

**Supporting Information**  
**for**  
**CuCl-catalyzed aerobic oxidation of 2,3-allenols**  
**to 1,2-allenic ketones with 1:1 combination of**  
**phenanthroline and bipyridine as ligands**

Shuxu Gao<sup>1</sup>, Yu Liu<sup>1</sup>, and Shengming Ma<sup>\*1,2</sup>

Address: <sup>1</sup>Shanghai Key Laboratory of Green Chemistry and Chemical Processes, Department of Chemistry, East China Normal University, 3663 North Zhongshan Road, Shanghai 200062, P. R. China and <sup>2</sup>State Key Laboratory of Organometallic Chemistry, Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, 345 Lingling Lu, Shanghai 200032, P. R. China. Fax: (+86)-21-6260-9305

Email: Shengming Ma\* - masm@sioc.ac.cn

\* Corresponding author

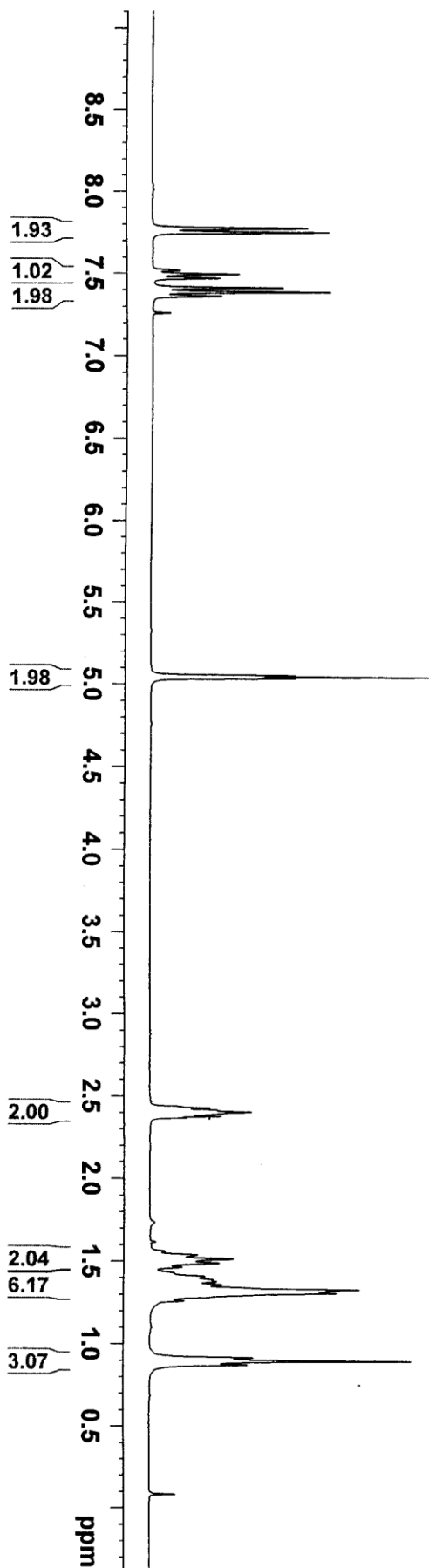
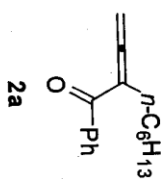
**<sup>1</sup>H and <sup>13</sup>C NMR spectra of products prepared**

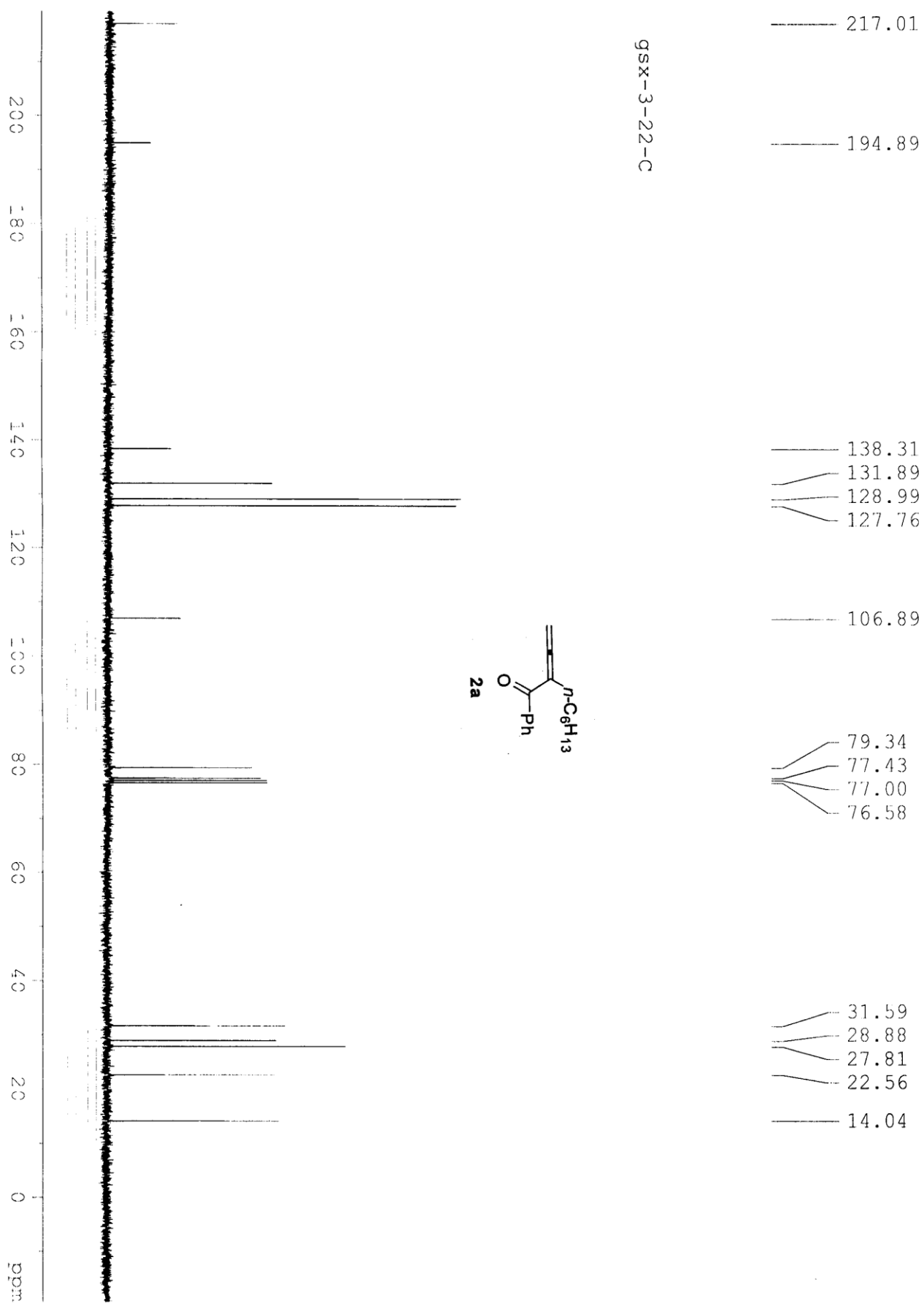
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7.260

5.053  
5.044  
5.035

2.435  
2.426  
2.412  
2.403  
2.377  
2.367  
1.559  
1.538  
1.514  
1.488  
1.464  
1.430  
1.408  
1.389  
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0.915  
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0.871

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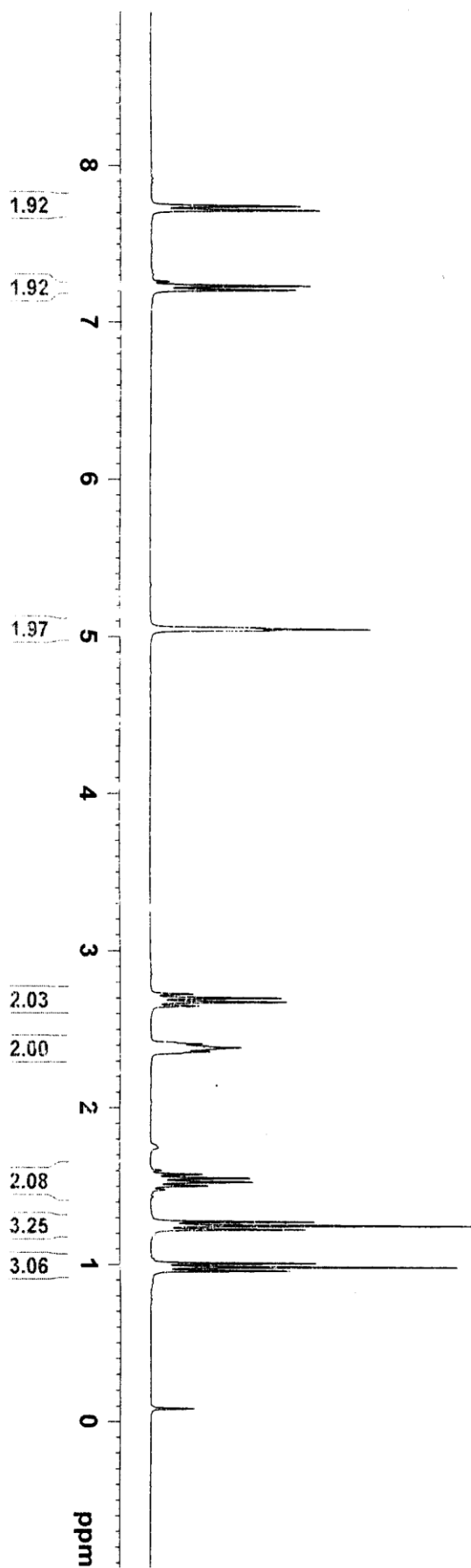
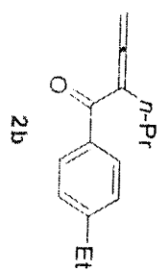


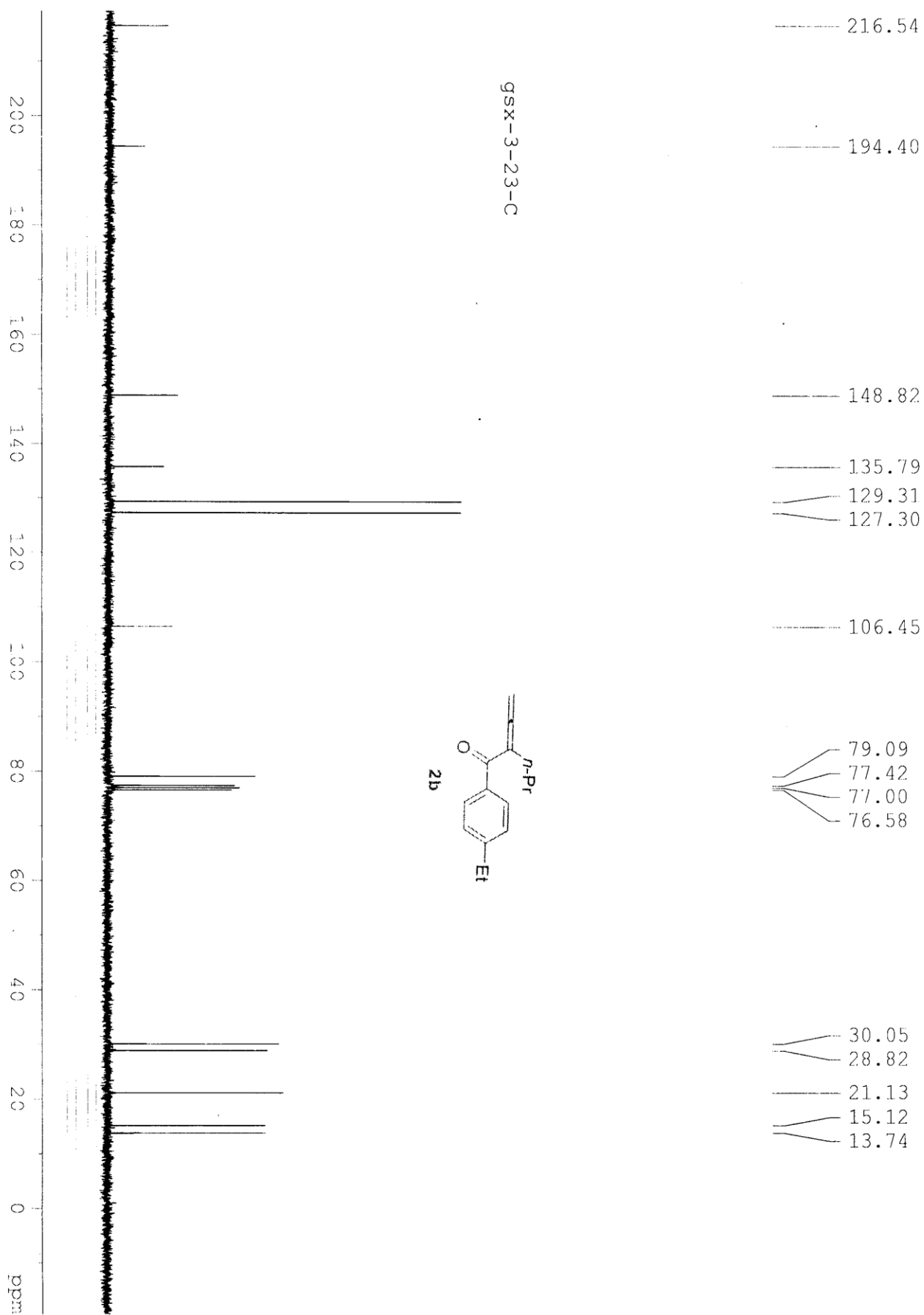
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7.260  
7.234  
7.207

5.056  
5.047  
5.037

2.725  
2.700  
2.675  
2.649  
2.417  
2.408  
2.384  
2.358  
2.349  
1.603  
1.578  
1.553  
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0.960



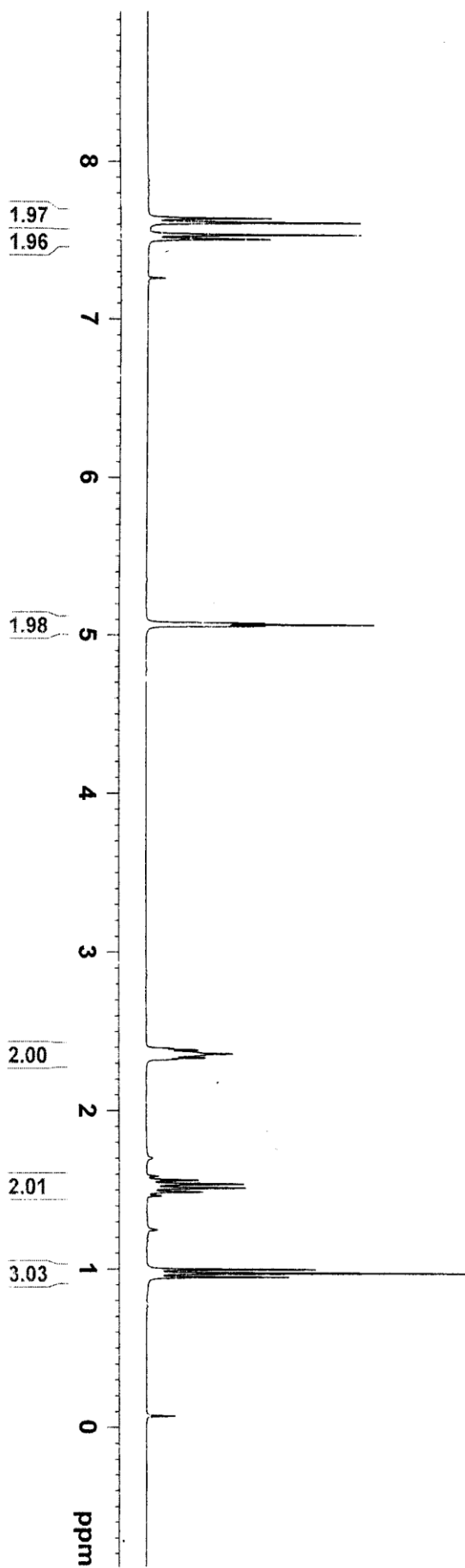
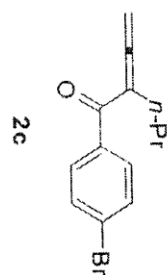


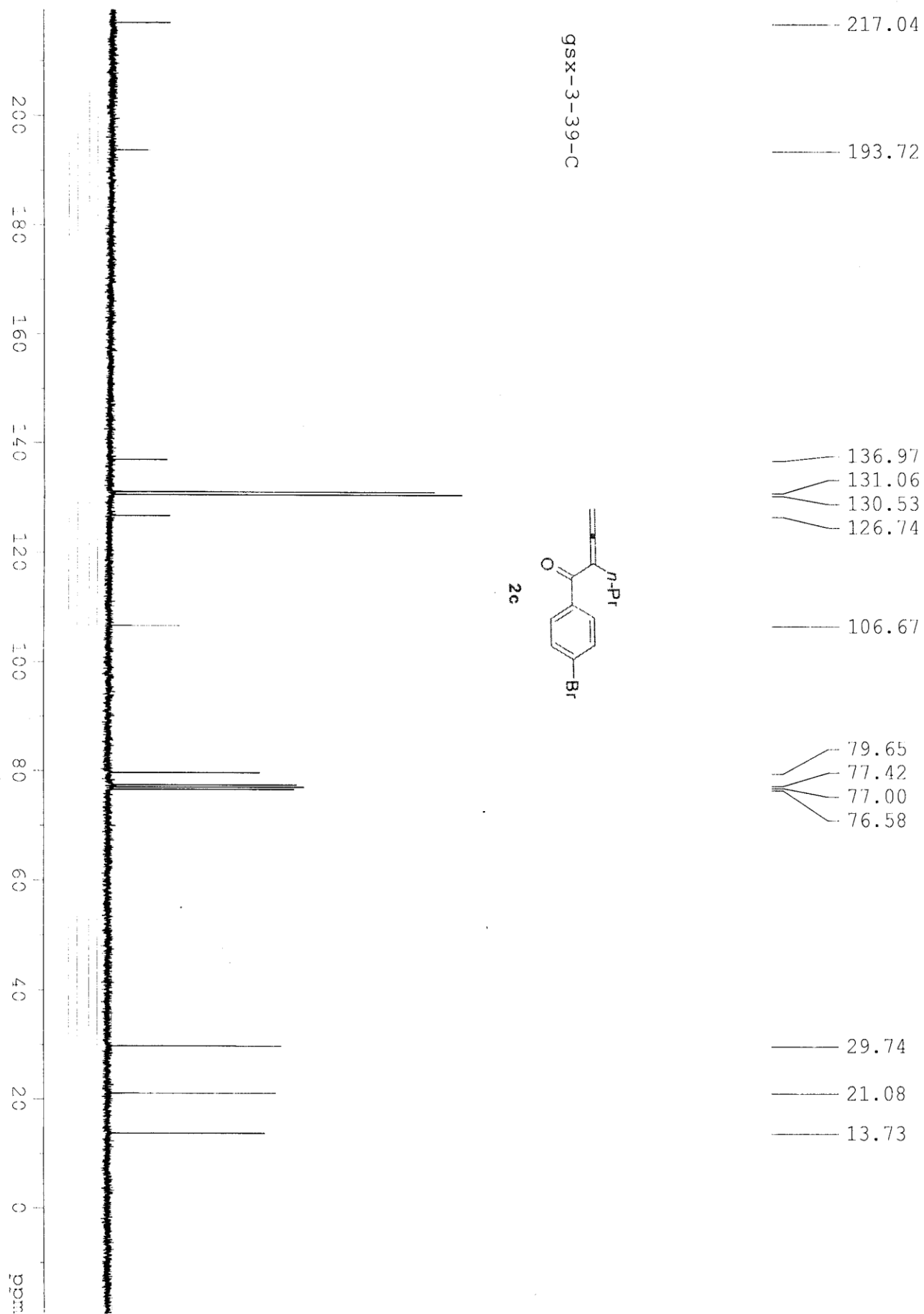
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7.638  
7.609  
7.533  
7.505  
7.260

5.075  
5.066  
5.056

2.391  
2.382  
2.366  
2.357  
2.349  
2.342  
2.331  
2.322  
1.584  
1.559  
1.534  
1.509  
1.485  
1.460  
0.994  
0.970  
0.945



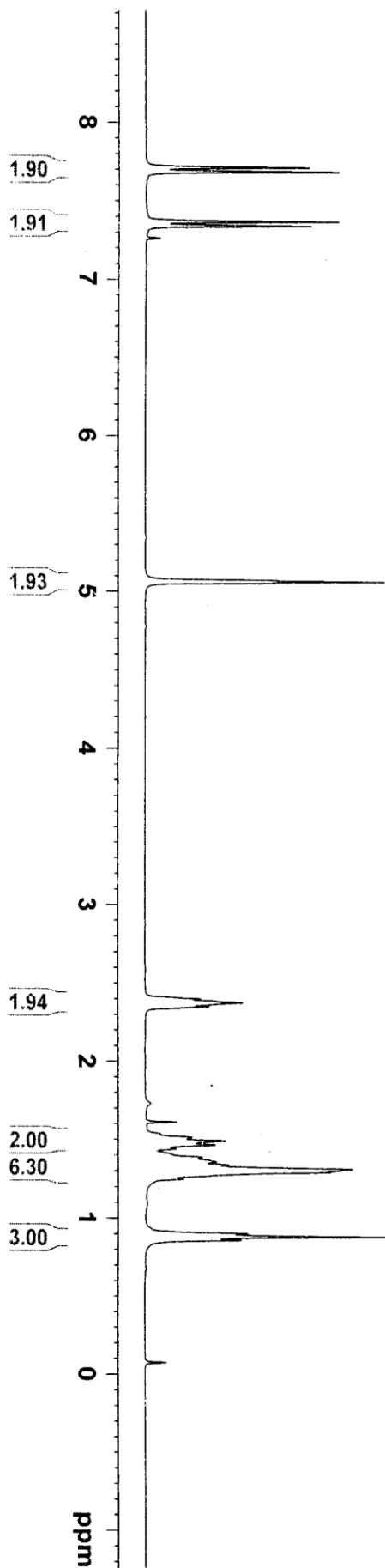
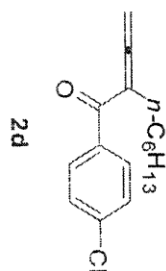


7.712  
7.684  
7.367  
7.339  
7.260

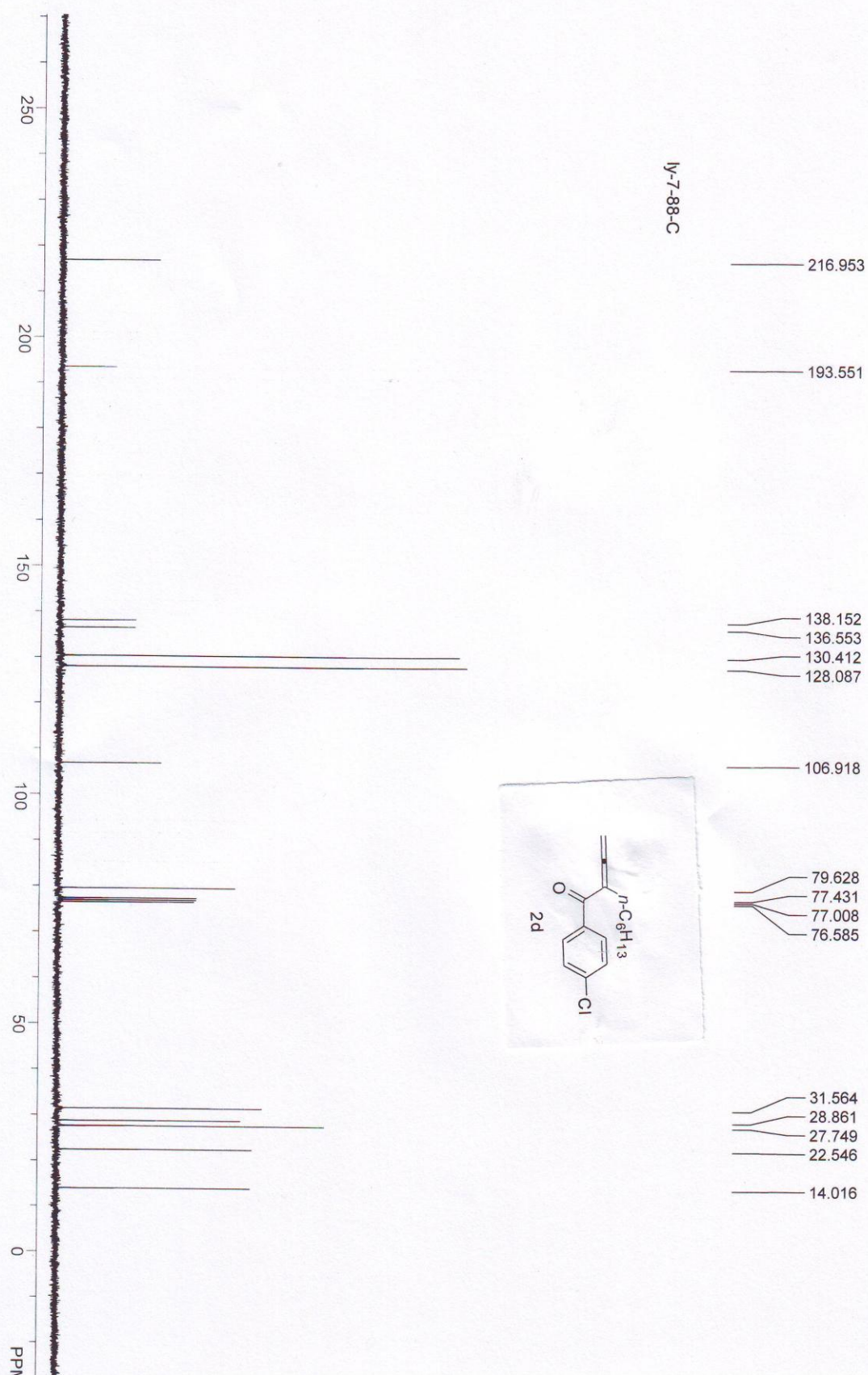
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5.062  
5.053

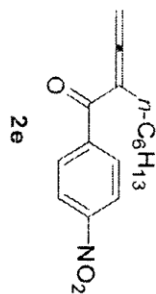
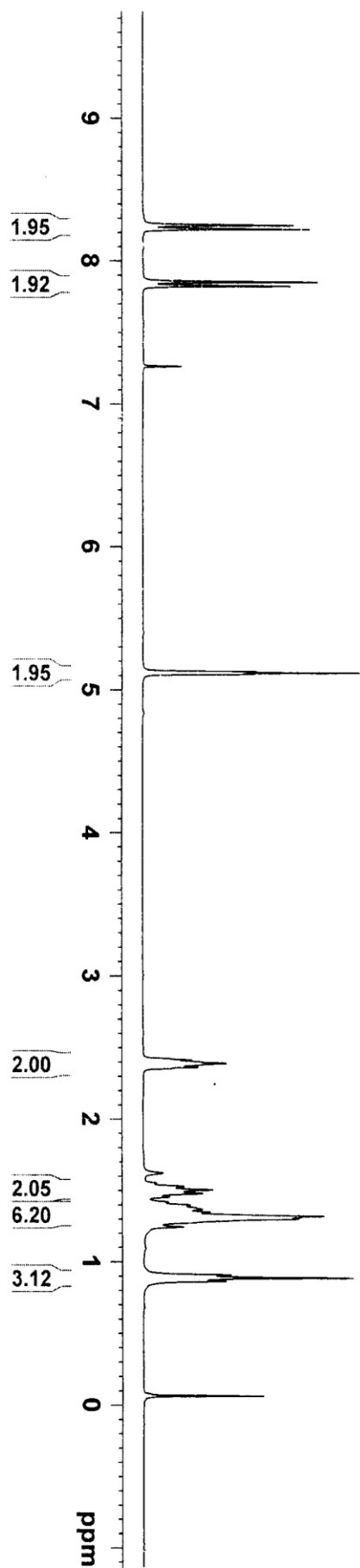
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2.348  
1.533  
1.512  
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1.356  
1.336  
1.310  
1.291  
1.246  
0.899  
0.879  
0.857

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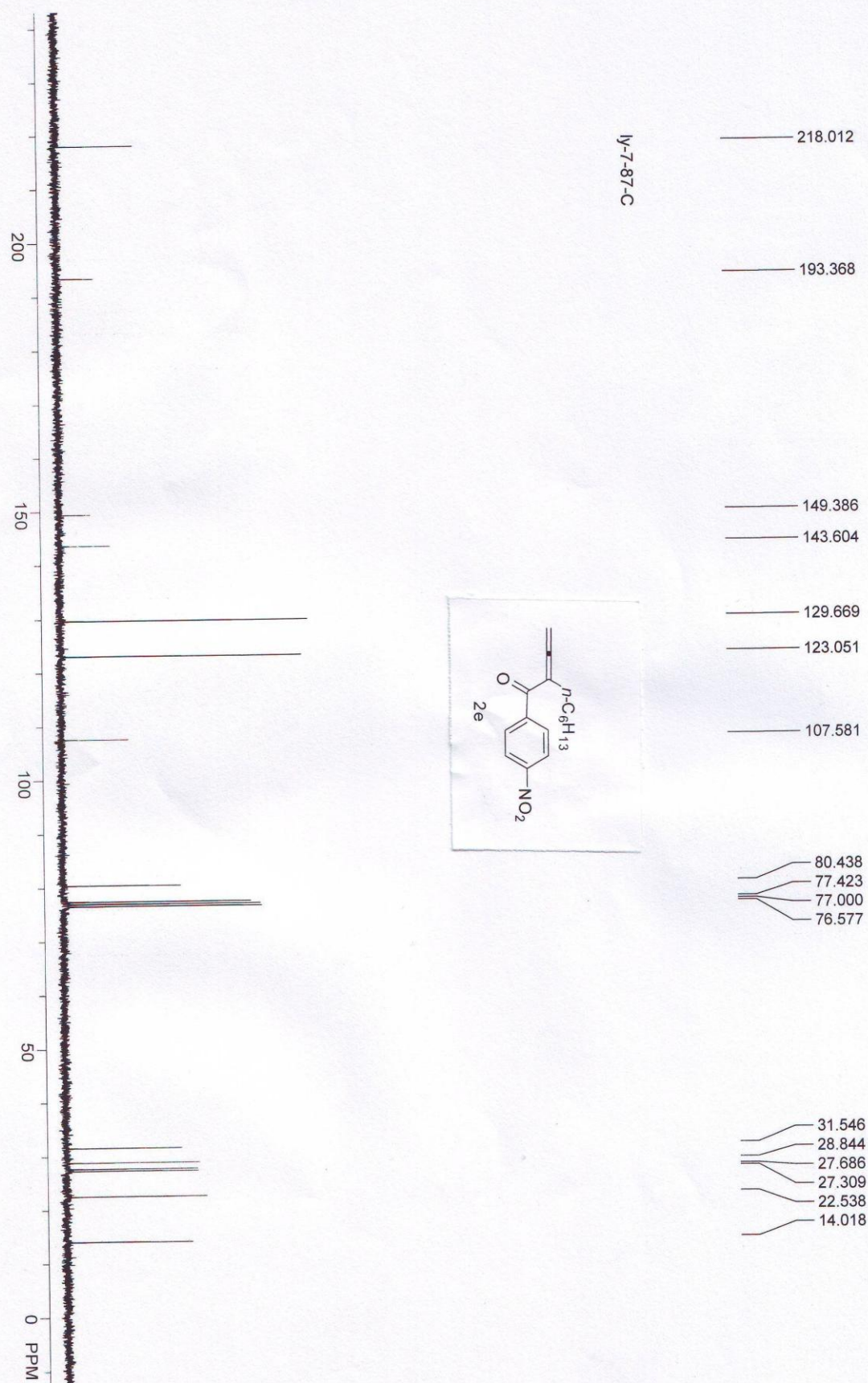


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8.222  
7.852  
7.823

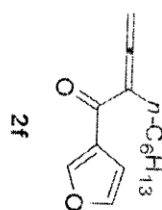
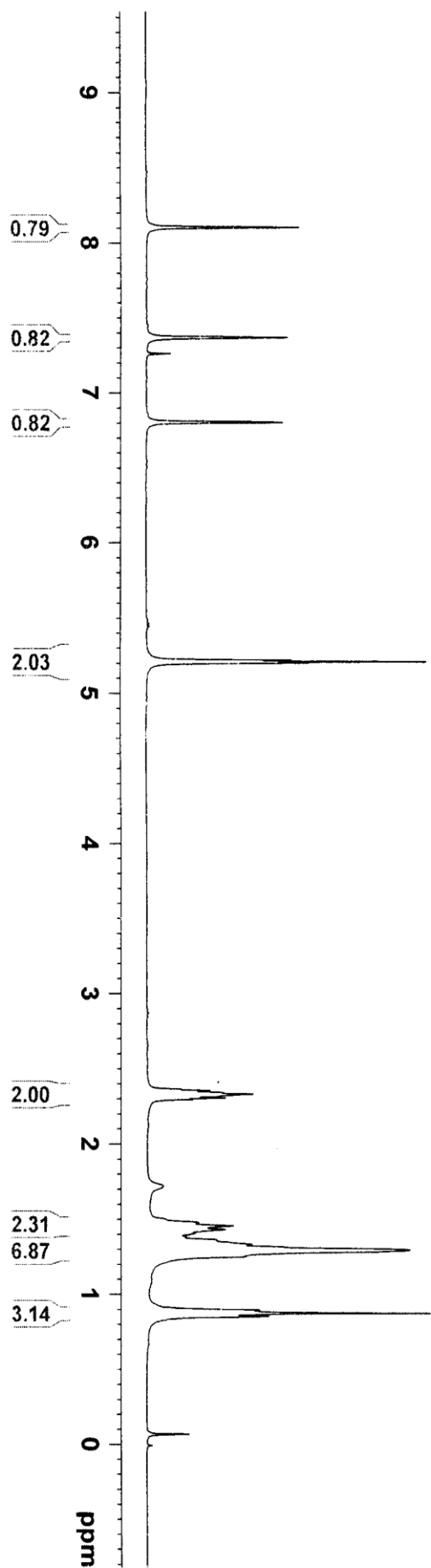
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5.107

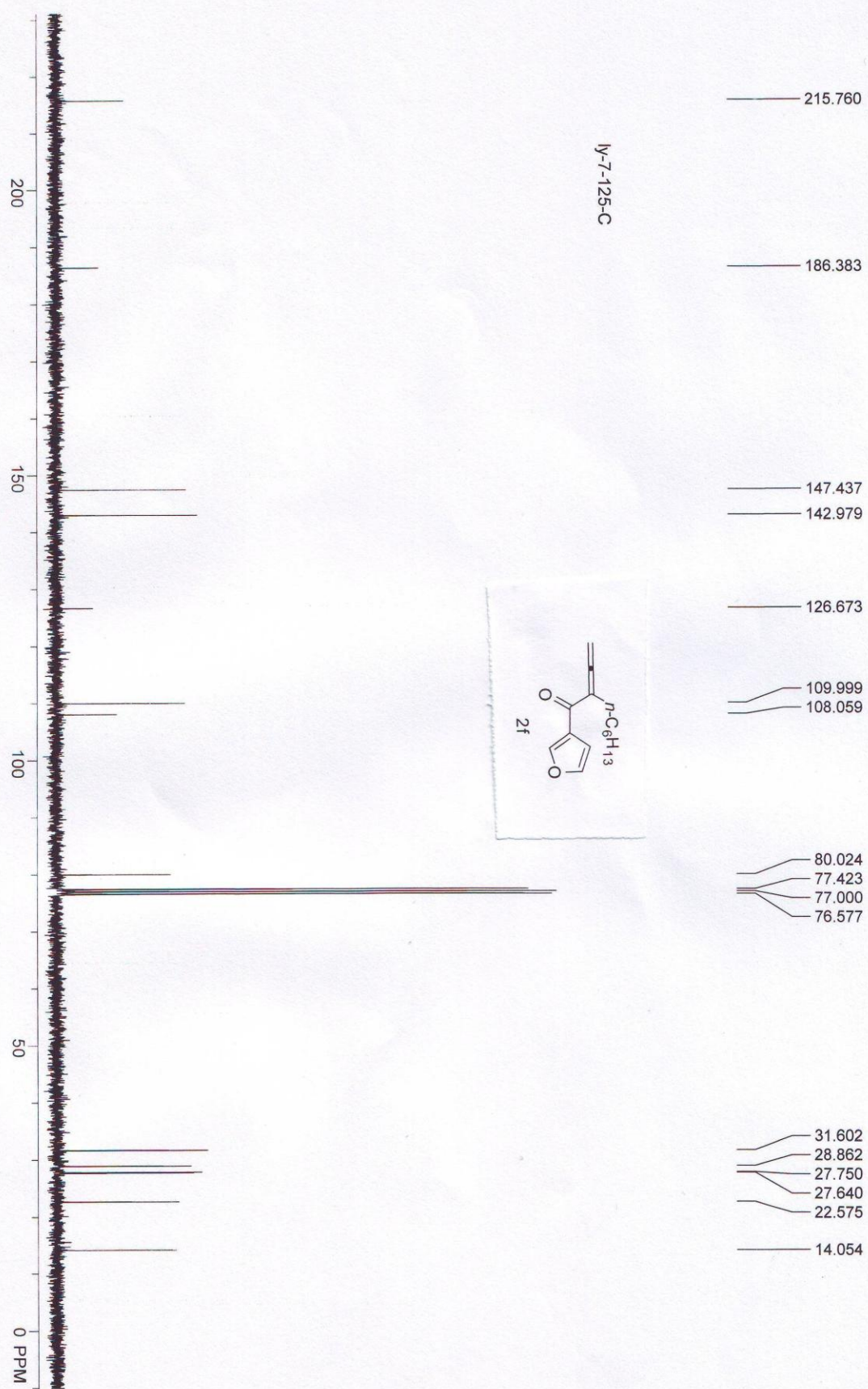
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2.364  
2.355  
1.551  
1.529  
1.505  
1.479  
1.455  
1.419  
1.398  
1.368  
1.348  
1.320  
1.312  
1.300  
1.243  
0.907  
0.886  
0.864

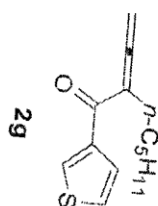
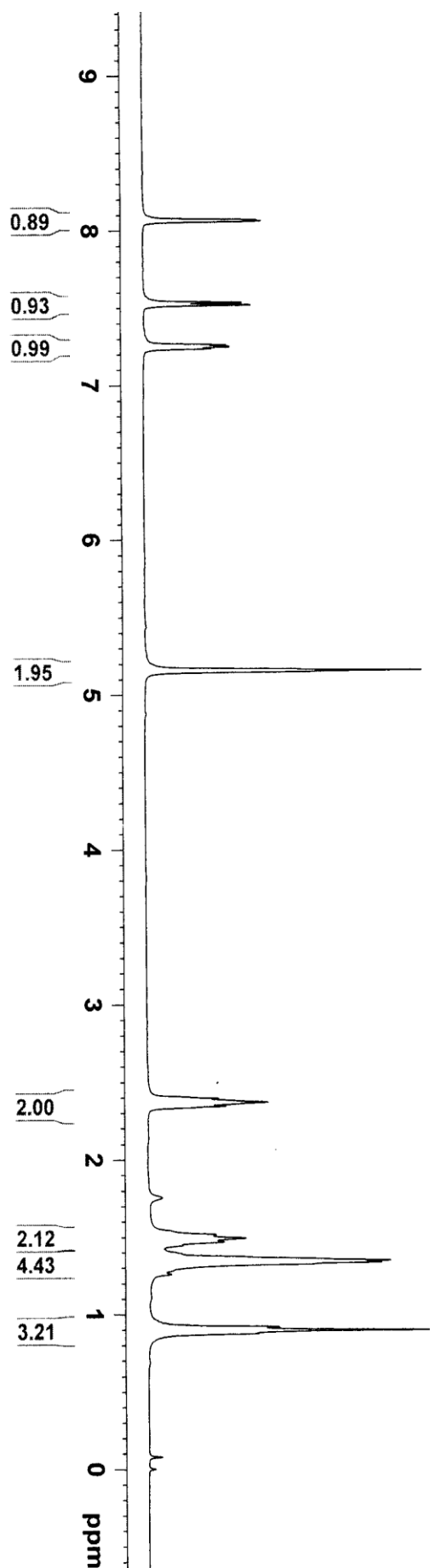


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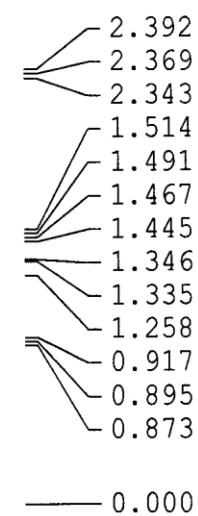
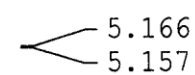
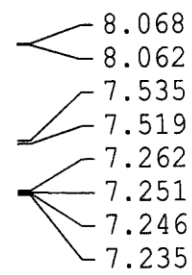


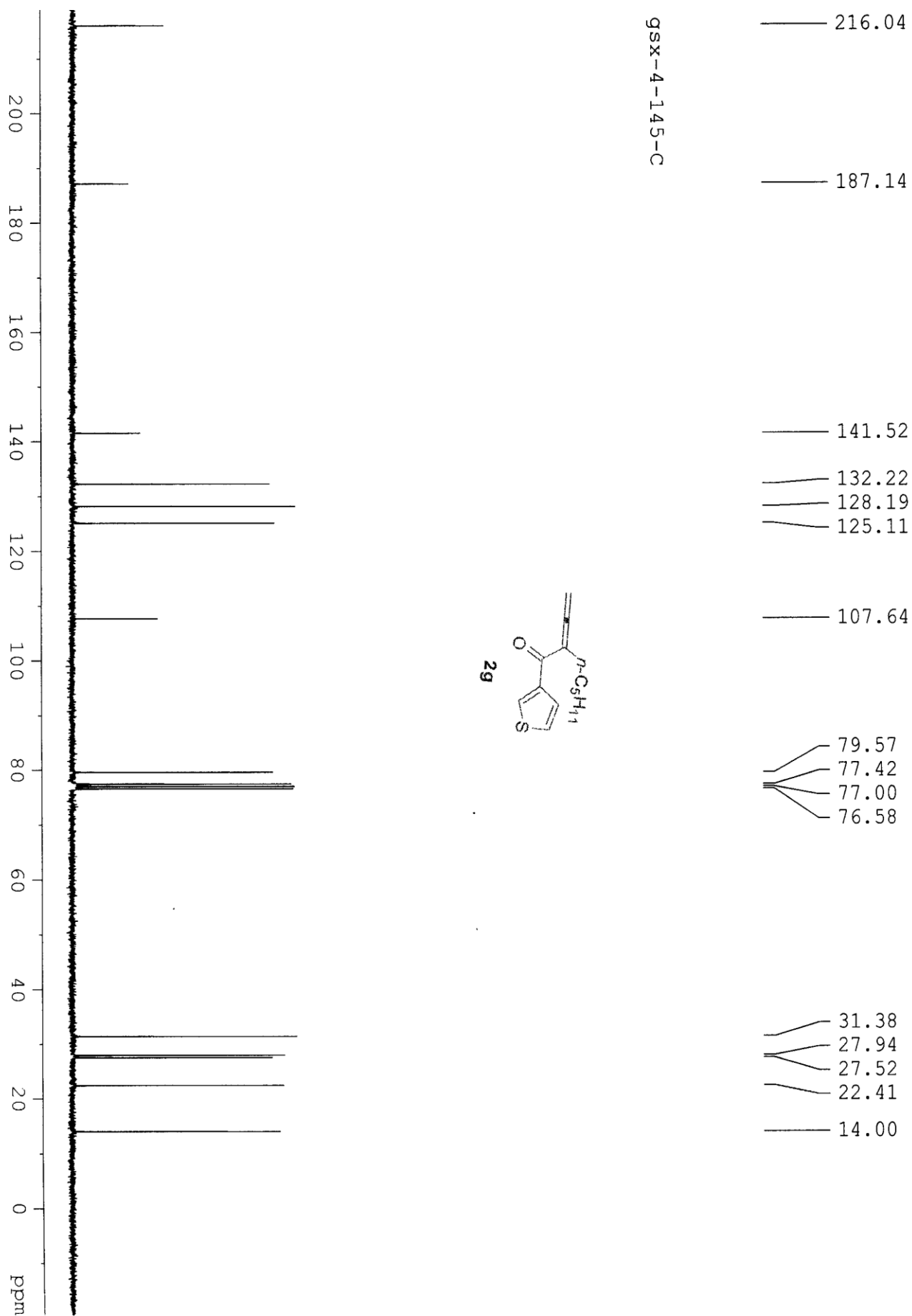


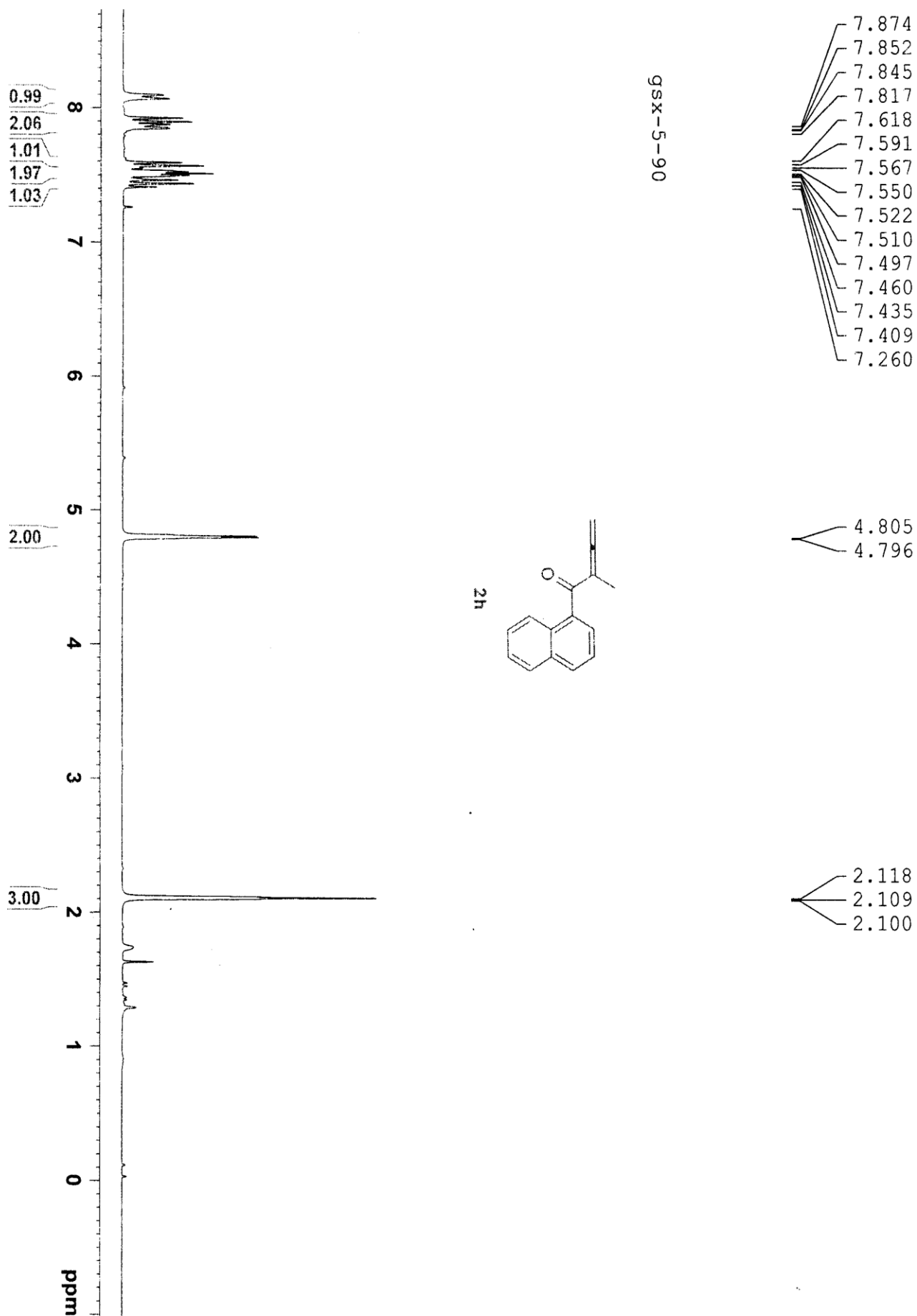




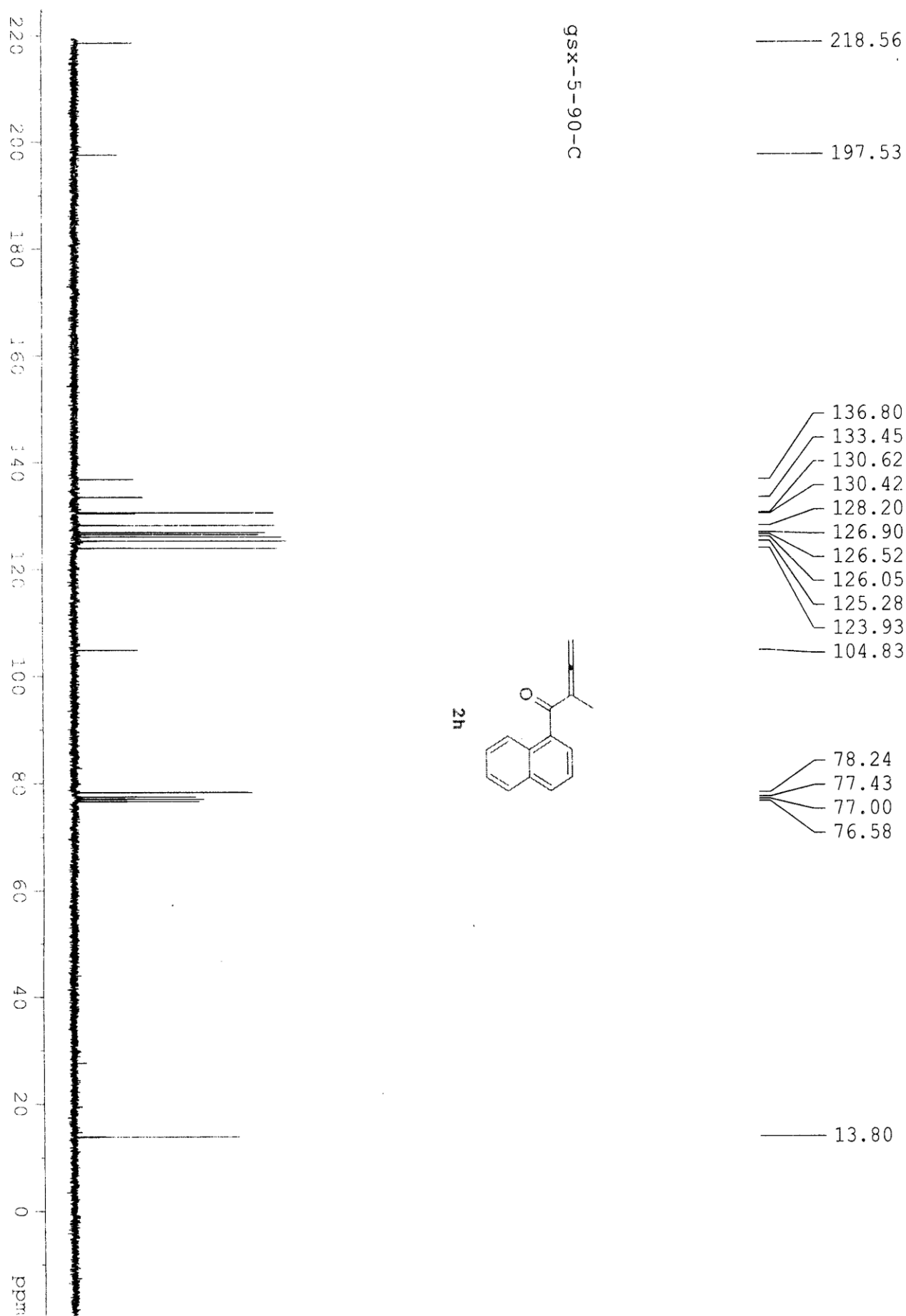
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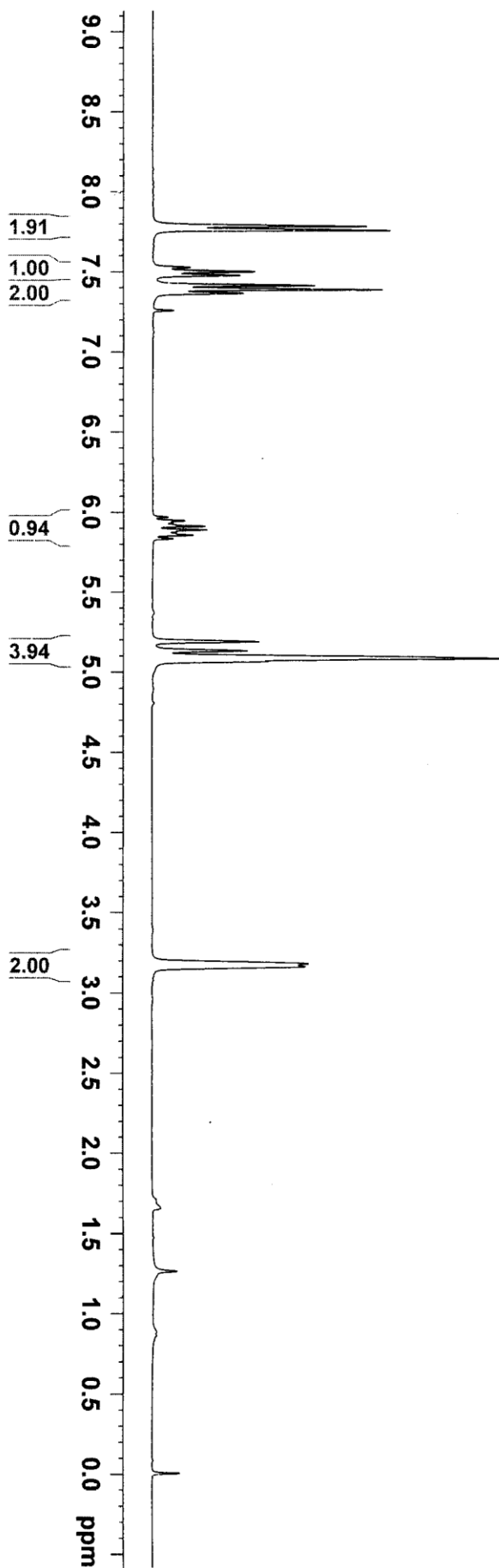
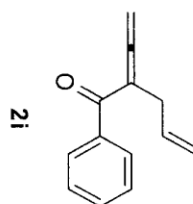


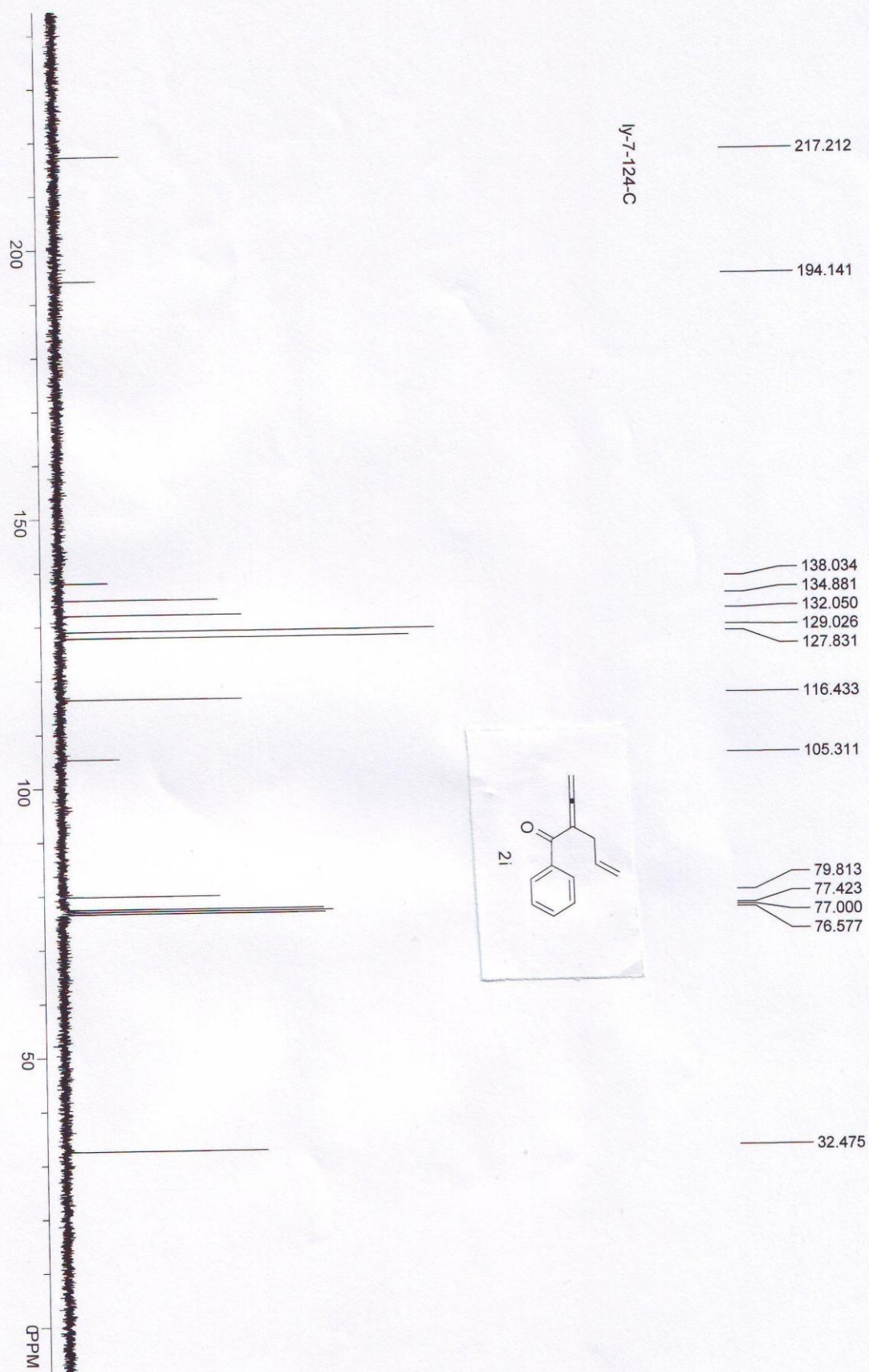
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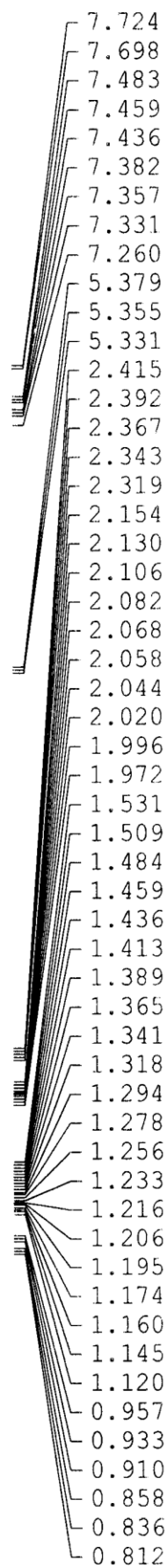
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7.479  
7.418  
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7.368  
7.260

5.971  
5.948  
5.937  
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5.892  
5.881  
5.858  
5.836  
5.192  
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5.093  
5.070

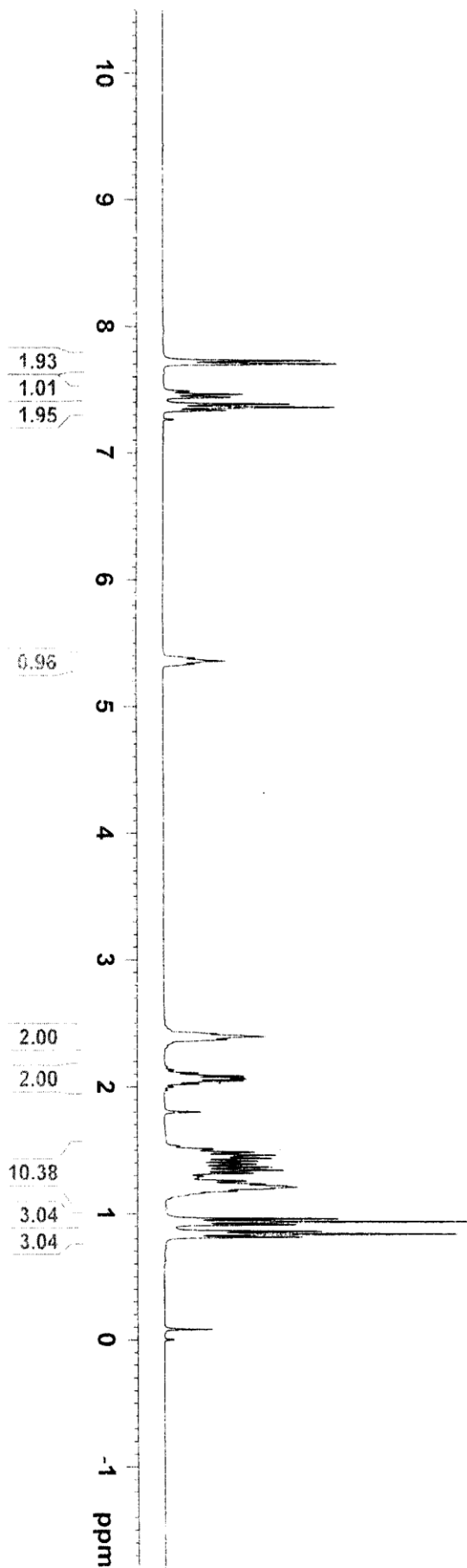
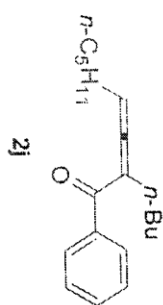
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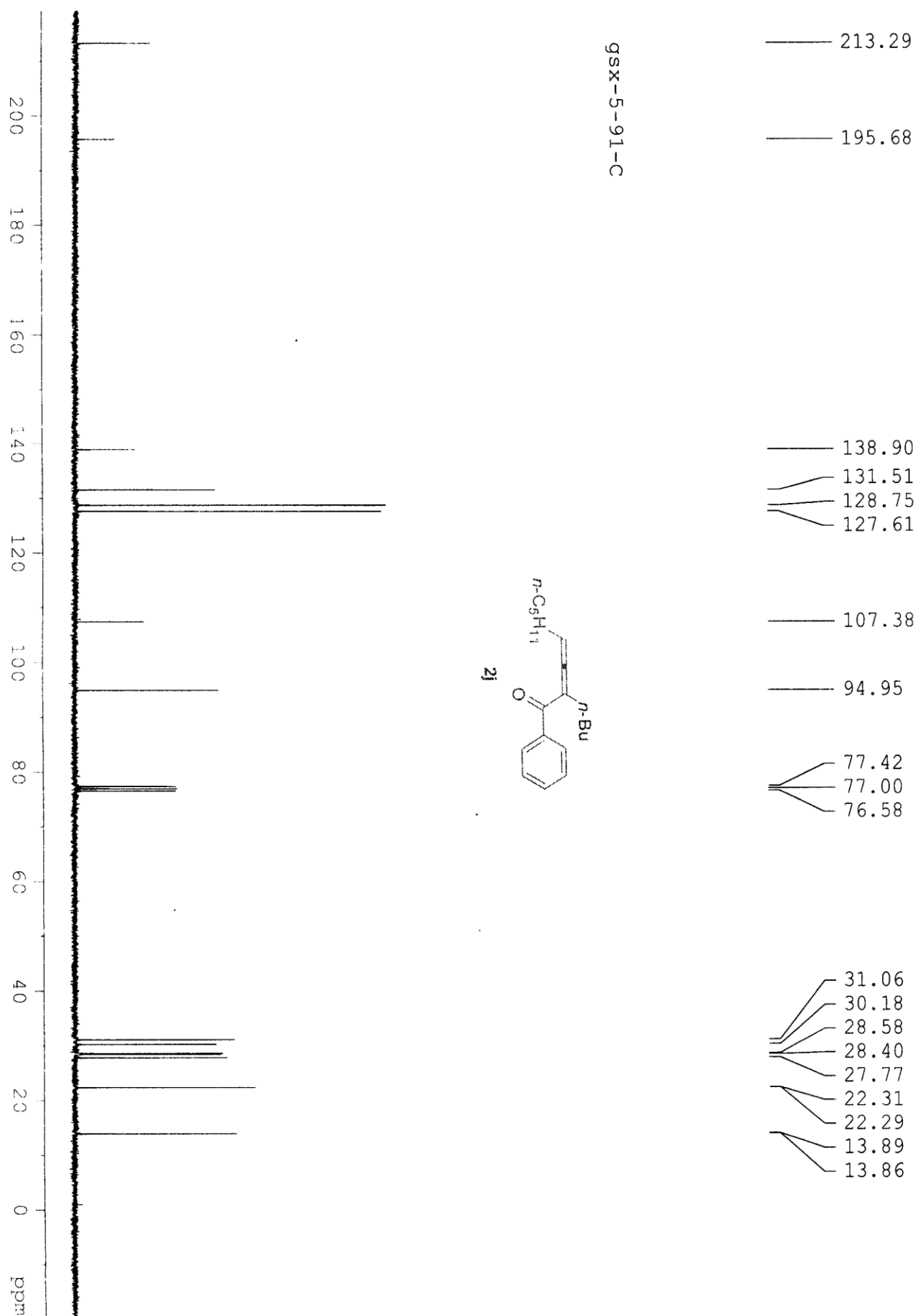






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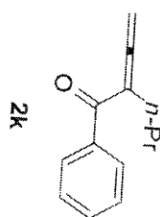




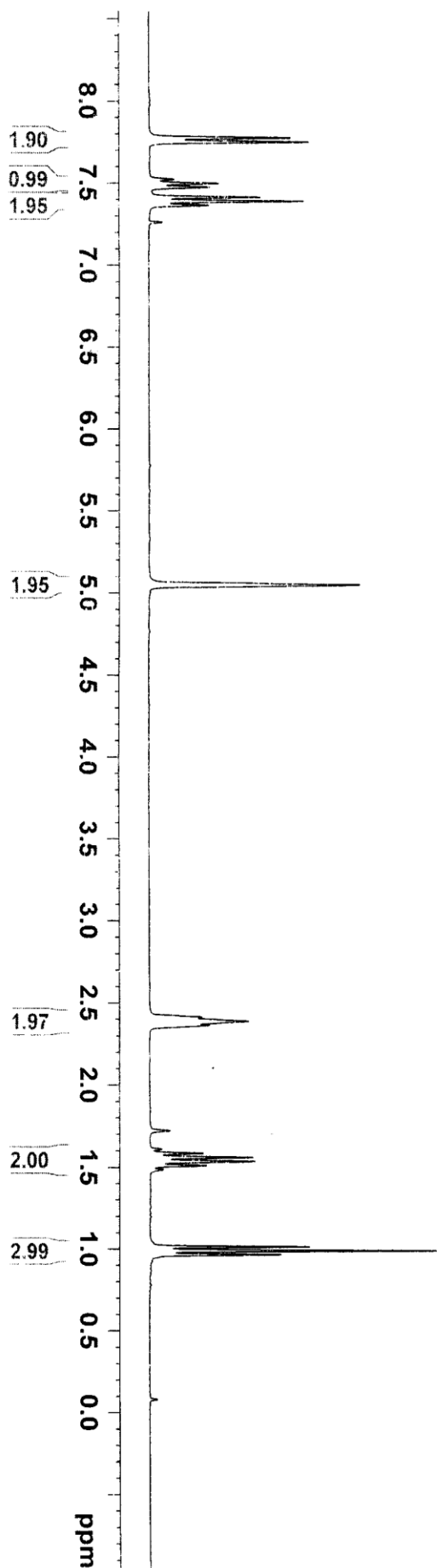
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7.260

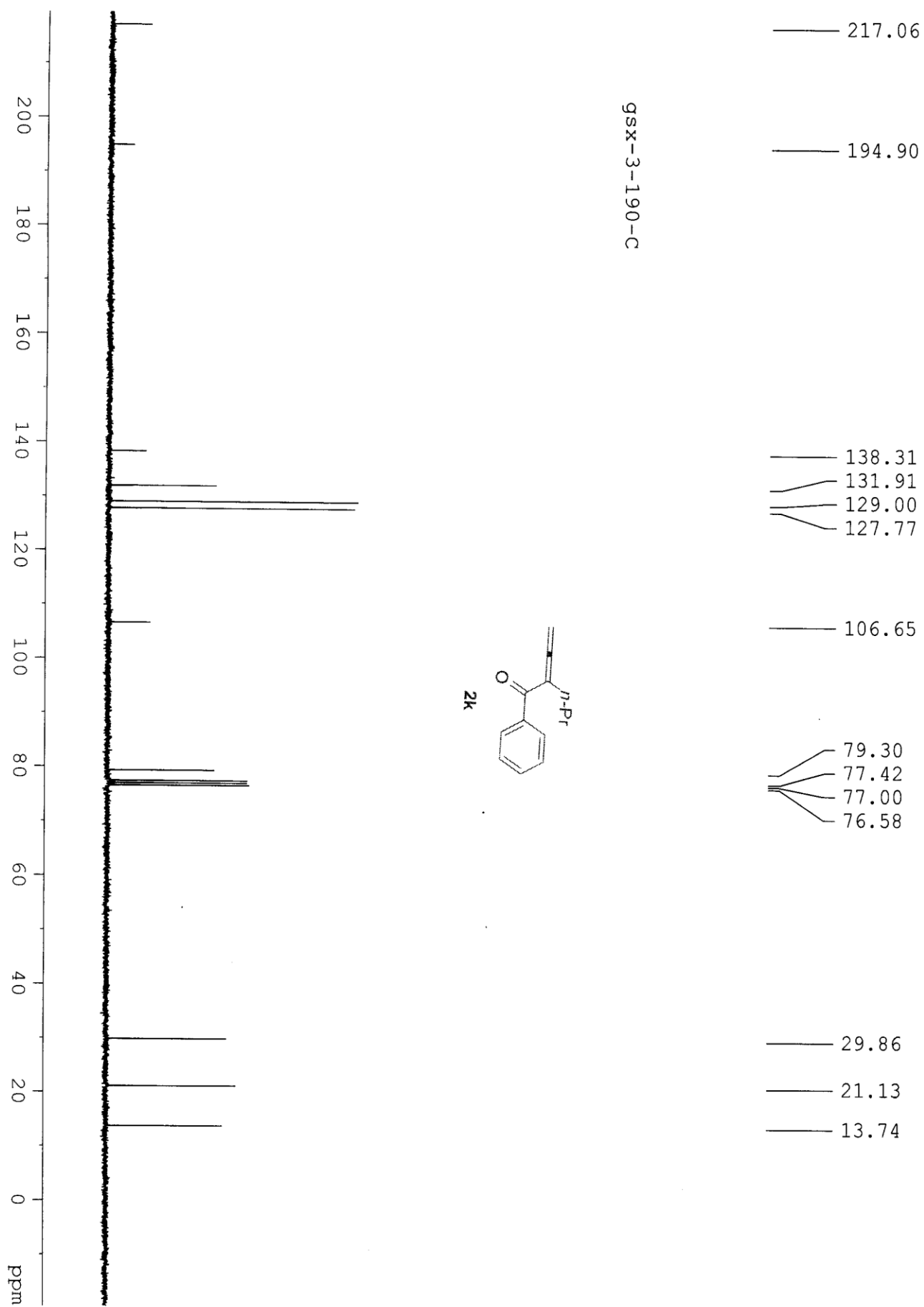
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5.048



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1.509  
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0.988  
0.964



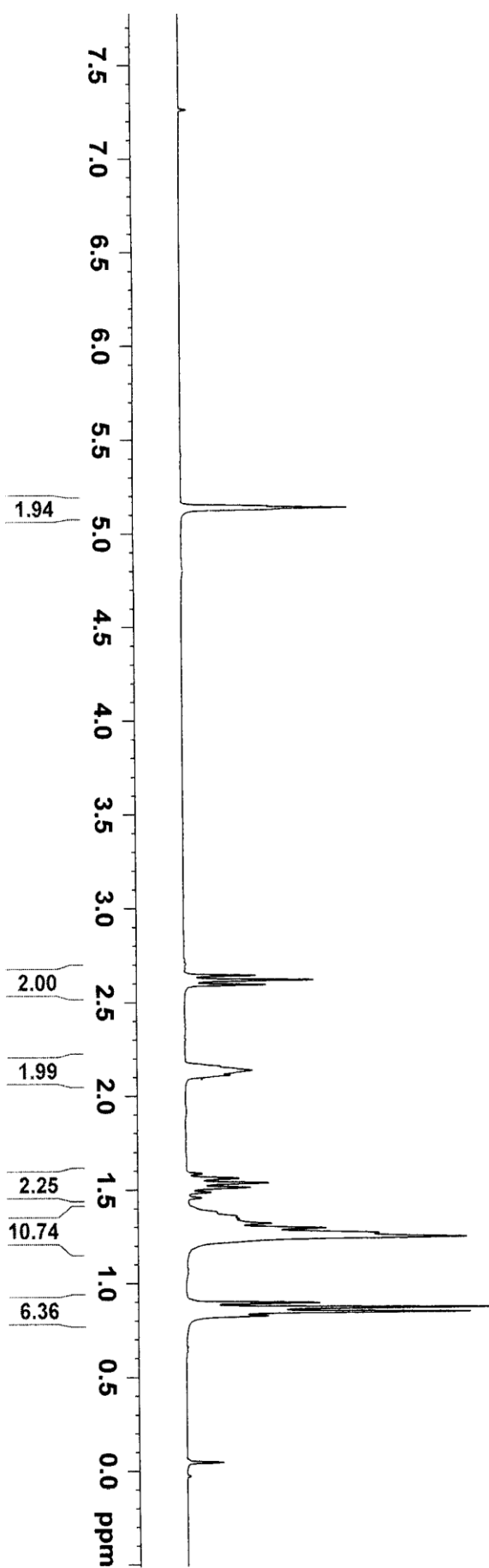
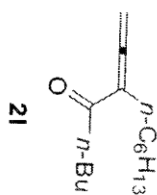


7.260

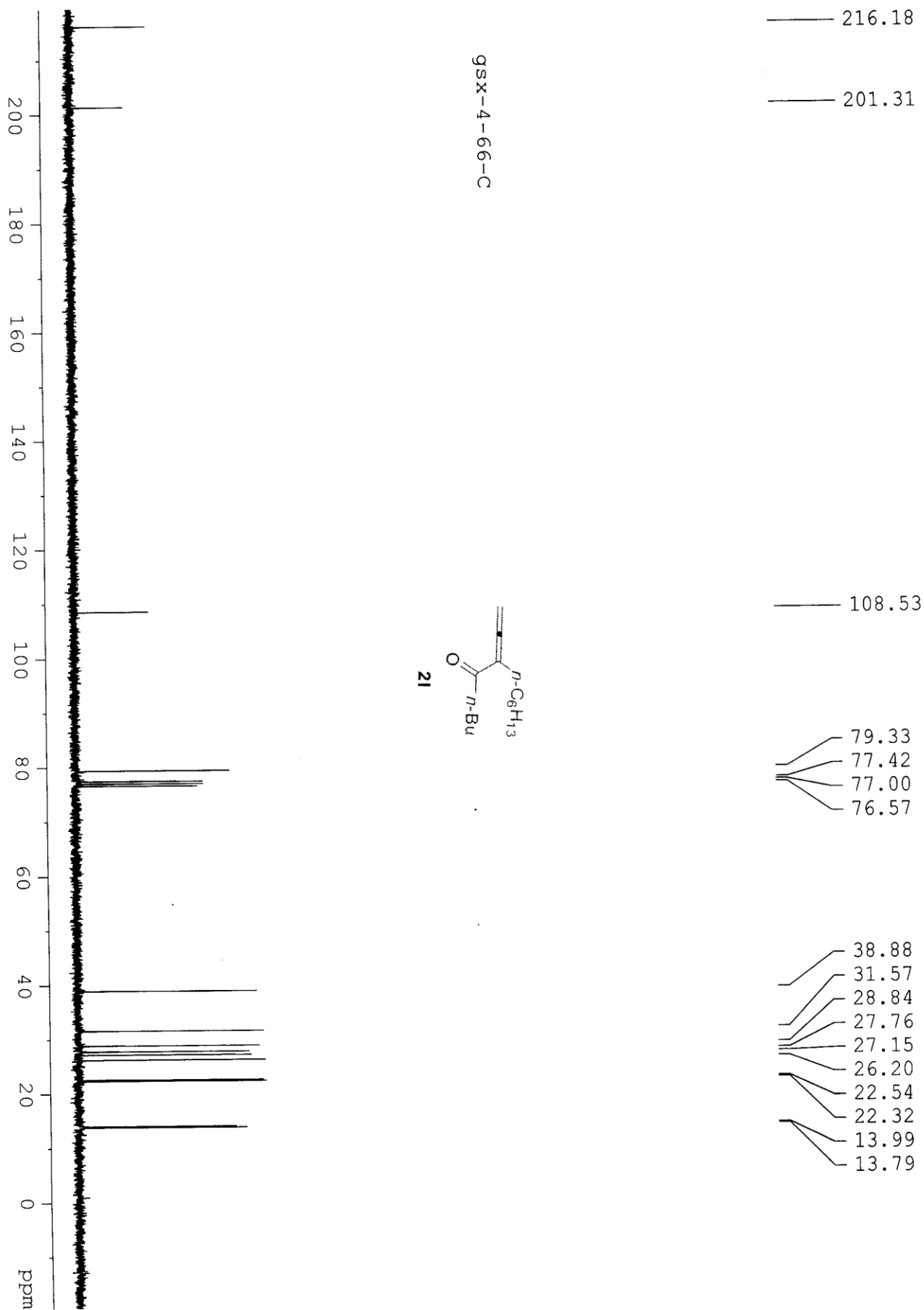
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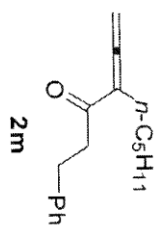
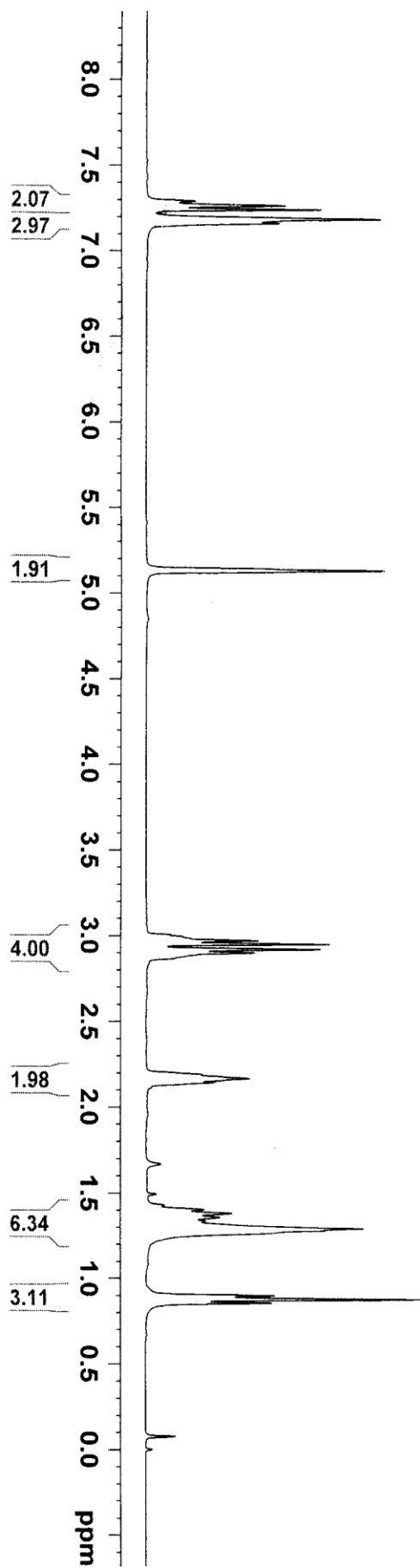
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1.485  
1.455  
1.378  
1.357  
1.343  
1.319  
1.293  
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1.246  
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0.868  
0.845  
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gsx-4-66









gsx-4-67

7.291  
7.265  
7.242  
7.187  
7.162

5.132

3.003  
2.993  
2.982  
2.970  
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2.920  
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2.189  
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1.380  
1.357  
1.335  
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