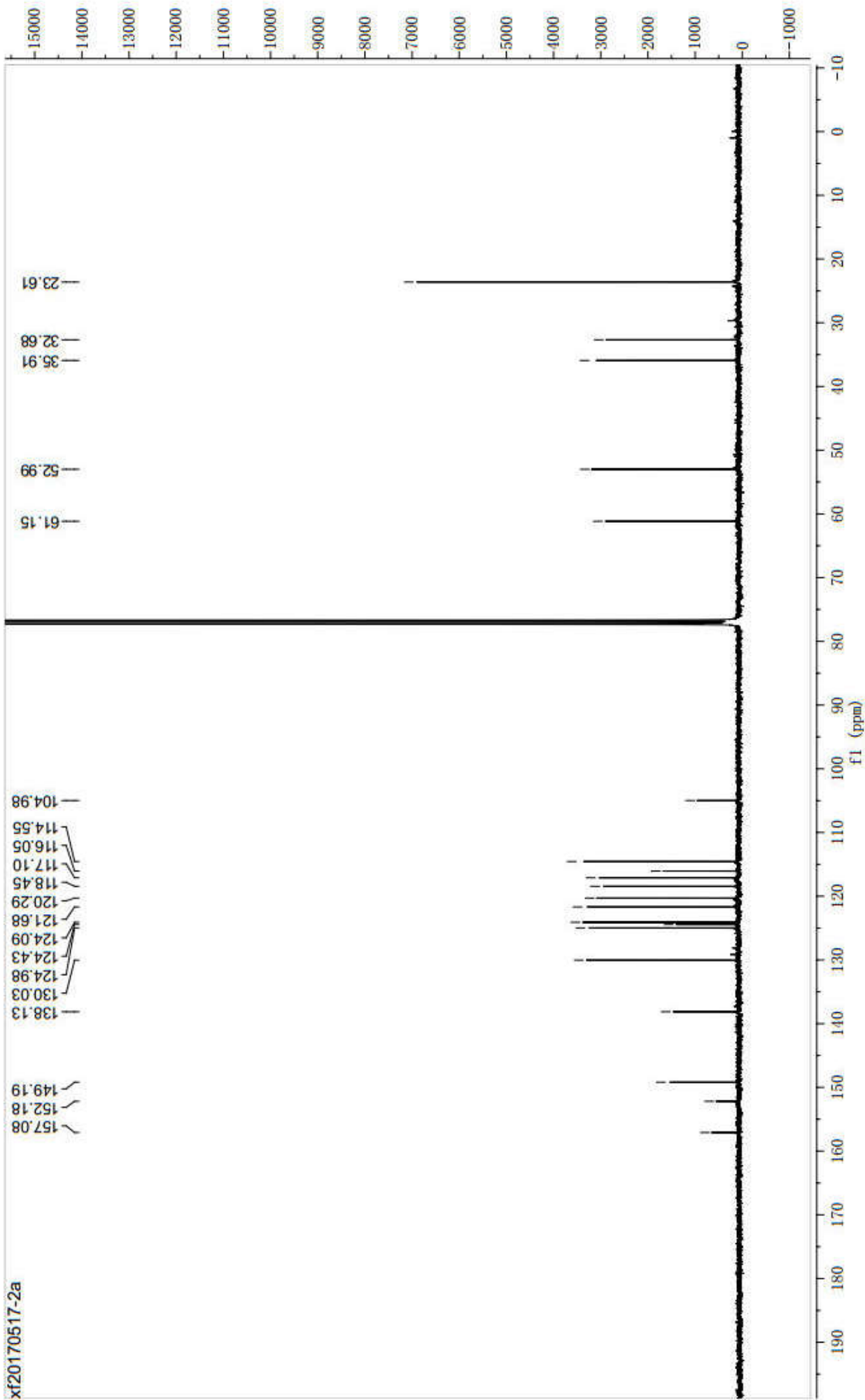
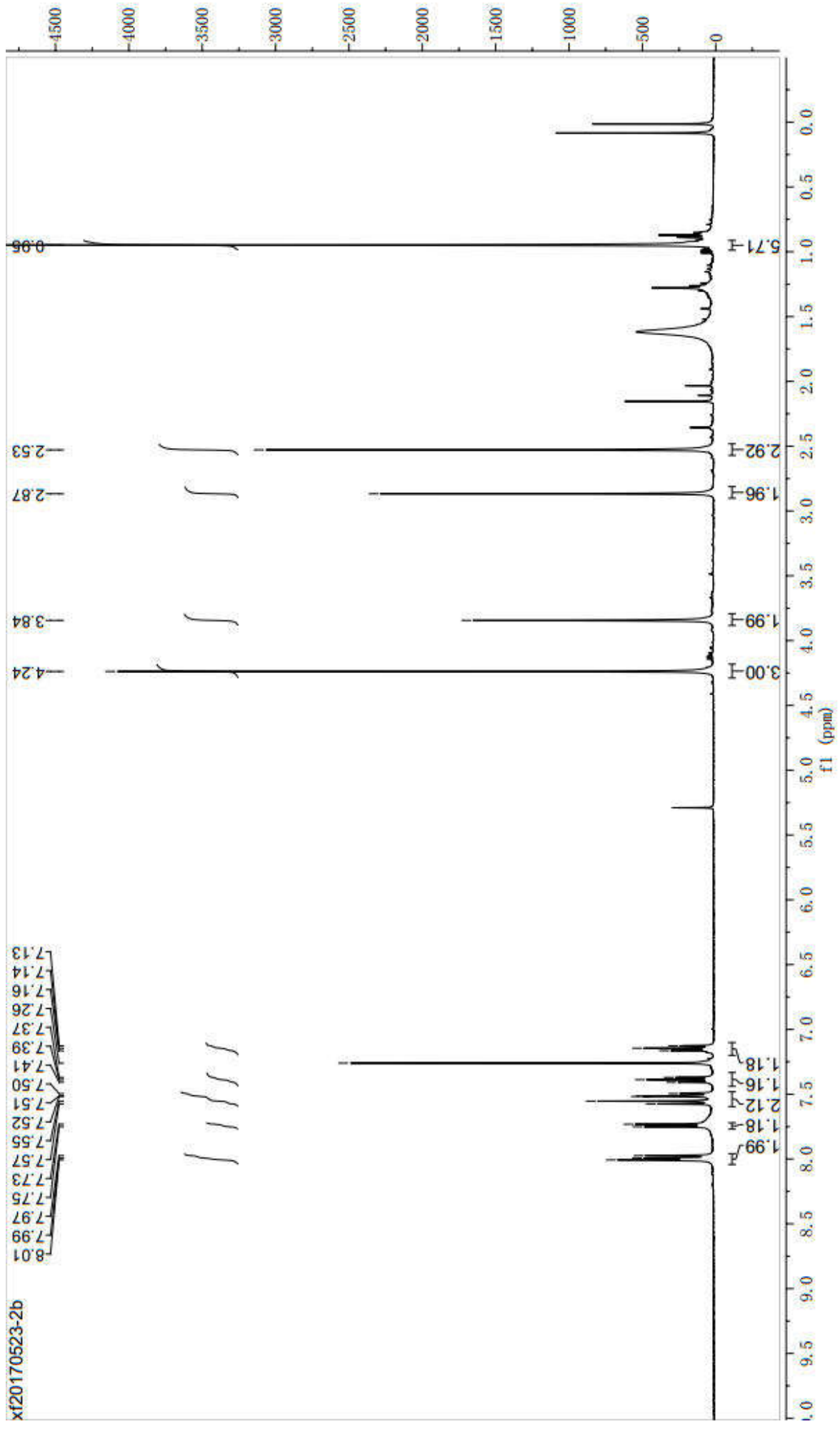


2a  $^1\text{H}$  NMR

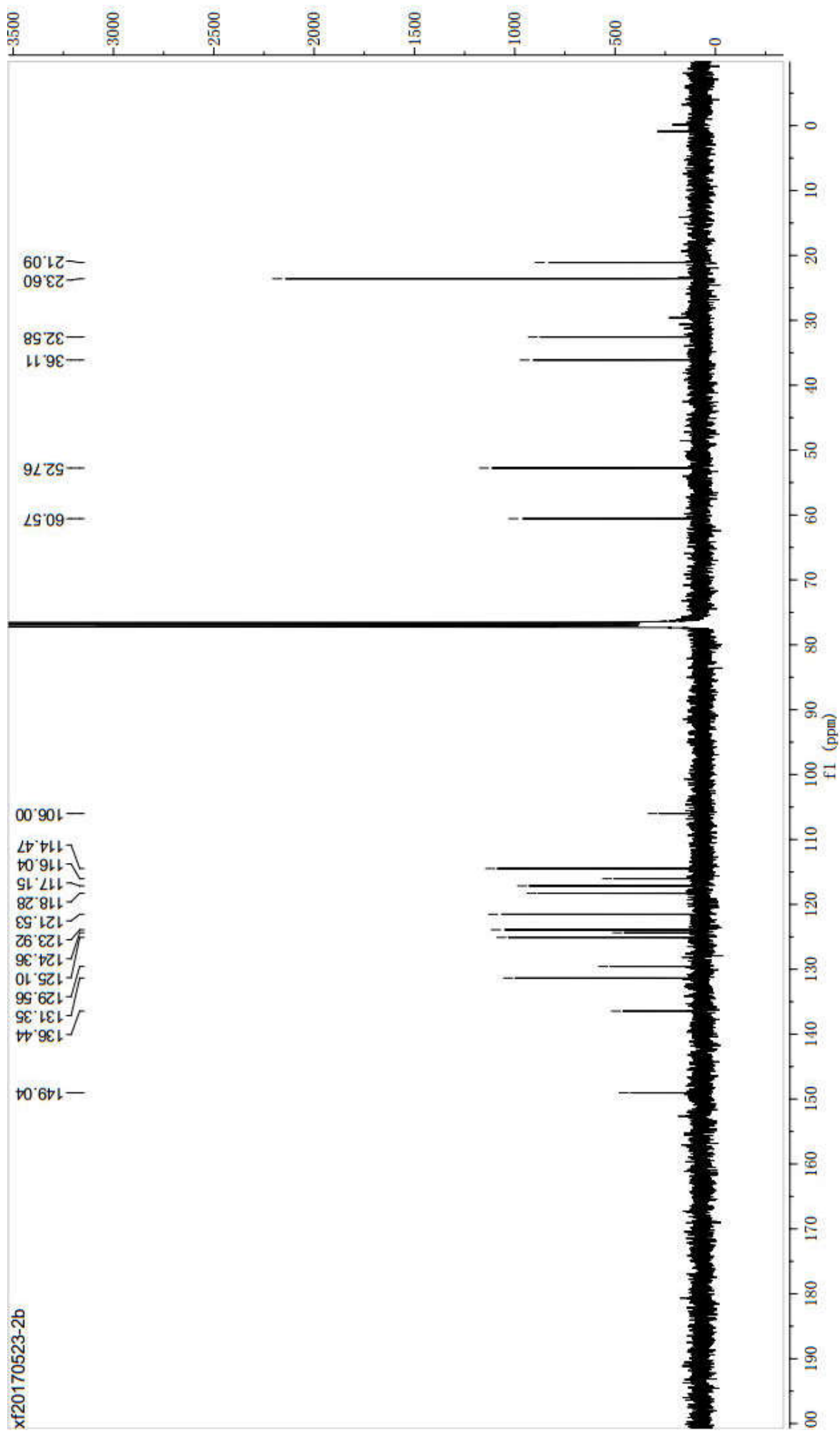


xf20170517-2a

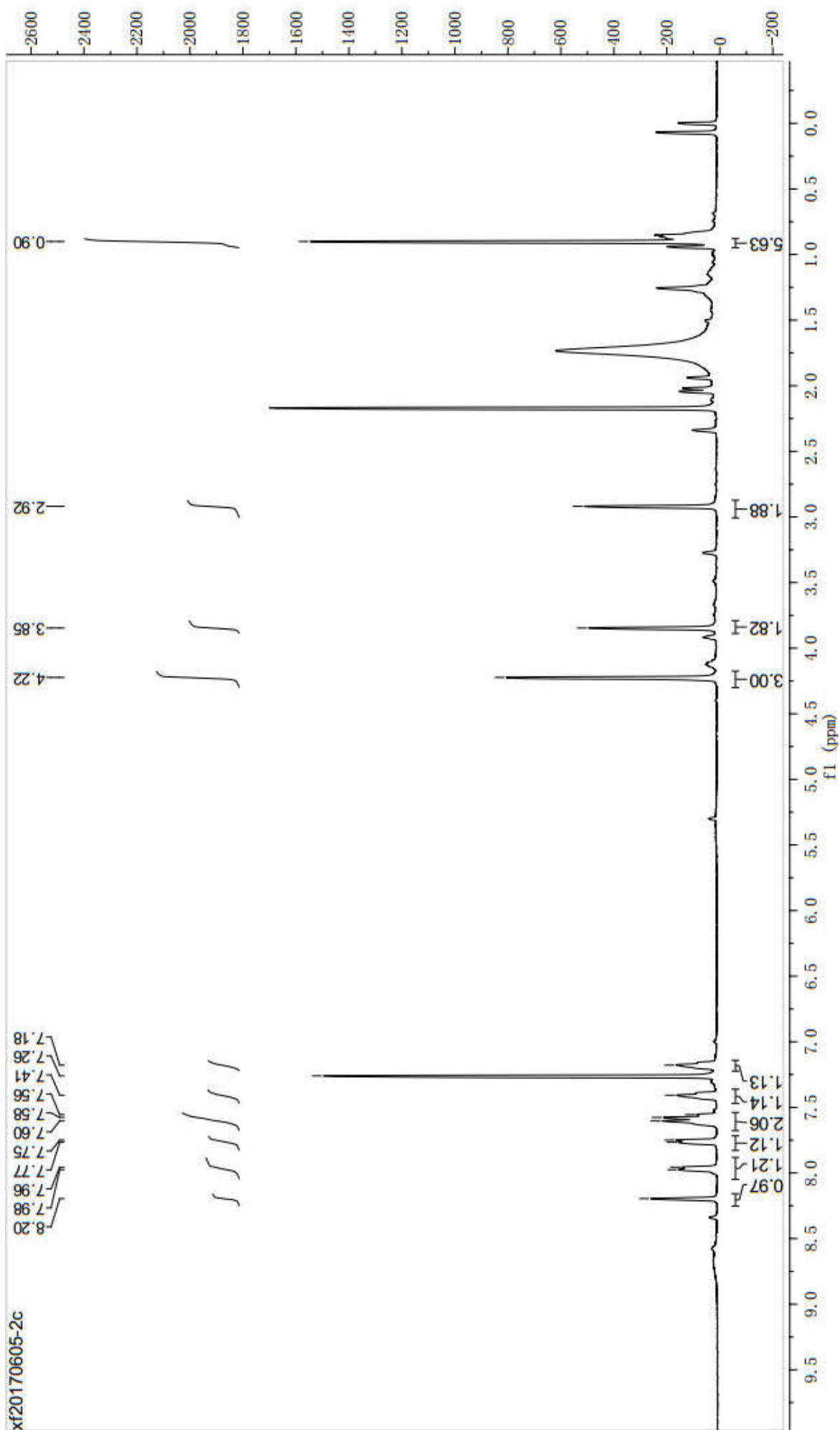
2a <sup>13</sup>C NMR



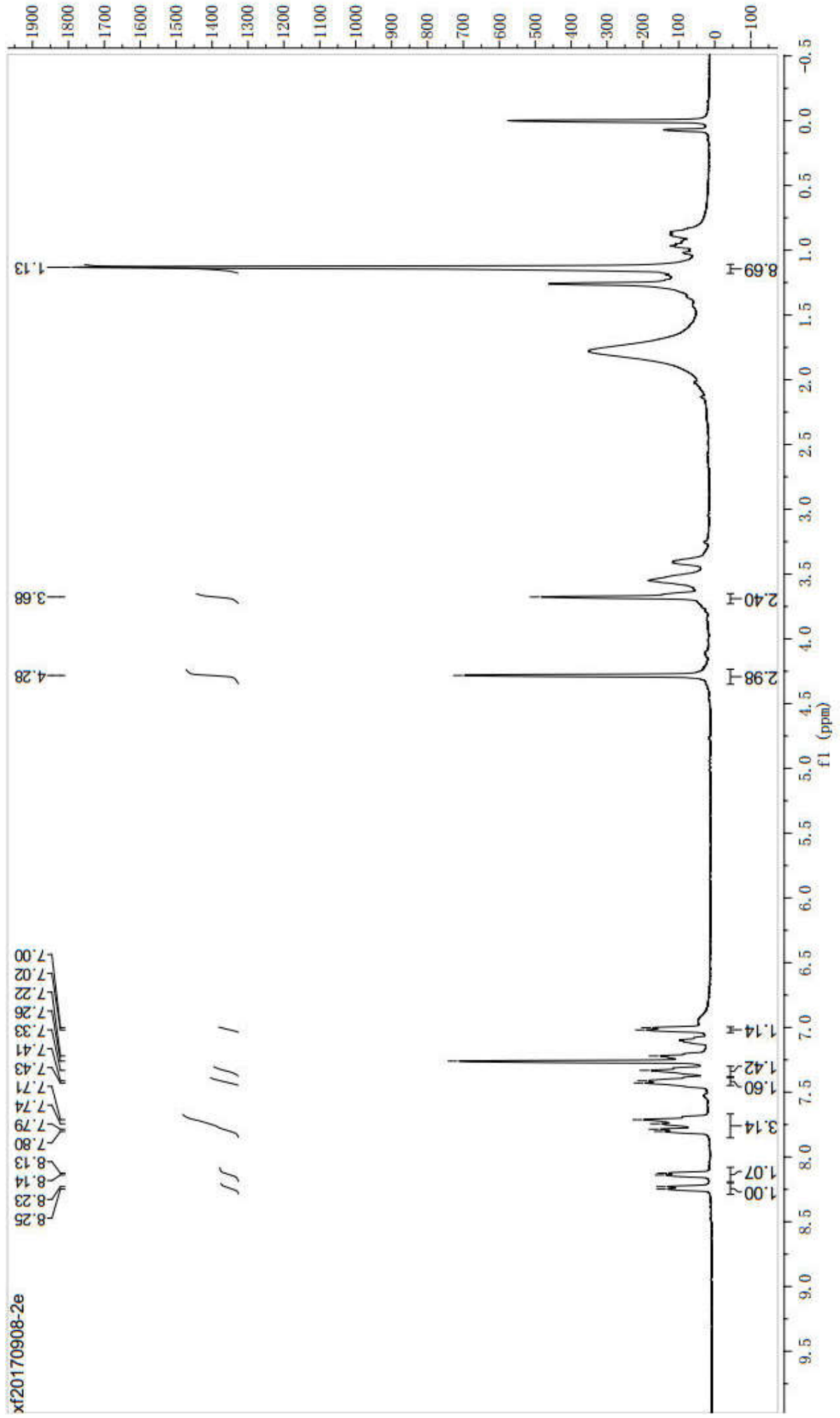
2b 1H NMR



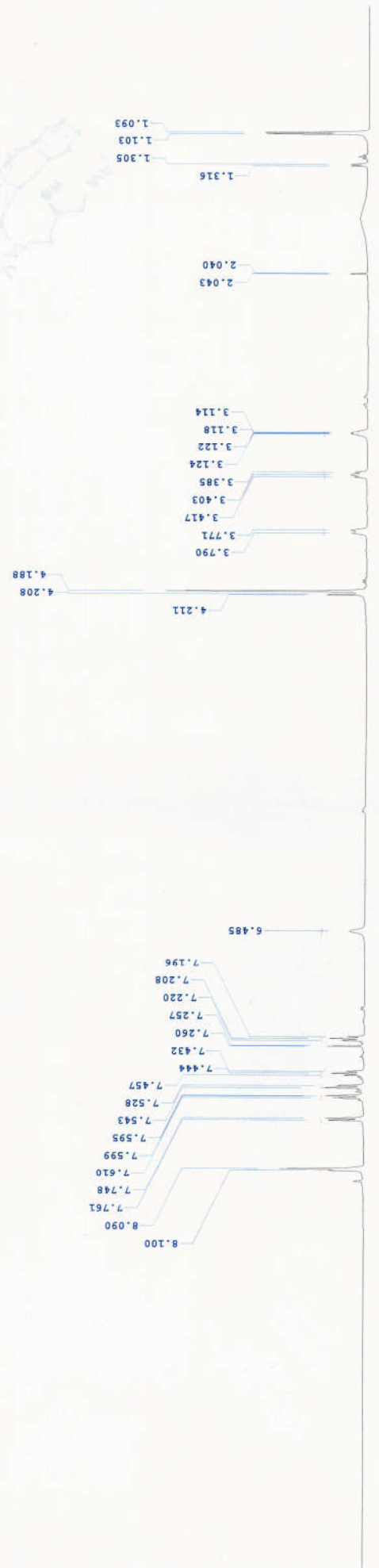
2b 13C NMR



2c 1HNMR



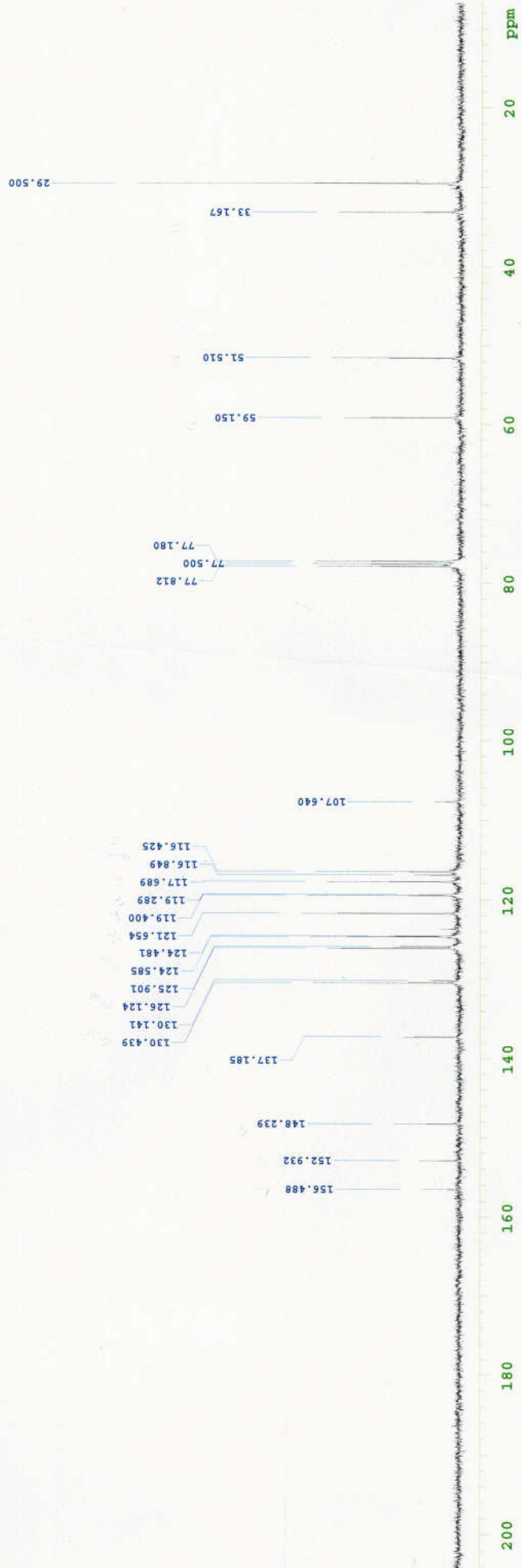
2e 1H NMR



<p>PULSER SEQUENCE Relax. delay 1.592 sec Pulse 45.0 degrees Acq. time 3.408 sec Width 9615.4 Hz 16 repetitions</p>	<p>OBSERVE H1, 599.7712267</p>	<p>DATA PROCESSING Line broadening 0.3 Hz FT size 65536 Total time 1 minute</p>	<p>Solvent: cdcl3 Ambient temperature Operator: walkup VNMR5-600 "varian600"</p>	<p>File: exp Pulse Sequence: s2pul</p>
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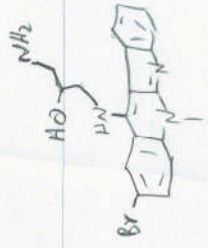
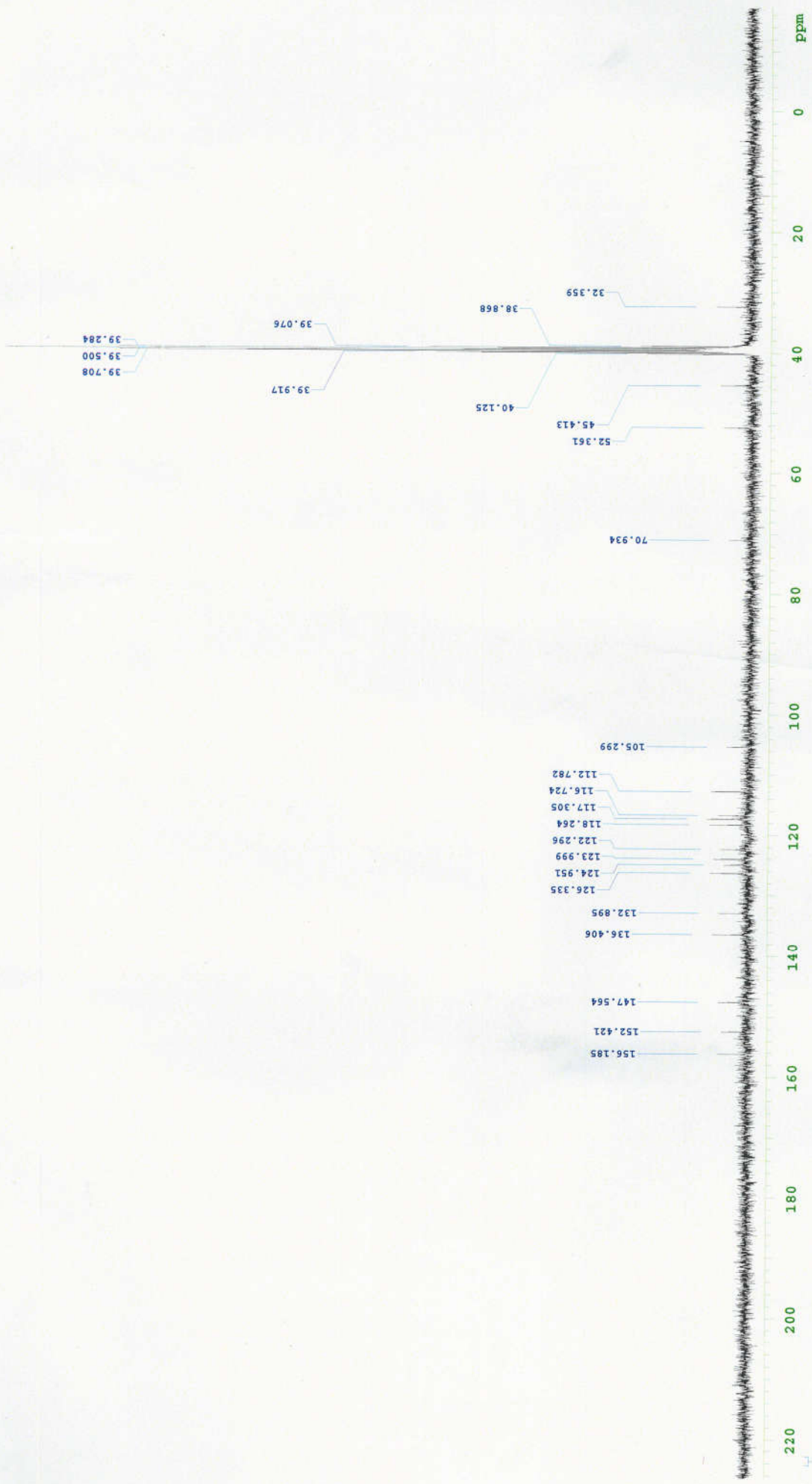


2

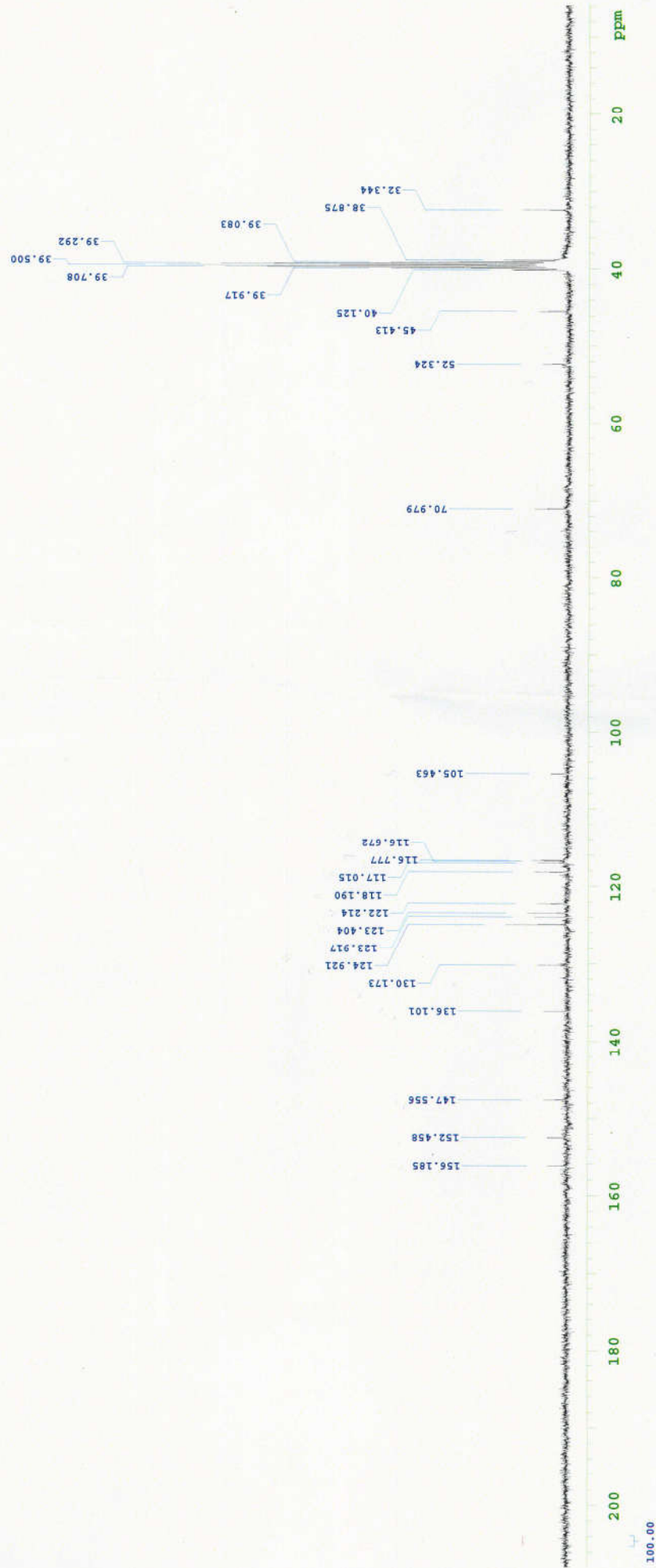


<p>File: /home/walkup/vnmrsys/data/data/s2pul_001.fid</p>	<p>DATA PROCESSING Line broadening 1.0 Hz FT size 65536 Total time 17 minutes</p>	<p>Solvent: cdcl3 Ambient temperature Operator: walkup VNMR-400 "Varian-400MR"</p>	<p>28</p>	<p>Observe C13, 100.5573036 Decouple H1, 399.9115921 Power 42 dB continuously on WALTZ-16 modulated 512 repetitions</p>	<p>Pulse Sequence: s2pul</p>
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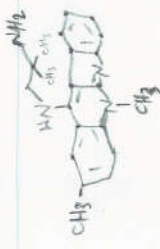
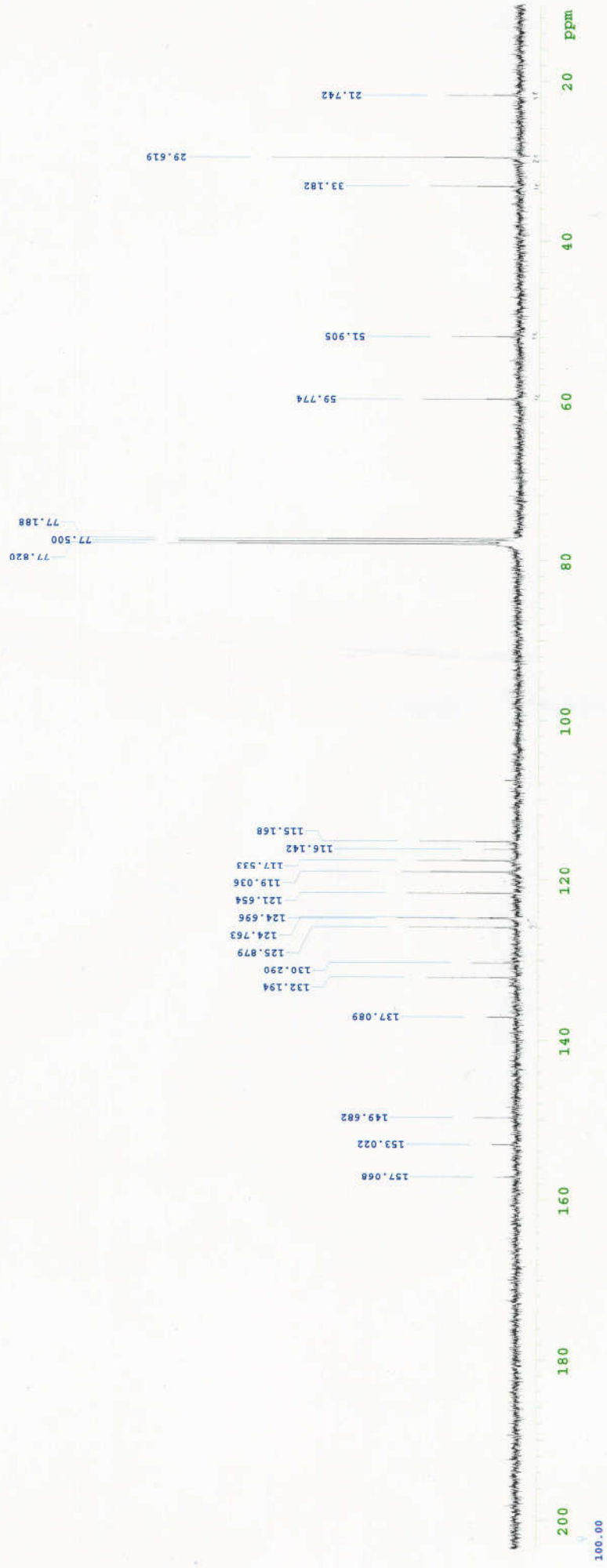




<p>PULSE SEQUENCE Relax. delay 0.700 sec Pulse 45.0 degrees Acq. time 1.300 sec Width 24509.8 Hz 512 repetitions</p>	<p>OBSERVE C13, 100.5578678 DECOUPLE H1, 399.9134917 Power 42 dB continuously on WALTZ-16 modulated</p>	<p>DATA PROCESSING Line broadening 1.0 Hz FT size 65536 Total time 17 minutes</p>	<p>Solvent: dmsc Ambient temperature Operator: vmmrl VNMRS-400 *Varian-400MR*</p>	<p>sh 590 File: xp Pulse Sequence: s2pul</p>
<p>File: Data not saved yet</p>				



<p><b>PULSE SEQUENCE</b>          Relax. delay 0.700 sec          Pulse 45.0 degrees          Acq. time 1.300 sec          Width 24509.8 Hz          512 repetitions</p>	<p><b>OBSERVE C13, 100-5578731</b>          DECOUPLE H1, 399.9134917          Power 42 dB          continuously on          WALTZ-16 modulated</p>	<p><b>DATA PROCESSING</b>          Line broadening 1.0 Hz          FT size 65536          Total time 17 minutes</p>	<p><b>Solvent: dmsc</b>          Ambient temperature          Operator: walkup          VNMRS-400 *Varian-400MR*</p>
<p>sh575 c13          File: exp          Pulse Sequence: s2pul</p>		<p>Handwritten chemical structure of a complex molecule with a benzene ring, a nitrogen atom, and a methyl group. The structure is labeled with 'CH3' and 'NH'.</p>	<p>Handwritten '2x' next to the chemical structure.</p>



Solvent: cdcl3  
Ambient temperature  
Operator: walkup  
VMMS-400 -Varian-400MR\*

sh 569 c 13  
File: exp  
Pulse Sequence: s2pul

DATA PROCESSING  
Line broadening 1.0 Hz  
PT size 65536  
Total time 33 minutes

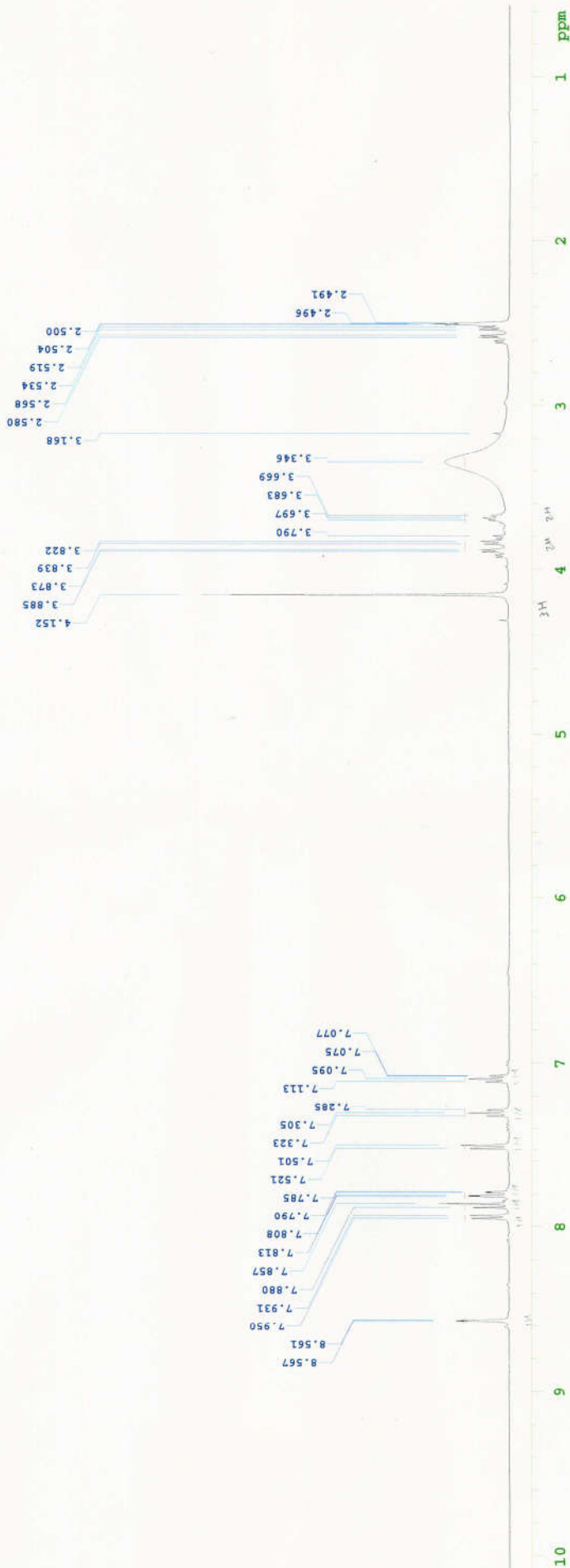
OBSERVE C13, 100.5572969  
DECOUPLE H1, 399.9115921  
Power 42 dB  
continuously on  
WALTZ-16 modulated

PULSE SEQUENCE  
Relax. delay 0.700 sec  
Pulse 45.0 degrees  
Acq. time 1.300 sec  
Width 24509.8 Hz  
1000 repetitions



<p>PULSE SEQUENCE</p> <p>Relax. delay 1.592 sec</p> <p>Pulse 45.0 degrees</p> <p>Acq. time 3.408 sec</p> <p>Width 9615.4 Hz</p> <p>16 repetitions</p>	<p>OBSERVE H1. 599.771258</p>	<p>DATA PROCESSING</p> <p>Line broadening 0.3 Hz</p> <p>PT size 65536</p> <p>Total time 1 minute</p>	<p>Solvent: cdcl3</p> <p>Ambient temperature</p> <p>Operator: walkup</p> <p>VMMS-600 "varian600"</p>
			<p>sh 574</p>
			<p>Pulse sequence: s2pul</p>

File: Data not saved yet



**PULSE SEQUENCE**  
Relax. delay 1.500 sec  
Pulse 45.0 degrees  
Acq. time 3.500 sec  
Width 6410.3 Hz  
16 repetitions

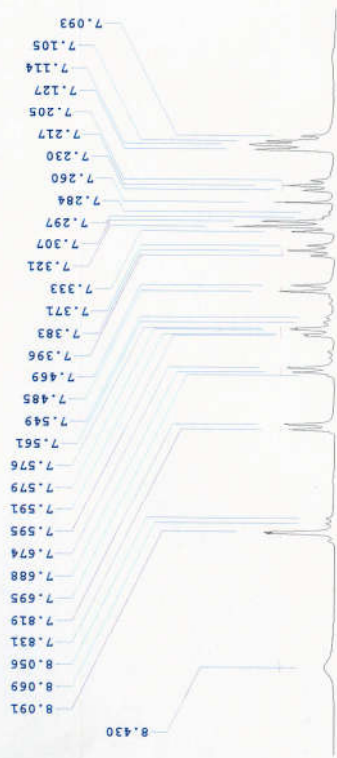
**OBSERVE** H1, 399.9114849

**DATA PROCESSING**  
Line broadening 0.2 Hz  
FT size 65516  
Total time 1 minute

**Solvent:** dmsc  
**Ambient temperature**  
**Operator:** walkup  
**VMMS-400** \*Varian-400MR\*

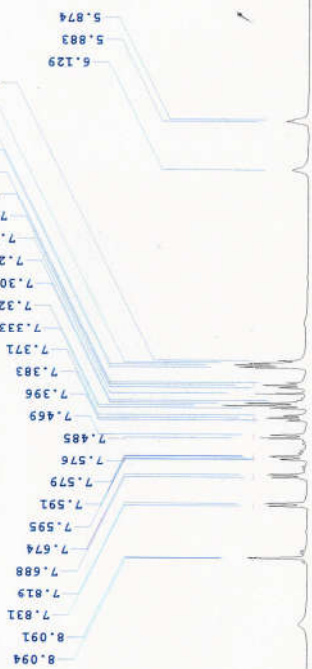
sh 599 584  
File: exp  
Pulse Sequence: s2pul

2H



8.6 8.4 8.2 8.0 7.8 7.6 7.4 7.2 7.0 ppm

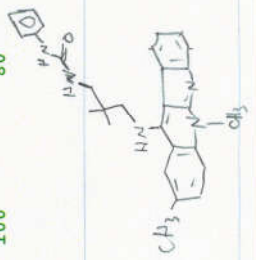
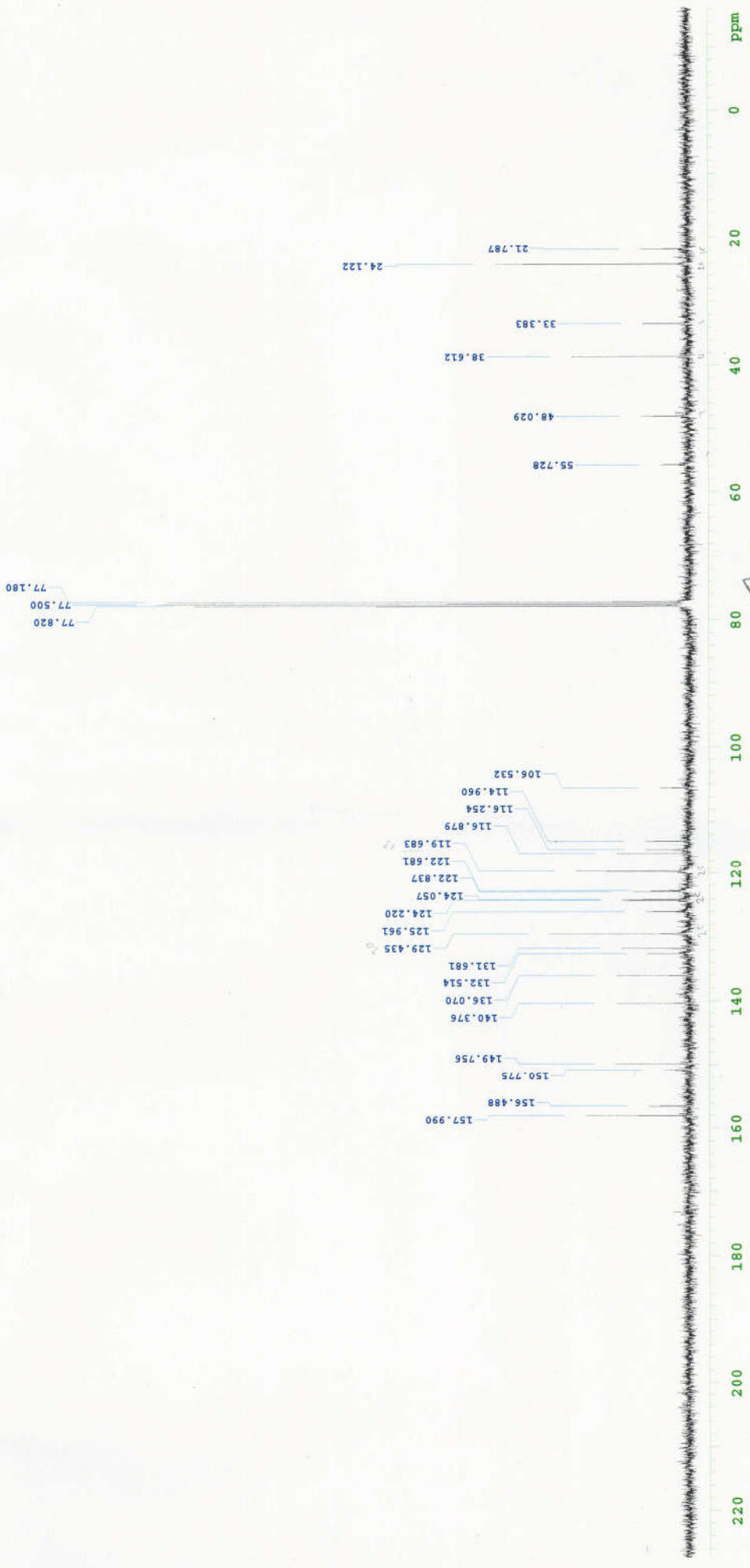
1.223  
1.239



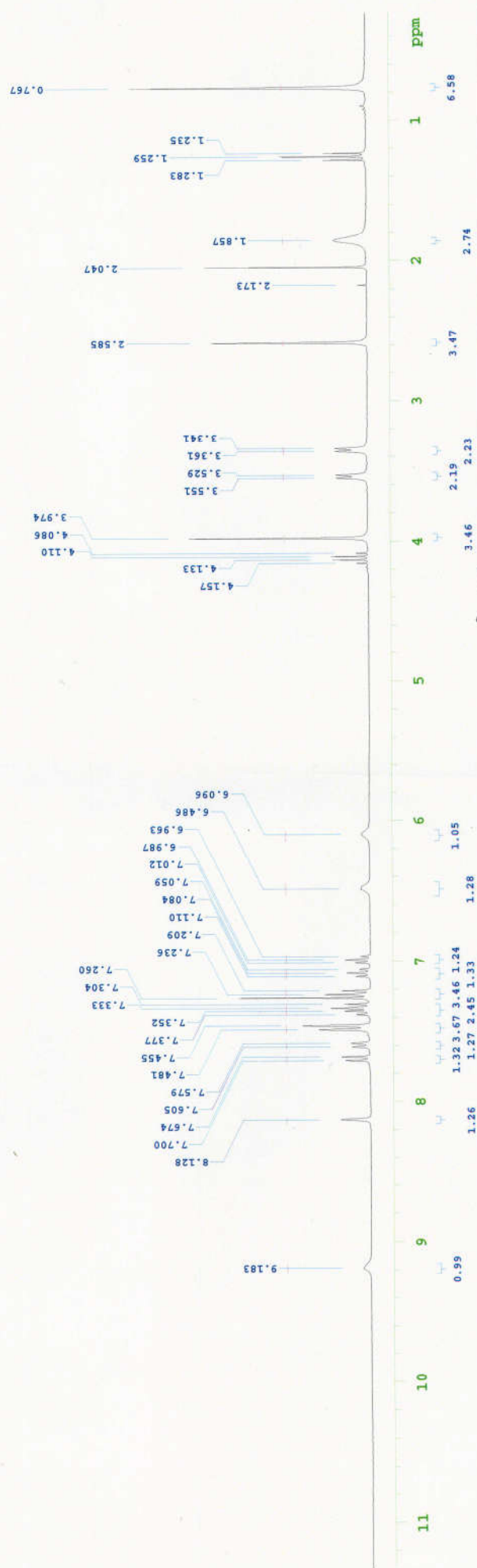
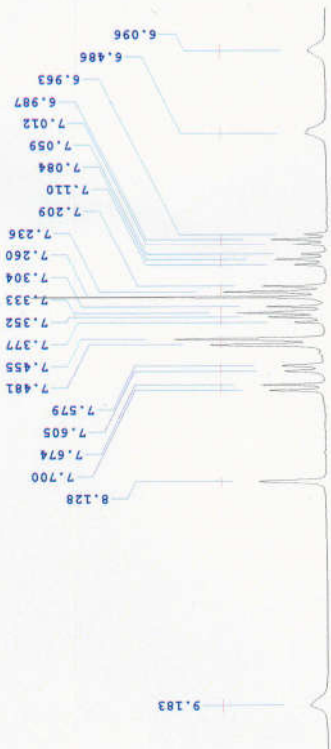
10 9 8 7 6 5 4 3 2 1 ppm

<p><b>PULSE SEQUENCE</b>          Relax. delay 1.592 sec          Pulse 45.0 degrees          Acq. time 3.408 sec          Width 9615.4 Hz          16 repetitions</p>	<p><b>OBSERVE</b> H1, 599.7712258          1.33 1.37 1.52 3.30 3.95          1.33 1.511 1.111 1.17</p>	<p><b>DATA PROCESSING</b>          Line broadening 0.3 Hz          FT size 65836          Total time 1 minute</p>	<p><b>Solvent:</b> cdcl3  <b>Ambient temperature</b>  <b>Operator:</b> walkup  <b>VMMS-600 *varian600*</b></p>	<p>sh 574</p>
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<p><b>PULSE SEQUENCE</b>          Relax delay 0.700 sec          Pulse 45.0 degrees          Acq. time 1.300 sec          Width 24509.8 Hz          512 repetitions</p>	<p>OBSERVE C13, 100.5573007          DECOUPLE H1, 399.9115921          Power 42 dB          continuously on          WALTZ-16 modulated</p>	<p><b>DATA PROCESSING</b>          Line broadening 1.0 Hz          FT size 65536          Total time 17 minutes</p>	<p>Solvent: cdcl3          Ambient temperature          Operator: walkup          VNMRS-400 "Varian-400MR"</p>	<p>sh 557.c13          File: exp          Pulse Sequence: s2pul</p>
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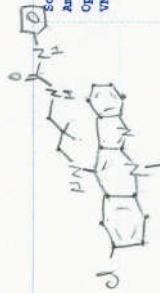
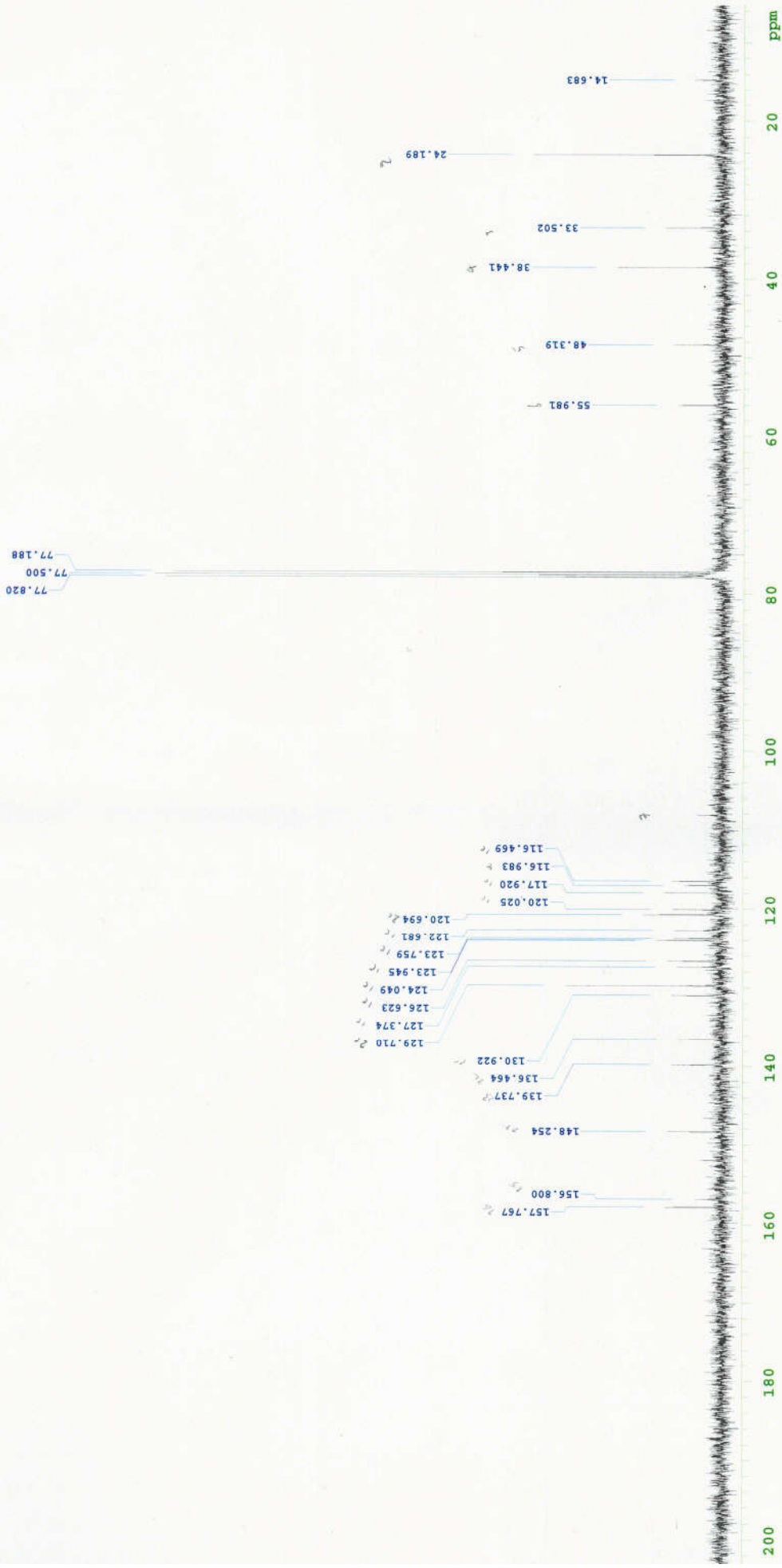


ppm	Integration	Chemical Shift (ppm)	Integration	Chemical Shift (ppm)	Integration	Chemical Shift (ppm)	Integration	Chemical Shift (ppm)	Integration	Chemical Shift (ppm)	Integration	Chemical Shift (ppm)	Integration
11	0.99	9.183	8	1.26	7.700	7	1.32	7.236	6	1.05	5	3.46	4.110
10	1.26	7.674	7	1.28	7.209	6	1.28	7.110	5	2.19	4	2.23	4.133
9	1.32	7.605	7	1.33	7.084	6	1.28	7.059	5	2.23	3	3.47	3.974
8	1.26	7.579	7	1.28	7.012	6	1.28	7.012	5	2.23	3	3.47	3.551
7	1.32	7.481	7	1.28	7.059	6	1.28	7.059	5	2.23	3	3.47	3.529
6	1.32	7.455	7	1.28	7.084	6	1.28	7.084	5	2.23	3	3.47	3.361
5	1.32	7.377	7	1.28	7.110	6	1.28	7.110	5	2.23	3	3.47	3.341
4	1.32	7.352	7	1.28	7.209	6	1.28	7.209	5	2.23	3	3.47	2.585
3	1.32	7.304	7	1.28	7.236	6	1.28	7.236	5	2.23	3	3.47	2.173
2	1.32	7.260	7	1.28	7.236	6	1.28	7.236	5	2.23	3	3.47	2.047
1	1.32	7.333	7	1.28	7.333	6	1.28	7.333	5	2.23	3	3.47	1.857
0	1.32	7.304	7	1.28	7.304	6	1.28	7.304	5	2.23	3	3.47	1.283
	1.32	7.377	7	1.28	7.377	6	1.28	7.377	5	2.23	3	3.47	1.235
	1.32	7.455	7	1.28	7.455	6	1.28	7.455	5	2.23	3	3.47	1.259
	1.32	7.579	7	1.28	7.579	6	1.28	7.579	5	2.23	3	3.47	0.767
	1.32	7.674	7	1.28	7.674	6	1.28	7.674	5	2.23	3	3.47	
	1.32	7.700	7	1.28	7.700	6	1.28	7.700	5	2.23	3	3.47	
	1.32	7.874	7	1.28	7.874	6	1.28	7.874	5	2.23	3	3.47	
	1.32	7.963	7	1.28	7.963	6	1.28	7.963	5	2.23	3	3.47	
	1.32	8.096	7	1.28	8.096	6	1.28	8.096	5	2.23	3	3.47	

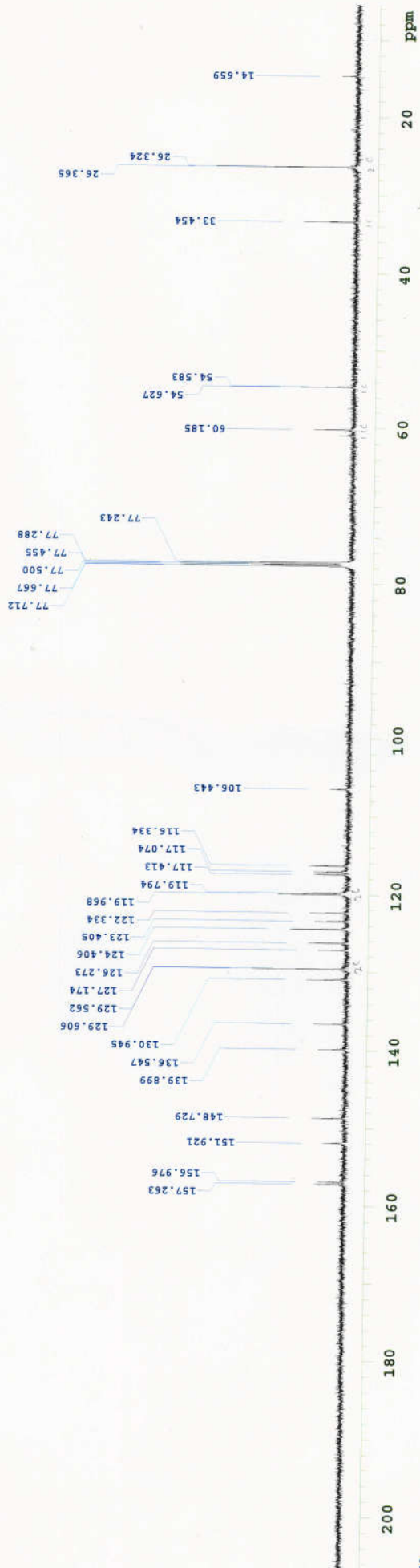


Solvent: cdcl3  
 Ambient temperature  
 Operator: walkup  
 Mercury-300 "Varian-NMR"  
 sh 557  
 File: exp  
 Pulse Sequence: s2pul





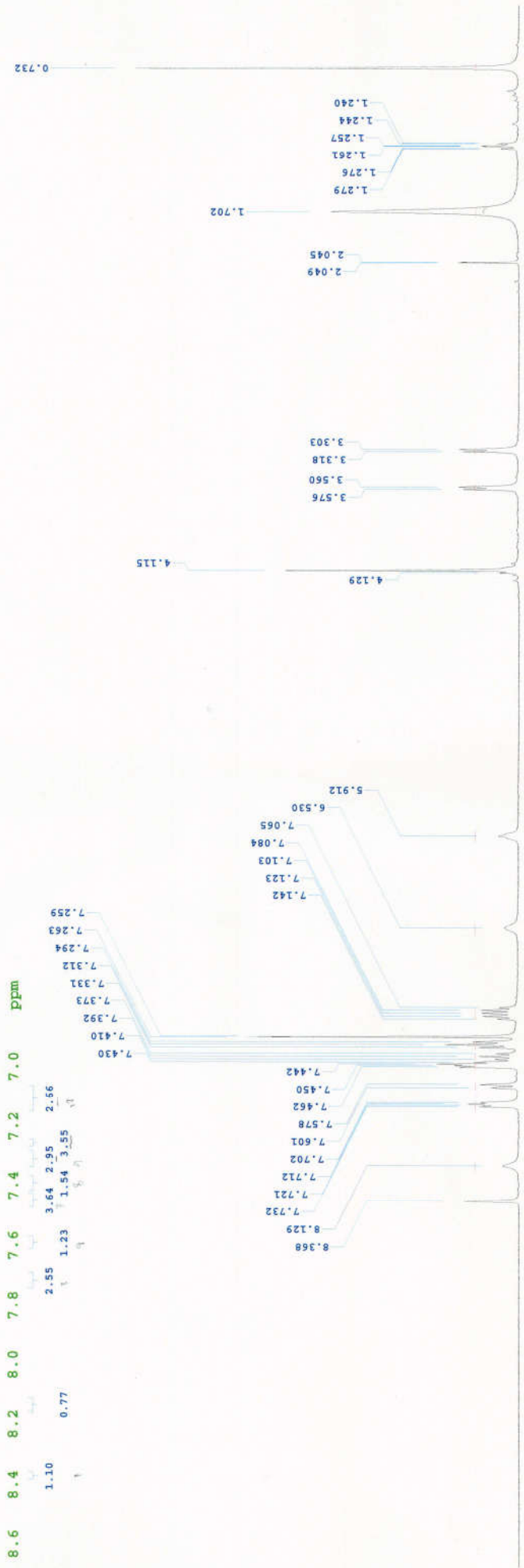
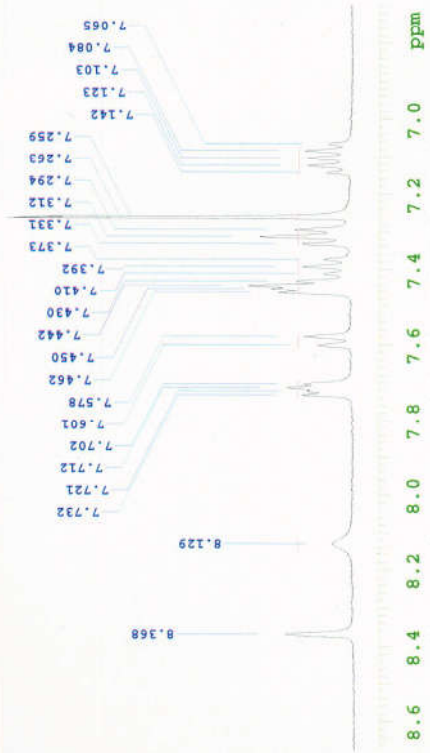
<p>LSR SEQUENCE  relax. delay 0.700 sec  pulse 45.0 degrees  acq. time 1.300 sec  fidh 24509.8 Hz  112 repetitions</p>	<p>OBSERVE C13, 100.5572962  DECOUPLE H1, 399.9115921  Power 42 dB  continuously on  WALTZ-16 modulated</p>	<p>DATA PROCESSING  Line broadening 1.0 Hz  FT size 65536  Total time 17 minutes</p>	<p>Solvent: cdcl3  Ambient temperature  Operator: walkup  VNMRS-400 *varian-400MR*</p>	<p>sh563c13  File: exp  Pulse Sequence: s2pul</p>
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.SE SEQUENCE relax. delay 0.700 sec tilt 45.0 degrees q. time 1.300 sec dth 36764.7 Hz 2 repetitions	OBSERVE C13, 150.8125237 DECOUPLE H1, 599.7742324 Power 40 dB continuously on WALTZ-16 modulated	DATA PROCESSING Line broadening 1.0 Hz FT size 131072 Total time 17 minutes	Solvent: cdcl3 Ambient temperature Operator: walkup VMMS-600 "variant600"	sh 573 c13
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e: Data not saved yet

File sequence: s2pul



ppm	Integration
10	
9	
8	0.95
7	0.72
6	2.05
5	3.12
4	2.25
3	2.04
2	2.08
1	7.88
0	6.26

**PULSER SEQUENCE**  
 Relax. delay 1.500 sec  
 Pulse 45.0 degrees  
 Acq. time 3.500 sec  
 Width 6410.3 Hz  
 16 repetitions

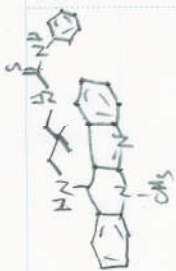
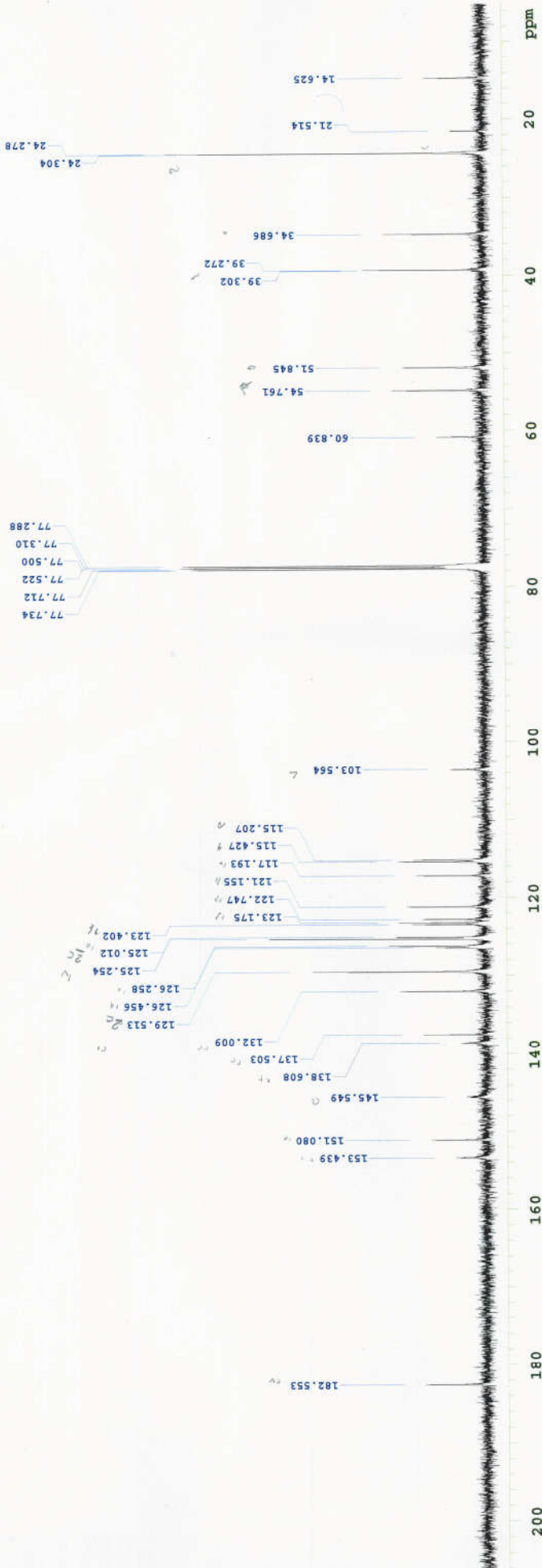
OBSERVE RL, 399.905925

**DATA PROCESSING**  
 Line broadening 0.2 Hz  
 FT size 6536  
 Total time 1 minute

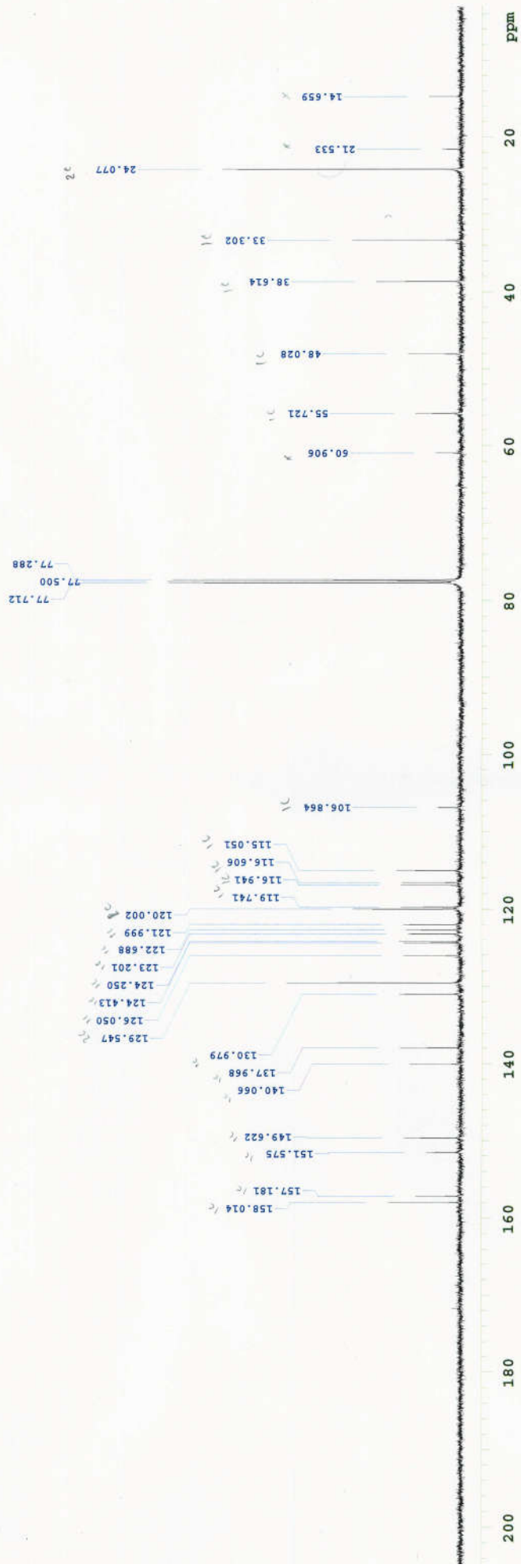
Solvent: cdcl3  
 Ambient temperature  
 Operator: walkup  
 VNMR5-400 \*Varian-400MR\*

shaban 563  
 File: exp  
 Pulse Sequence: s2pul

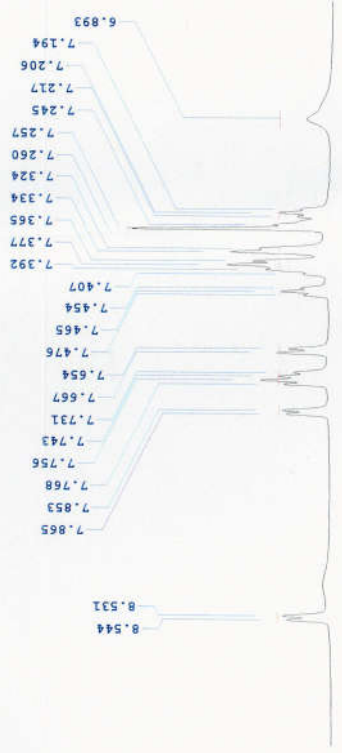




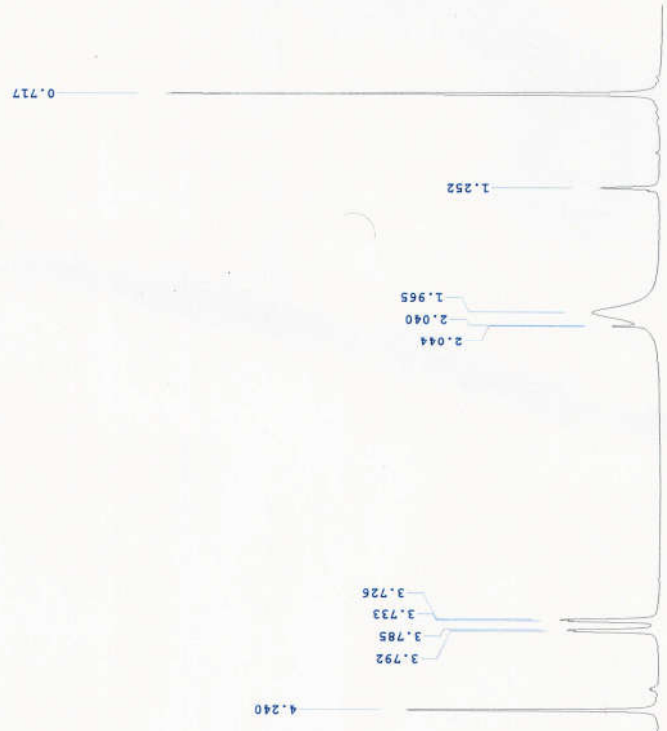
<p>USER SEQUENCE</p> <p>Relax. delay 0.700 sec</p> <p>Pulse 45.0 degrees</p> <p>Acq. time 1.300 sec</p> <p>Width 36764.7 Hz</p> <p>512 repetitions</p>	<p>OBSERVE C13, 150.8125282</p> <p>DECOUPLE H1, 599.7742324</p> <p>Power 40 dB</p> <p>continuously on</p> <p>WALTZ-16 modulated</p>	<p>DATA PROCESSING</p> <p>Line broadening 1.0 Hz</p> <p>FT size 131072</p> <p>Total time 17 minutes</p>	<p>Solvent: cdcl3</p> <p>Ambient temperature</p> <p>Operator: walkup</p> <p>YNMR5-600 "varian600"</p>	<p>sh 564 c13</p>
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<p>PULSE SEQUENCE Relax. delay 0.700 sec Pulse 45.0 degrees Acq. time 1.300 sec Width 36764.7 Hz 512 repetitions</p>	<p>OBSERVE C13, 150.8125343 DECOUPLE H1, 599.7742124 power 40 dB continuously on WALTZ-16 modulated</p>	<p>DATA PROCESSING Line broadening 1.0 Hz FT size 131072 Total time 17 minutes</p>	<p>Solvent: cdcl3 Ambient temperature Operator: walkup VNMR5-600 "varian600"</p>	<p>sh 562 c13</p>
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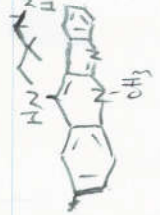


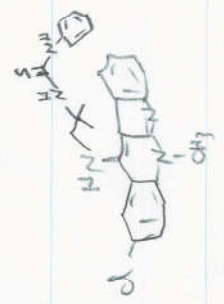
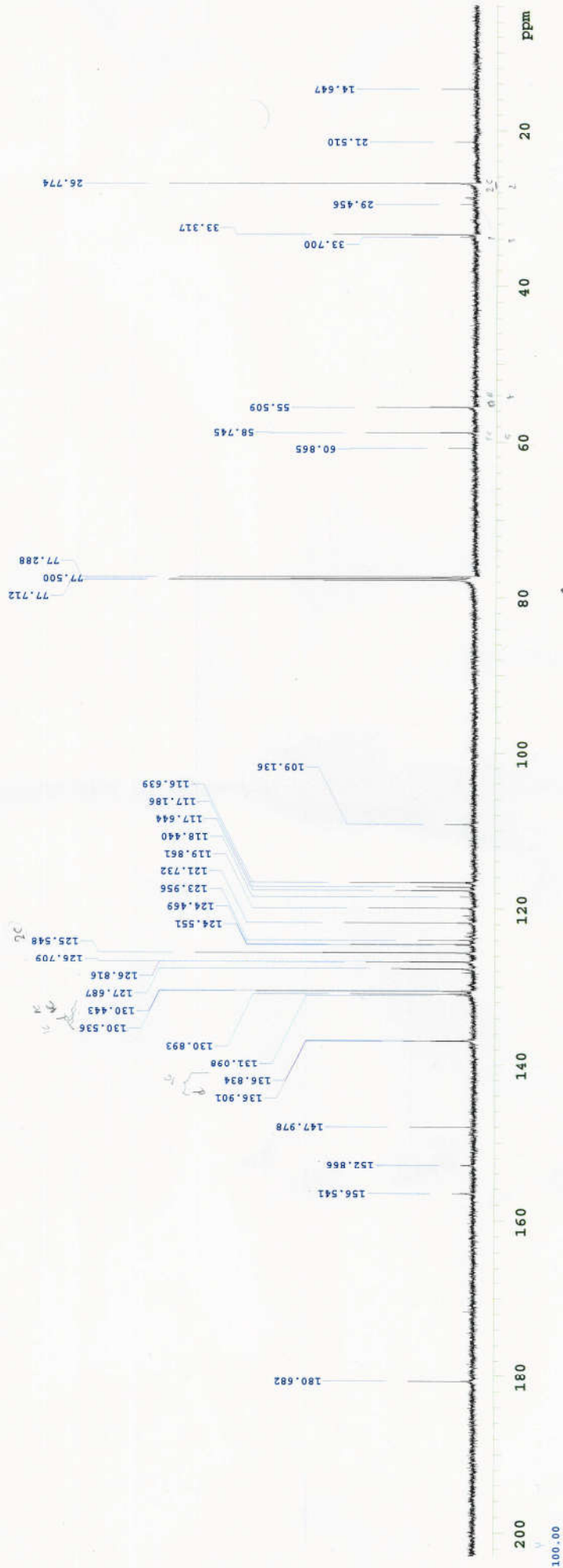
8.8 8.6 8.4 8.2 8.0 7.8 7.6 7.4 7.2 7.0 6.8 ppm



11 10 9 8 7 6 5 4 3 2 1 ppm

<p><b>PULSE SEQUENCE</b>          Relax. delay 1.592 sec          Pulse 45.0 degrees          Acq. time 3.408 sec          Width 9615.4 Hz          16 repetitions</p>	<p><b>OBSERVE</b> HL, 599.7712255</p>	<p><b>DATA PROCESSING</b>          Line broadening 0.3 Hz          FT size 65536          Total time 1 minute</p>	<p>Solvent: cdcl3          Ambient Temperature          Operator: walkup          VNMR5-600 "varian600"</p>	<p>sh 564          File: exp          Pulse Sequence: s2pul</p>
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<p>PULSE SEQUENCE</p> <p>Relax. delay 0.700 sec</p> <p>Pulse 45.0 degrees</p> <p>Acq. time 1.300 sec</p> <p>Width 36764.7 Hz</p> <p>512 repetitions</p>	<p>OBSERVE C13, 150.8125260</p> <p>DECOUPLE H1, 599.7742324</p> <p>Power 40 dB</p> <p>continuously on</p> <p>WALTZ-16 modulated</p>	<p>DATA PROCESSING</p> <p>Line broadening 1.0 Hz</p> <p>FT size 131072</p> <p>Total time 17 minutes</p>	<p>Solvent: cdcl3</p> <p>Ambient temperature</p> <p>Operator: walkup</p> <p>VMMS-600 *varian600*</p> <p>sh 574 c13</p>	<p>Pulse sequence: s2pul</p>
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