

**Supporting Information**

for

**An efficient and practical entry to 2-amido-dienes  
and 3-amido-trienes from allenamides through  
stereoselective 1,3-hydrogen shifts.**

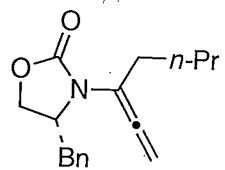
Ryuji Hayashi, John B. Feltenberger, Andrew G. Lohse, Mary C. Walton and Richard  
P. Hsung\*

Address: Department of Chemistry and Division of Pharmaceutical Sciences,  
University of Wisconsin, Madison, WI 53705

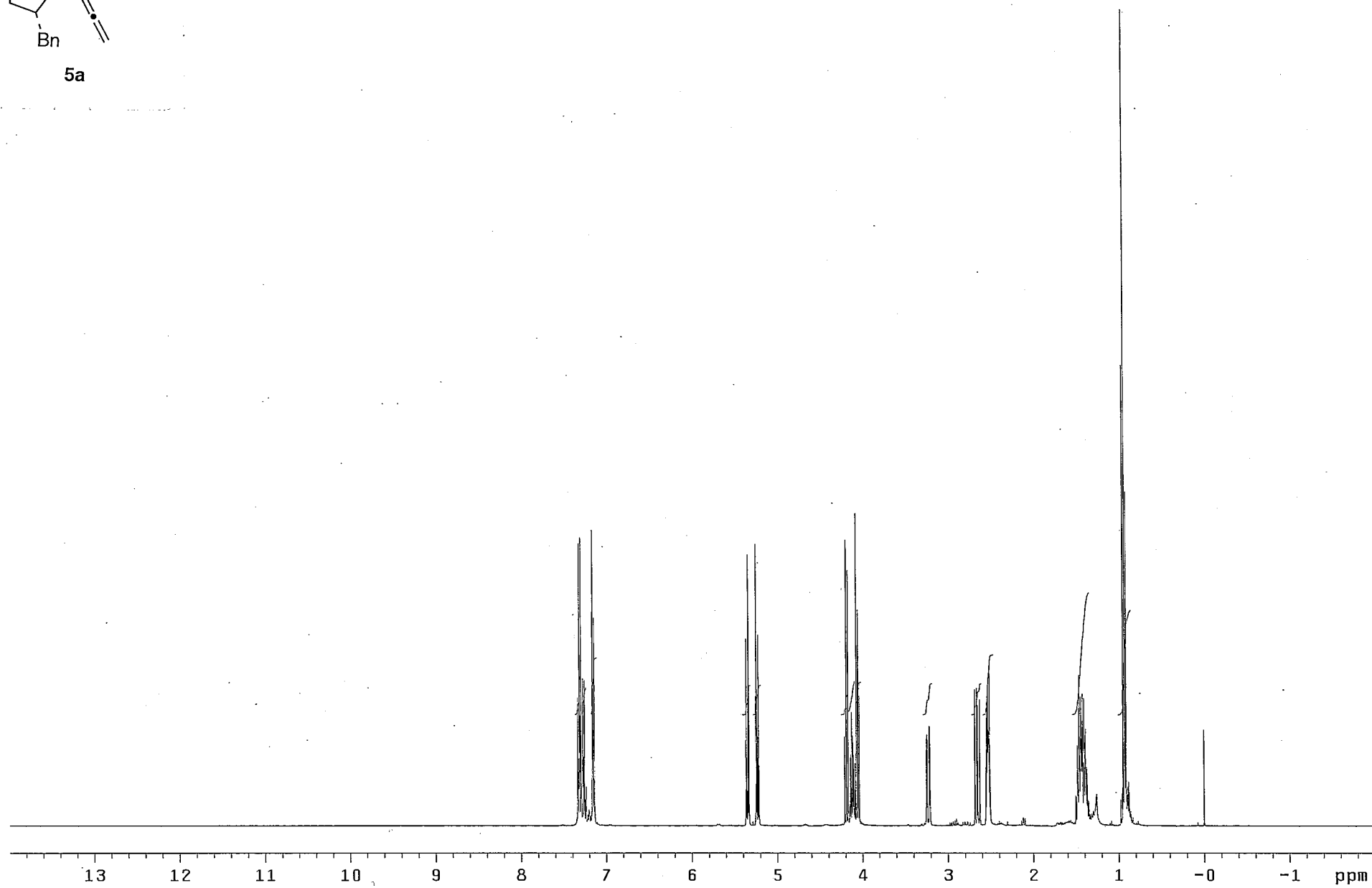
Email: Richard P. Hsung\* - [rhsung@wisc.edu](mailto:rhsung@wisc.edu)

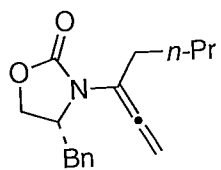
\*Corresponding author

**Proton and carbon NMR spectra, and NOE data.**

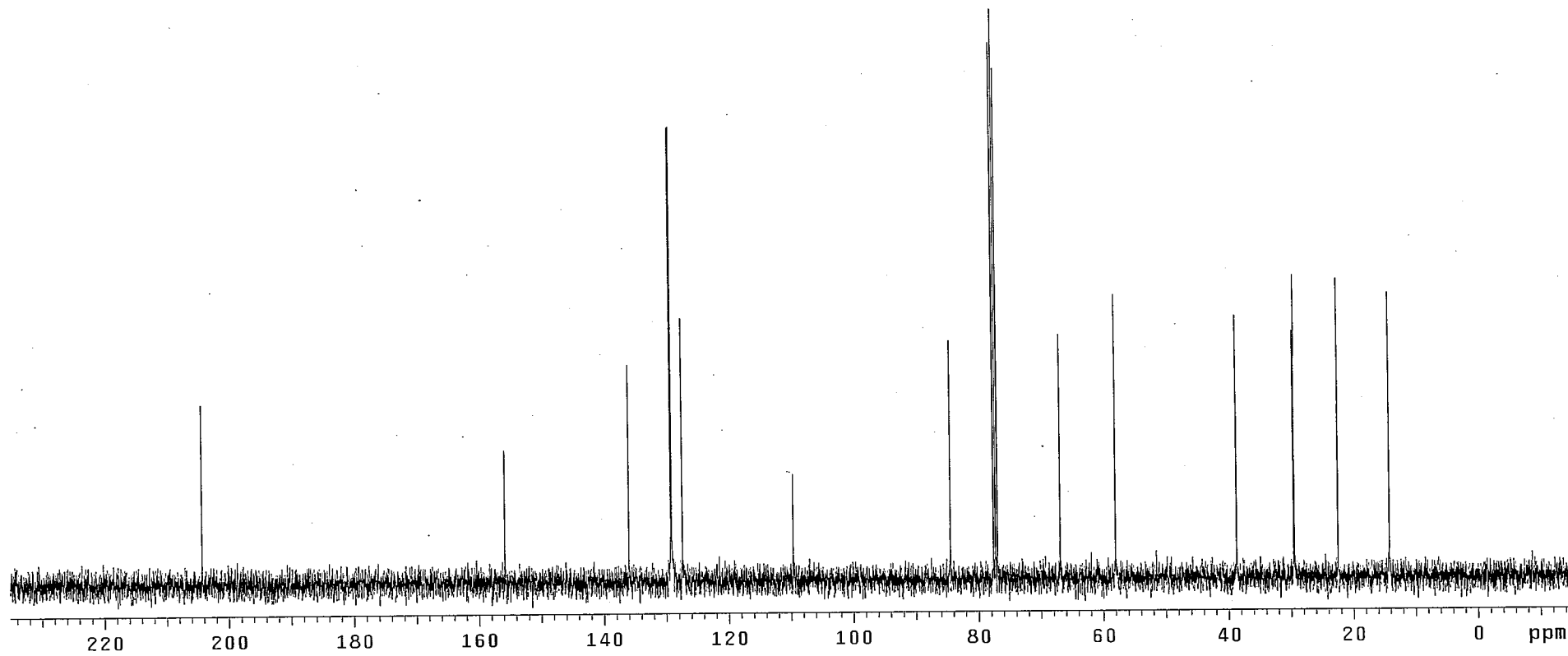


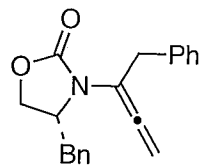
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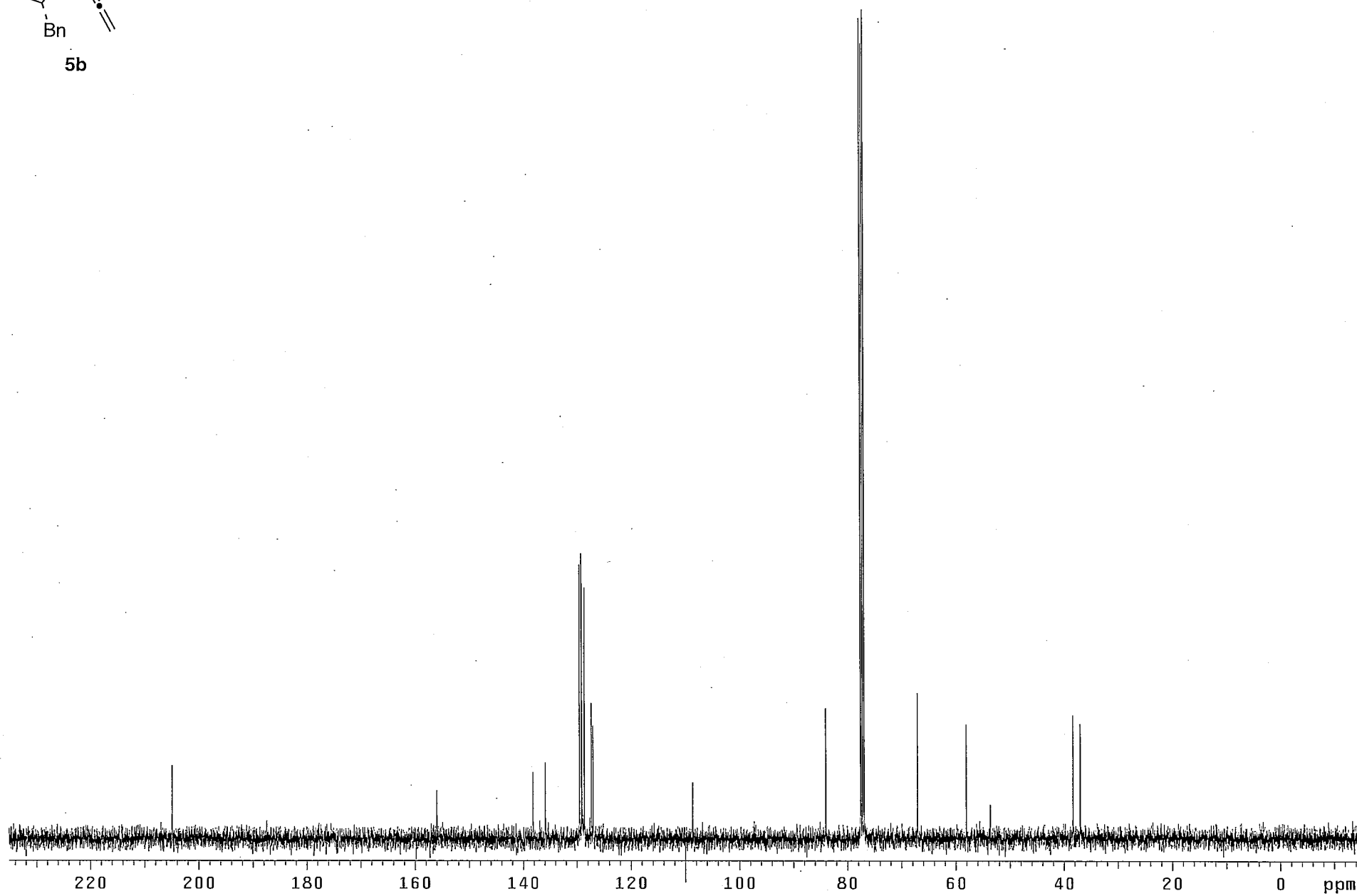


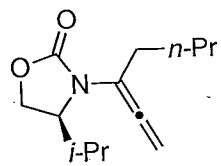
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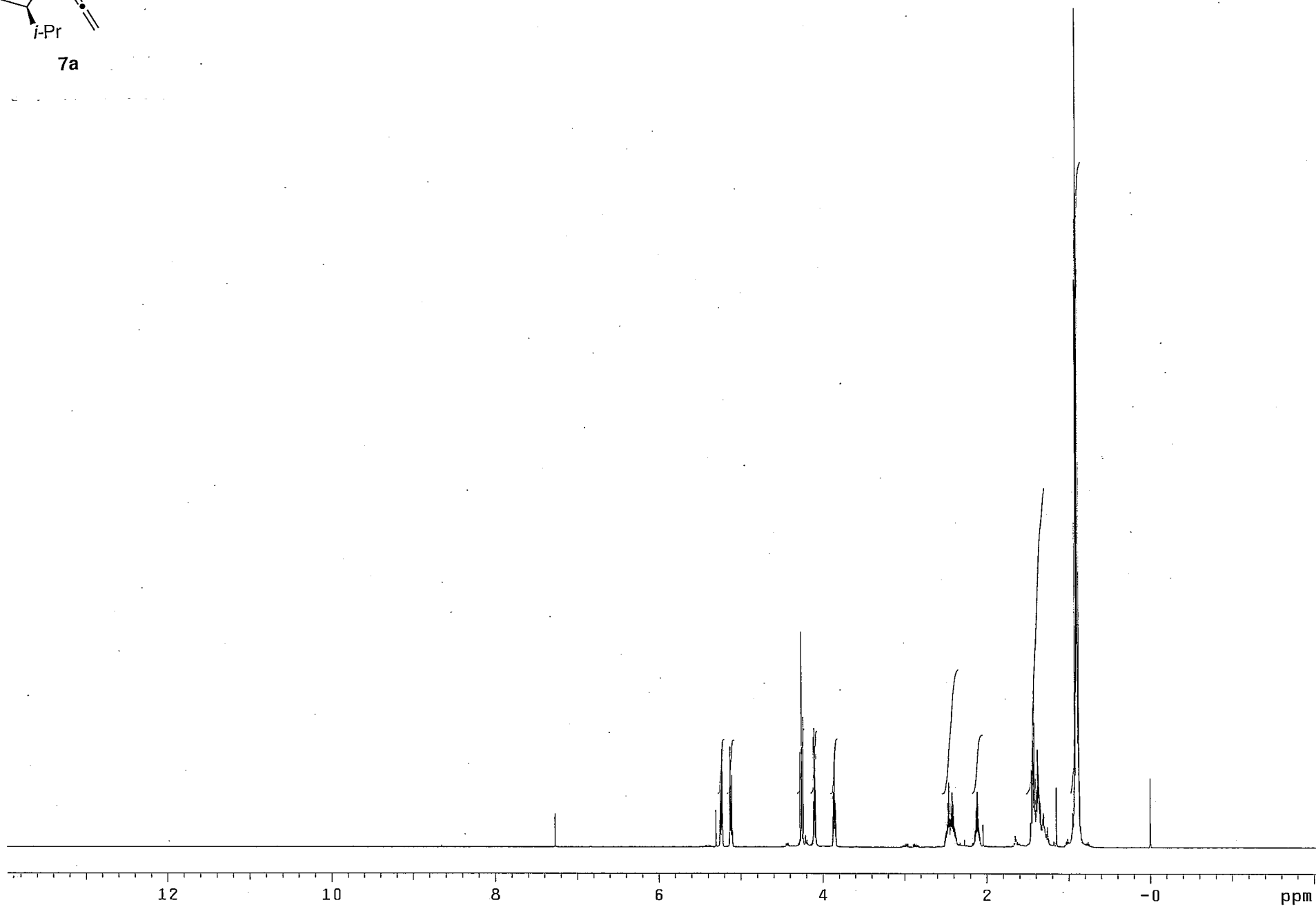


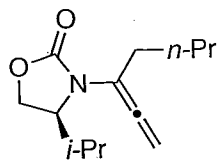
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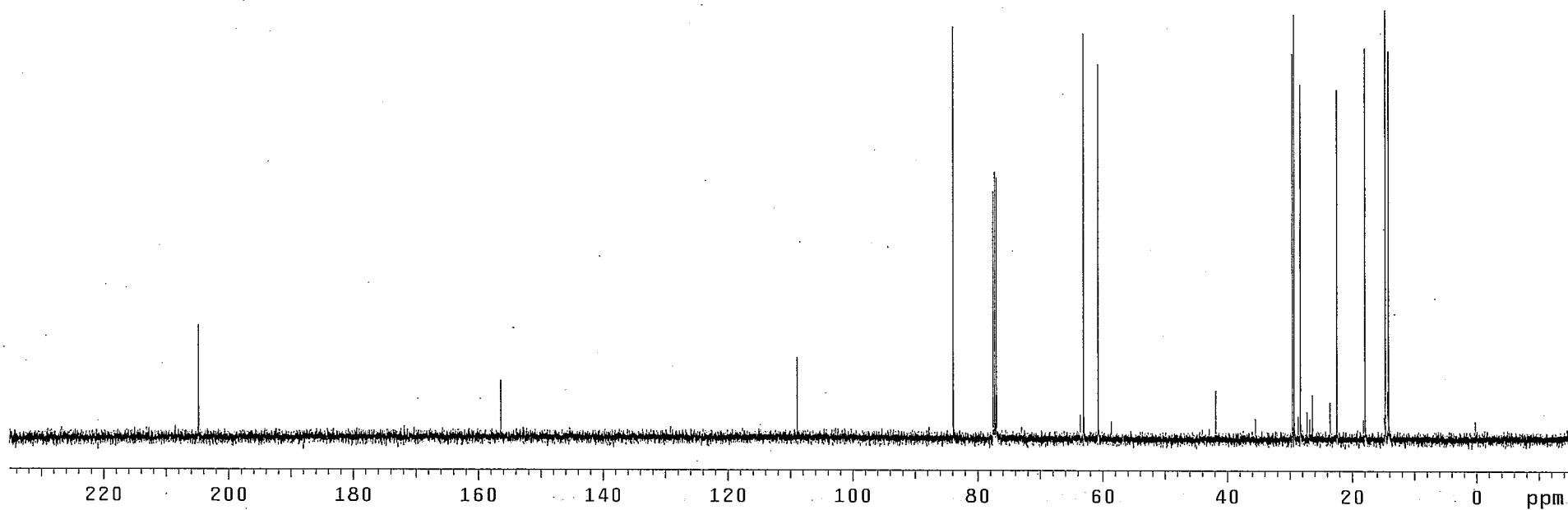


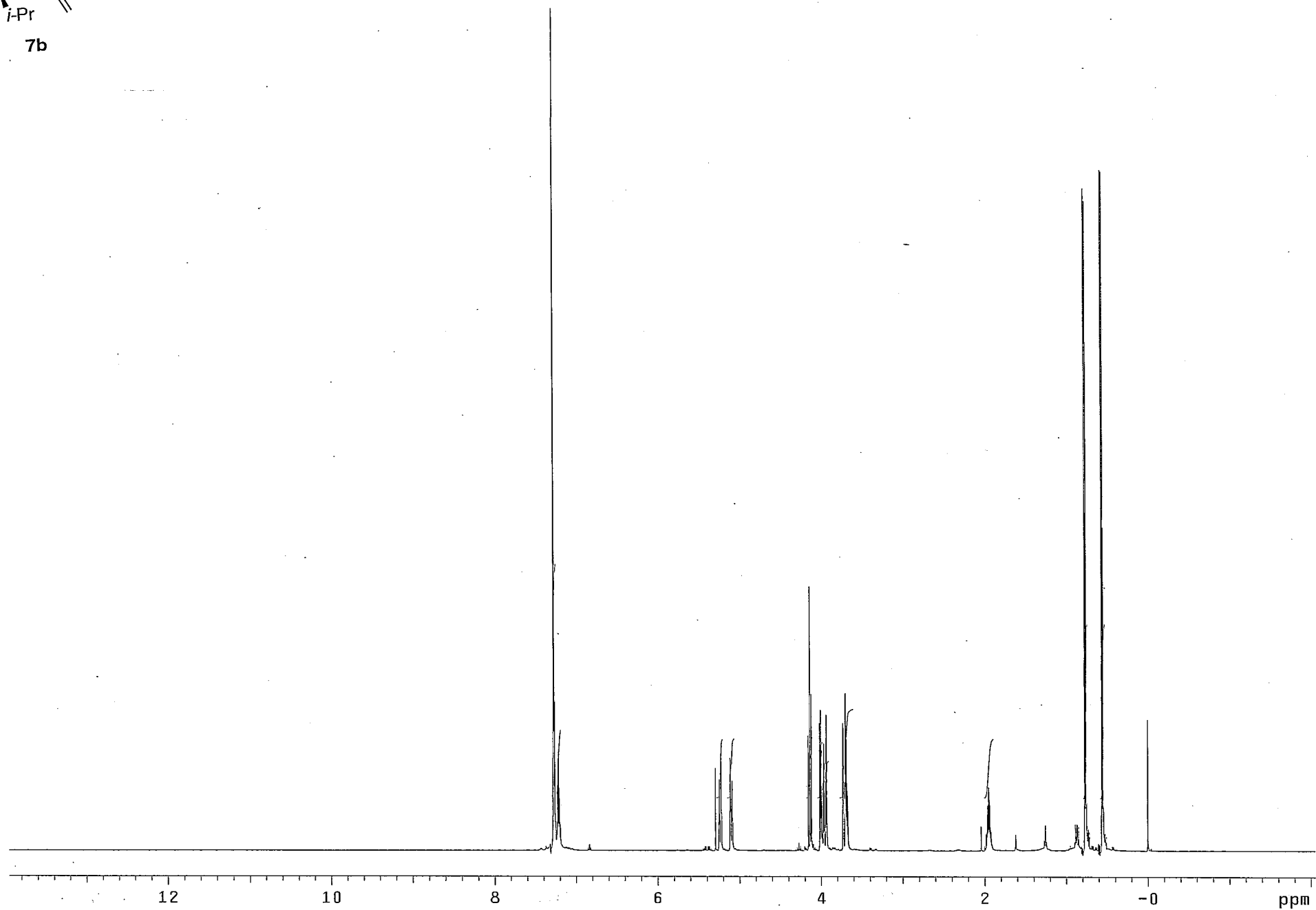
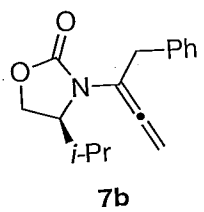
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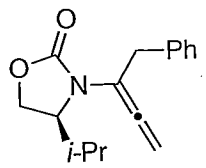




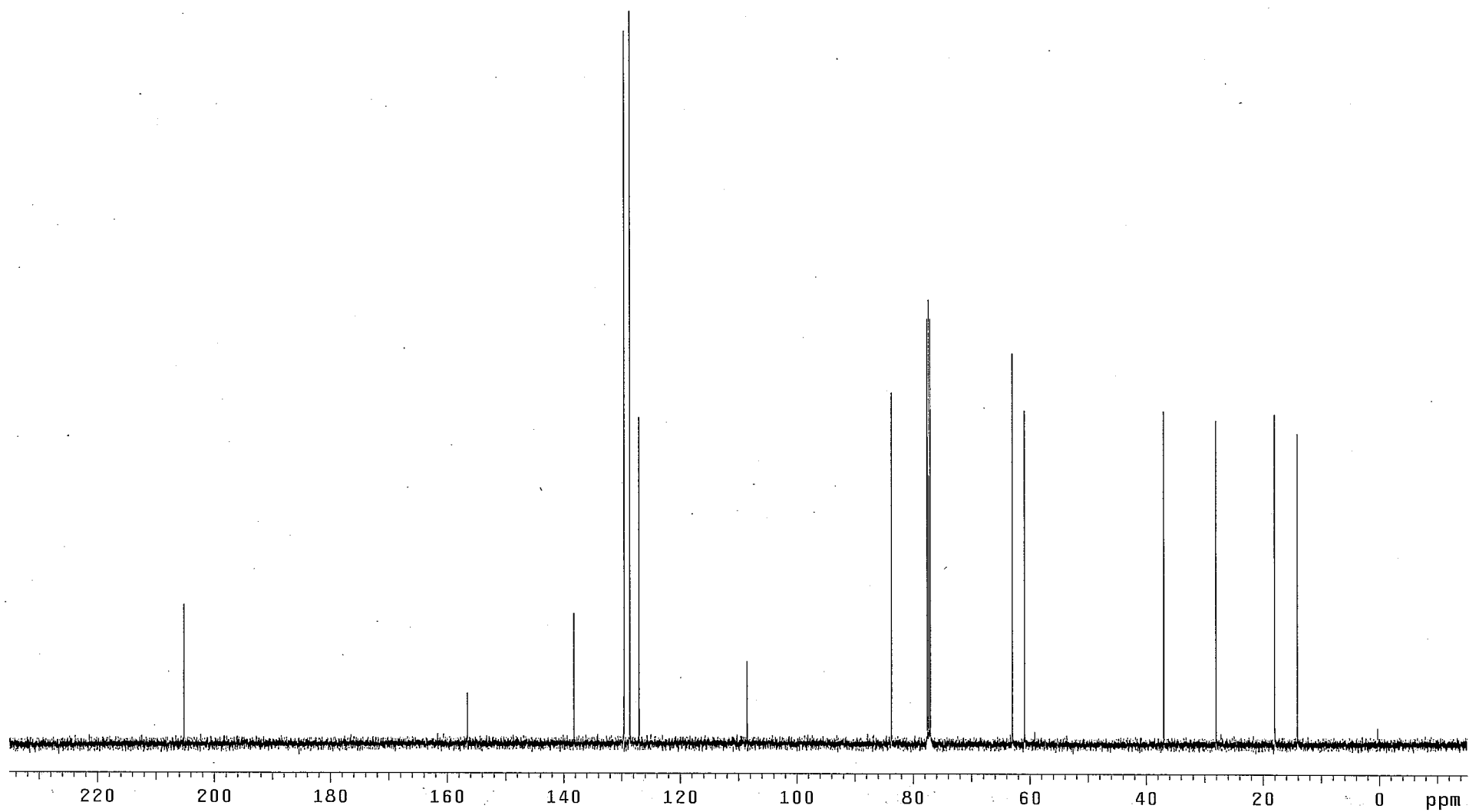
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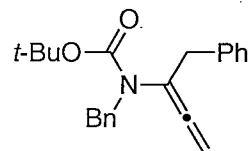




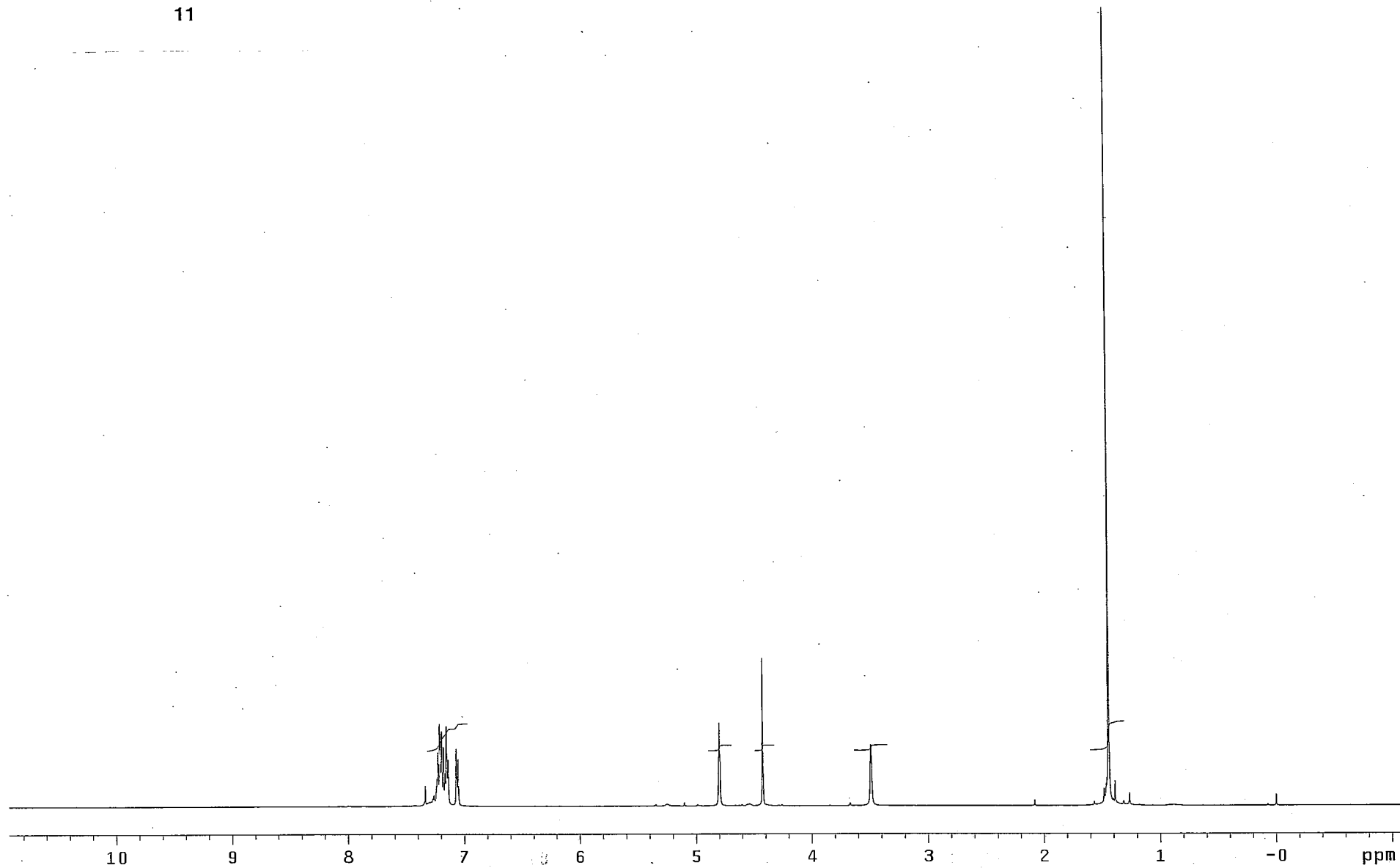
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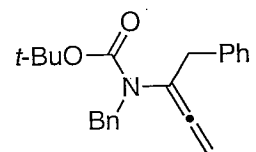




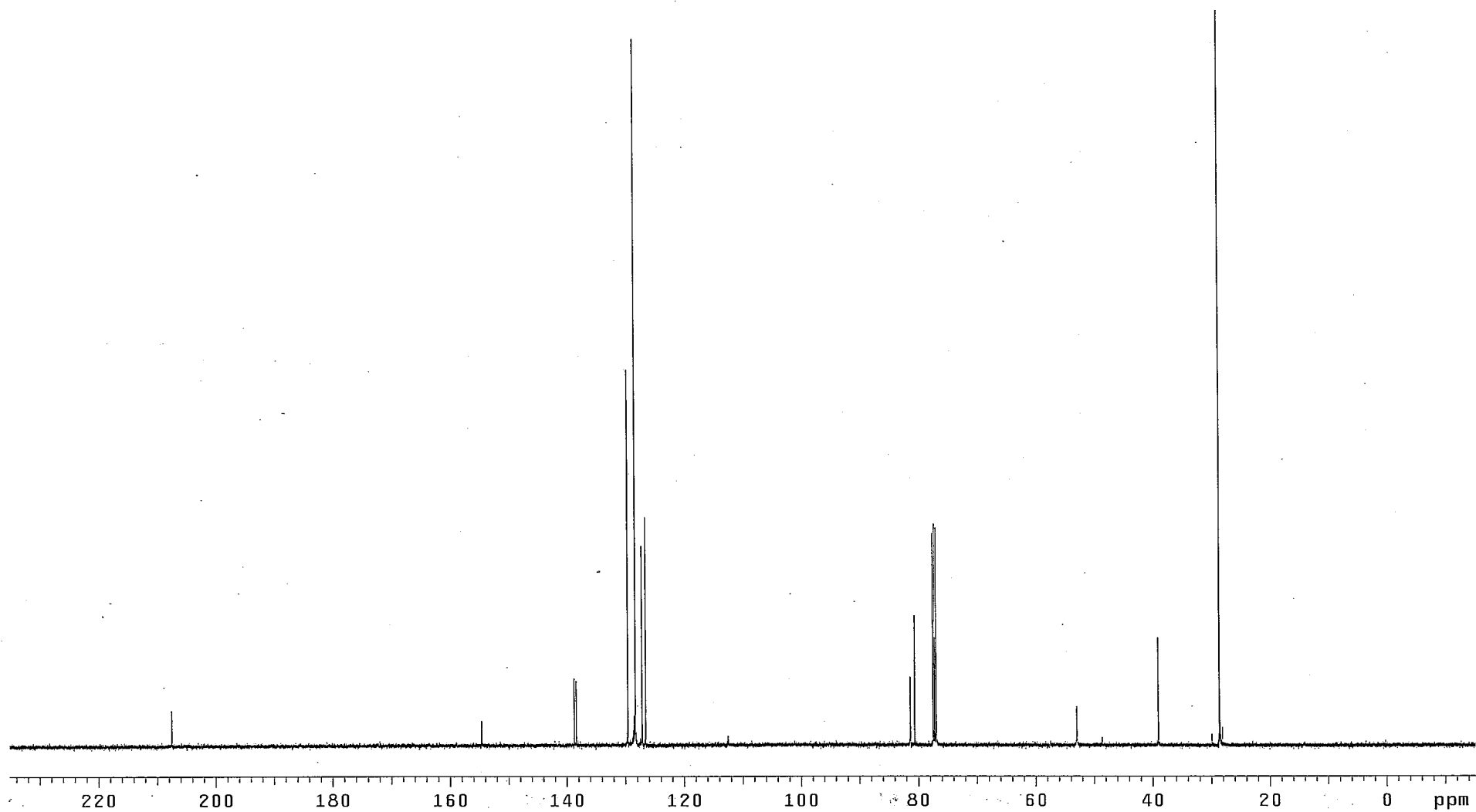


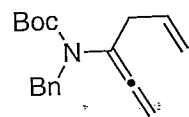
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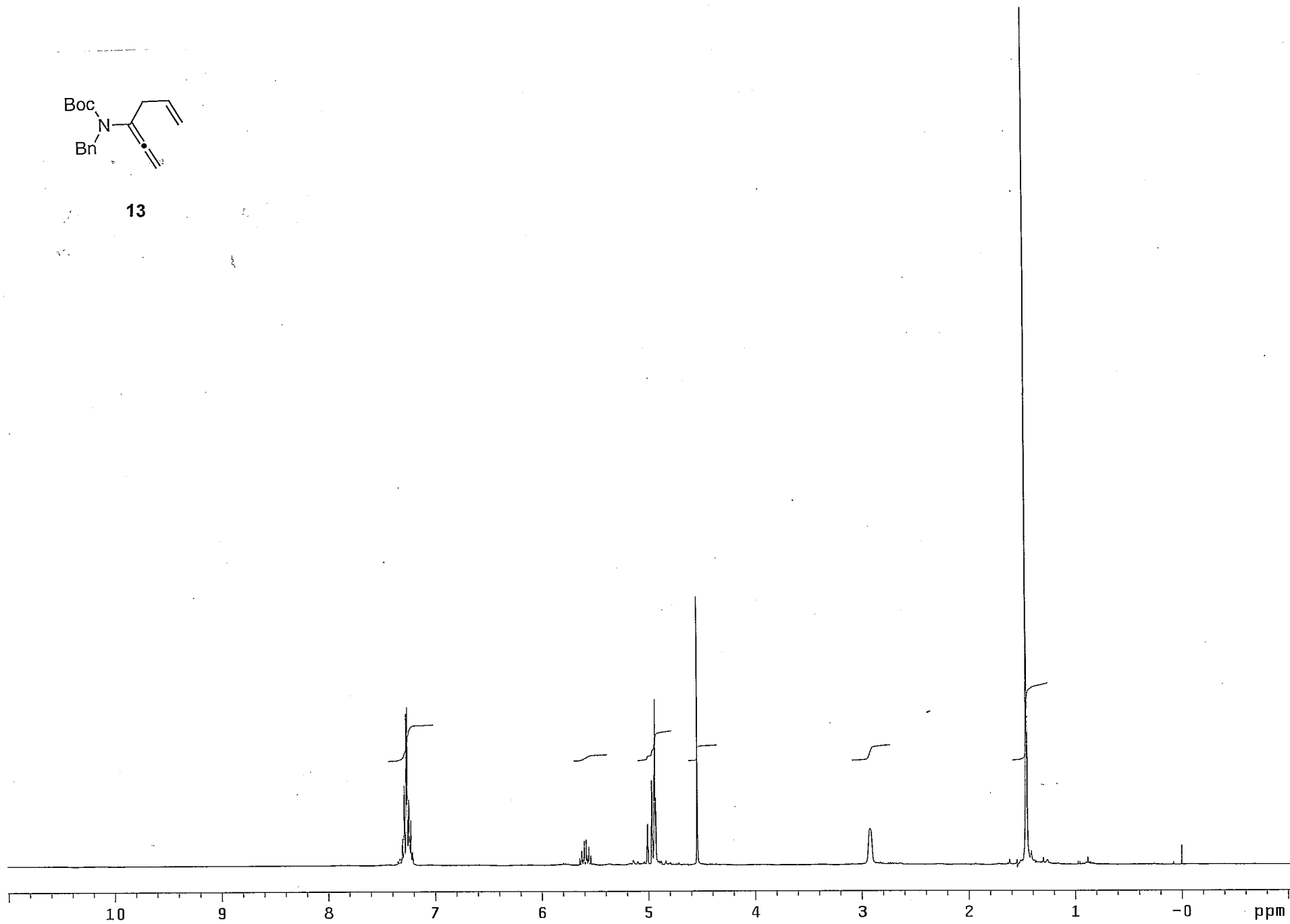


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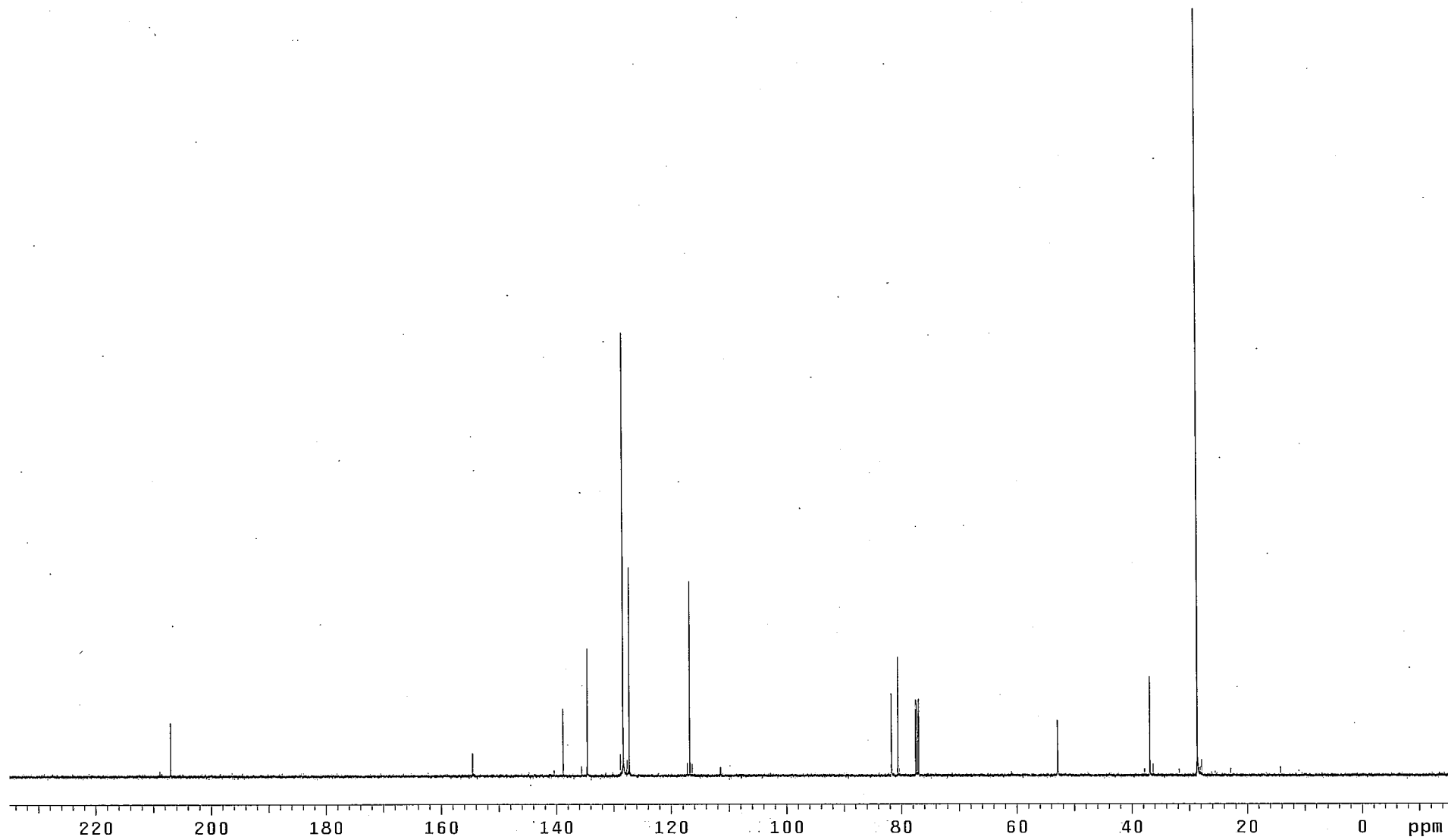


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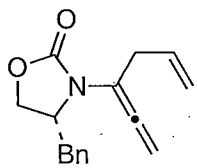




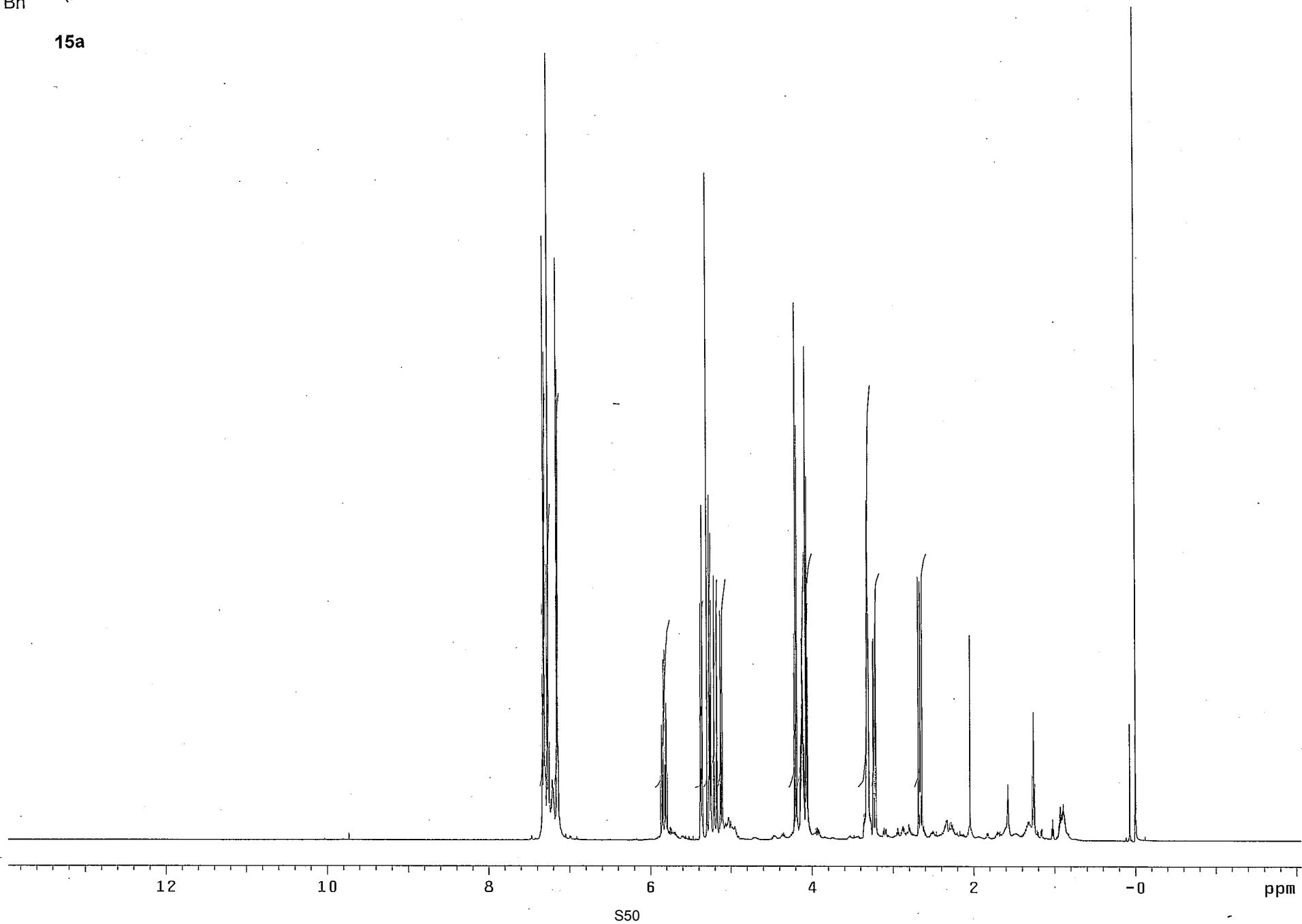
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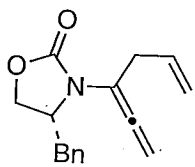


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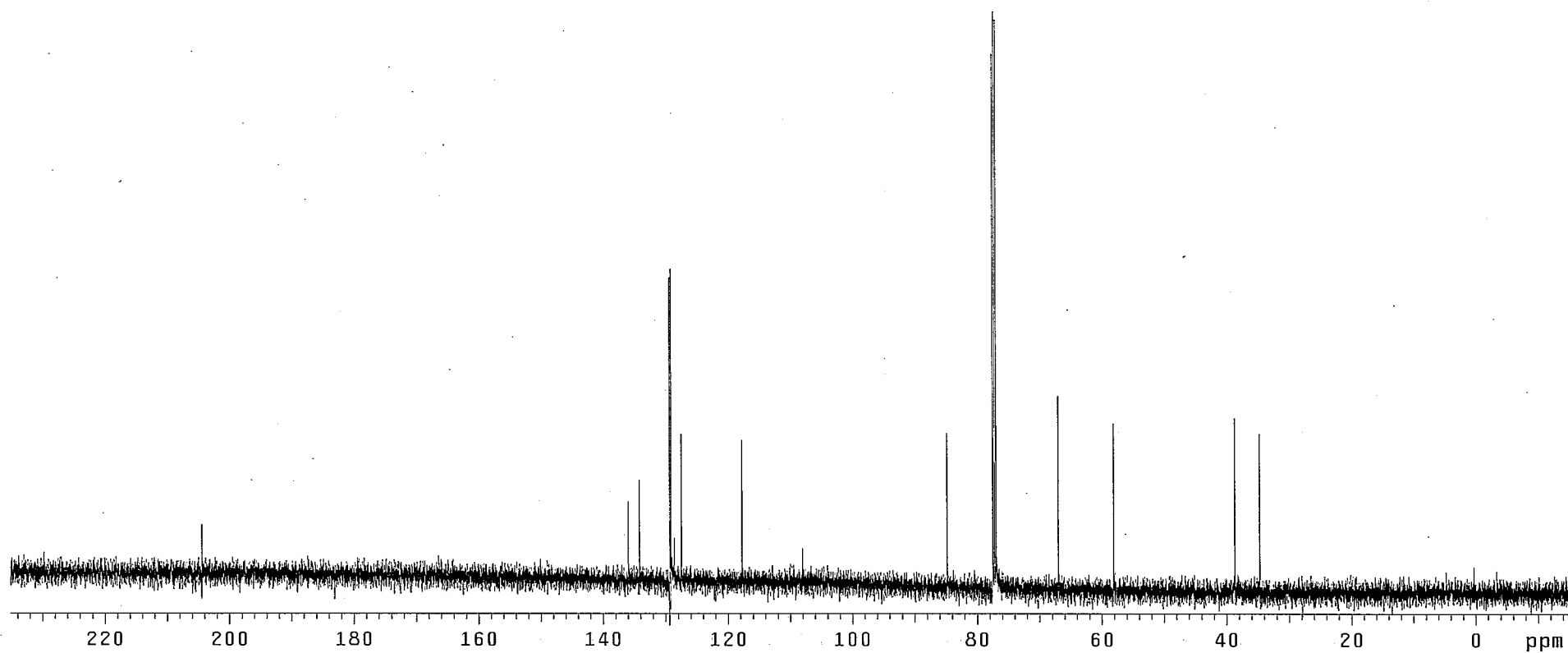


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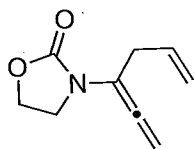




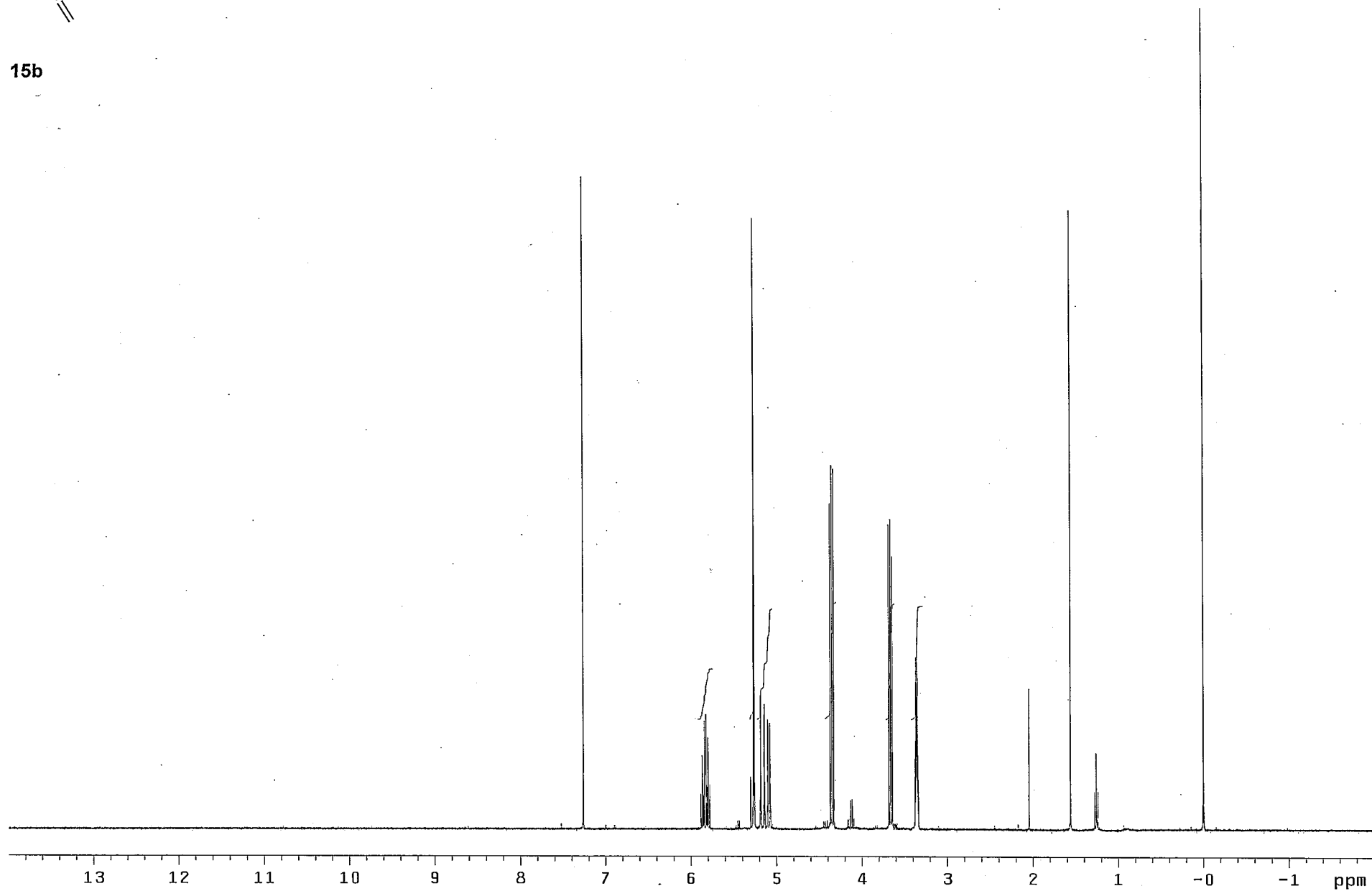
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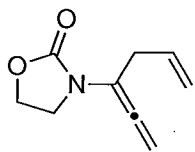


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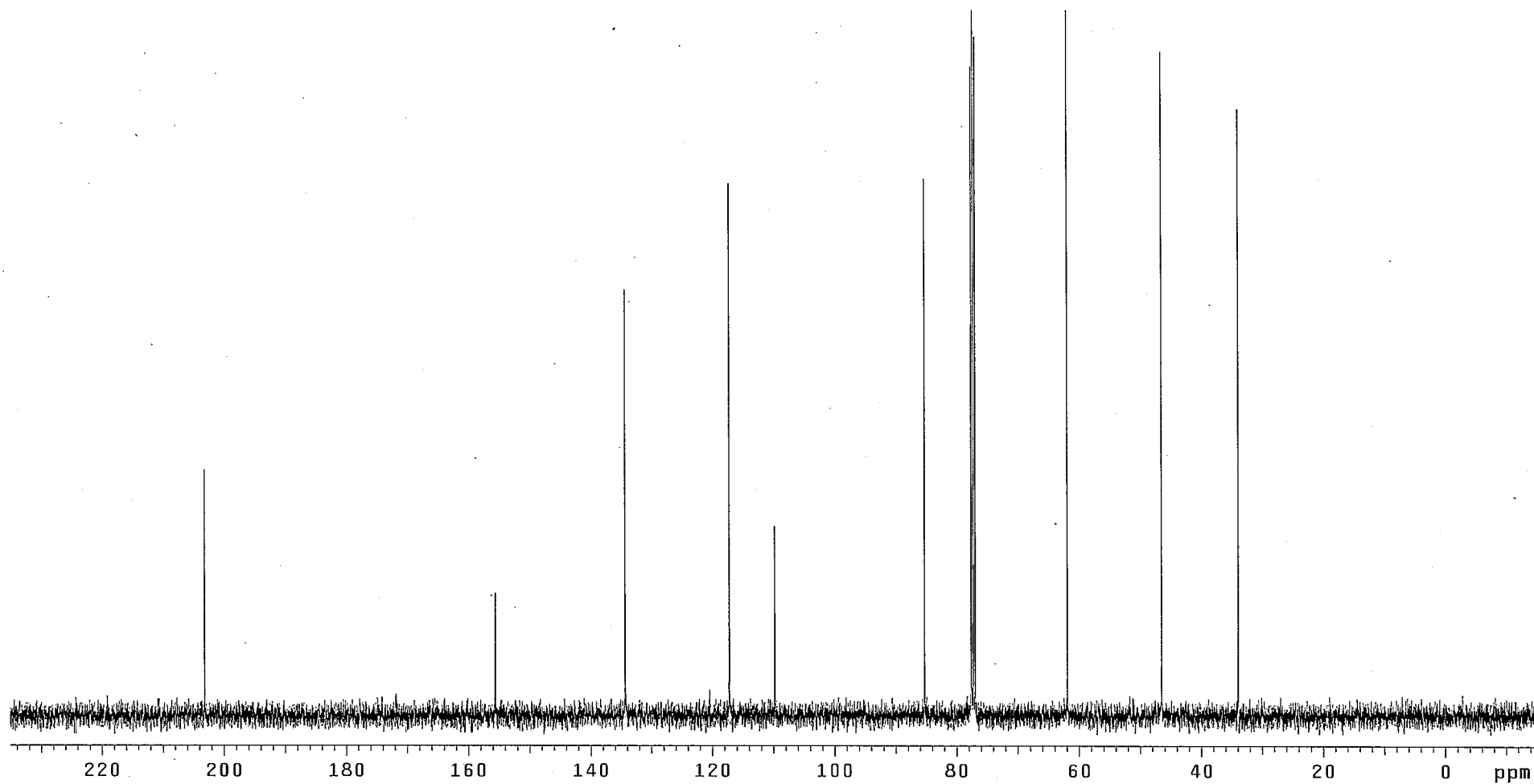


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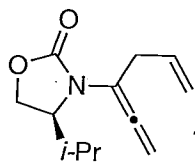




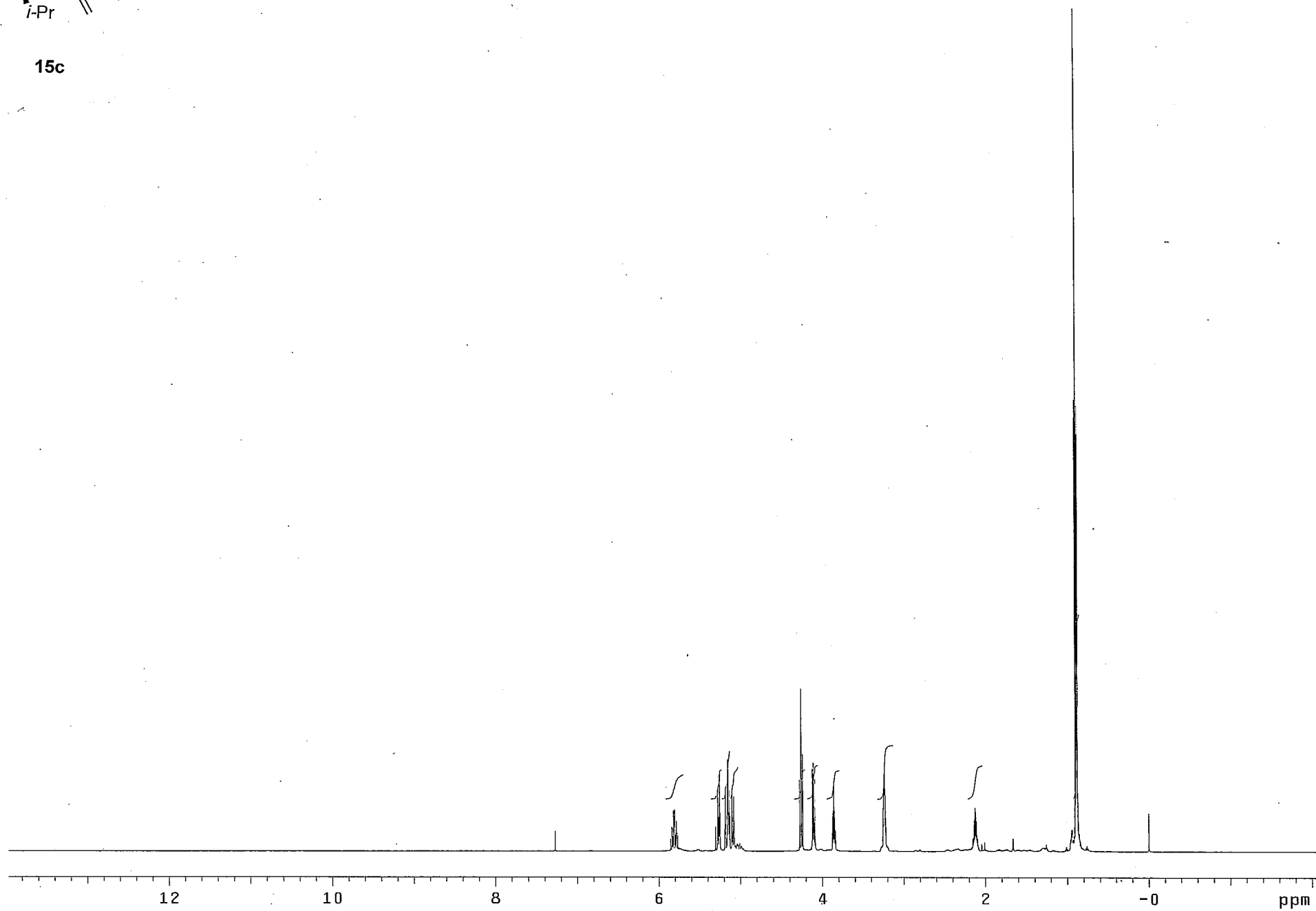
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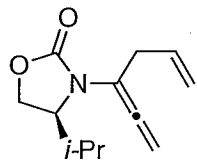




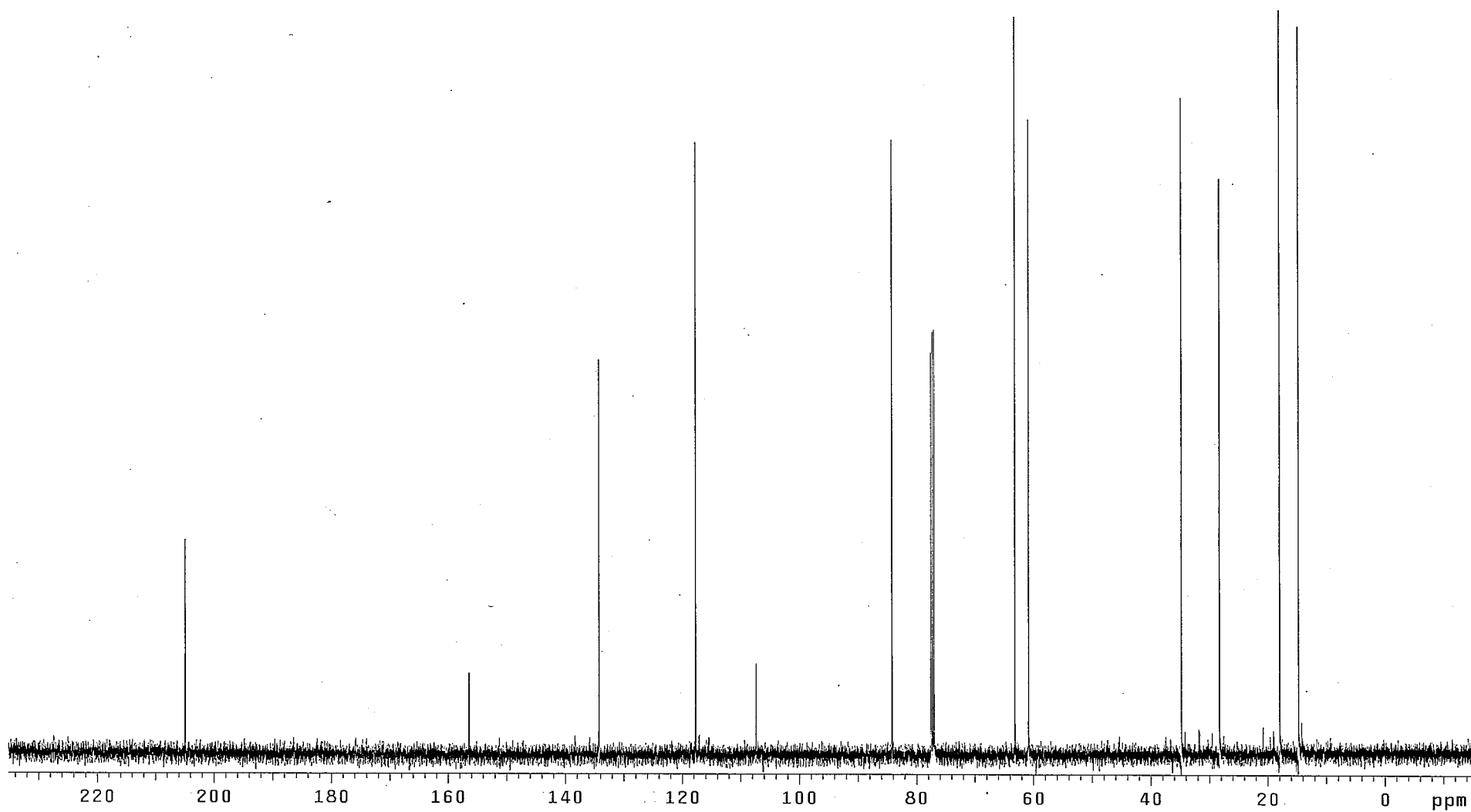


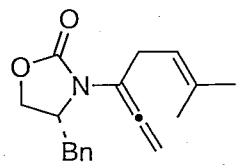
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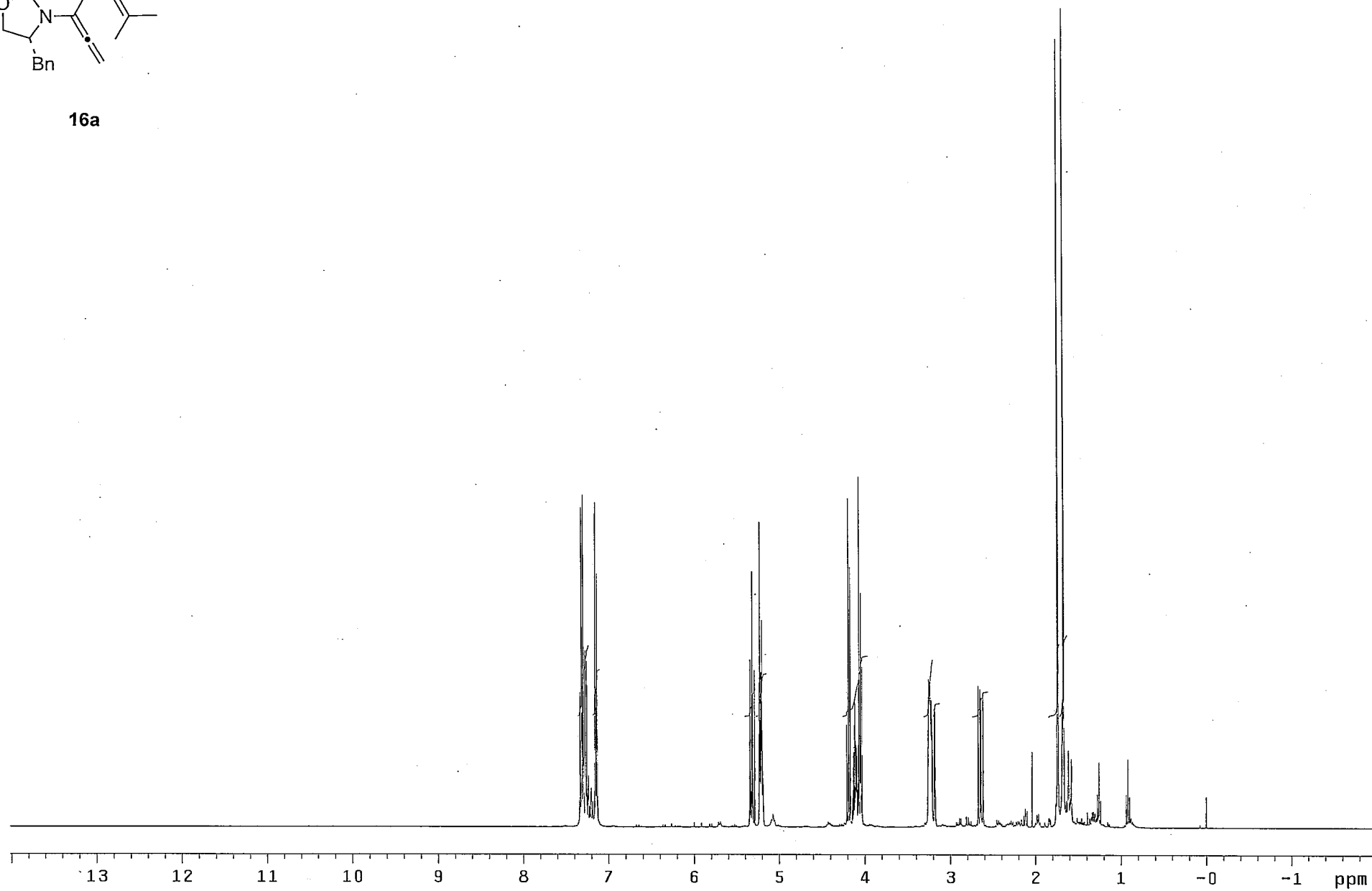


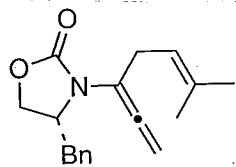
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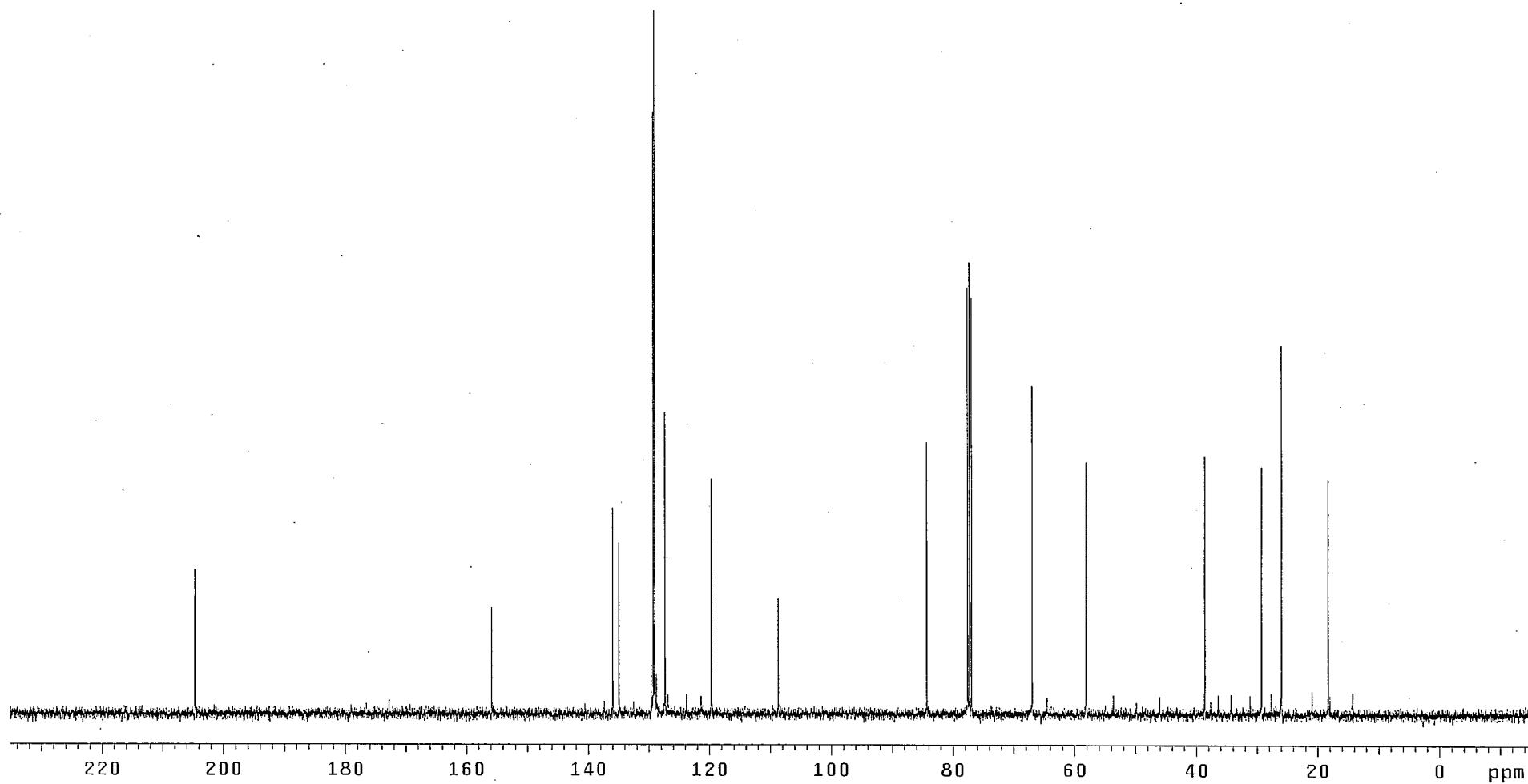


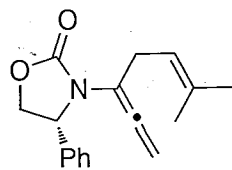
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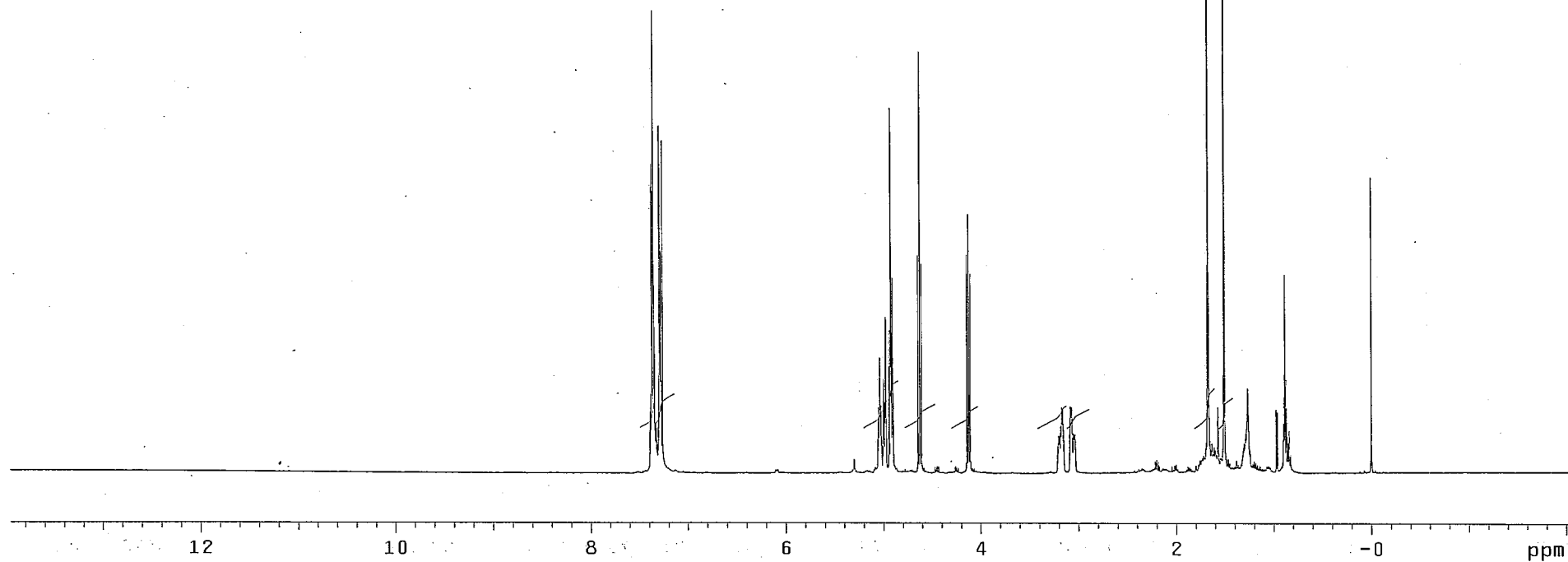


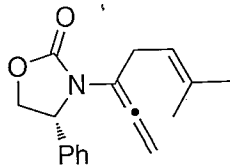
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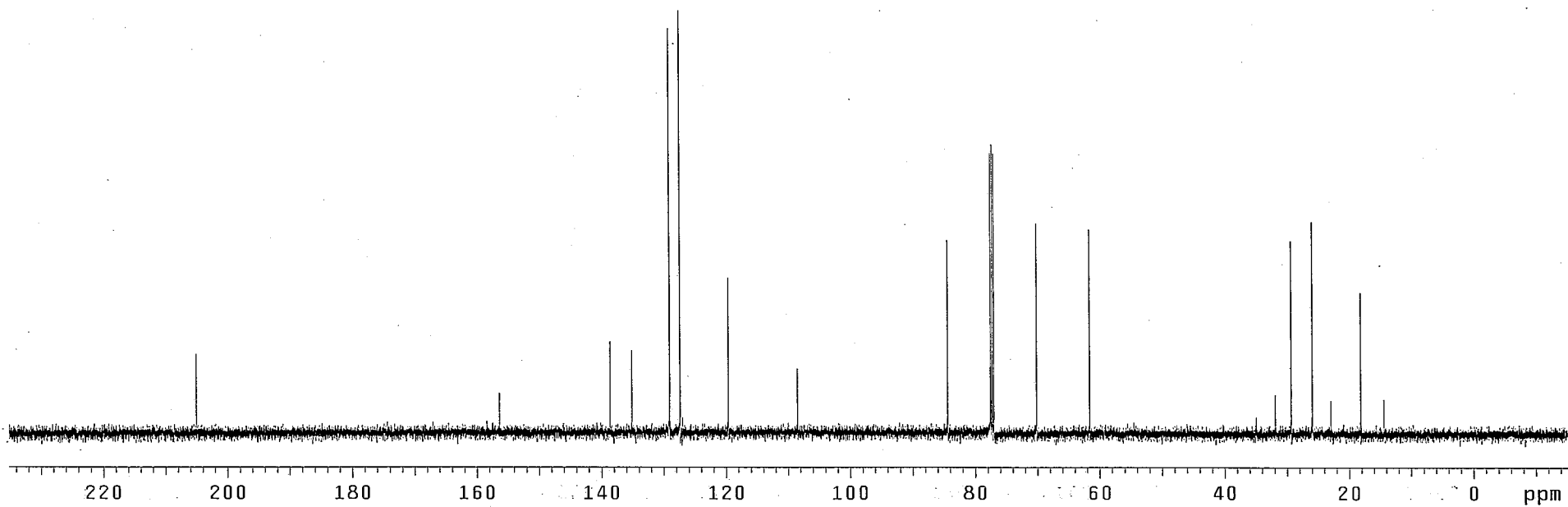


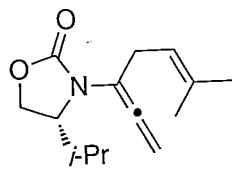
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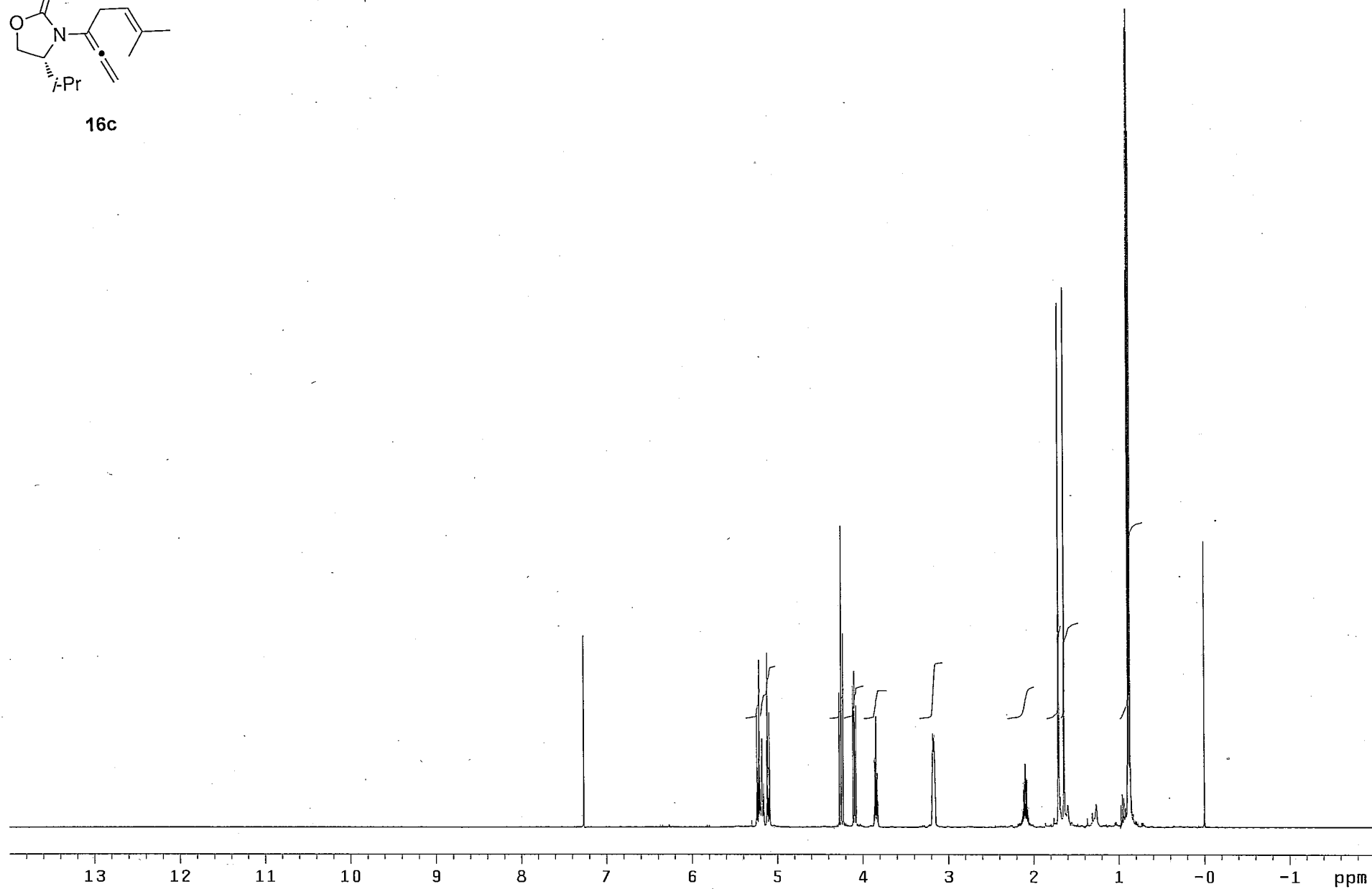


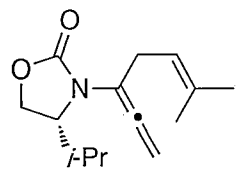
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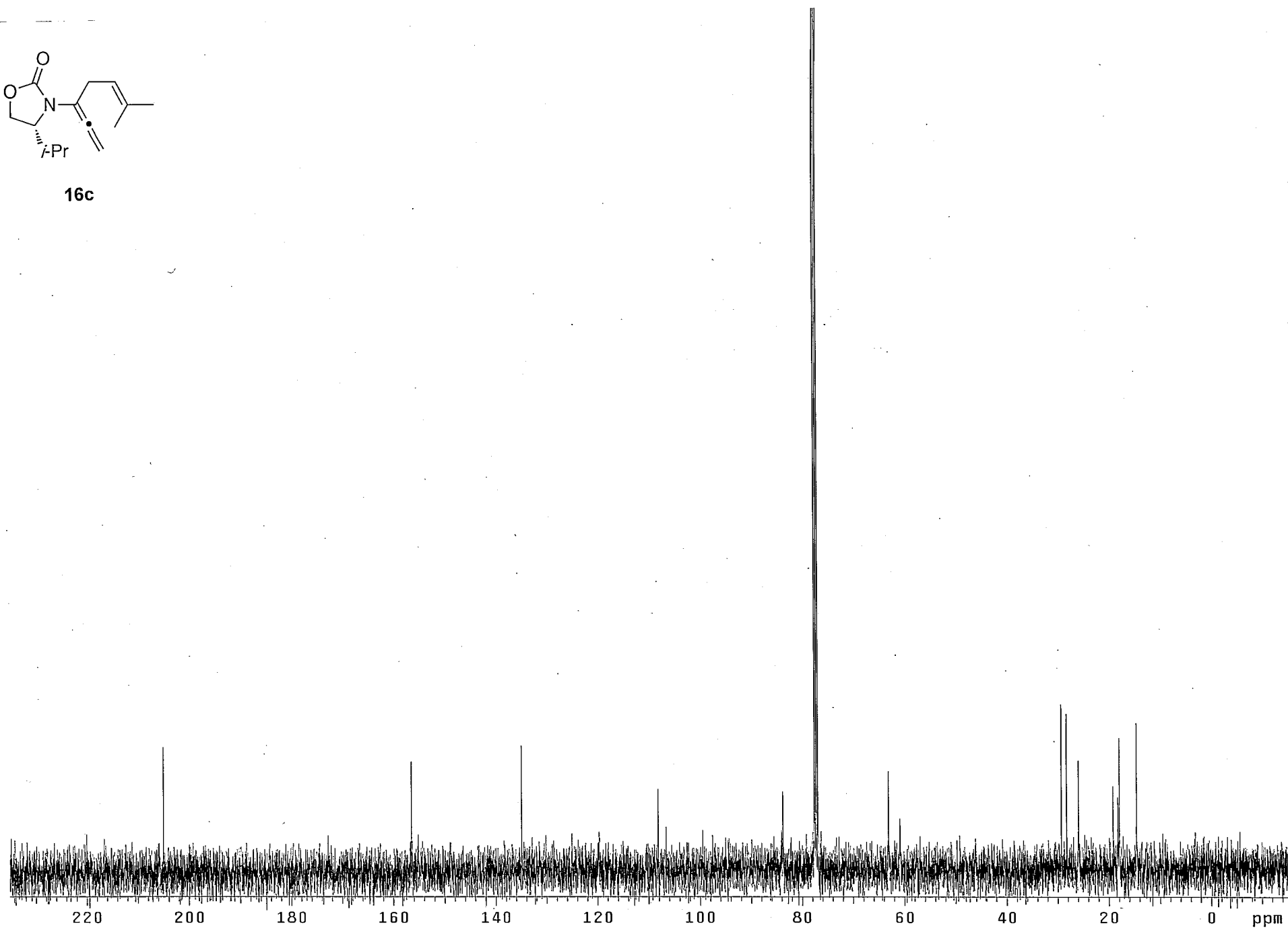


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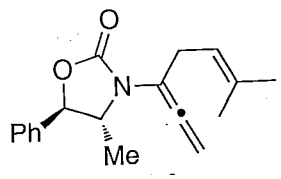




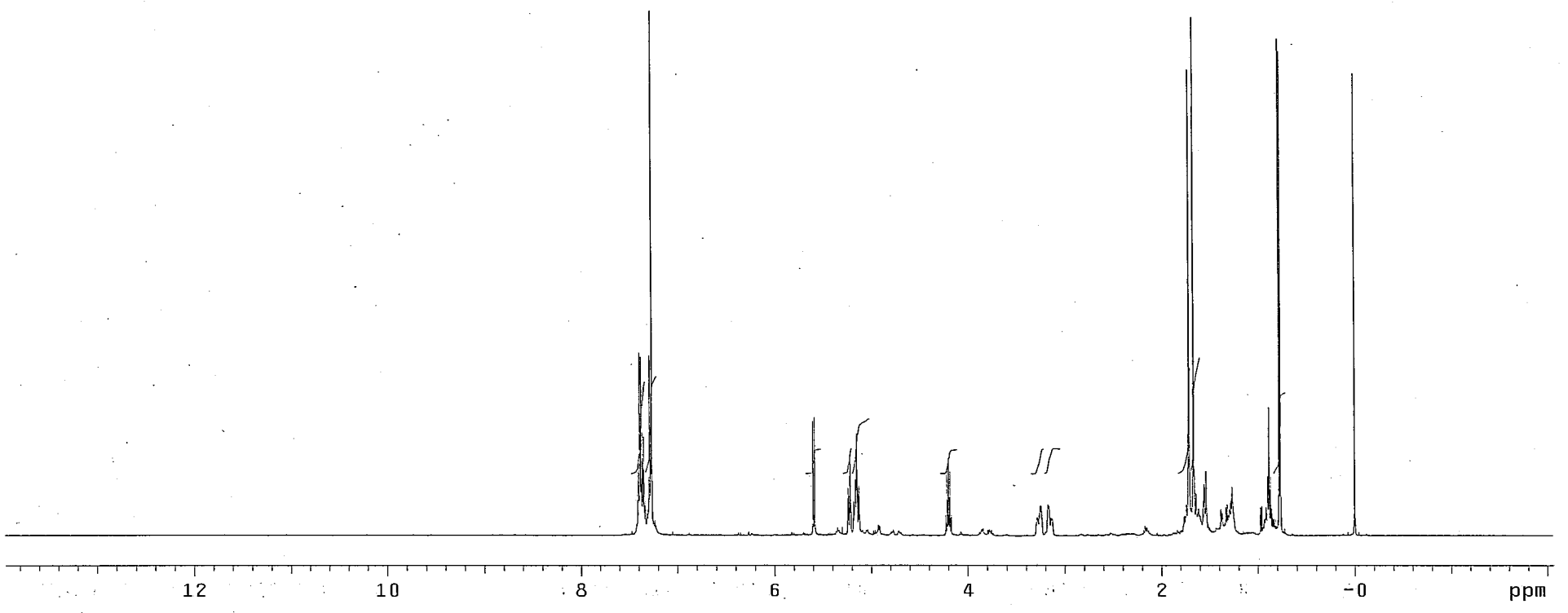
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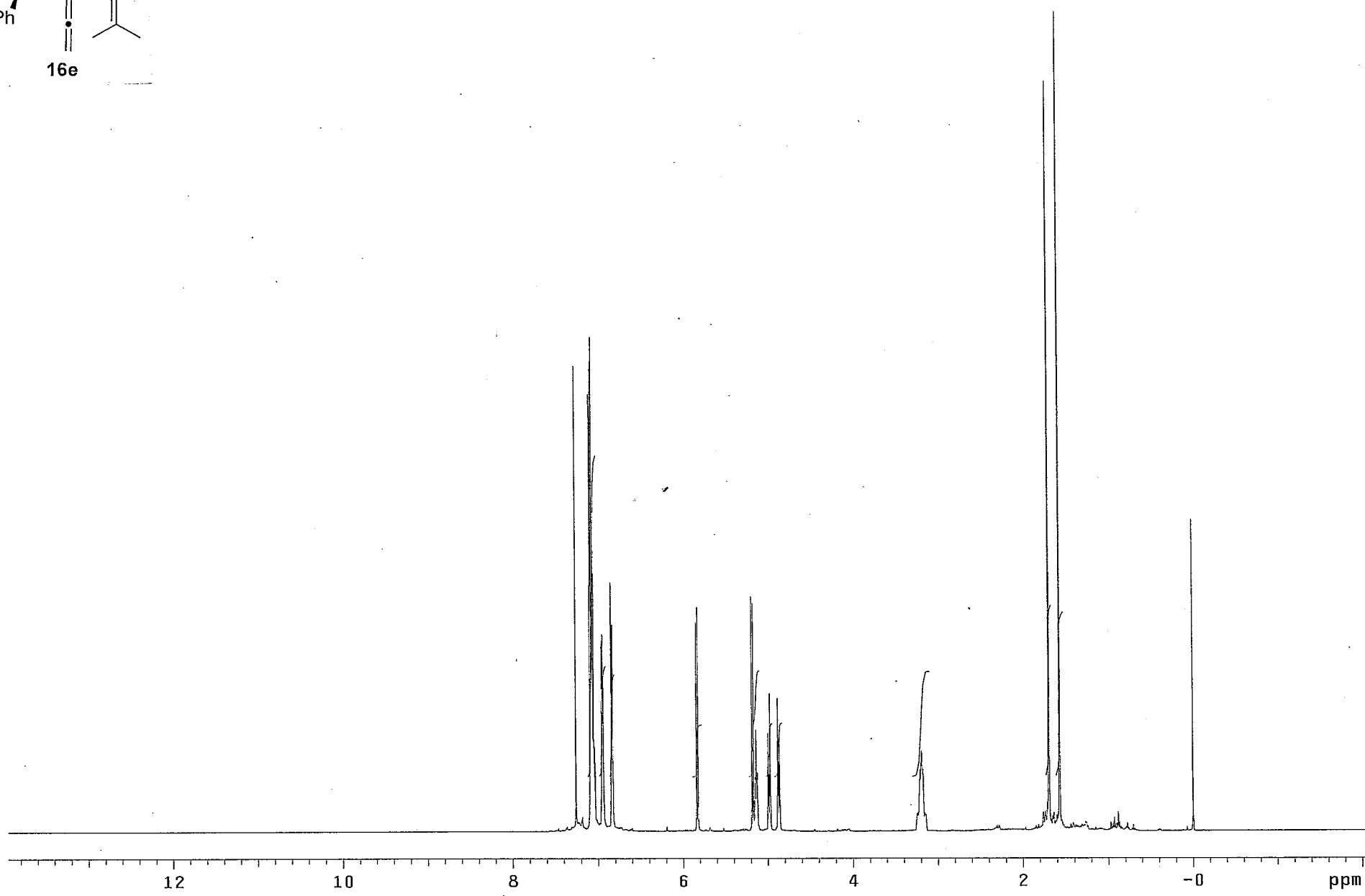
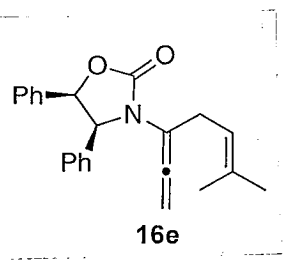


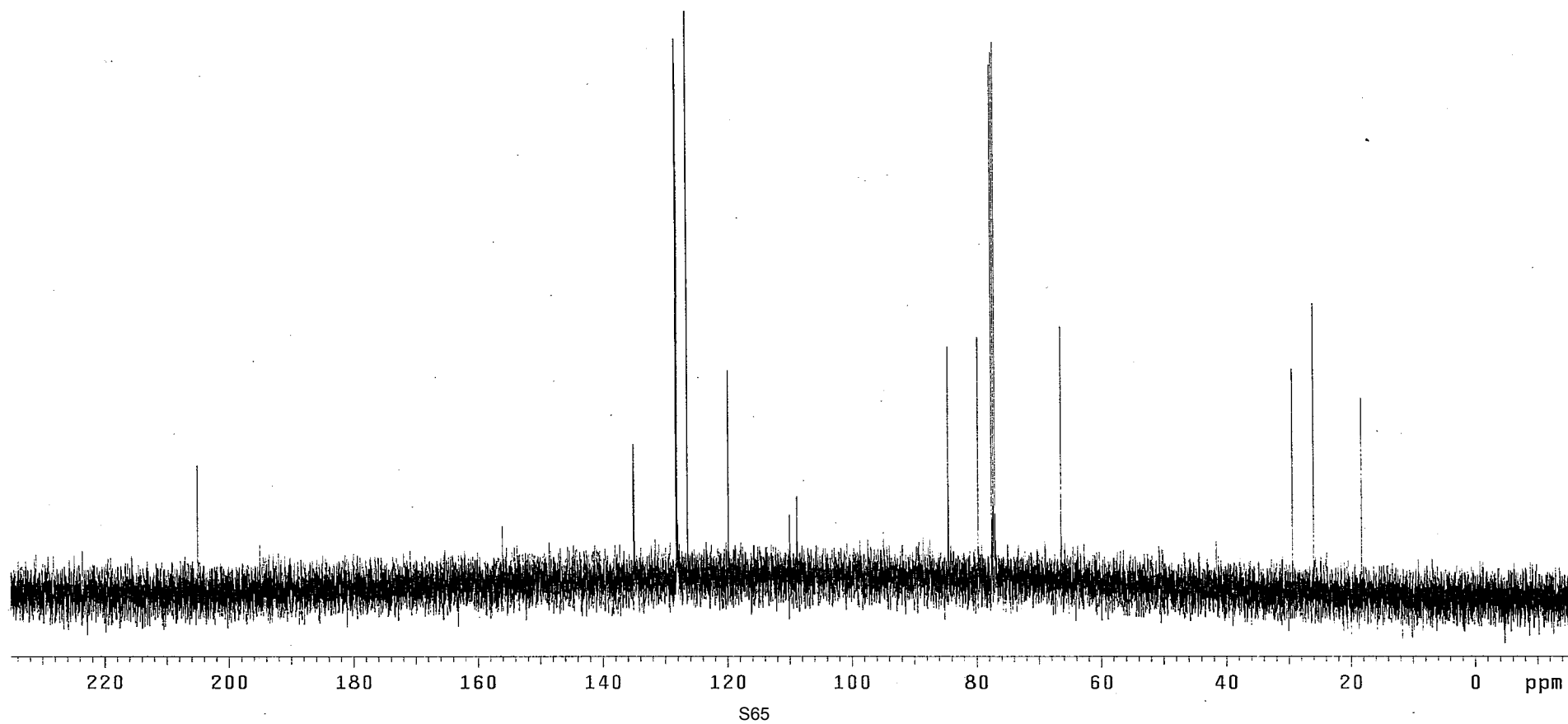
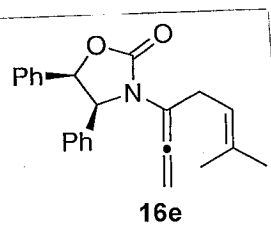


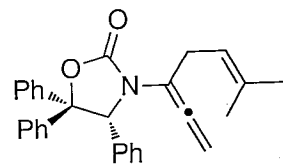
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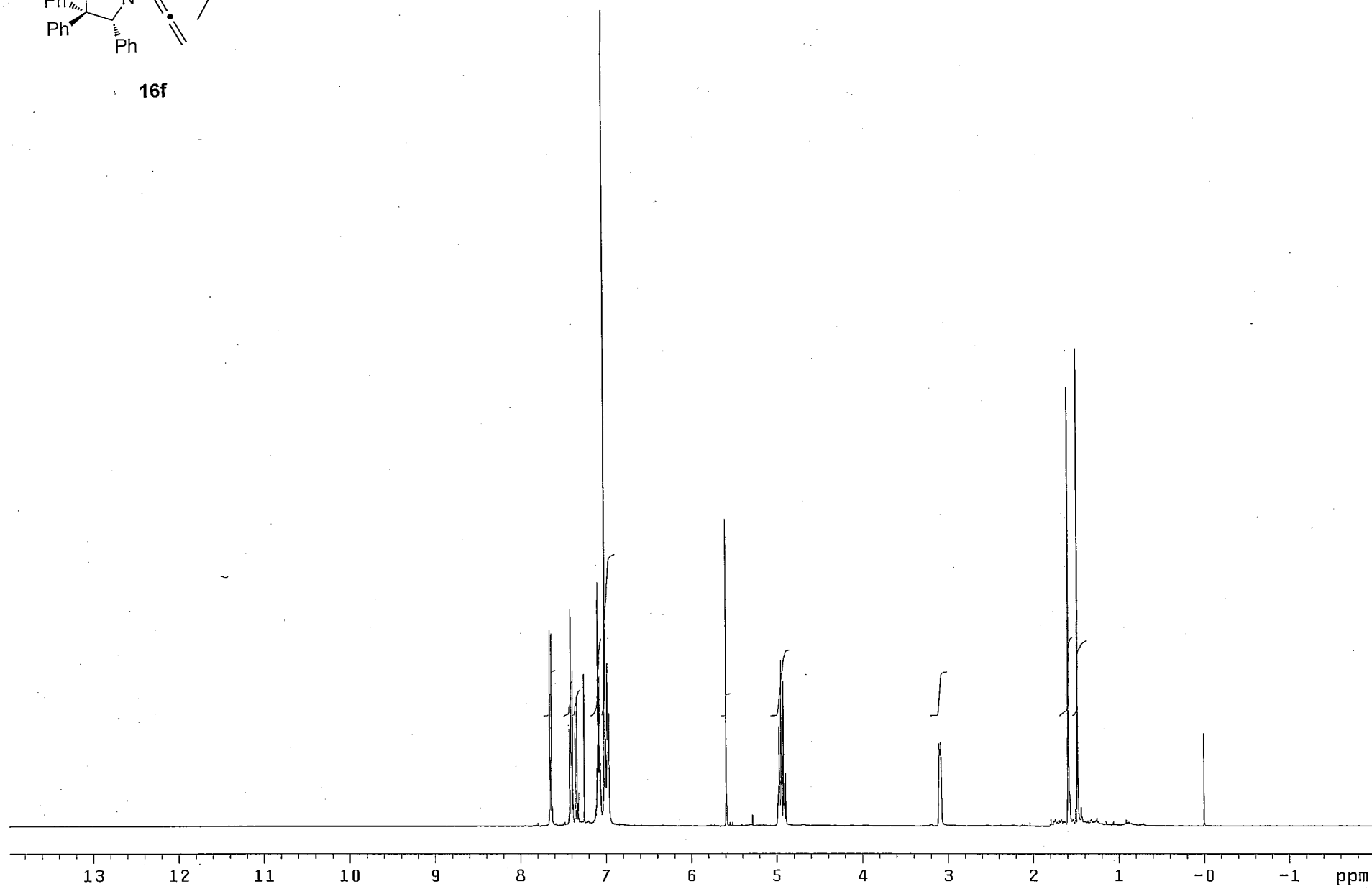


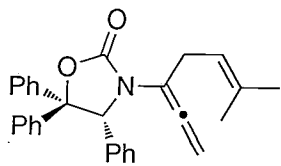




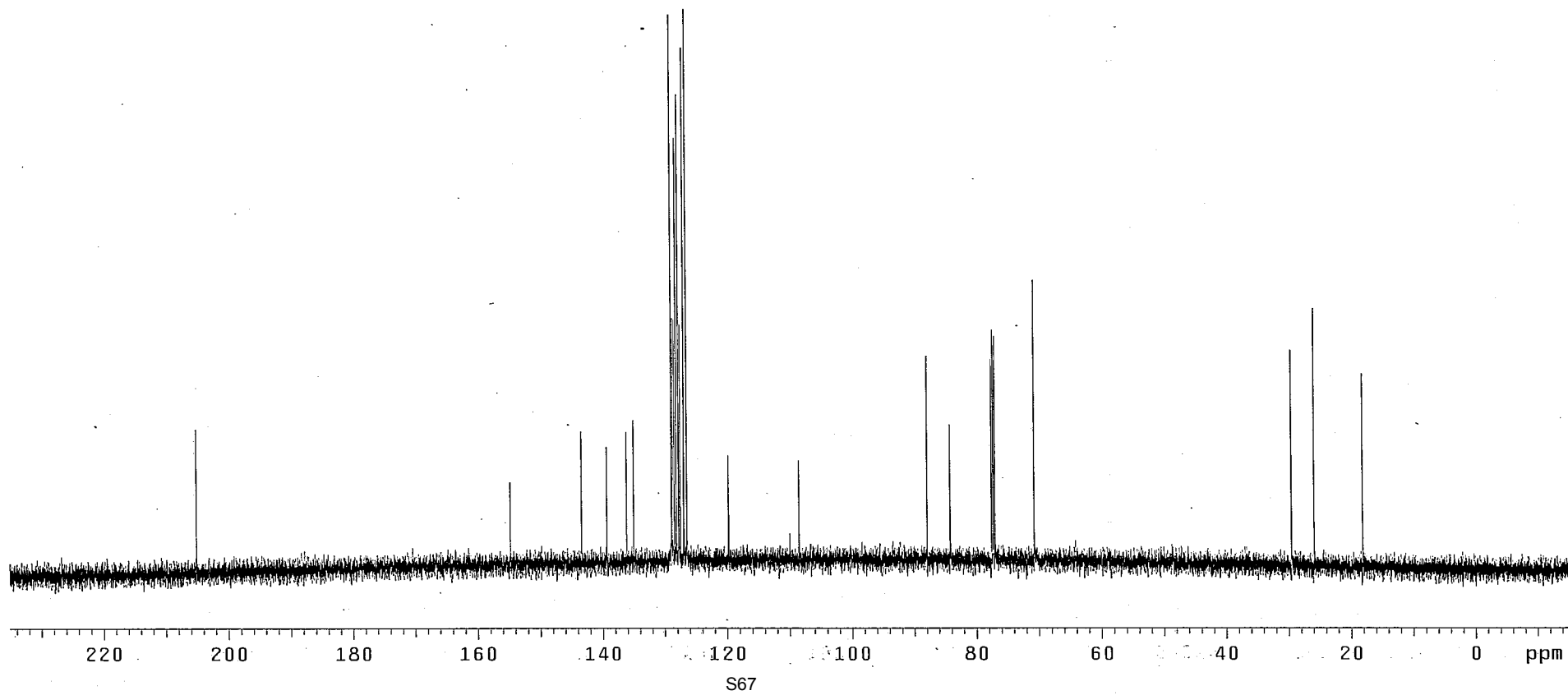


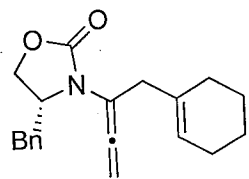
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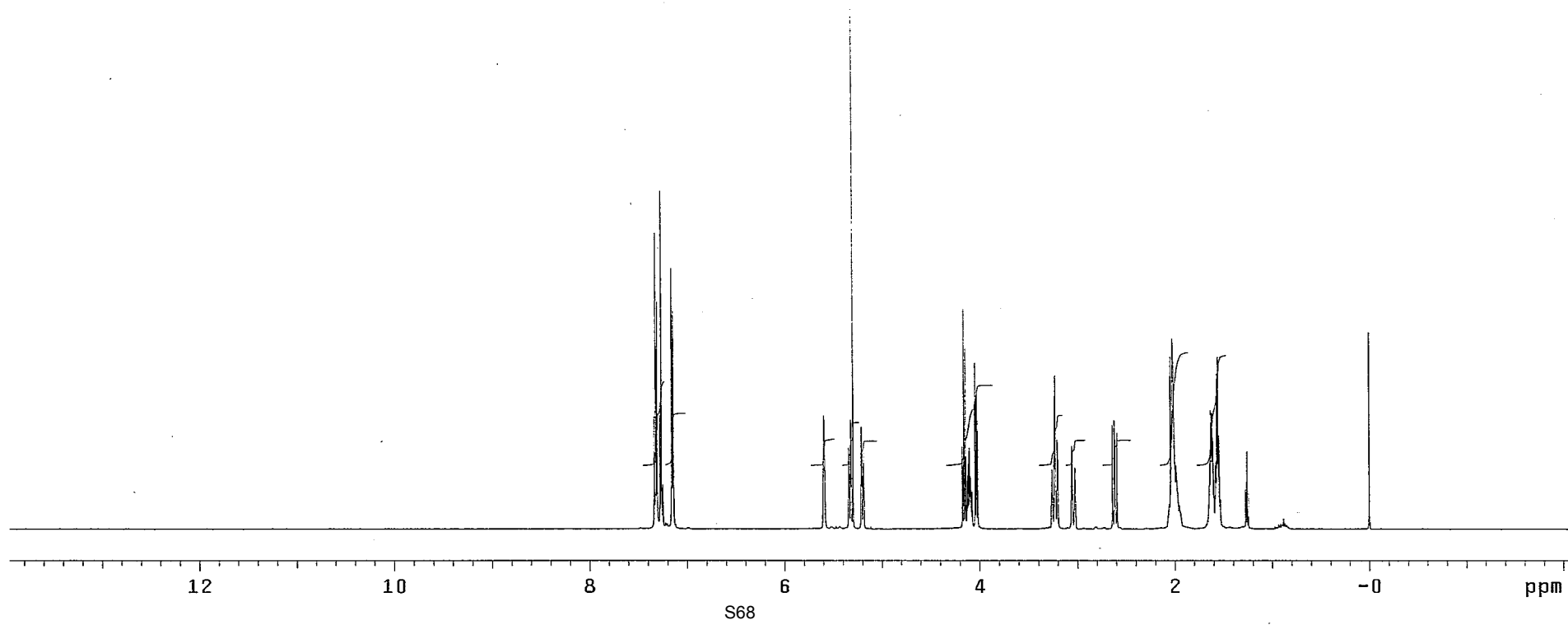


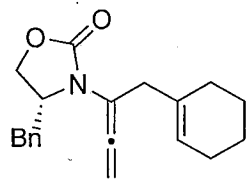
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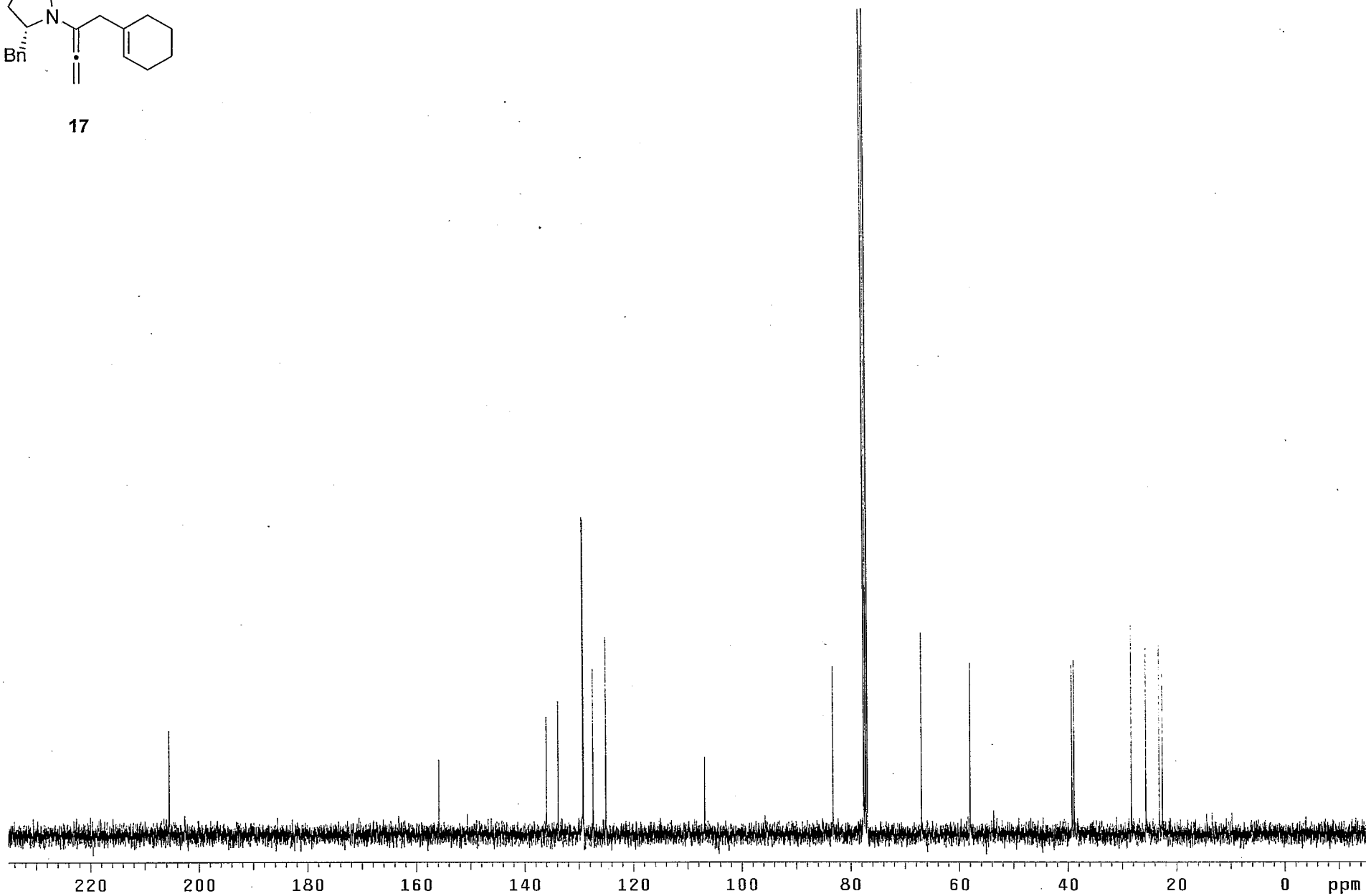


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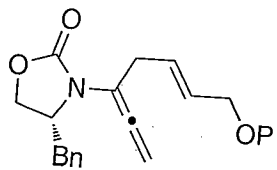




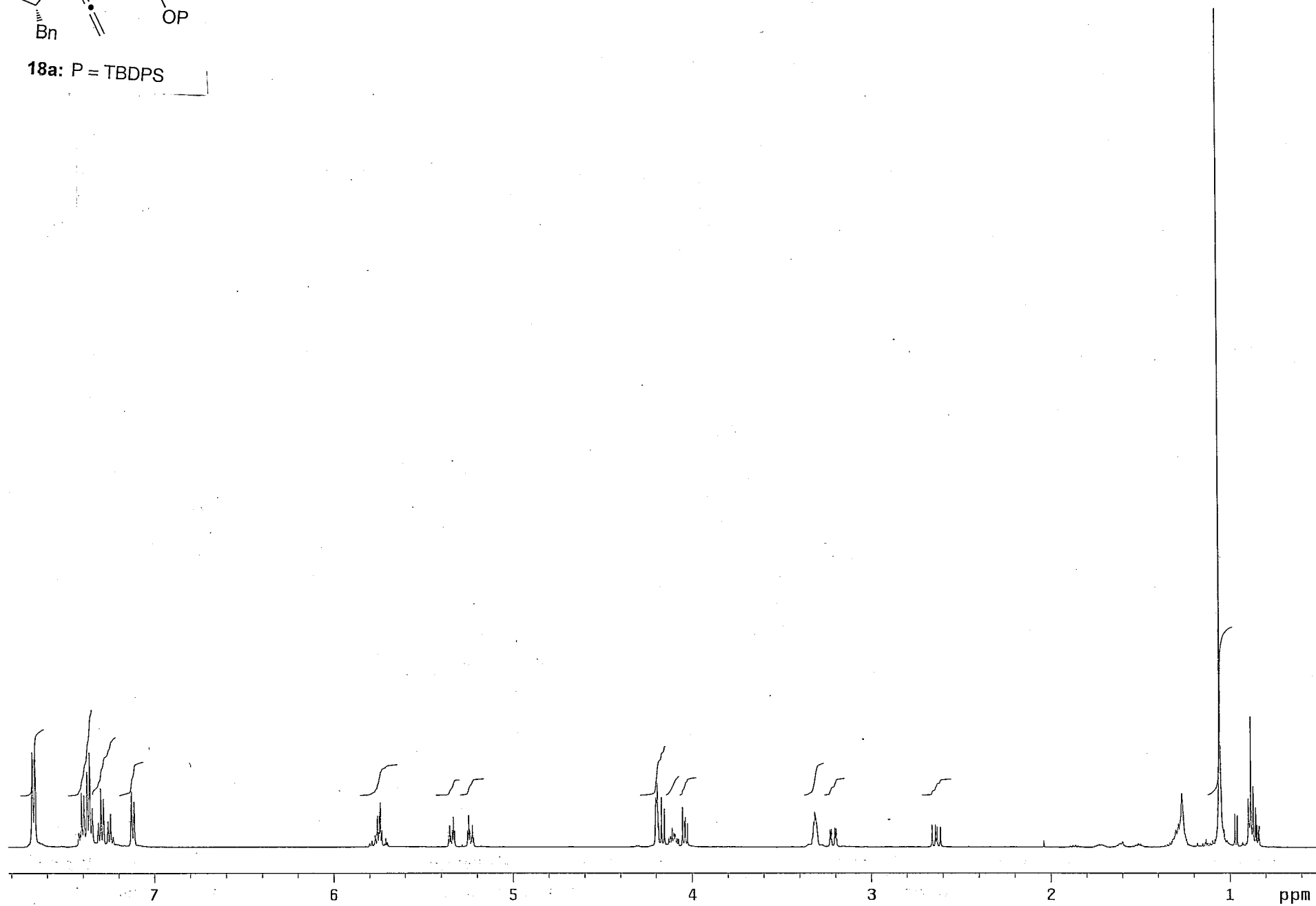
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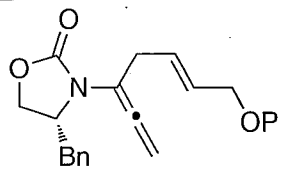




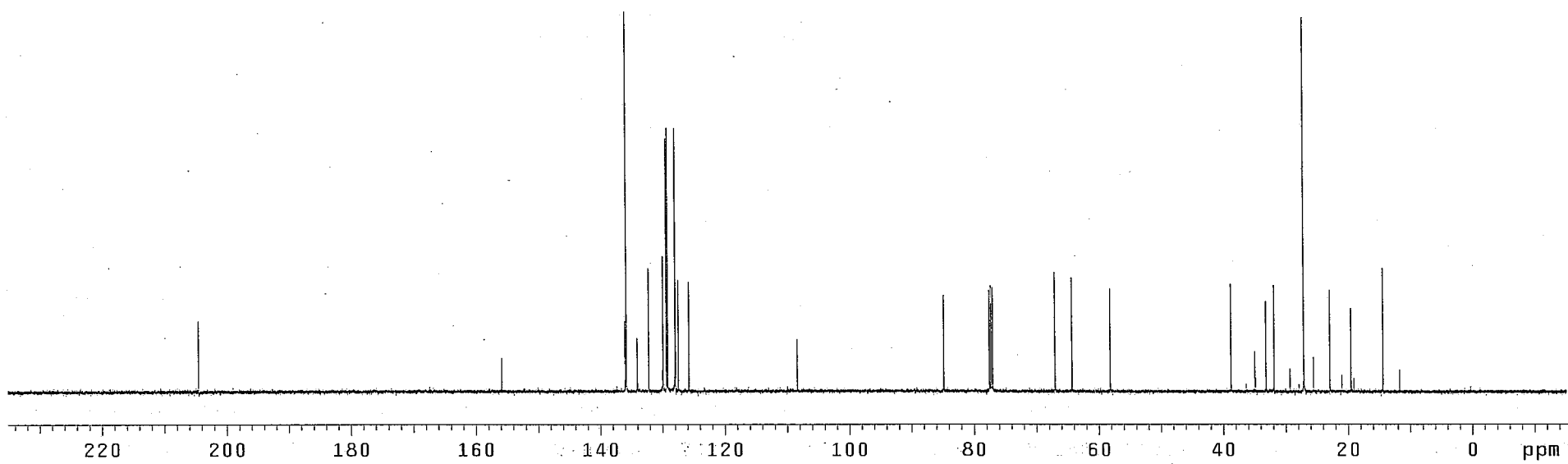


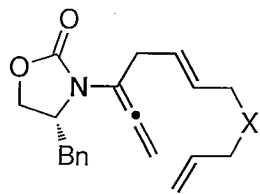
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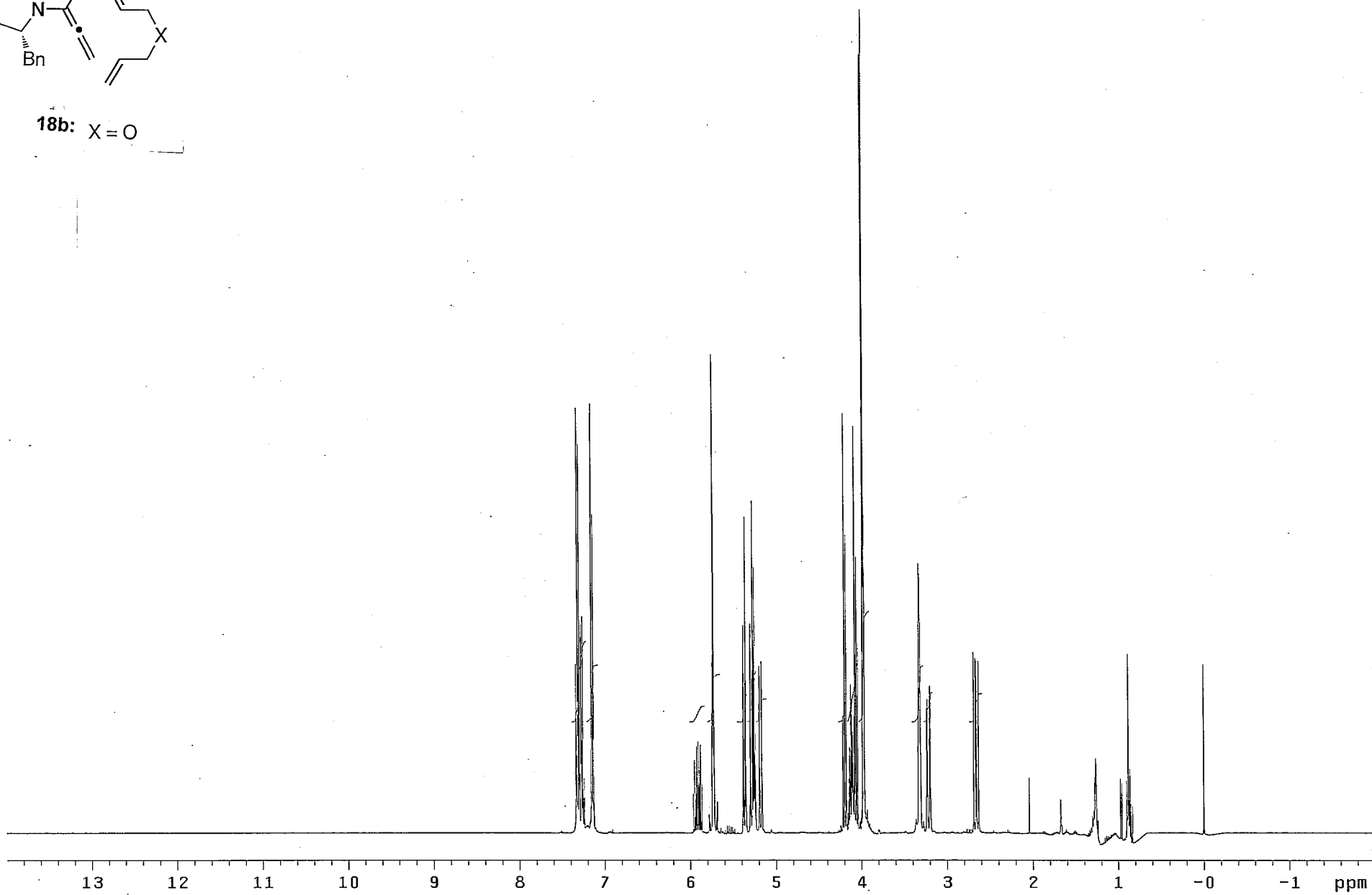


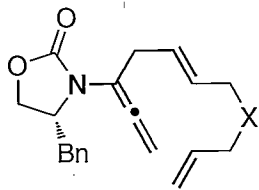
18a: P = TBDPS



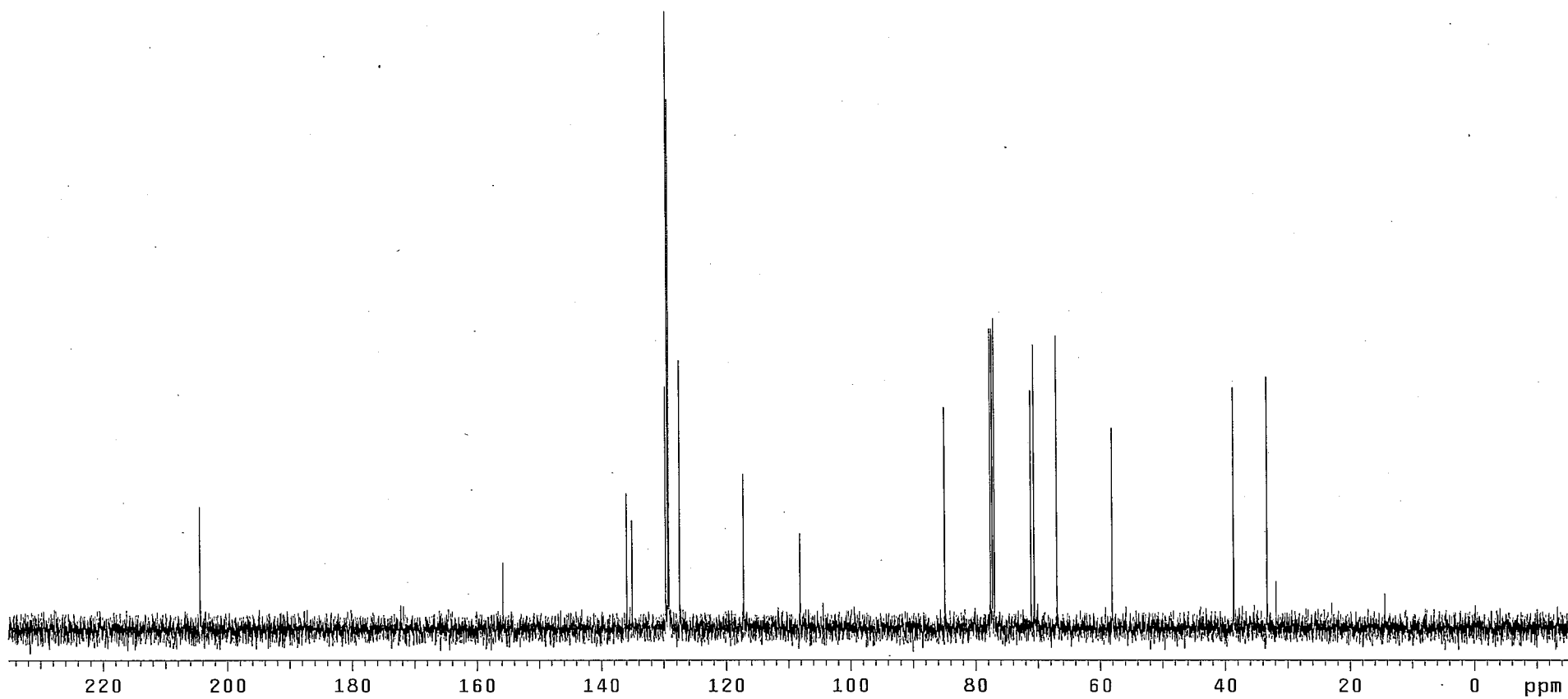


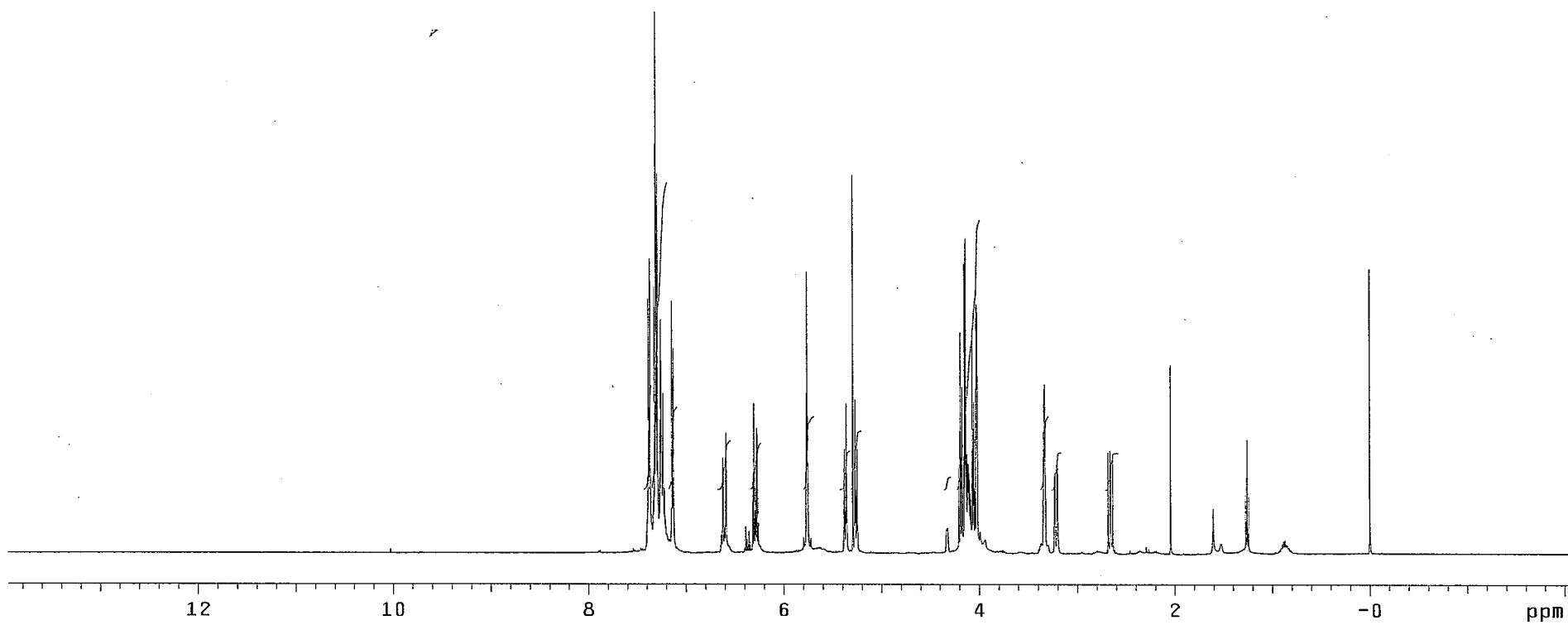
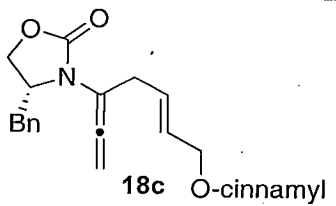
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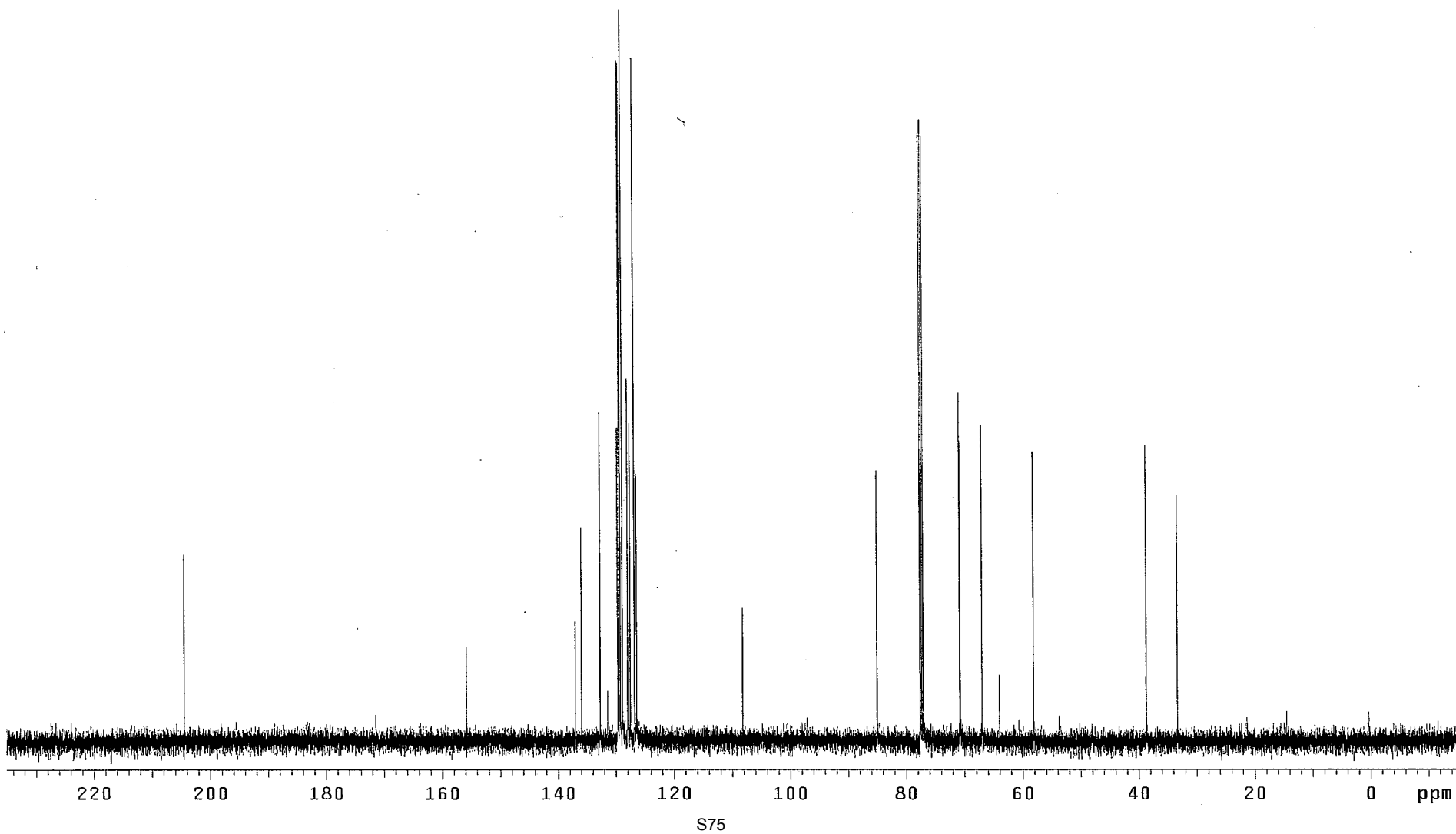
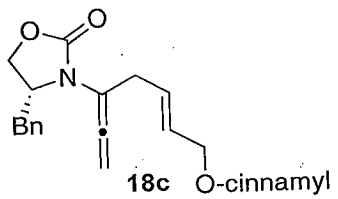


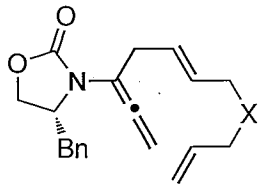


18b: X = O

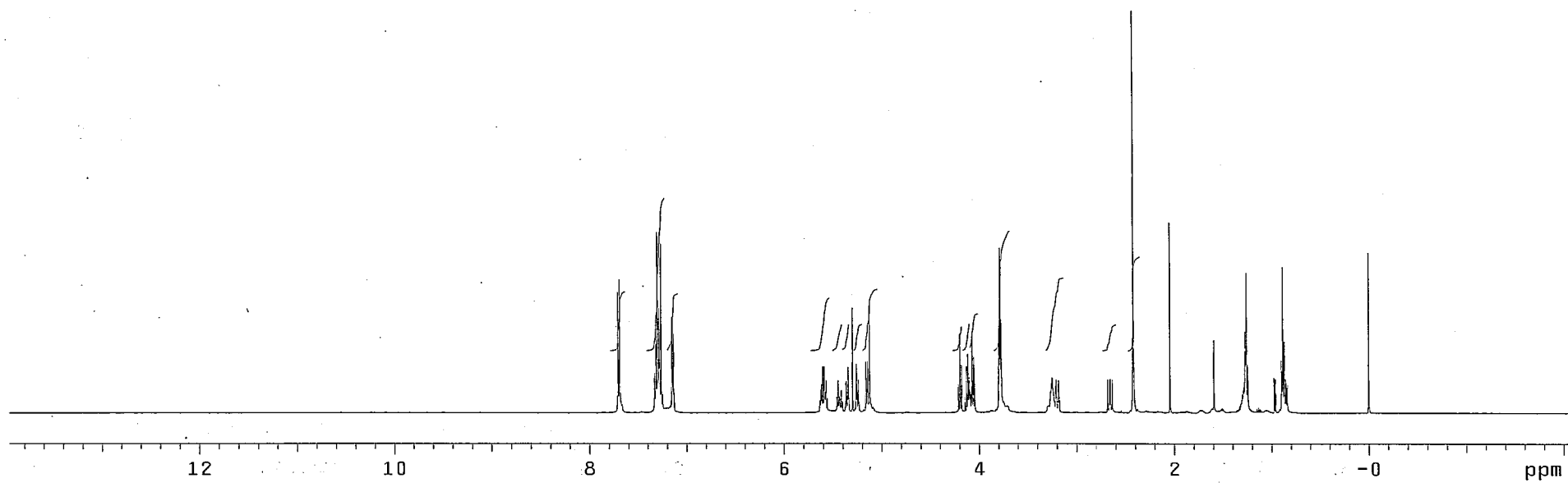


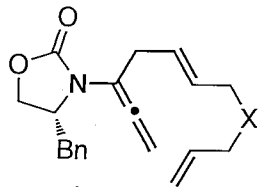




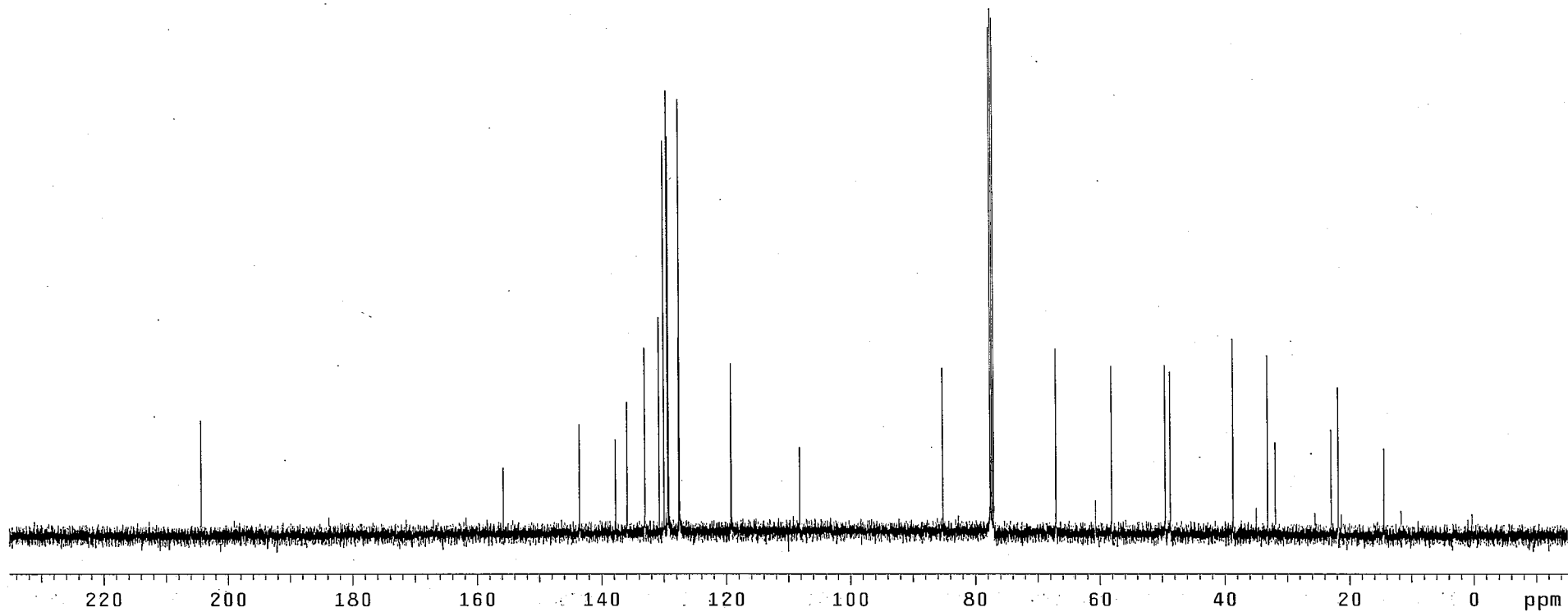


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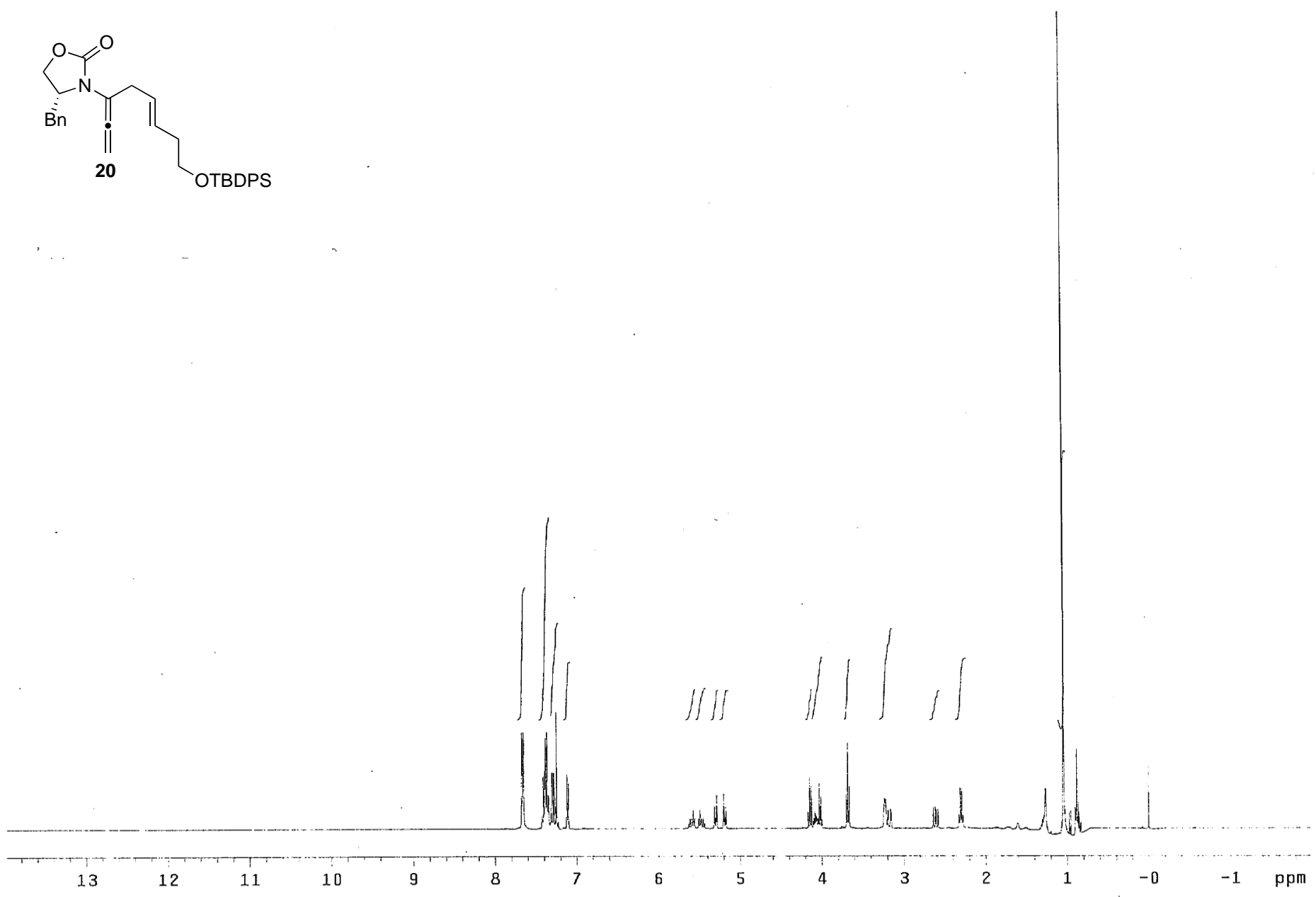
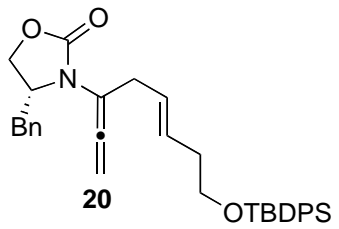


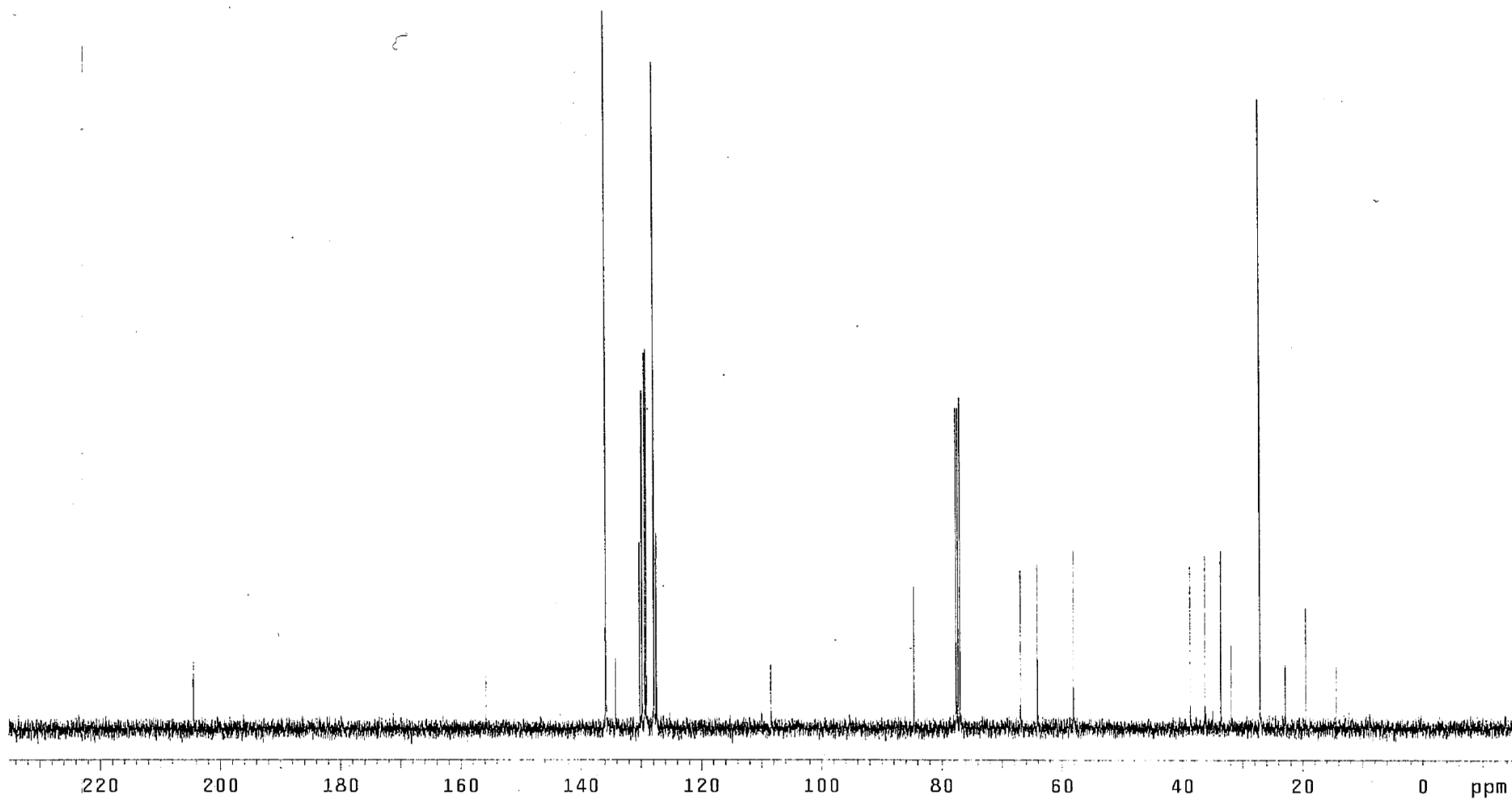
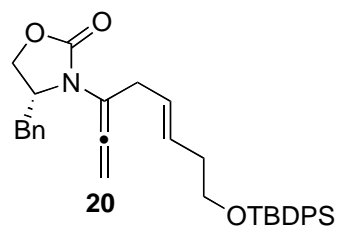


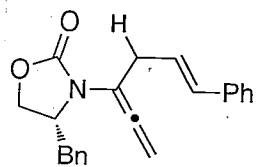
19: X = NTs



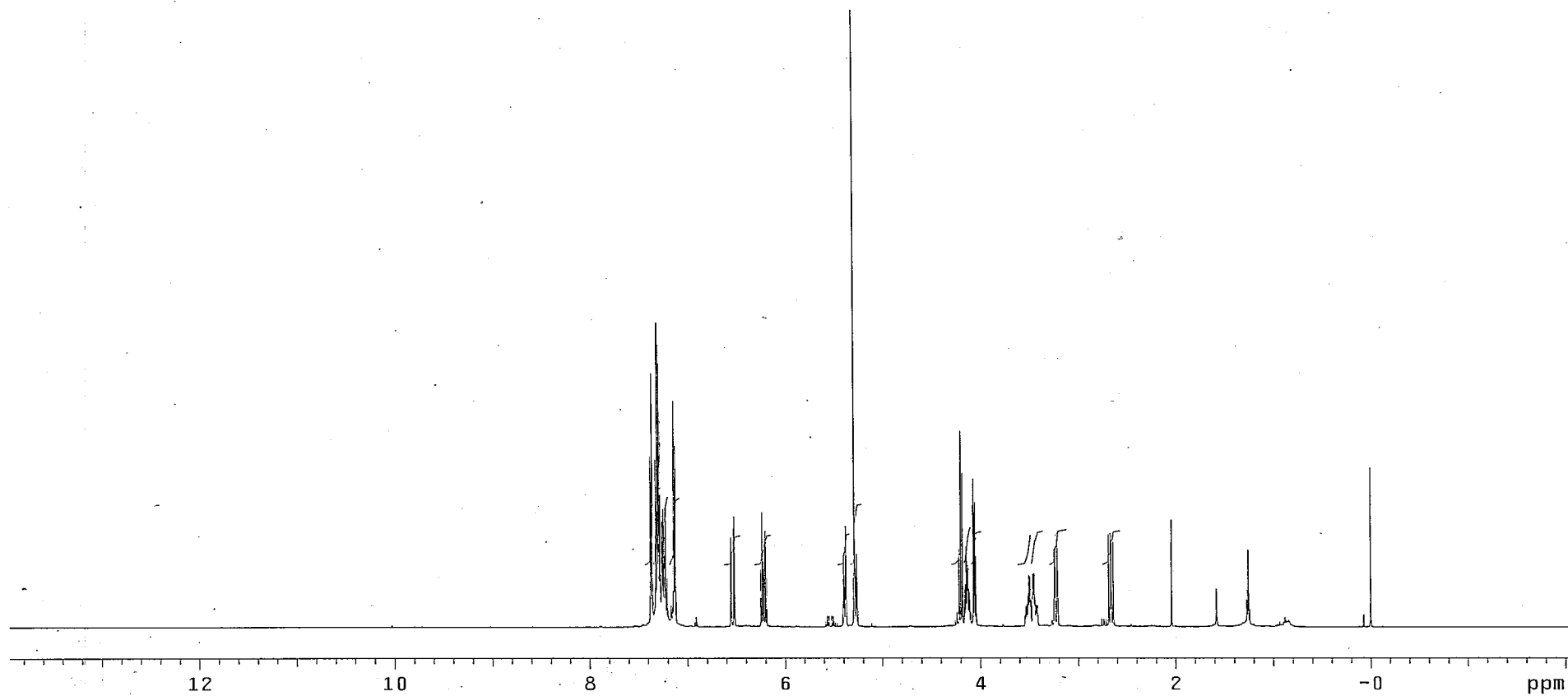




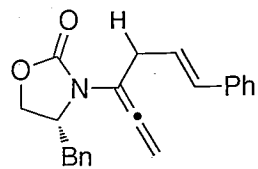




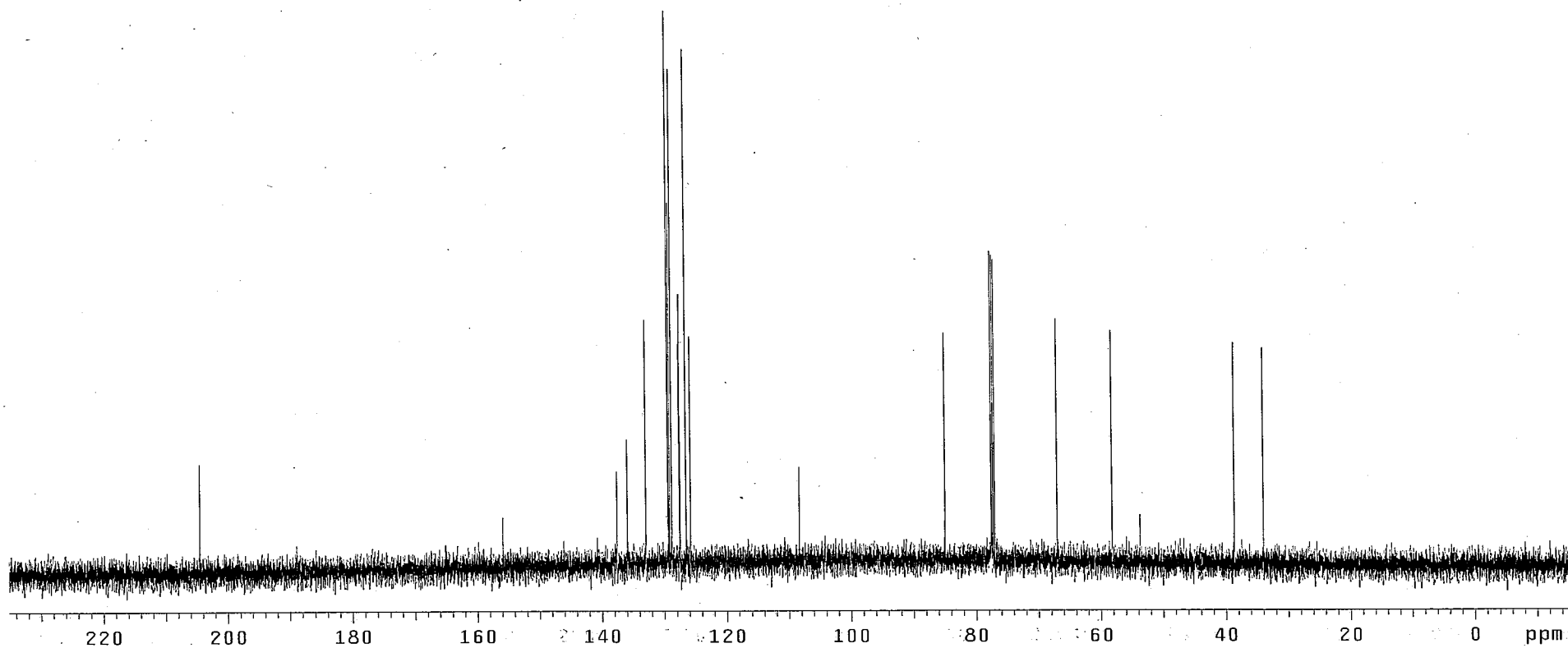
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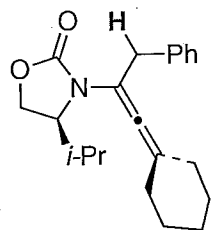


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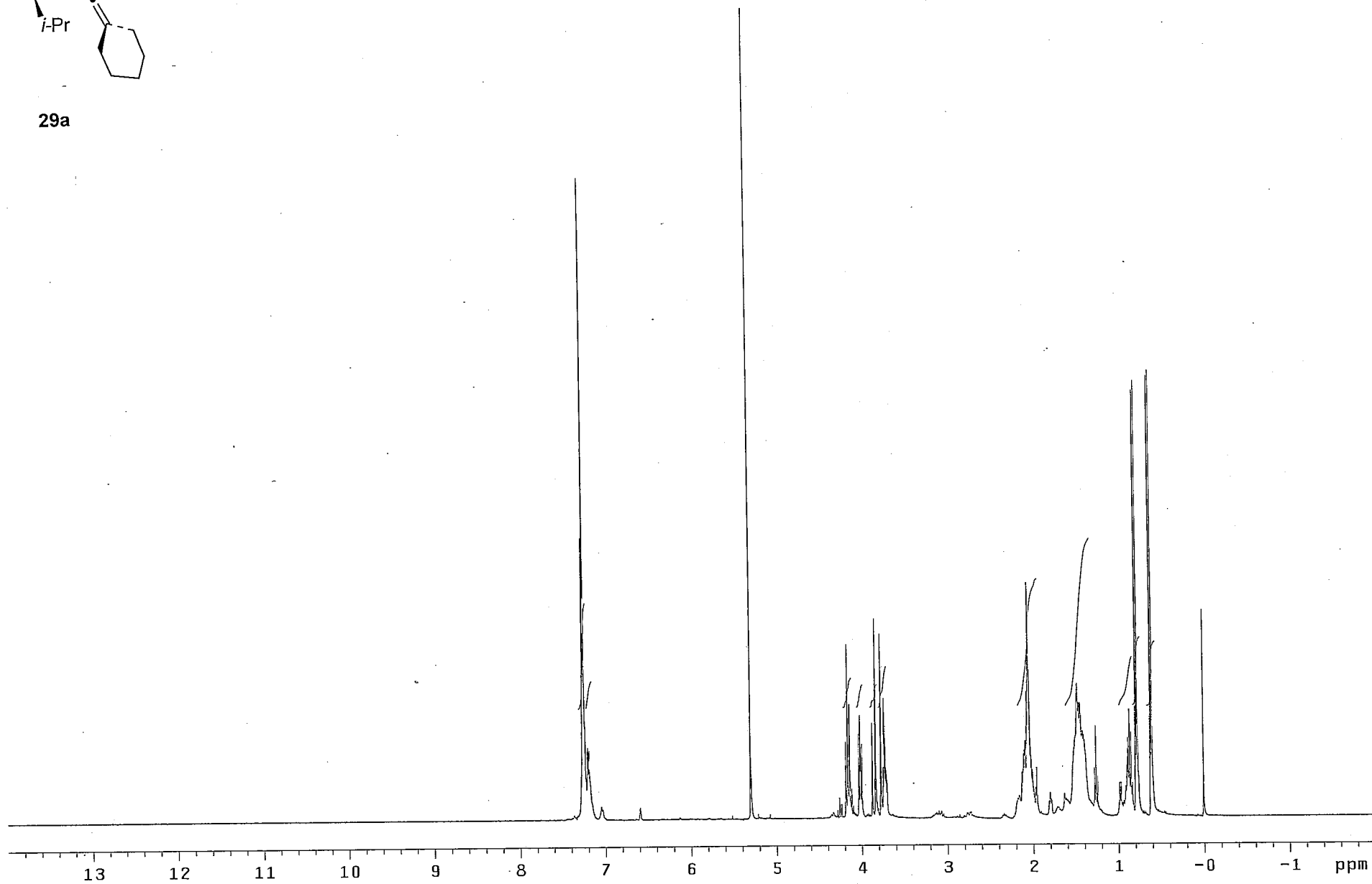


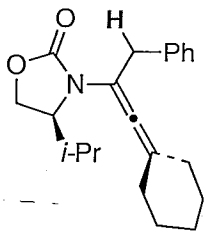
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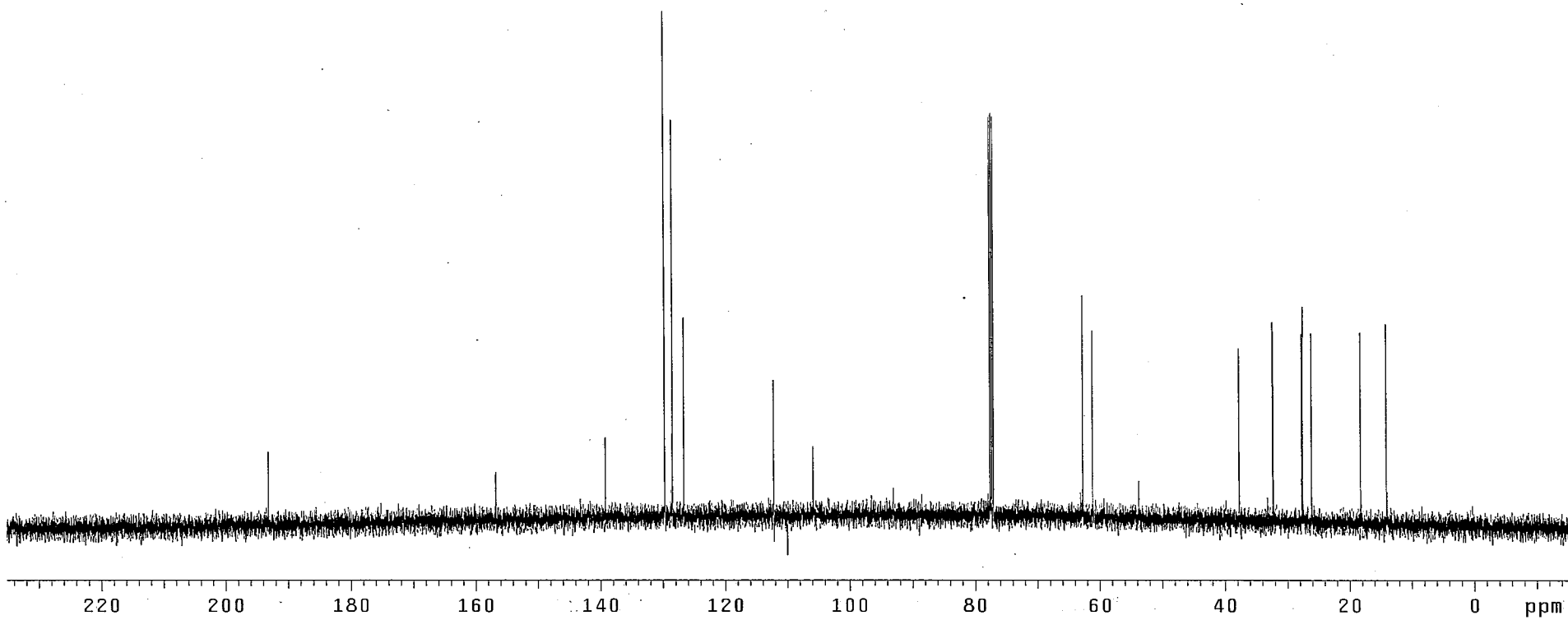


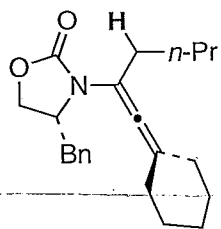
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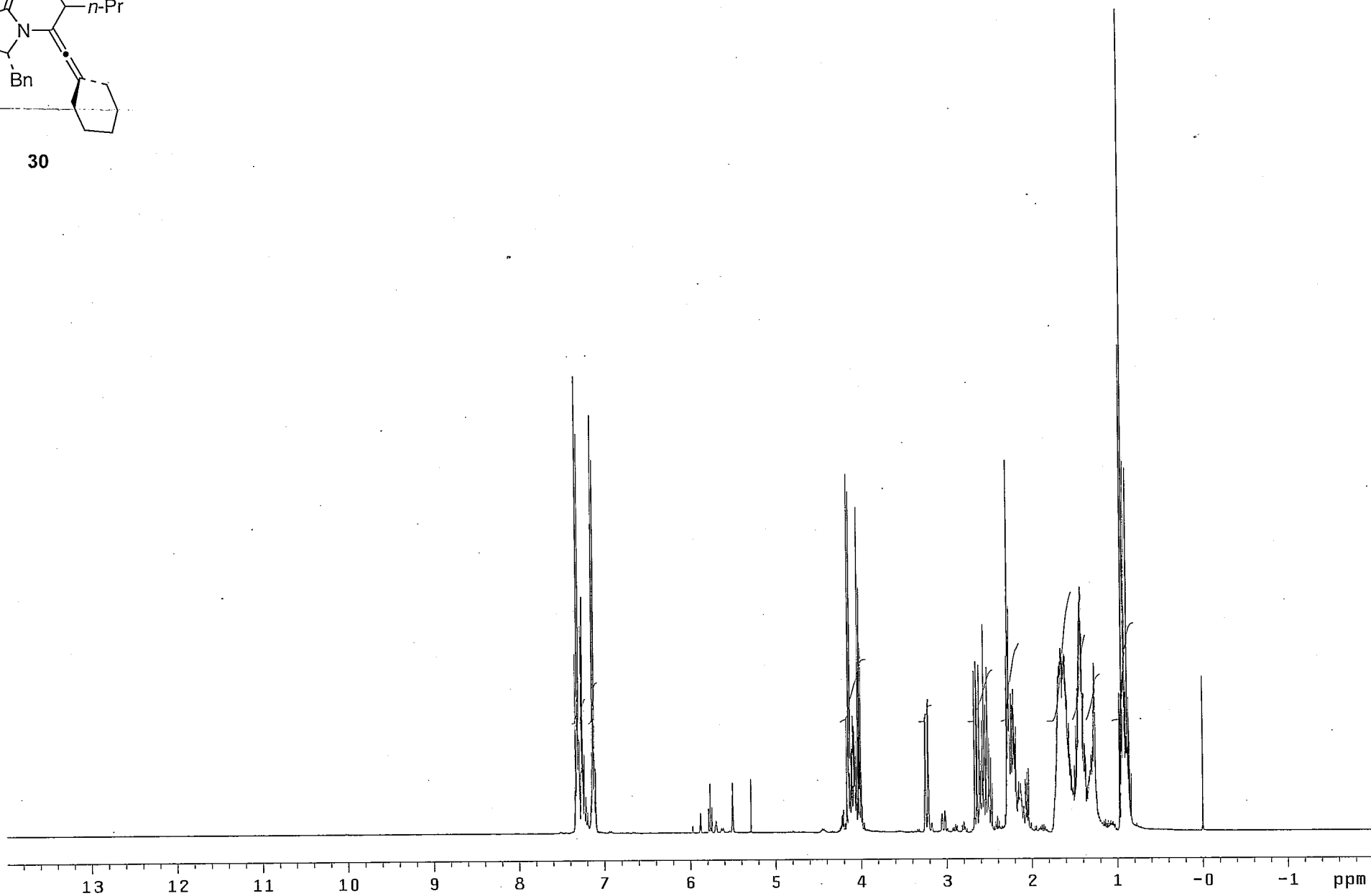


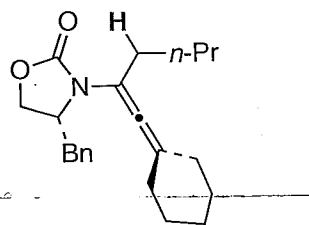
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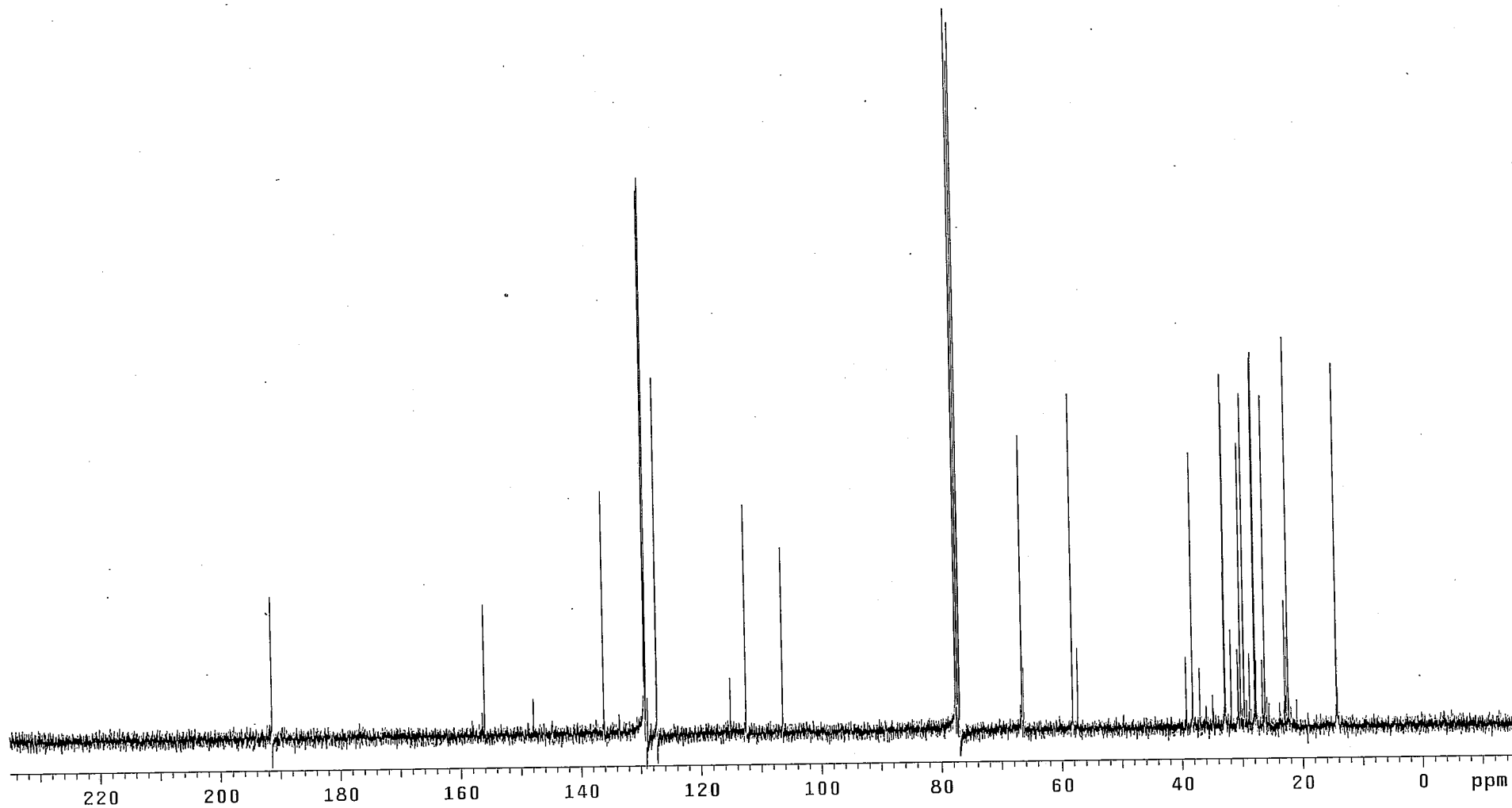


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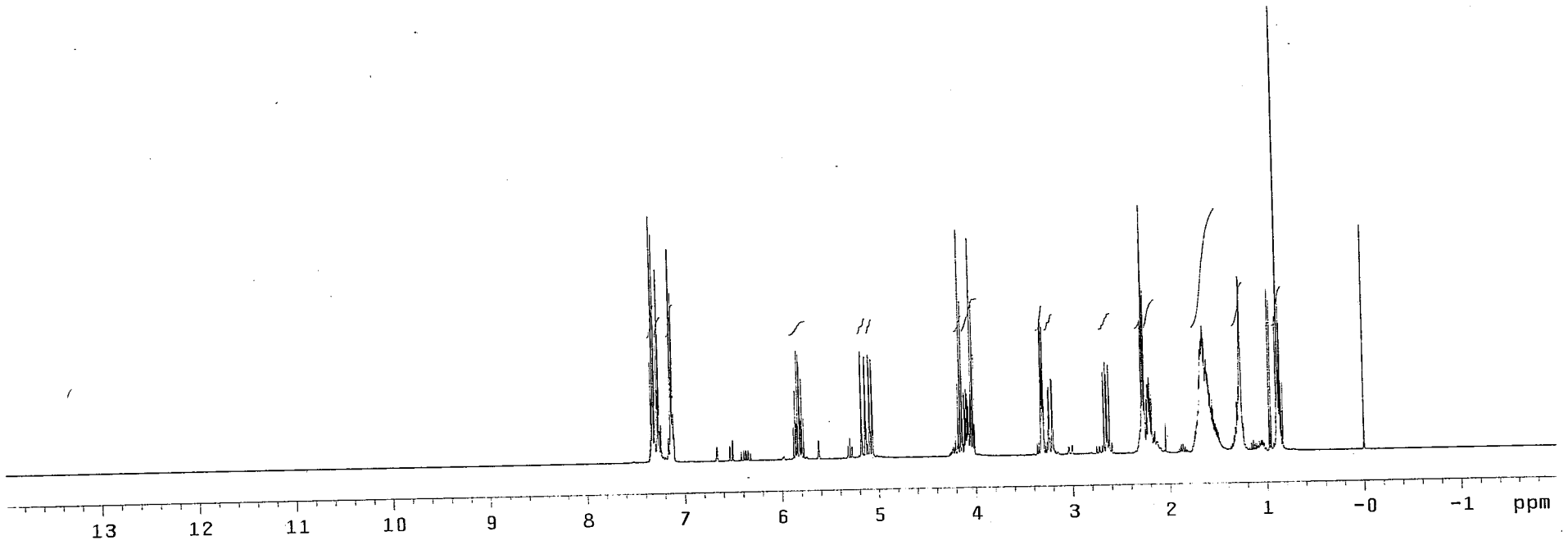
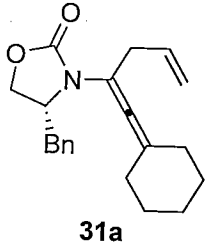


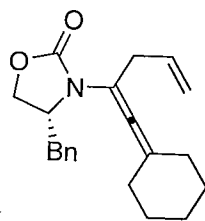


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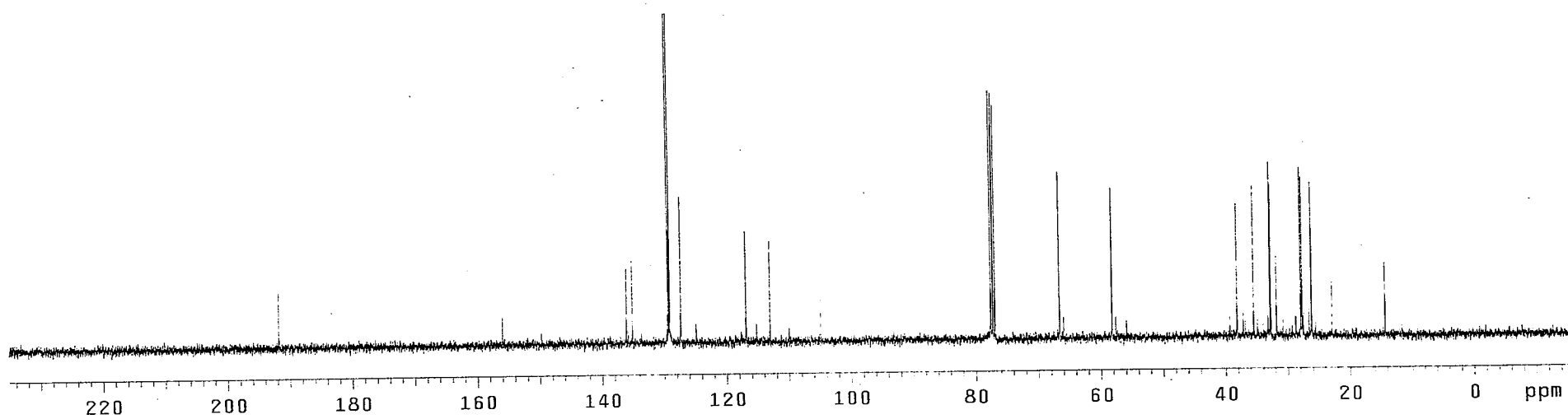


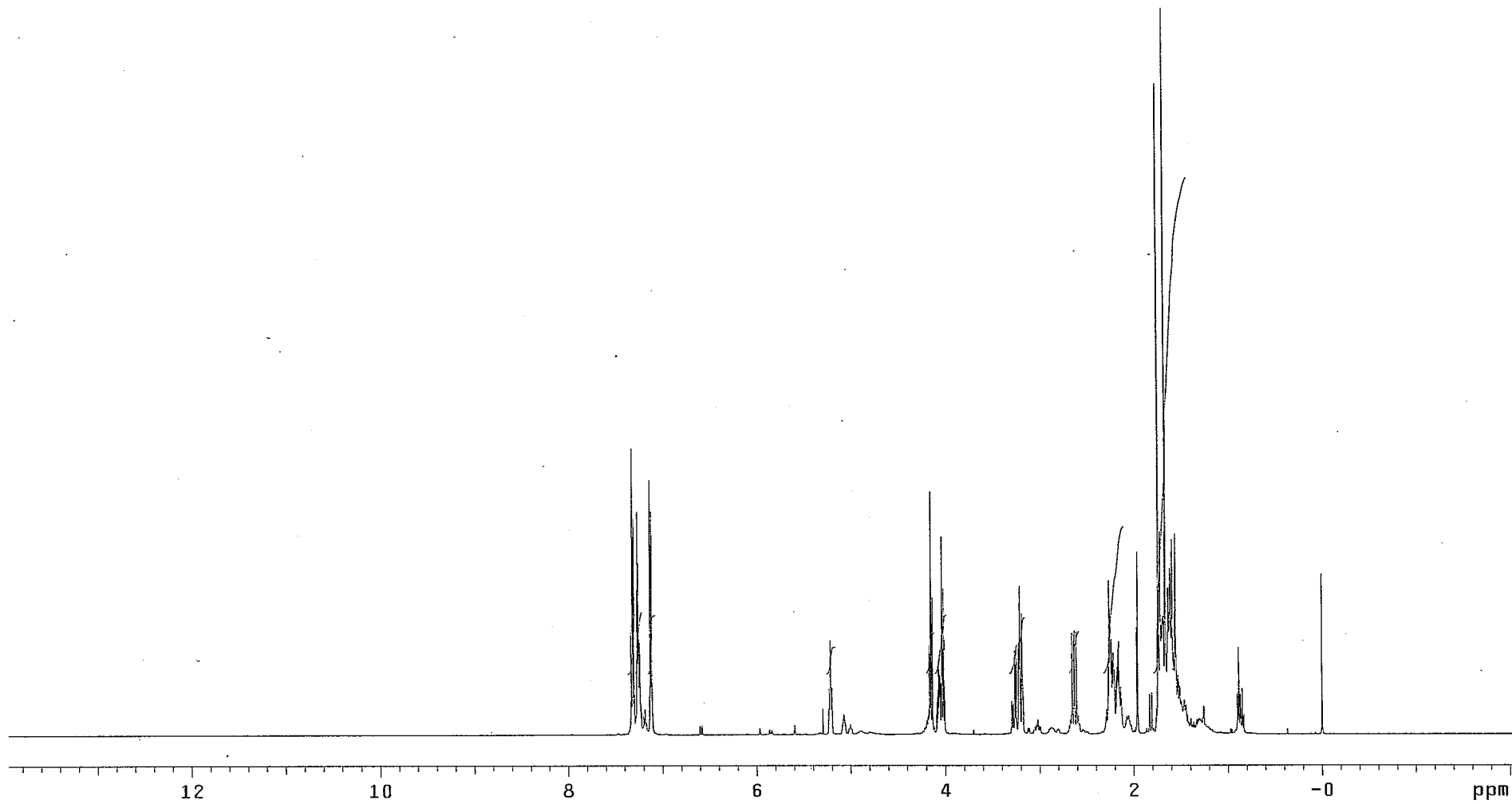
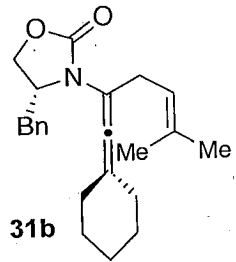


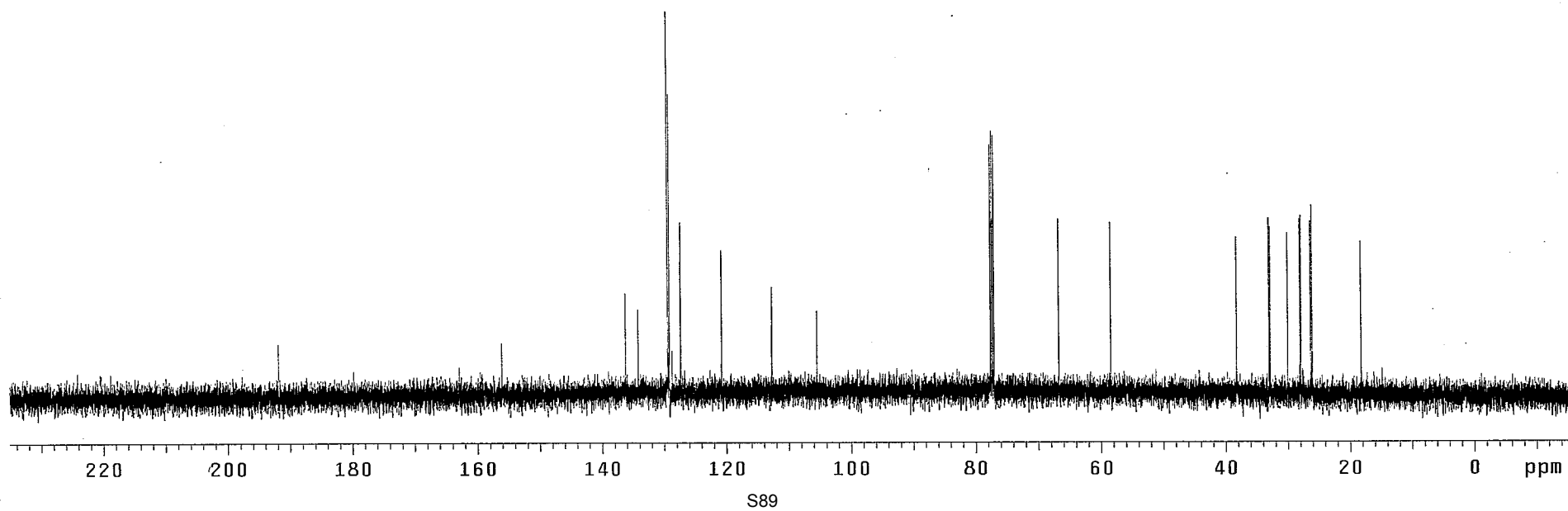
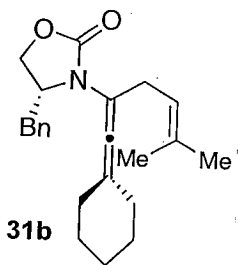


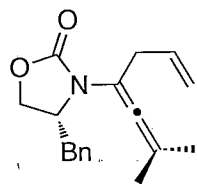


31a

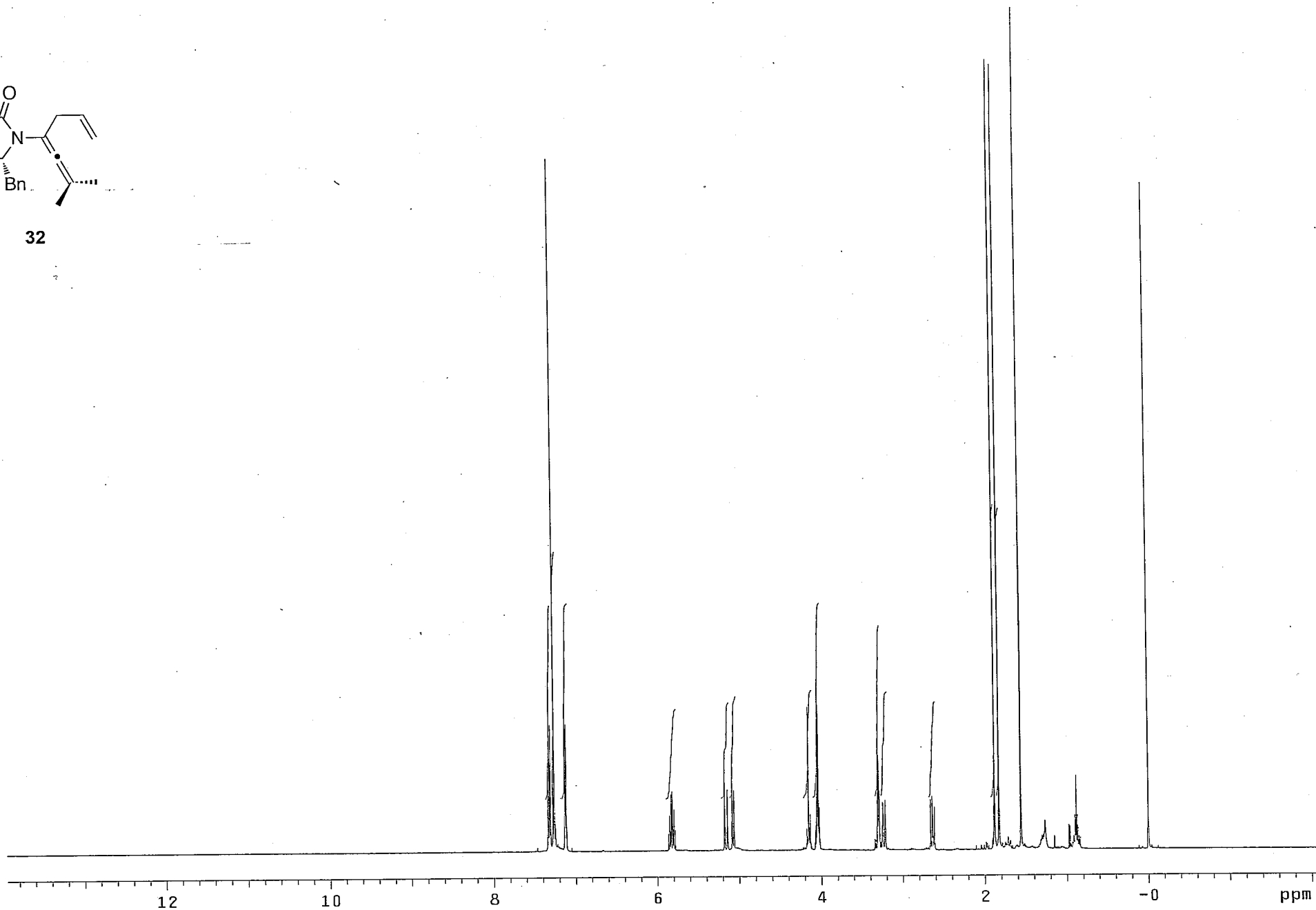


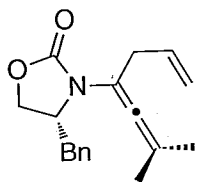




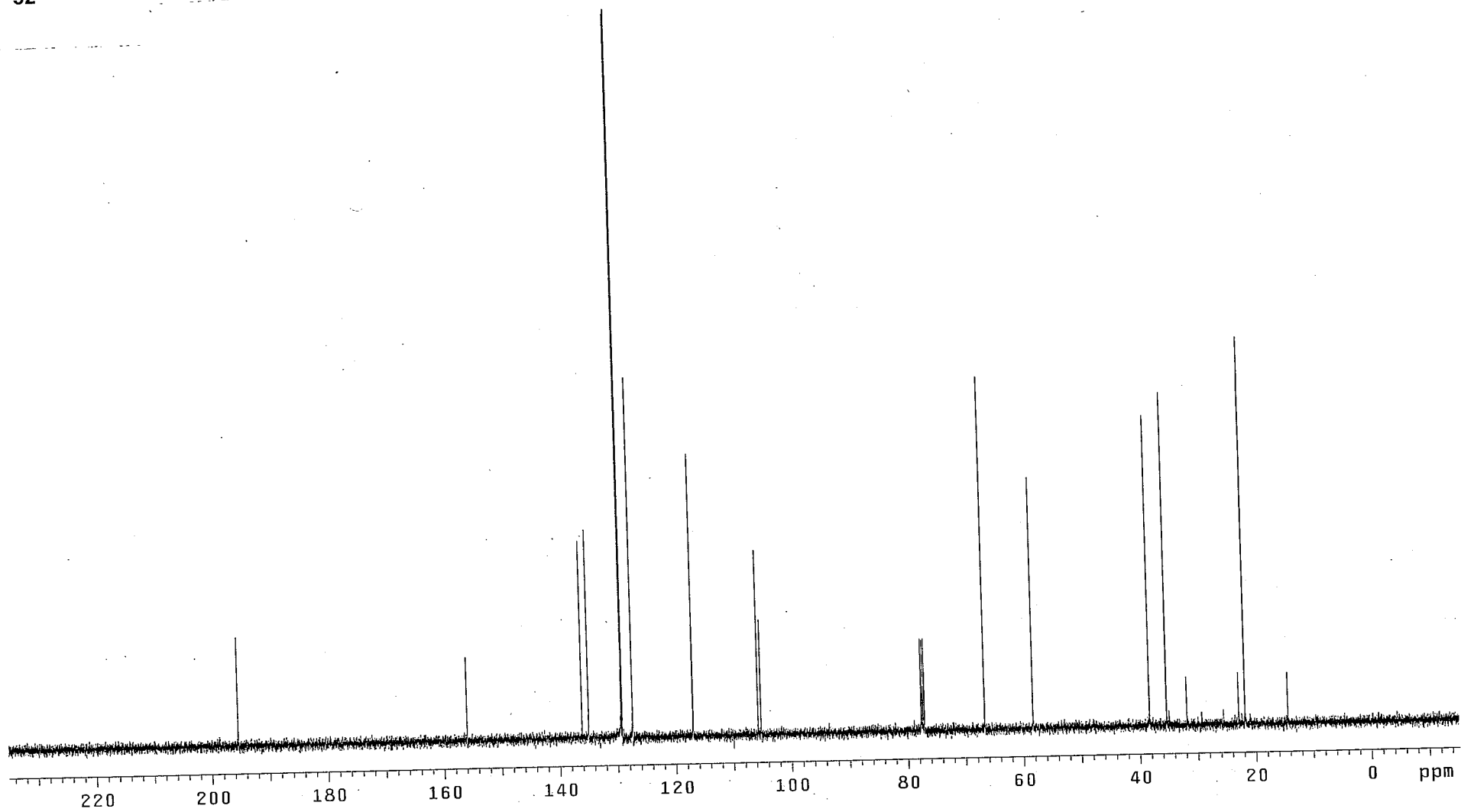


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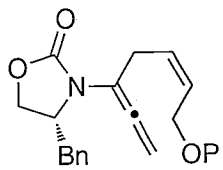




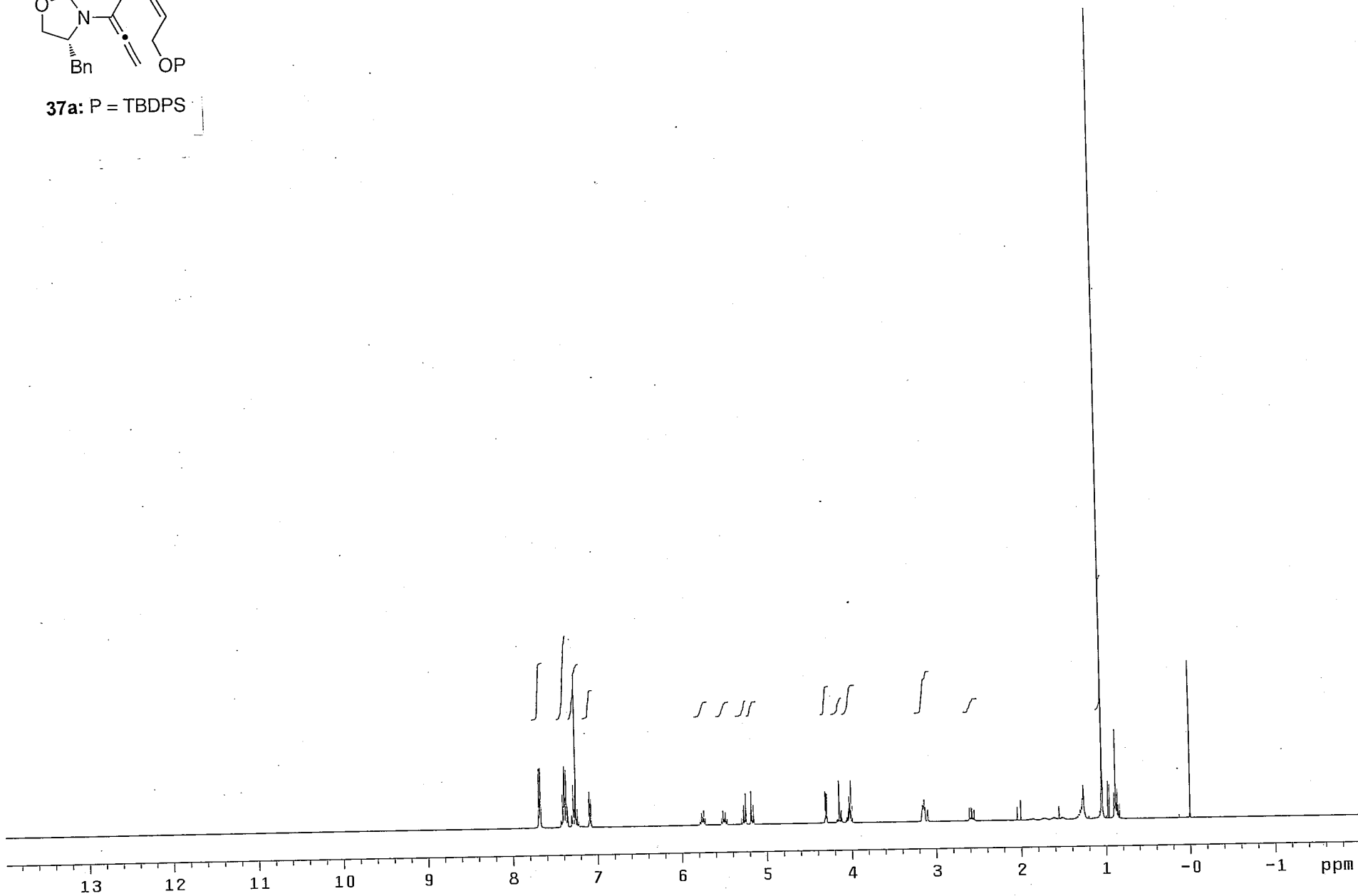
32

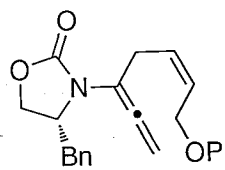


S91

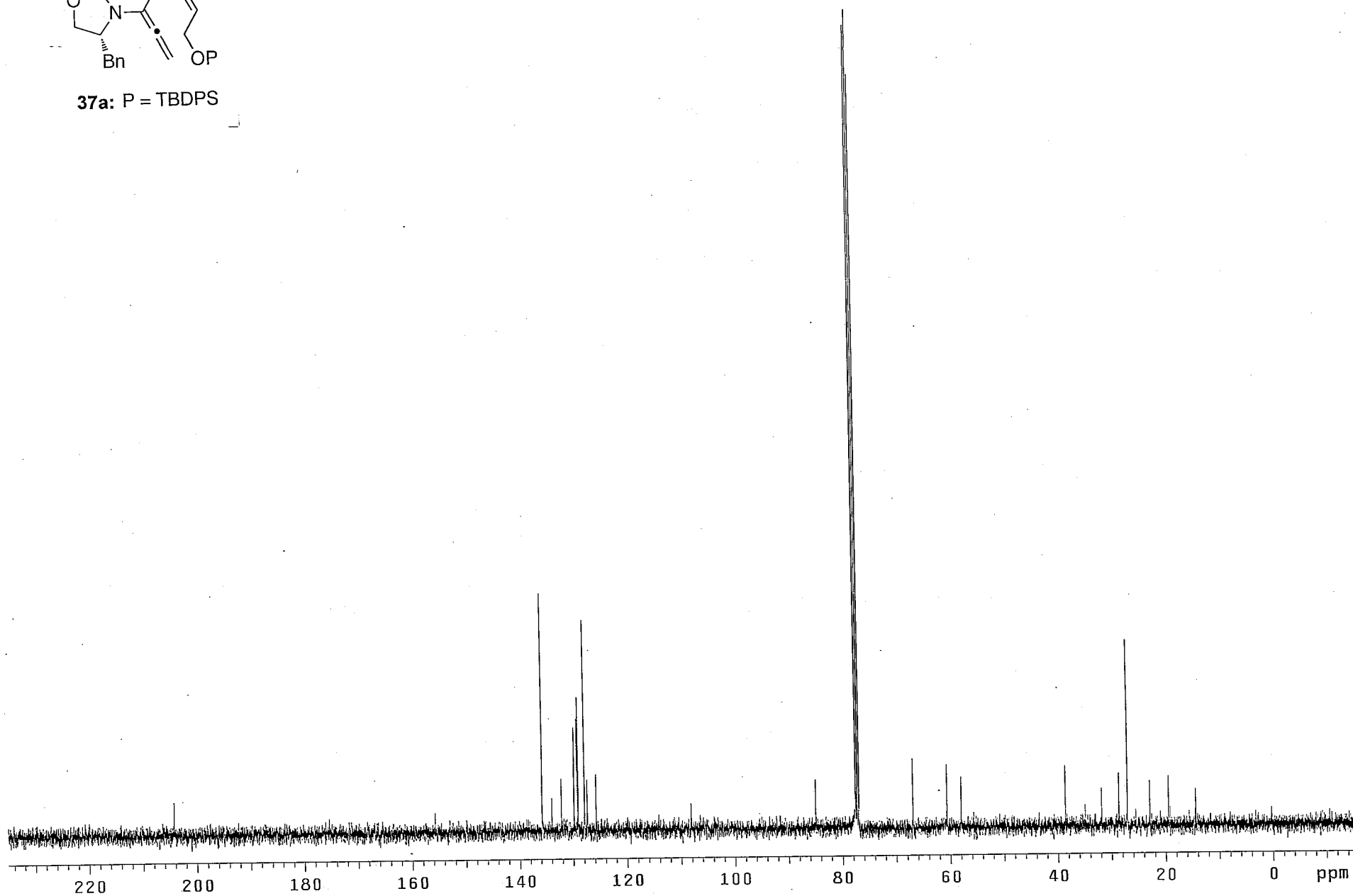


37a: P = TBDPS

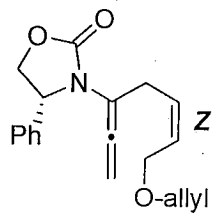




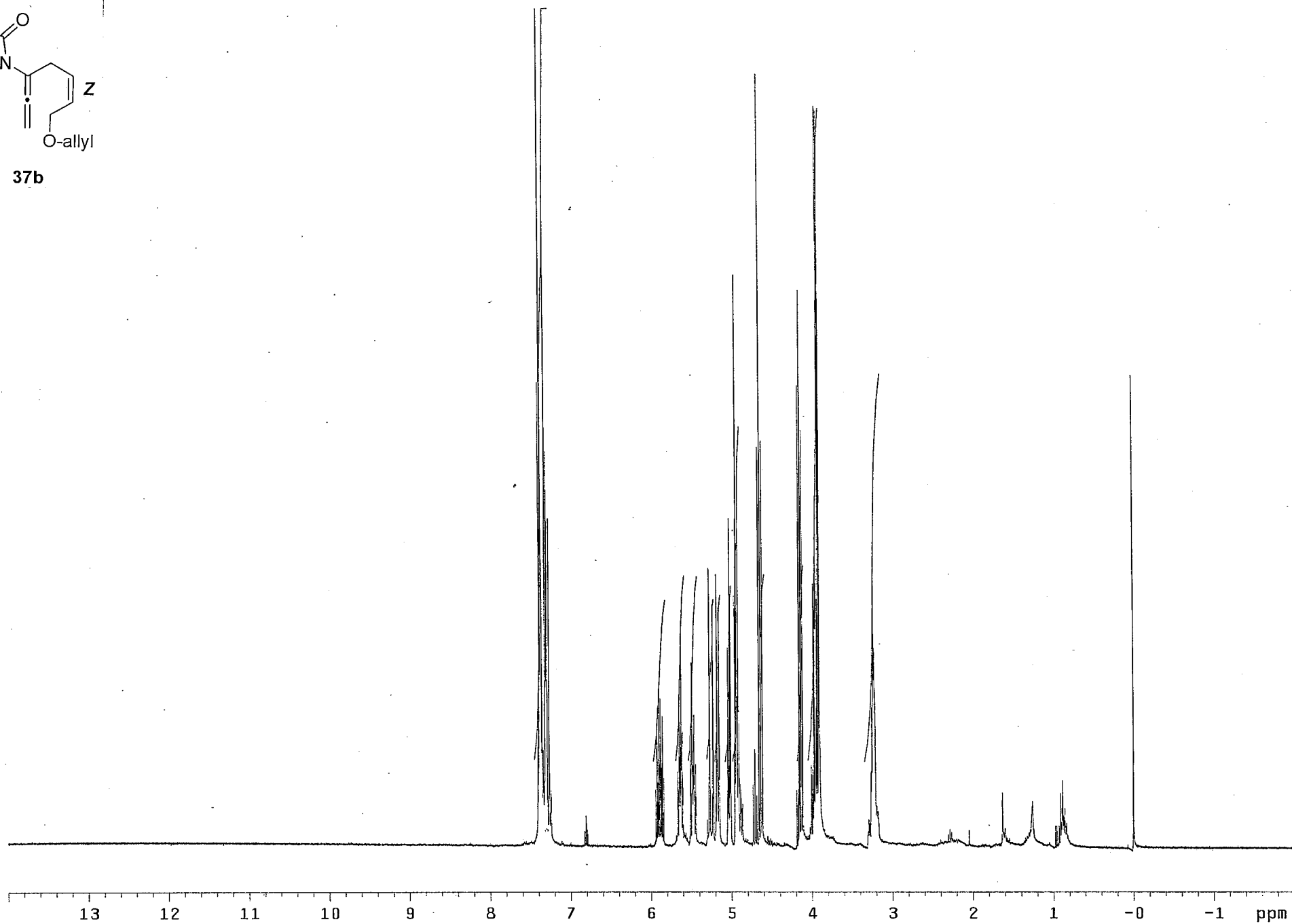
37a: P = TBDPS

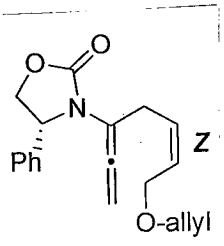




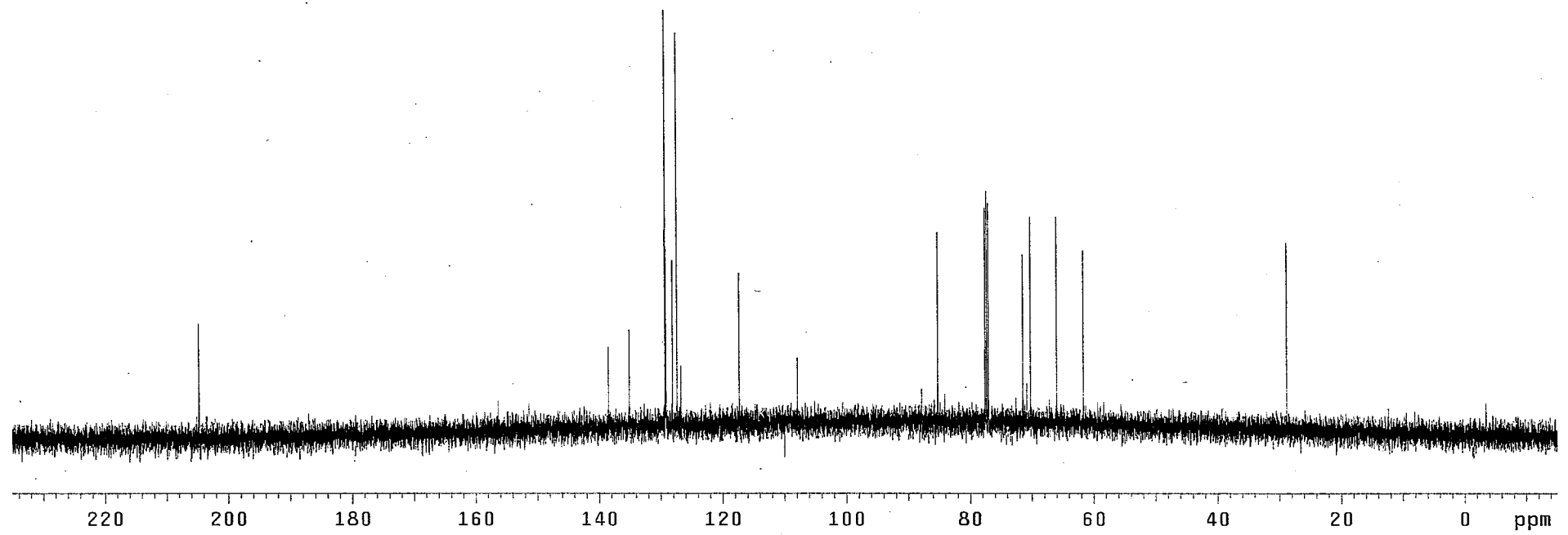


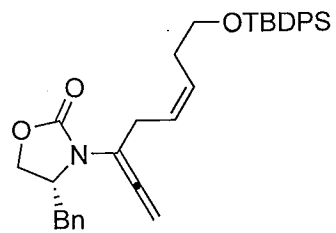
37b



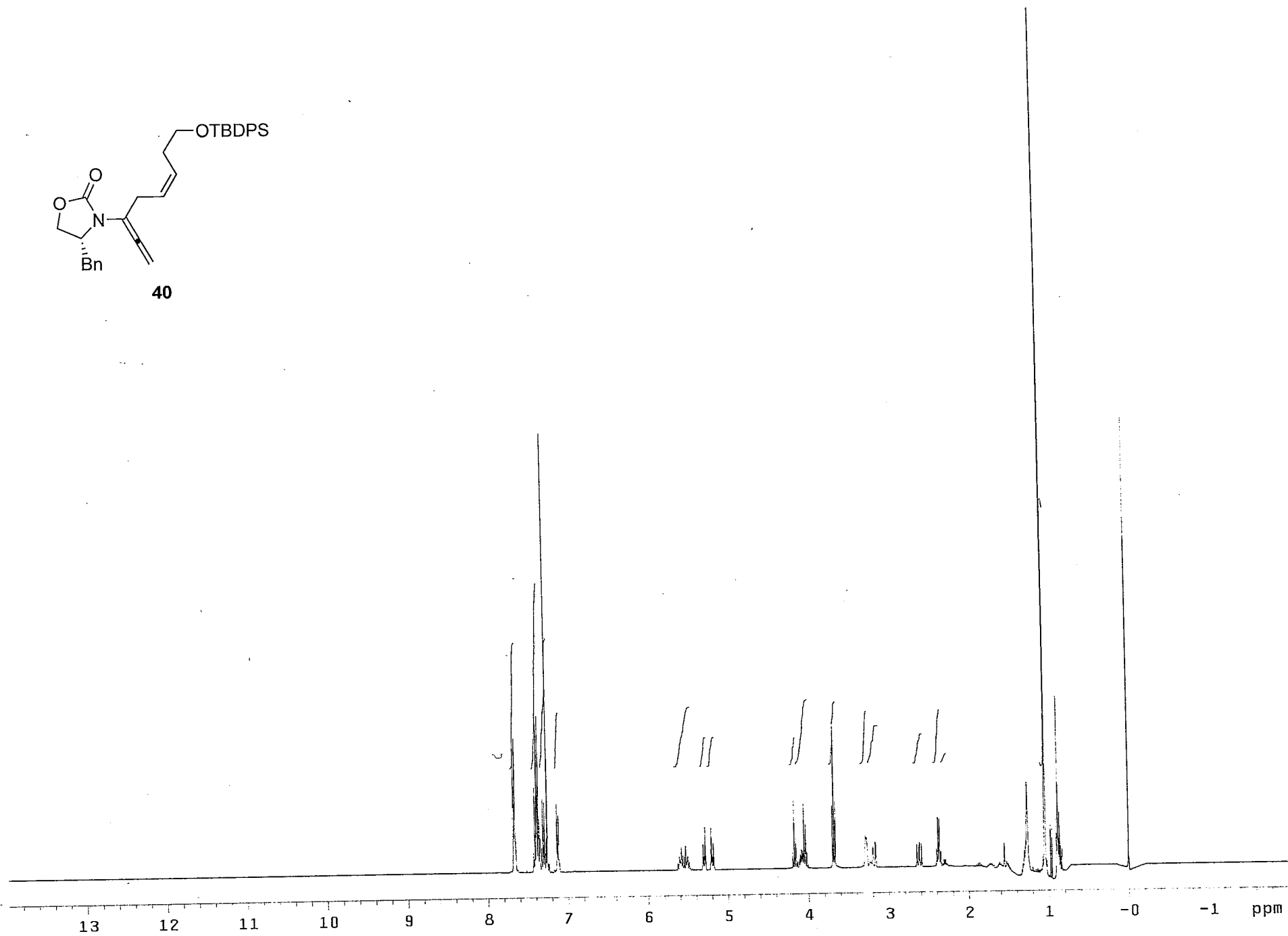


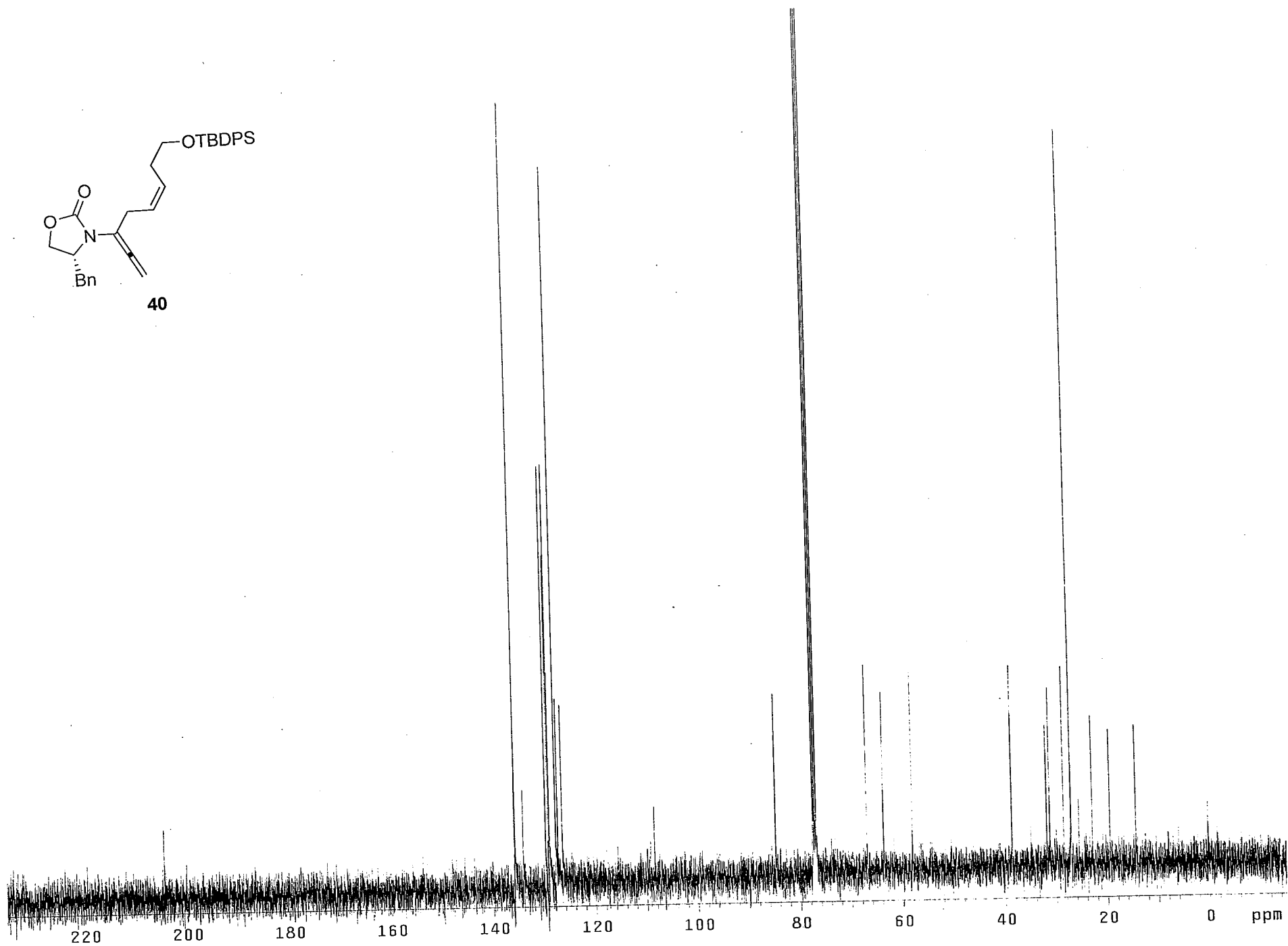
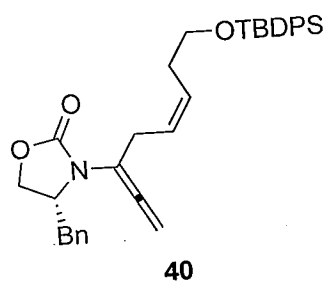
37b

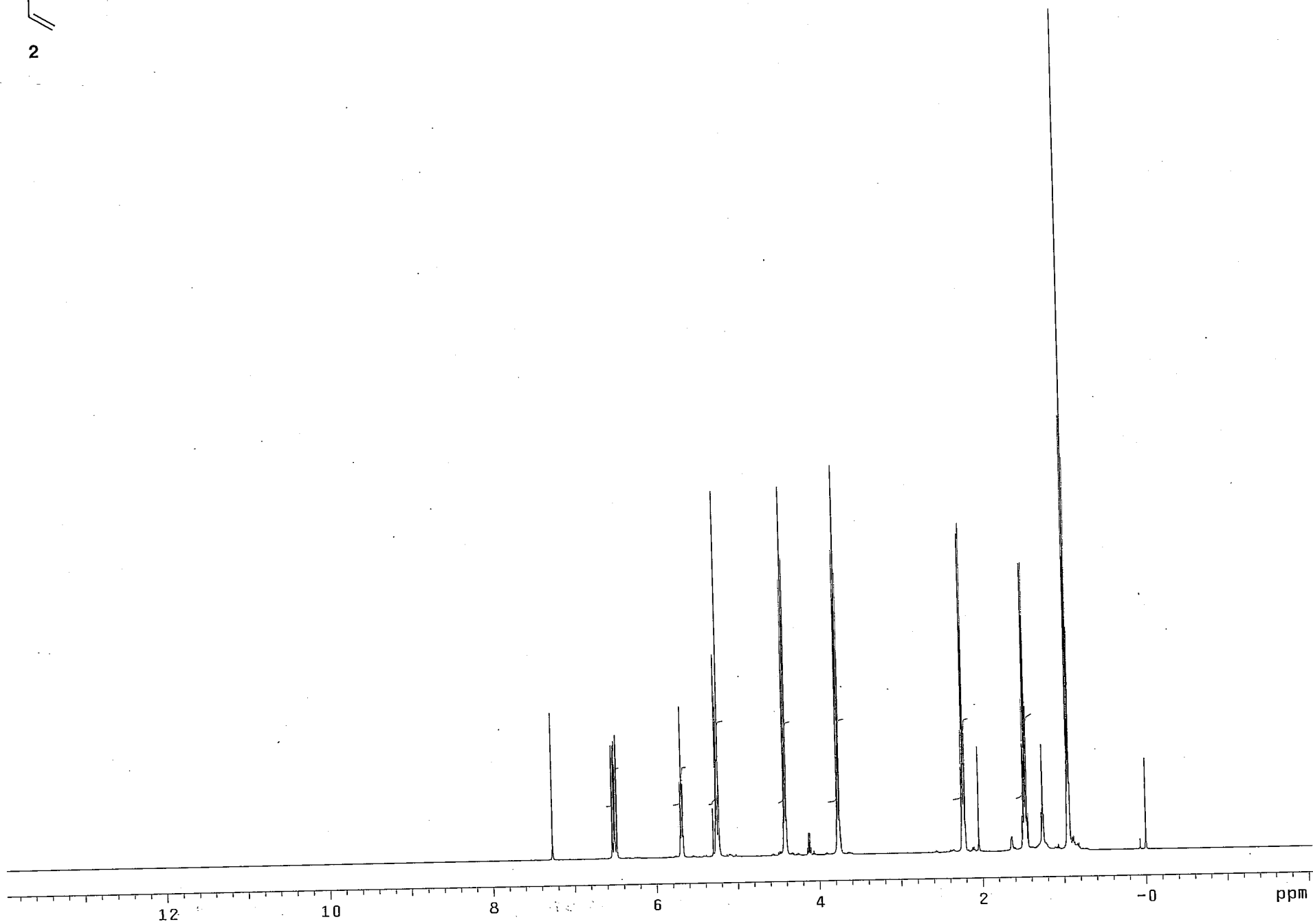
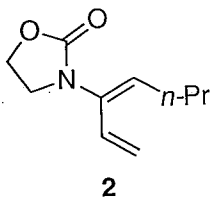


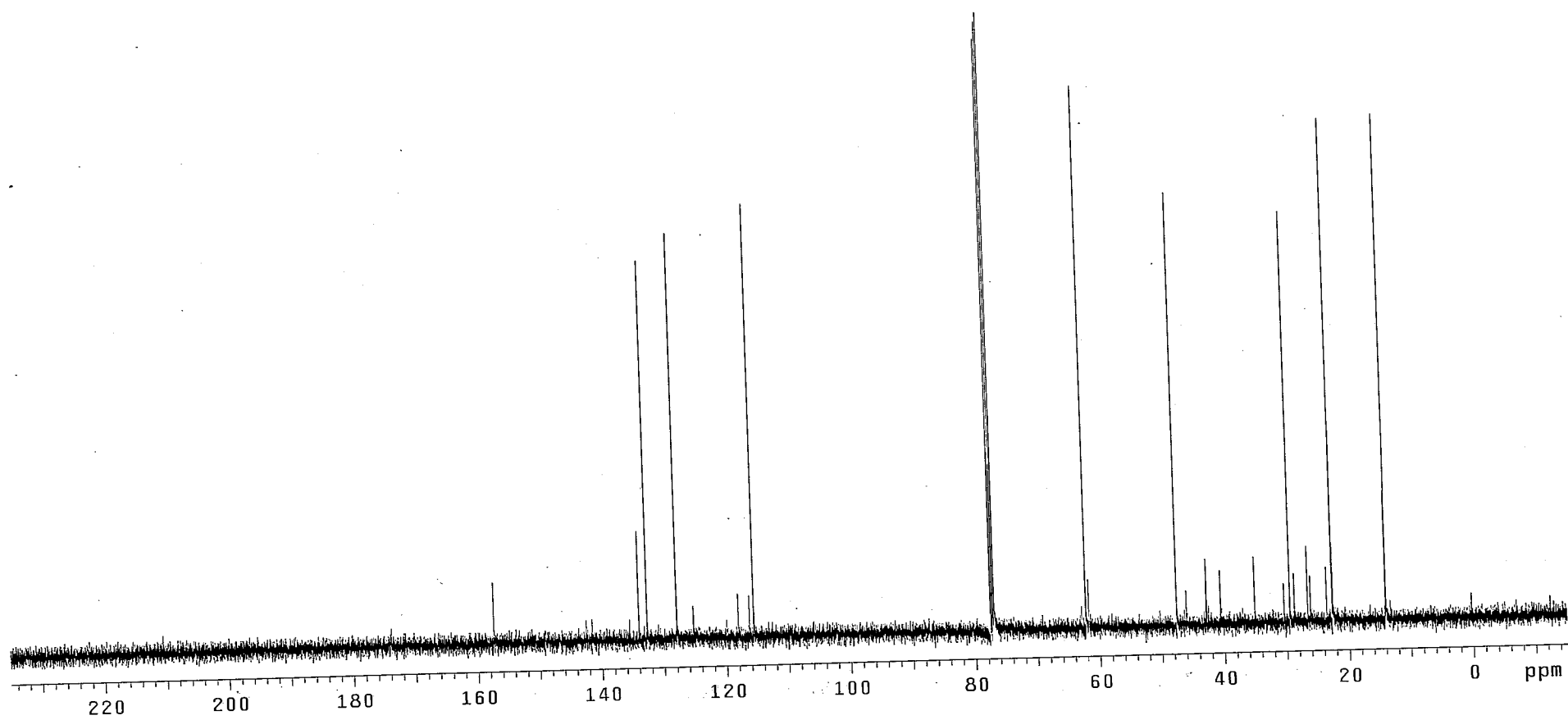
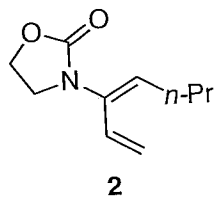


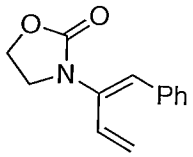
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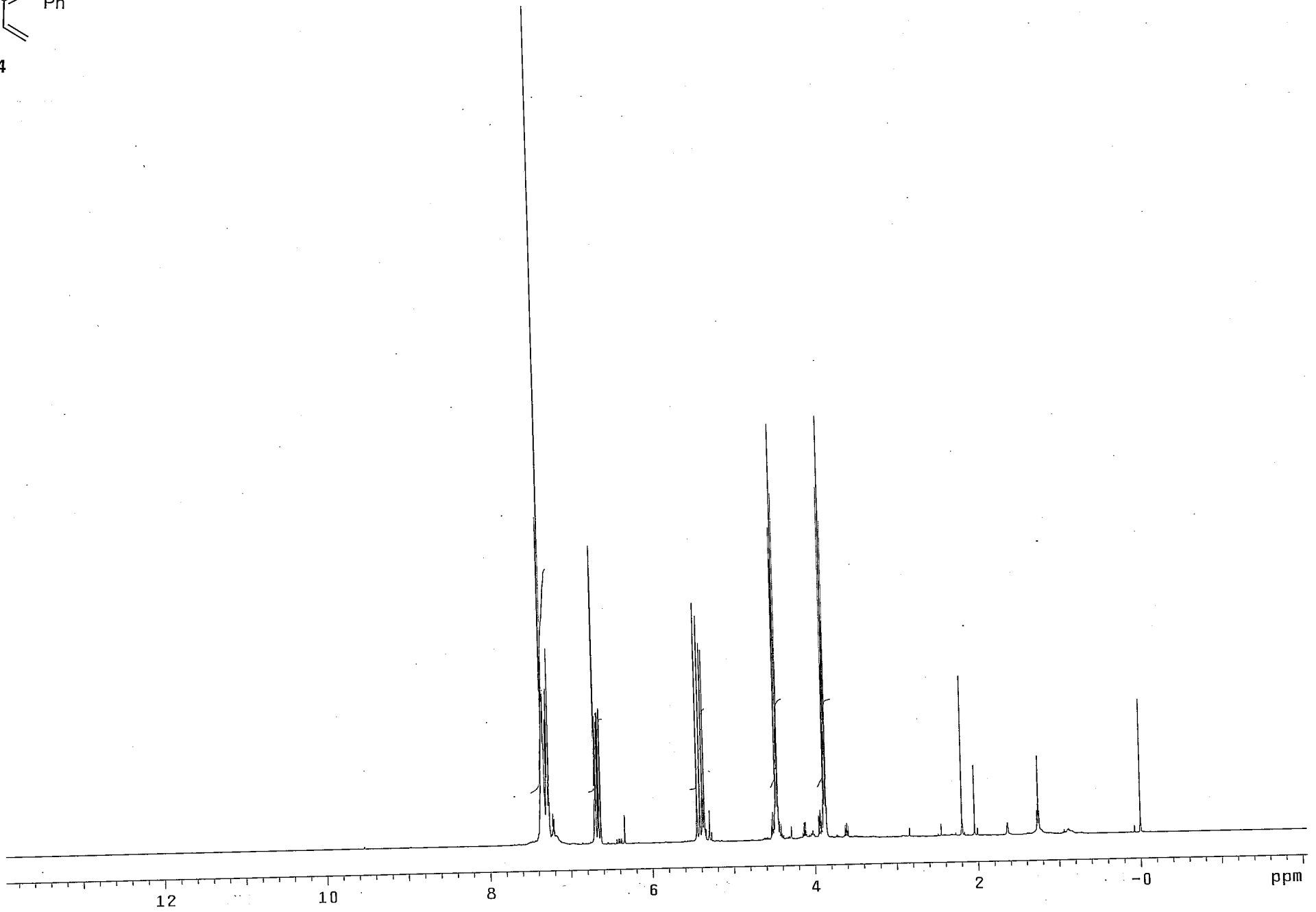




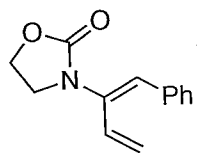




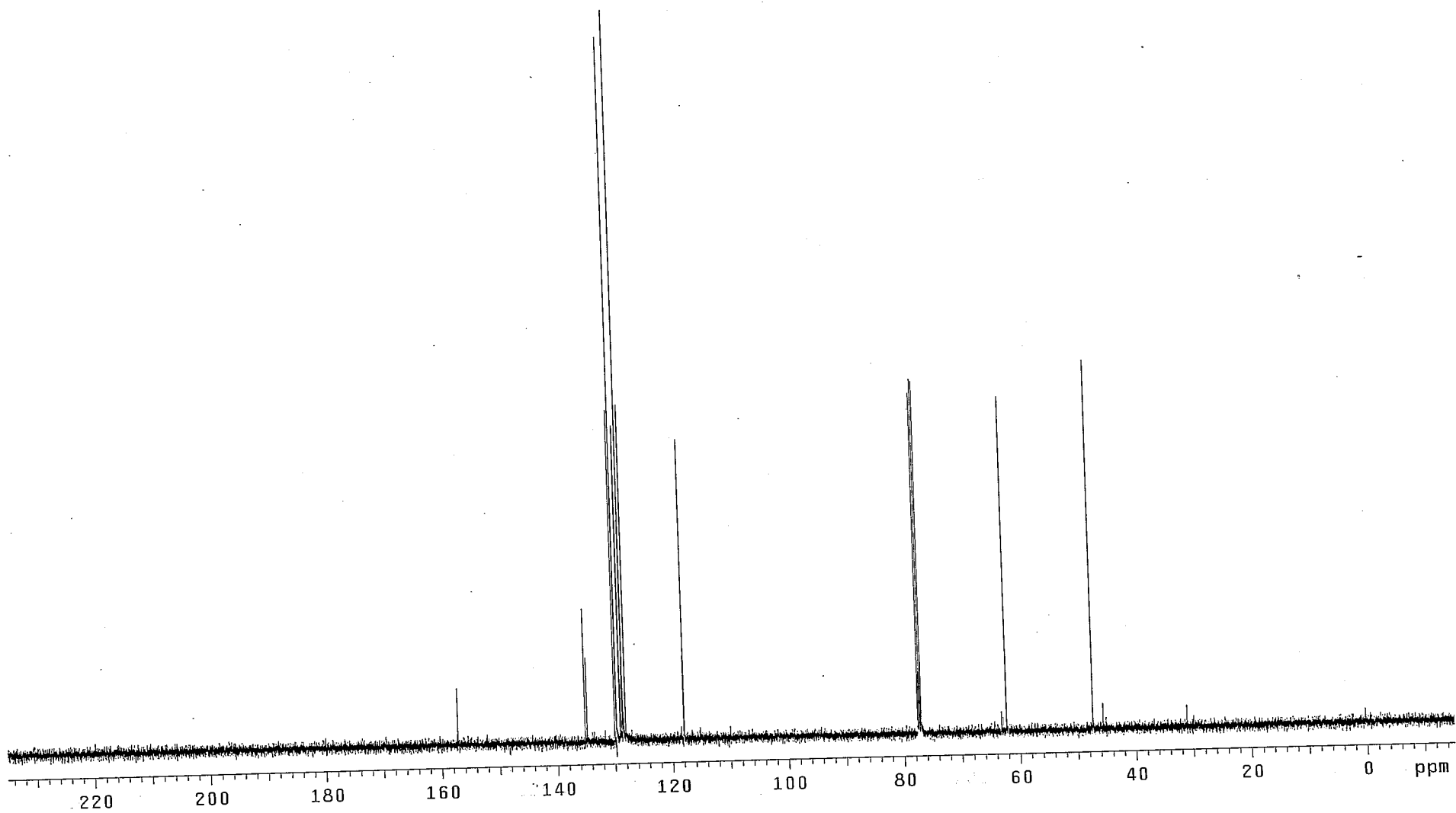
4



S100

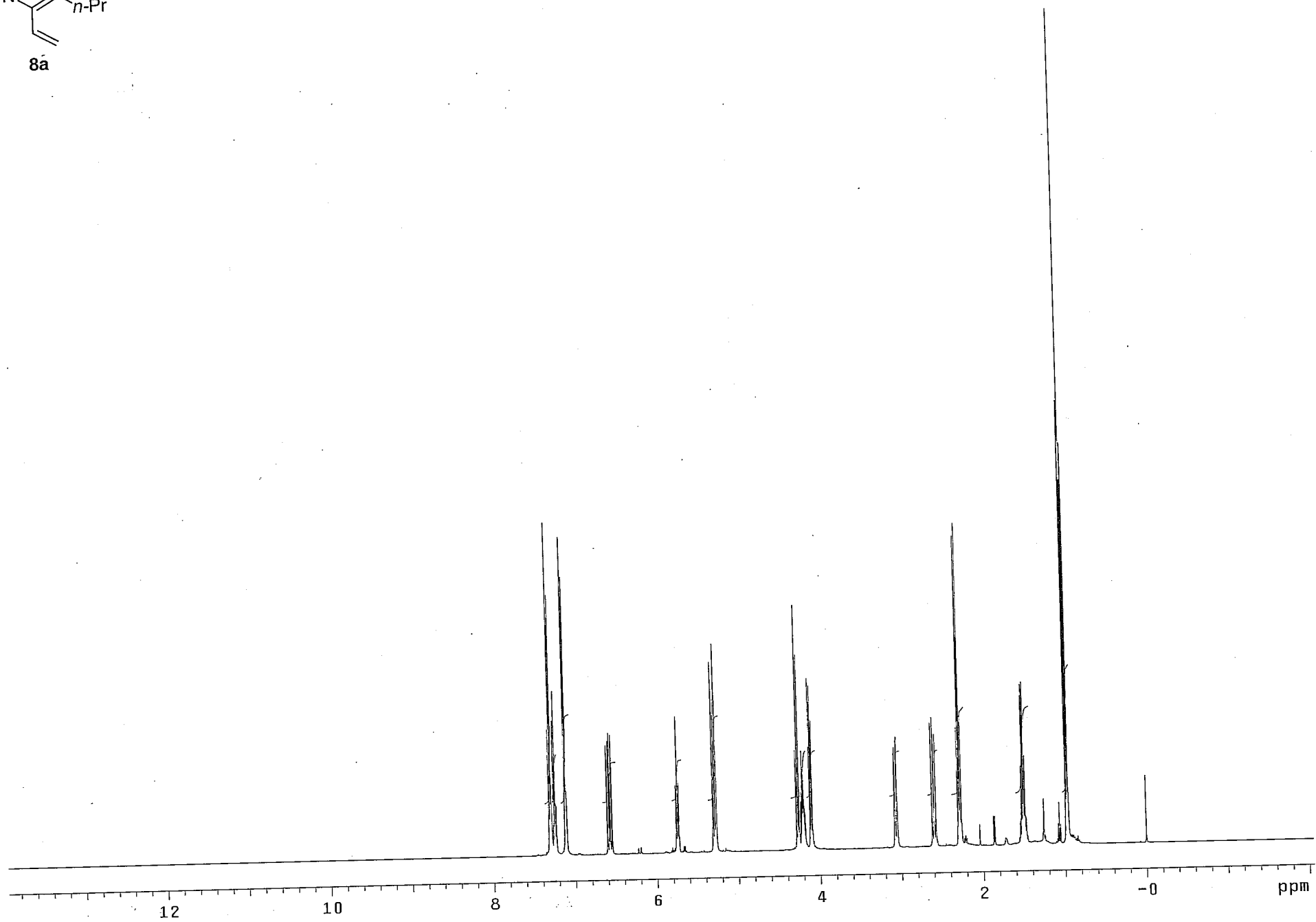
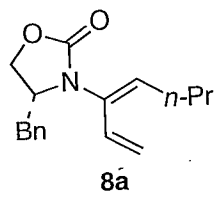


4

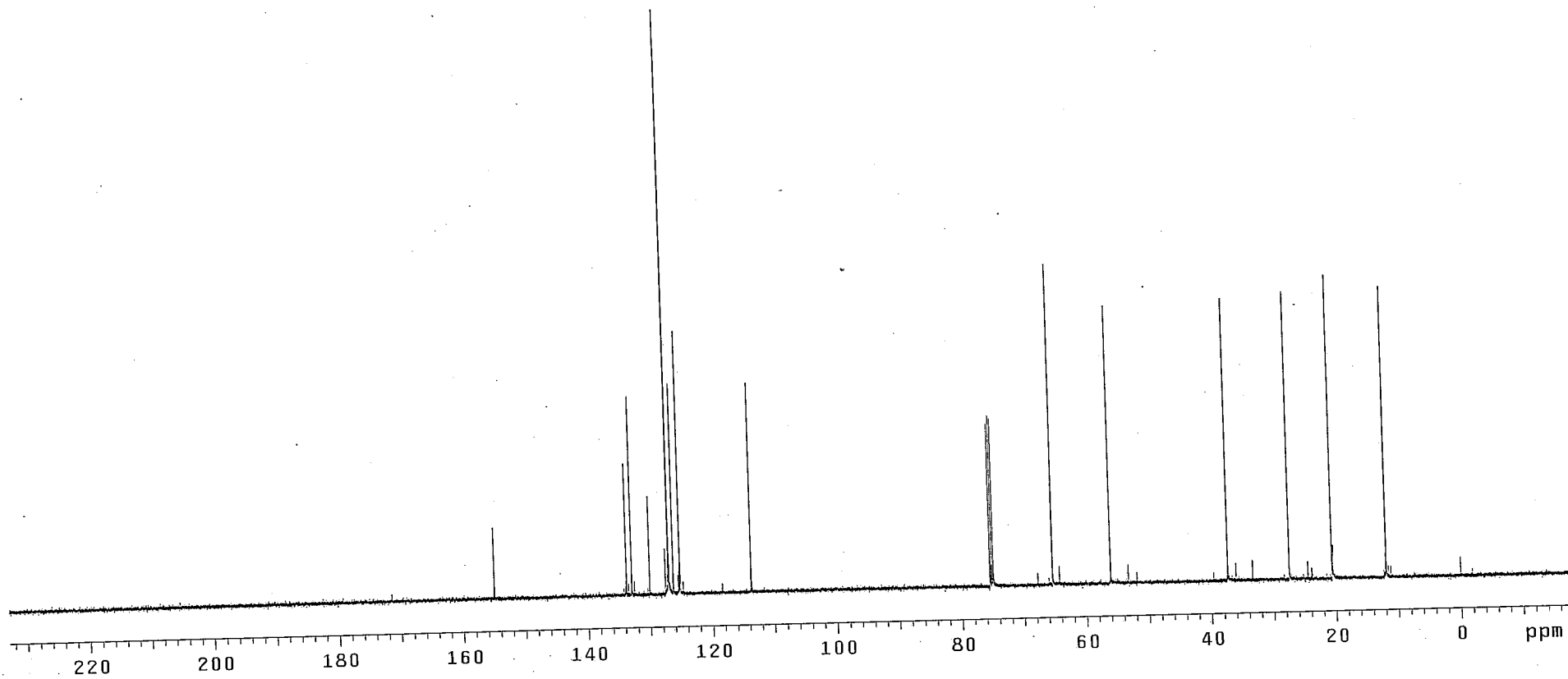
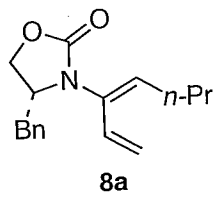


S101

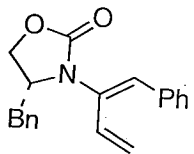




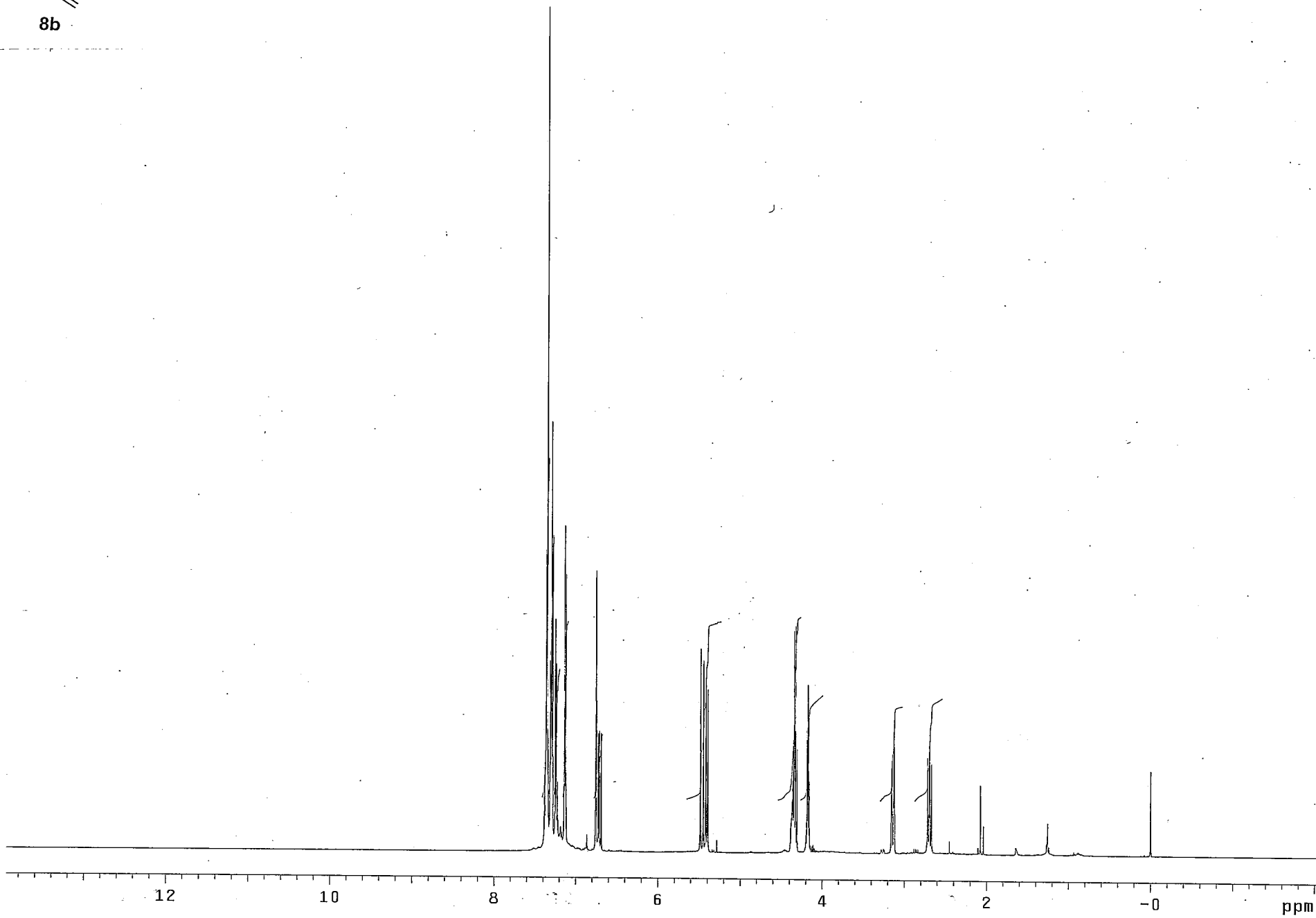
S102



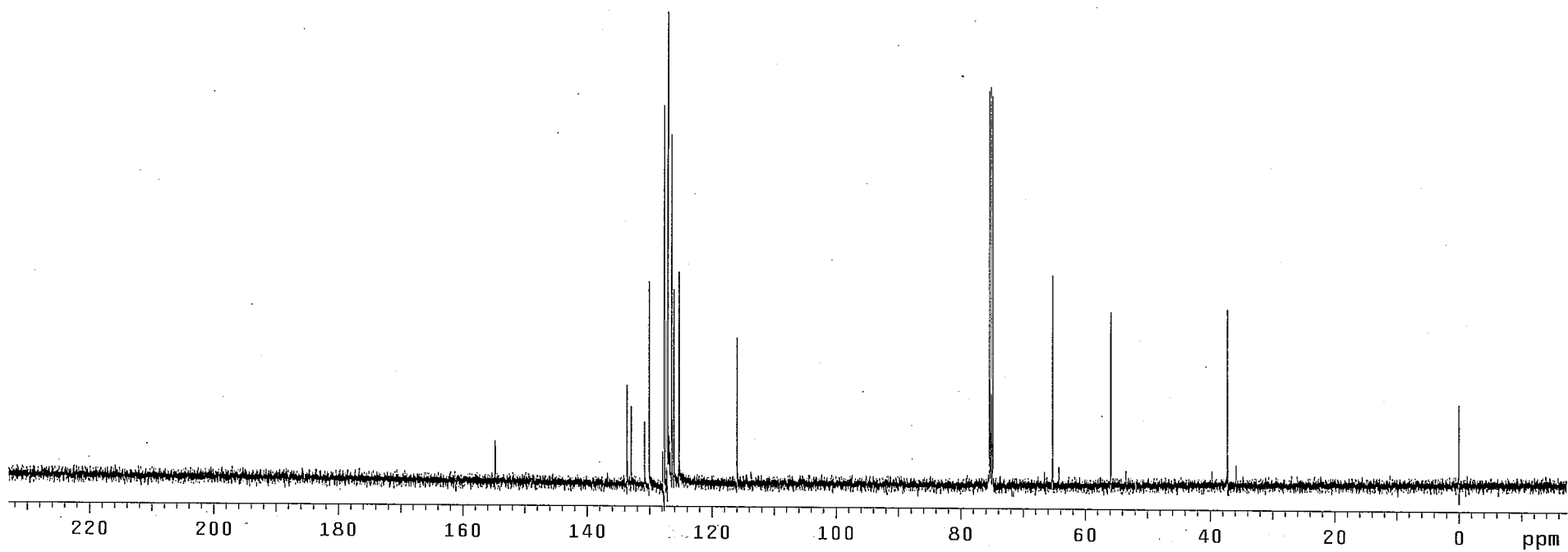
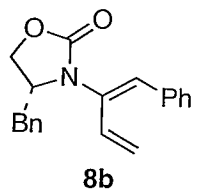
S103



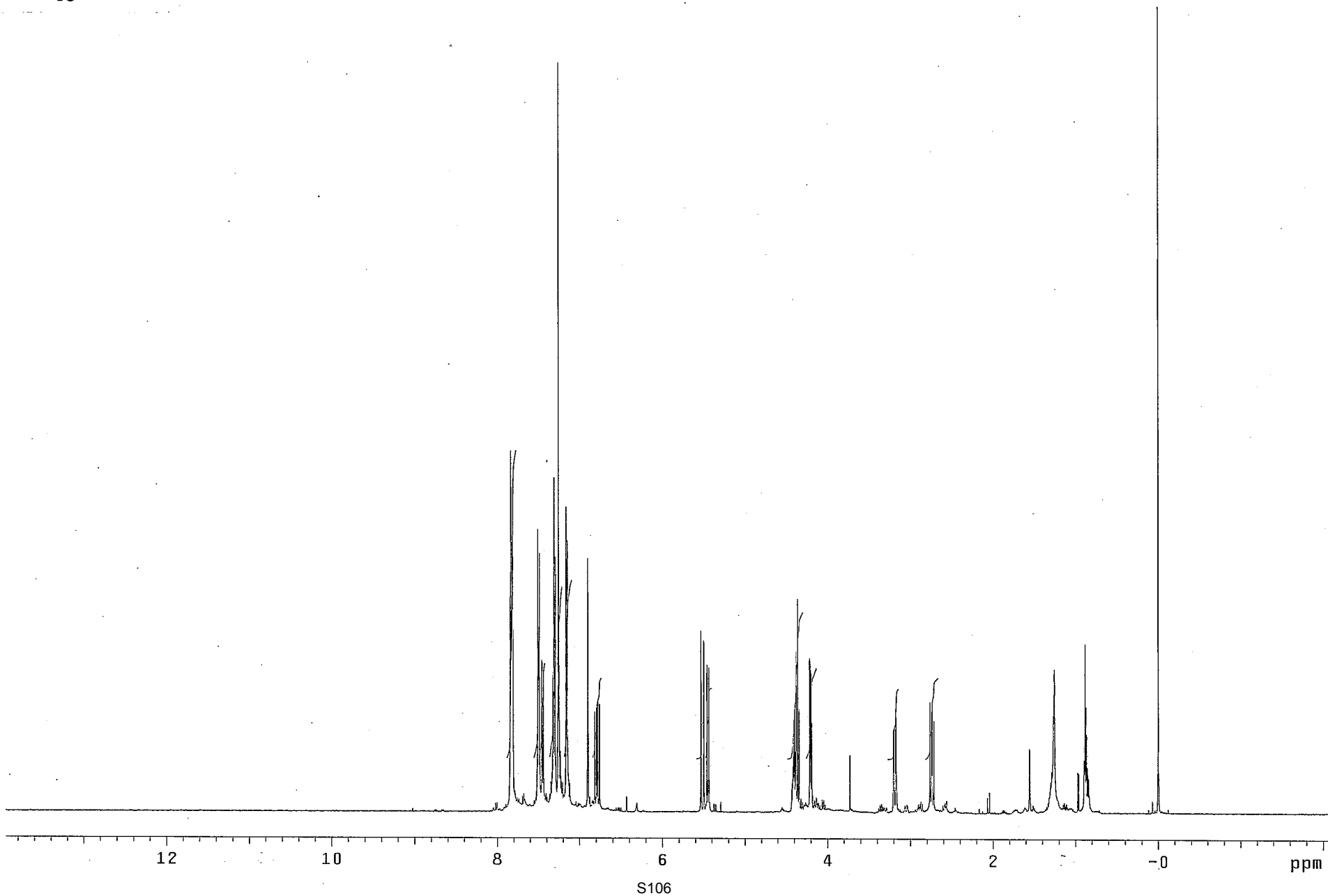
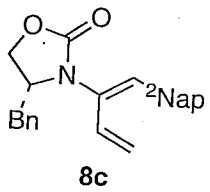
8b

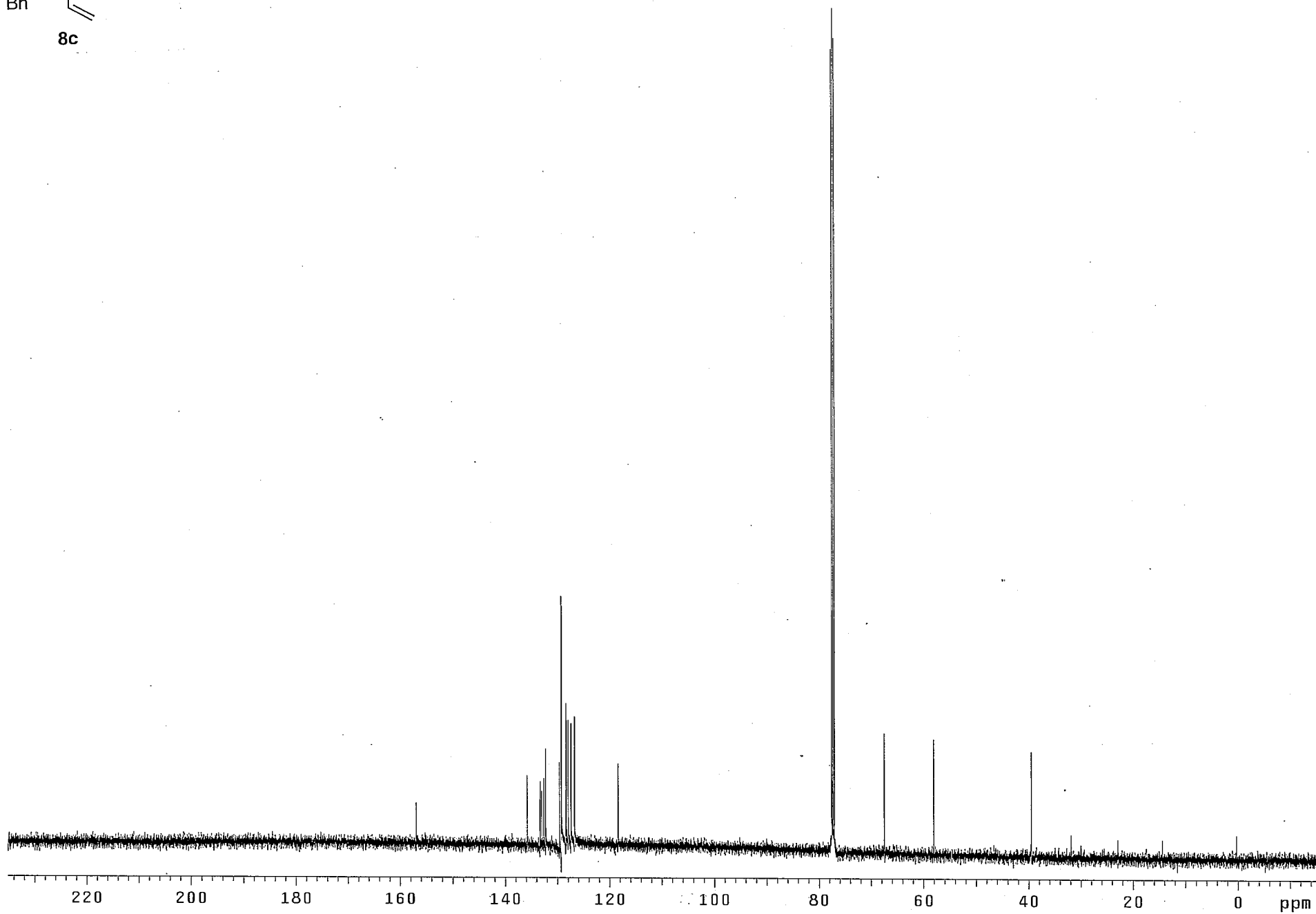
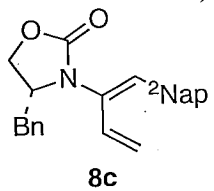


S104



S105

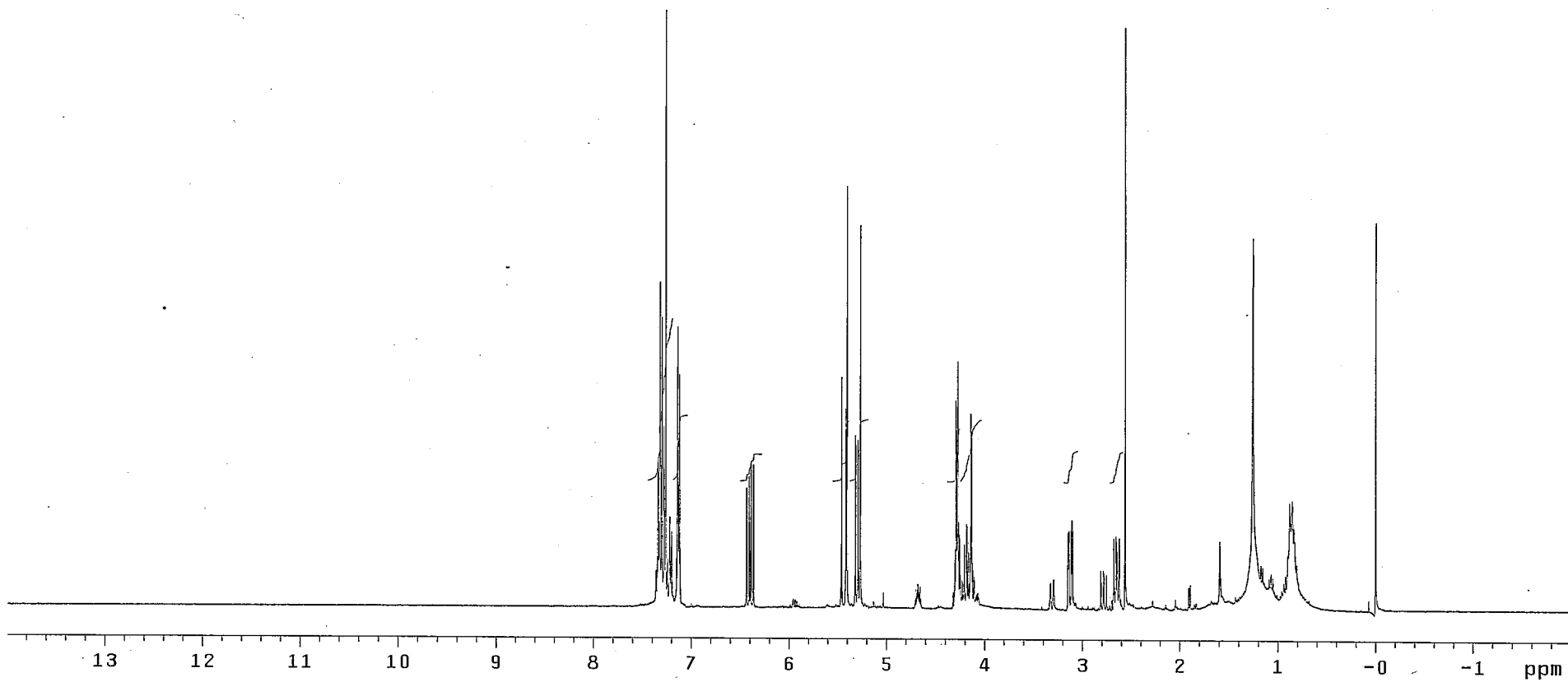


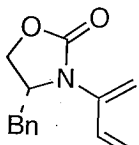


S107

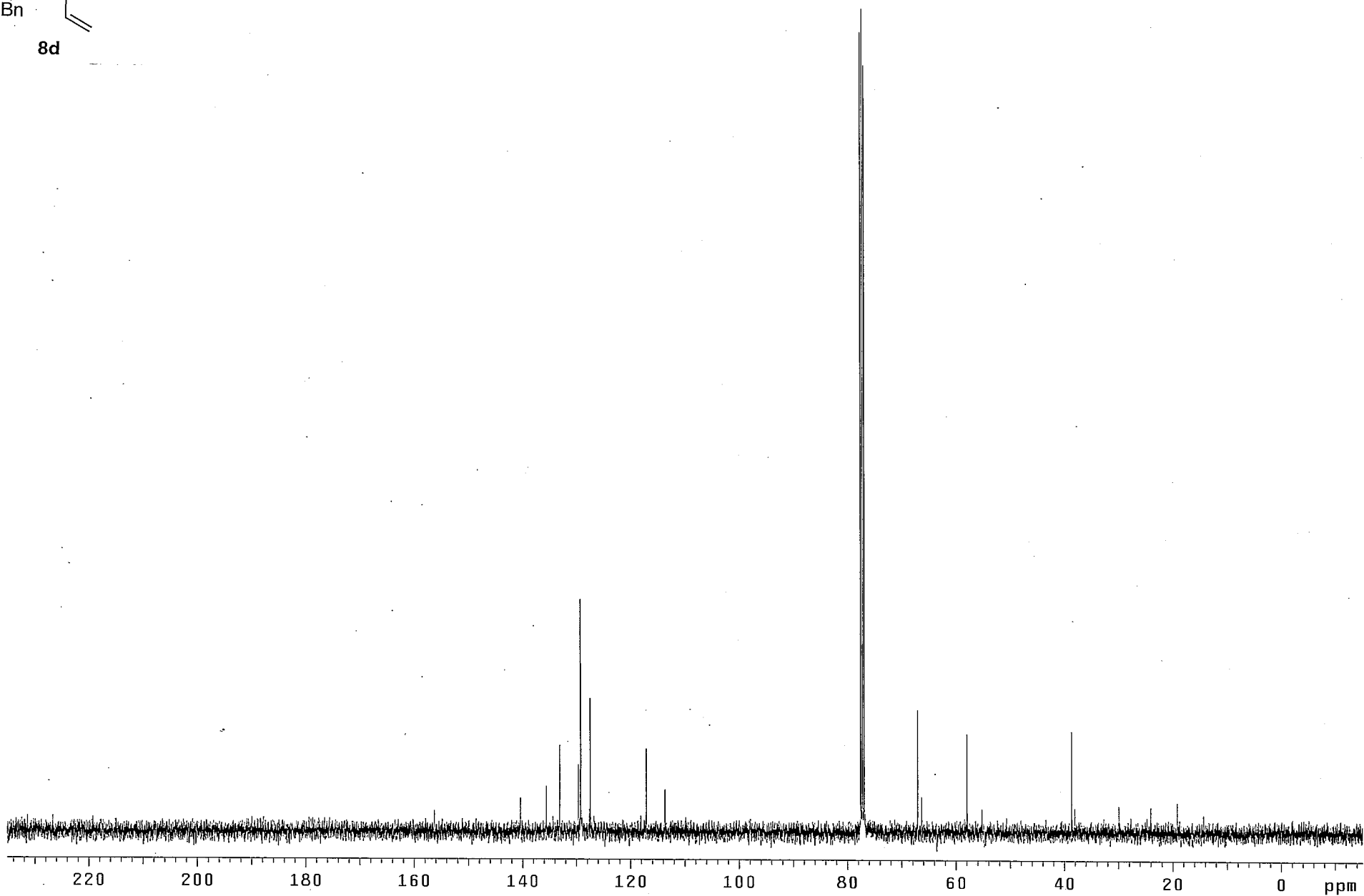


8d

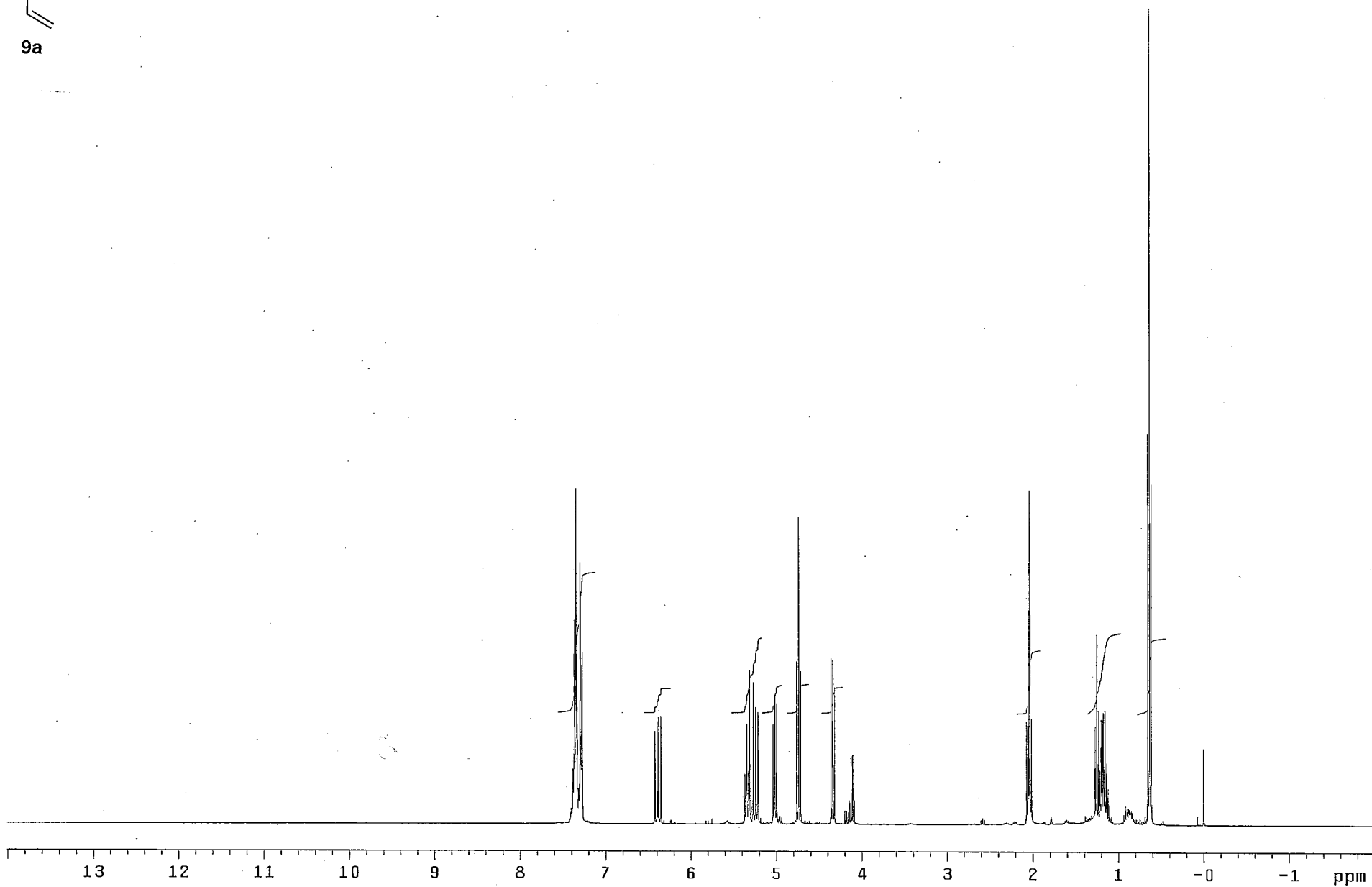
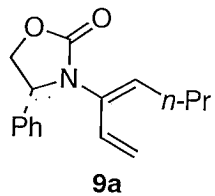


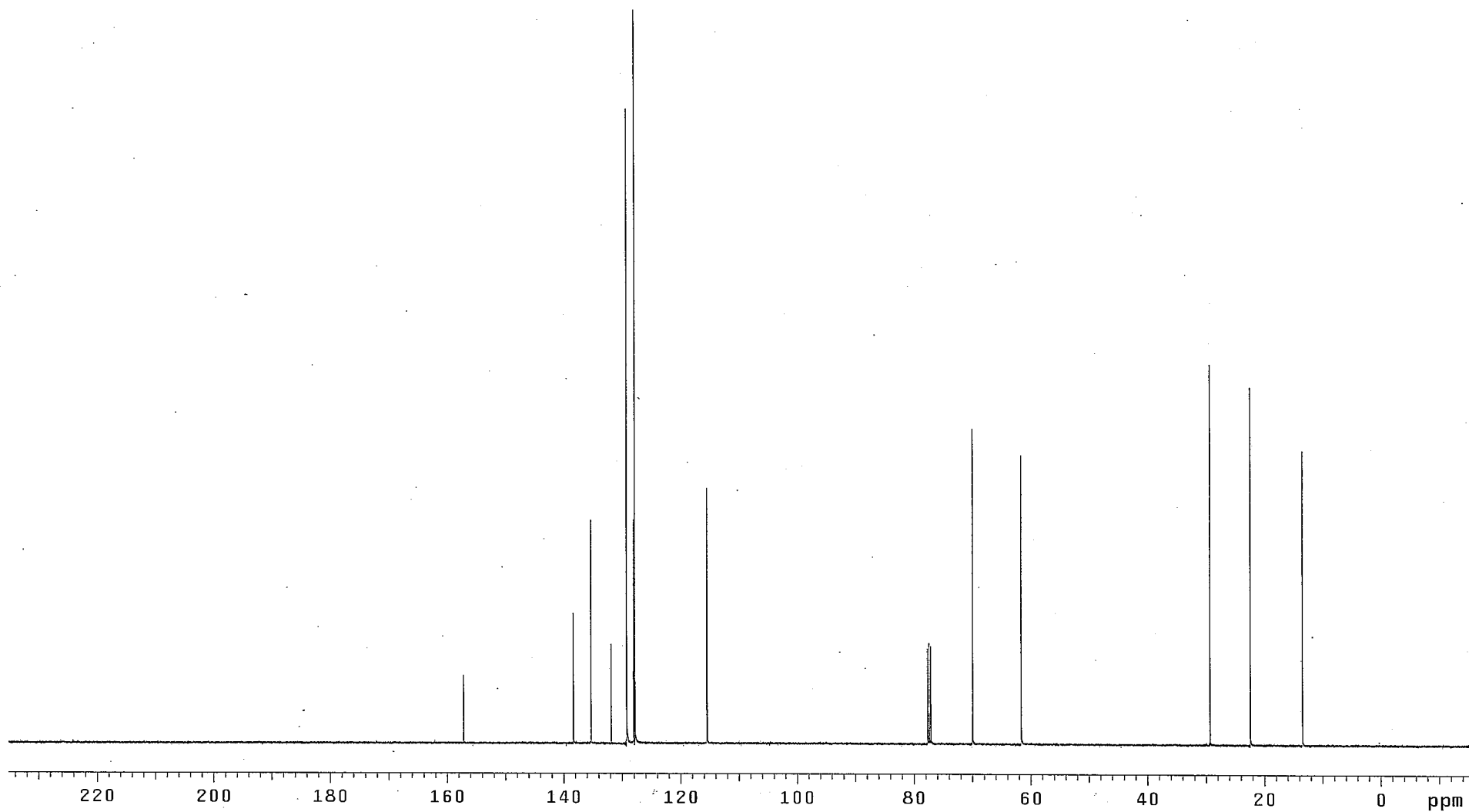
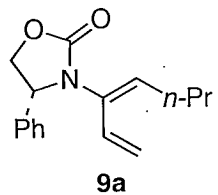


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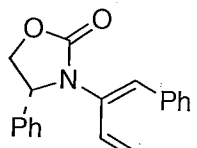




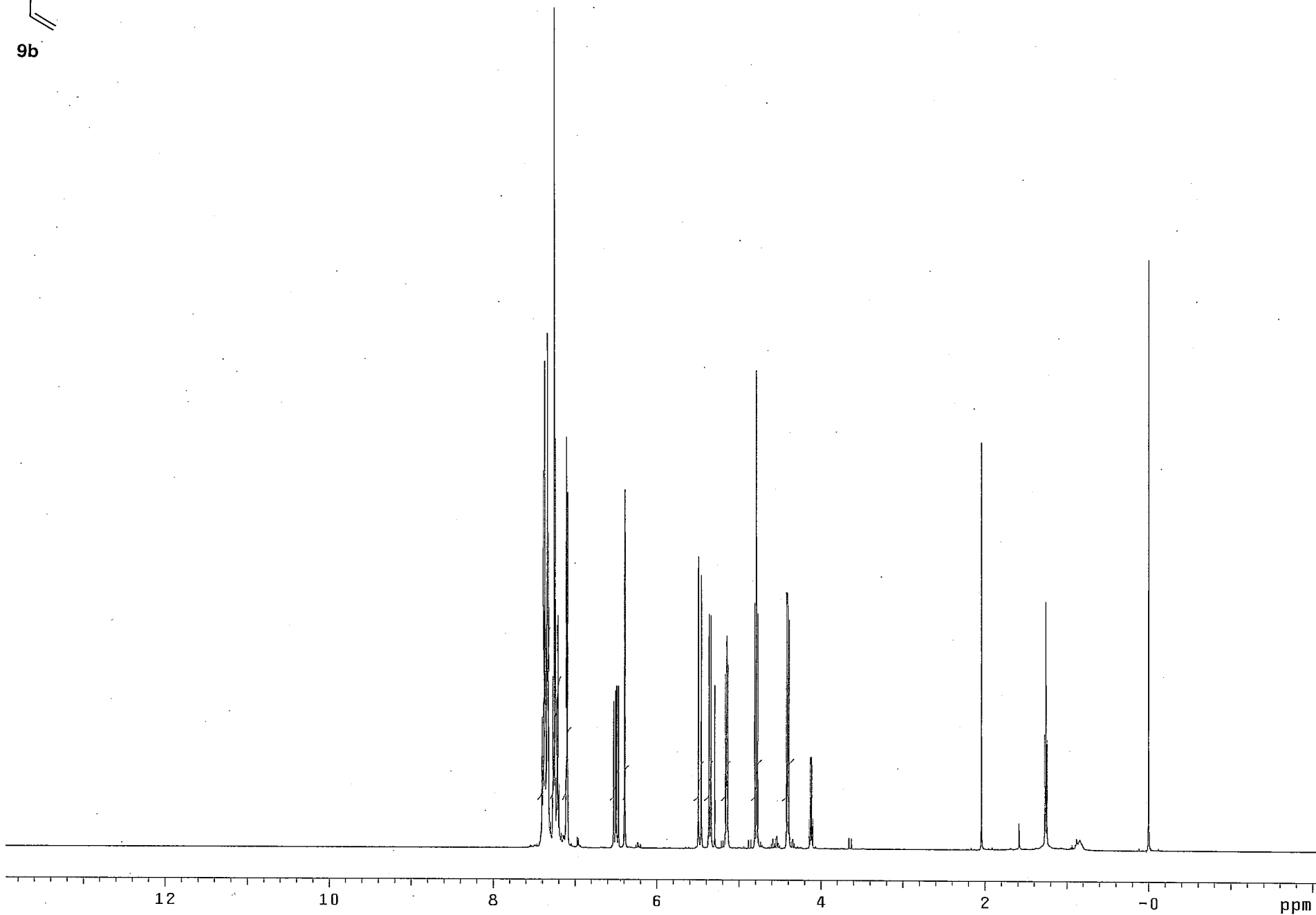


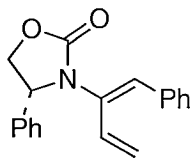


S111

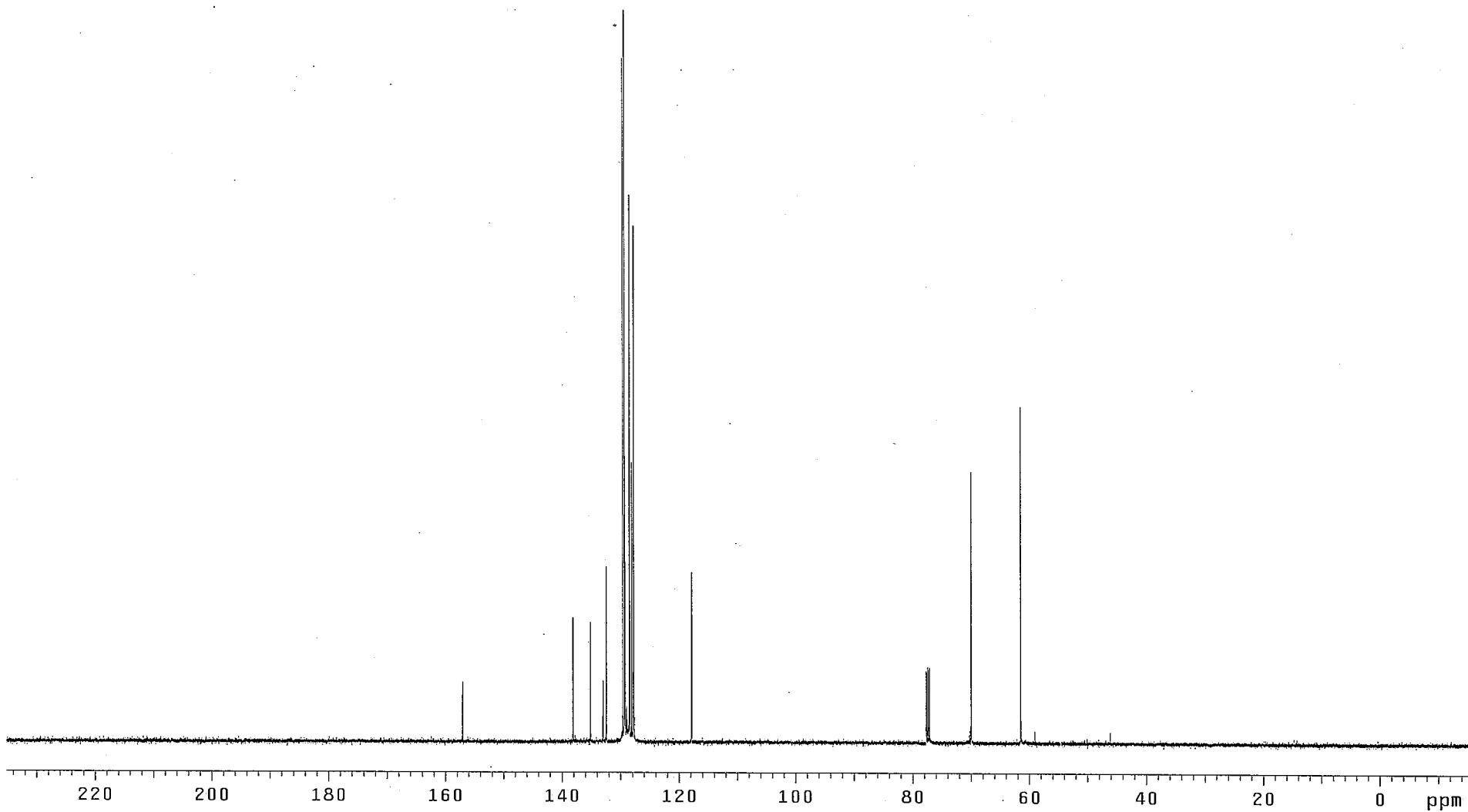


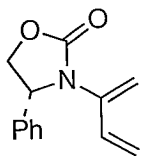
9b



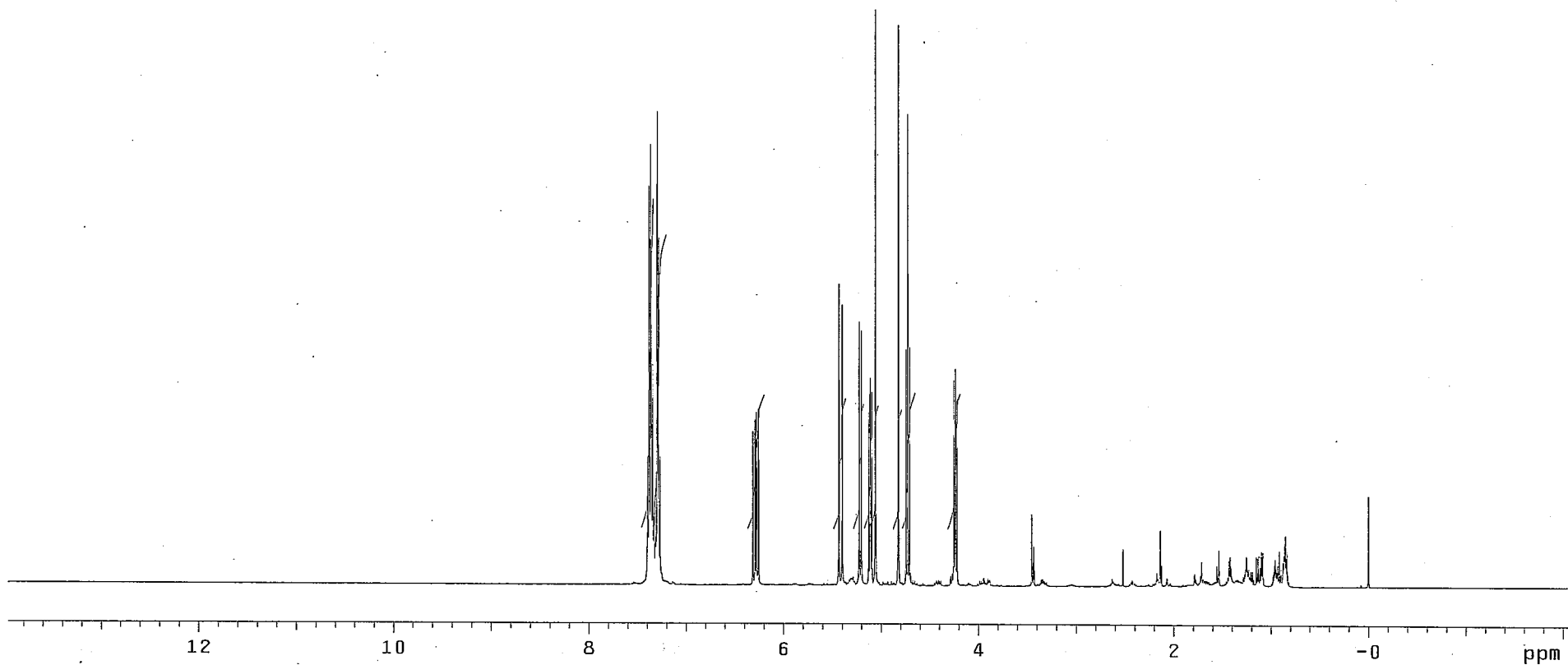


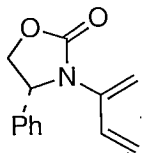
9b



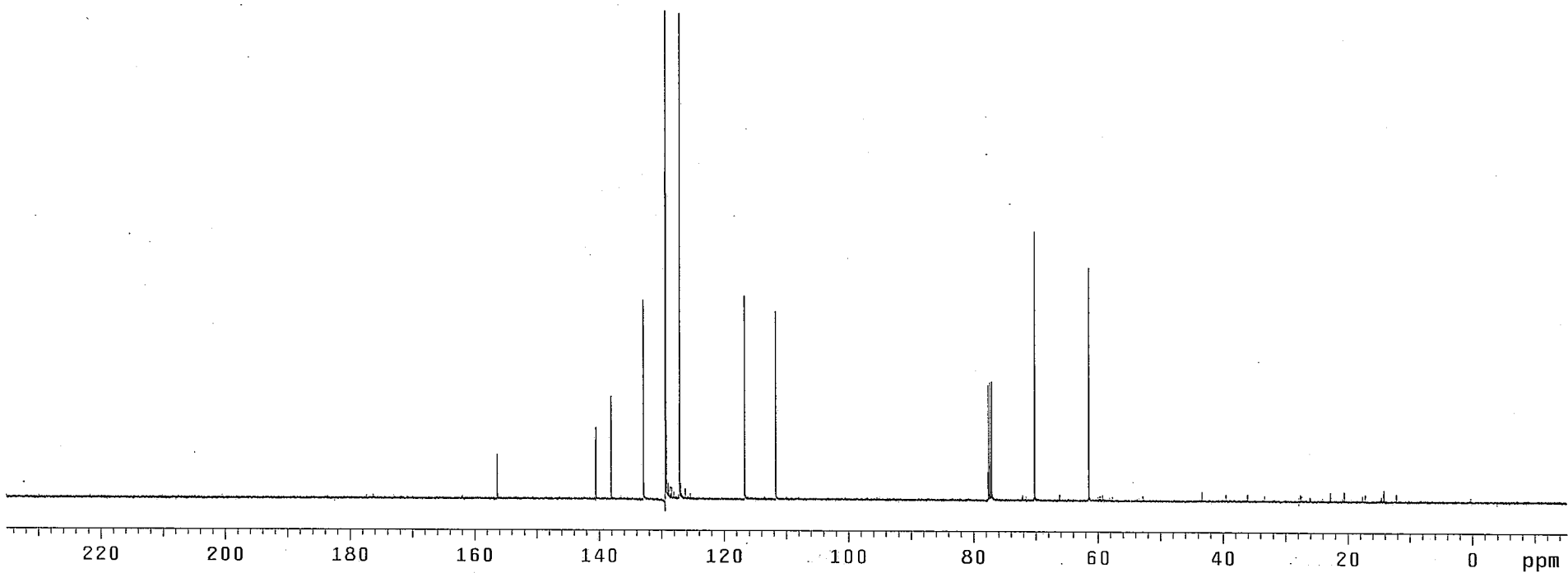


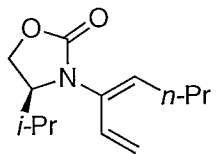
9c



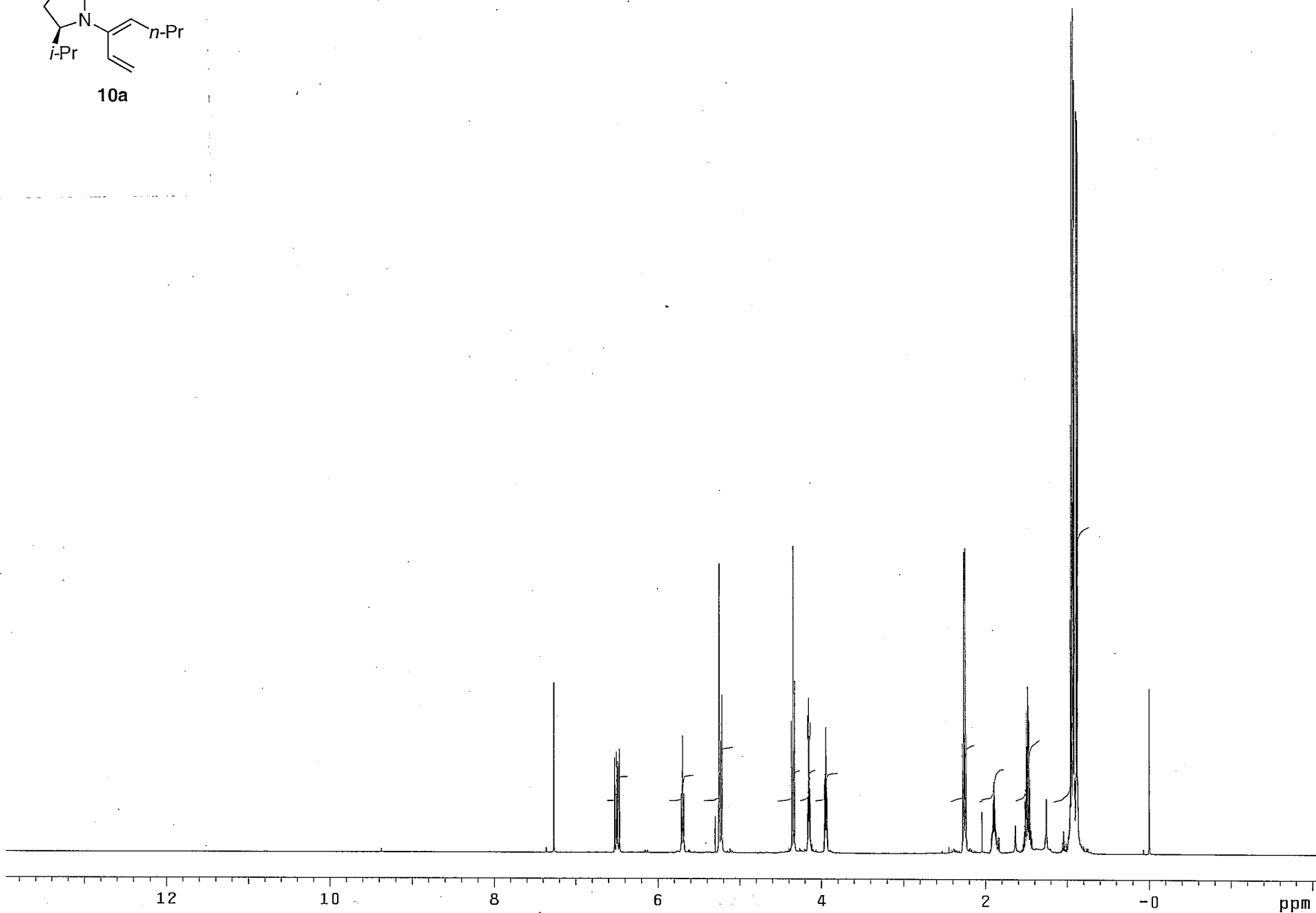


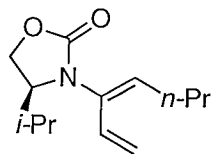
9c



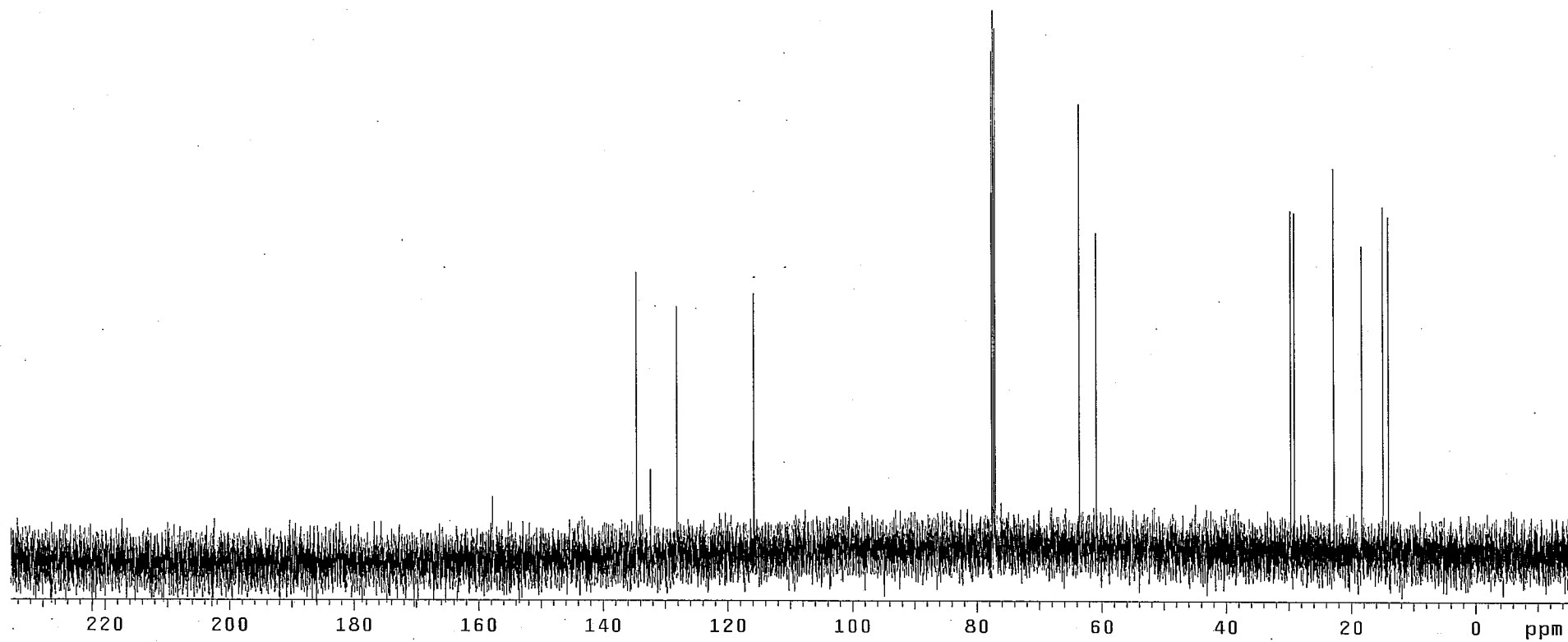


10a

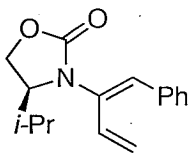




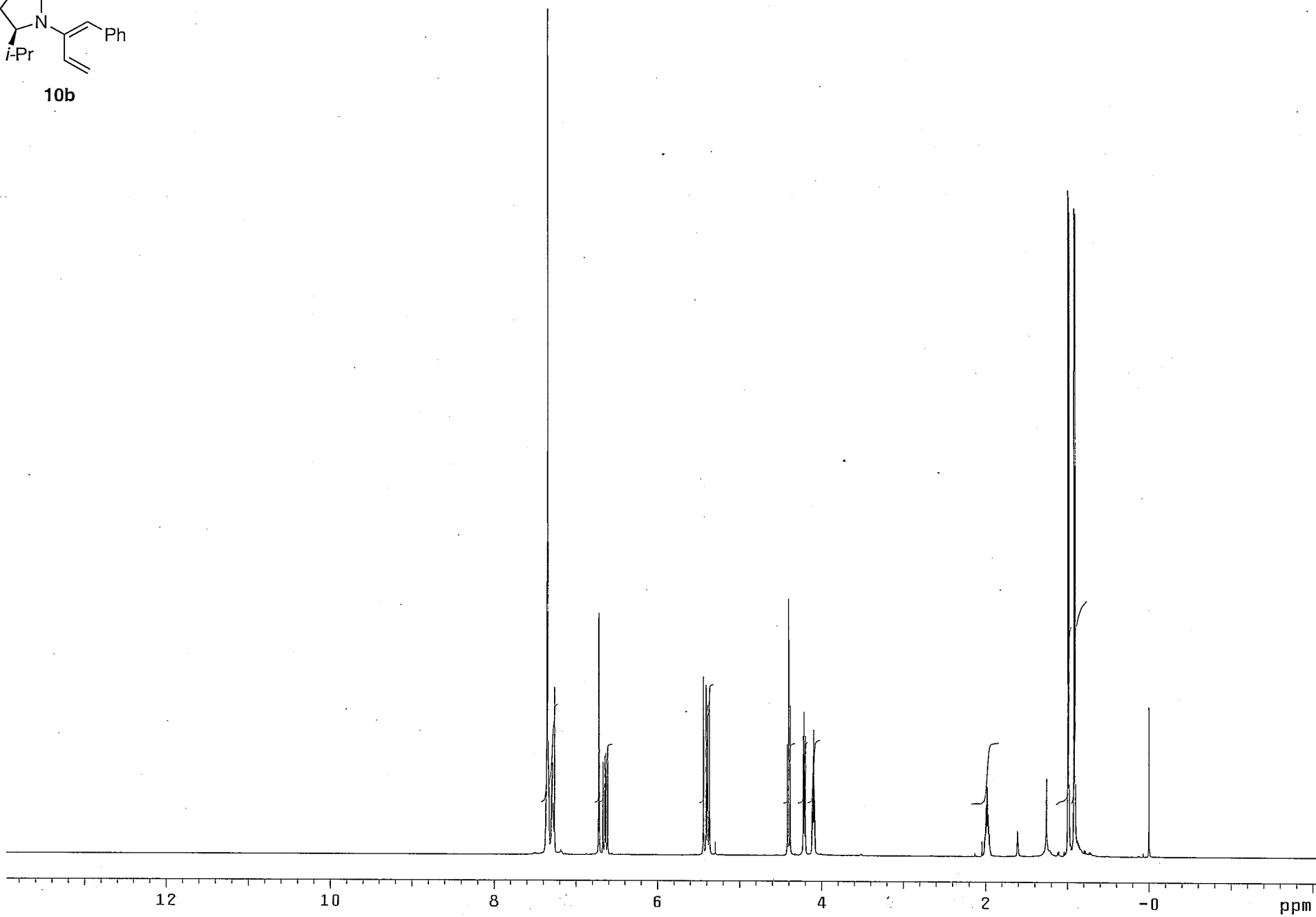
10a

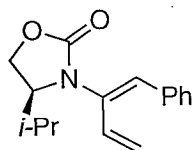




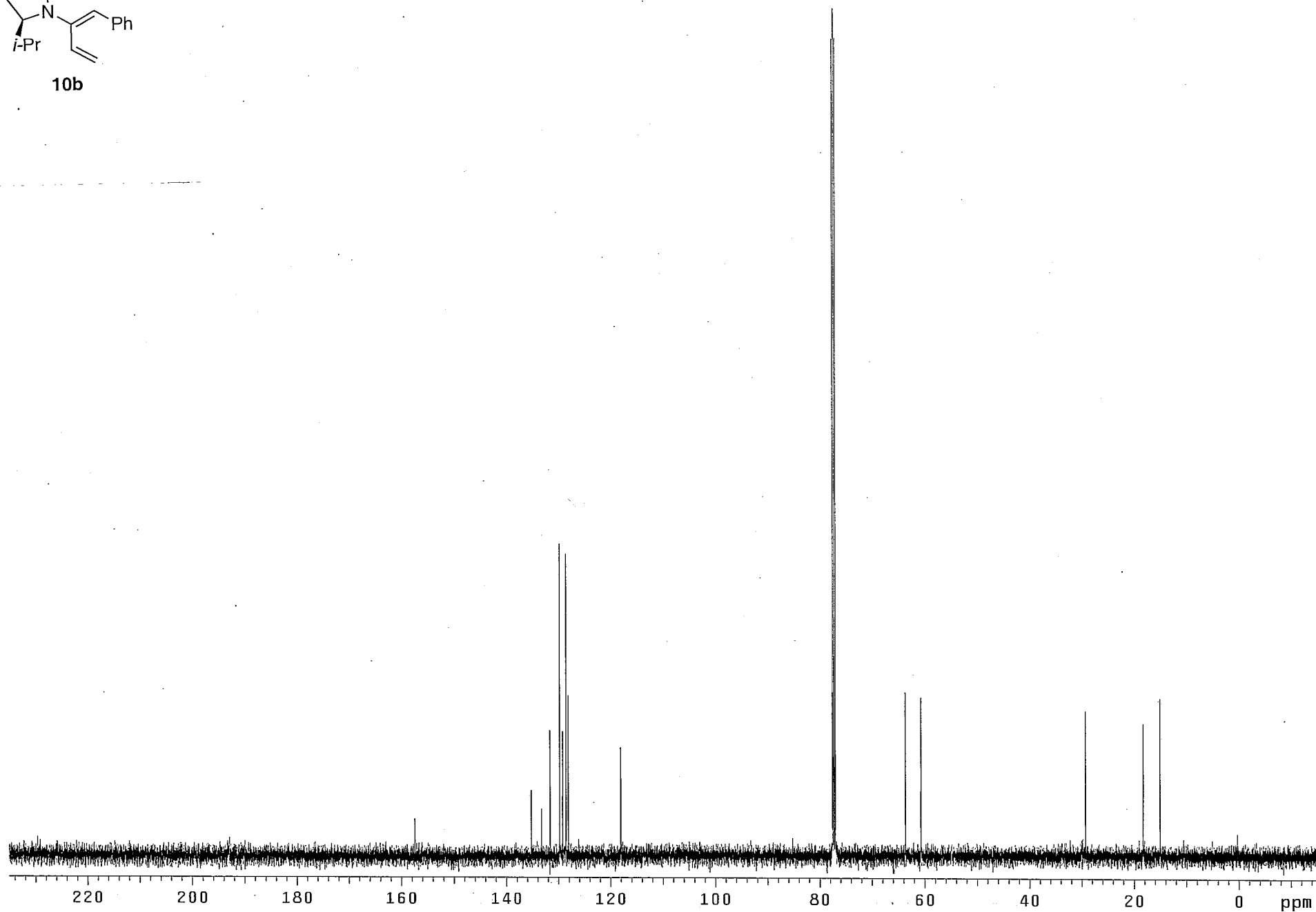


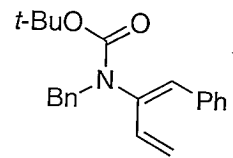
10b



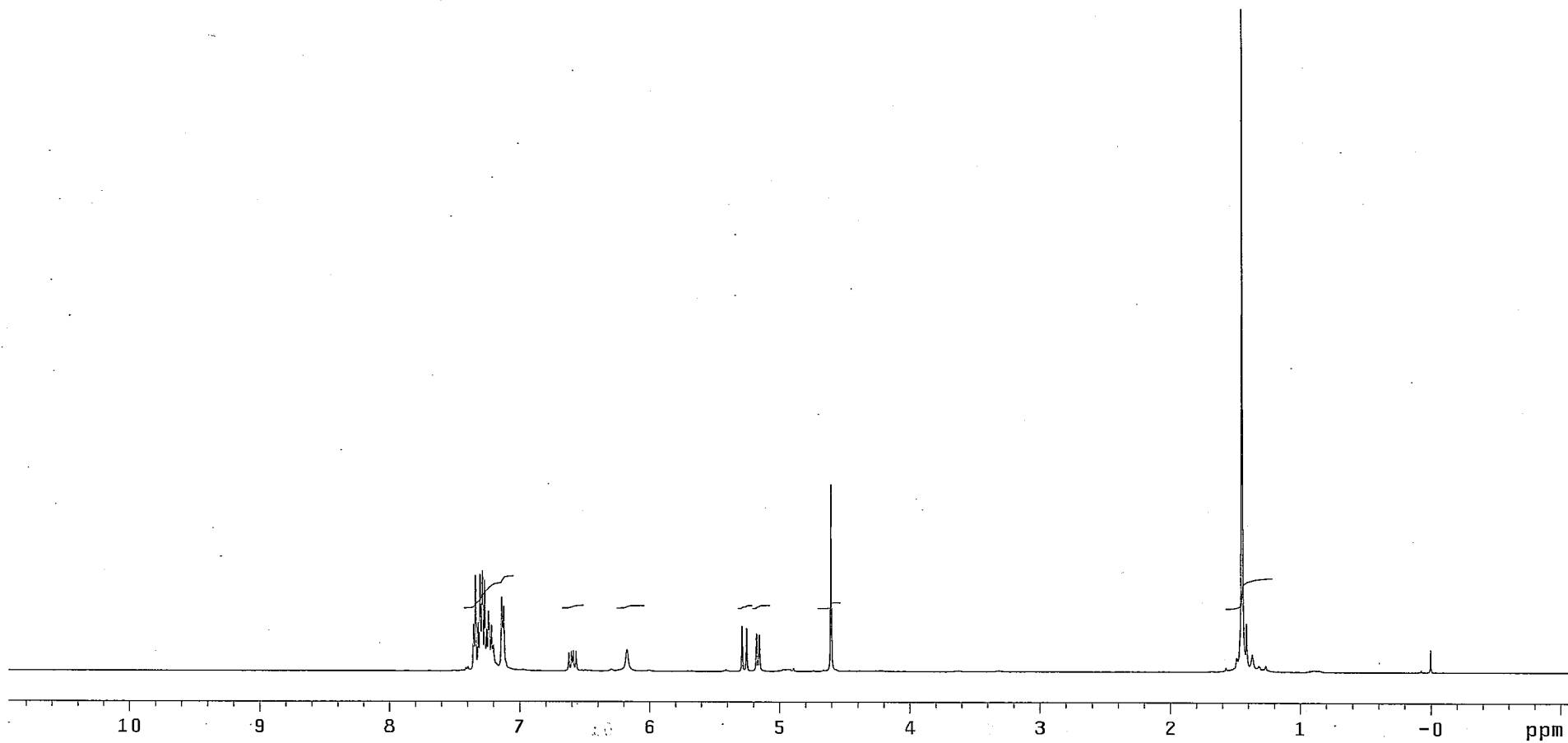


10b

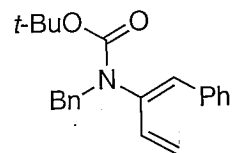




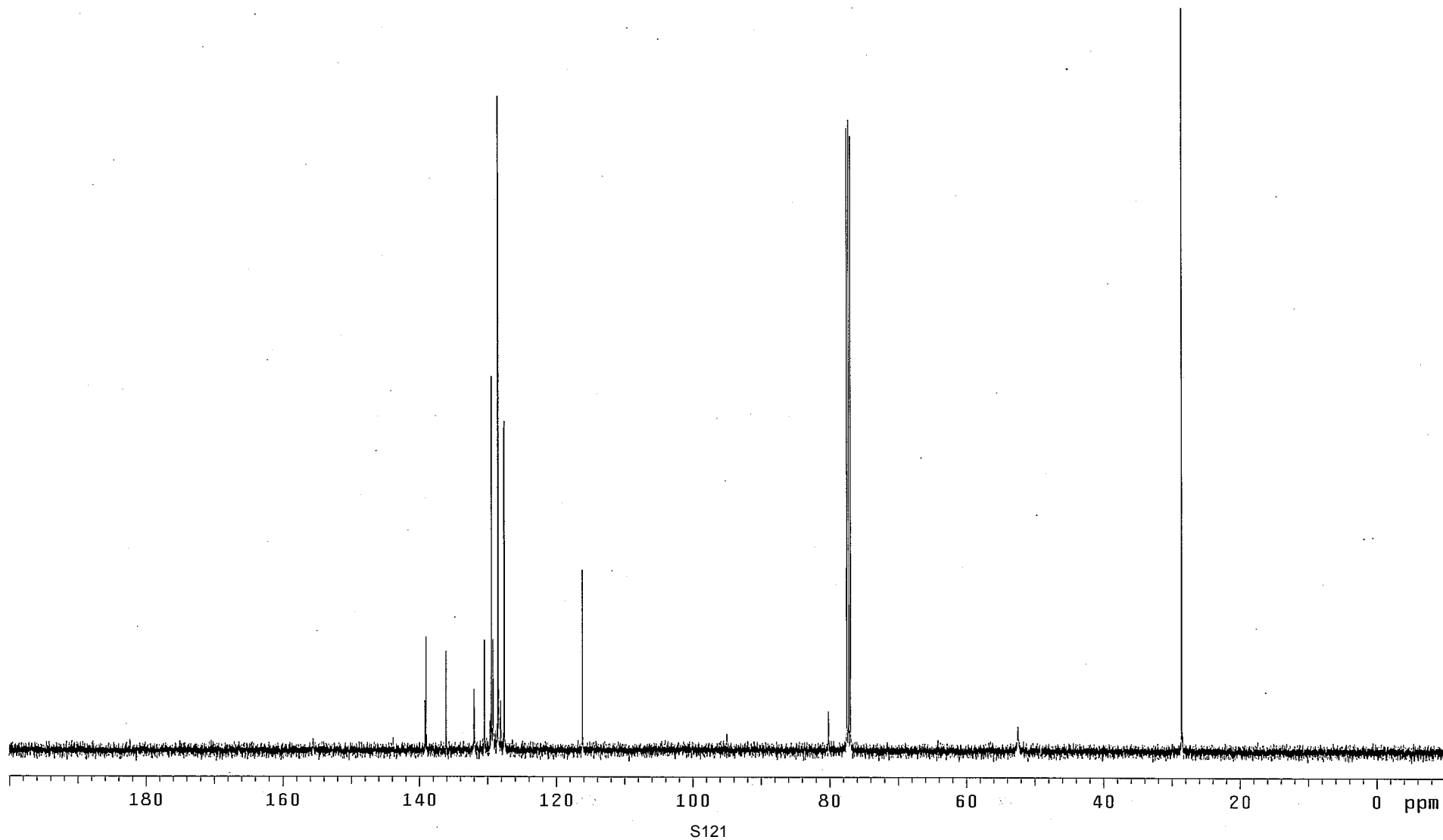
12

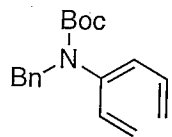


S120

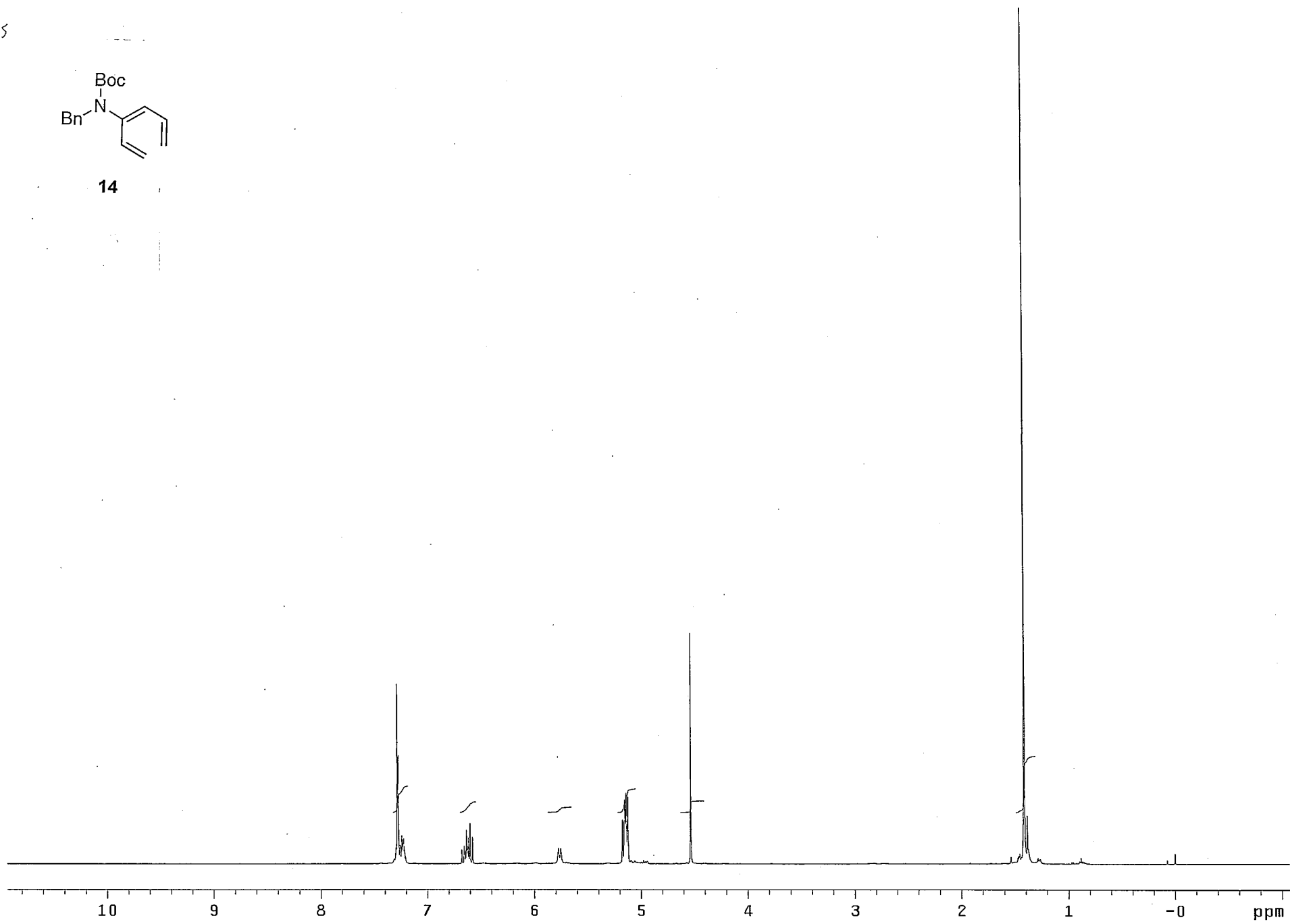


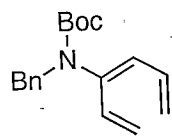
12



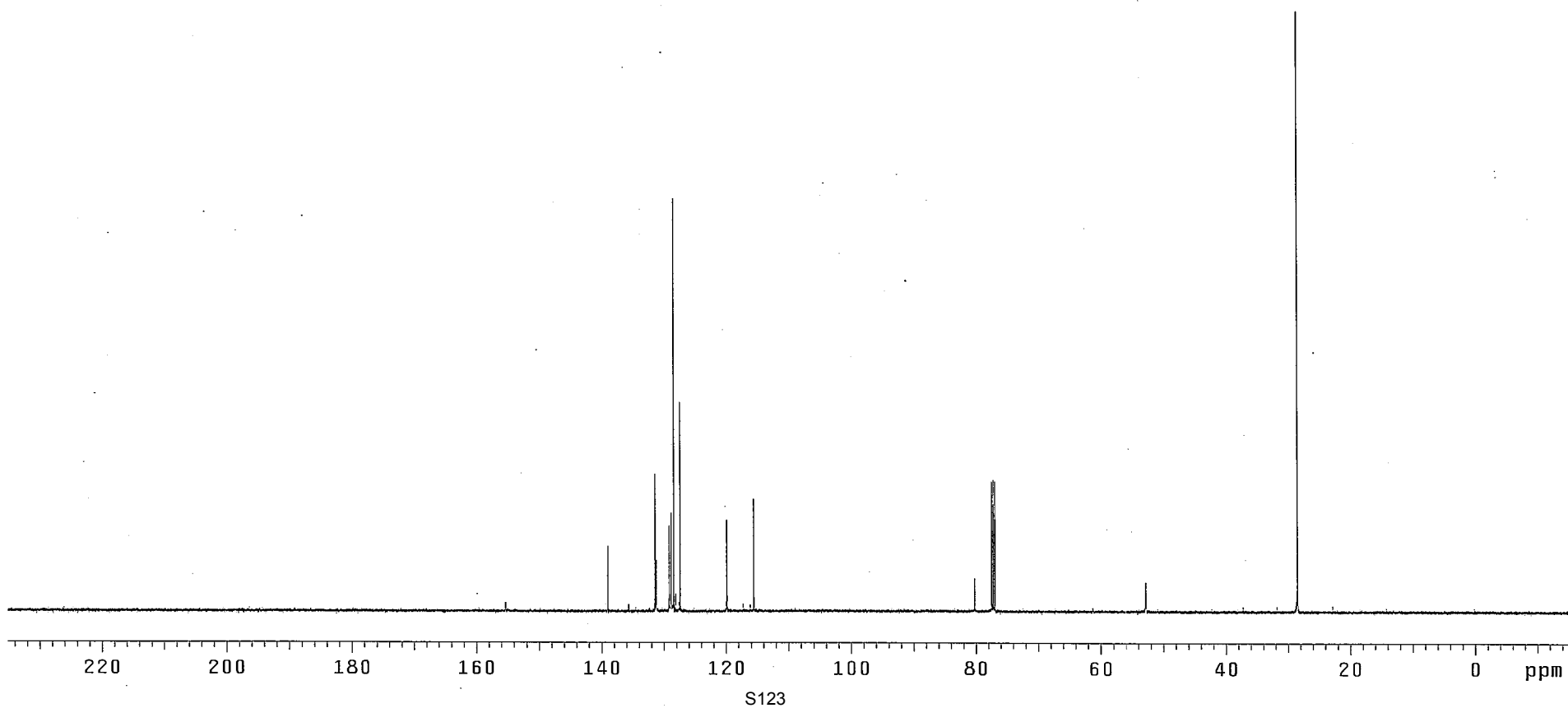


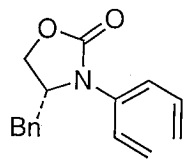
14



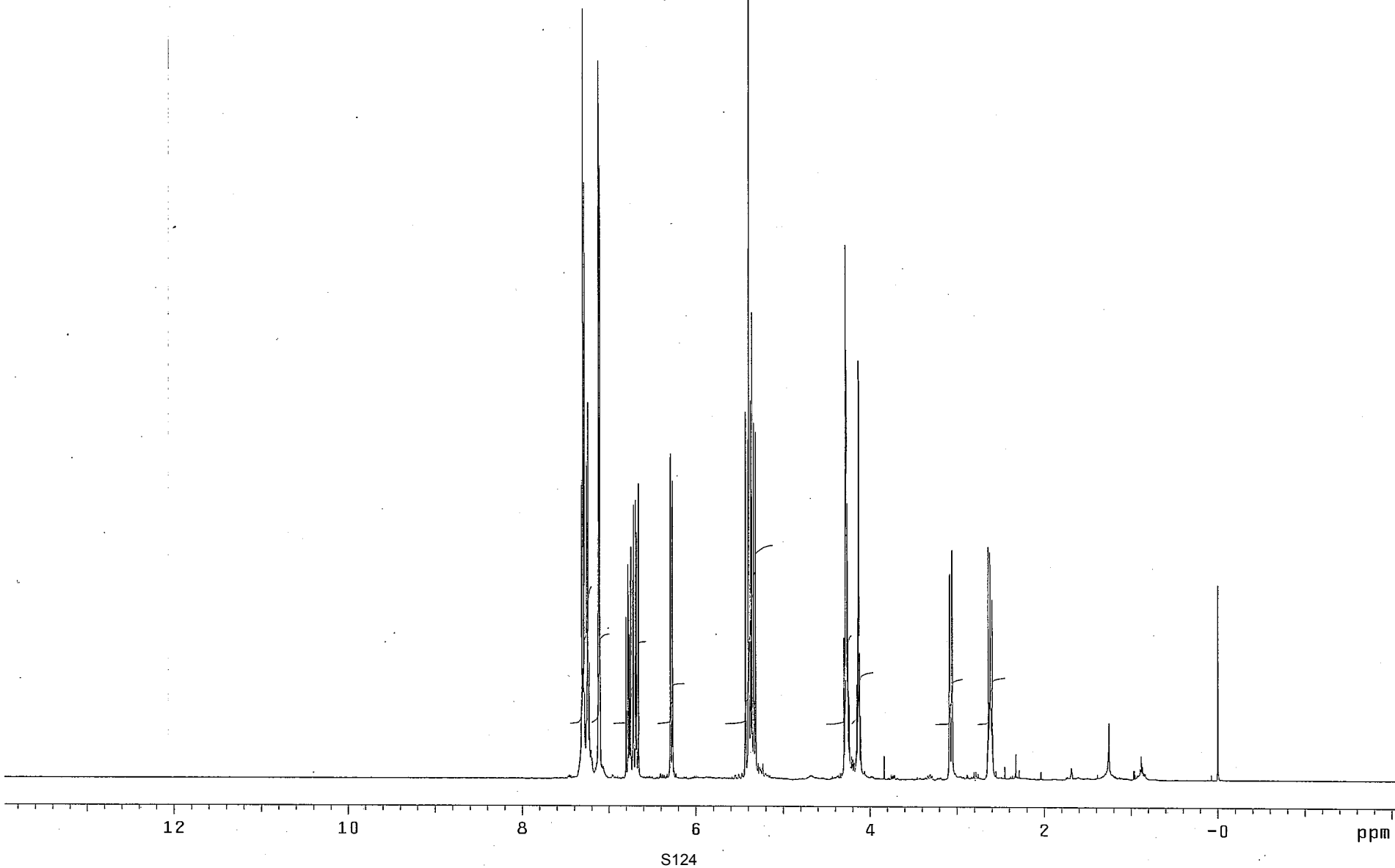


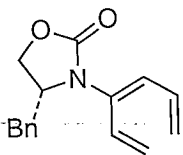
14



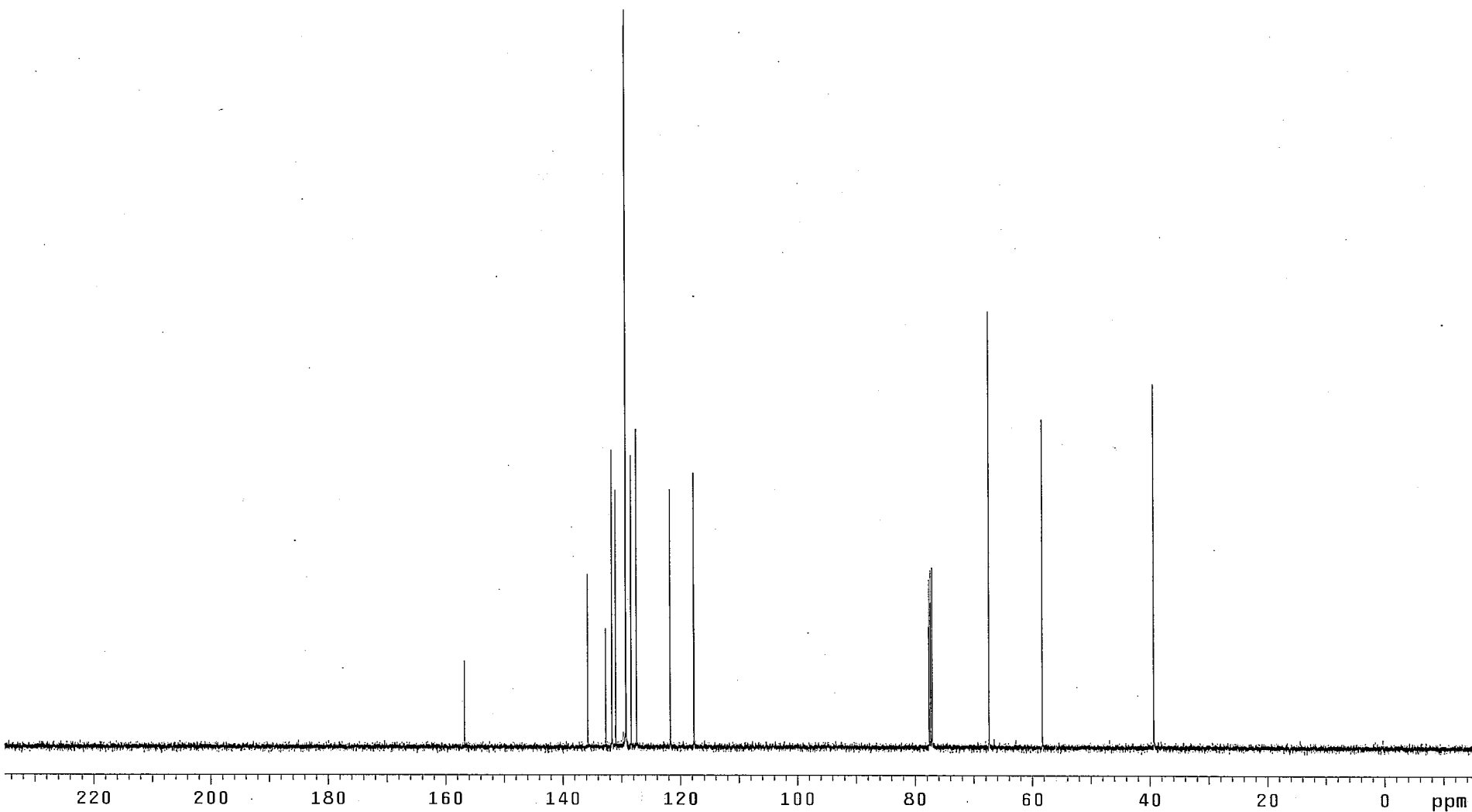


22



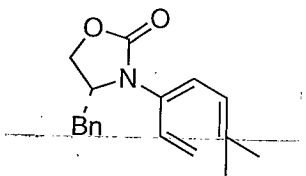


22

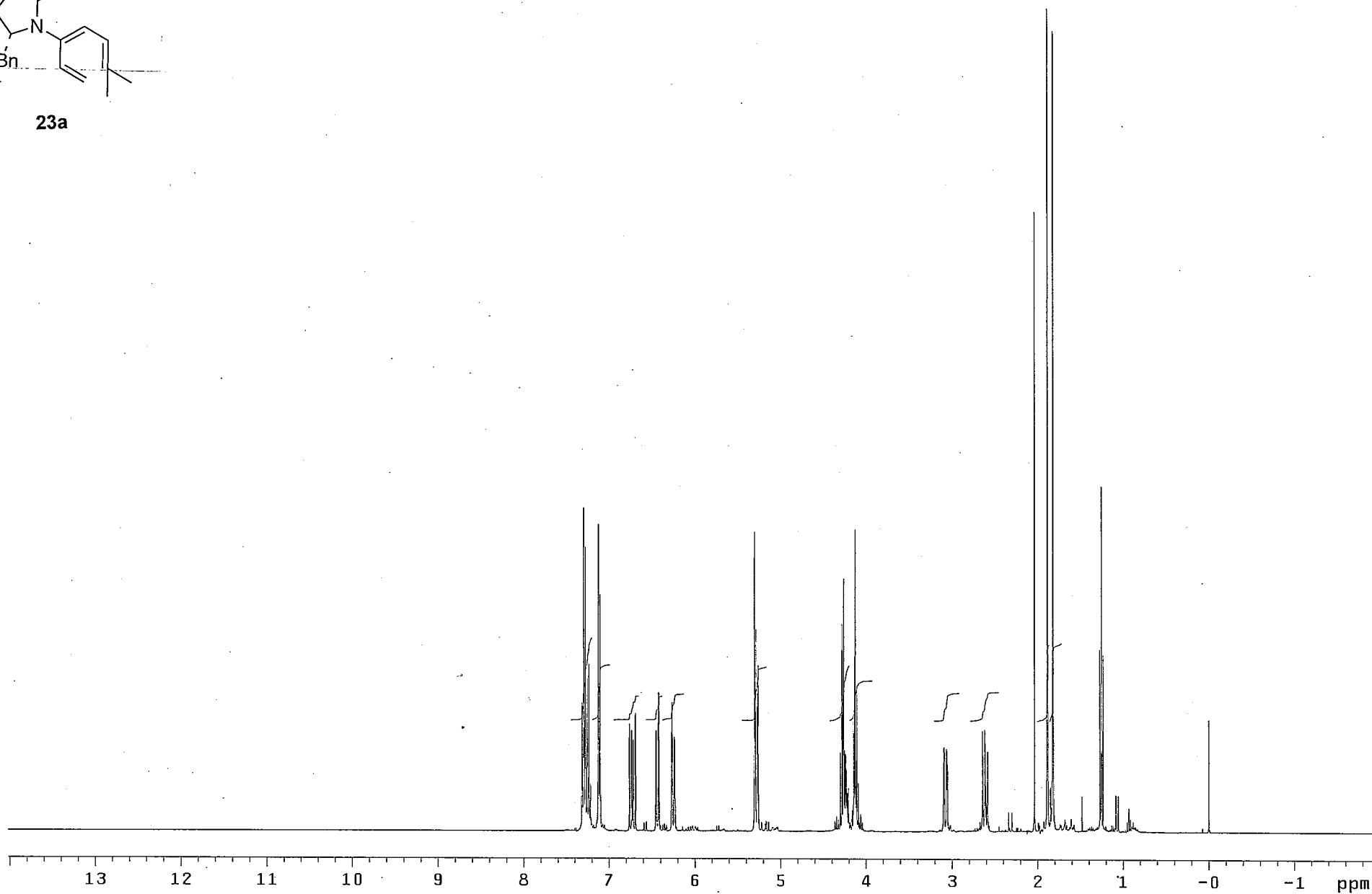


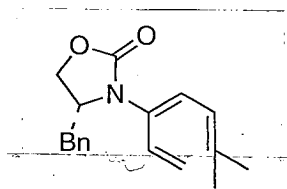
S125



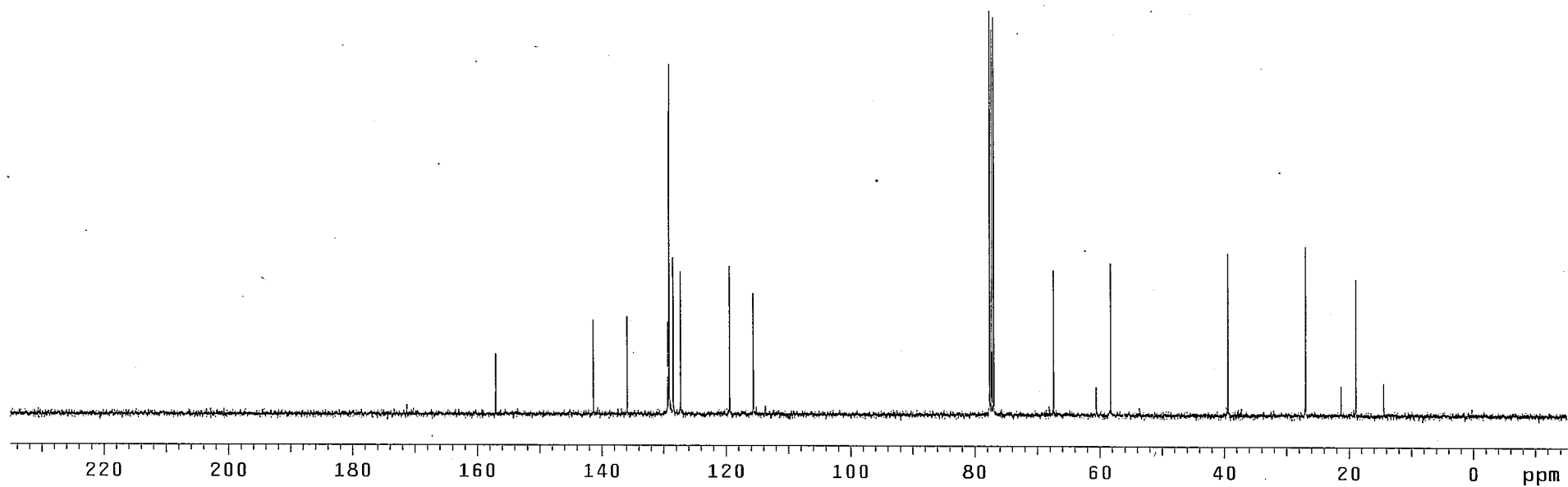


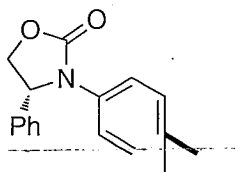
23a



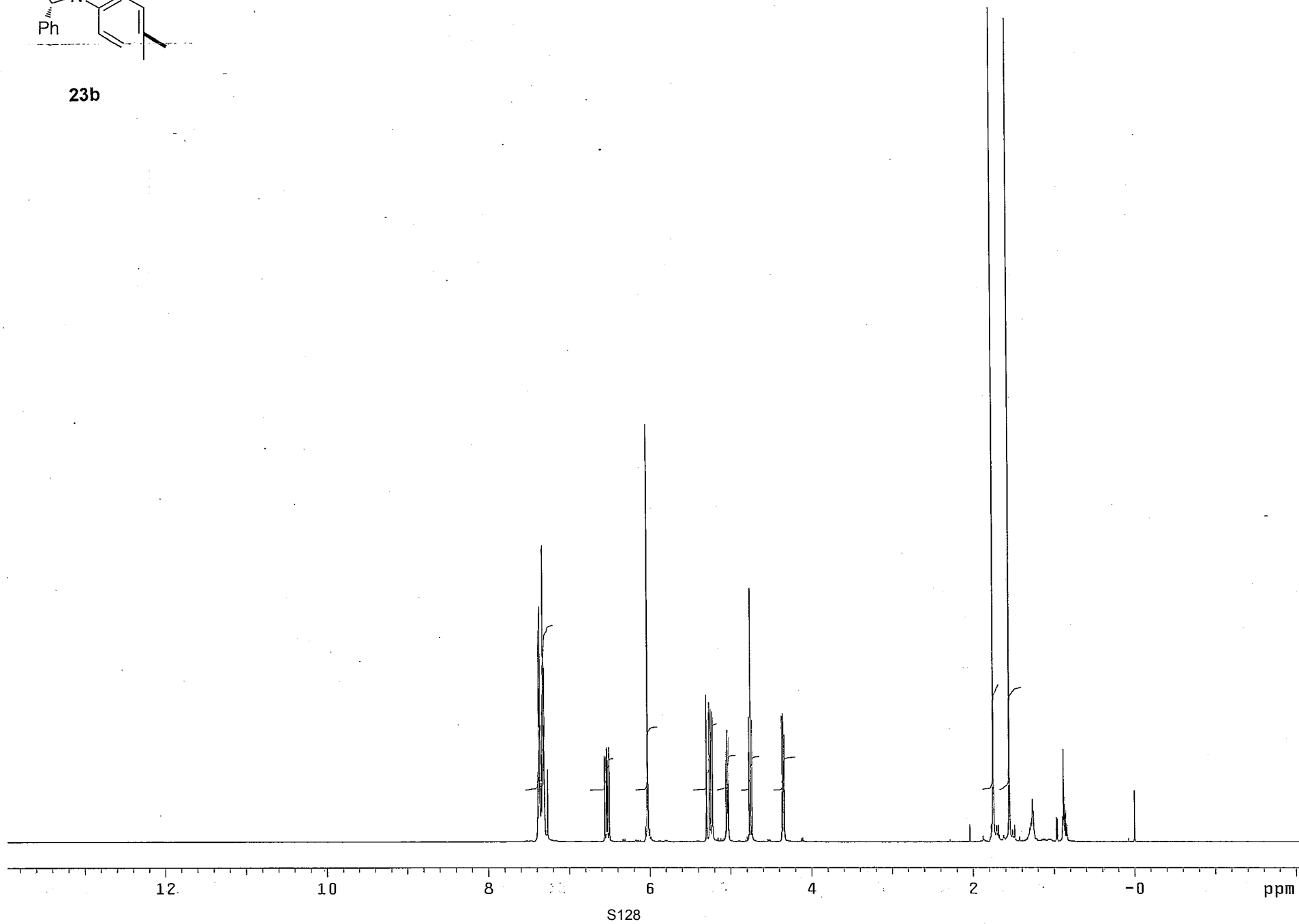


23a

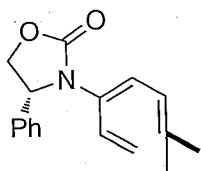




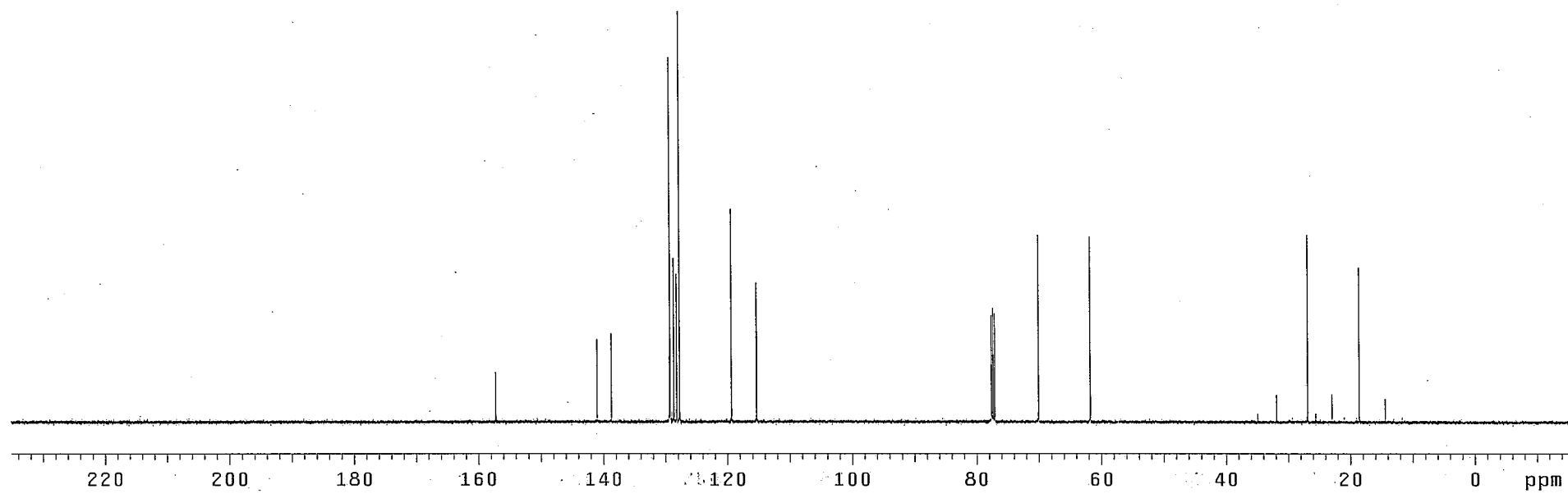
23b



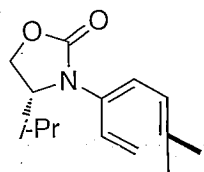
S128



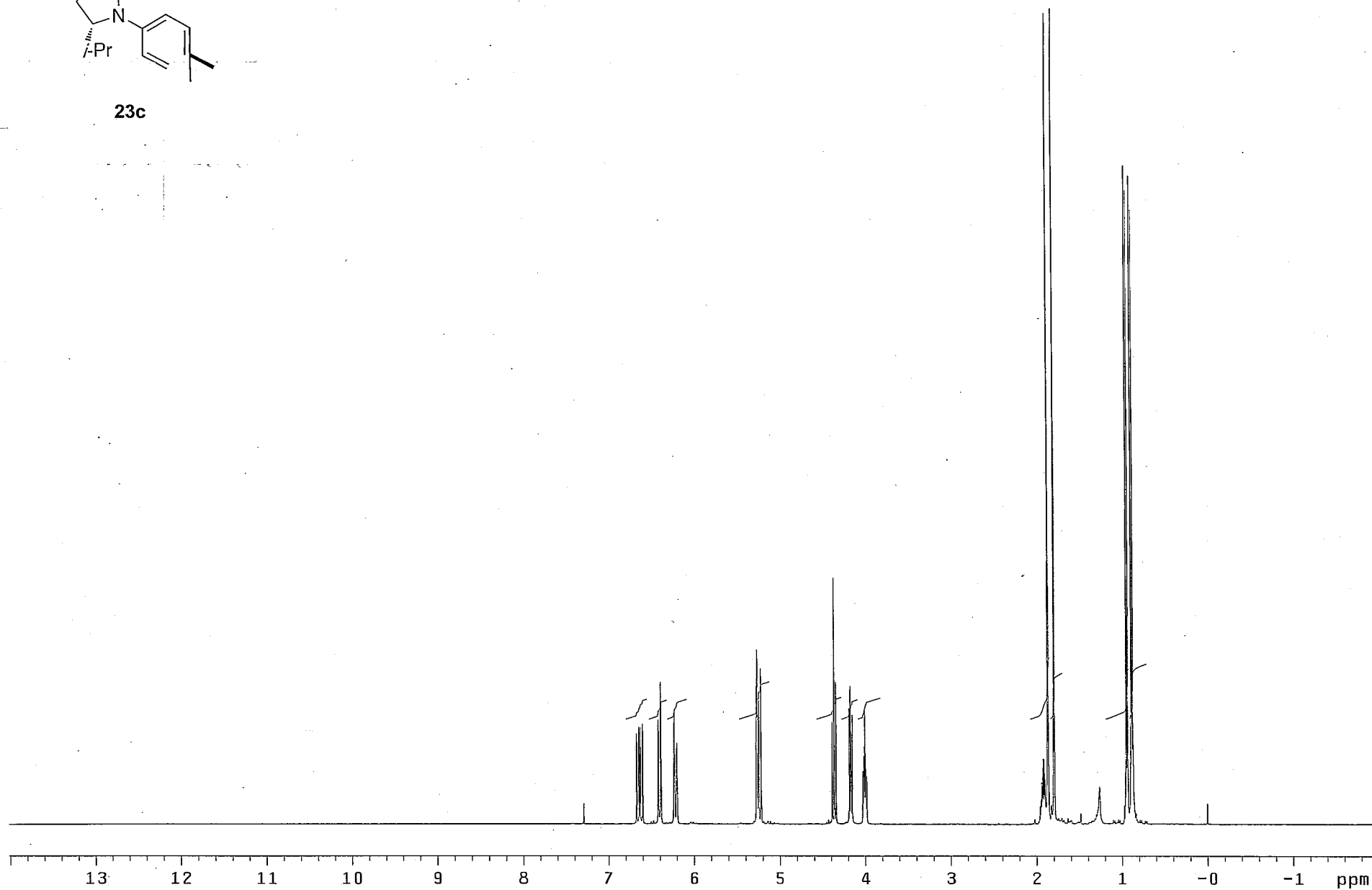
23b

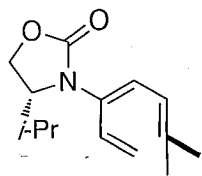


S129

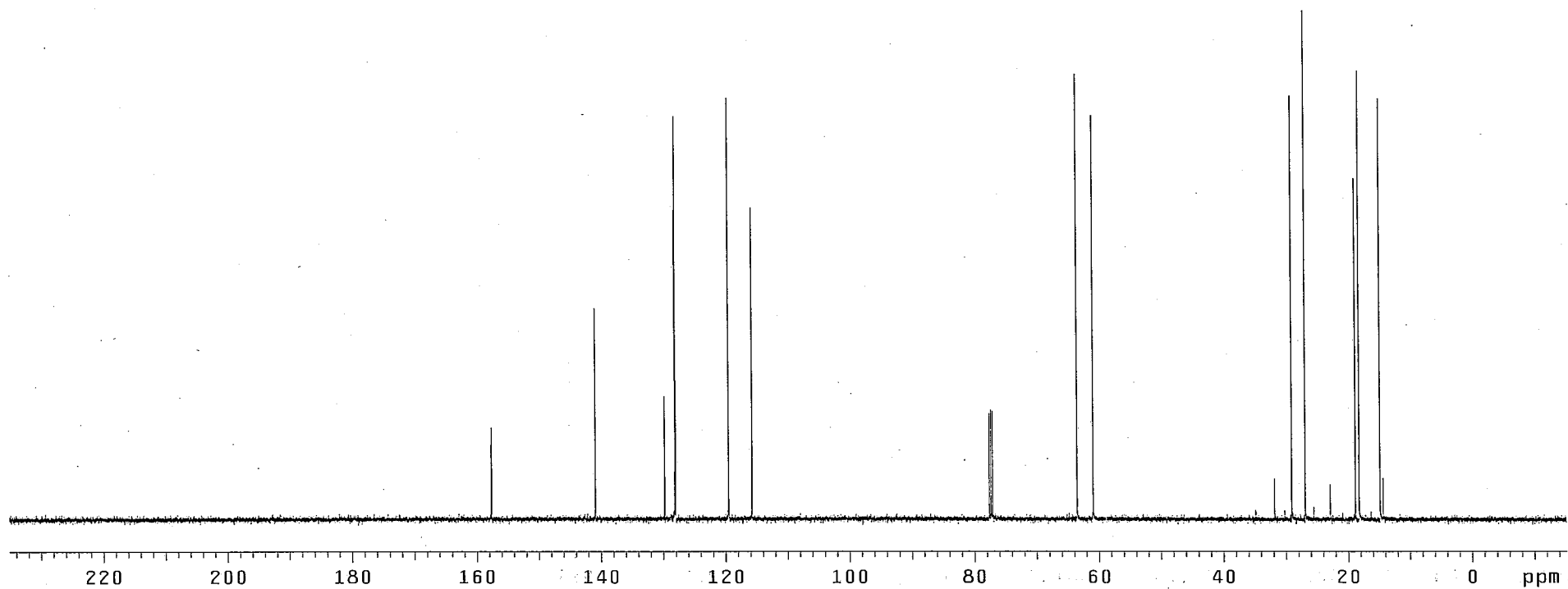


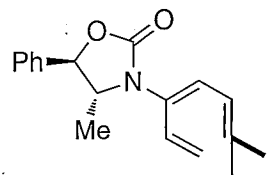
23c



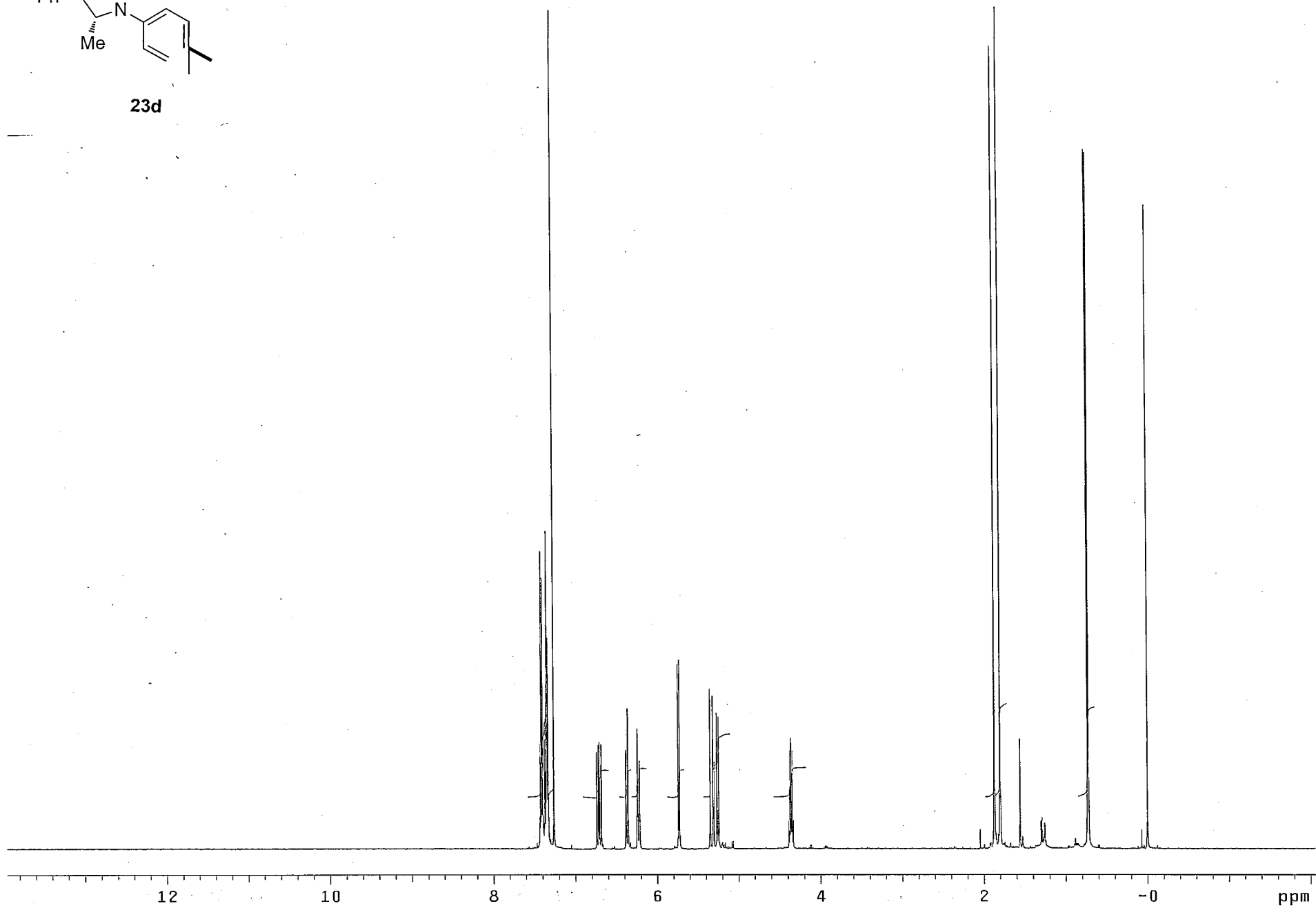


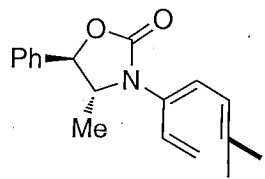
23c



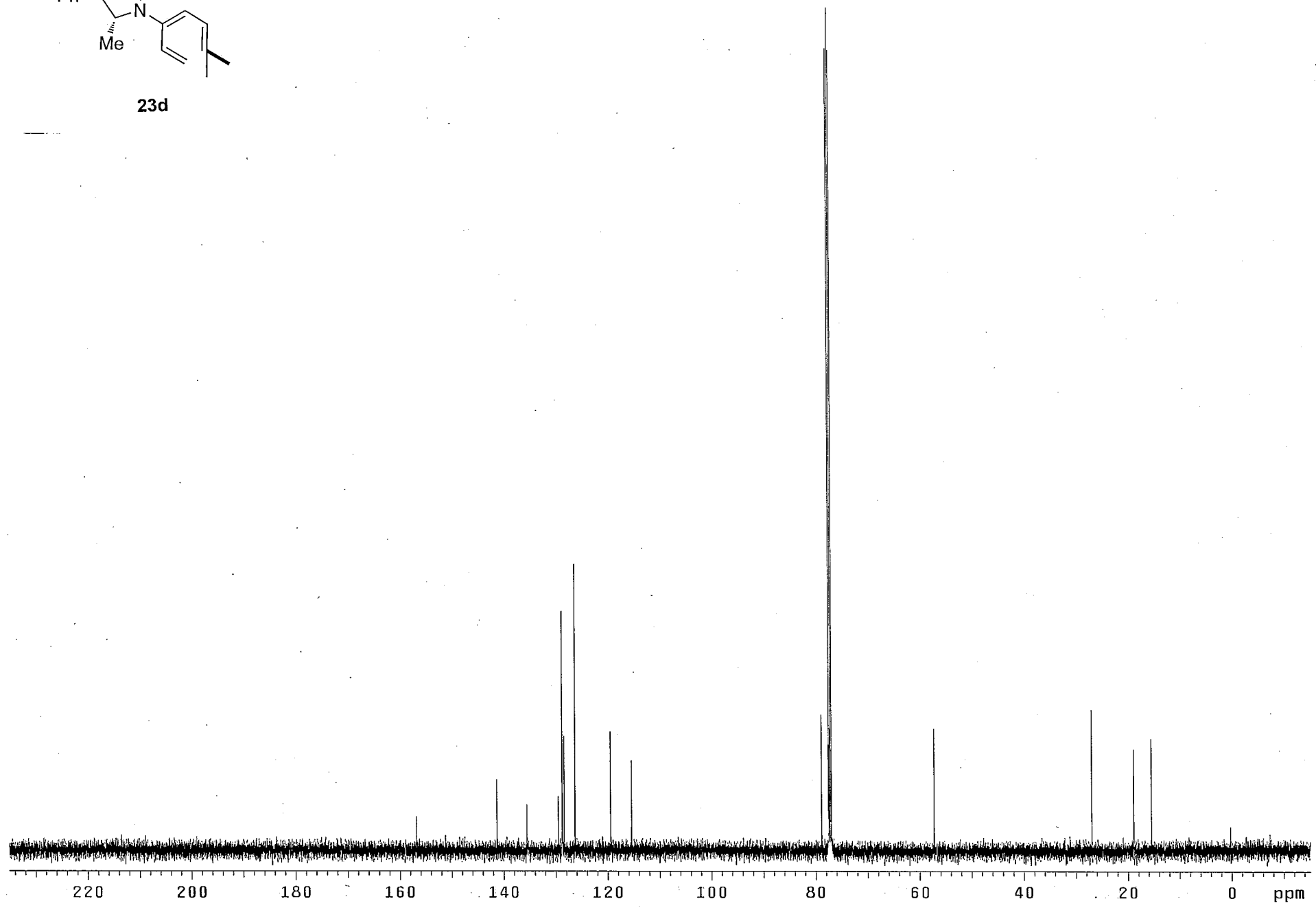


23d

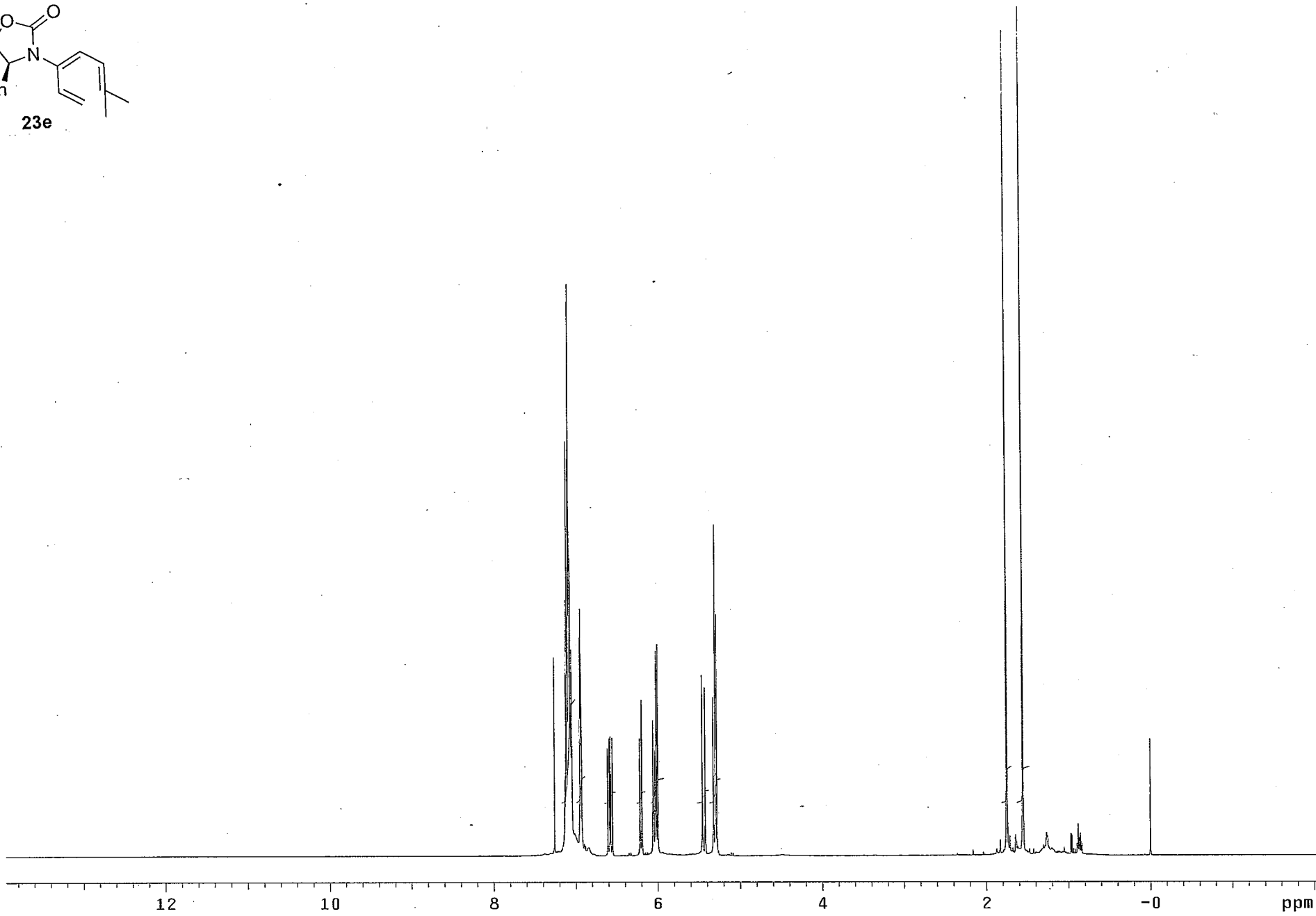
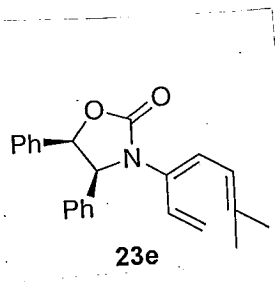


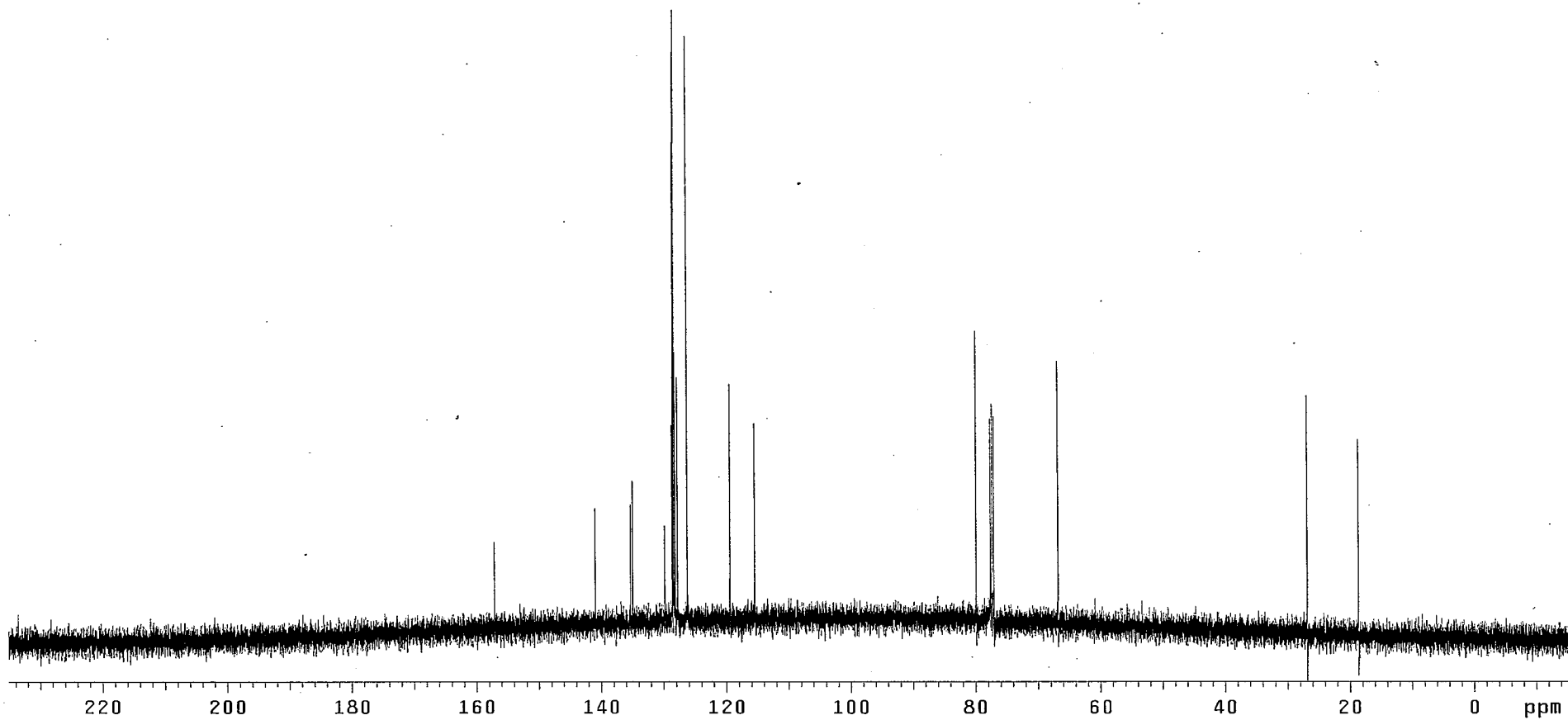
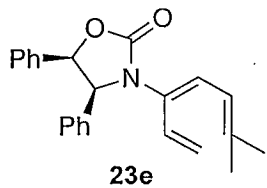


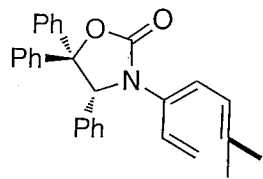
23d



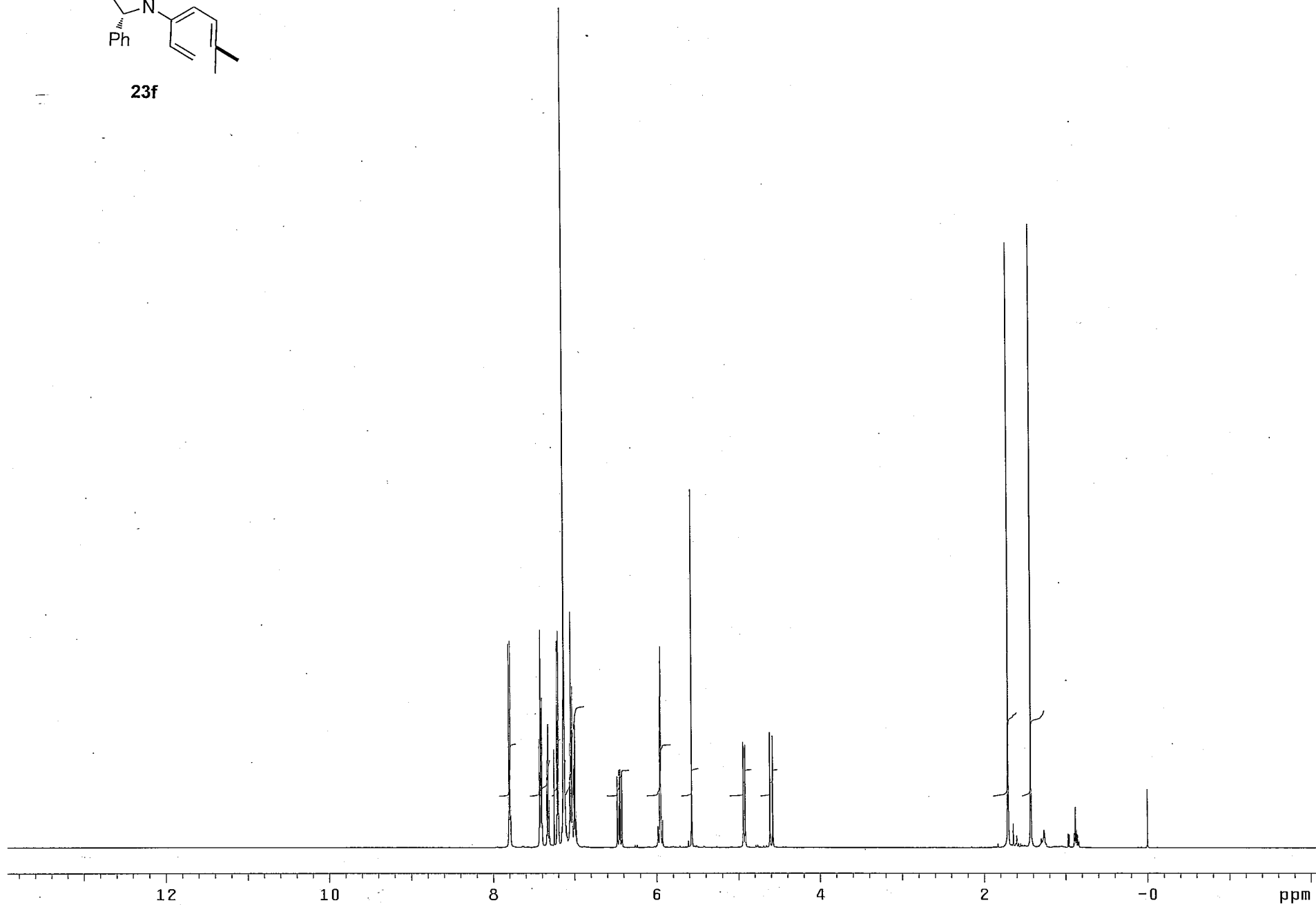




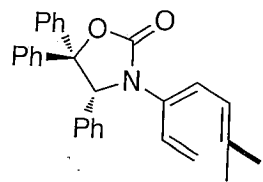




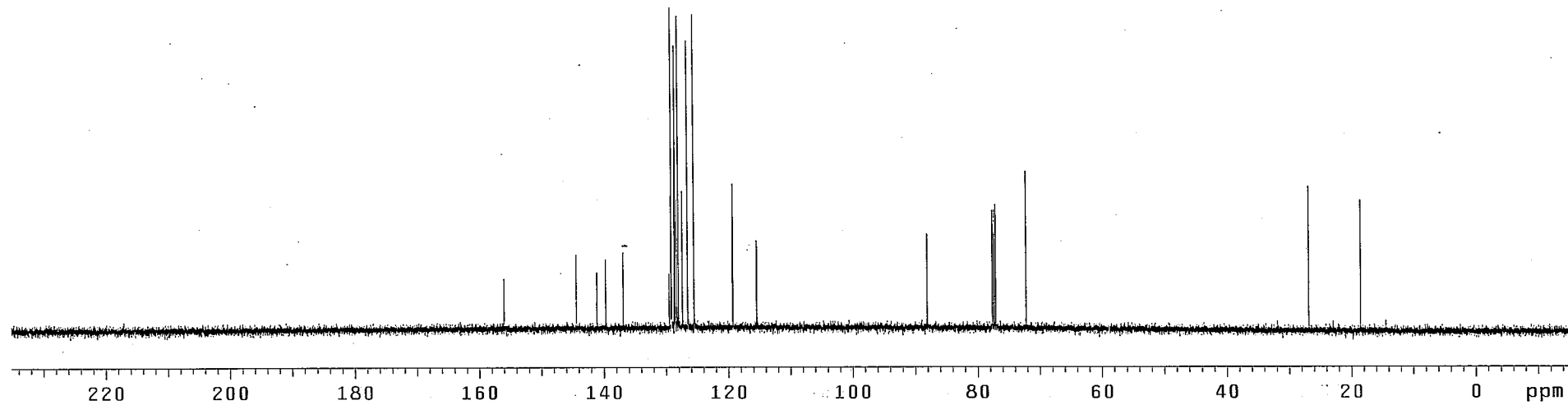
23f

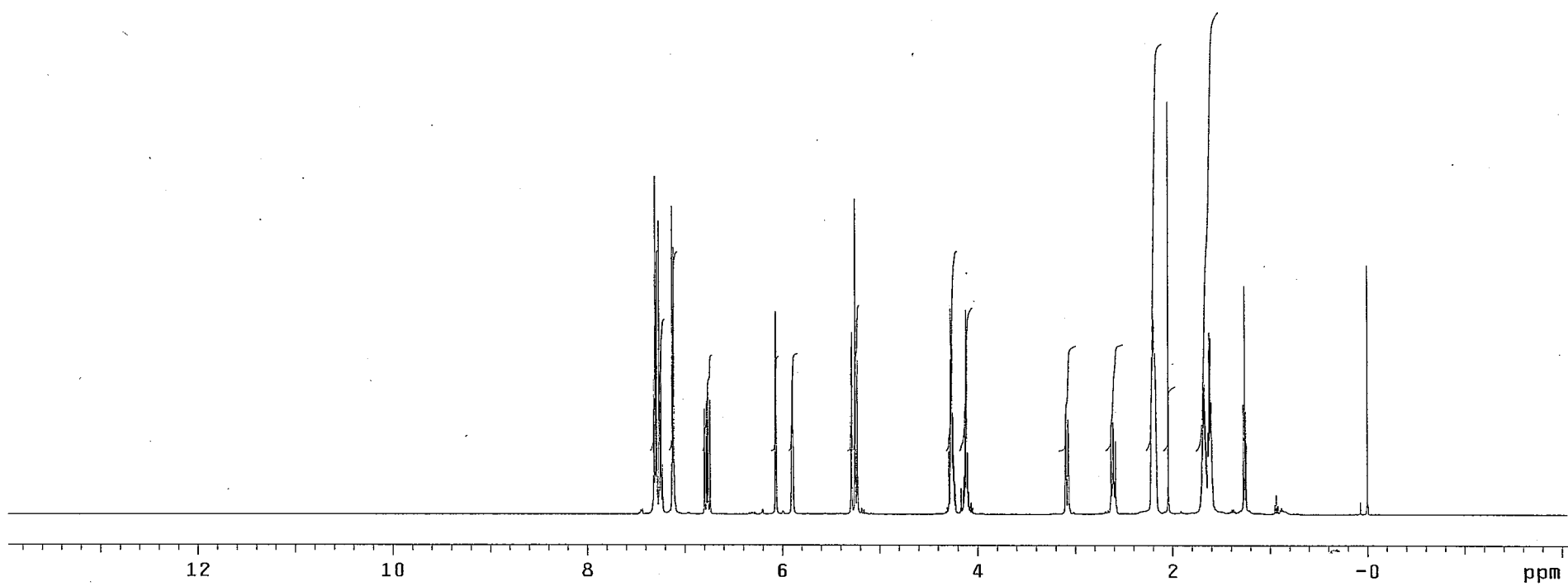
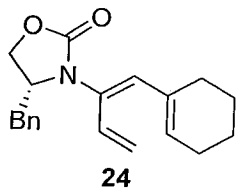


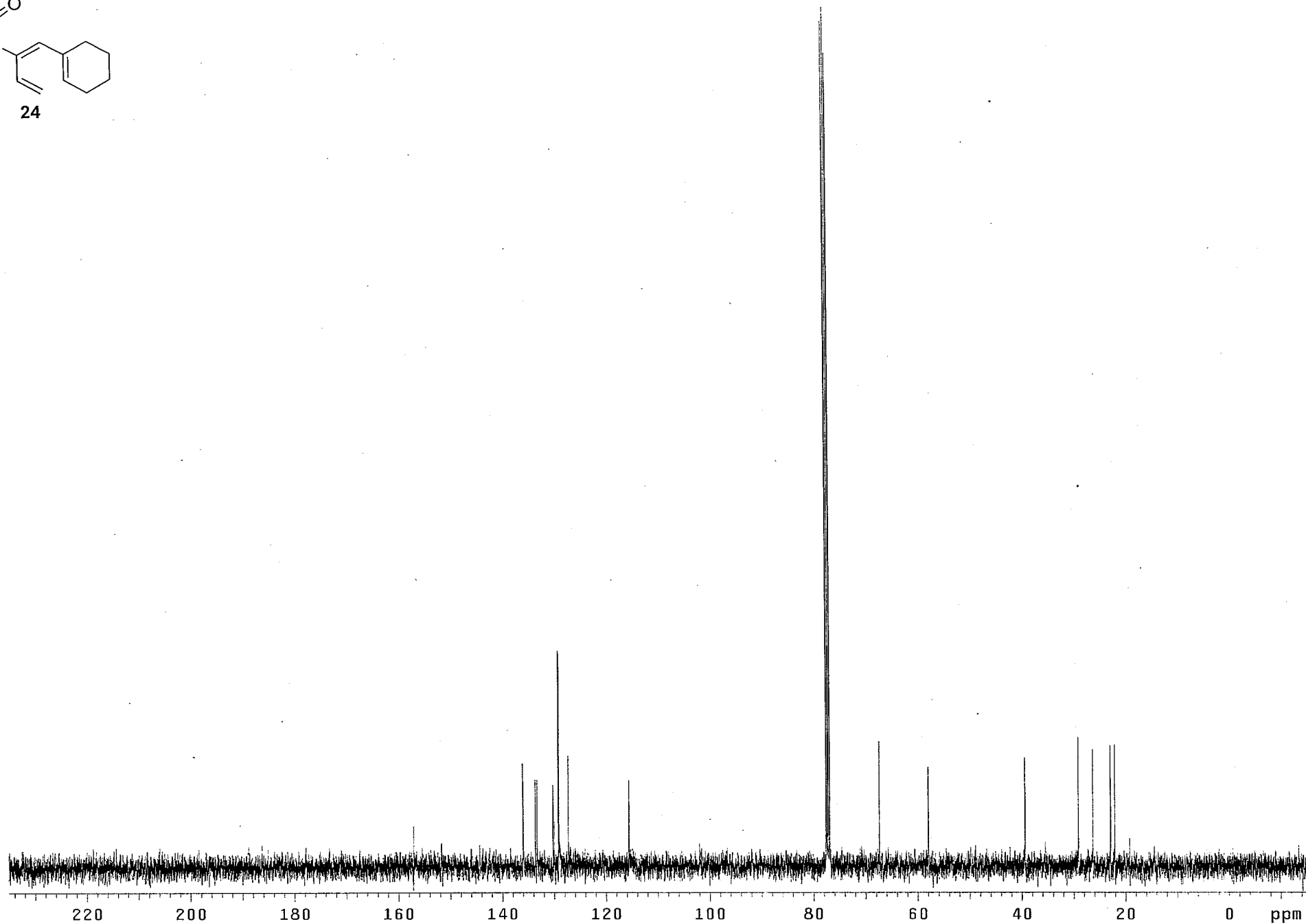
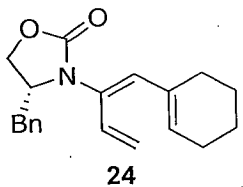
S136

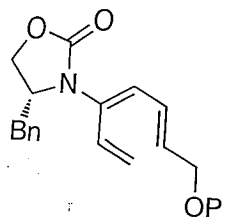


23f

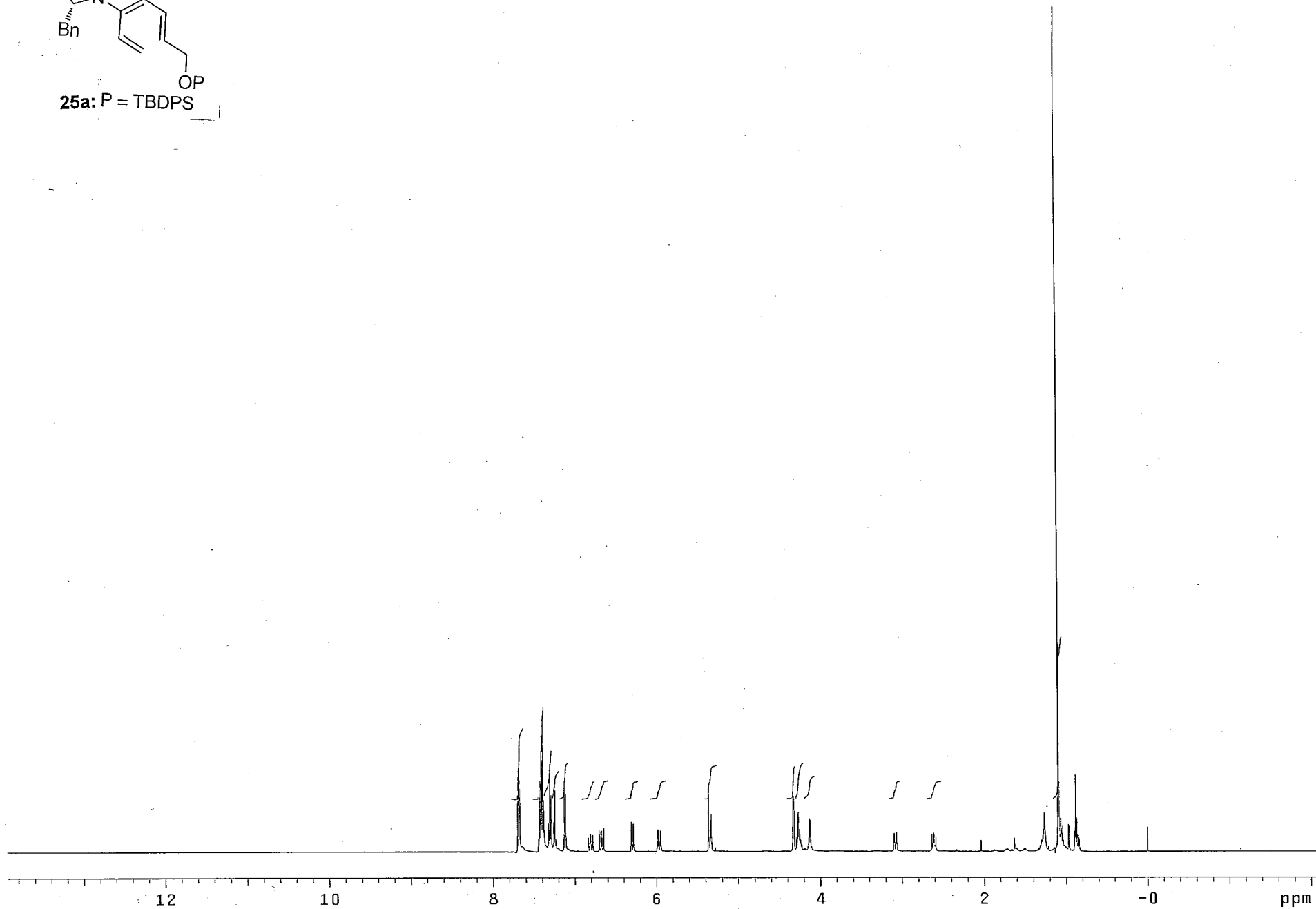




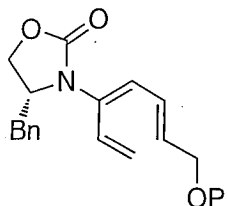




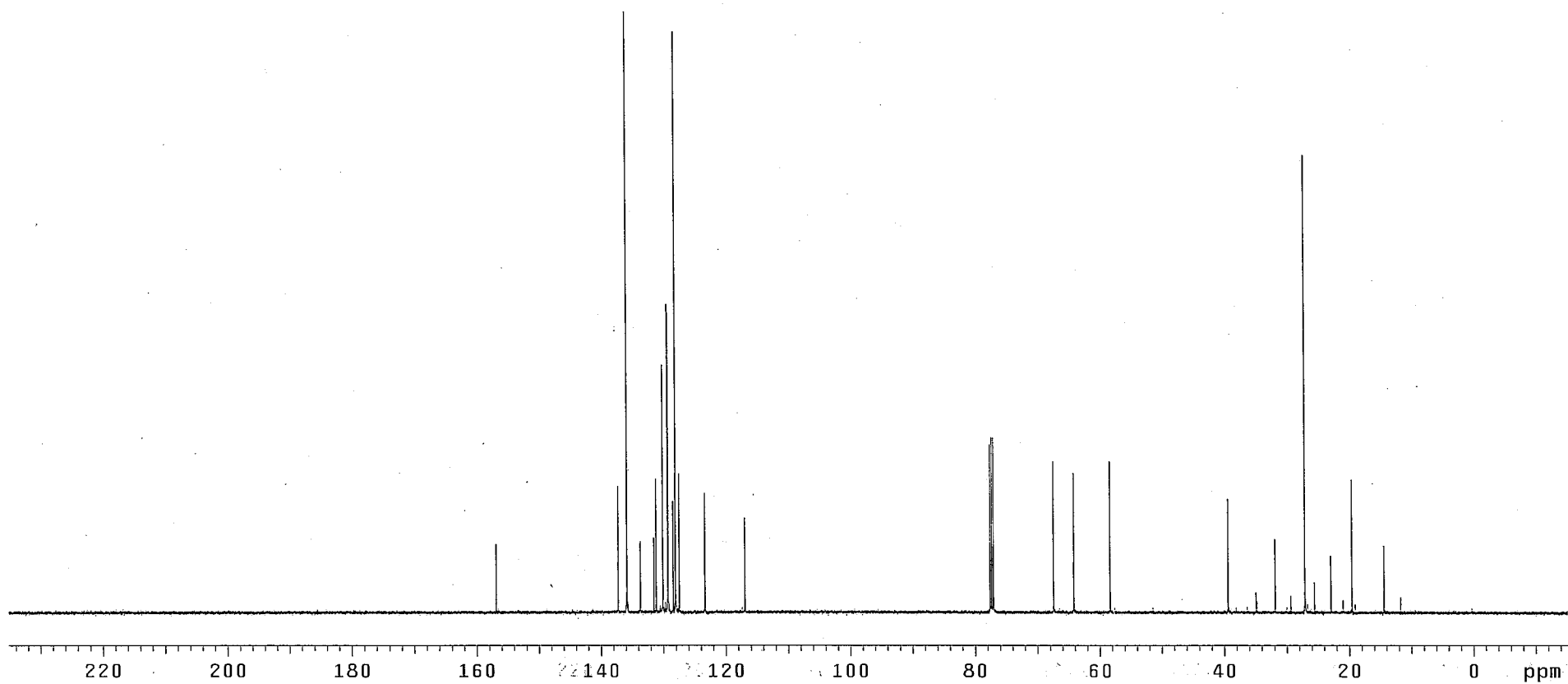
25a: P = TBDPS



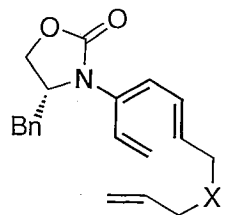
S140



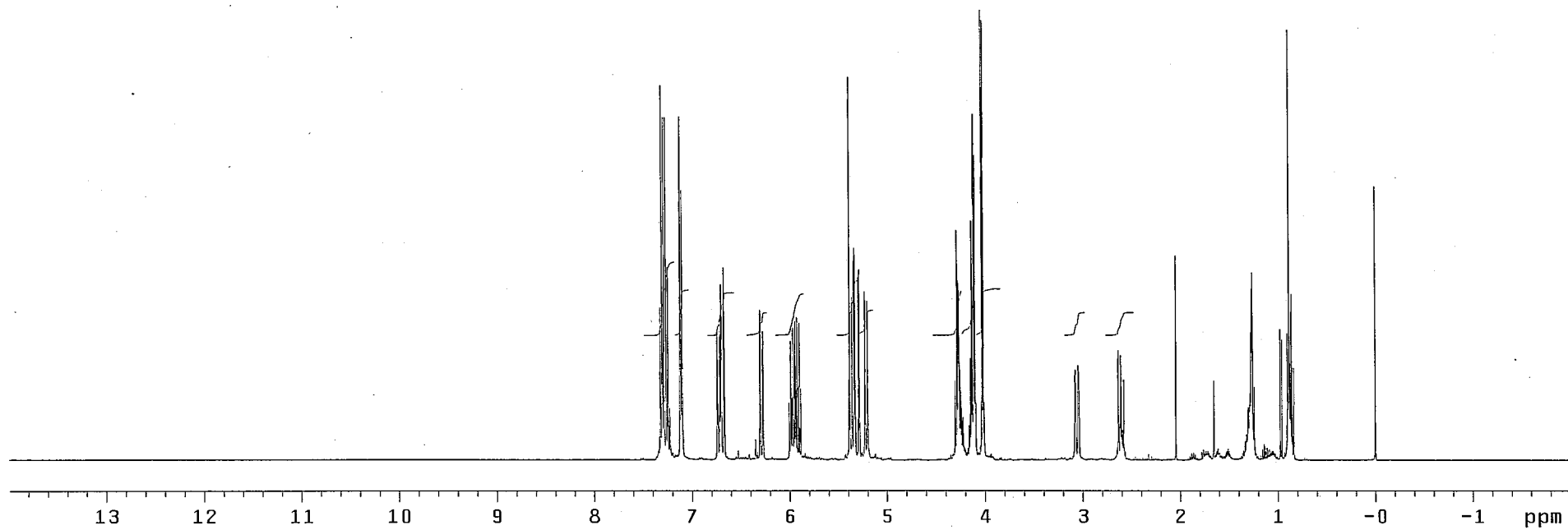
25a: P = TBDPS

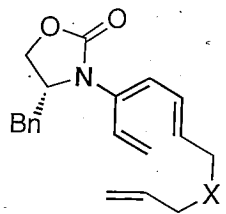




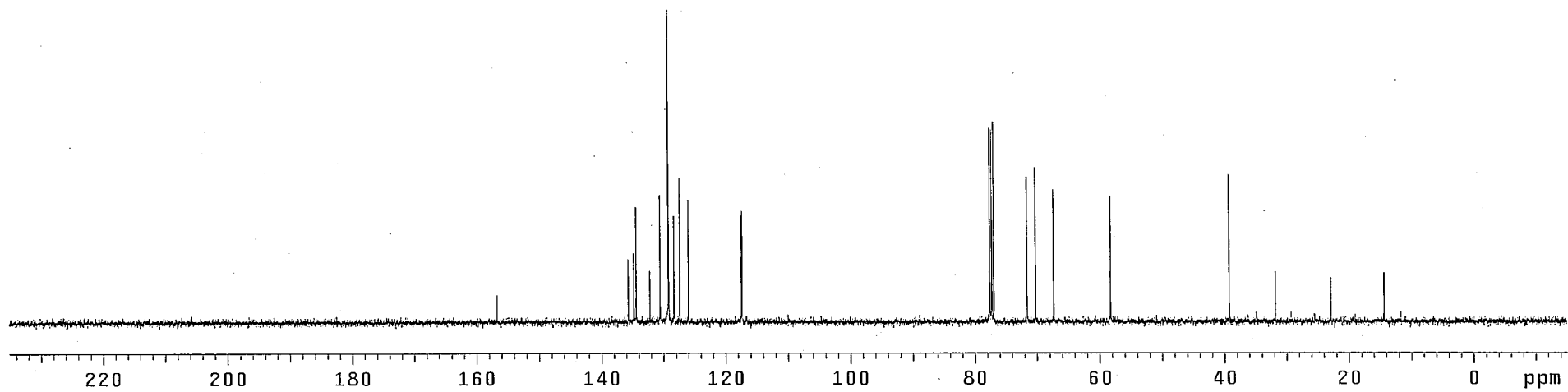


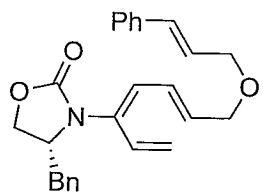
25b: X = O



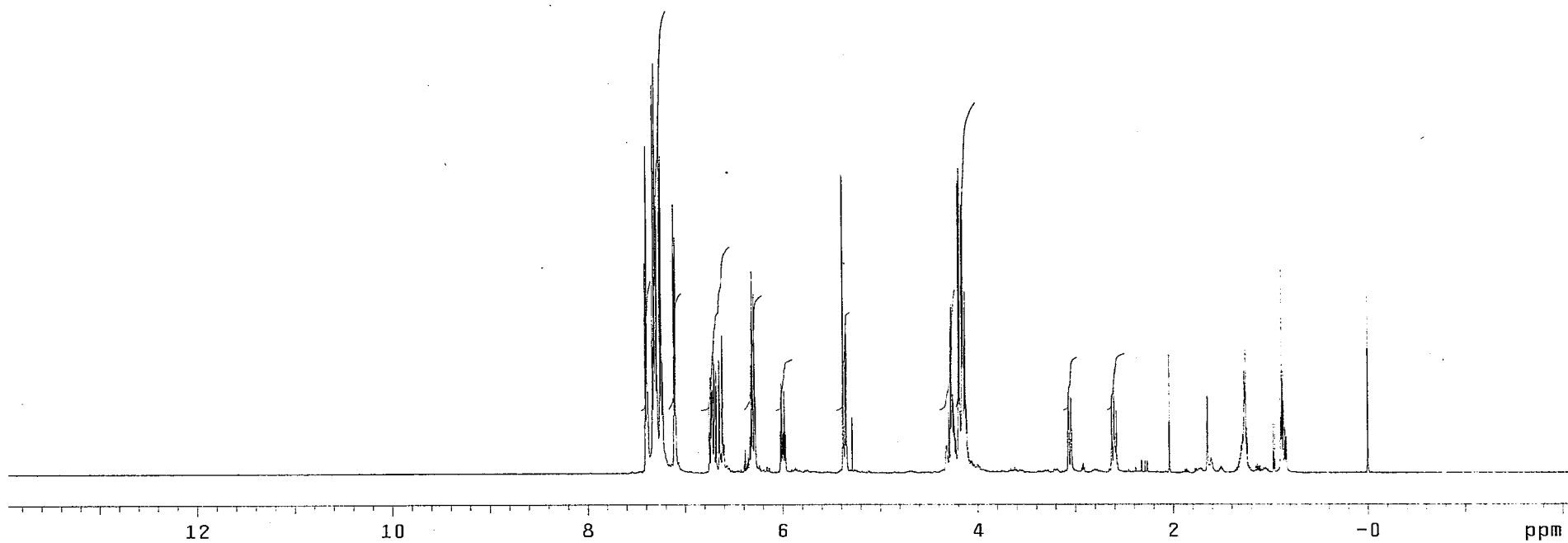


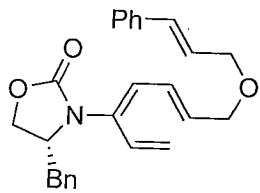
25b: X = O



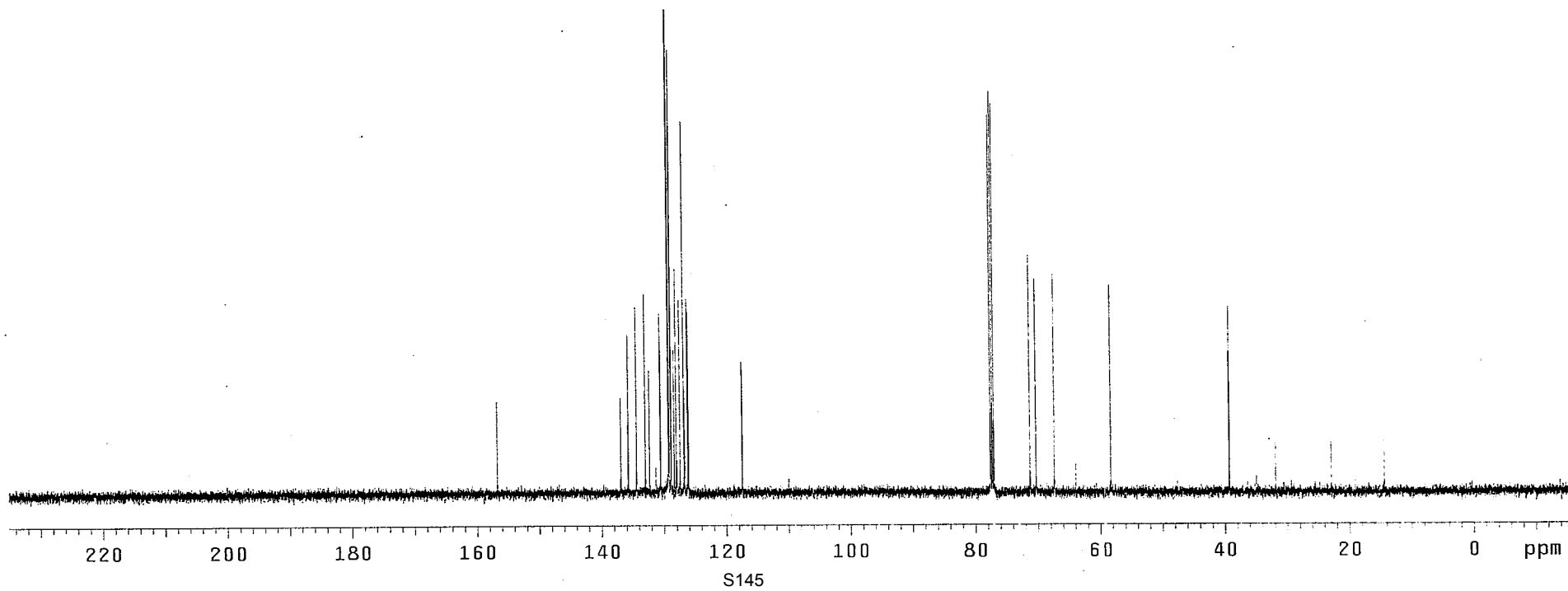


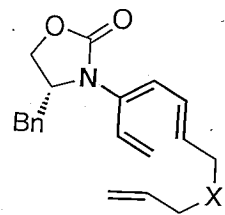
25c



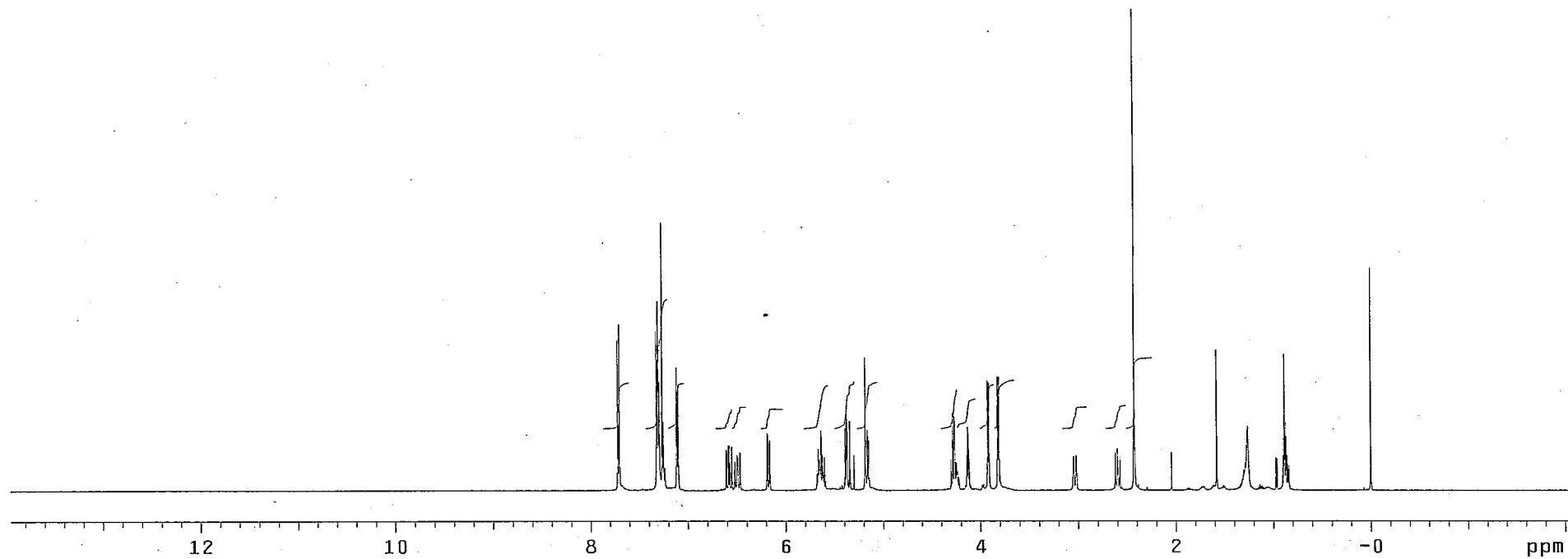


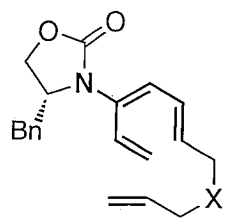
25c





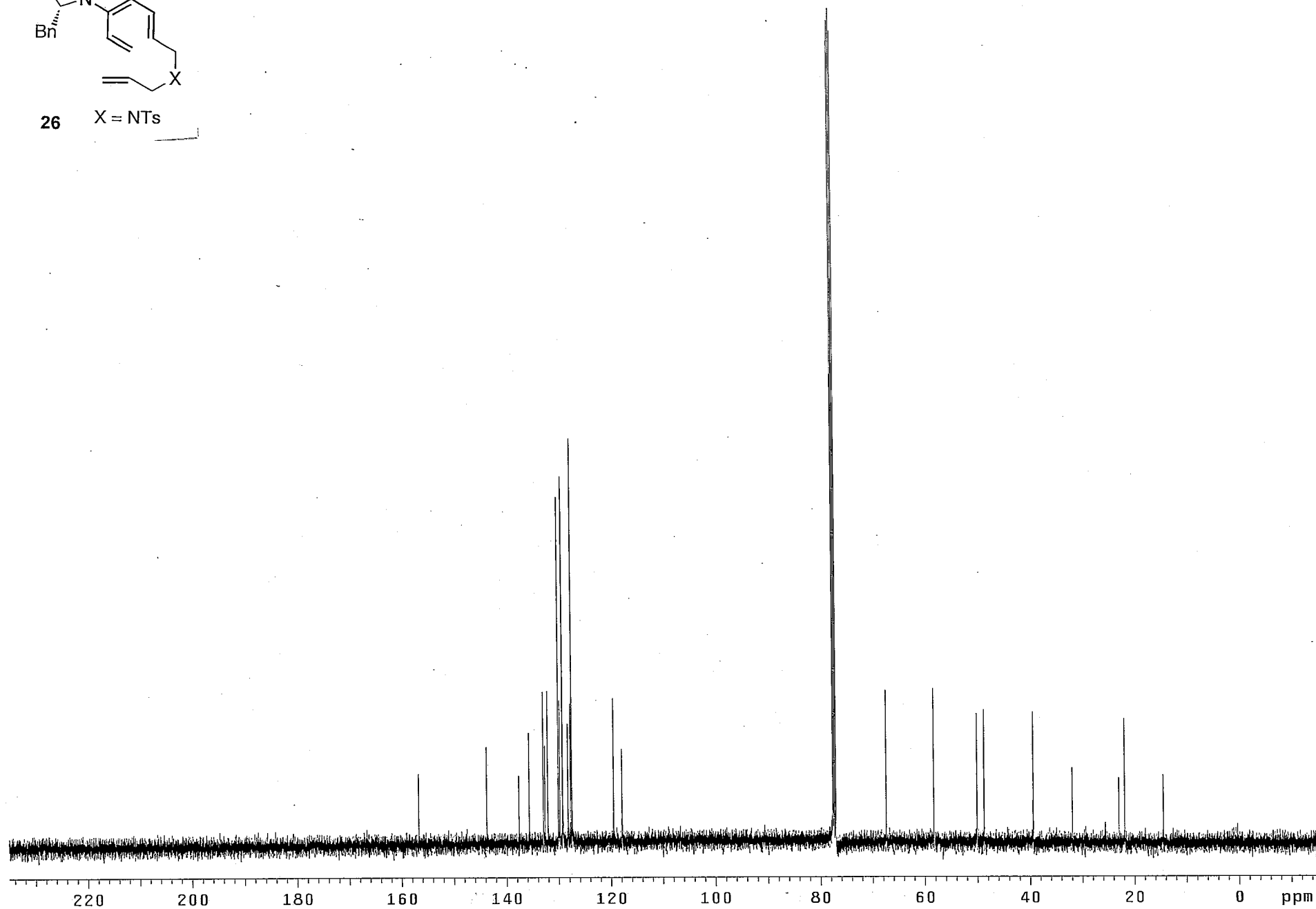
26 X = NTs

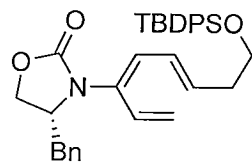




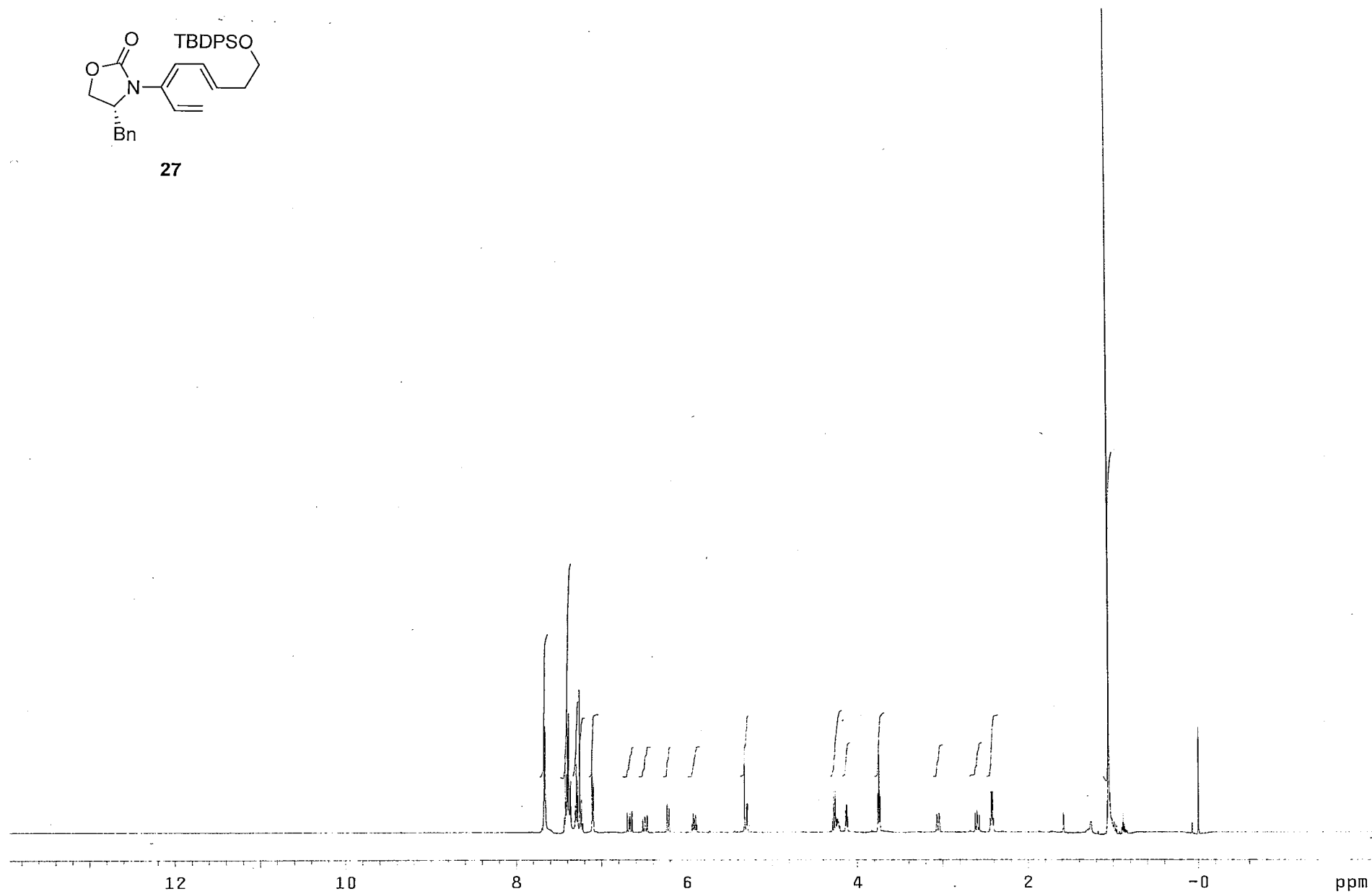
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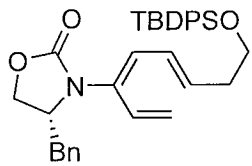
X = NTs



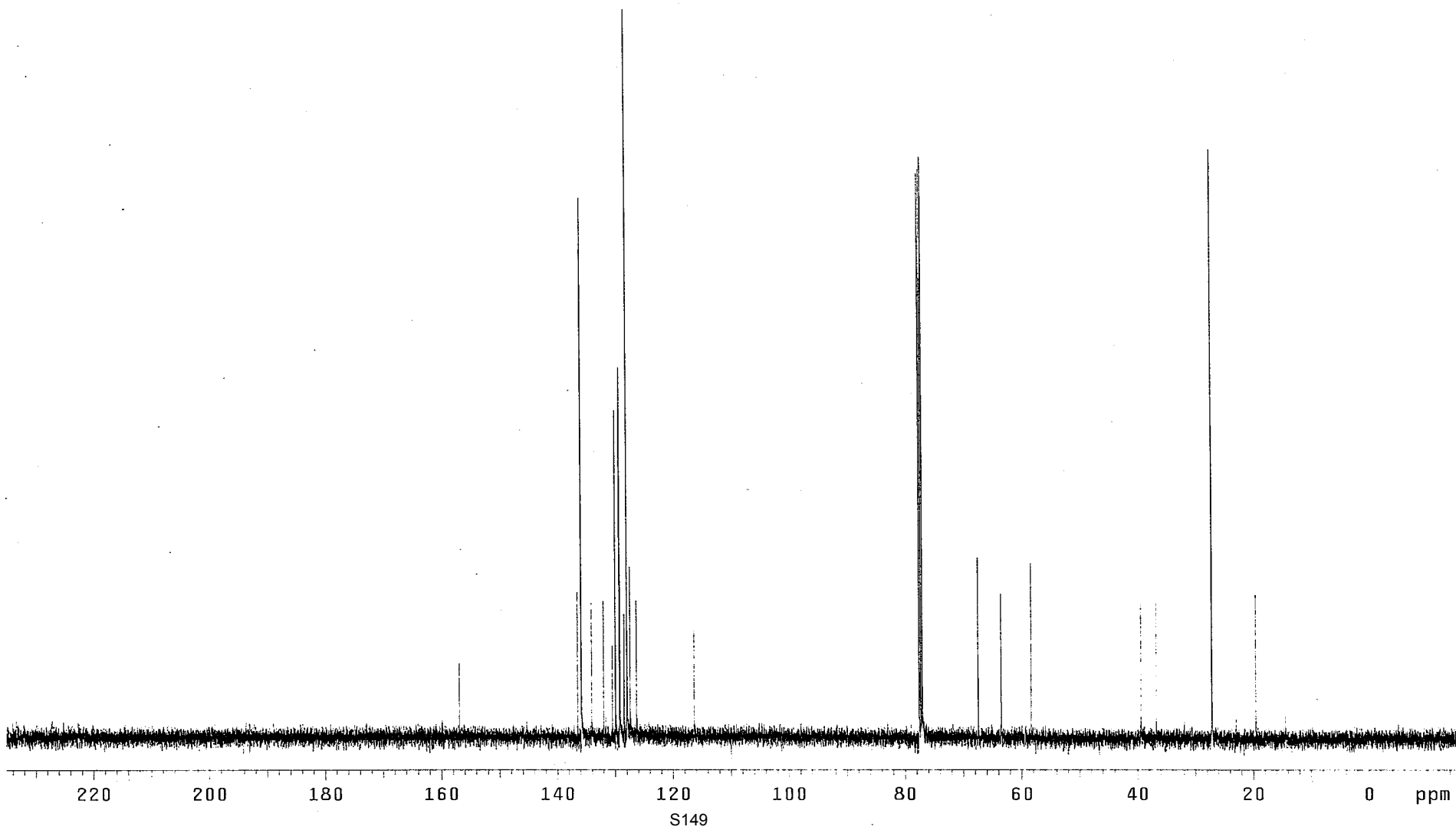


27

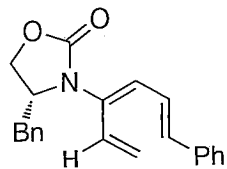




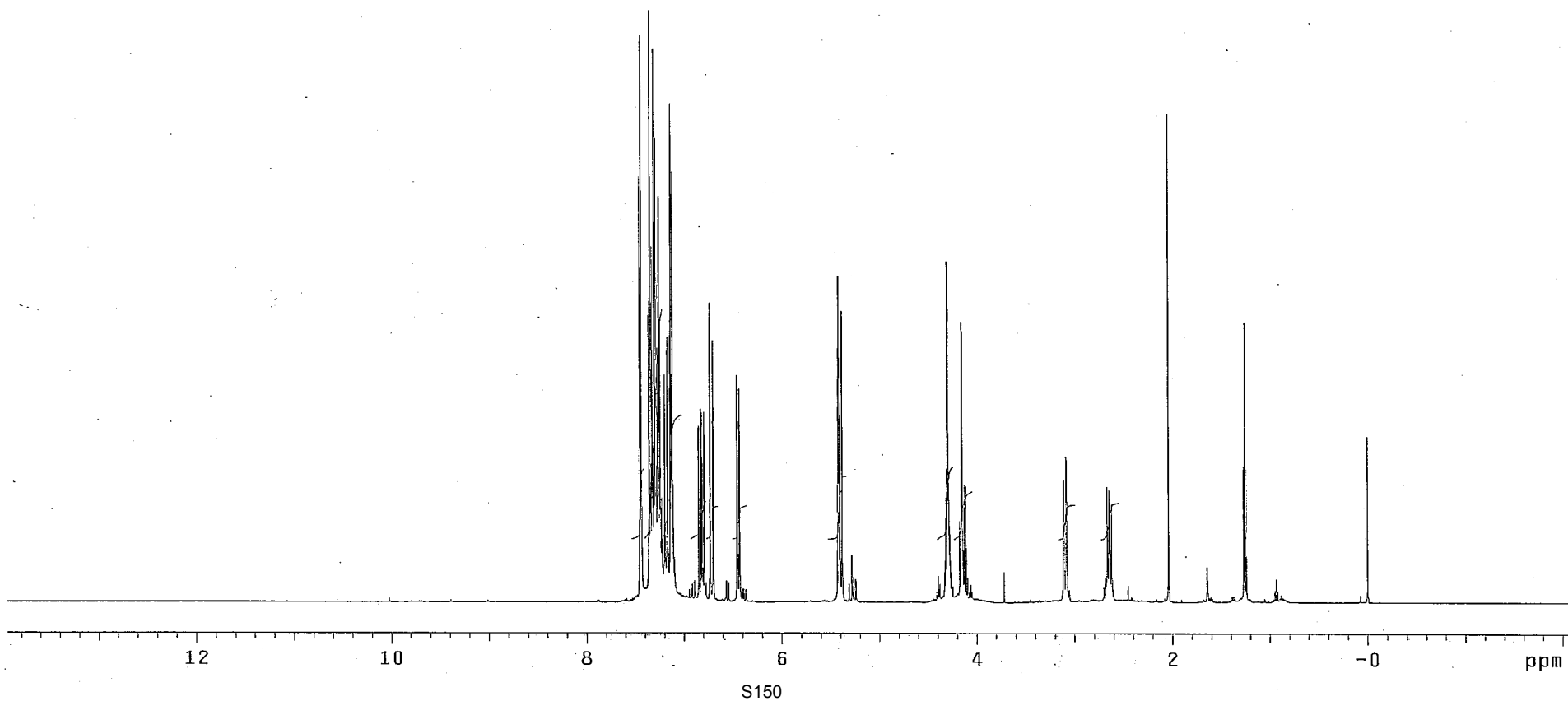
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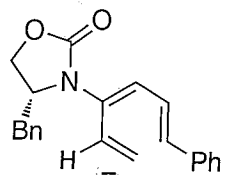




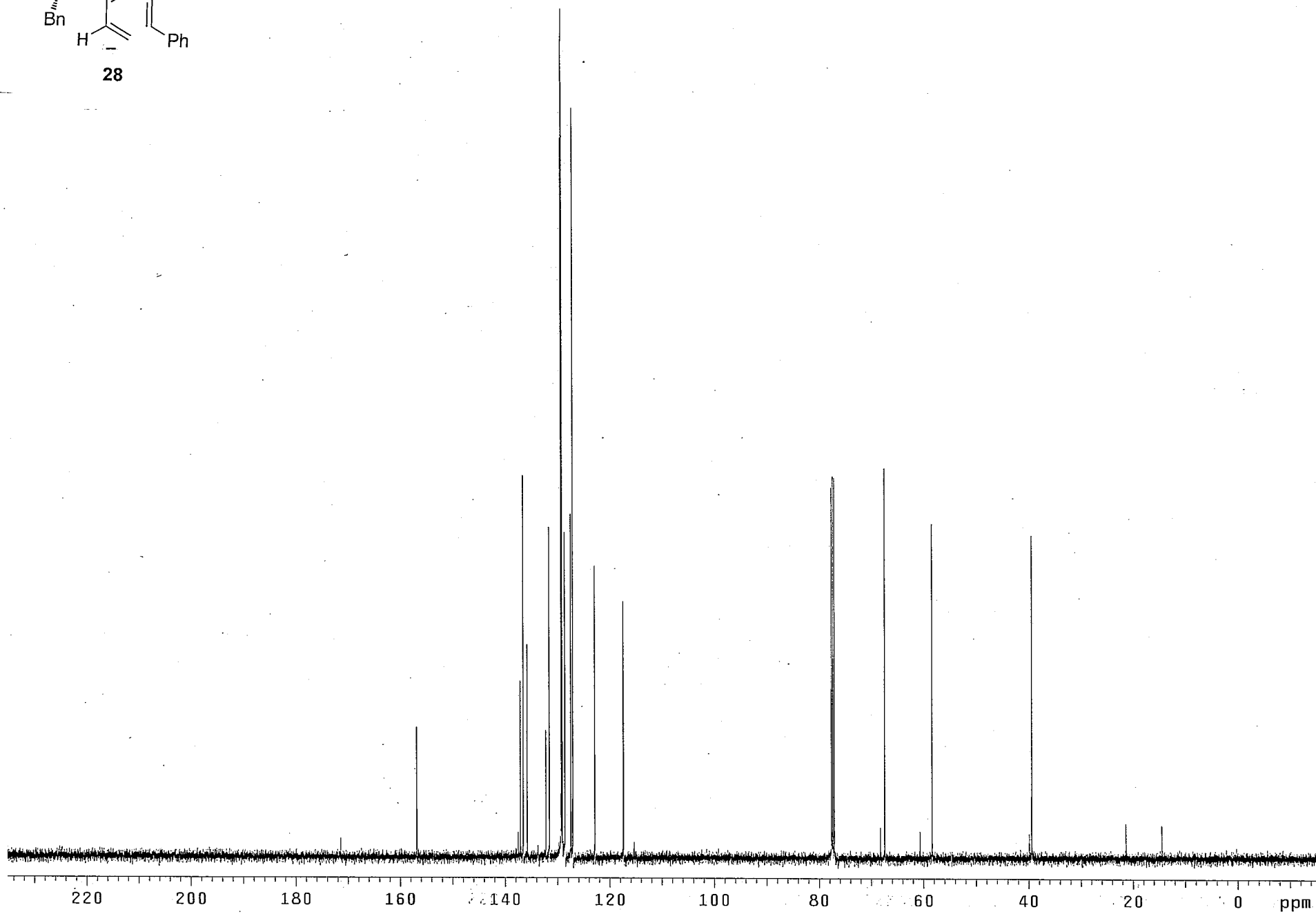


28

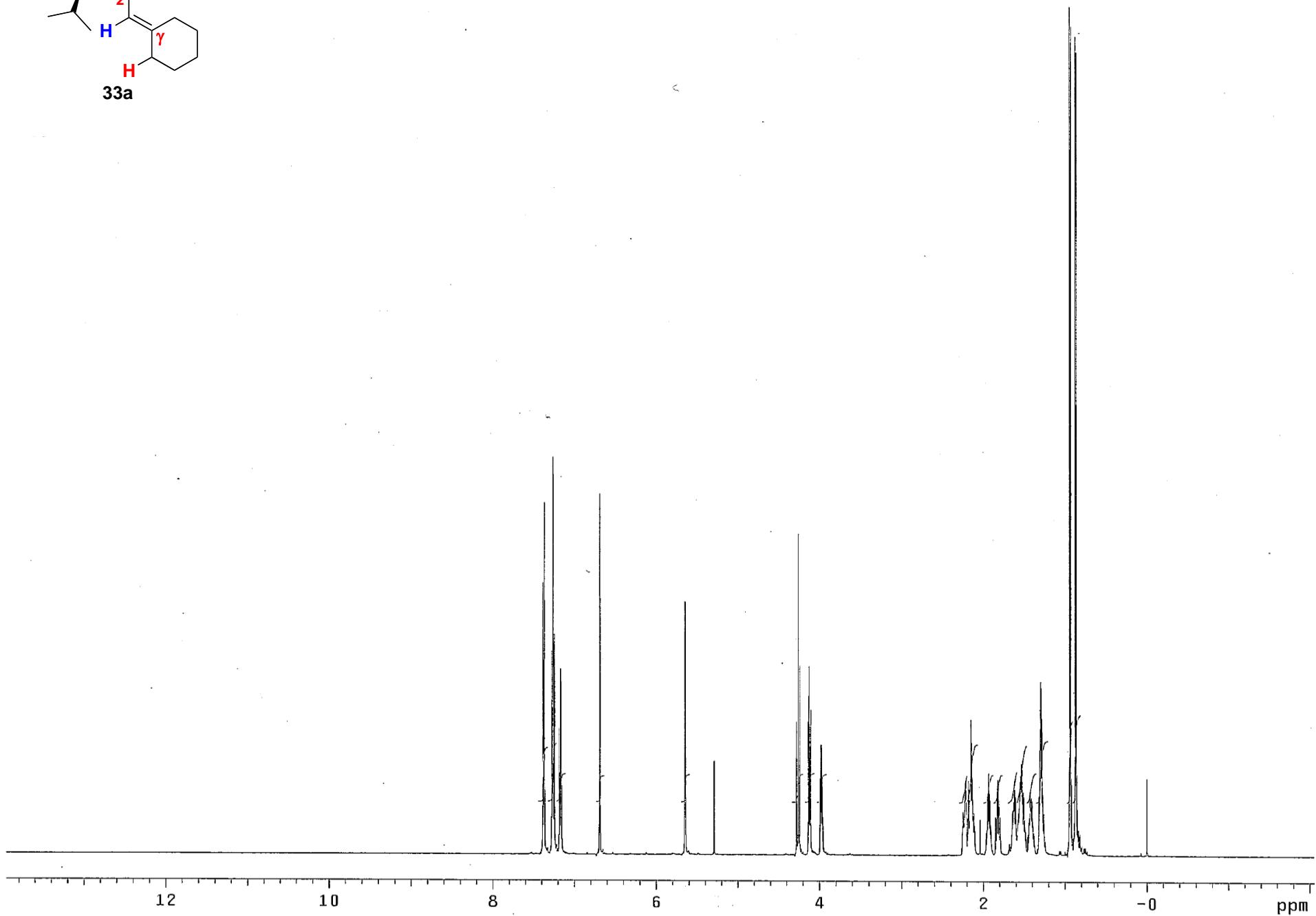
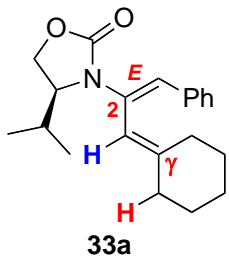


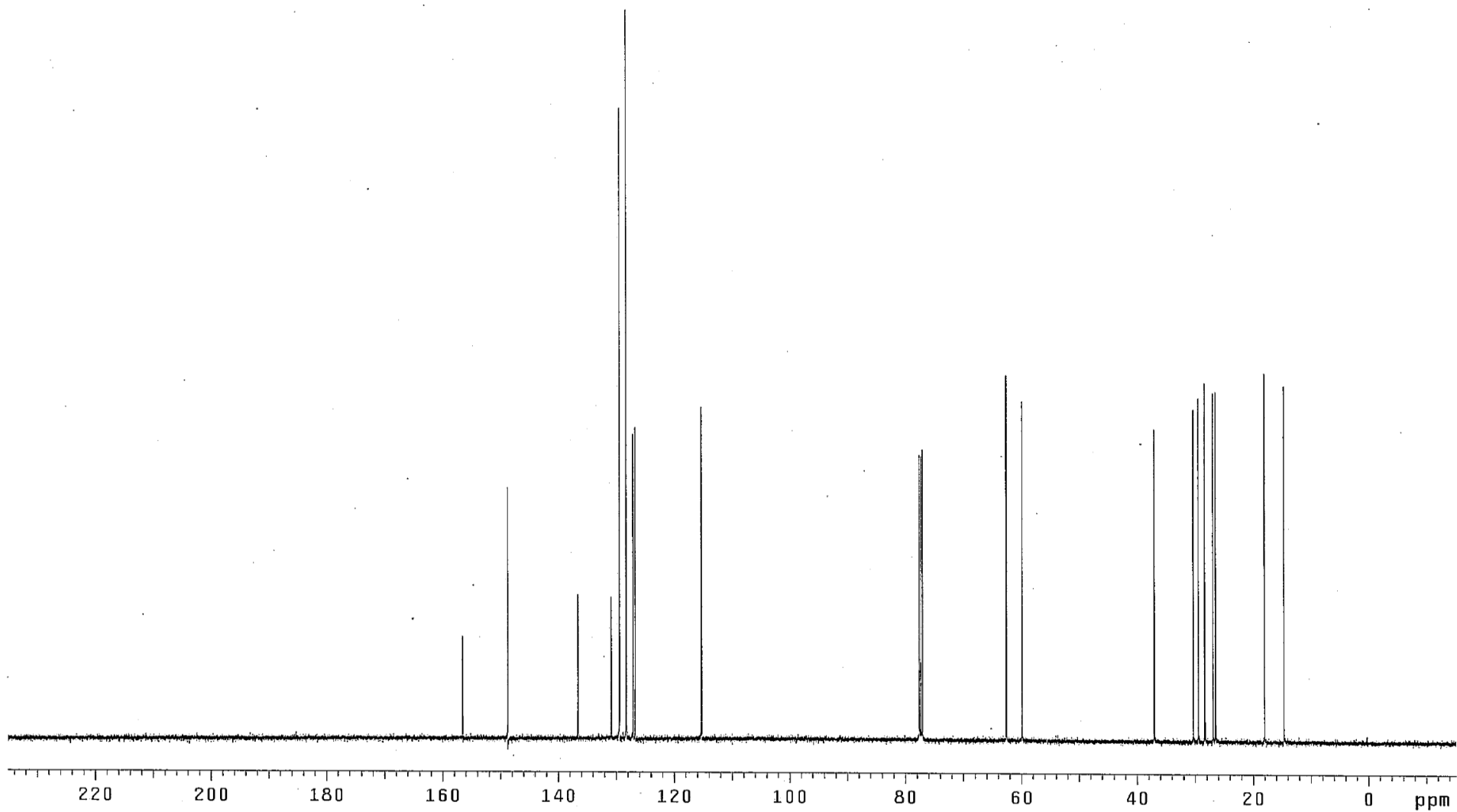
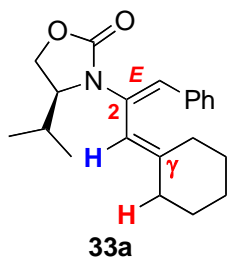


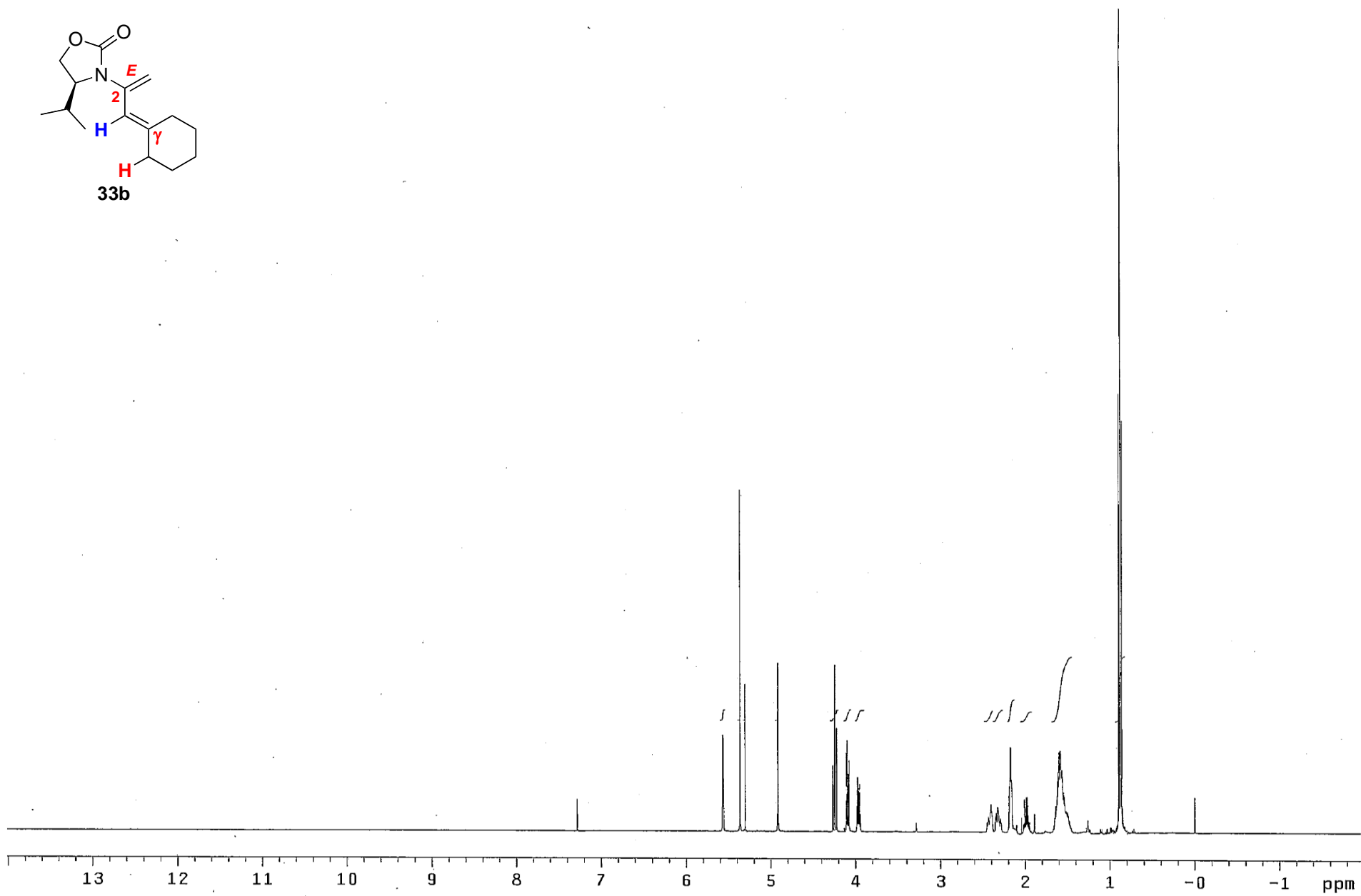
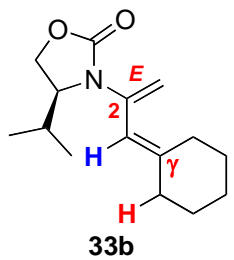
28

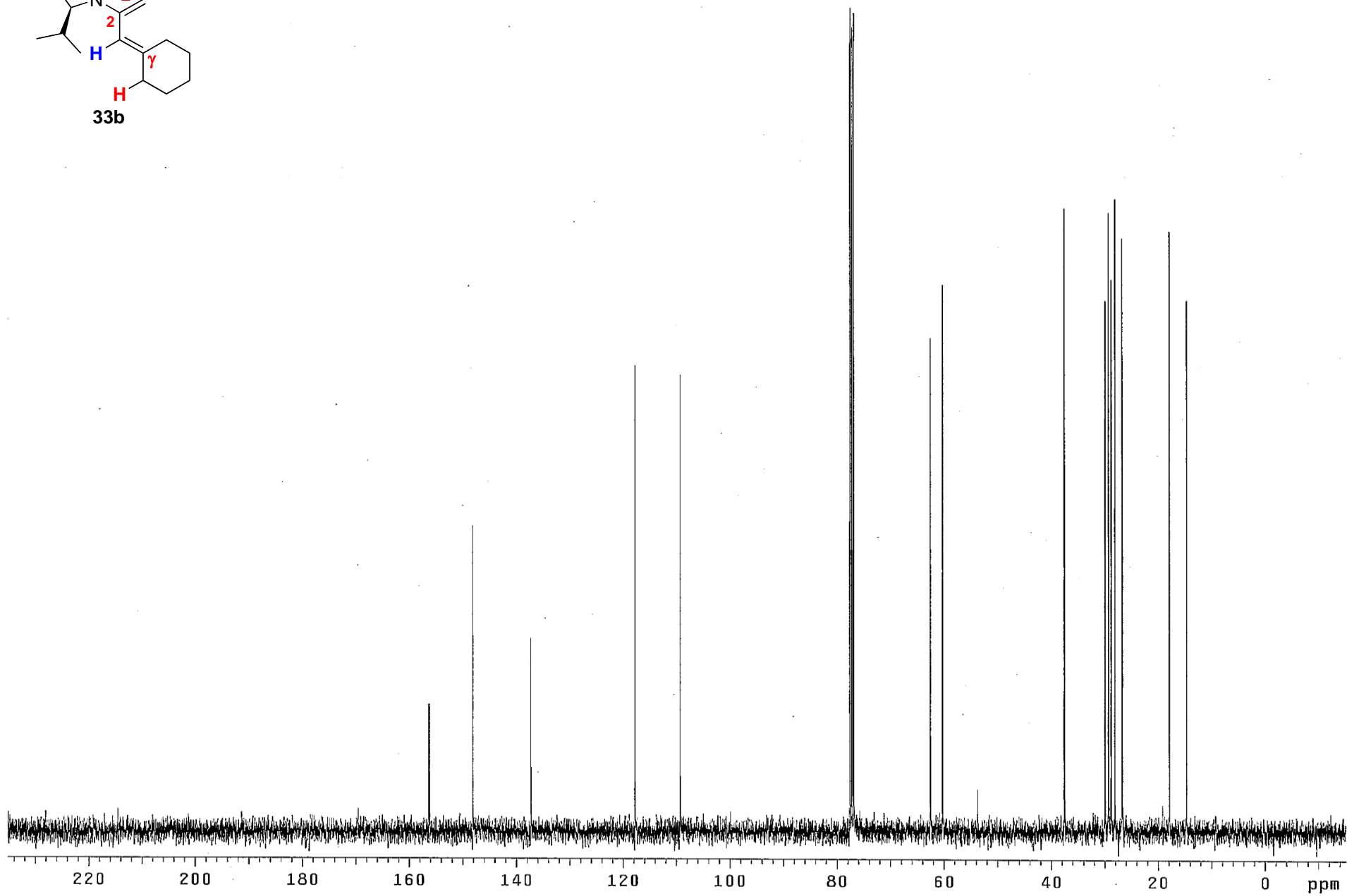
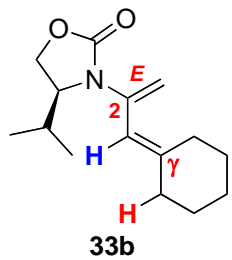


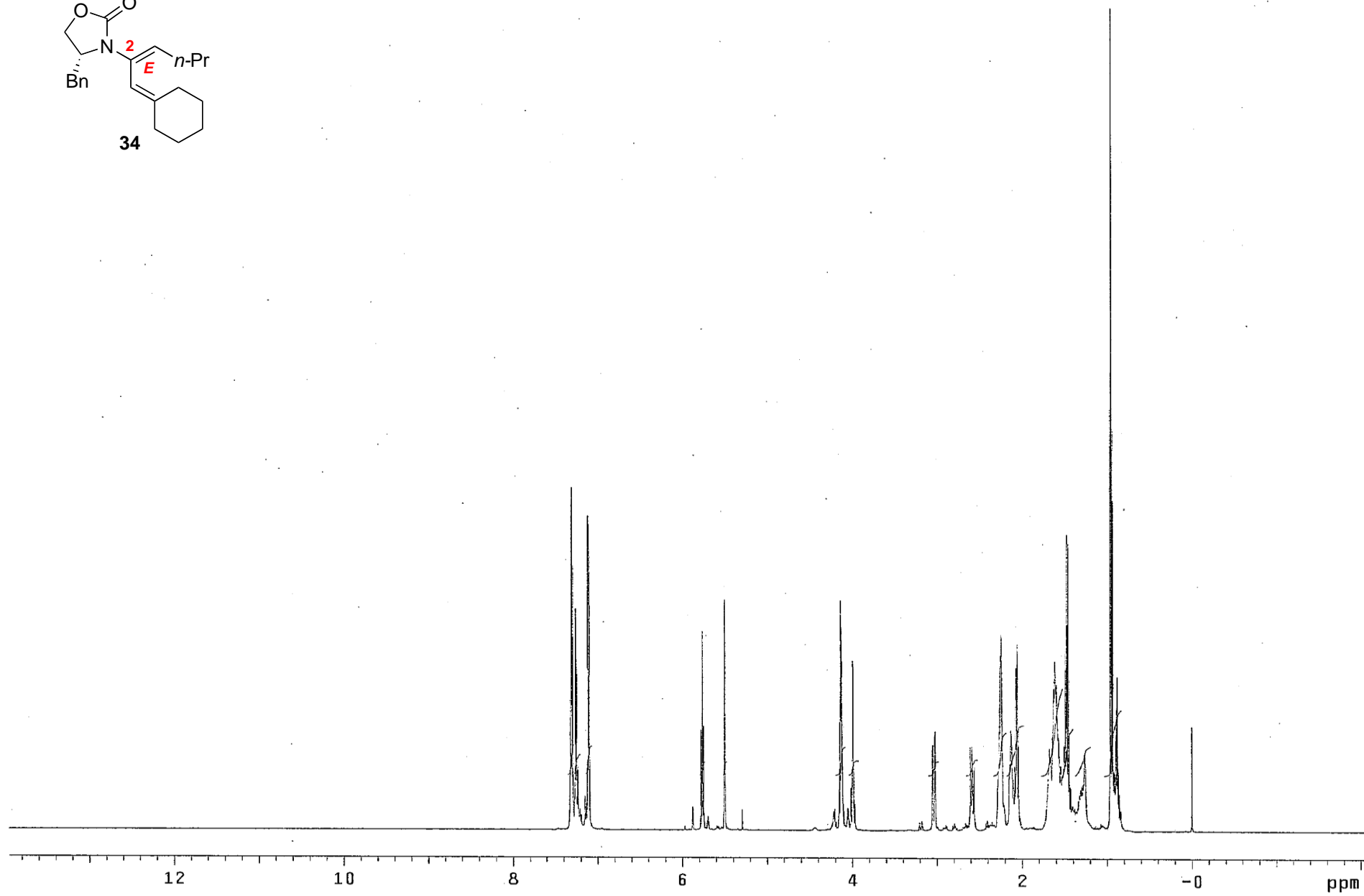
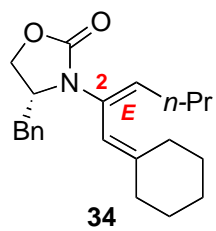
S151

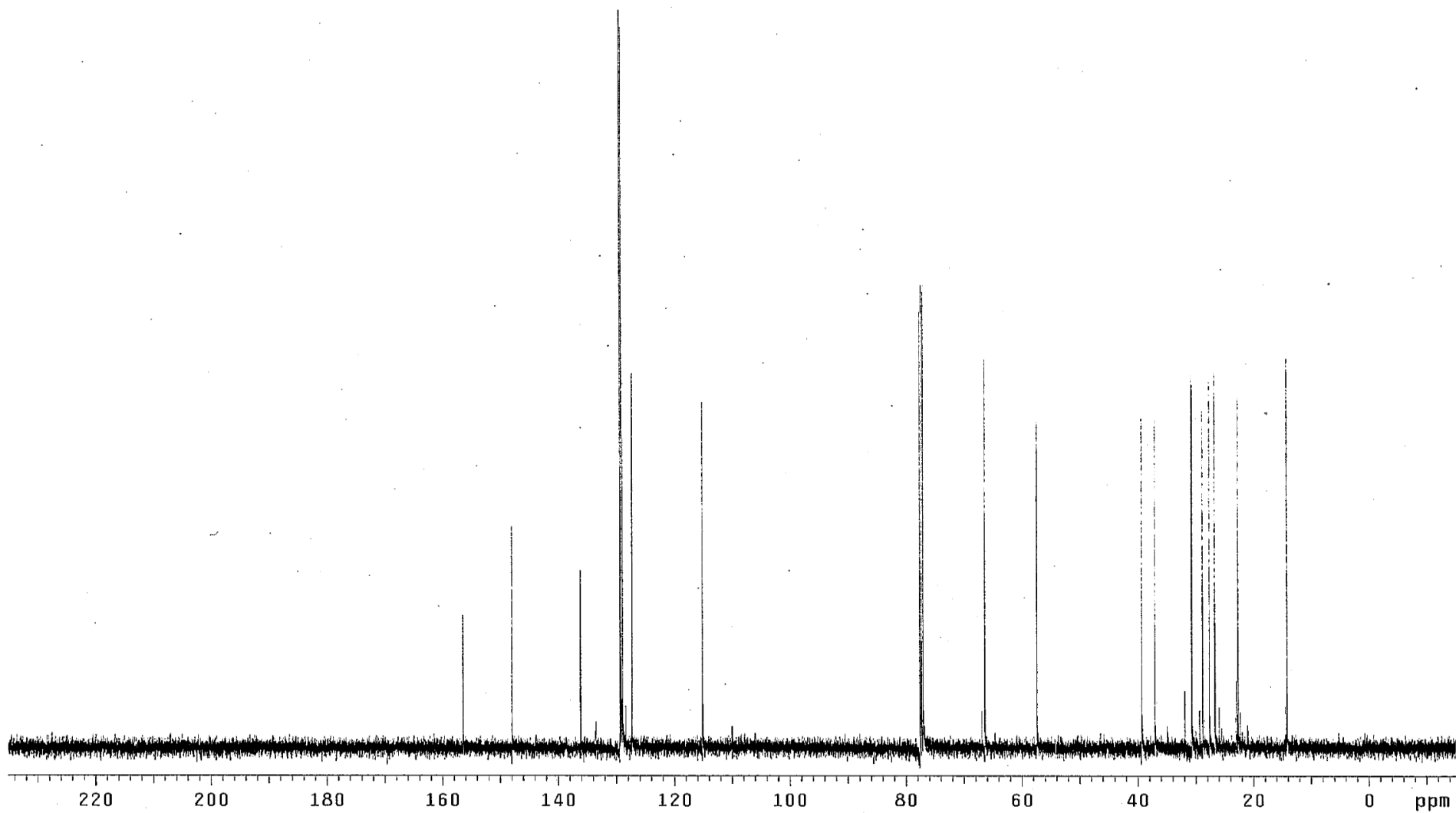
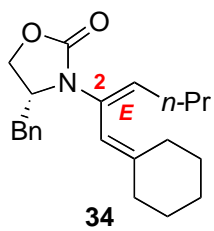














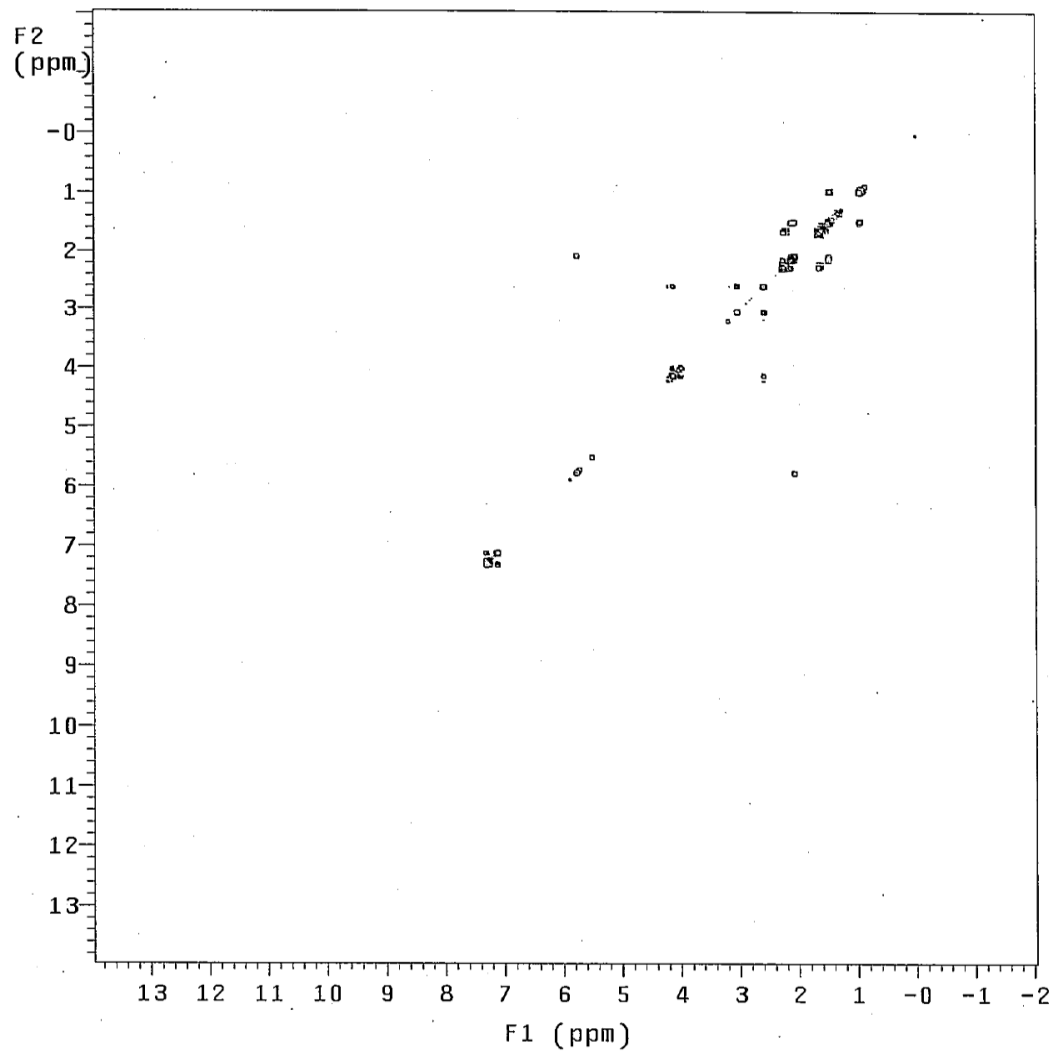
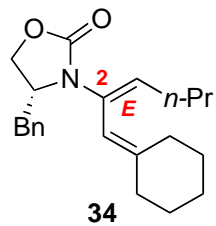
RH-2-140cosy\_28Mar2009

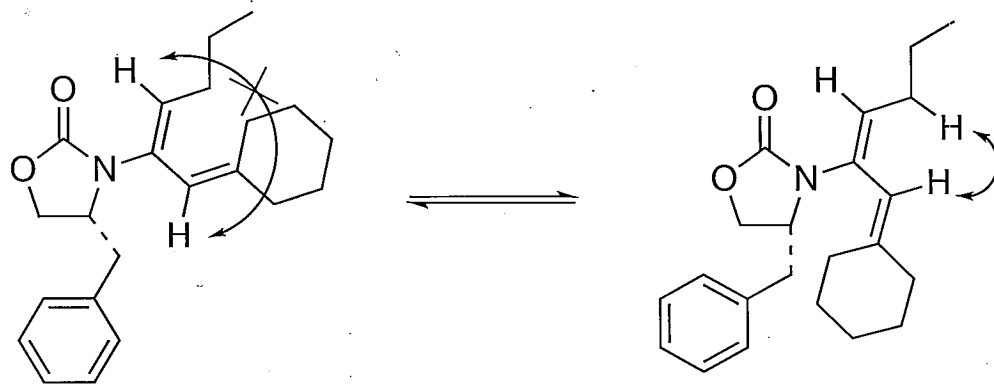
Archive directory: /export/home/ryuji/vnmrsys/data  
Sample directory: RH-2-140cosy\_28Mar2009

Pulse Sequence: gCOSY

Solvent: CDCl3  
Temp. 25.0 C / 298.1 K  
File: gCOSY  
INOVA-500 "nmr03"

Relax. delay 1.000 sec  
Acq. time 0.128 sec  
Width 8000.0 Hz  
2D Width 8000.0 Hz  
Single scan  
128 increments  
OBSERVE H1, 499.7288165 MHz  
DATA PROCESSING  
Sq. sine bell 0.064 sec  
F1 DATA PROCESSING  
Sq. sine bell 0.016 sec  
FT size 2048 x 2048  
Total time 2 min, 45 sec





**The Key nOe for the 2-Amido-Diene**

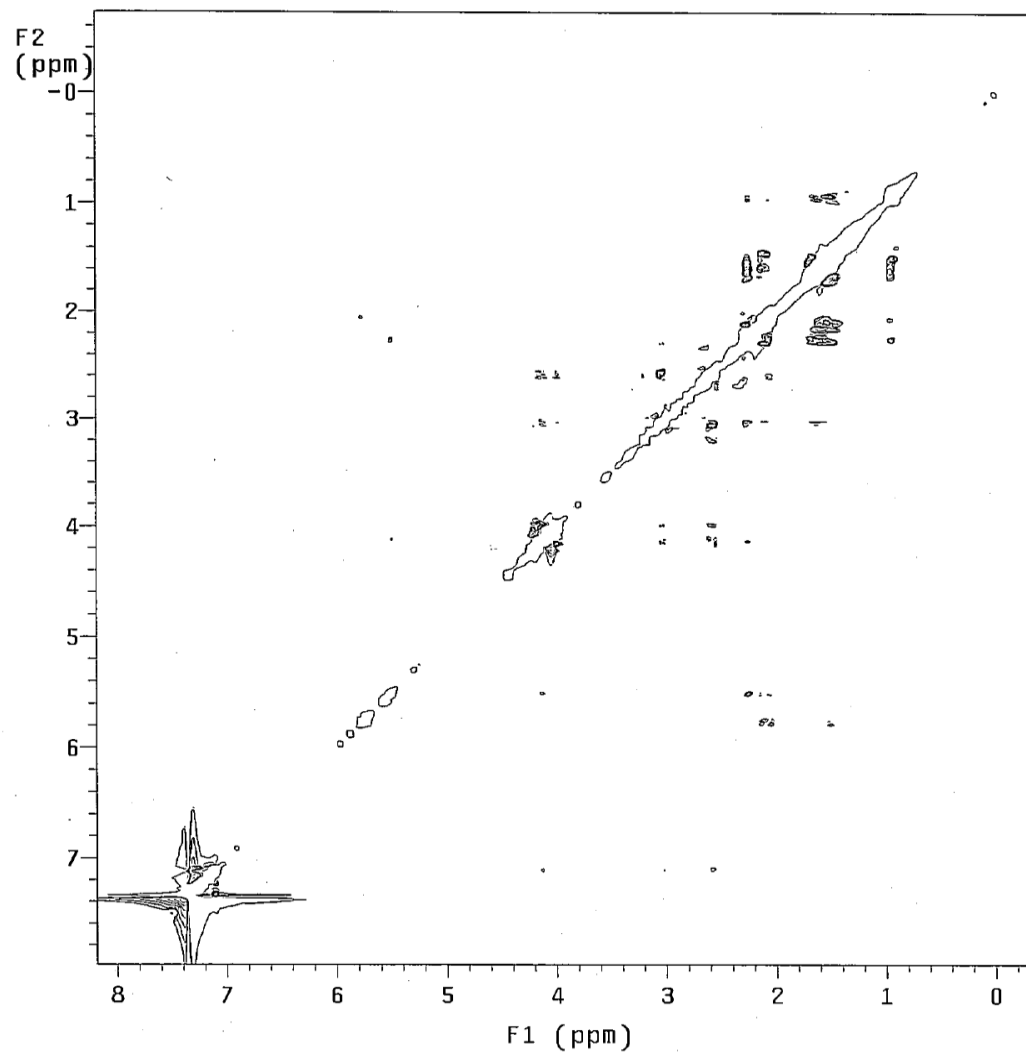
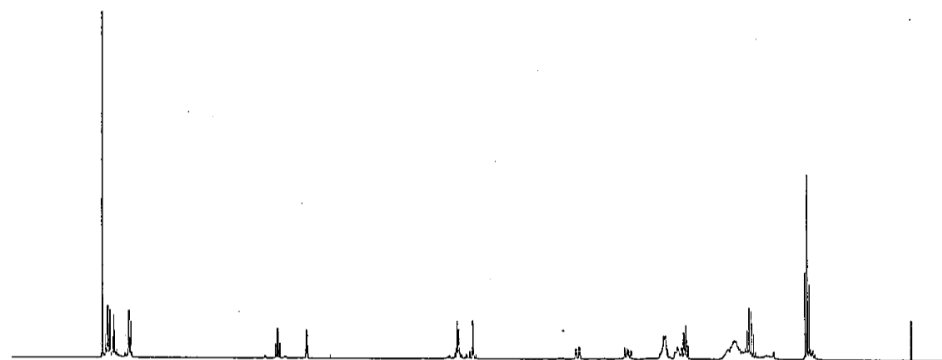
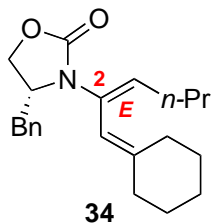
RH-2-140NOESY\_29Mar2009

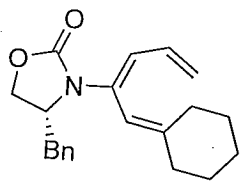
Archive directory: /export/home/ryuji/vnmrsys/data  
Sample directory: RH-2-140NOESY\_29Mar2009

Pulse Sequence: NOESY

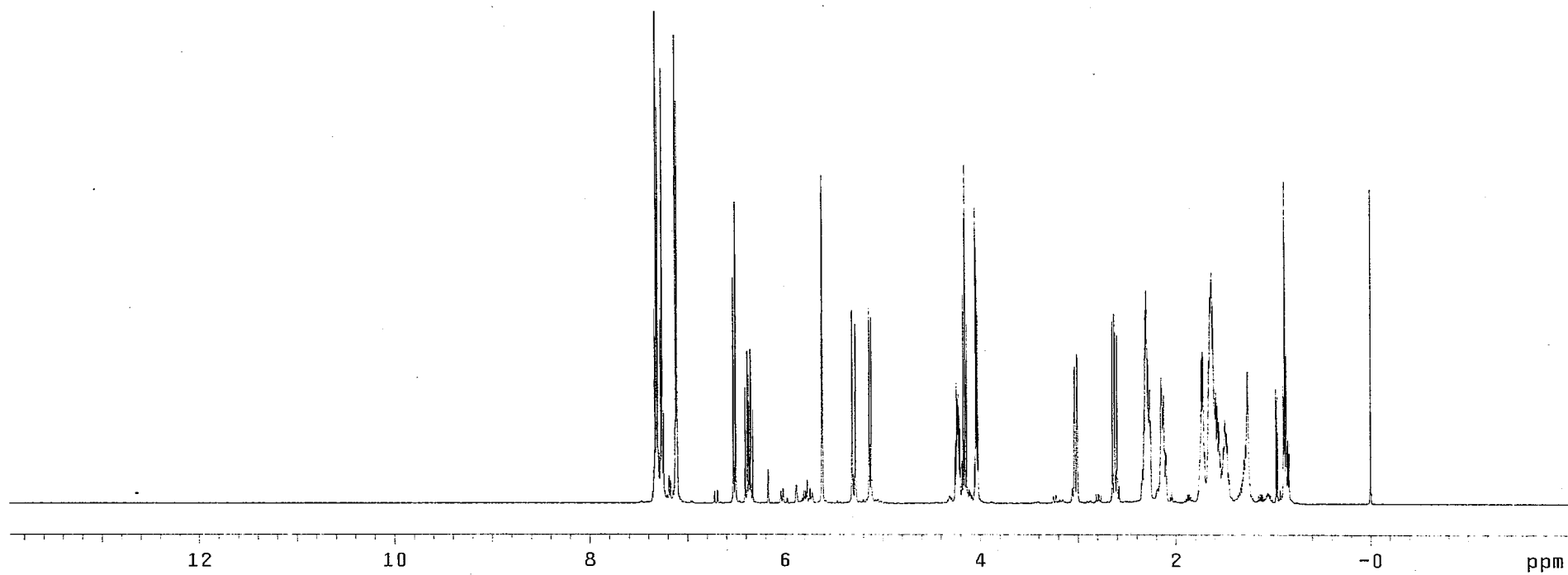
Solvent: CDCl3  
Temp. 25.0 C / 298.1 K  
File: NOESY  
INOVA-500 "nmr03"

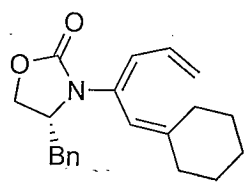
Relax. delay 1.000 sec  
Mixing 0.200 sec  
Acq. time 0.160 sec  
Width 6387.7 Hz  
2D Width 6387.7 Hz  
4 repetitions  
2 x 128 increments  
OBSERVE H1, 399.7865261 MHz  
DATA PROCESSING  
Gauss apodization 0.074 sec  
F1 DATA PROCESSING  
Gauss apodization 0.018 sec  
FT size 2048 x 2048  
Total time 24 min, 21 sec



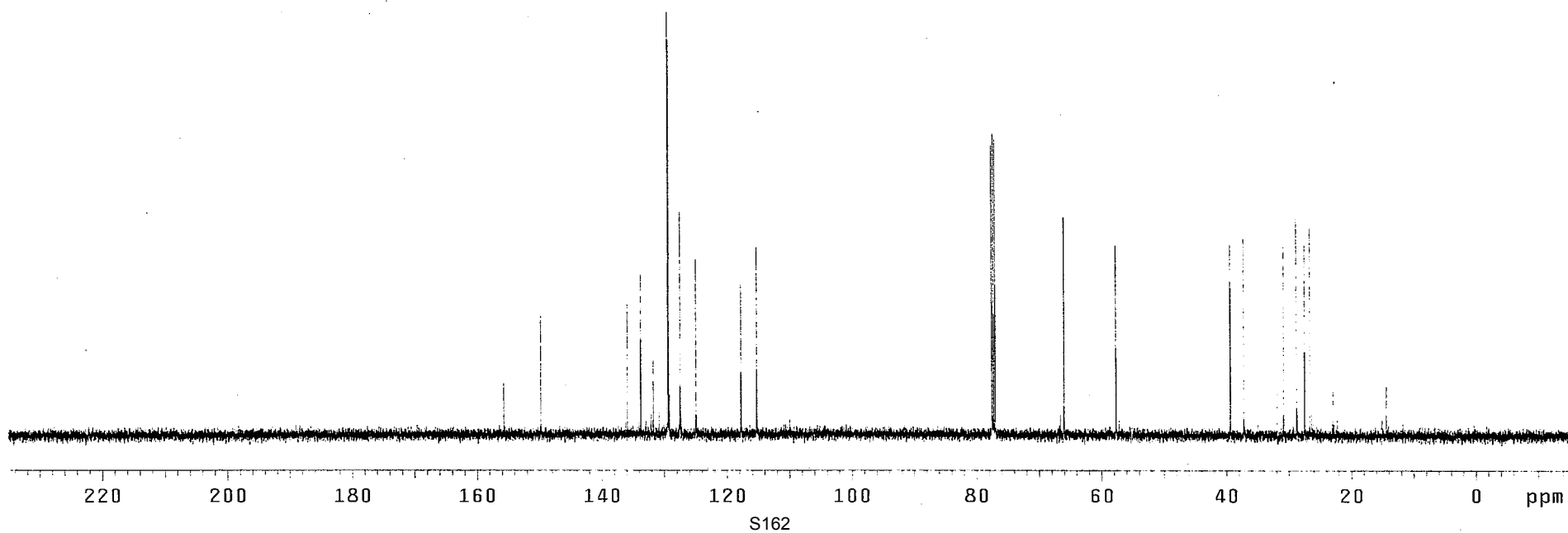


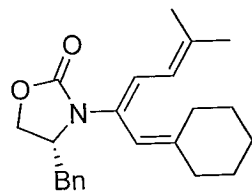
35a



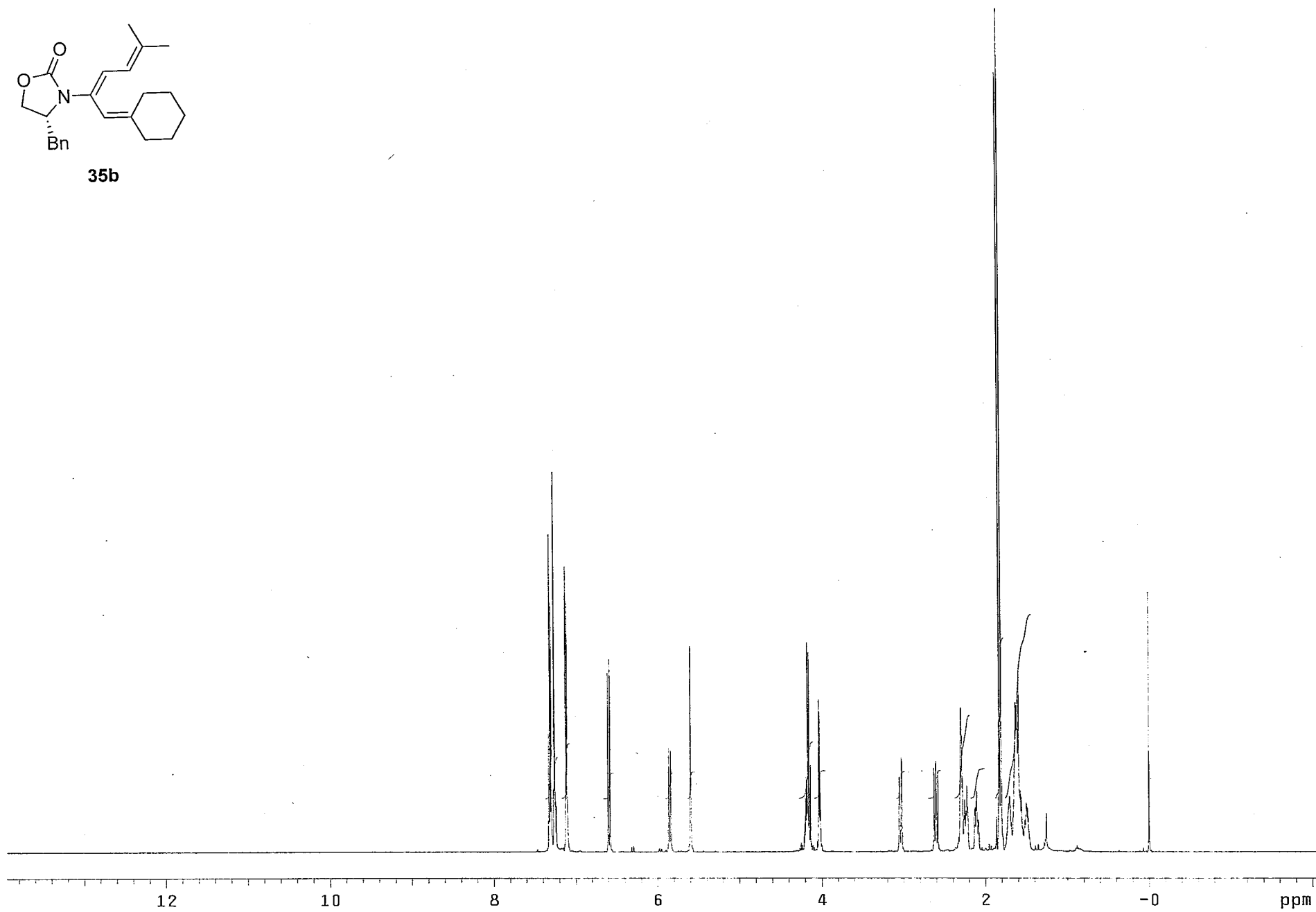


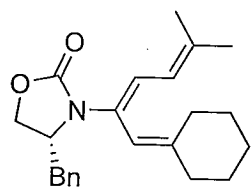
35a



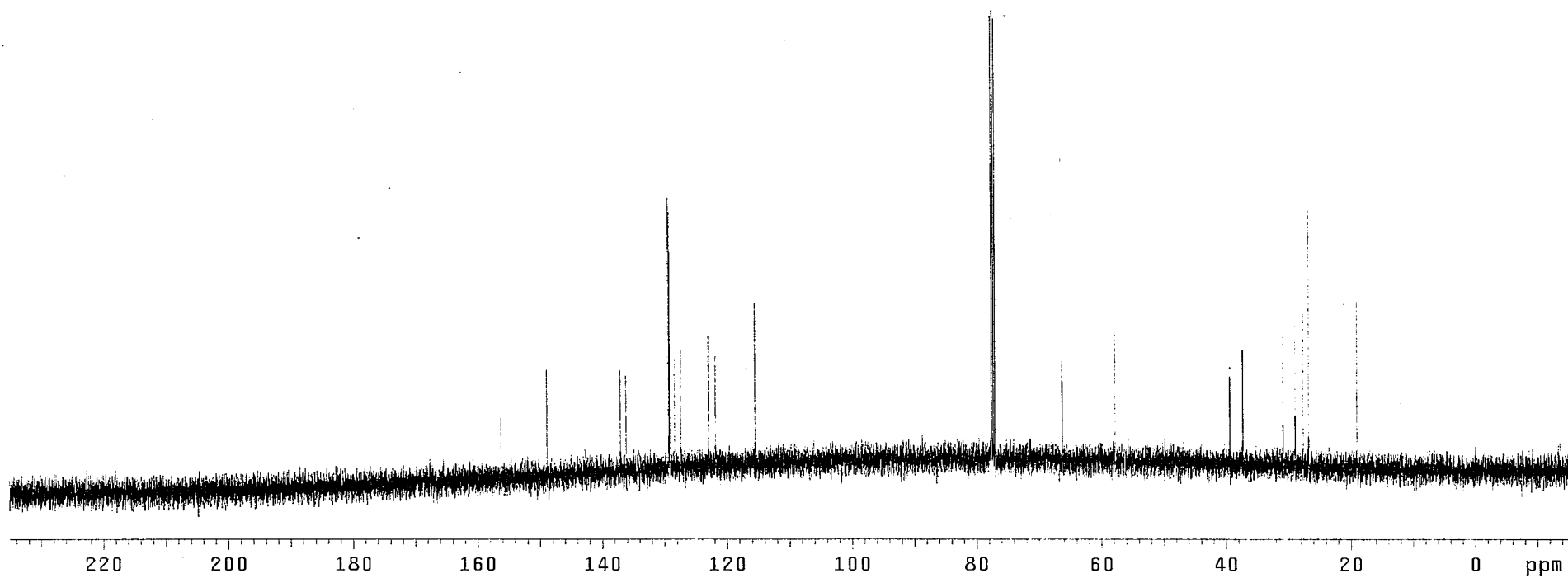


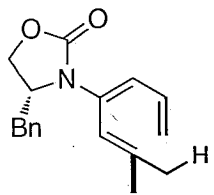
35b



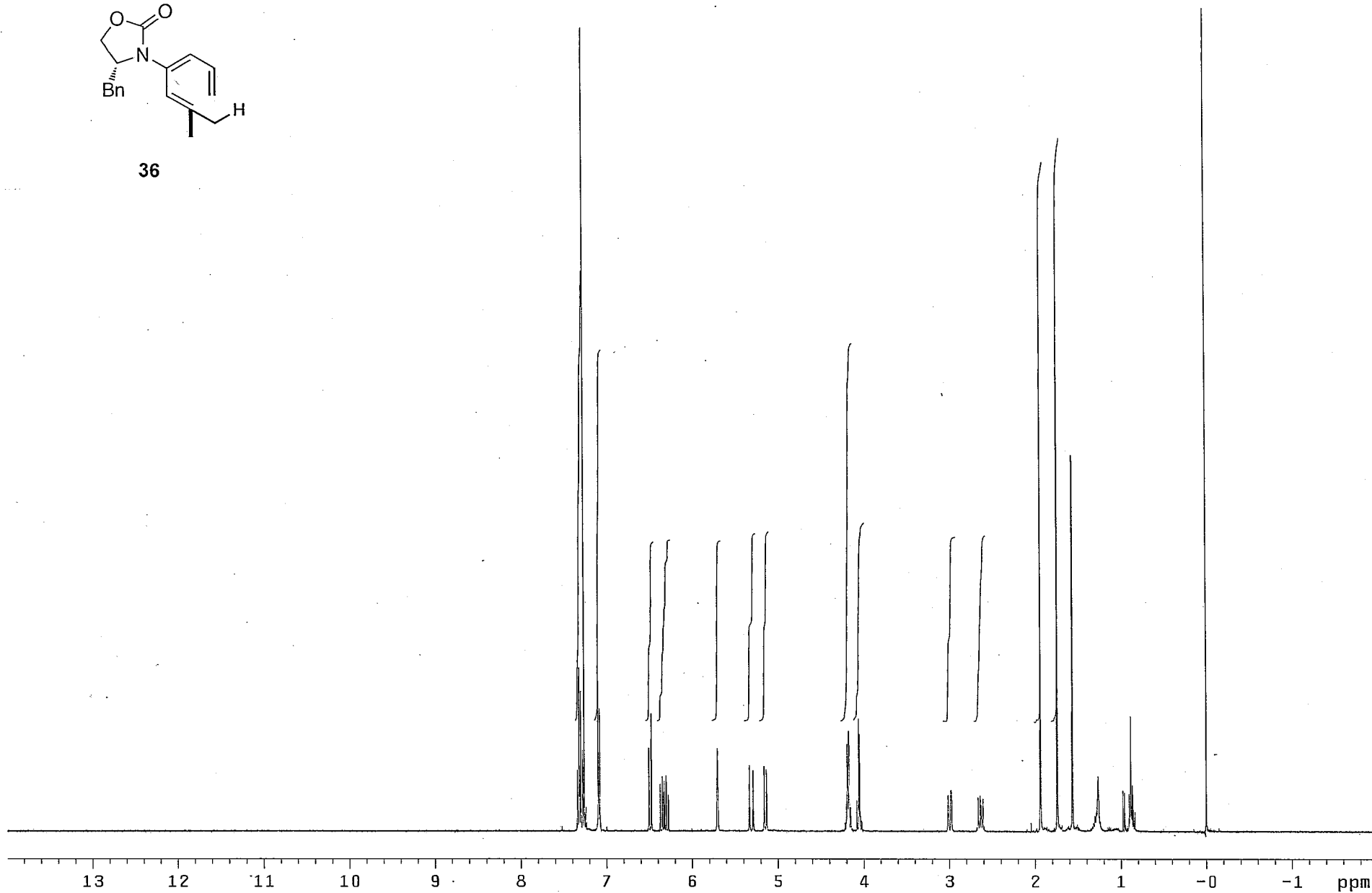


35b

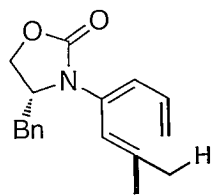




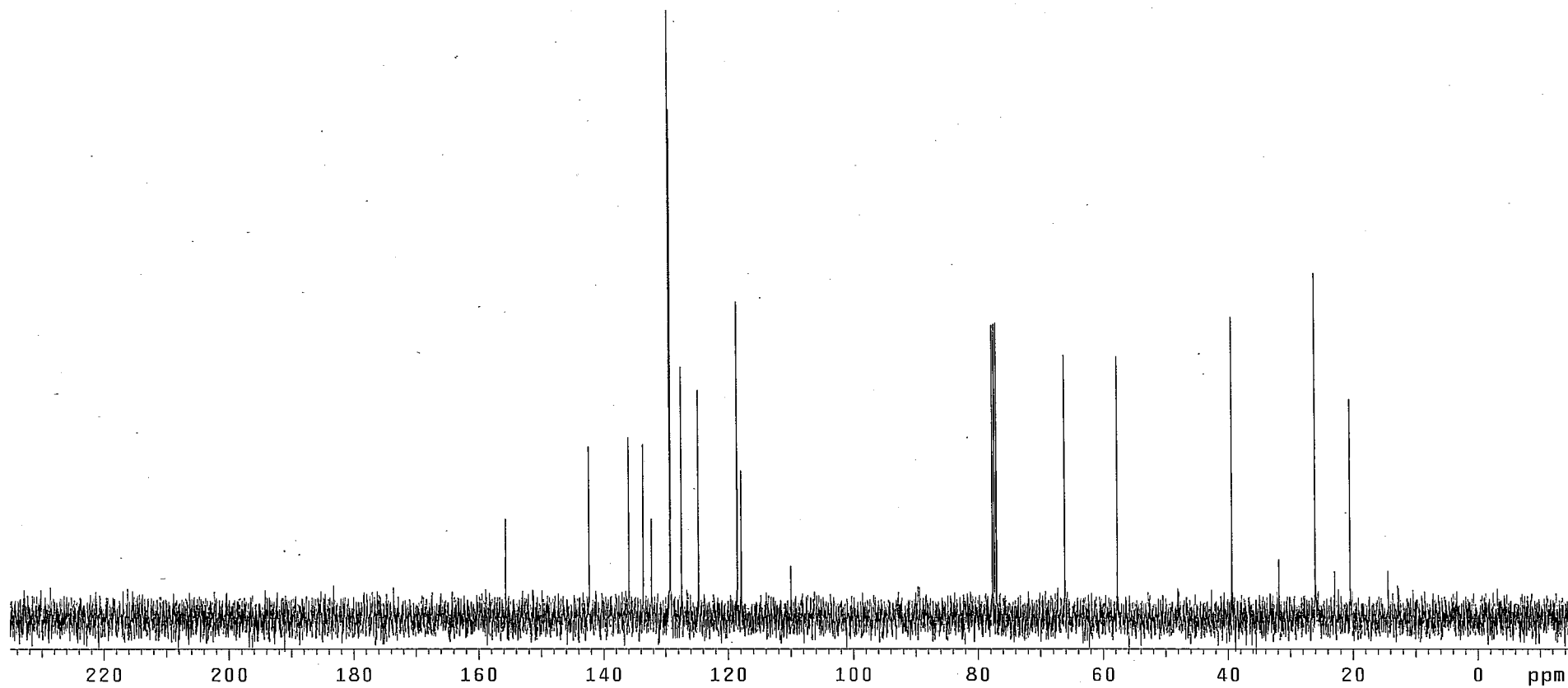
36

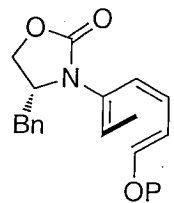




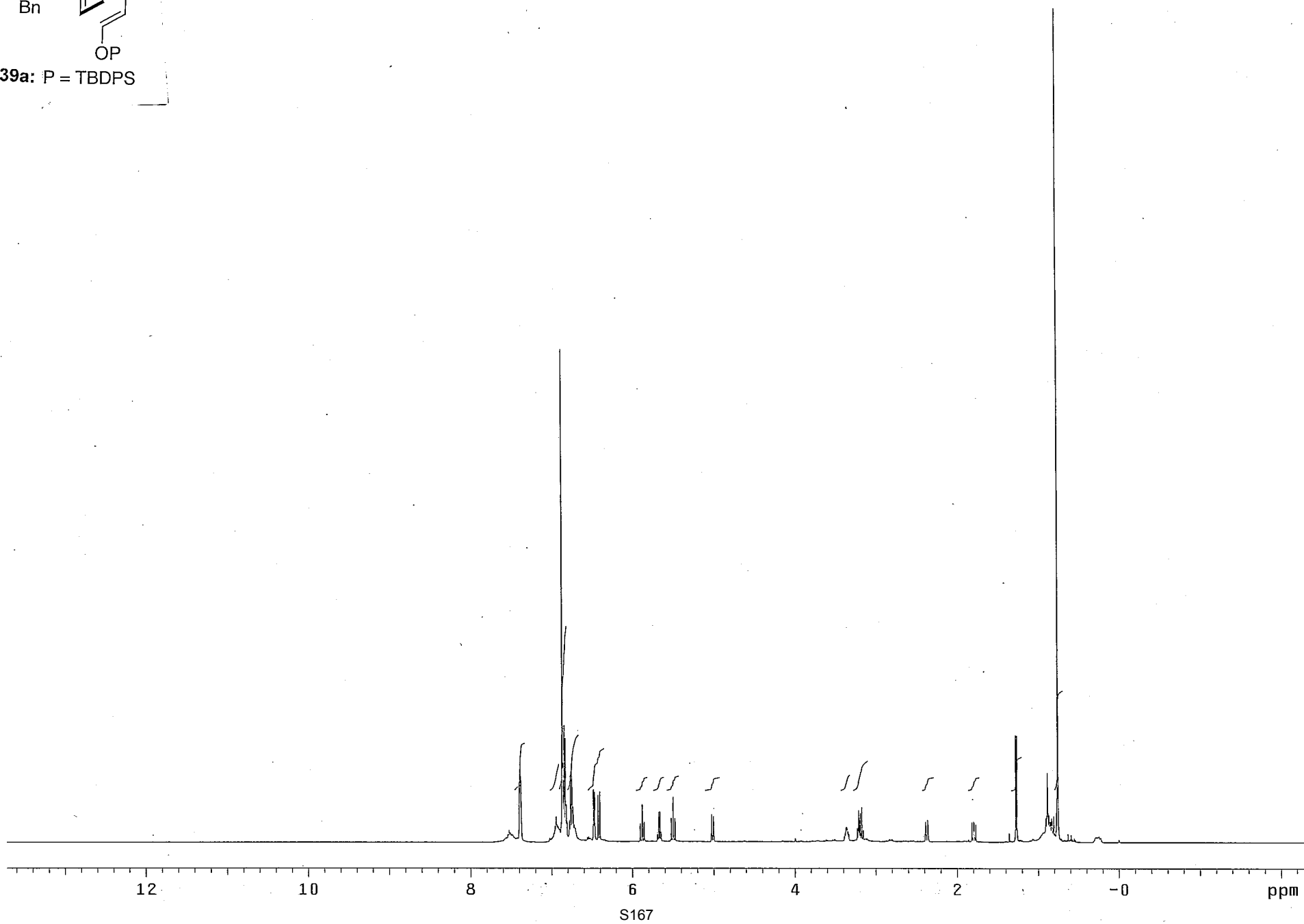


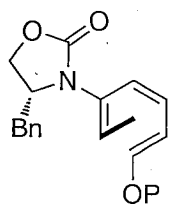
36



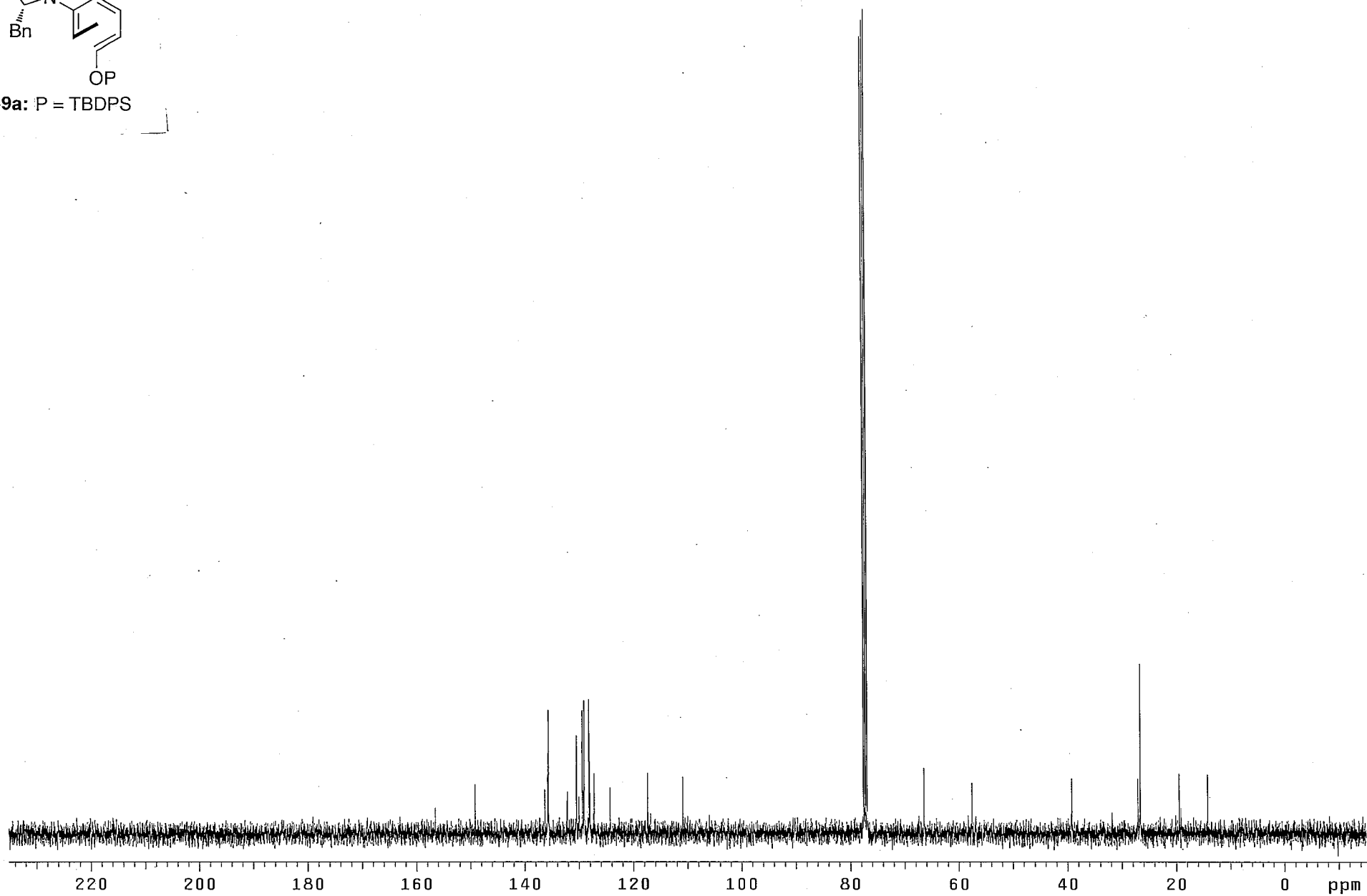


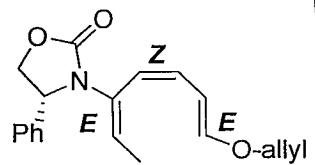
39a: P = TBDPS



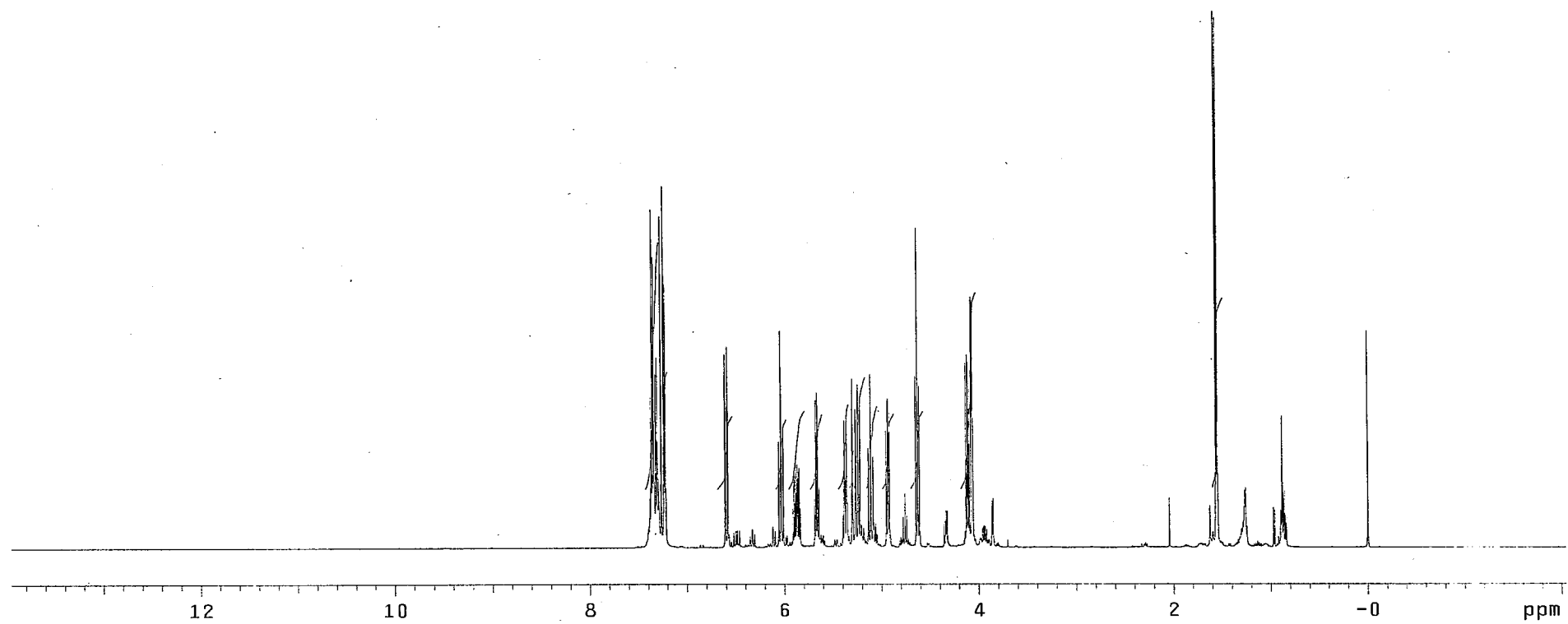


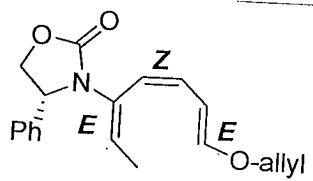
39a: P = TBDPS



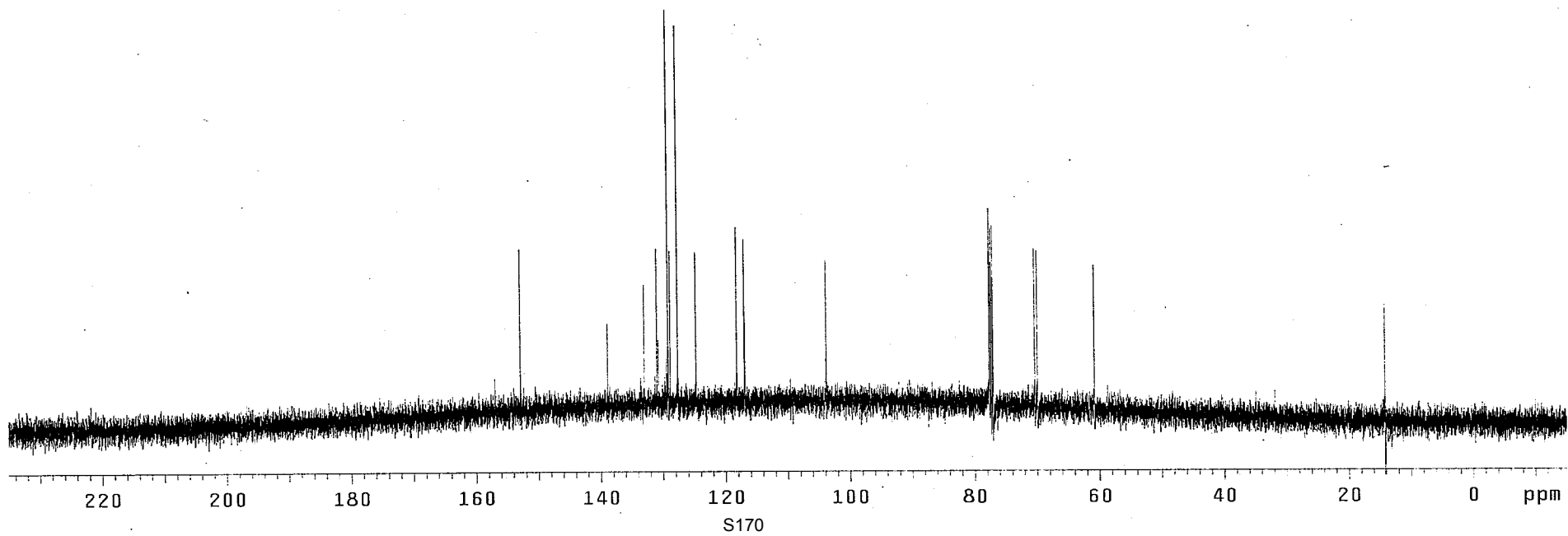


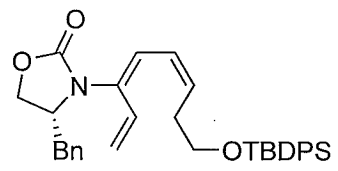
39b



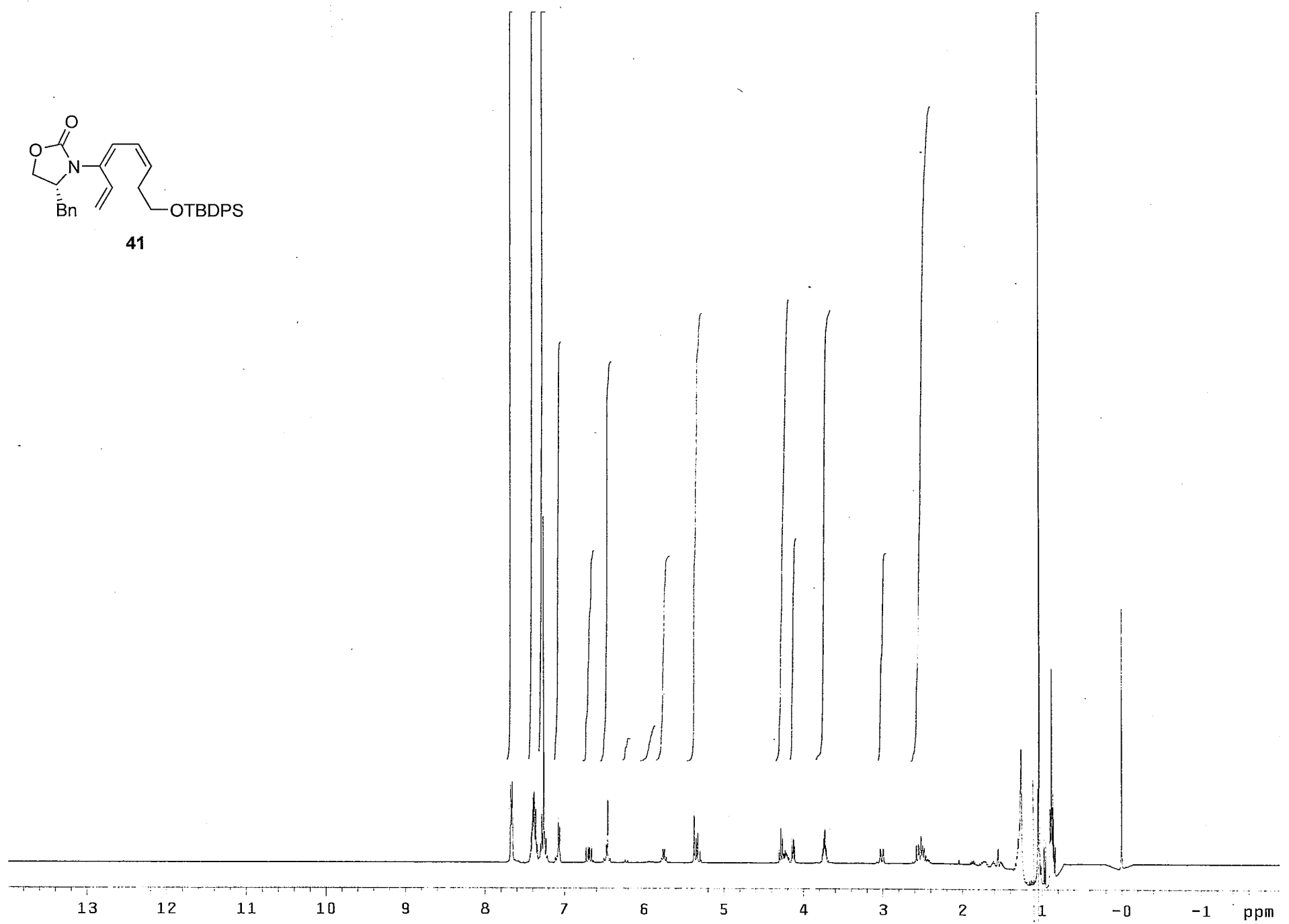


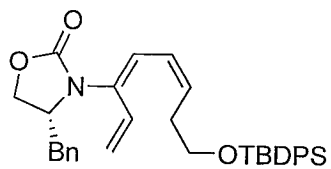
39b



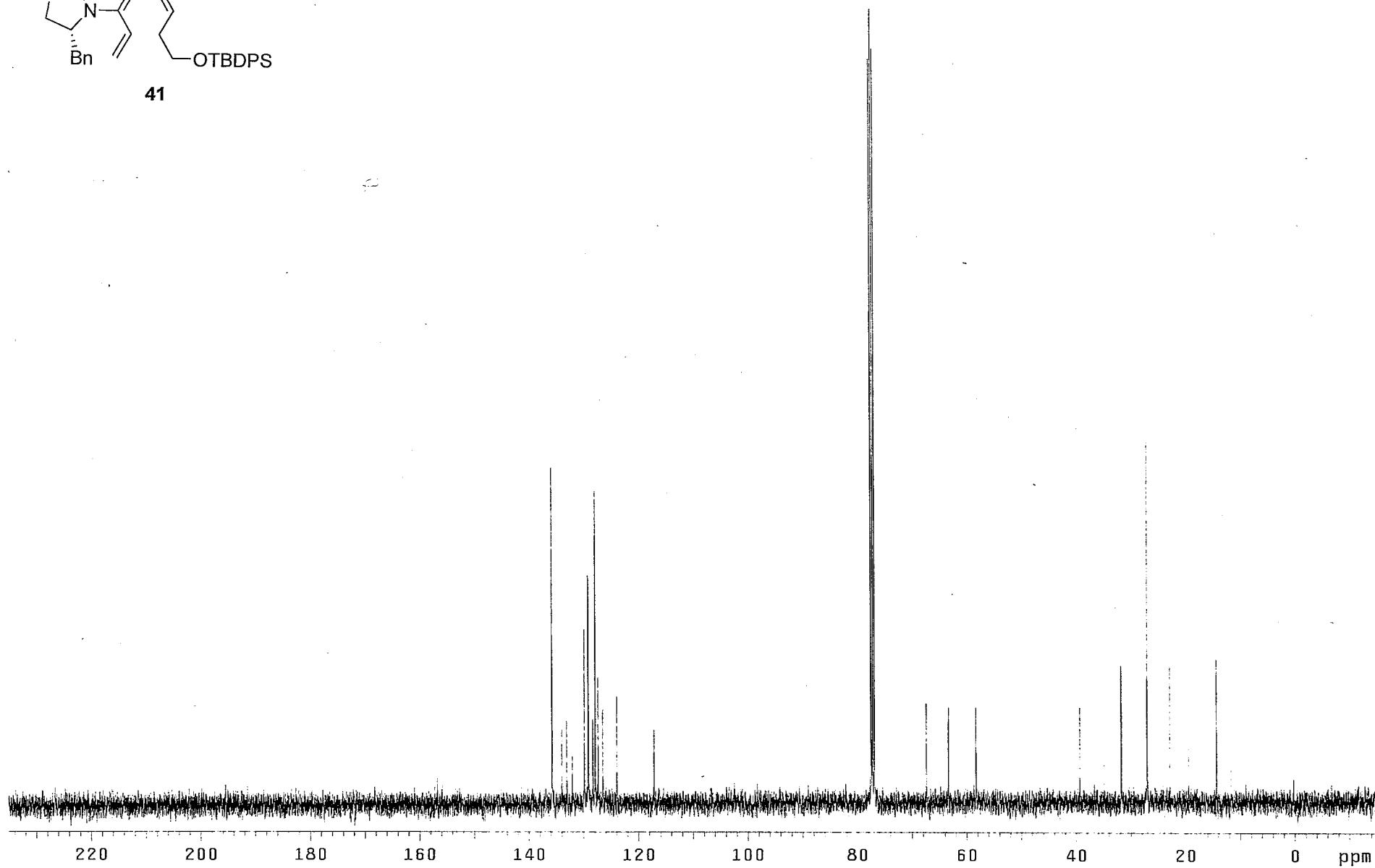


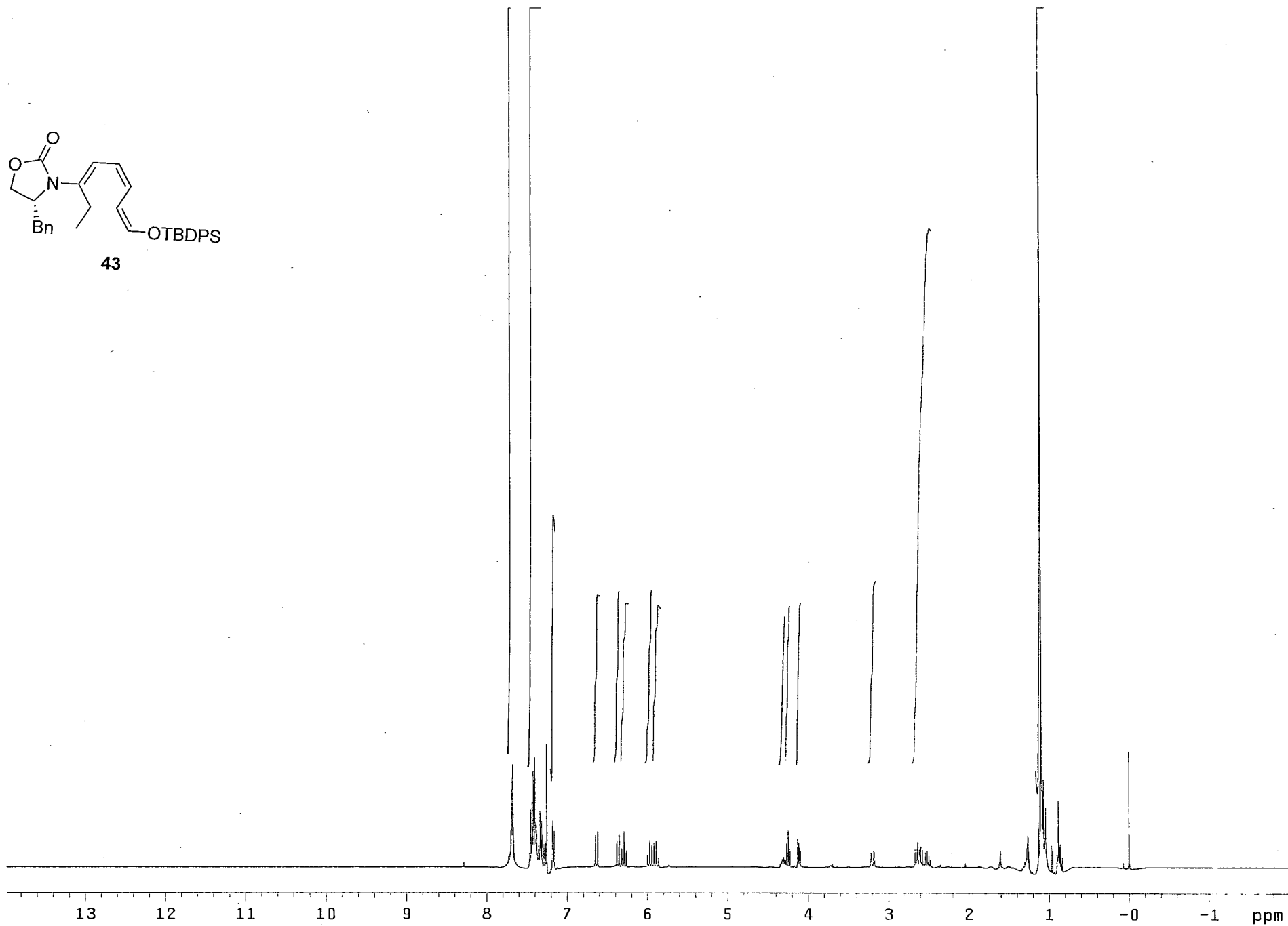
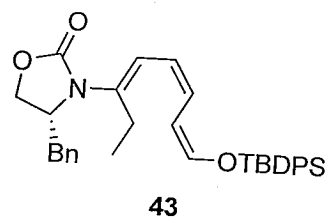
41



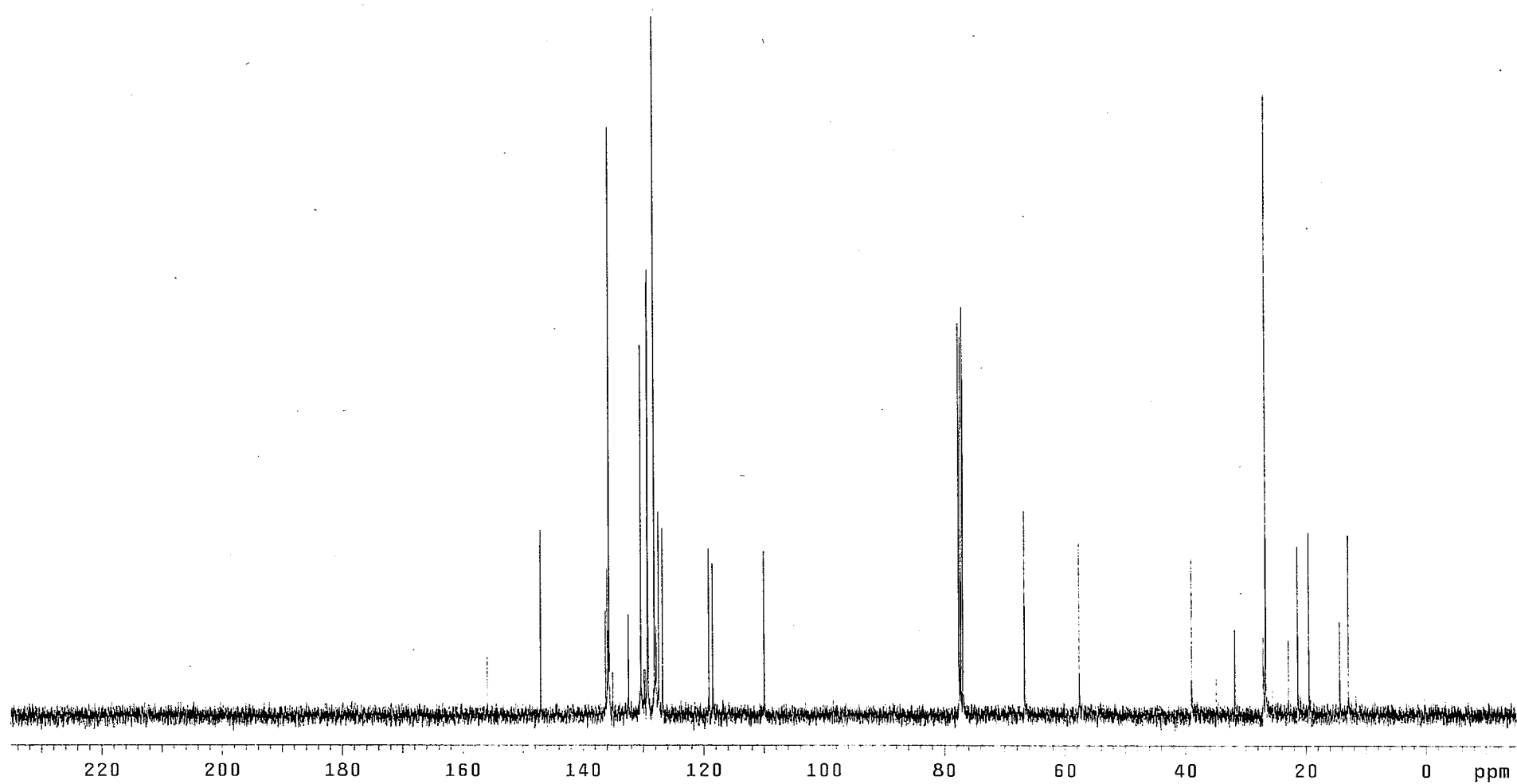
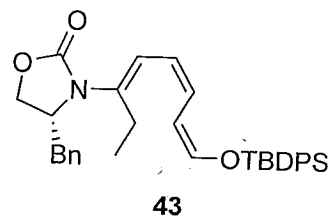


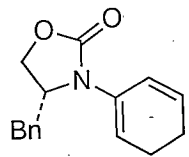
41



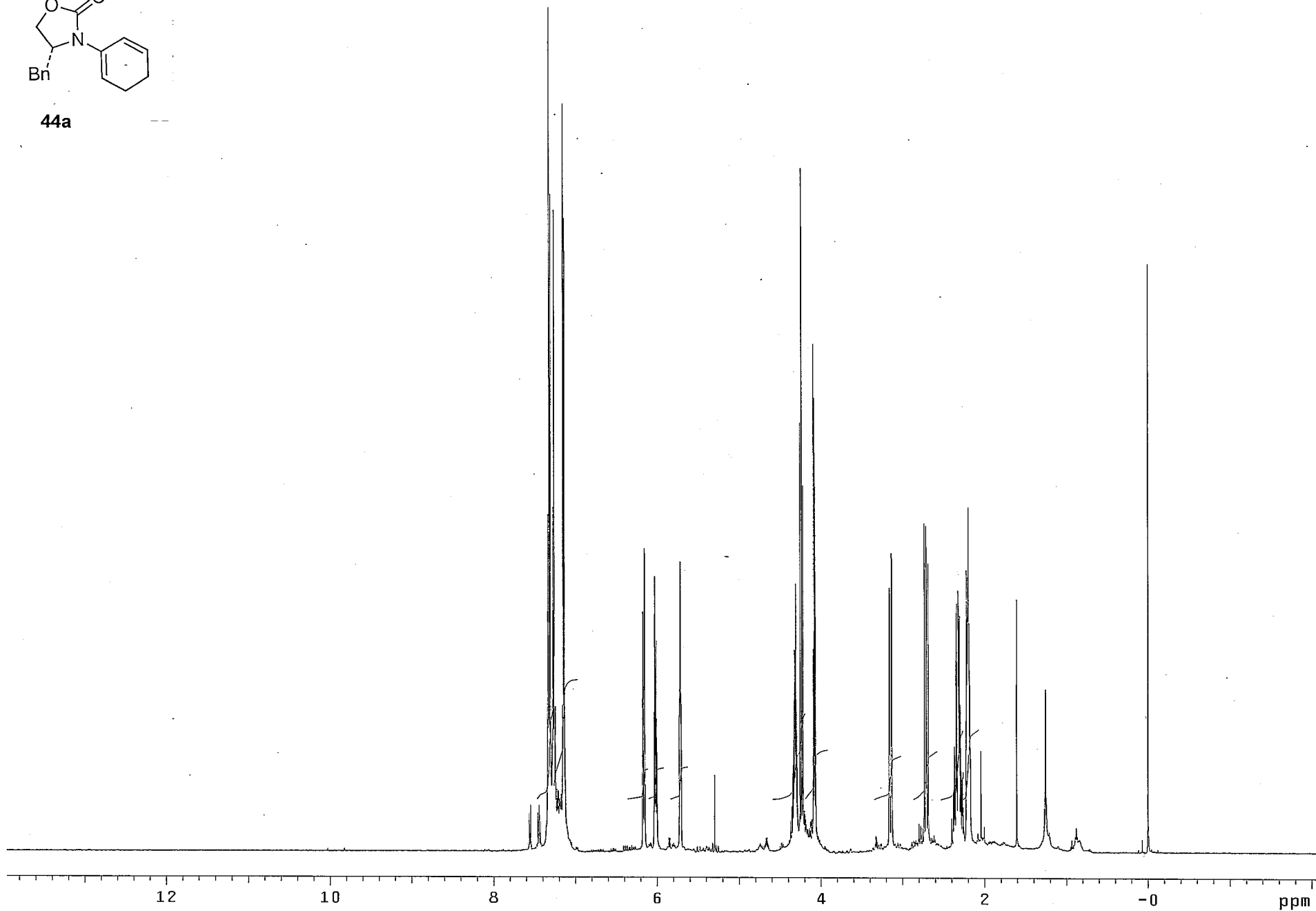


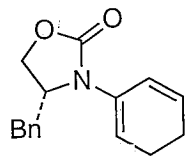




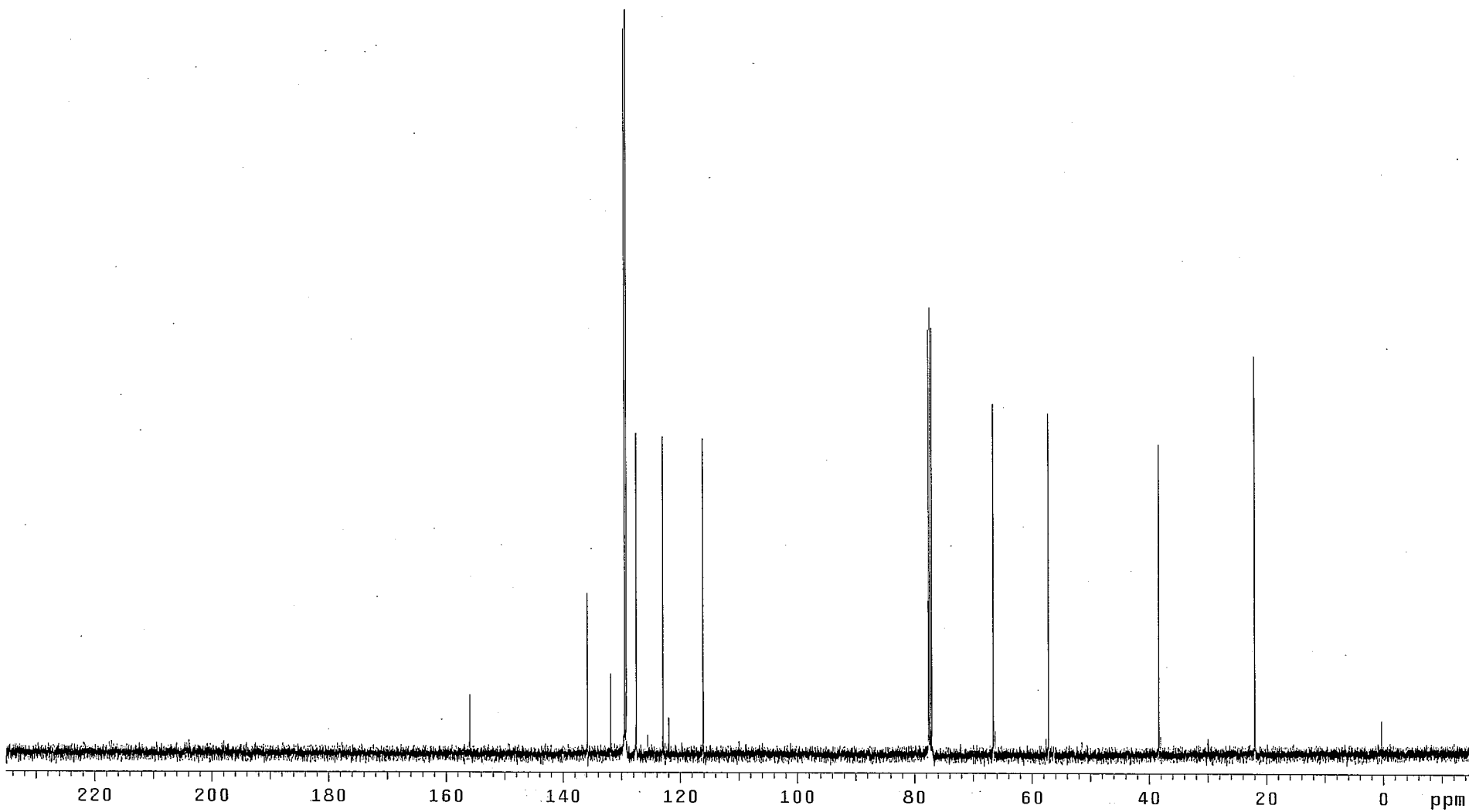


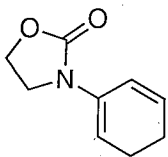
44a



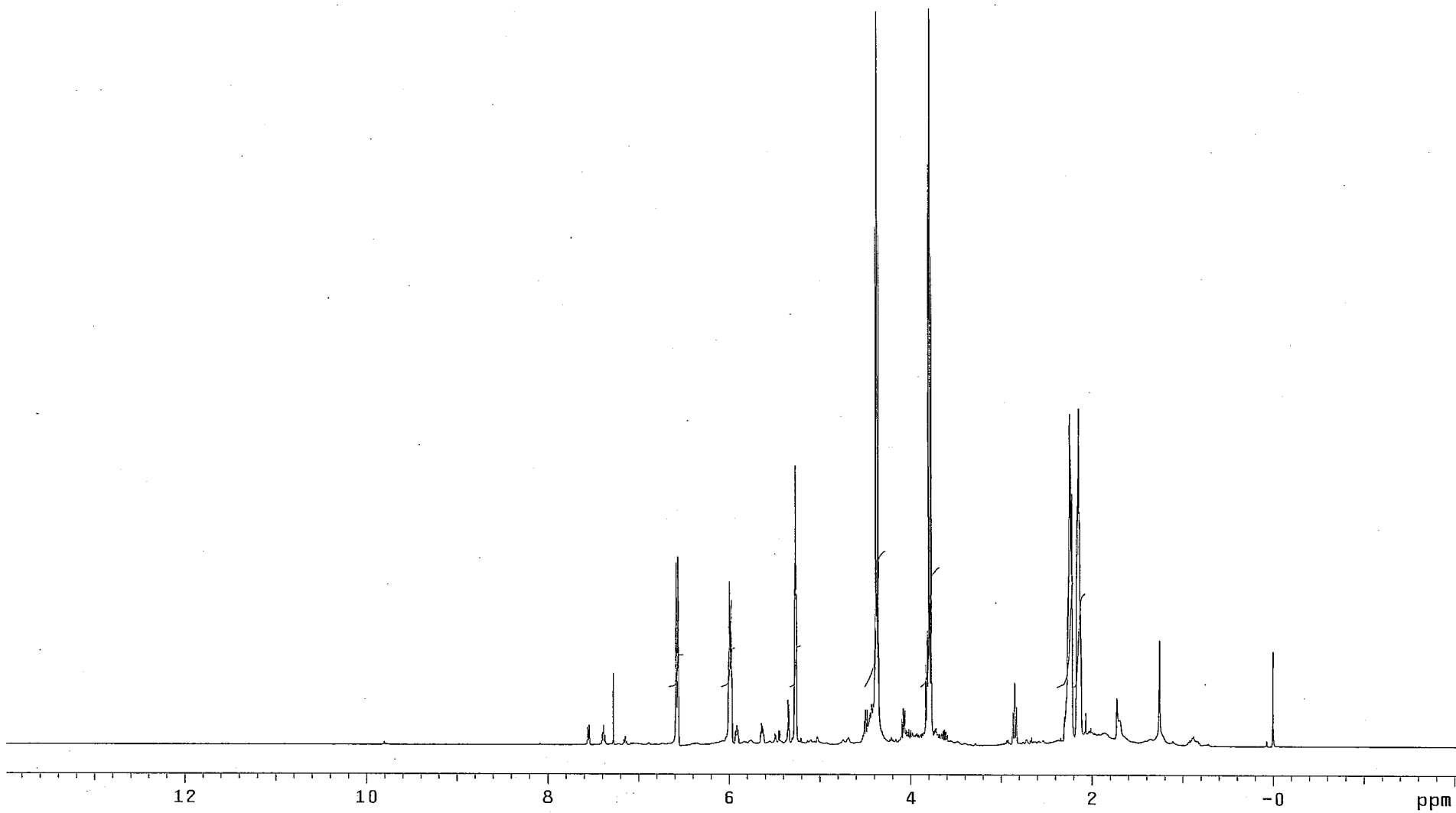


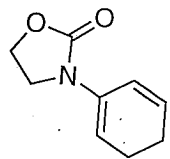
44a



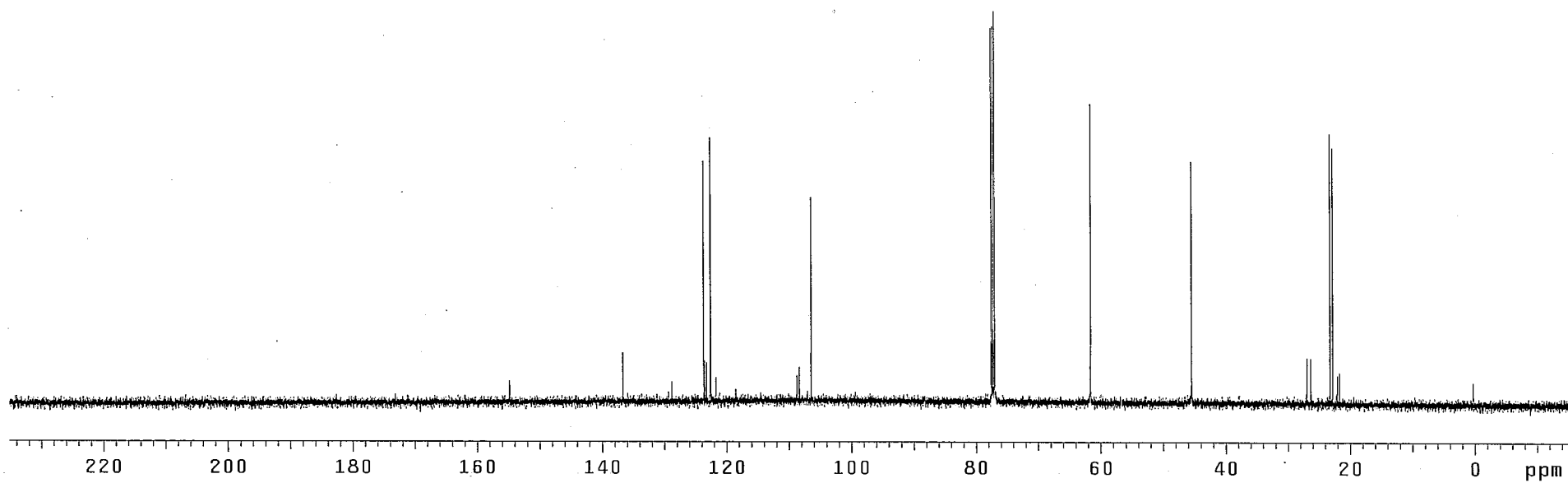


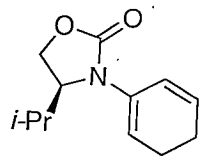
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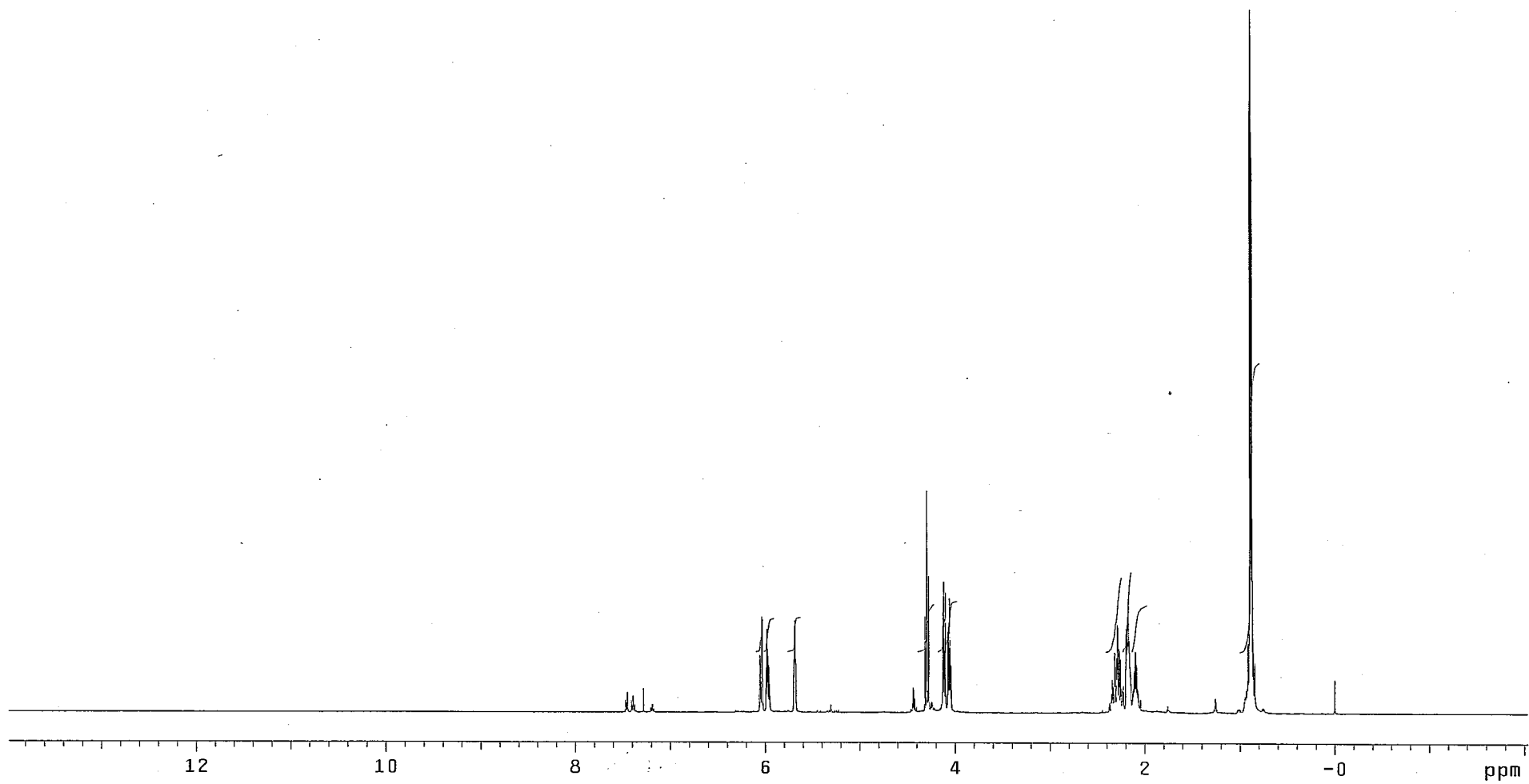


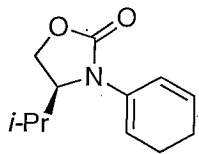
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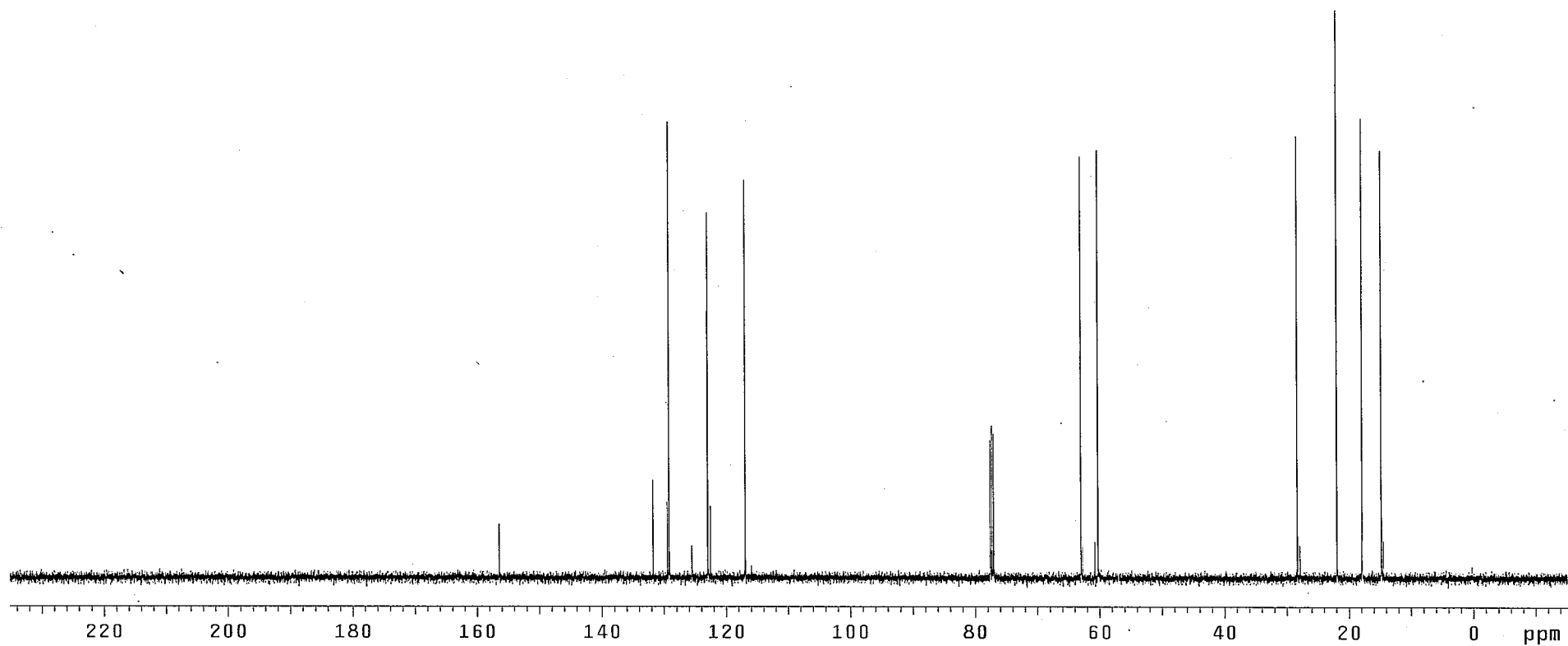


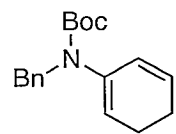
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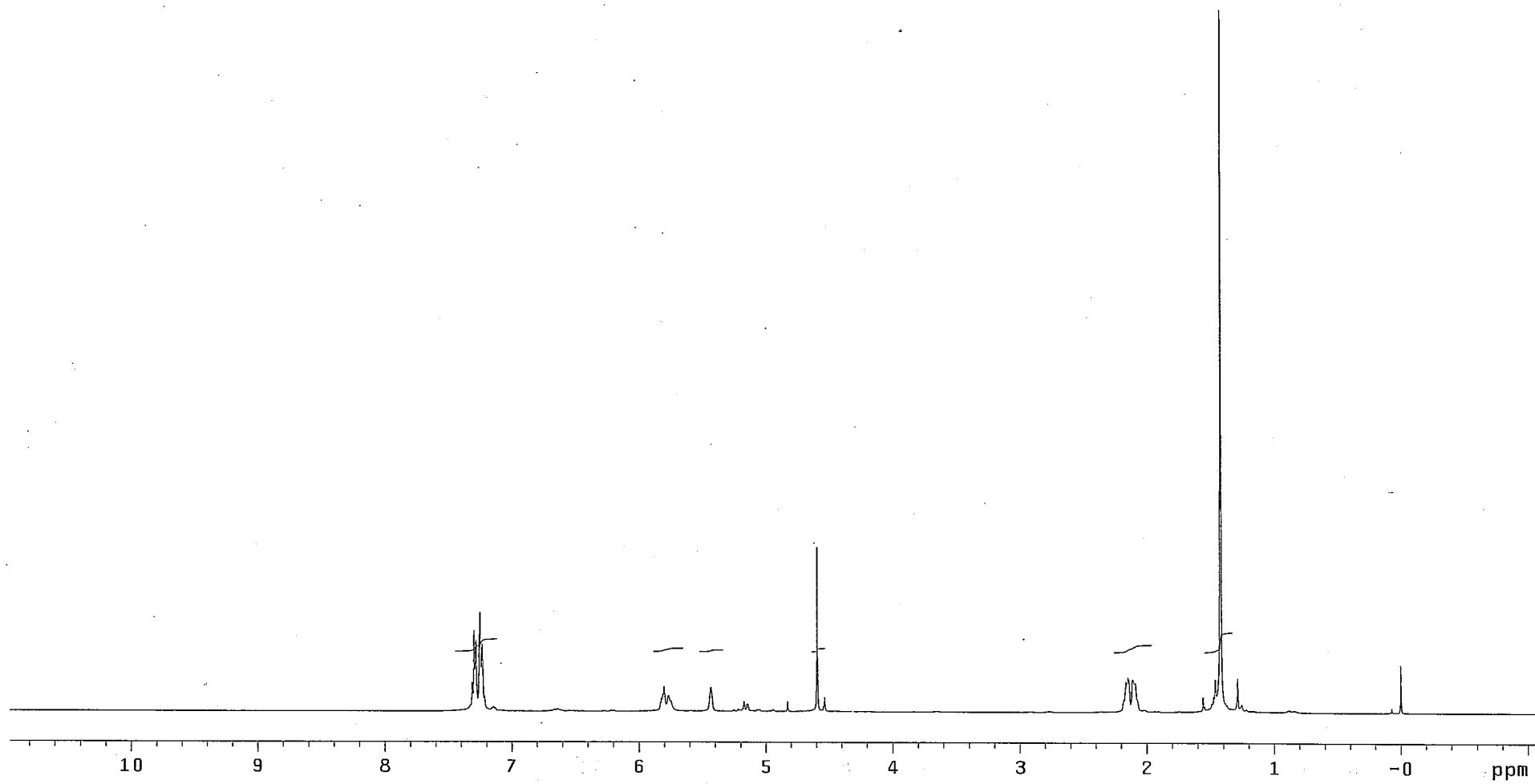


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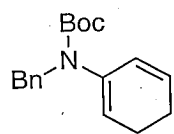


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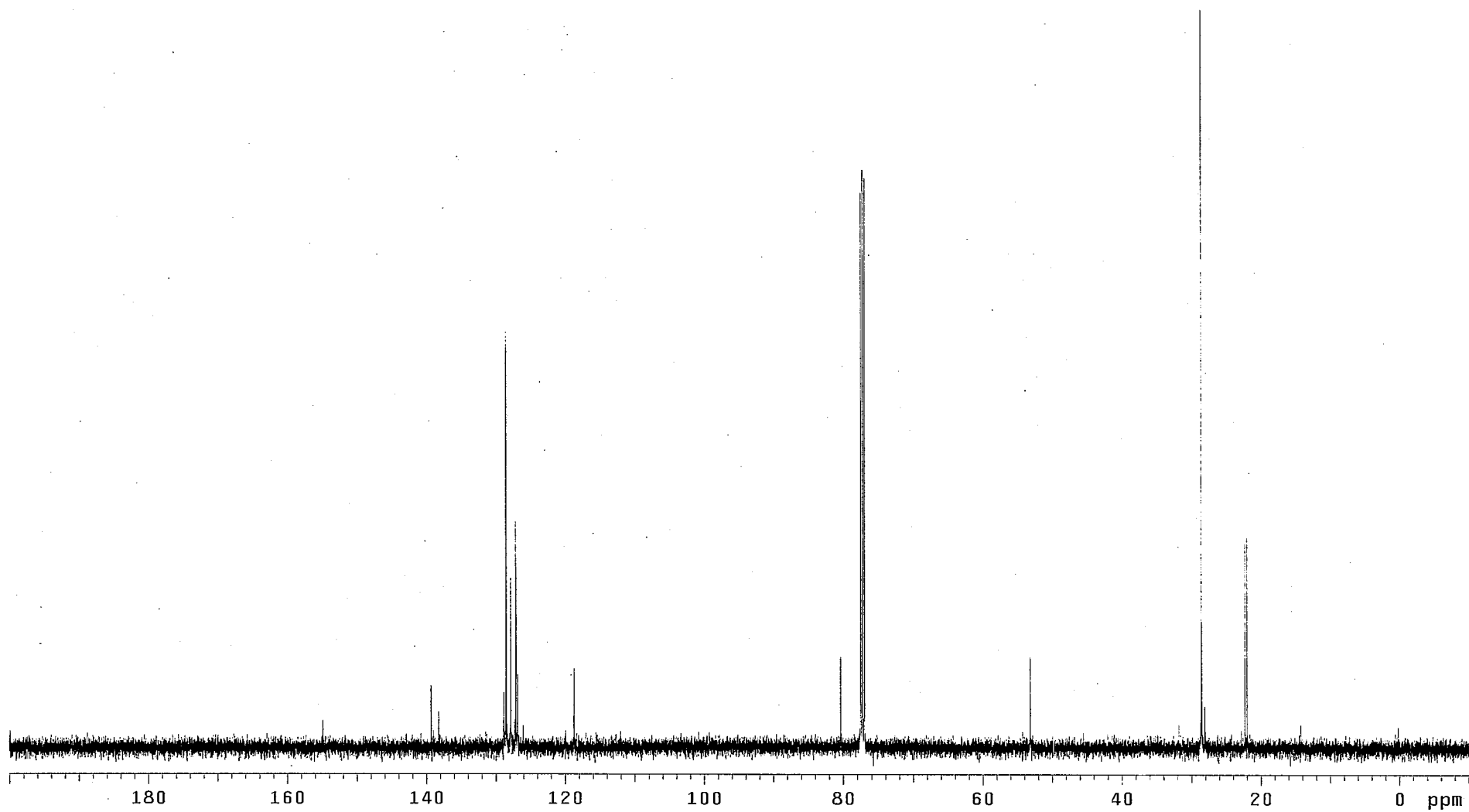


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