

## SUPPORTING INFORMATION

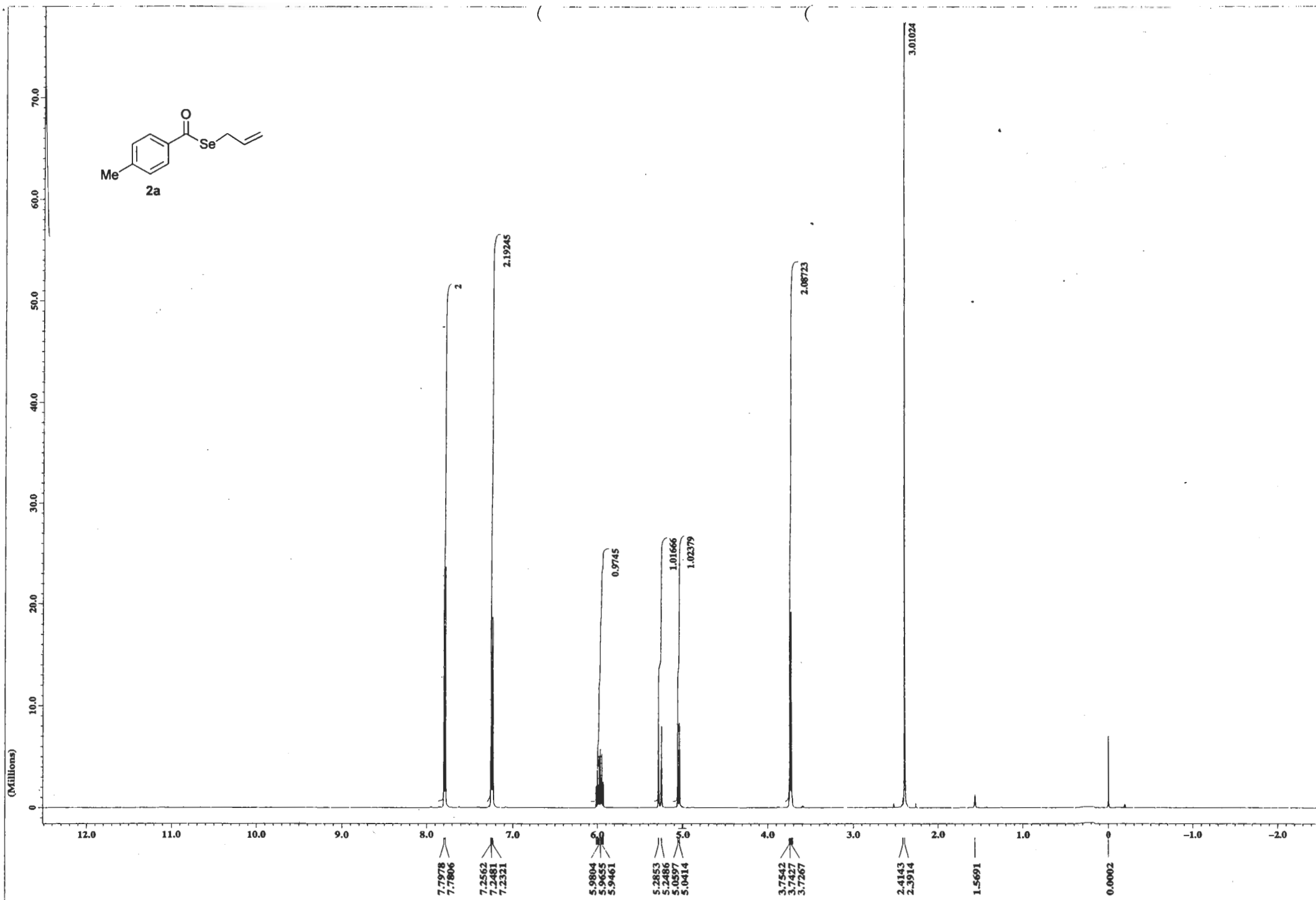
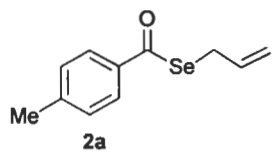
### Synthesis of selenium-containing bicyclic $\beta$ -lactams via alkene metathesis

**Dinesh R. Garud,<sup>a</sup> Deepali D. Garud<sup>a</sup> and Mamoru Koketsu<sup>\*b</sup>**

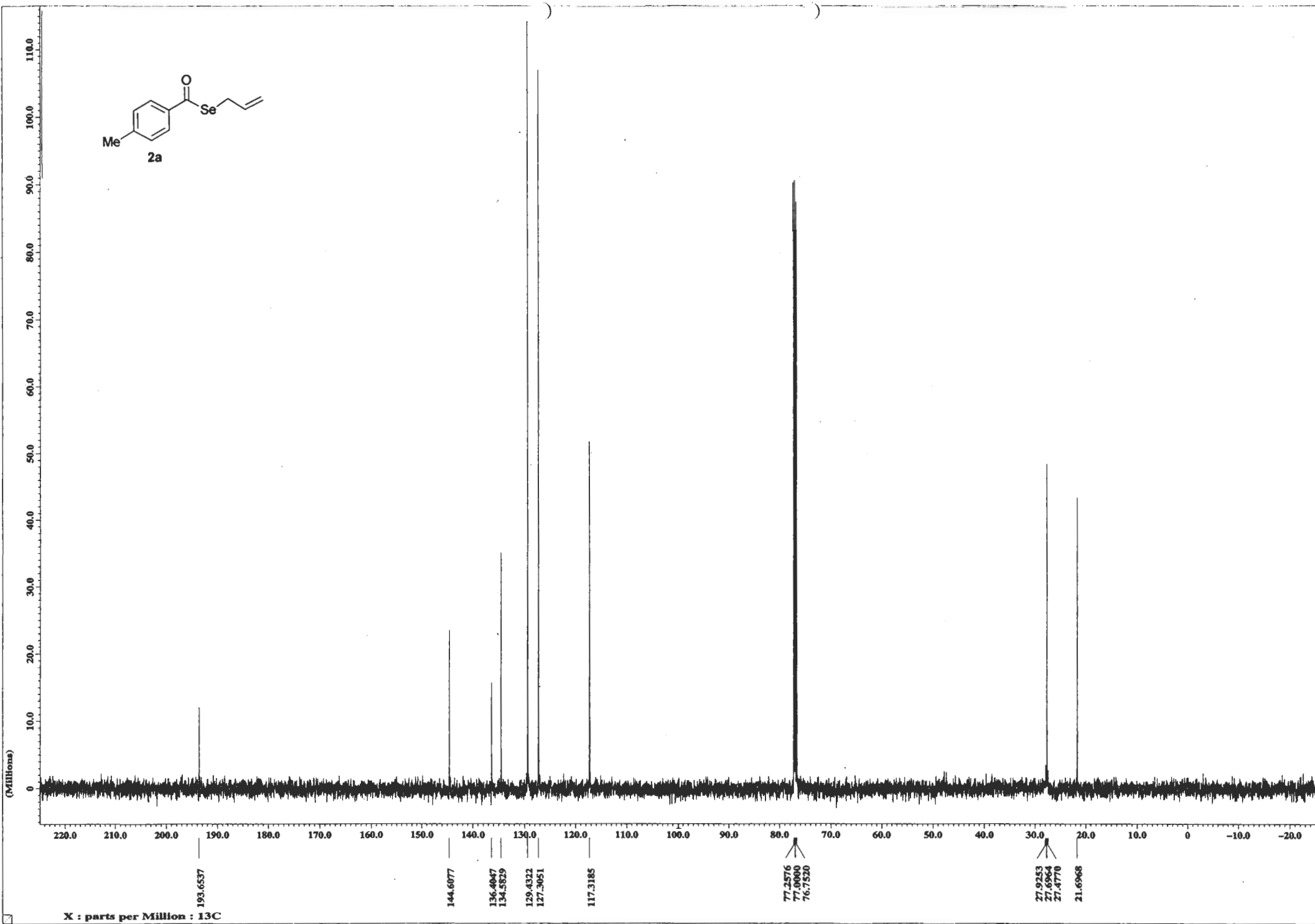
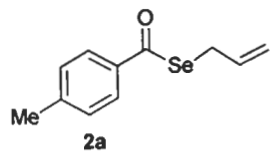
<sup>a</sup> *Department of Chemistry, Faculty of Engineering, Gifu University, Gifu-501-1193, Japan. E-mail: ddgarud@yahoo.co.in*

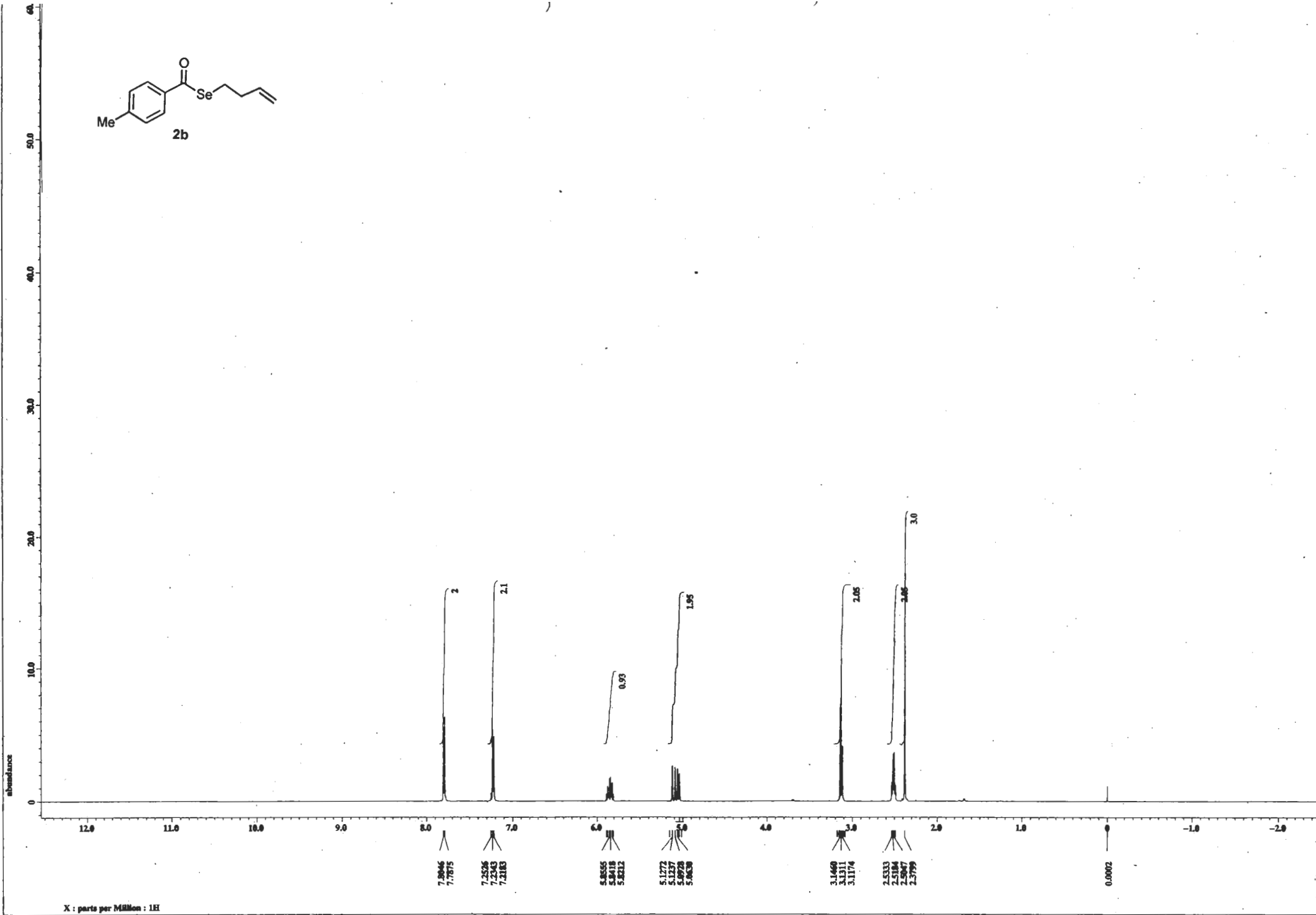
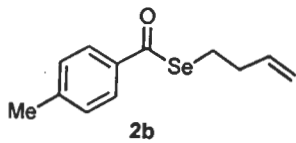
<sup>b</sup> *Division of Instrumental Analysis, Life Science Research Center, Gifu University, Gifu-501-1193 Japan. Fax: +81-58-293-2619;*

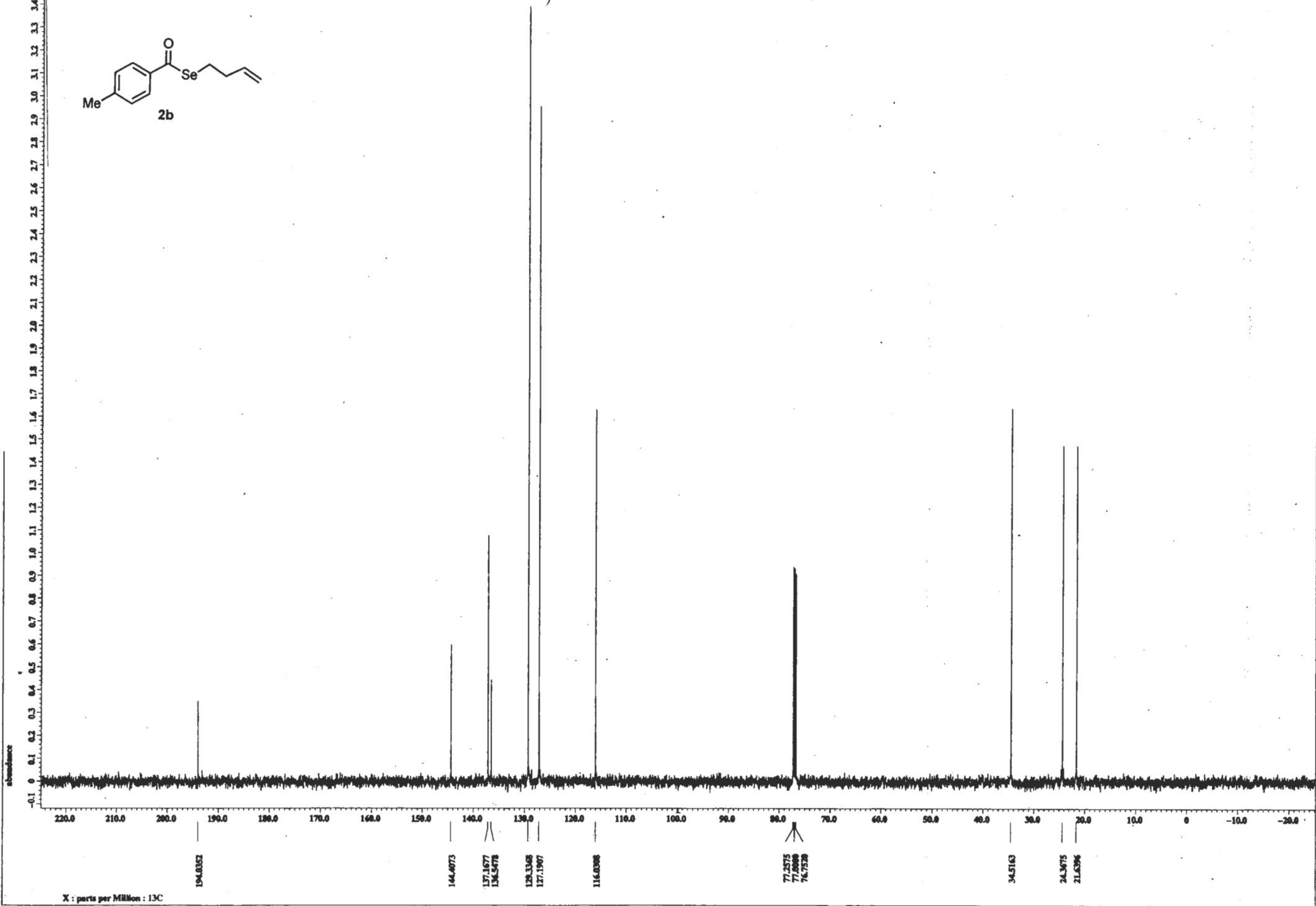
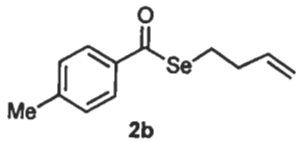
*Tel: +81-58-293-2619; E-mail: [koketsu@gifu-u.ac.jp](mailto:koketsu@gifu-u.ac.jp)*



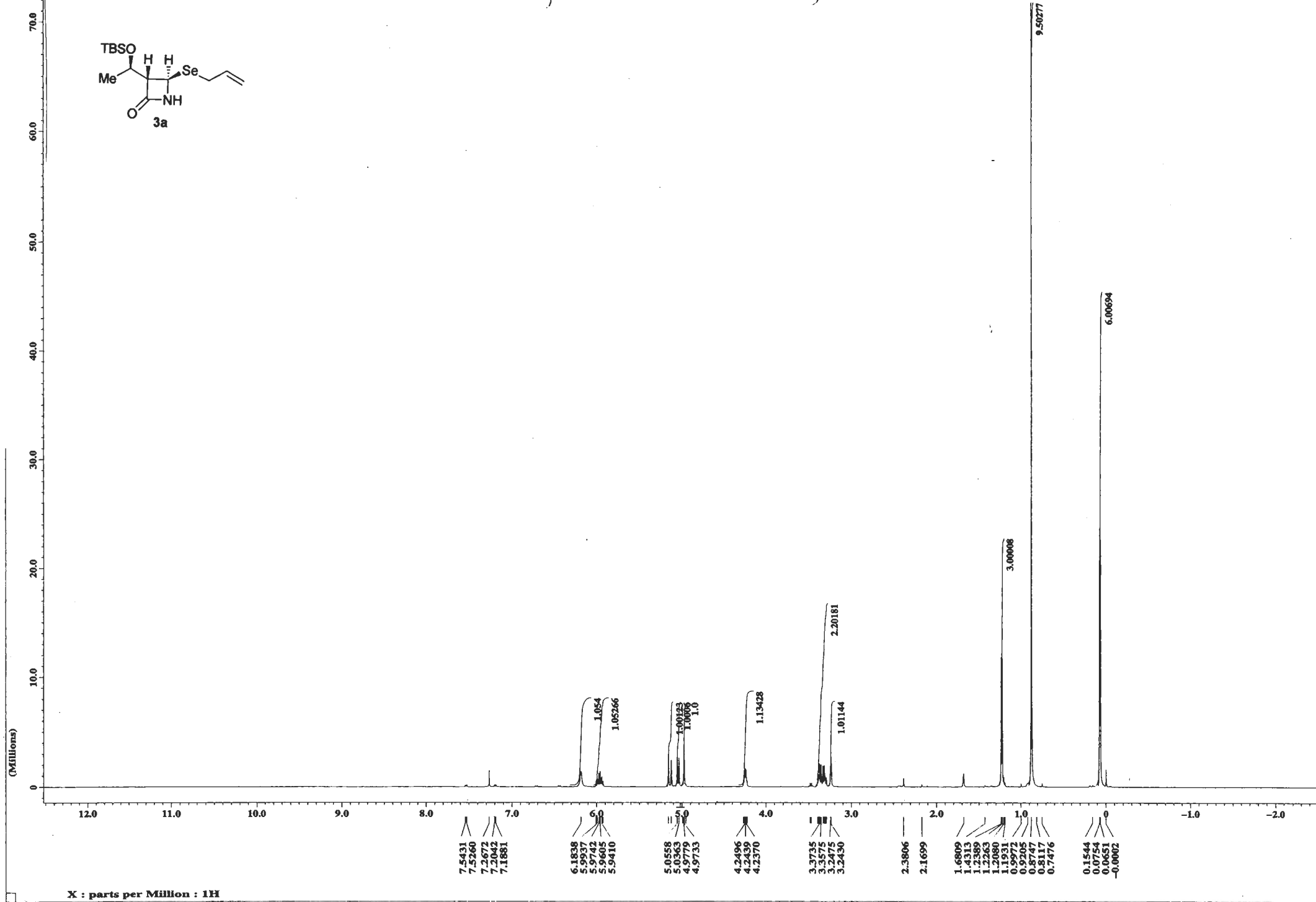
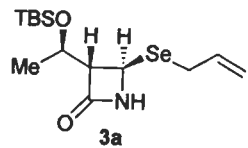
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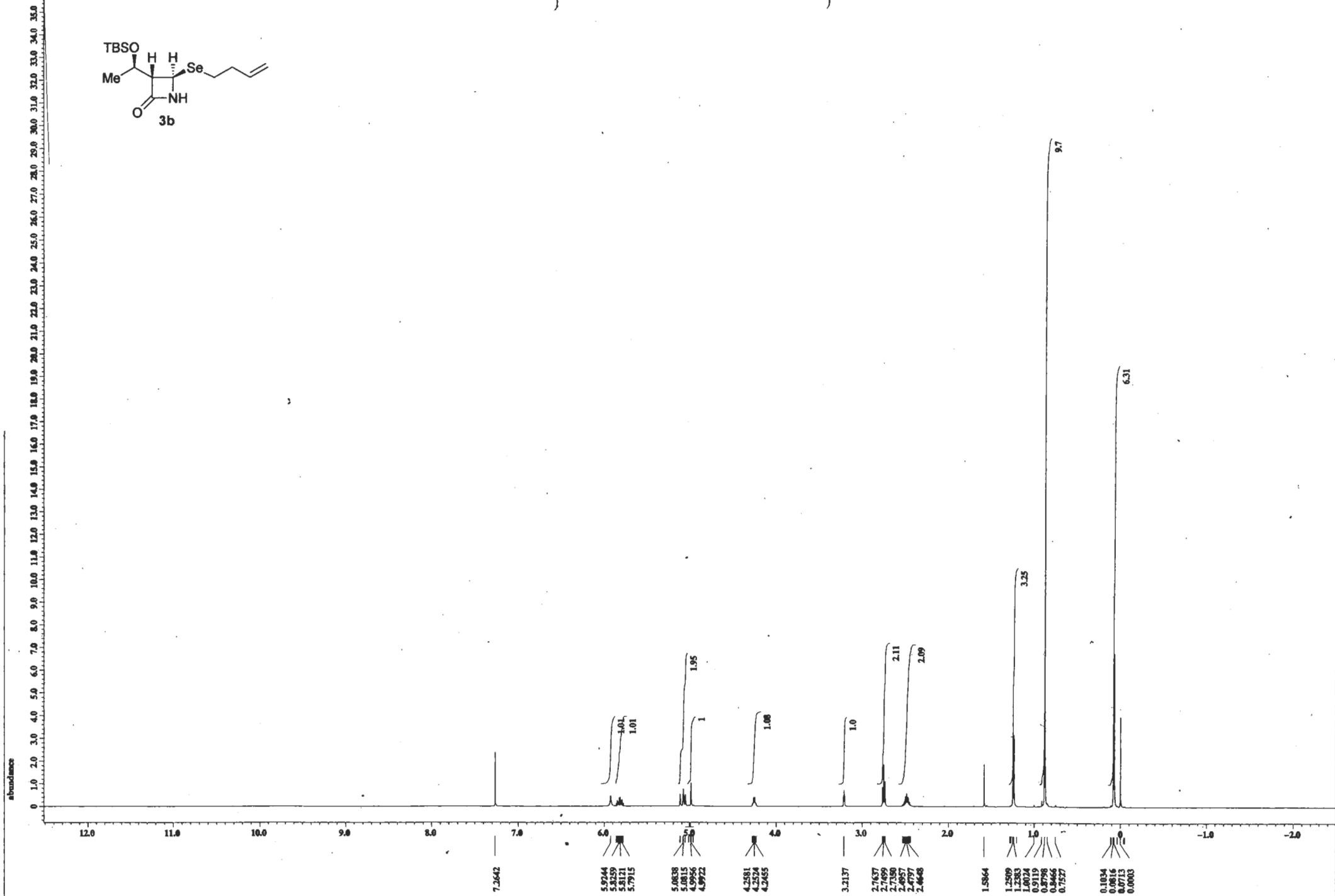
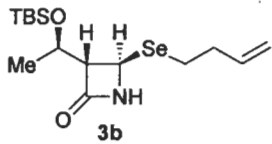




X : parts per Million : 13C

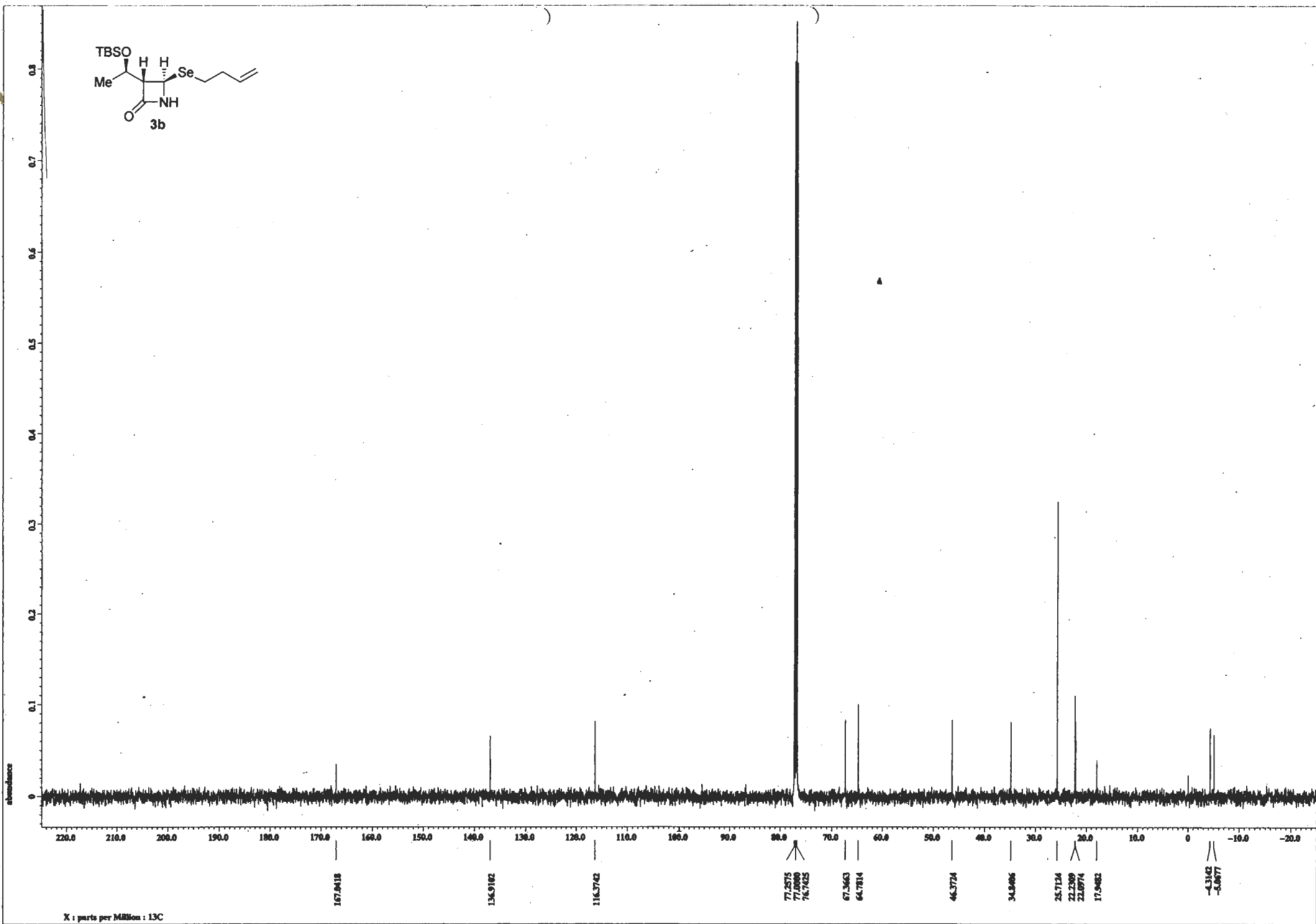
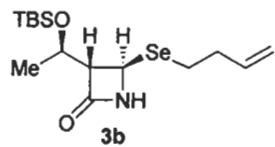




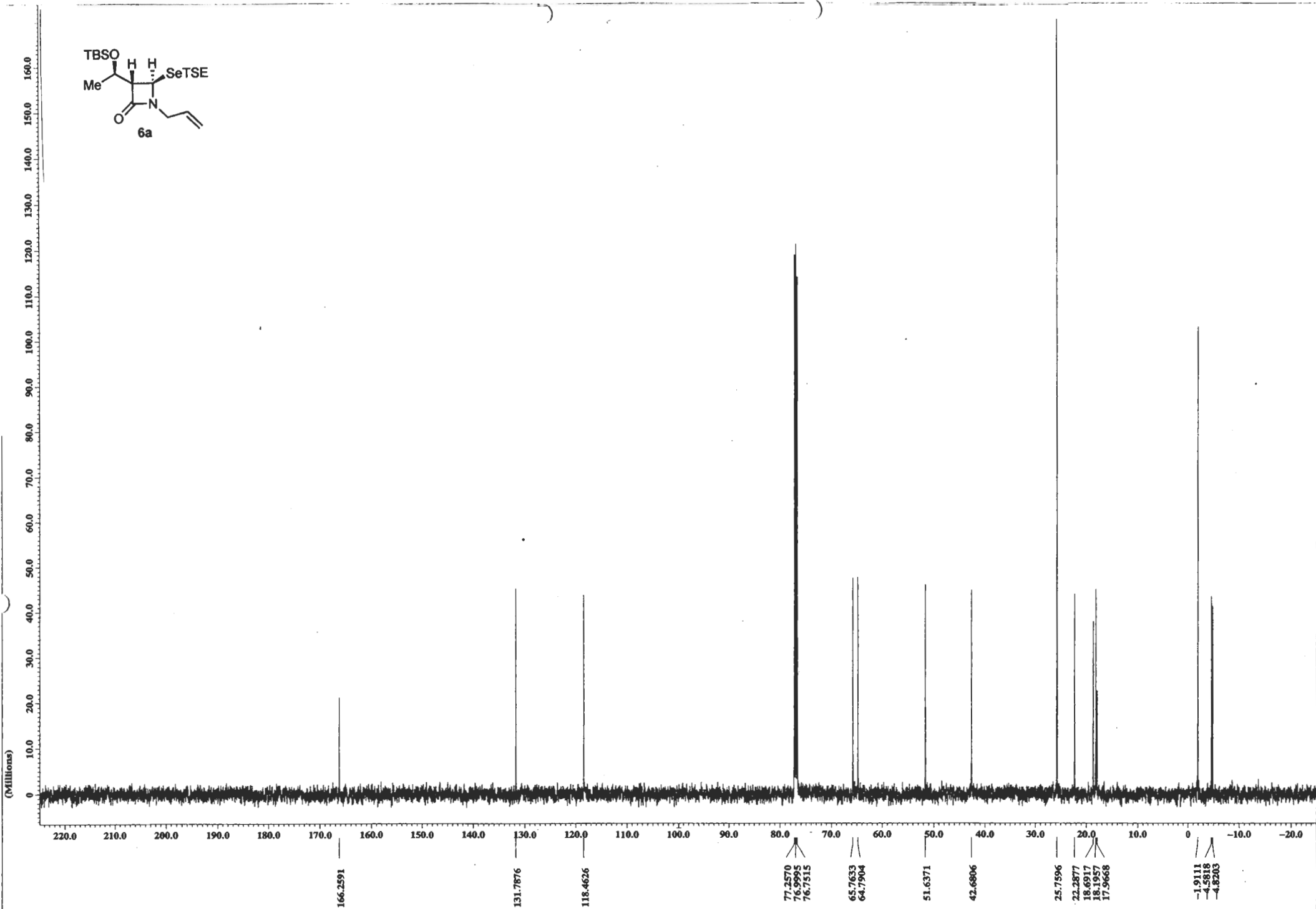
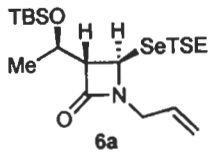


X : parts per Million : 1H





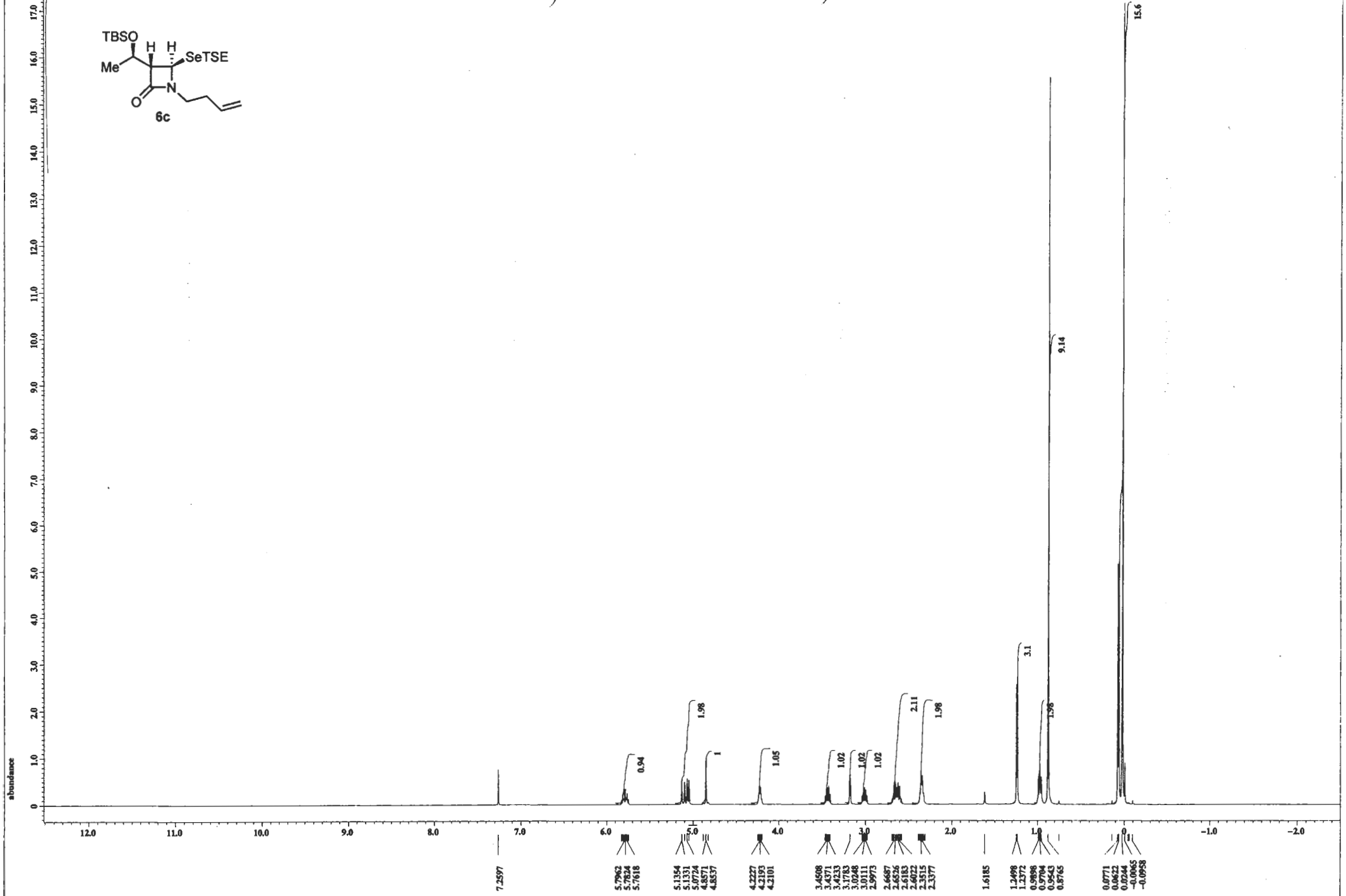
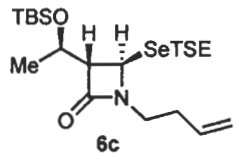




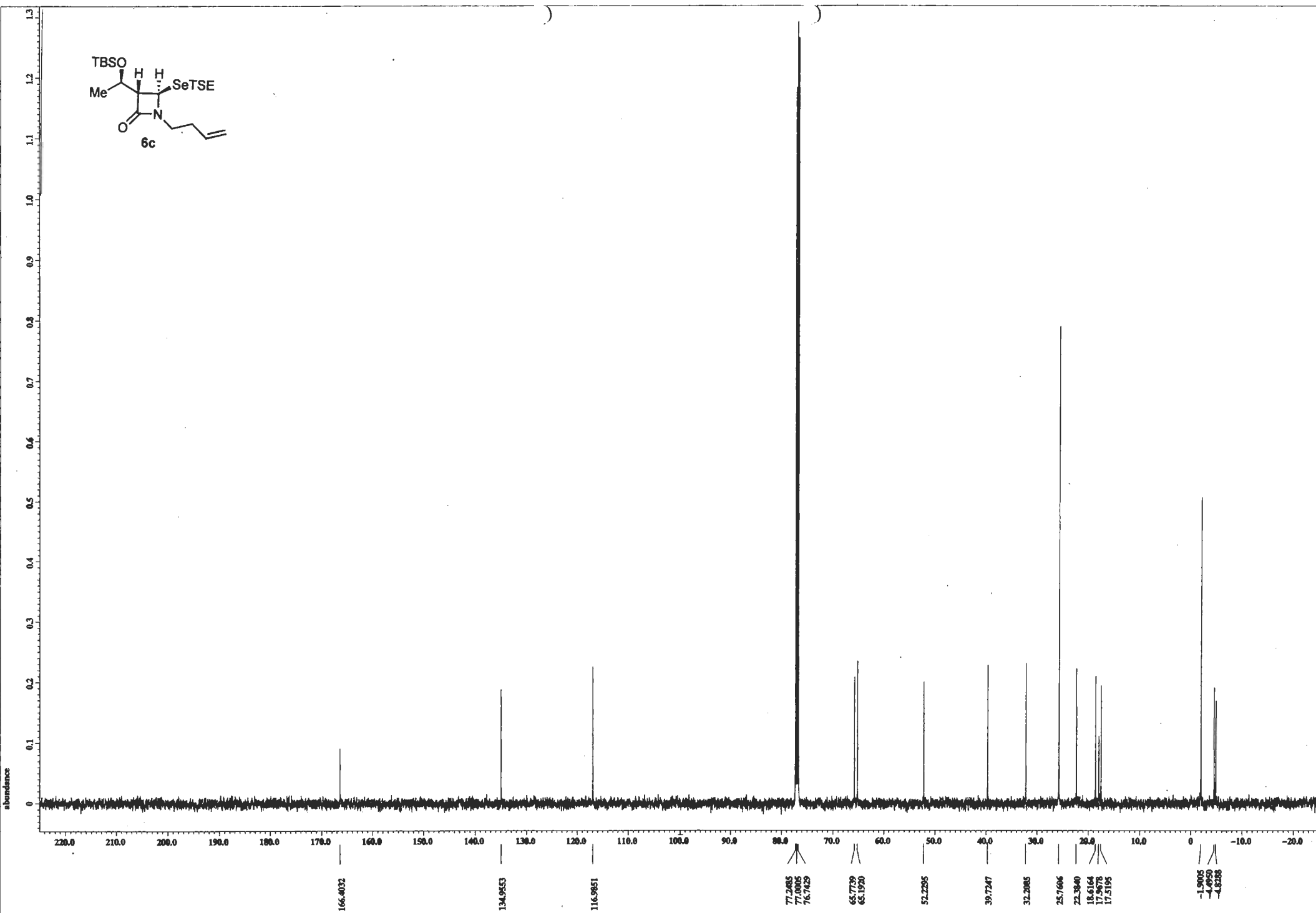
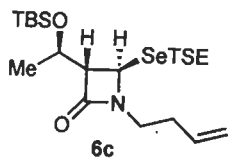
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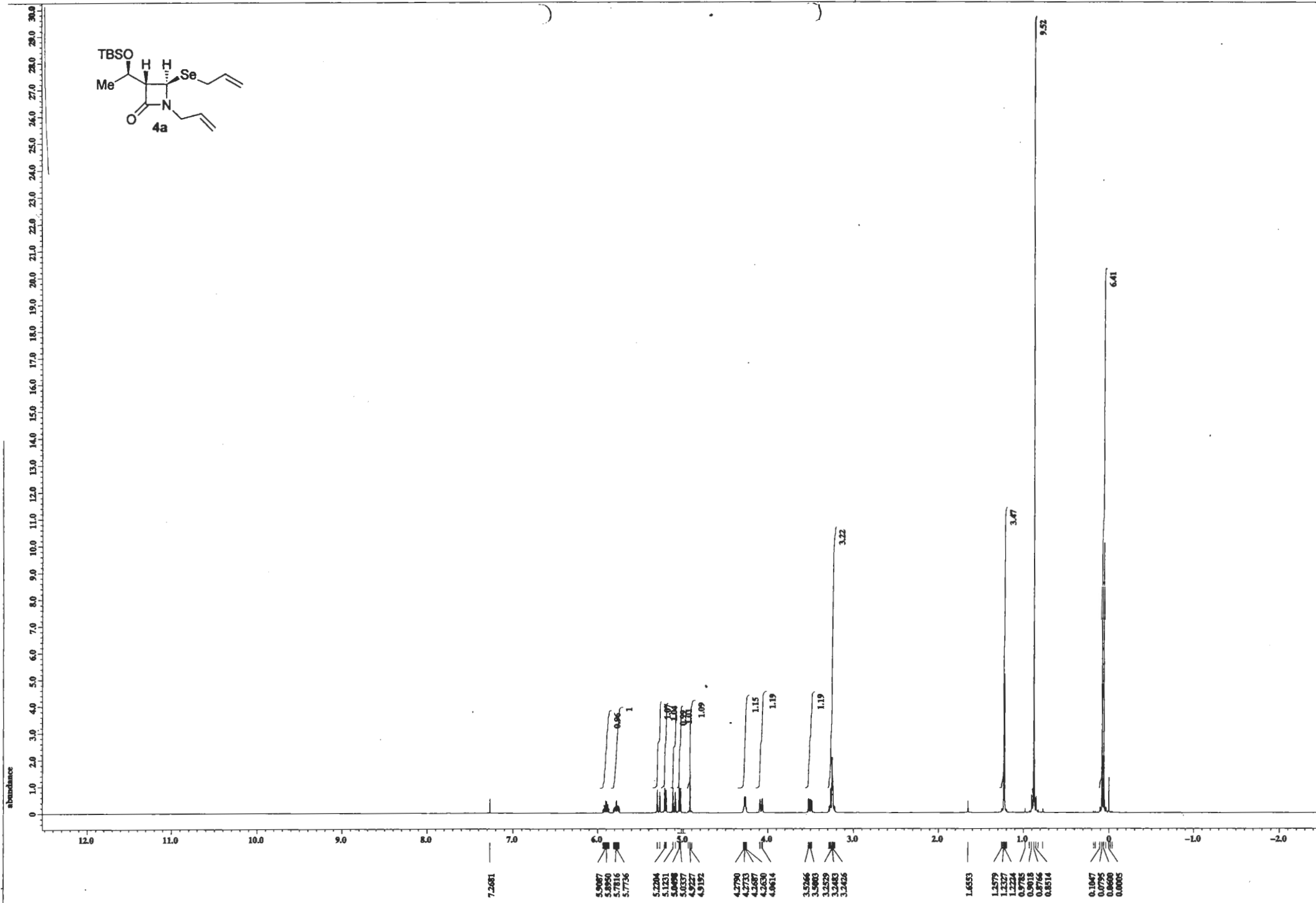
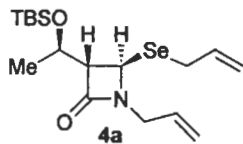




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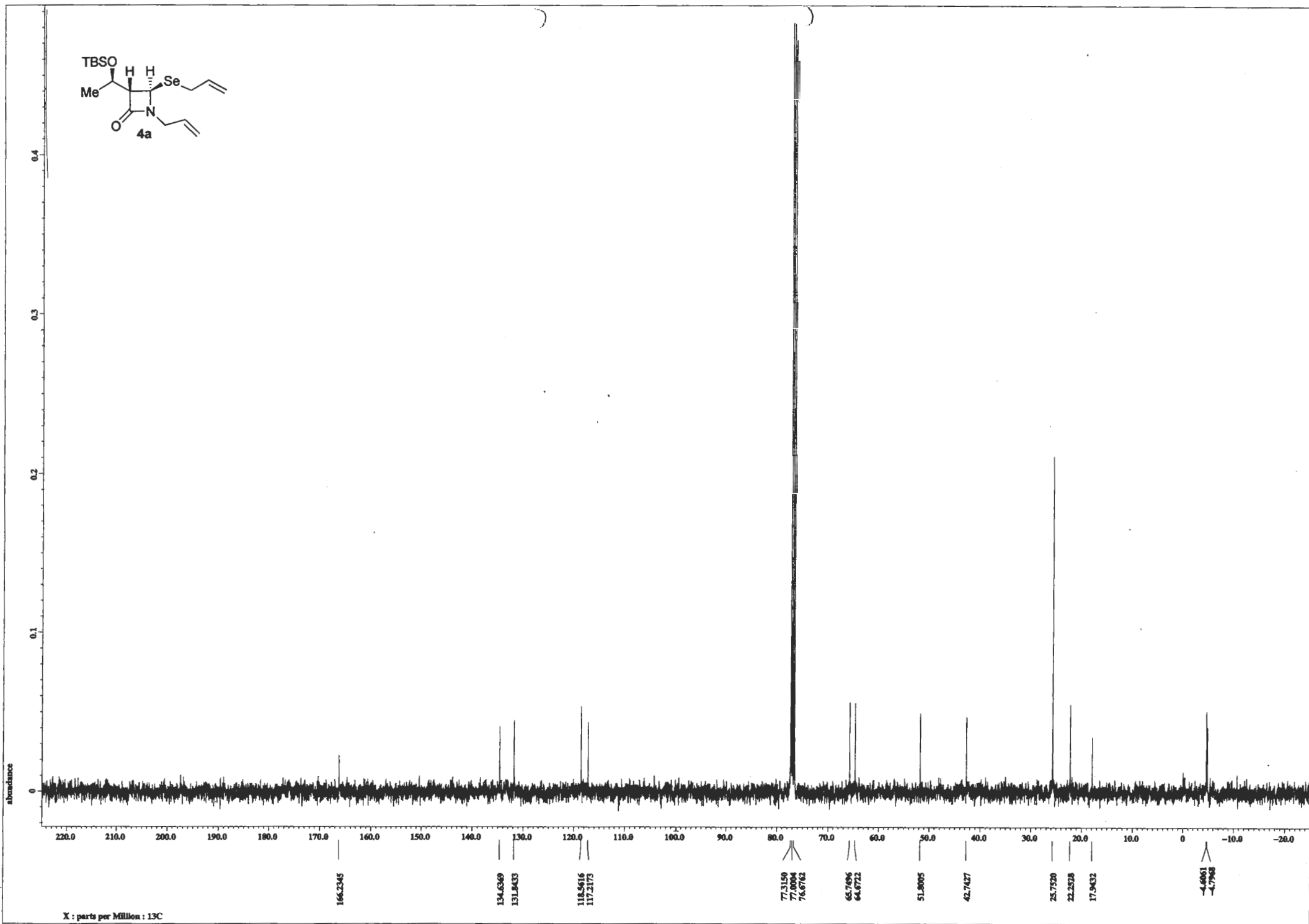
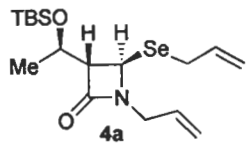


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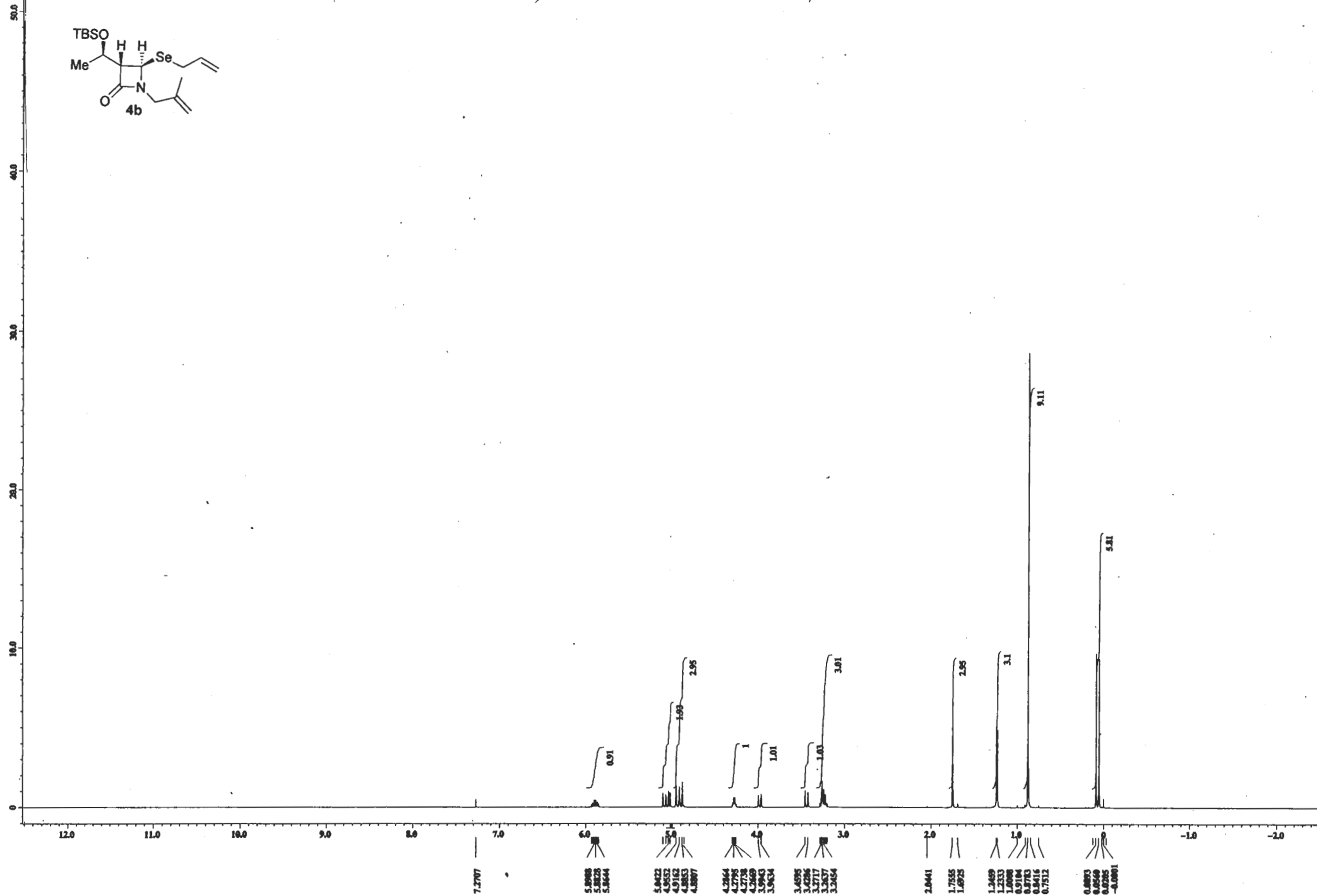
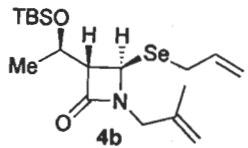


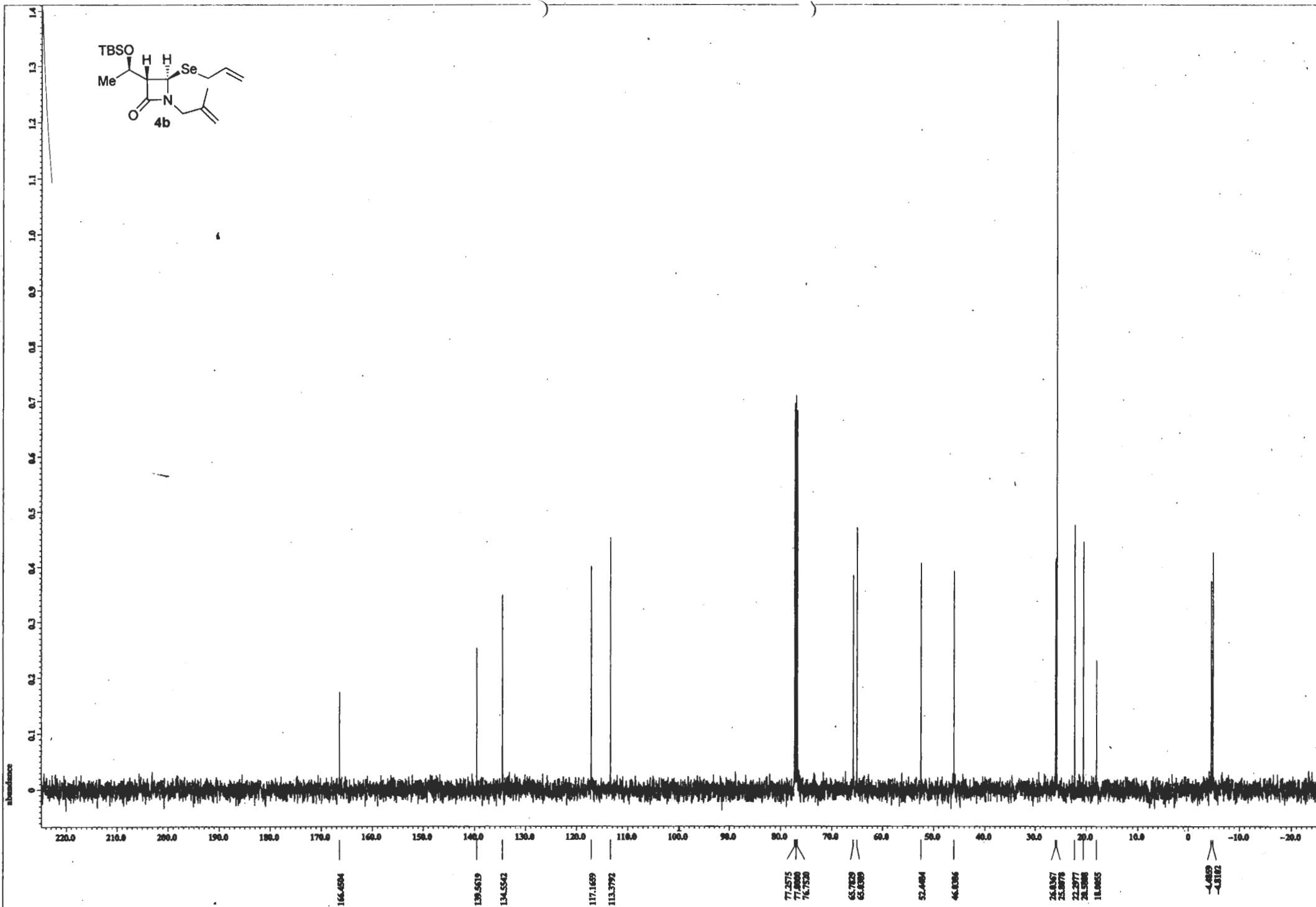
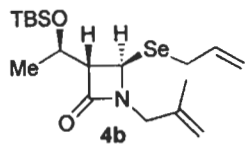
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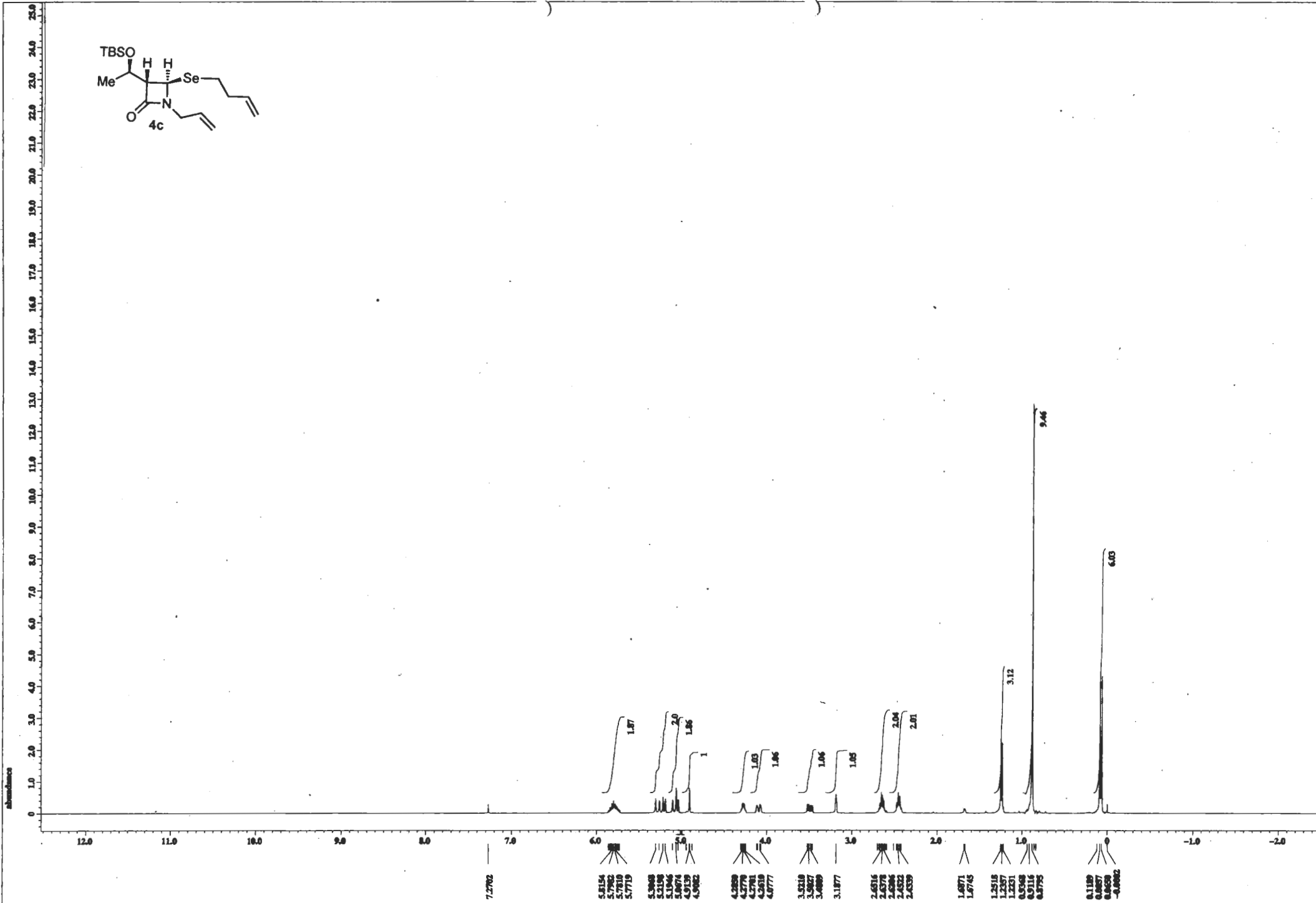
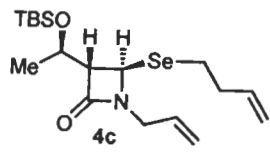


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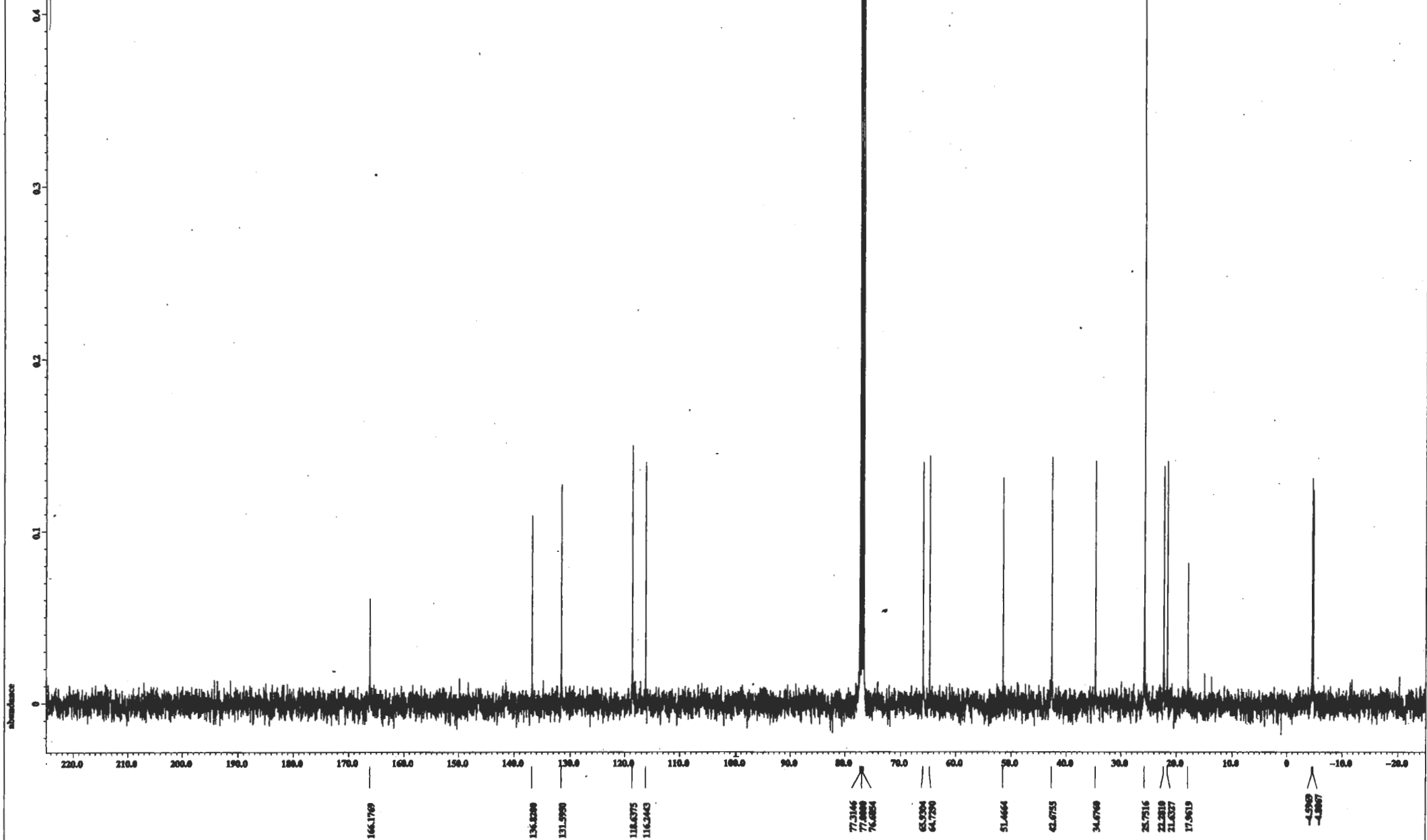
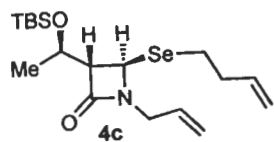




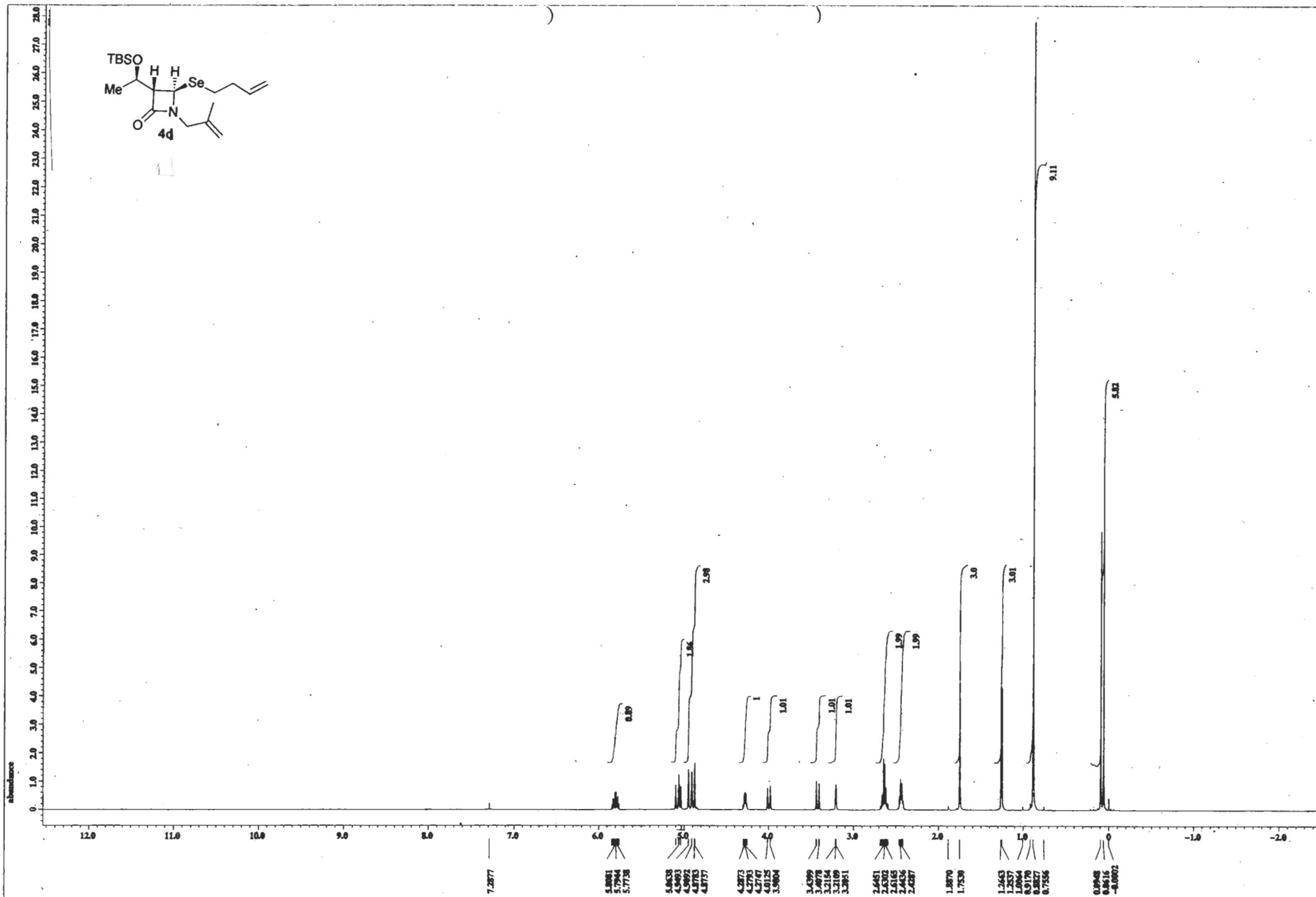
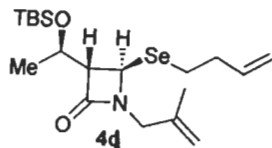
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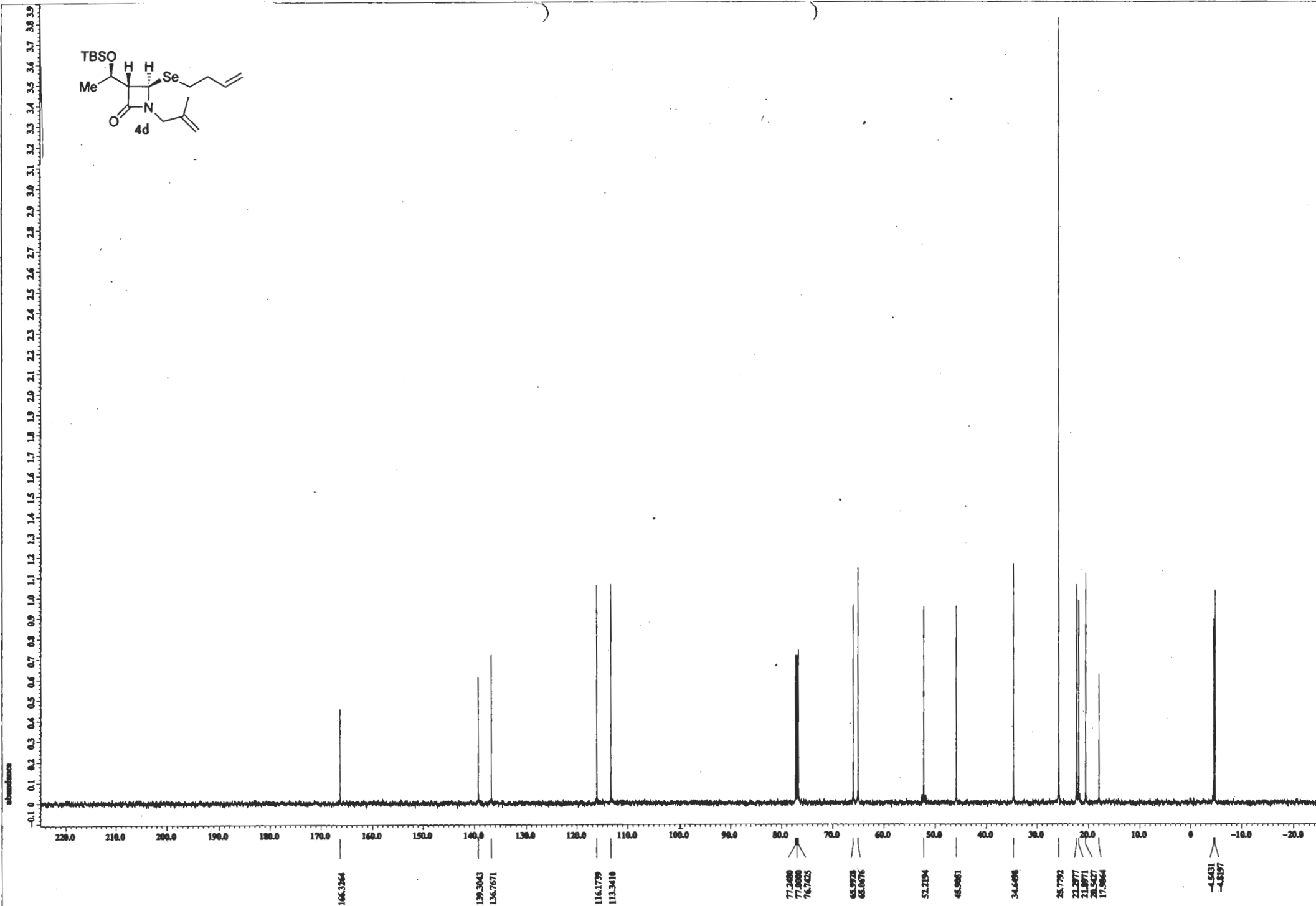
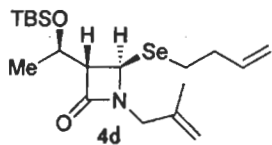
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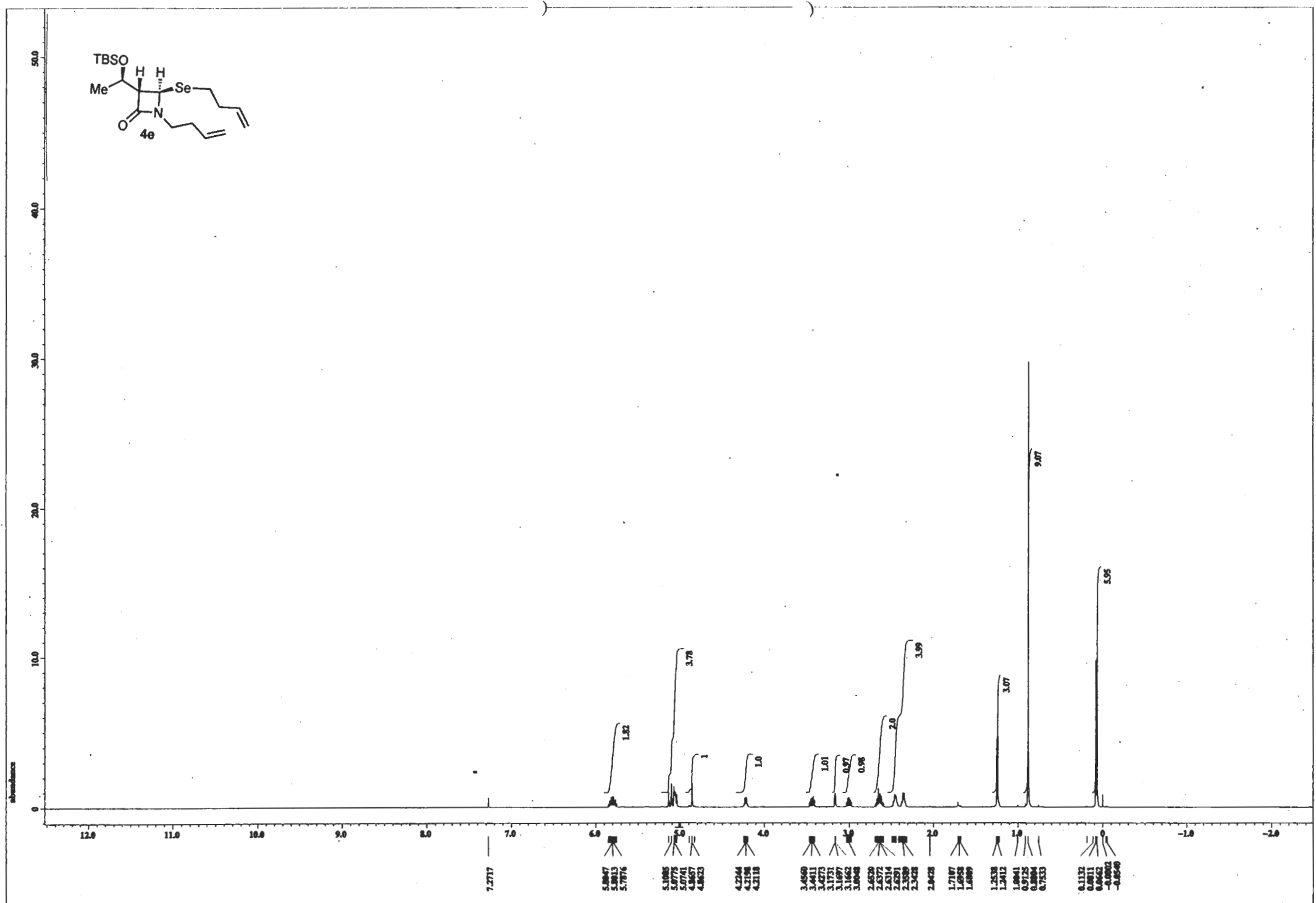
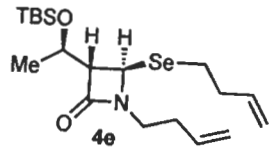
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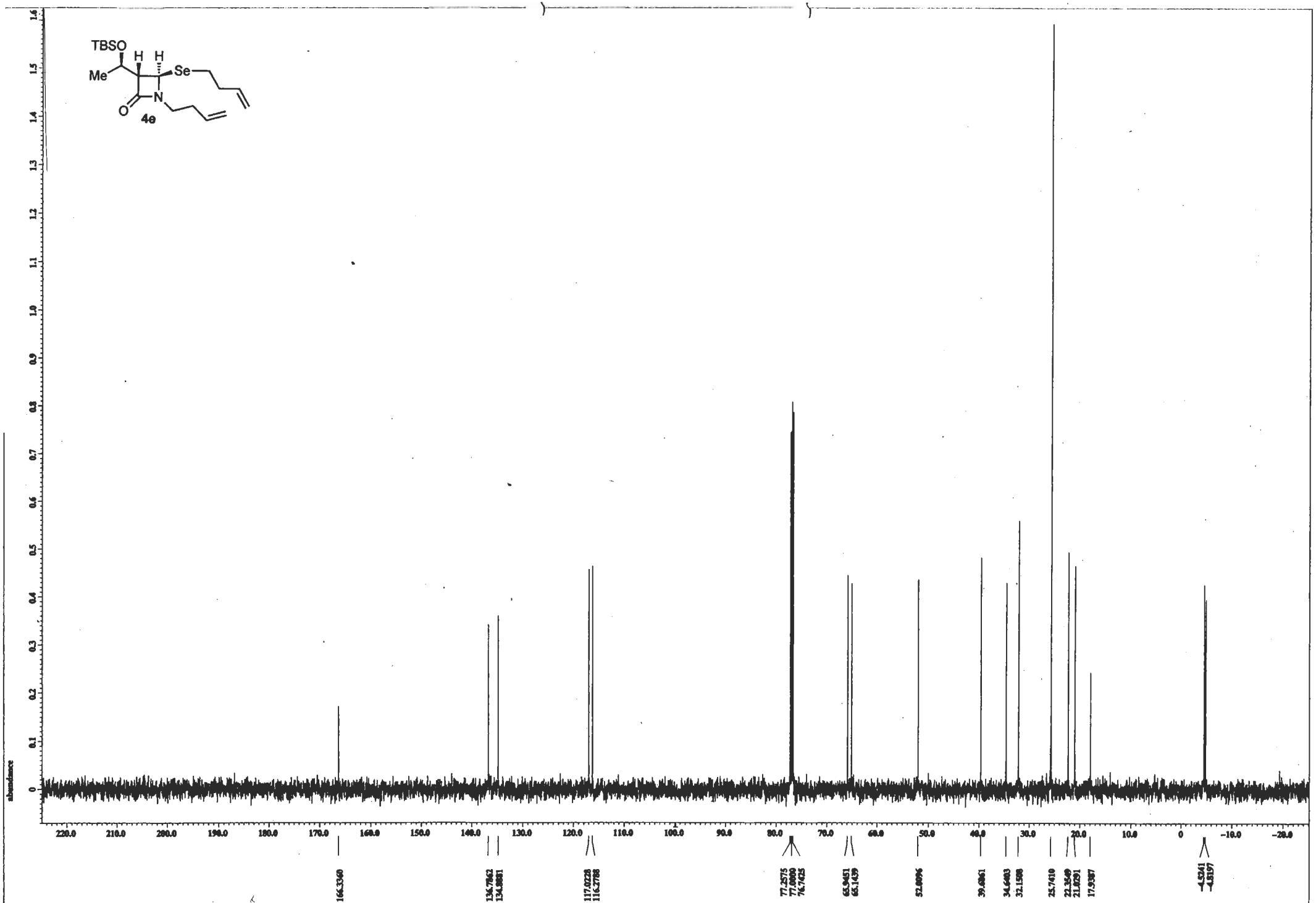
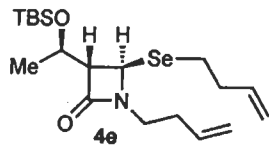


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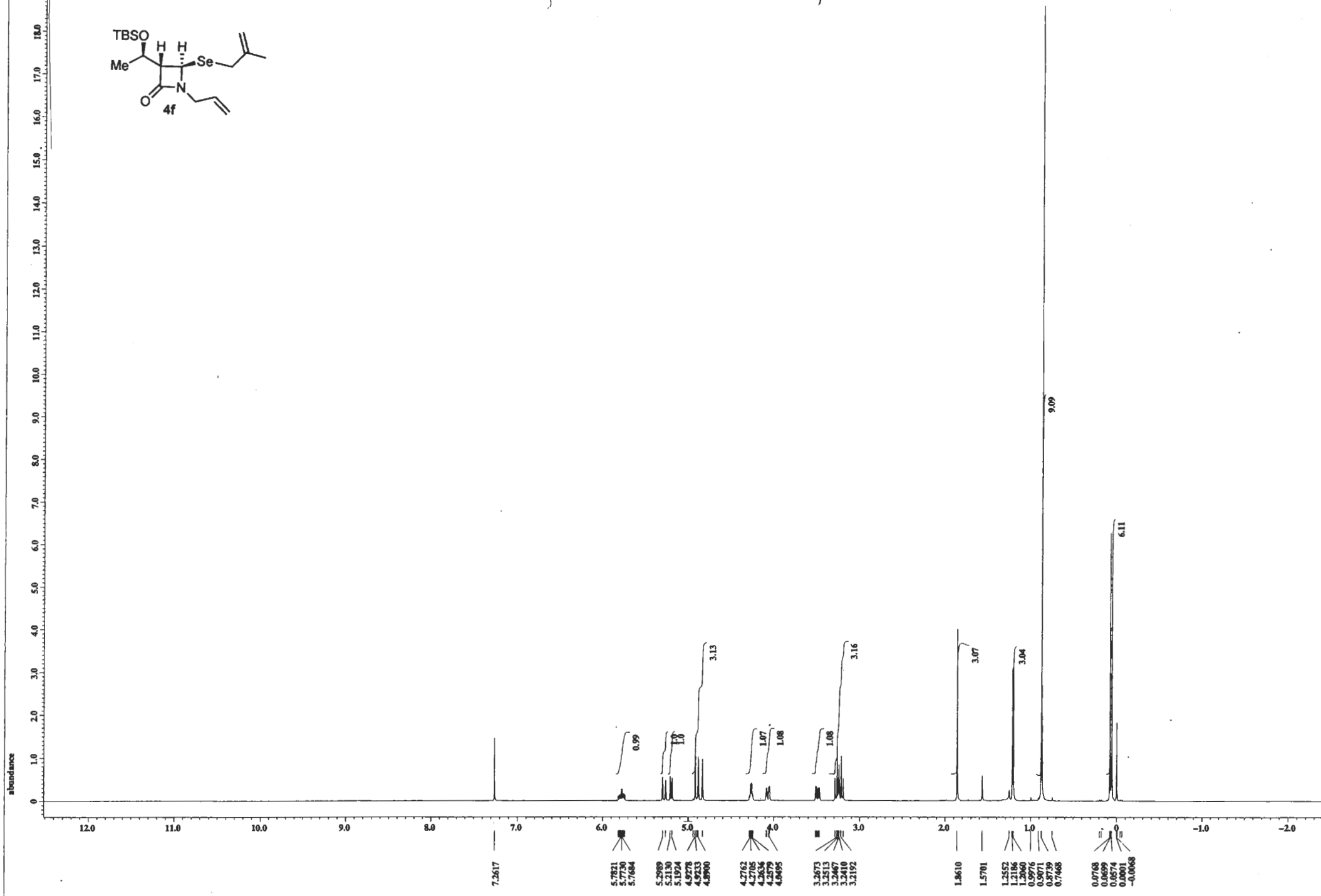
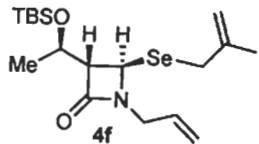


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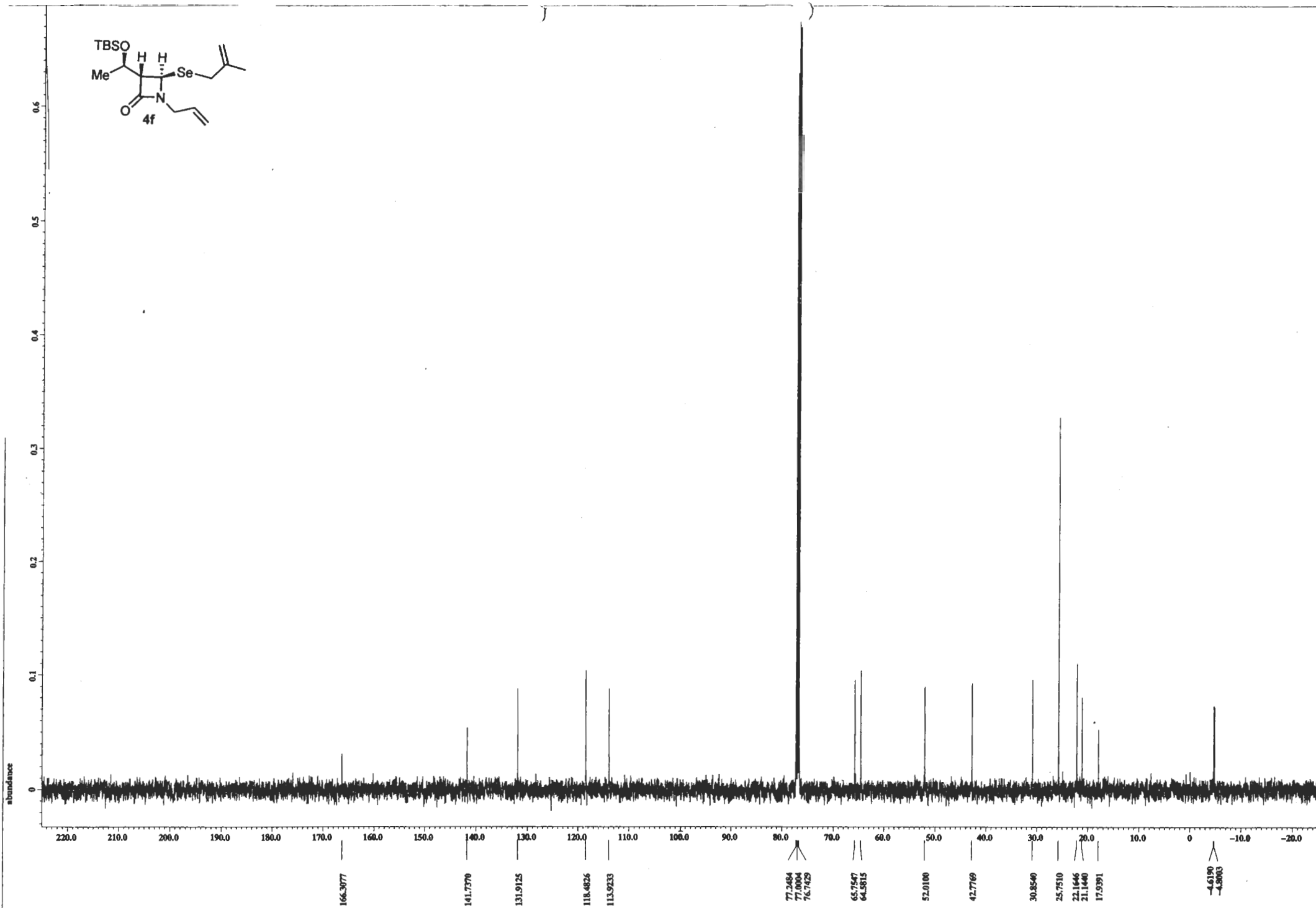
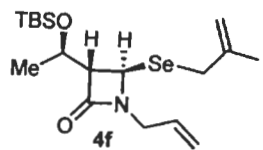




X : parts per Million : 13C



X : parts per Million : 1H



X : parts per Million : 13C

166.3077

141.7370

131.9125

118.4826

113.9233

77.2484  
77.0004  
76.7429

65.7547  
64.5815

52.0100

42.7769

30.8540

25.7510

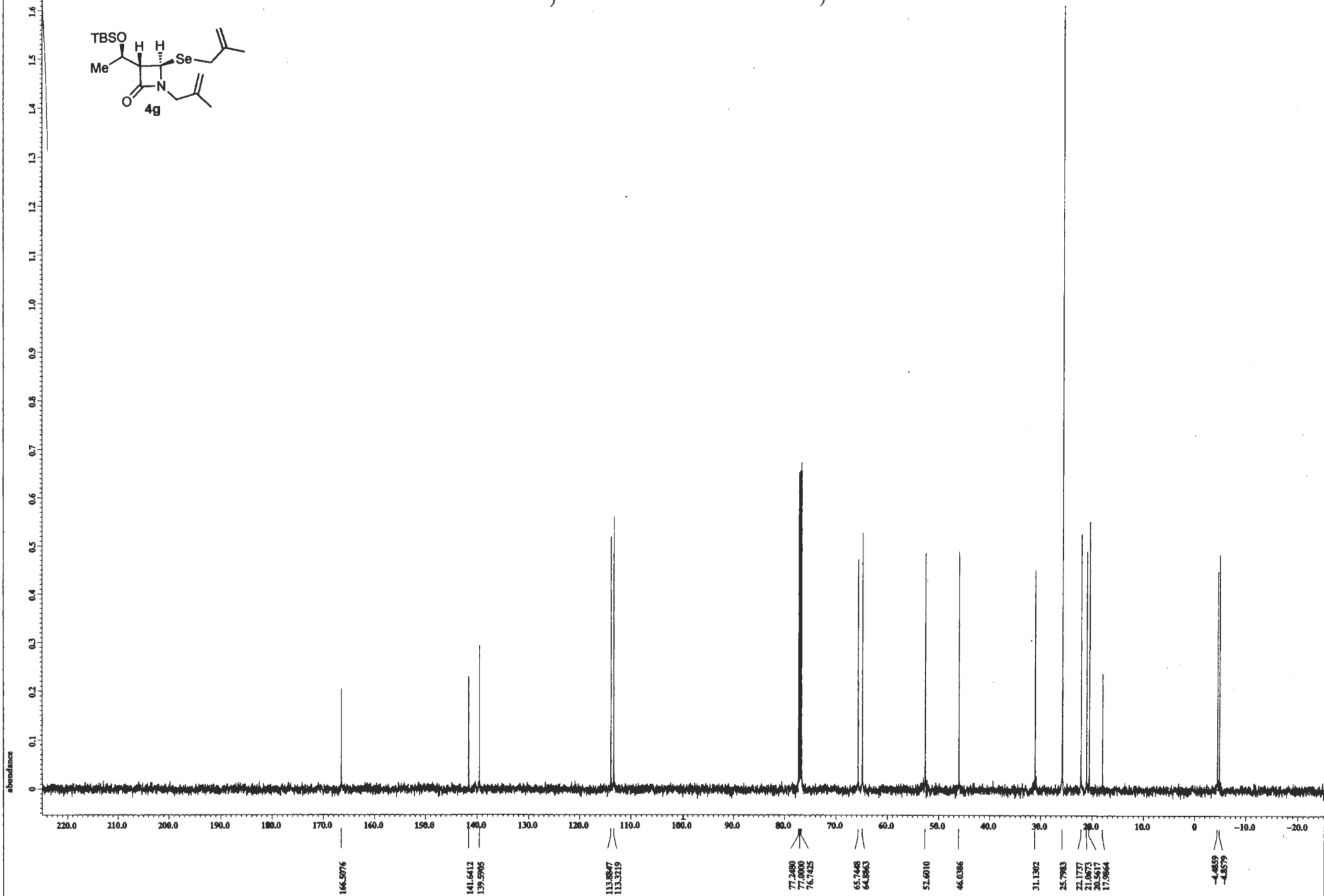
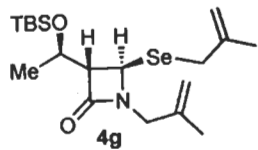
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21.1440

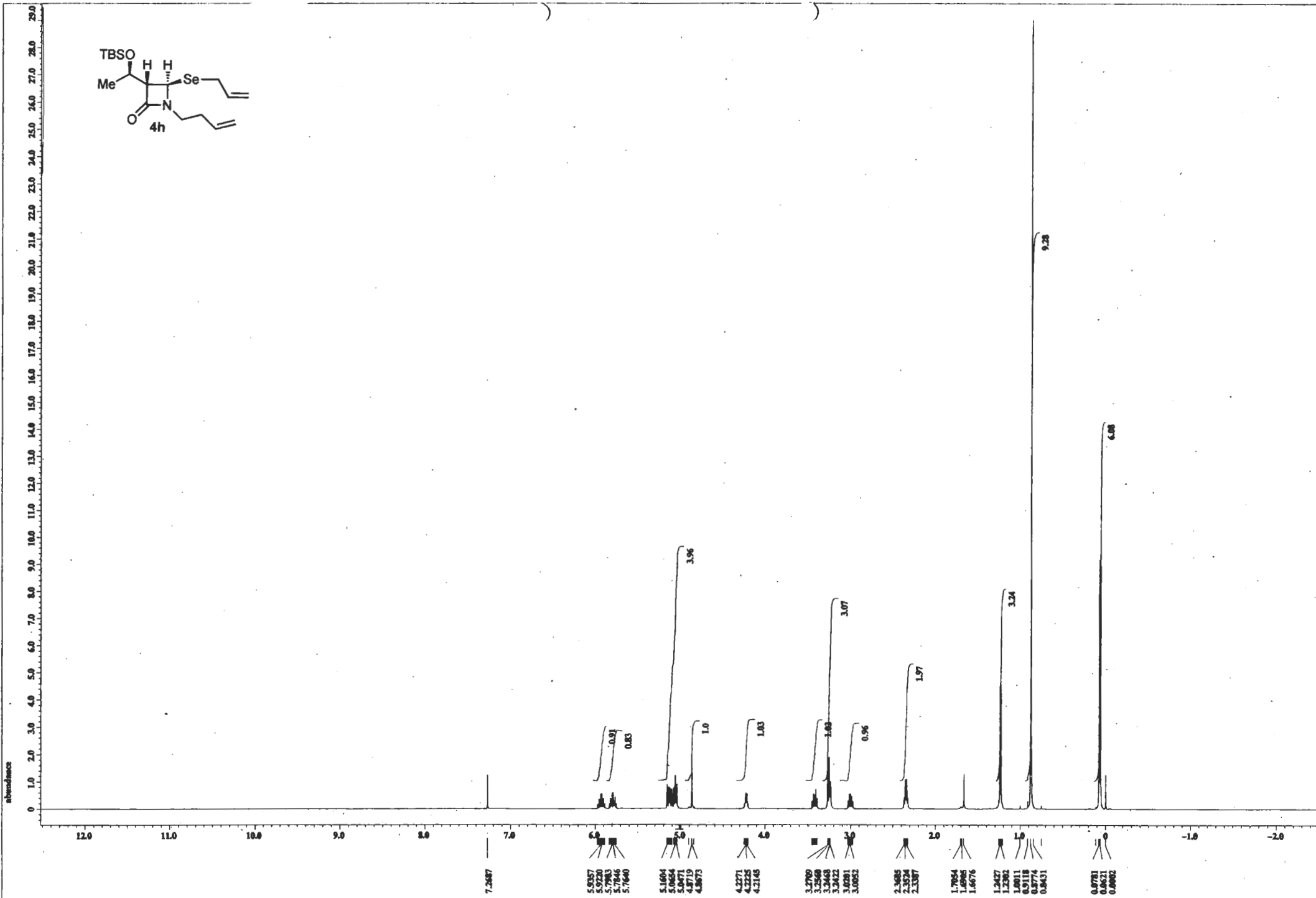
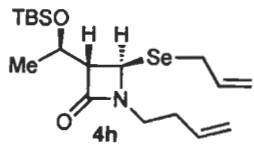
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-4.6190  
-4.8803

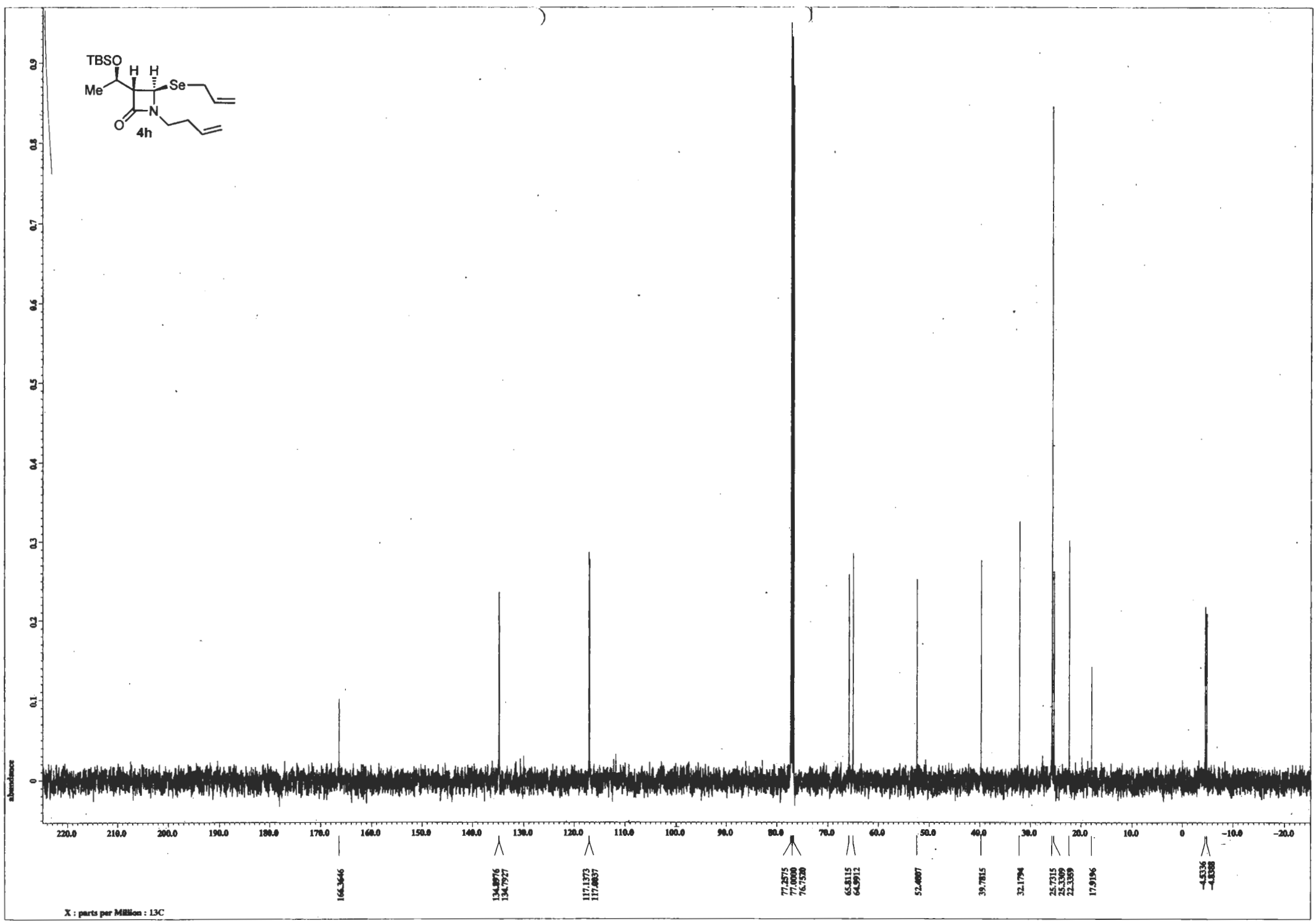
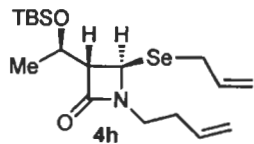




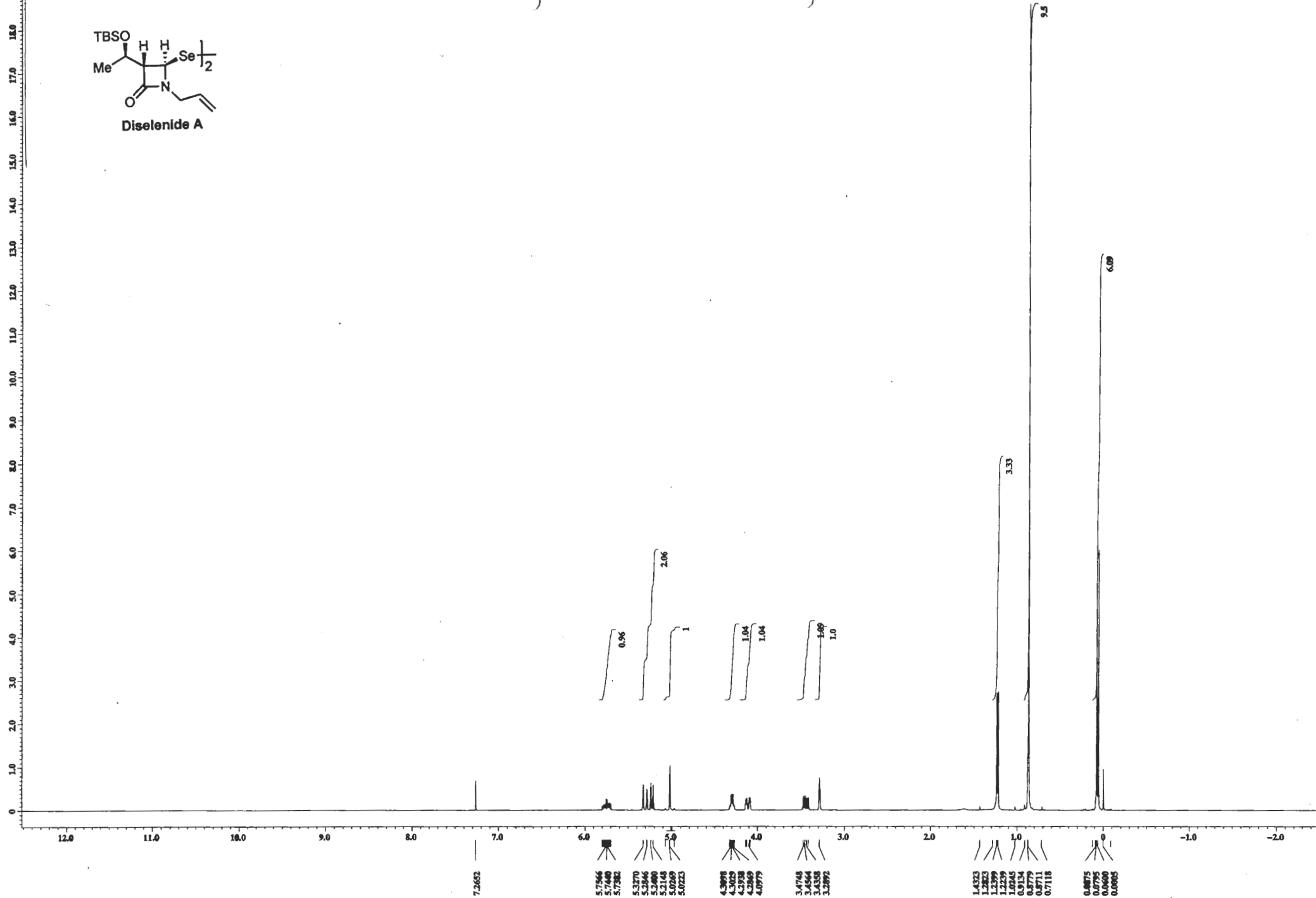
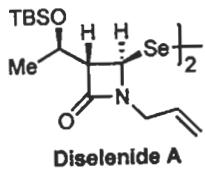
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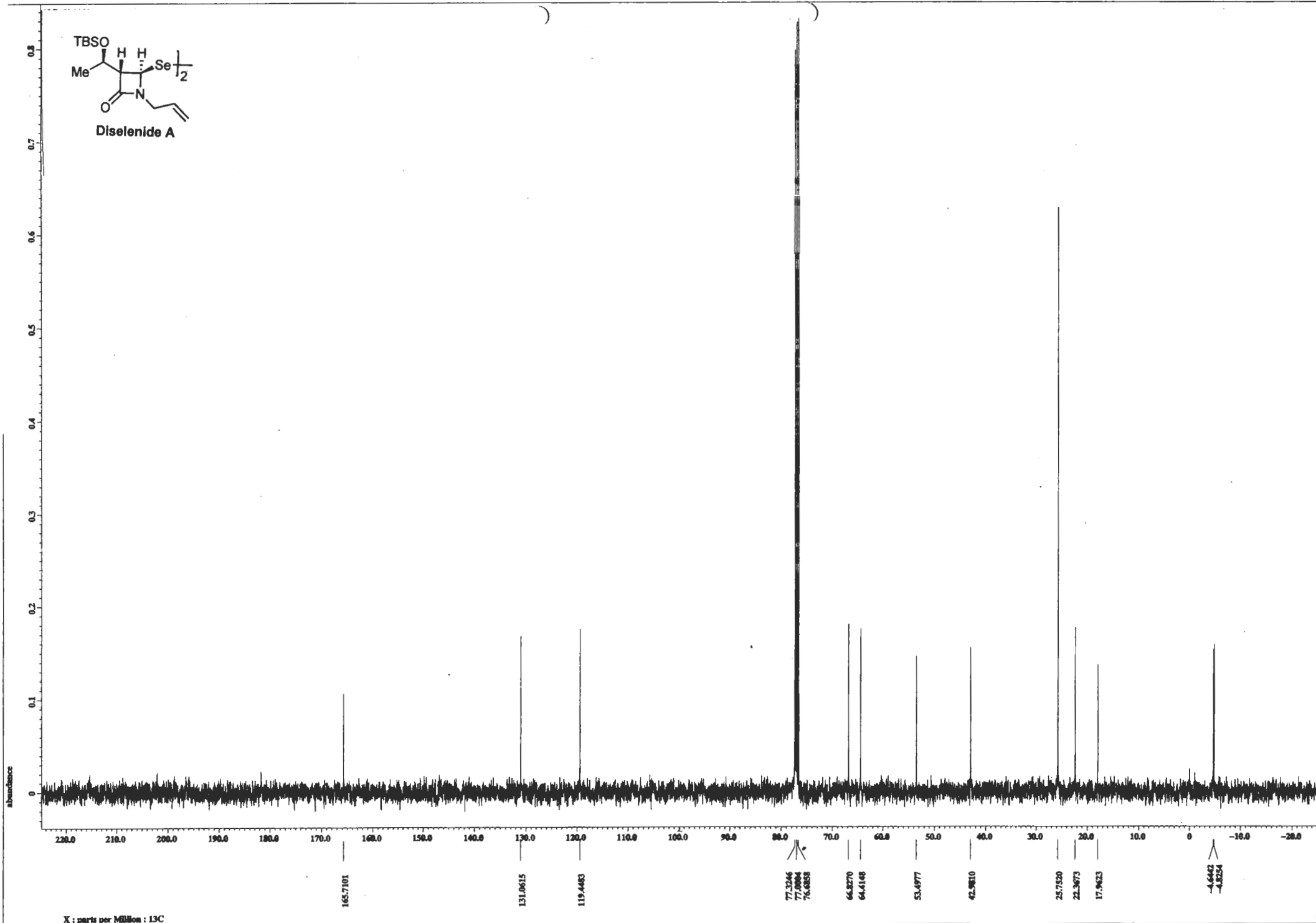
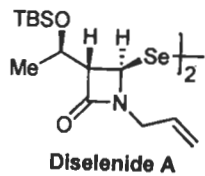
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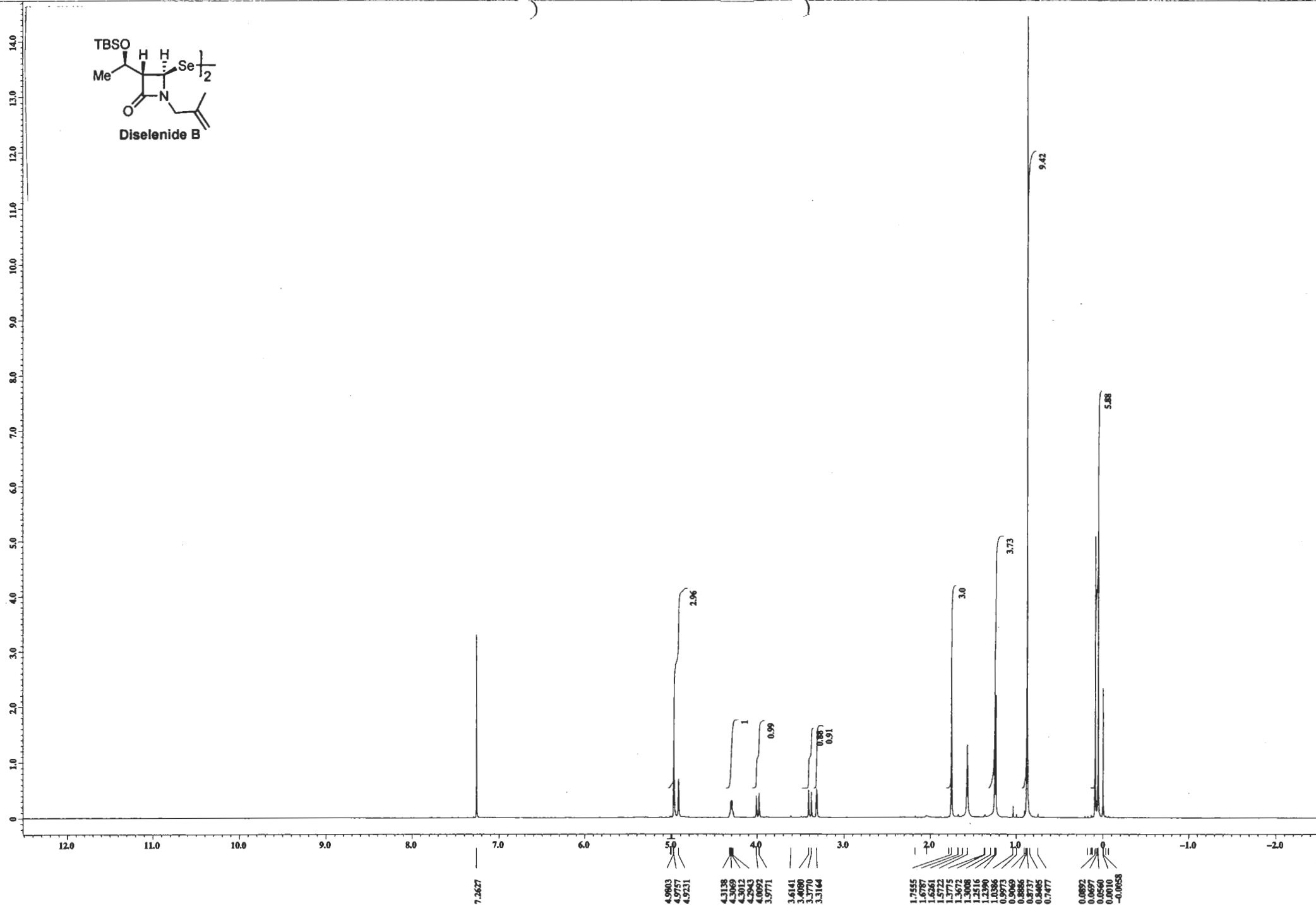
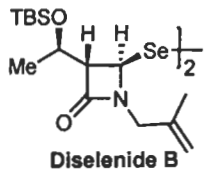


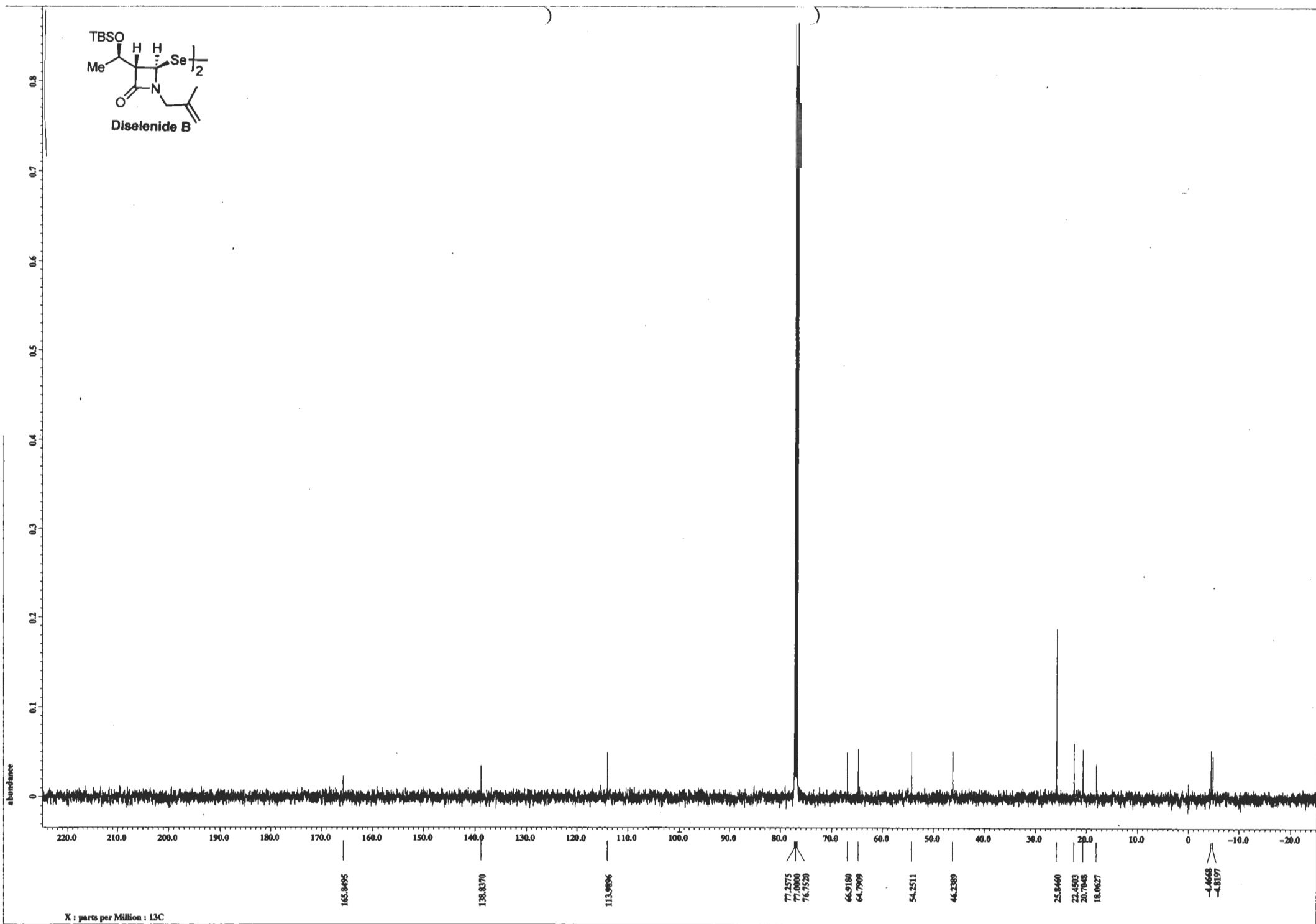
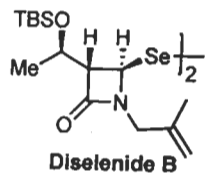
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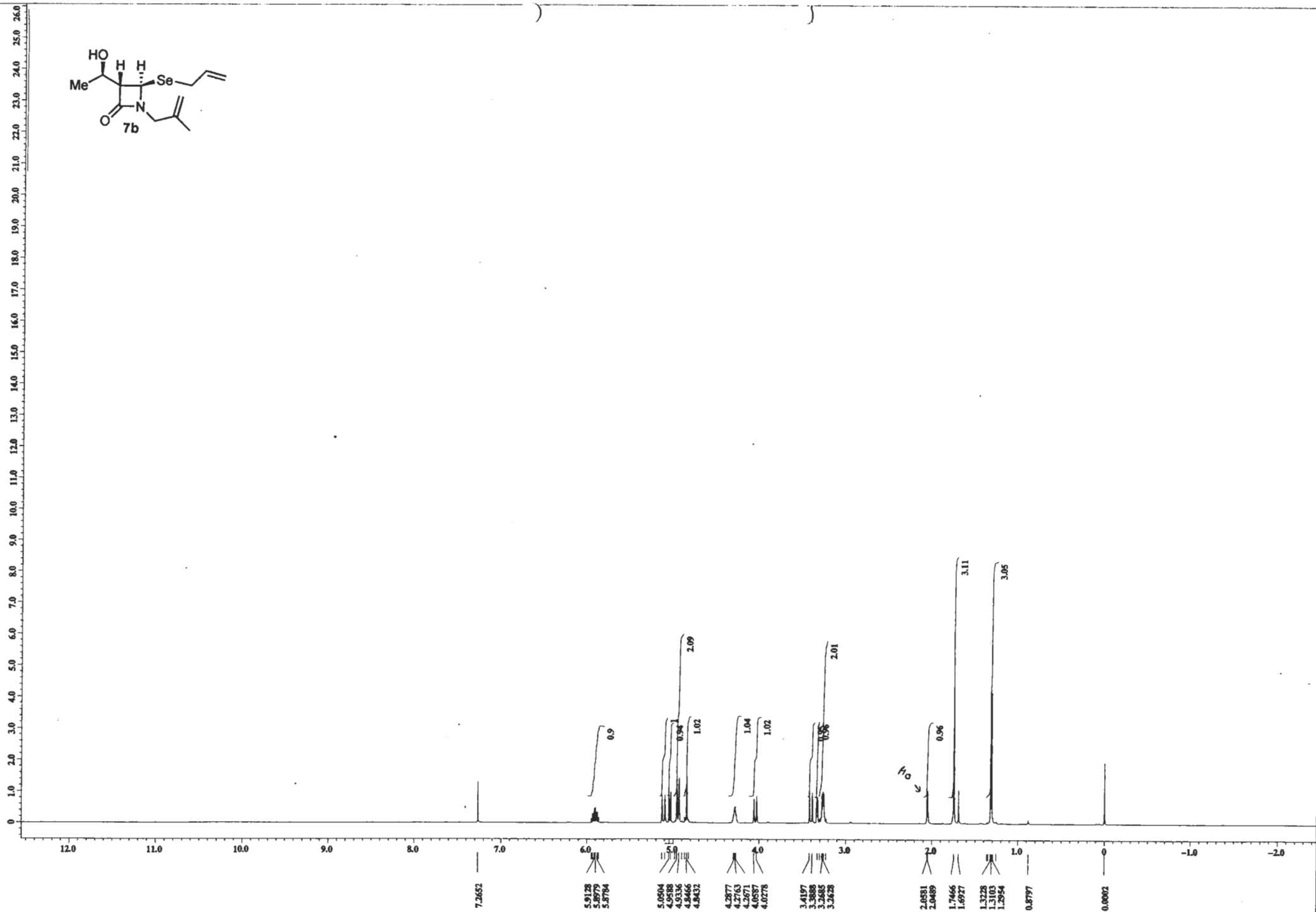
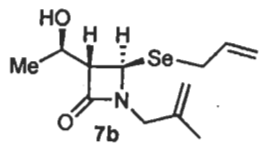




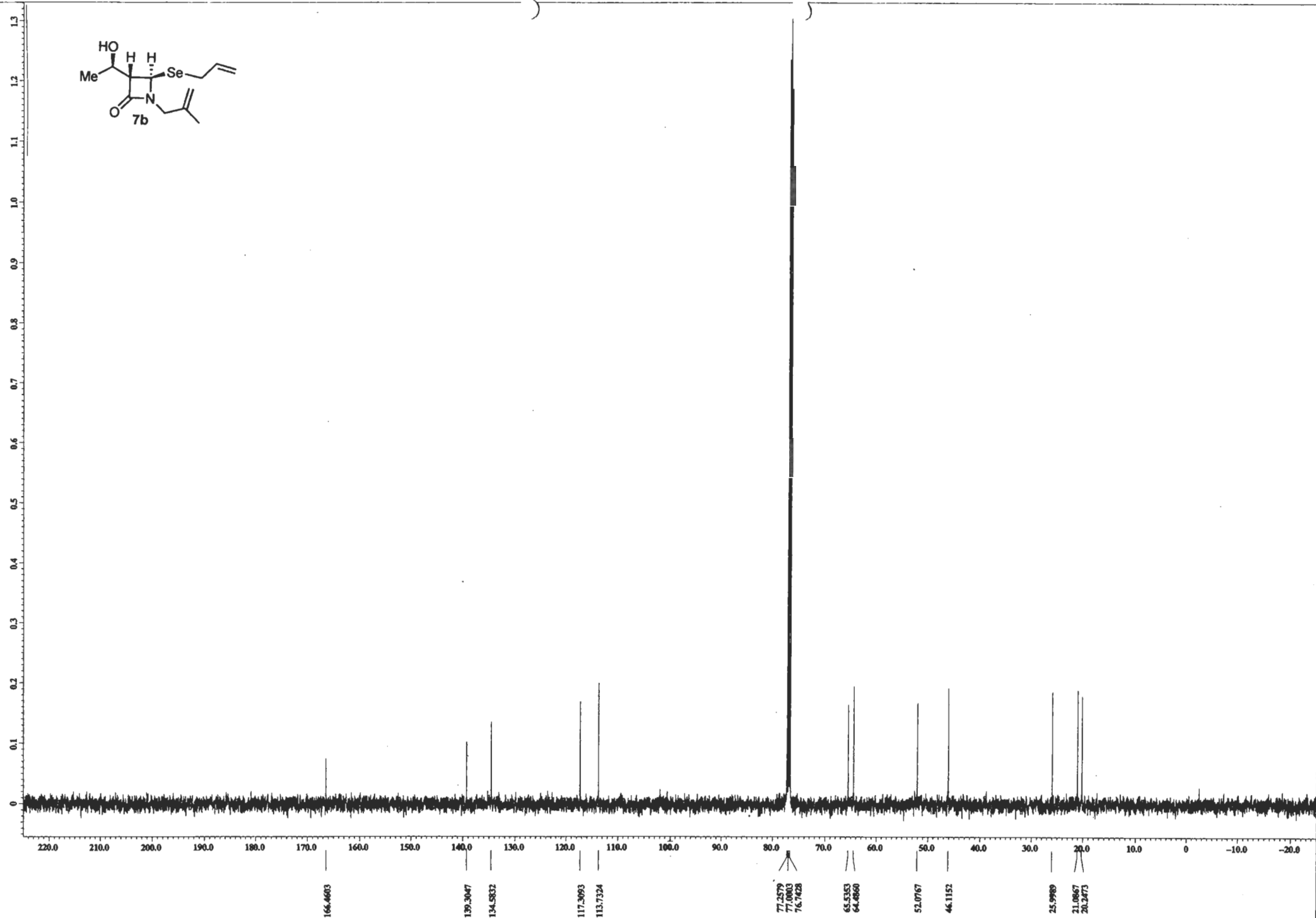
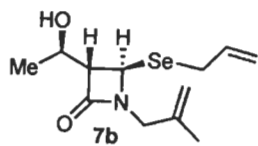




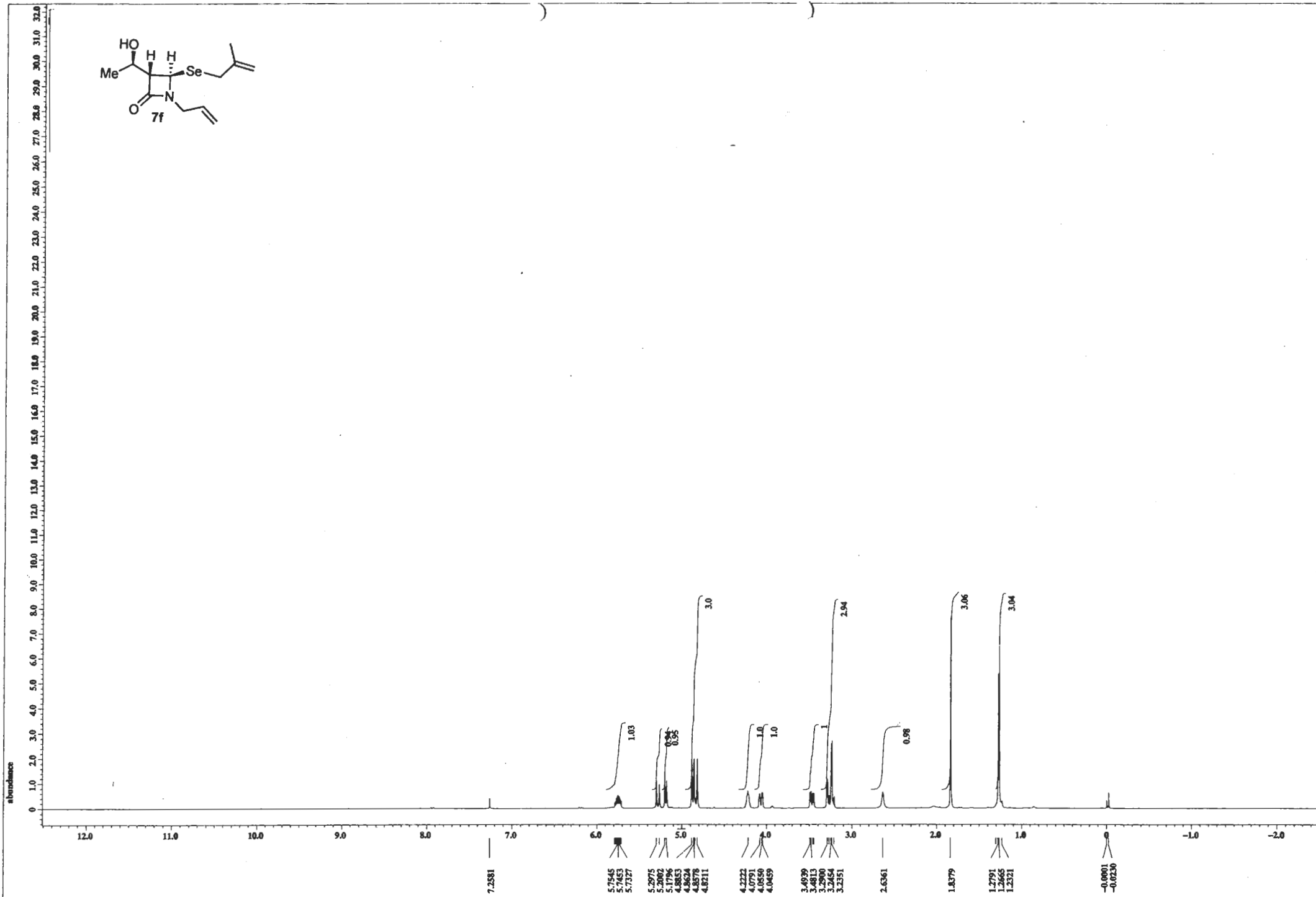
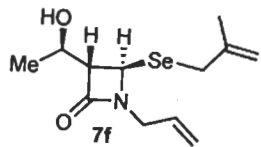




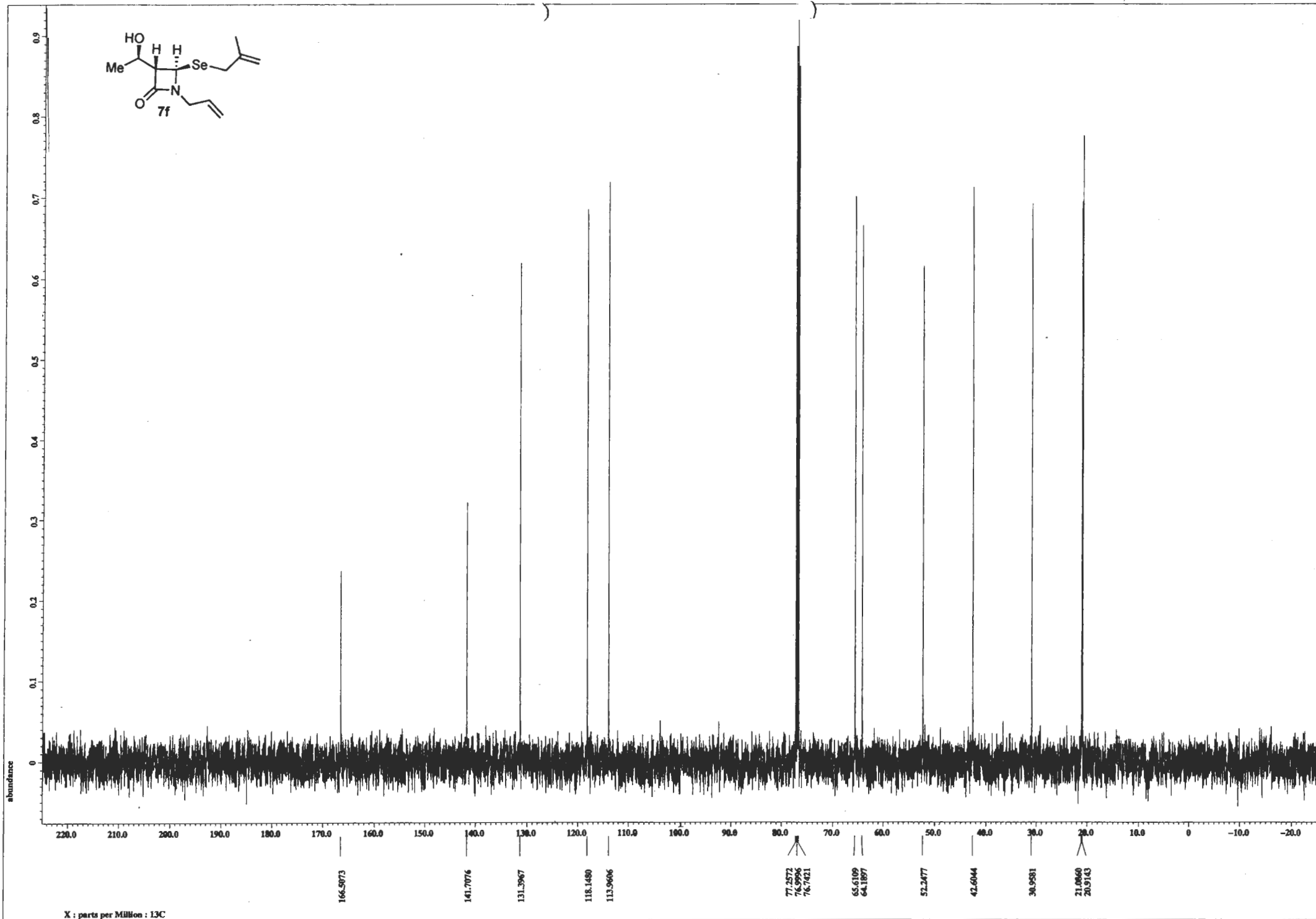
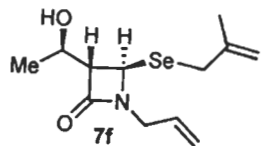
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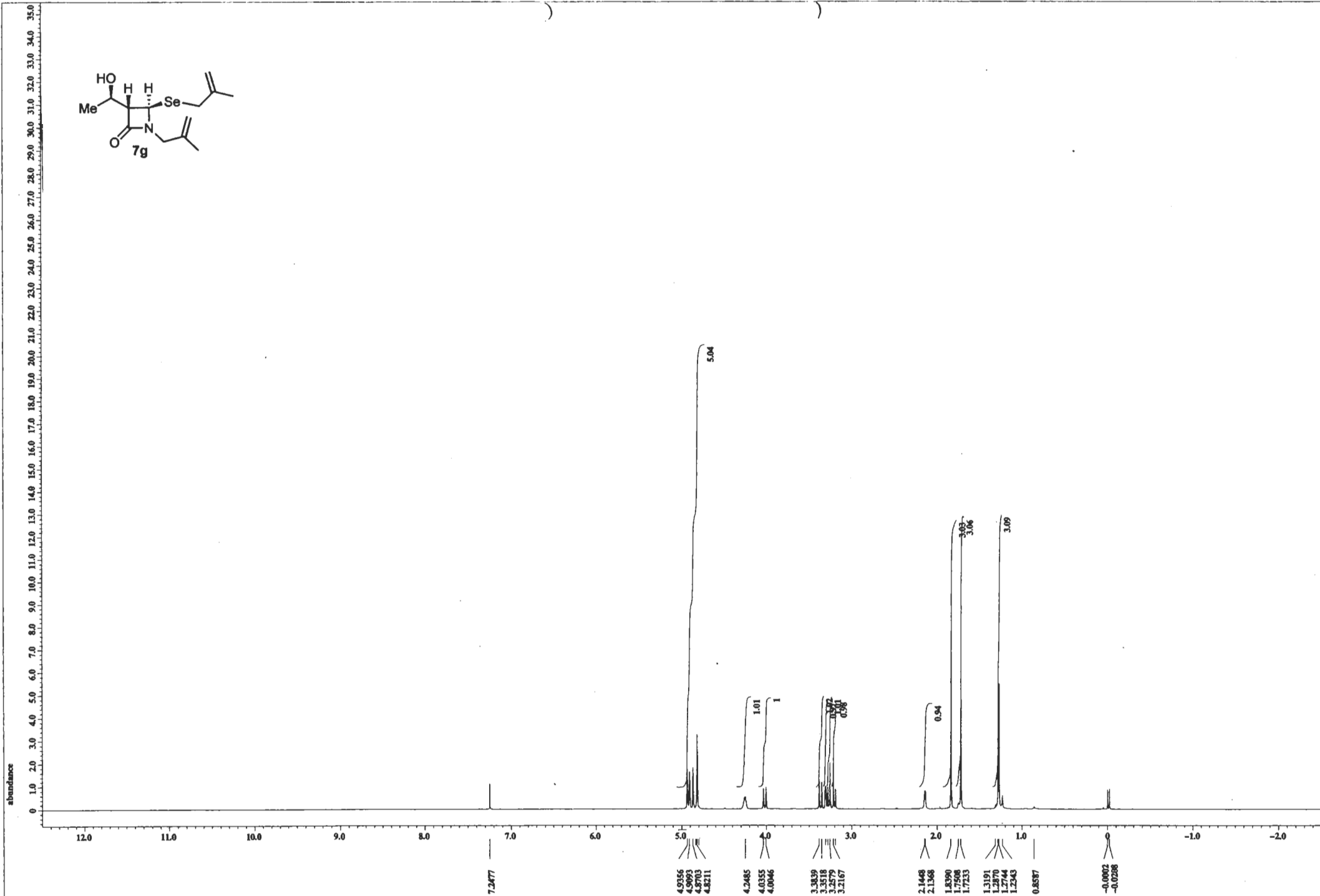
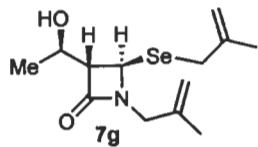


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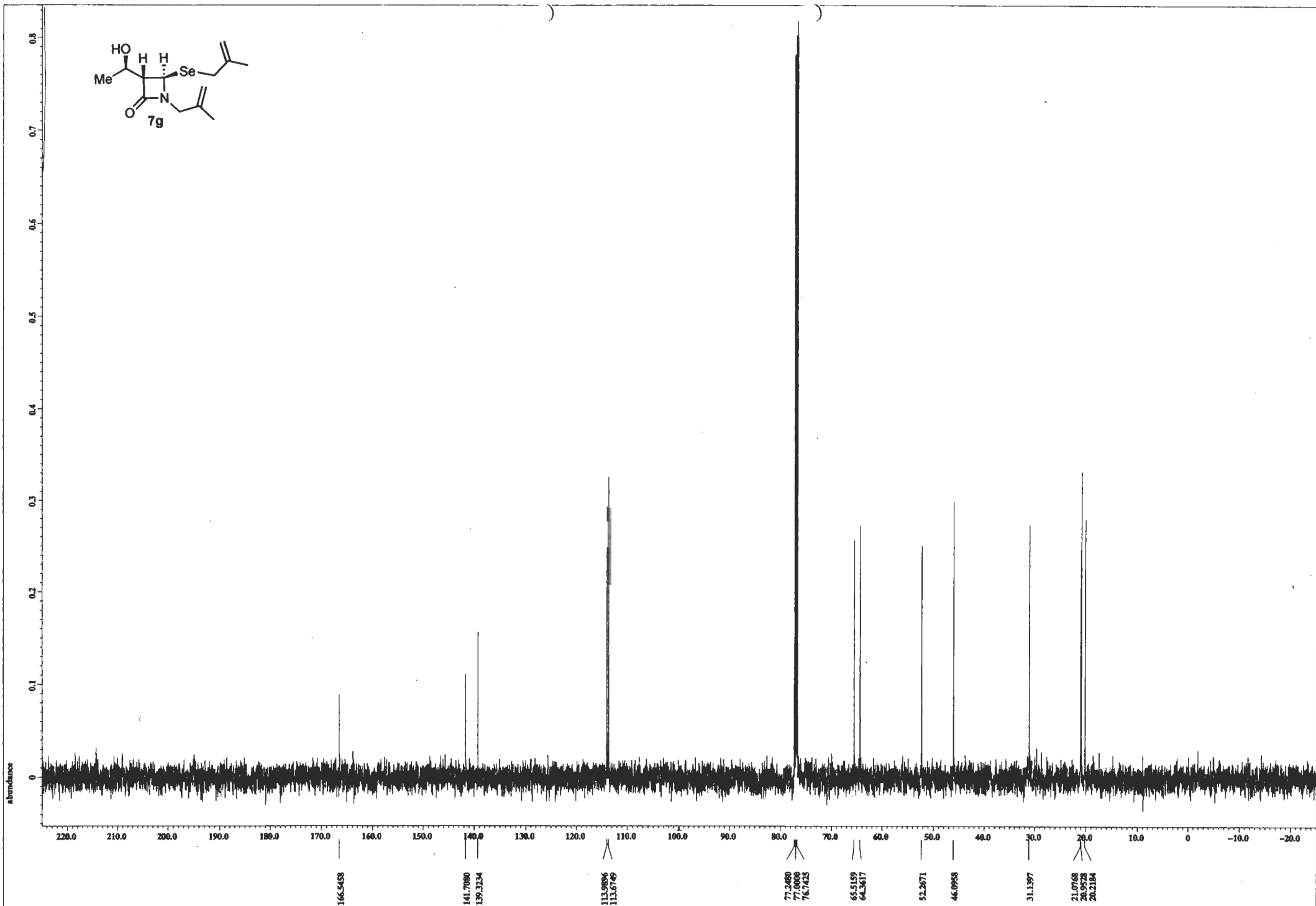
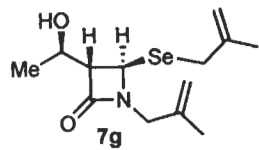
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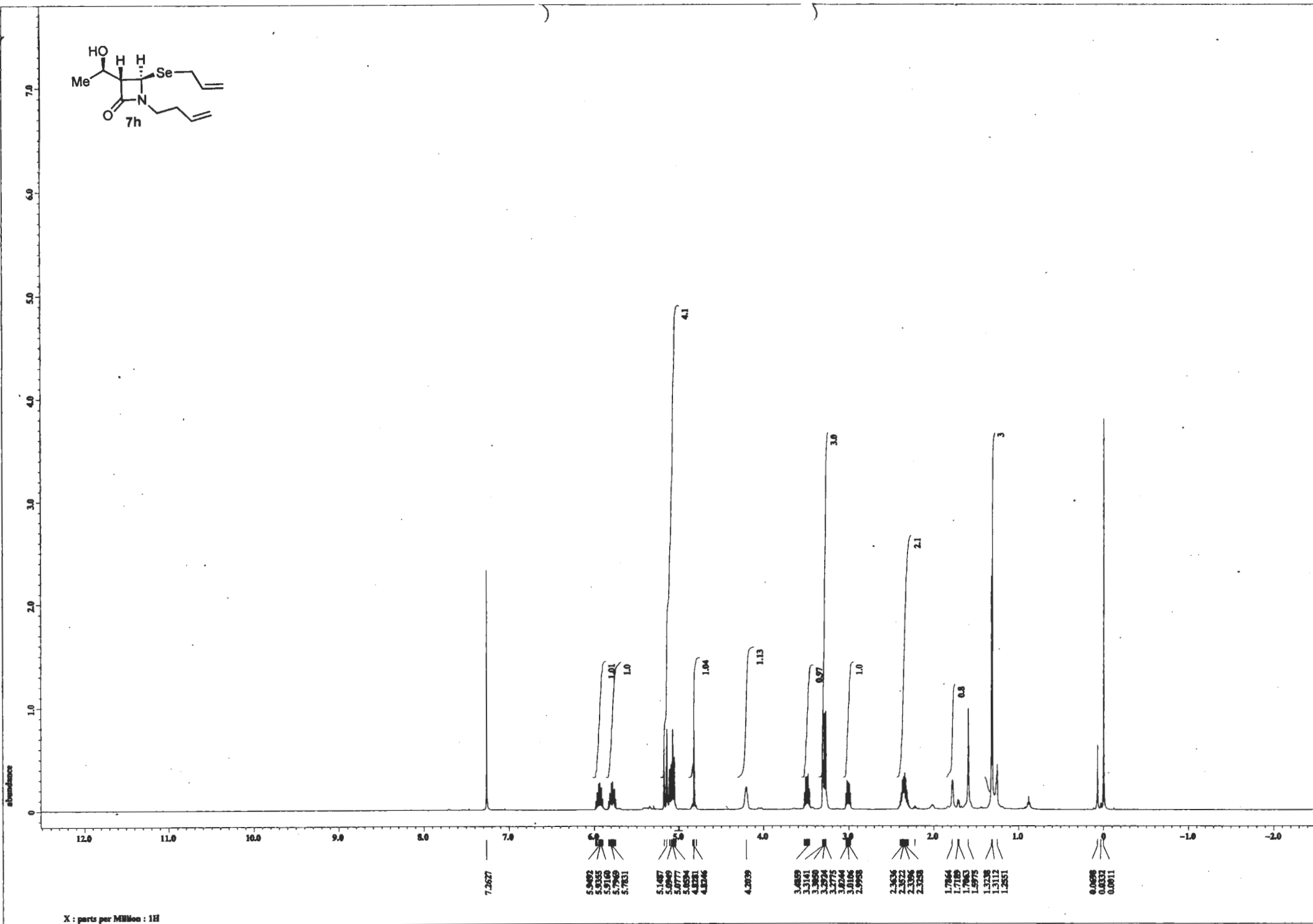
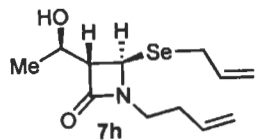


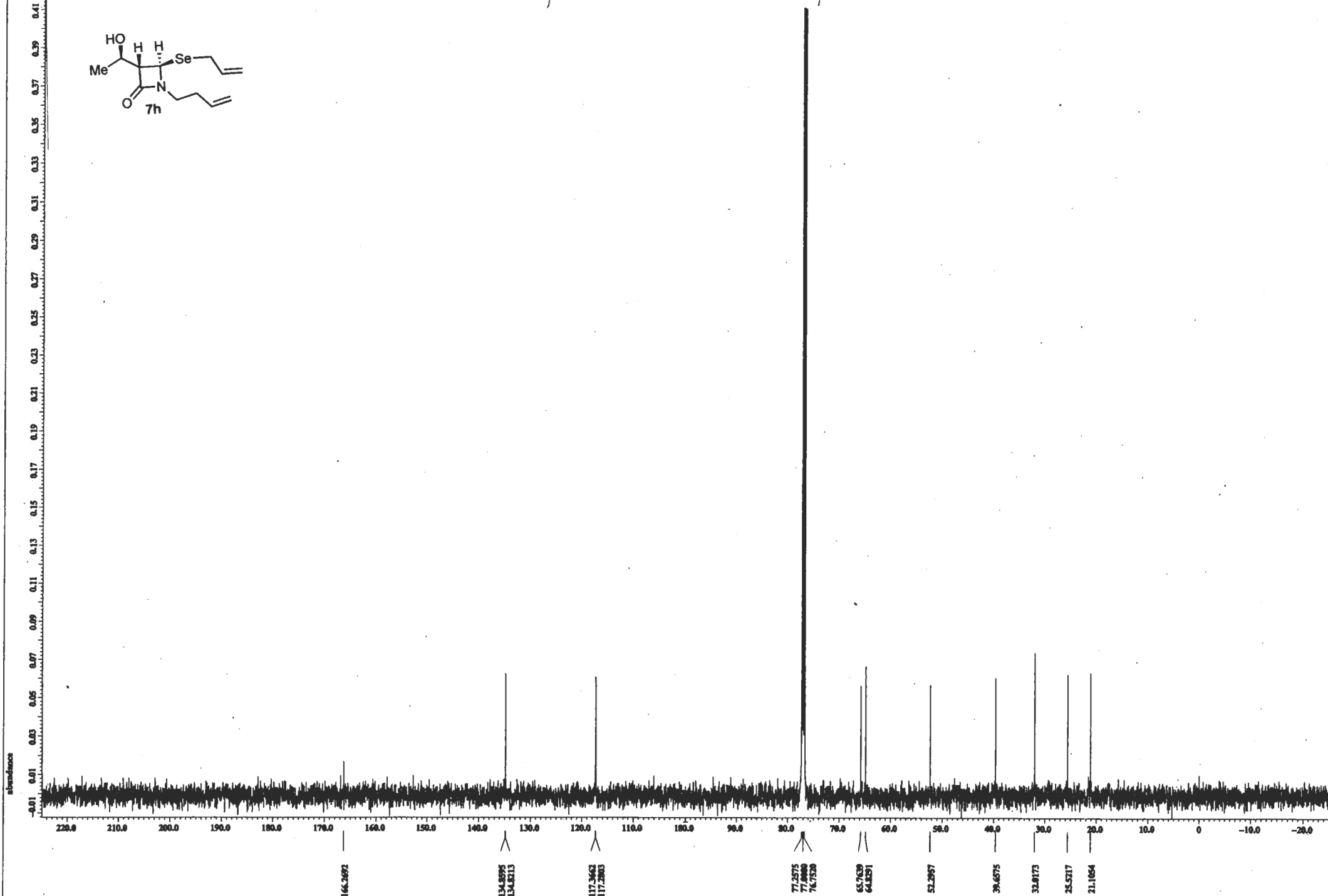
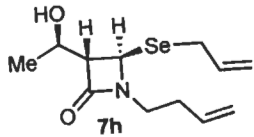
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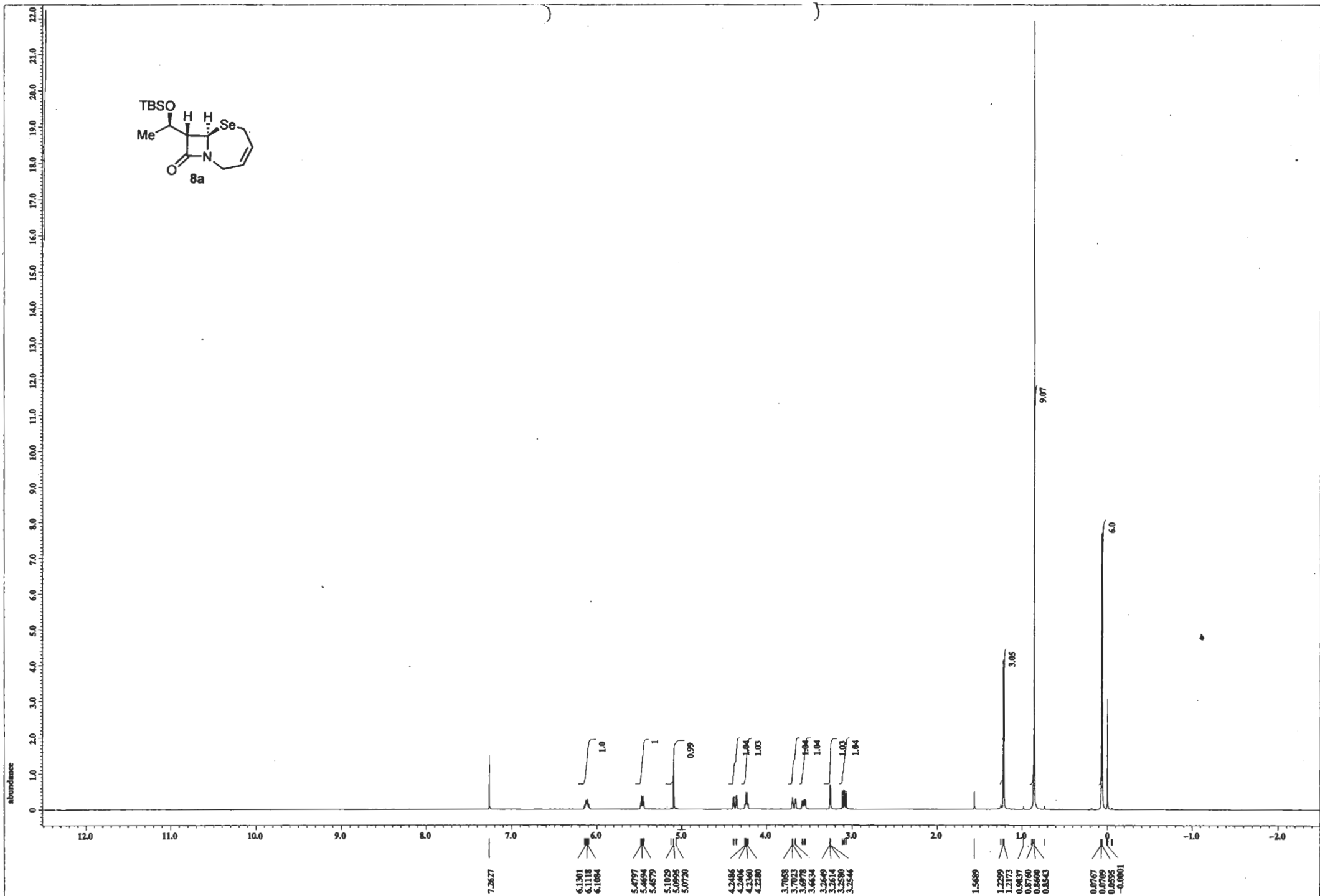
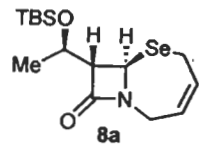


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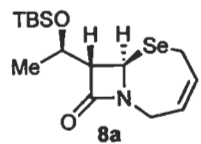




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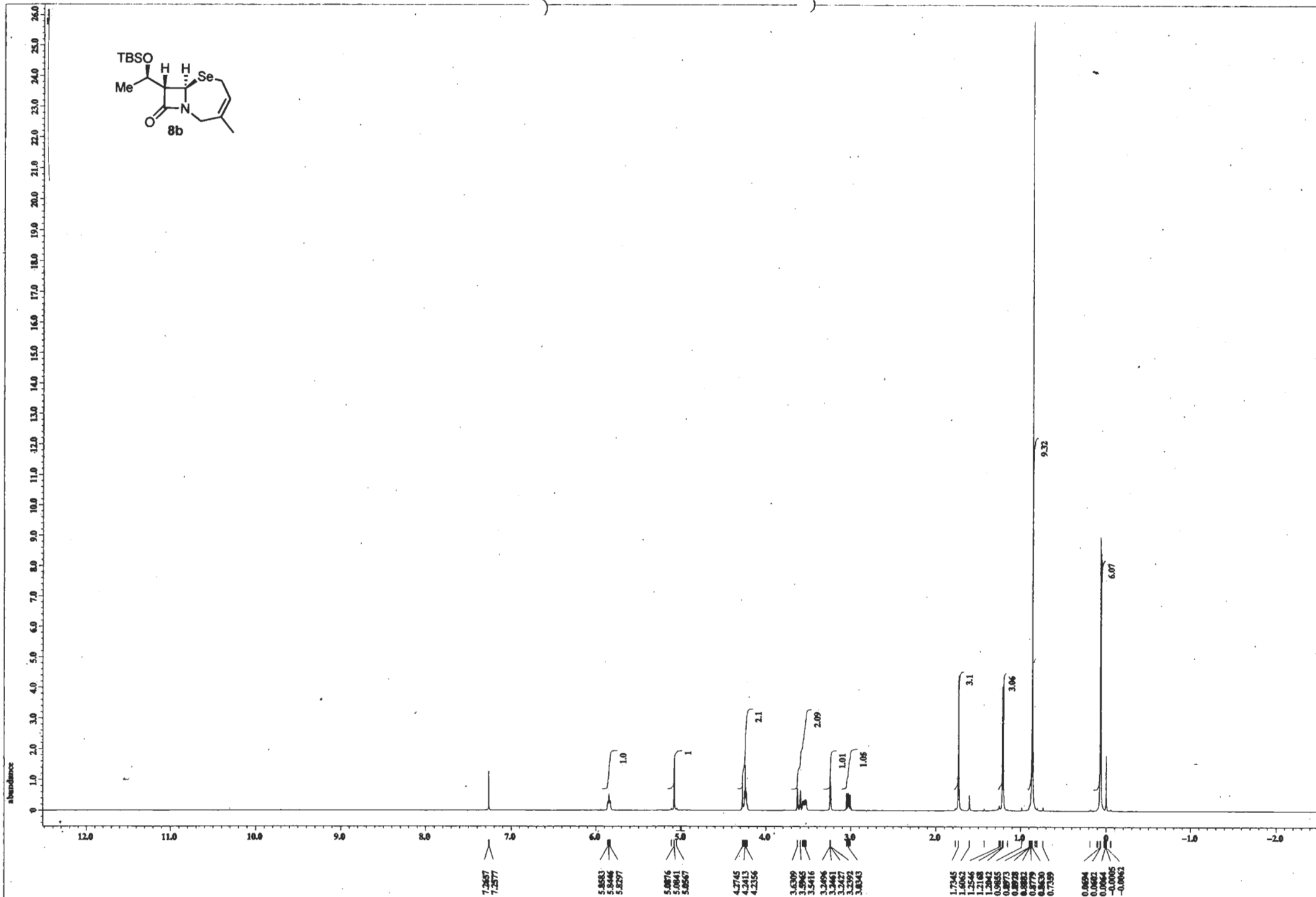
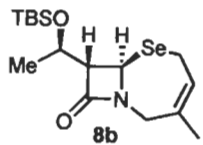


0.6  
0.5  
0.4  
0.3  
0.2  
0.1  
0

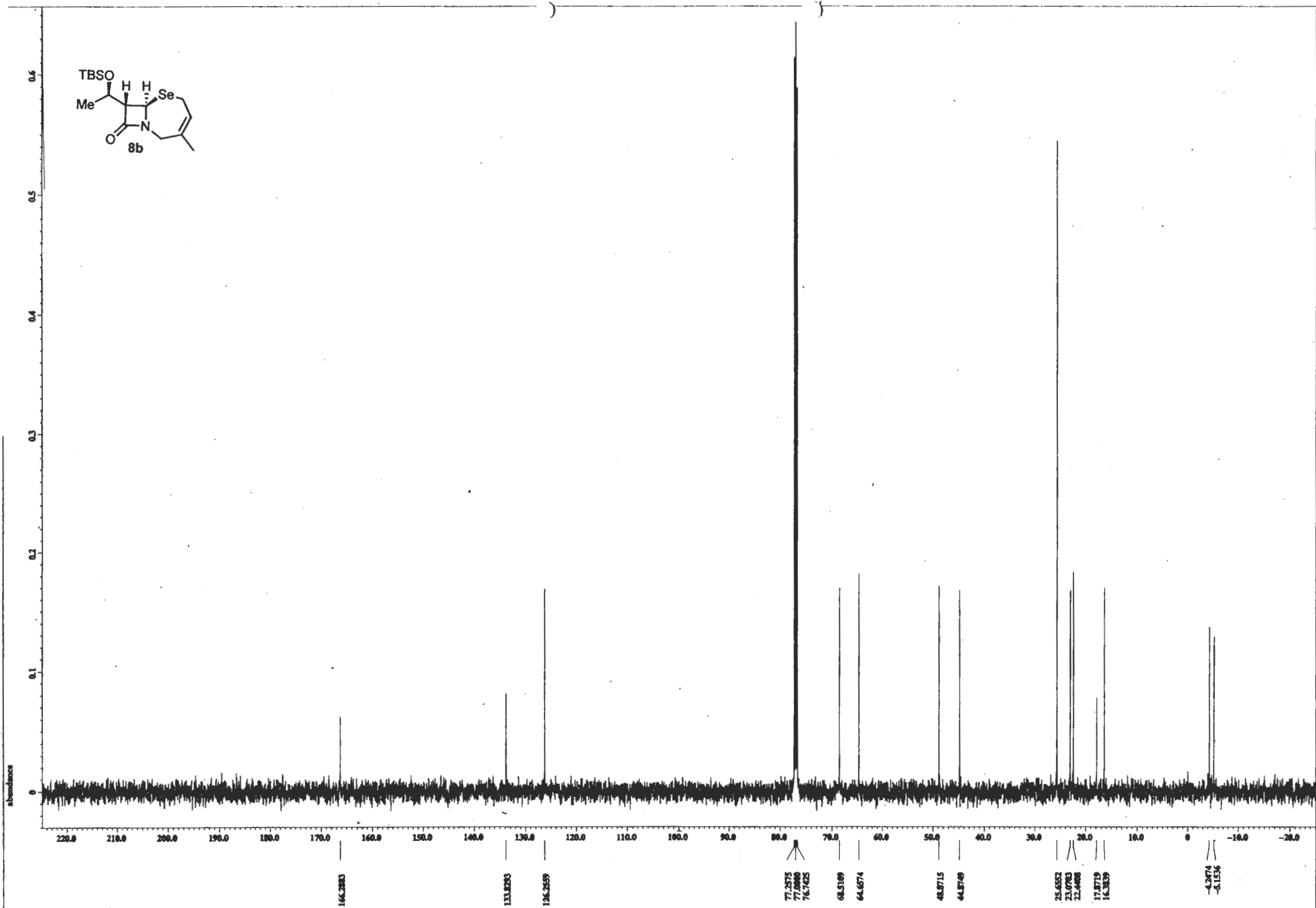
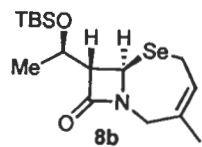
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164.2124  
131.9907  
125.2929  
77.2579  
77.0004  
76.7524  
68.4731  
64.7818  
49.5014  
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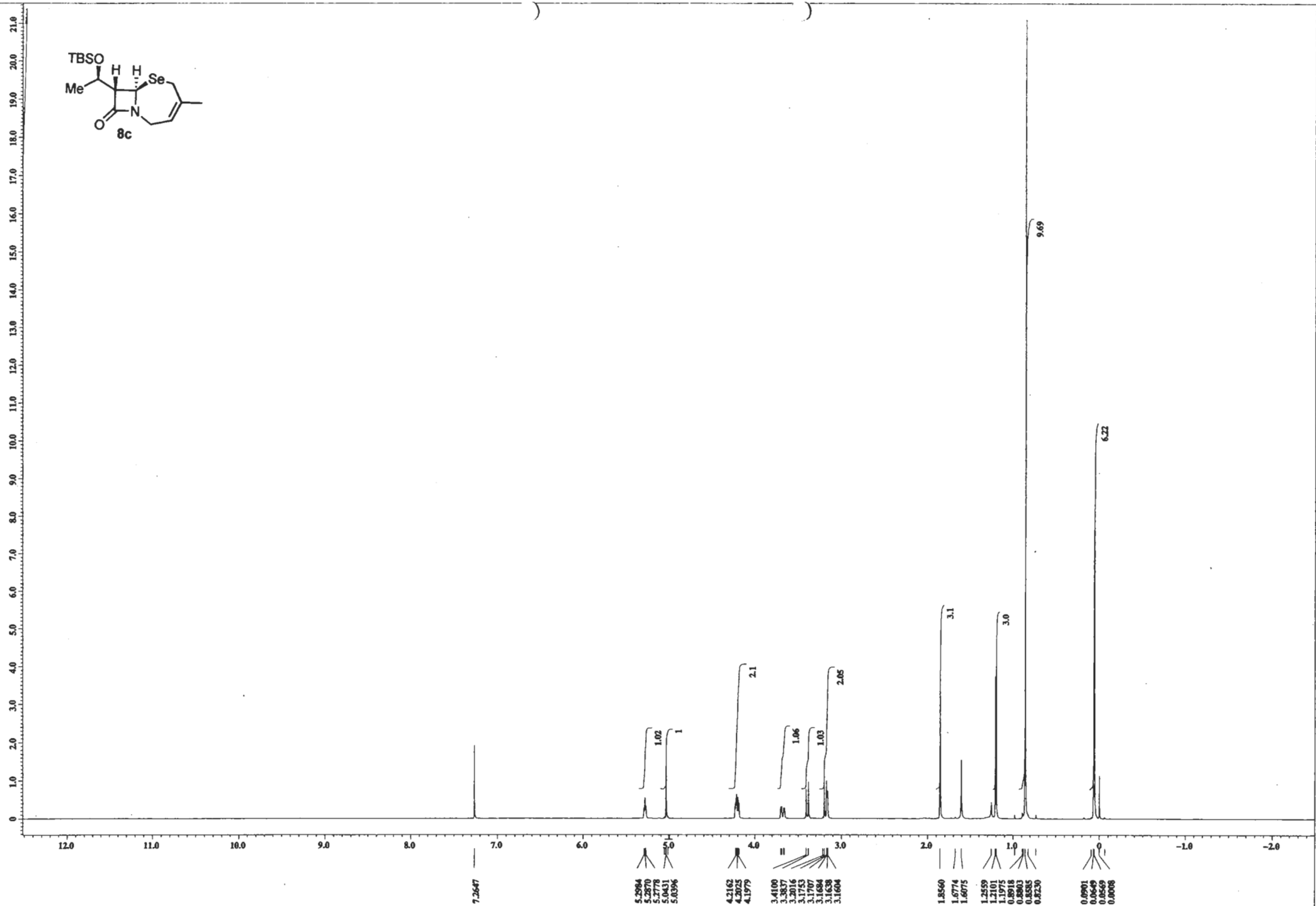
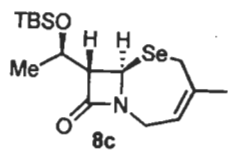
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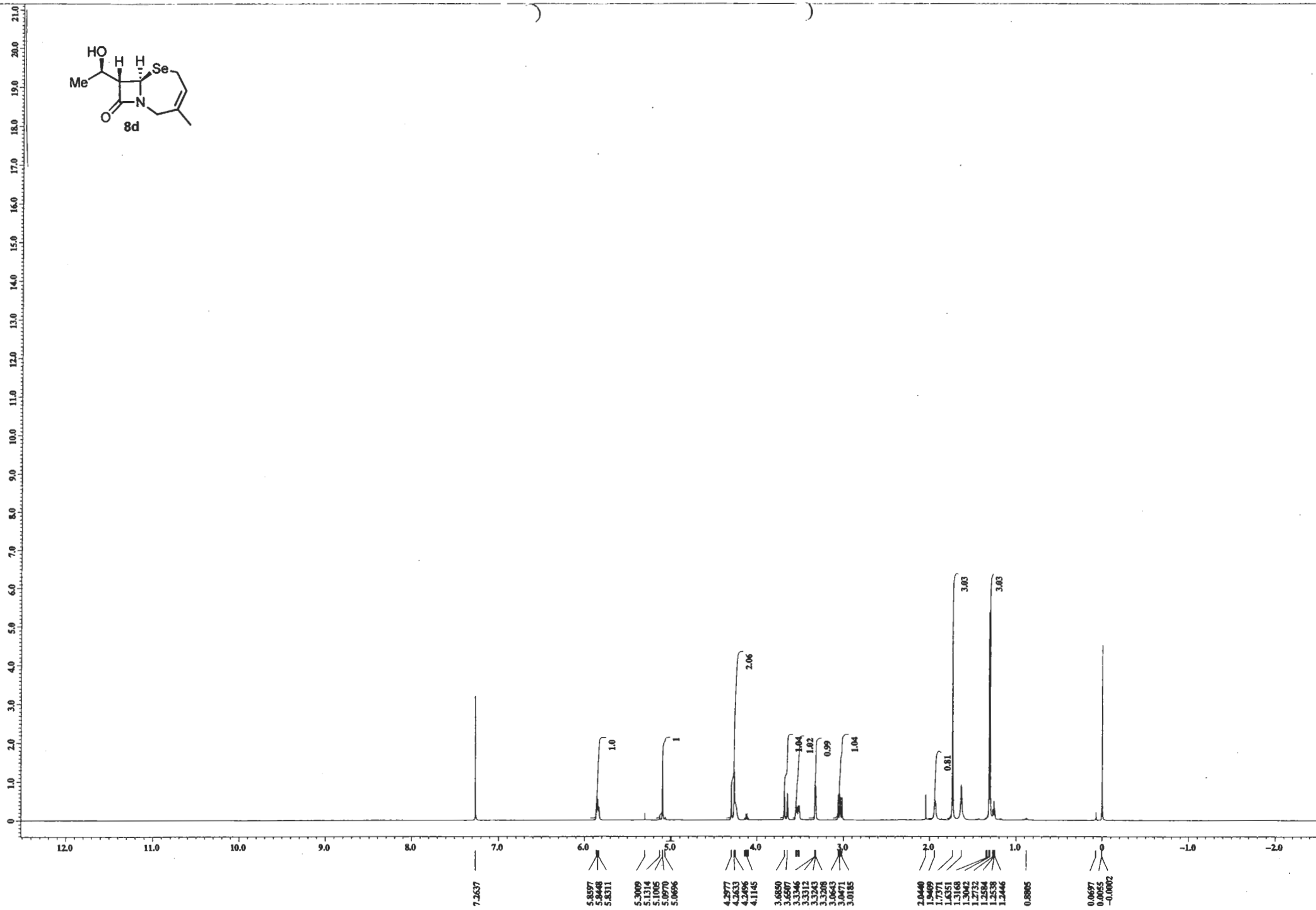
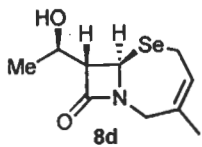
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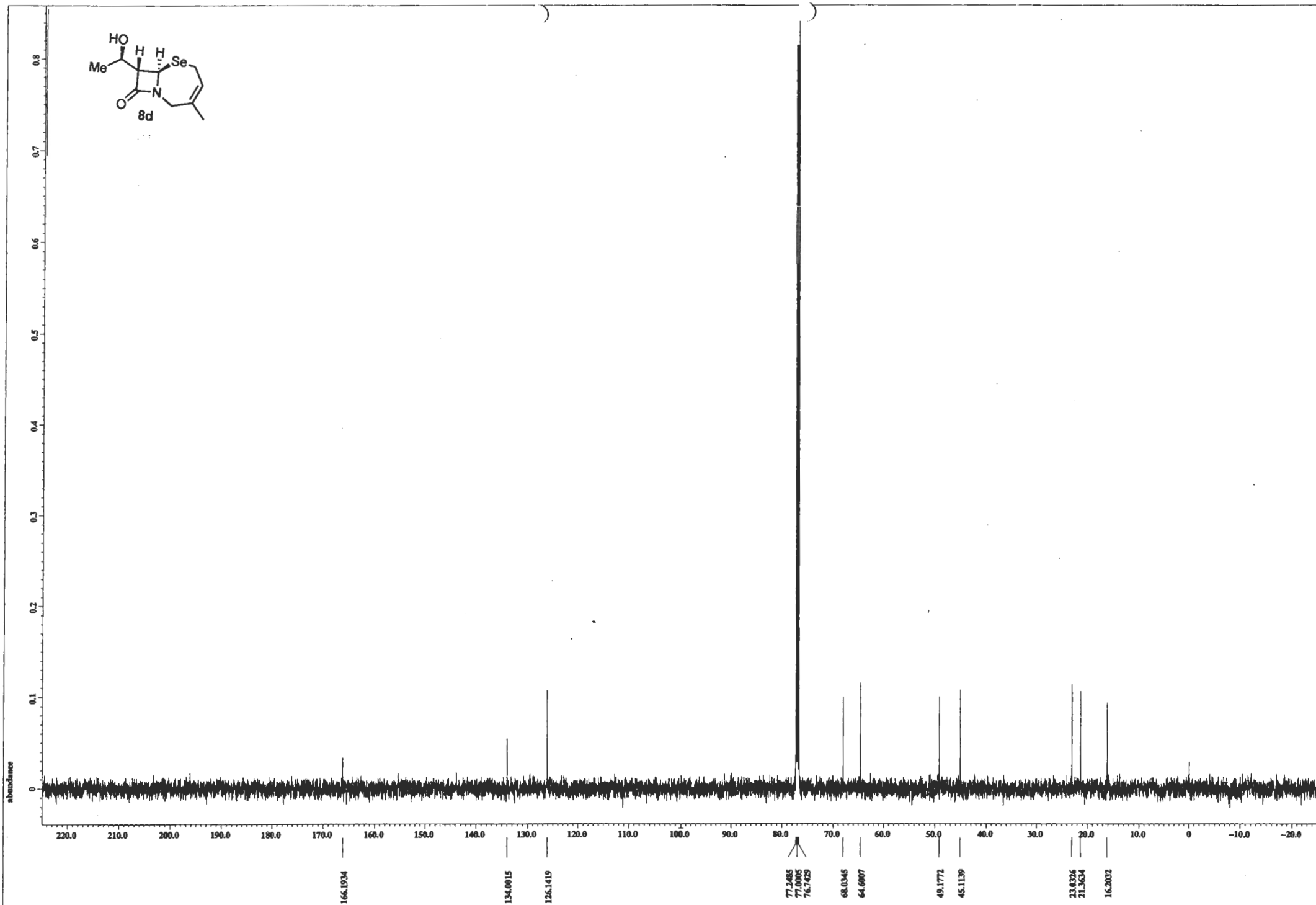
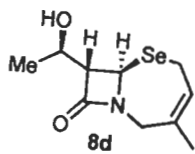
X : parts per Million : 1H



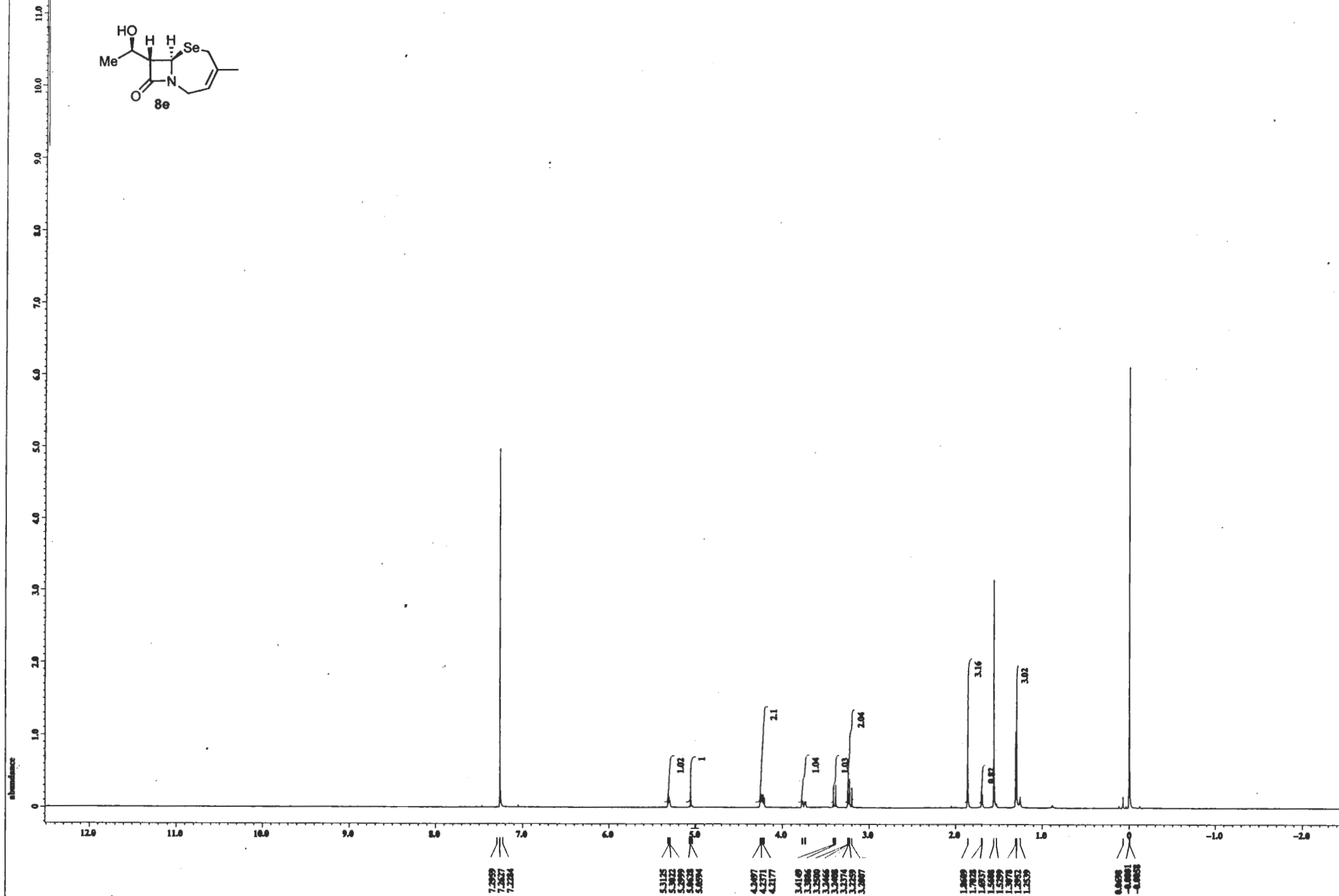
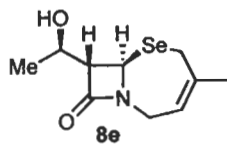


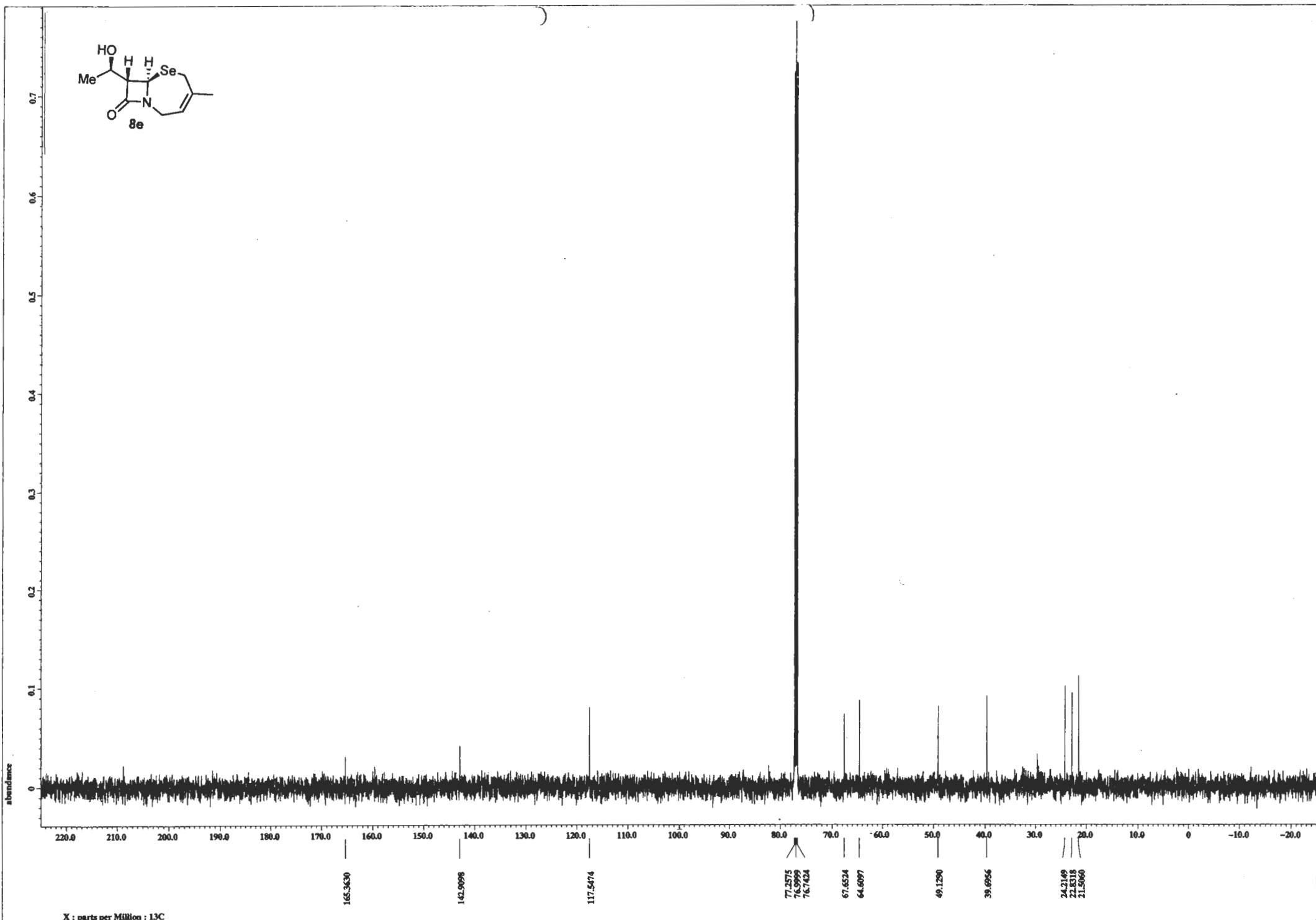
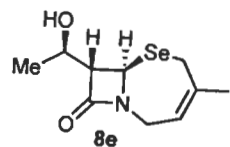


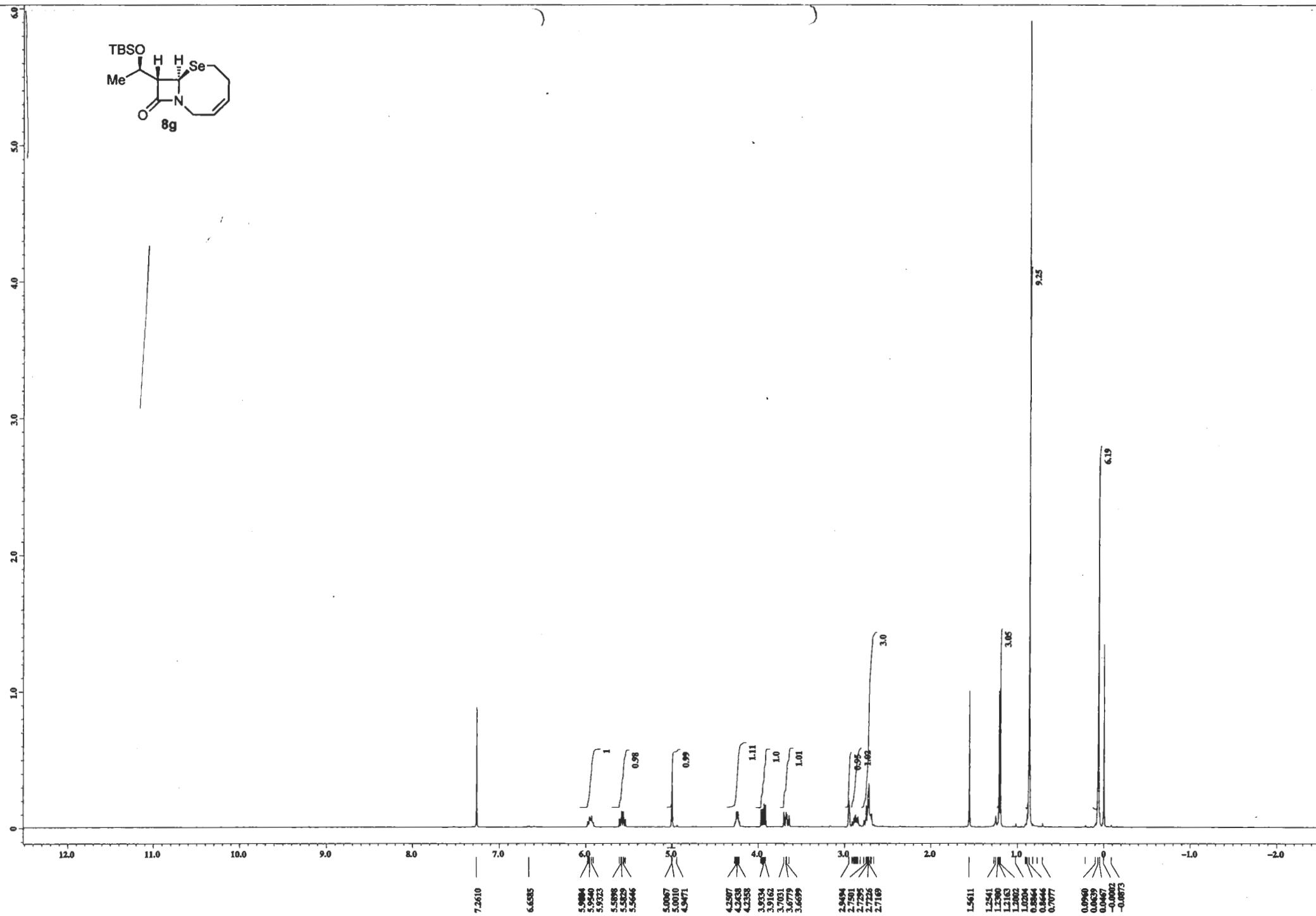
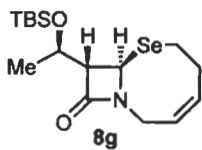
X : parts per Million : 1H



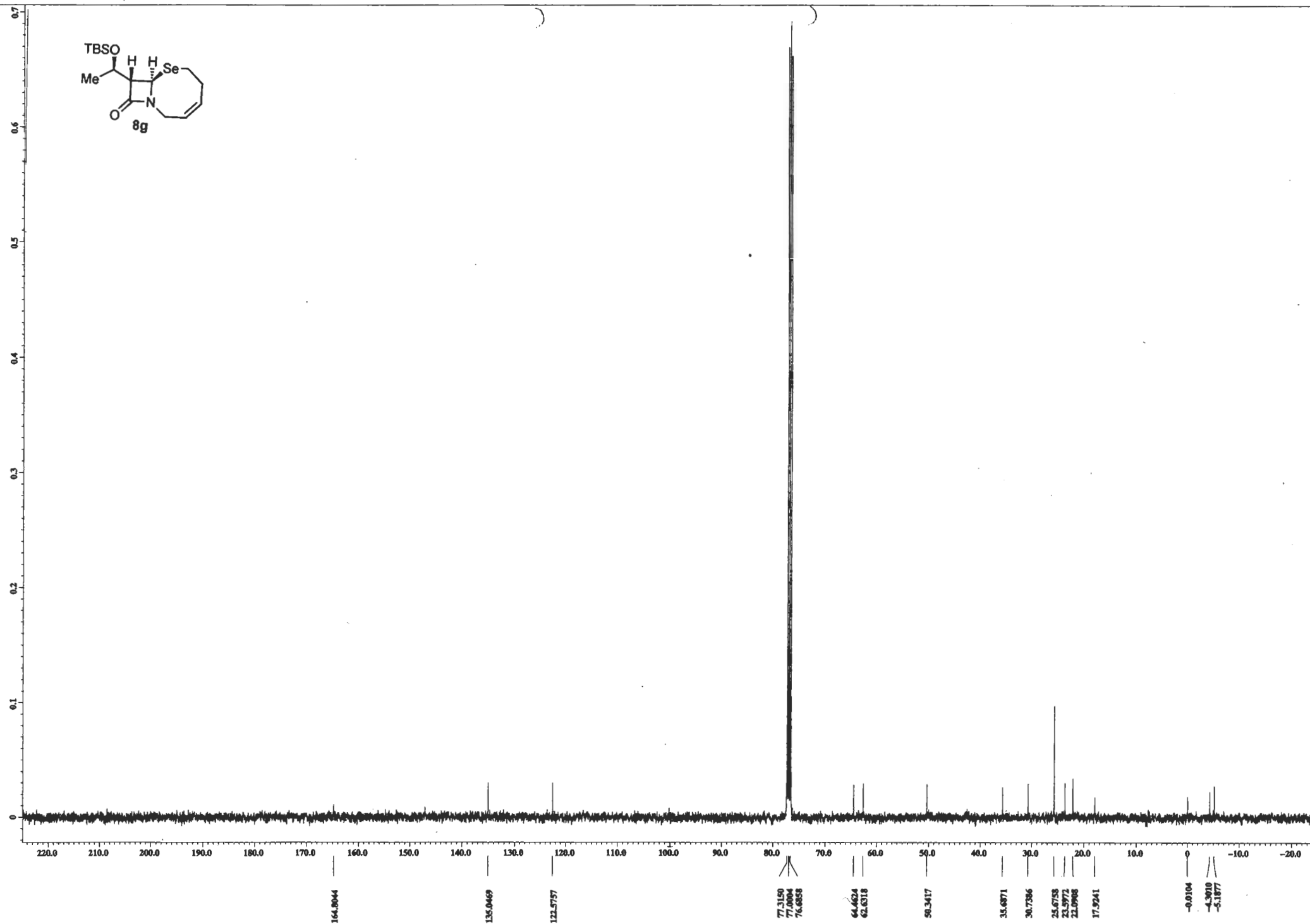
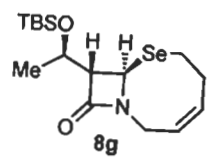
X : parts per Million :  $^{13}\text{C}$



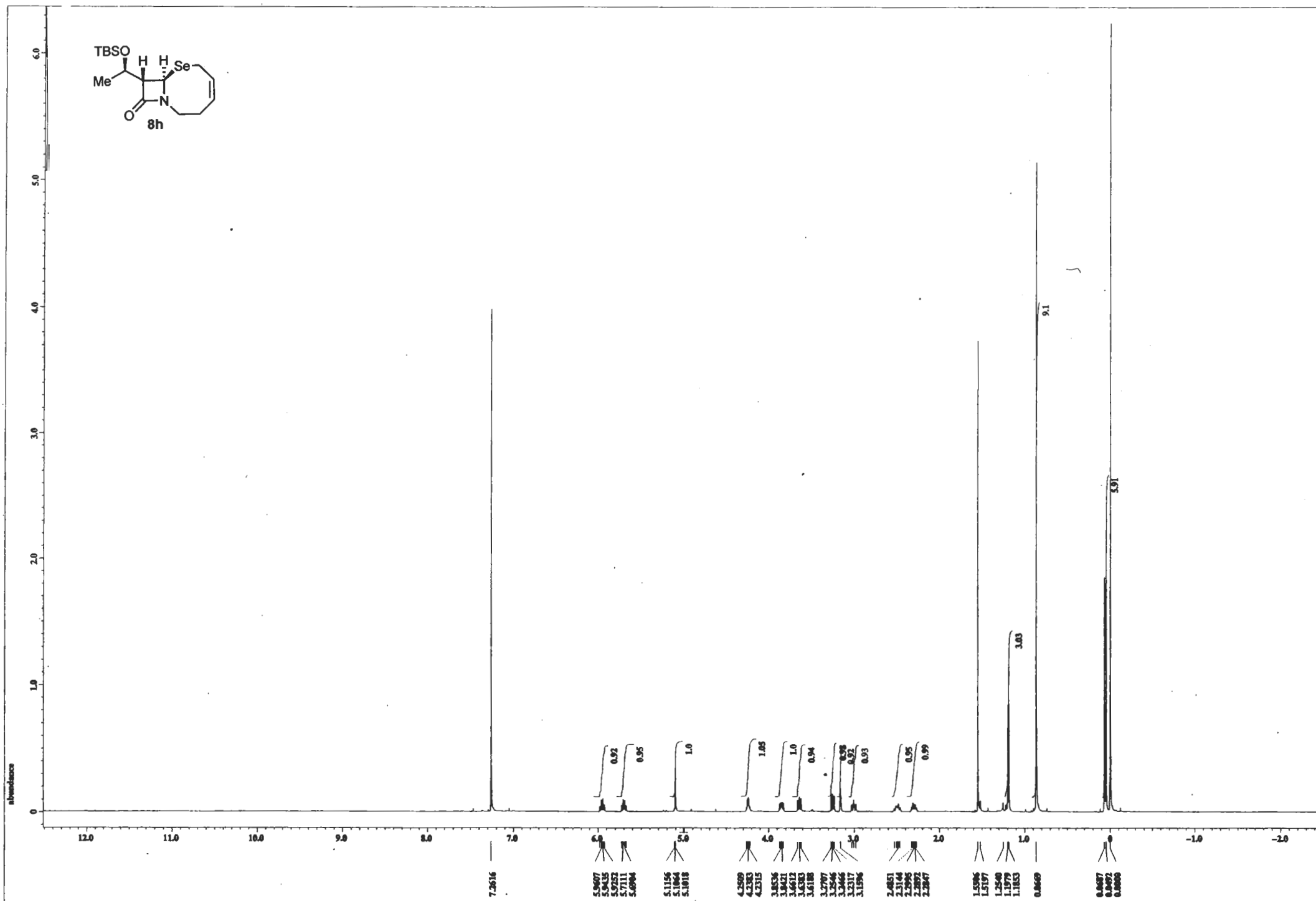
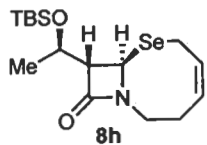




X : parts per Million : 1H

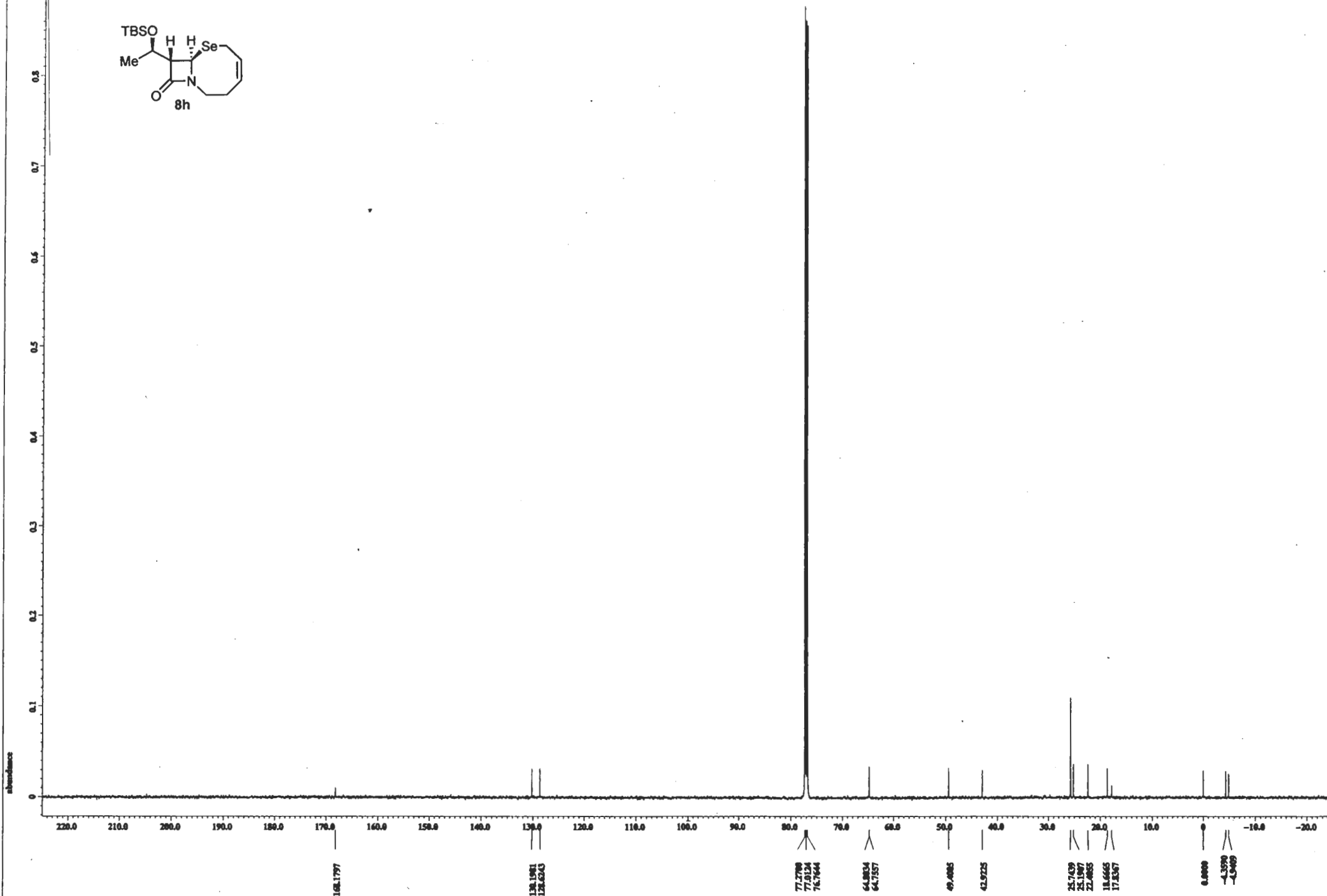
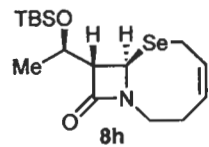


X : parts per Million : 13C

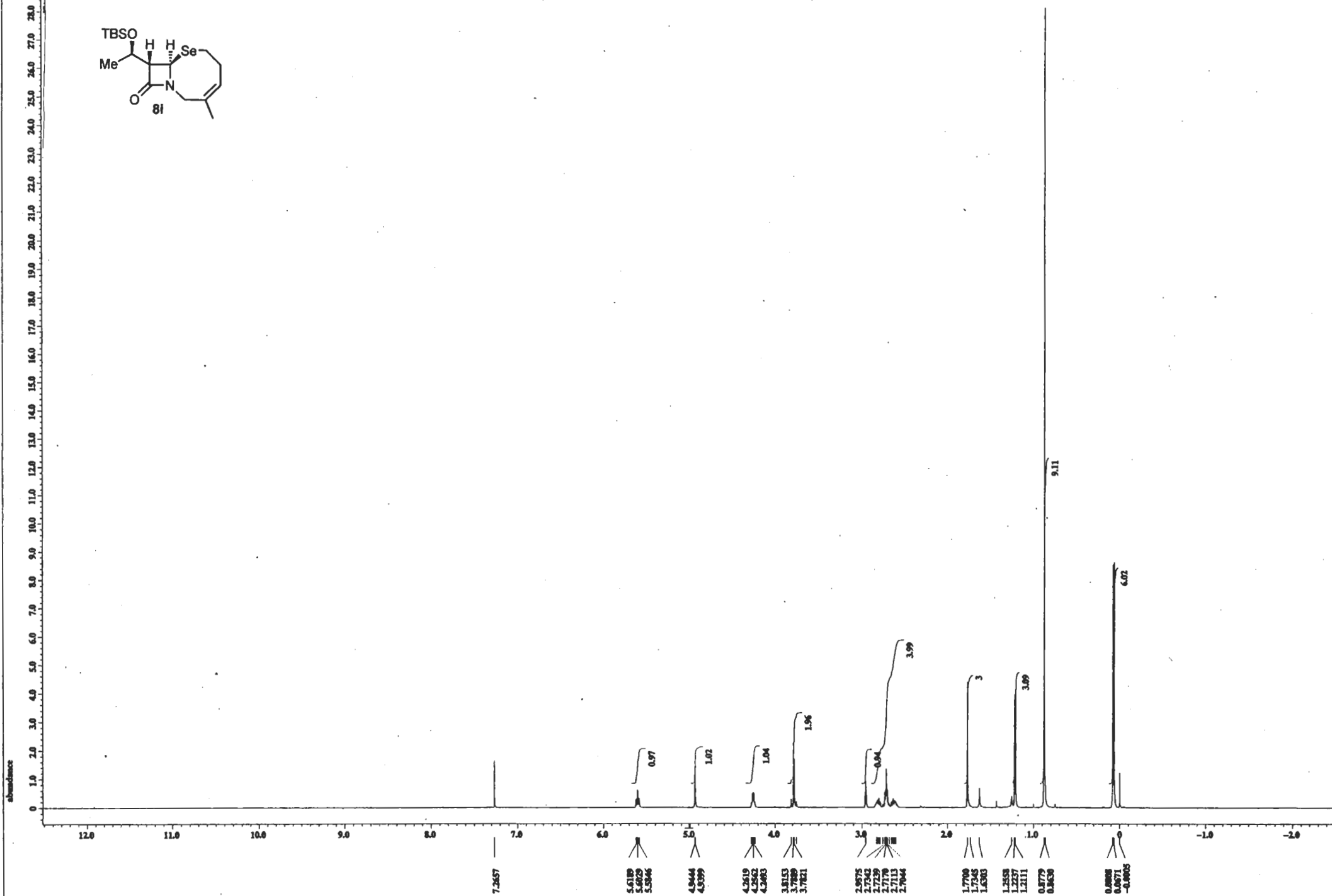
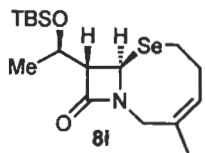


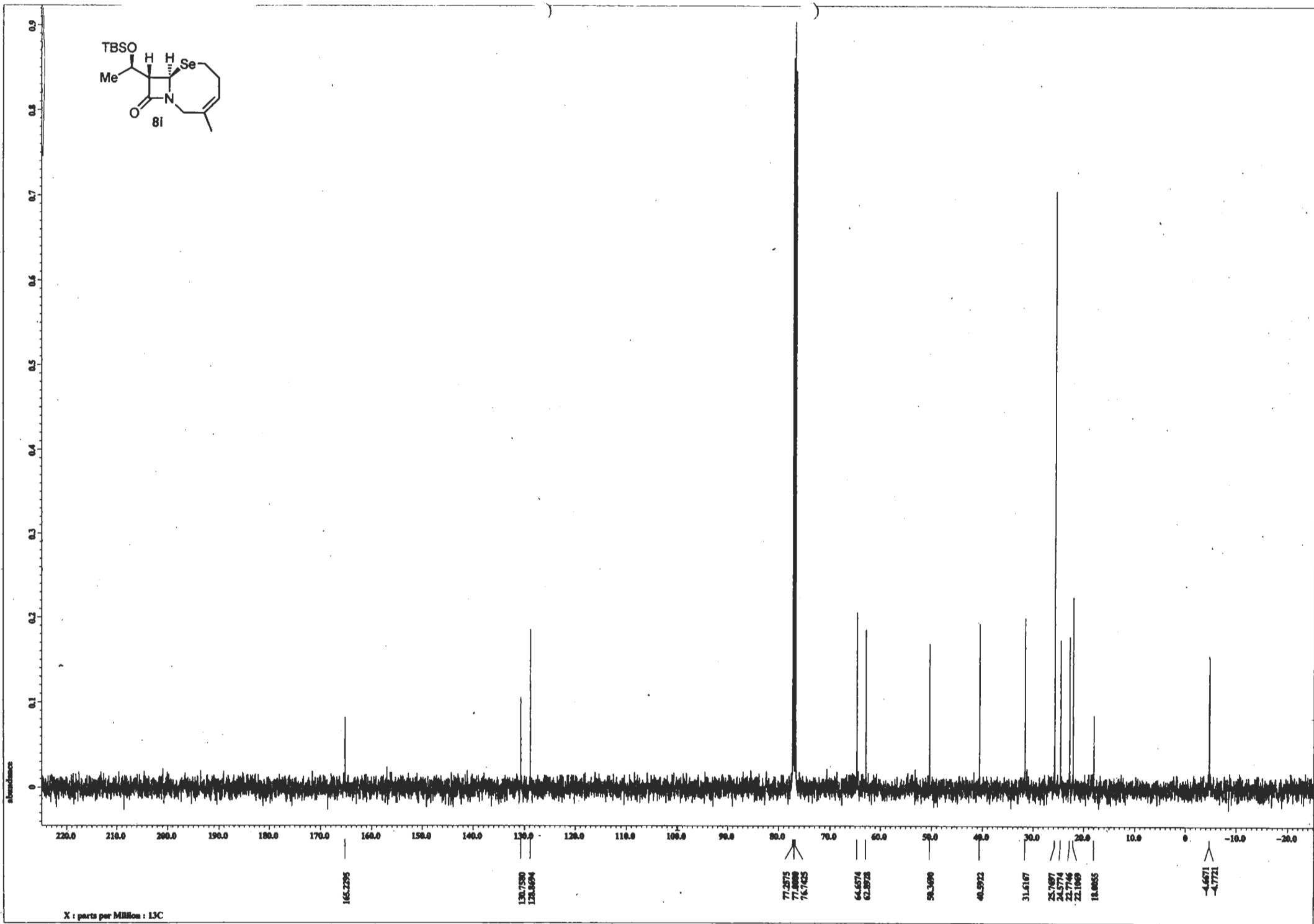
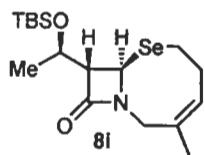
X : parts per Million : 1H

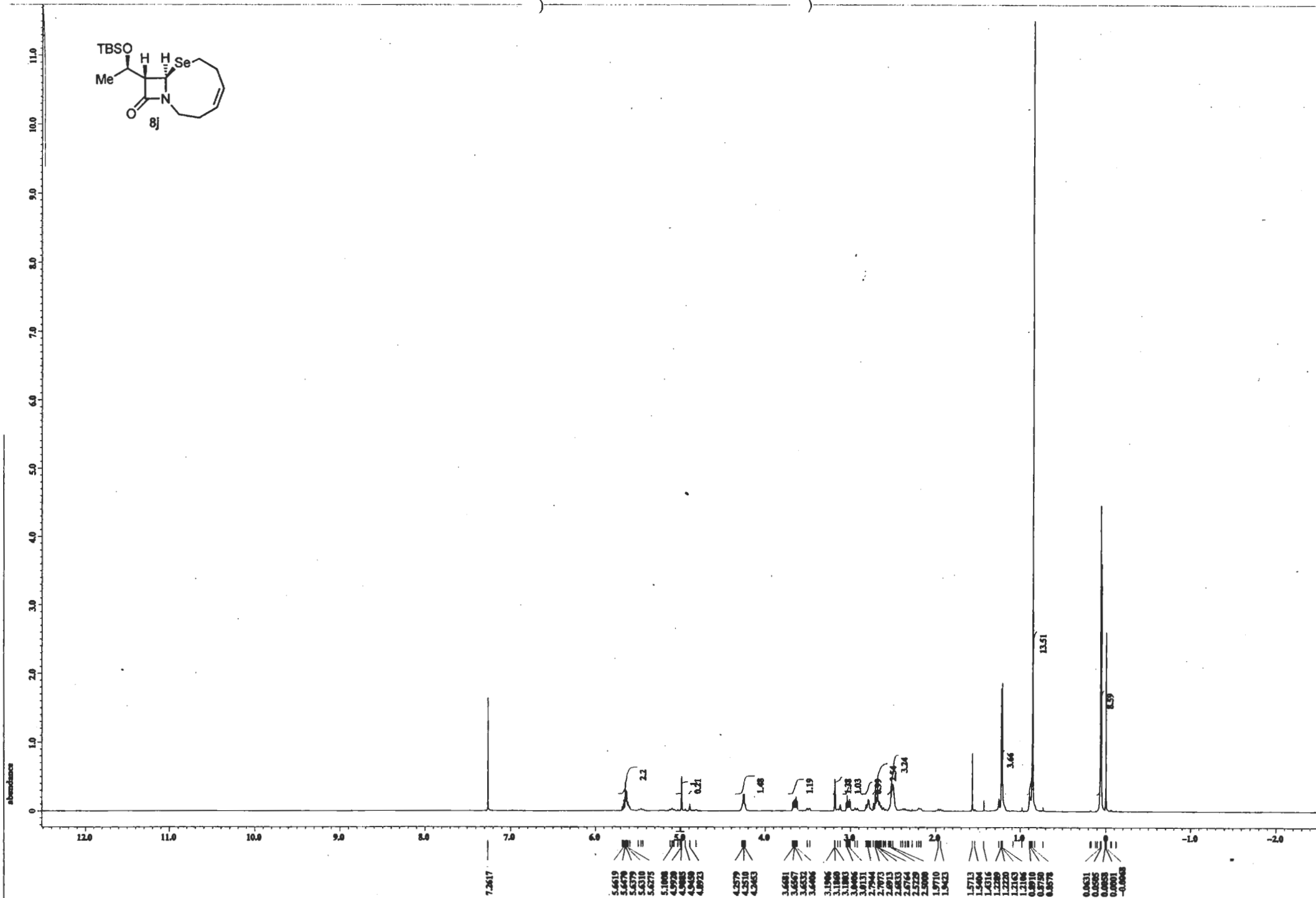
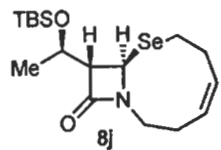




X : parts per Million : 13C







X : parts per Million : 1H

