

Oxidation of Secondary Methyl Ethers to Ketones

Pieter J. Gilissen, Daniel Blanco-Ania, Floris P. J. T. Rutjes*

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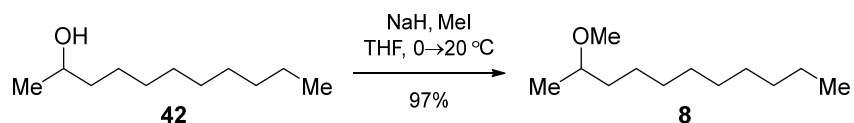
Supporting Information

| | |
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| Substrate synthesis schemes | S3 |
| Copies of ^1H NMR and ^{13}C NMR spectra | S5 |

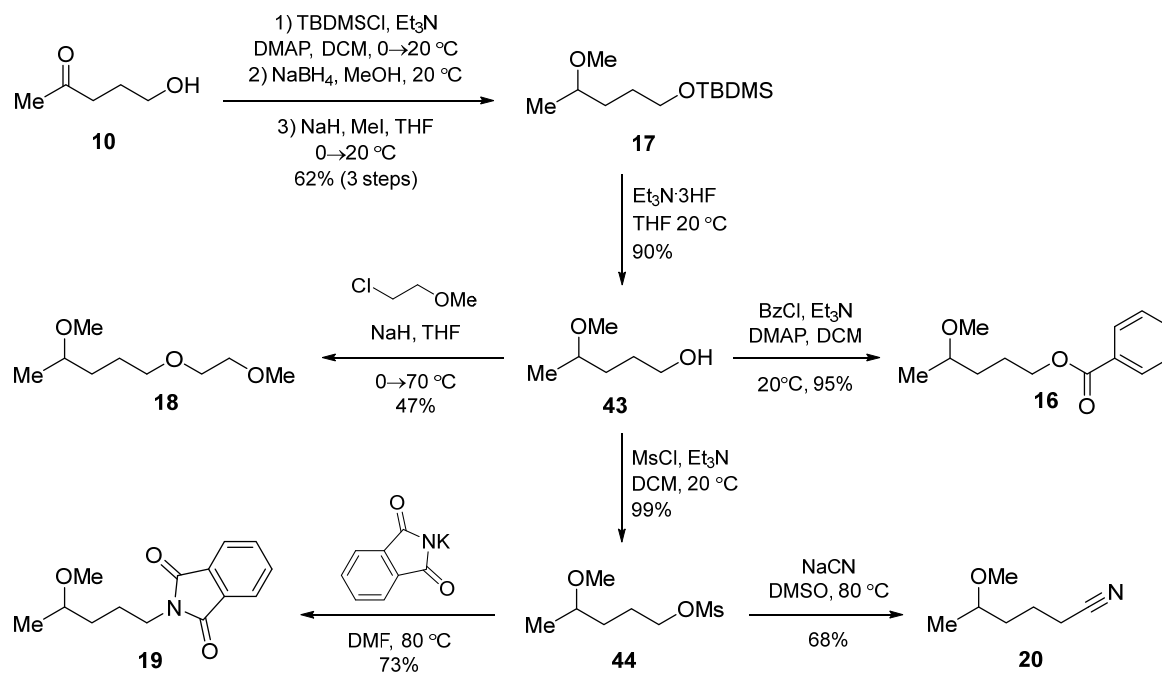
Substrate synthesis schemes

Substrate **8** was synthesized from undecan-2-ol (**42**) in a common Williamson ether synthesis (Scheme S1). Substrates **16–20** were synthesized from 5-hydroxypentan-2-one (**10**) using regular synthetic transformations (Scheme S2). Substrate **21** was synthesized in two steps from γ -valerolactone (**45**; Scheme S3). Substrate **22** was synthesized from 1-phenylethanol (**46**; Scheme S4). Substrates **23–25** were synthesized from cyclohexane-1,4-diol (**47**; Scheme S5) and substrates **26–28** were synthesized from benzyl 4-oxopiperidine-1-carboxylate (**40**; Scheme S6).

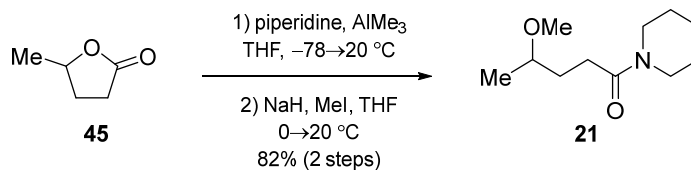
Scheme S1: Synthesis of substrate **8**.



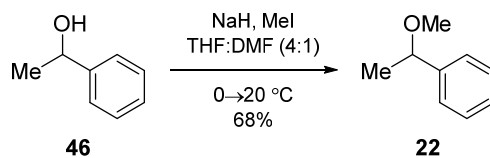
Scheme S2: Synthesis of substrates **16–20**.



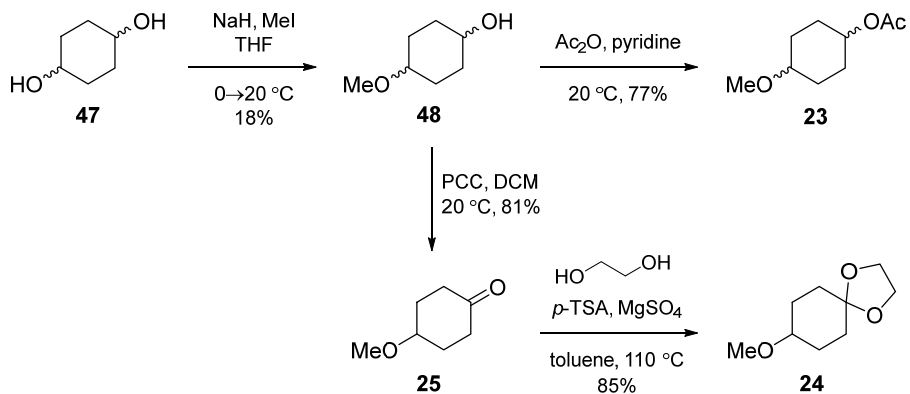
Scheme S3: Synthesis of substrate **21**.



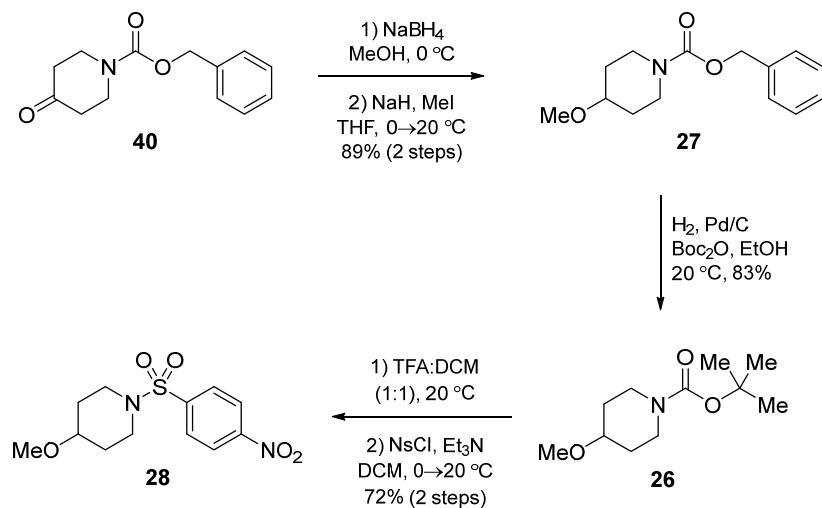
Scheme S4: Synthesis of substrate 22.



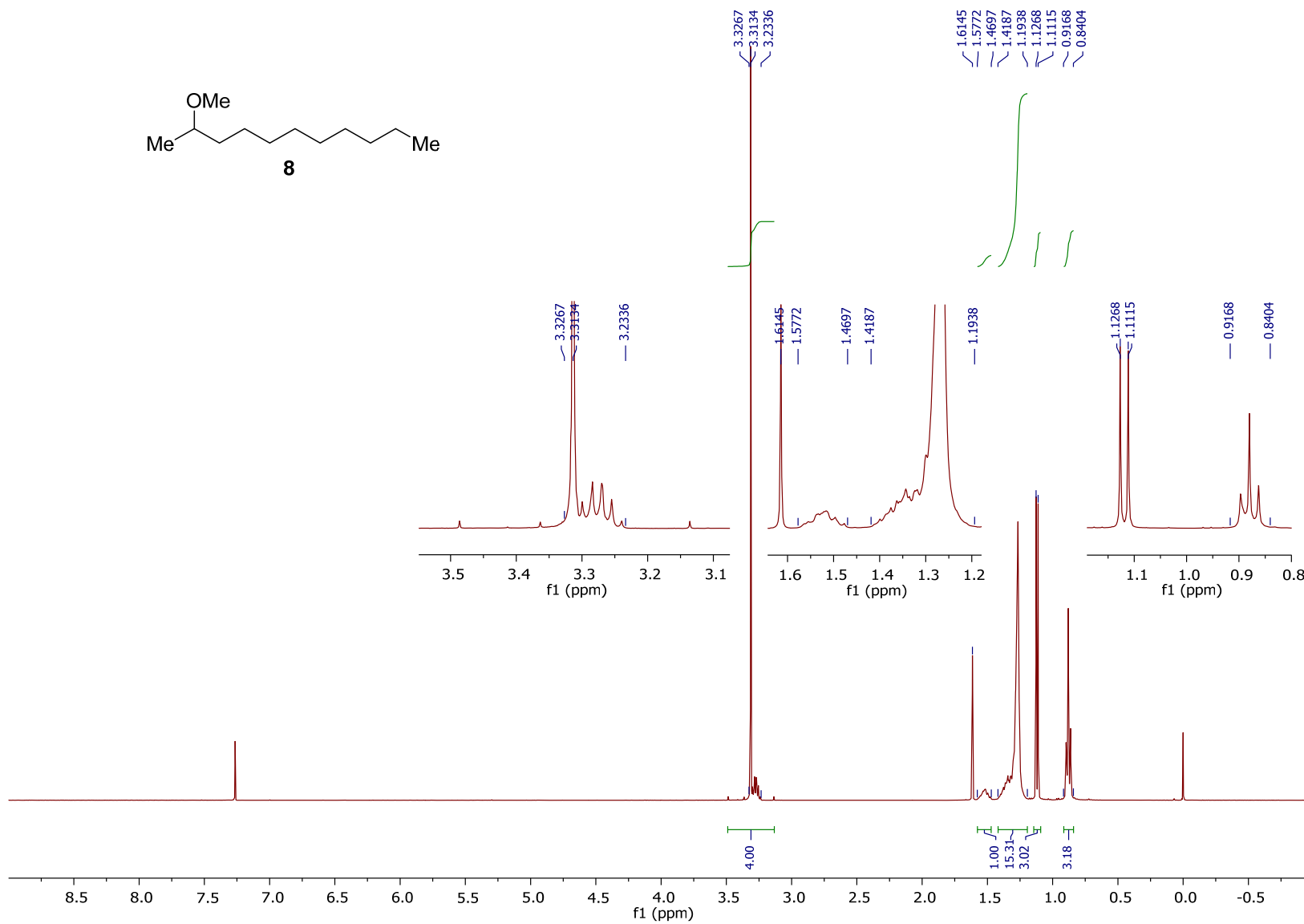
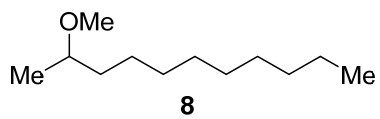
Scheme S5: Synthesis of substrates 23–25.

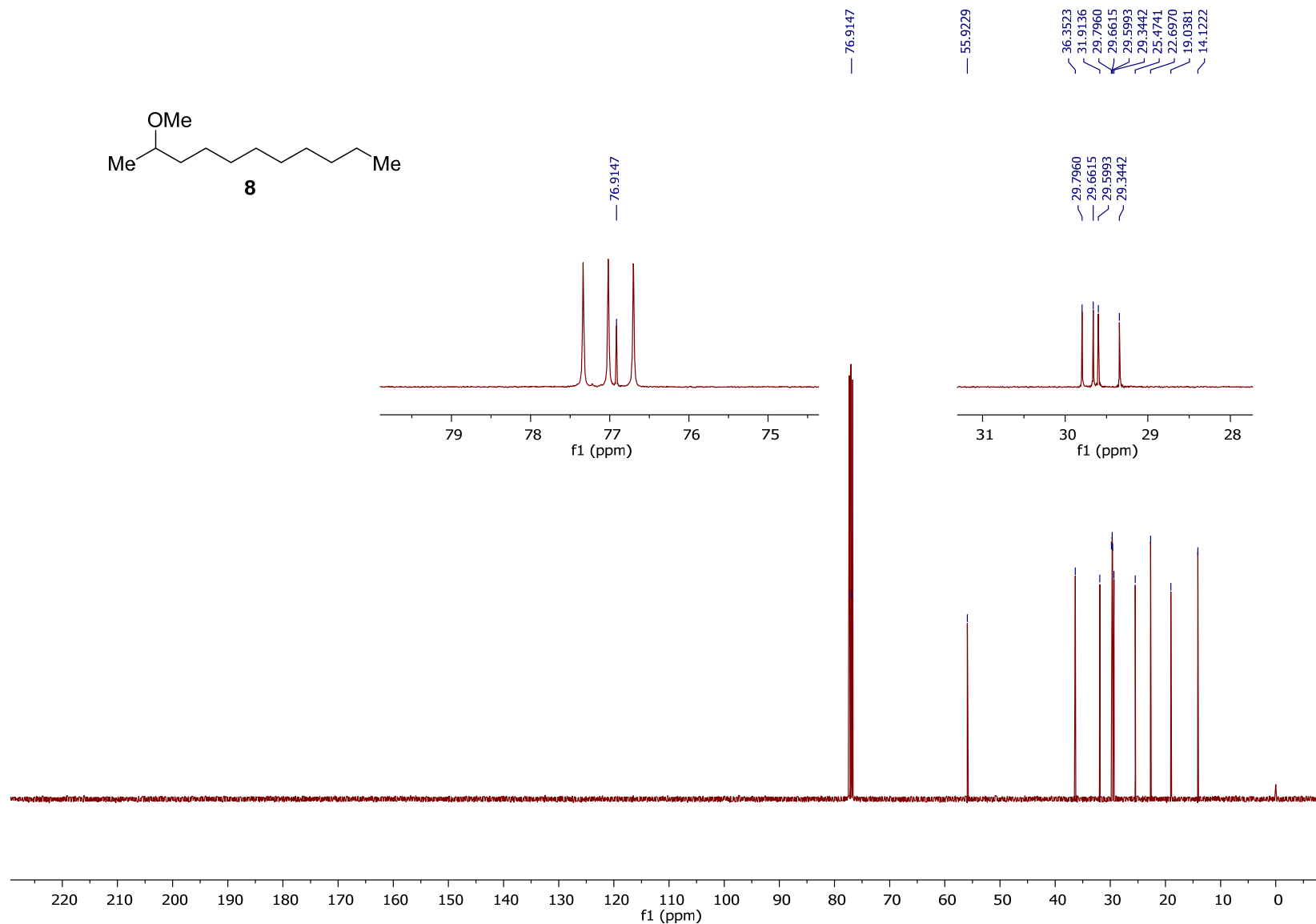
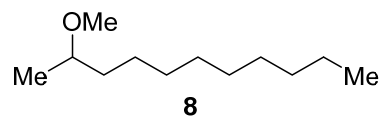


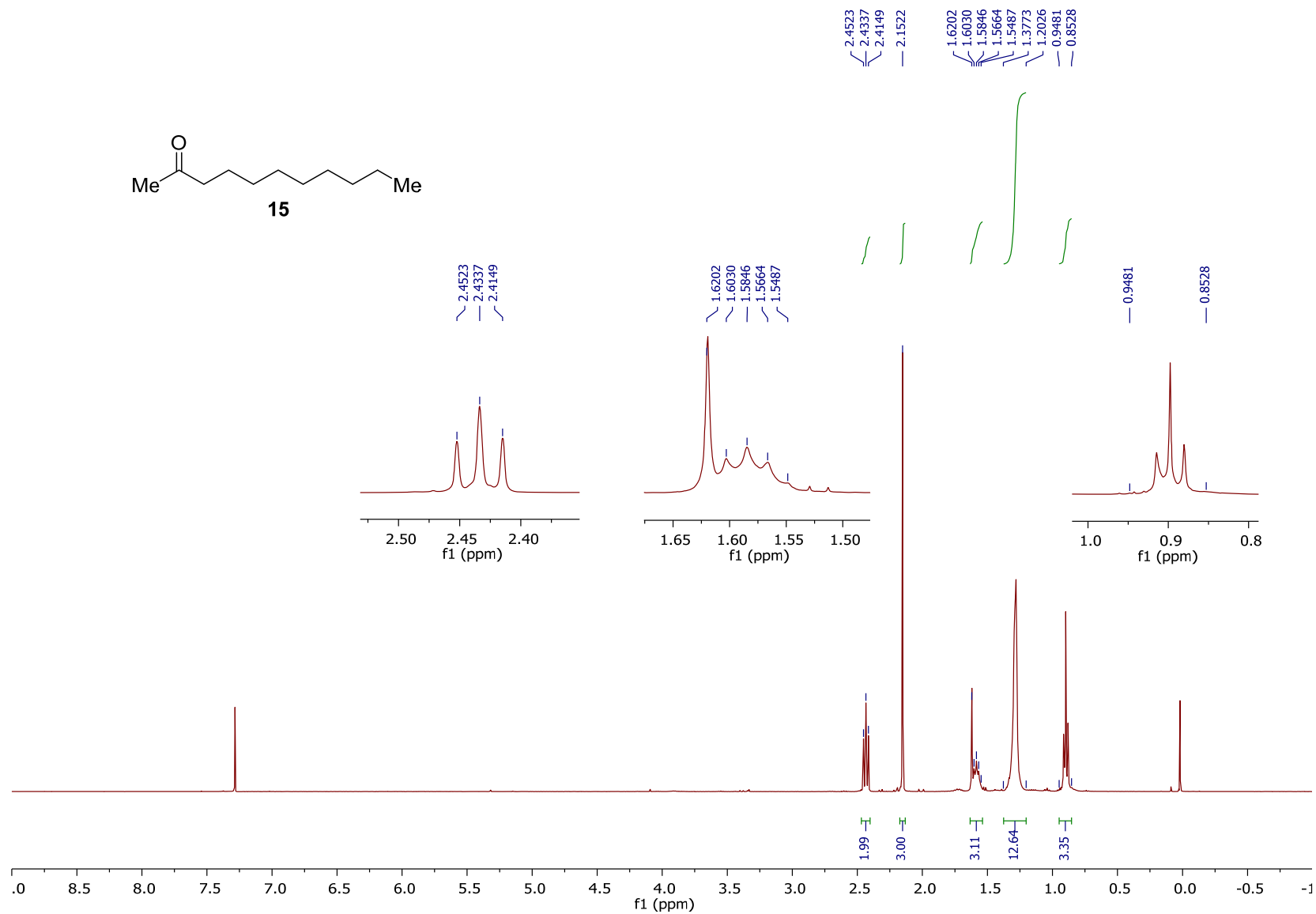
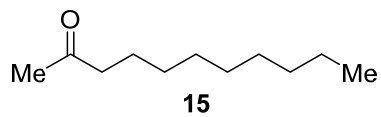
Scheme S6: Synthesis of substrates 26–28.



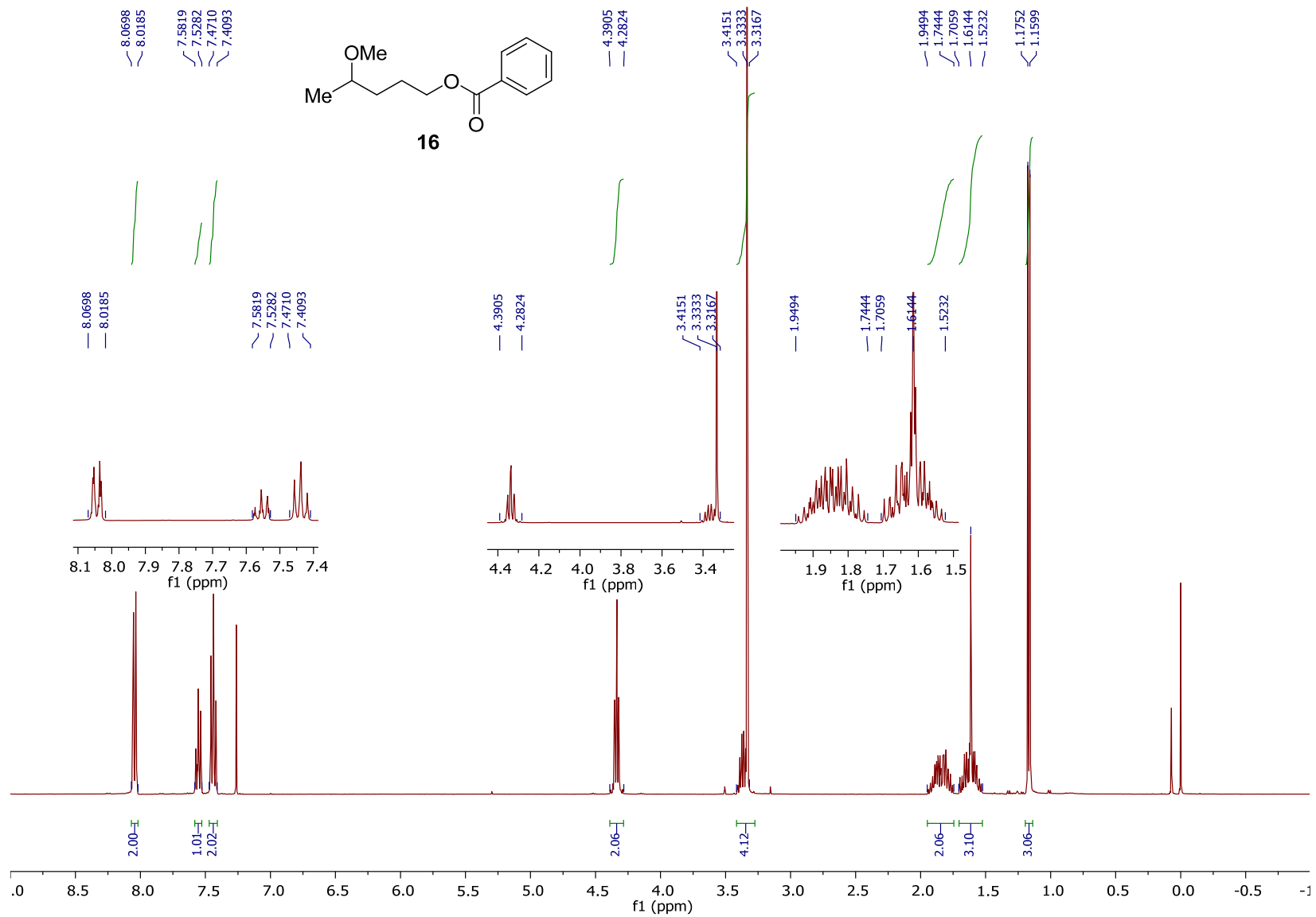
Copies of ^1H NMR and ^{13}C NMR spectra

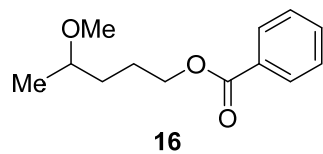






S8





— 166.6480

132.8356
130.4341
129.5342
128.3243

— 76.2763

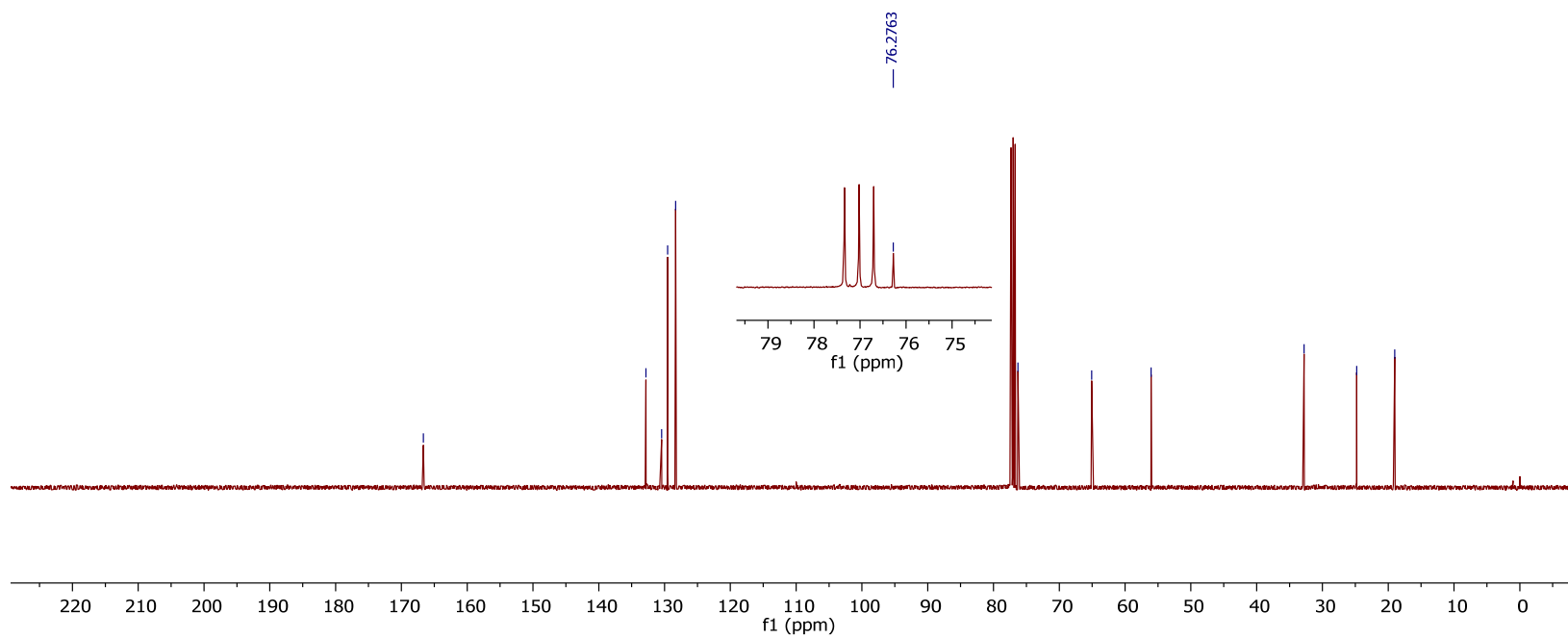
— 65.0738

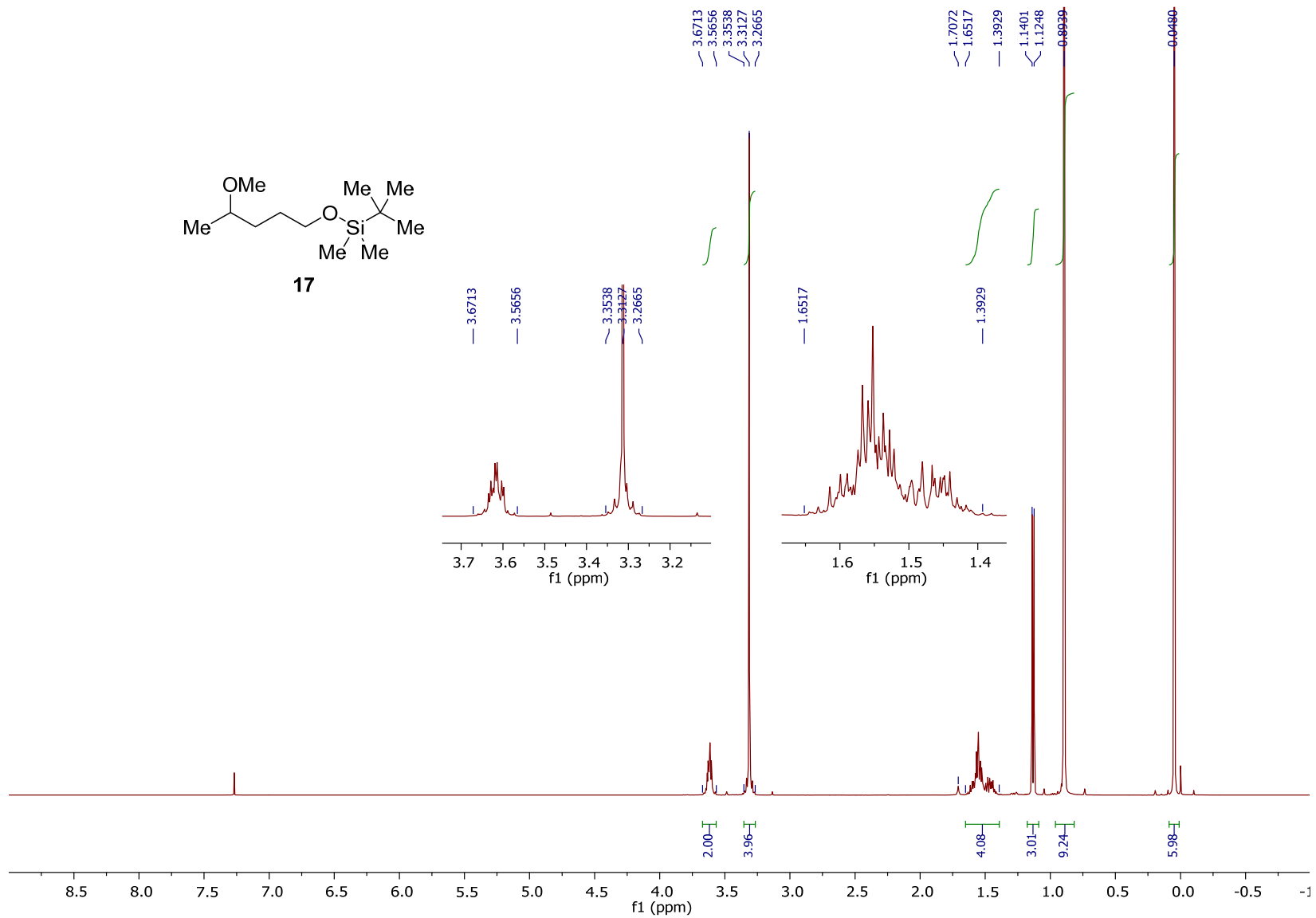
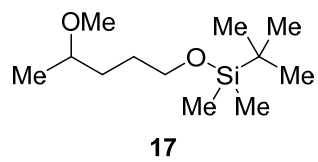
— 56.0395

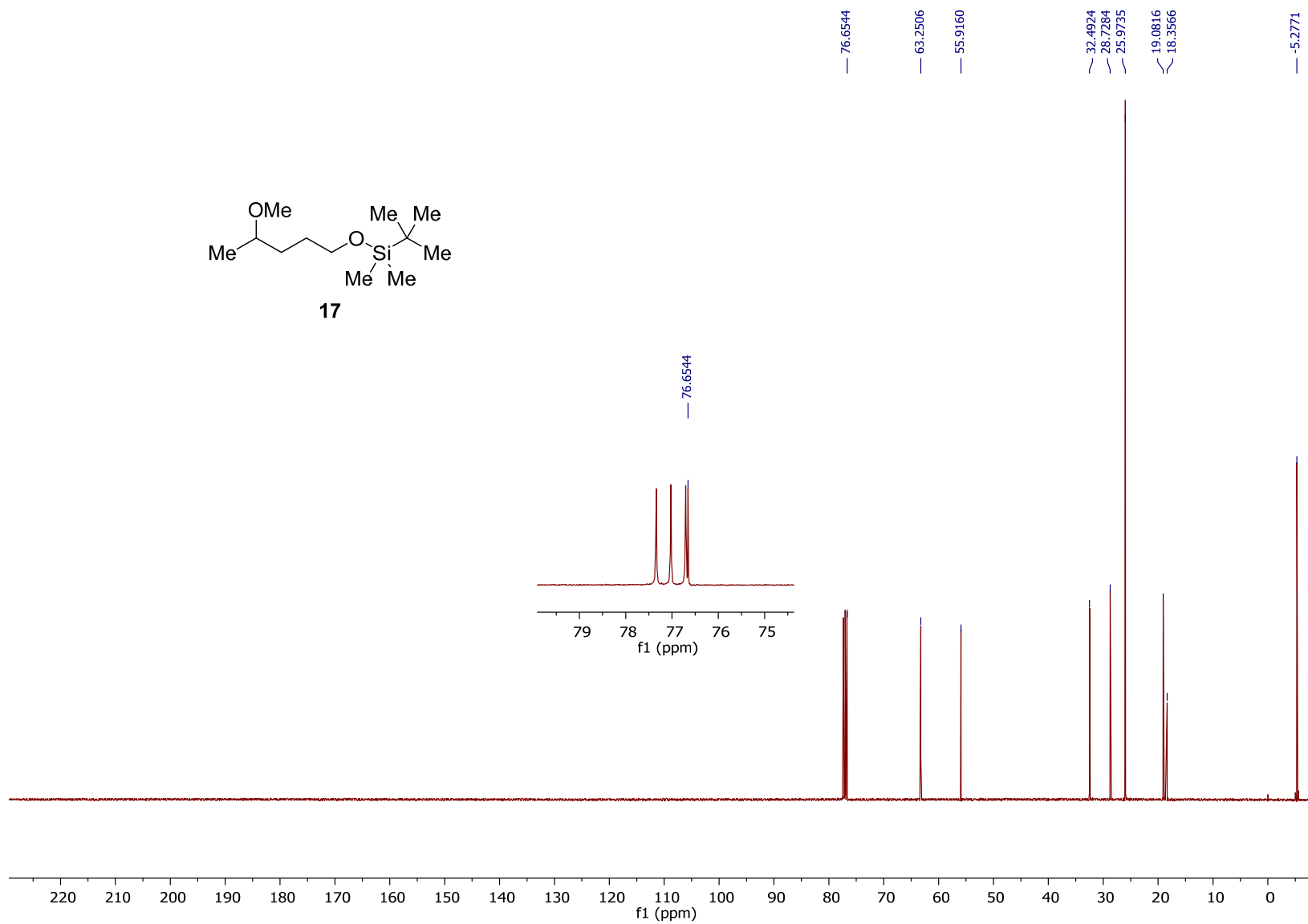
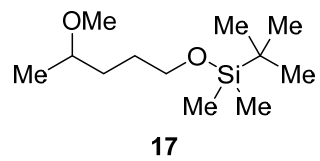
— 32.7918

— 24.7975

— 19.0093

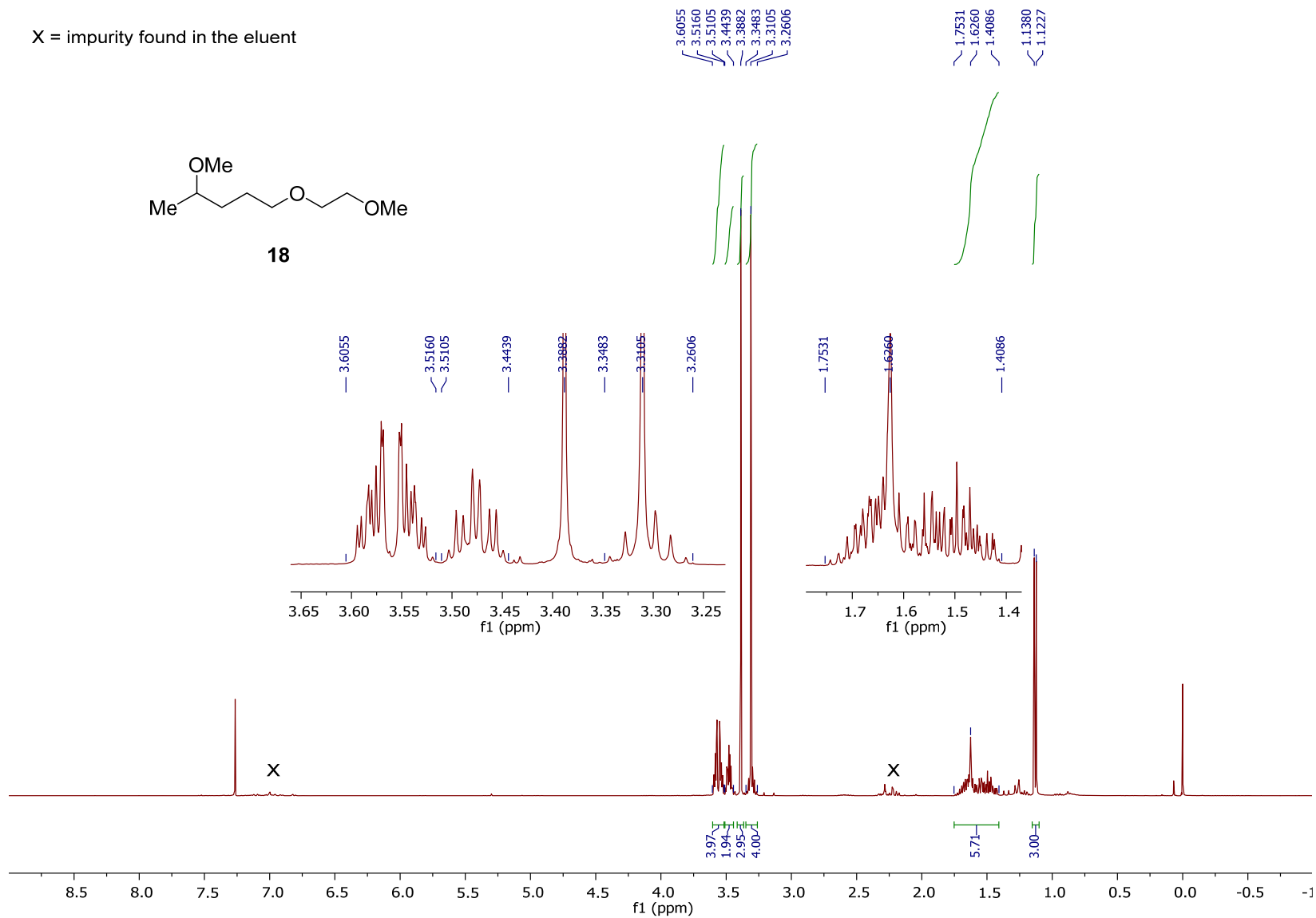
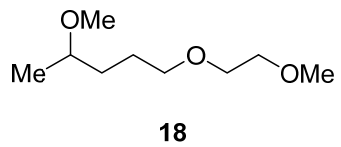


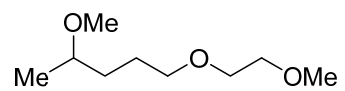




S12

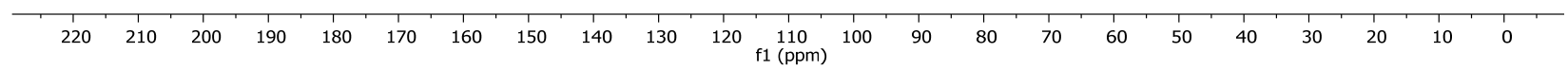
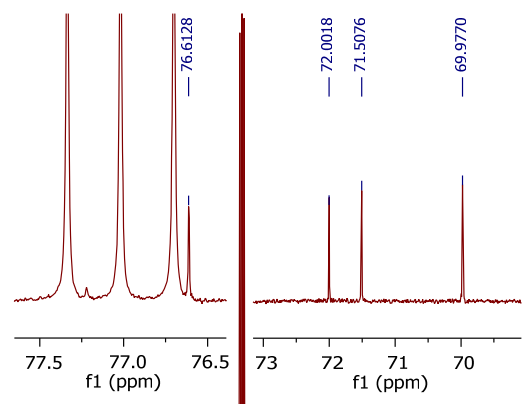
X = impurity found in the eluent



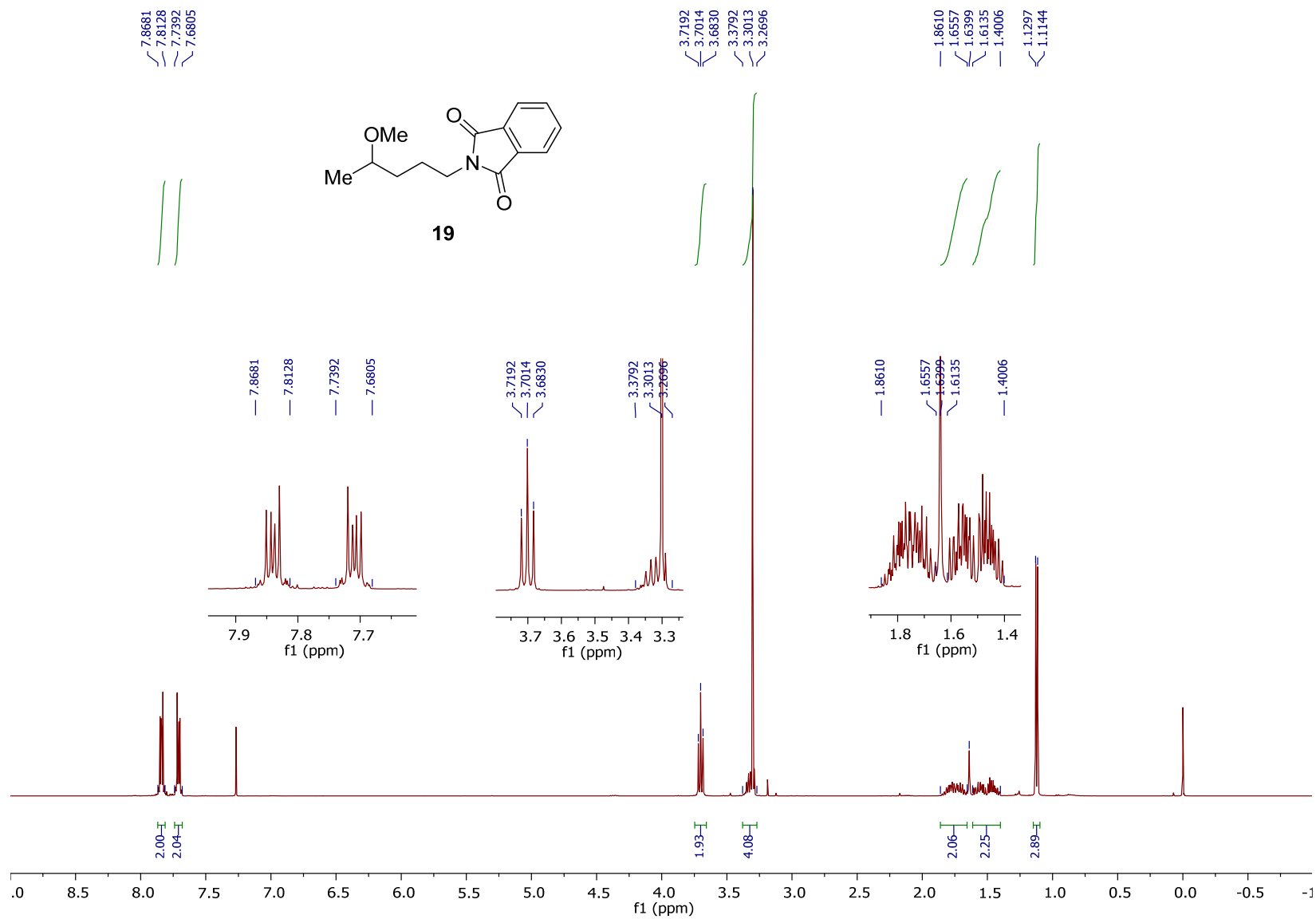


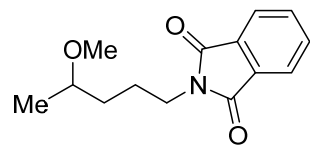
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76.6128
72.0018
71.5076
69.9770
59.0802
55.9753
32.7426
25.5812
19.0393

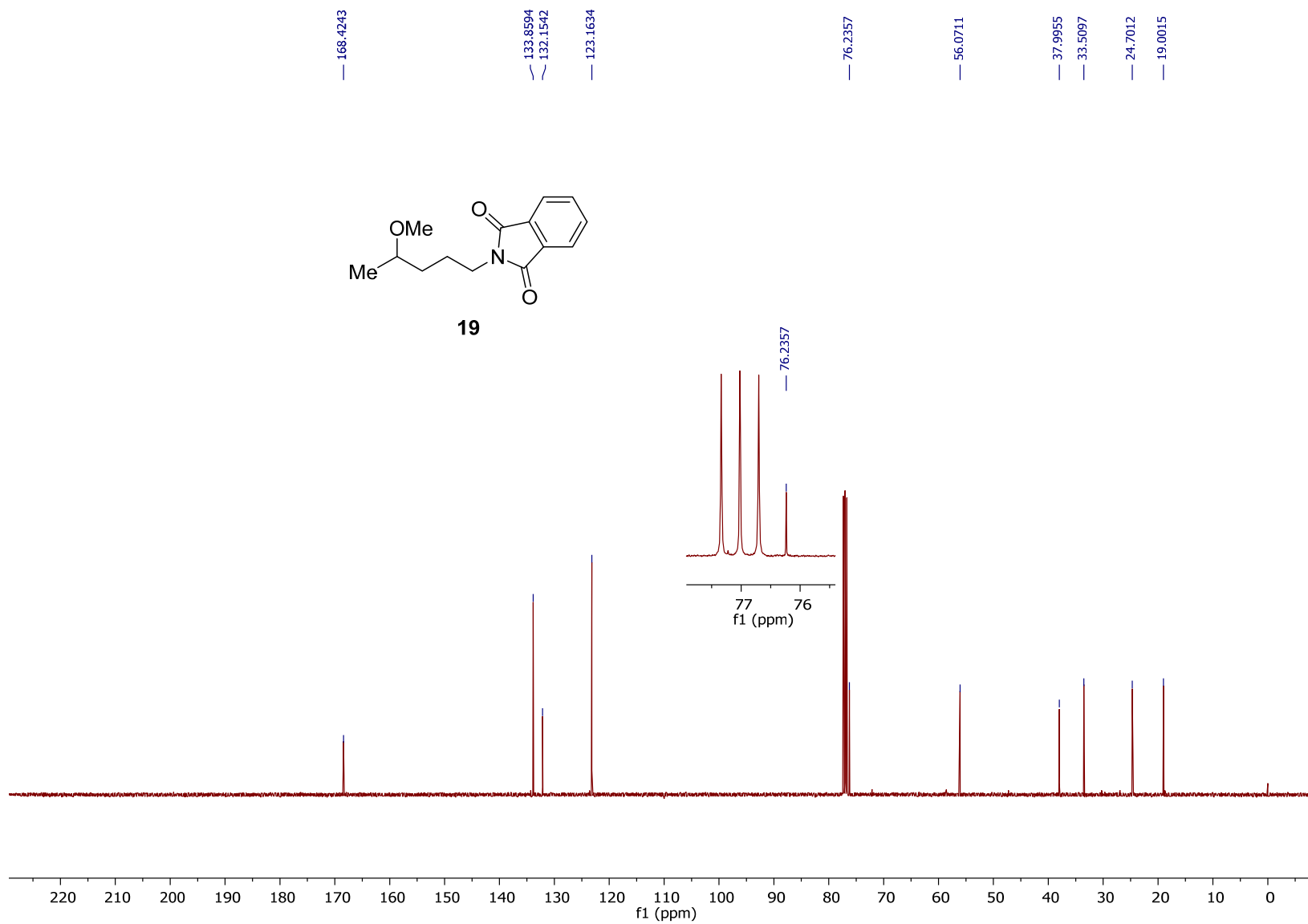


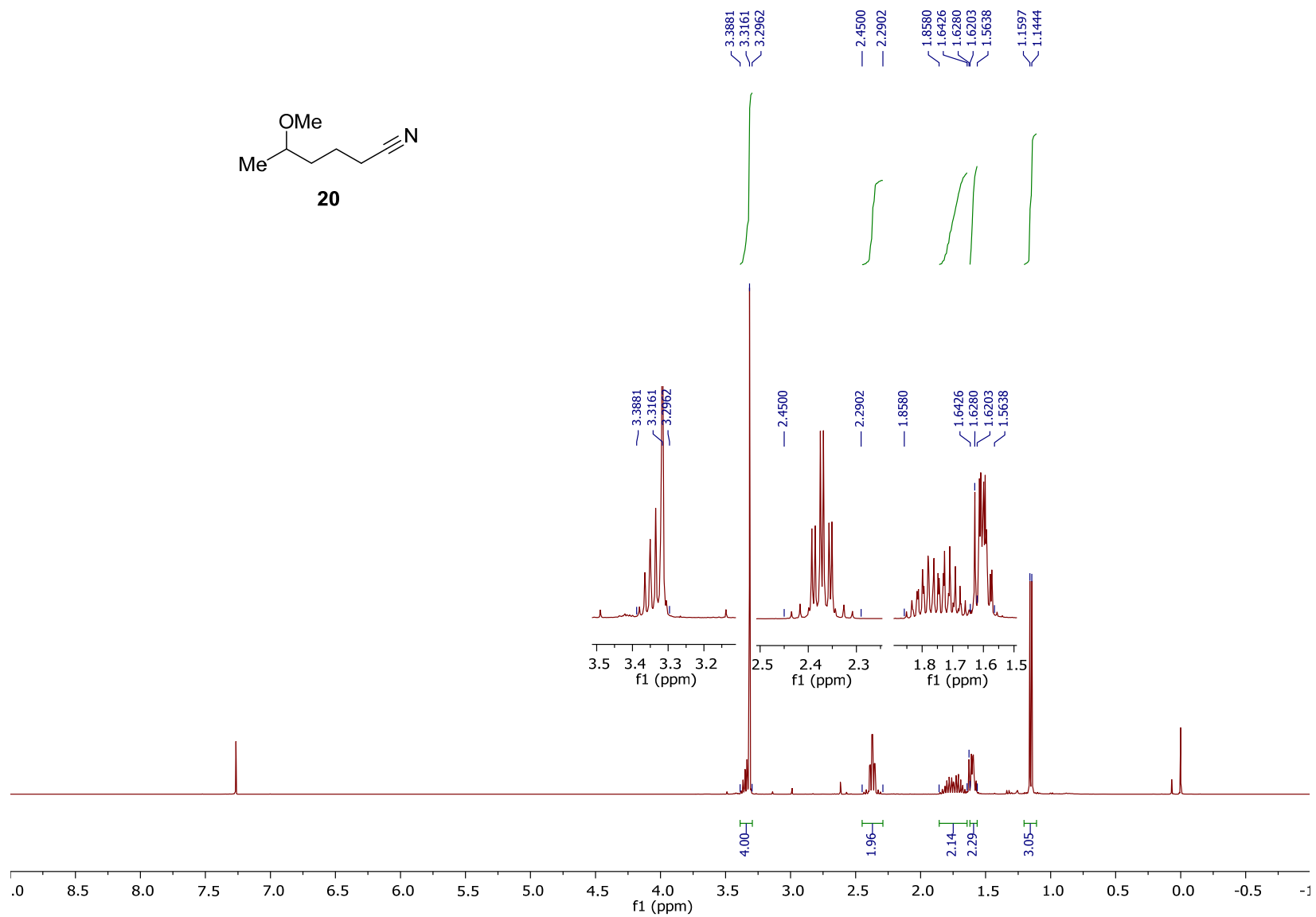
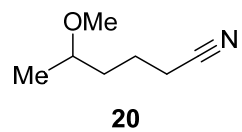
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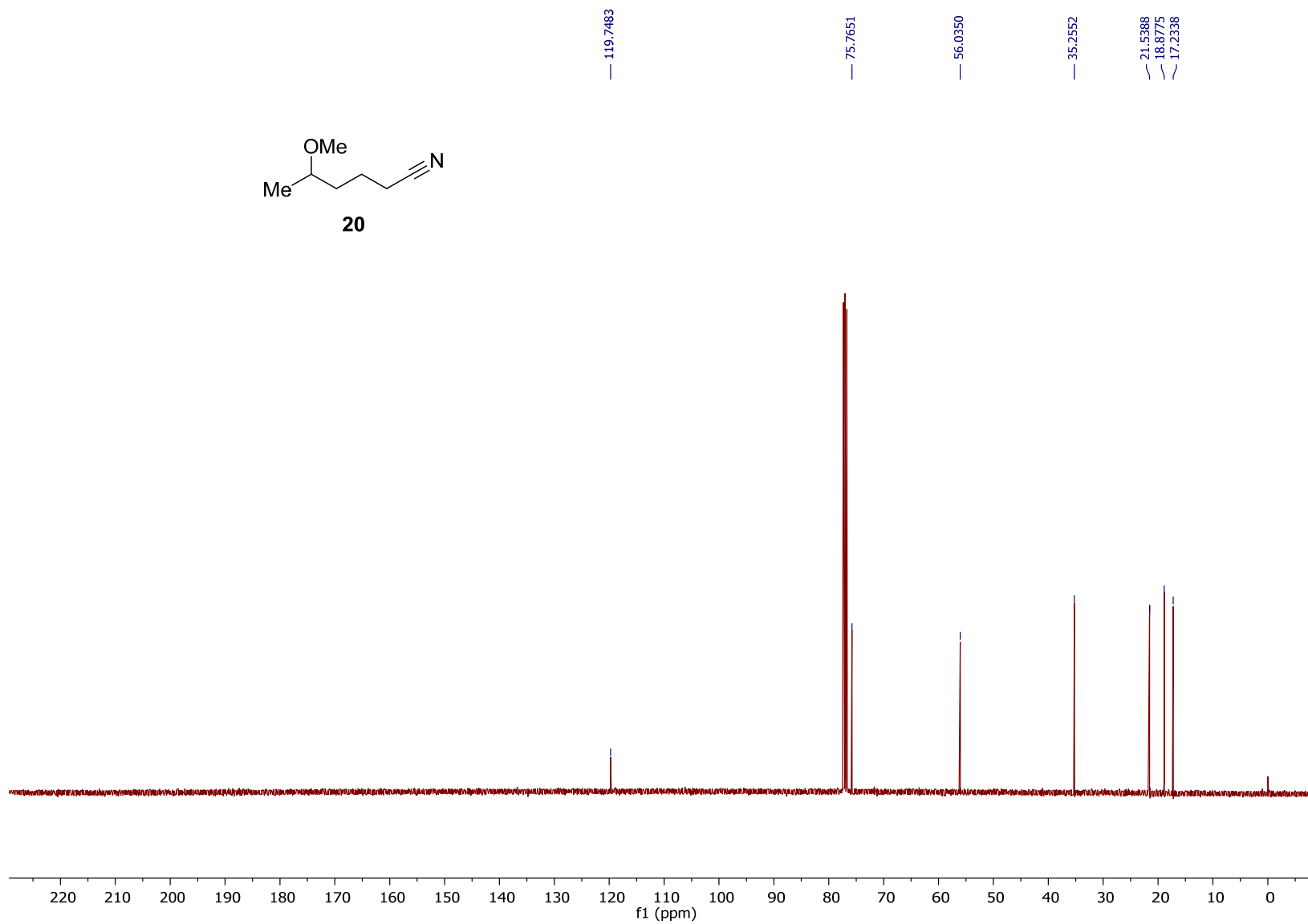
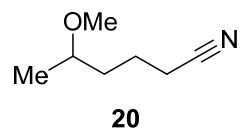


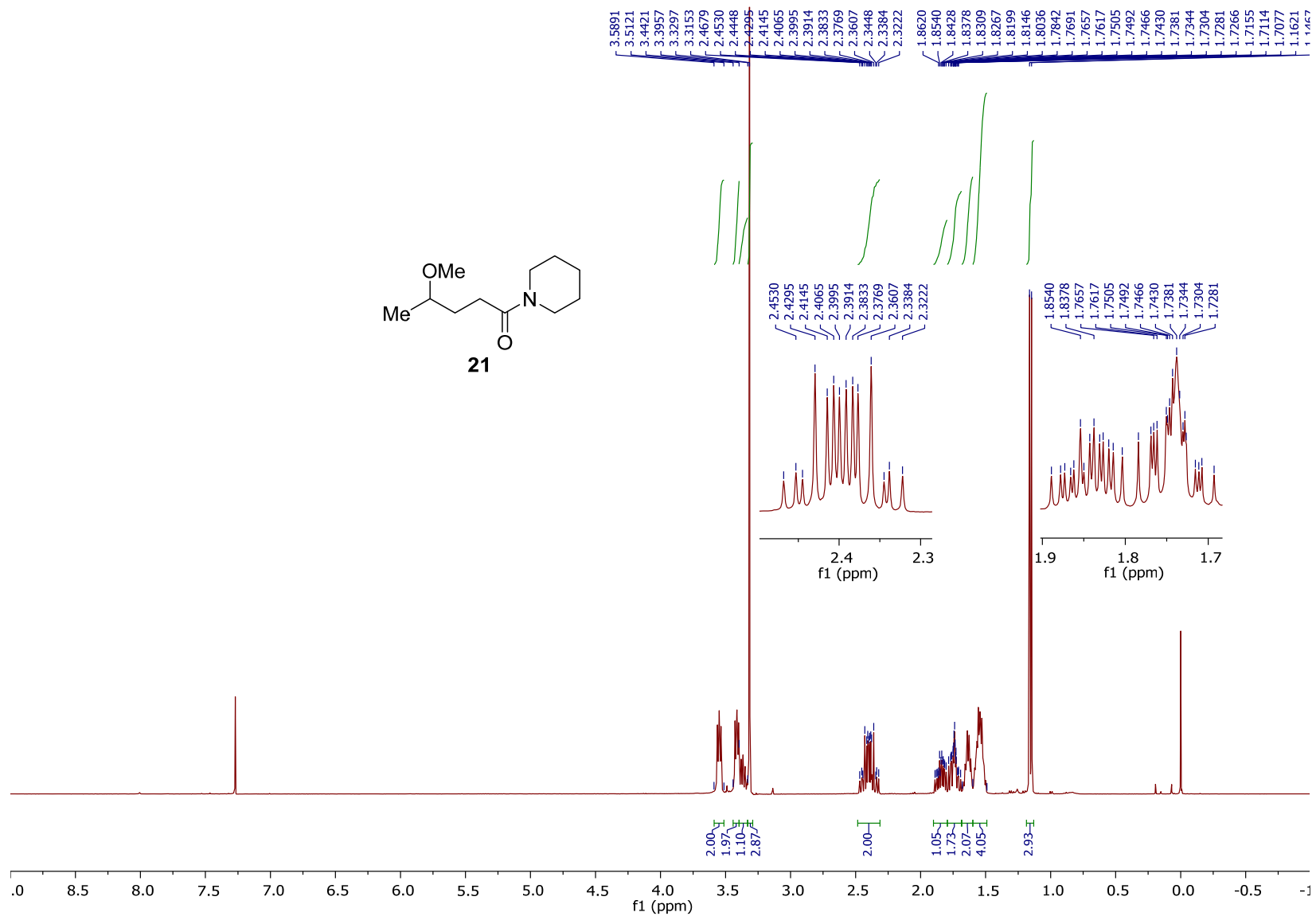


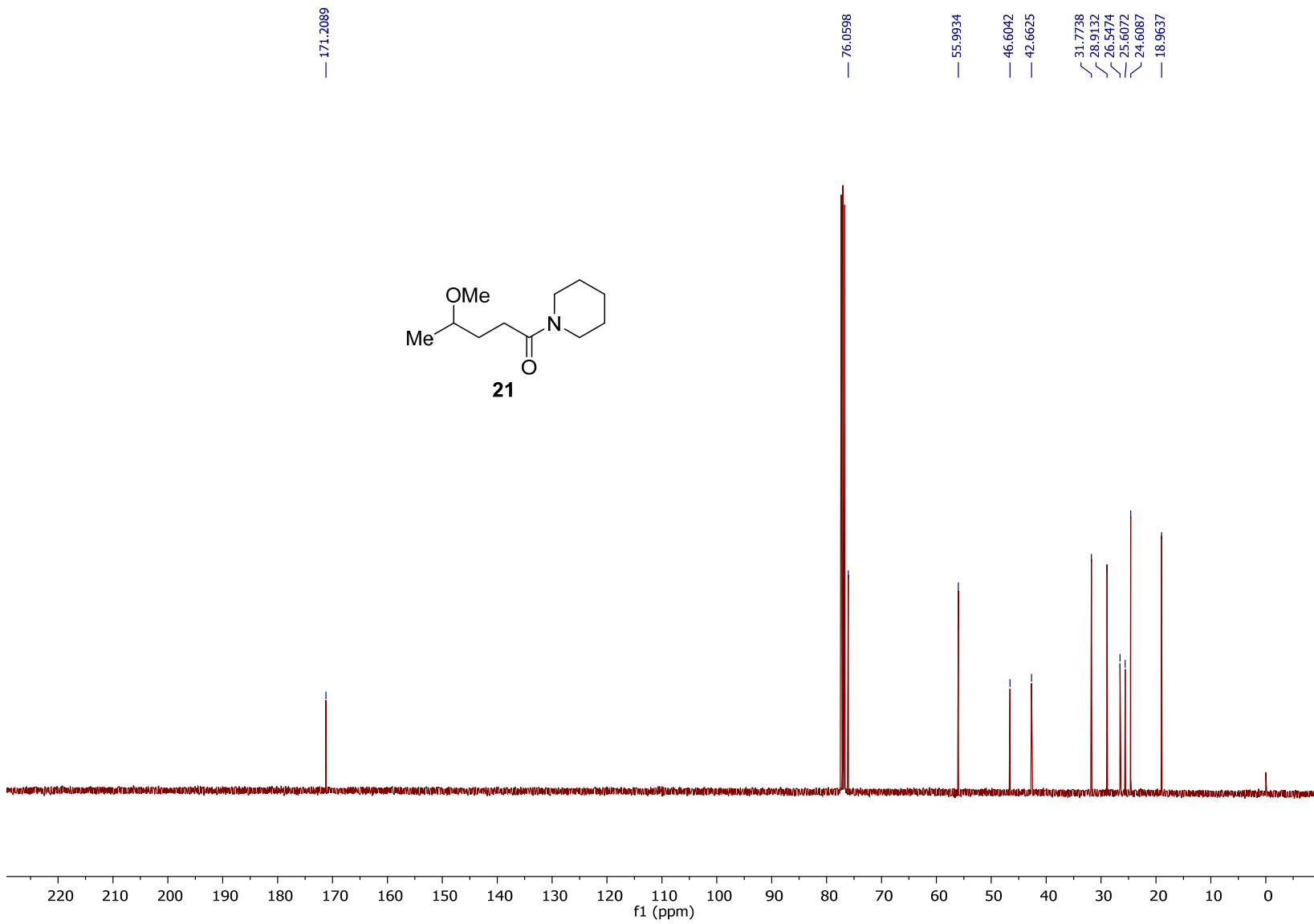
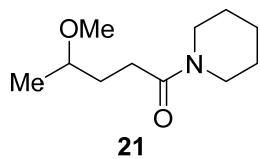
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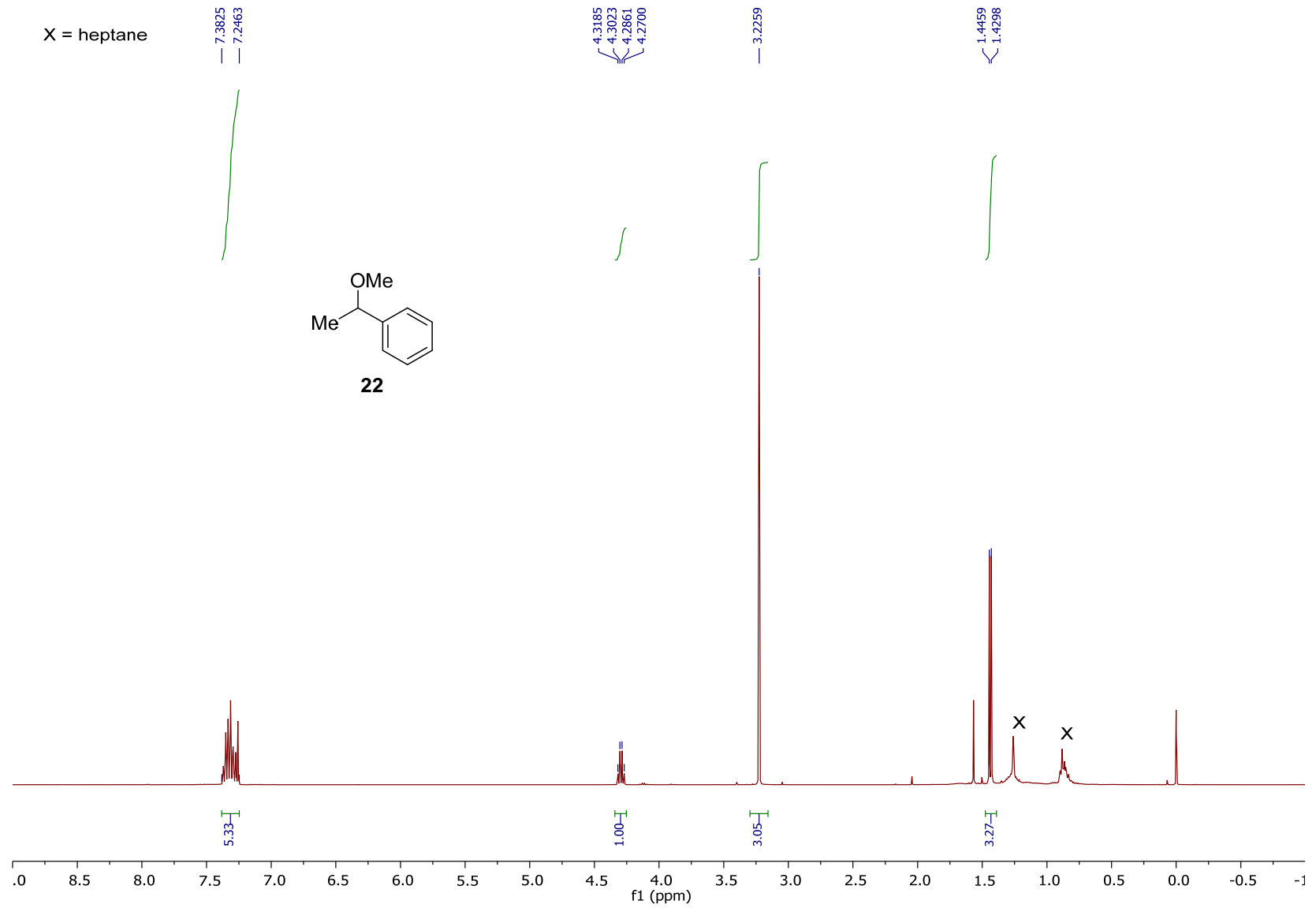
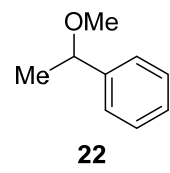
X = heptane

7.3825
7.2463

4.3185
4.3023
4.2861
4.2700

3.2259

1.4459
1.4298



S21

X = heptane

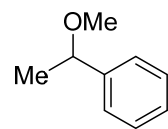
— 143.5087

128.4248
127.4519
126.1874

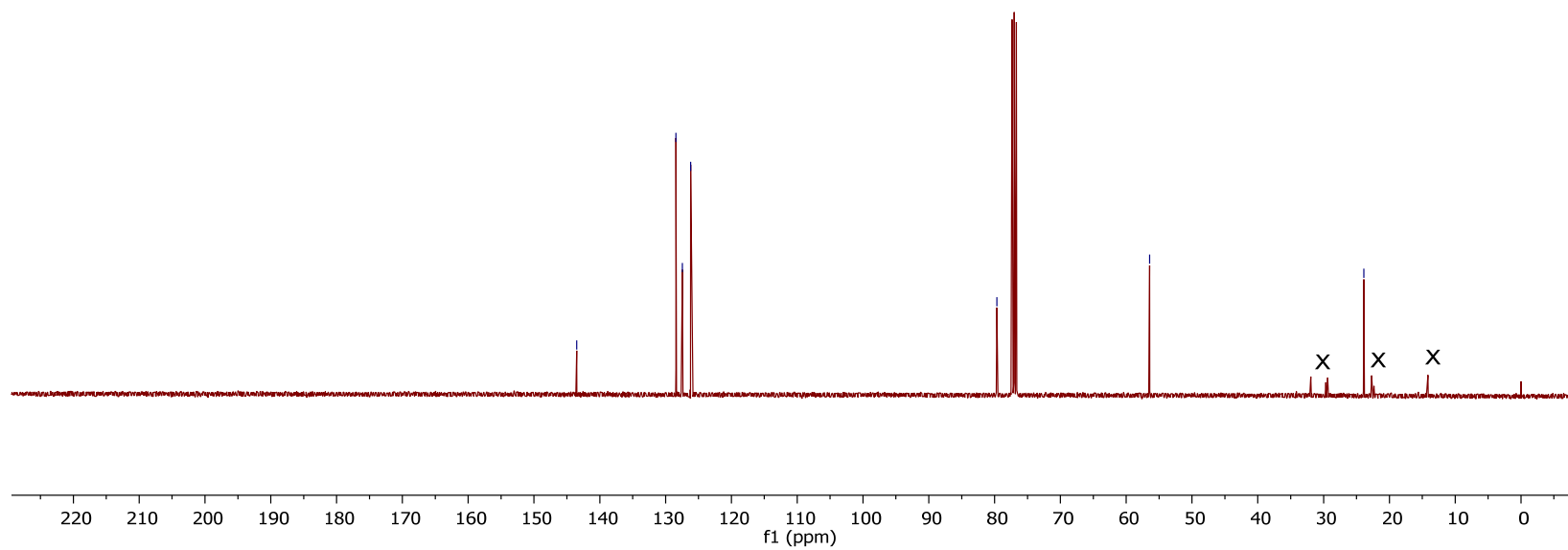
— 79.6485

— 56.4454

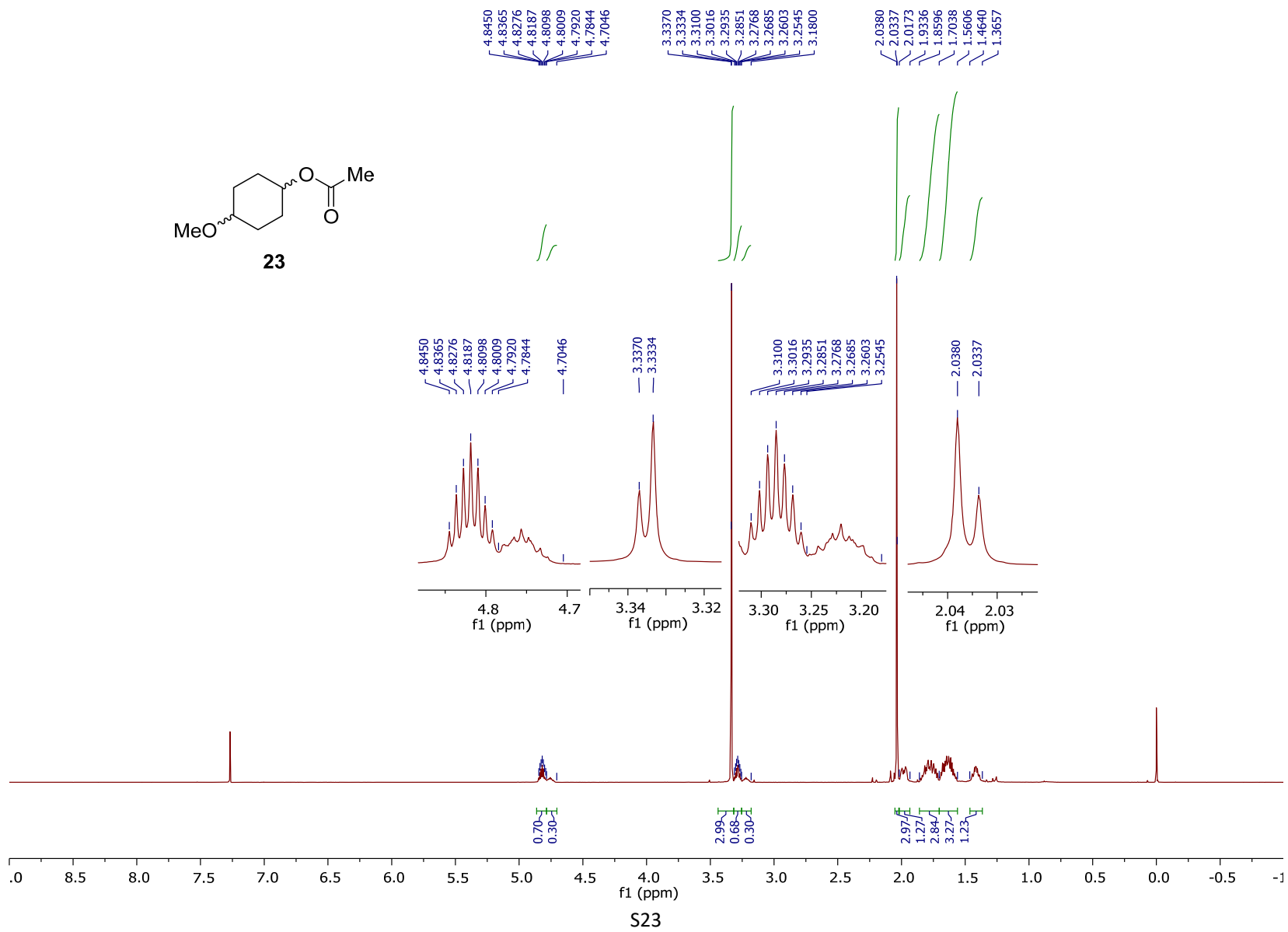
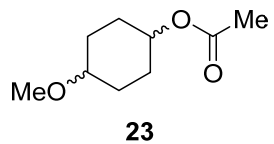
— 23.8870

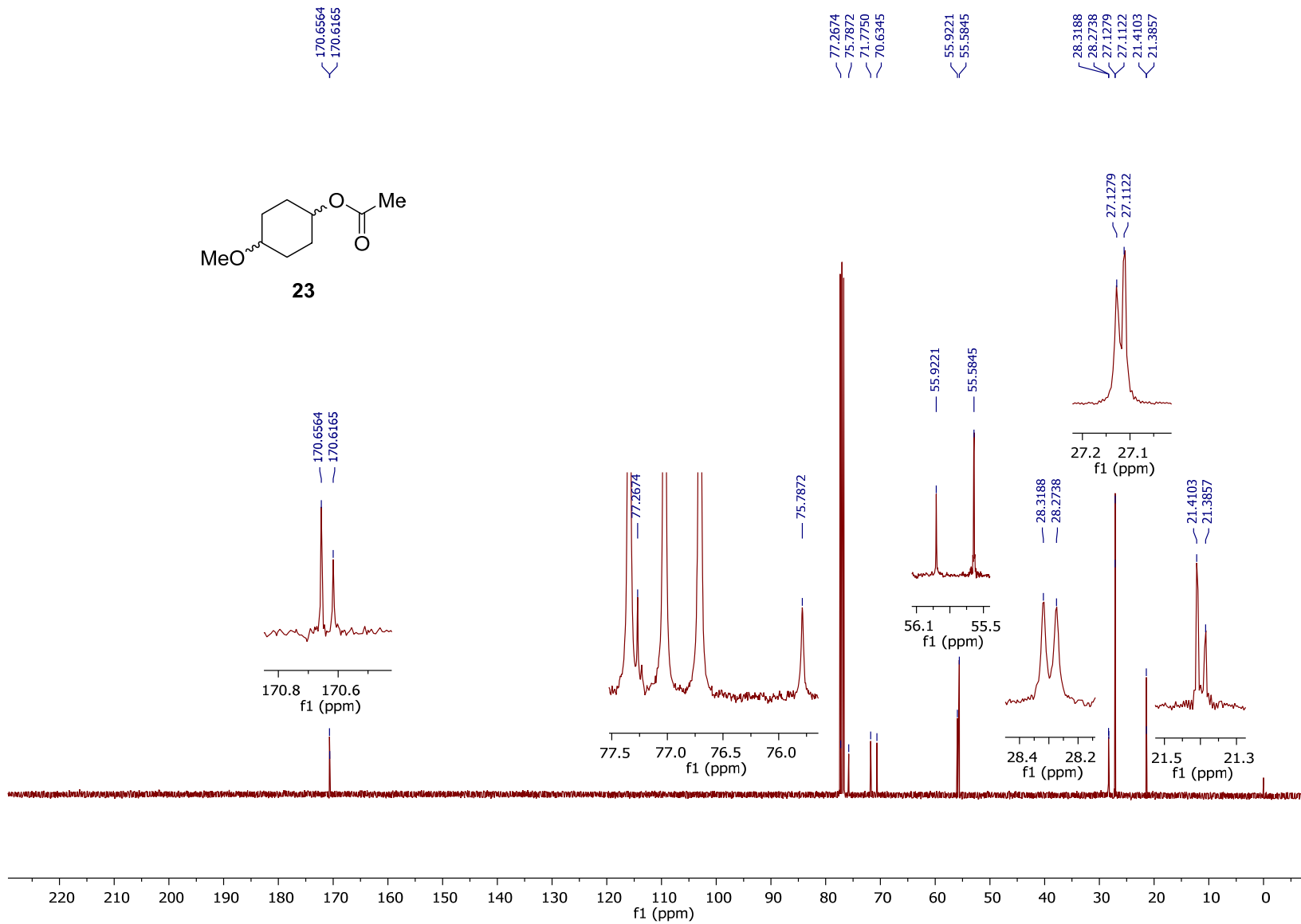
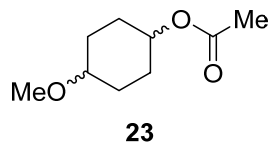


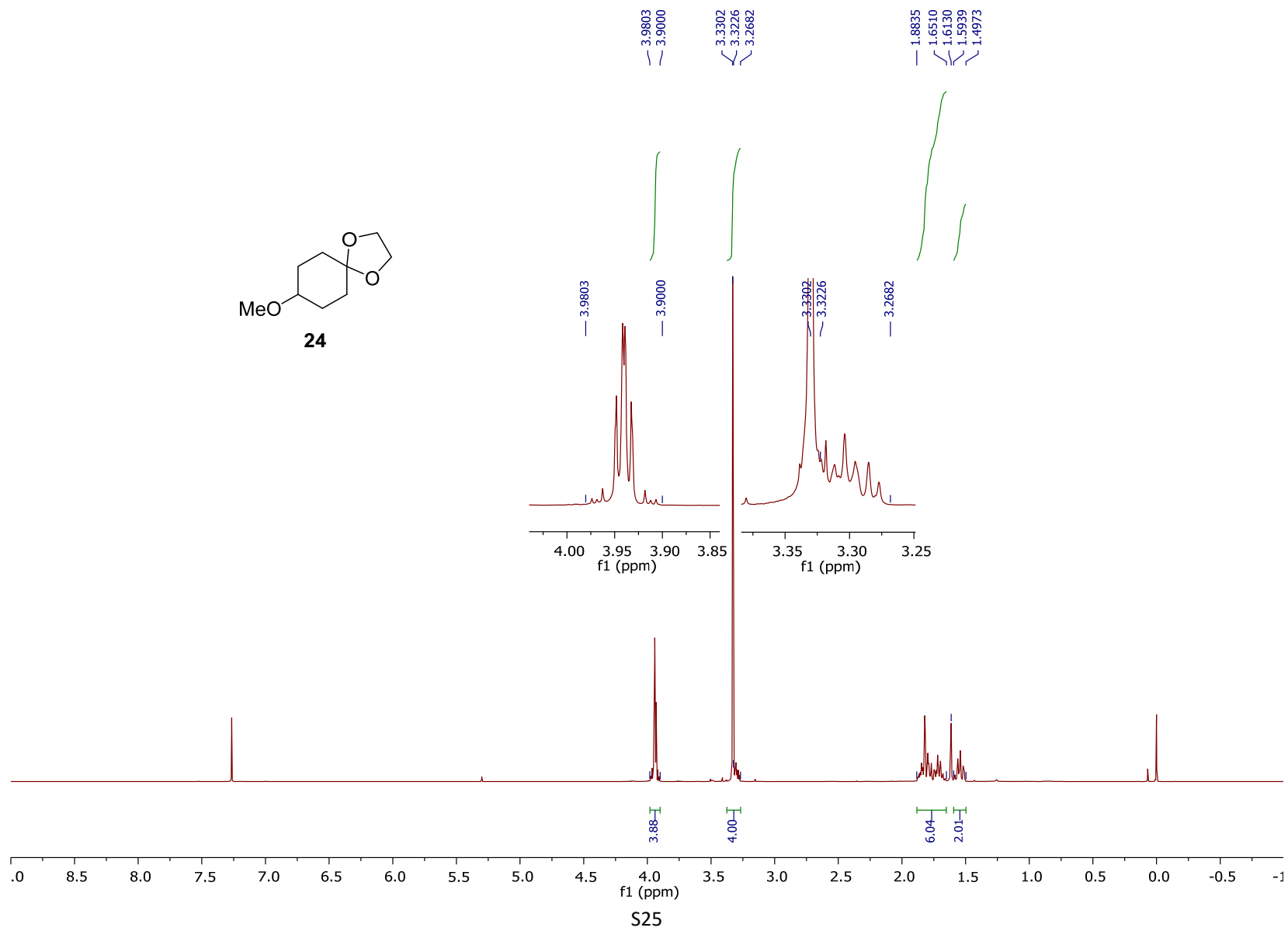
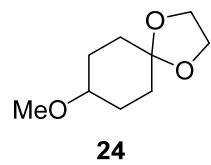
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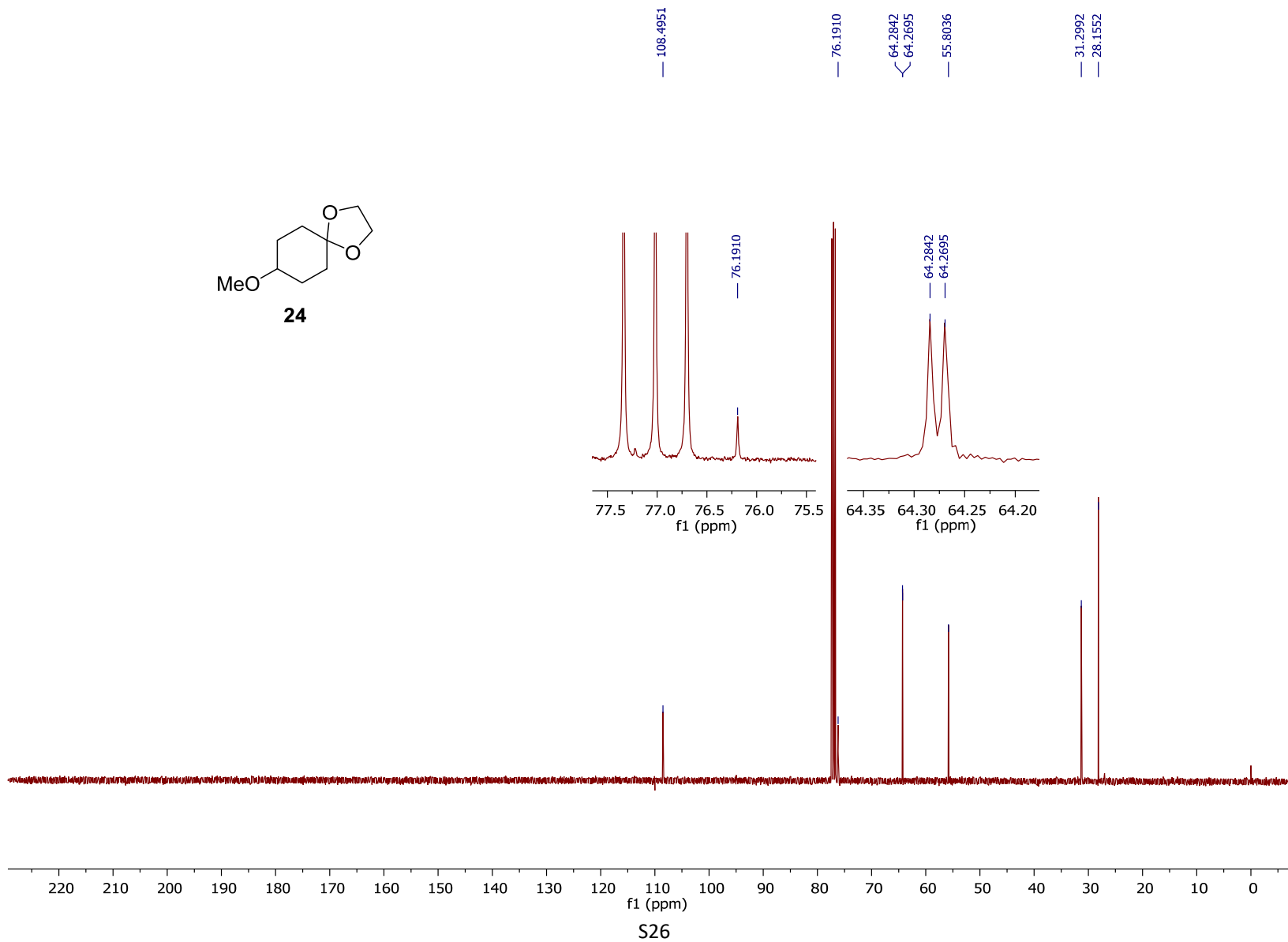
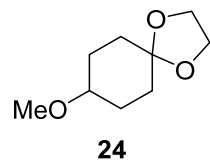


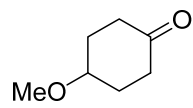
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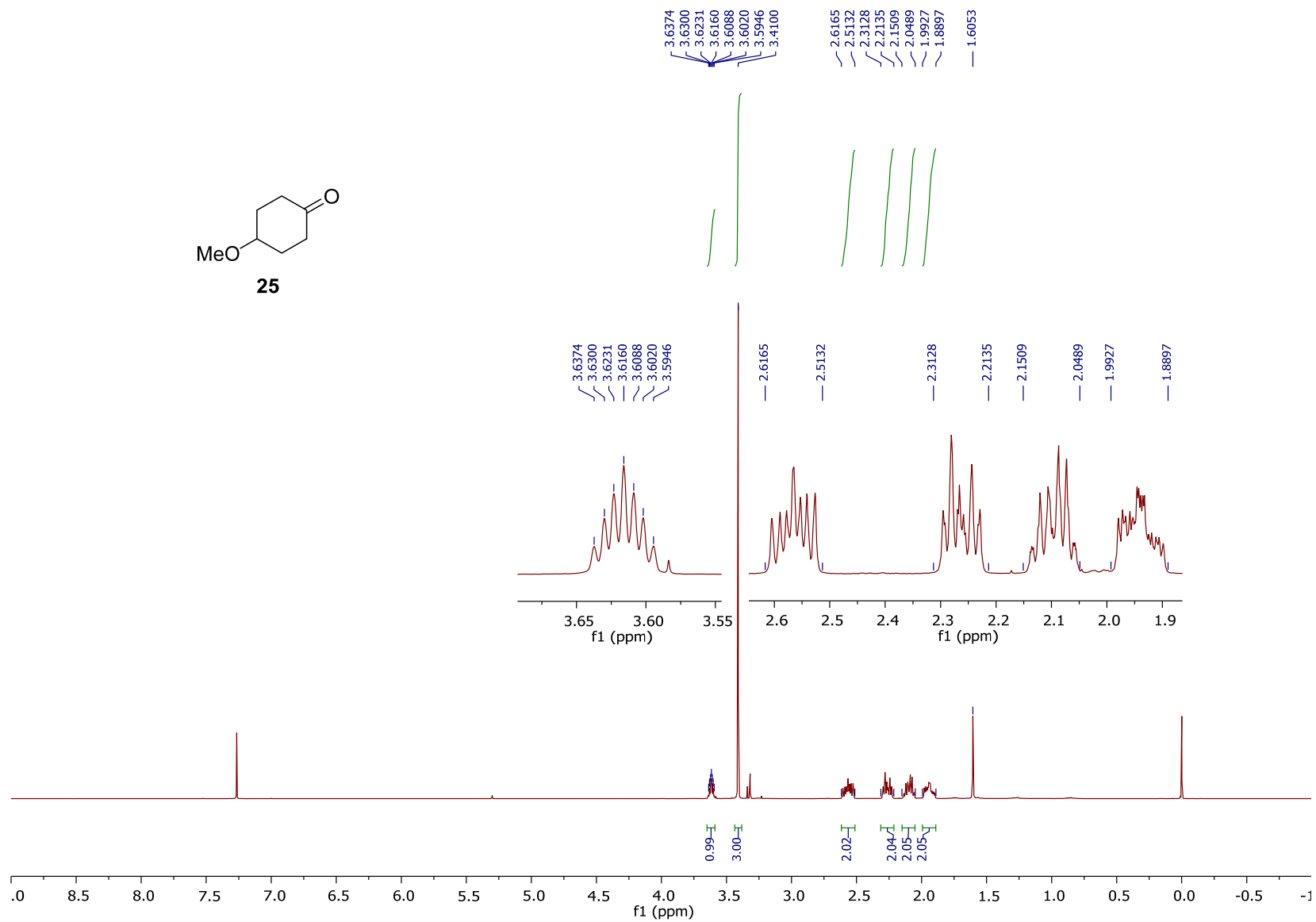




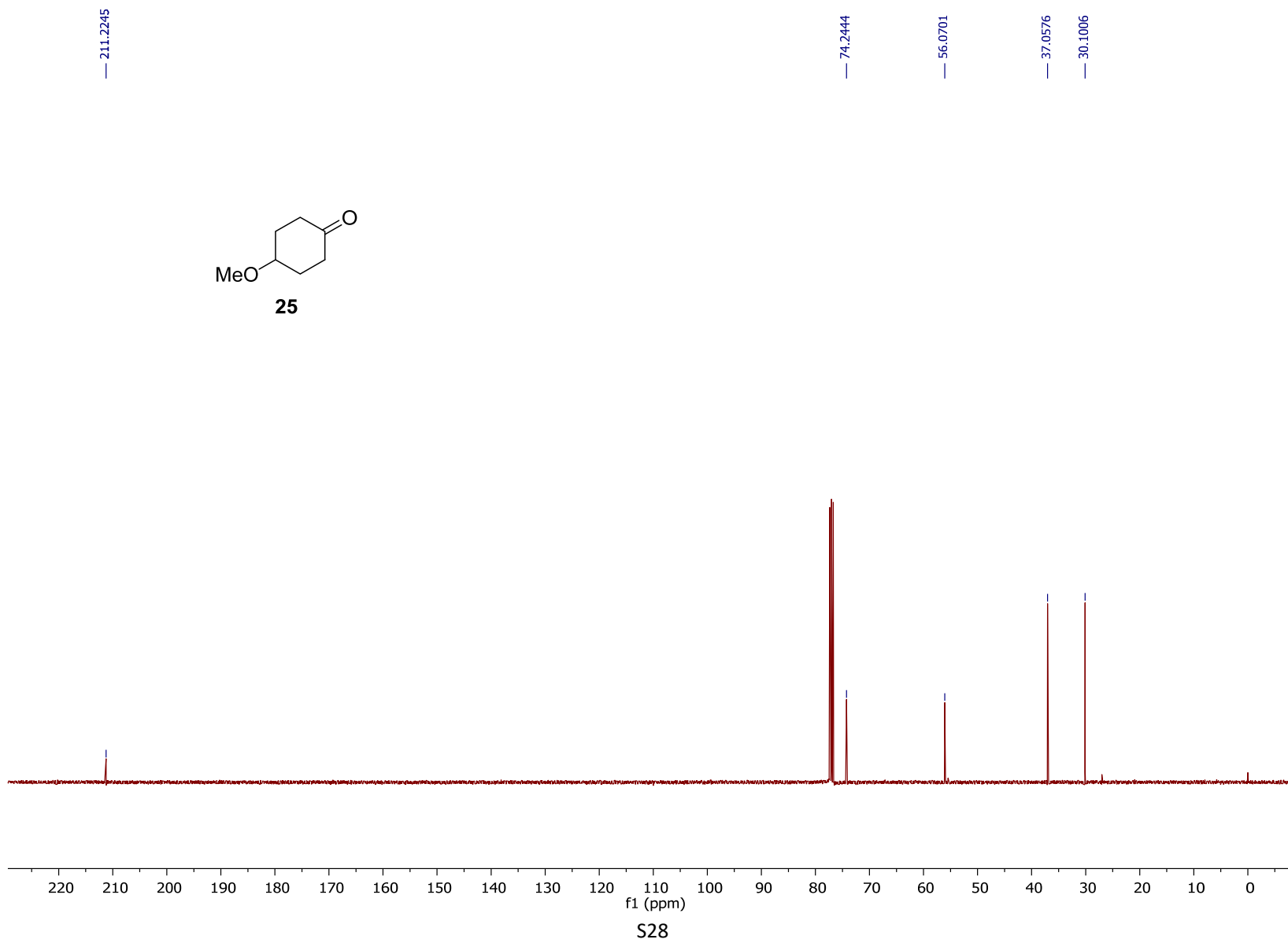
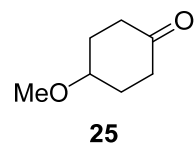


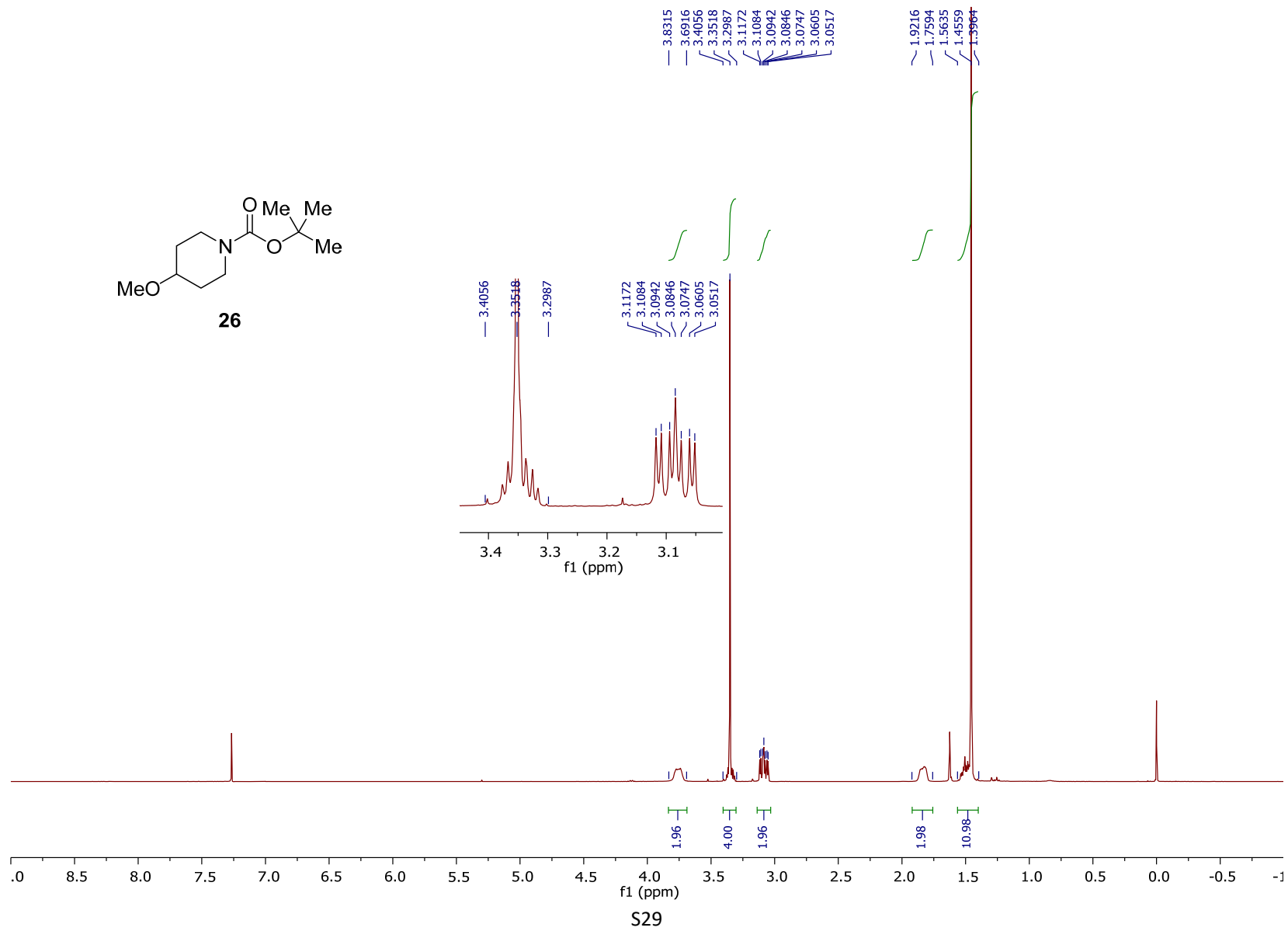
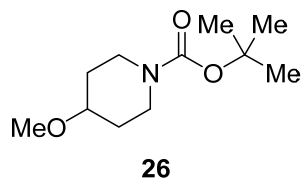


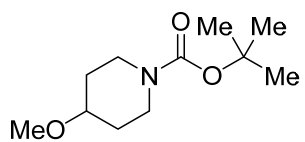
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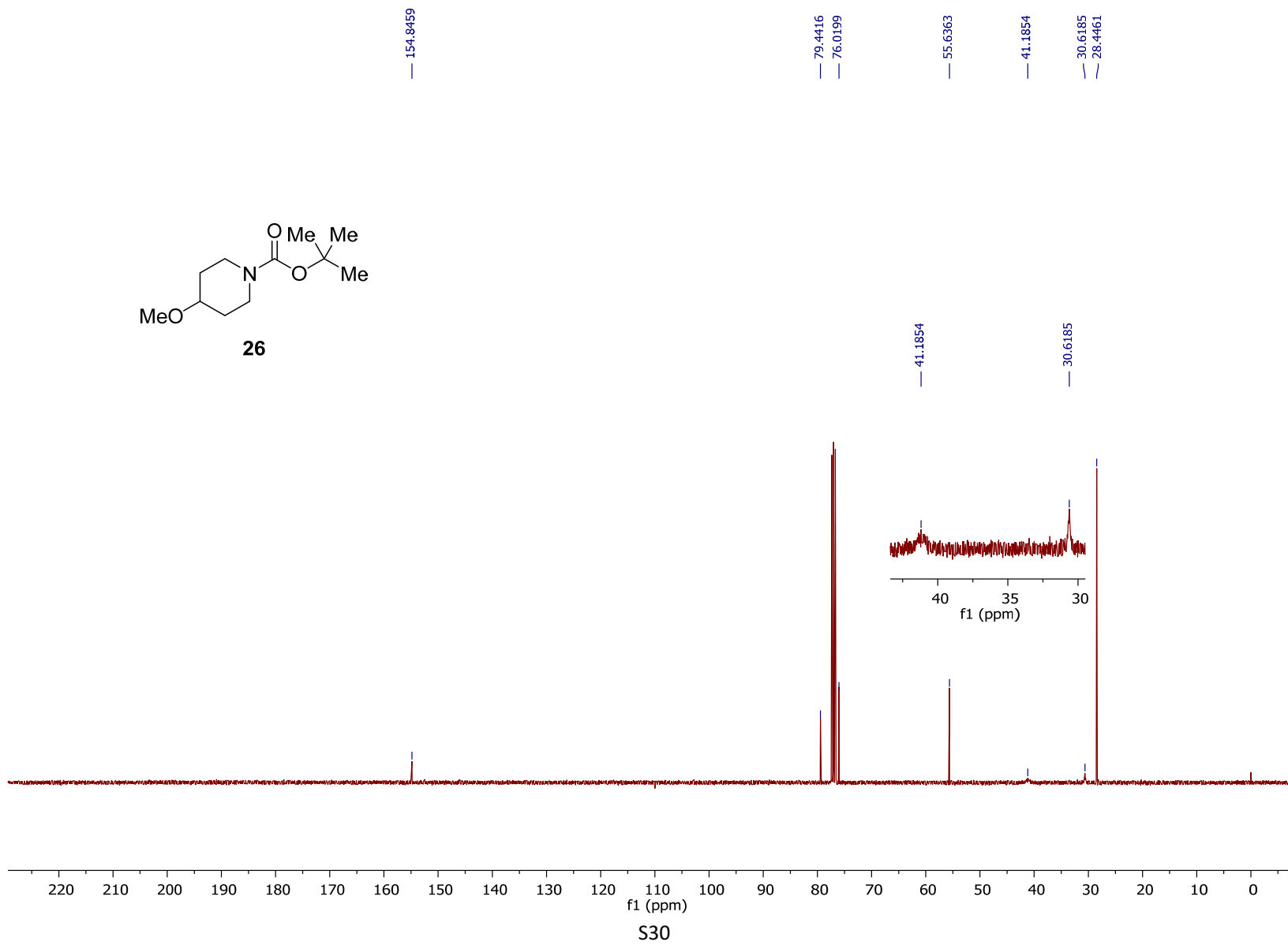
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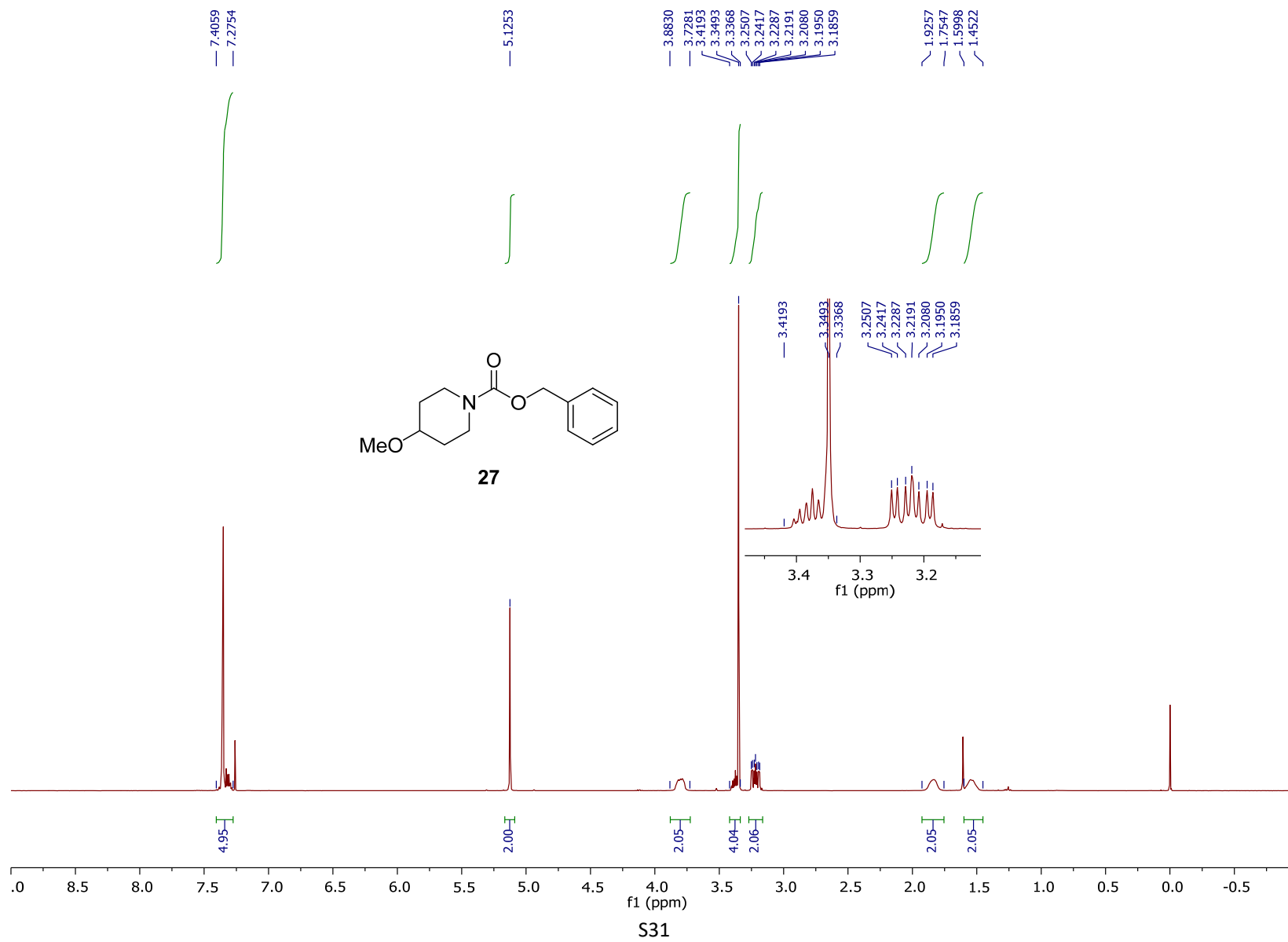


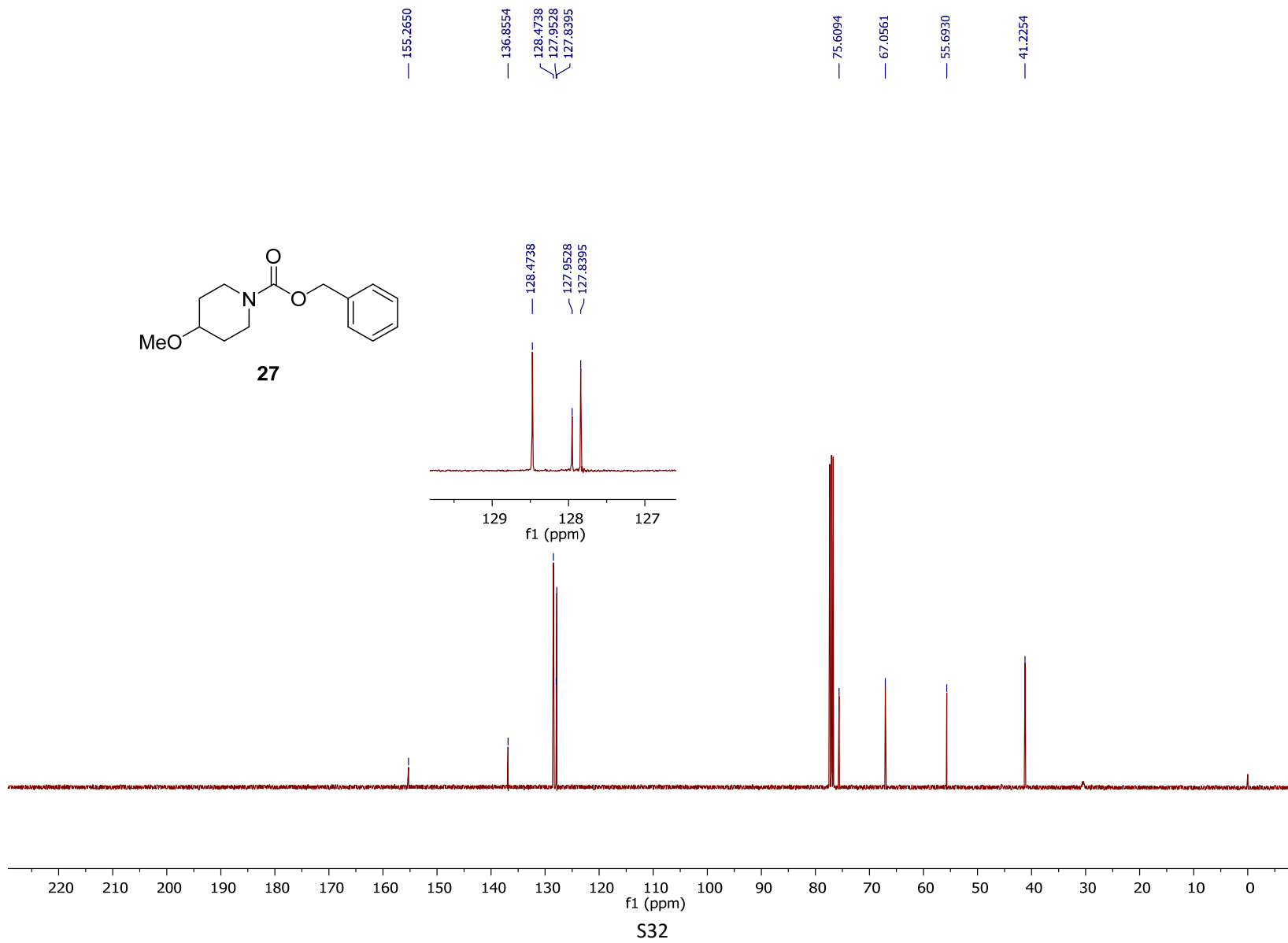
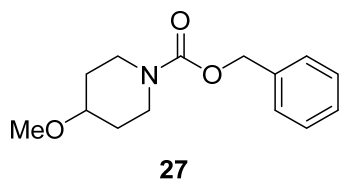


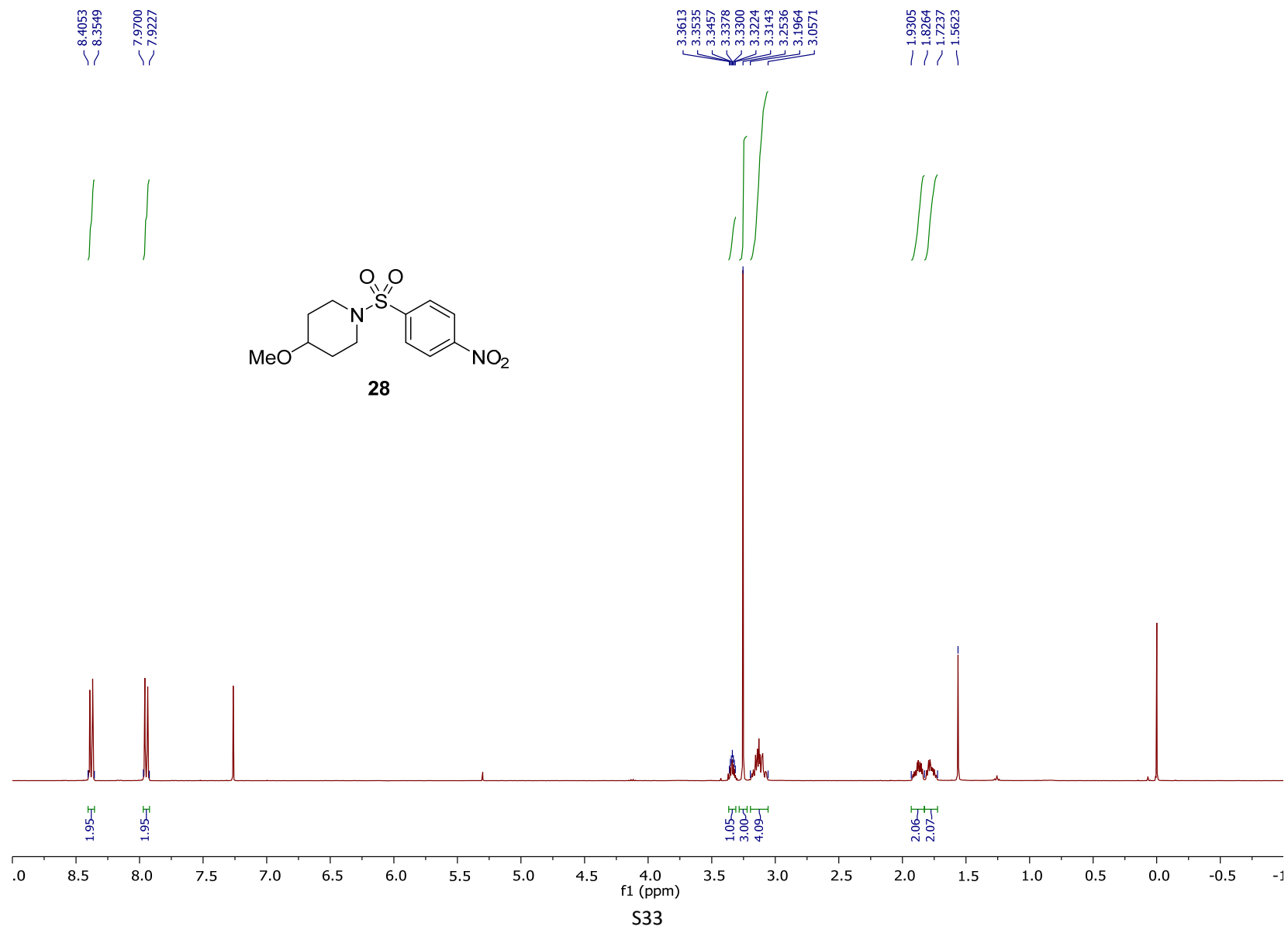


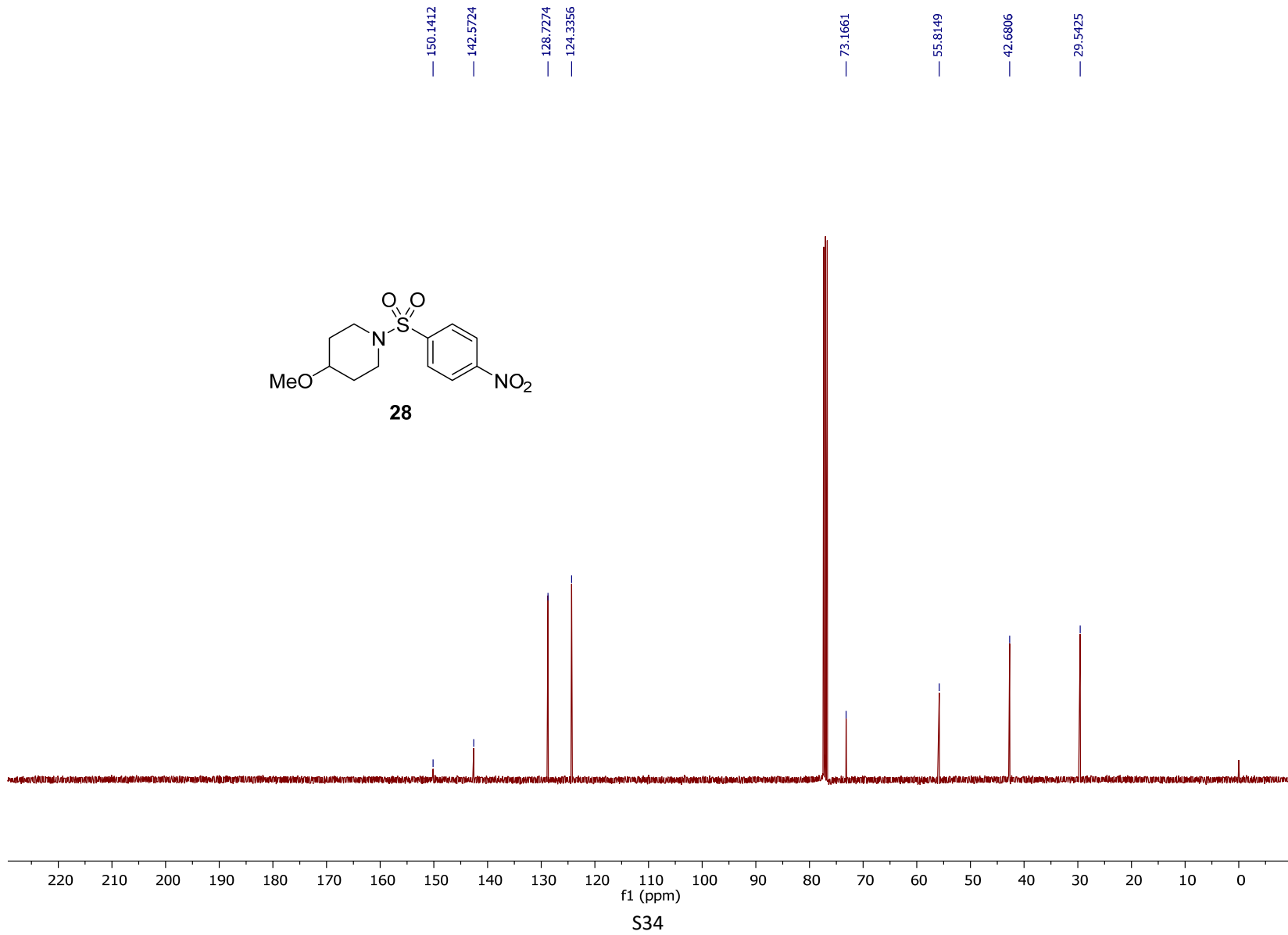
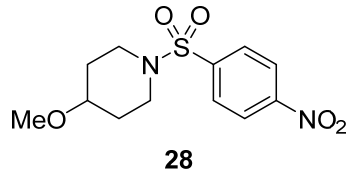
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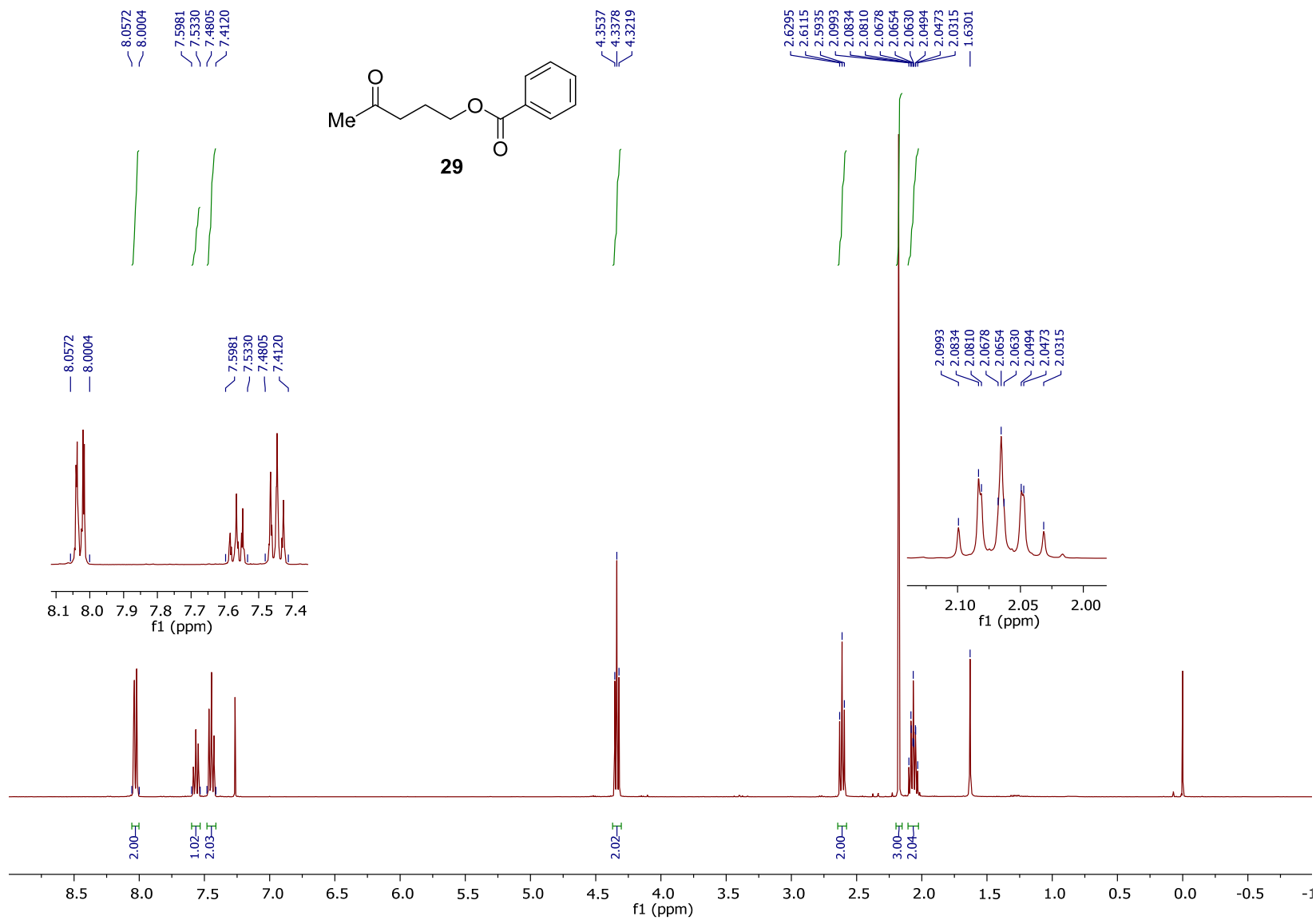












— 207.6611

— 166.5388

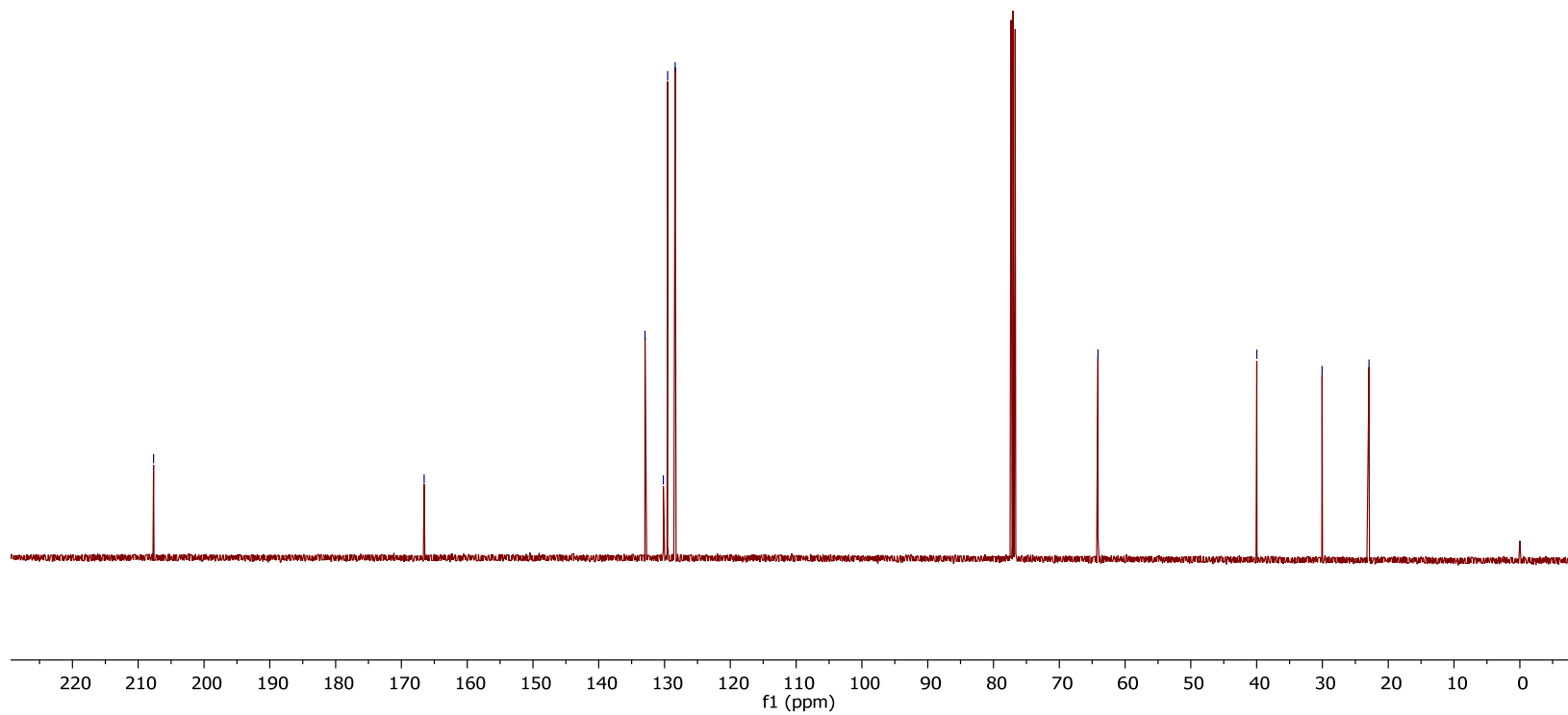
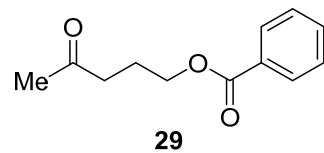
132.9745
130.1827
129.5377
128.3824

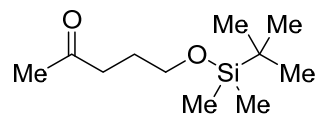
— 64.1183

— 39.9746

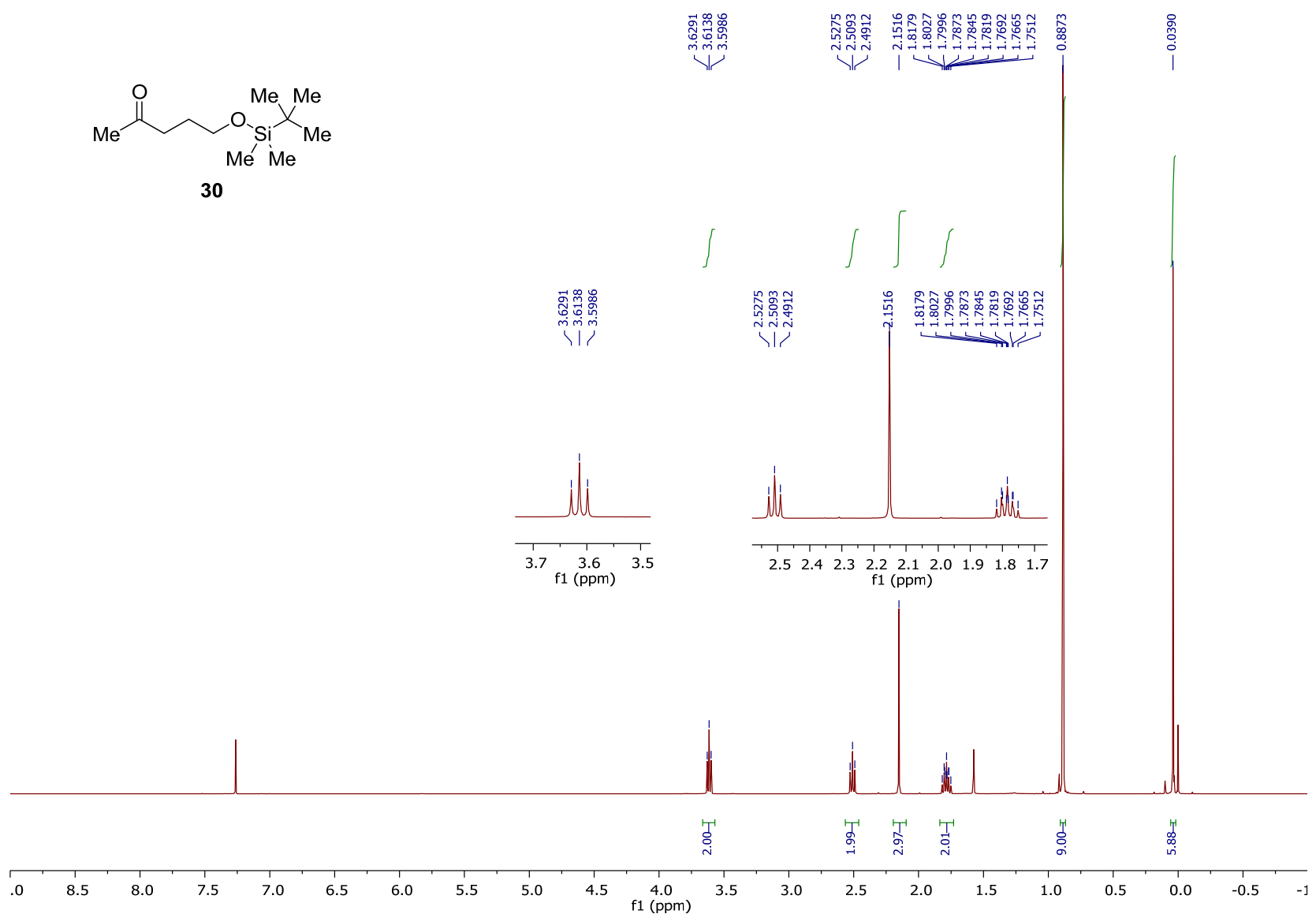
— 30.0475

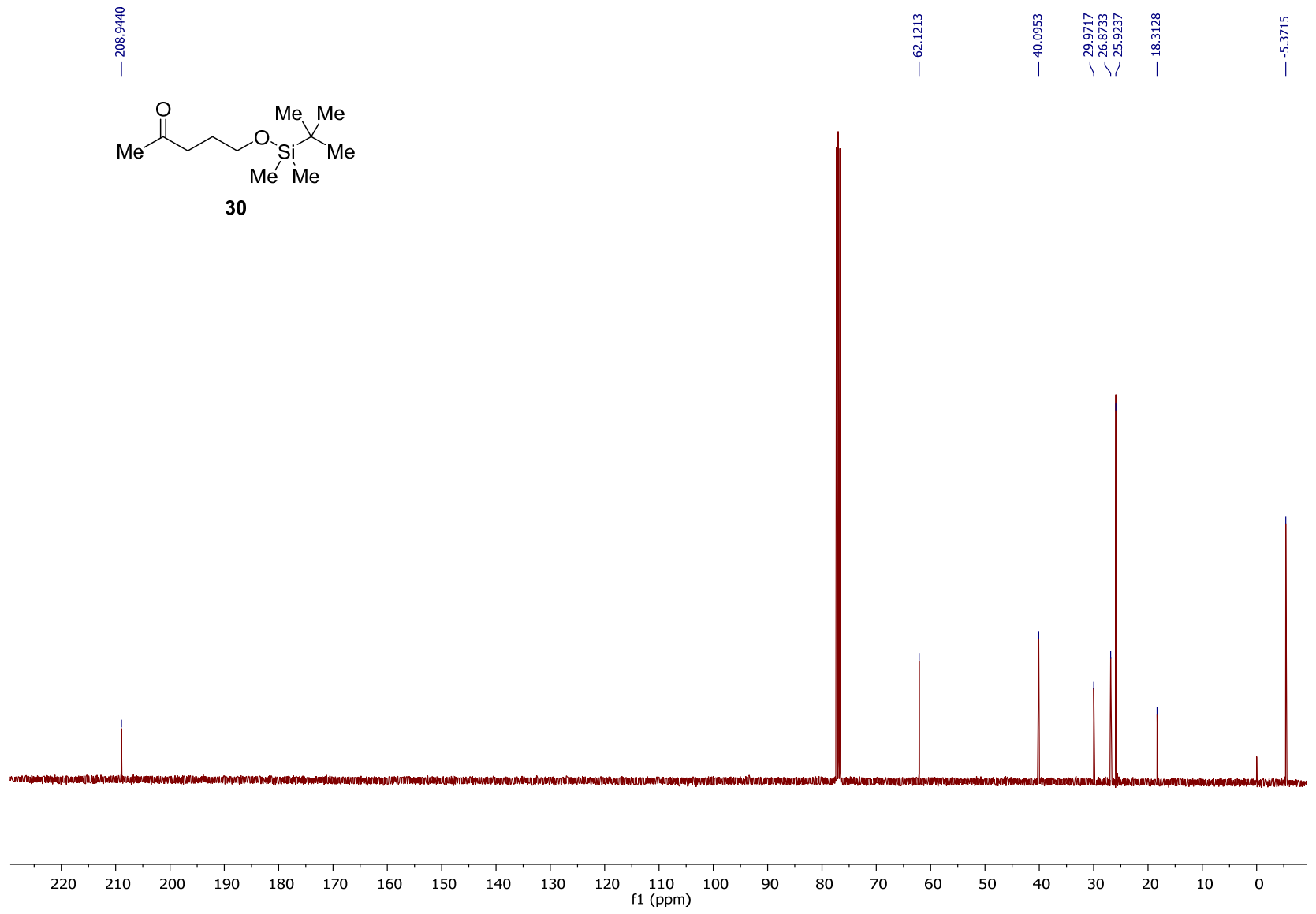
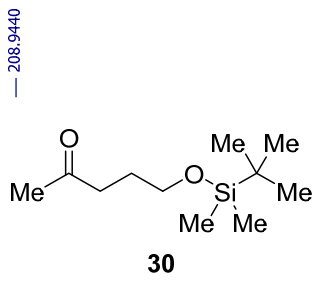
— 22.9227



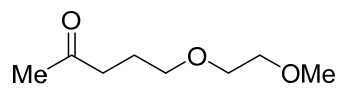


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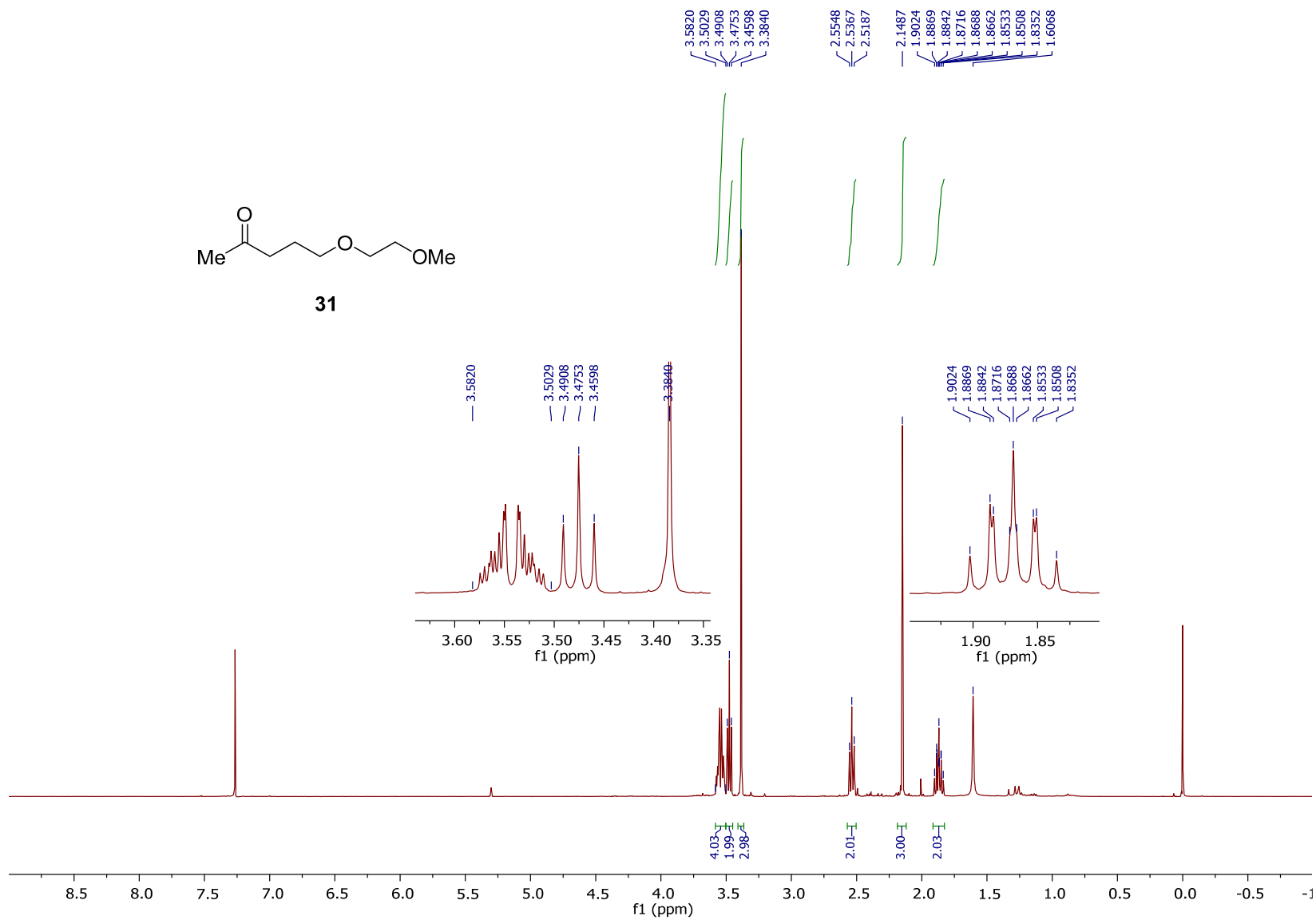




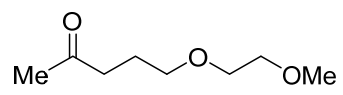
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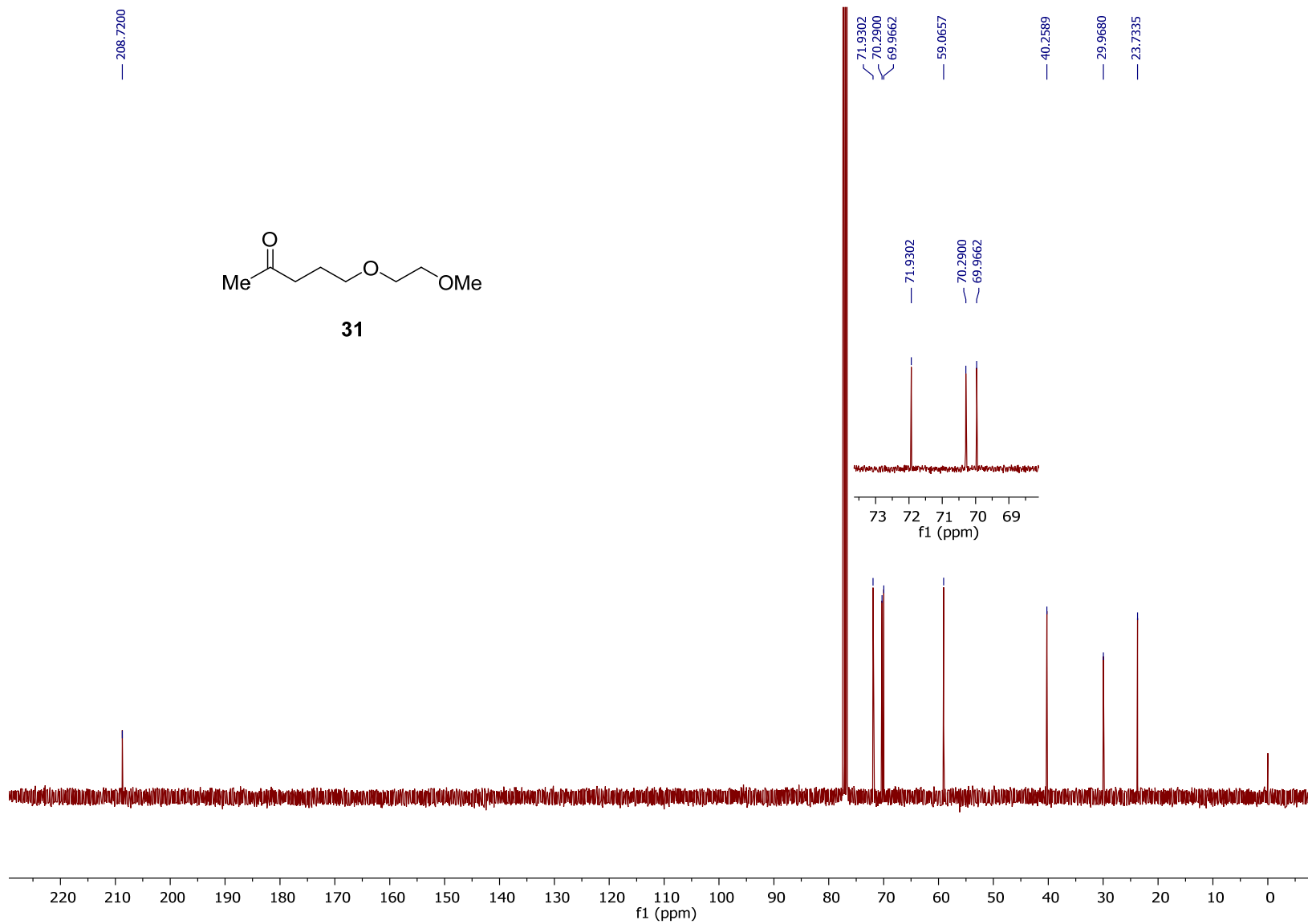
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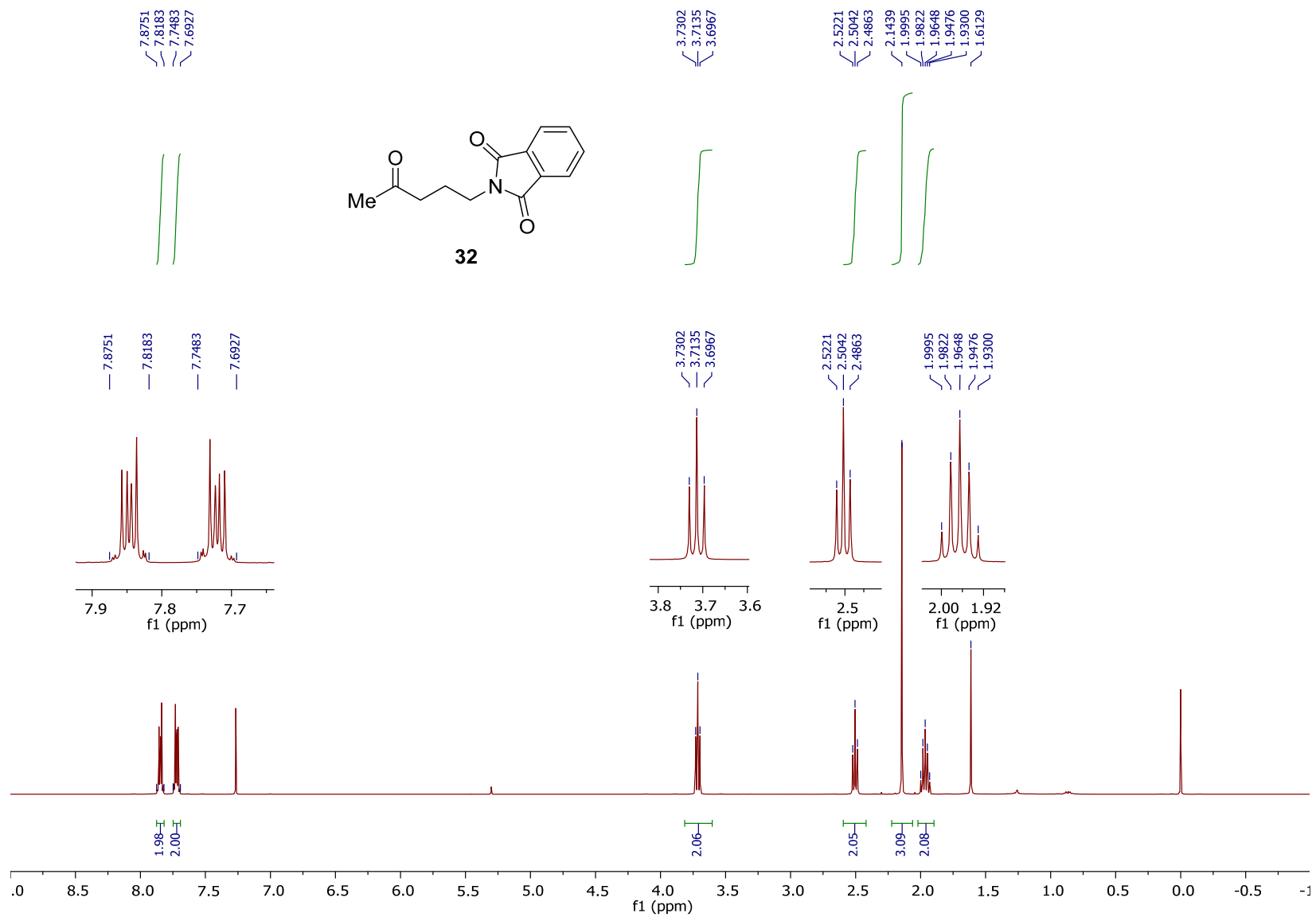
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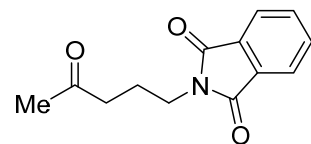


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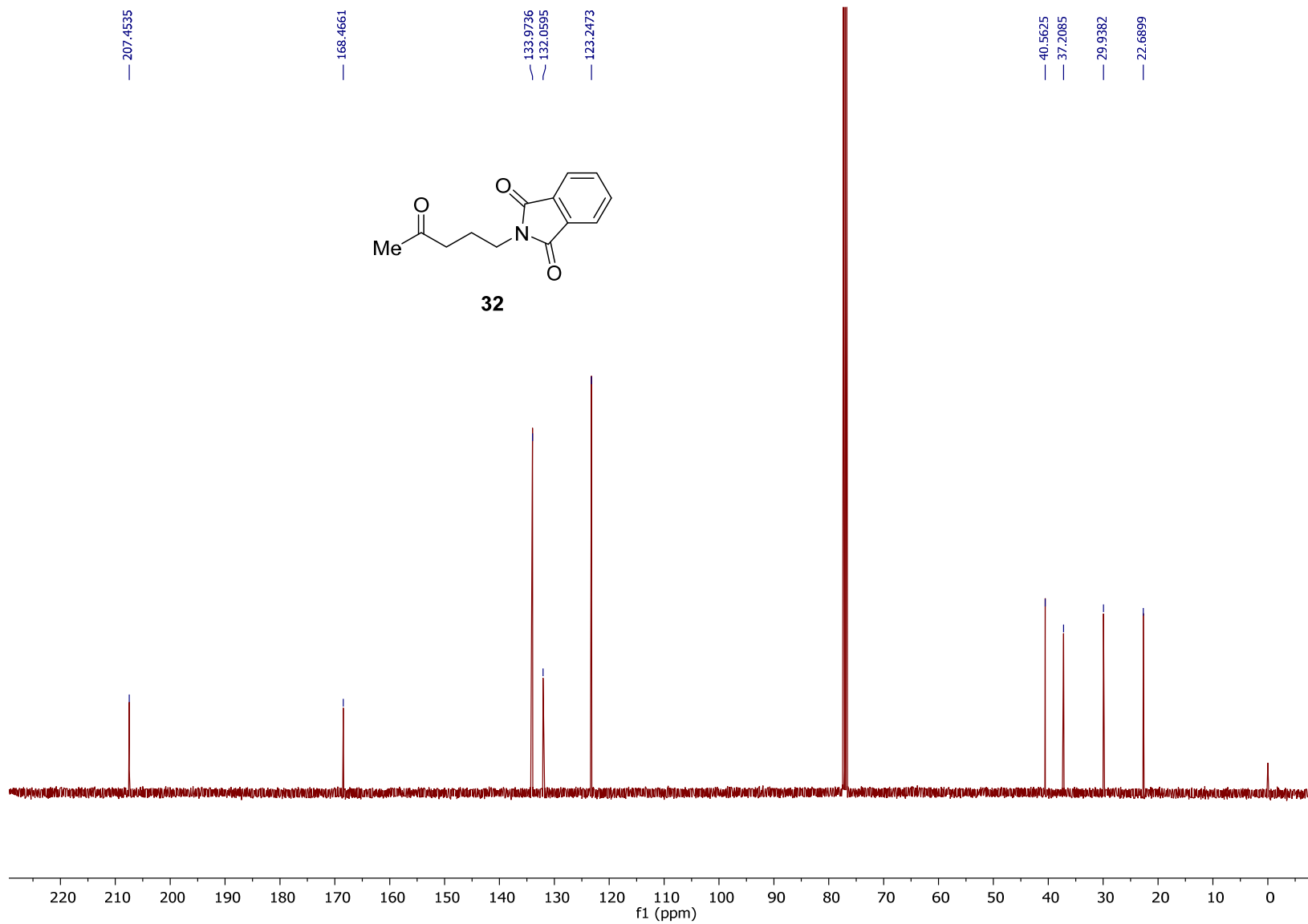


S40

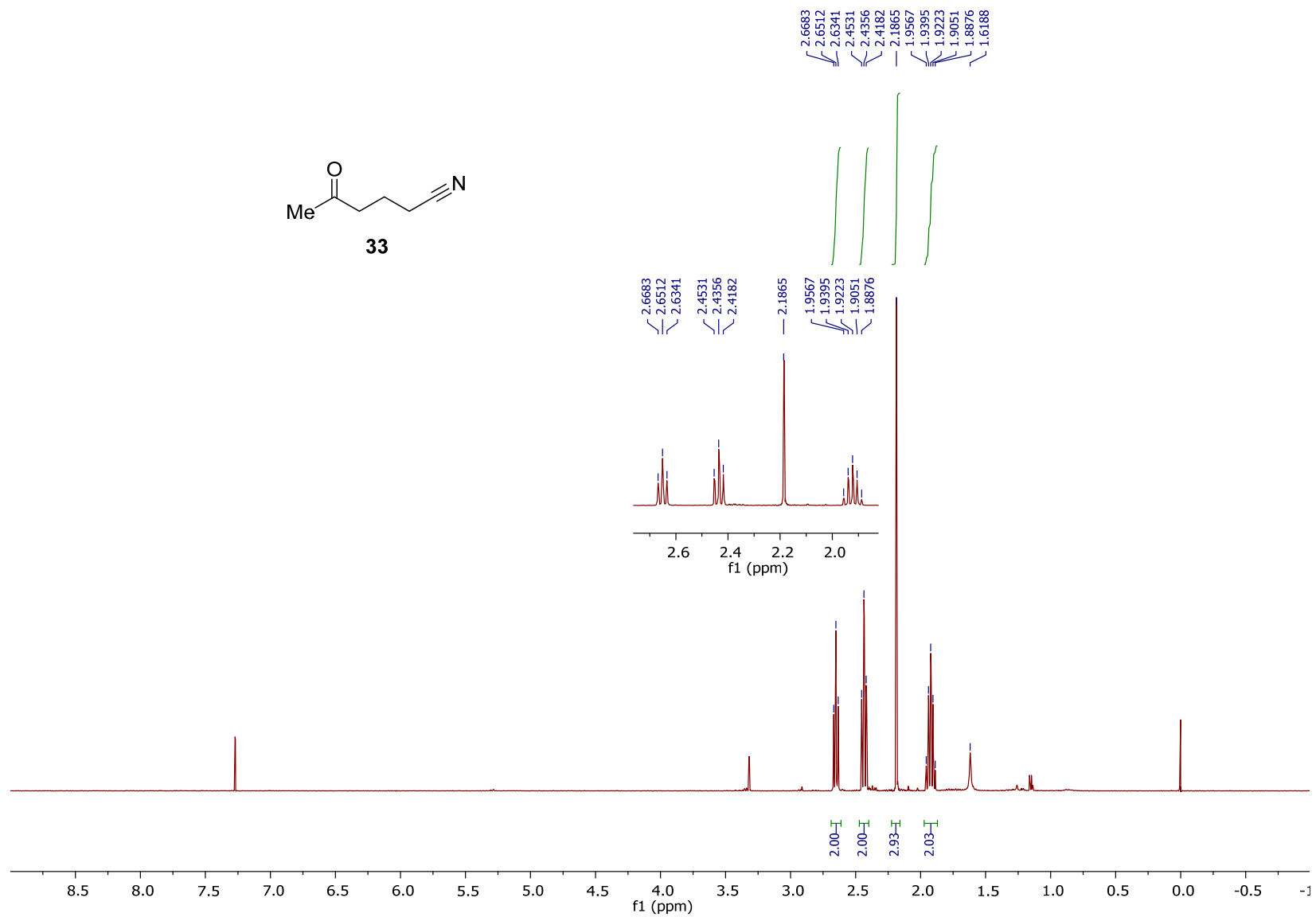
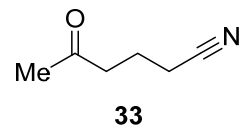




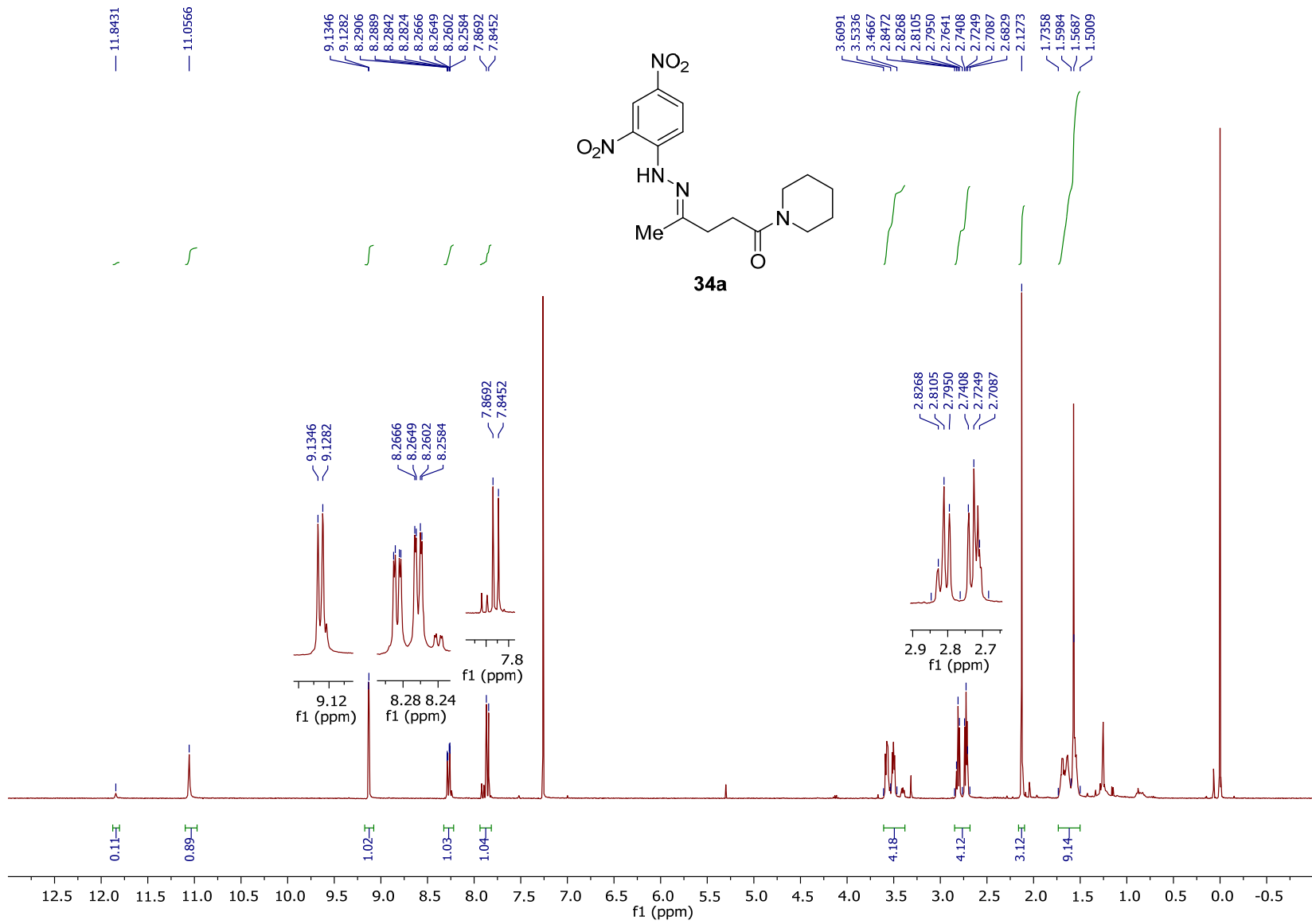
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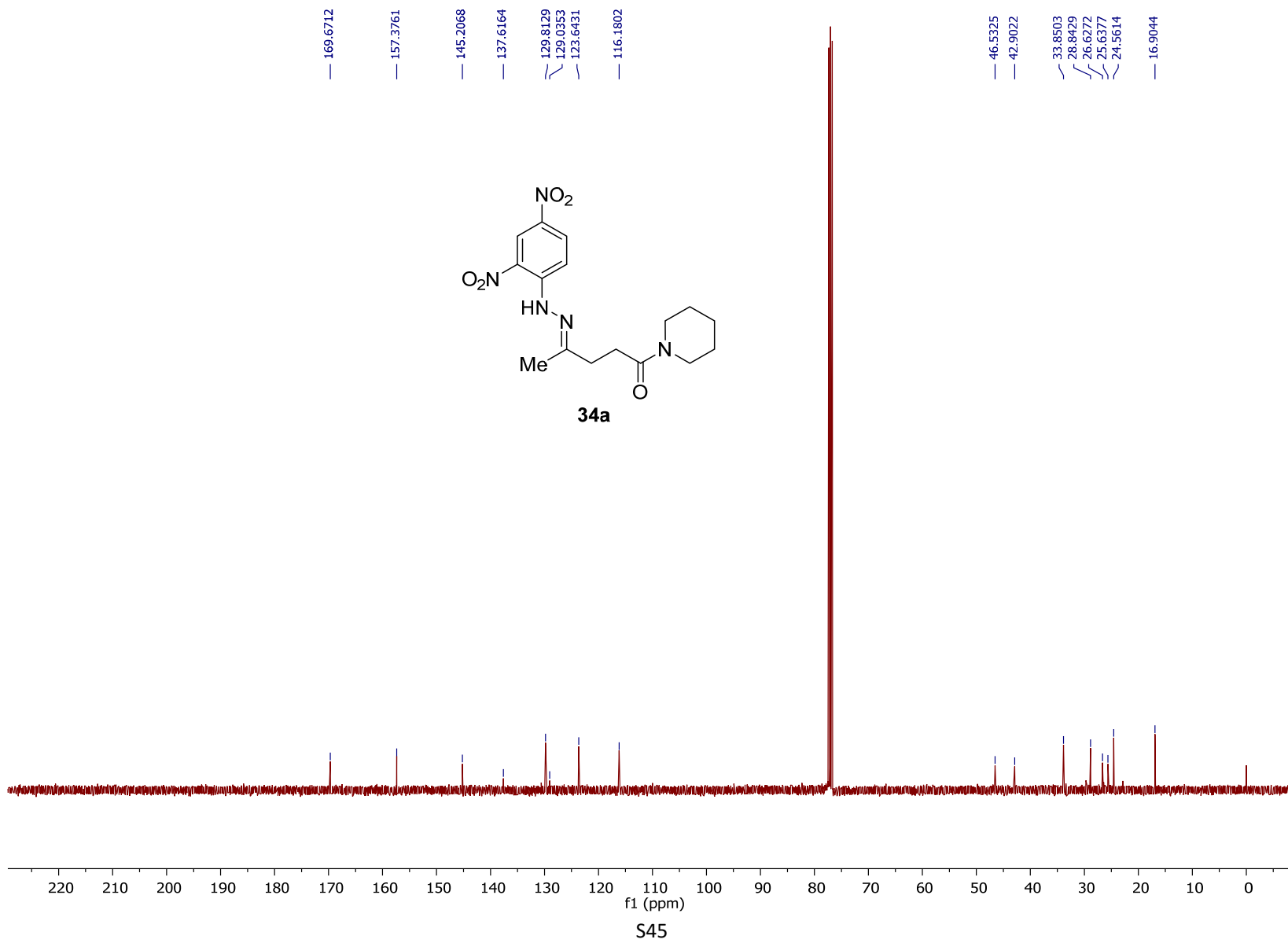
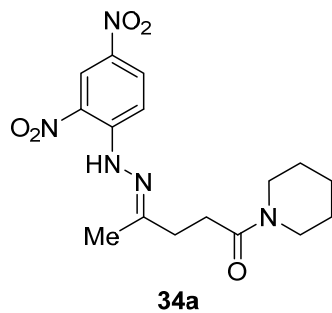


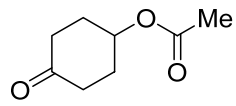
S42



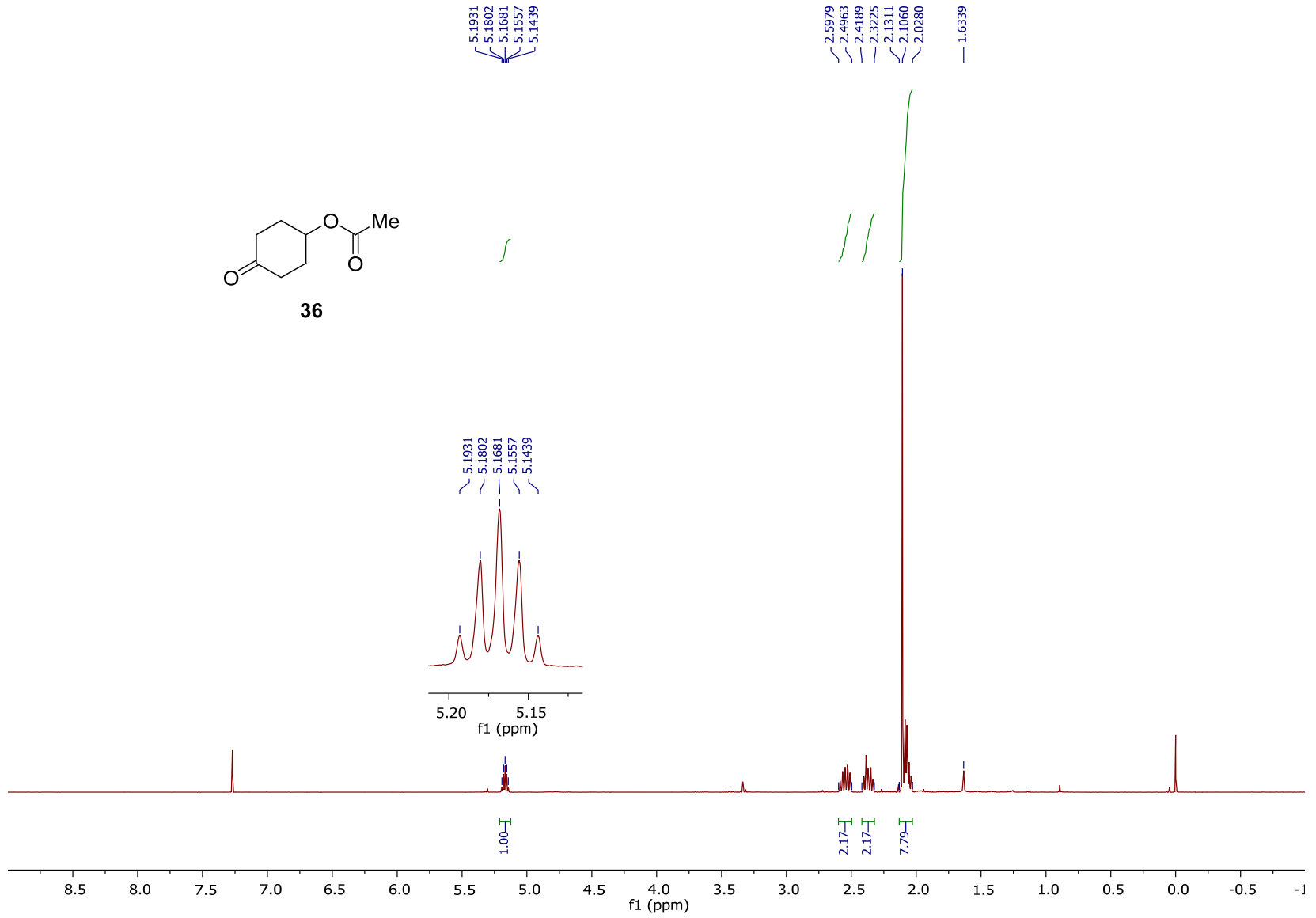
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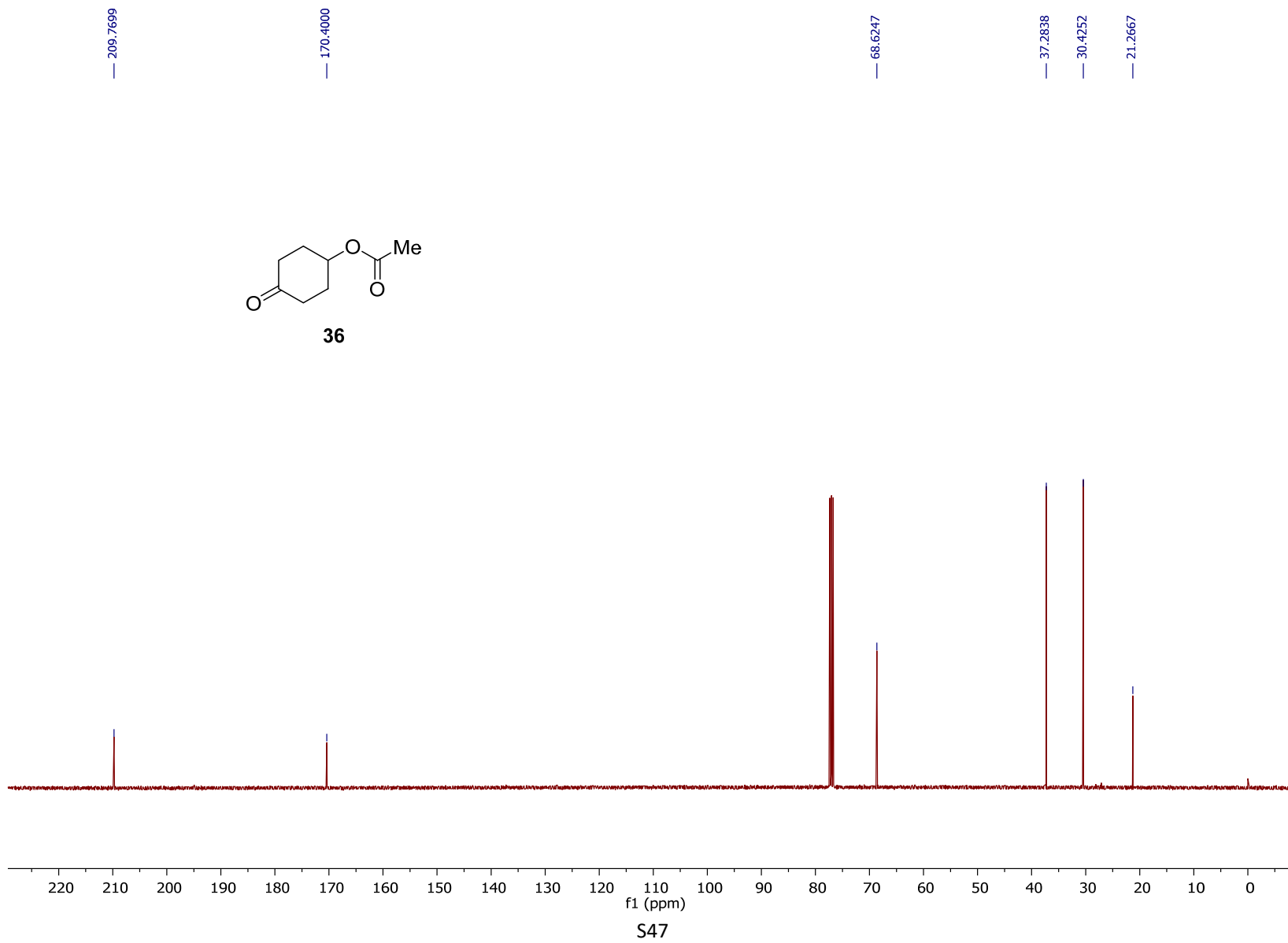
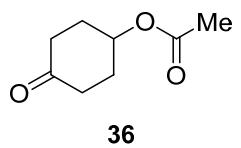


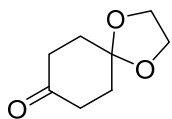


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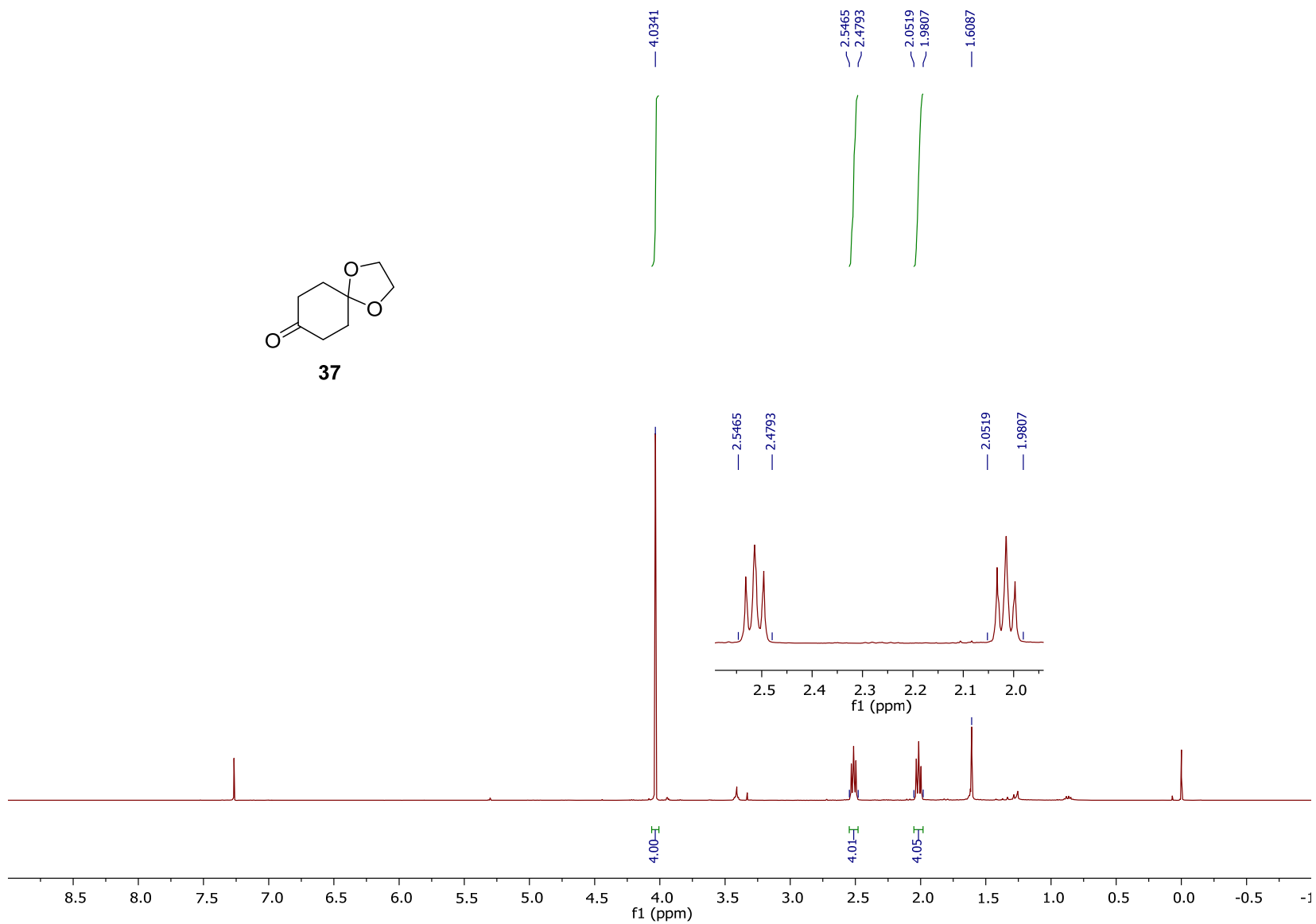


S46

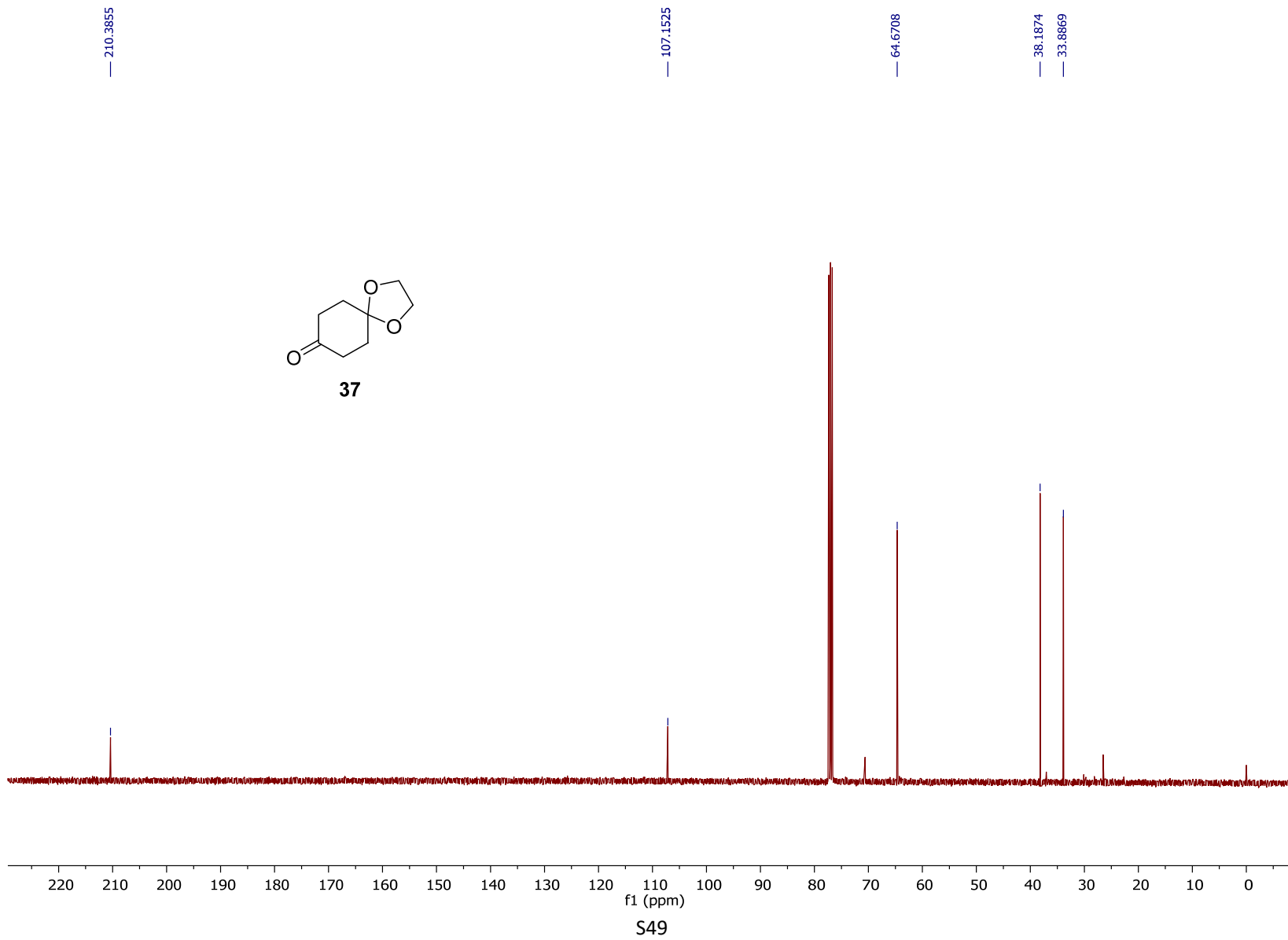
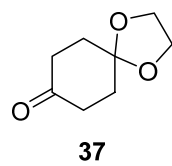


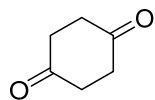


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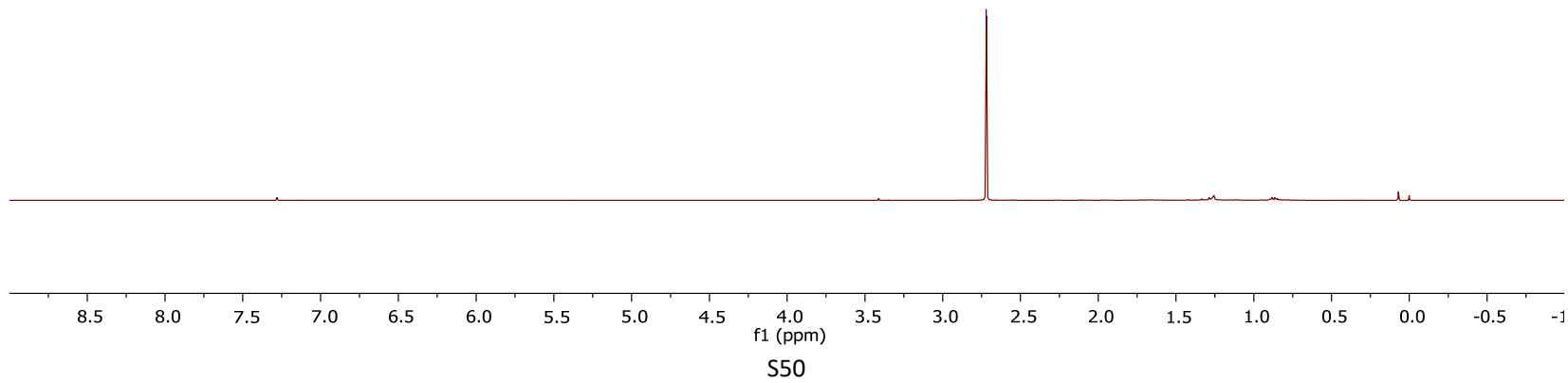
S48

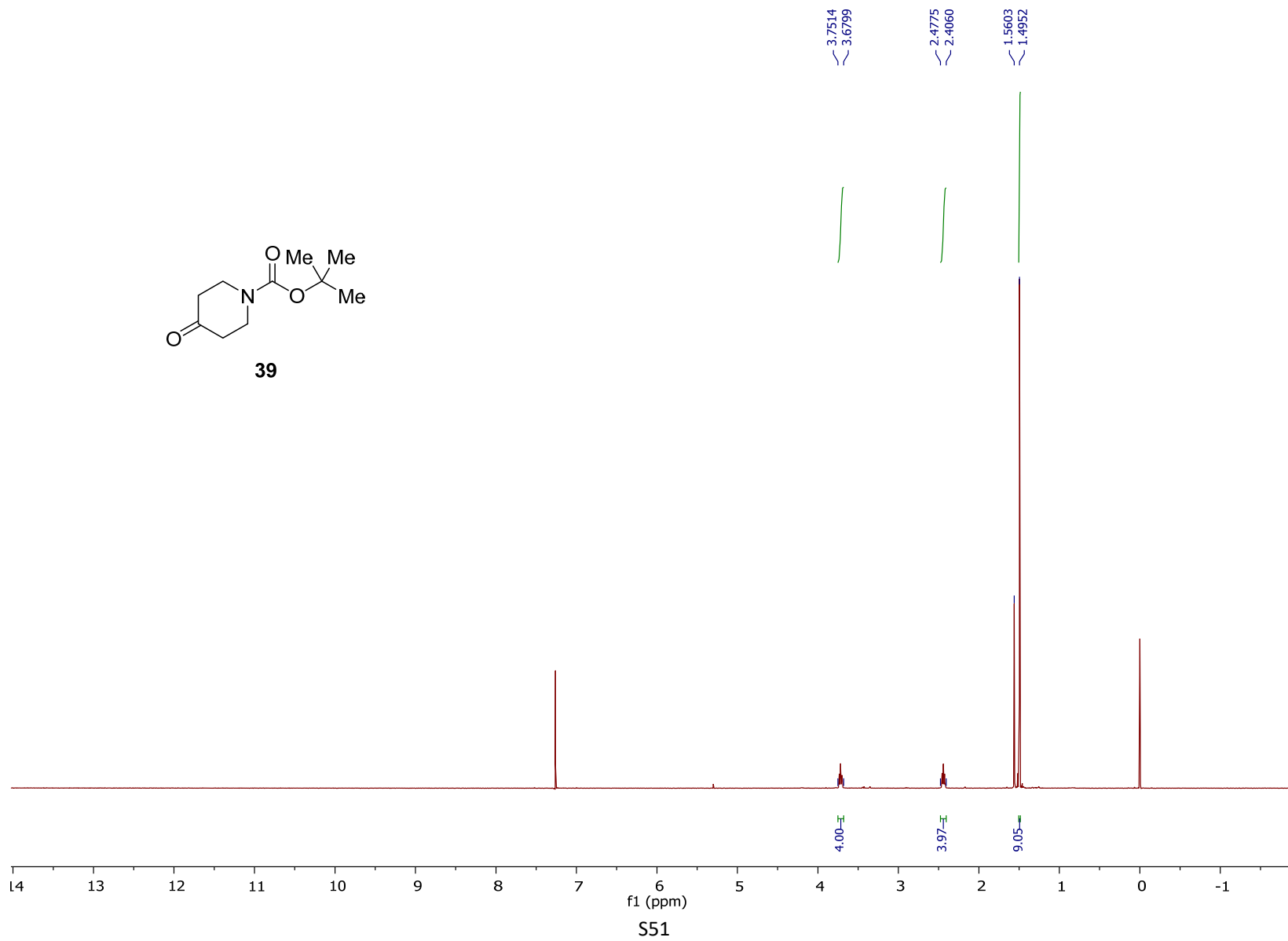
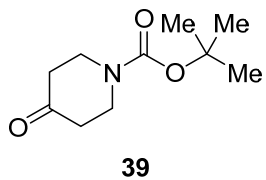


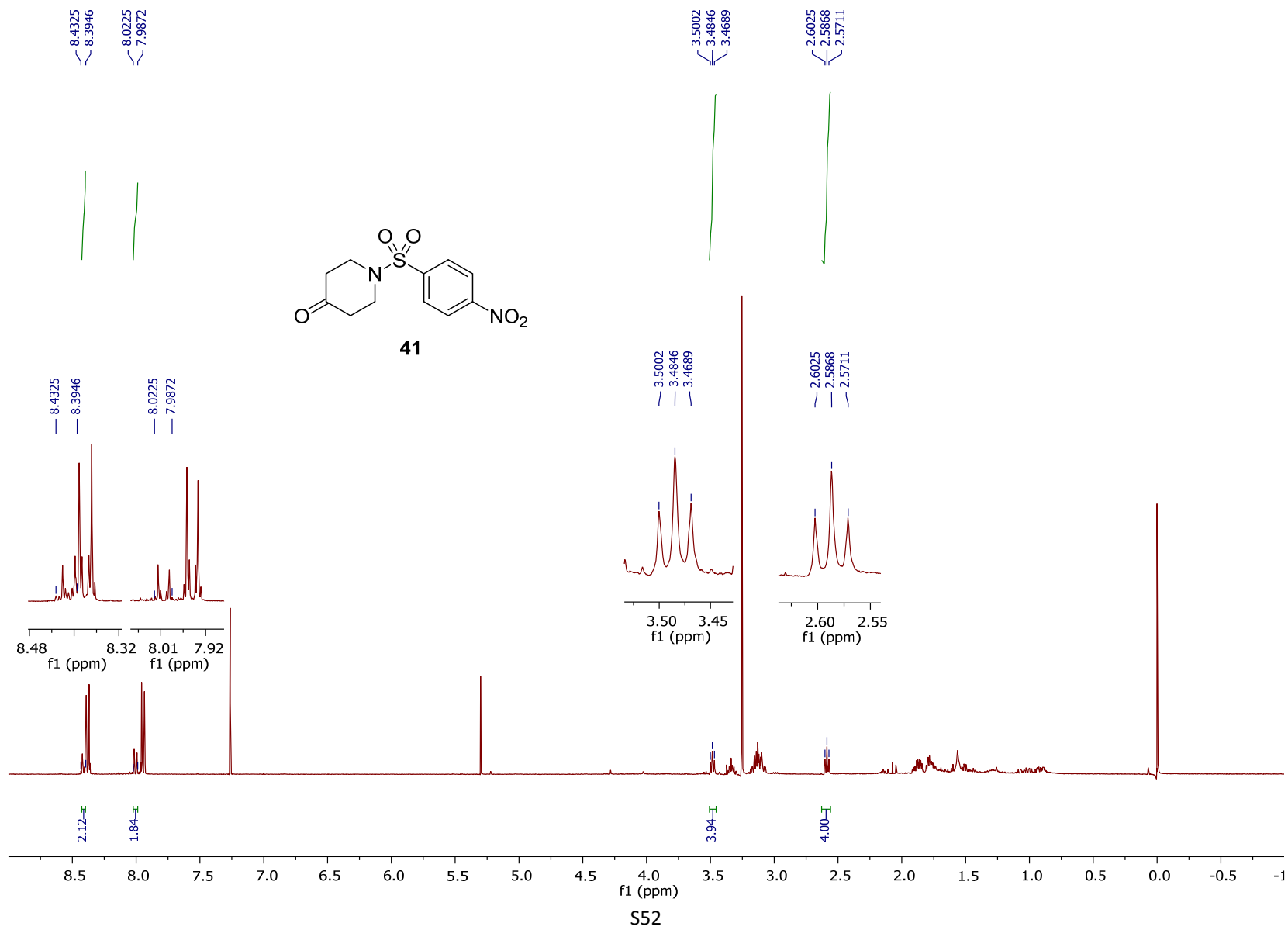


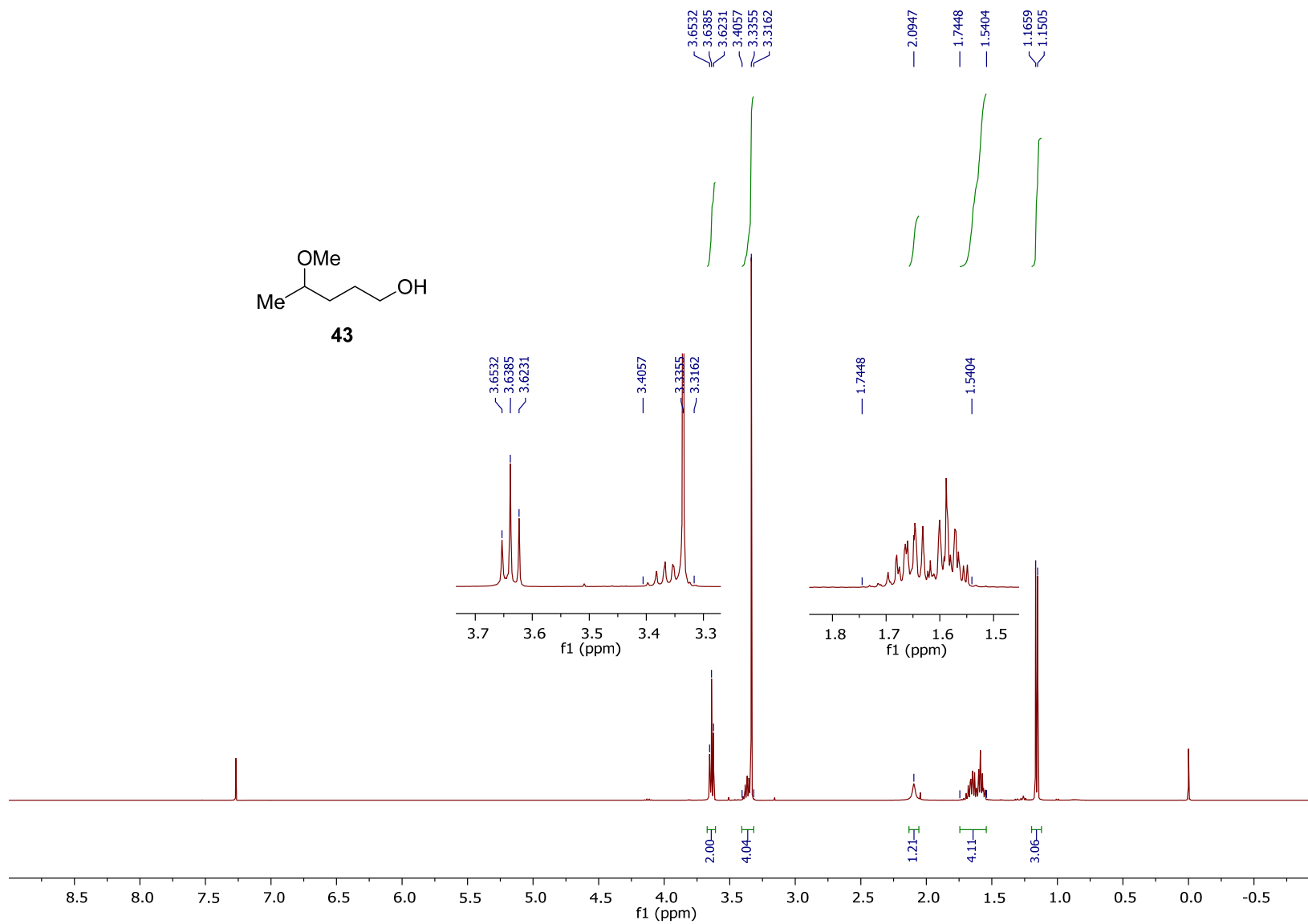
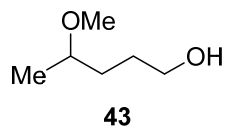
38

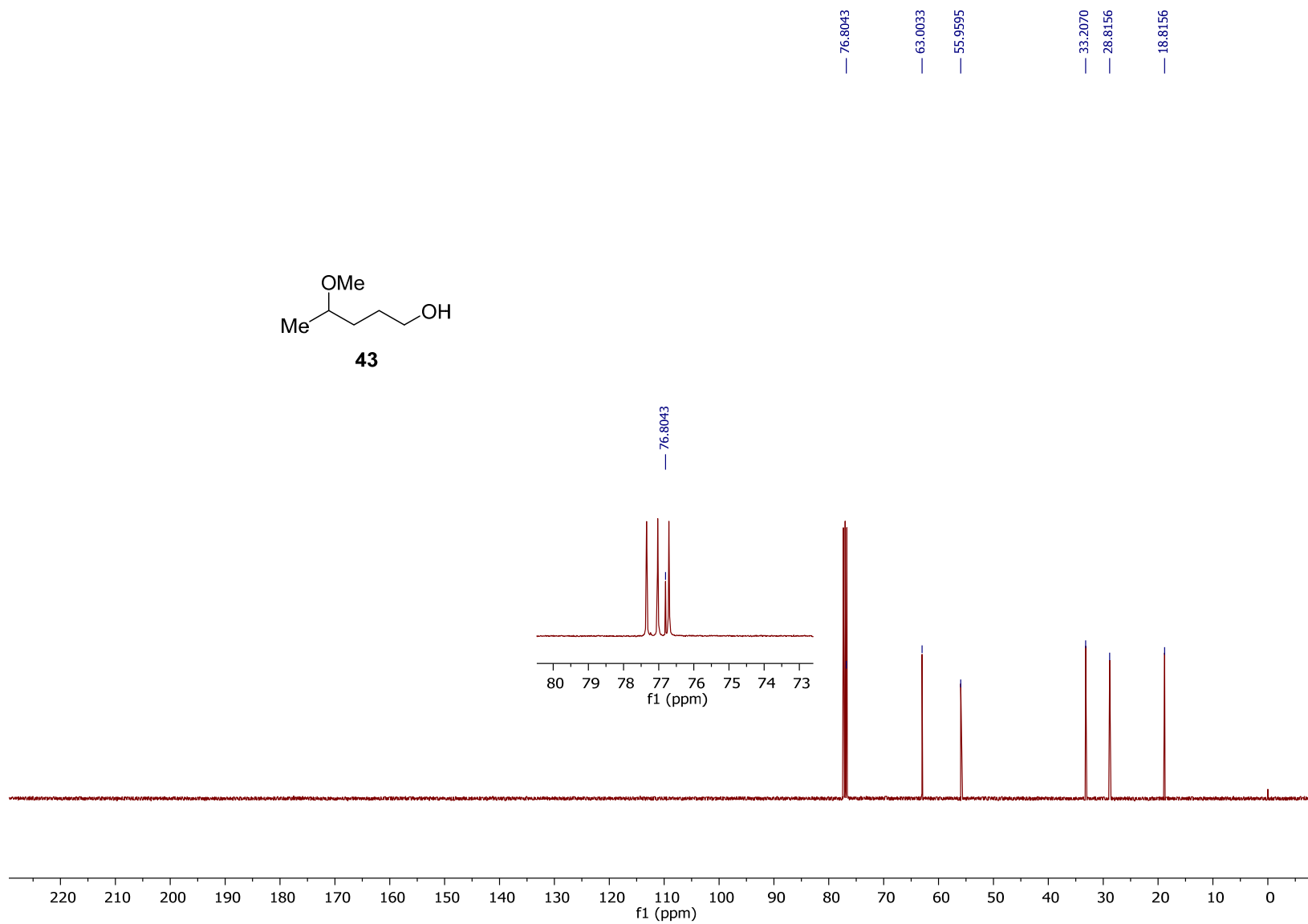
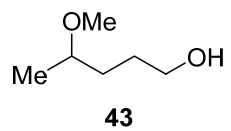
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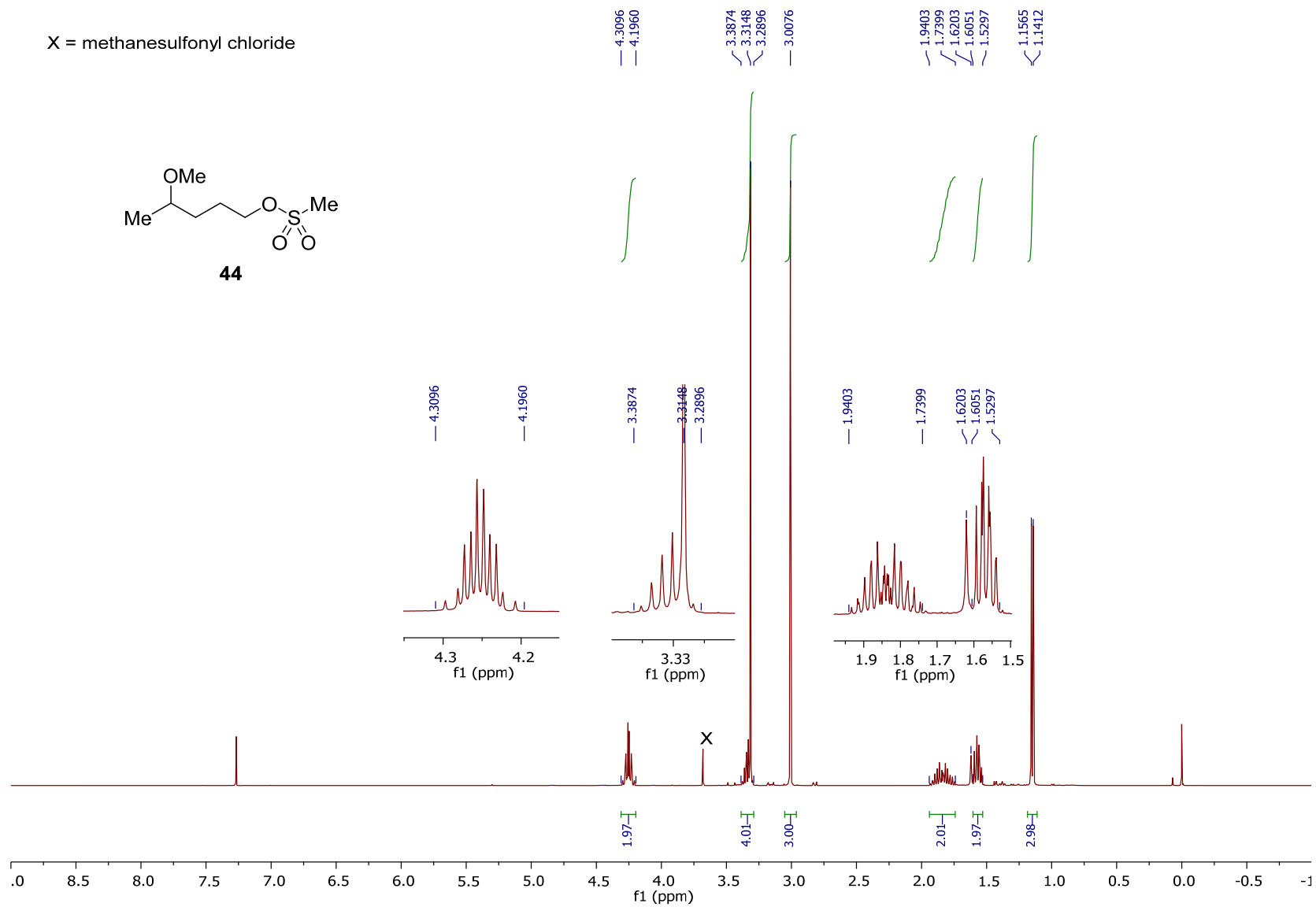
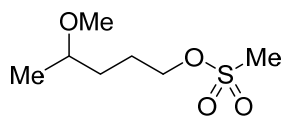


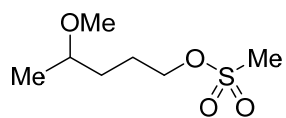




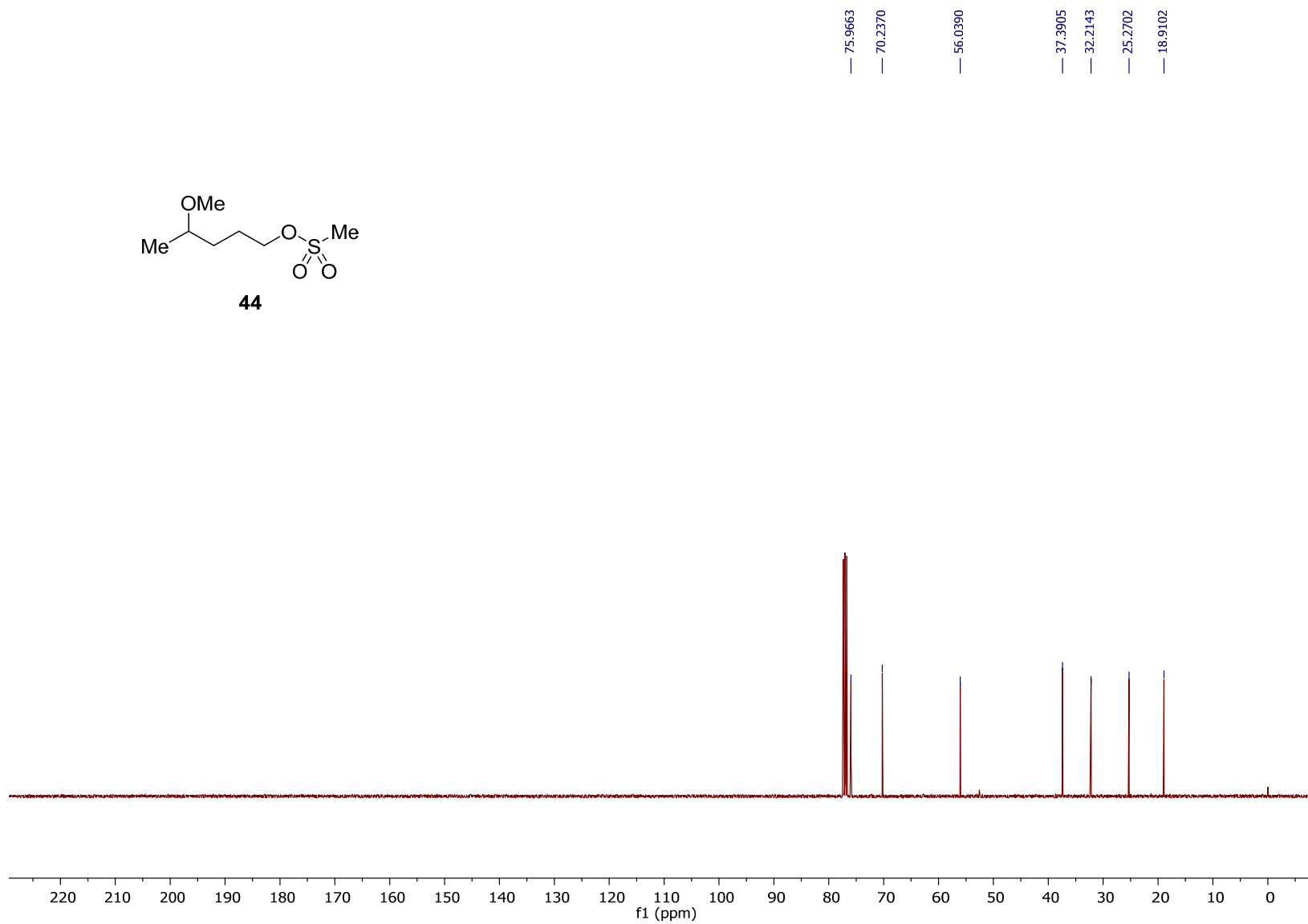
S54

X = methanesulfonyl chloride





44



S56

X = impurity from the eluent

