

CHEMISTRY

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Supporting Information

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Regio- and Stereoselective Ring Opening Reactions of Epoxides with Indoles and Pyrroles in 2,2,2-Trifluoroethanol

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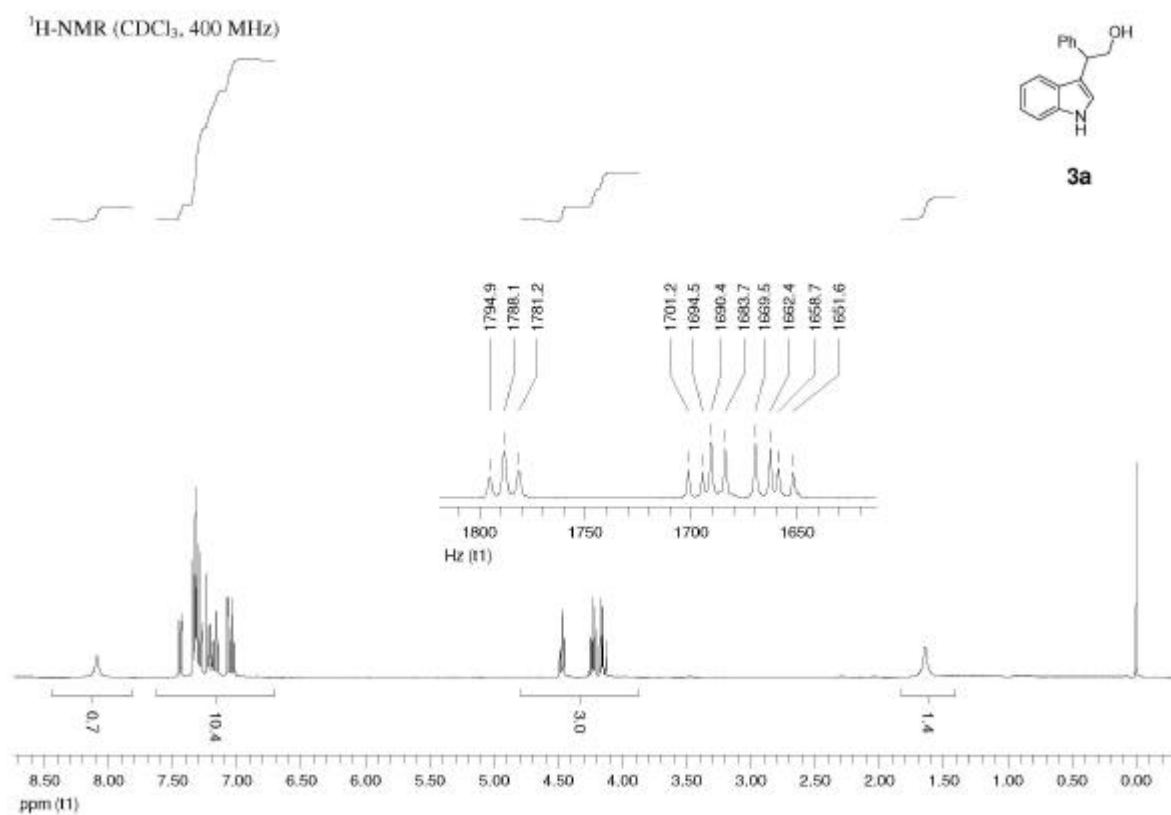
Butenandtstraße 5-13 (Haus F)

81377 München (Germany)

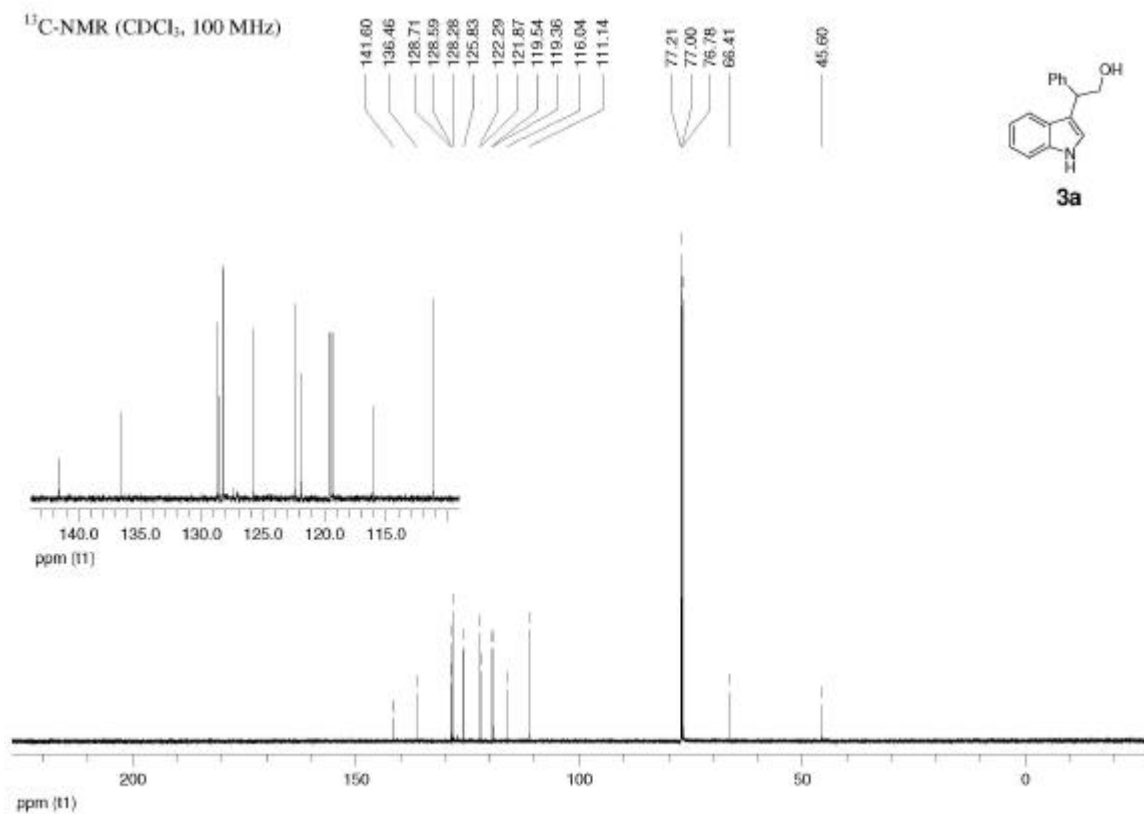
Fax: (+49) 89-2180-77717

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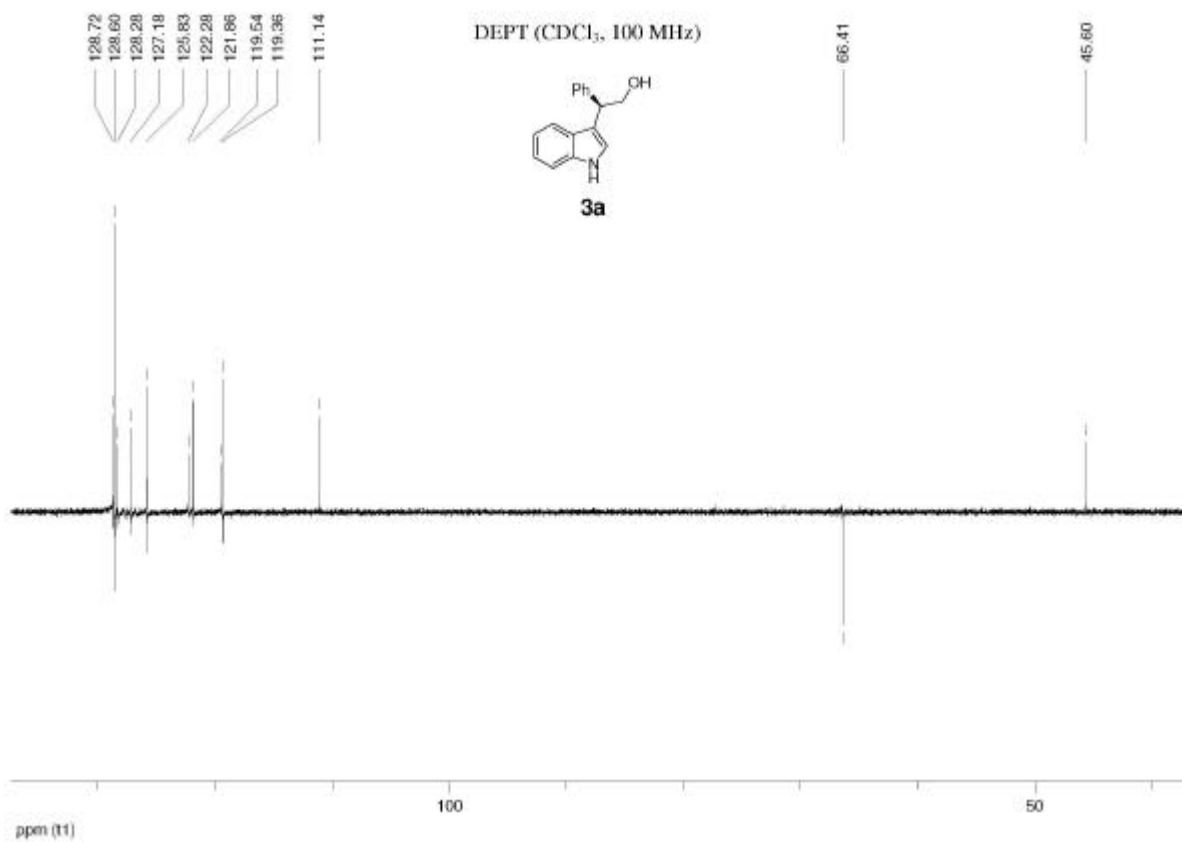
^1H and ^{13}C NMR spectra of products.



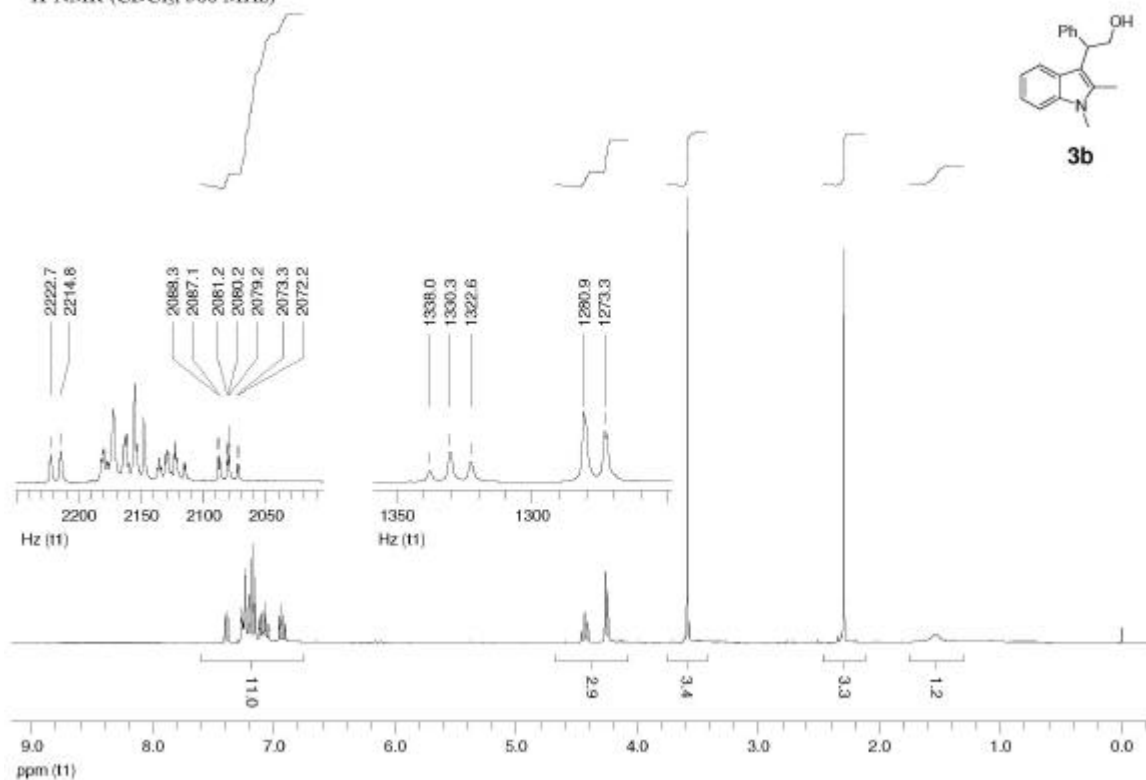
^{13}C -NMR (CDCl_3 , 100 MHz)



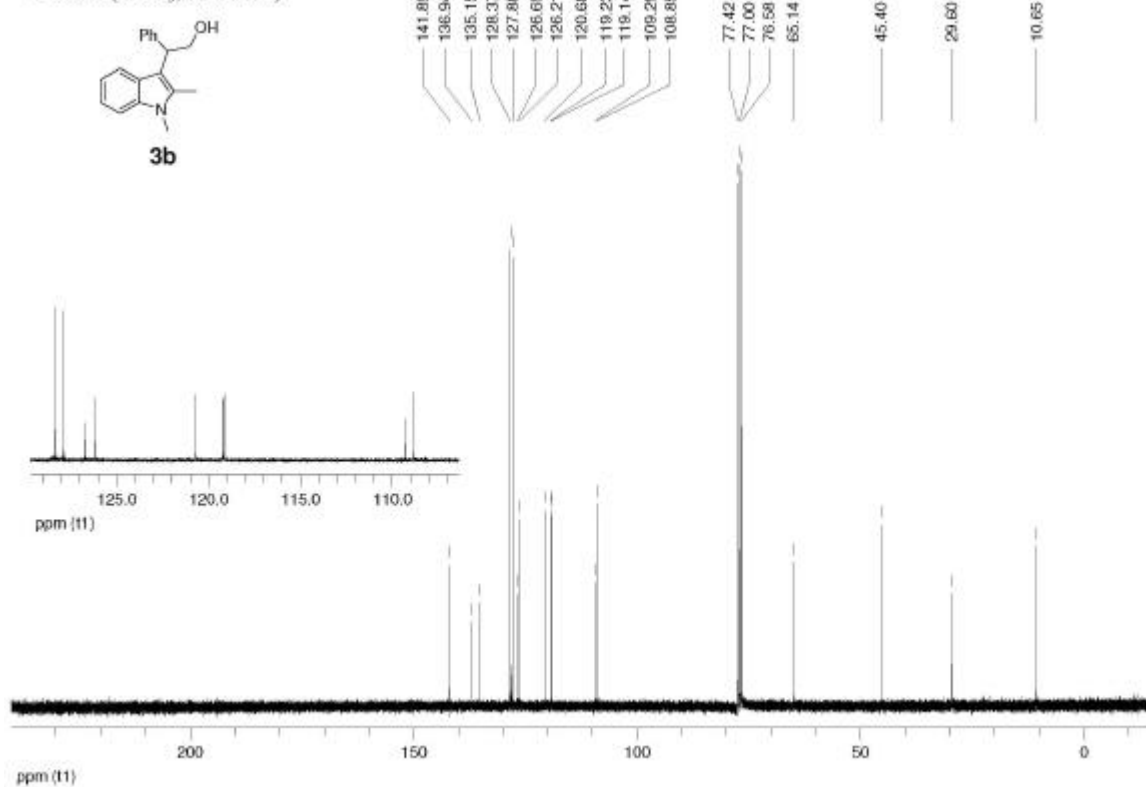
DEPT (CDCl_3 , 100 MHz)



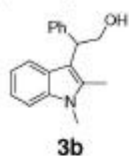
¹H-NMR (CDCl₃, 300 MHz)



¹³C-NMR (CDCl₃, 75.5 MHz)



DEPT (CDCl₃, 75.5 MHz)

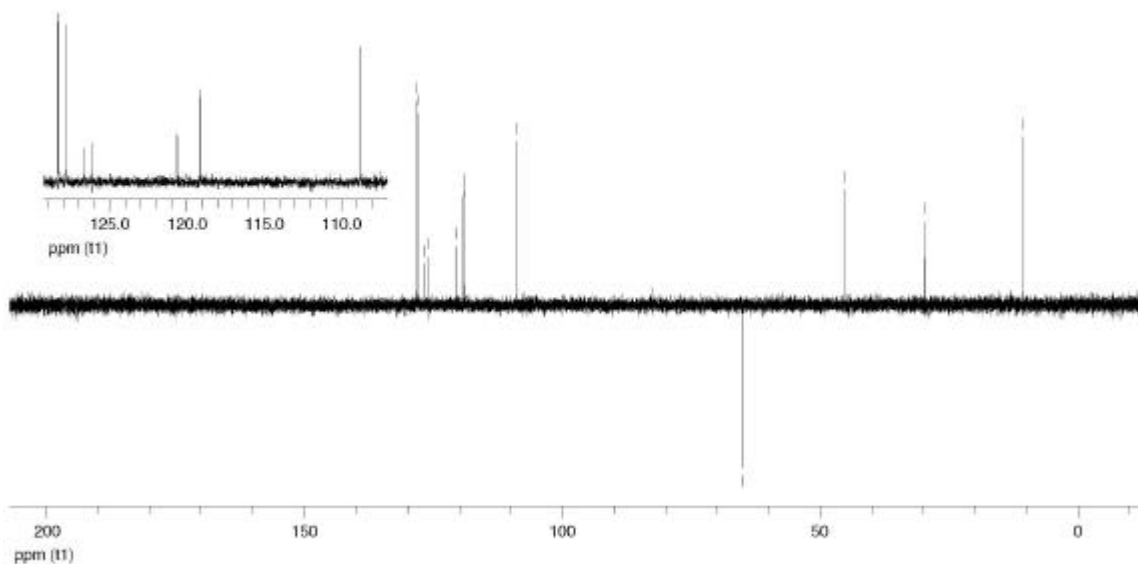


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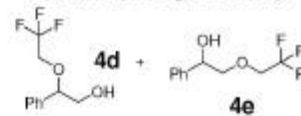
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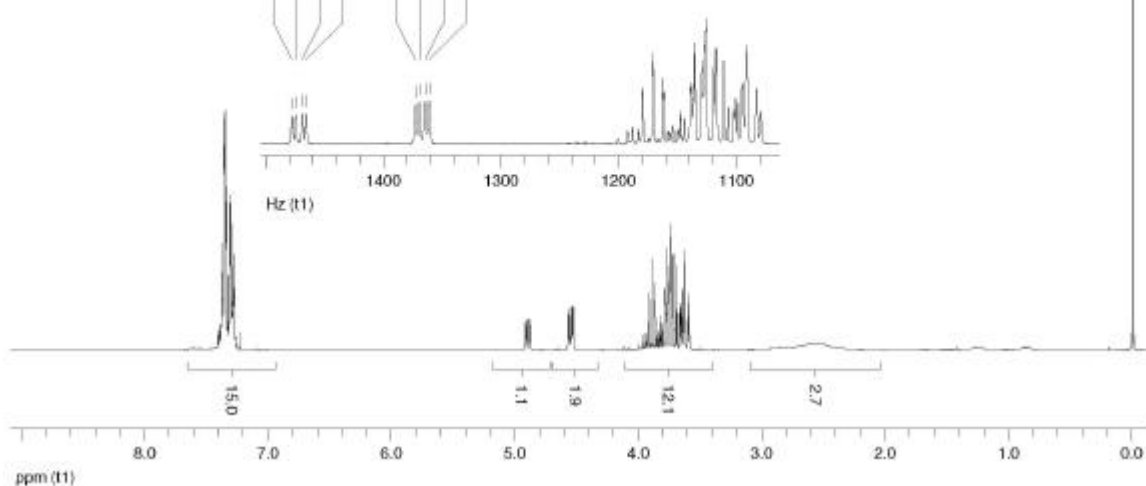
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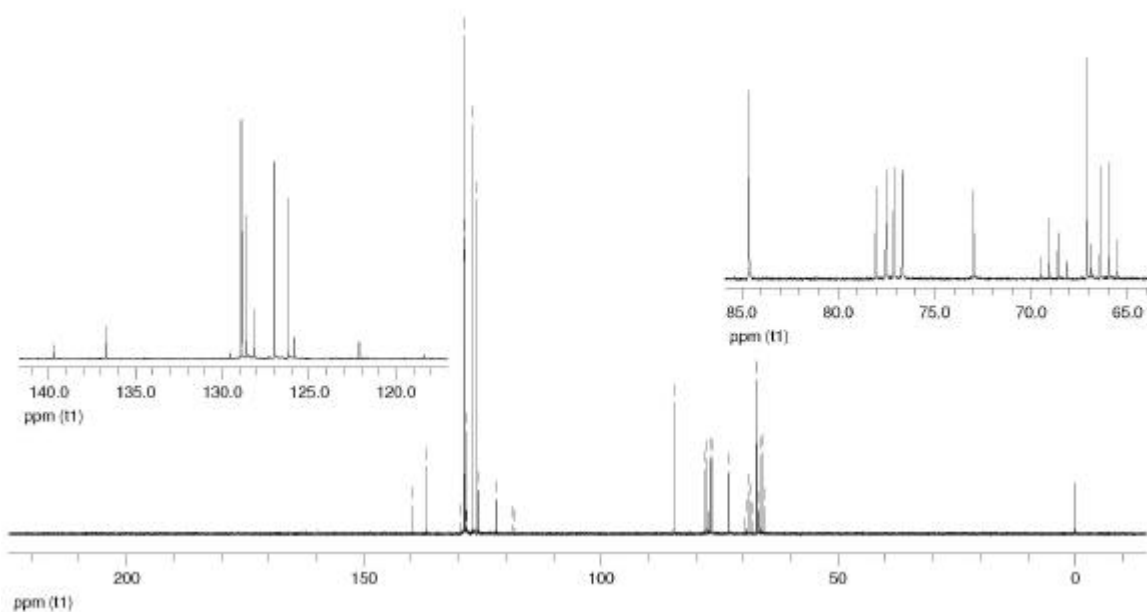
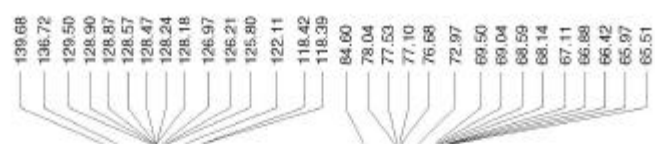
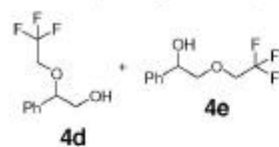
¹H-NMR (CDCl₃, 300 MHz)



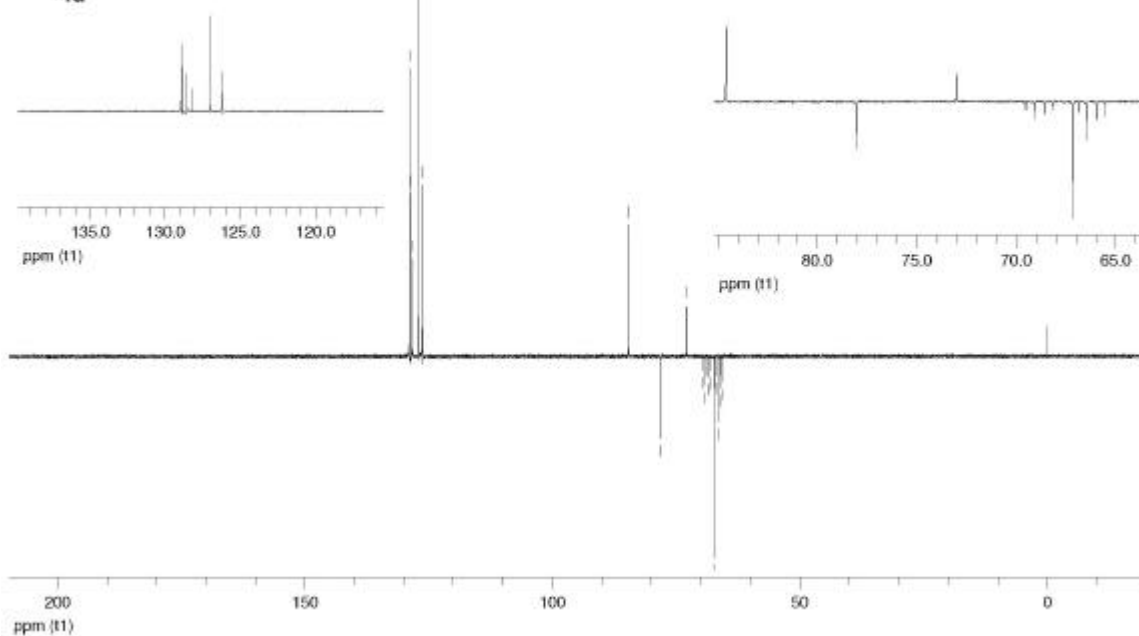
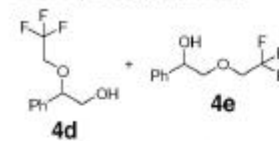
Hz (t1)

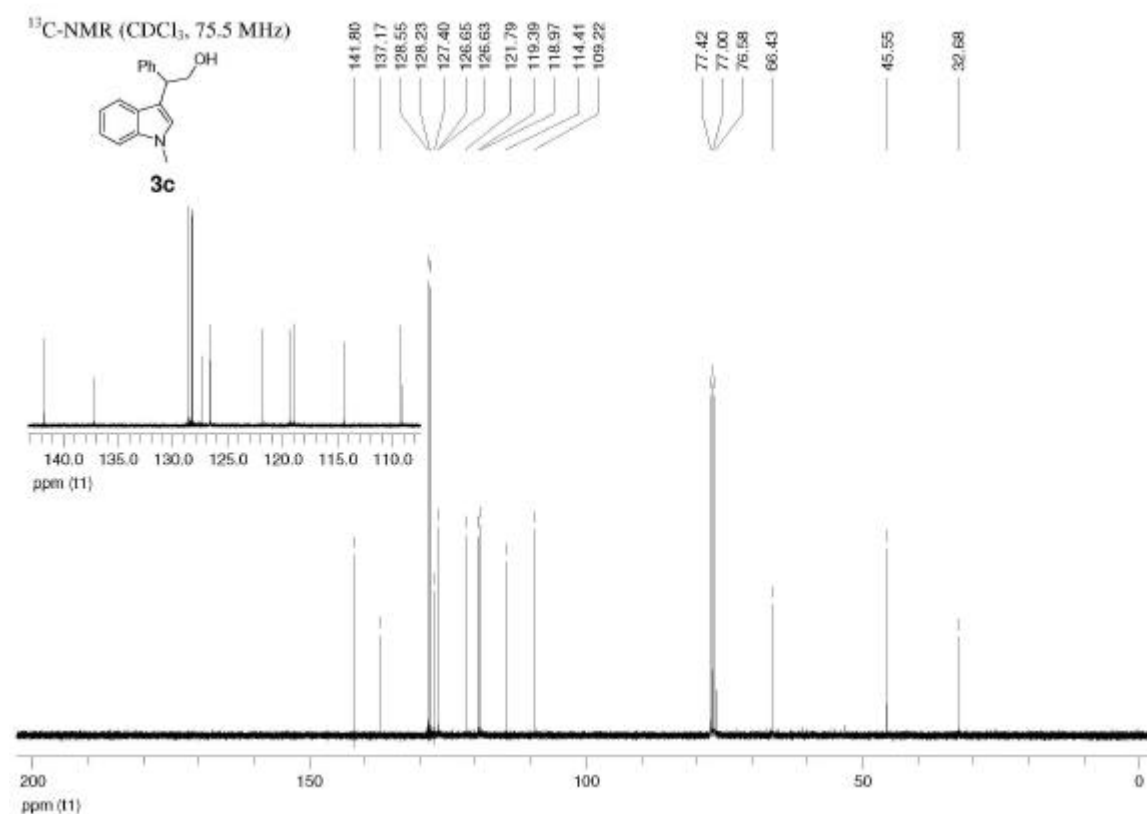
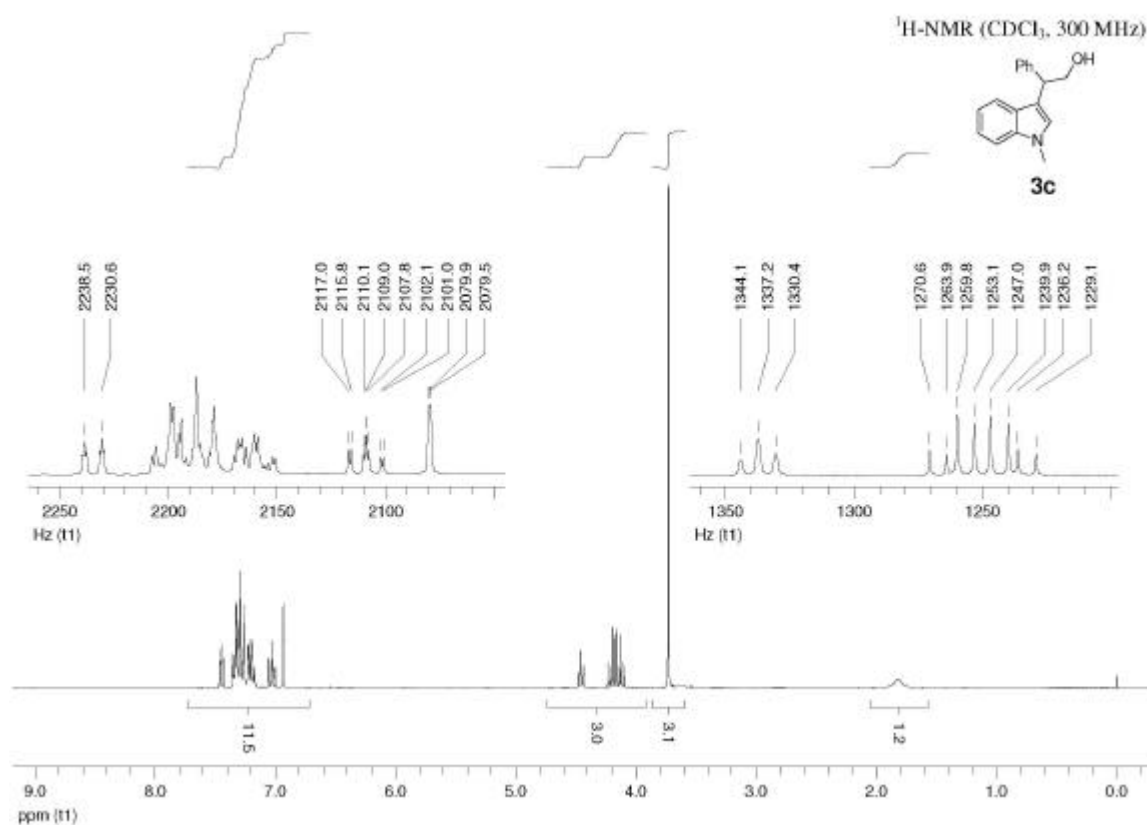


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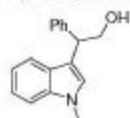


DEPT (CDCl₃, 75.5 MHz)

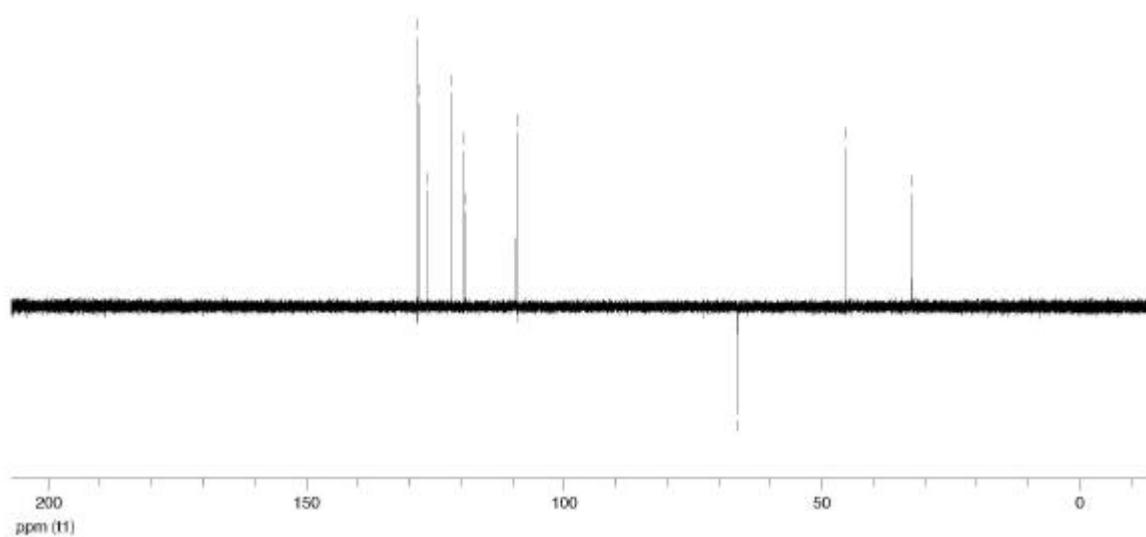




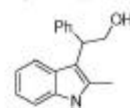
DEPT (CDCl₃, 75.5 MHz)



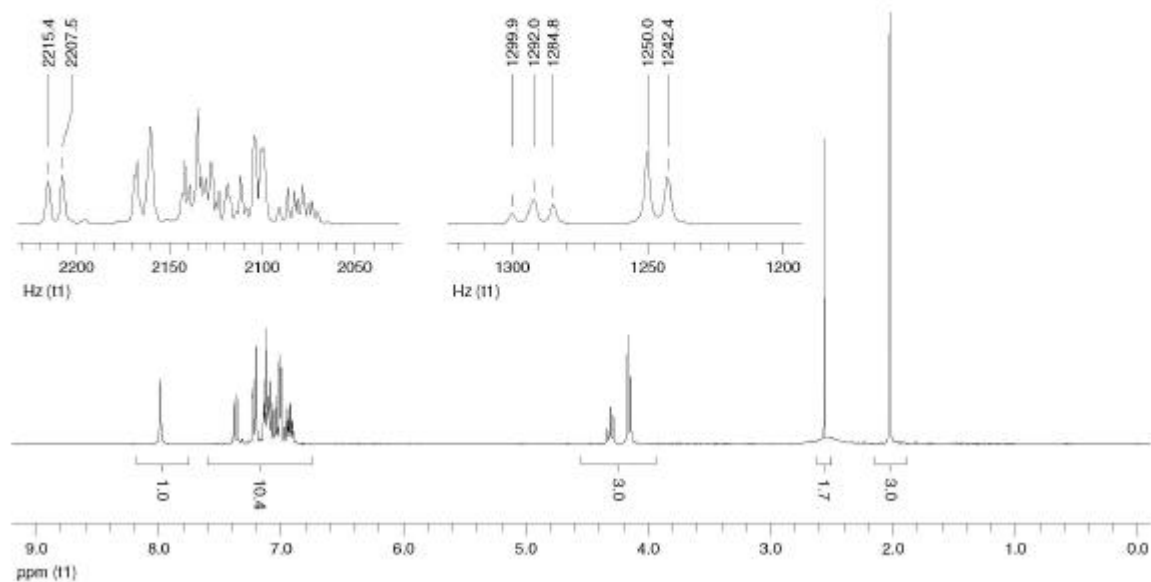
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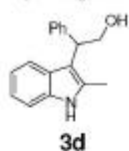
¹H-NMR (CDCl₃, 300 MHz)



3d



¹³C-NMR (CDCl₃, 75.5 MHz)

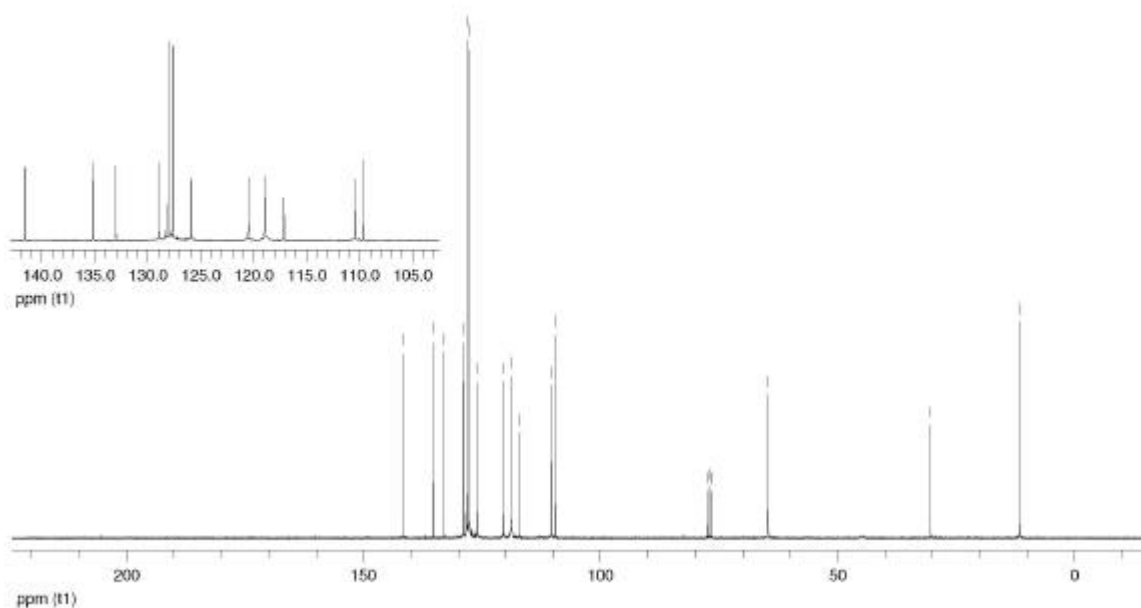


141.64
135.15
133.02
128.94
128.05
127.68
125.82
120.48
118.96
117.15
110.43
109.64

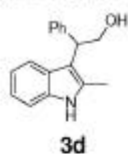
77.43
77.00
76.57
64.62

30.35

11.61



DEPT (CDCl₃, 75.5 MHz)

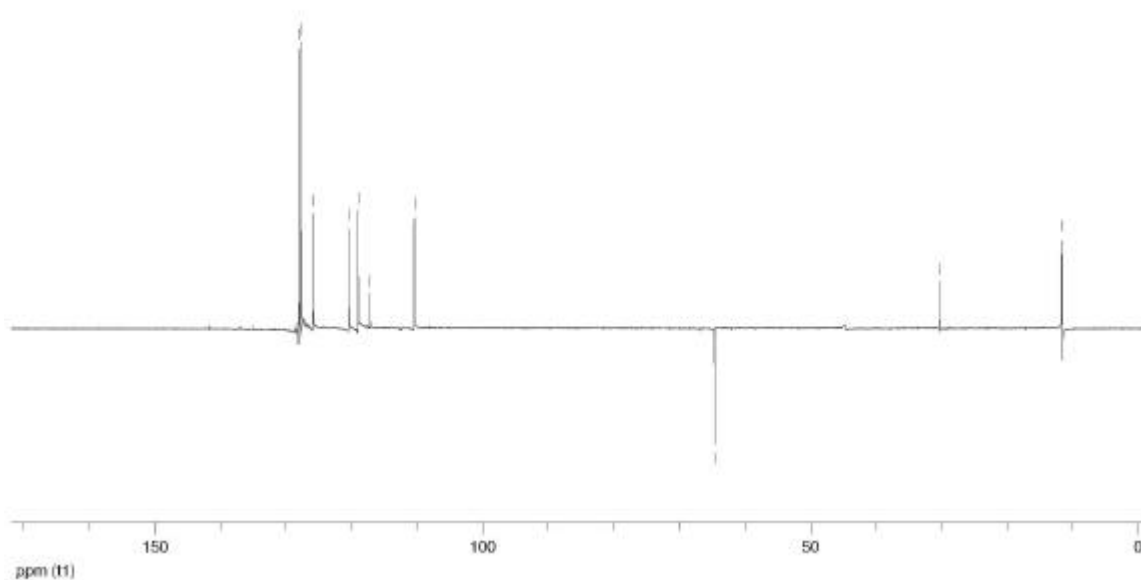


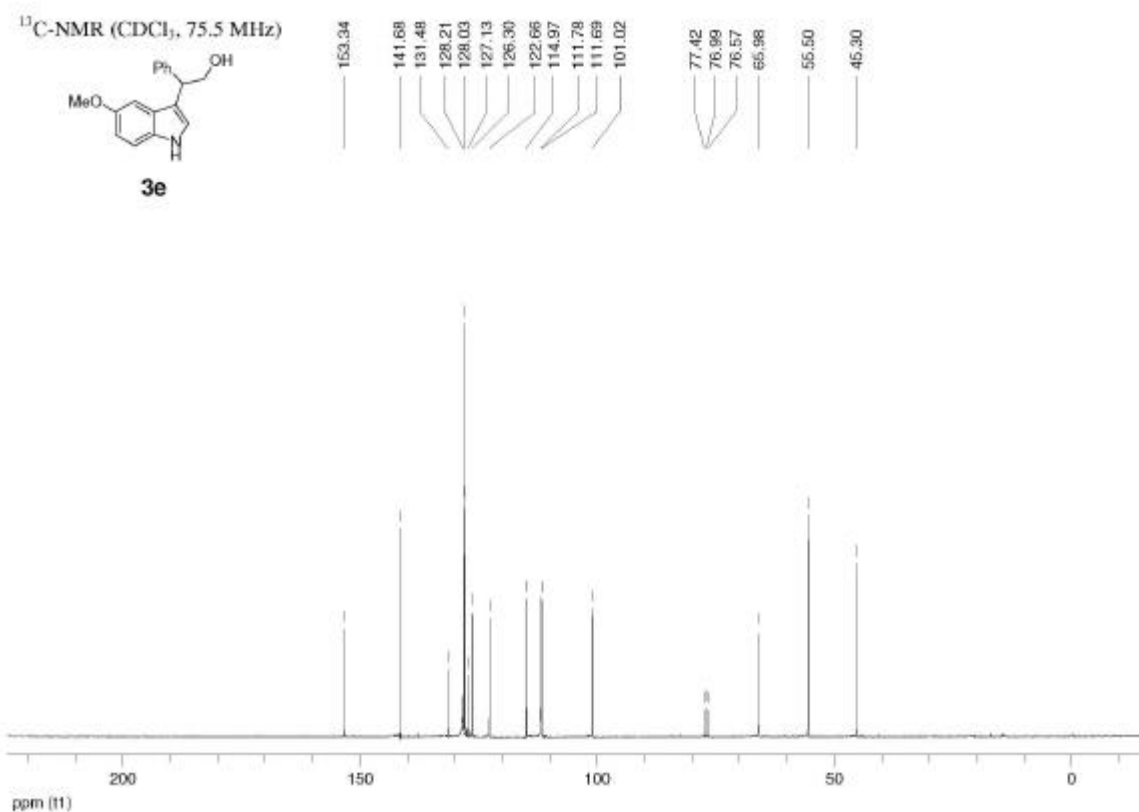
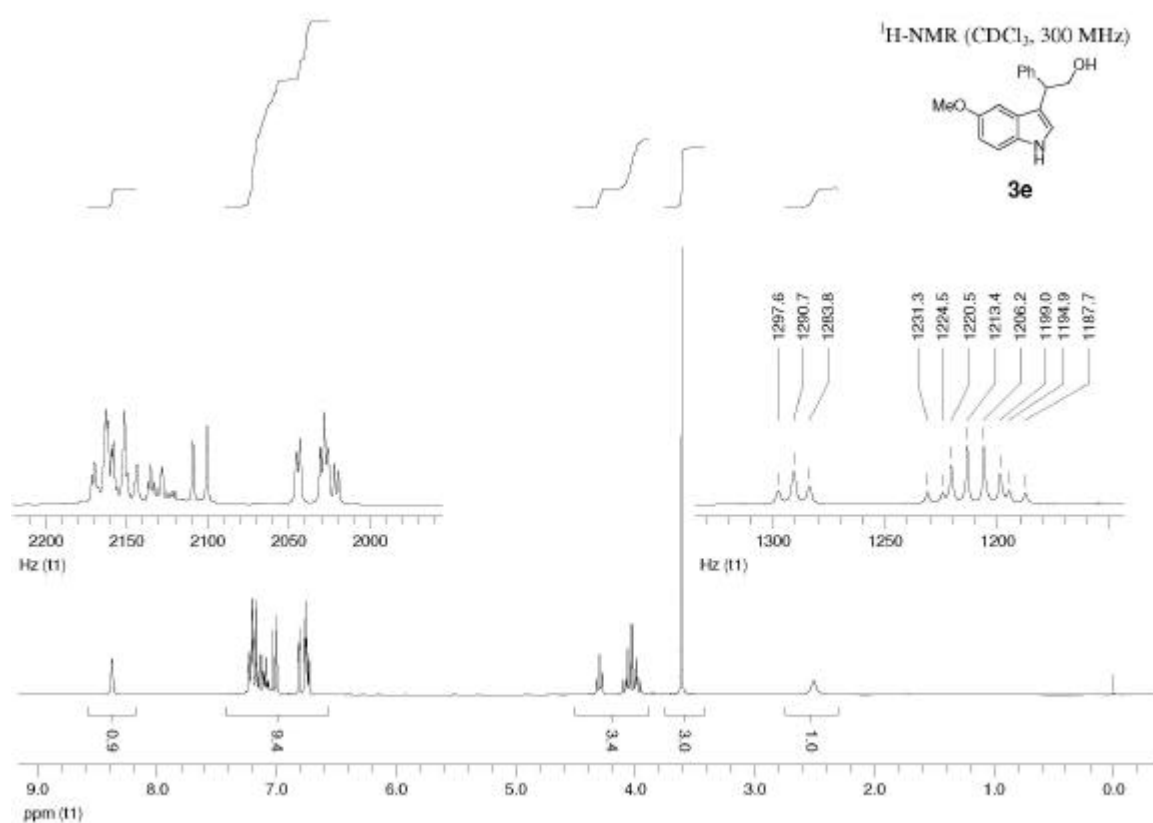
128.04
127.67
125.91
120.47
118.95
117.14
110.42

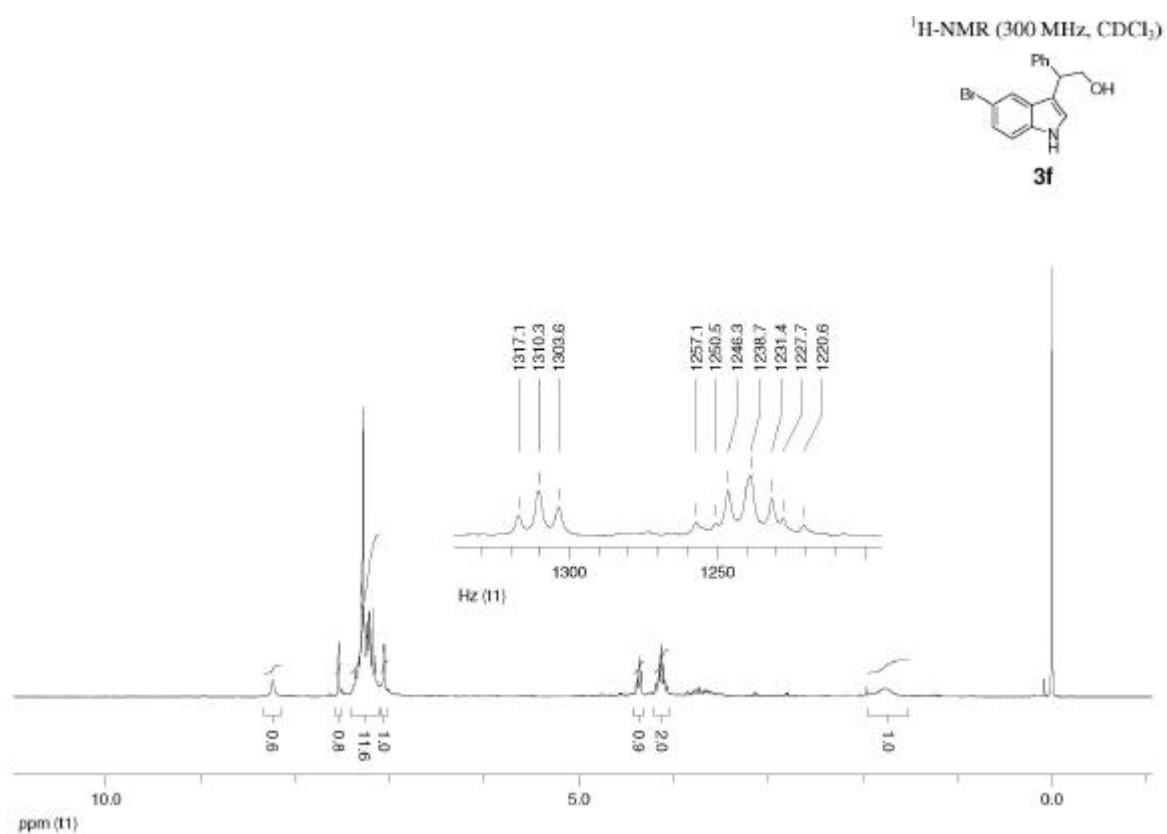
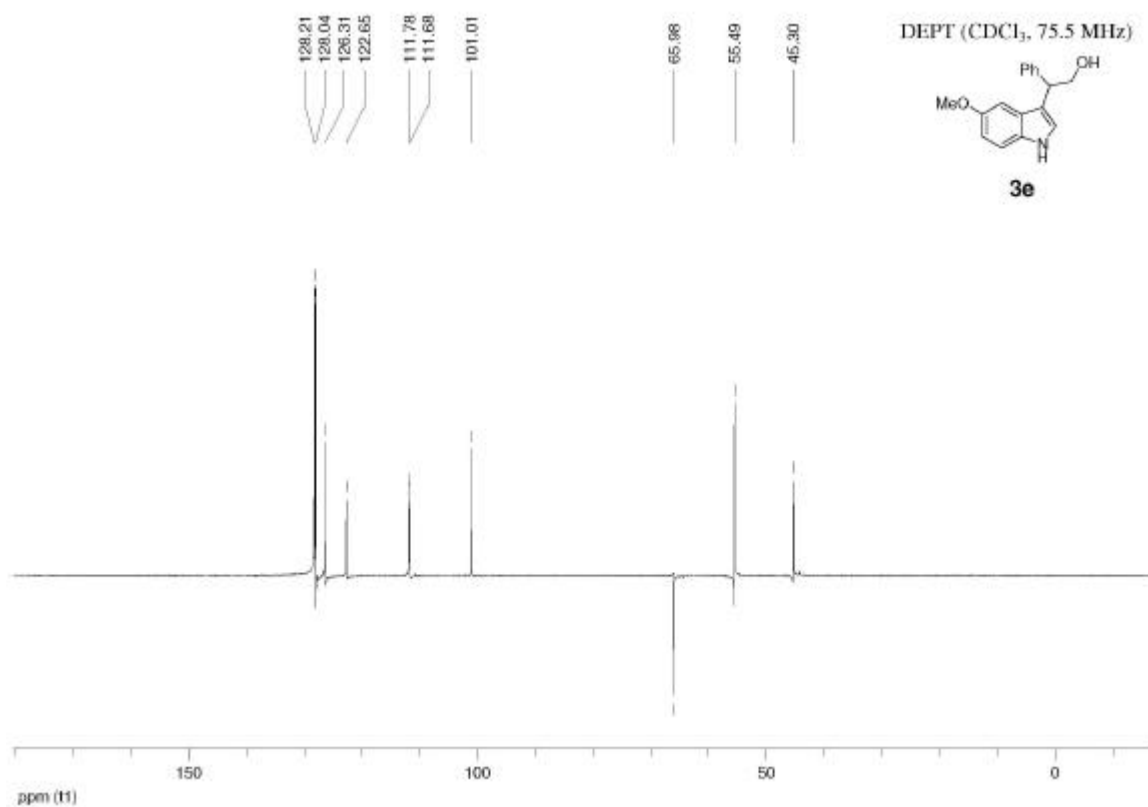
64.61

30.35

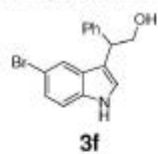
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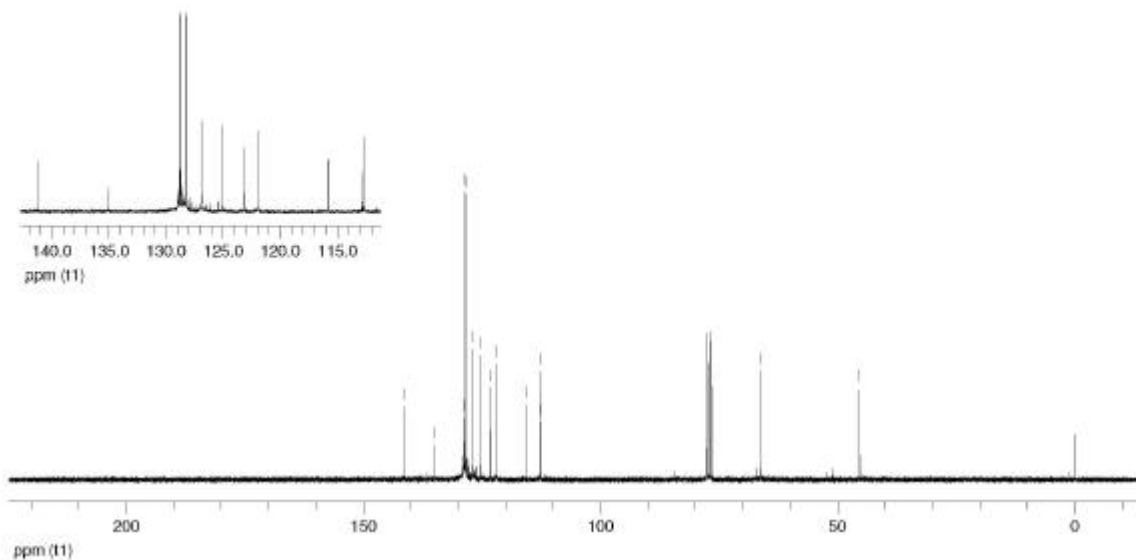
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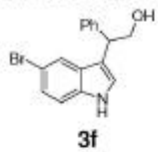
141.16
135.02
128.79
128.70
128.20
126.91
125.11
123.13
121.84
115.76
112.79
112.62

66.38

45.36



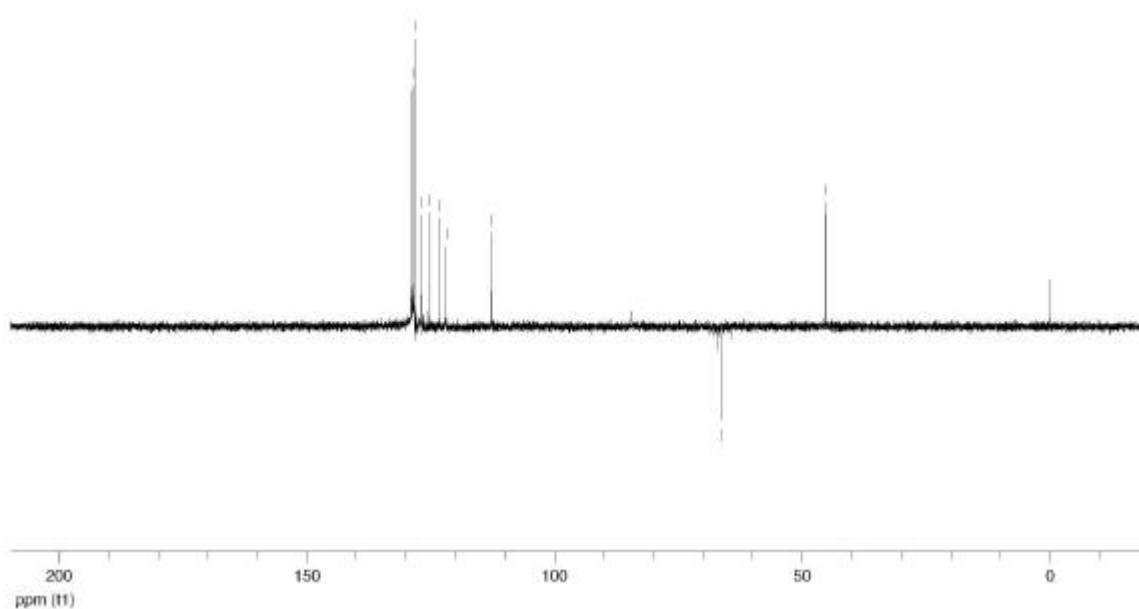
DEPT (75.5 MHz, CDCl₃)

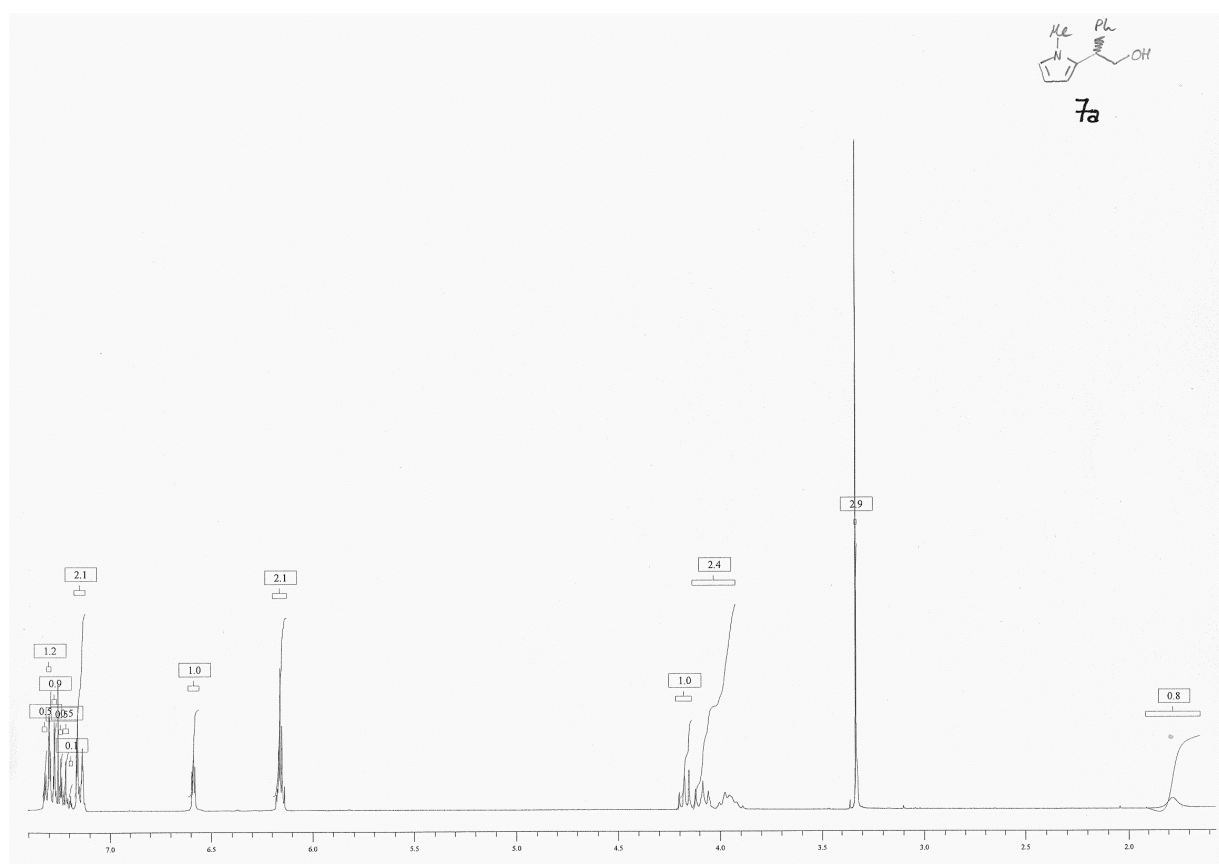
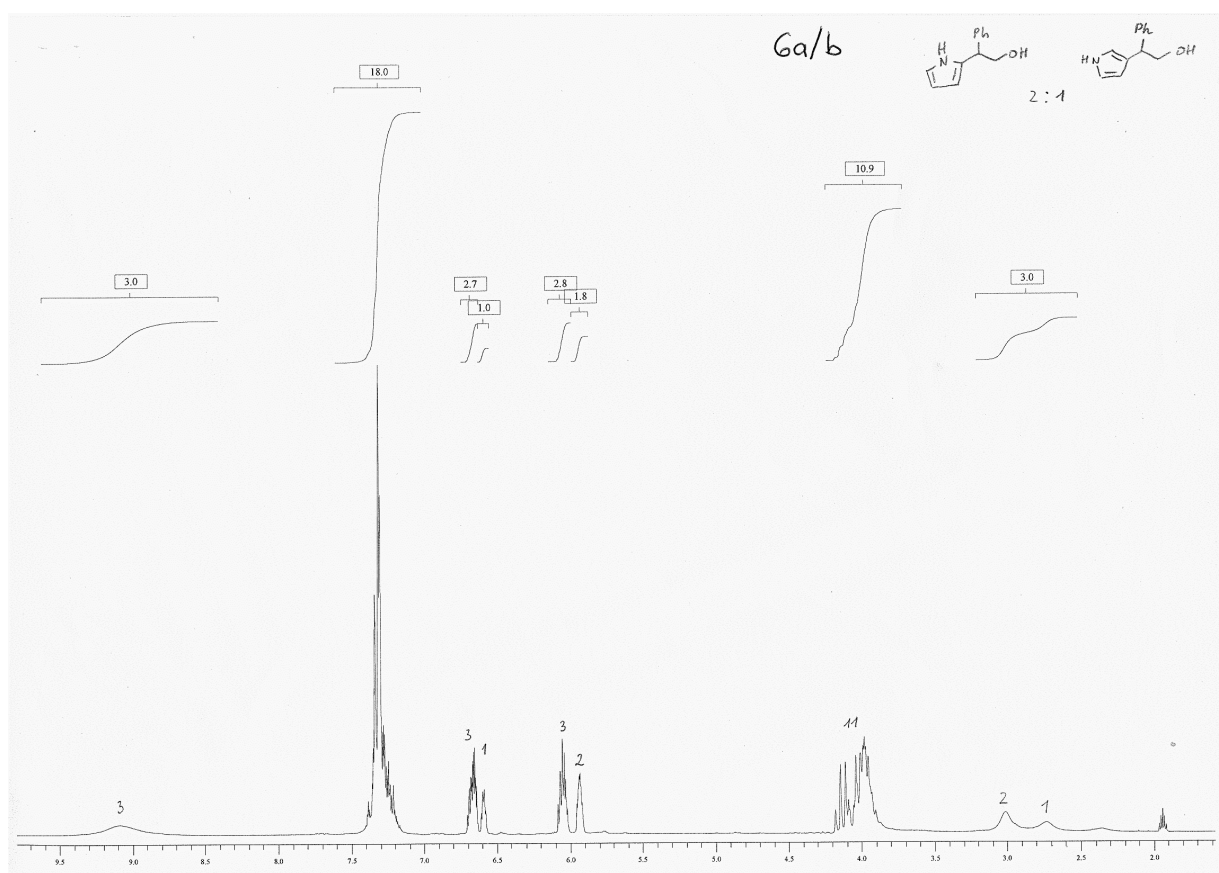


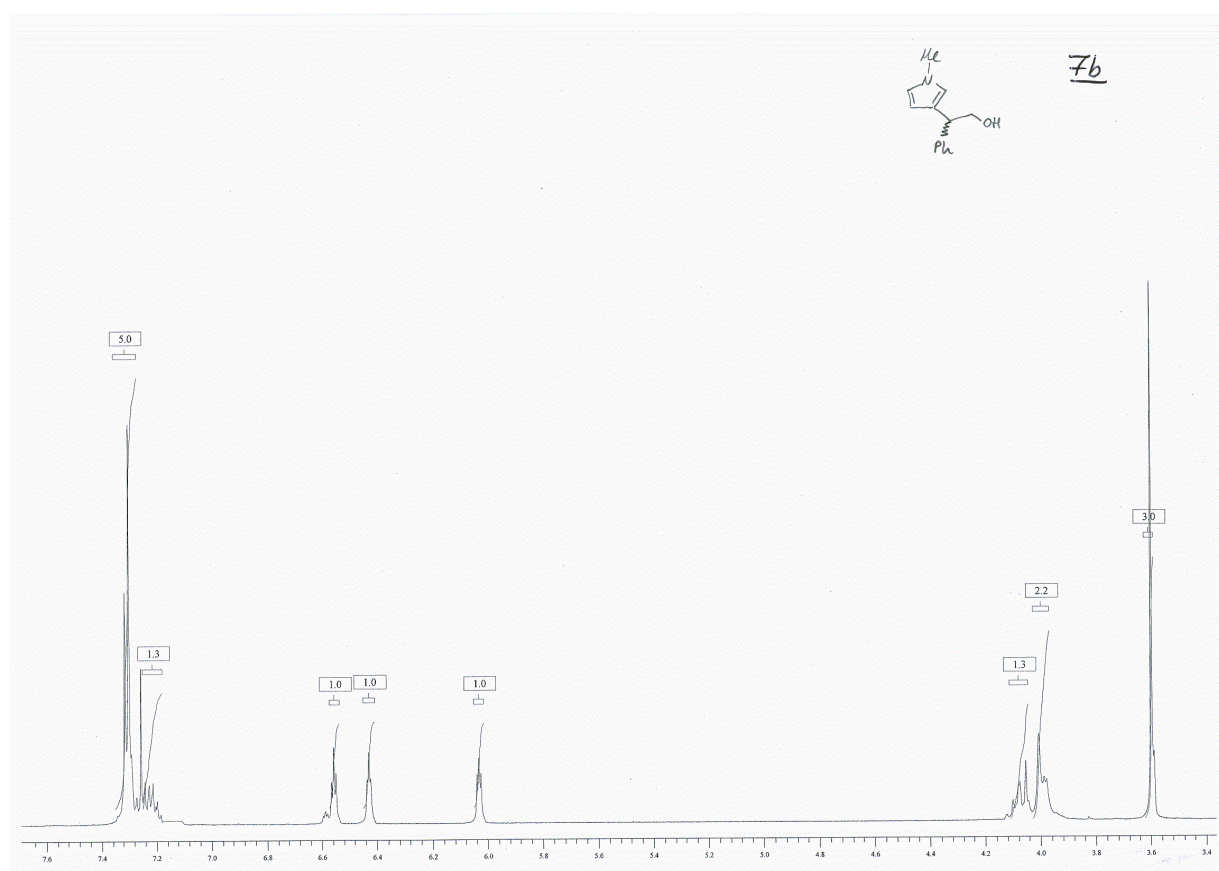
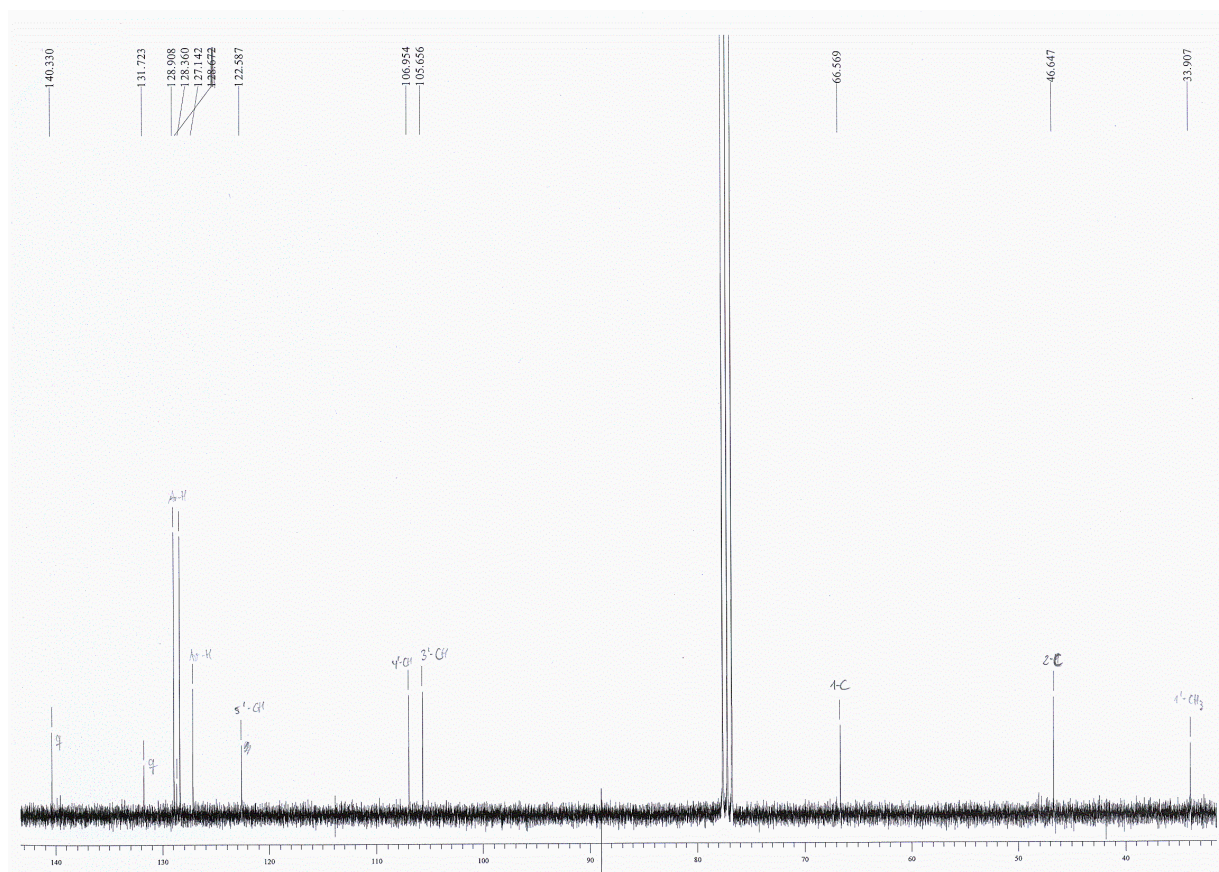
128.70
128.21
126.92
125.11
123.13
121.83
112.62

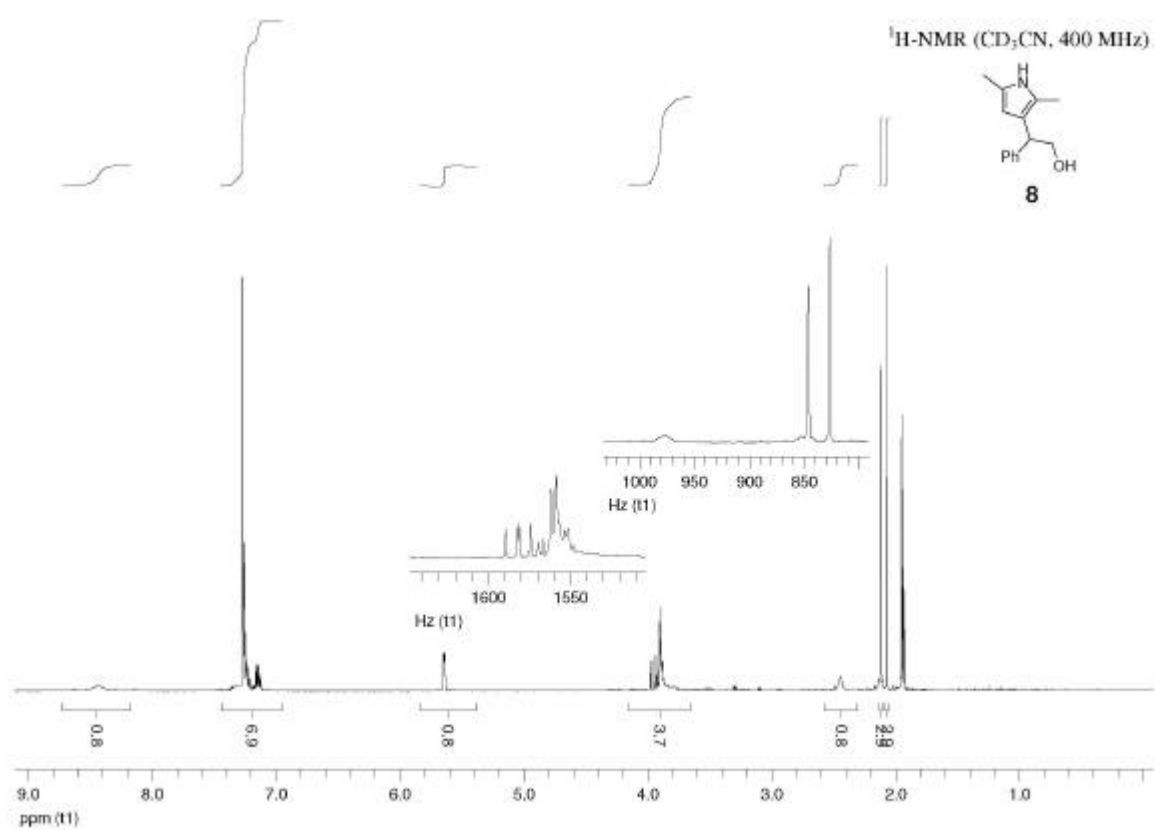
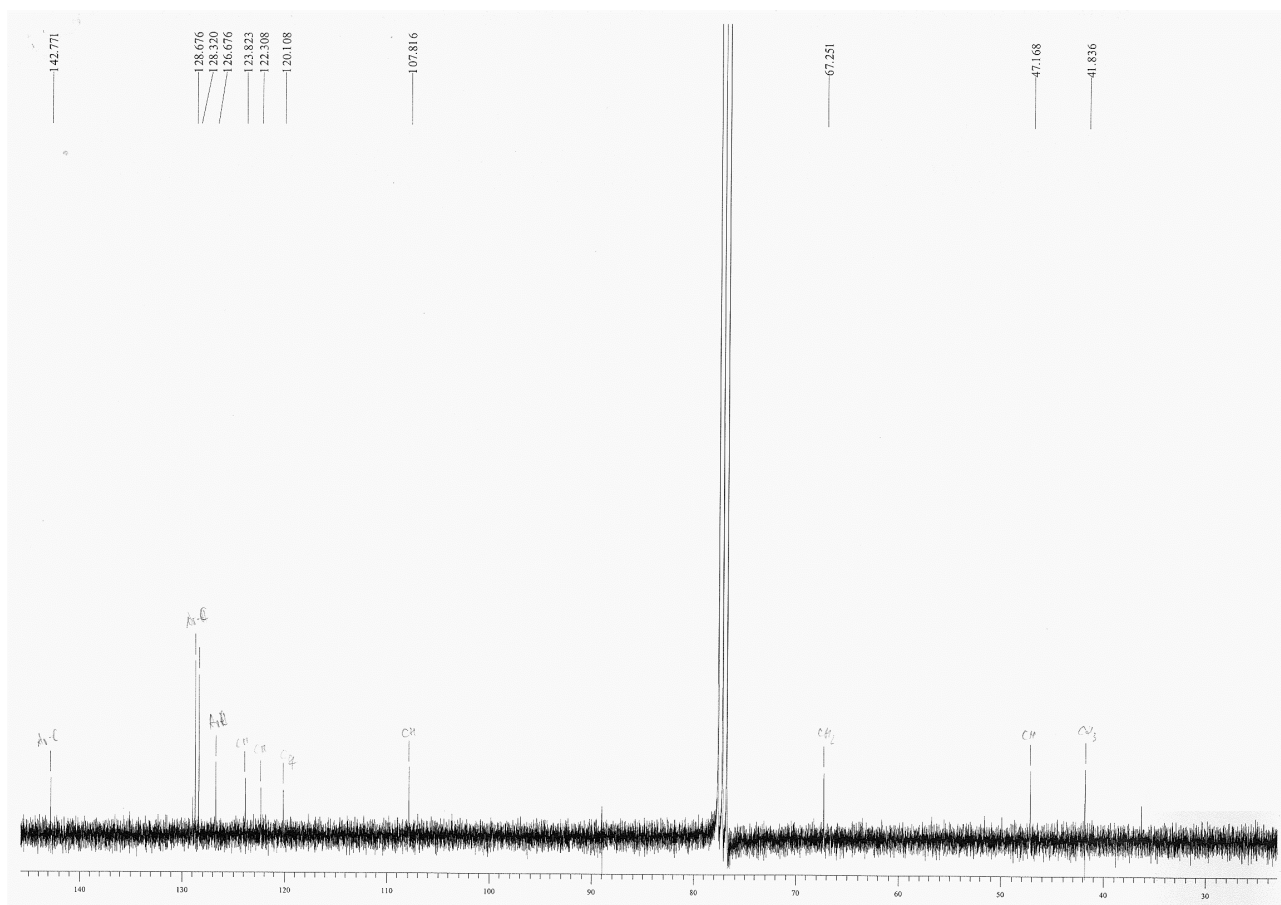
66.38

45.35

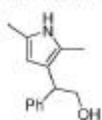








^{13}C -NMR (CD_3CN , 100 MHz)



8

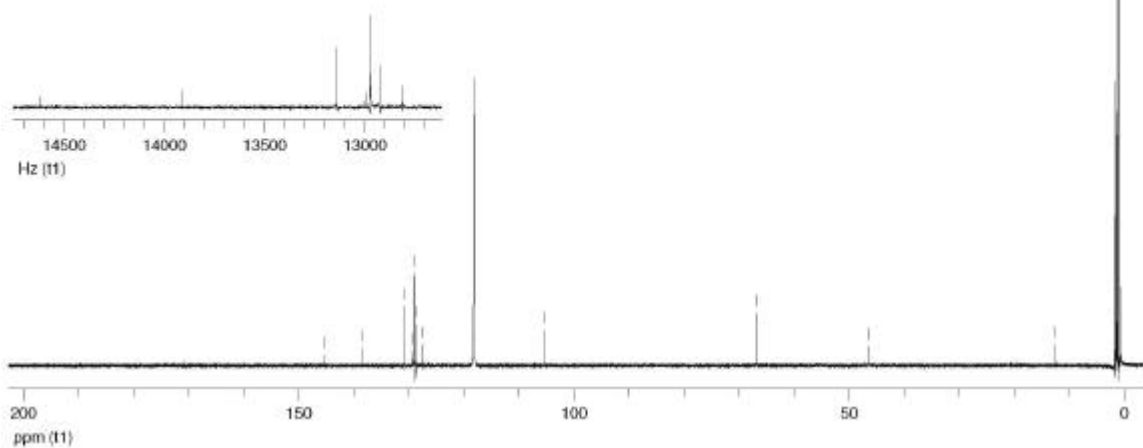
145.39
138.33
130.64
129.23
128.99
128.53
127.42

105.17

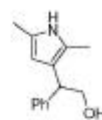
66.90

46.56

12.74



DEPT (CD_3CN , 100 MHz)



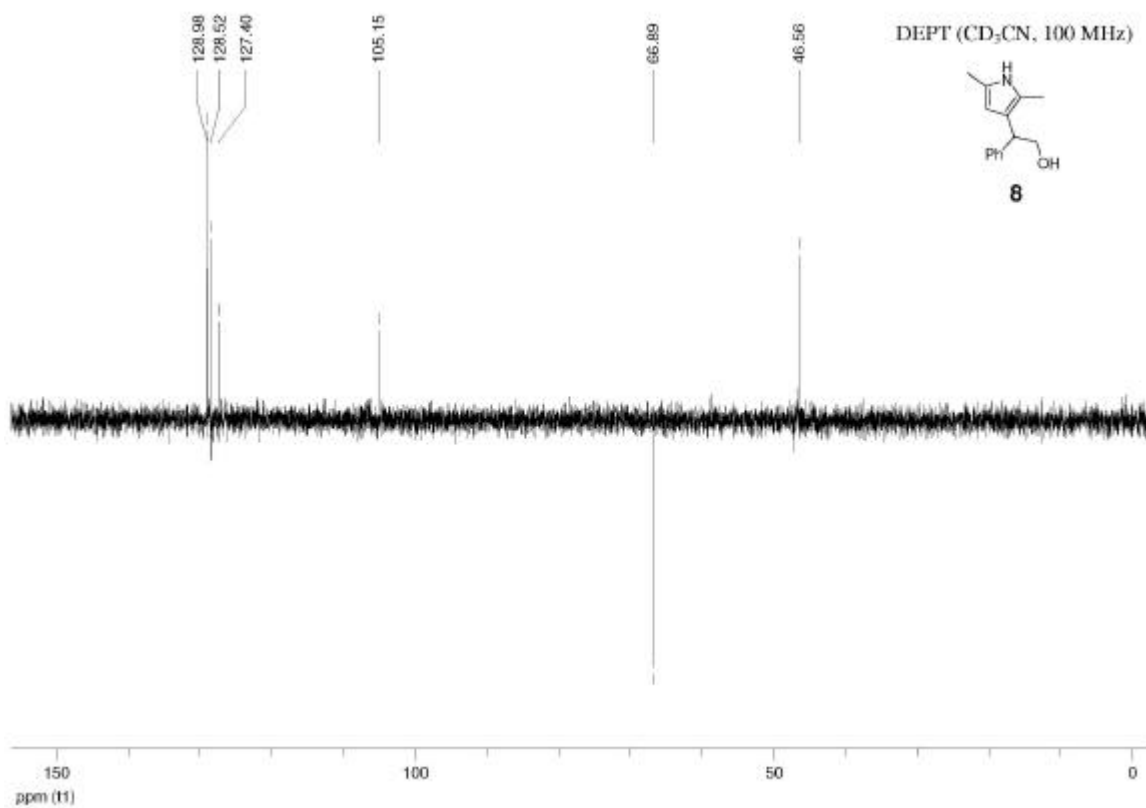
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128.98
128.52
127.40

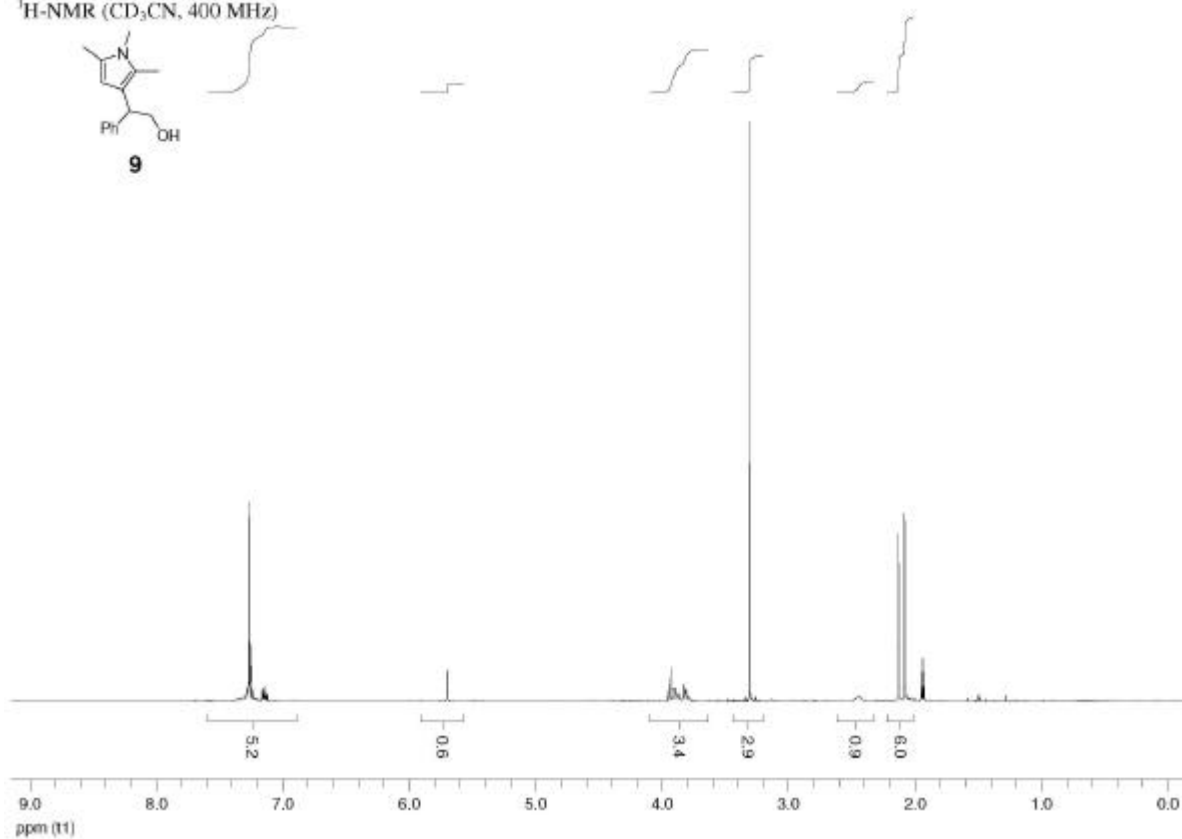
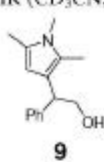
105.15

66.89

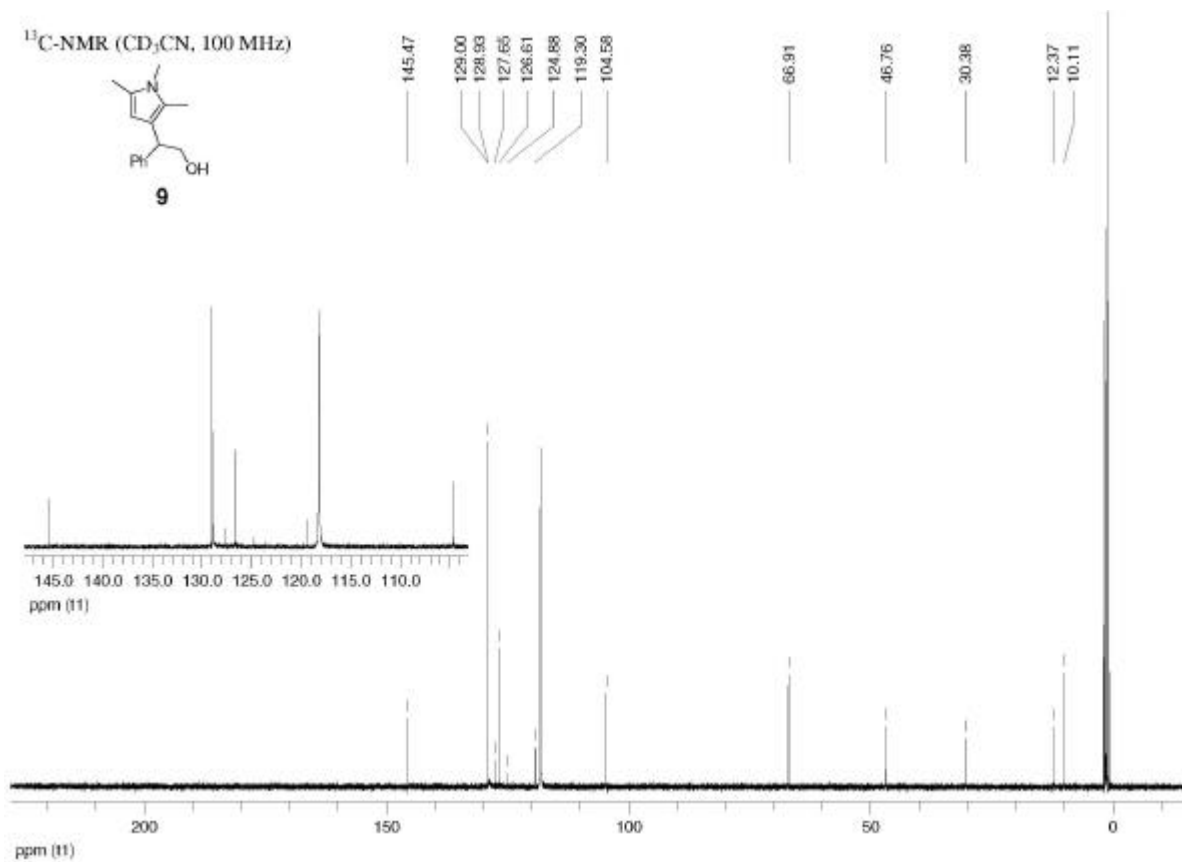
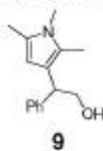
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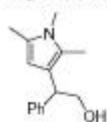
¹H-NMR (CD₃CN, 400 MHz)



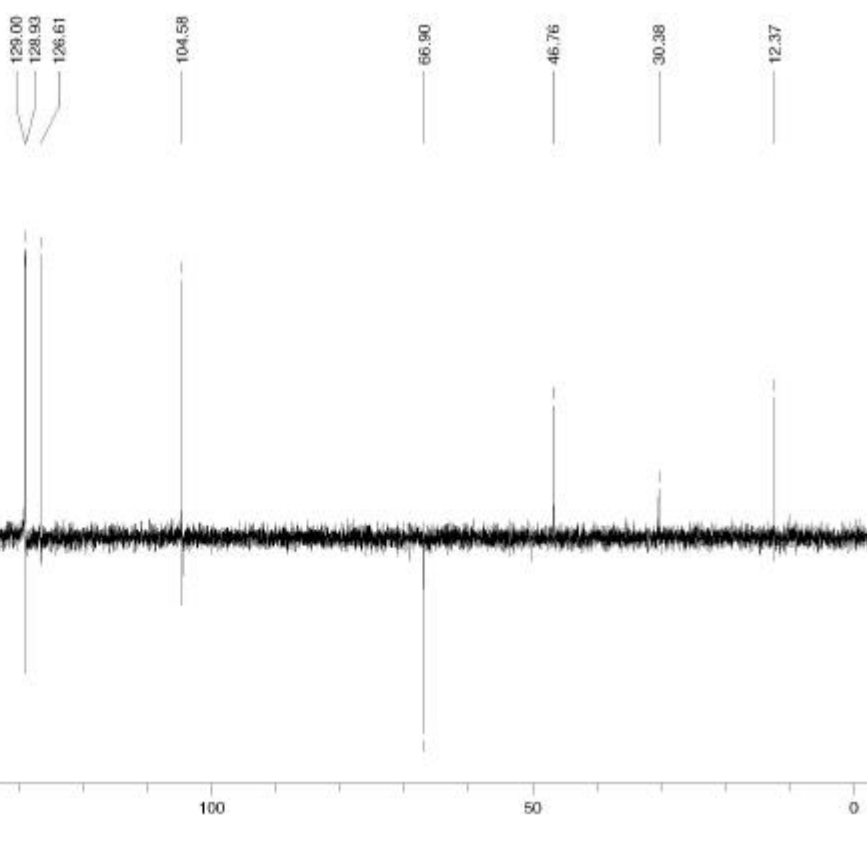
¹³C-NMR (CD₃CN, 100 MHz)



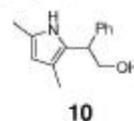
DEPT (CD₃CN, 100 MHz)



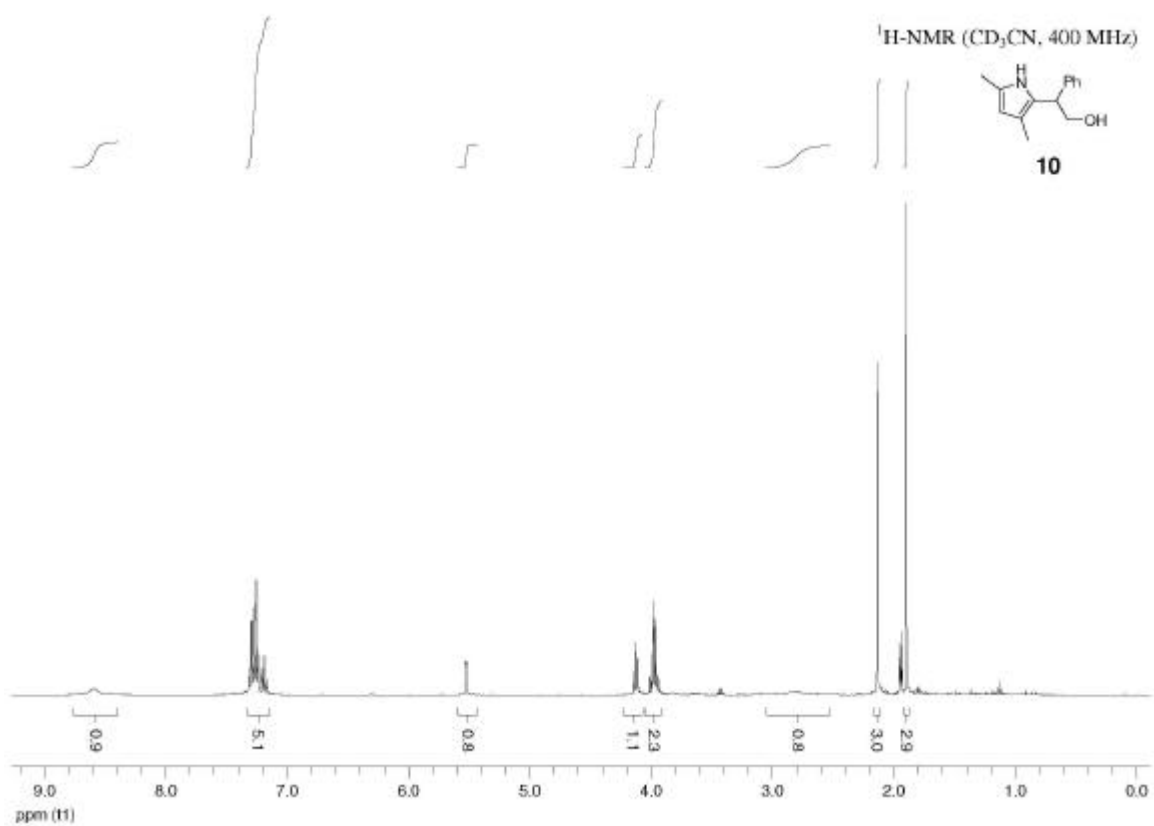
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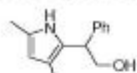
¹H-NMR (CD₃CN, 400 MHz)



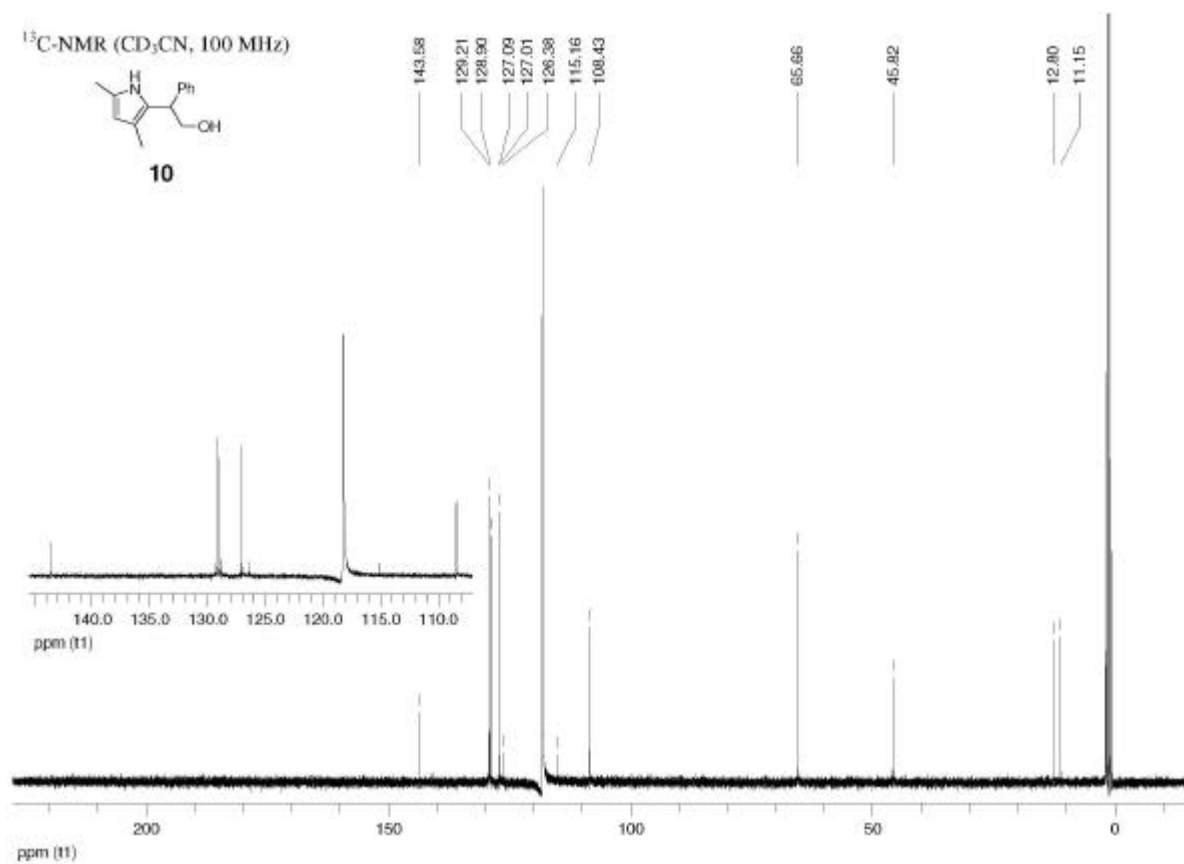
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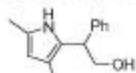
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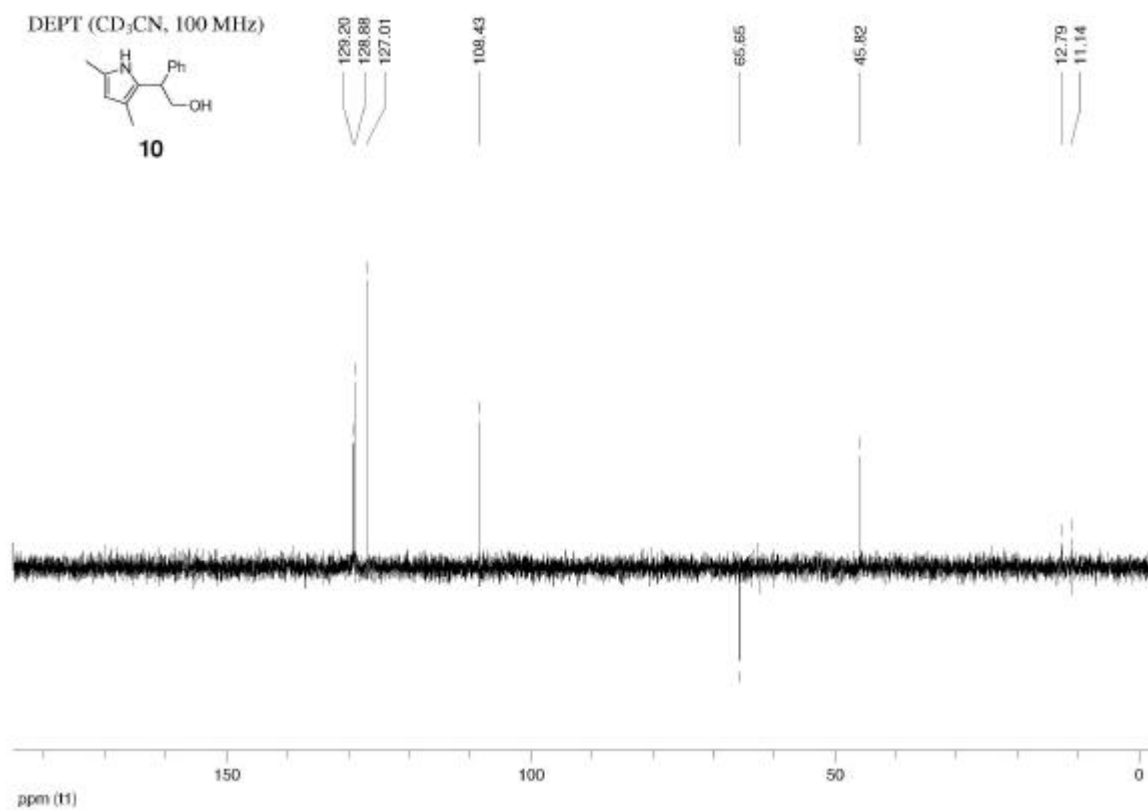
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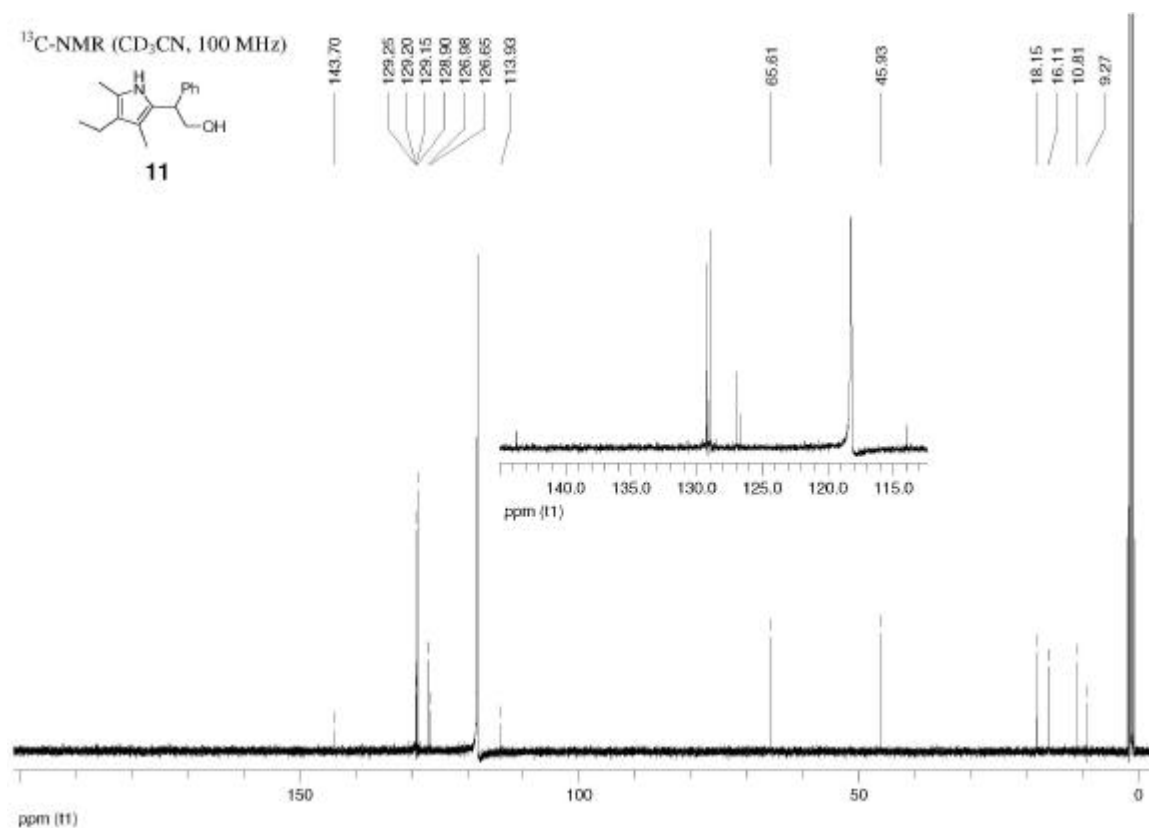
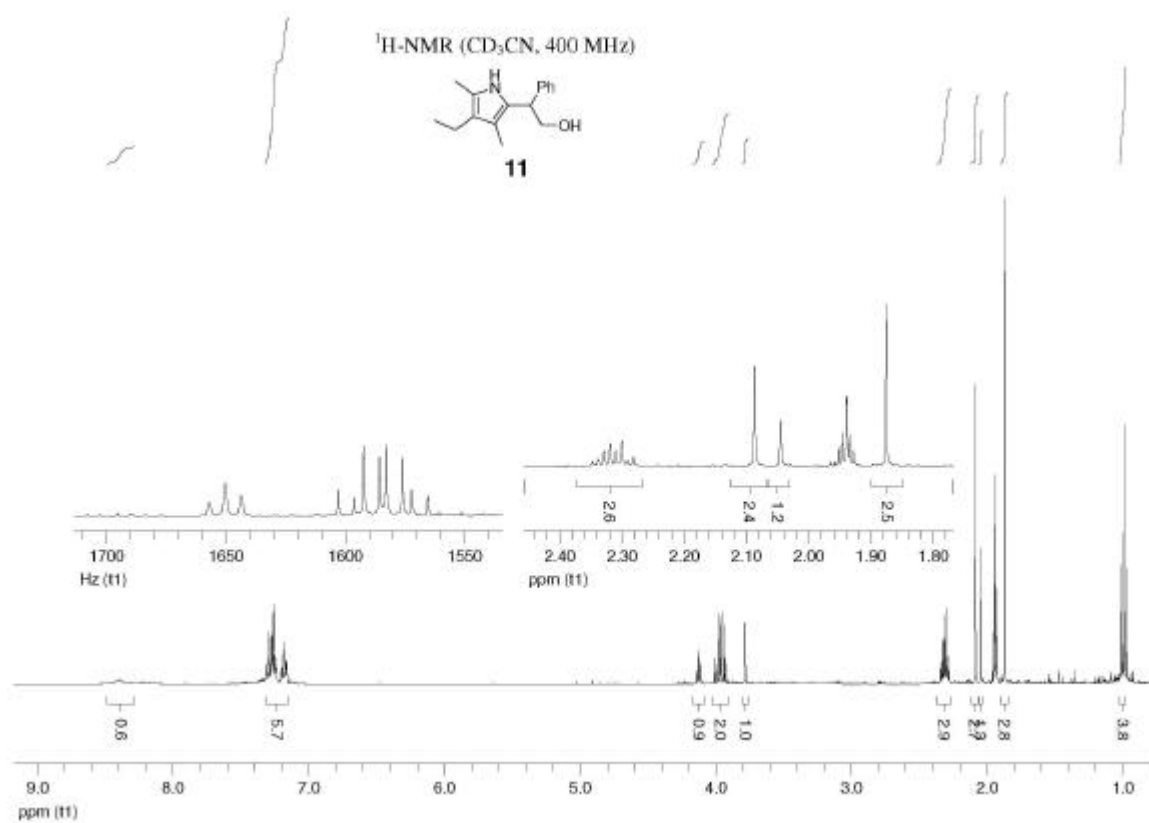


DEPT (CD_3CN , 100 MHz)

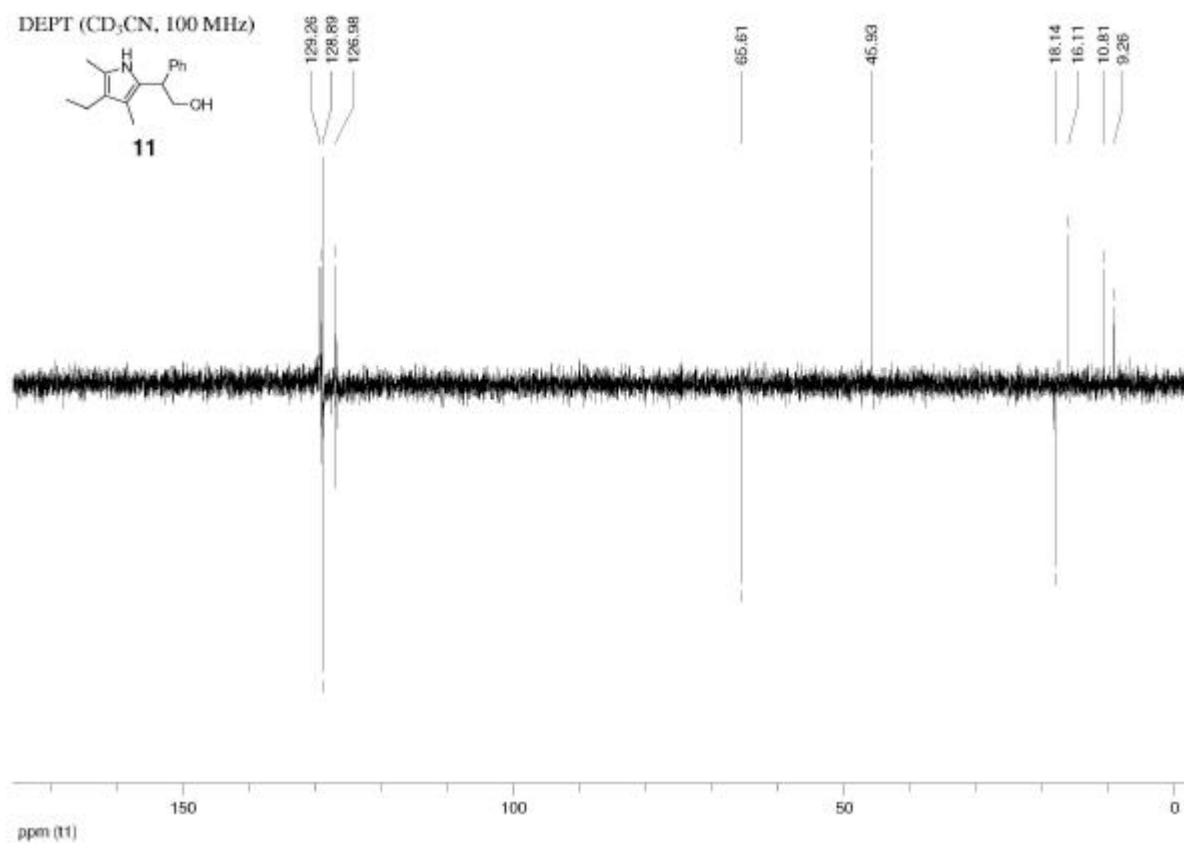
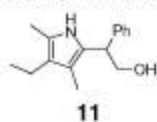


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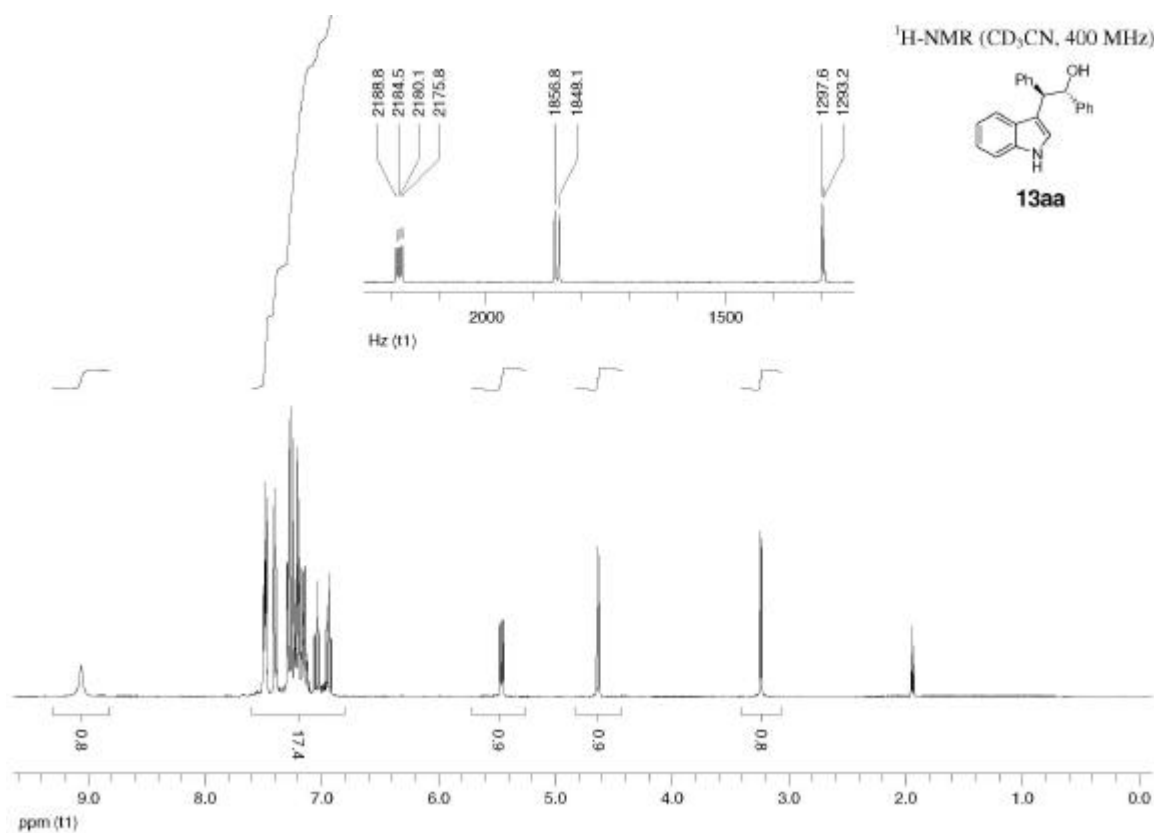
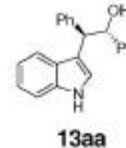


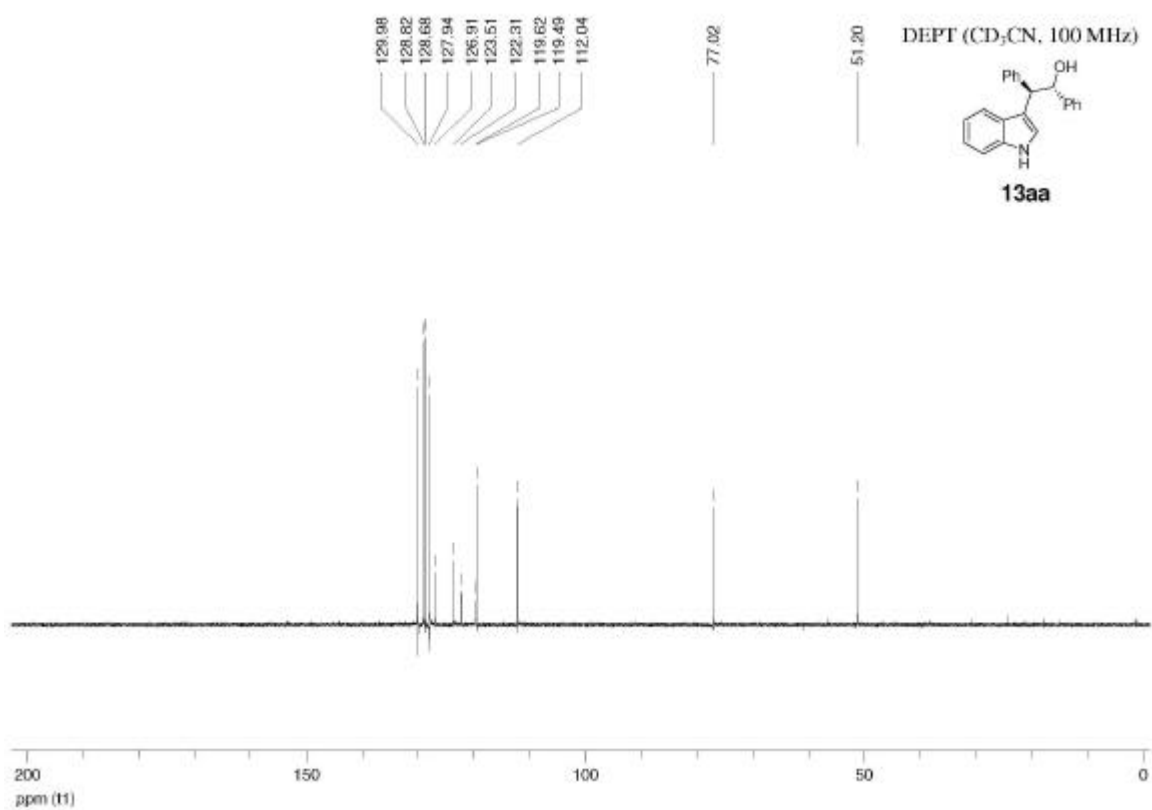
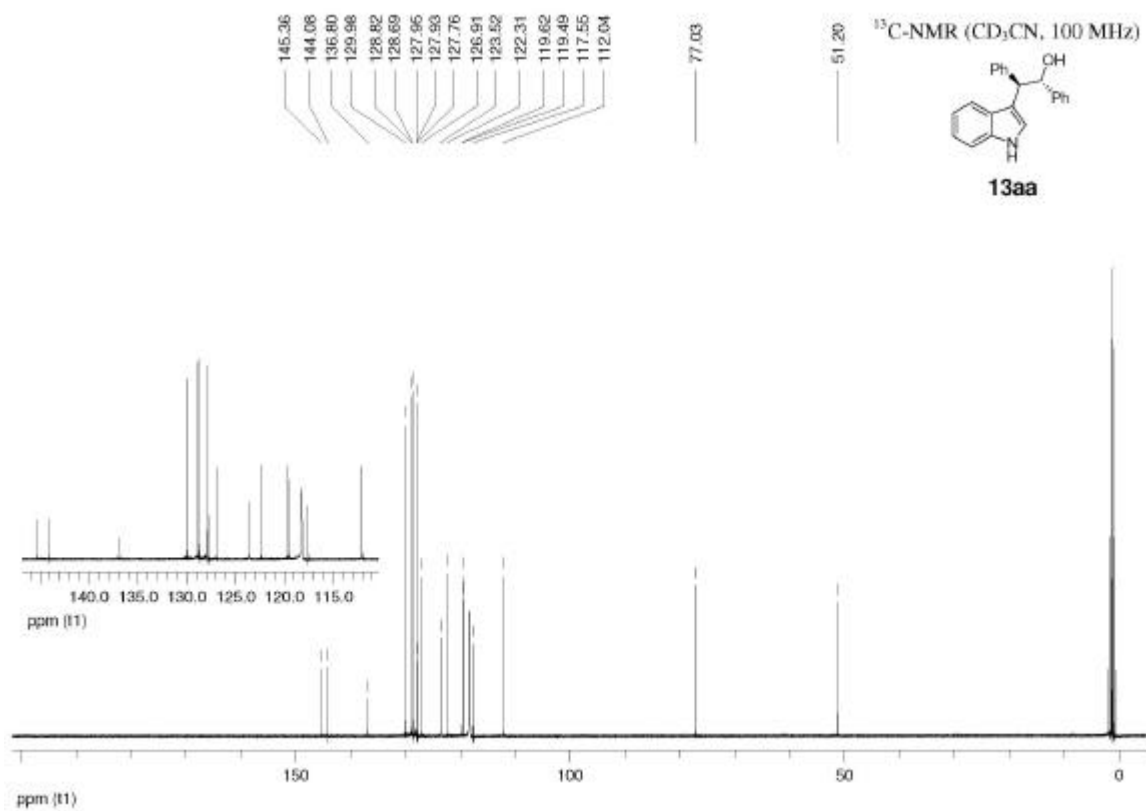


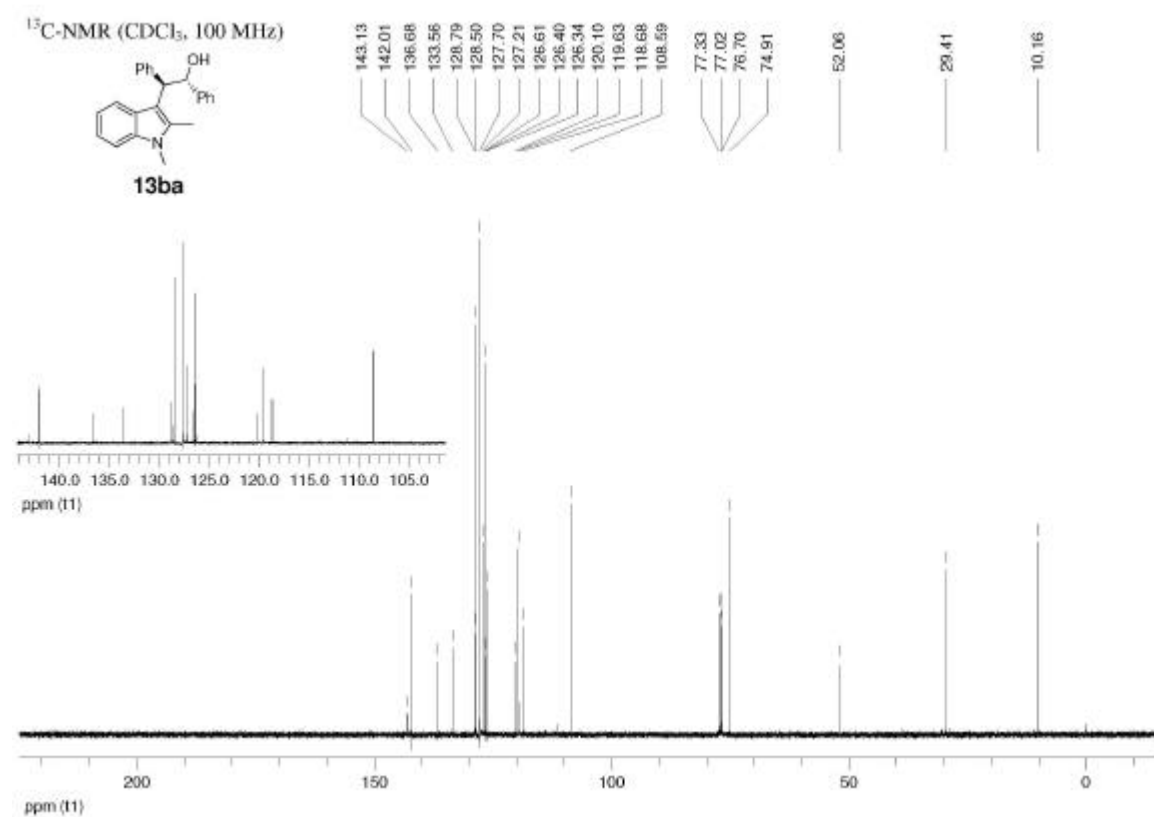
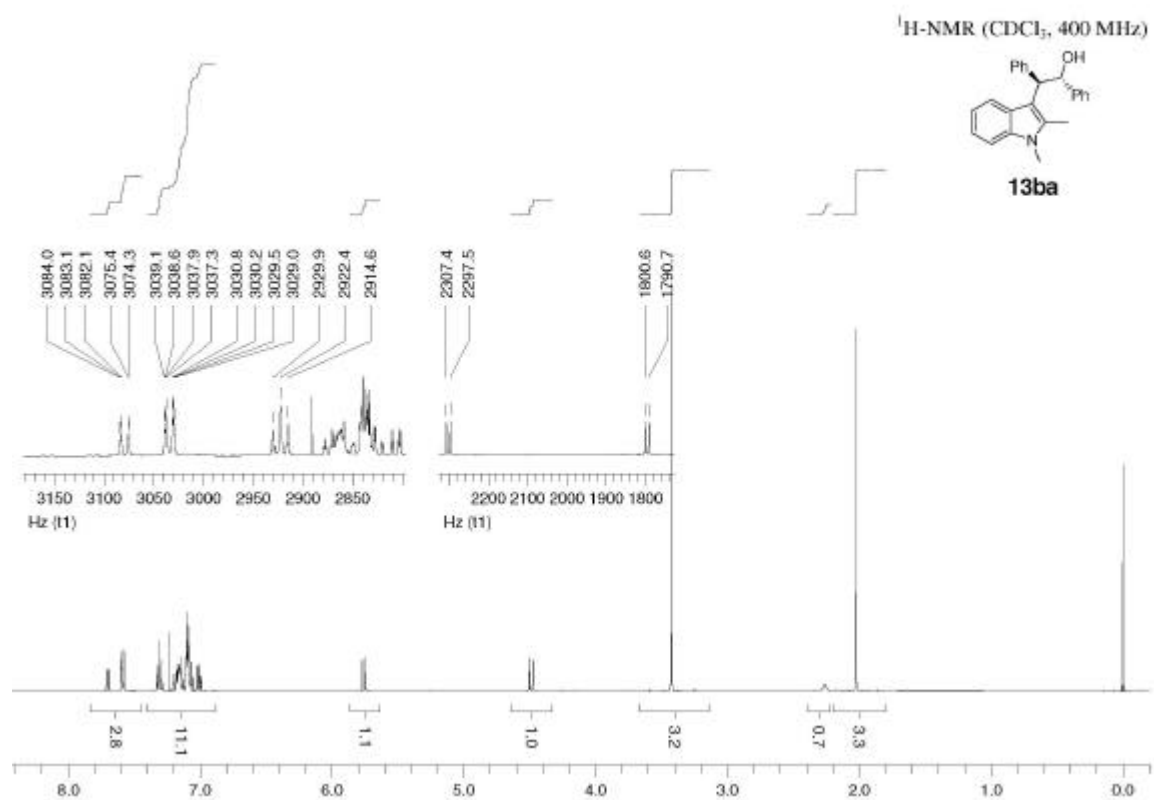
DEPT (CD₃CN, 100 MHz)



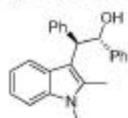
¹H-NMR (CD₃CN, 400 MHz)



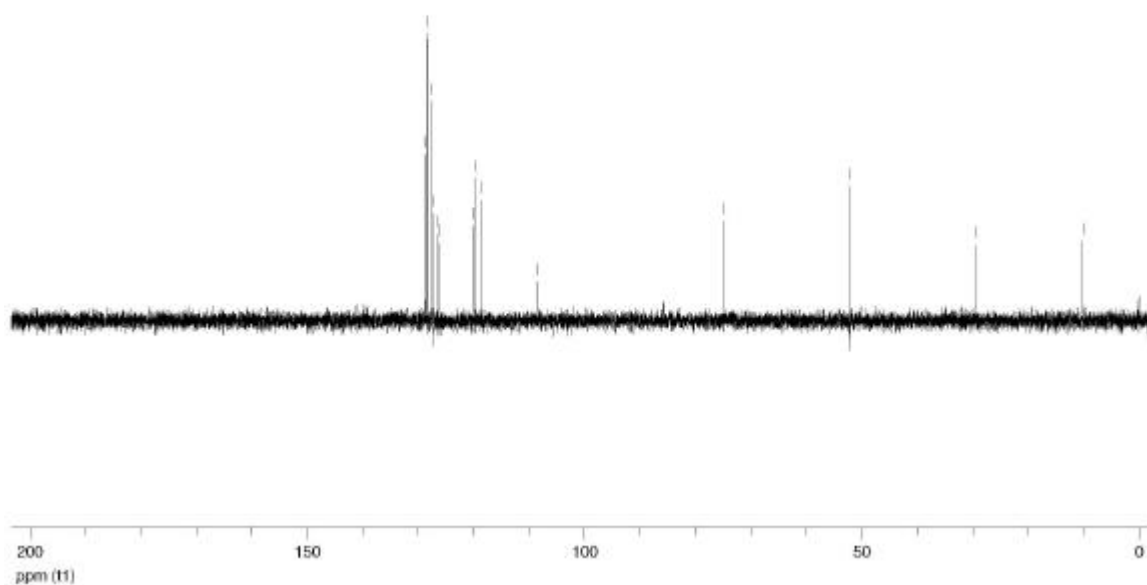




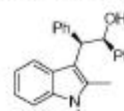
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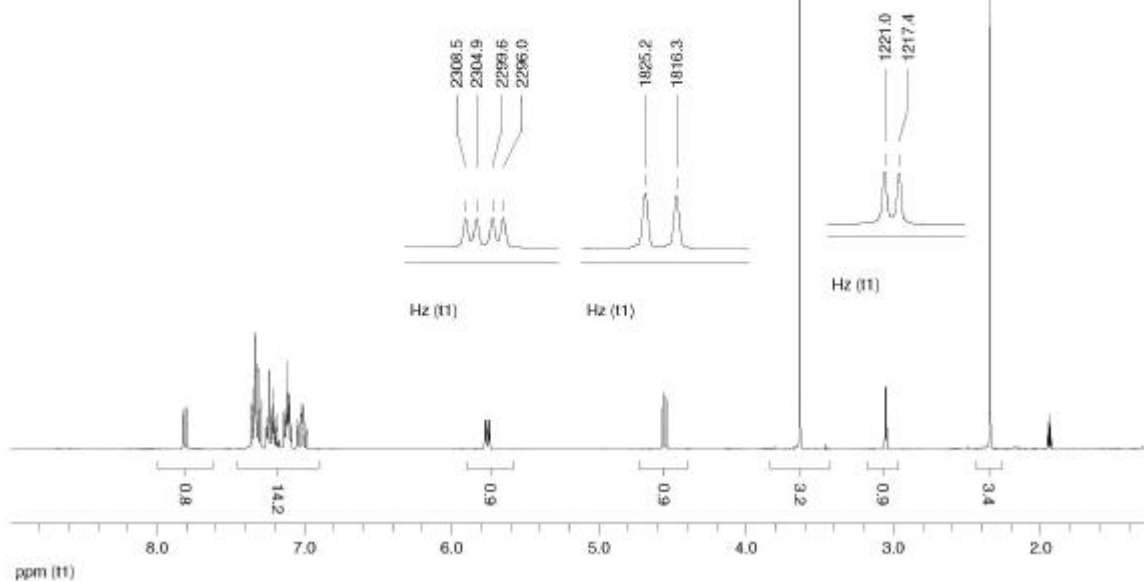
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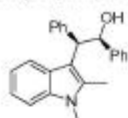
¹H-NMR (CD₃CN, 400 MHz)



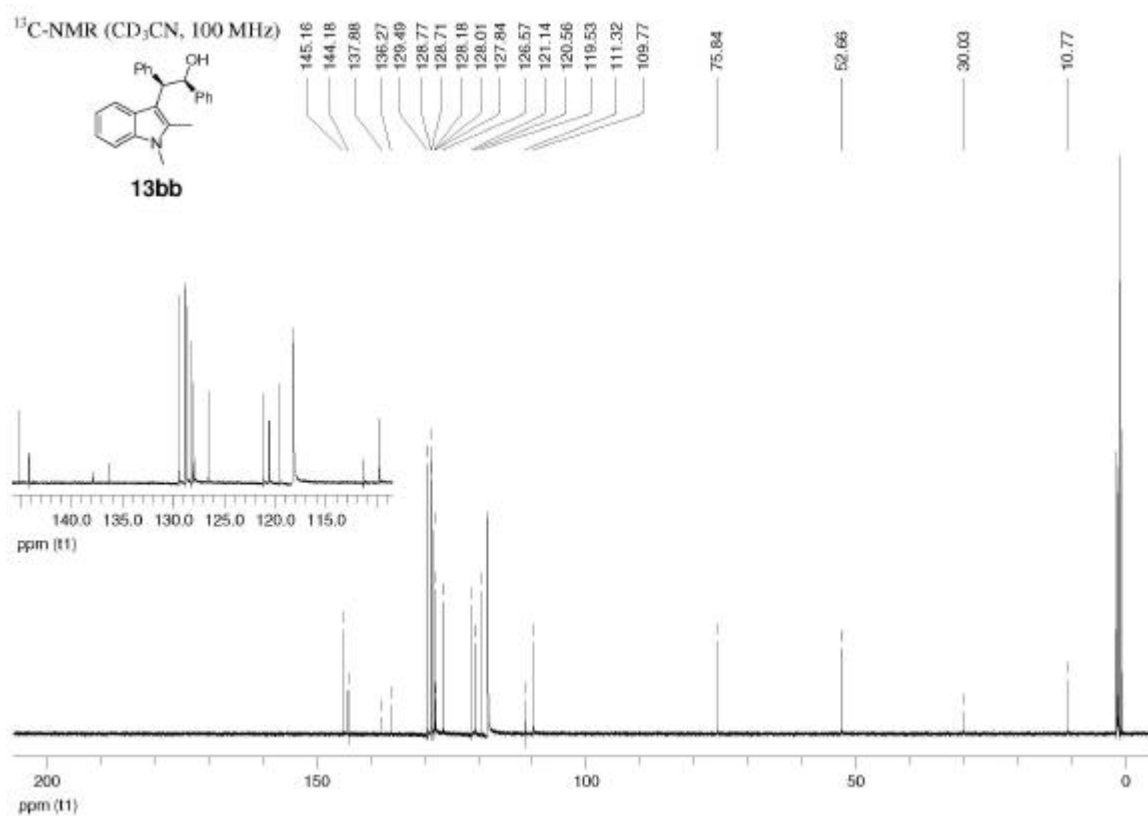
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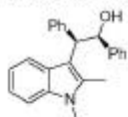
^{13}C -NMR (CD_3CN , 100 MHz)



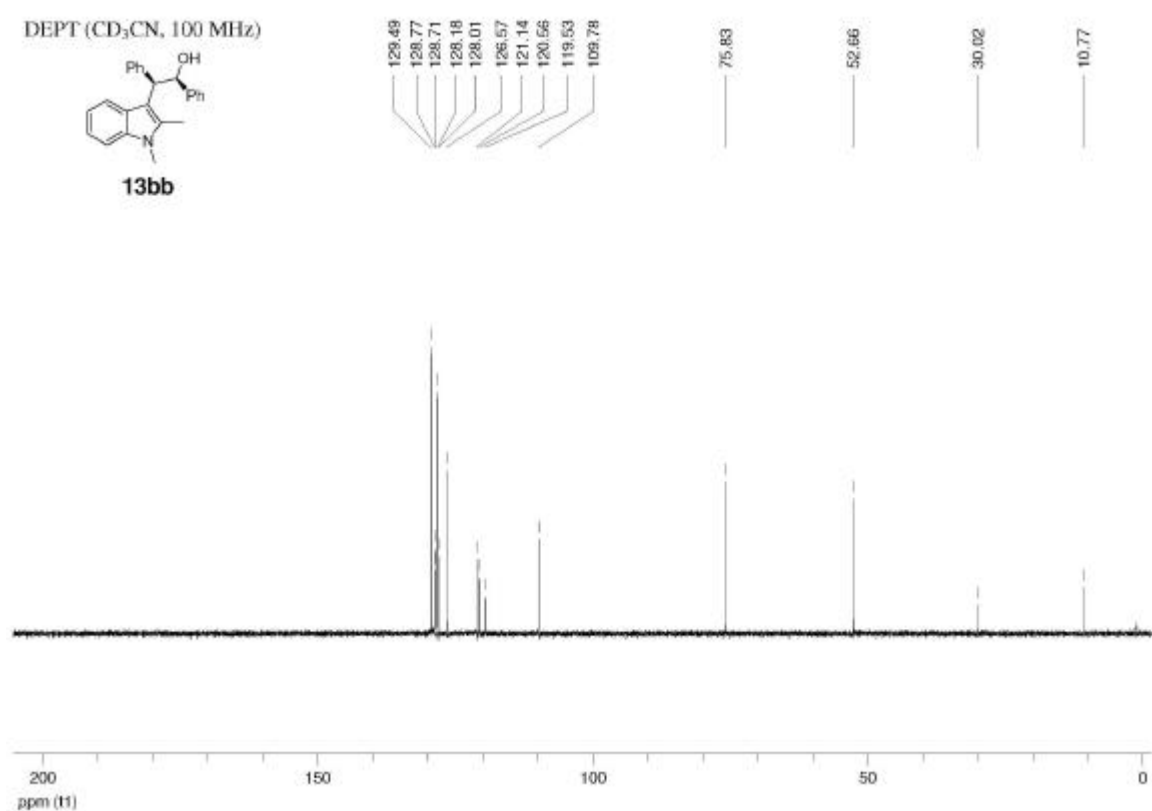
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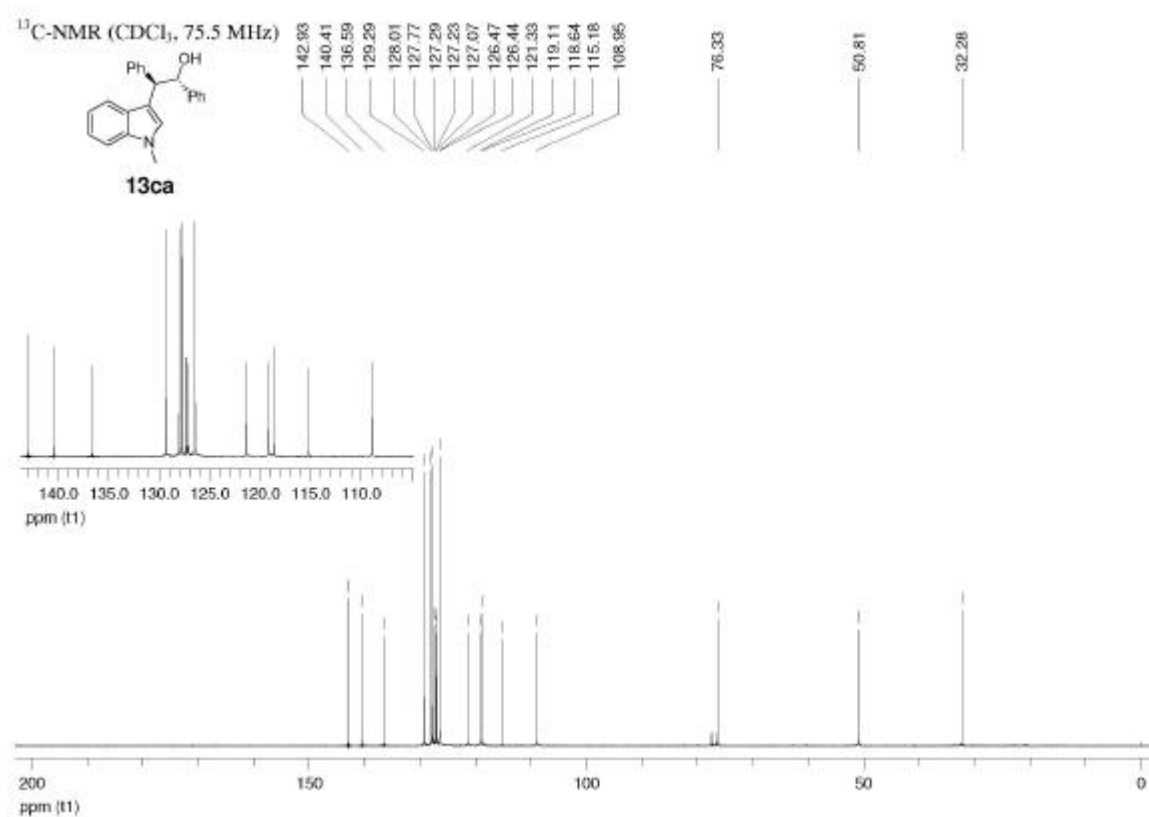
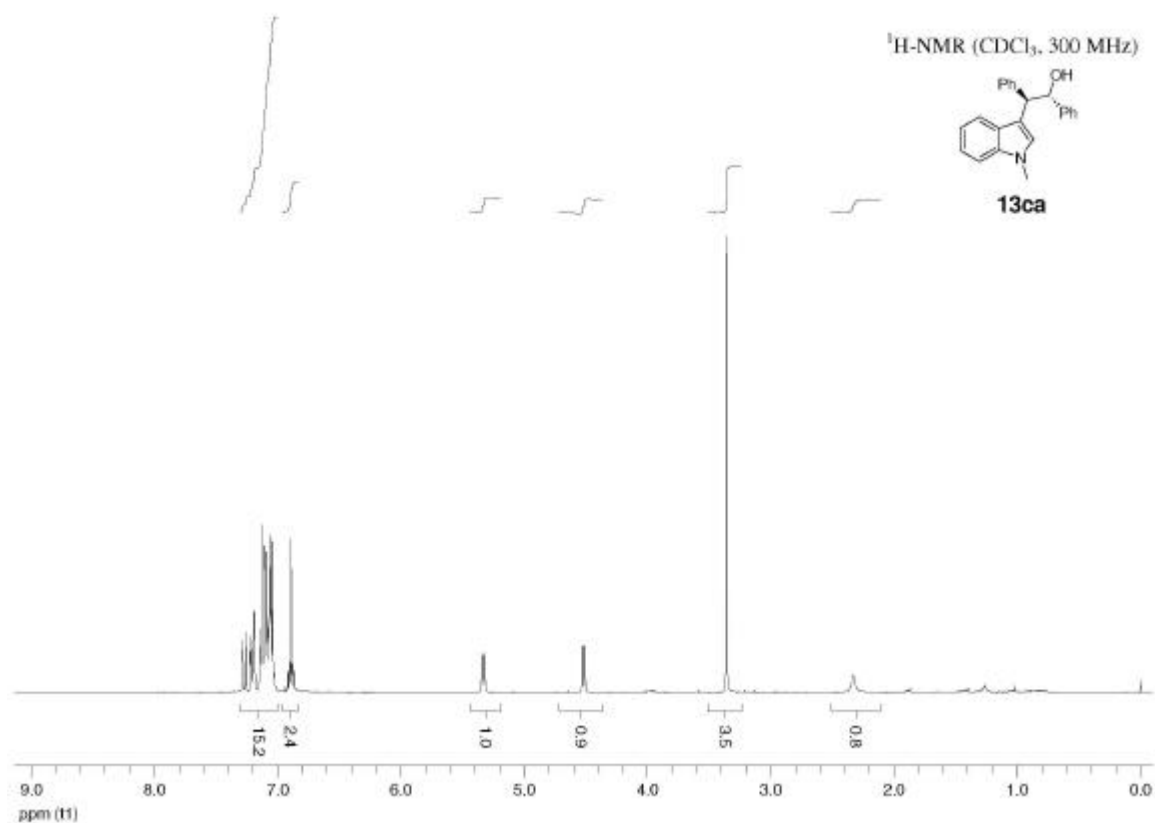


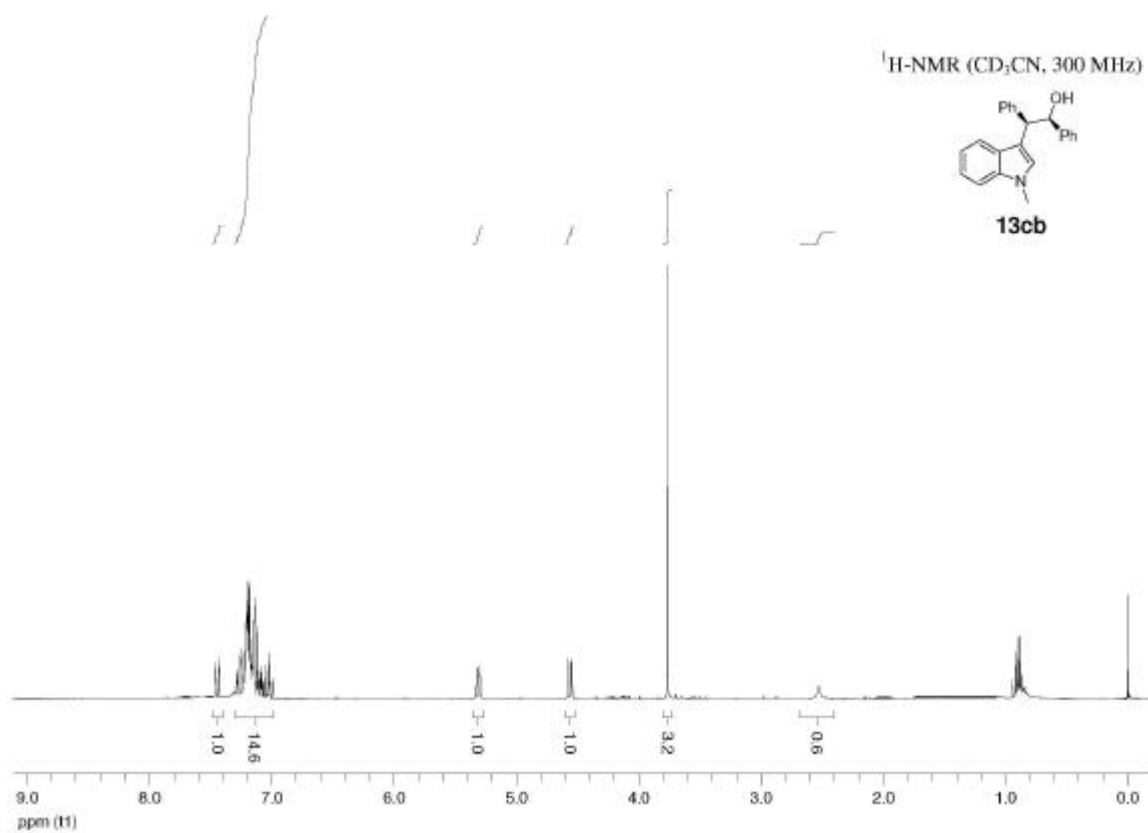
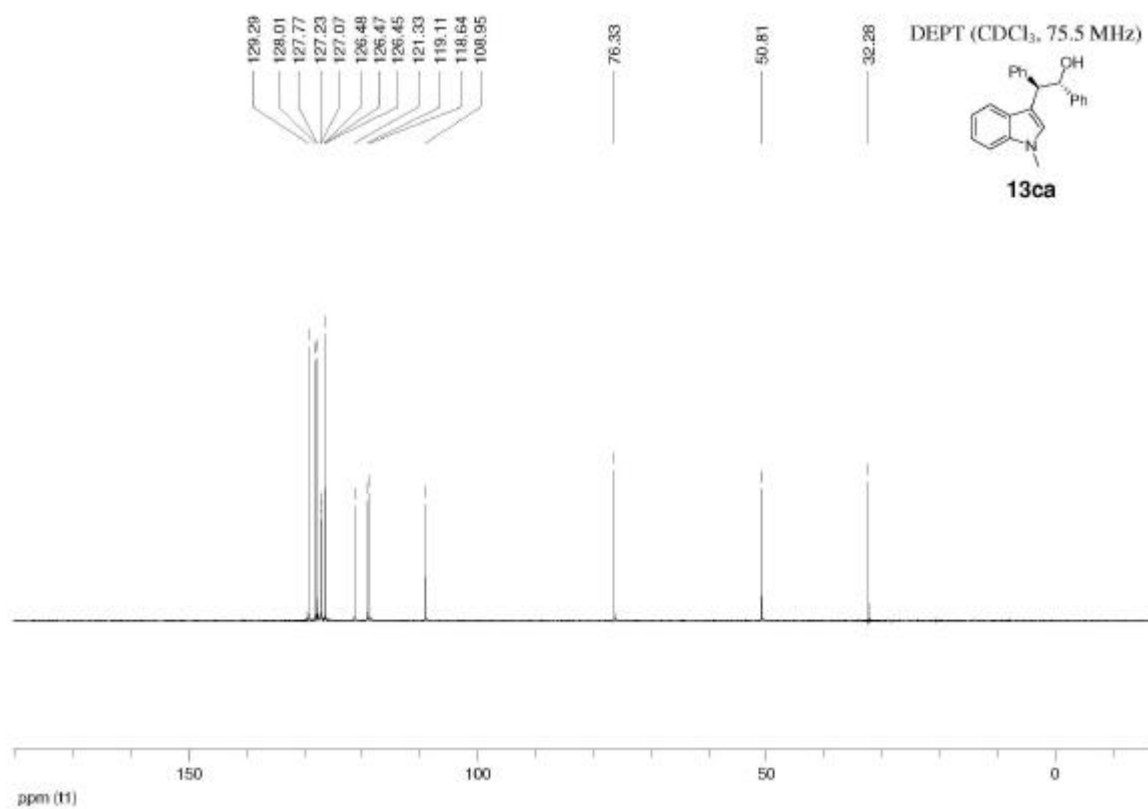
DEPT (CD_3CN , 100 MHz)



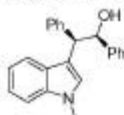
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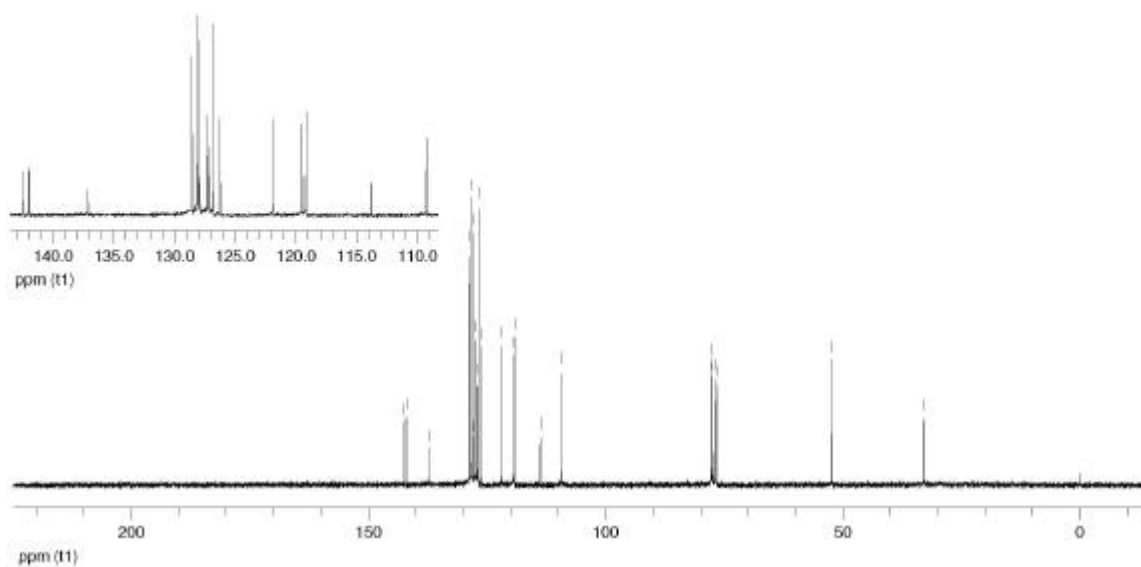
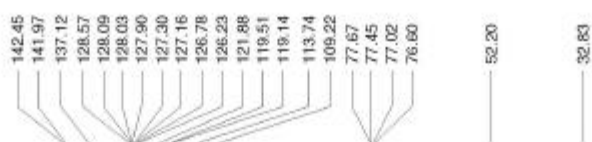




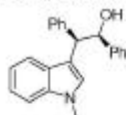
¹³C-NMR (CD₃CN, 75.5 MHz)



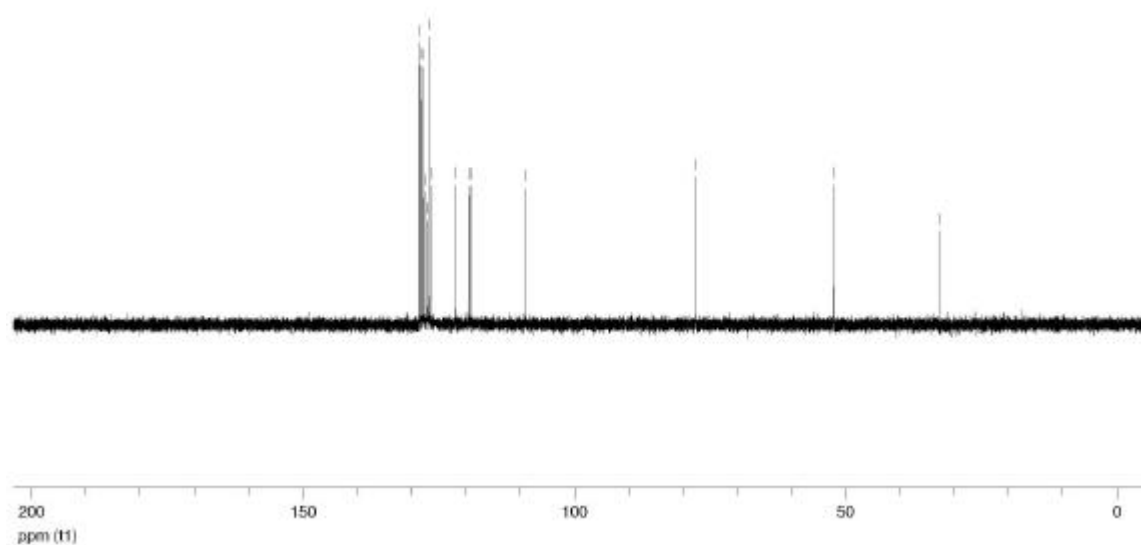
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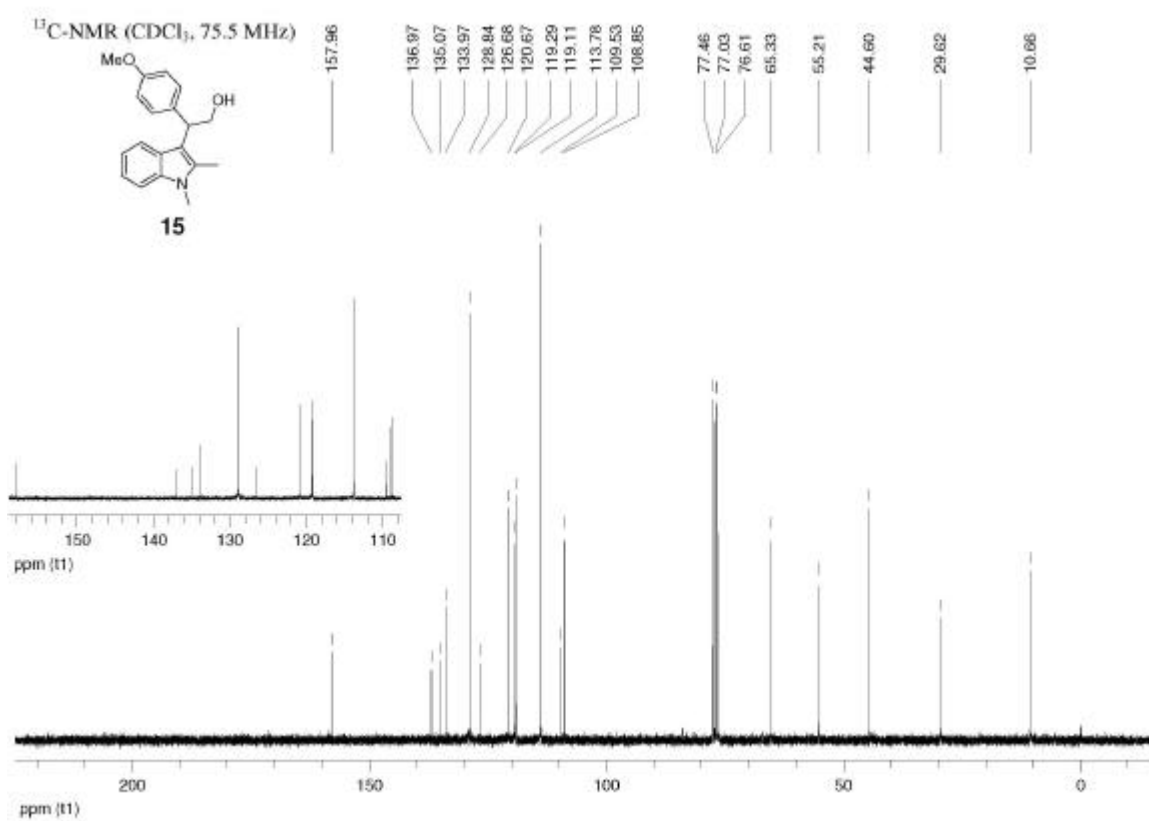
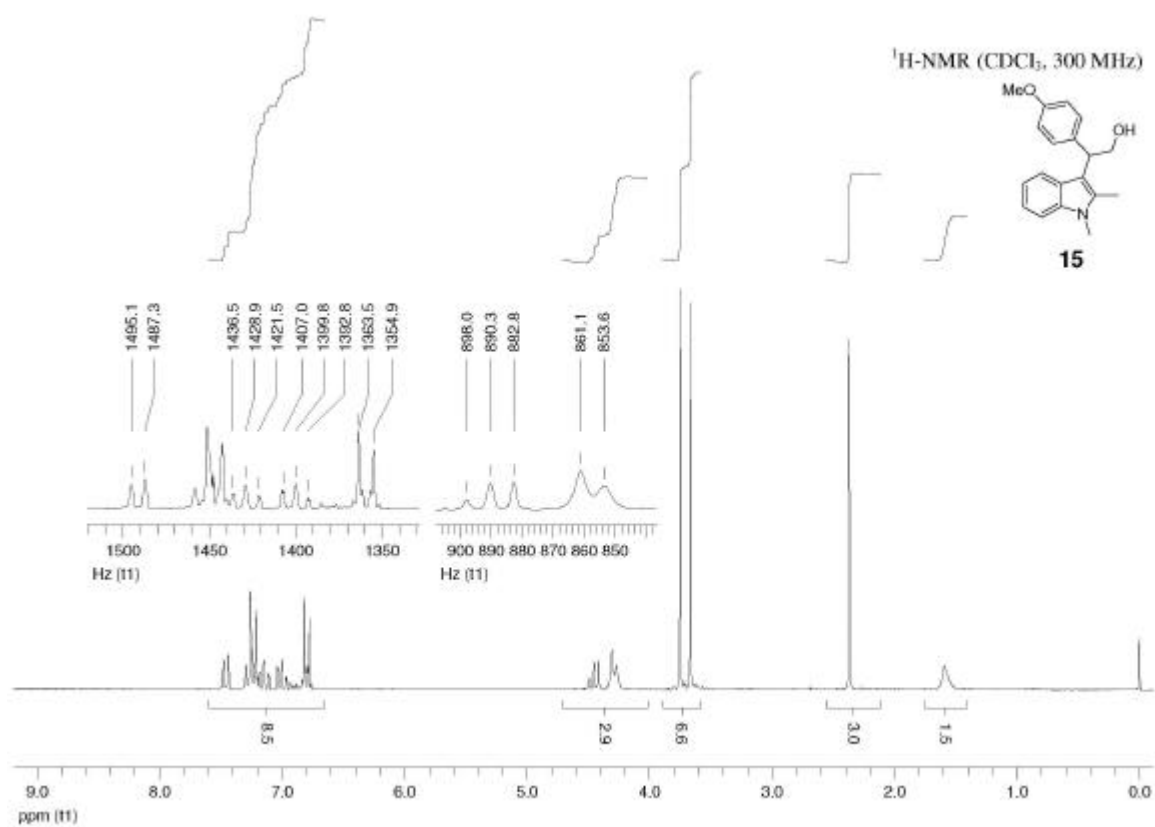


DEPT (CD₃CN, 75.5 MHz)

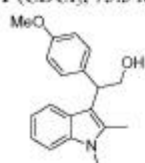


13cb

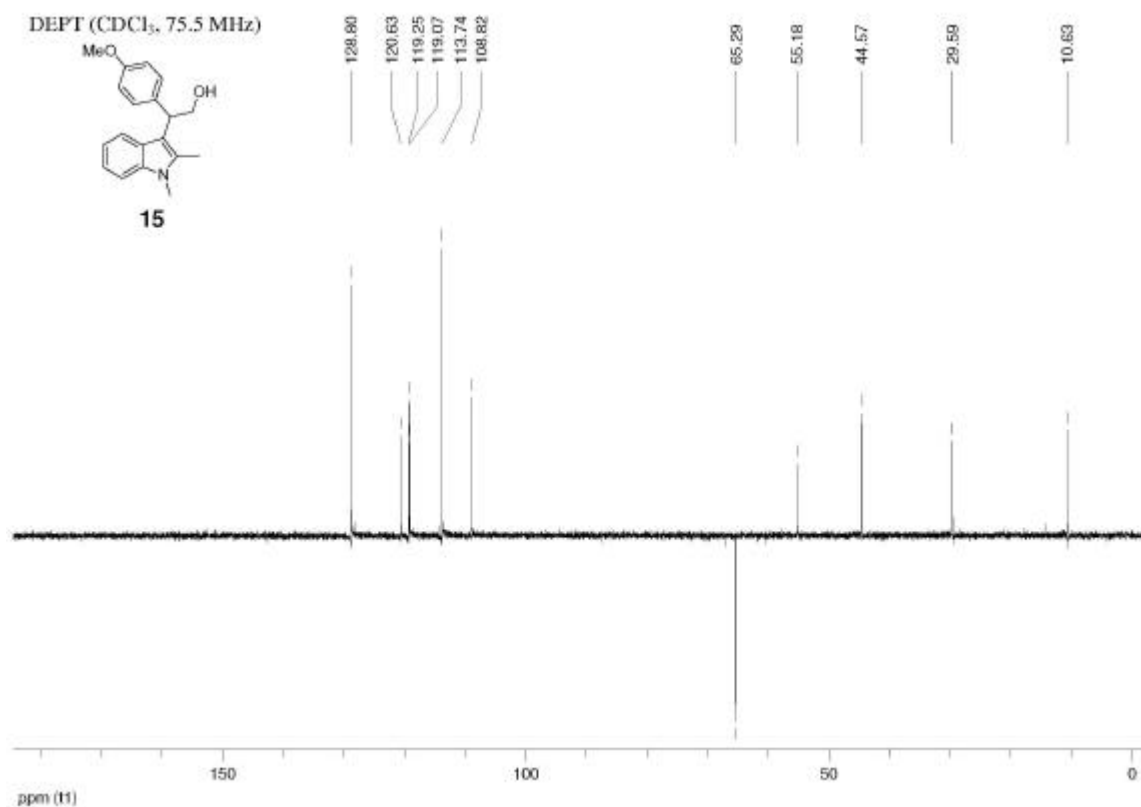




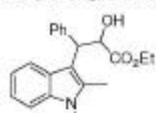
DEPT (CDCl₃, 75.5 MHz)



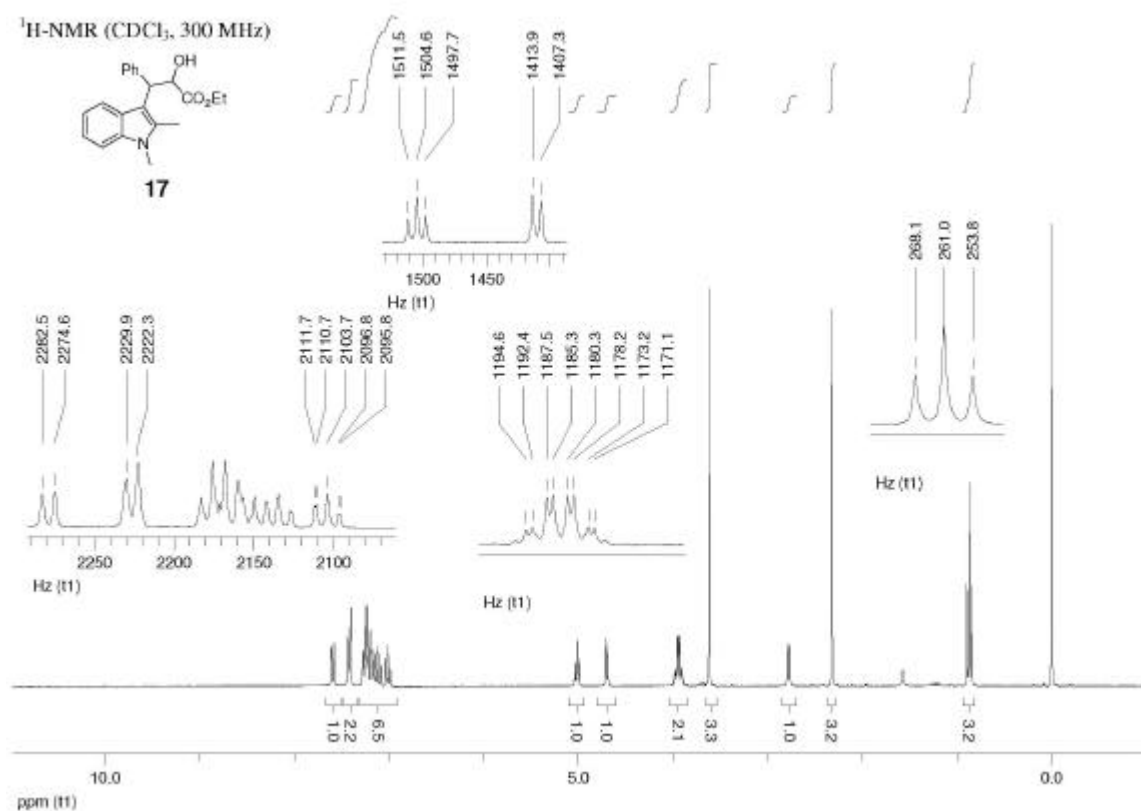
15



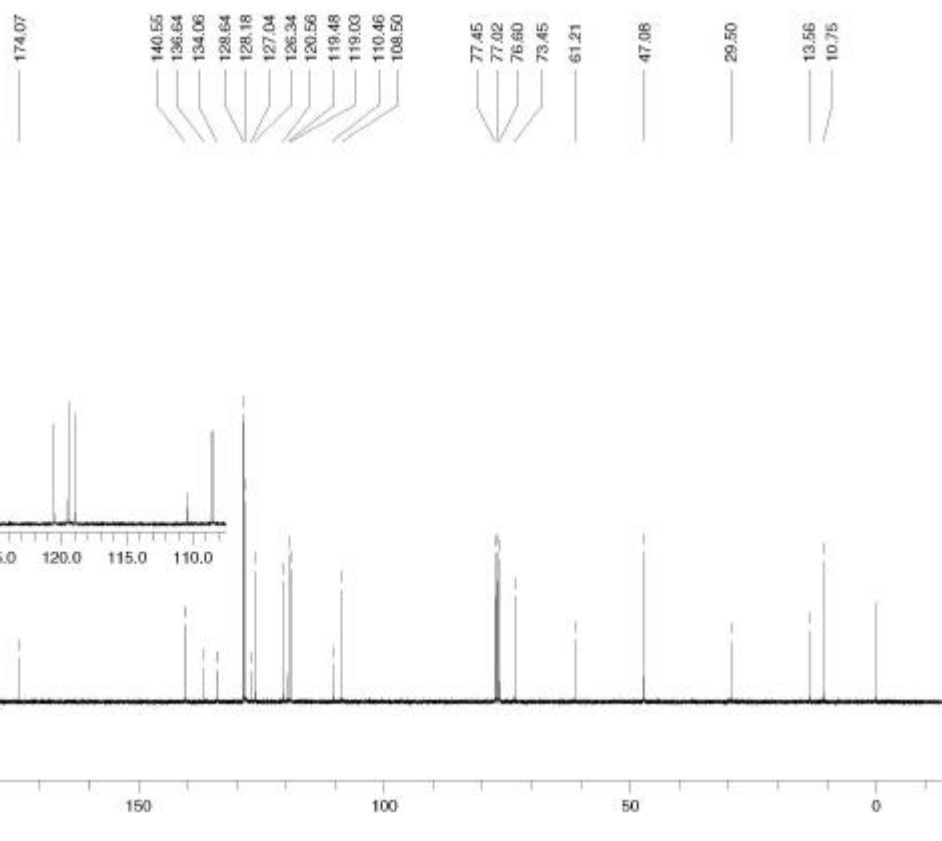
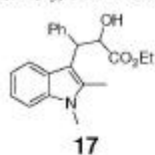
¹H-NMR (CDCl₃, 300 MHz)



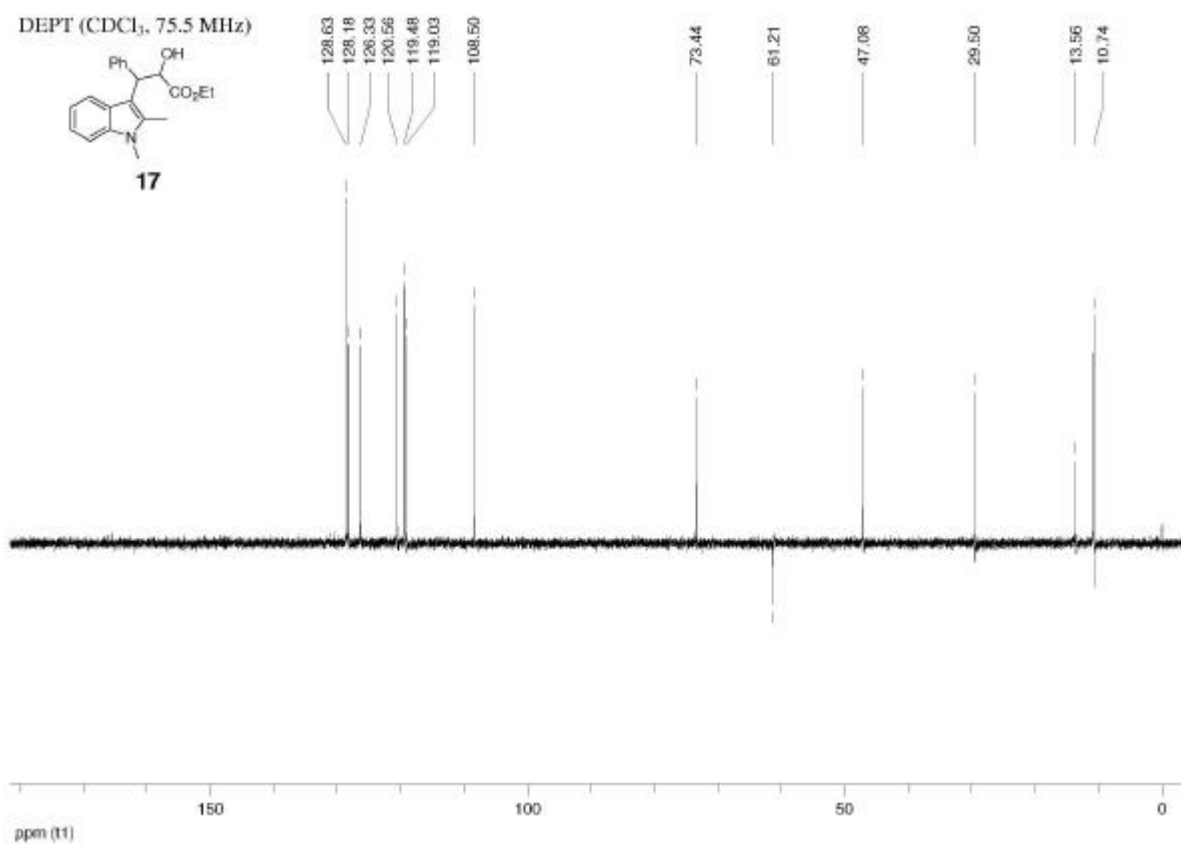
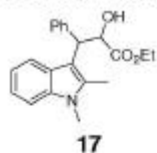
17

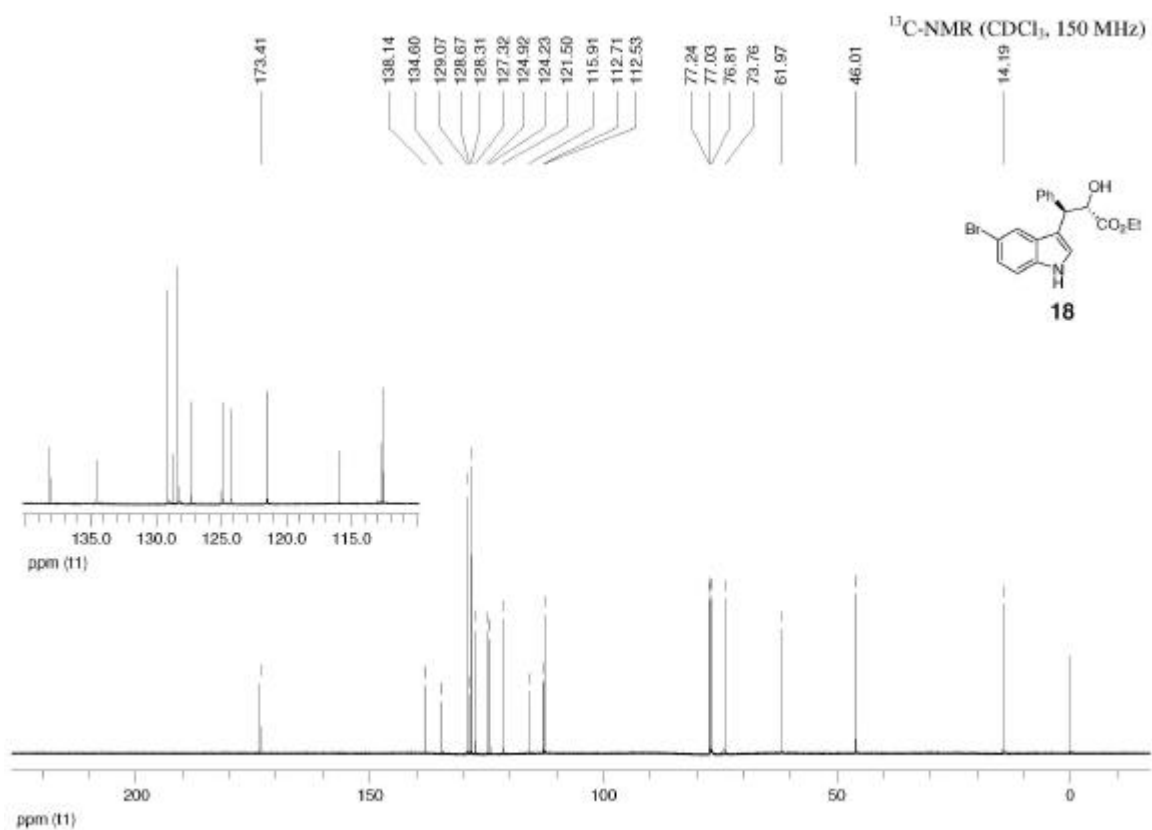
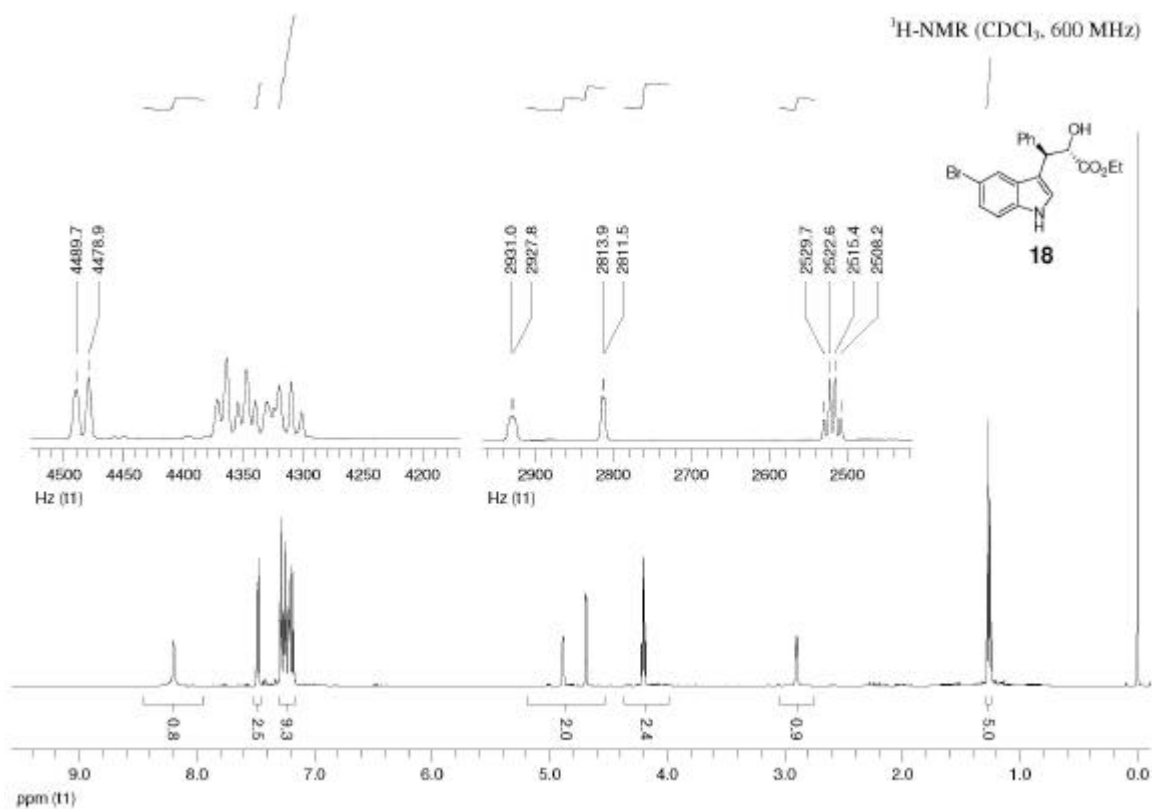


¹³C-NMR
(CDCl₃, 75.5 MHz)

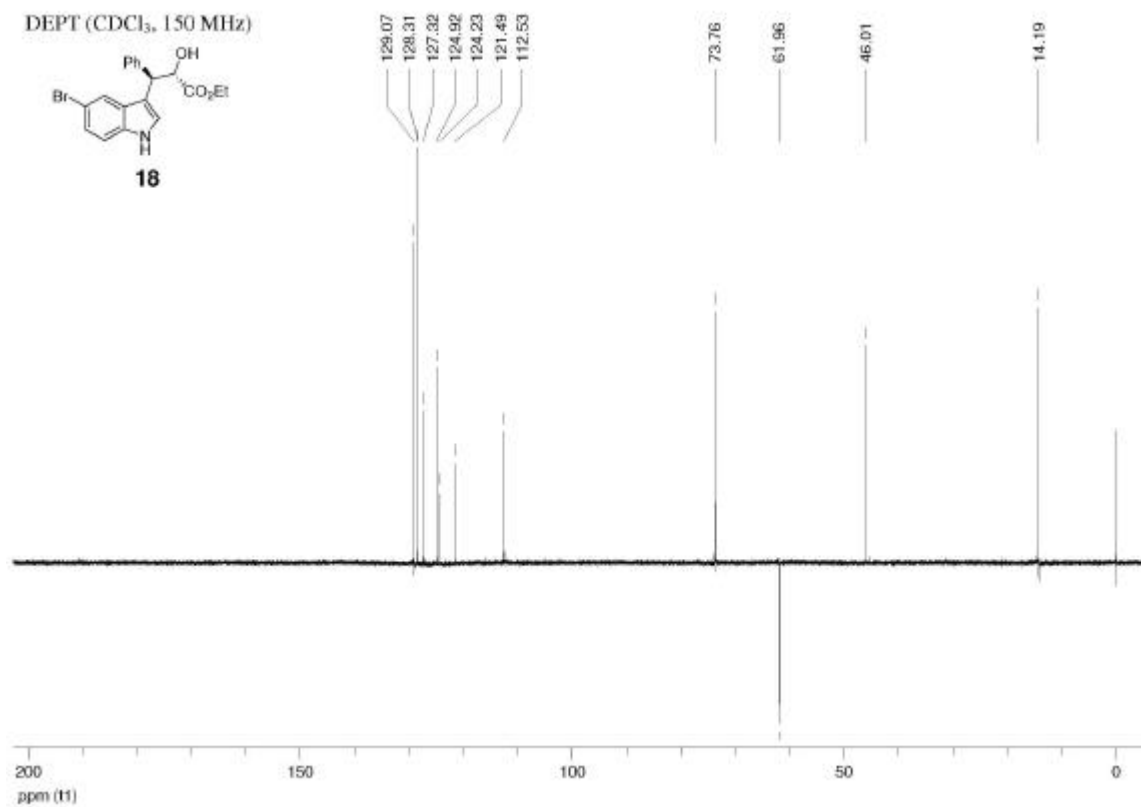
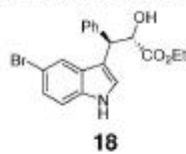


DEPT (CDCl₃, 75.5 MHz)

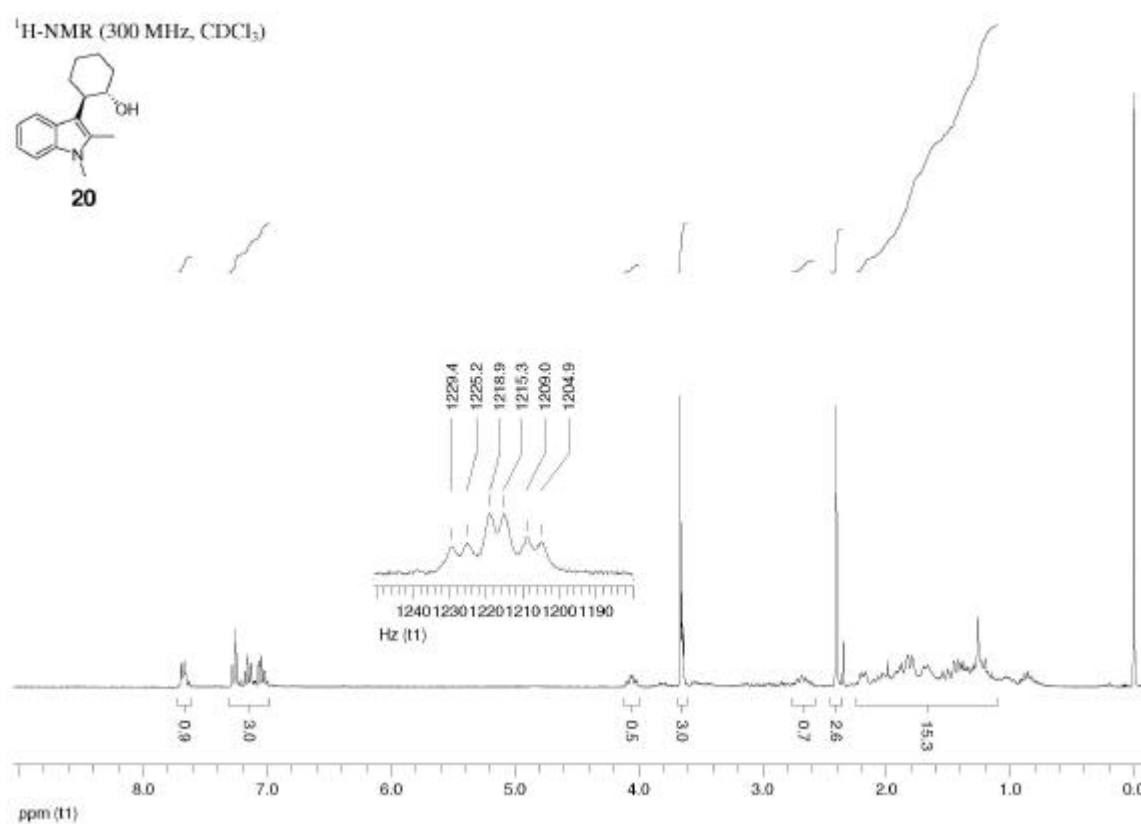
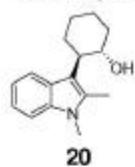


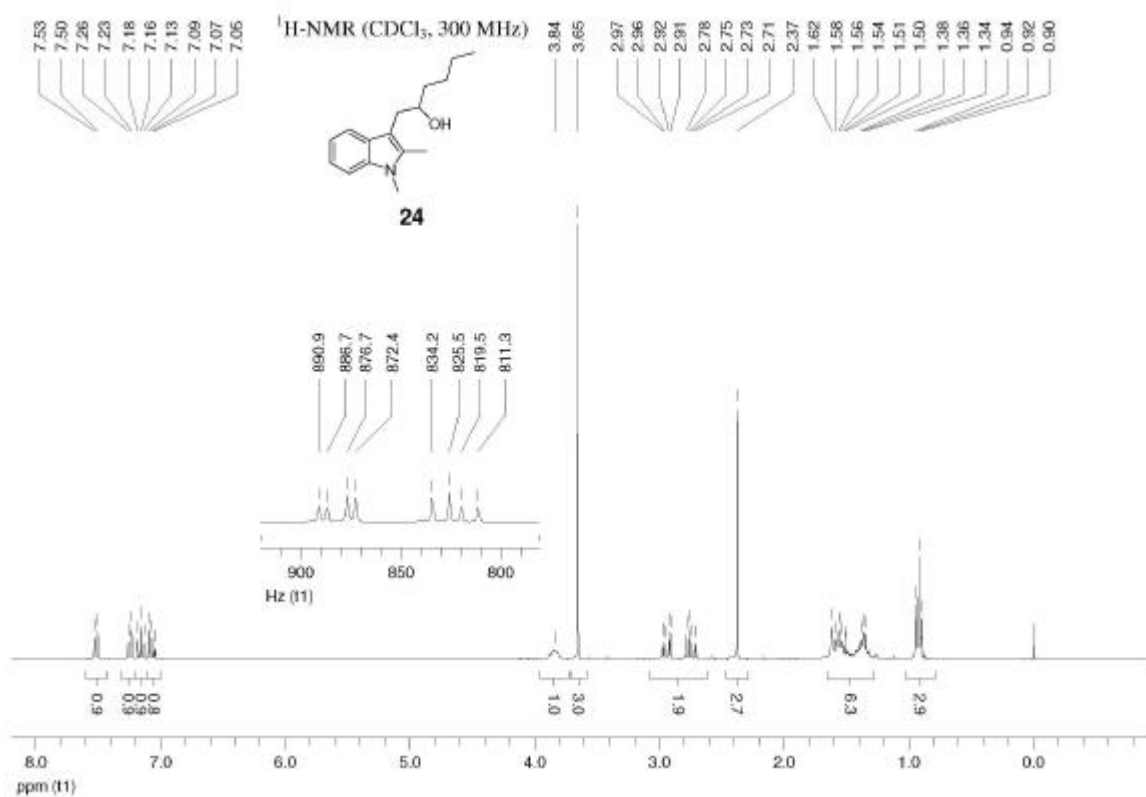
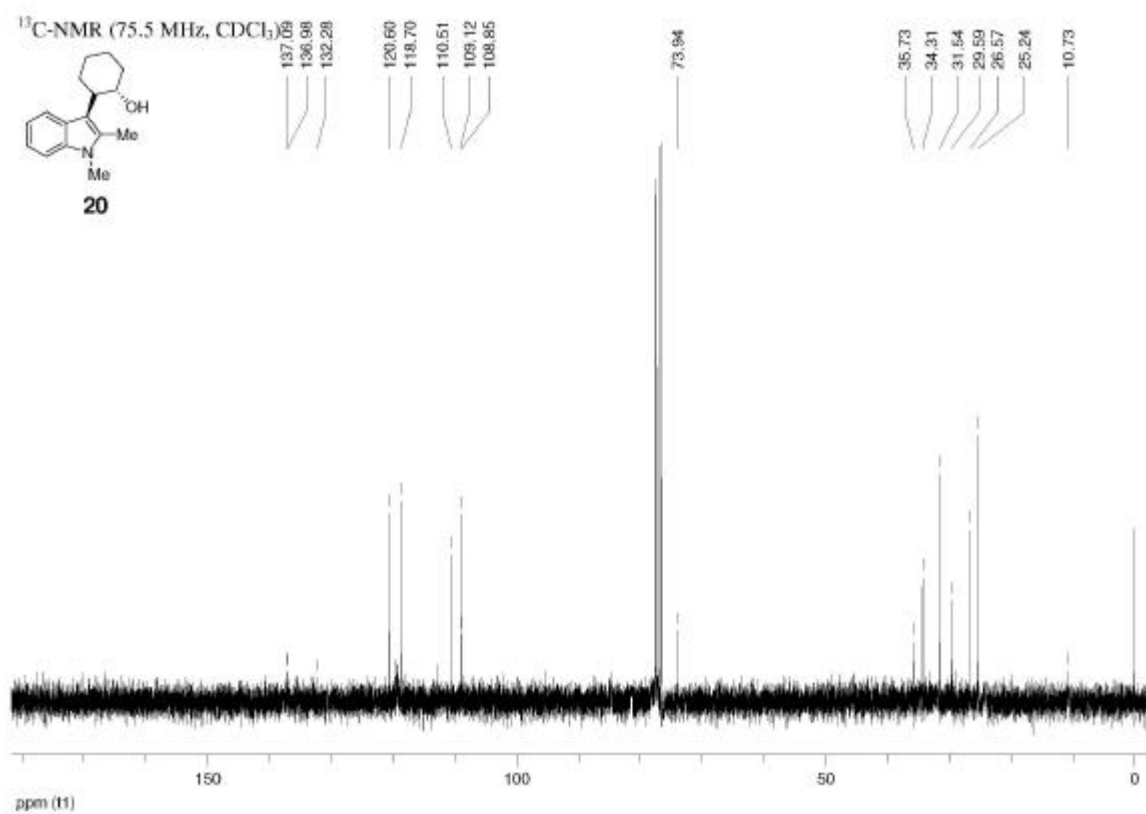


DEPT (CDCl₃, 150 MHz)

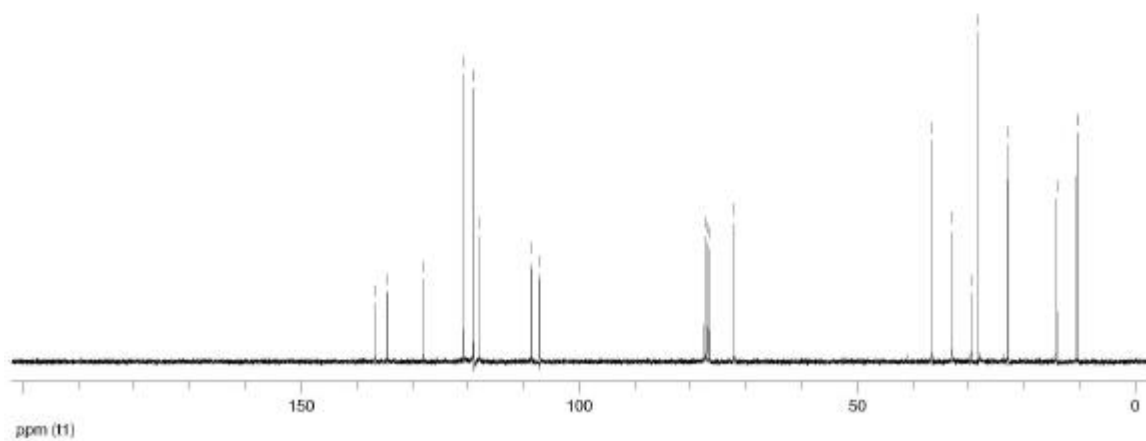
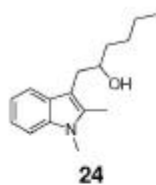


¹H-NMR (300 MHz, CDCl₃)

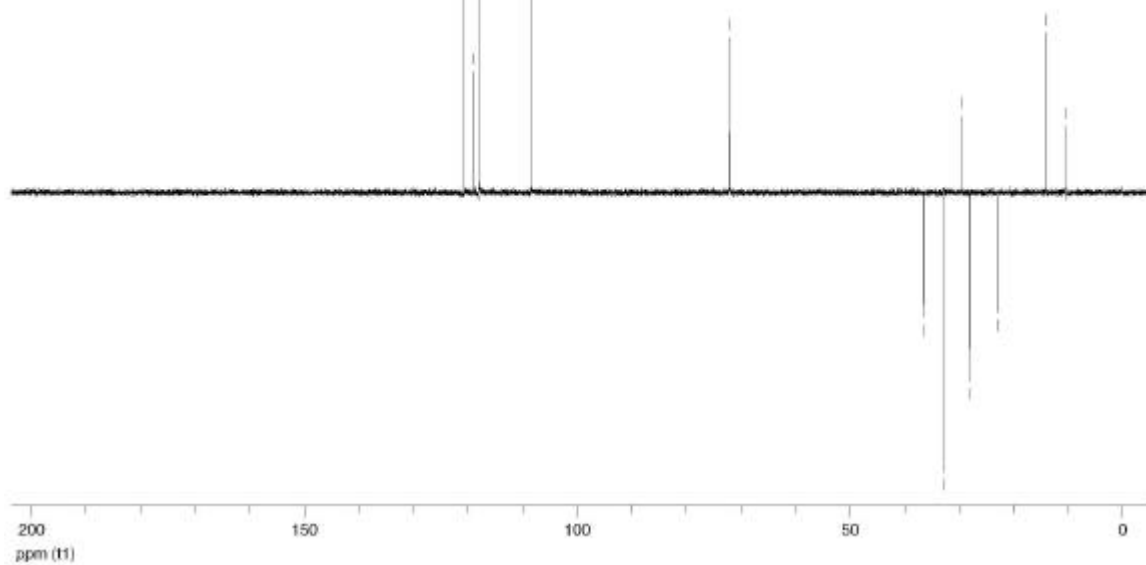
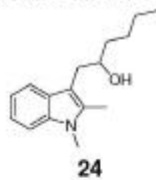


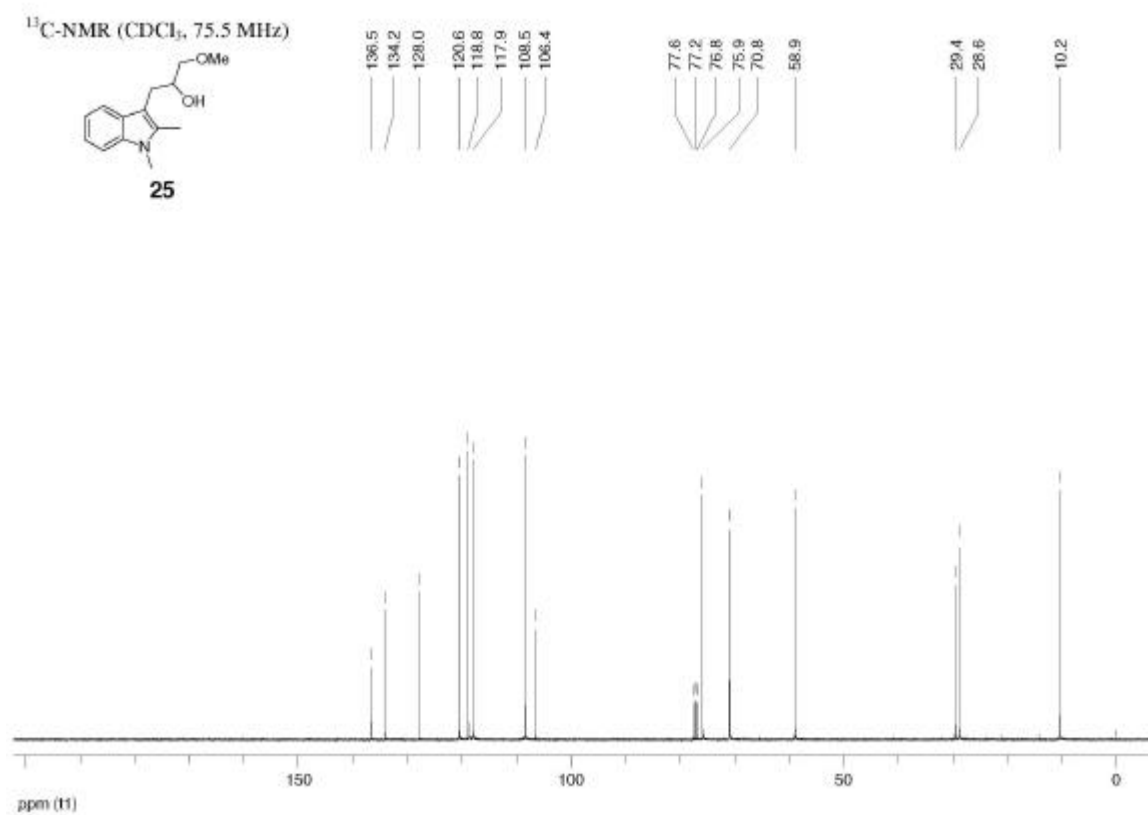
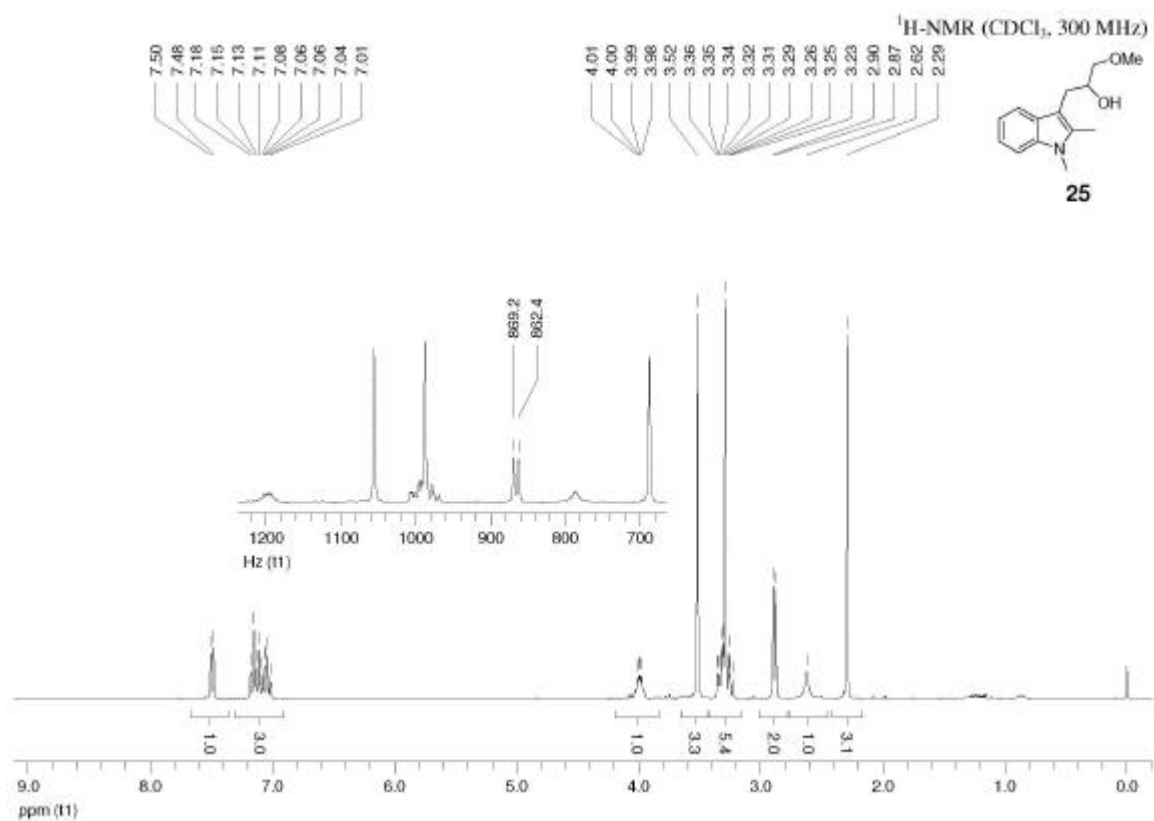


^{13}C -NMR (75.5 MHz, CDCl_3)



DEPT (CDCl_3 , 75.5 MHz)





DEPT (CDCl₃, 75.5 MHz)

