER(0.1% F.A)
                DECTION:210NM
                FLOWRATE:1ML/MIN
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Area Percent Report
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Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Use Multiplier & Dilution Factor with ISTDs

```

Signal 1: DAD1 A, Sig=210,16 Ref=off

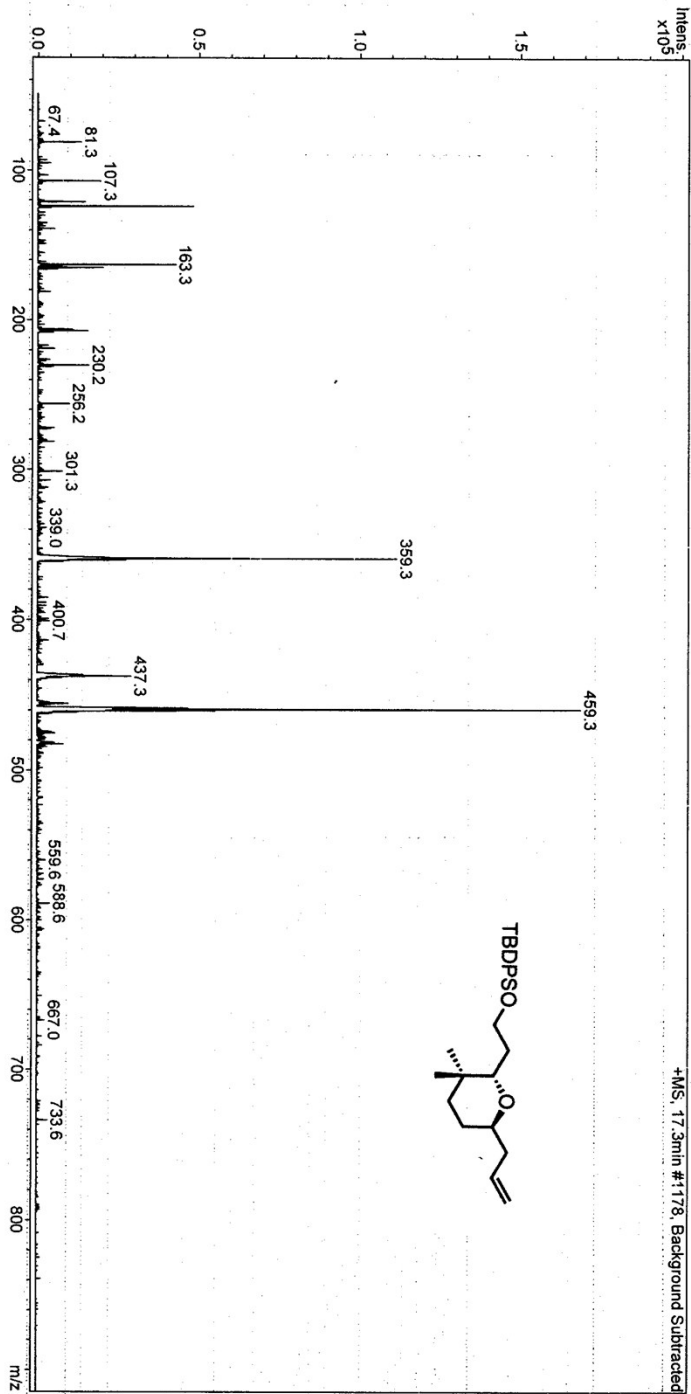
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	2.513	MM	0.0933	84.62338	15.11111	7.0739
2	3.158	BB	0.1124	8.84328	1.22229	0.7392
3	9.986	BB	0.2119	14.44650	1.00388	1.2076
4	17.379	BB	0.3892	1088.36340	42.71683	90.9792

Totals : 1196.27657 60.05410

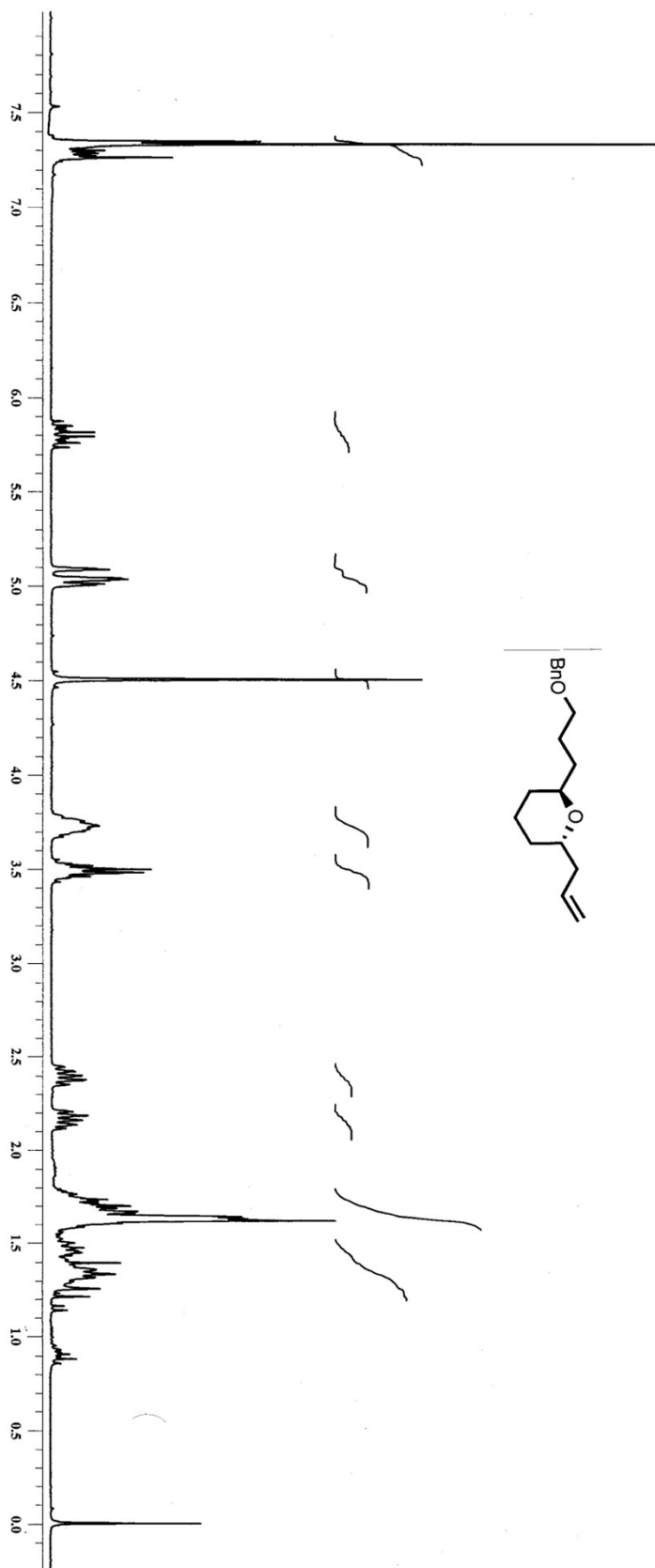
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*** End of Report ***

Display Report - Selected Window Selected Analysis

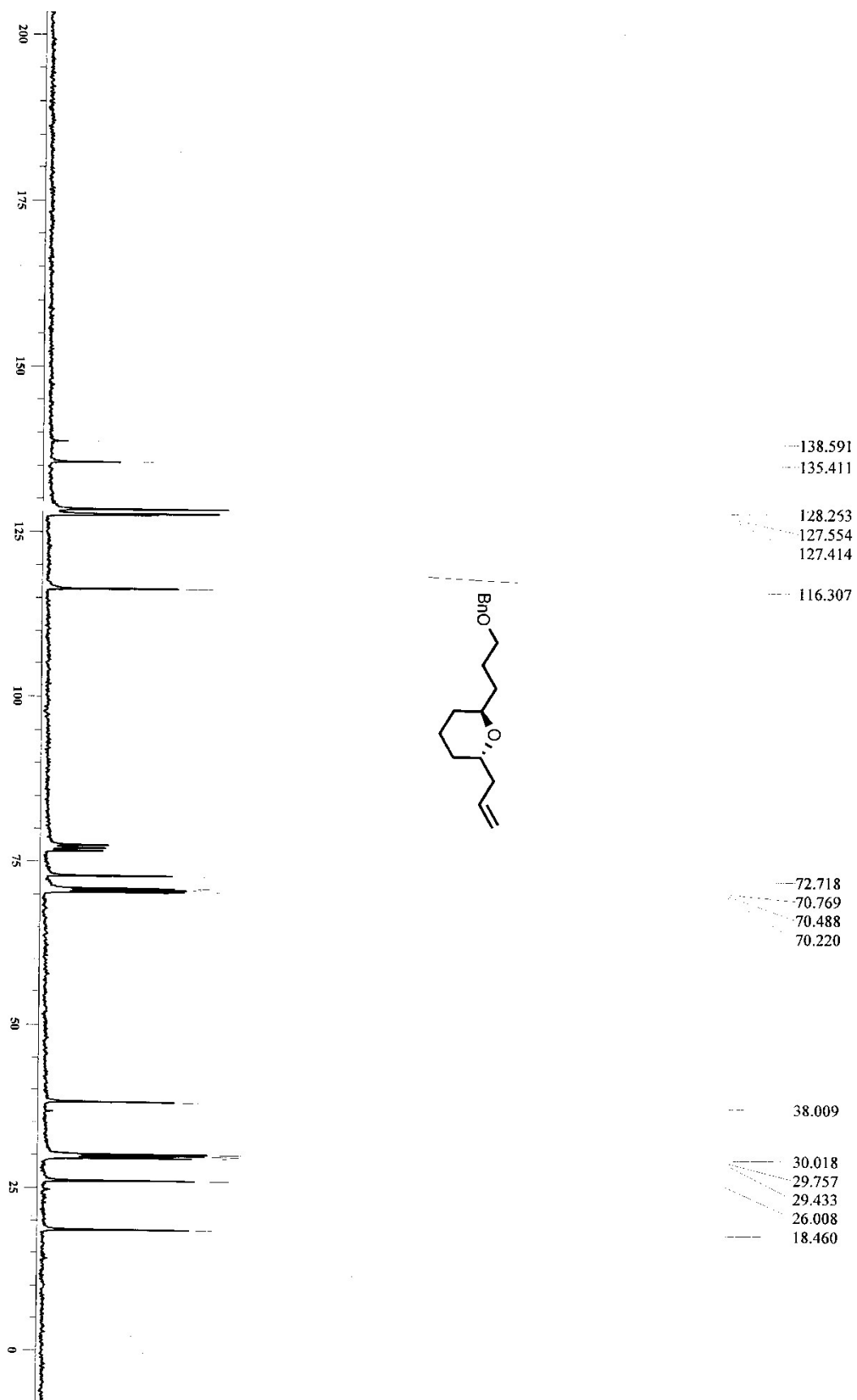
Analysis Name: 22102014000002.D **Instrument:** LC-MSD-Trip-SL **Print Date:** 10/22/201 11:17:51
Method: LCM.M **Operator:** SARMA **Acq. Date:** 10/22/2014 10:47:13 AM
Sample Name: DKM-BKR-TBDB 436 **Analysis Info:**



LC-MS of compound 2c



^1H NMR of 2d (300 MHz, CDCl_3)



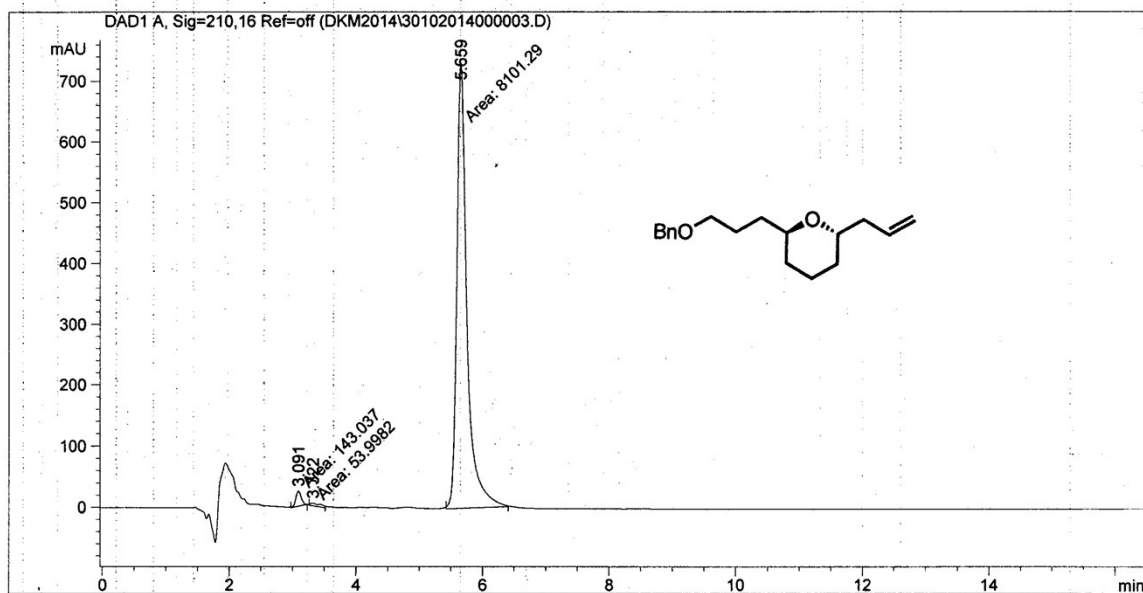
^{13}C NMR of 2d (75 MHz, CDCl_3)

Data File D:\DATA\DKM2014\30102014000003.D
 Sample Name: DKM-DSR-BN 274

```

=====
Acq. Operator   : V.RAJESH                      Seq. Line :    1
Acq. Instrument : Instrument 1                  Location  : Vial 32
Injection Date  : 10/30/2014 12:23:50 PM      Inj       :    1
                                                Inj Volume: 20 µl

Acq. Method     : D:\METHODS\LCM.m
Last changed    : 10/30/2014 12:21:45 PM by V.RAJESH
Analysis Method : D:\METHODS\LCM.m
Last changed    : 11/10/2014 11:06:17 AM by V.RAJESH
Method Info     : COLUMN:ATLANTIS C18,4.6 X 150MM 5U
                  MOBILE PHASE:80% ACN IN WATER(0.1% F.A)
                  DECTION:210NM
                  FLOWRATE:1ML/MIN
=====
  
```



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 Area Percent Report
 =====

```

Sorted By      :      Signal
Multiplier     :      1.0000
Dilution       :      1.0000
Use Multiplier & Dilution Factor with ISTDs
  
```

Signal 1: DAD1 A, Sig=210,16 Ref=off

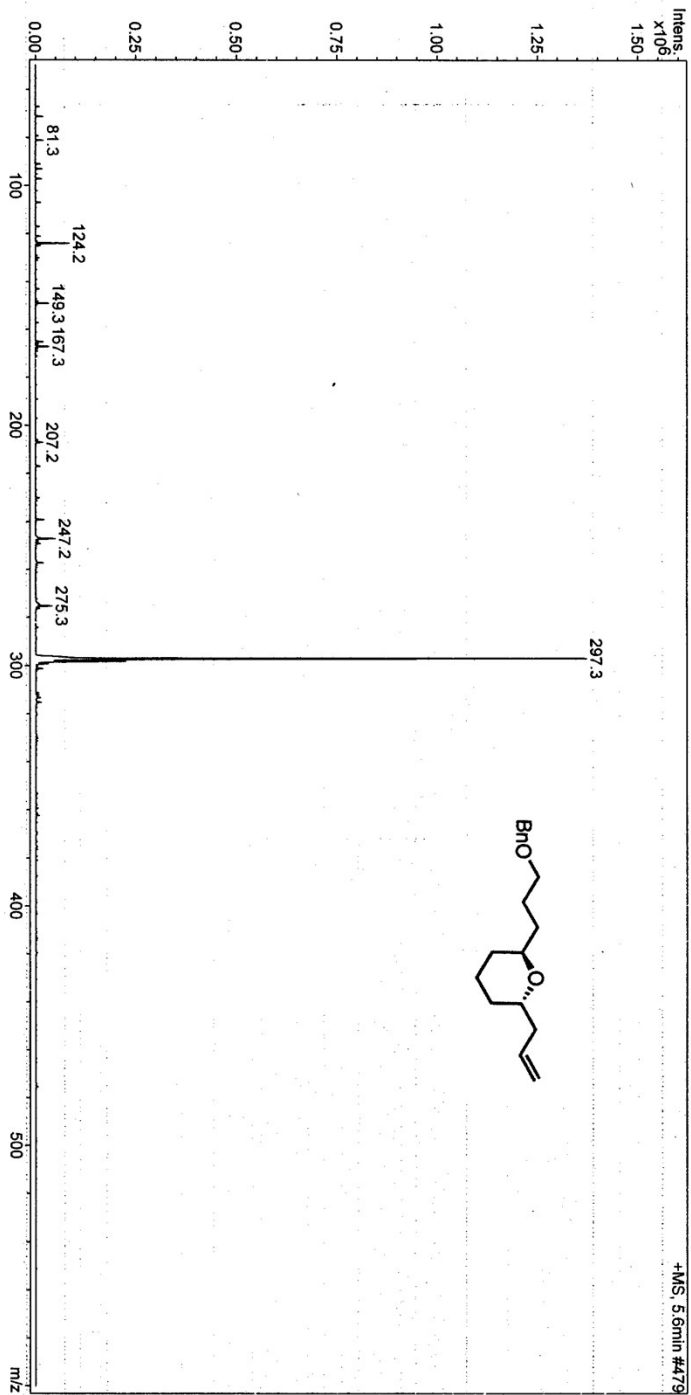
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	3.091	MM	0.0962	143.03712	24.77896	1.7237
2	3.322	MM	0.1974	53.99820	4.55960	0.6507
3	5.659	MM	0.1844	8101.28857	732.35425	97.6256

Totals : 8298.32390 761.69281

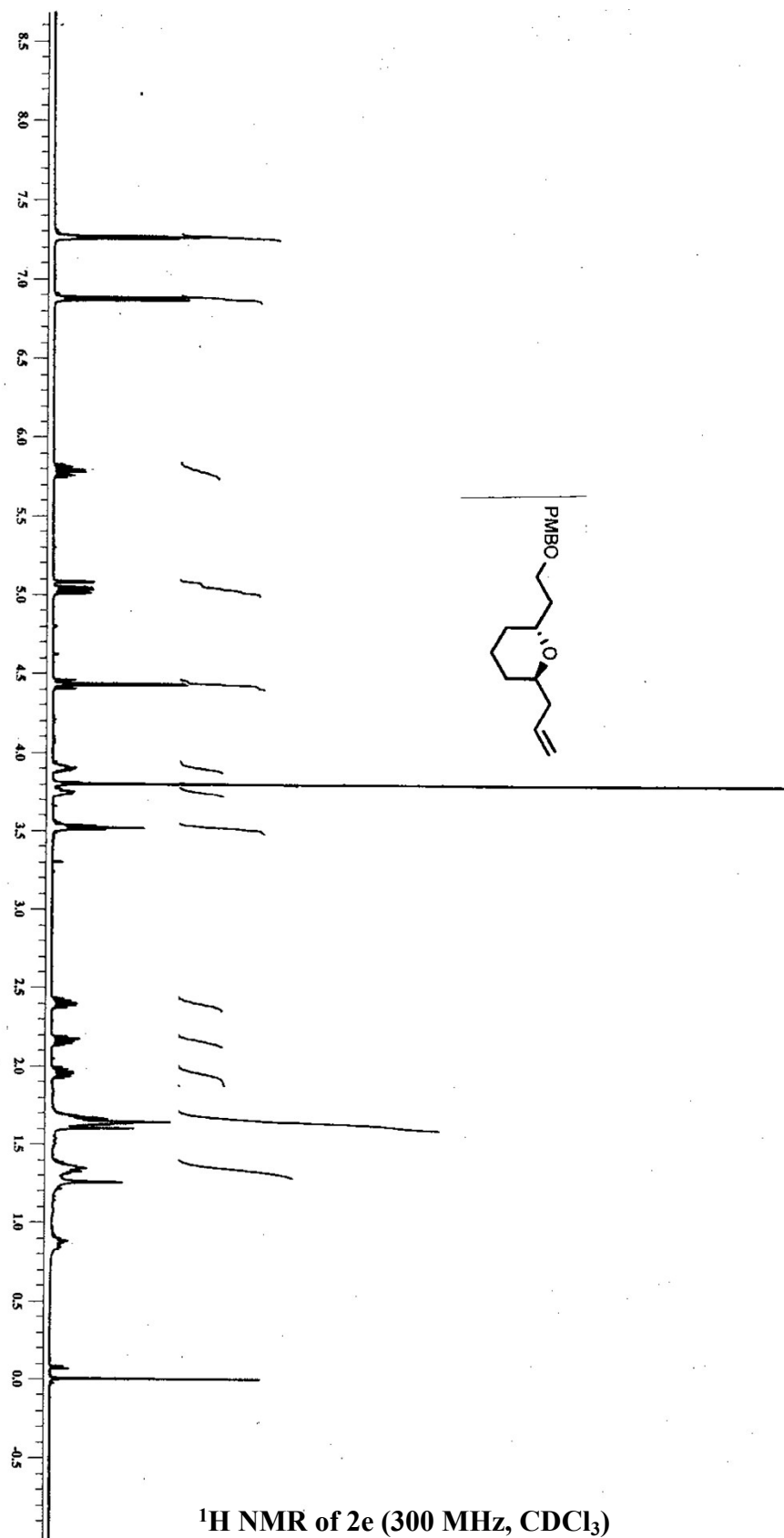
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 *** End of Report ***

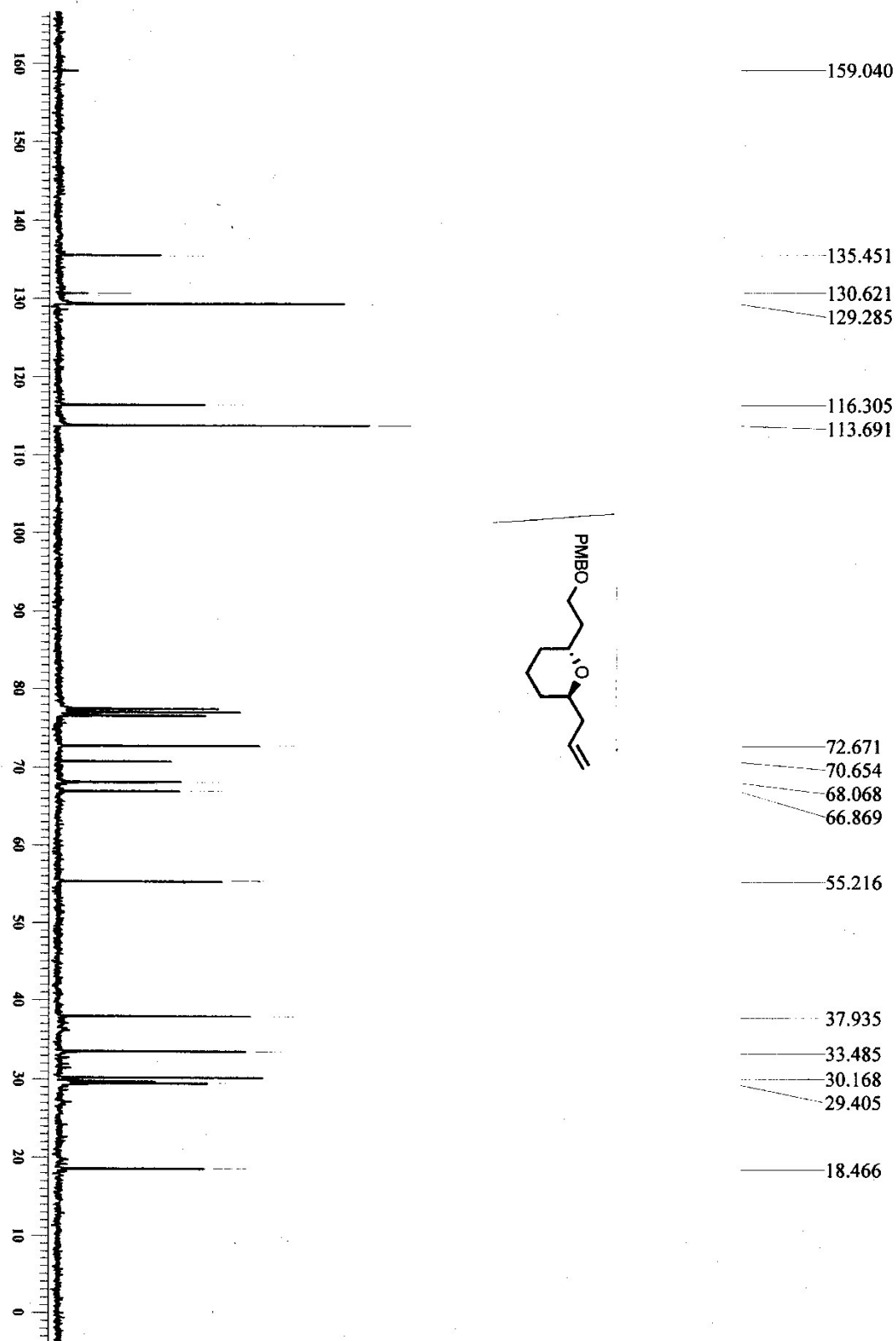
Display Report - Selected Window Selected Analysis

Analysis Name: 30102014000003.D Instrument: LC-MSD-Trip-SL Print Date: 11/10/201 11:07:37
Method: LCM.M Operator: SARMA Acq. Date: 10/30/2014 11:24:27 PM
Sample Name: DKM-DSR-BN 274
Analysis Info:



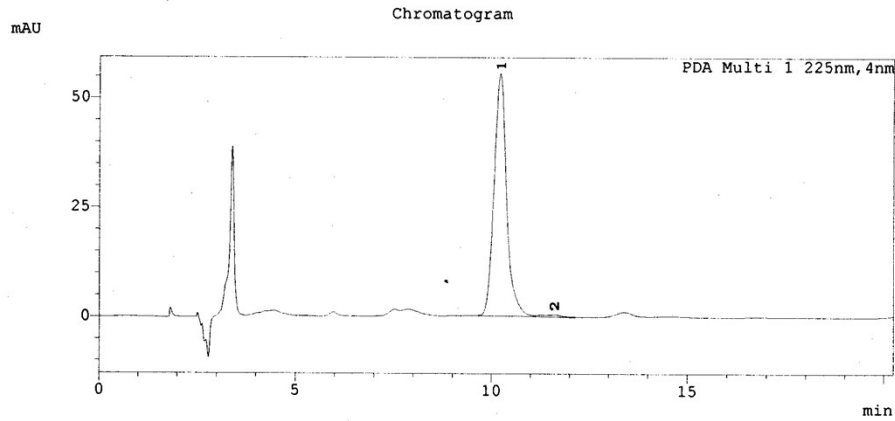
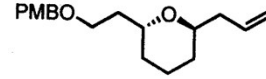
LC-MS of compound 2d





^{13}C NMR of 2e (75 MHz, CDCl_3)

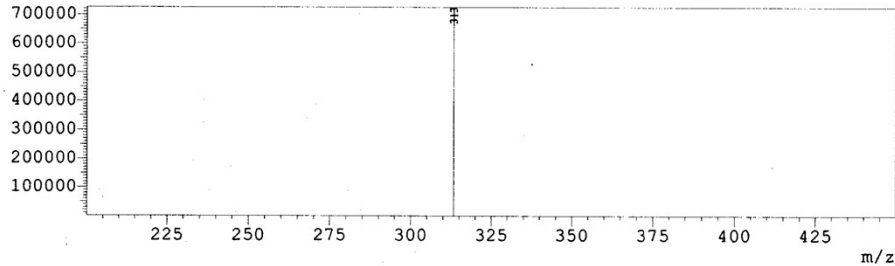
Sample Code : BKP-290
 Data File : 071015....6.lcd
 Method : LC-MS Lab Method.lcm
 Injection Volume : 20
 Date Acquired : 10/7/2015 11:45:09 AM
 Report File : LC-MS Data Report.lsr
 Chromatographic Conditions : Column: Phenosphere ODS (2) (250 X 4.6mm, 5.0 u)
 Mobile Phase: 70% MeOH in 0.1% FA, 1.0 mL/min



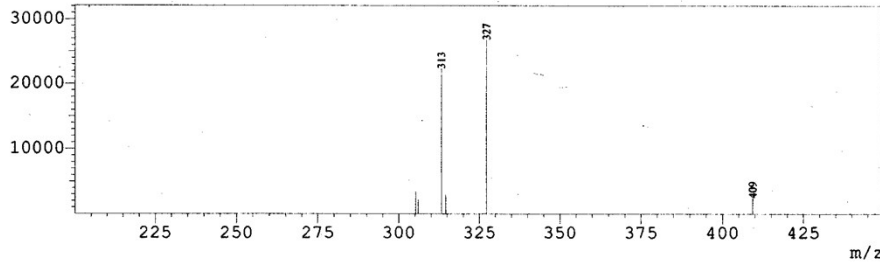
Peak Table

Peak#	Ret. Time	Peak Start	Peak End	Area	Area%
1	10.222	9.557	11.072	1241411	98.723
2	11.612	11.072	12.160	16053	1.277
Total				1257464	100.000

Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 9.960-10.693(3985-4278)
 BG Mode:Averaged 3.063-9.760(1226-3905)

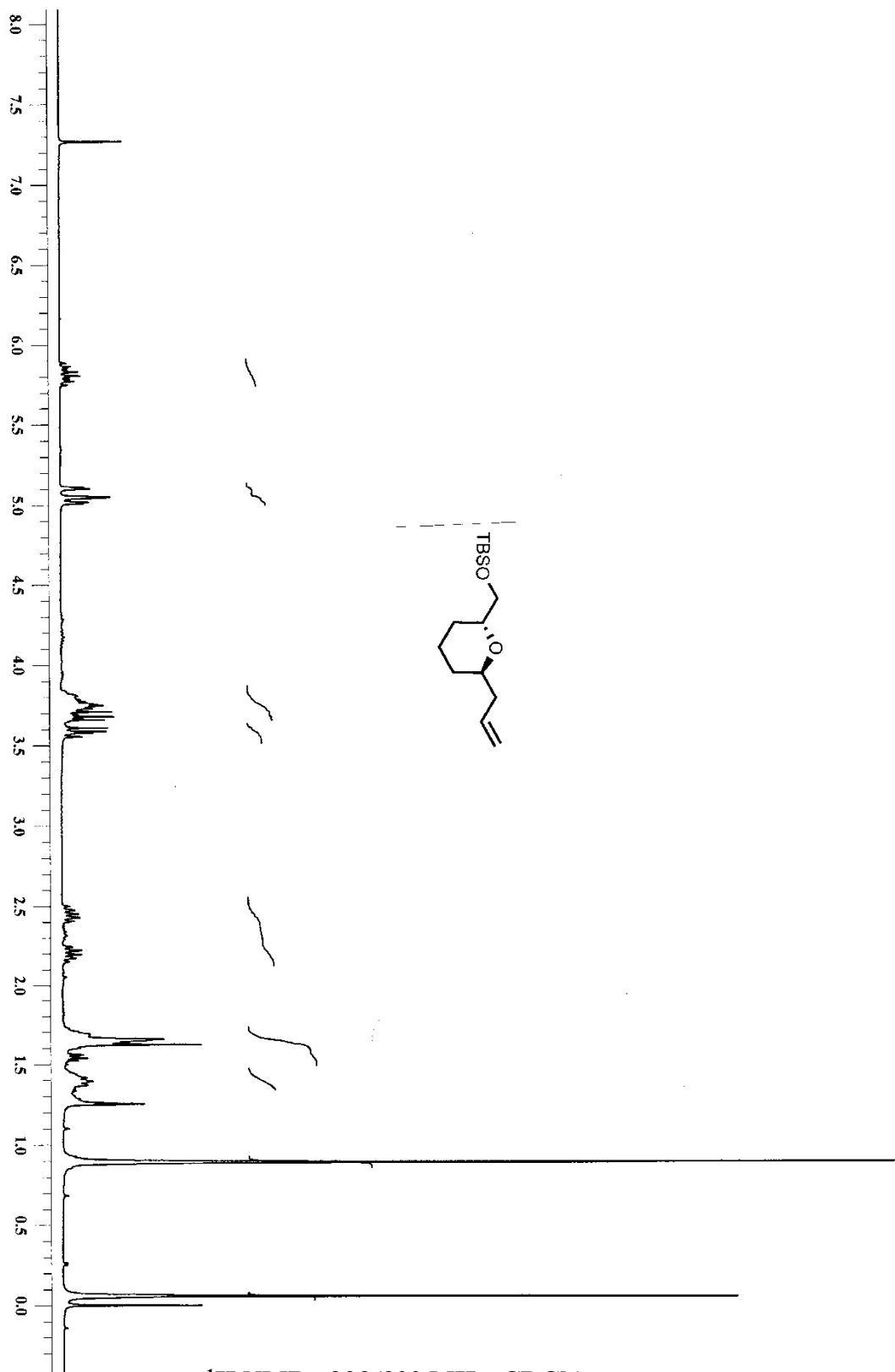


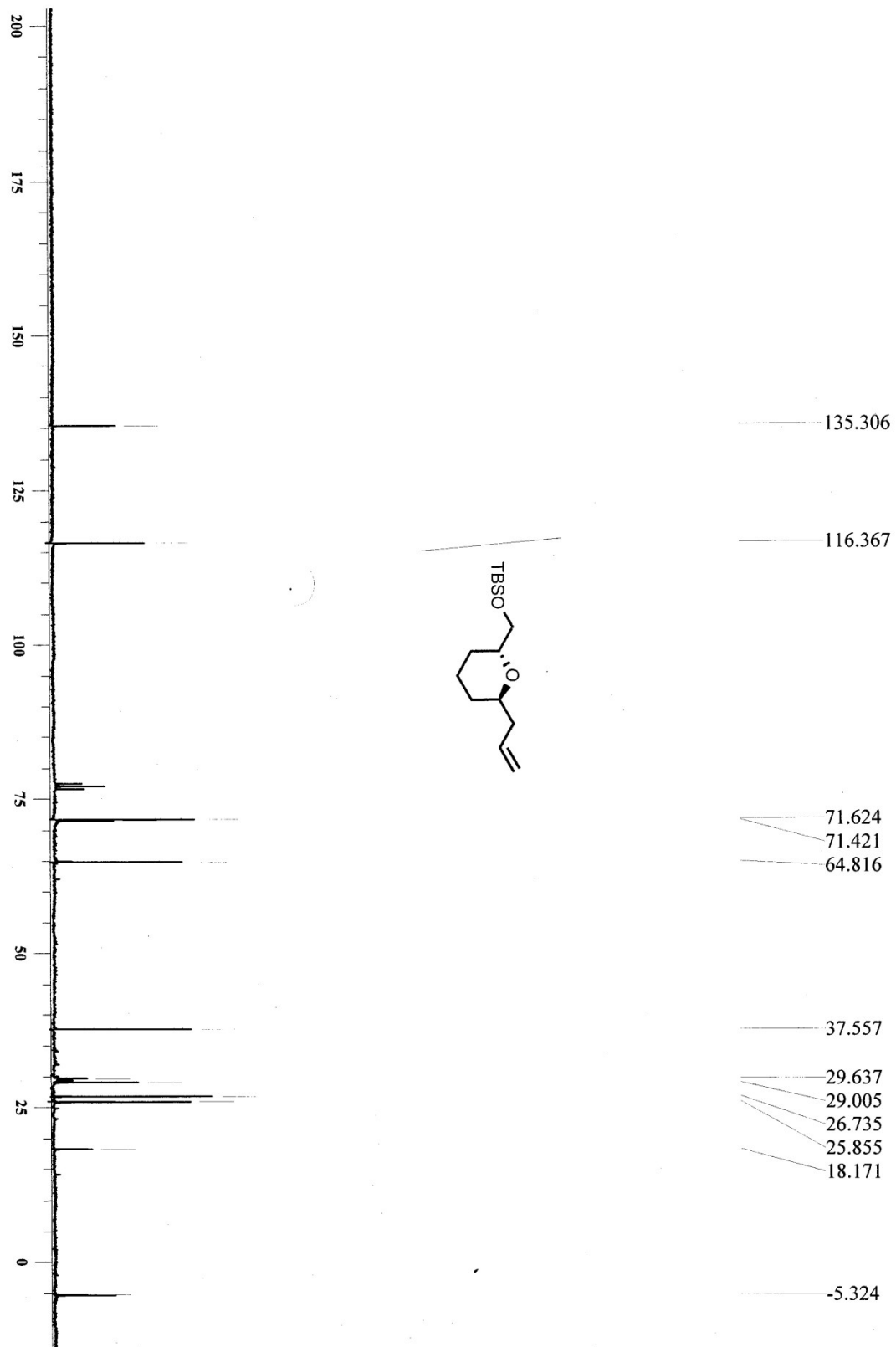
Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 11.260-12.025(4505-4811)
 BG Mode:Averaged 12.193-20.255(4878-8103)



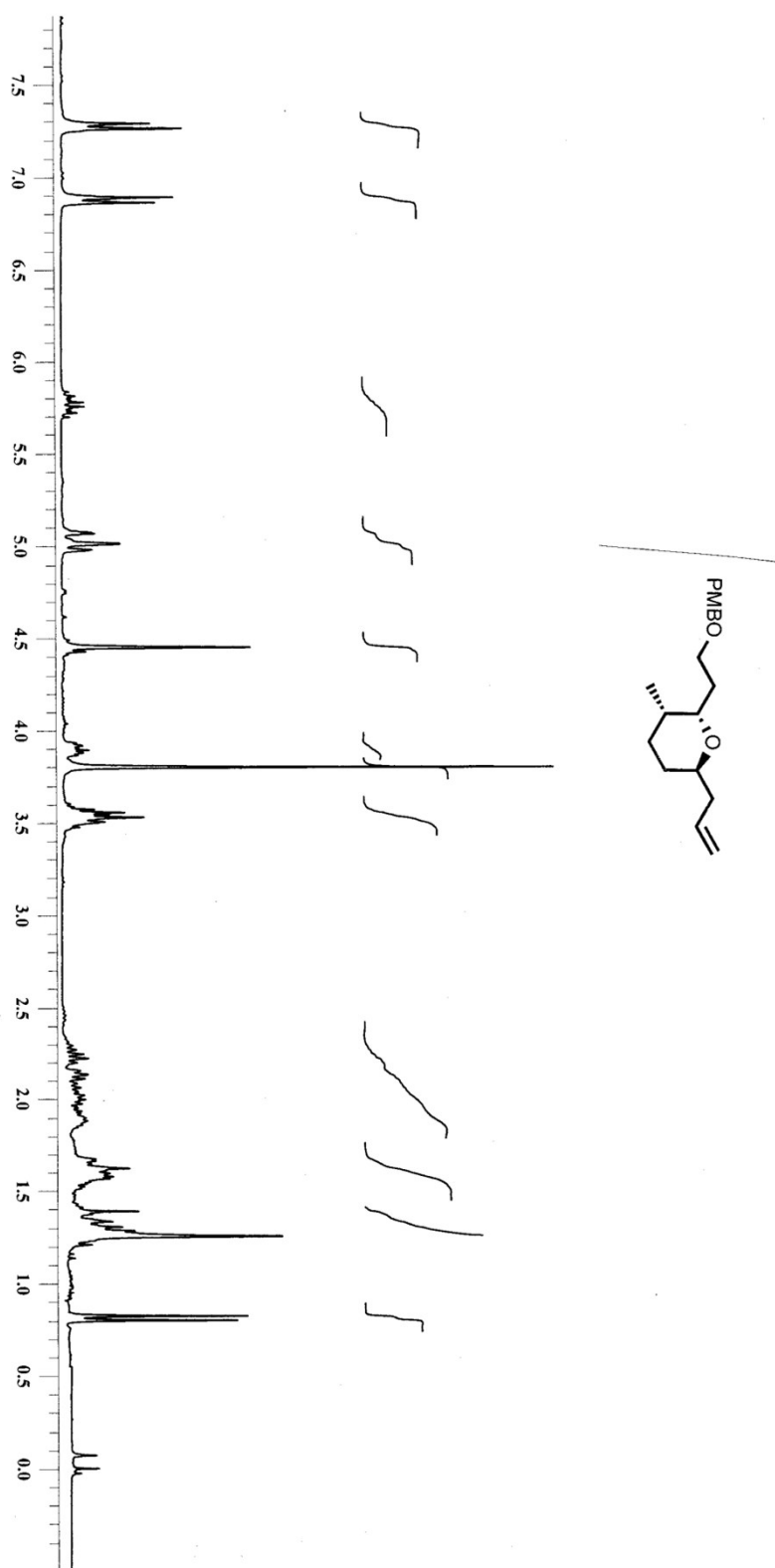
LC-MS REPORT

HPLC of compound 2e

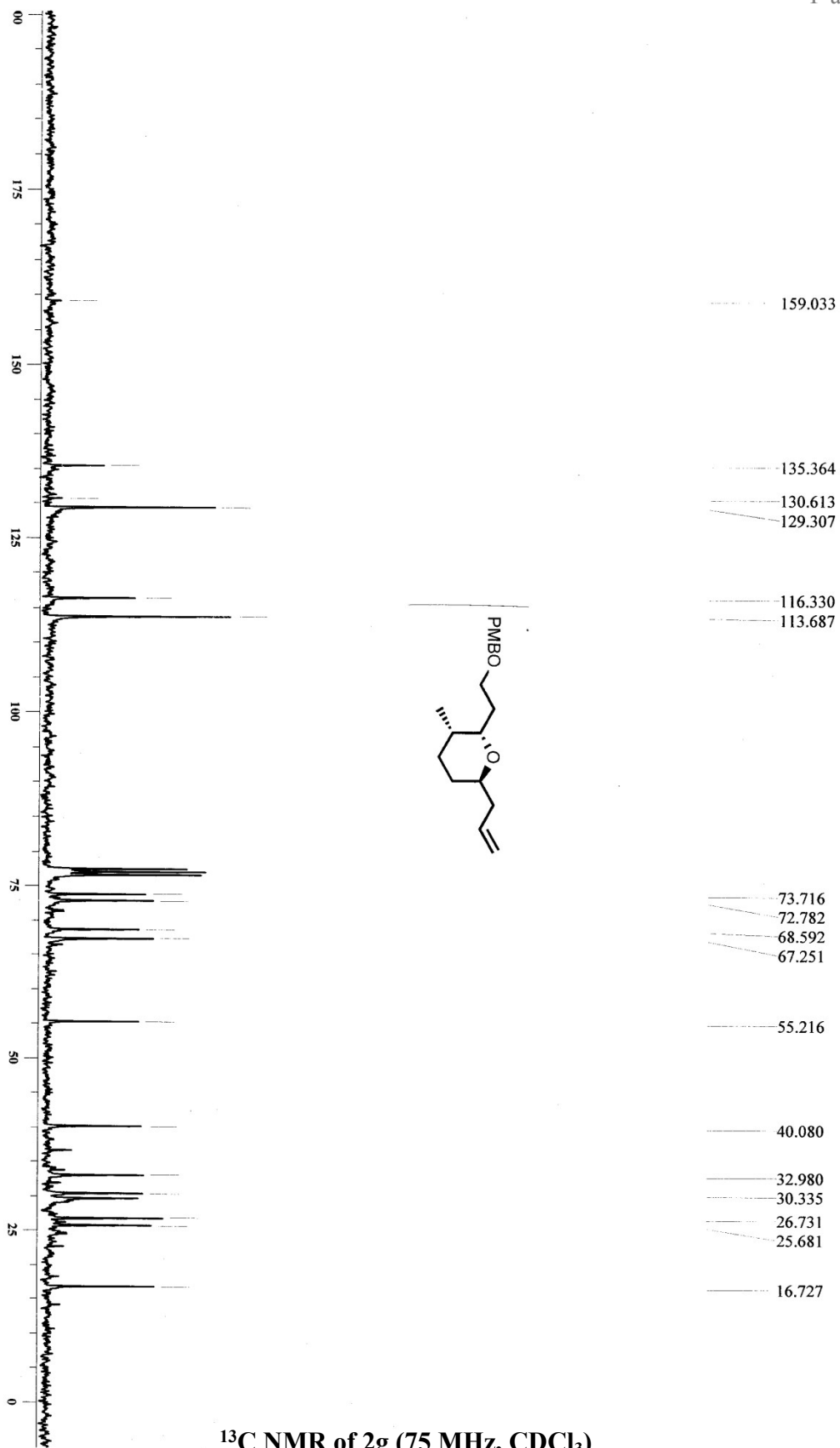




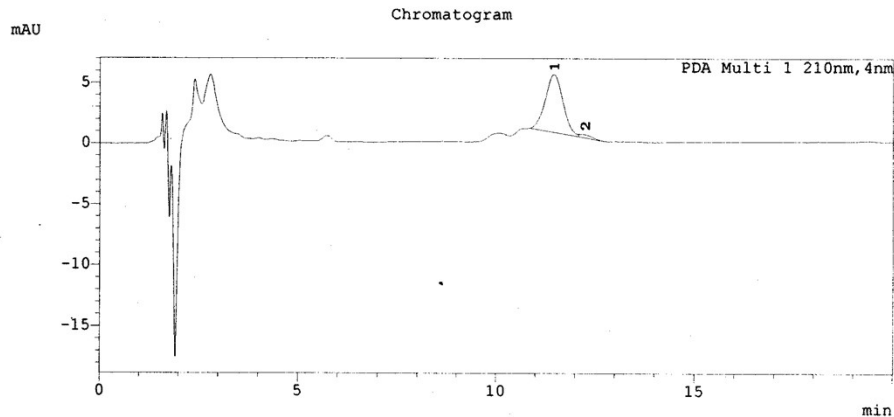
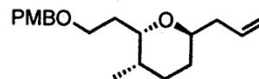
¹³C NMR of 2f (75 MHz, CDCl₃)



$^1\text{H NMR}$ of 2g (300 MHz, CDCl_3)



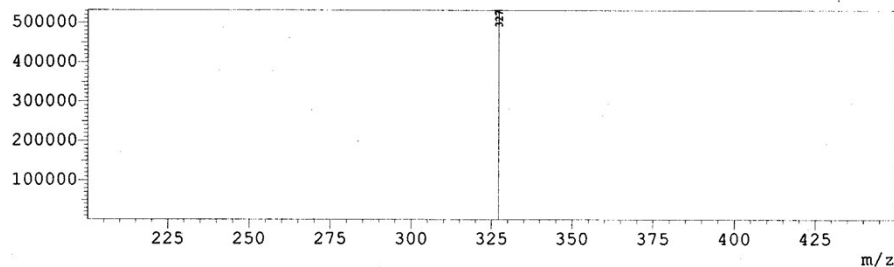
Sample Code : DKM-BKP-304
 Data File : 131015.2.1cd
 Method : LC-MS Lab Method.lcm
 Injection Volume : 20
 Date Acquired : 10/13/2015 11:20:16 AM
 Report File : LC-MS Data Report.lsr
 Chromatographic Conditions : Column: Atlantis C18 (150 X4.6mm, 5.0u)
 Mobile Phase: 75% MeOH in 0.1% FA
 Flowrate: 1.0 mL/min



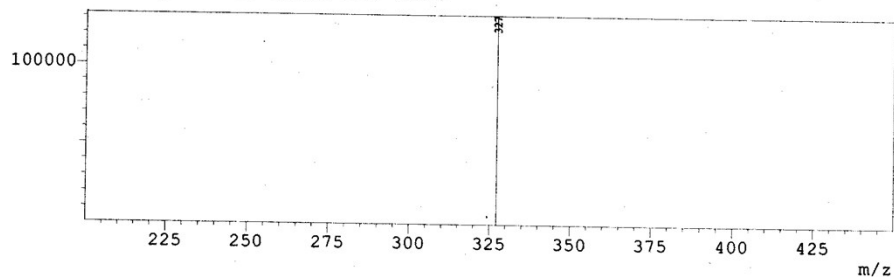
Peak Table

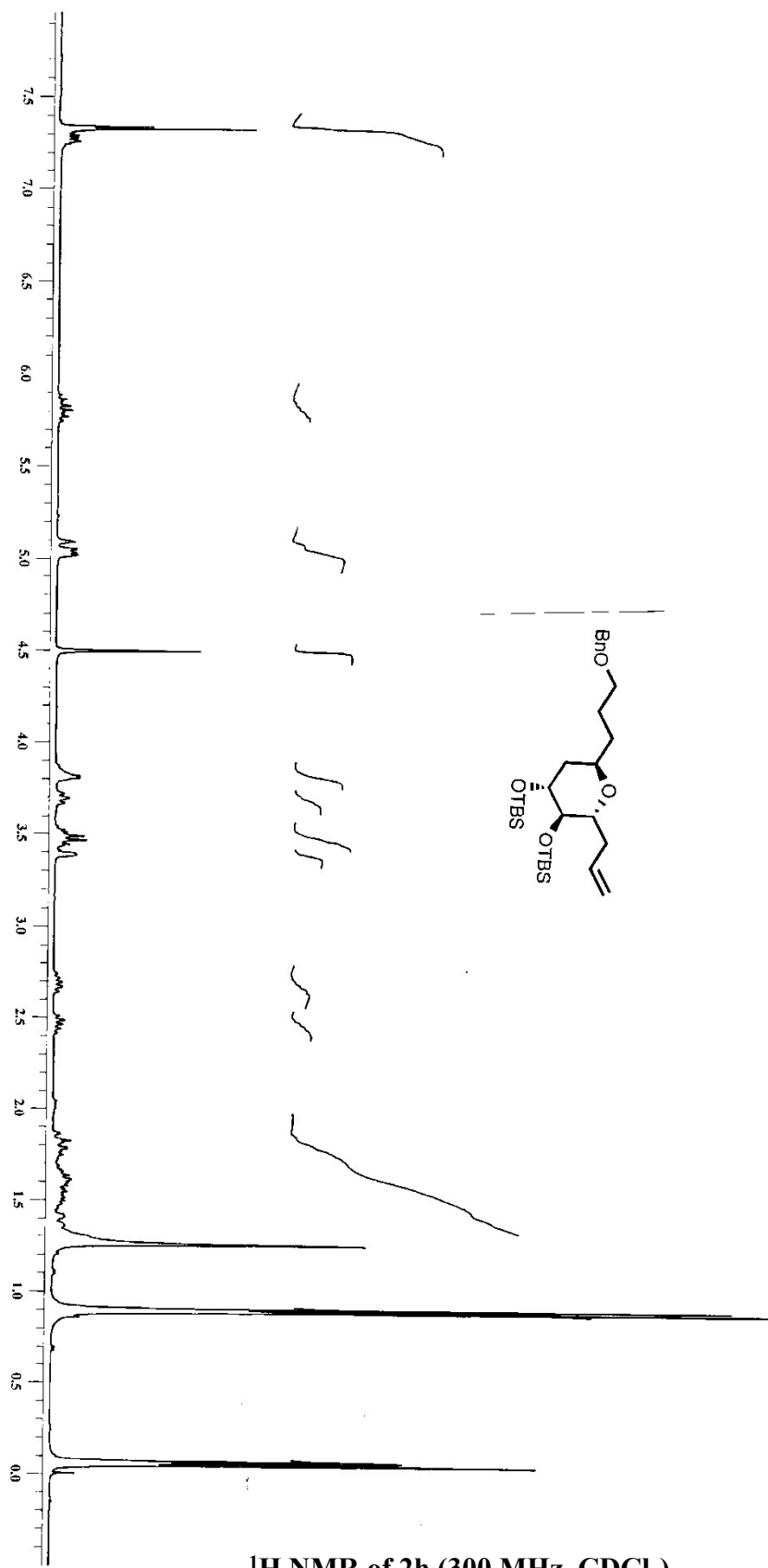
Peak#	Ret. Time	Peak Start	Peak End	Area	Area%
1	11.462	10.869	12.085	147913	96.579
2	12.245	12.085	12.704	5239	3.421
Total				153152	100.000

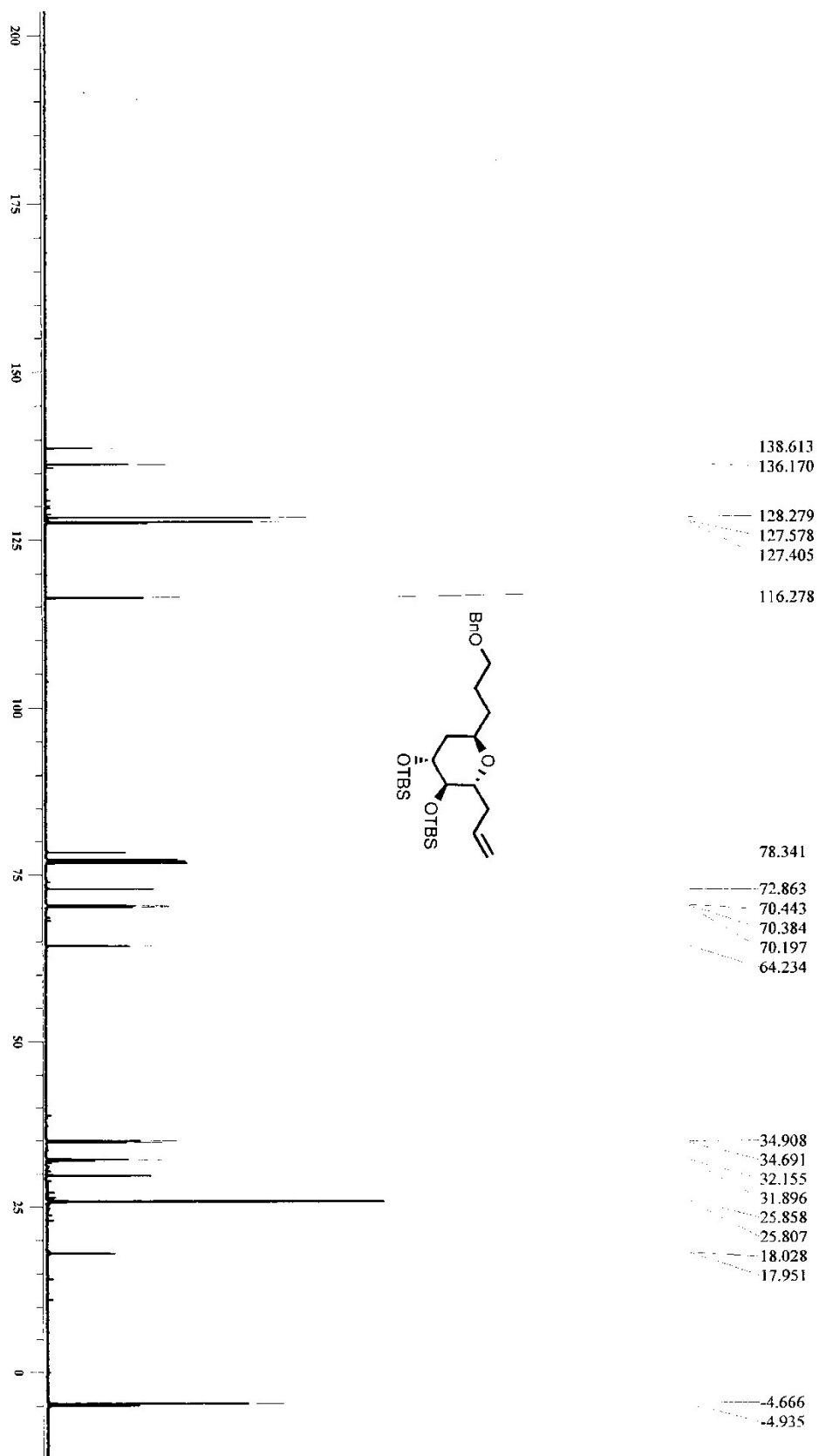
Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 10.887-11.873(6533-7125)
 BG Mode:Averaged 1.085-10.788(652-6474)



Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 11.873-12.498(7125-7500)
 BG Mode:Averaged 0.855-11.807(514-7085)

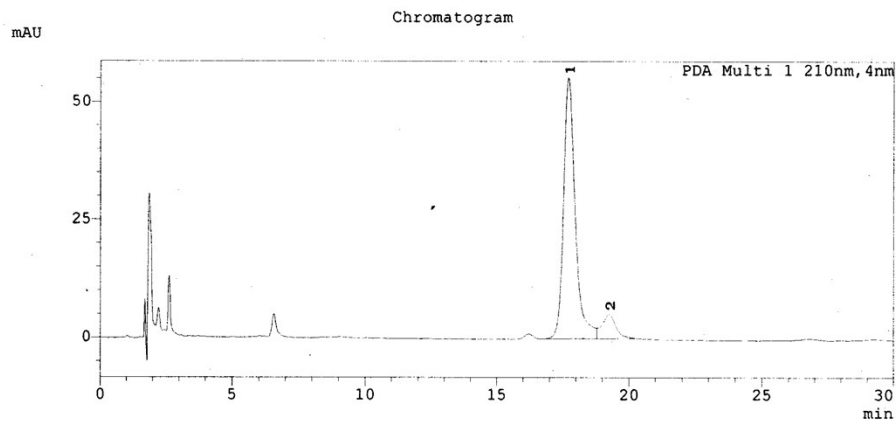
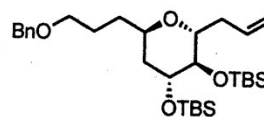






¹³C NMR of 2h (75 MHz, CDCl₃)

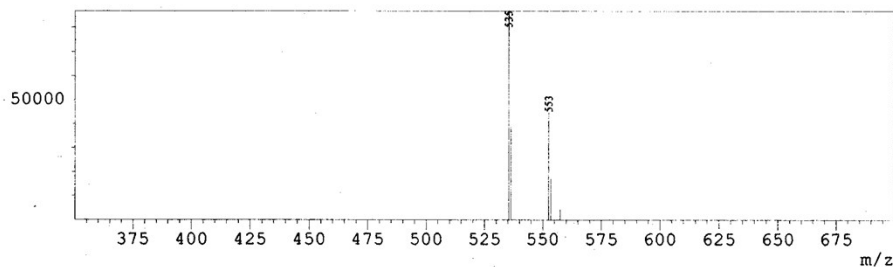
Sample Code : BKP-534
 Data File : 061015...3.lcd
 Method : LC-MS Lab Method.lcm
 Injection Volume : 20
 Date Acquired : 10/6/2015 7:31:06 PM
 Report File : LC-MS Data Report.lsr
 Chromatographic Conditions : Column: Atlantis C18 (150 X 4.6mm, 5.0 u)
 Mobile Phase: 95% ACN in 0.1% FA, 1.0 mL/min



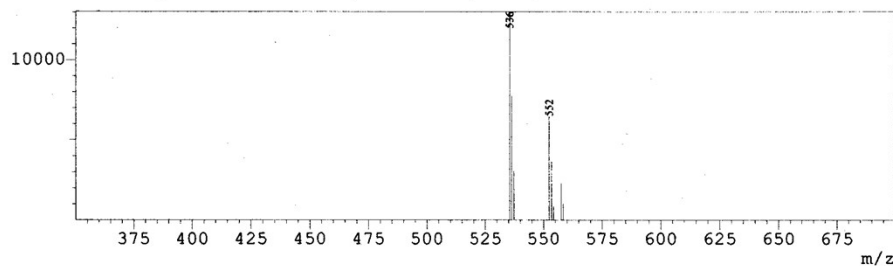
Peak Table

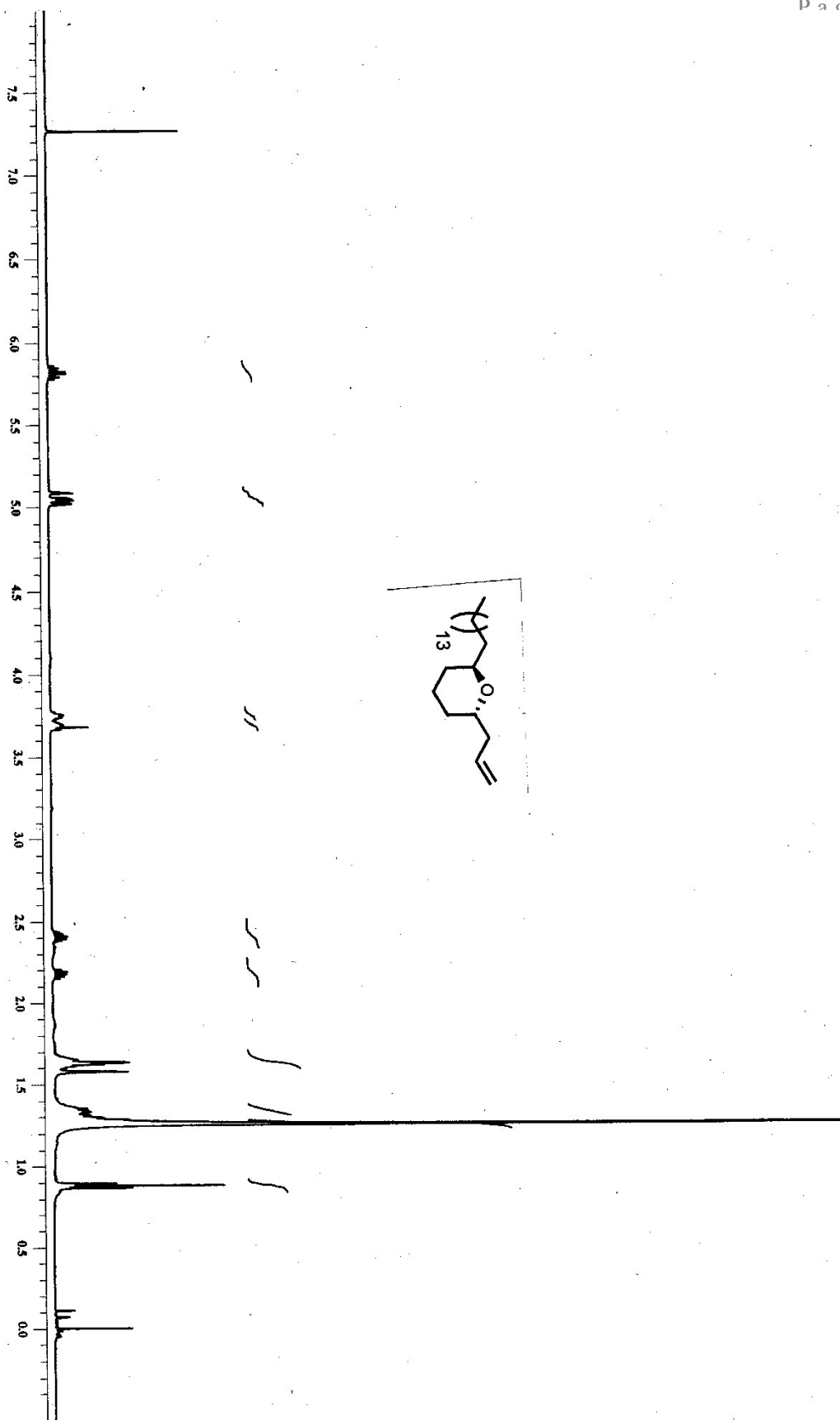
Peak#	Ret. Time	Peak Start	Peak End	Area	Area%
1	17.706	16.821	18.795	1703390	90.202
2	19.256	18.795	20.267	185026	9.798
Total				1888416	100.000

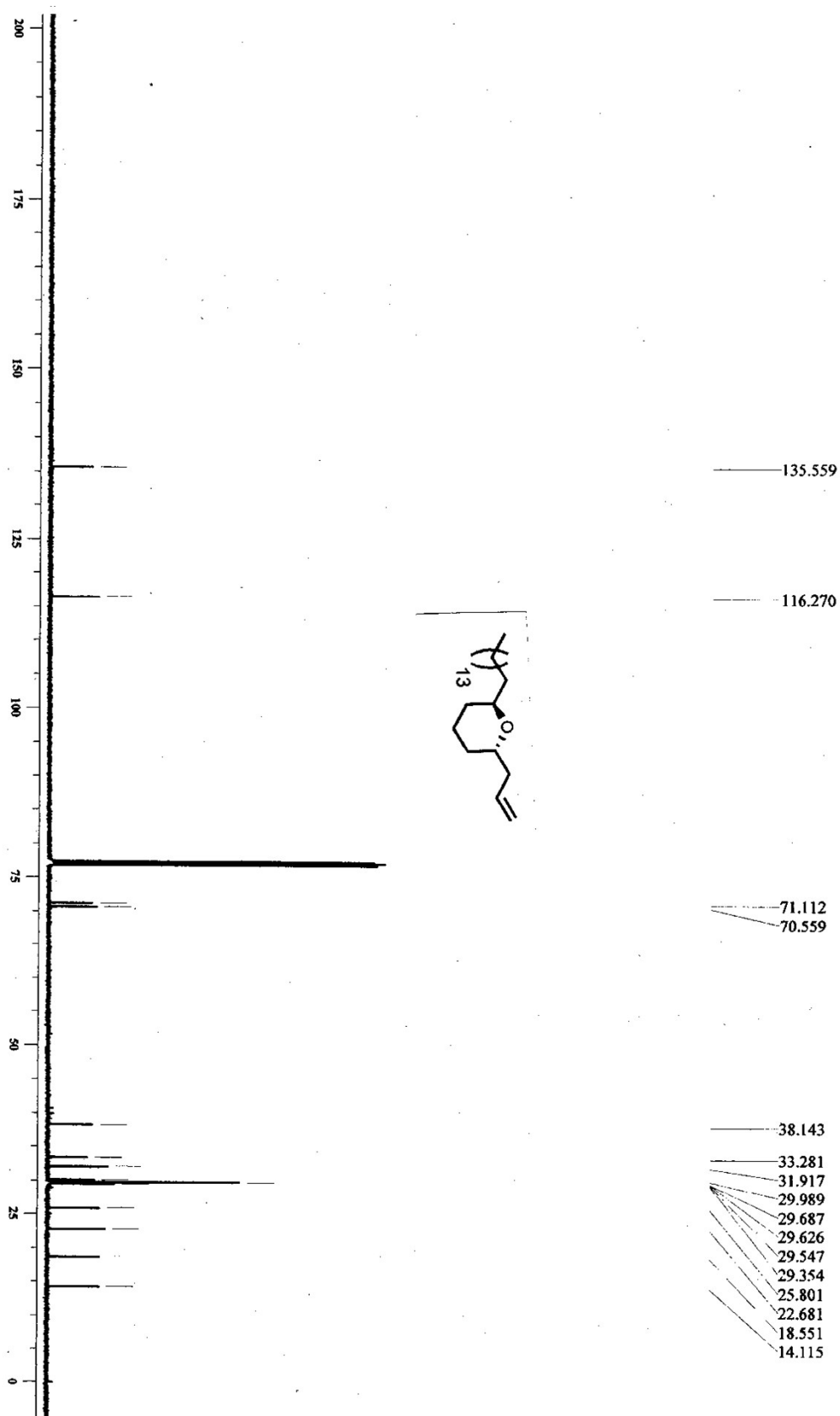
Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 17.300-18.288 (6921-7316)
 BG Mode:Averaged 5.195-17.235 (2079-6895)



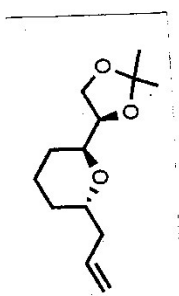
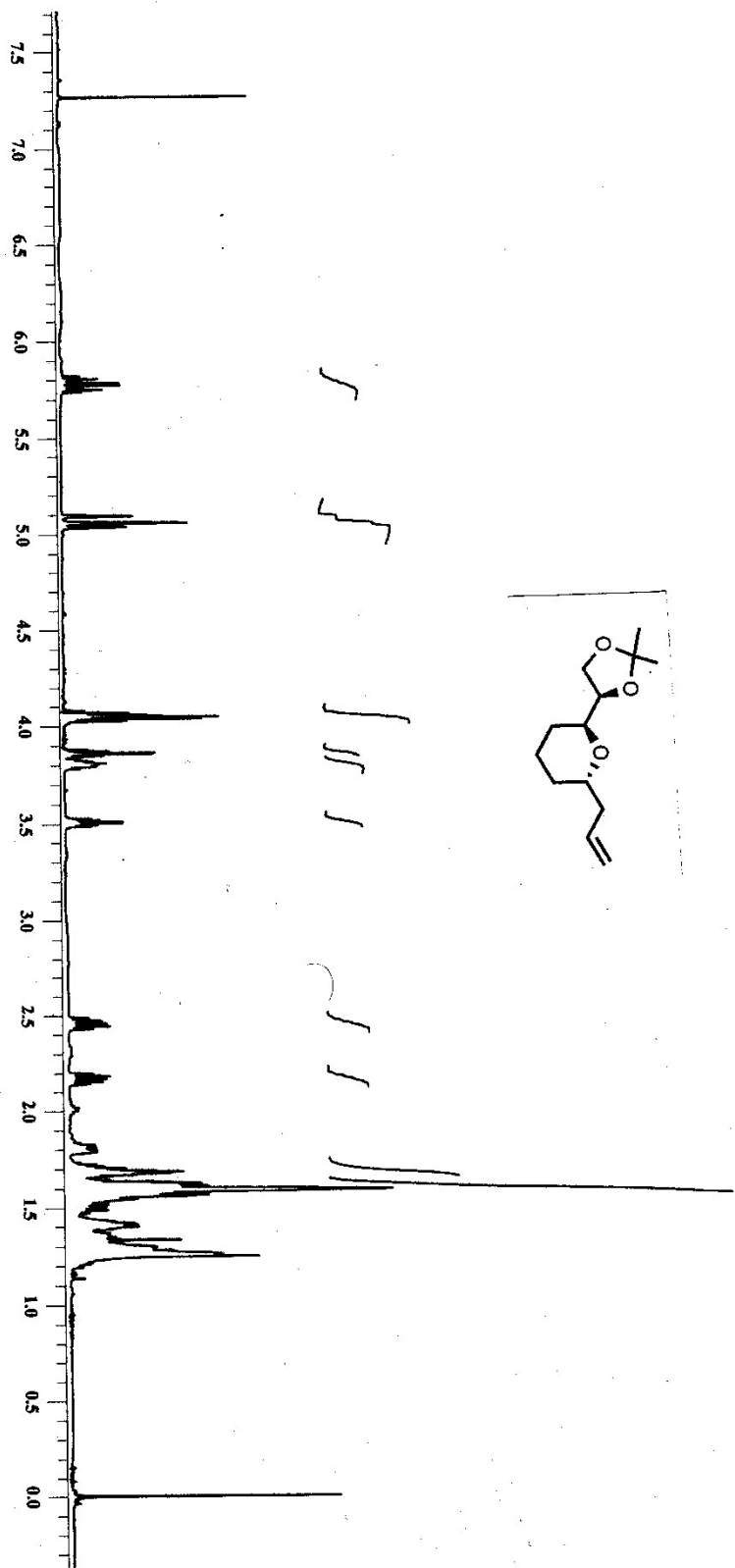
Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 18.945-19.470 (7579-7789)
 BG Mode:Averaged 19.470-33.090 (7789-13237)



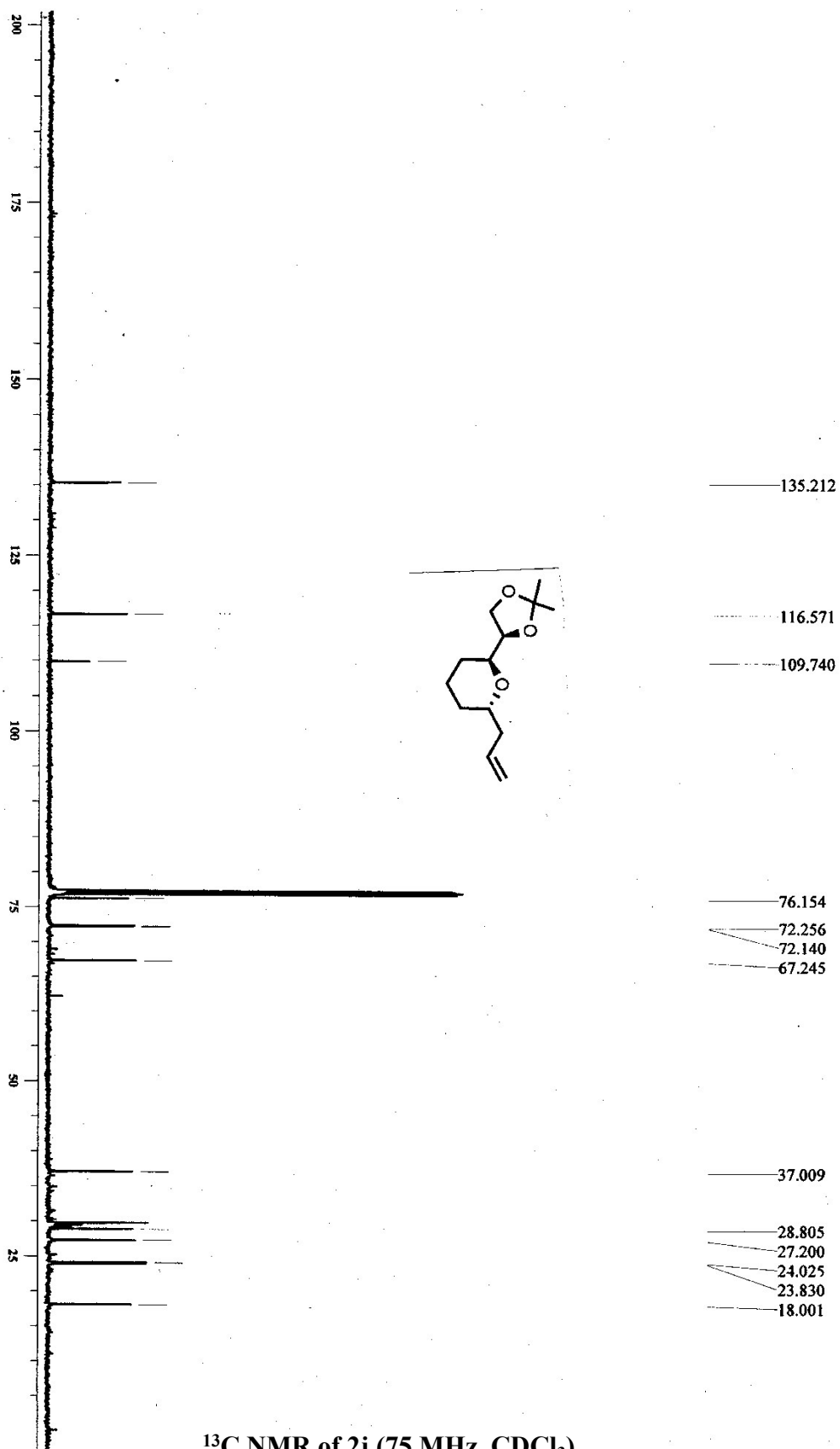
 ^1H NMR of 2i (300 MHz, CDCl_3)



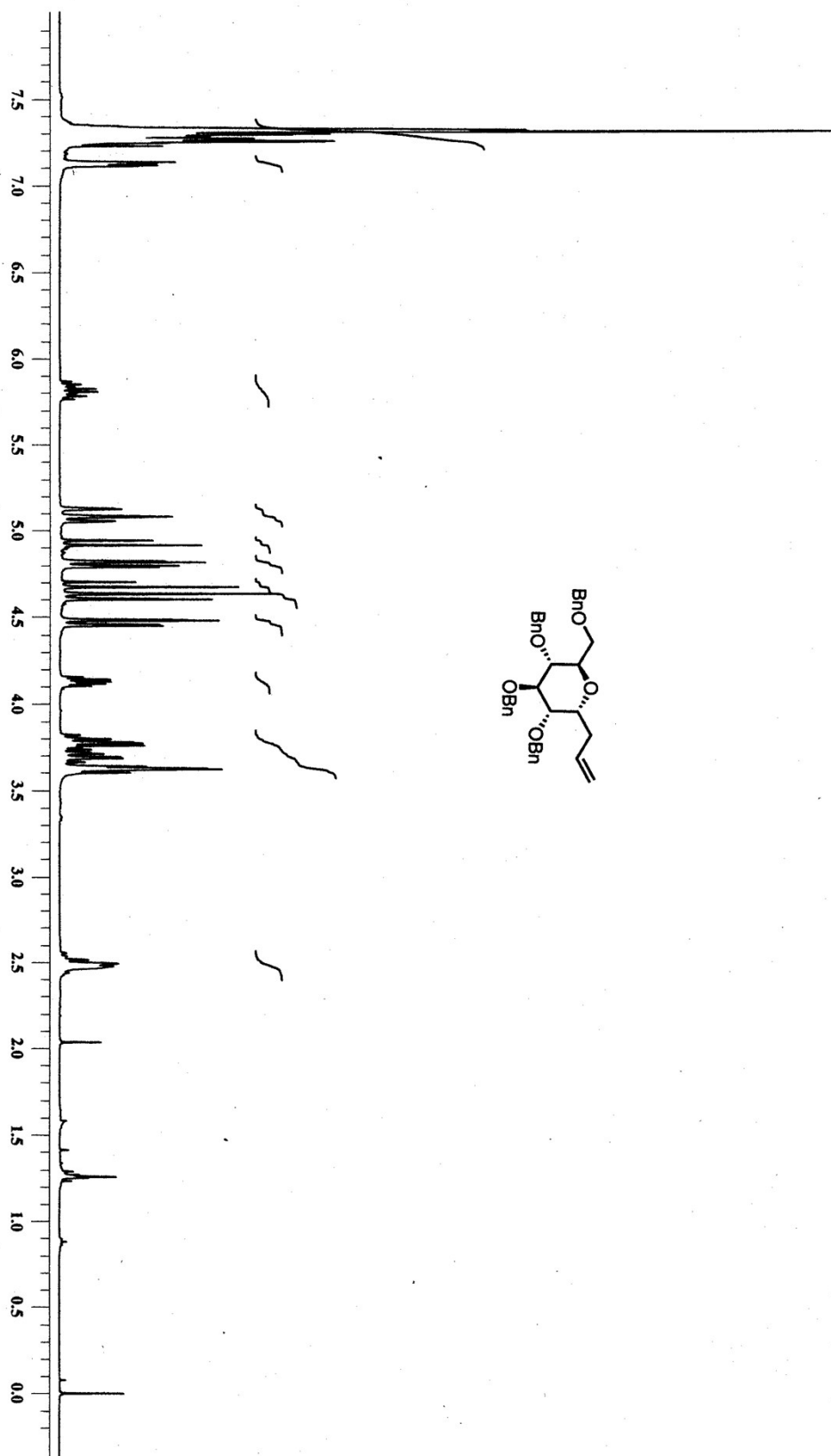
¹³C NMR of 2i (75 MHz, CDCl₃)



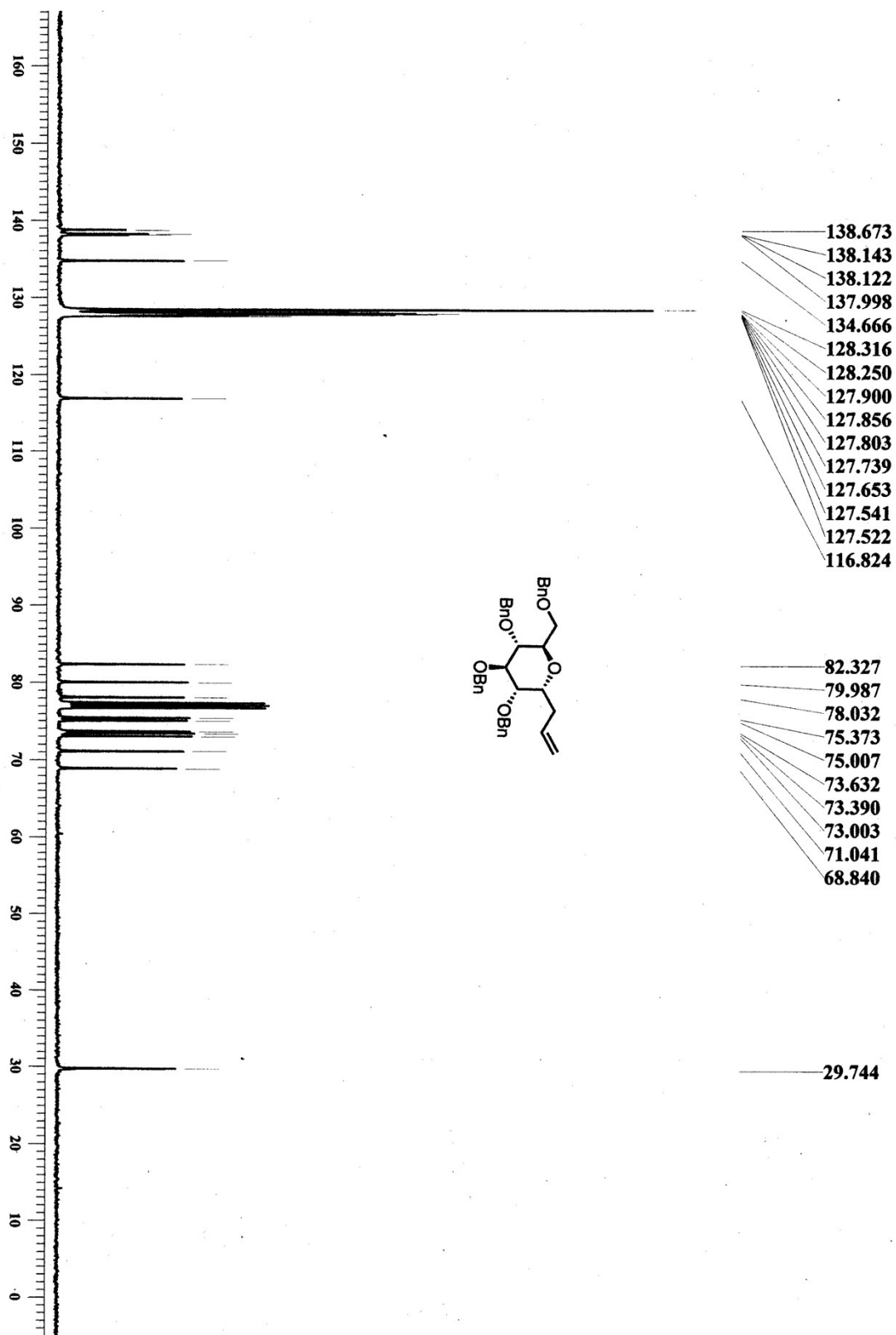
^1H NMR of 2j (300 MHz, CDCl_3)



¹³C NMR of 2j (75 MHz, CDCl₃)

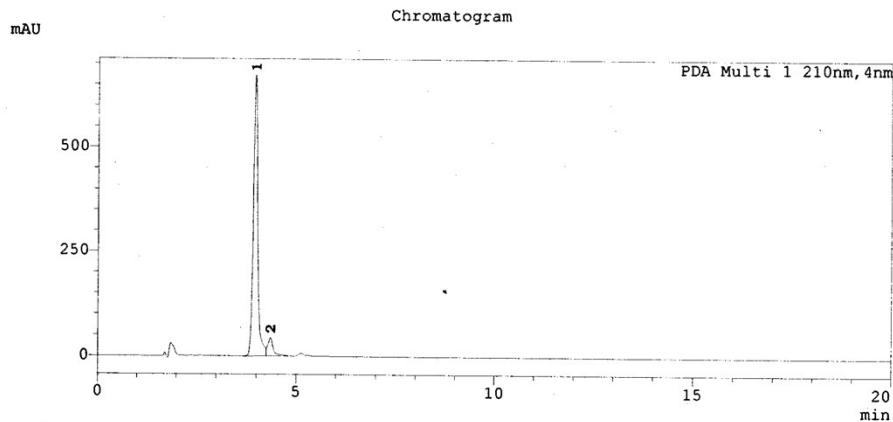
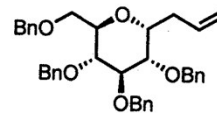


^1H NMR of 2k (400 MHz, CDCl_3)



¹³C NMR of 2k (100 MHz, CDCl₃)

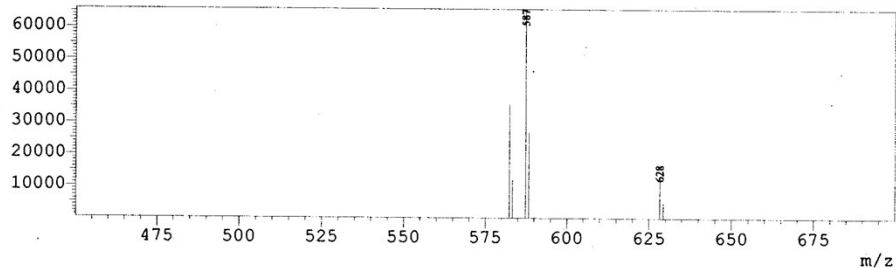
Sample Code : BKP-564
 Data File : 061015....5.lcd
 Method : LC-MS Lab Method.lcm
 Injection Volume : 20
 Date Acquired : 10/6/2015 8:52:27 PM
 Report File : LC-MS Data Report.lsr
 Chromatographic Conditions : Column: Atlantis C18 (150 X 4.6mm, 5.0 u)
 Mobile Phase: 95% ACN in 0.1% FA, 1.0 mL/min



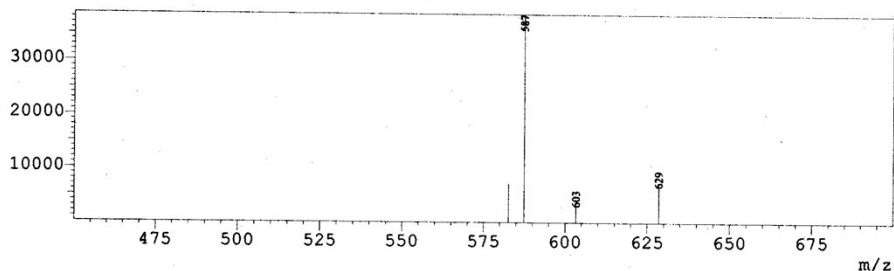
Peak Table

Peak#	Ret. Time	Peak Start	Peak End	Area	Area%
1	3.963	3.659	4.245	5197973	92.271
2	4.356	4.245	4.917	435425	7.729
Total				5633398	100.000

Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 3.828-4.105 (1532-1643)
 BG Mode:Averaged 1.873-3.810 (750-1525)

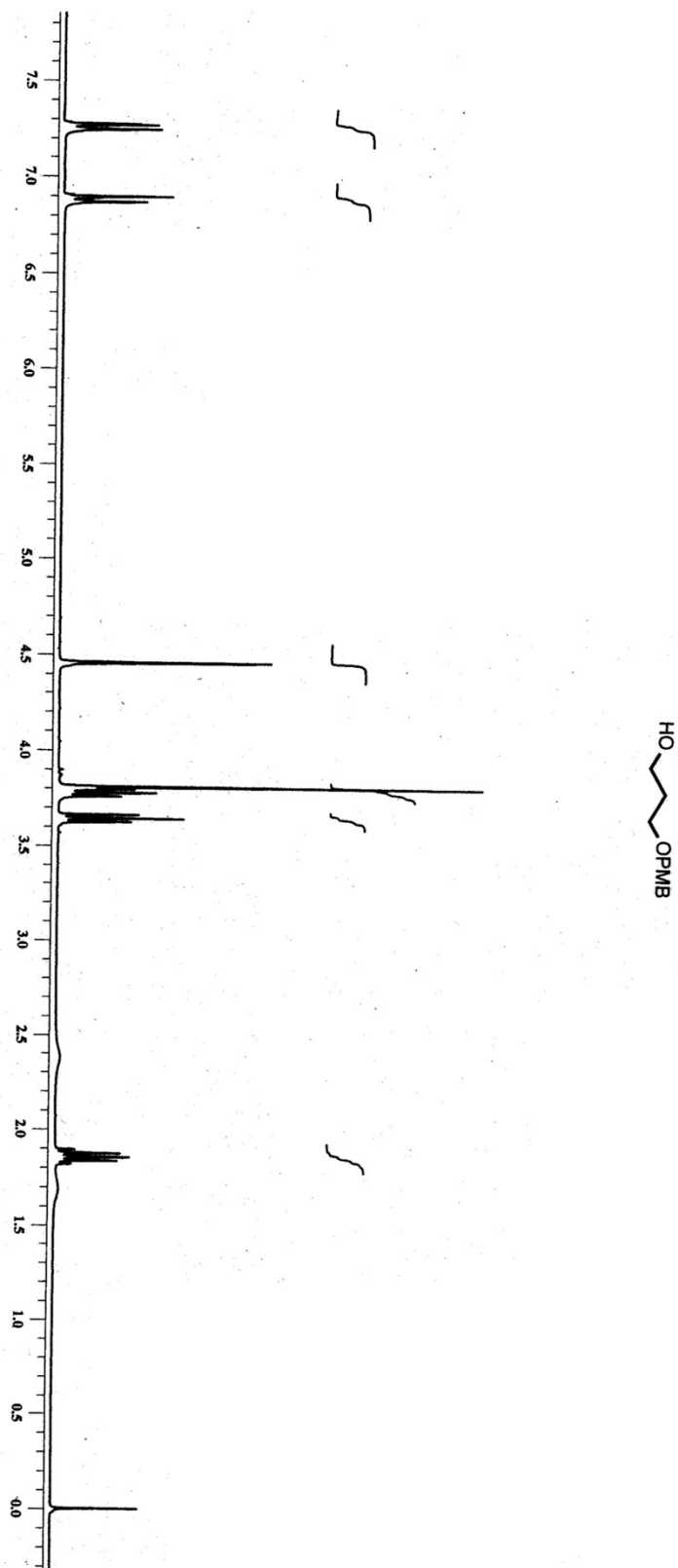


Q1 Scan Positive+
 \$If\$(SpPrTab==SpPrTab) Spectrum Mode:Averaged 4.193-4.418 (1678-1768)
 BG Mode:Averaged 1.975-4.140 (791-1657)

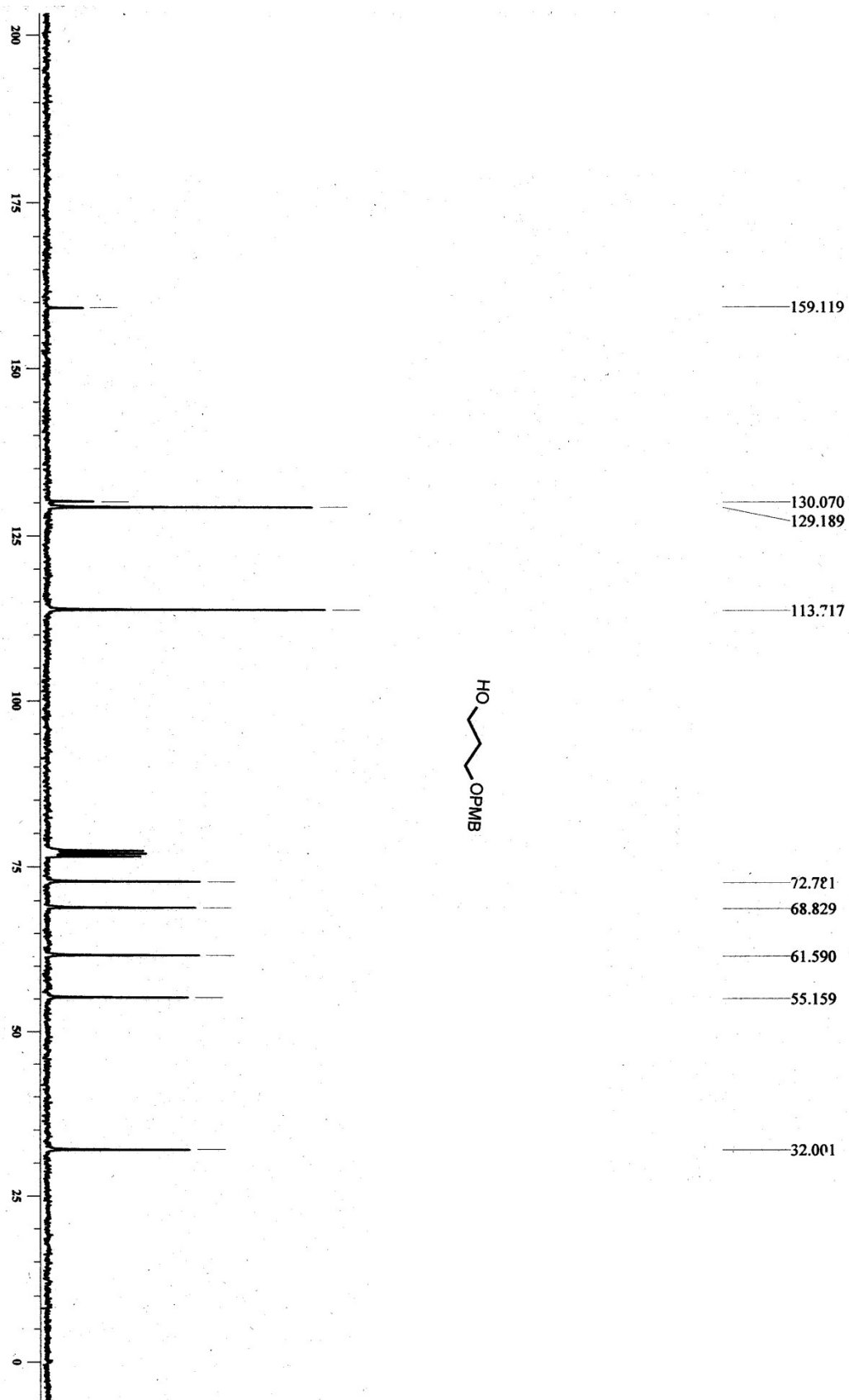


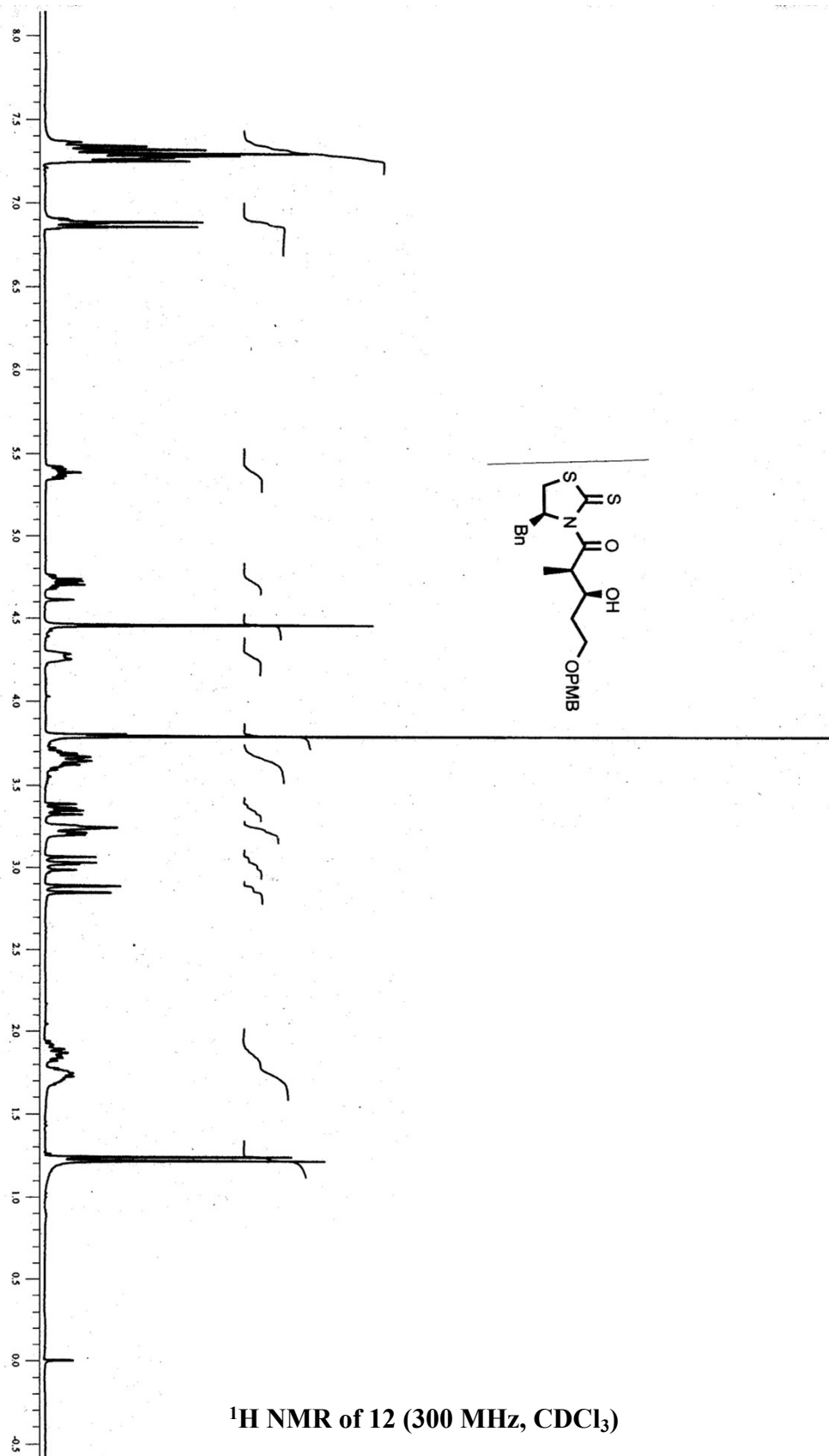
LC-MS REPORT

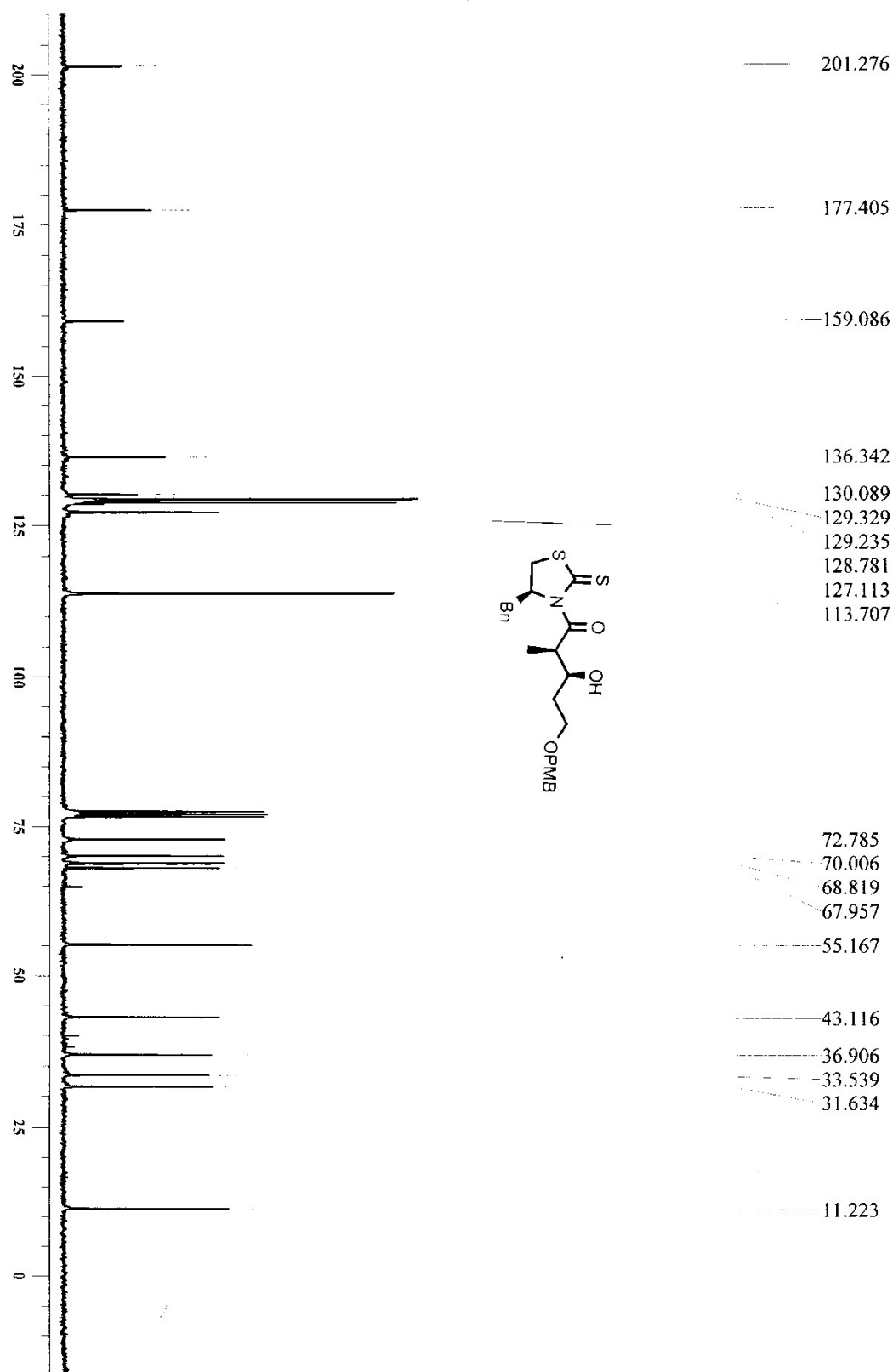
HPLC of compound 2k



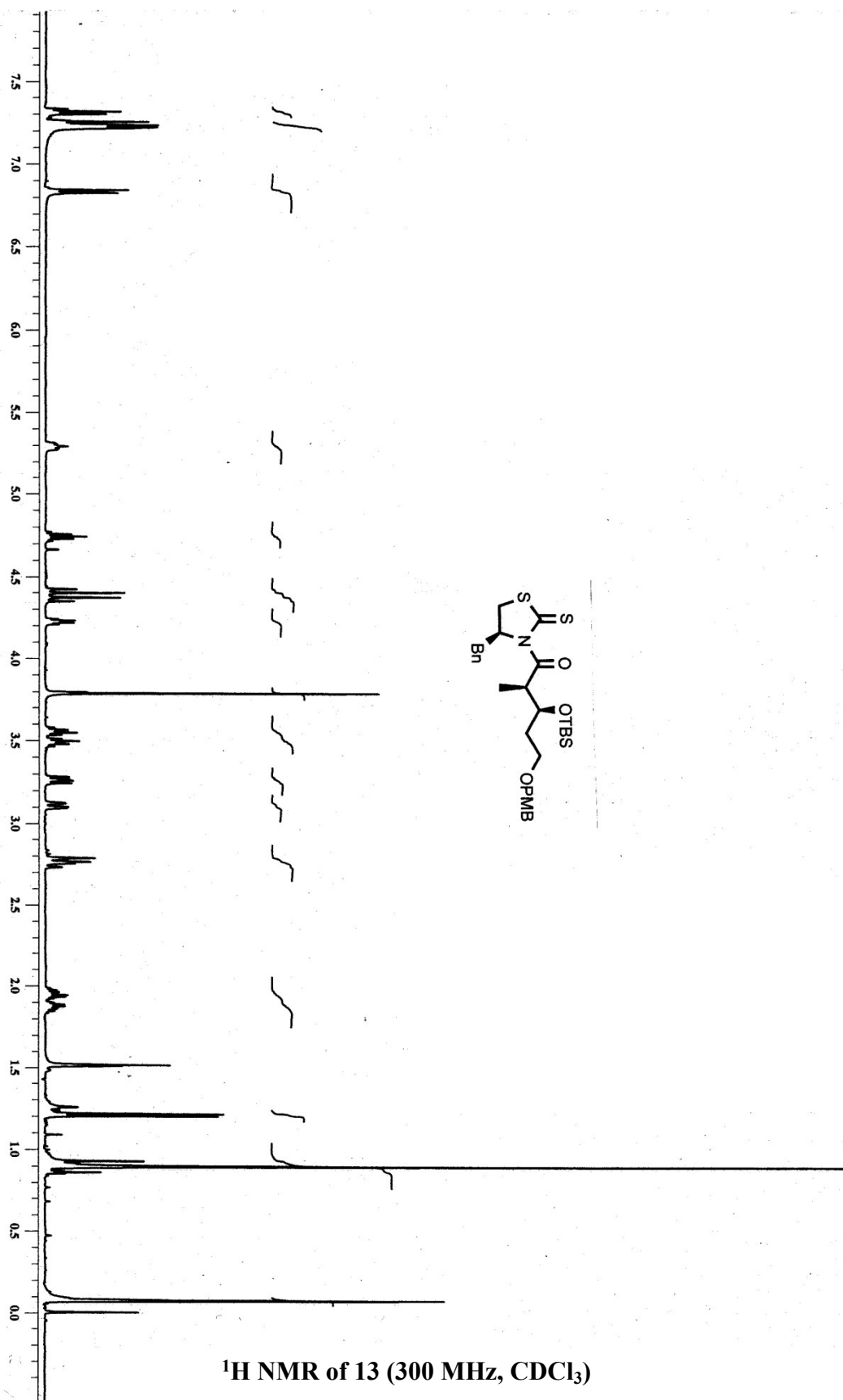
^1H NMR of 9 (300 MHz, CDCl_3)

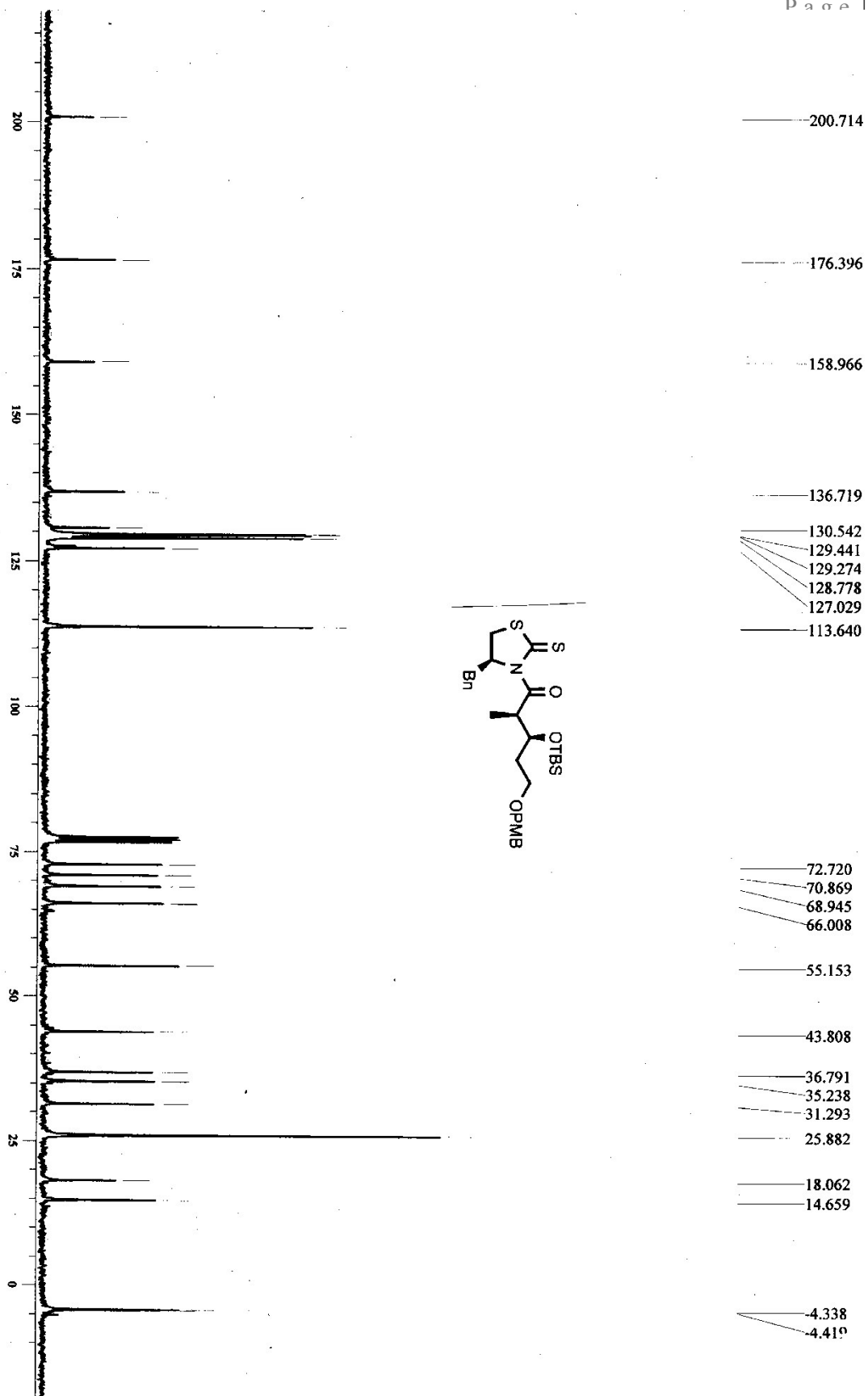


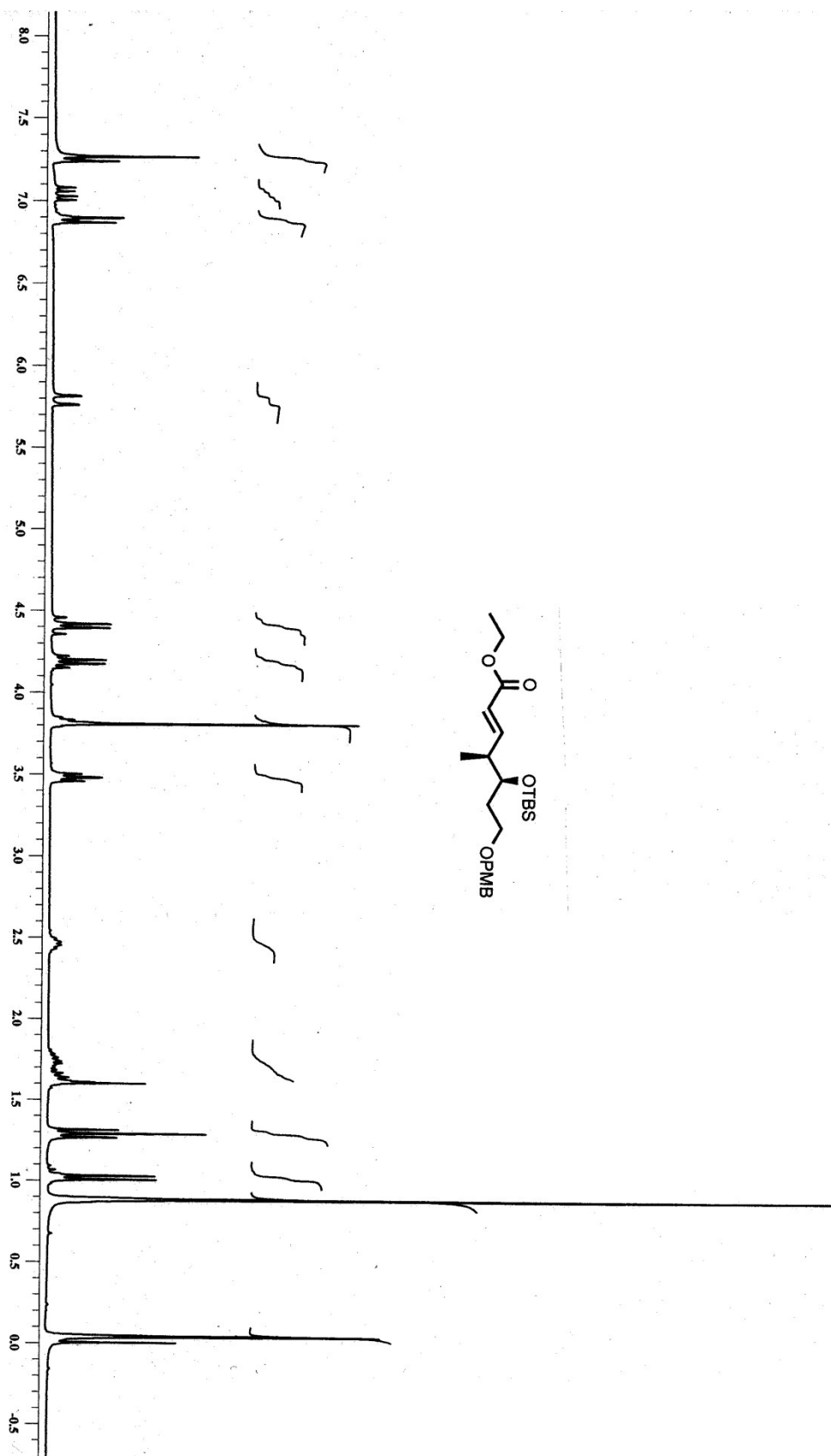


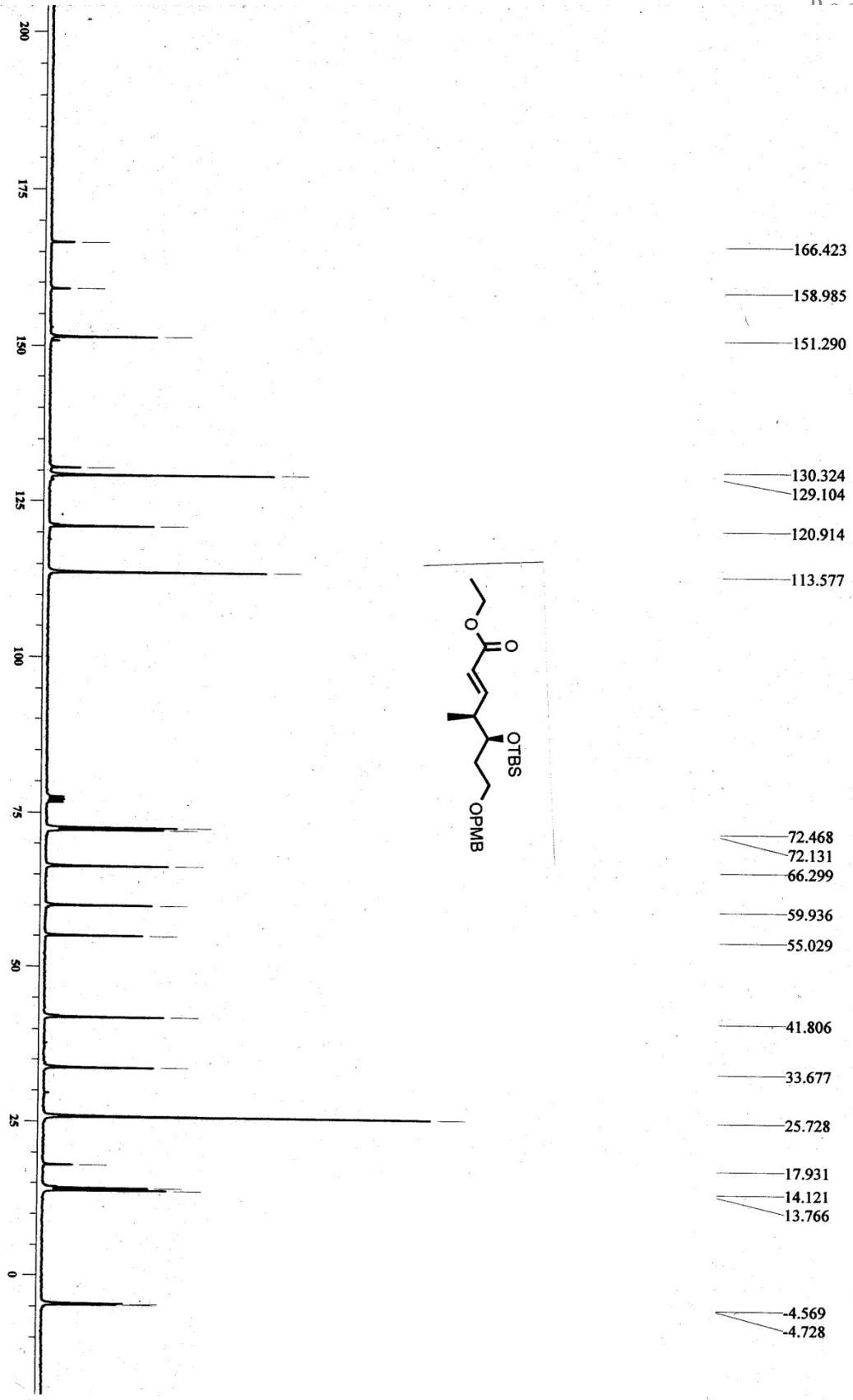


¹³C NMR of 12 (75 MHz, CDCl₃)

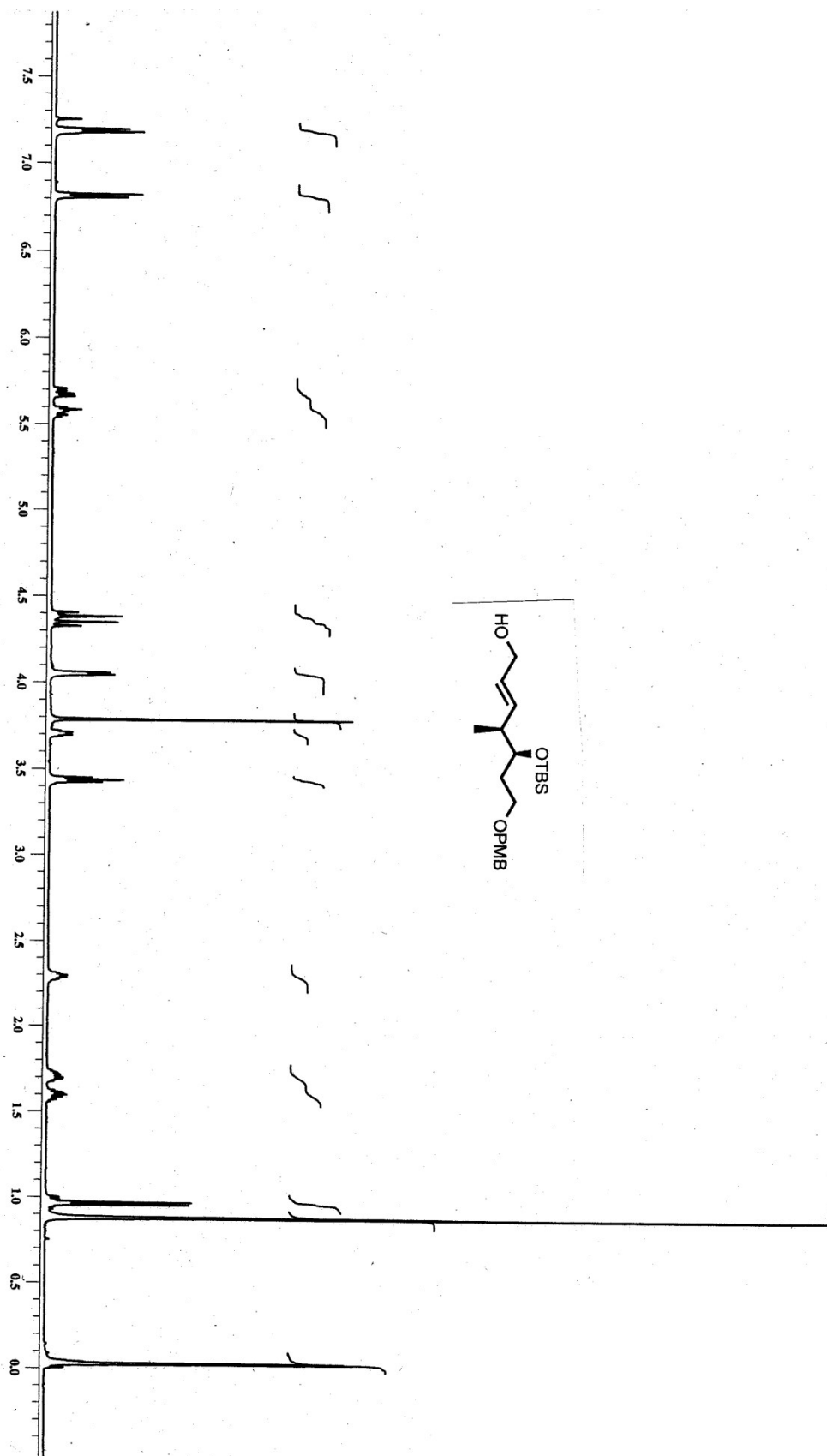


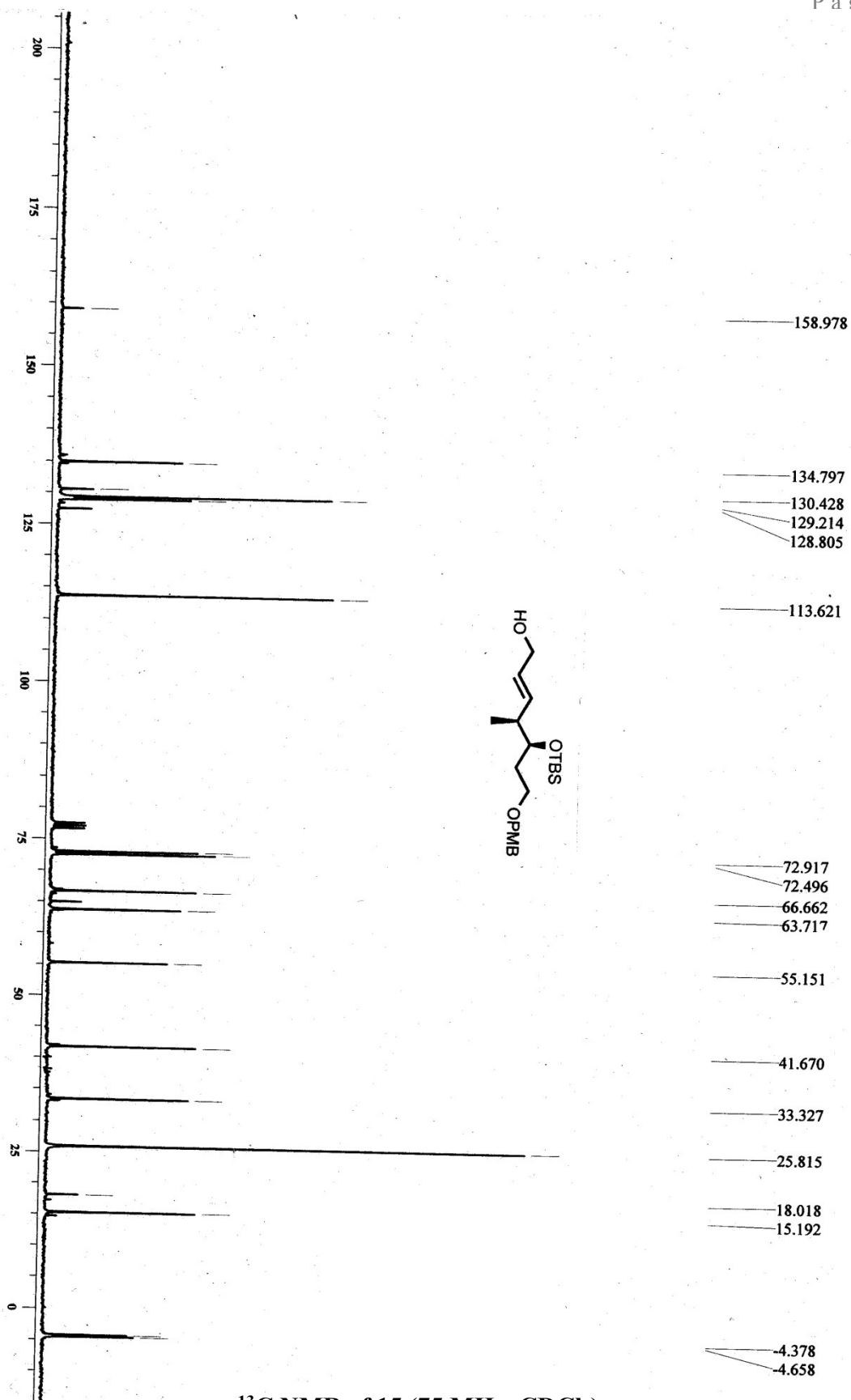
 ^{13}C NMR of 13 (75 MHz, CDCl_3)

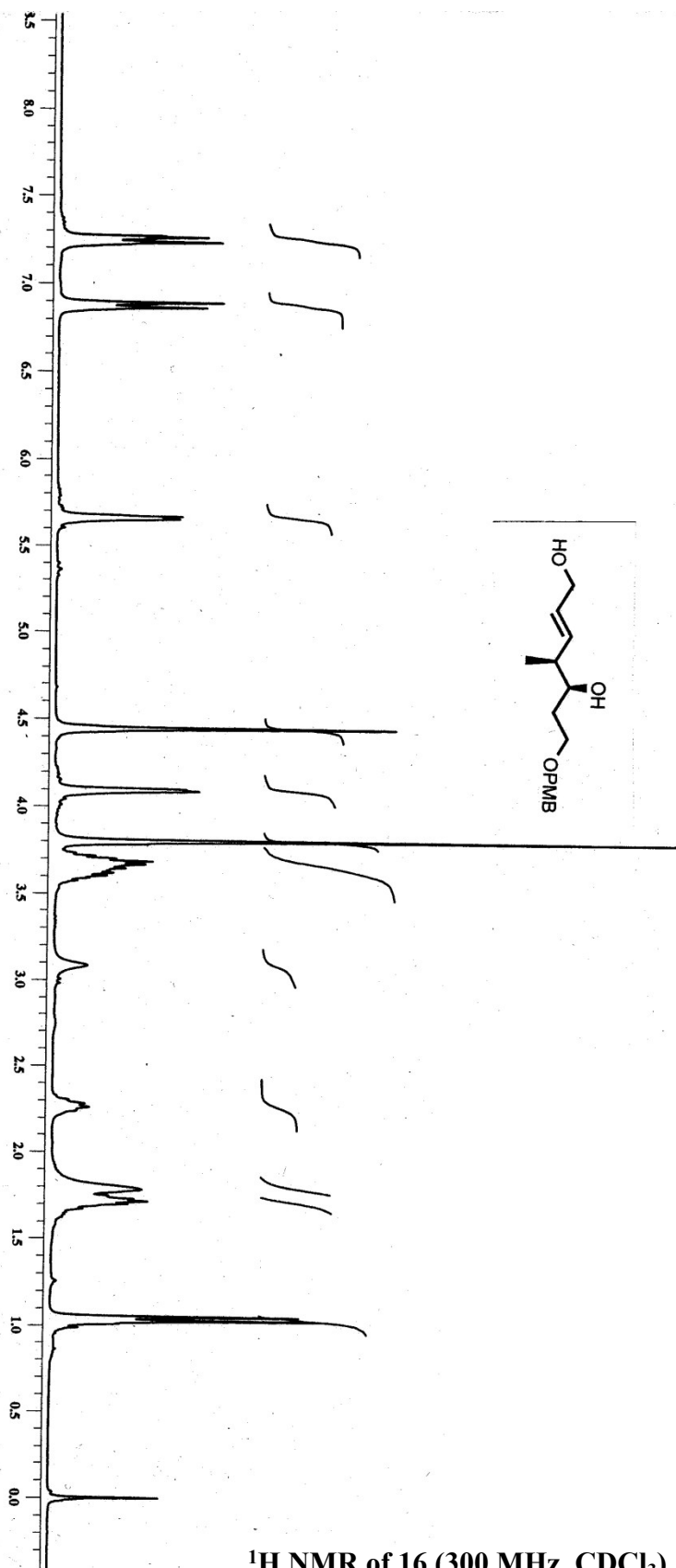
 ^1H NMR of 14 (300 MHz, CDCl_3)

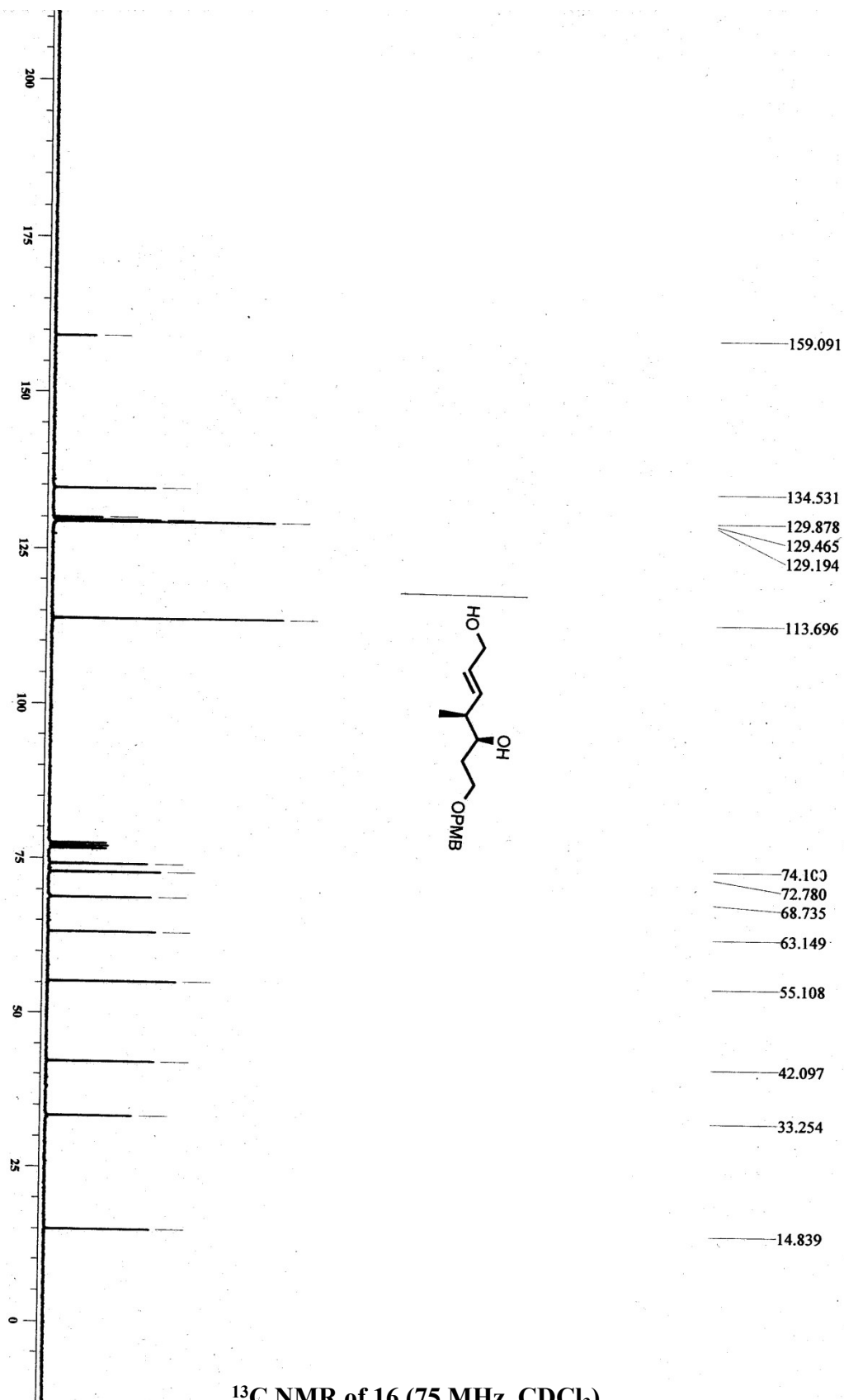


^{13}C NMR of 14 (75 MHz, CDCl_3)

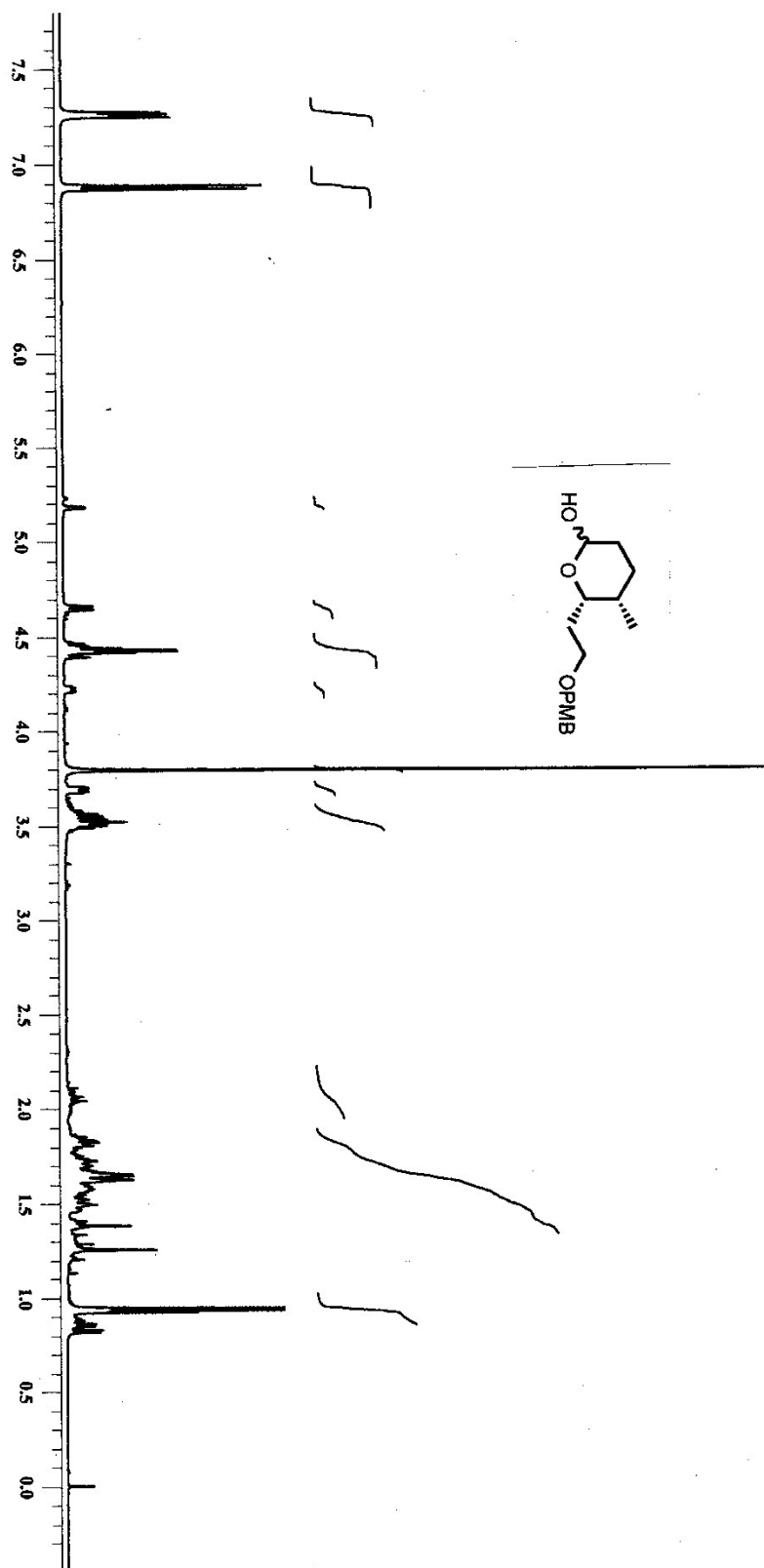
 ^1H NMR of 15 (300 MHz, CDCl_3)

¹³C NMR of 15 (75 MHz, CDCl₃)

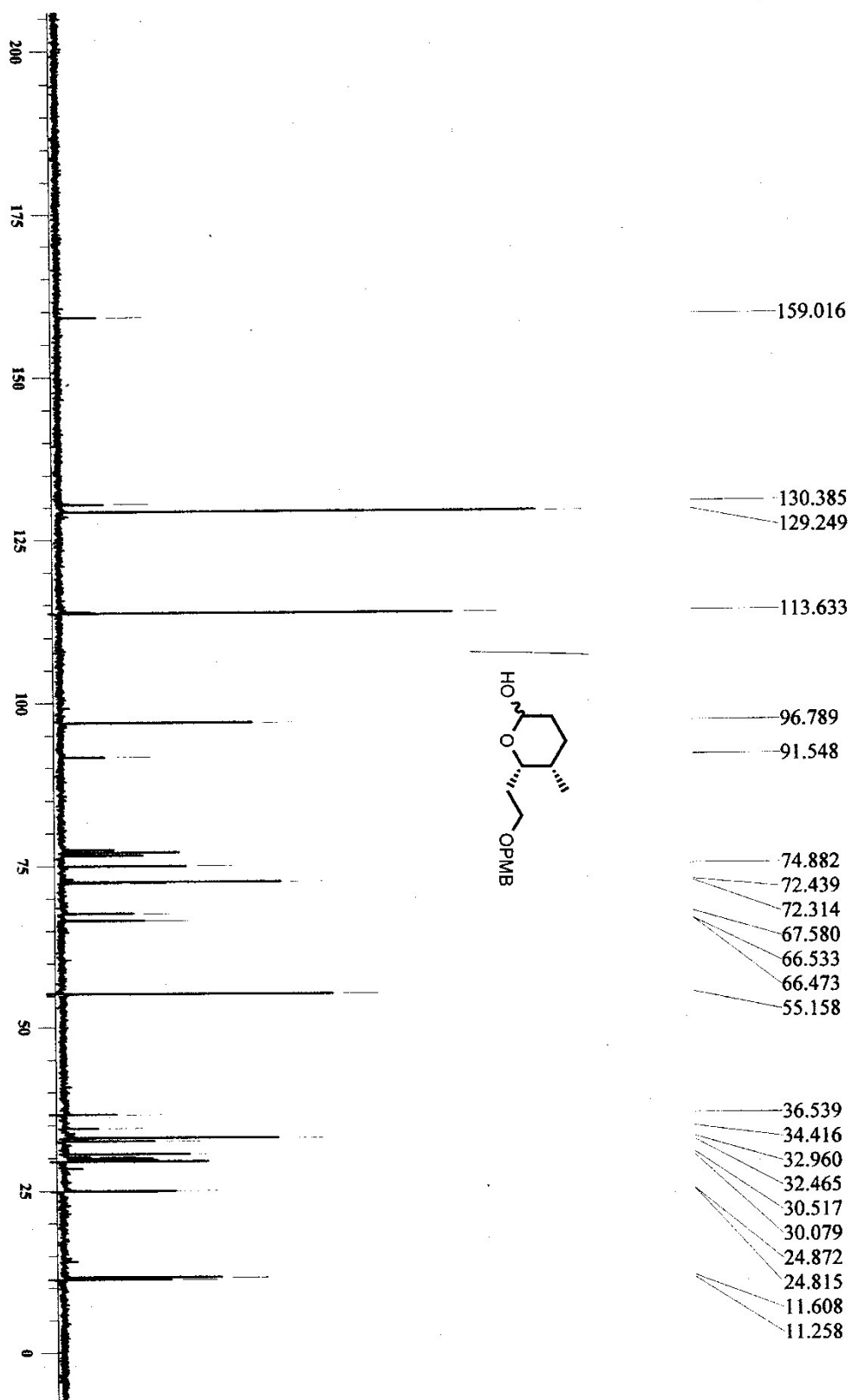




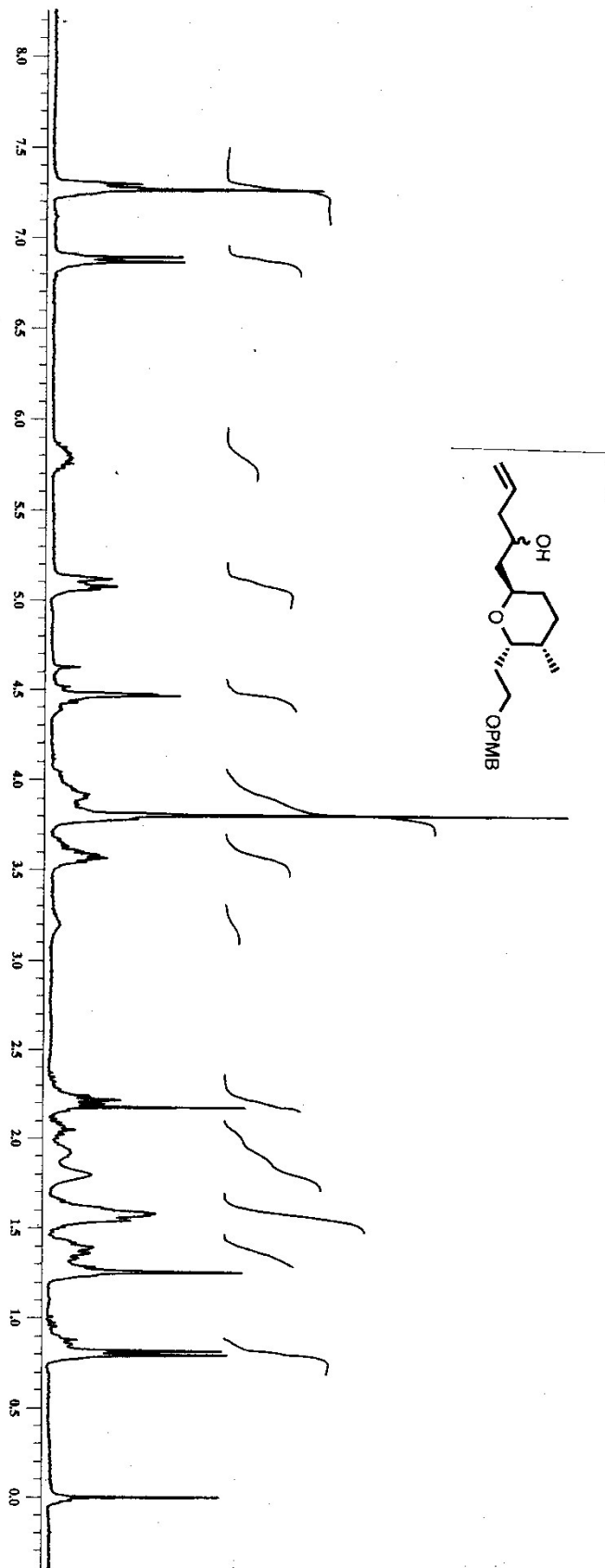
¹³C NMR of 16 (75 MHz, CDCl₃)



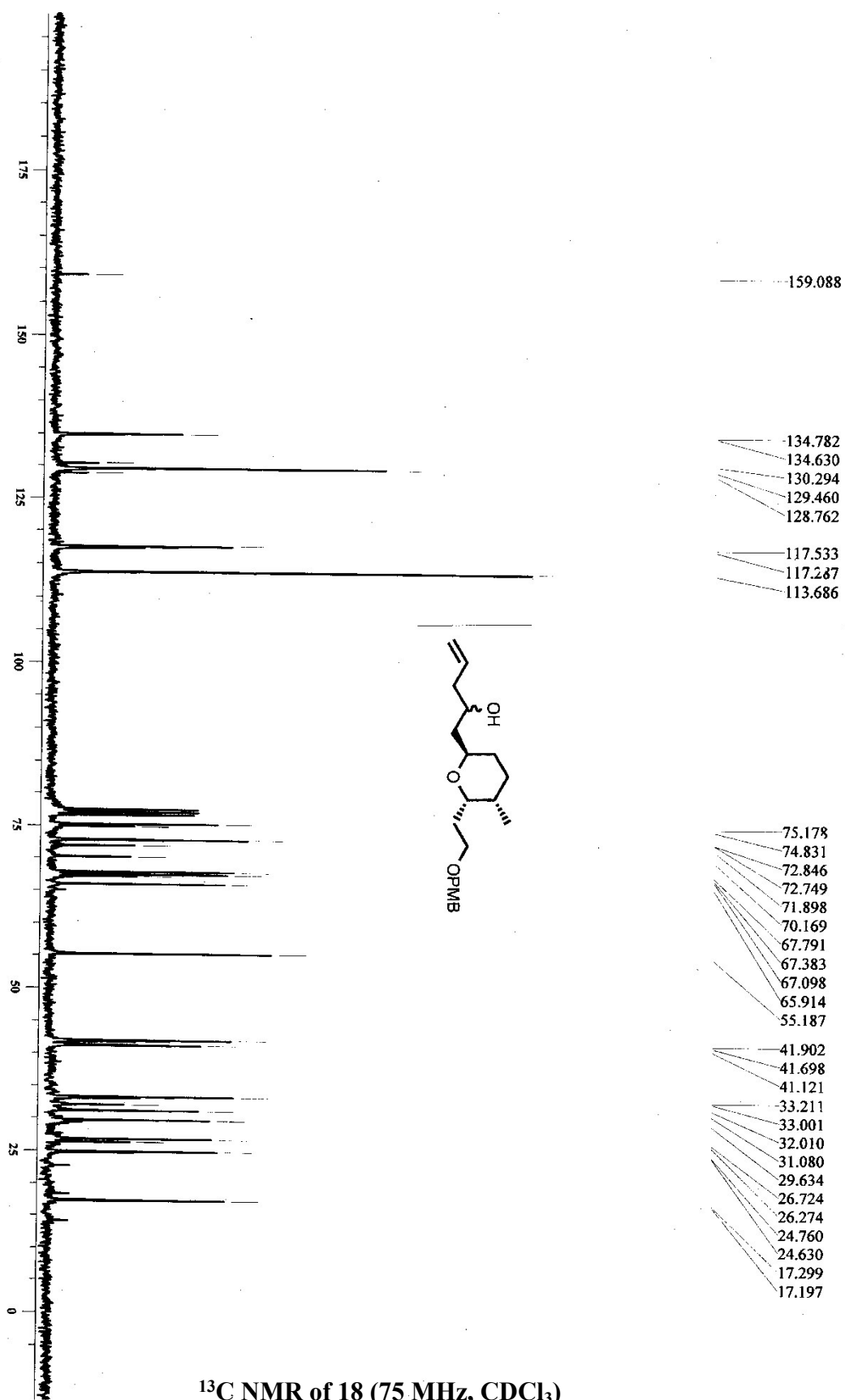
¹H NMR of 1g (300 MHz, CDCl₃)

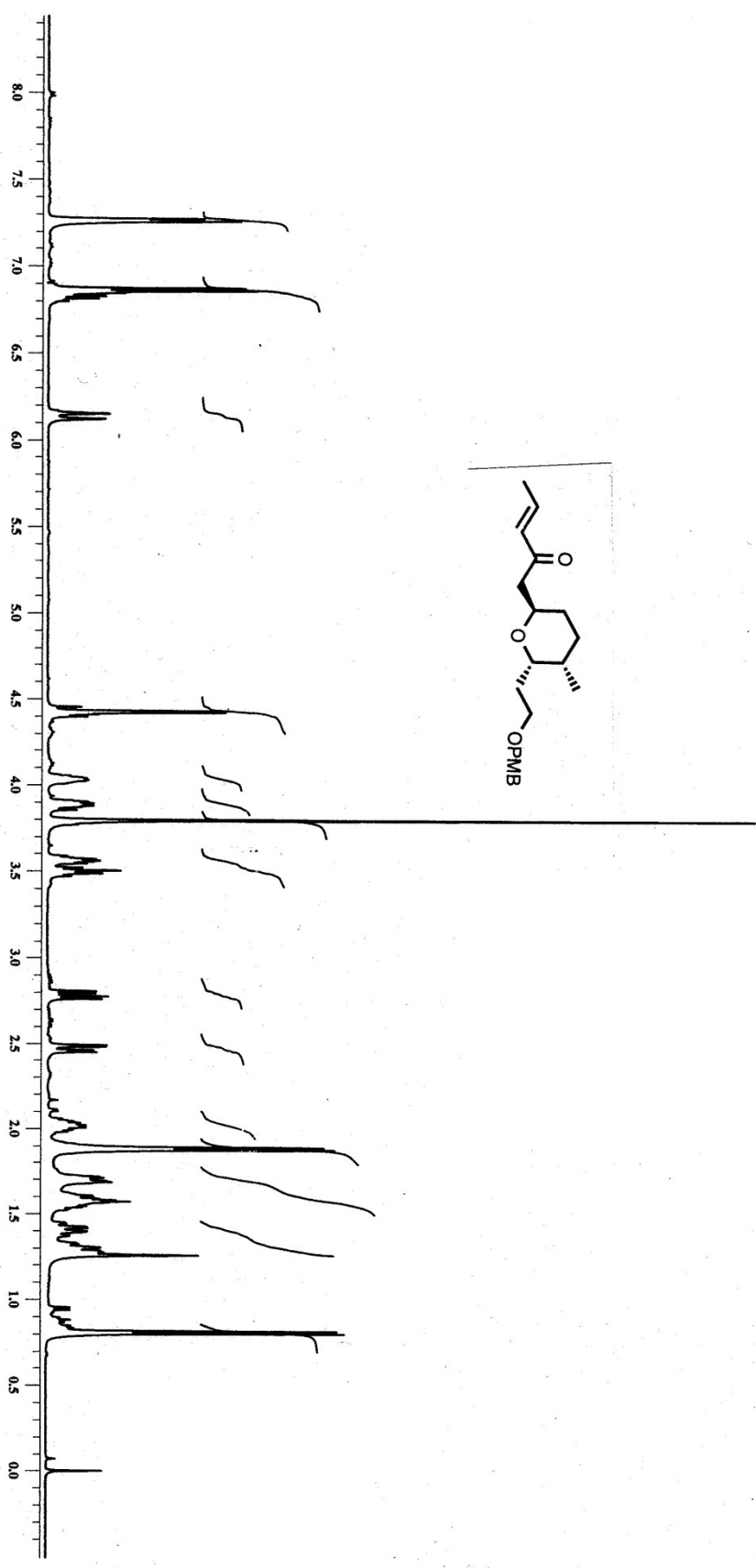


¹³C NMR of 1g (75 MHz, CDCl₃)

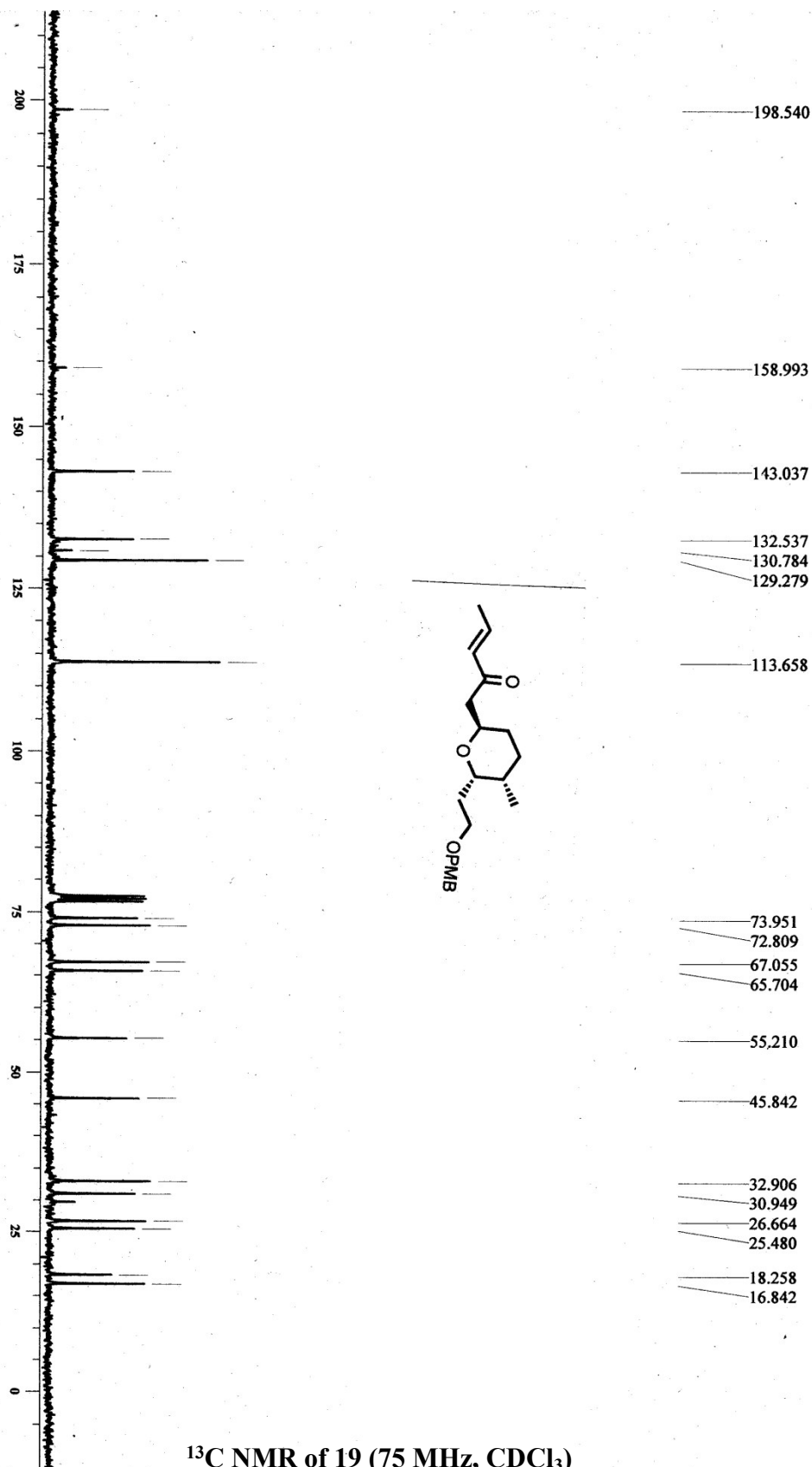


¹H NMR of 18 (300 MHz, CDCl₃)

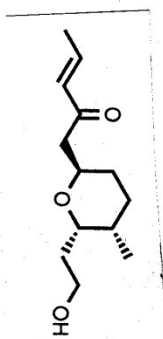
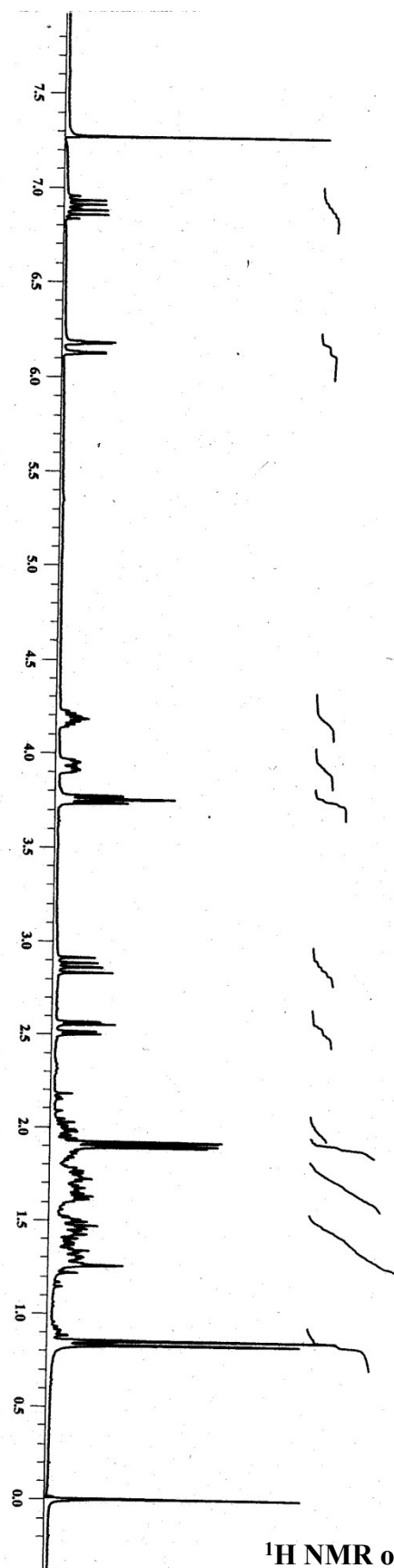




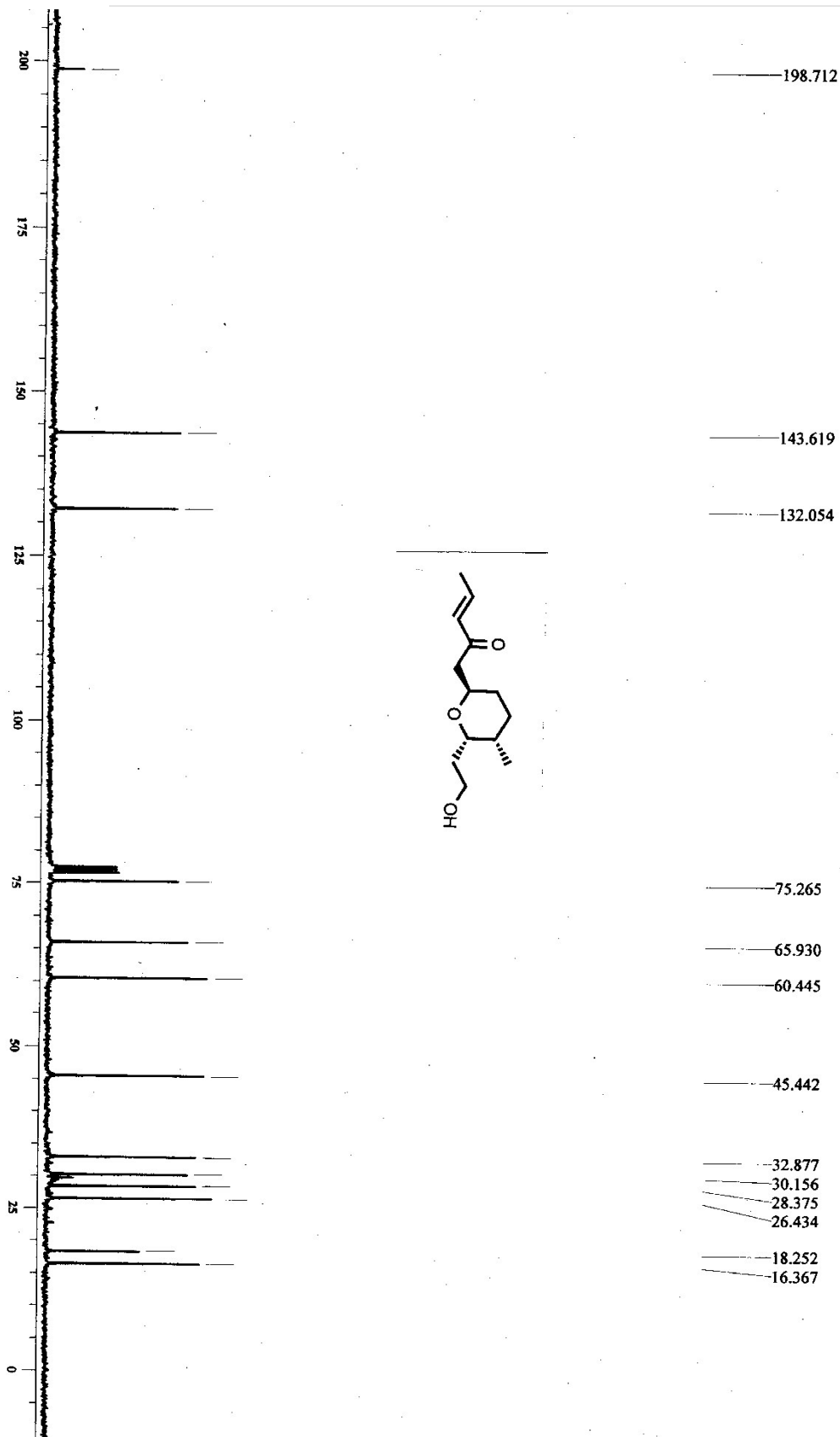
¹H NMR of 19 (500 MHz, CDCl₃)

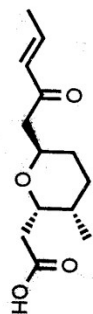
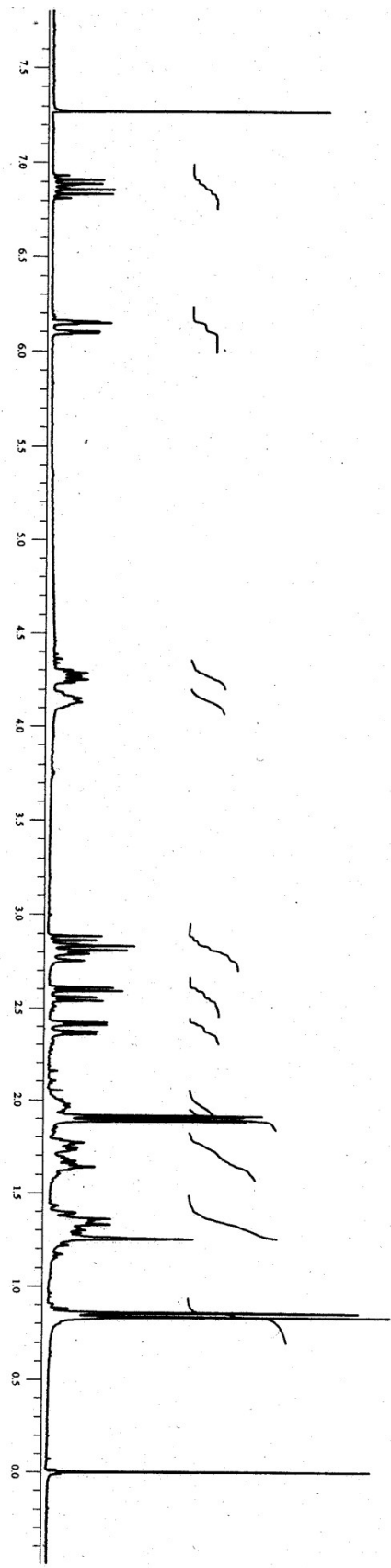


¹³C NMR of 19 (75 MHz, CDCl₃)

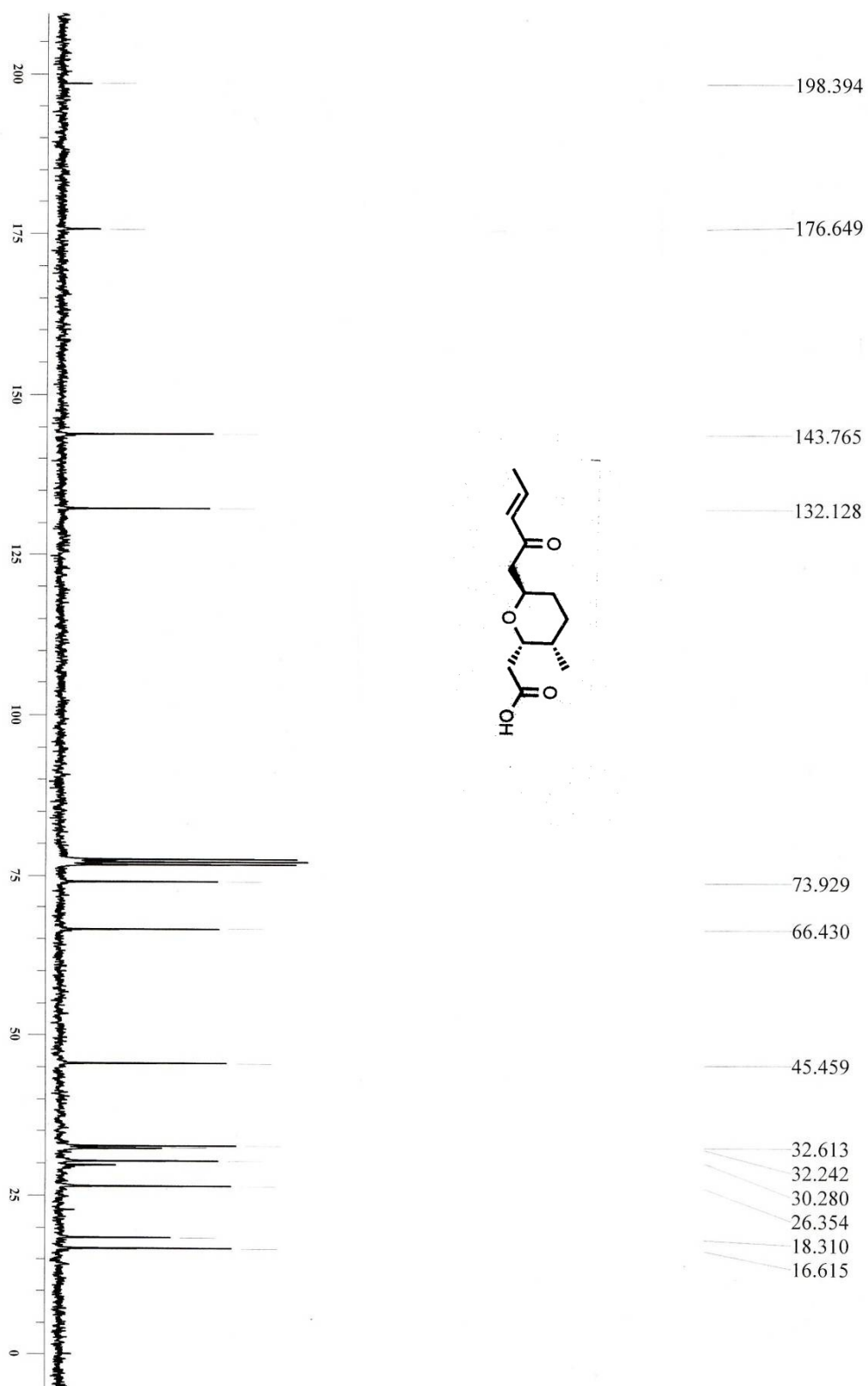


^1H NMR of 20 (300 MHz, CDCl_3)

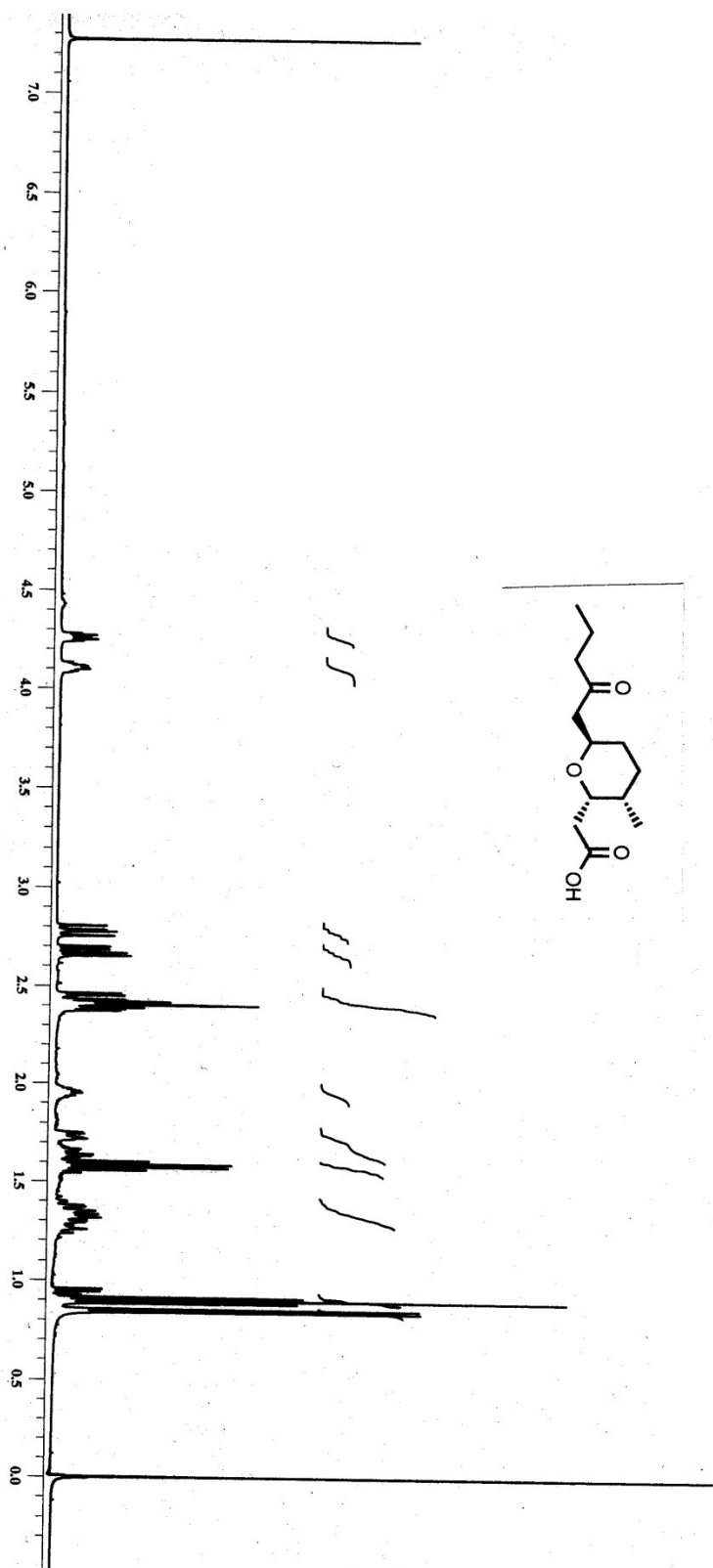
 ^{13}C NMR of 20 (75 MHz, CDCl_3)

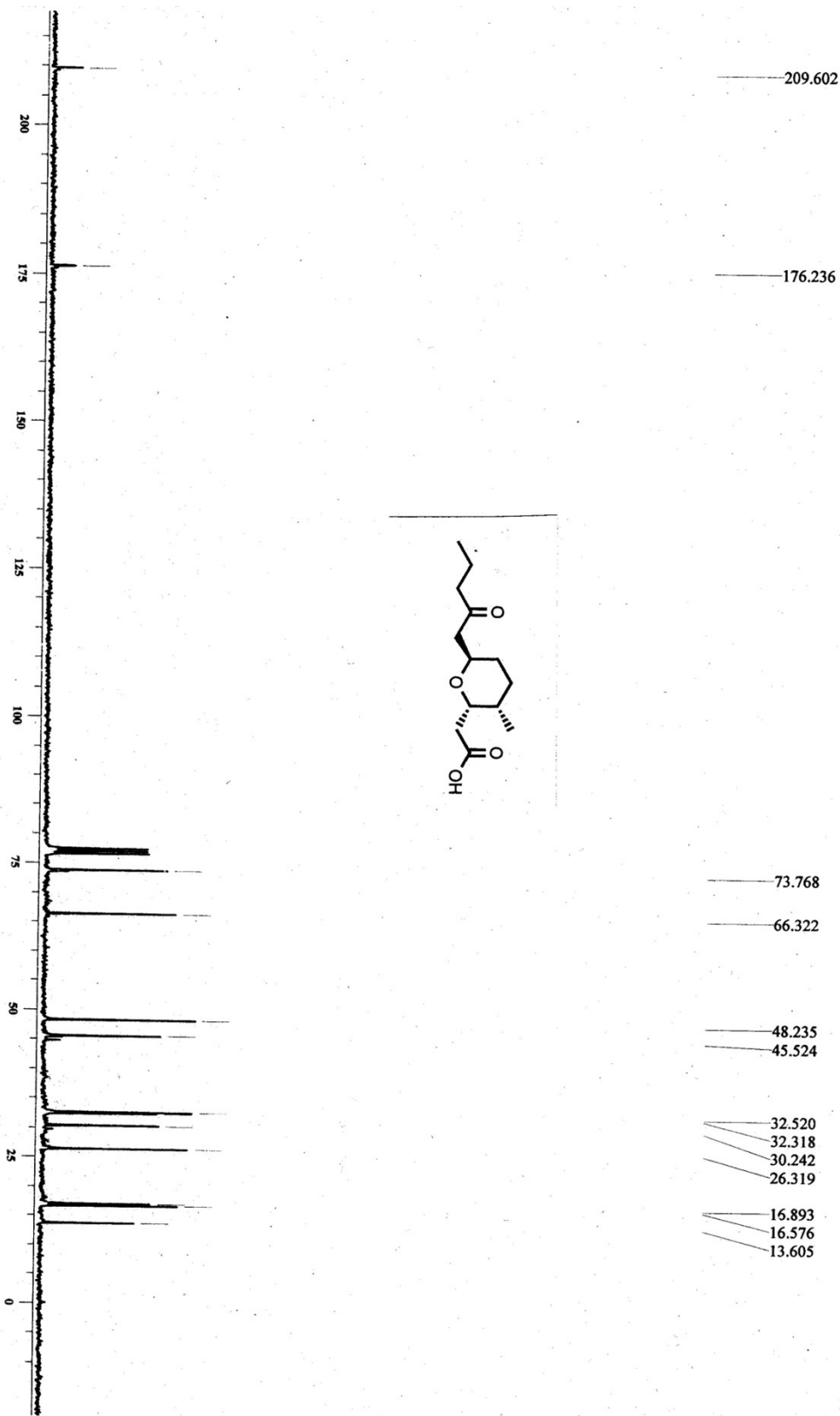


^1H NMR of 21 (300 MHz, CDCl_3)



¹H NMR of 21 (300 MHz, CDCl₃)





¹³C NMR of 22 (75 MHz, CDCl₃)