

## Supporting Information

### **Design and Synthesis of 4-Alkylidene- $\beta$ -lactams: Benzyl- and Phenethyl-carbamates as Key Fragments to Switch on Antibacterial Activity**

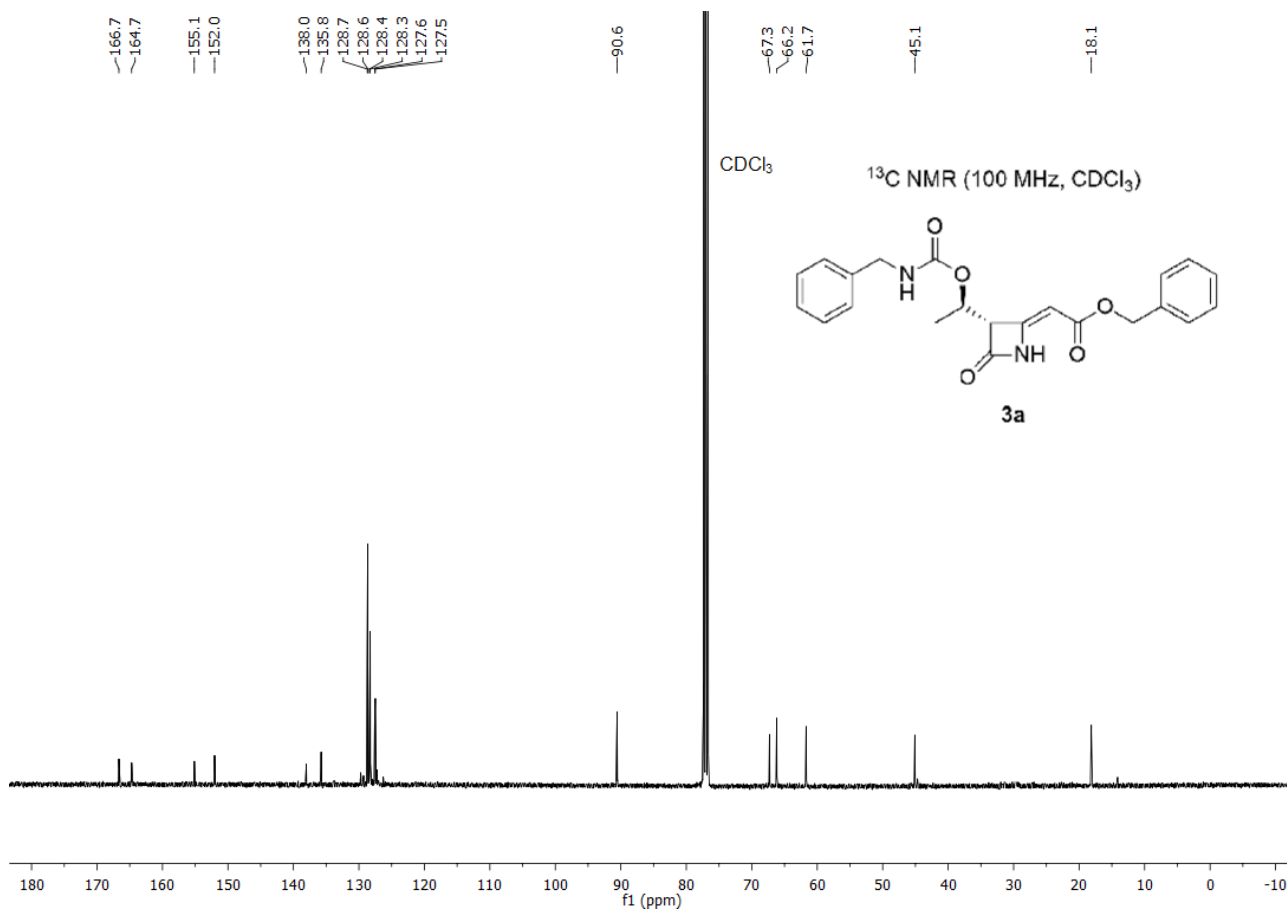
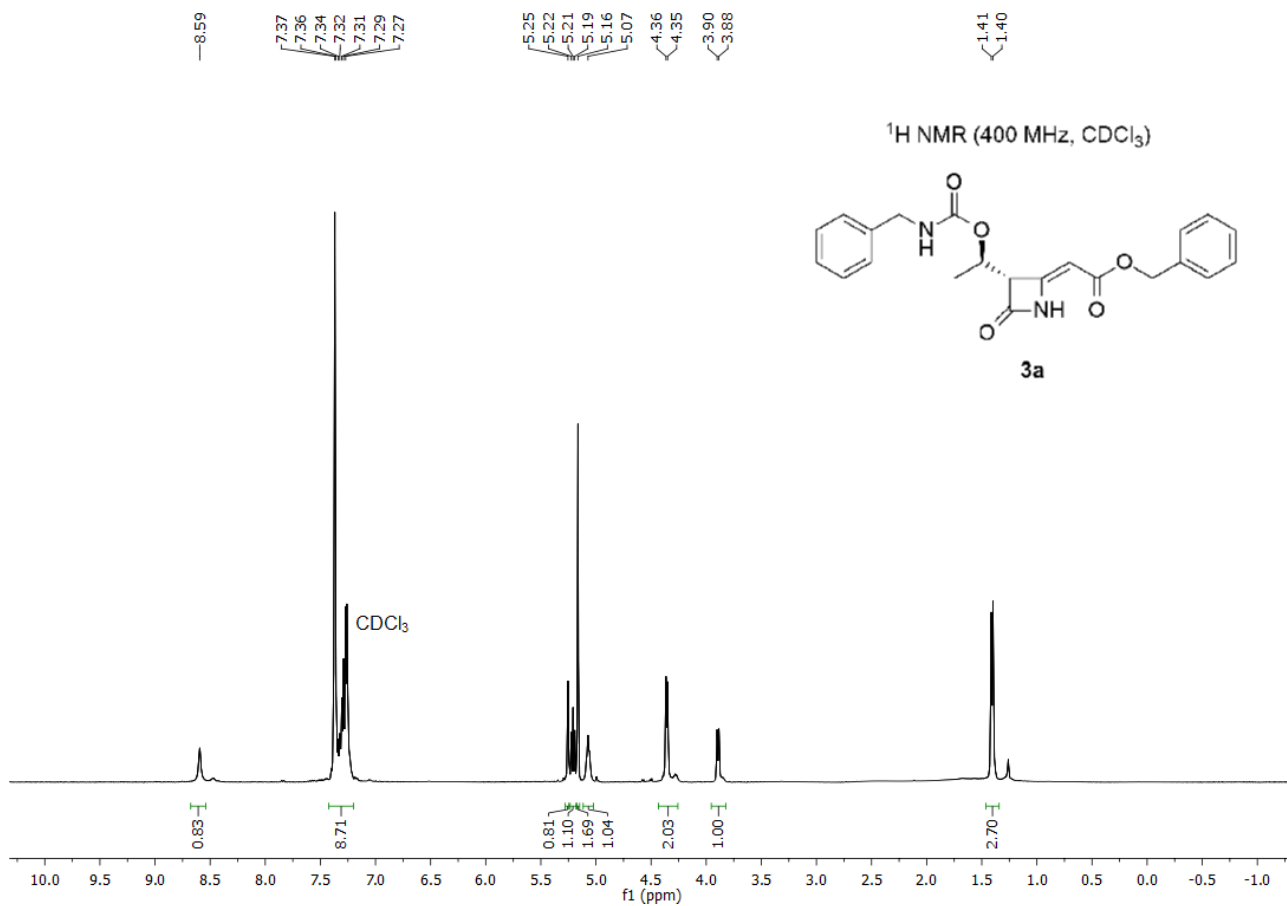
Daria Giacomini,<sup>\*[a]</sup> Giulia Martelli,<sup>[a]</sup> Miriam Piccichè,<sup>[a]</sup> Enrico Calaresu,<sup>[b]</sup>  
Clementina Elvezia Cocuzza,<sup>[b]</sup> and Rosario Musumeci<sup>[b]</sup>

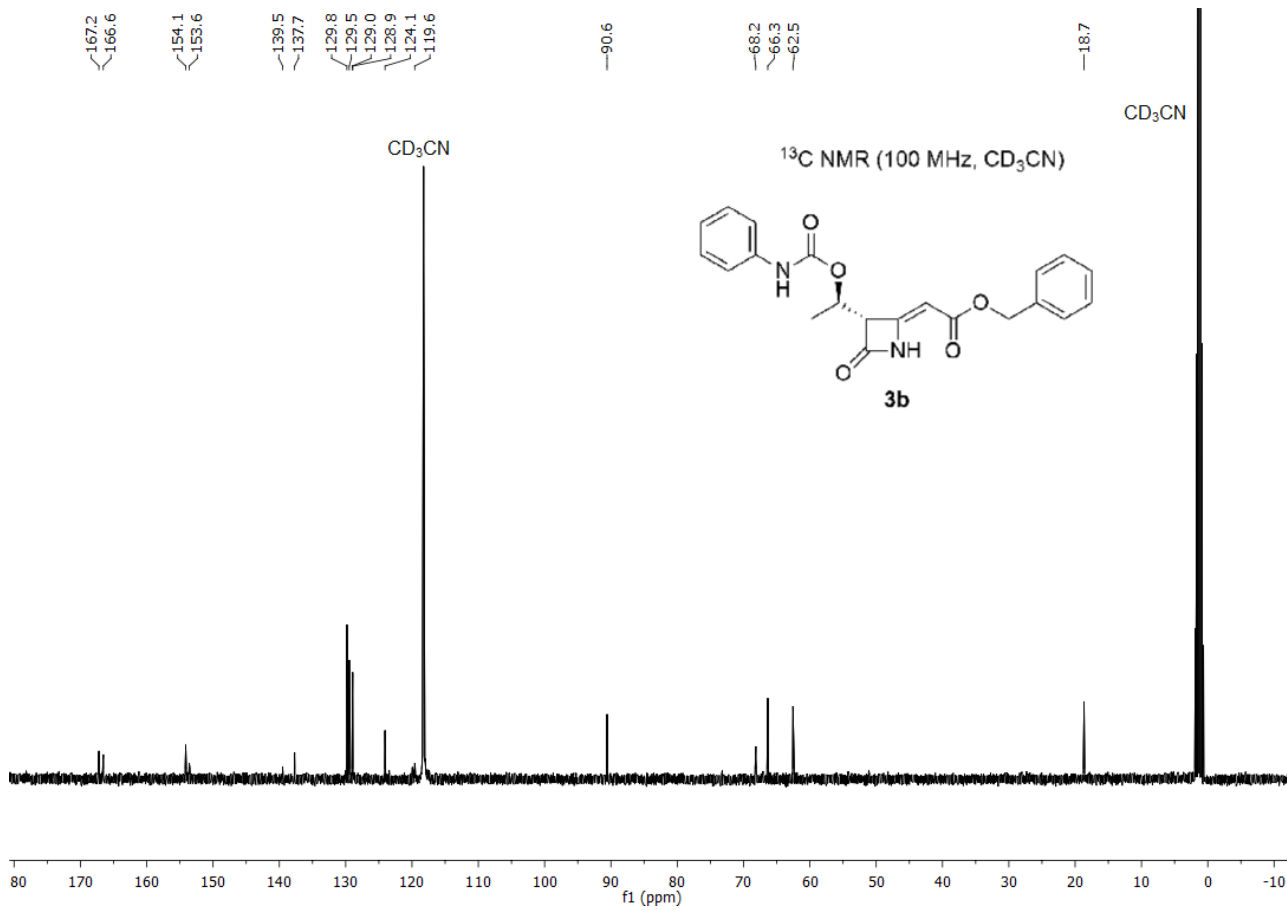
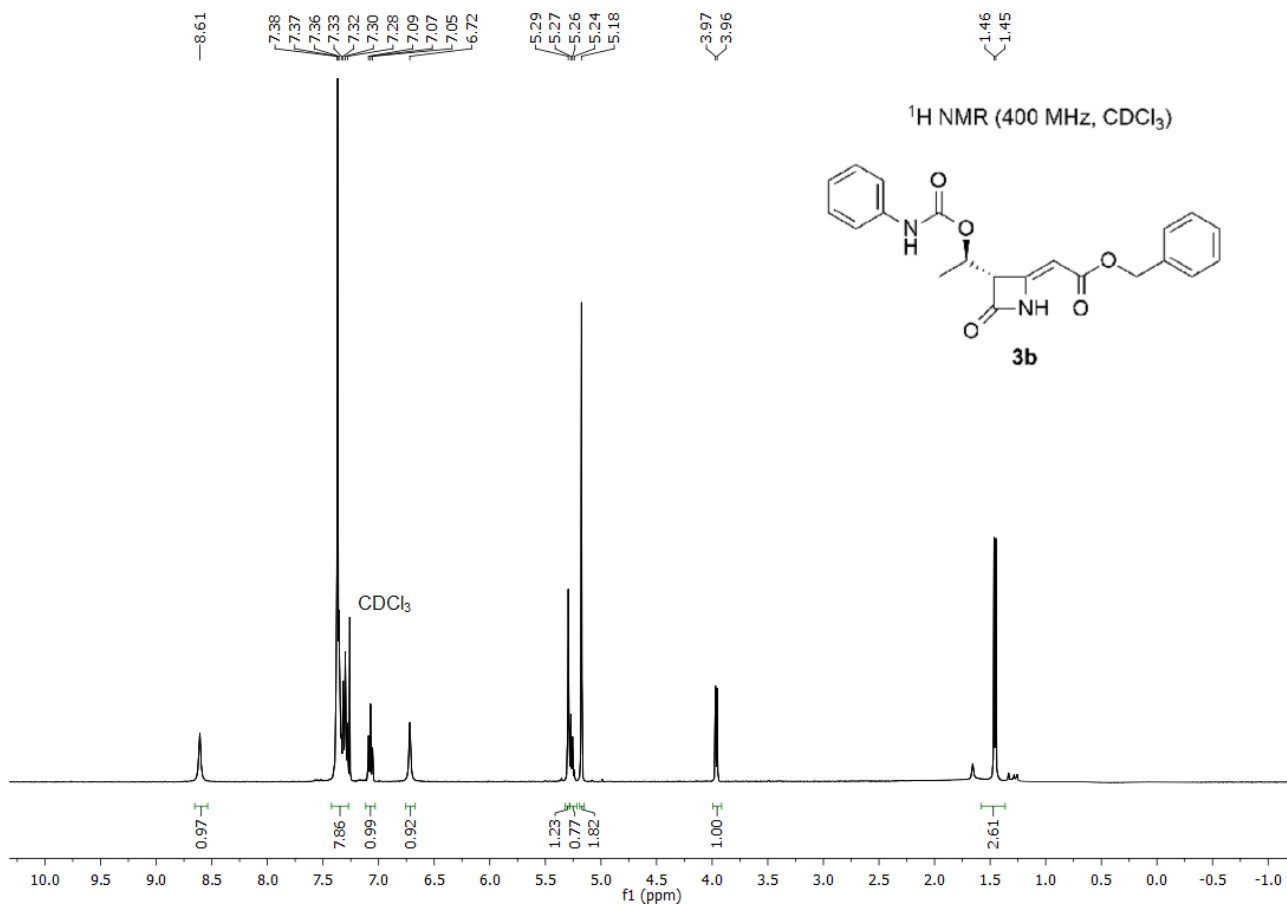
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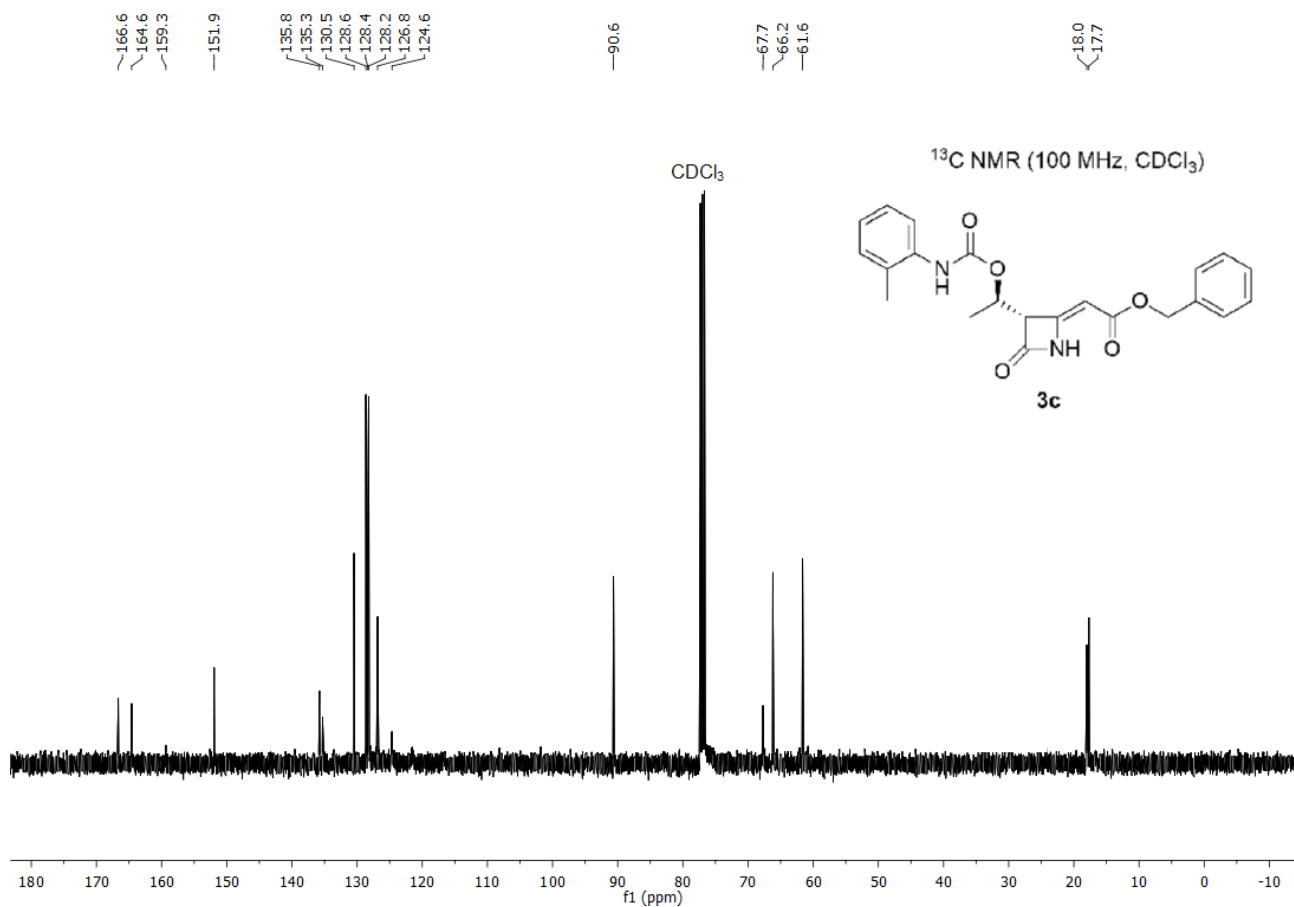
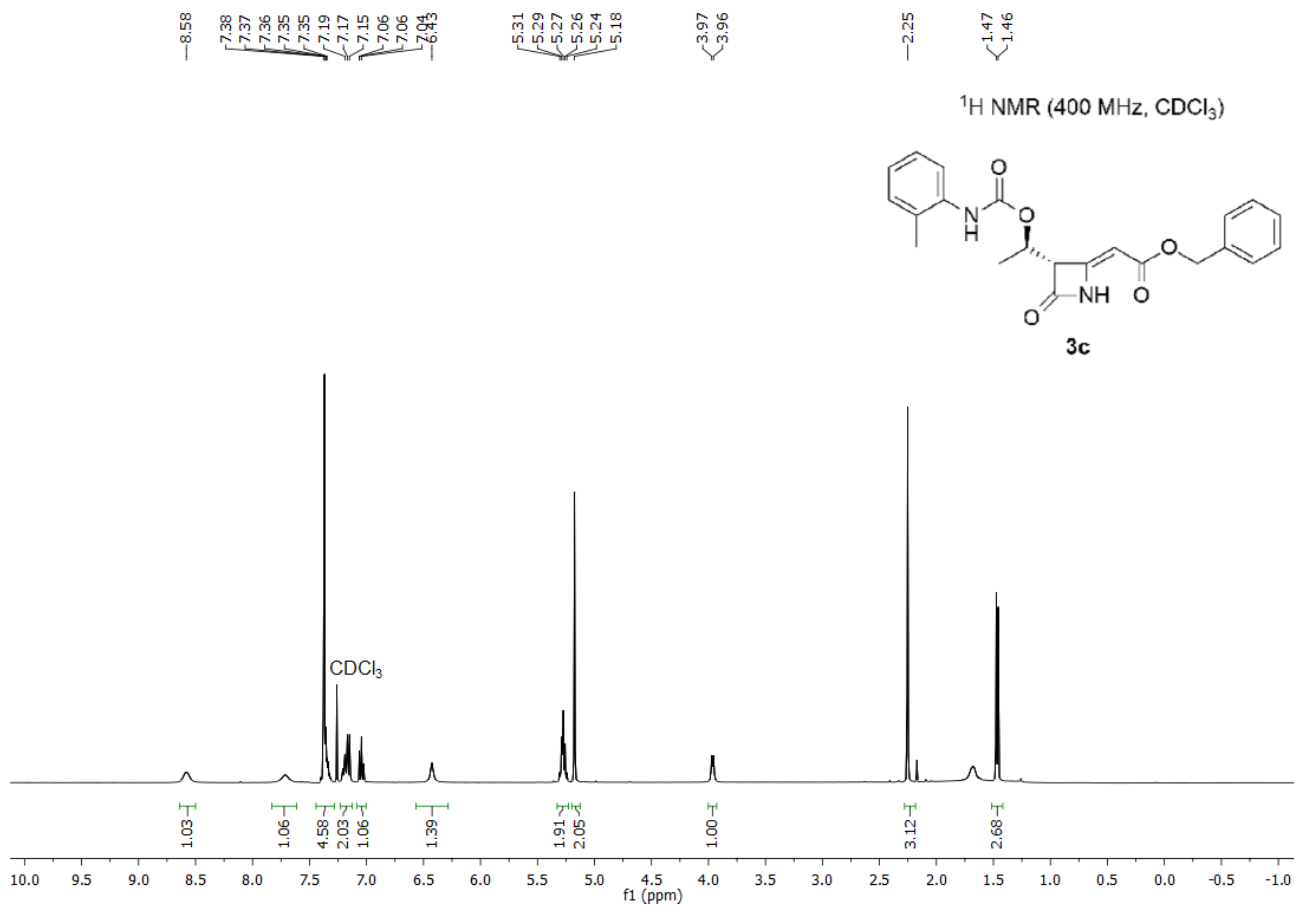
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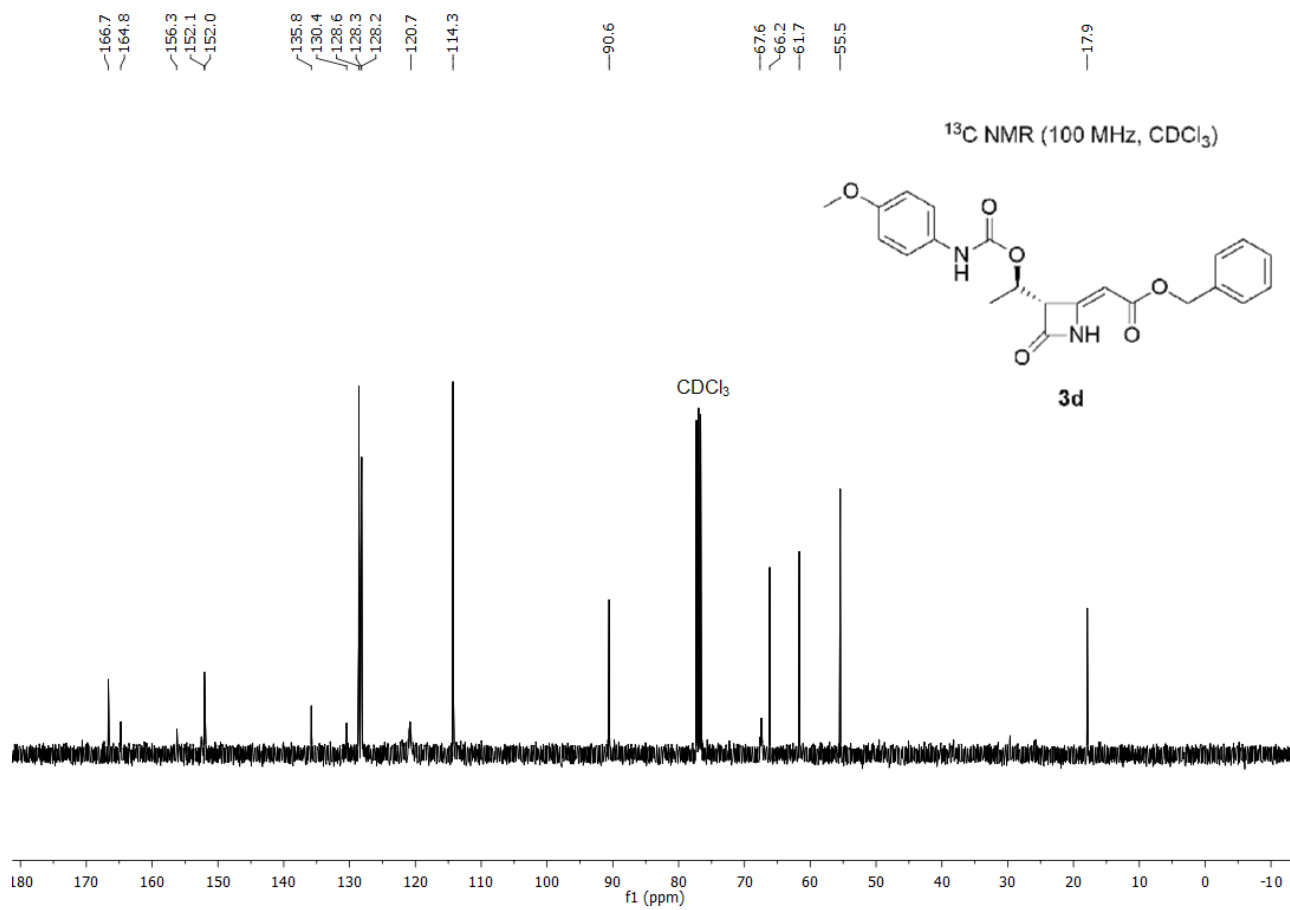
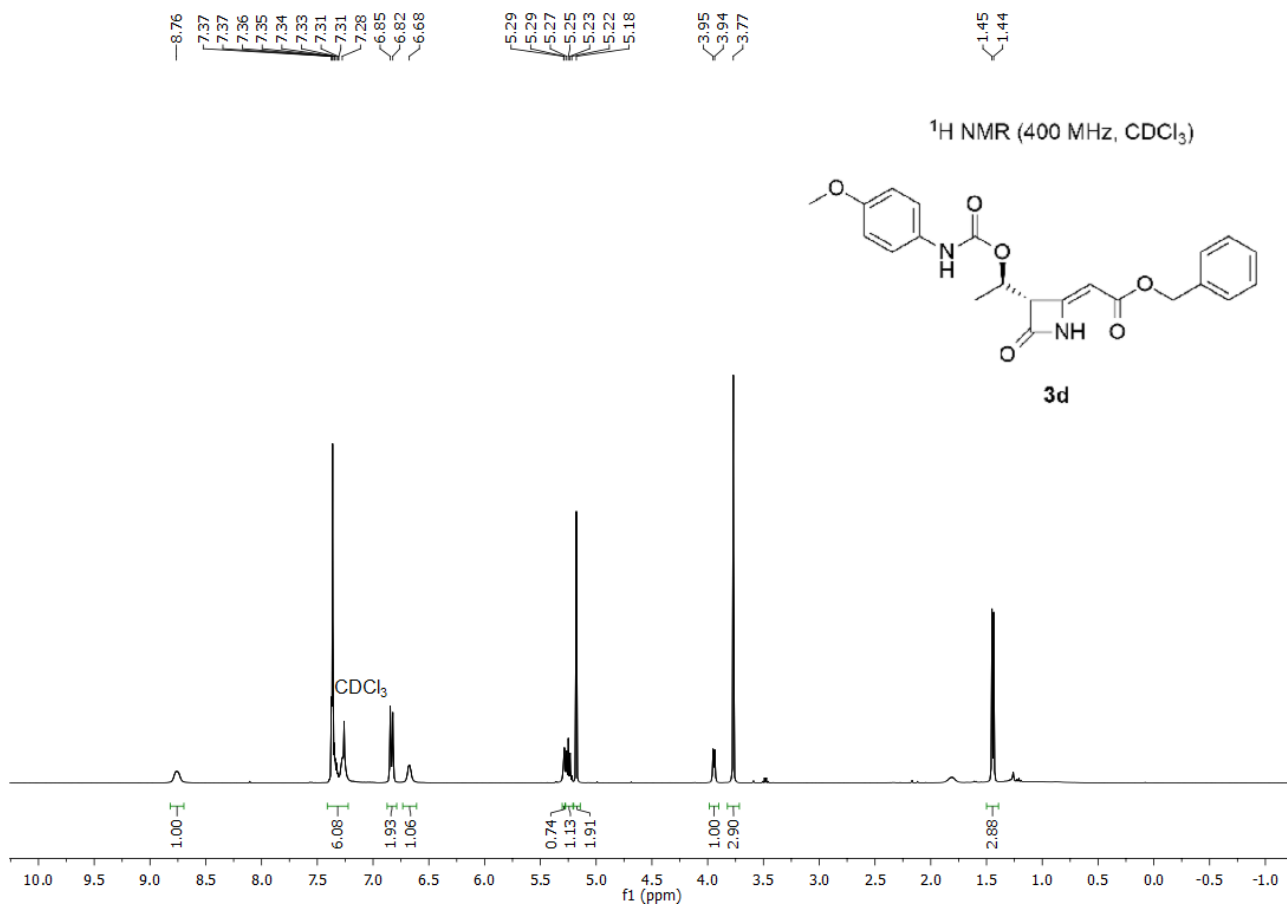
$^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of compounds **3a-u** and **5u**;

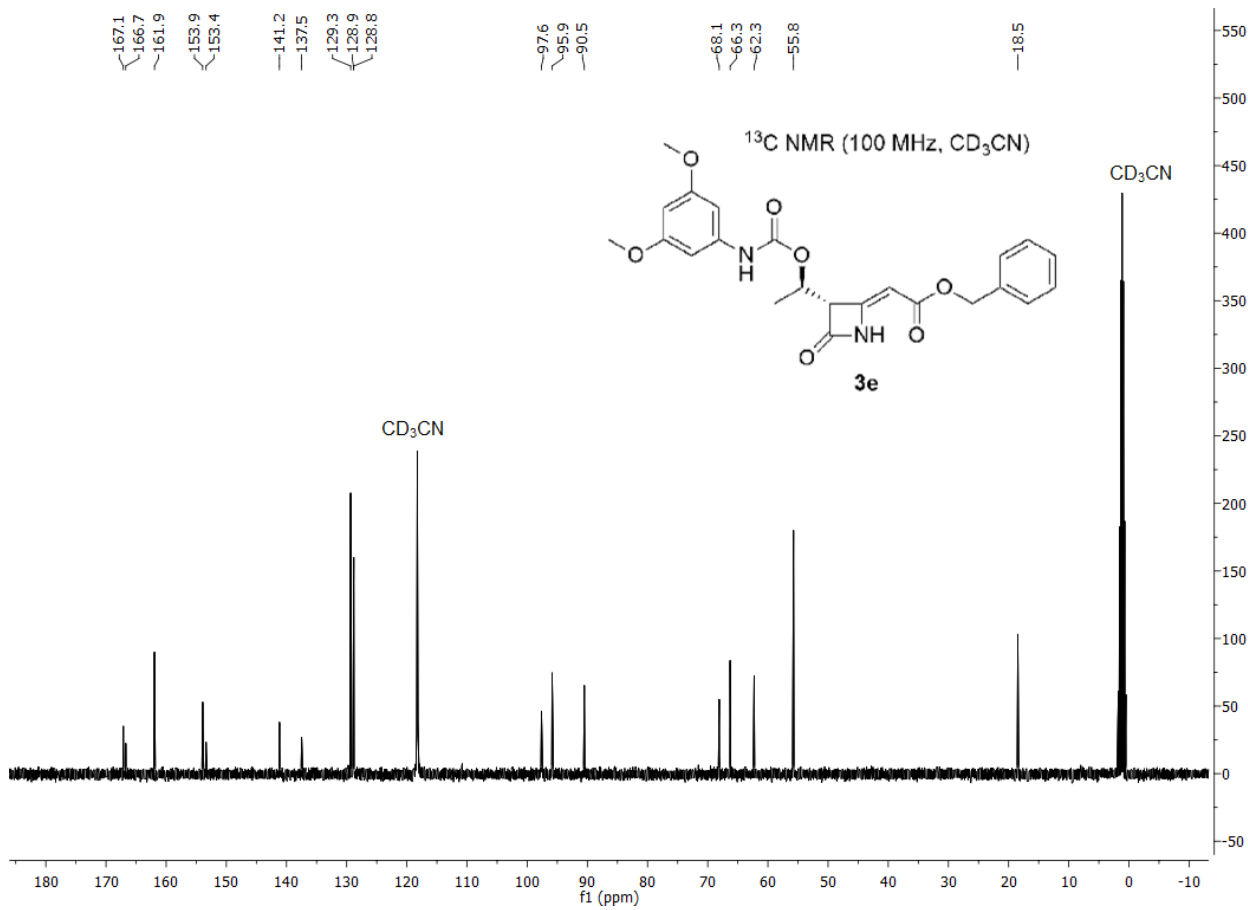
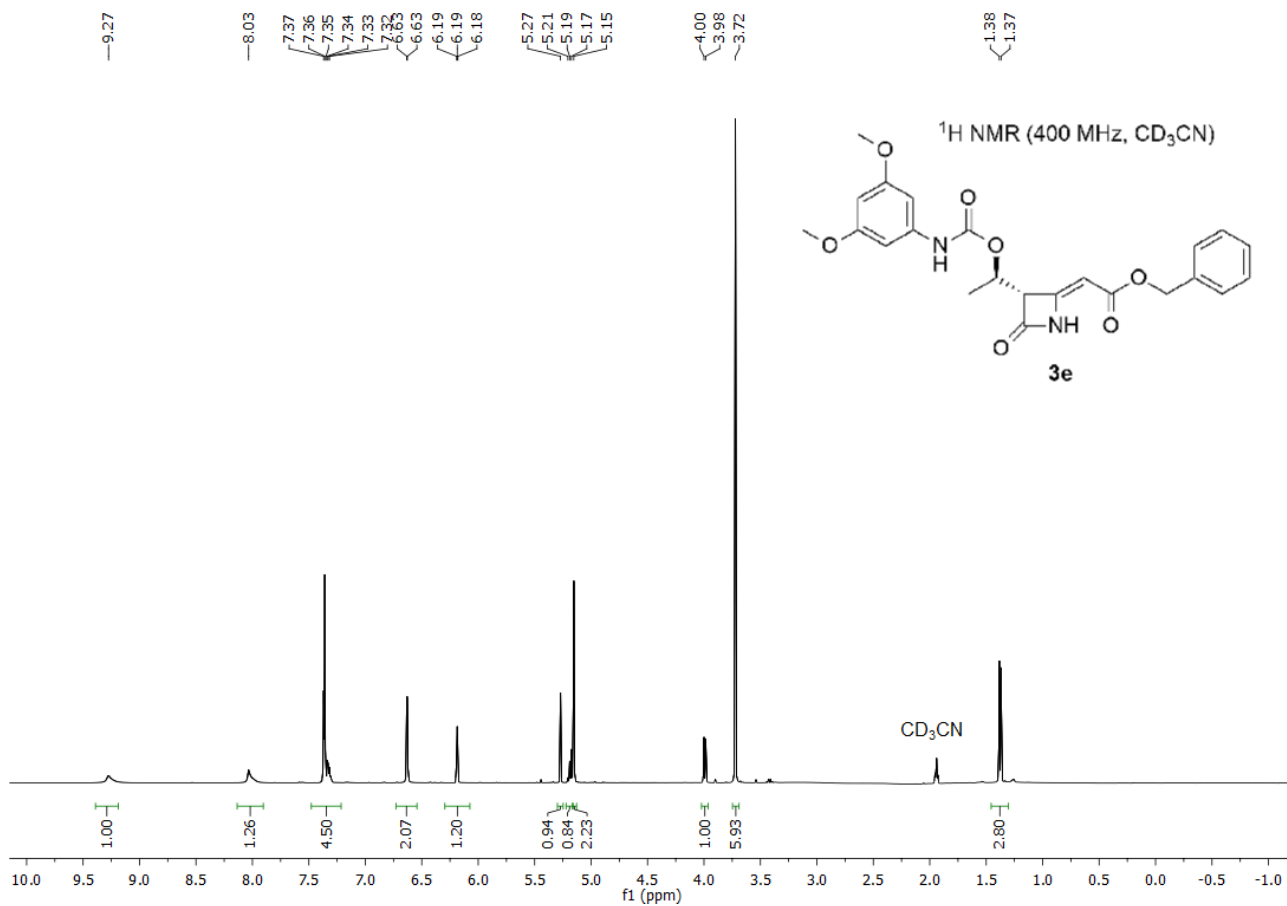
NOESY NMR spectra of compounds **3d** and **3j**.

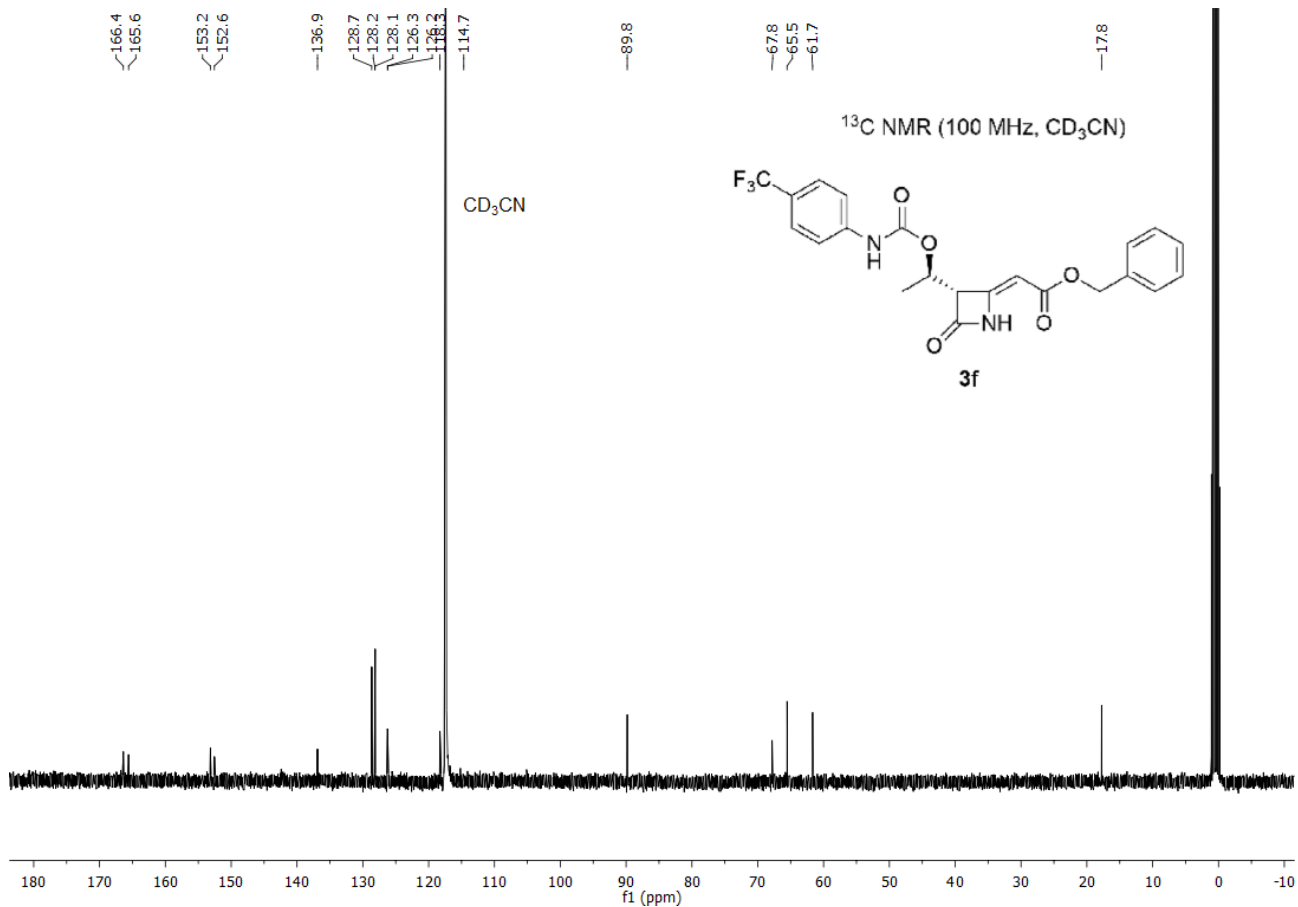
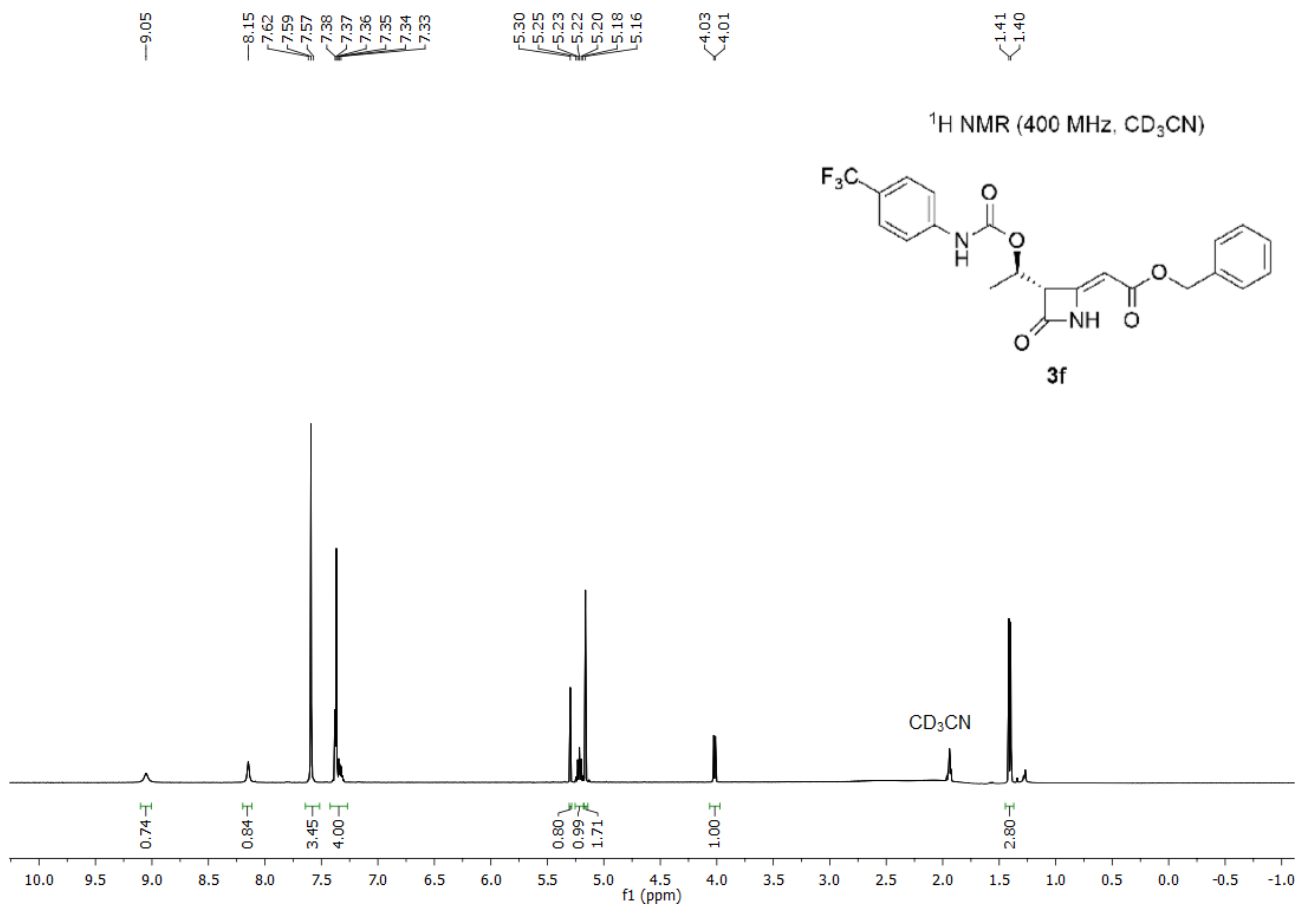




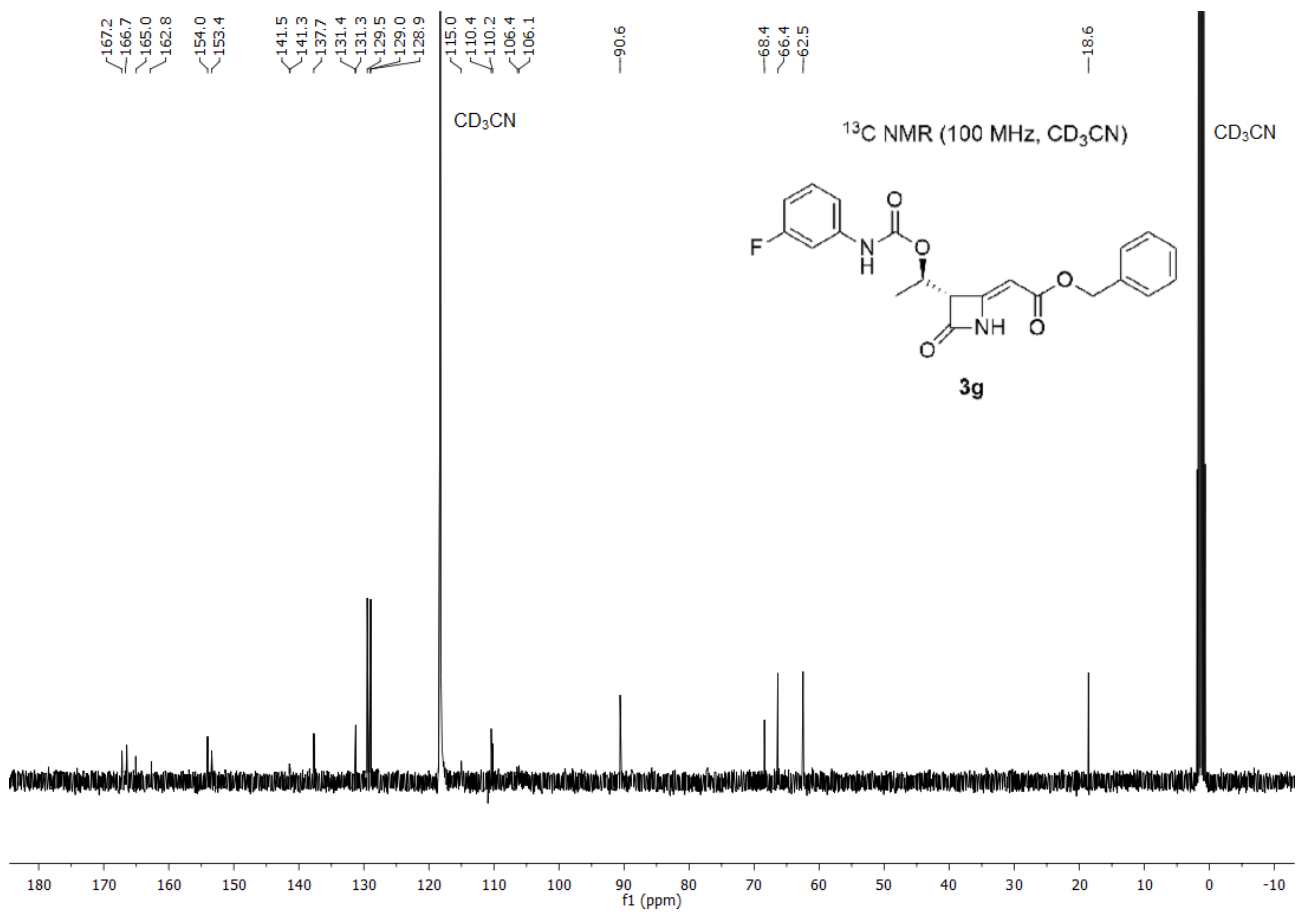
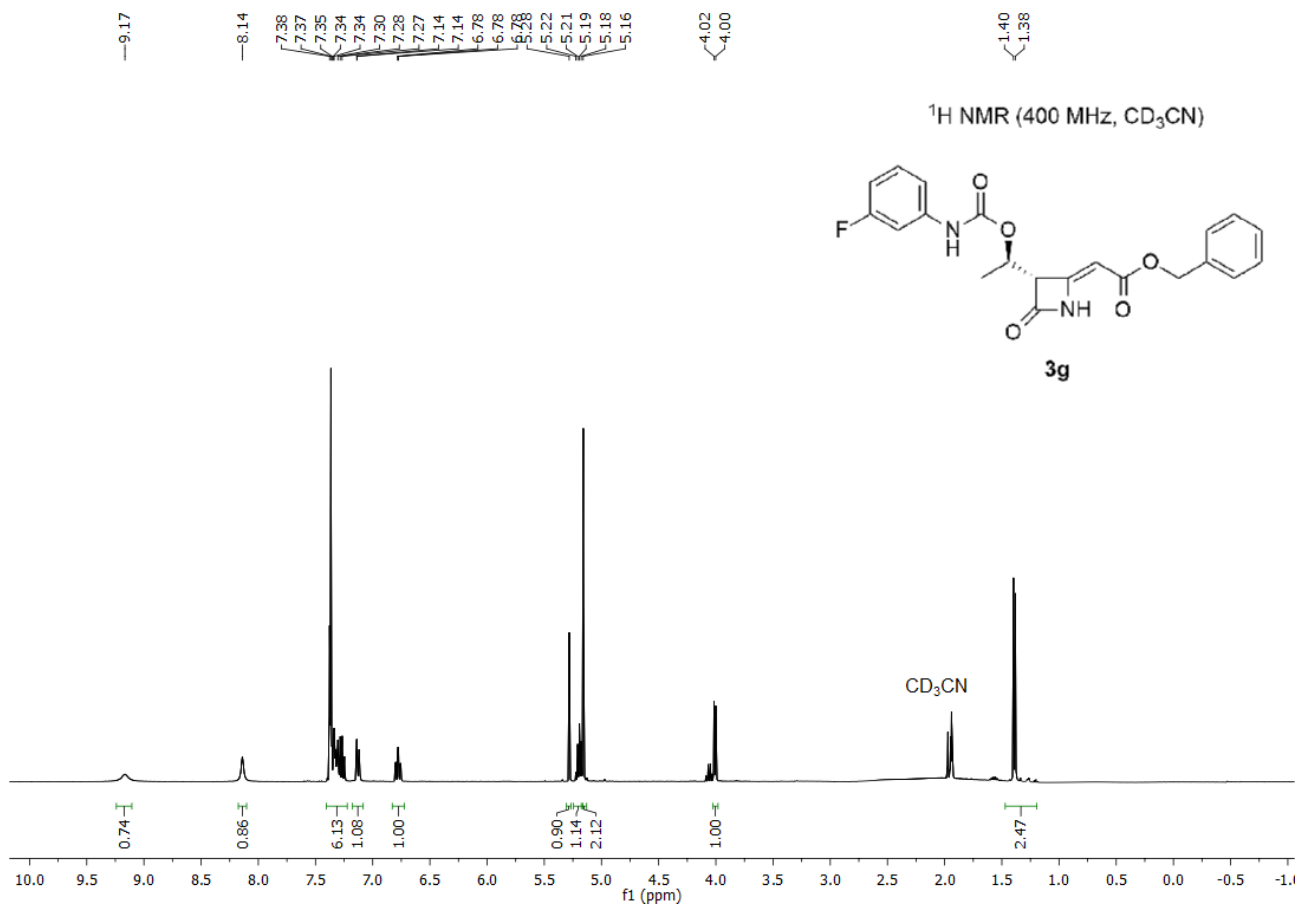






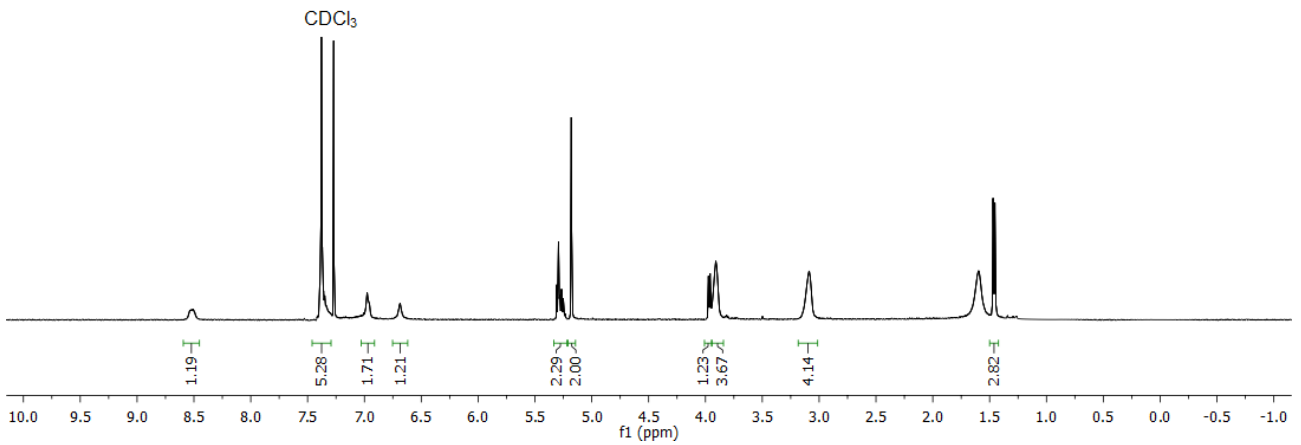
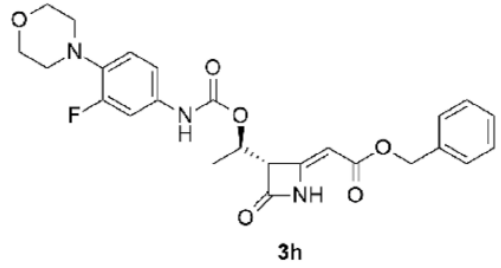






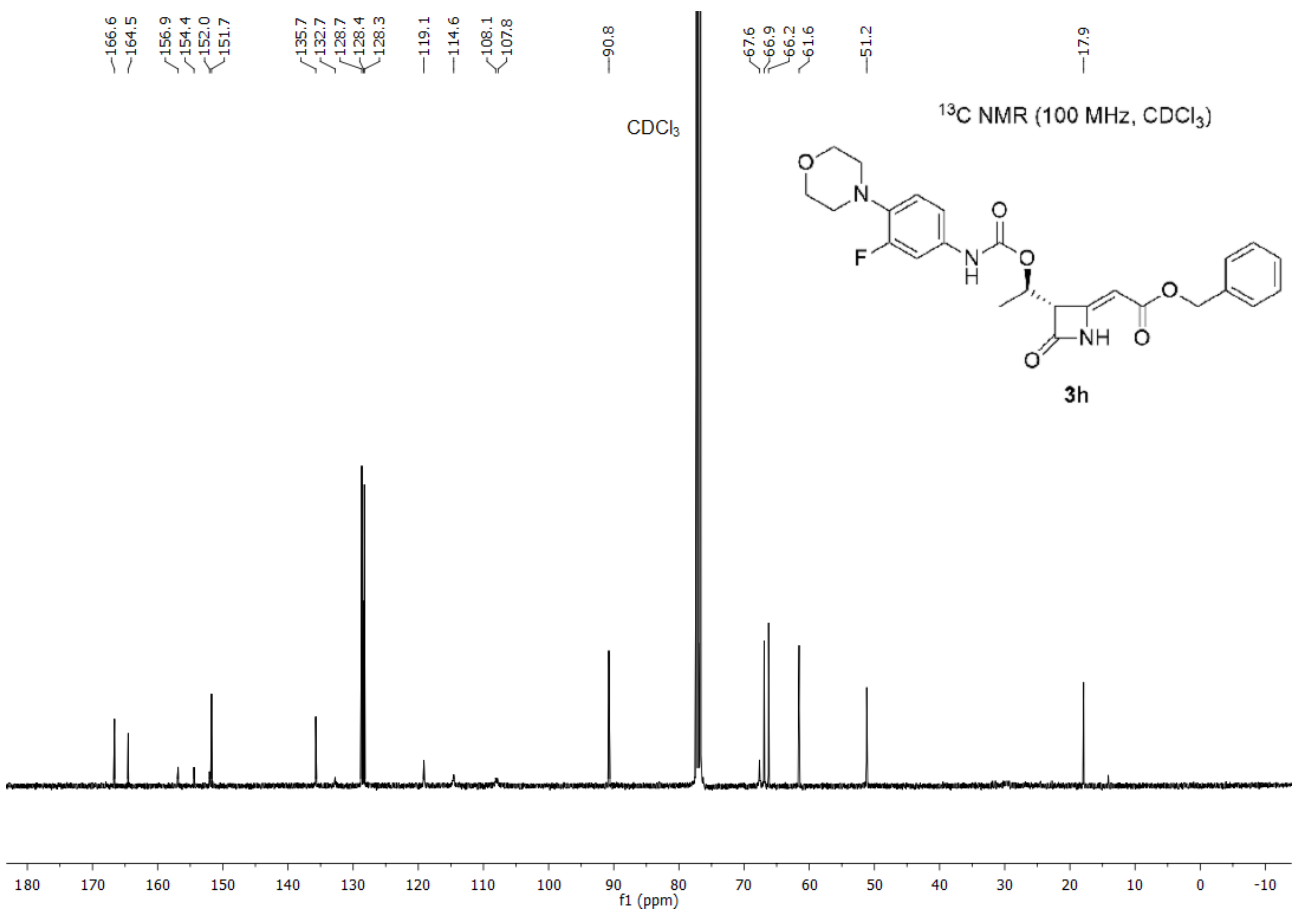
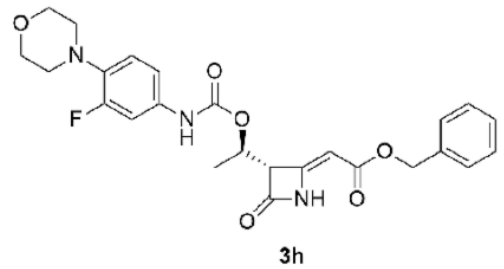
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7.41, 7.39, 7.38, 7.37, 7.35, 7.34, 7.01, 6.98, 6.96, 6.69  
5.31, 5.29, 5.28, 5.27, 5.25, 5.18  
3.97, 3.96, 3.93, 3.91, 3.87  
3.16, 3.09, 3.04  
1.47, 1.45

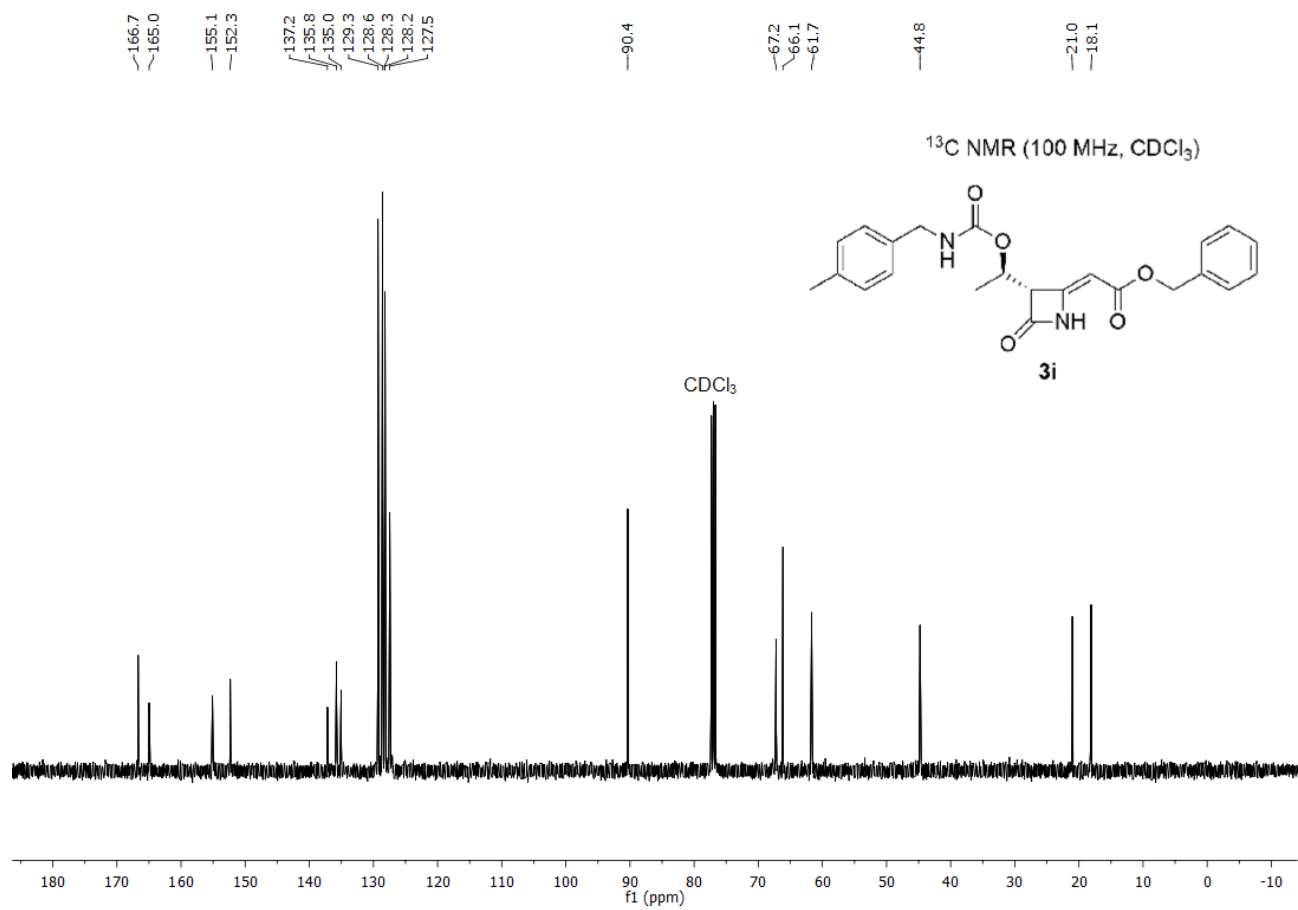
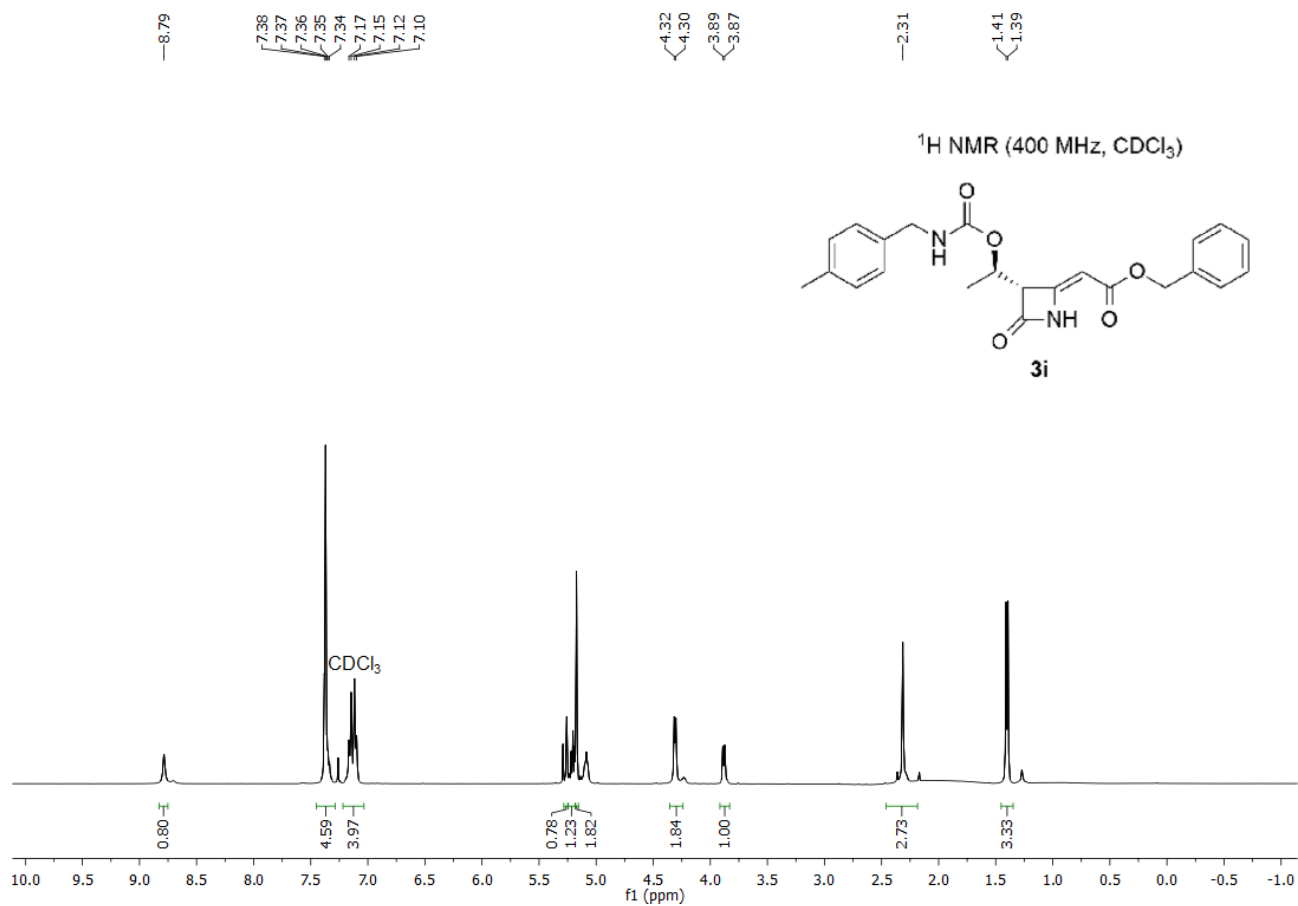
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>)

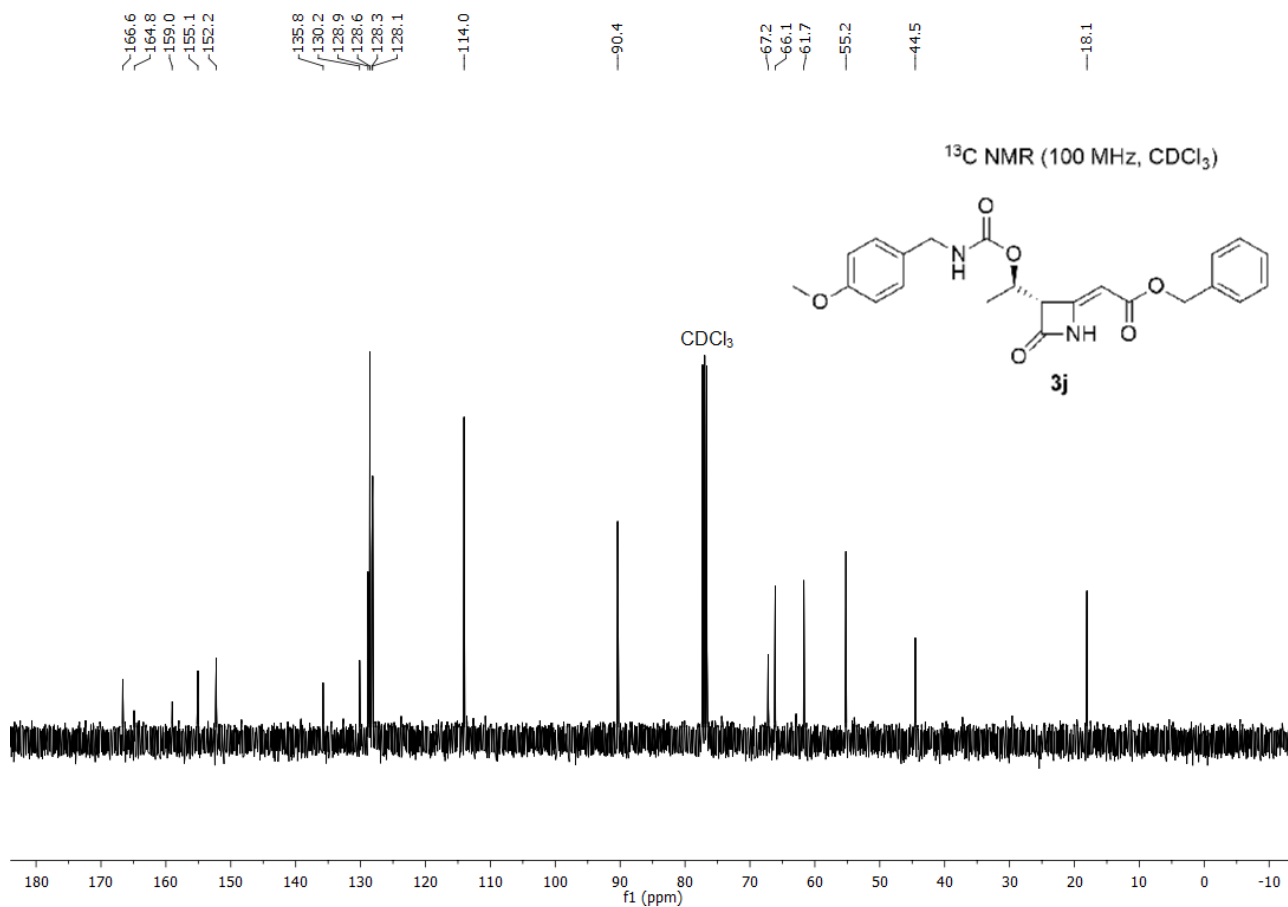
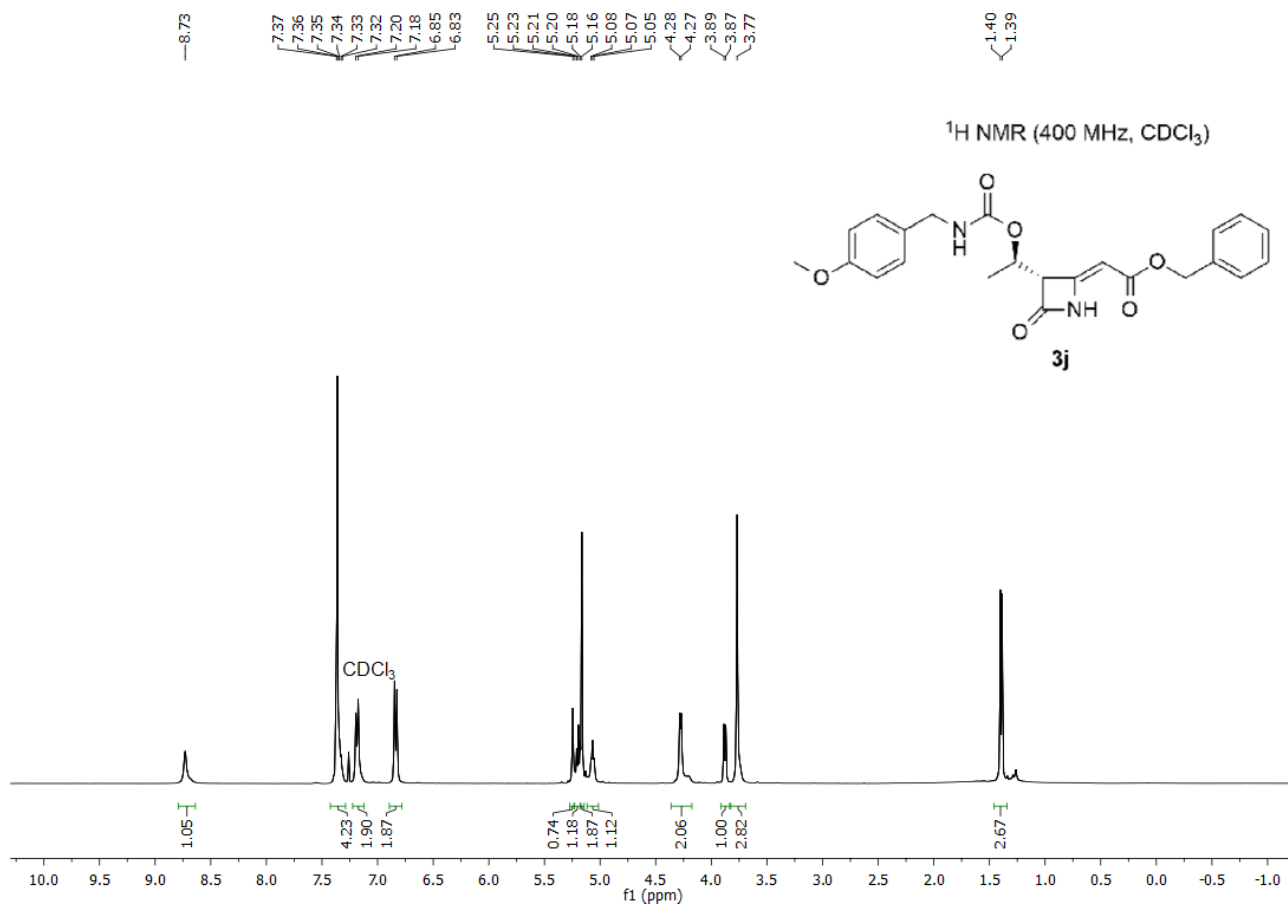


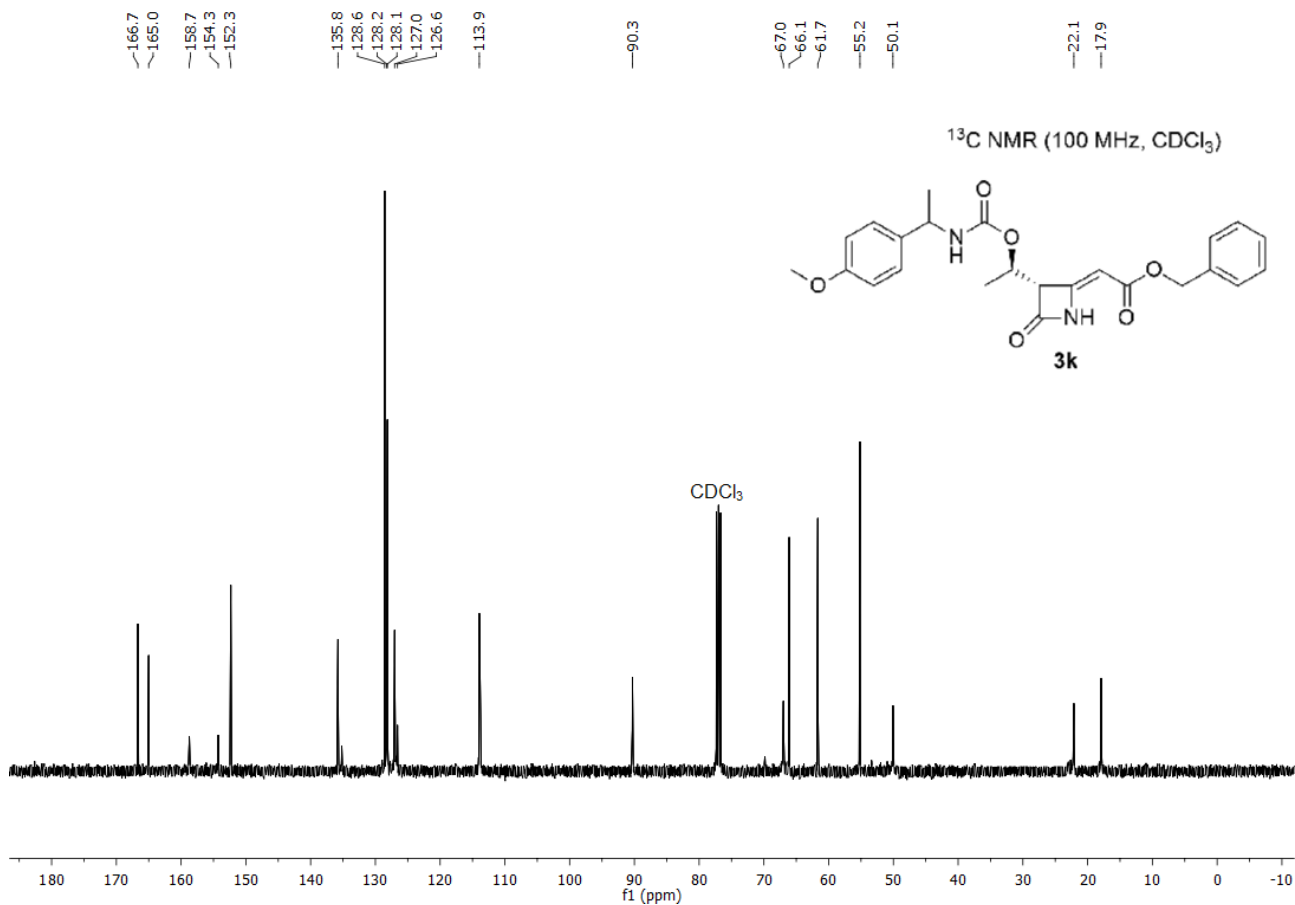
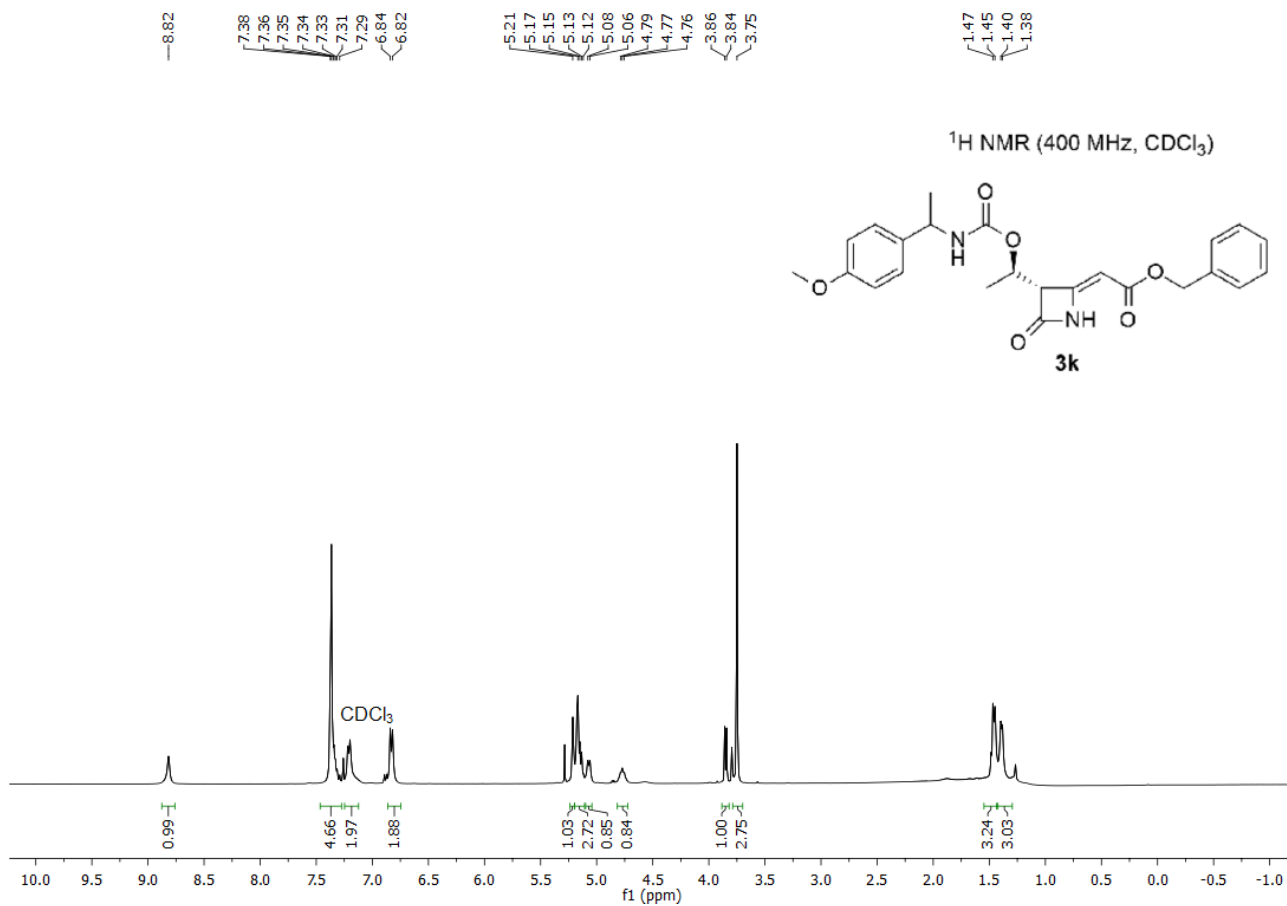
166.6, 164.5, 156.9, 154.4, 152.0, 151.7  
135.7, 132.7, 128.7, 128.4, 128.3  
119.1, 114.6, 108.1, 107.8  
90.8  
67.6, 66.9, 66.2, 61.6  
51.2  
17.9

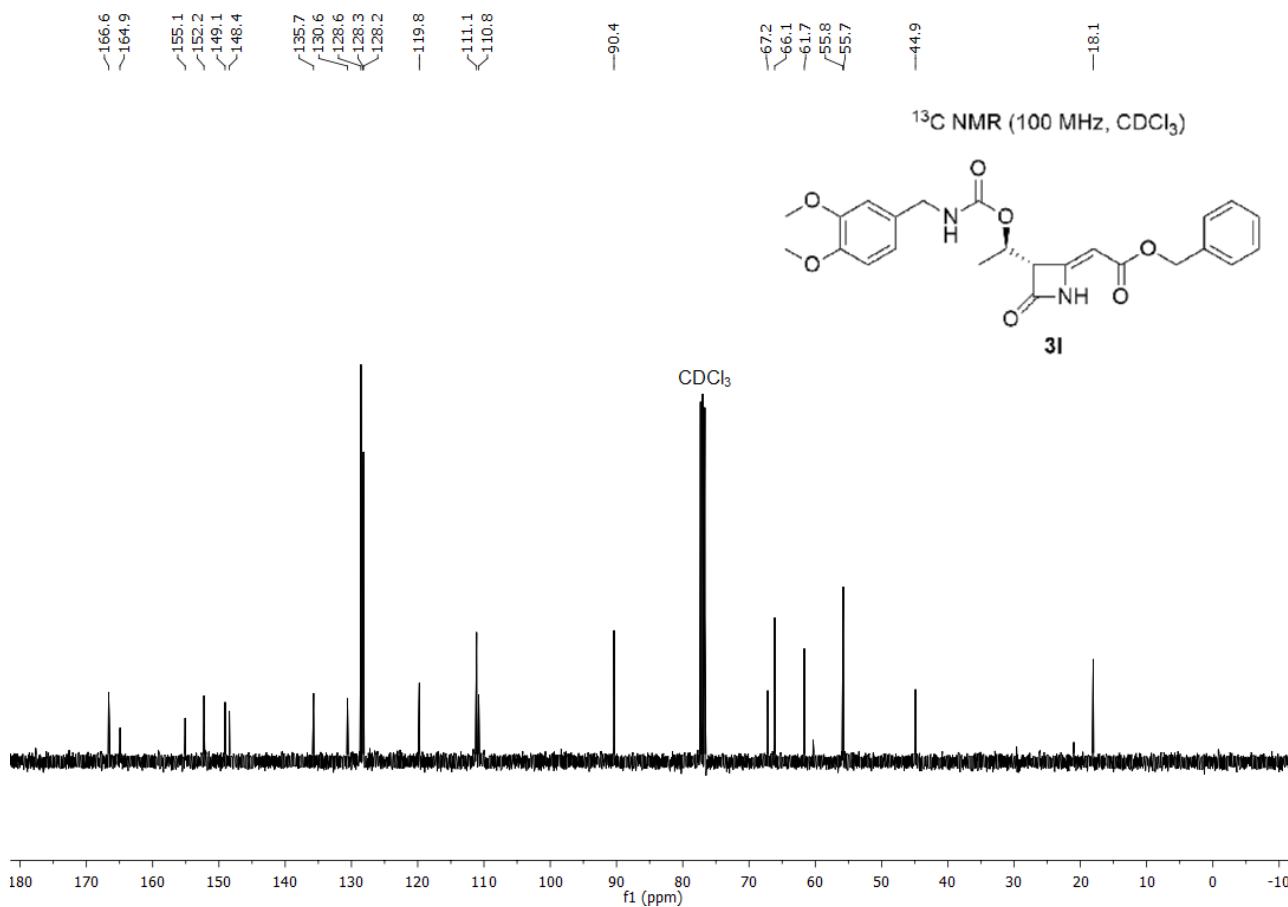
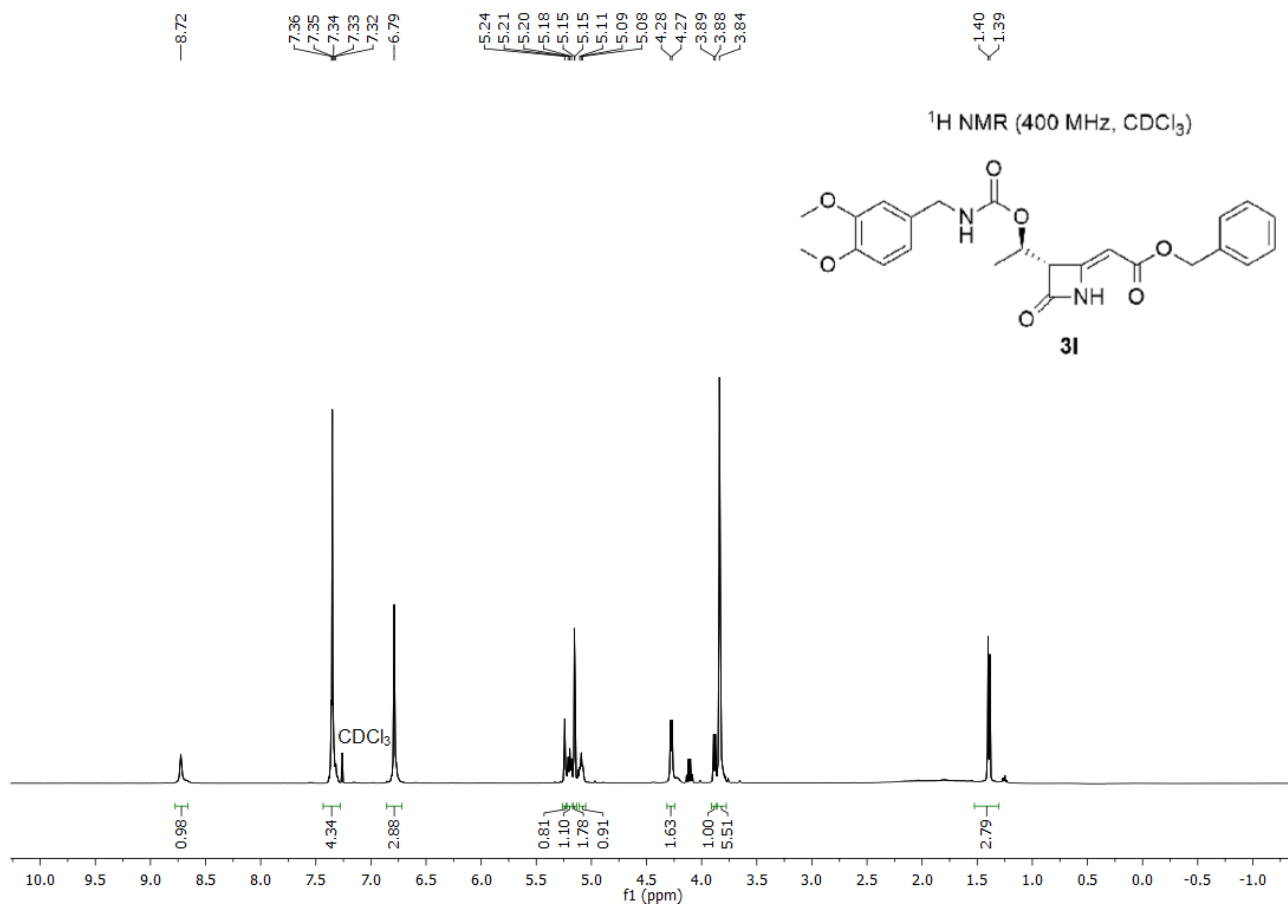
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>)

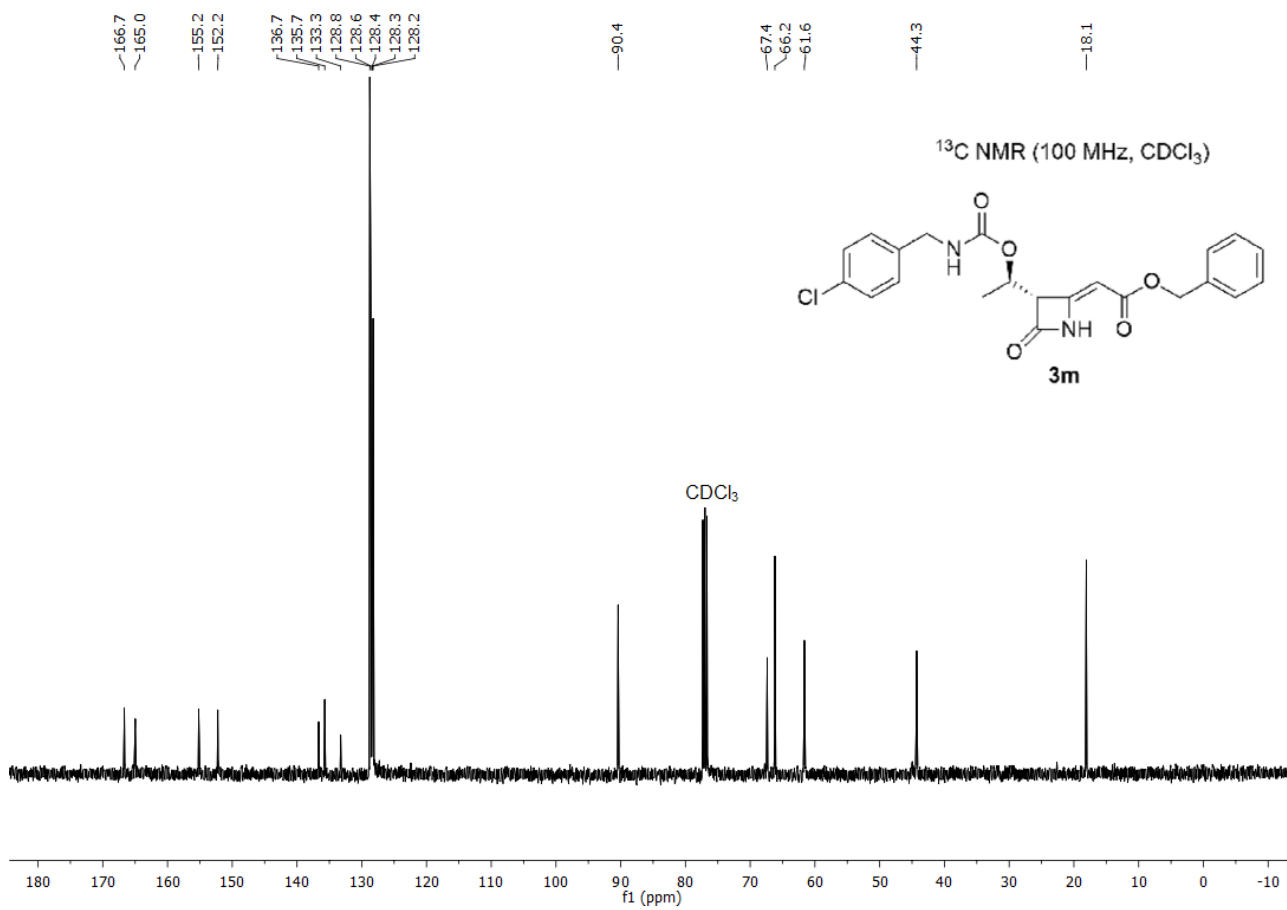
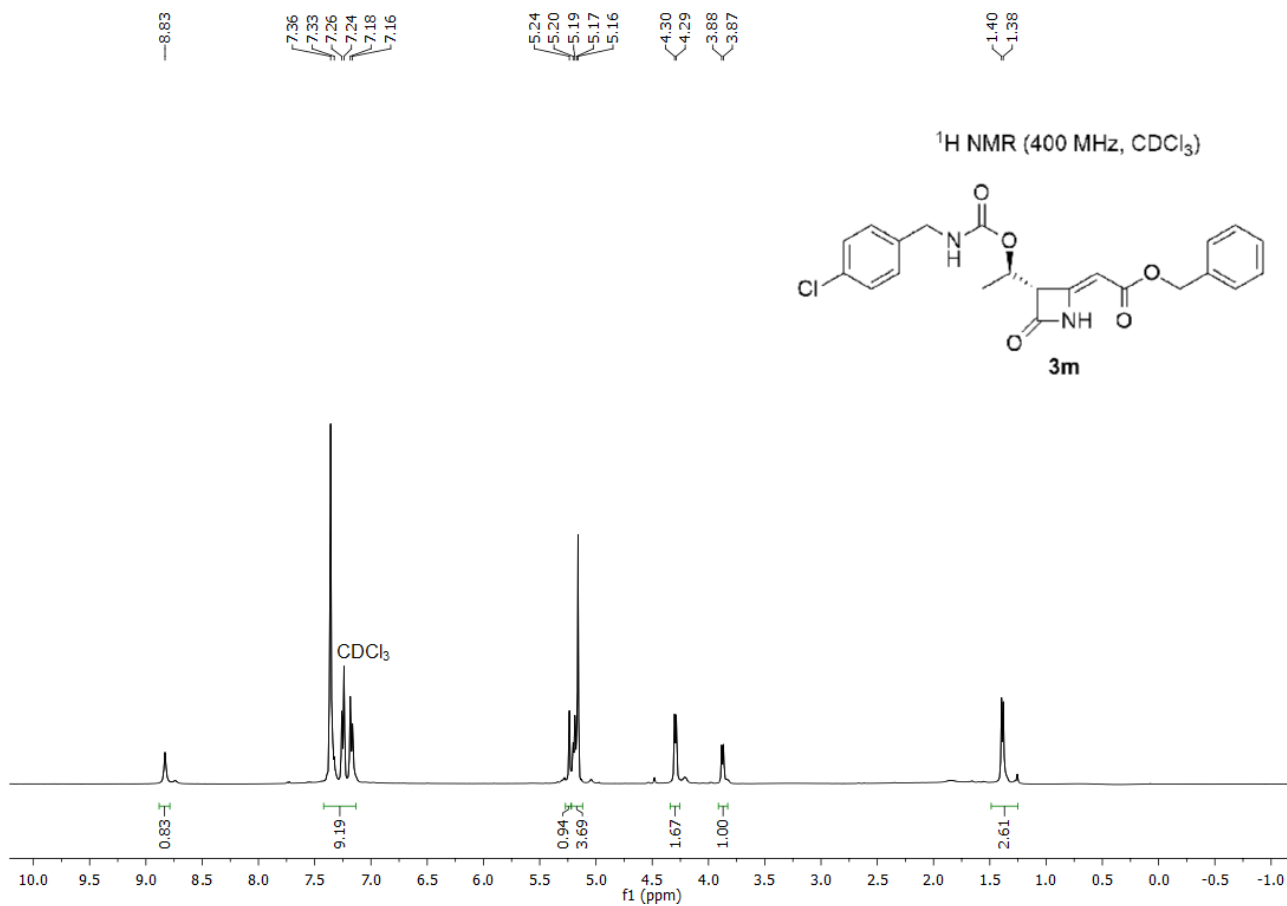


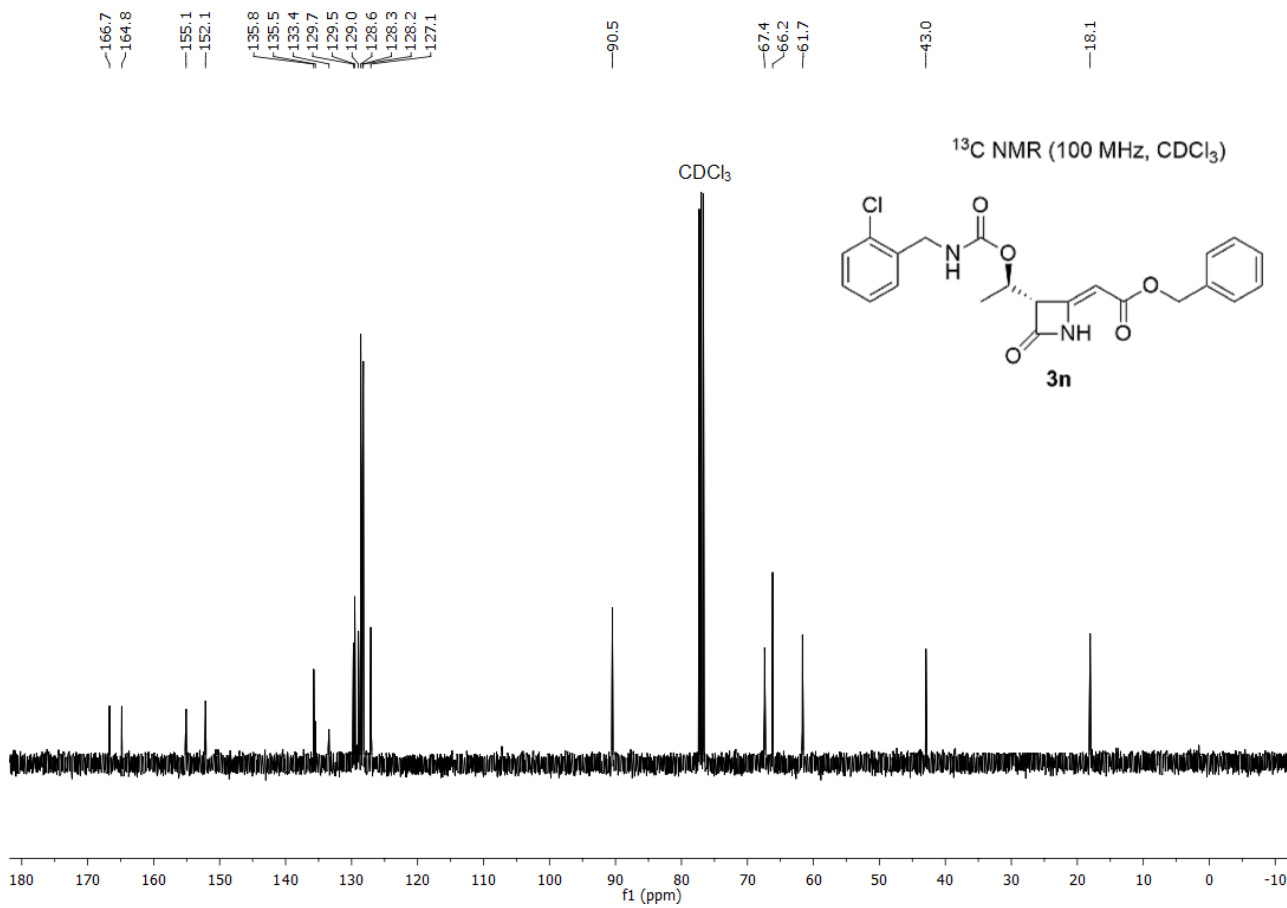
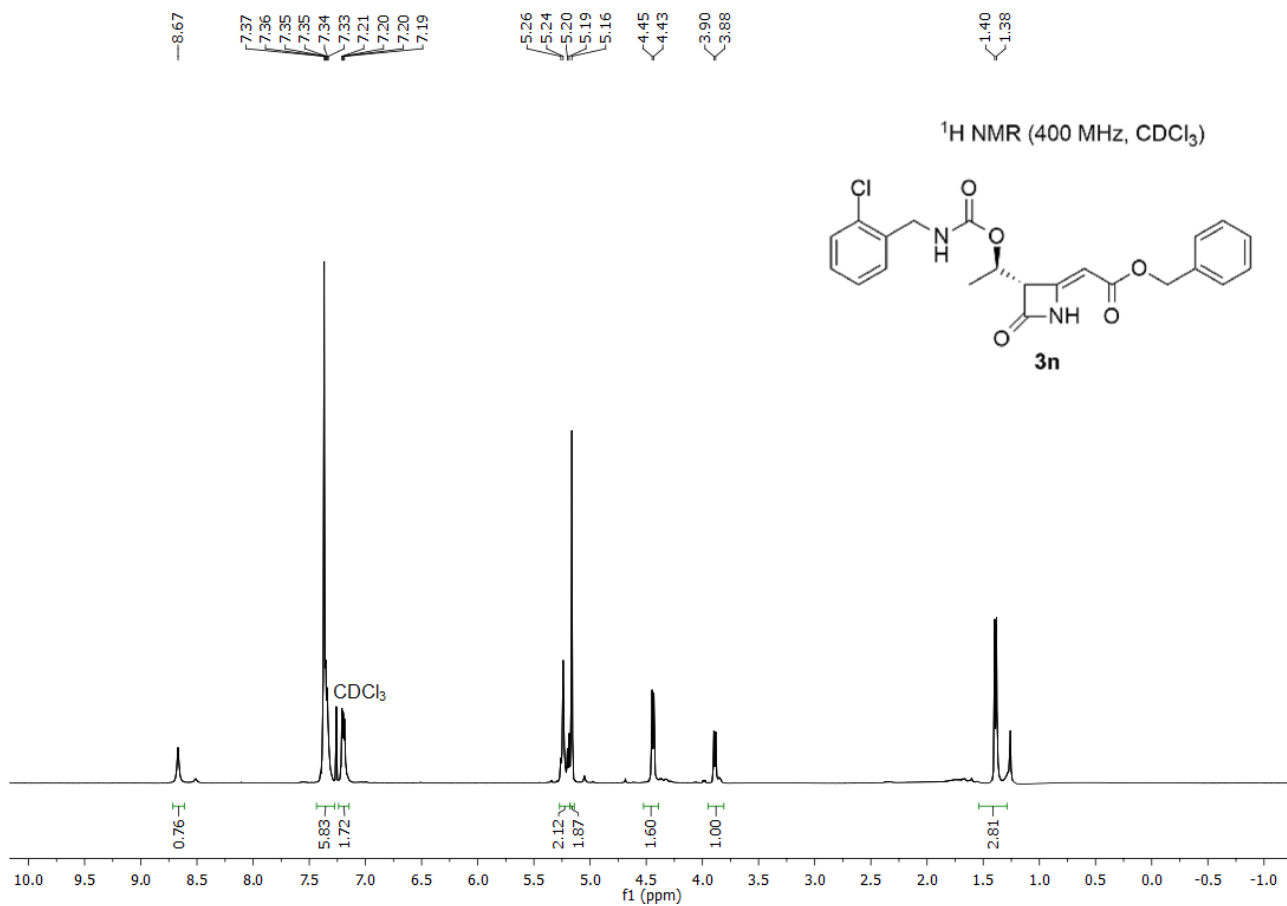




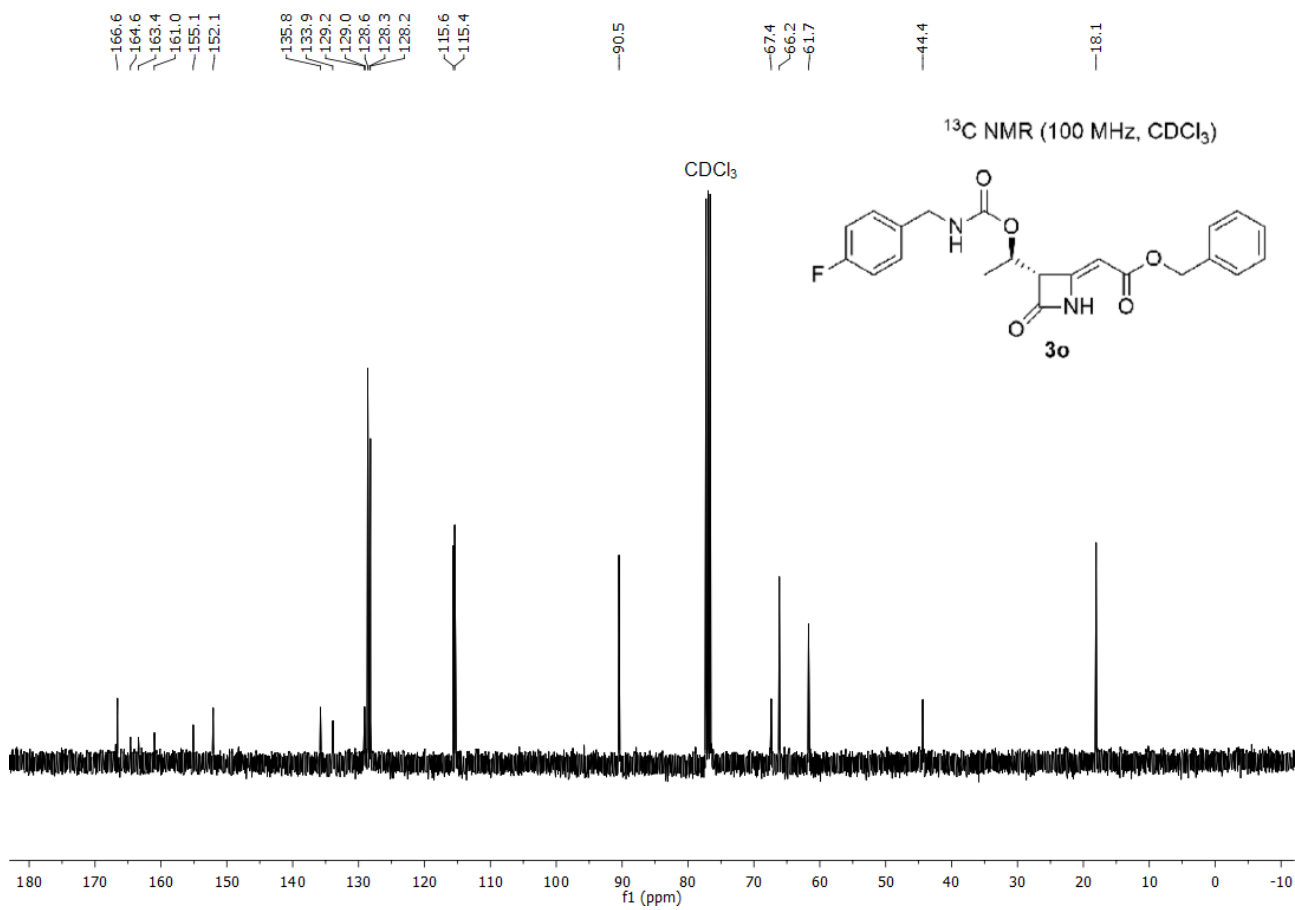
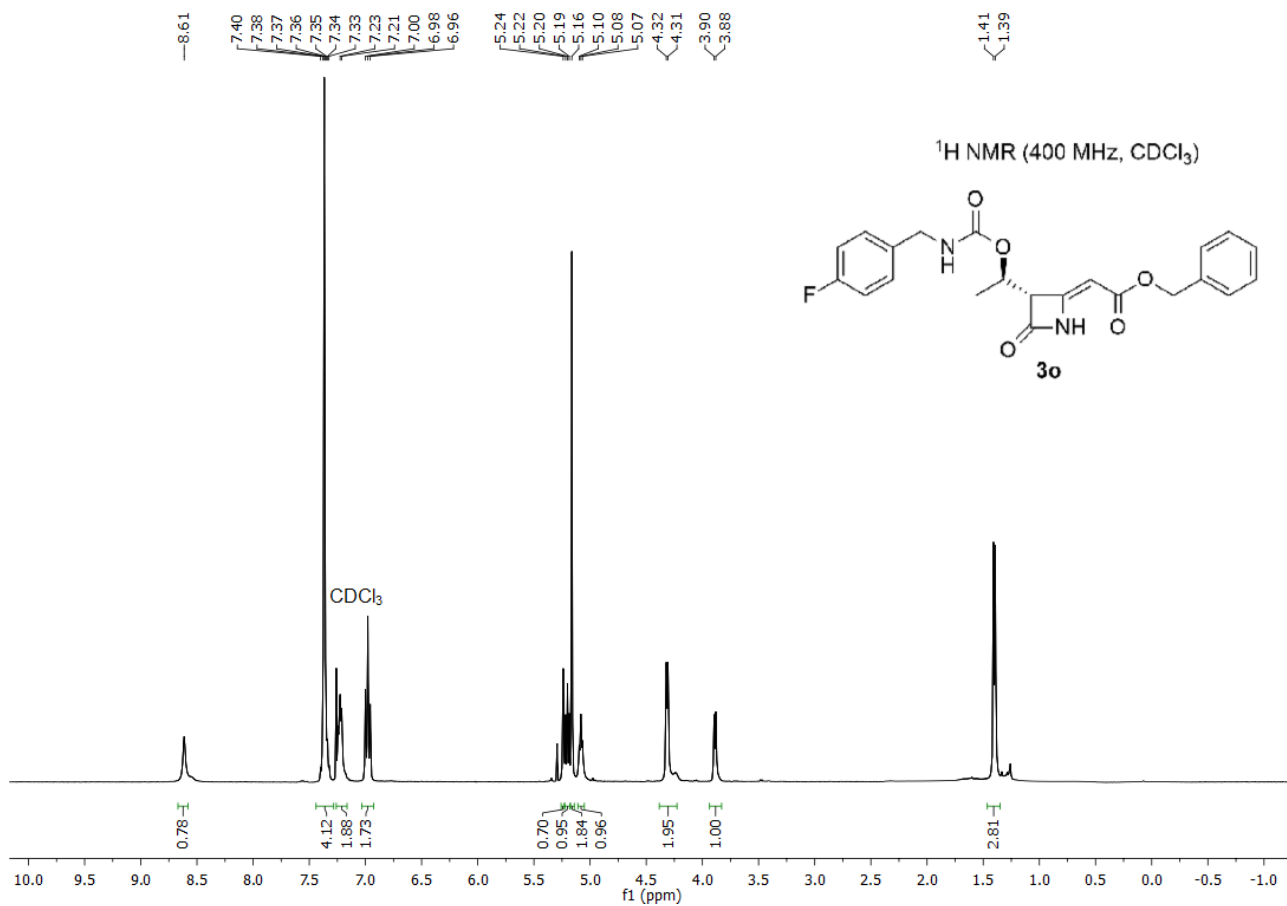












8.80

7.35  
7.26  
7.25  
7.23  
7.17  
7.16  
6.96  
6.93  
6.88  
6.86  
6.84

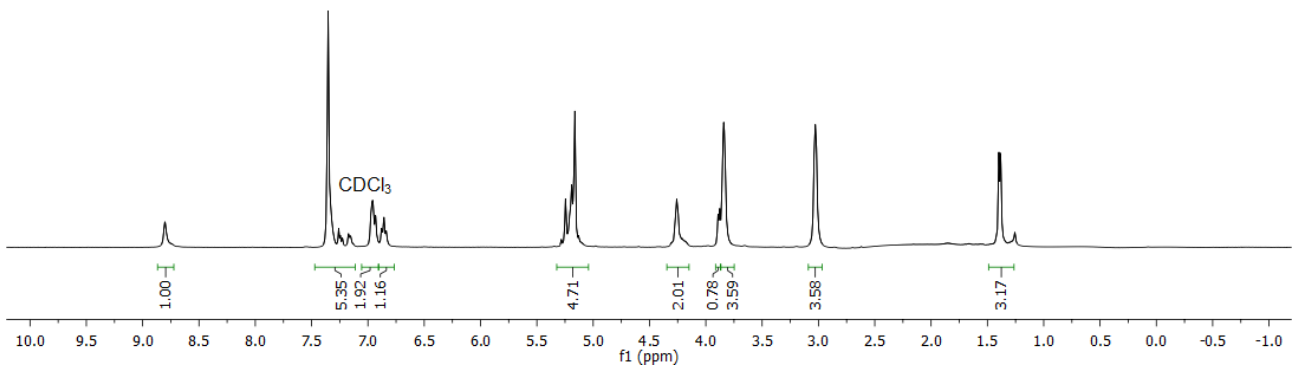
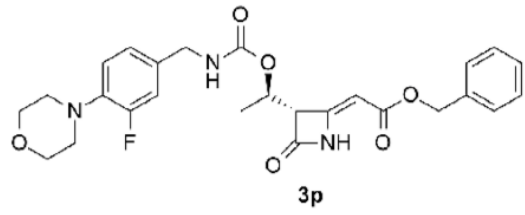
5.25  
5.21  
5.19  
5.16  
5.13

4.26  
3.89  
3.88  
3.84

3.03

1.40  
1.38

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>)



166.6  
164.9  
156.7  
155.1  
154.3  
152.2  
139.2  
139.1  
135.8  
133.0  
132.9  
128.6  
128.3  
128.1  
123.4  
123.4  
118.7  
118.7  
115.5  
115.3

90.4

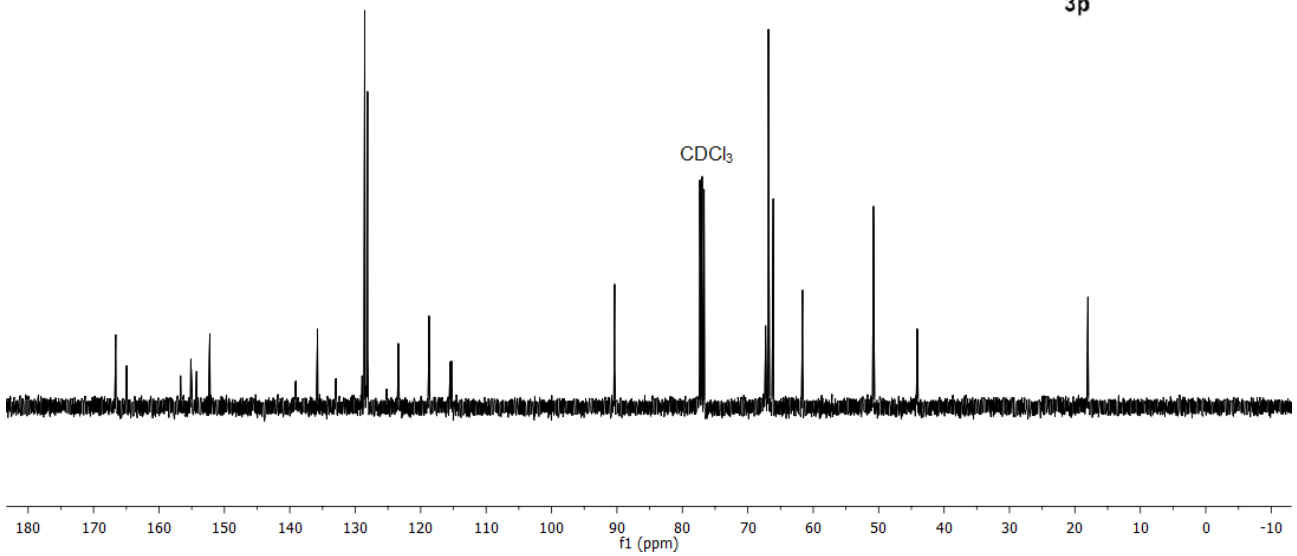
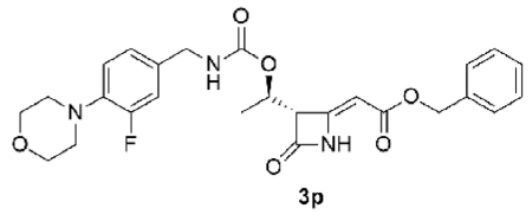
67.3  
66.8  
66.1  
61.6

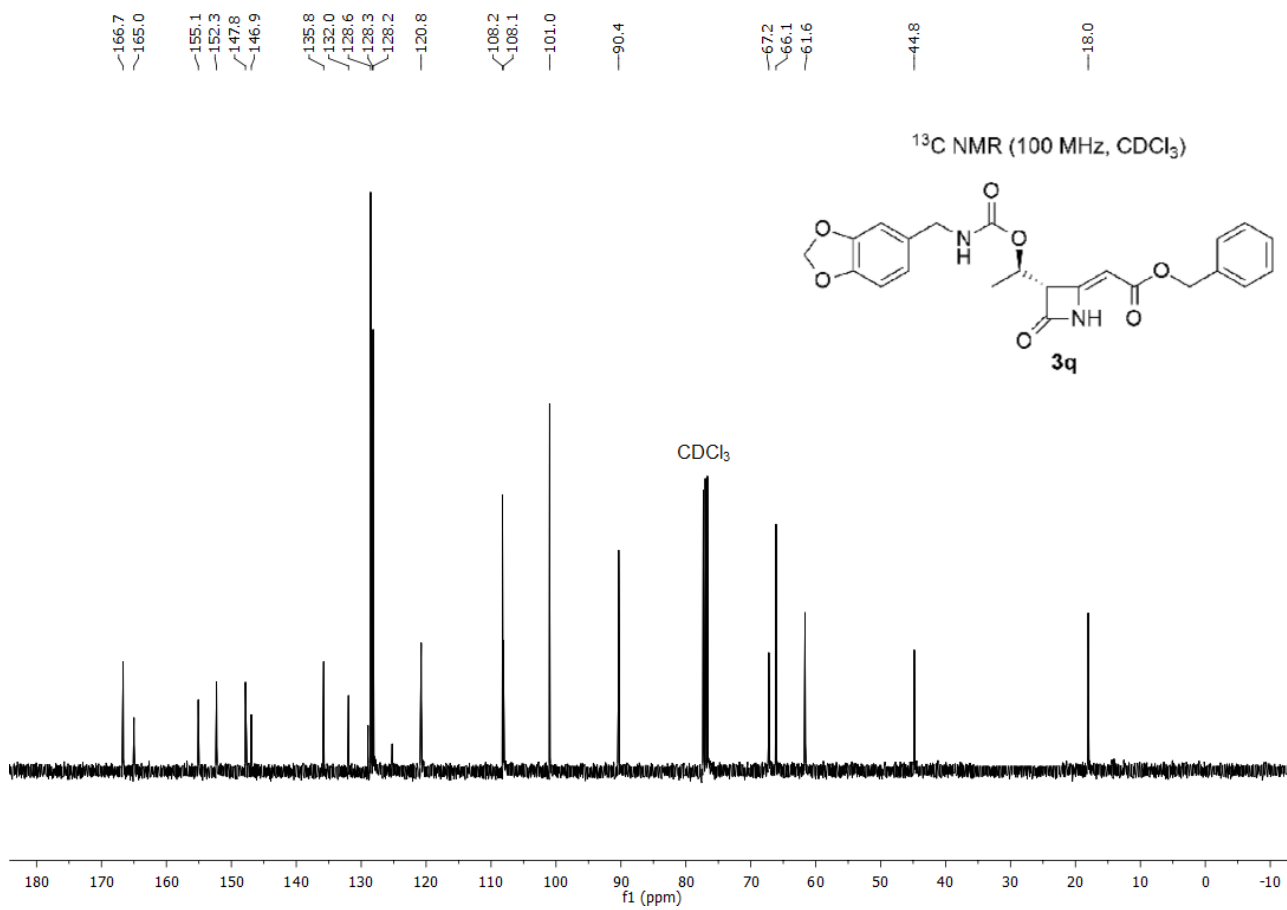
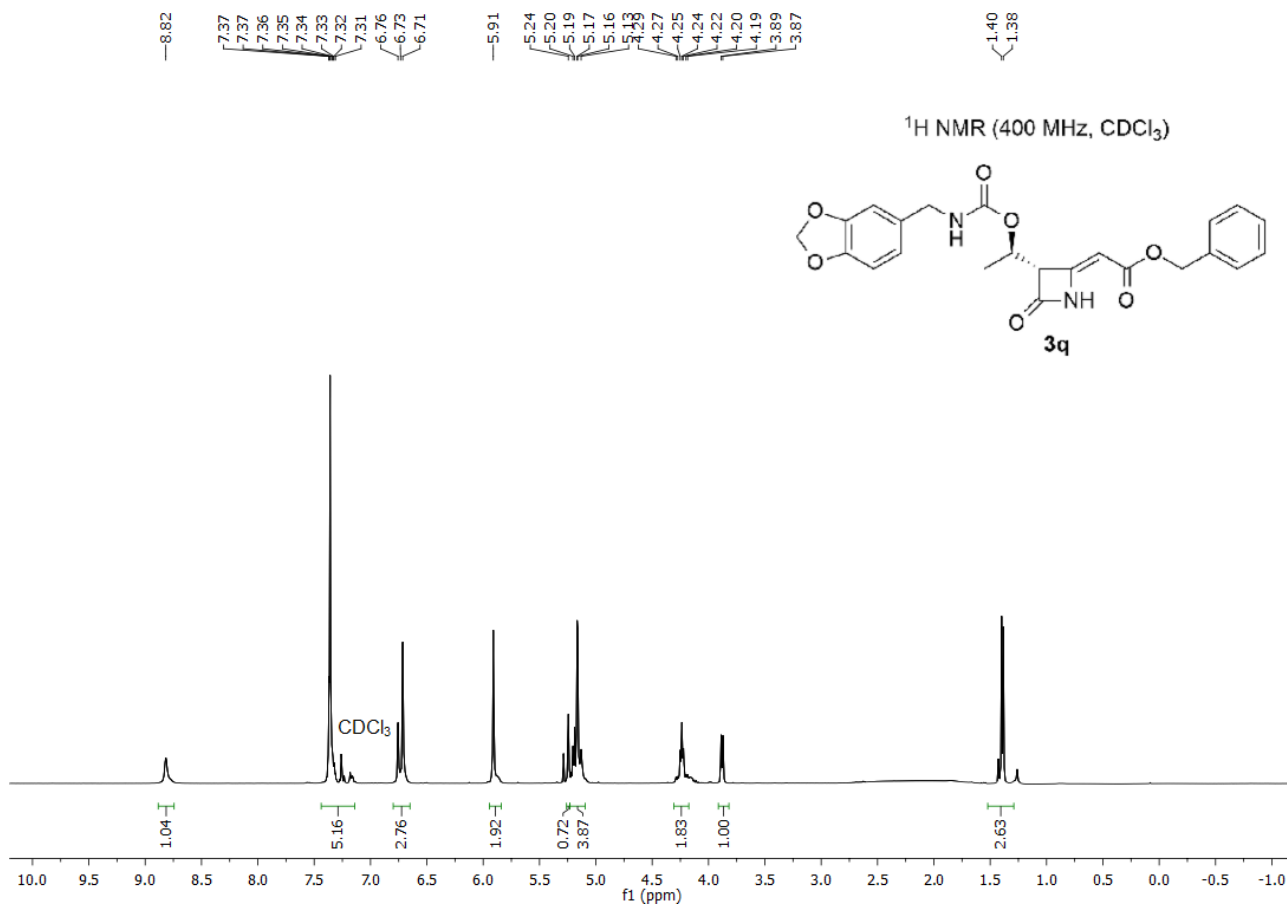
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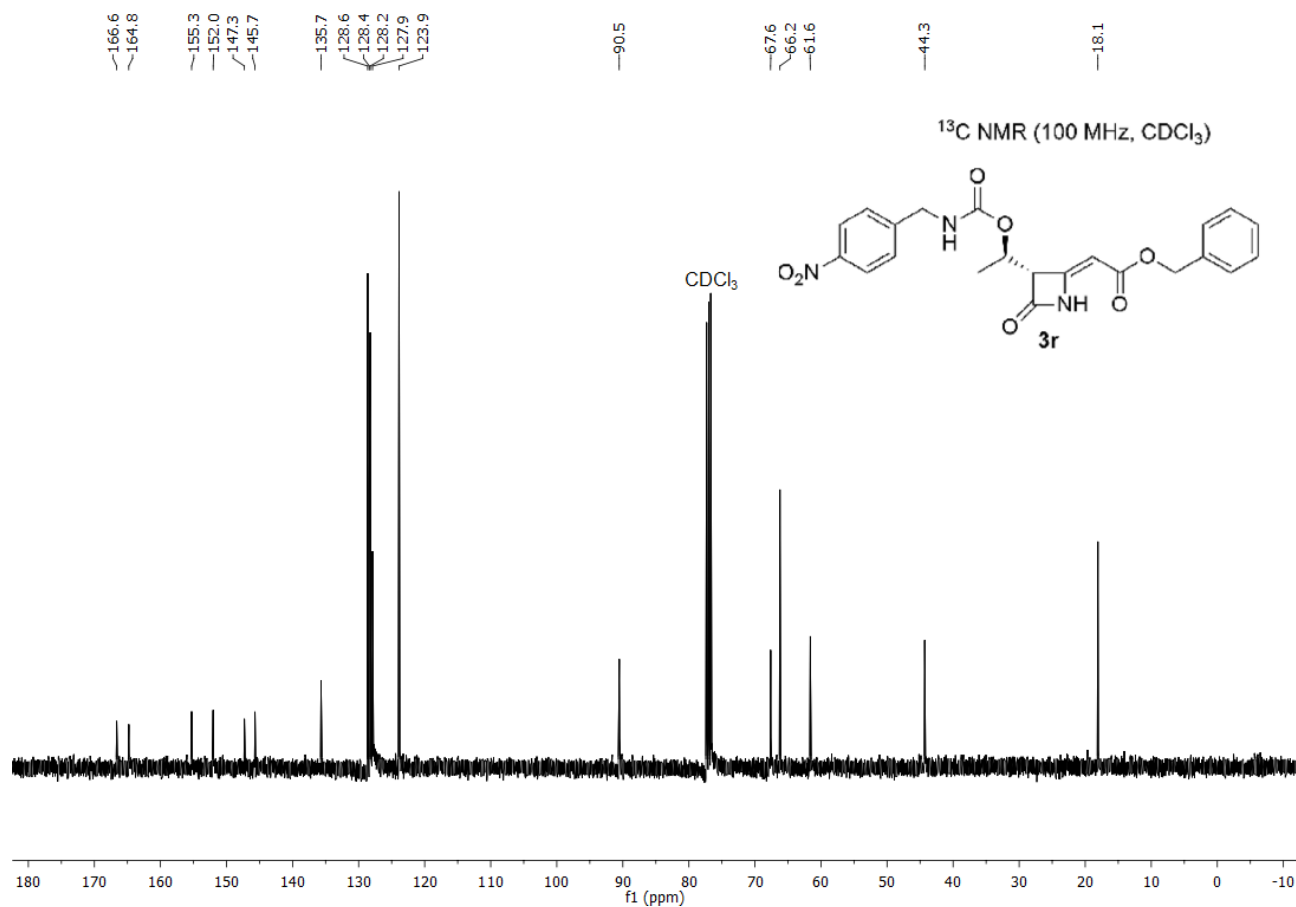
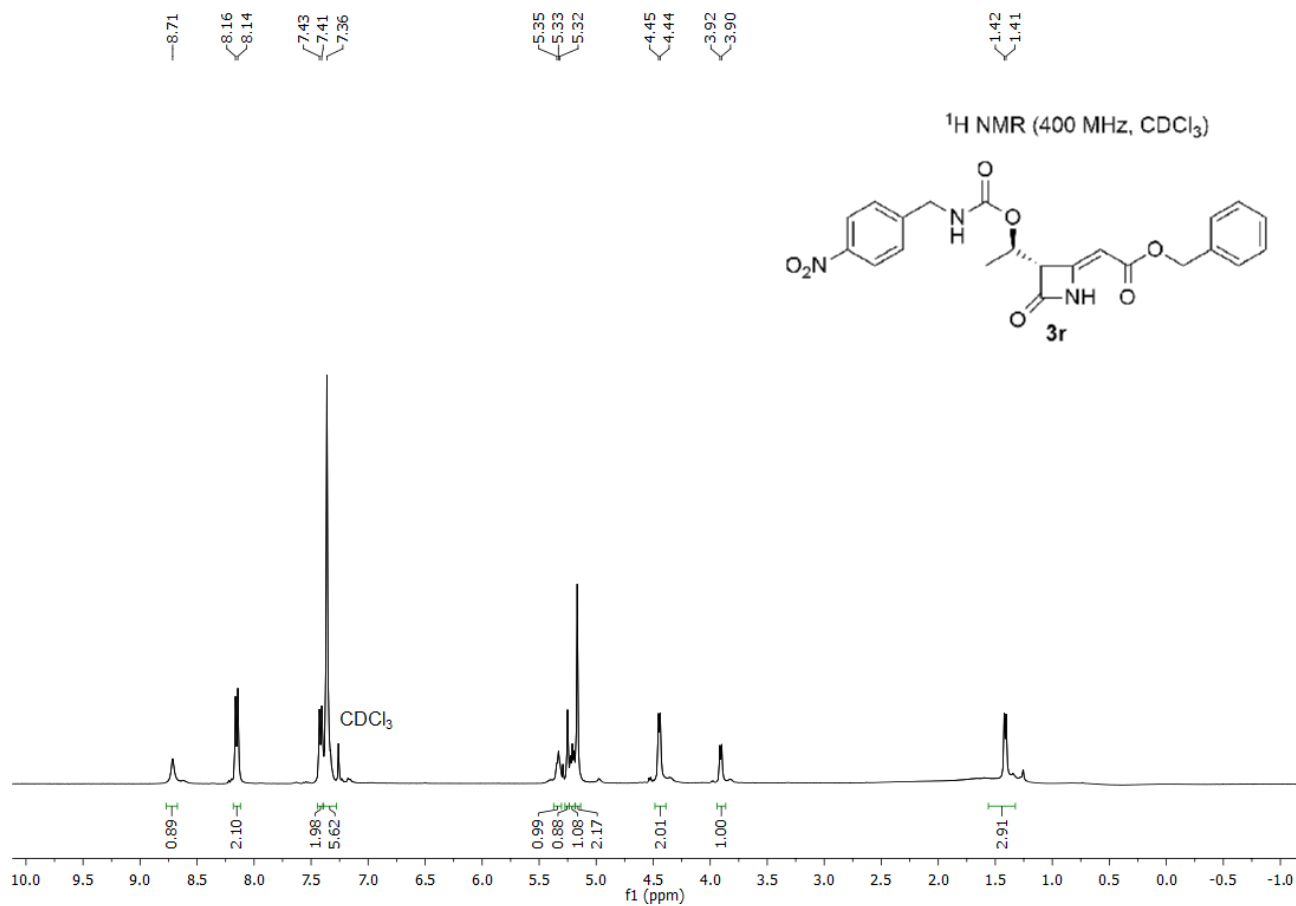
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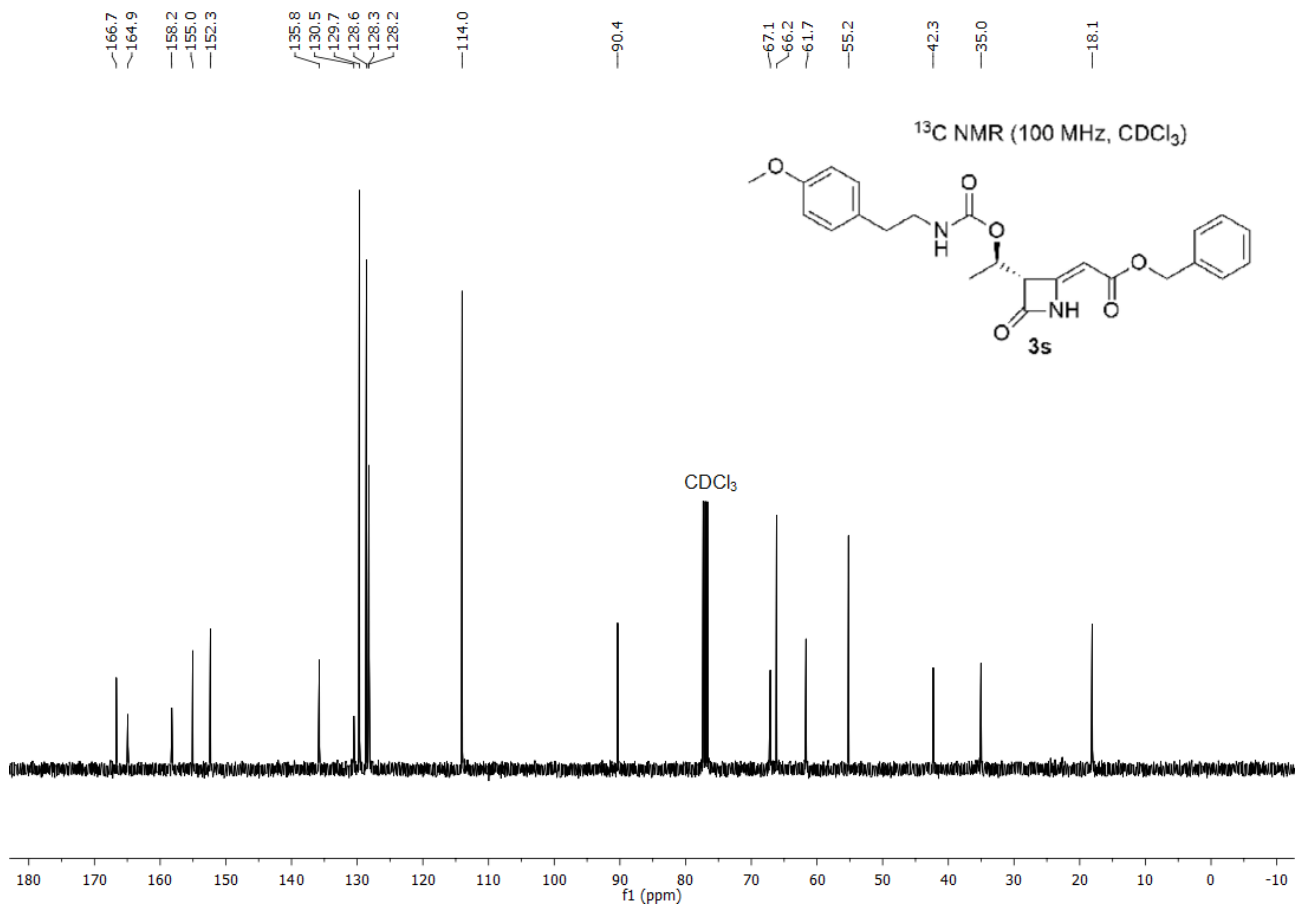
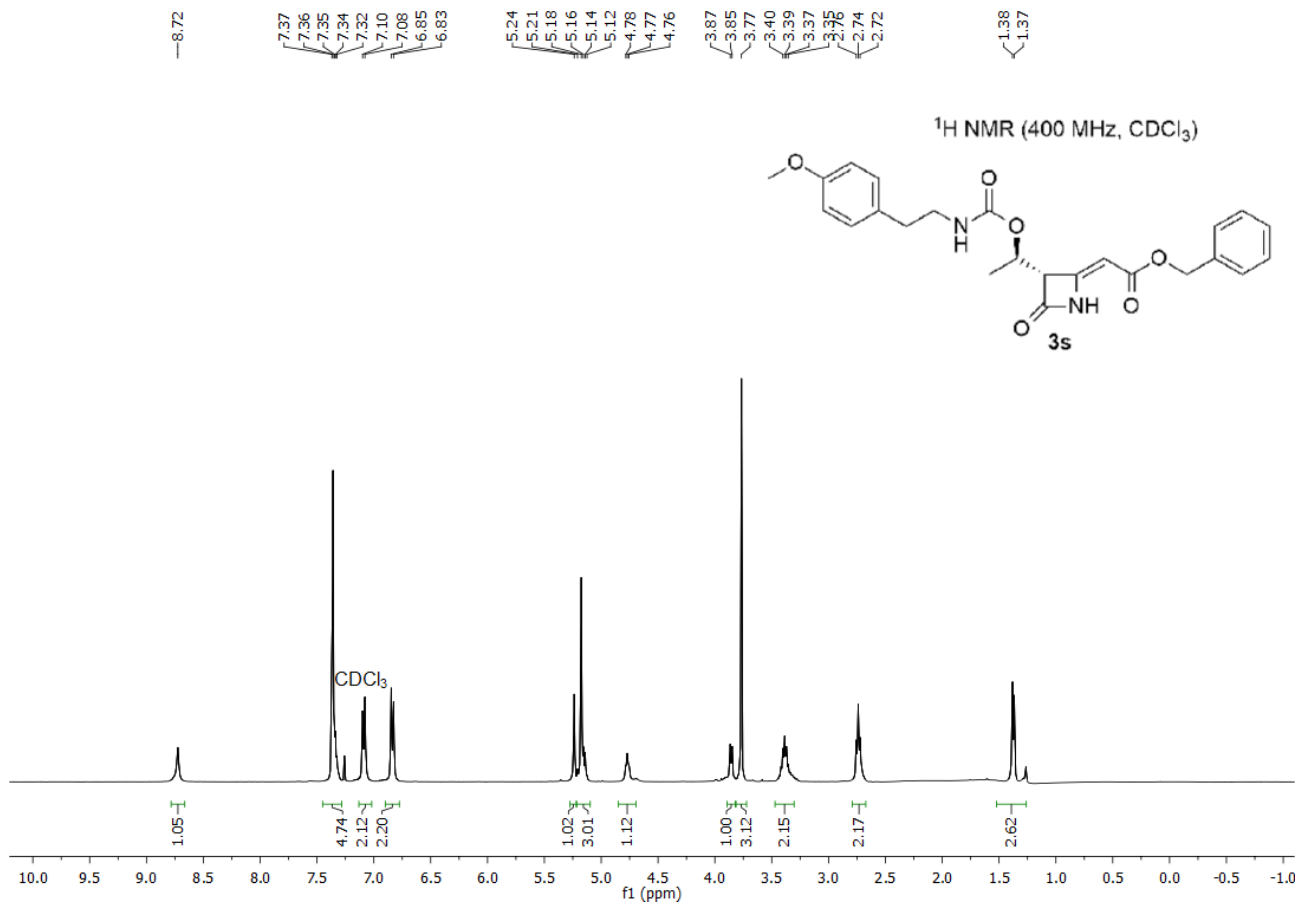
18.0

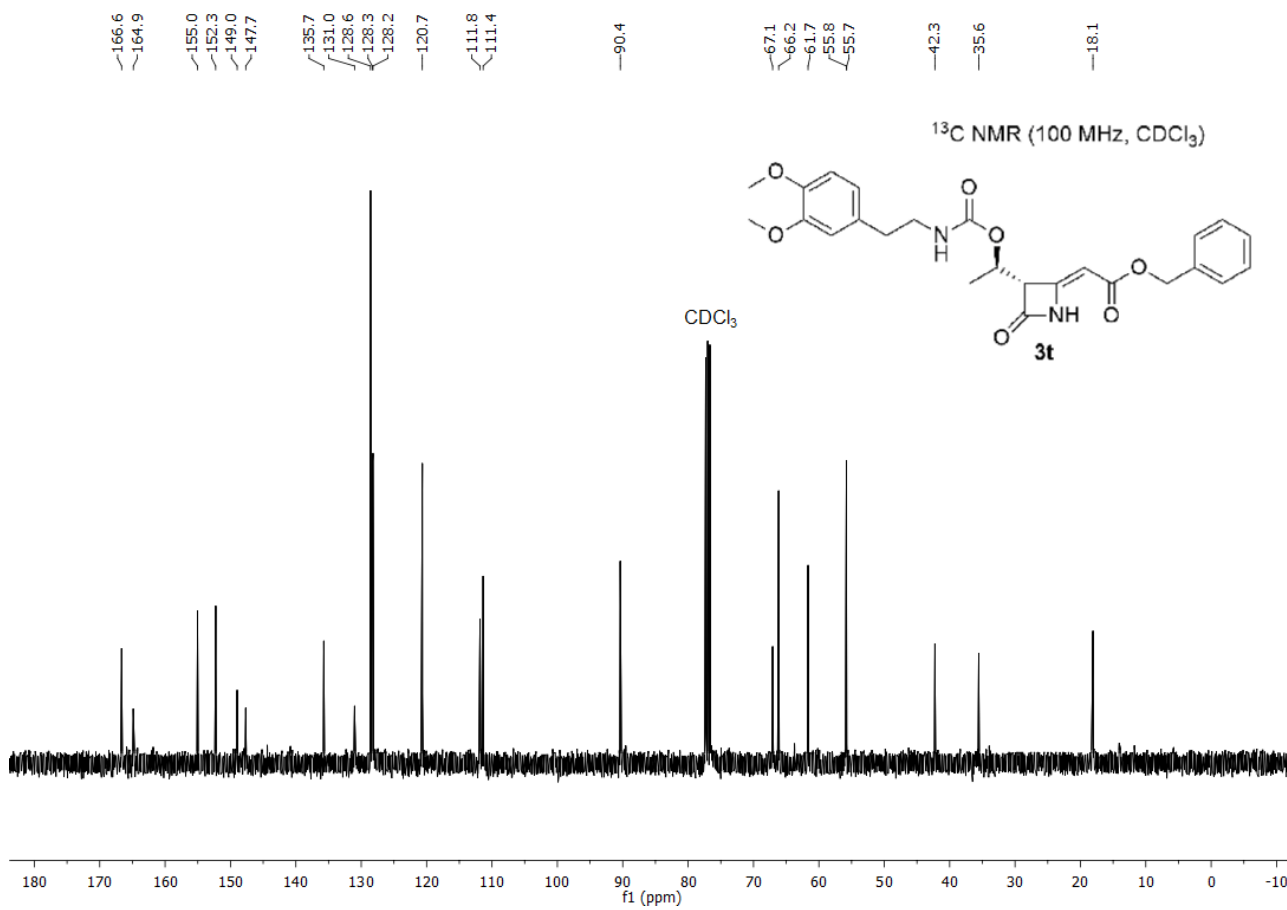
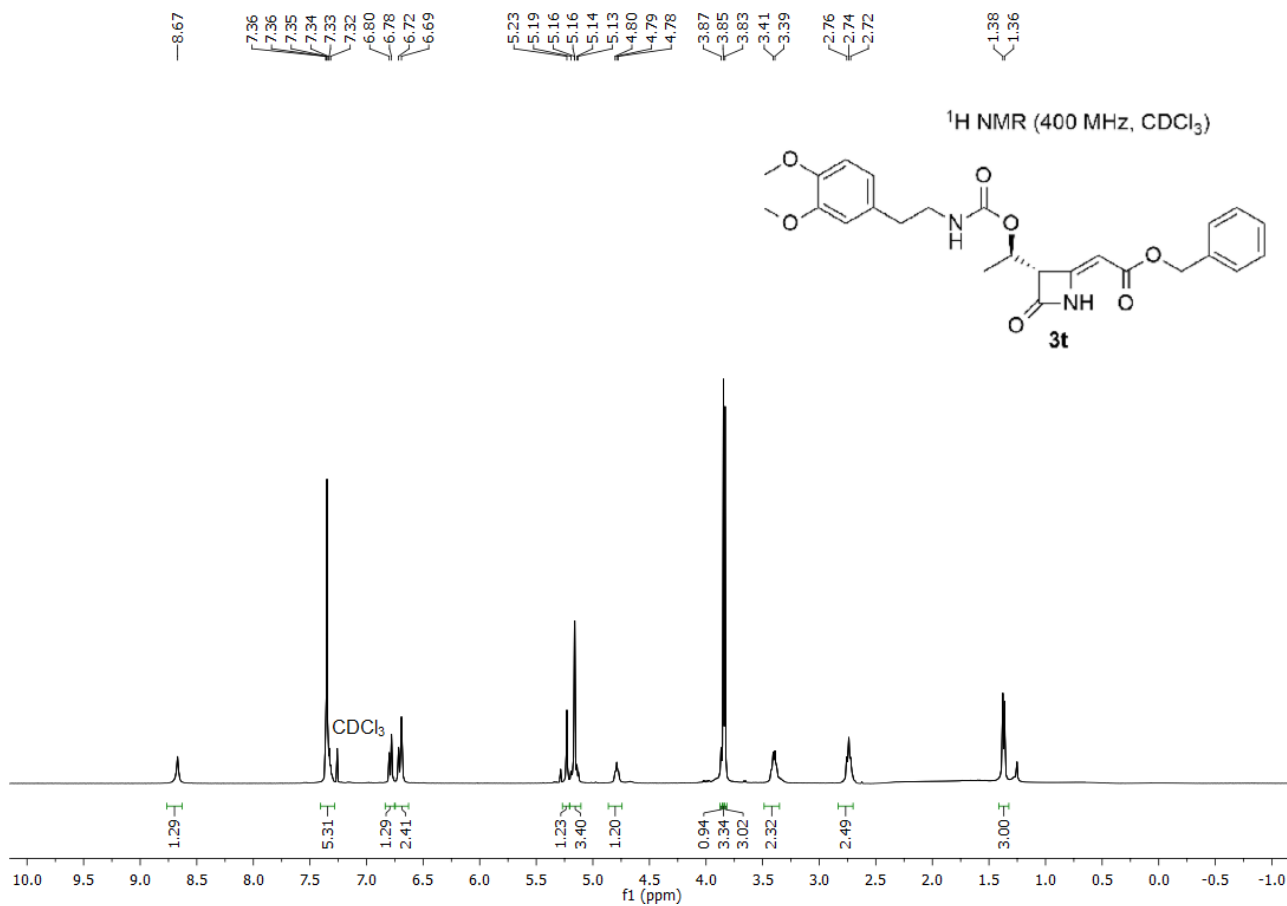
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>)



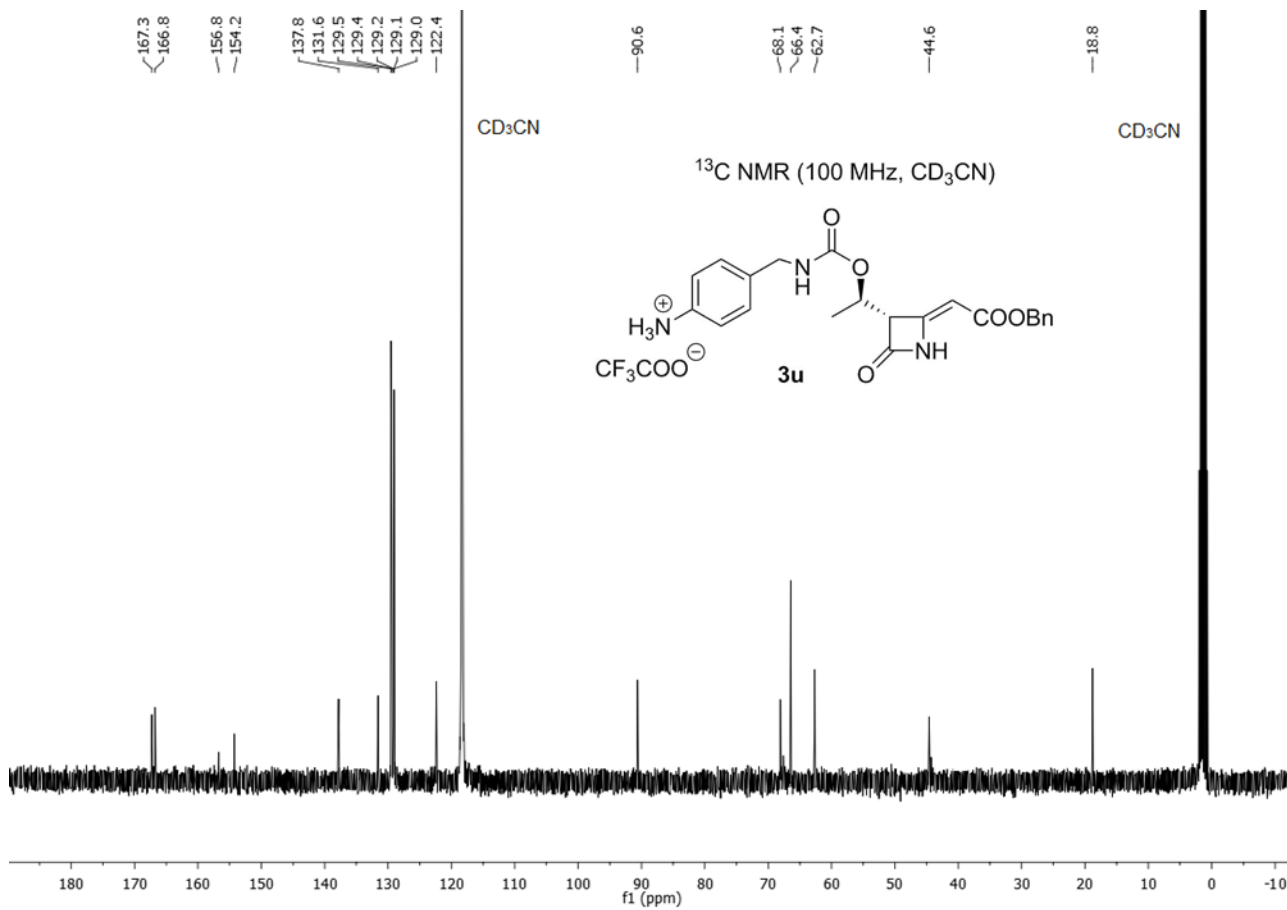
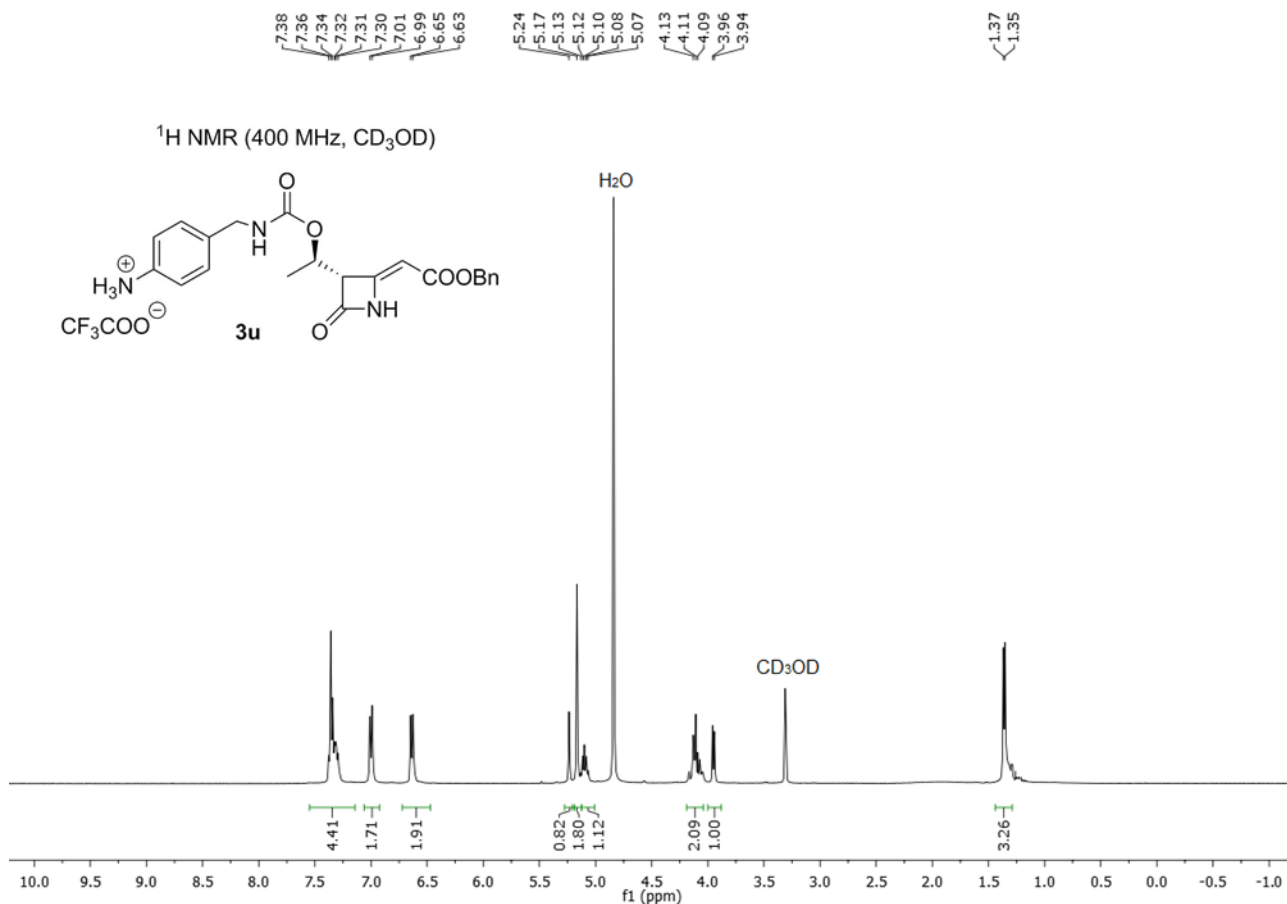






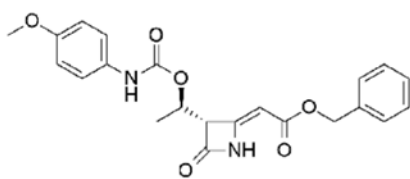




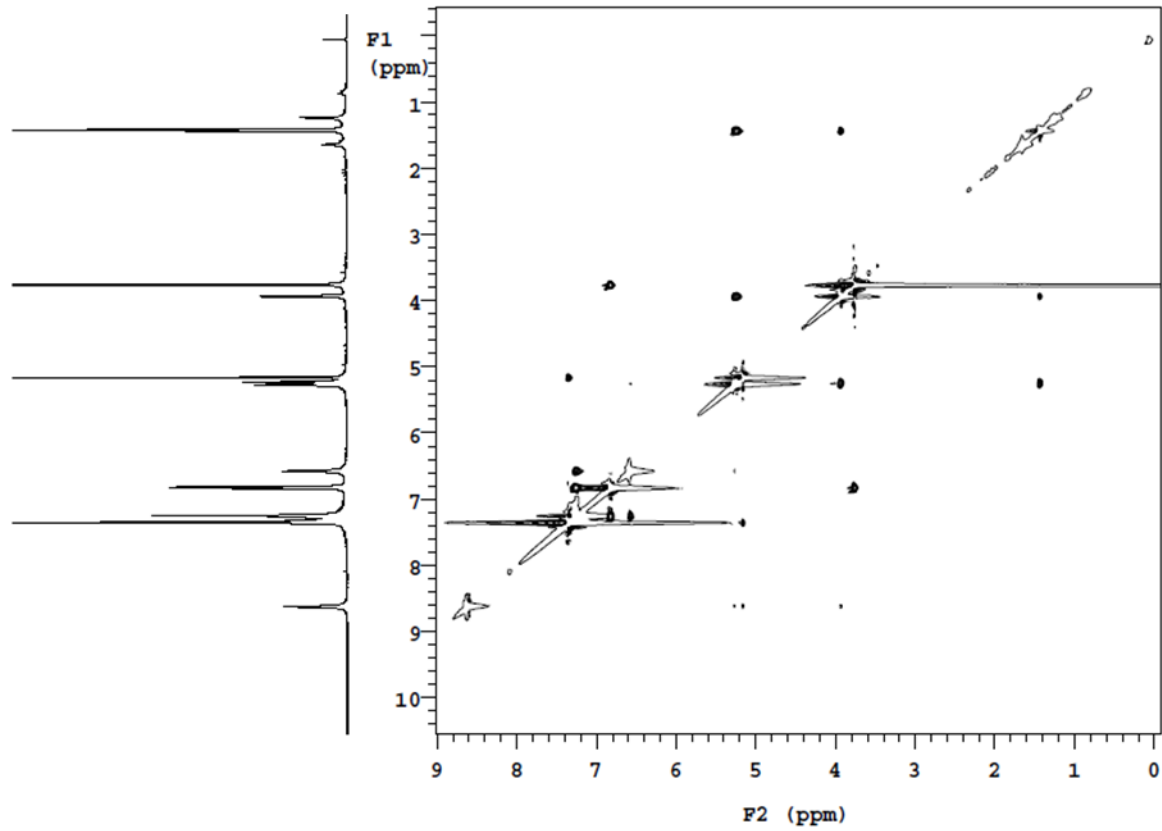
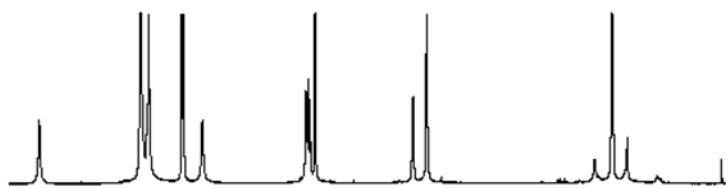




NOESY NMR (400MHz, CDCl<sub>3</sub>)



3d



NOESY NMR (400MHz, CDCl<sub>3</sub>)

