

Supporting Information

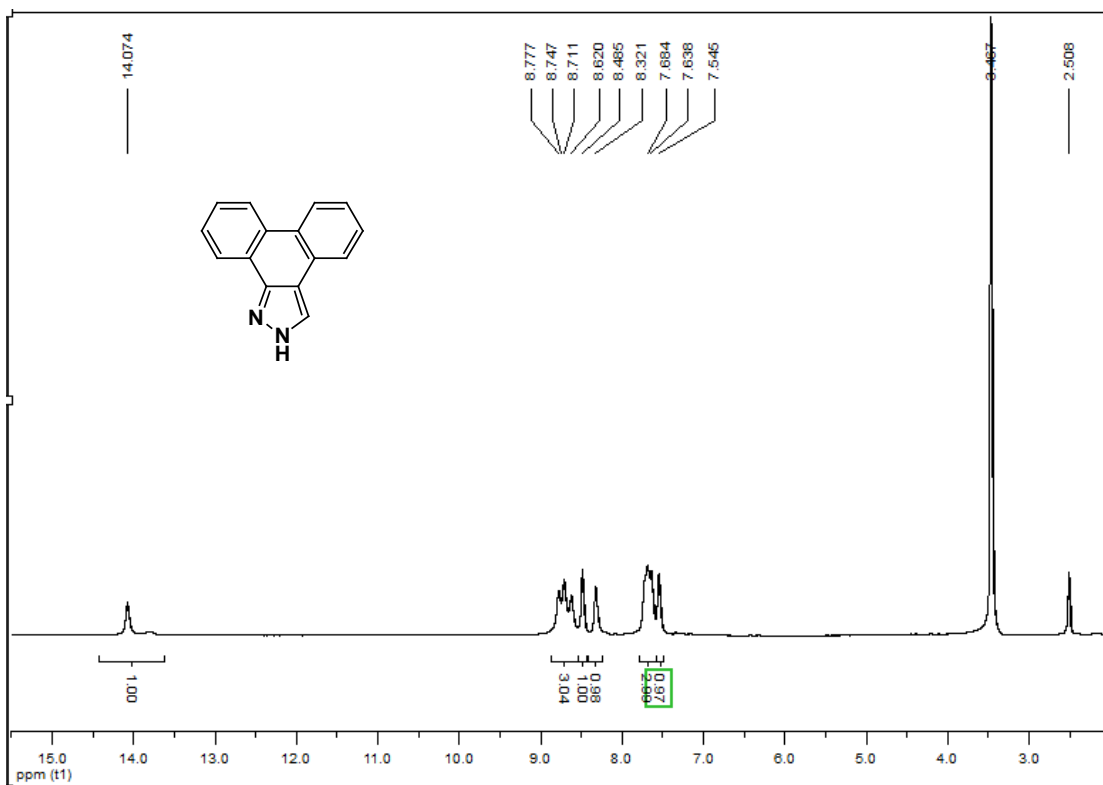
One-pot Synthesis of 2*H*-Phenanthro[9,10-*c*]Pyrazoles From Isoflavones by Two Dehydration Processes

Qiuya Wang^{a,b}, Zunting Zhang^{a,*}, Zichao Du, Huiliang Hua, Shasha Chen

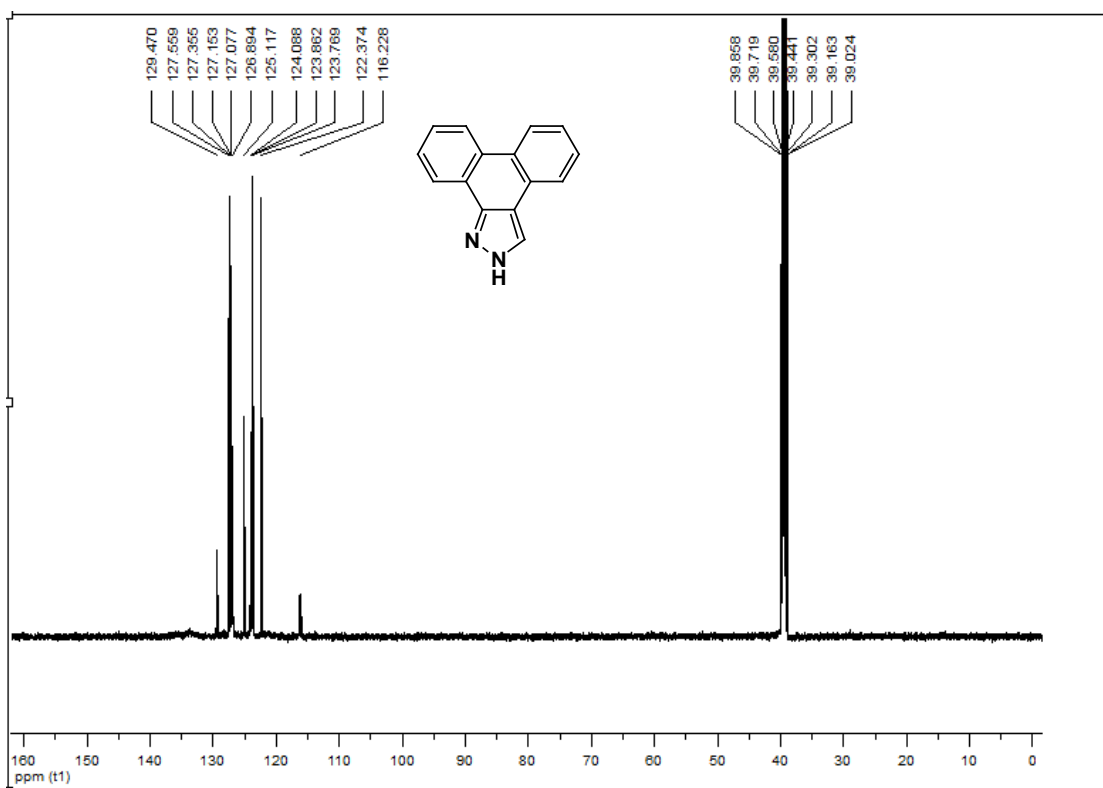
^a Key Laboratory of the Ministry of Education for Medicinal Resources and Natural Pharmaceutical Chemistry, National Engineering Laboratory for Resource Development of Endangered Crude Drugs in Northwest of China, and School of Chemistry and Chemical Engineering, Shaanxi Normal University, Xi'an 710062, PRC

^b College of Chemistry and Life Science, WeiNan Normal University, WeiNan 714000, PRC

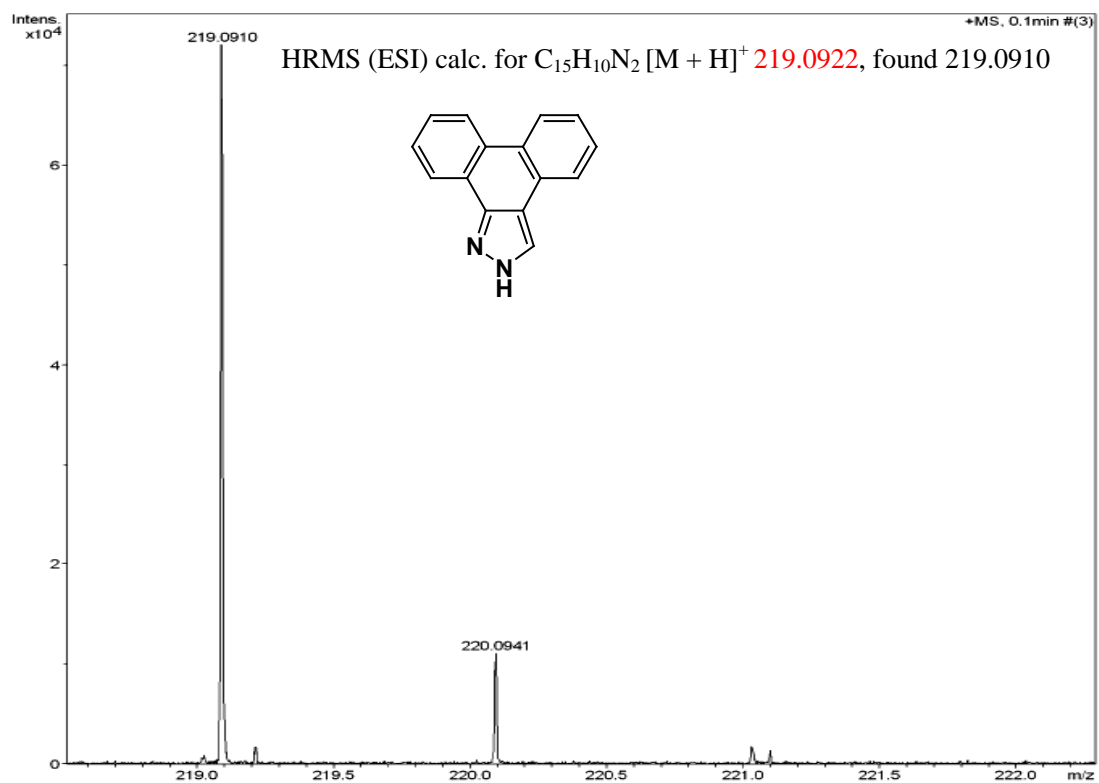
** To whom correspondence should be addressed. Phone: +86-29-85303940; fax: +86-29-85303940; E-mail addresses: zhangzunting@sina.com (Zhang Z.); Wqiuya1978@163.com (Wang Q.)*



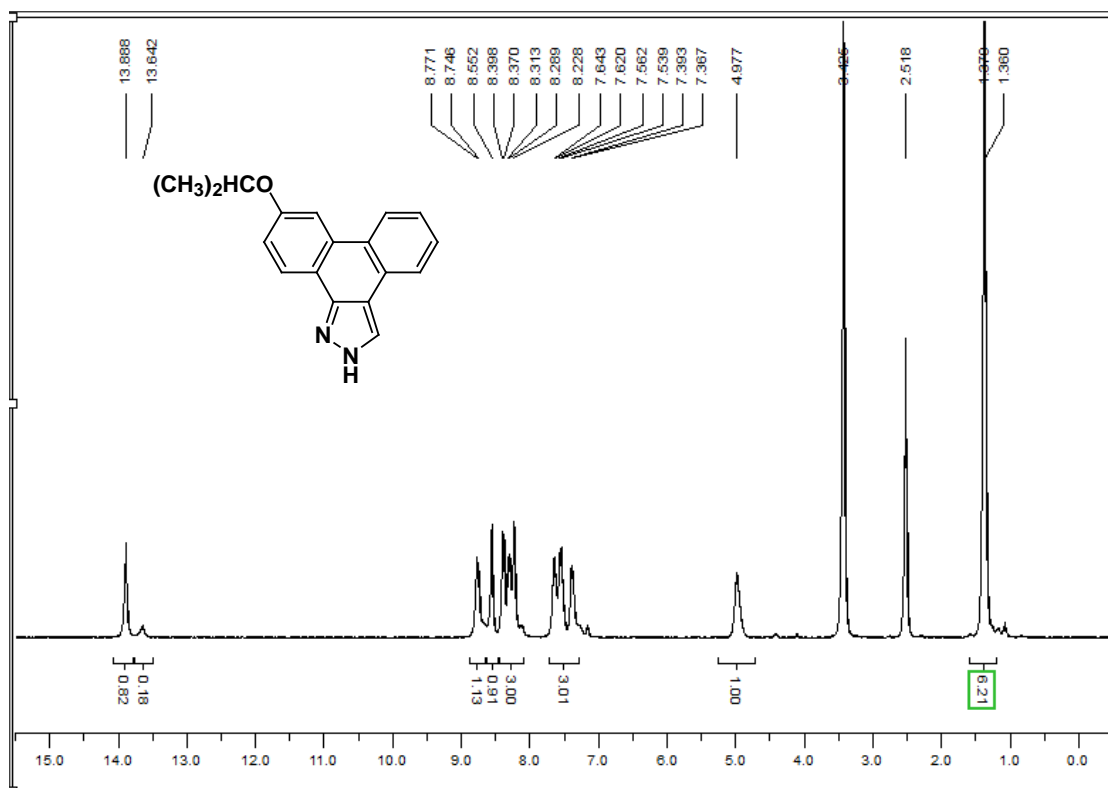
Compound 1a $^1\text{H NMR}$ (DMSO- d_6)



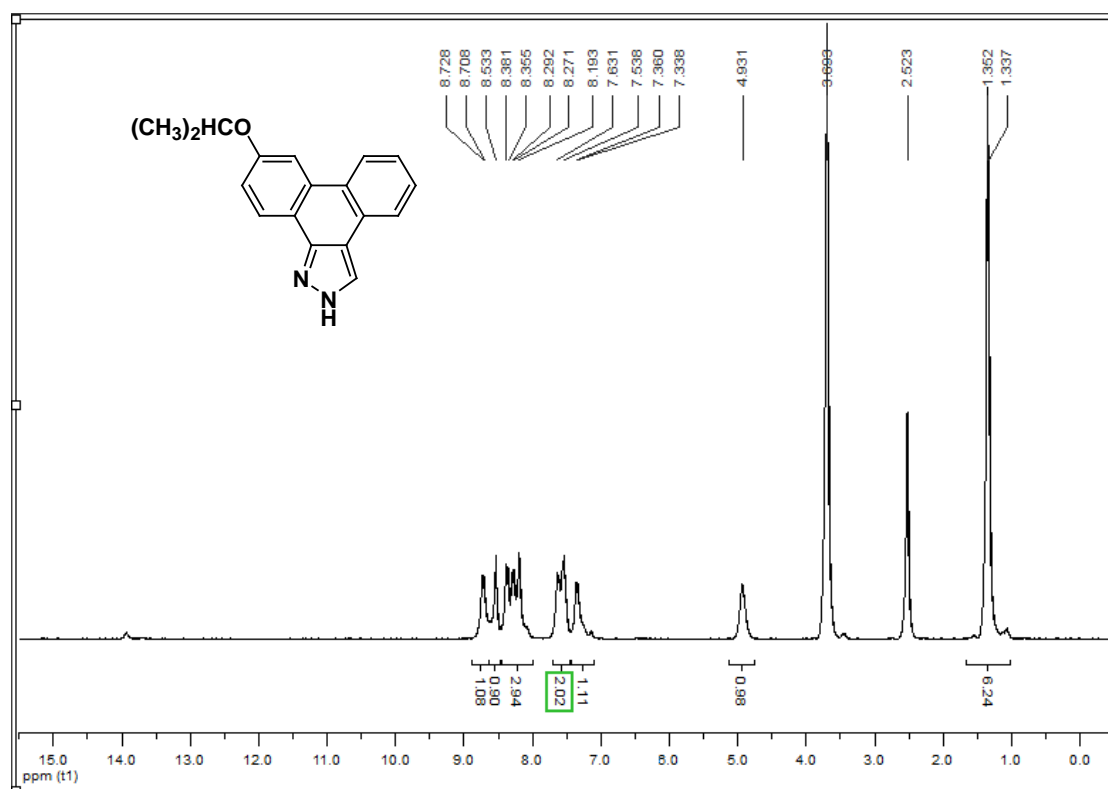
Compound 1a $^{13}\text{C NMR}$ (DMSO- d_6)



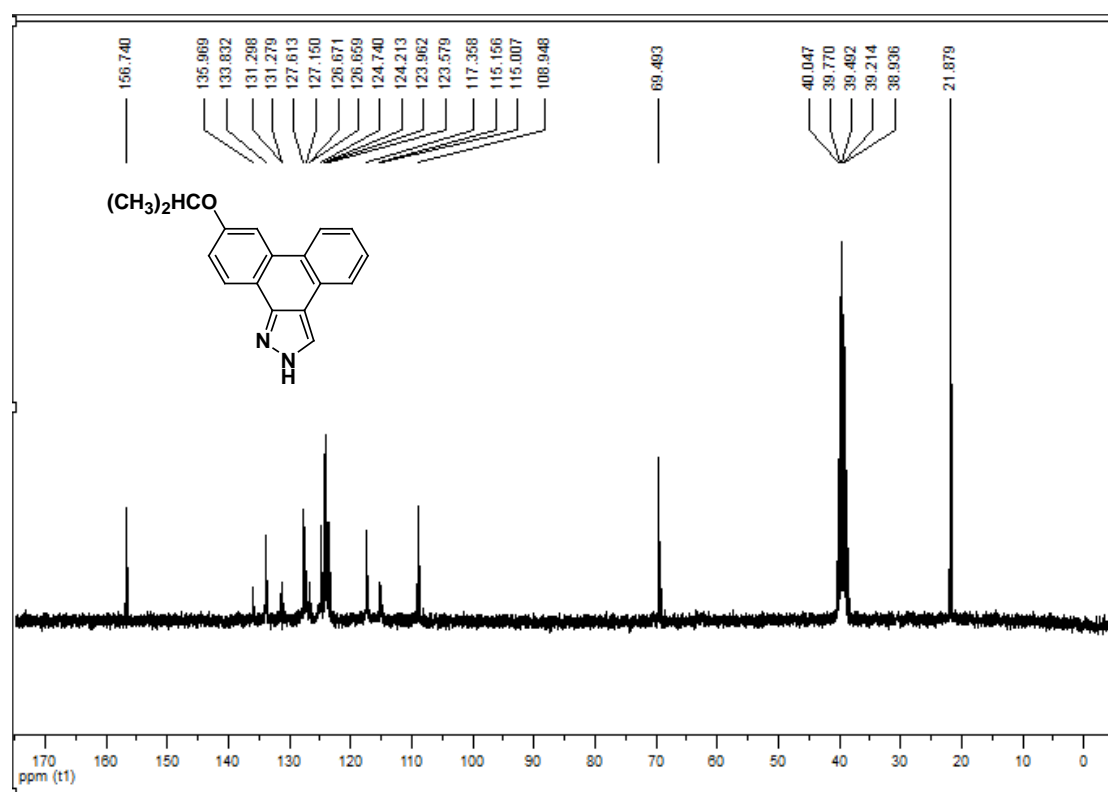
Compound 1a HRMS(MeOH)



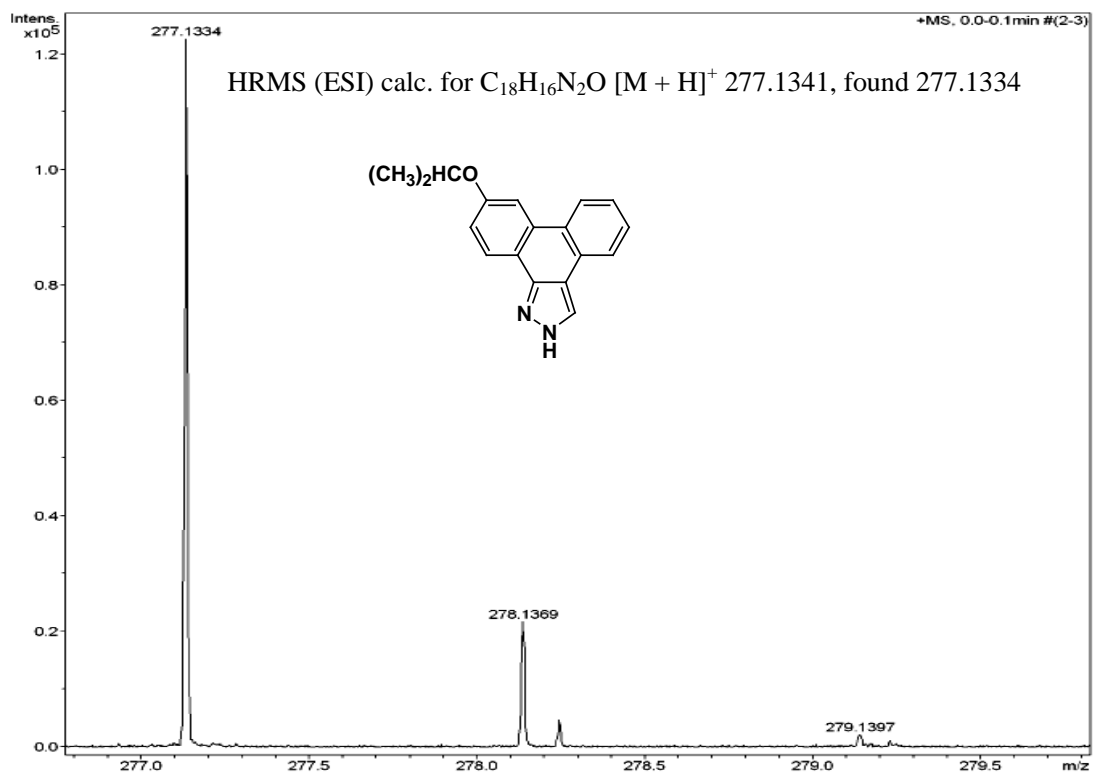
Compound 1b ¹H NMR(DMSO-d₆)



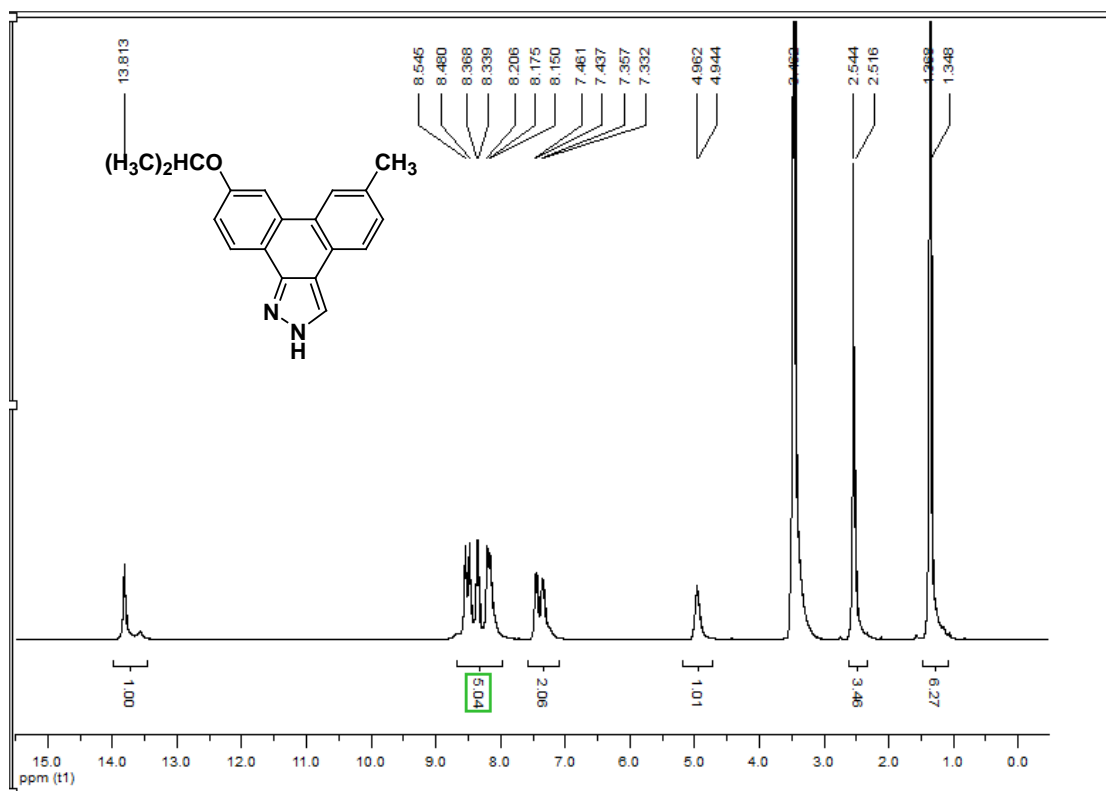
Compound 1b ^1H NMR(DMSO- d_6 +D $_2$ O)



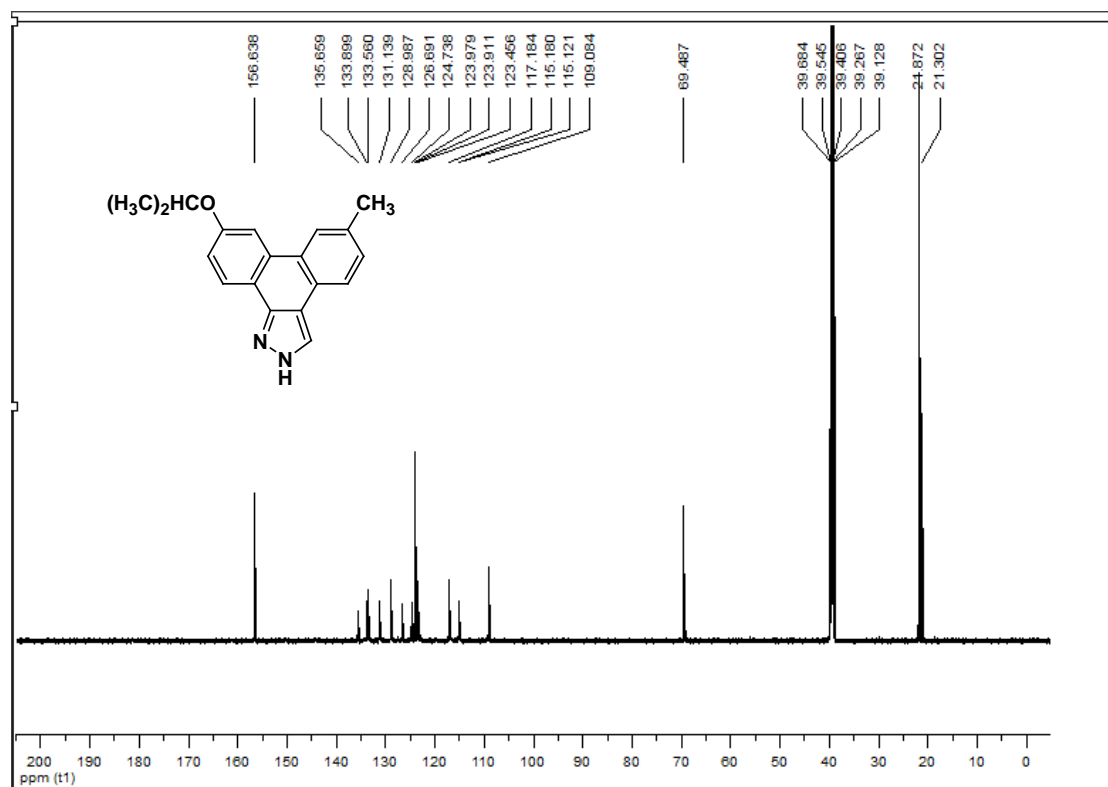
Compound 1b ^{13}C NMR(DMSO- d_6)



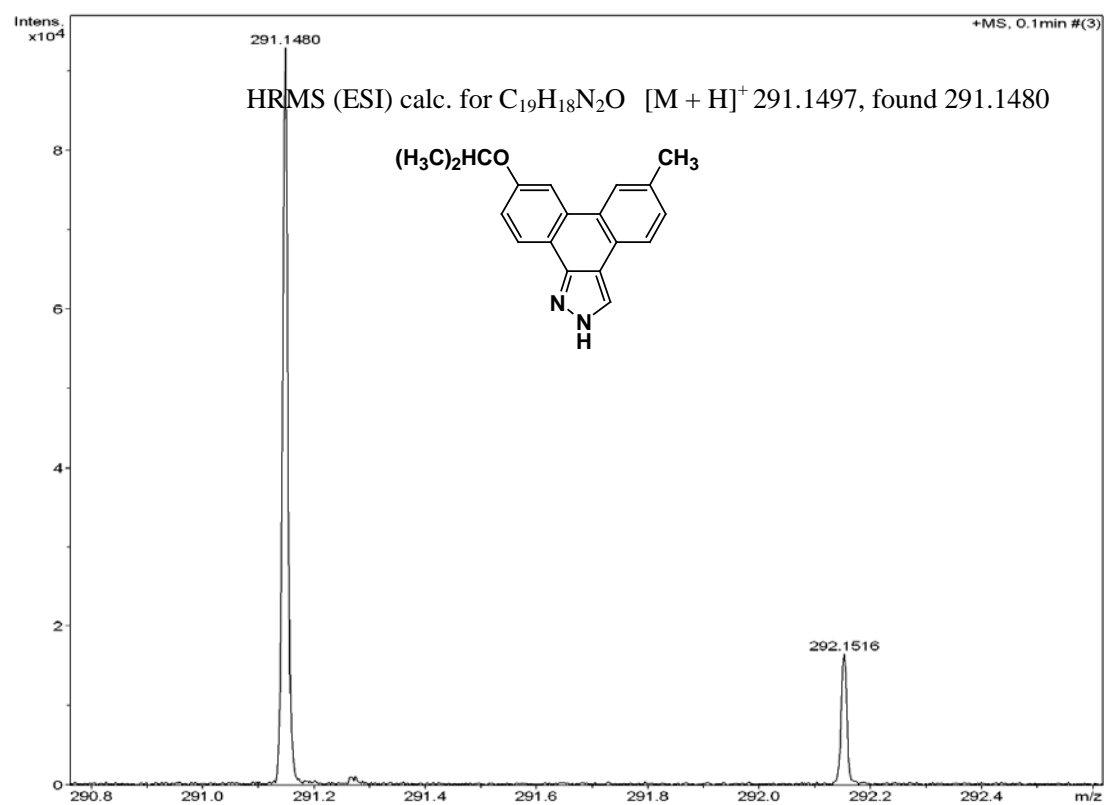
Compound 1b HRMS(MeOH)



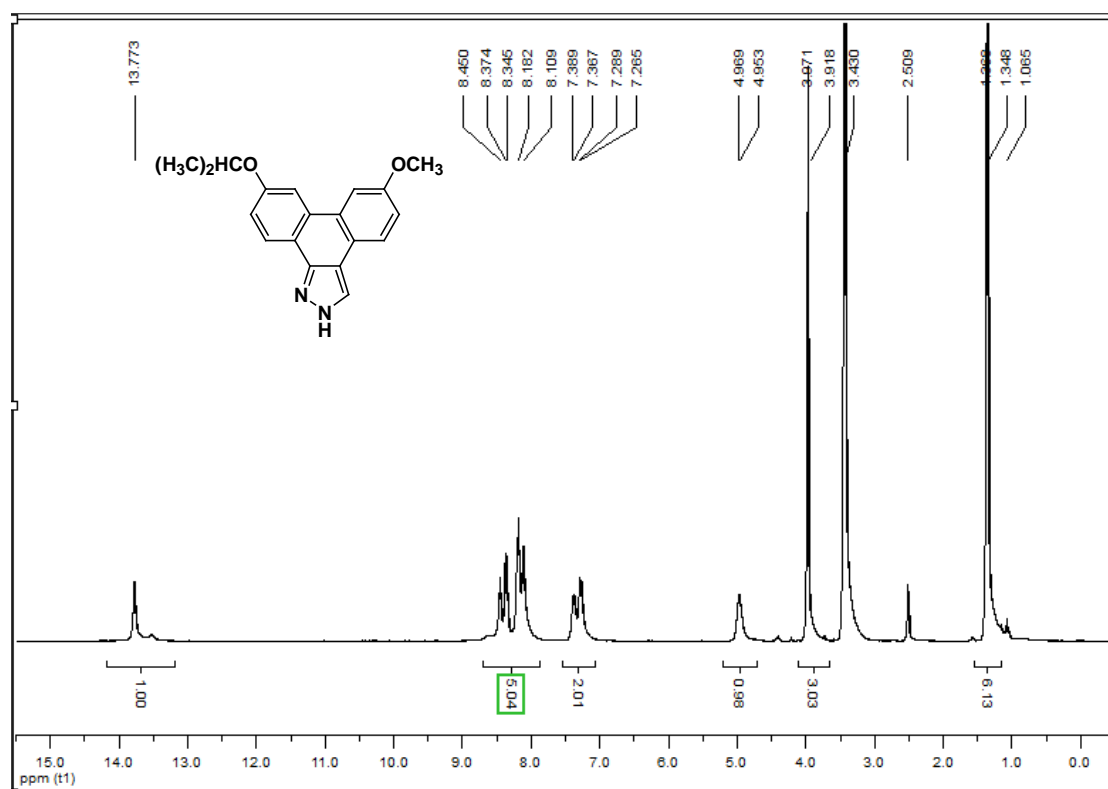
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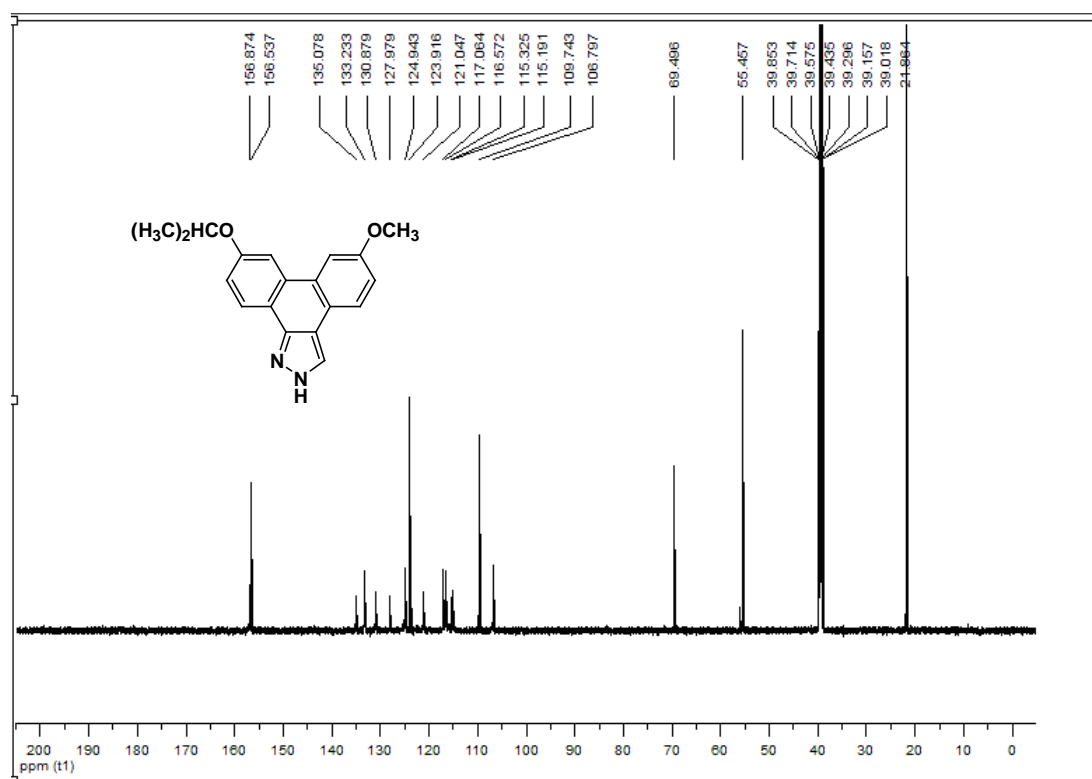
Compound 1c ^{13}C NMR(DMSO- d_6)



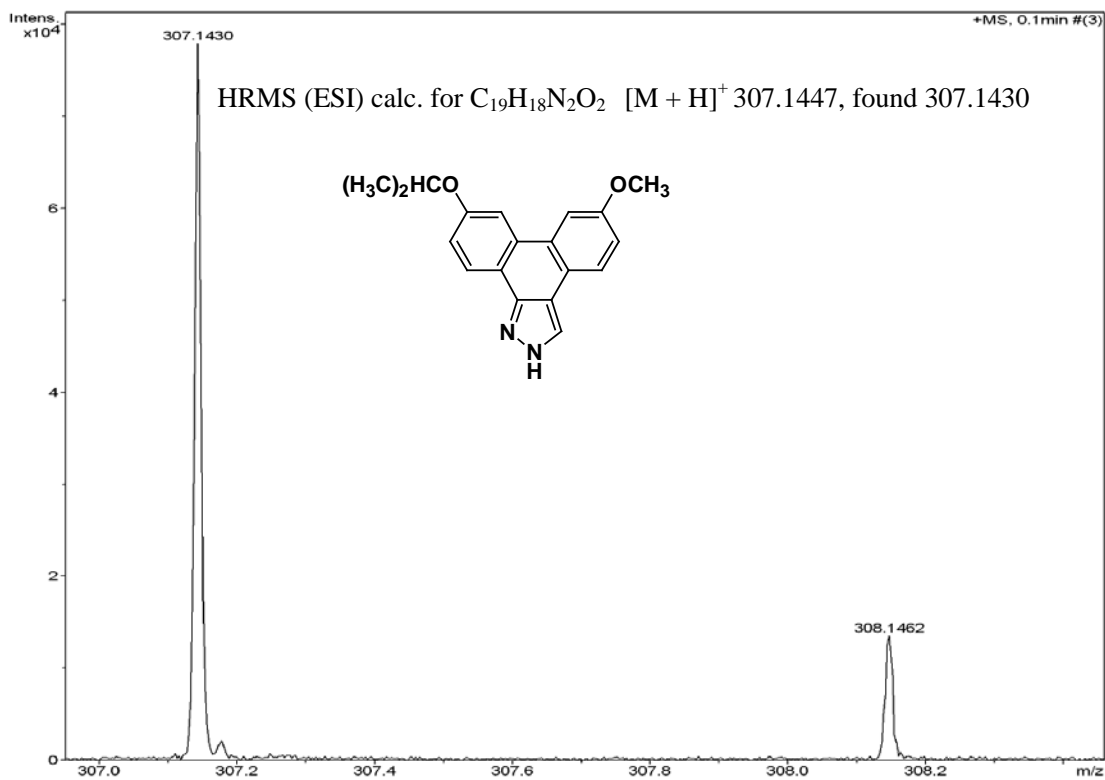
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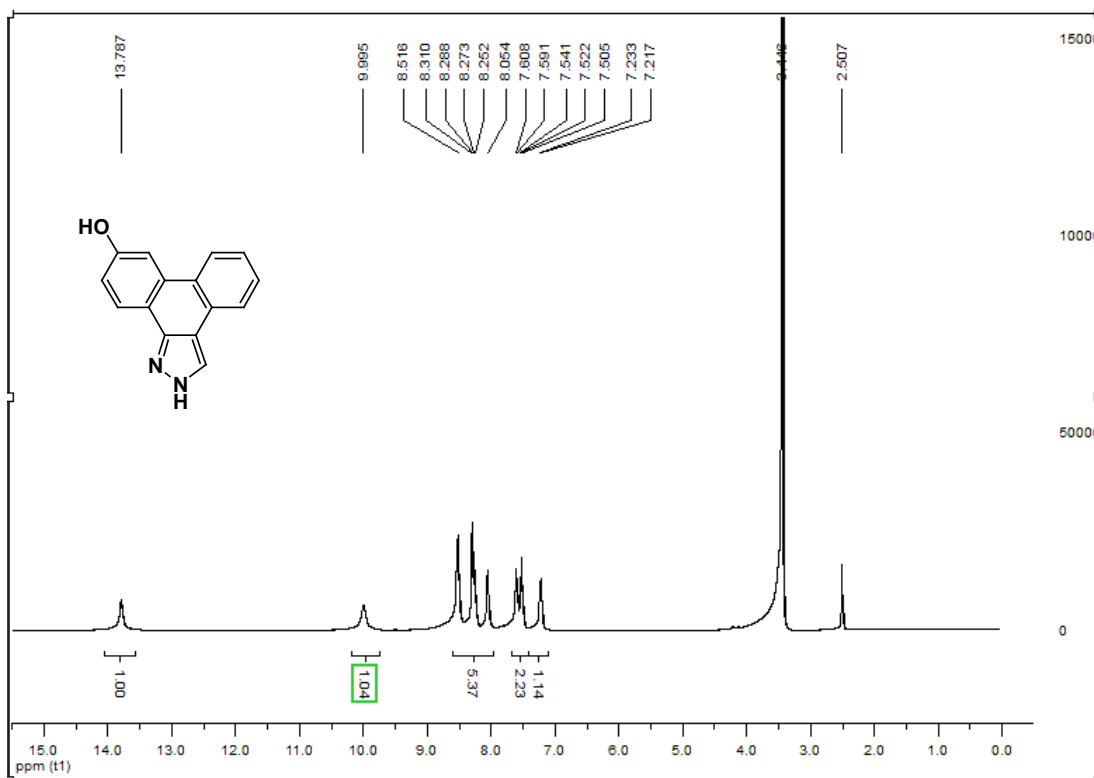
Compound 1d $^1\text{H NMR}$ (DMSO- d_6)



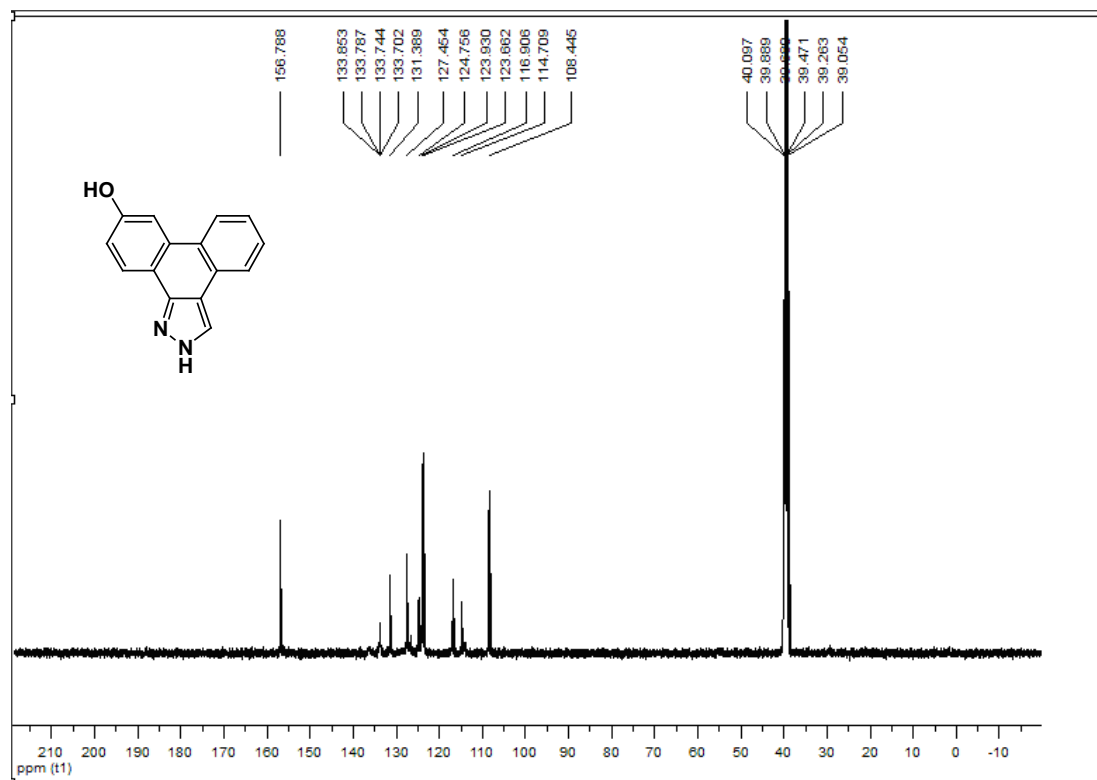
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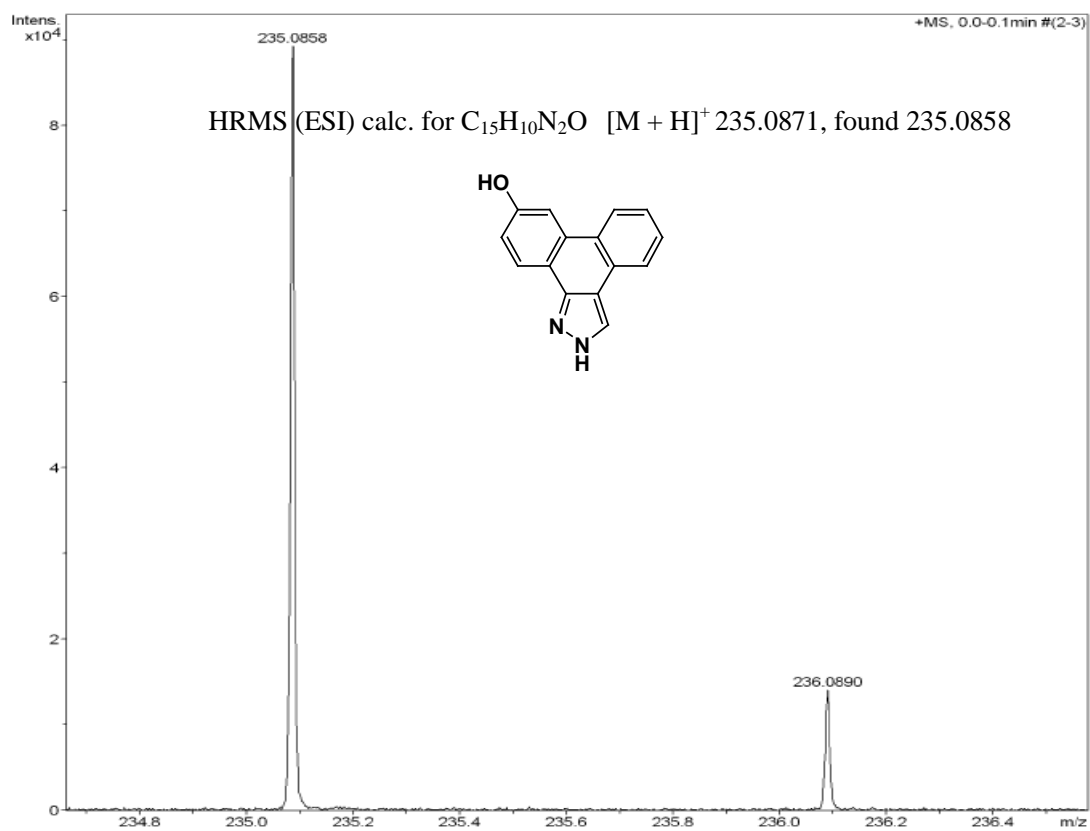
Compound 1d HRMS(MeOH)



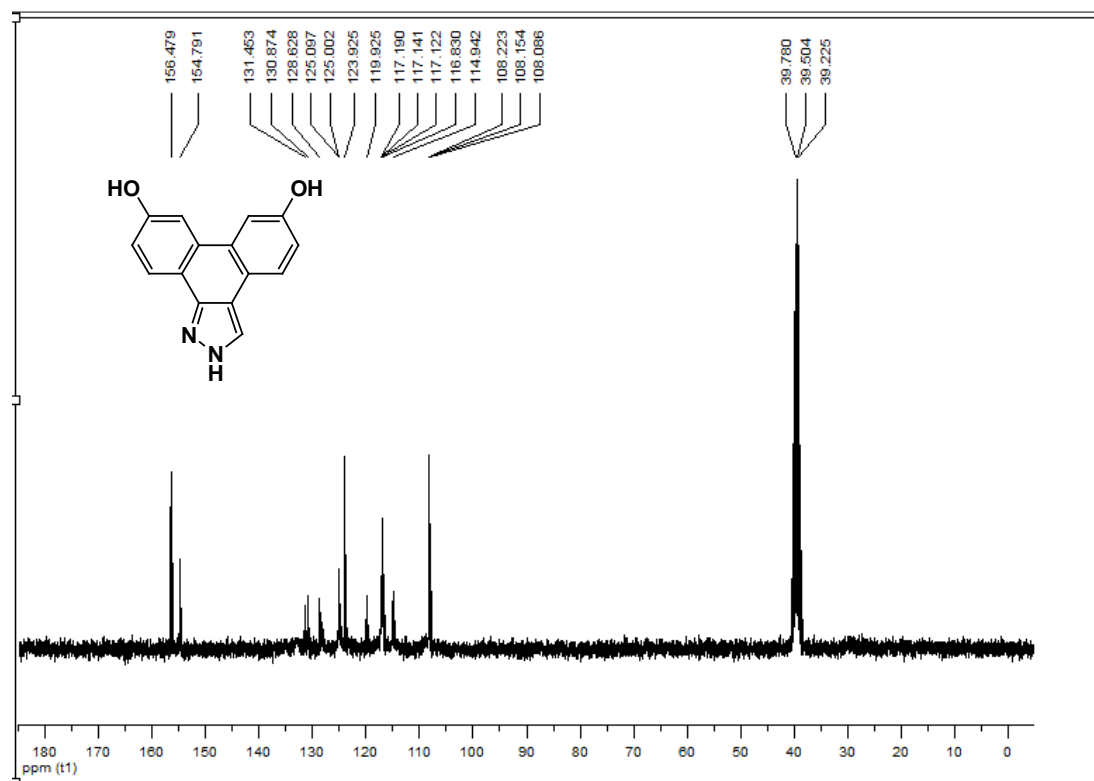
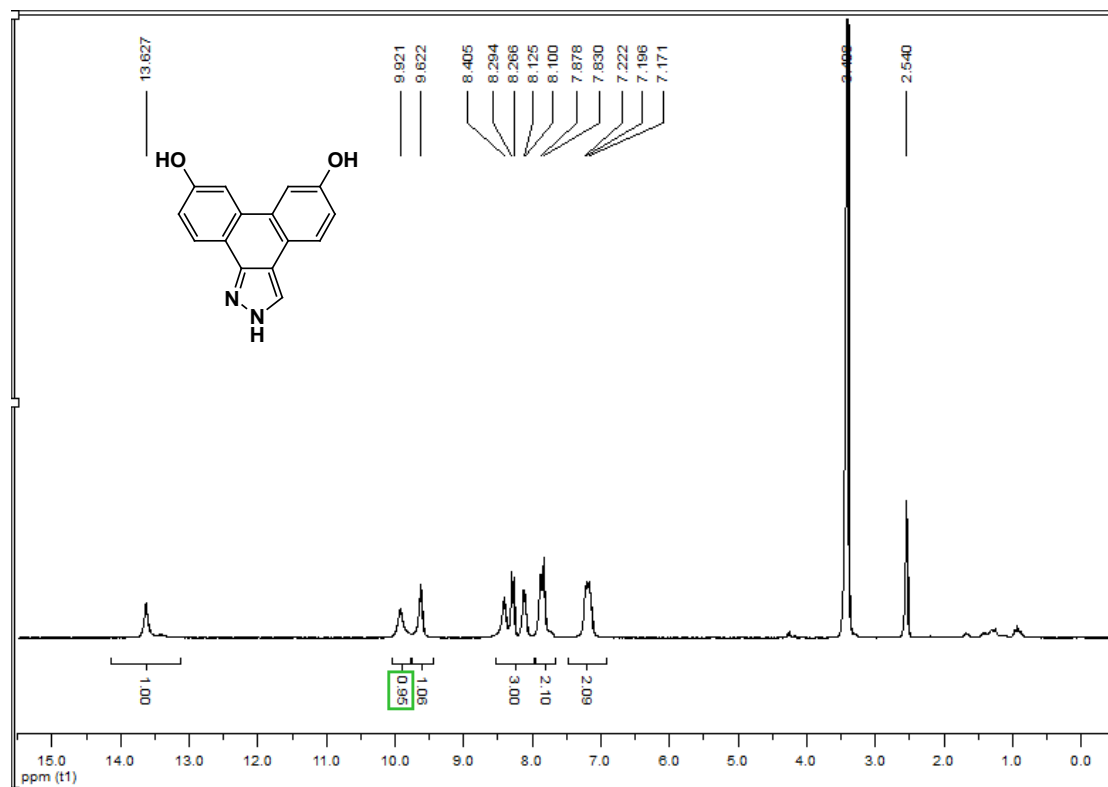
Compound 1e 1H NMR(DMSO- d_6)

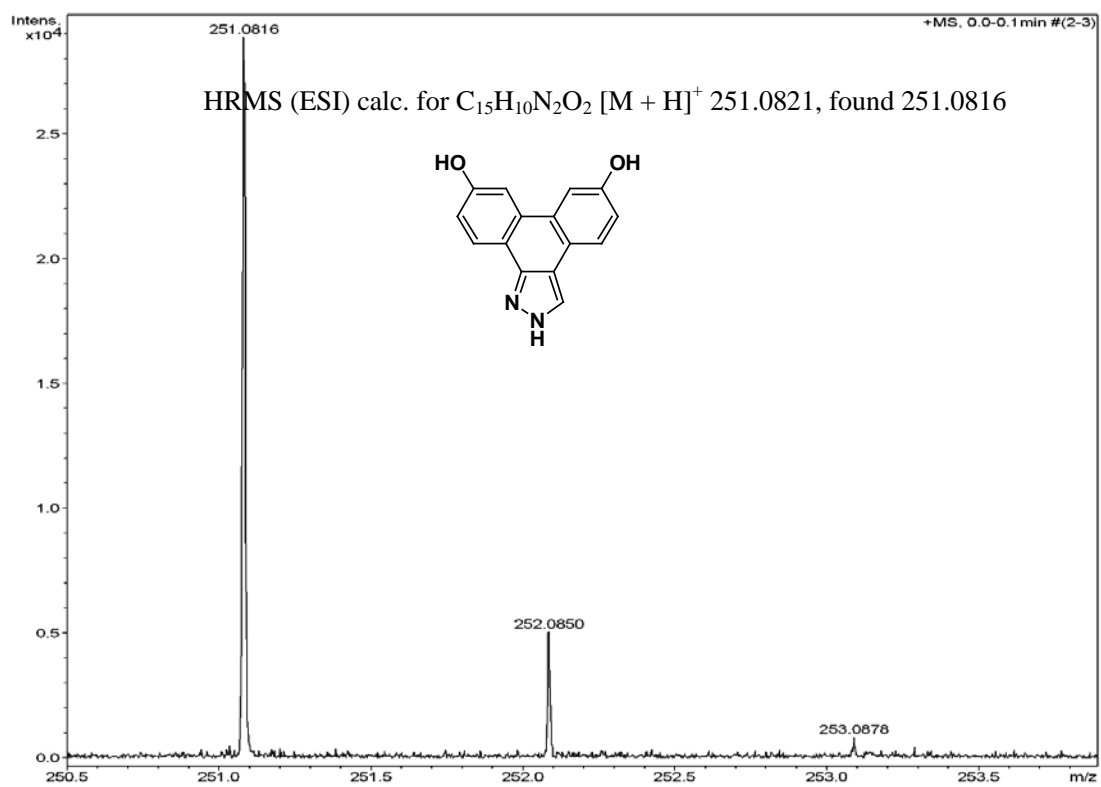


Compound 1e ^{13}C NMR(DMSO- d_6)

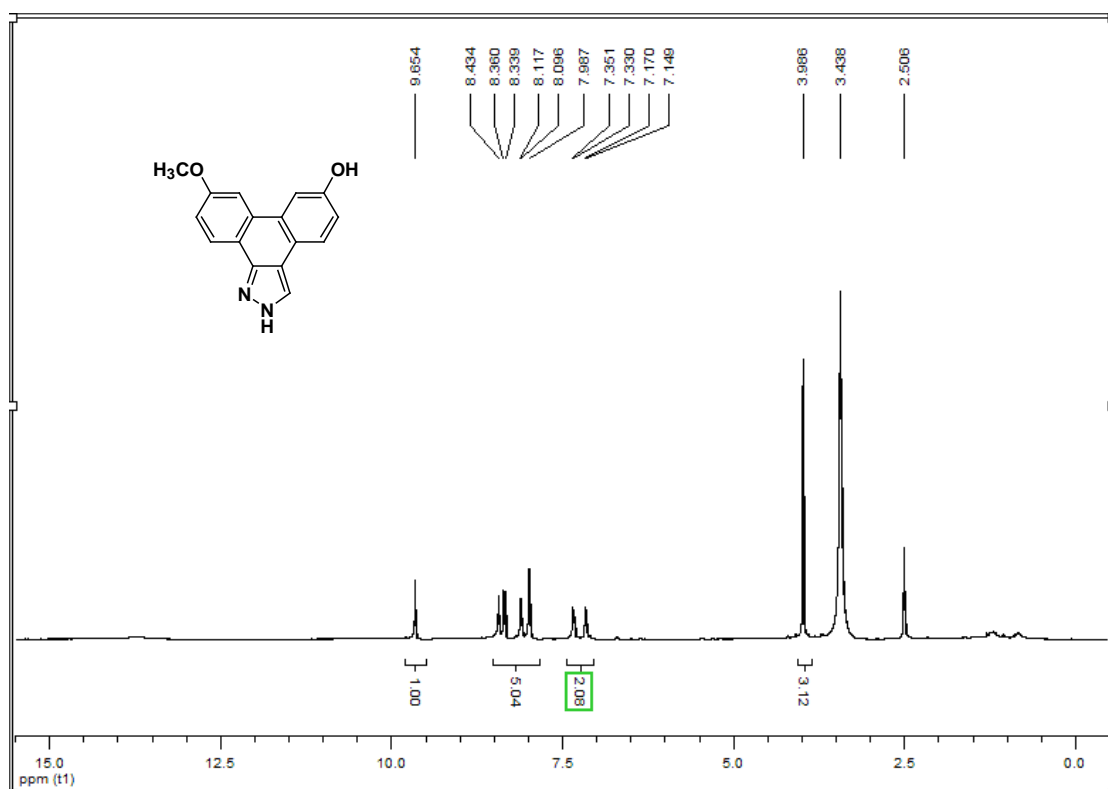


Compound 1e HRMS(MeOH)

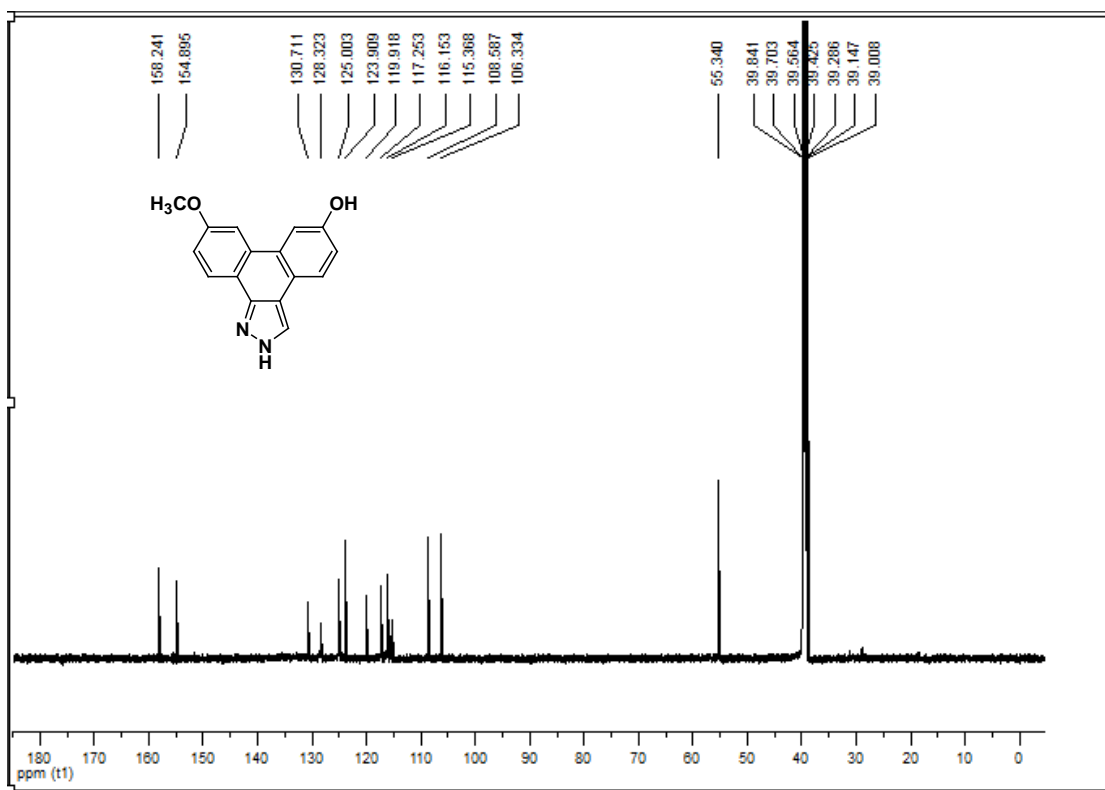




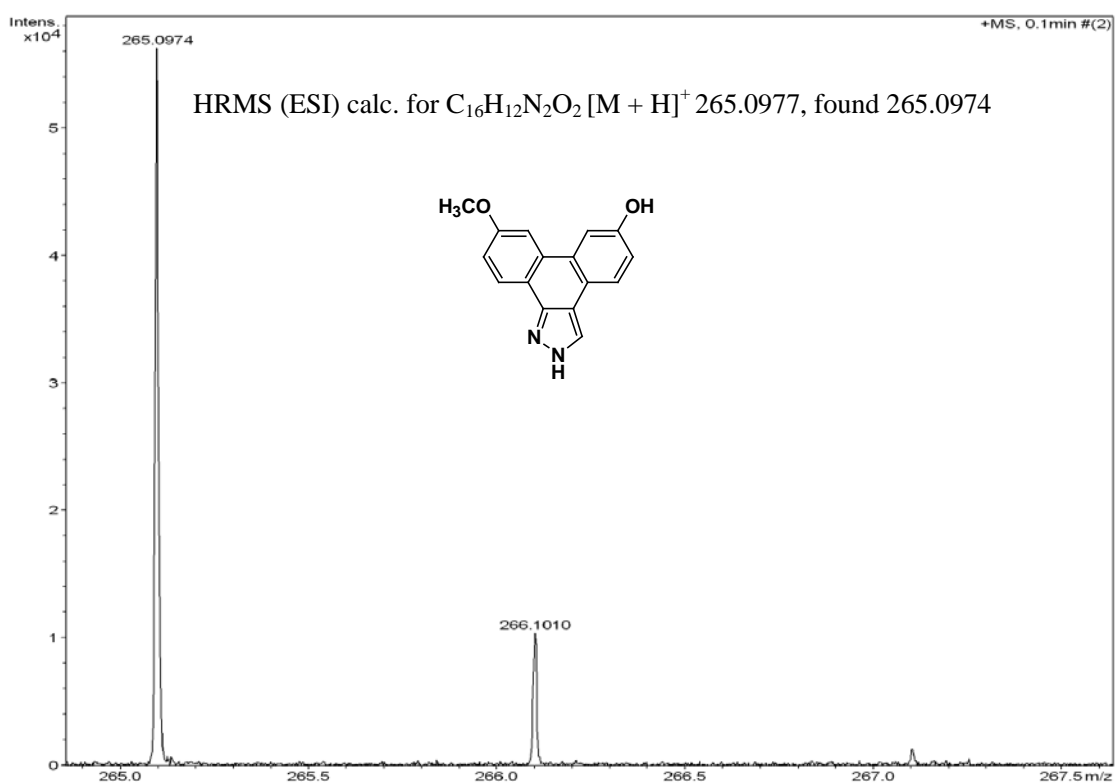
Compound 1f HRMS(MeOH)



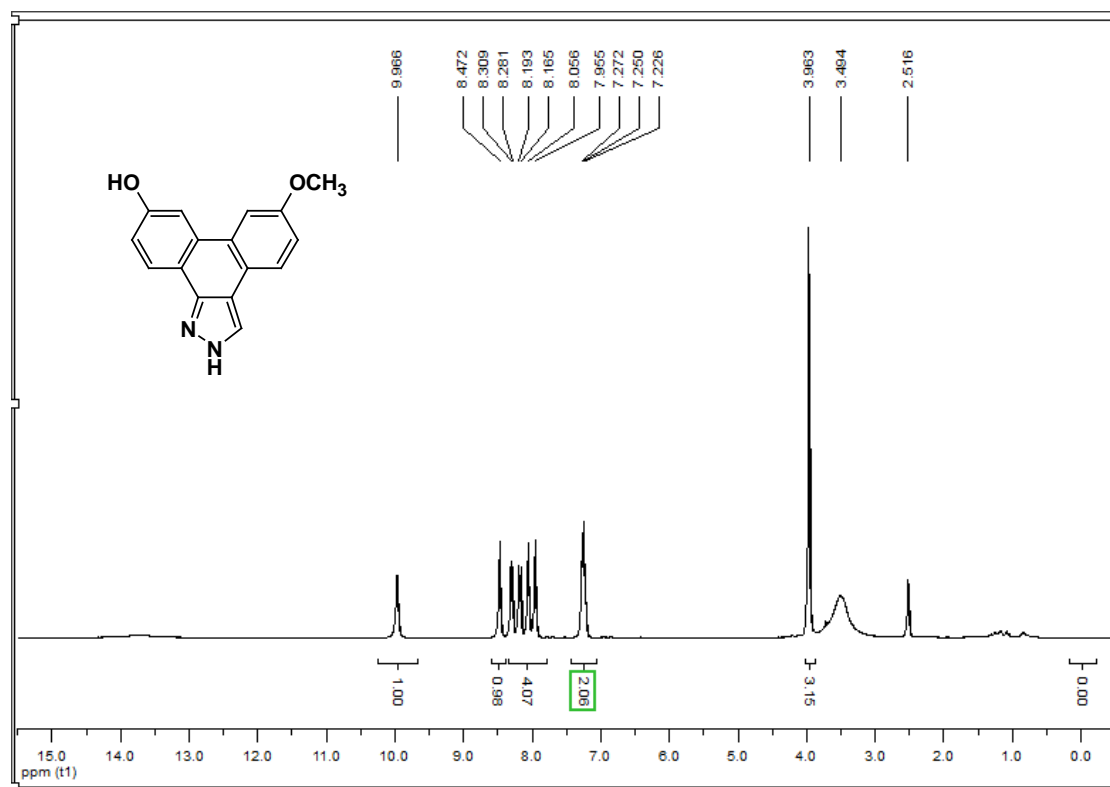
Compound 1g 1H NMR(DMSO- d_6)



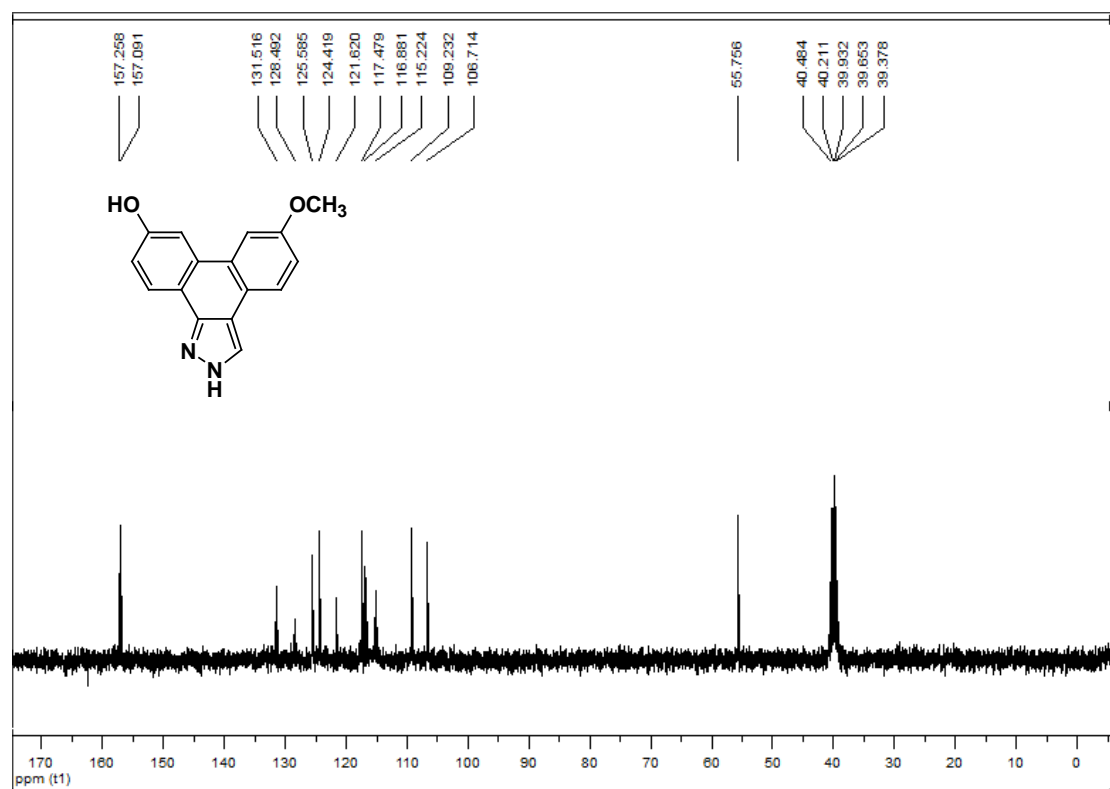
Compound 1g ¹³C NMR(DMSO-d₆)



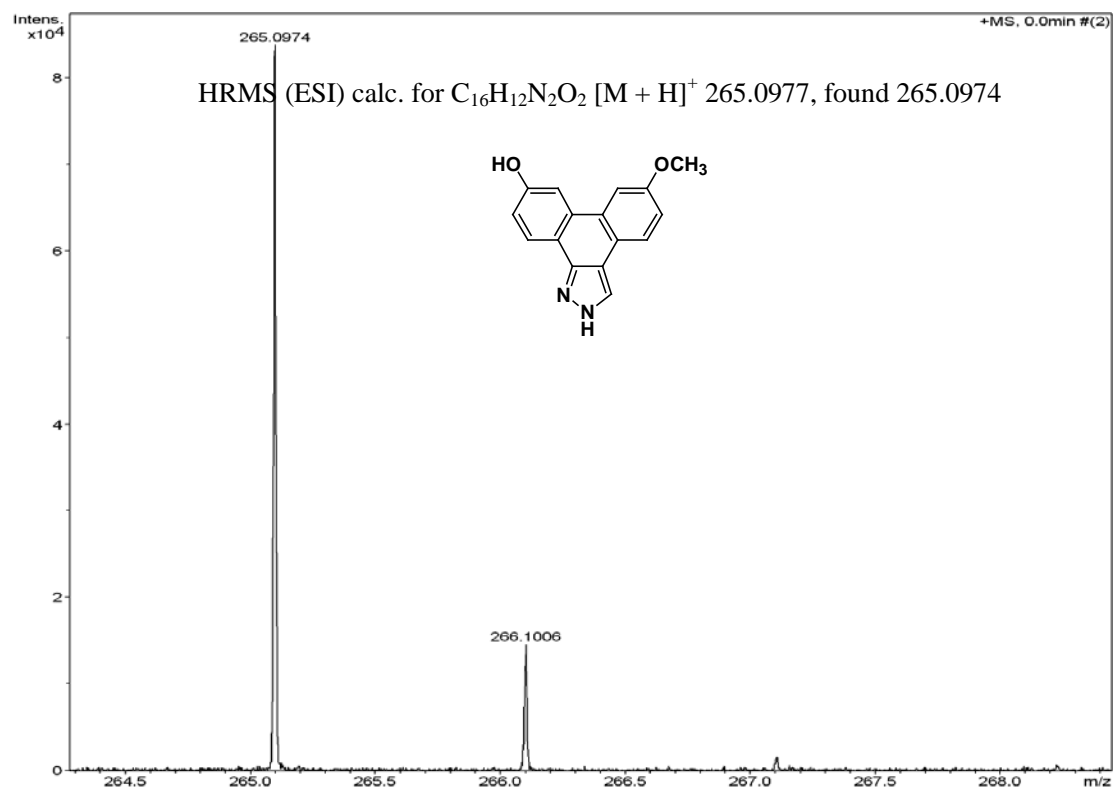
Compound 1g HRMS(MeOH)



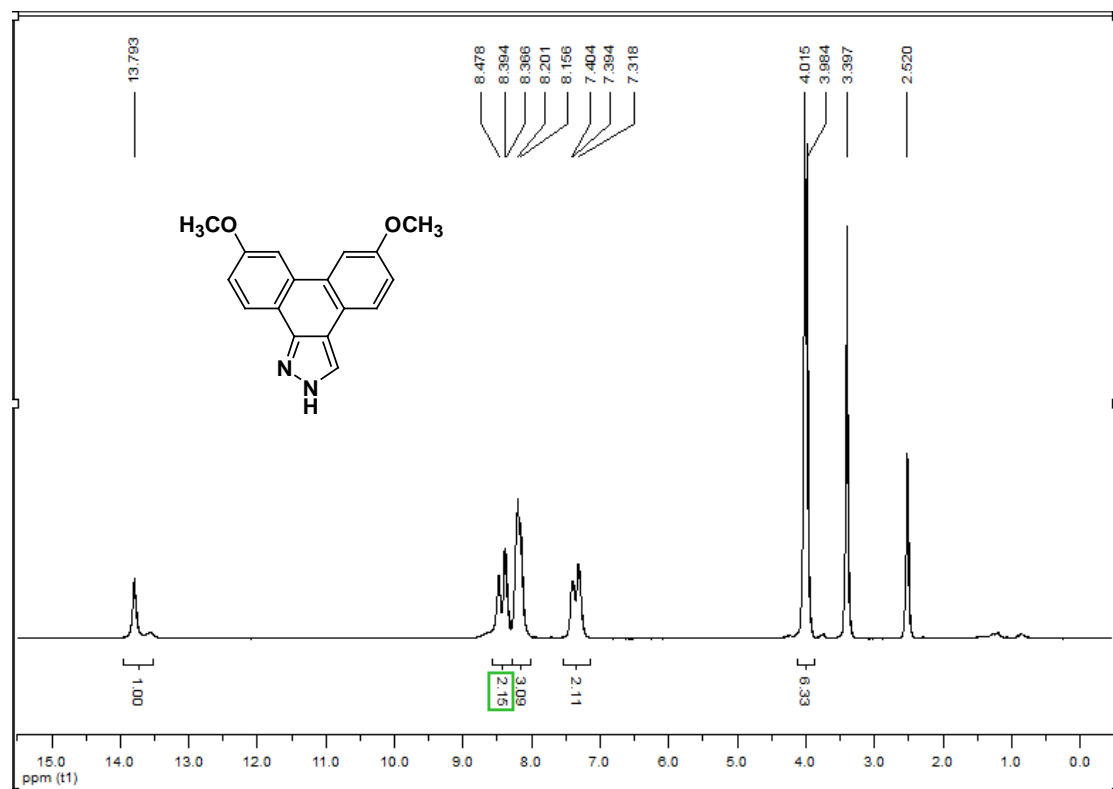
Compound 1h ^1H NMR(DMSO- d_6)



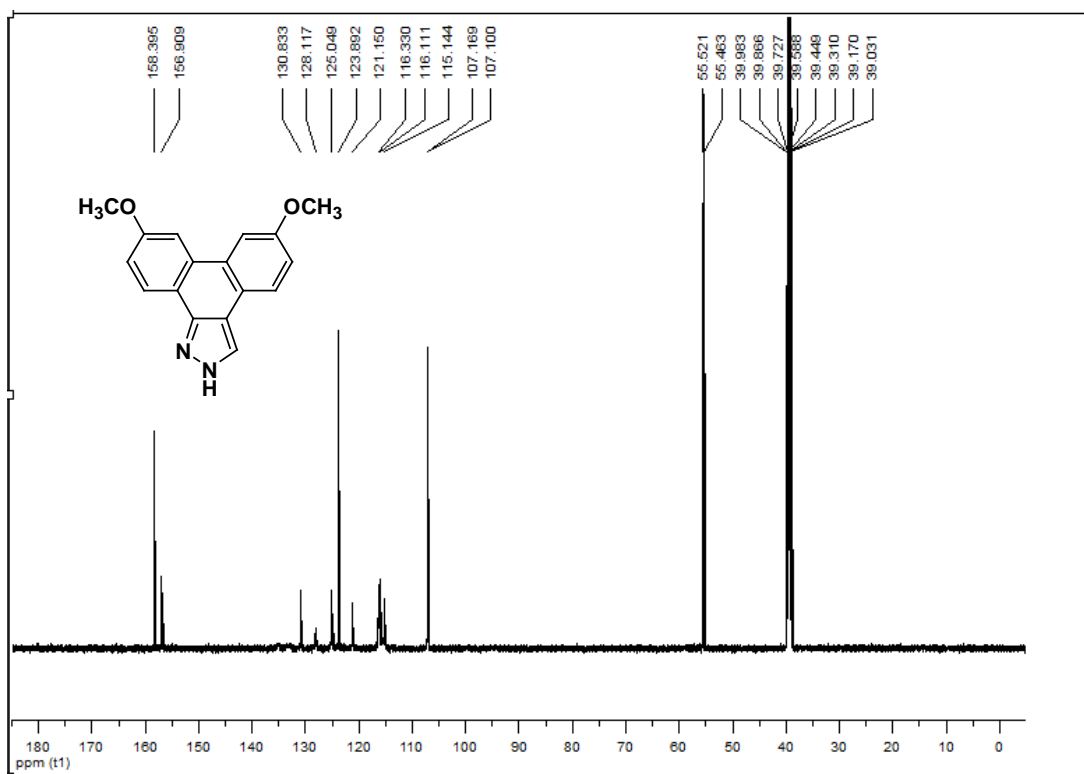
Compound 1h ^{13}C NMR(DMSO- d_6)



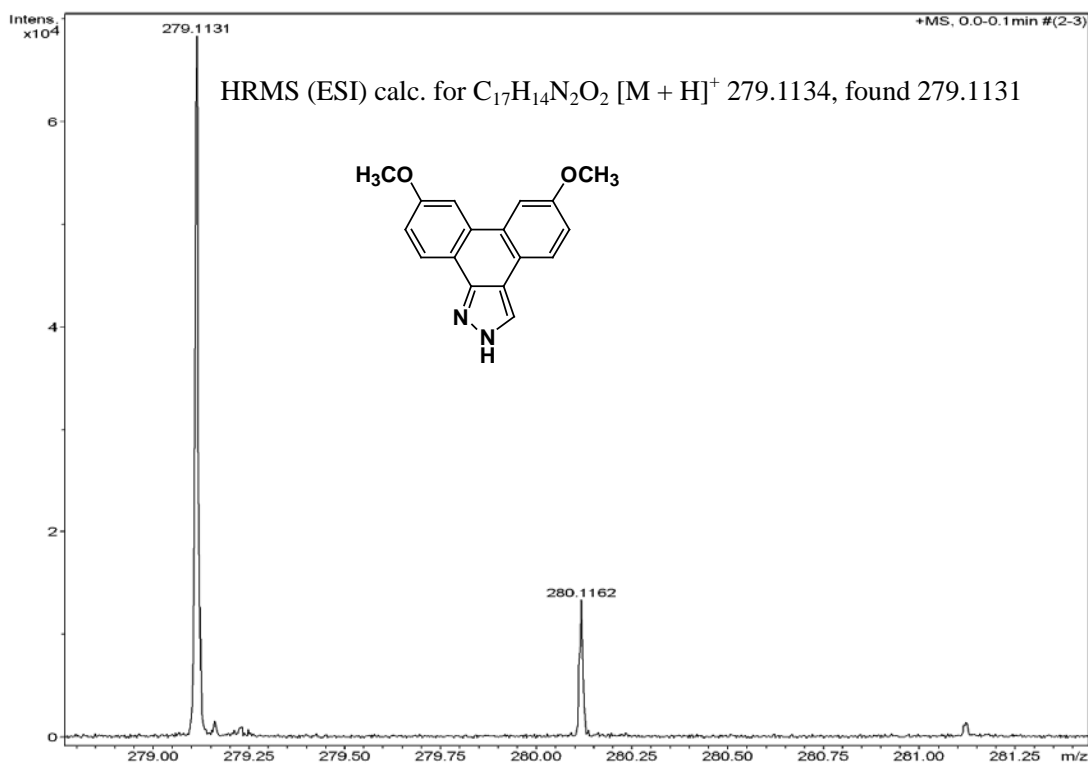
Compound 1h HRMS(MeOH)



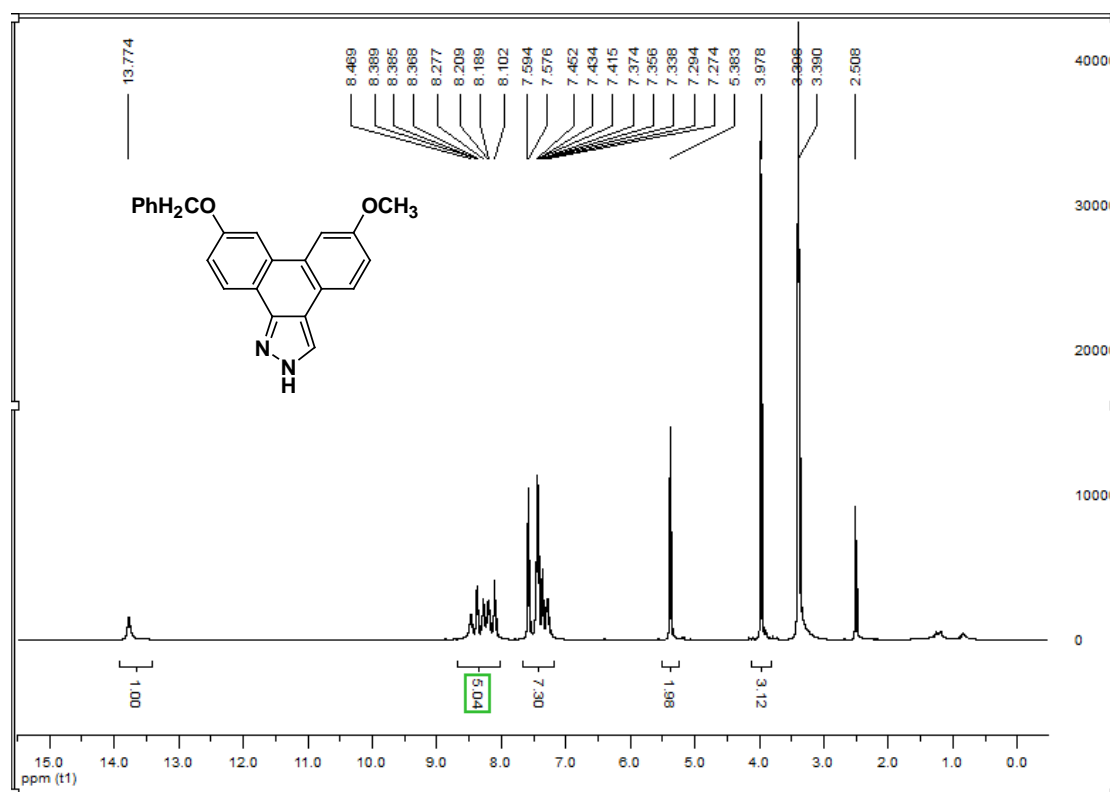
Compound 1i 1H NMR(DMSO- d_6)



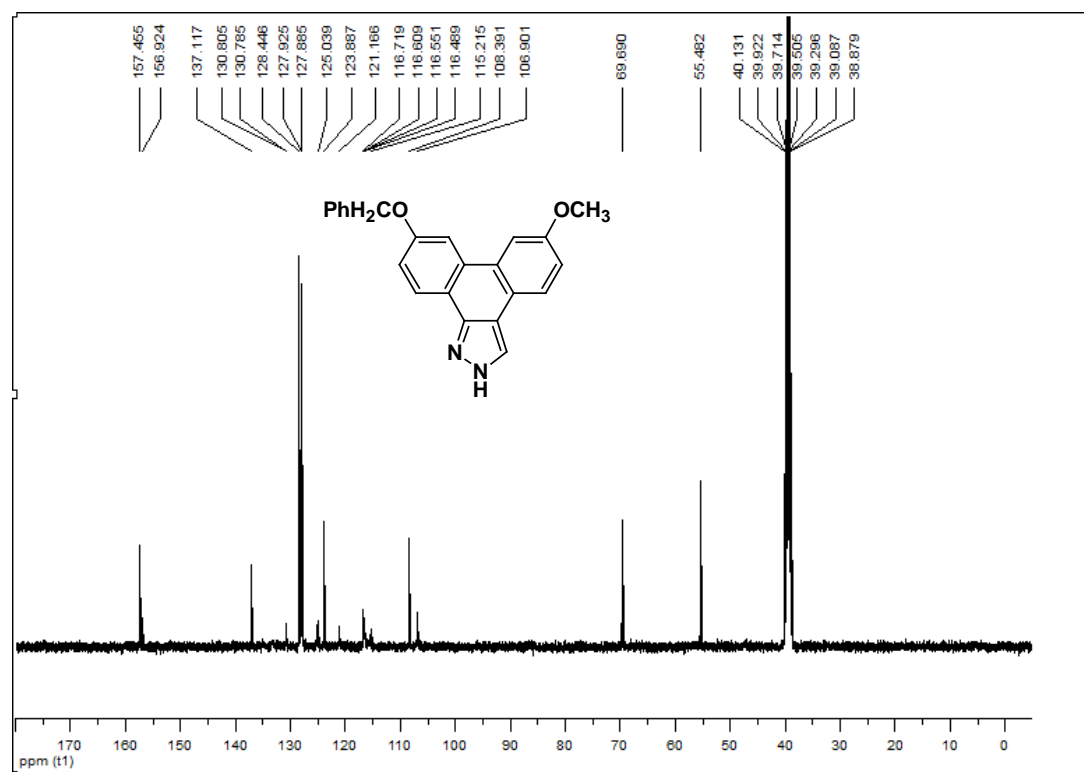
Compound 1i ¹³C NMR(DMSO-d₆)



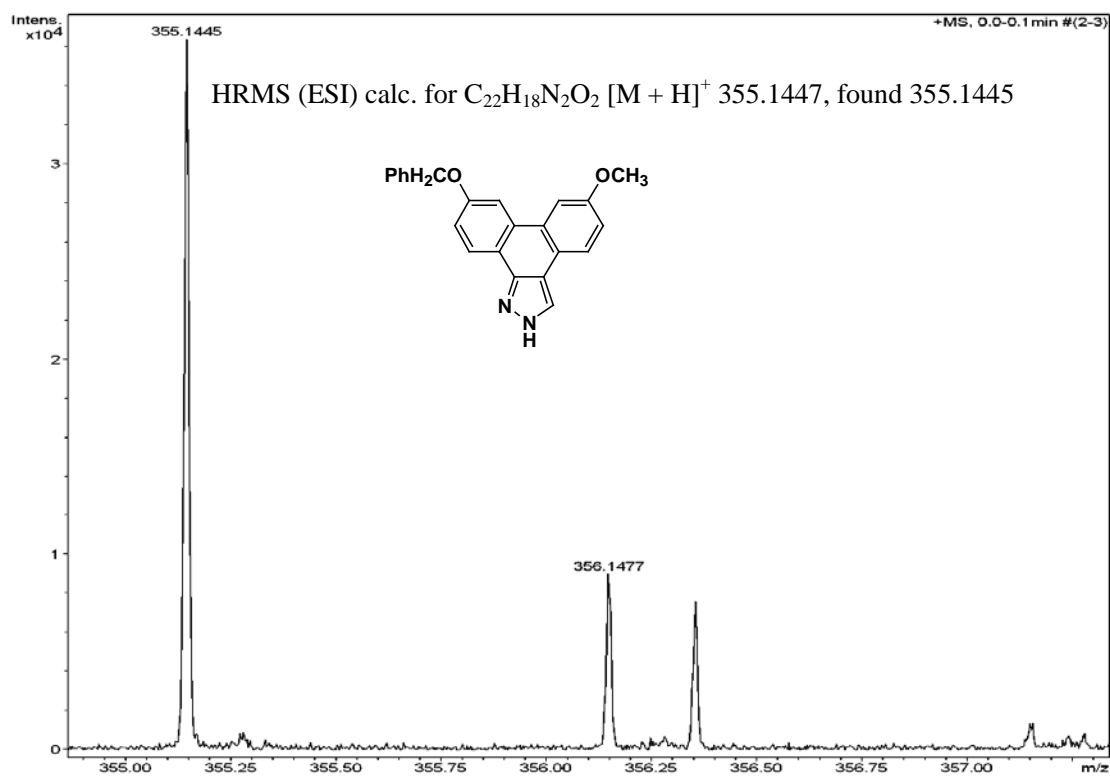
Compound 1i HRMS(MeOH)



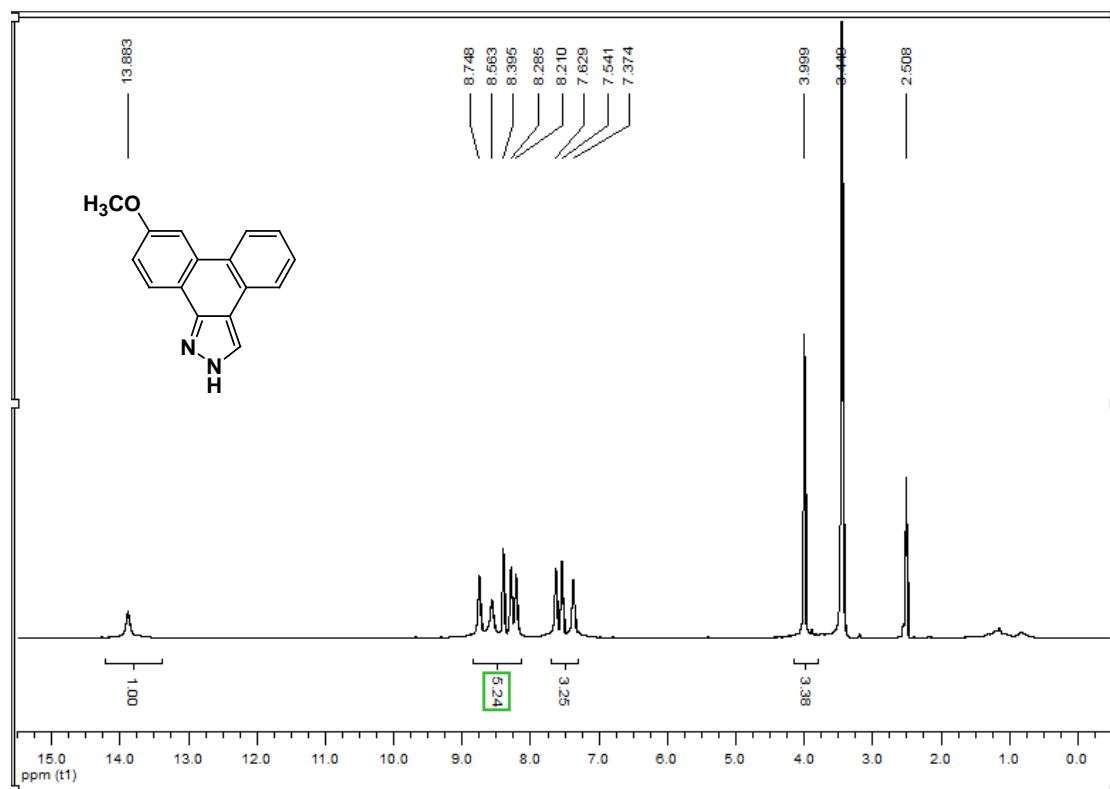
Compound 1j $^1\text{H NMR}$ (DMSO- d_6)



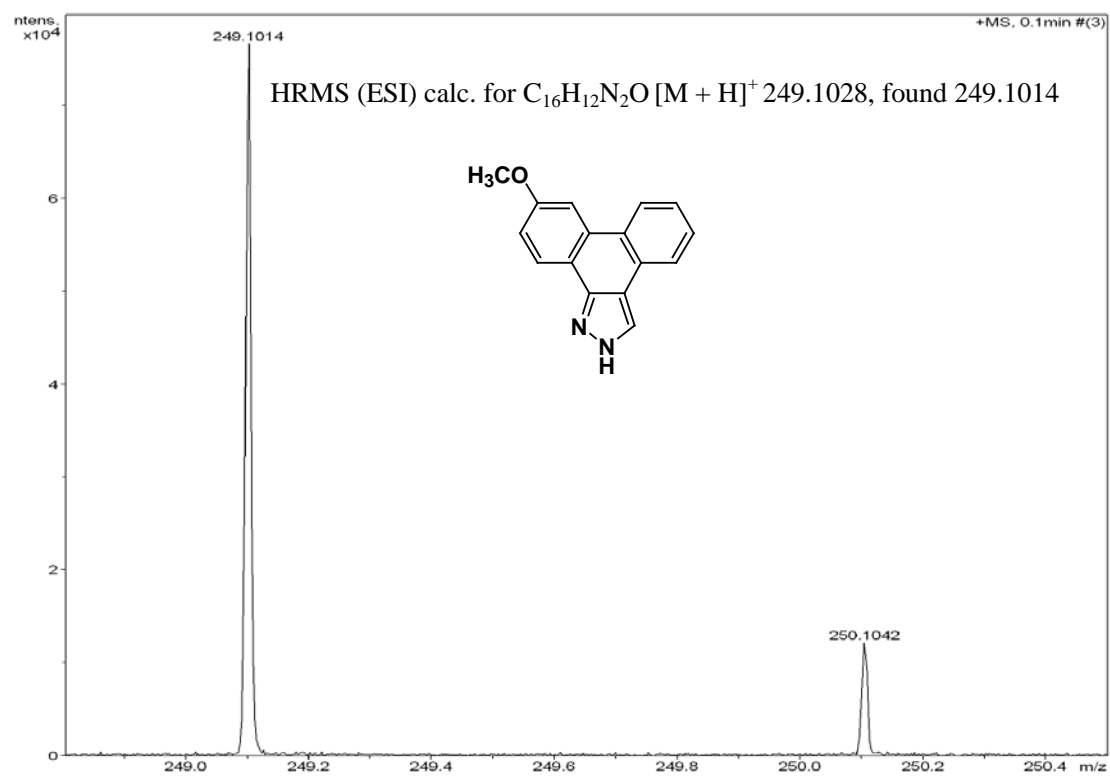
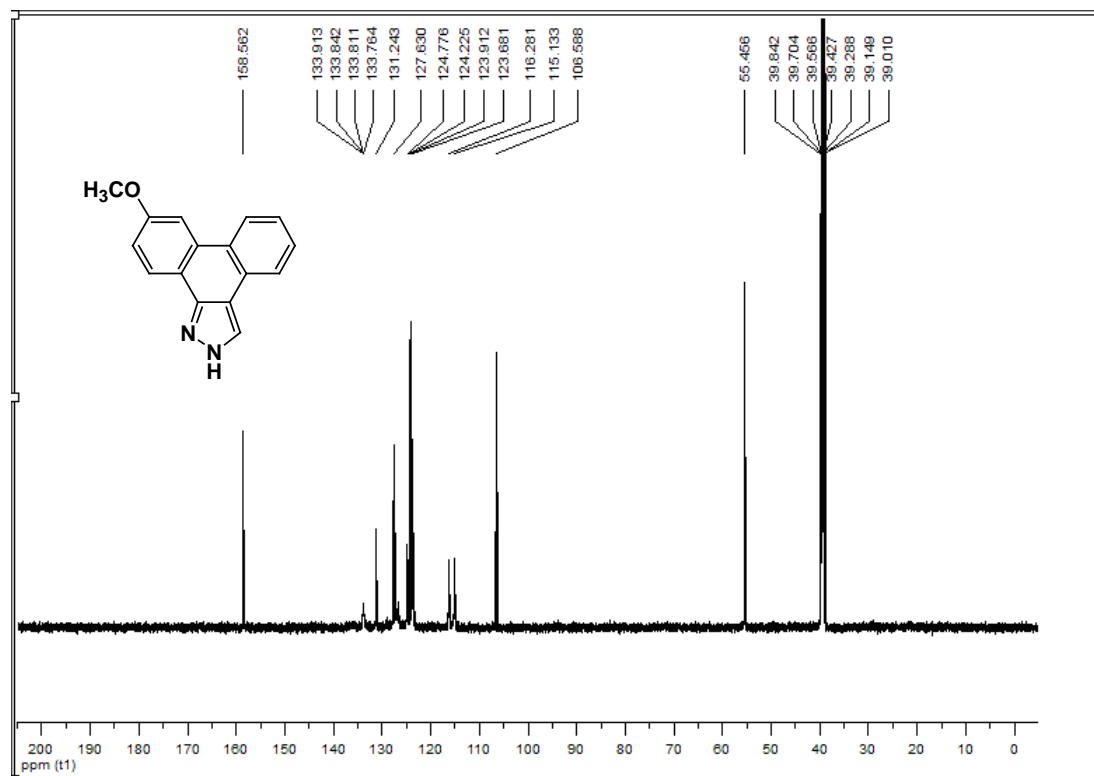
Compound 1j $^{13}\text{C NMR}$ (DMSO- d_6)

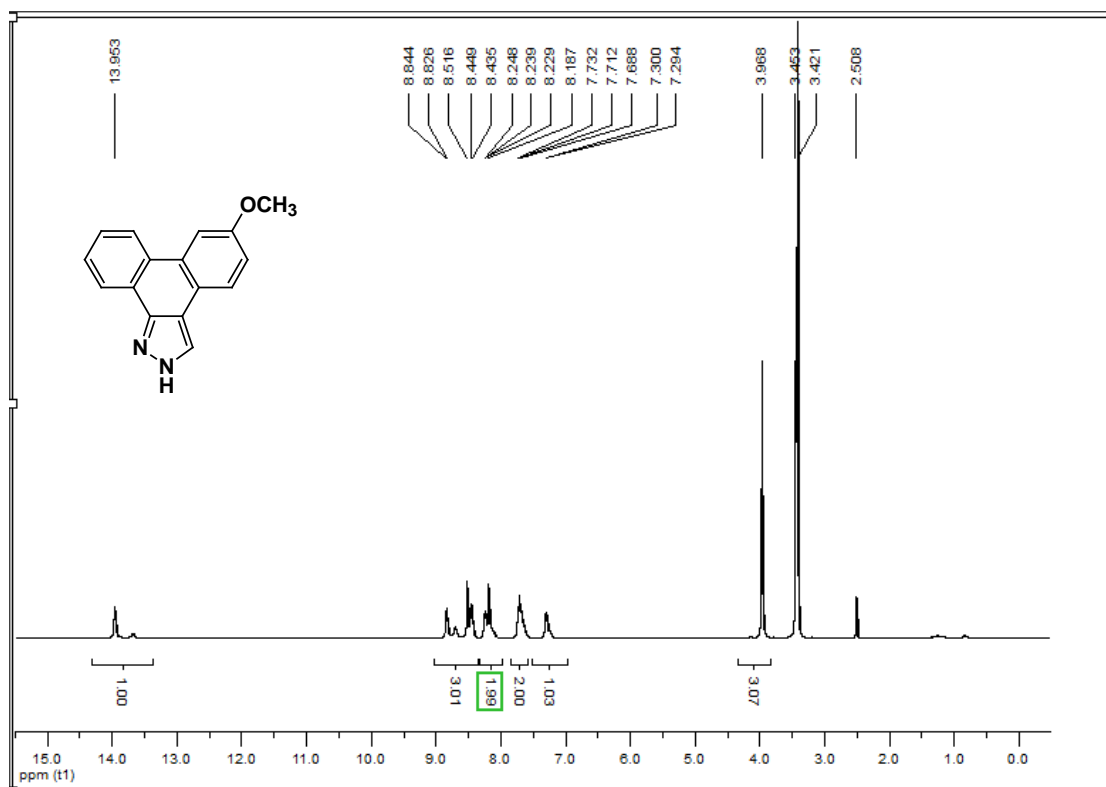


Compound 1j HRMS(MeOH)

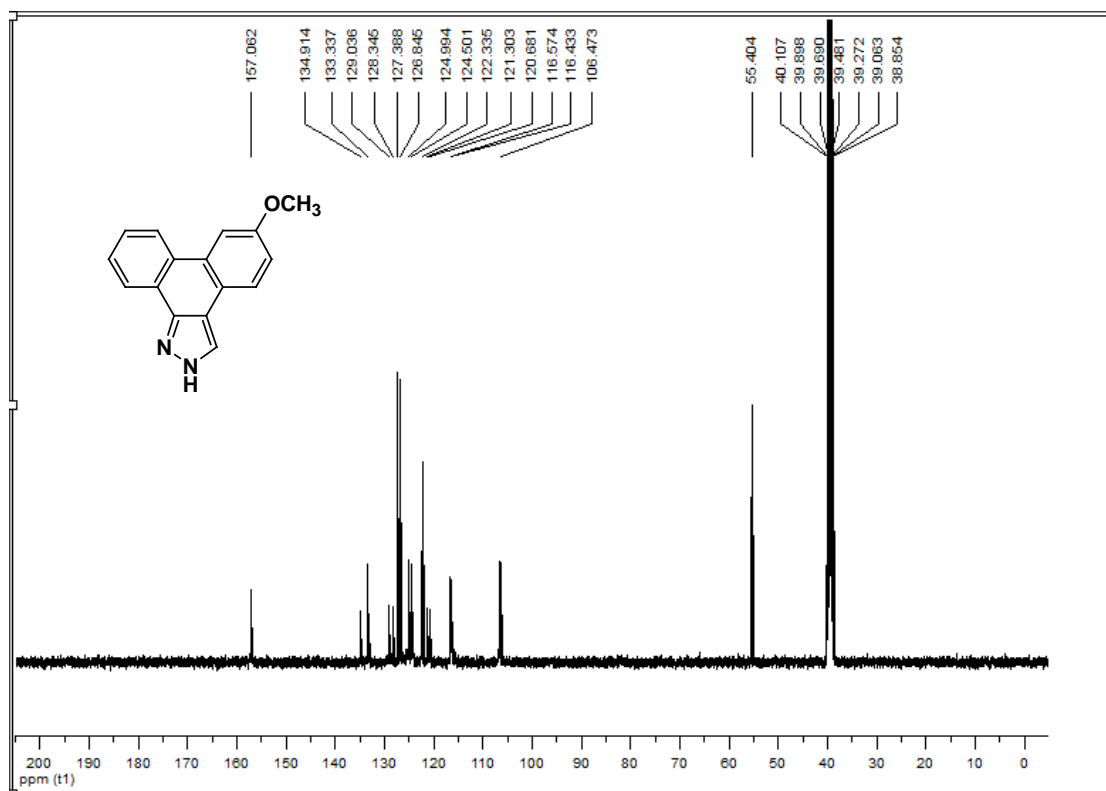


Compound 1k 1H NMR(DMSO- d_6)

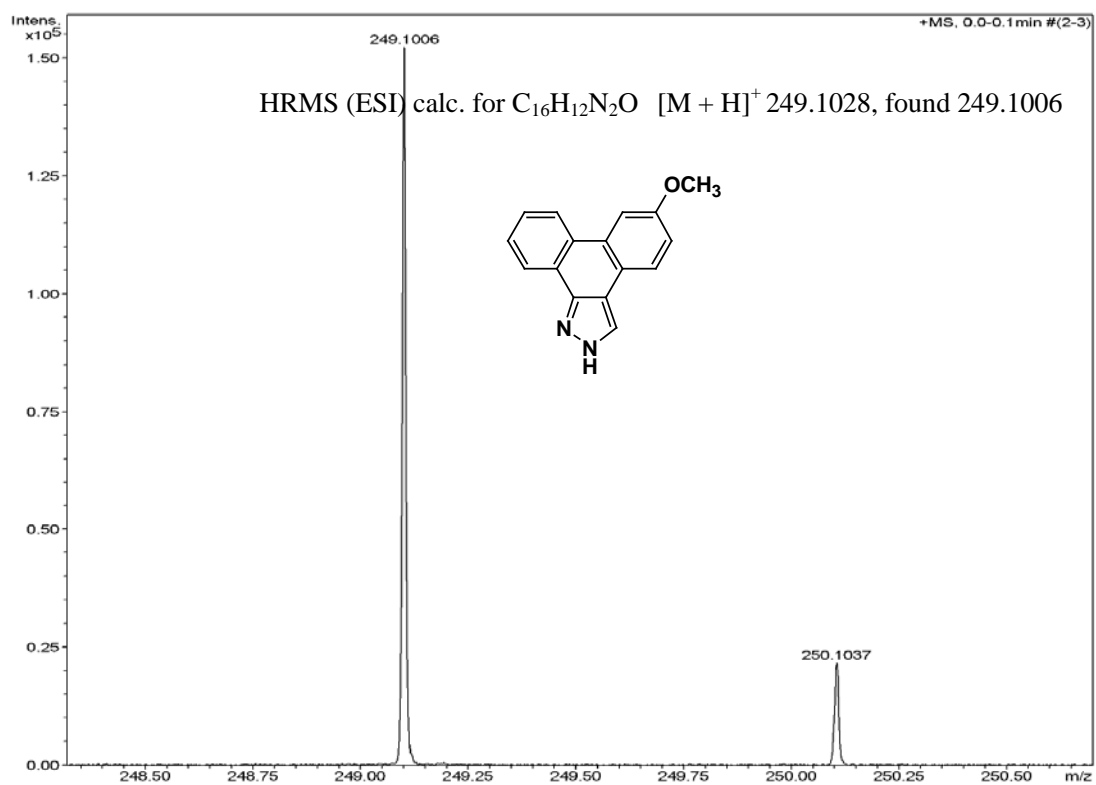




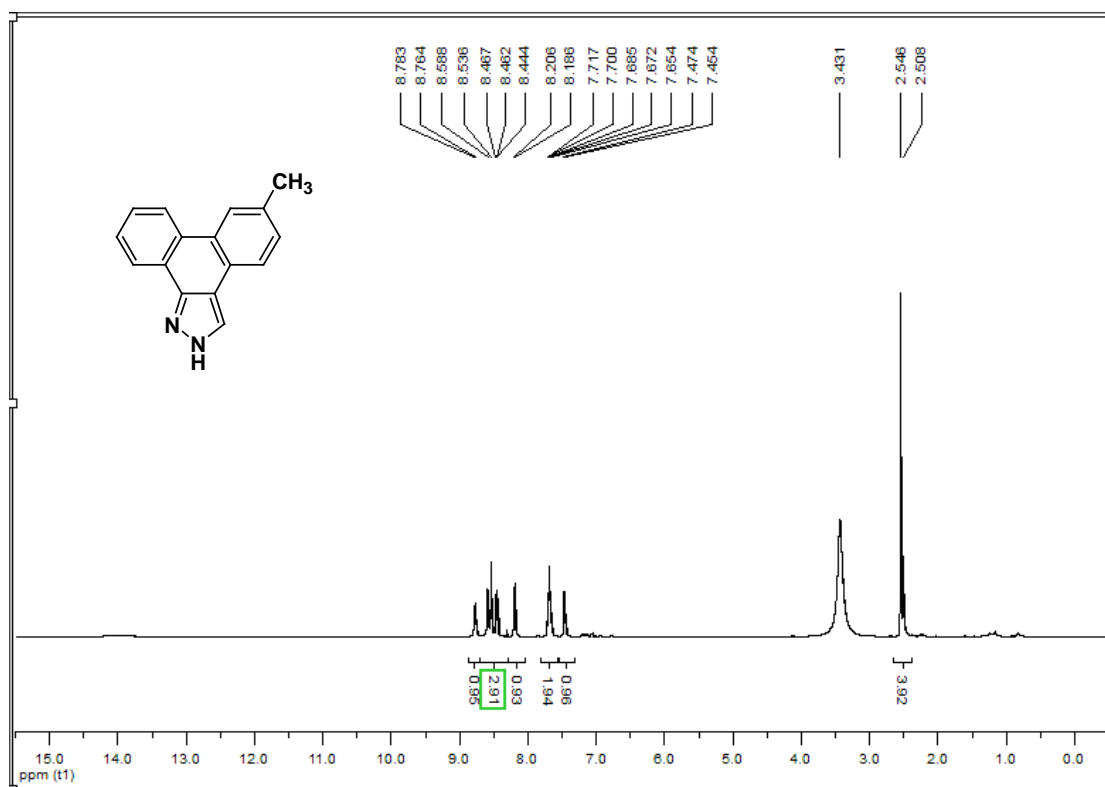
Compound 11 $^1\text{H NMR}$ (DMSO- d_6)



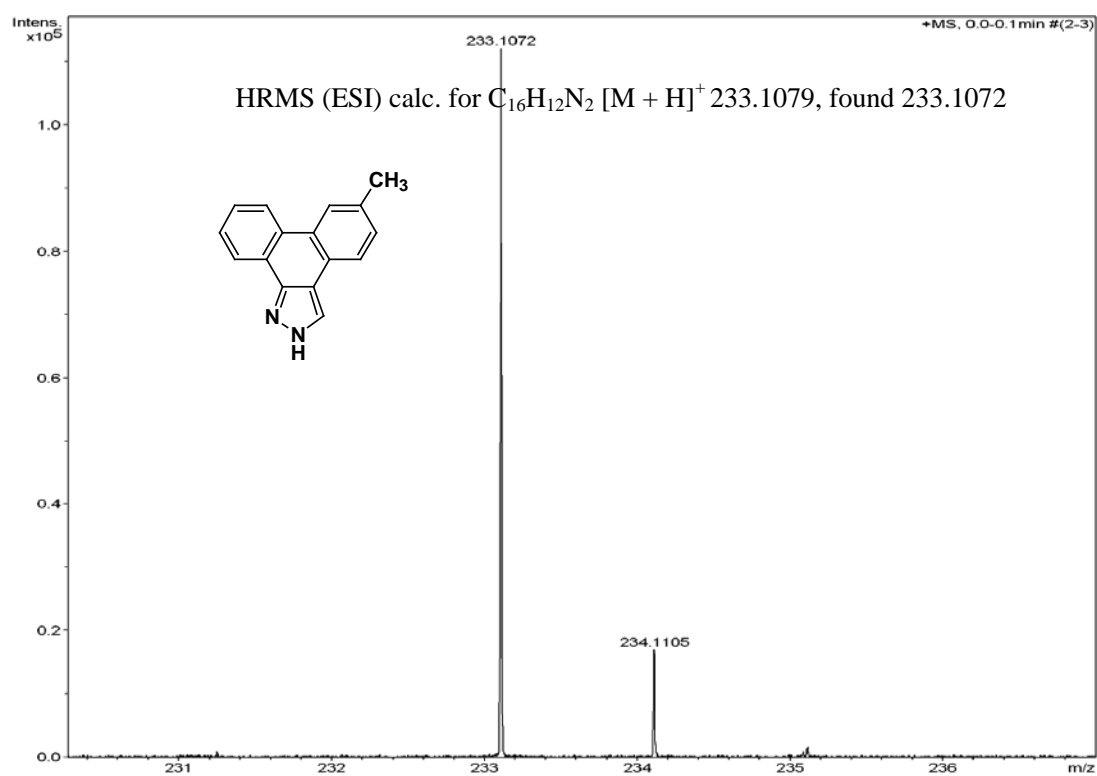
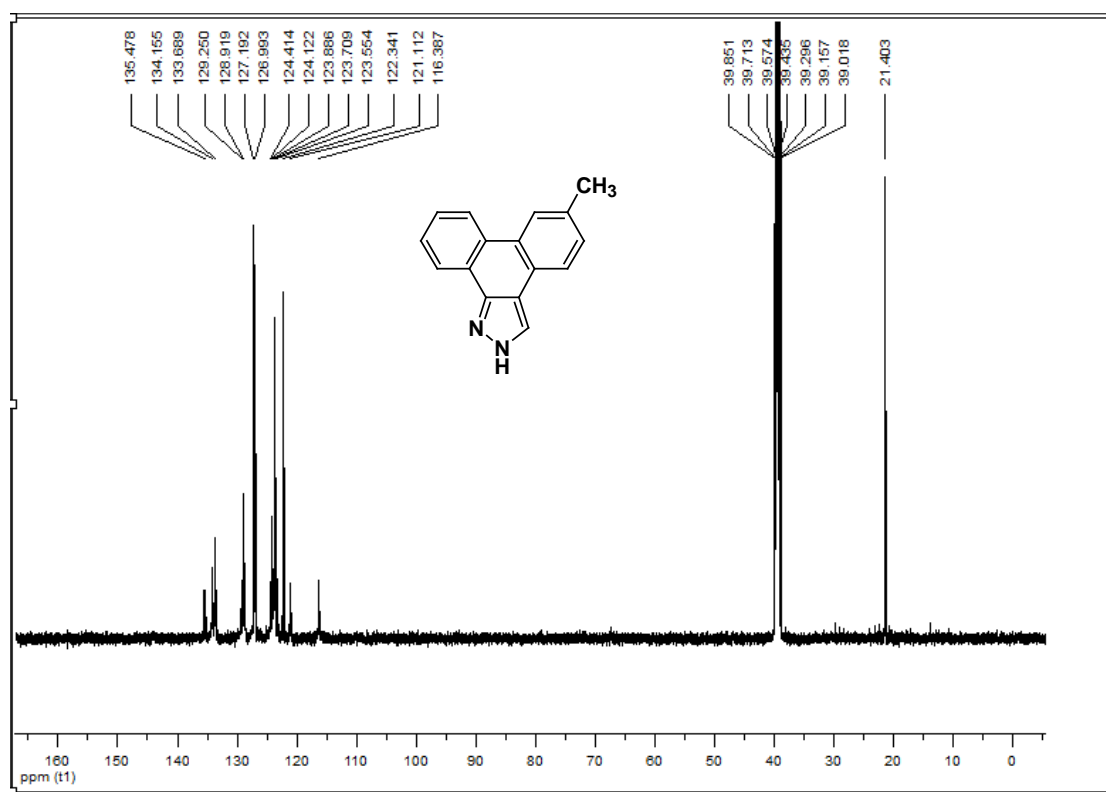
Compound 11 $^{13}\text{C NMR}$ (DMSO- d_6)

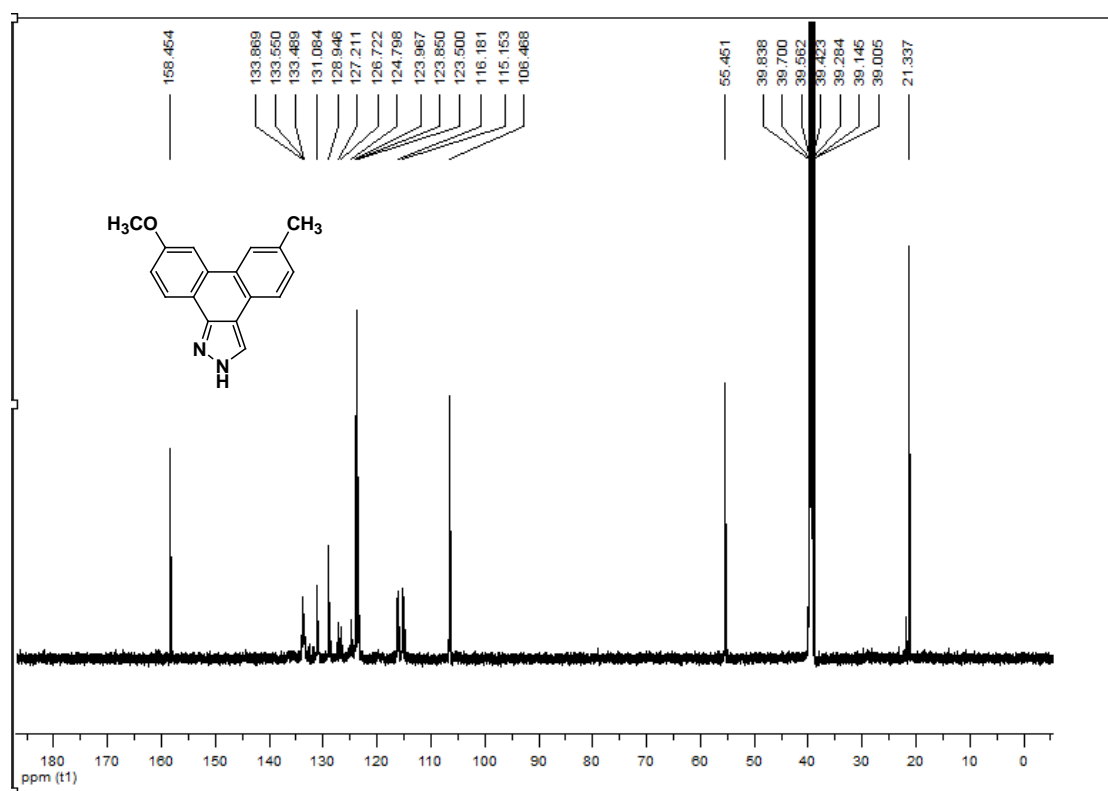
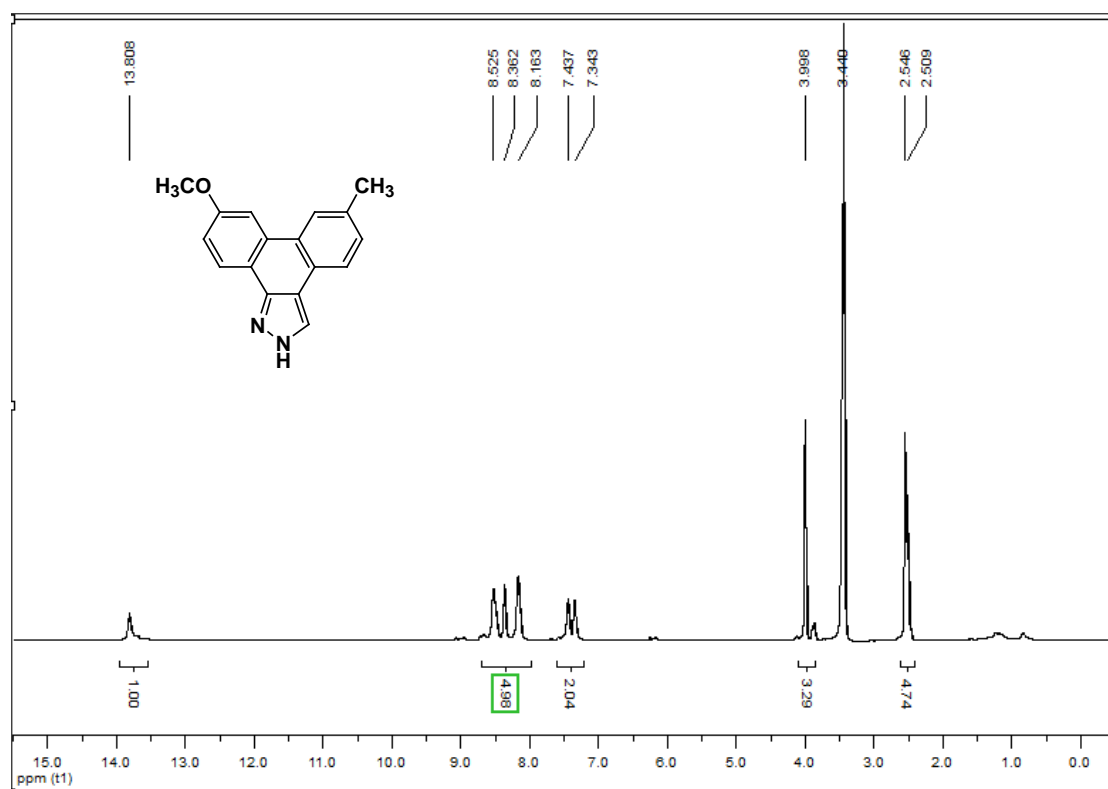


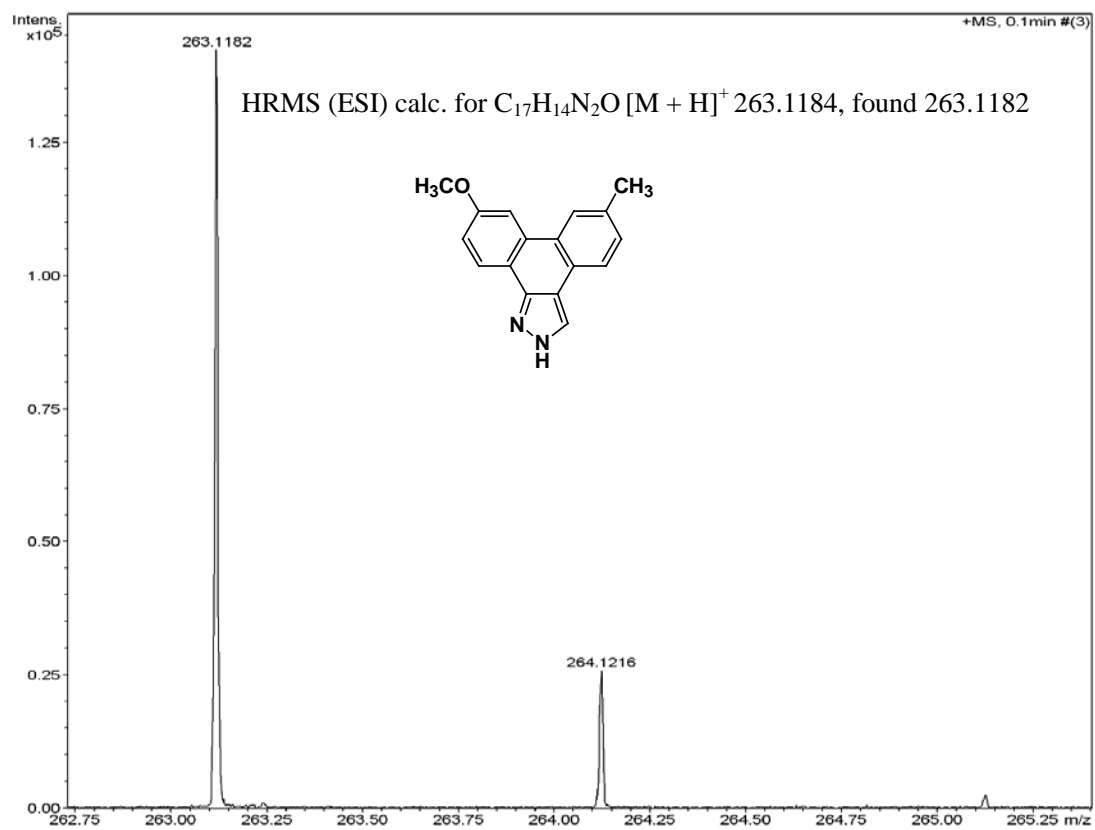
Compound 11 HRMS(MeOH)



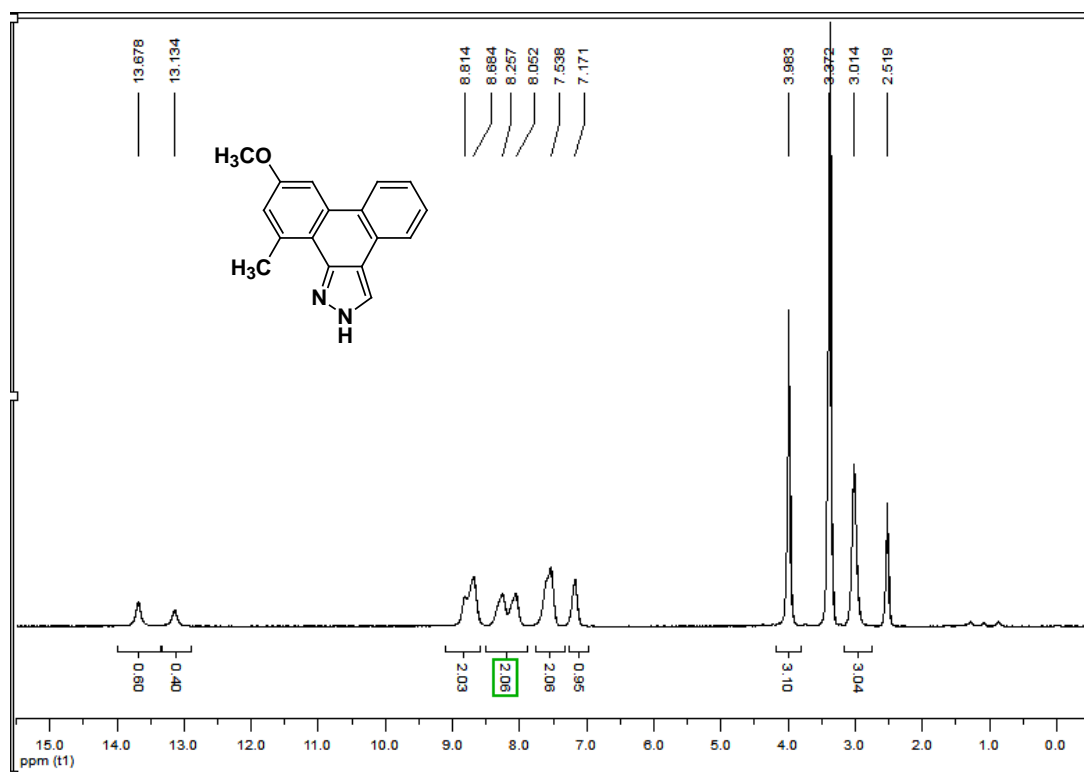
Compound 1m ¹H NMR(DMSO-d₆)



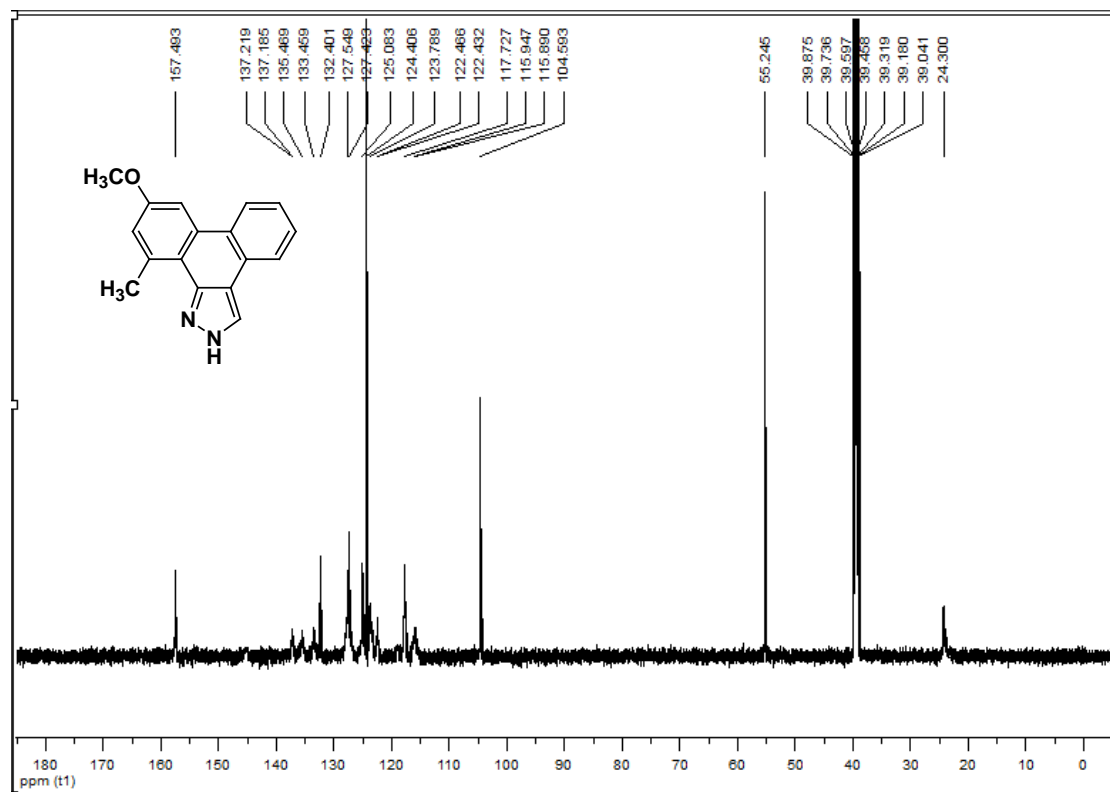




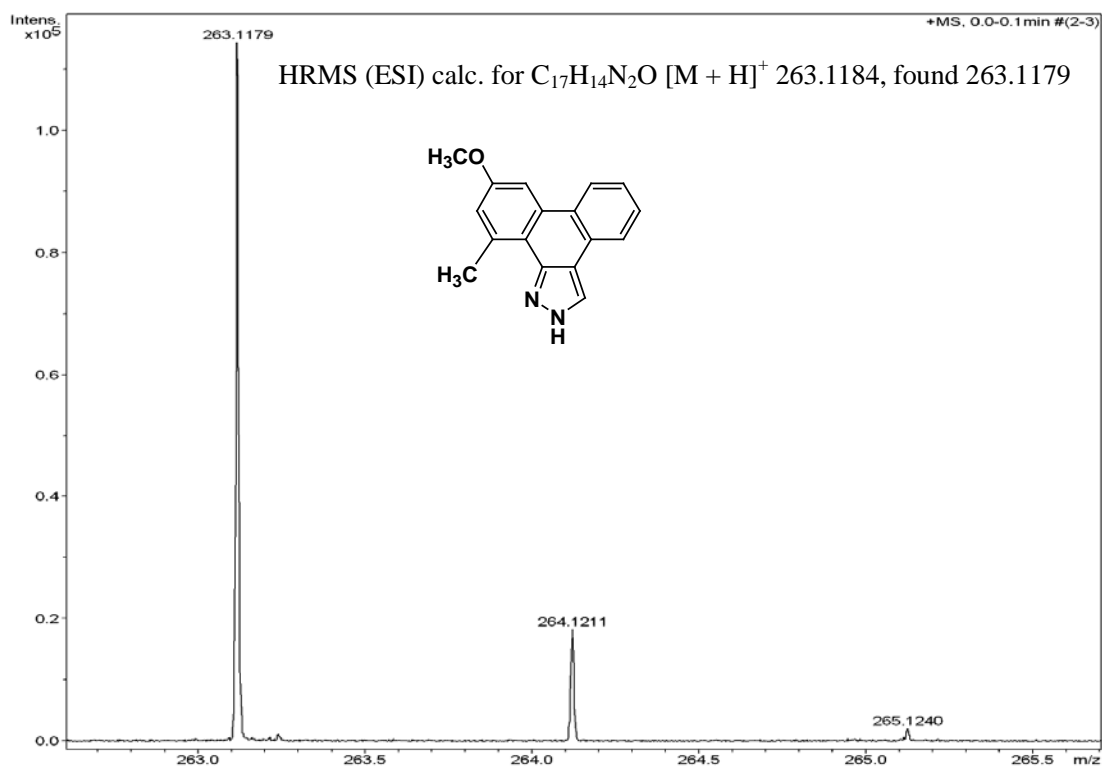
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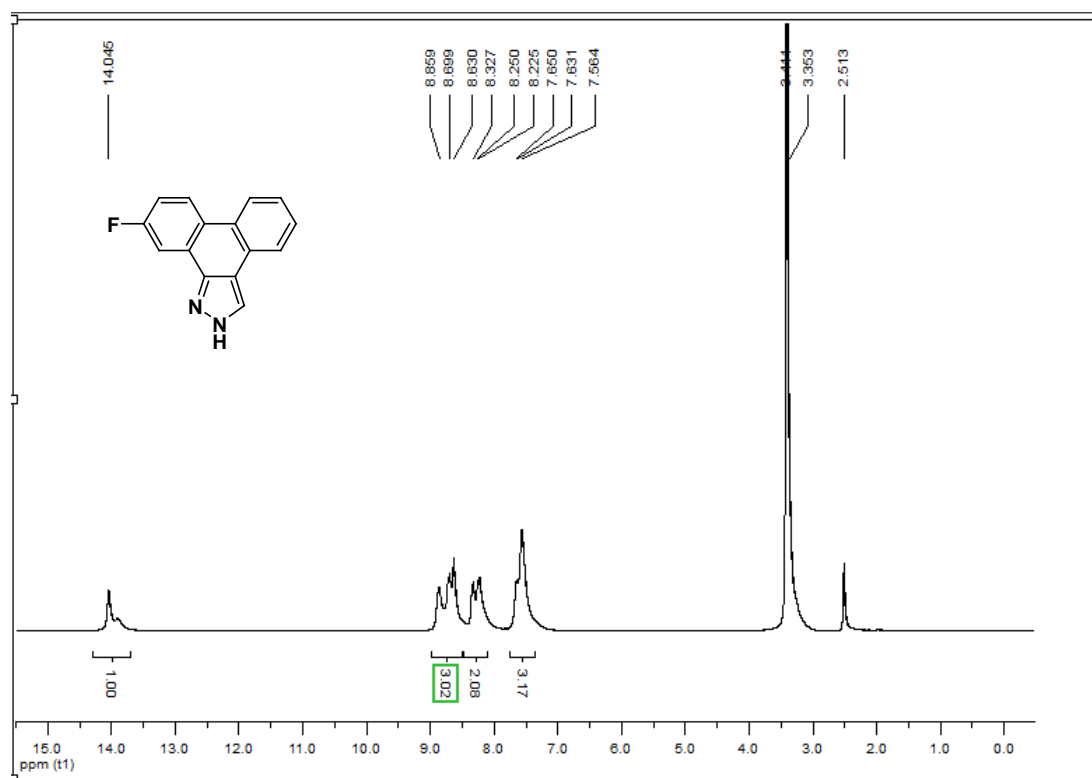
Compound 1n ¹H NMR(DMSO-d₆)



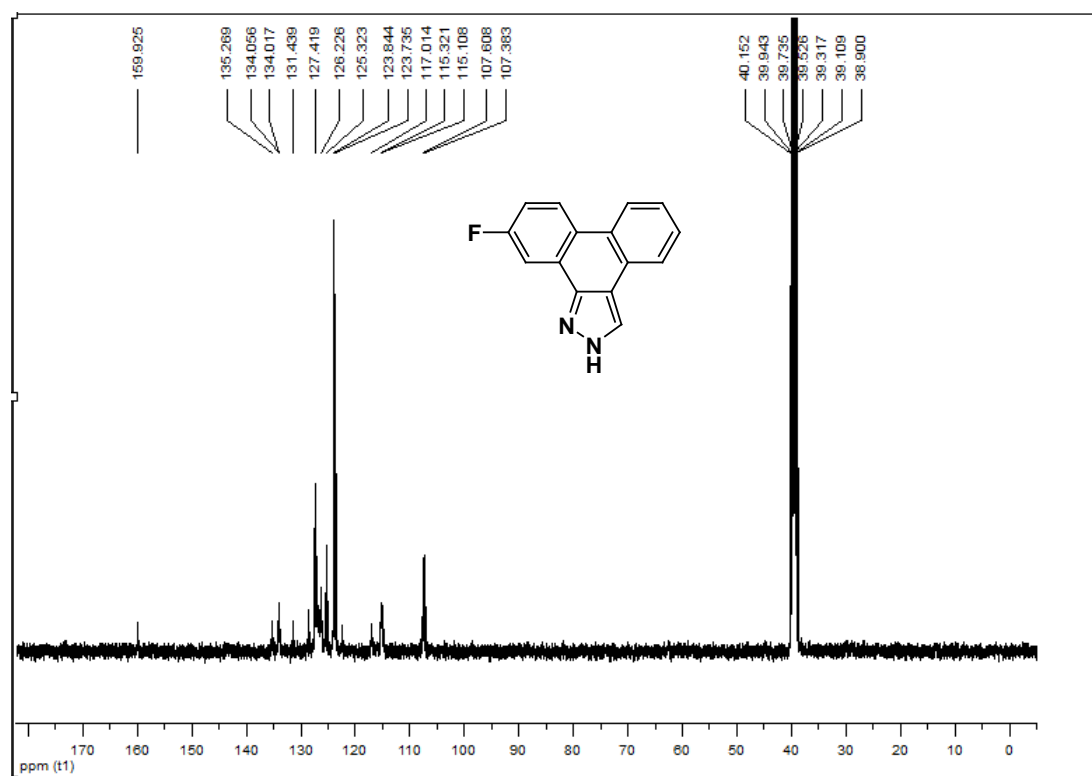
Compound 1o ^{13}C NMR(DMSO- d_6)



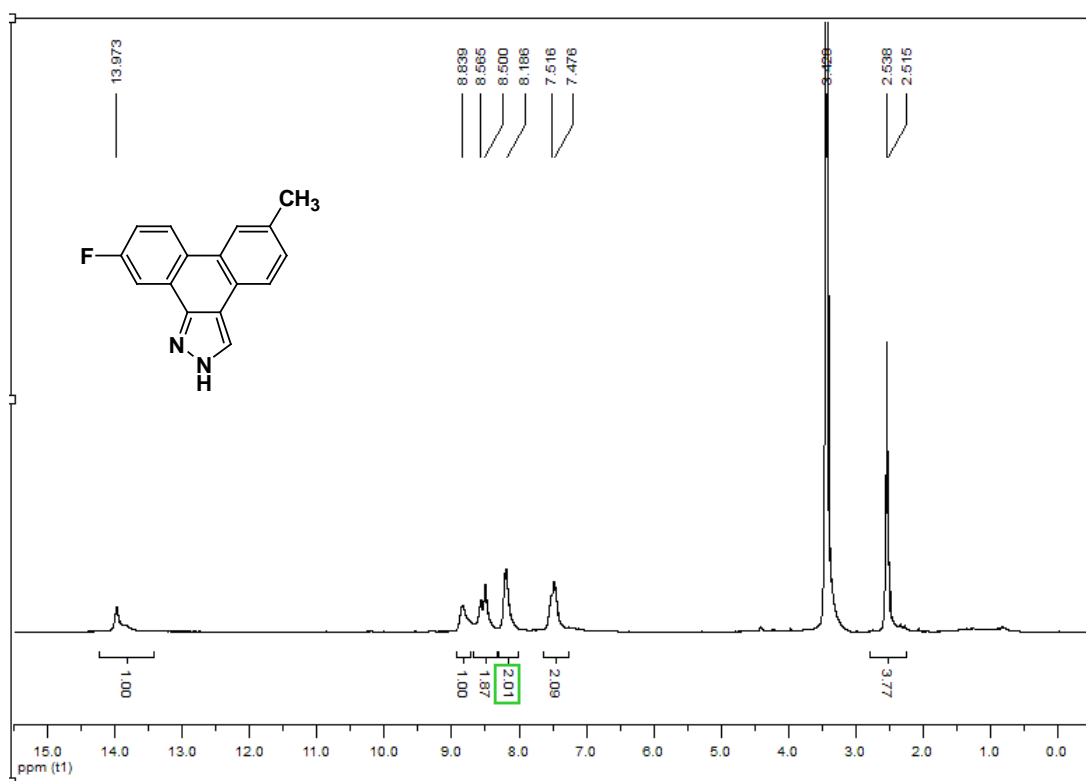
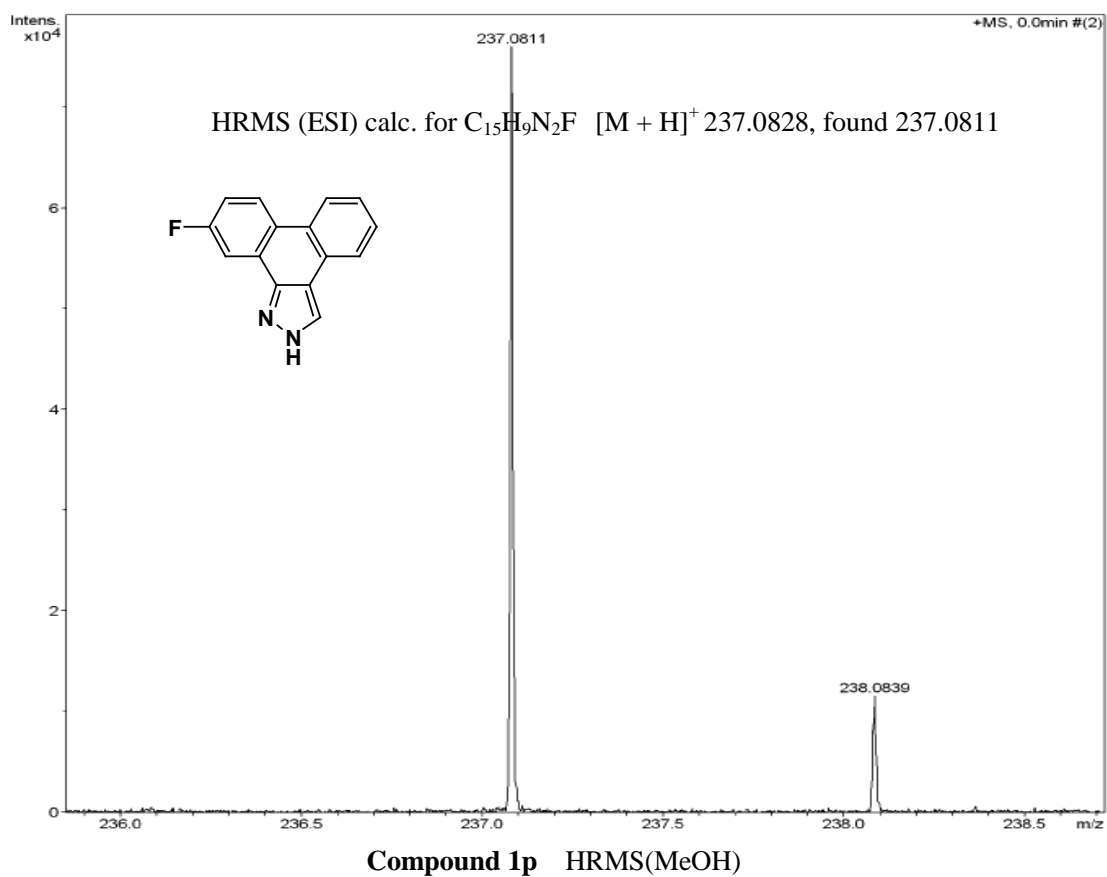
Compound 1o HRMS(MeOH)

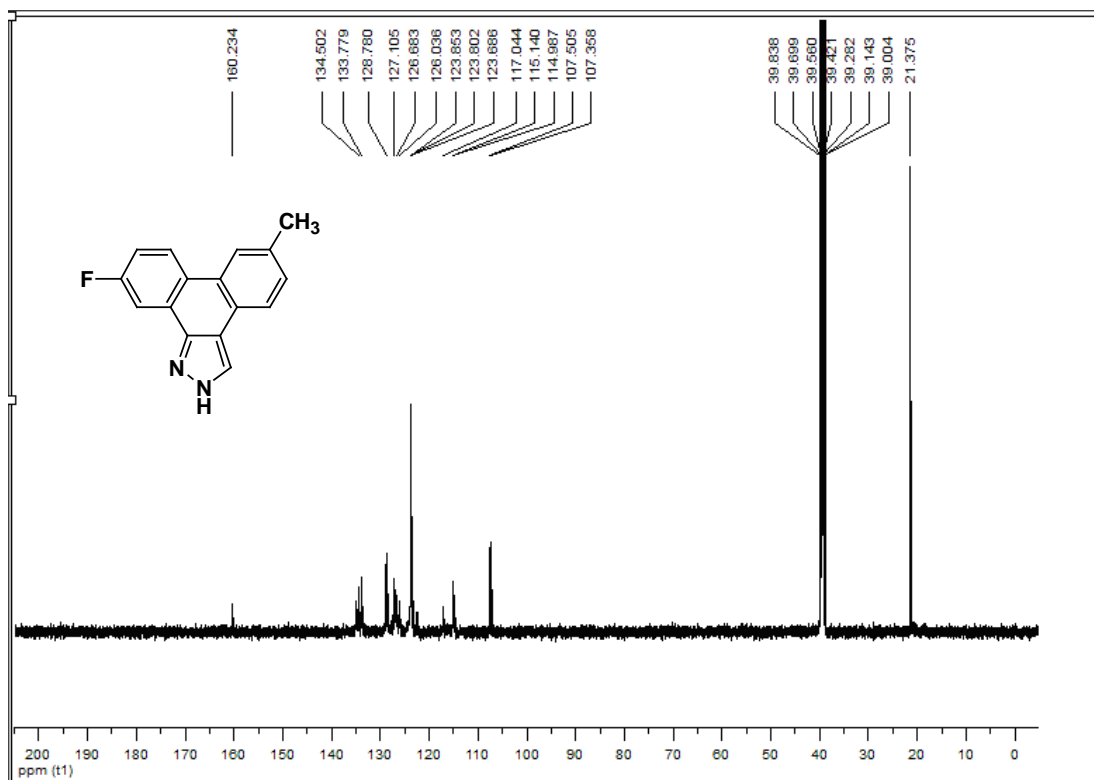


Compound 1p $^1\text{H NMR}$ (DMSO- d_6)

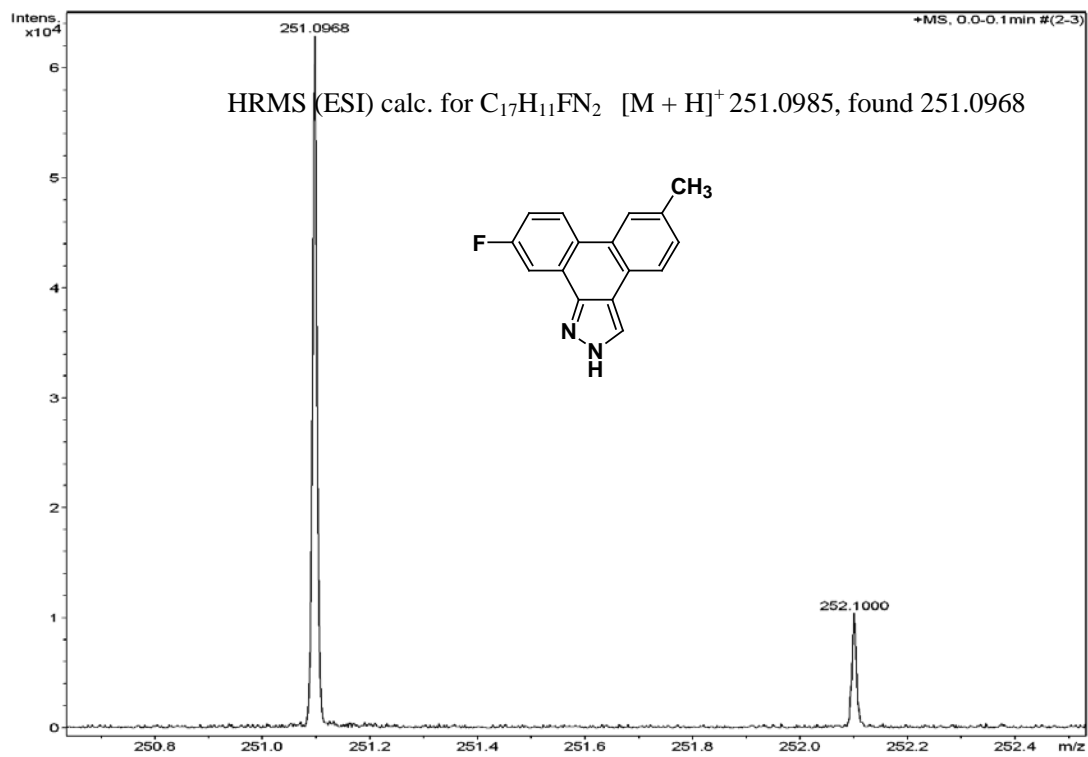


Compound 1p $^{13}\text{C NMR}$ (DMSO- d_6)

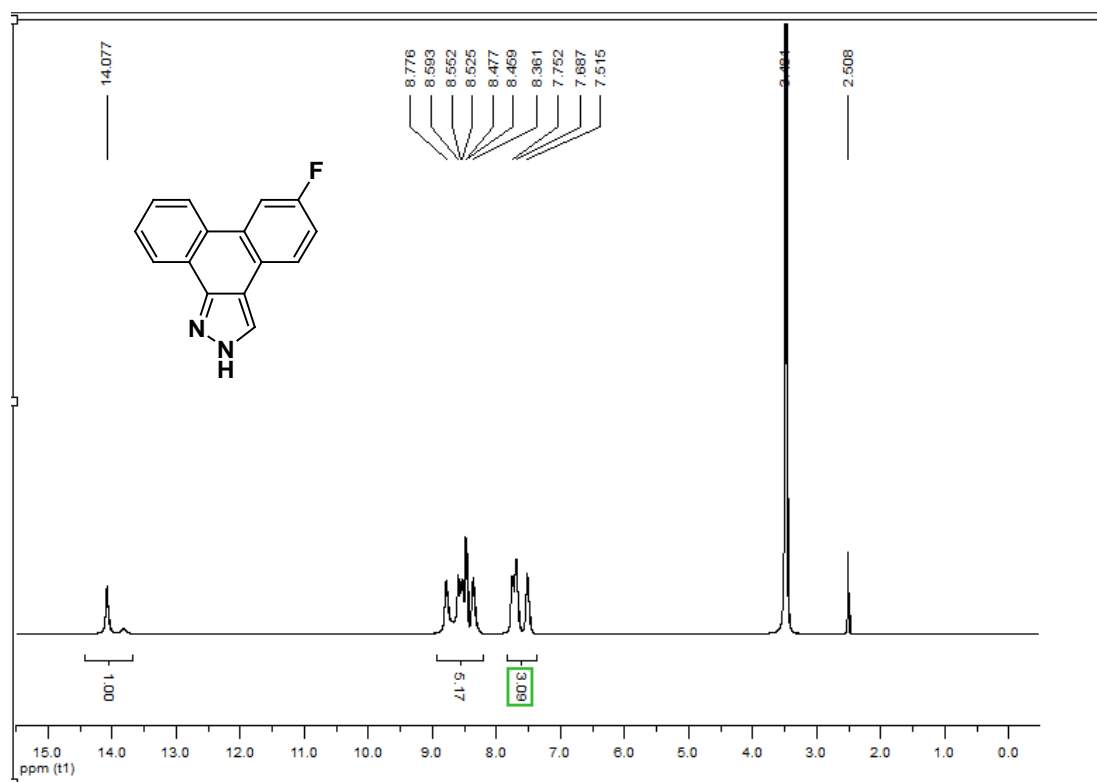




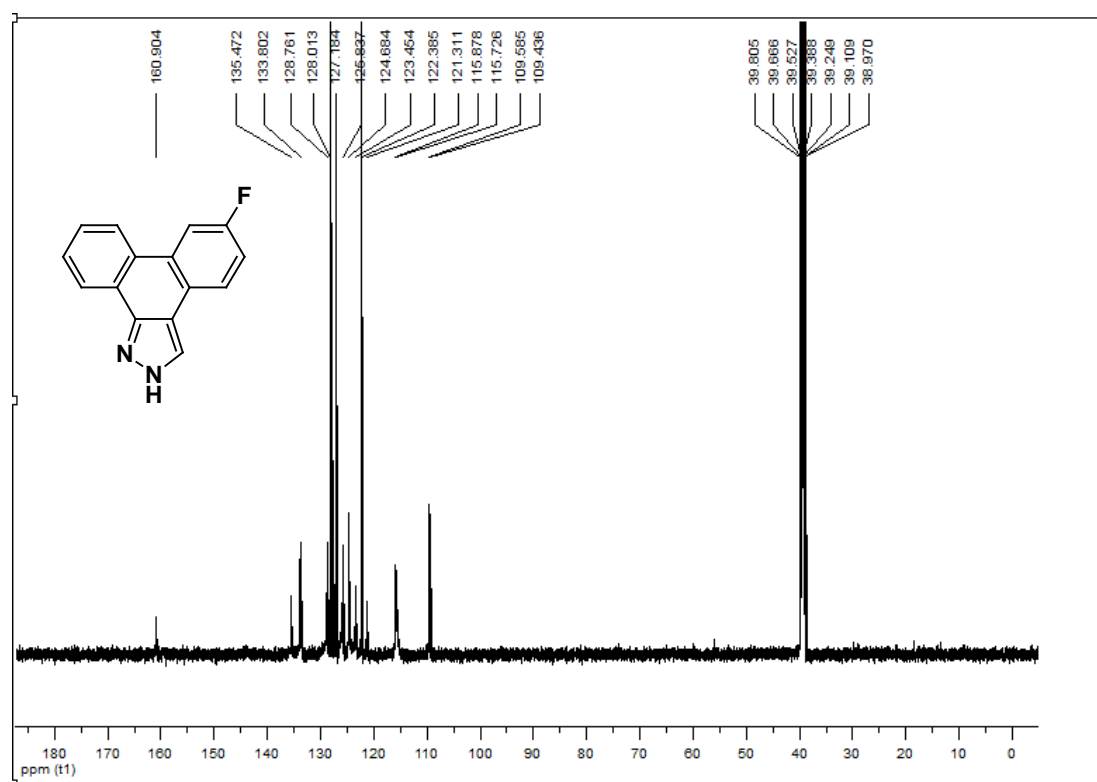
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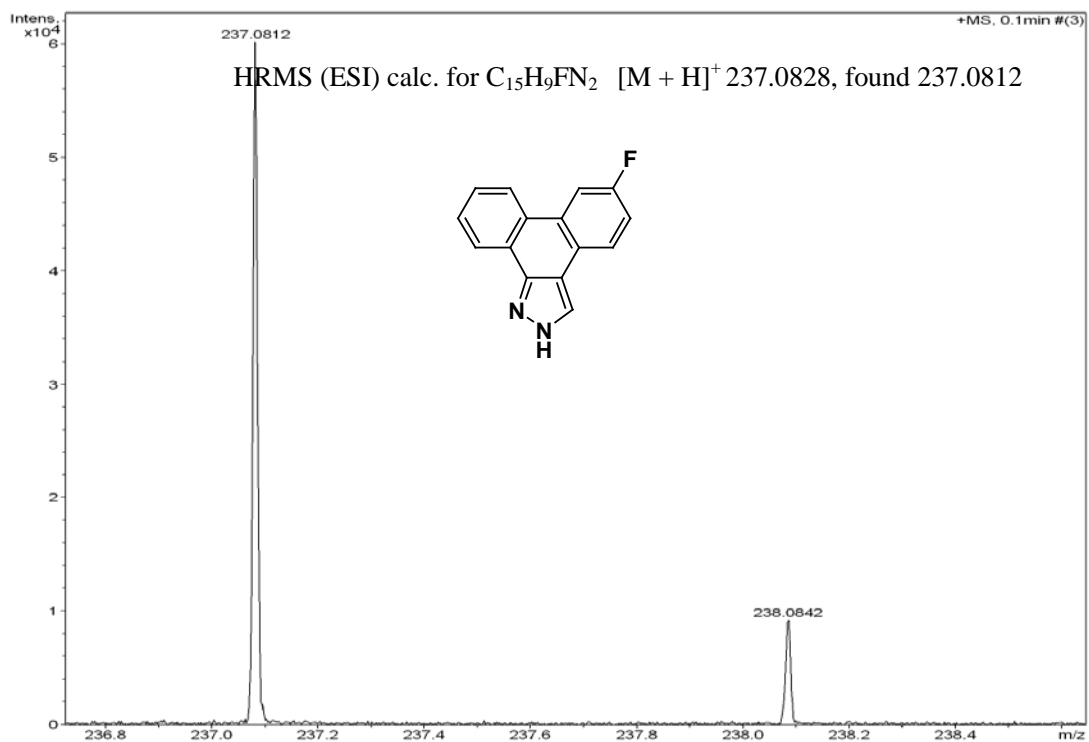
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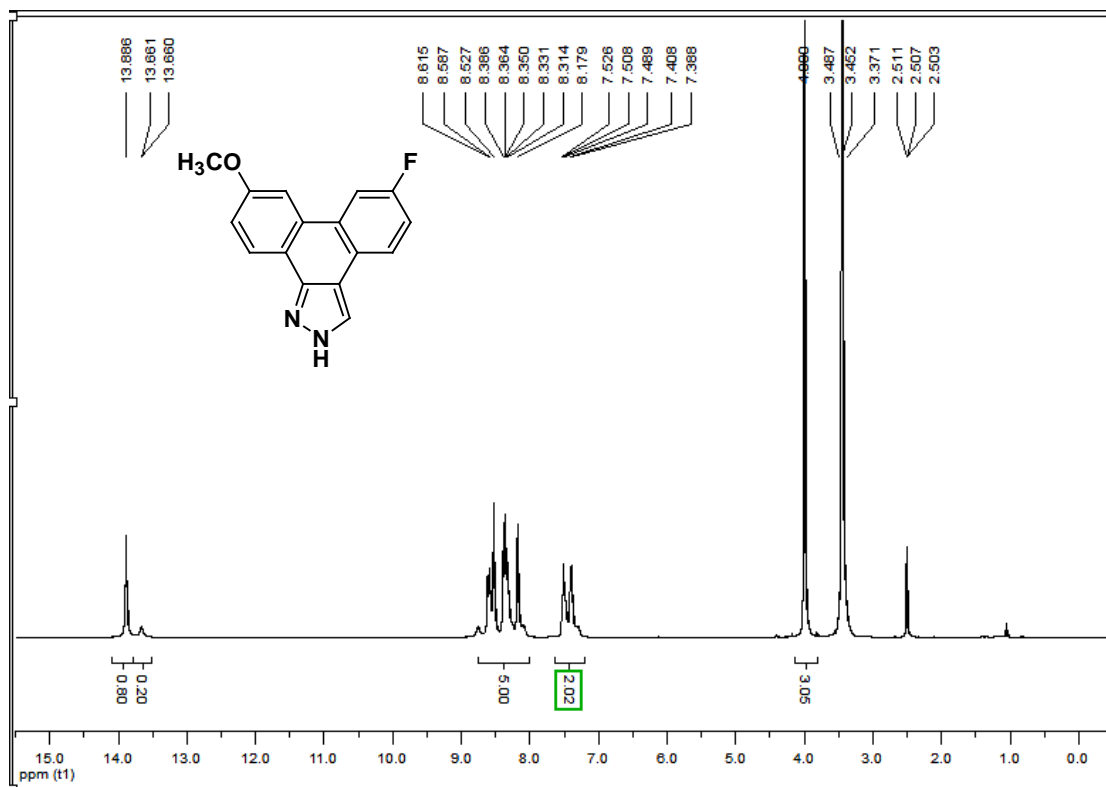
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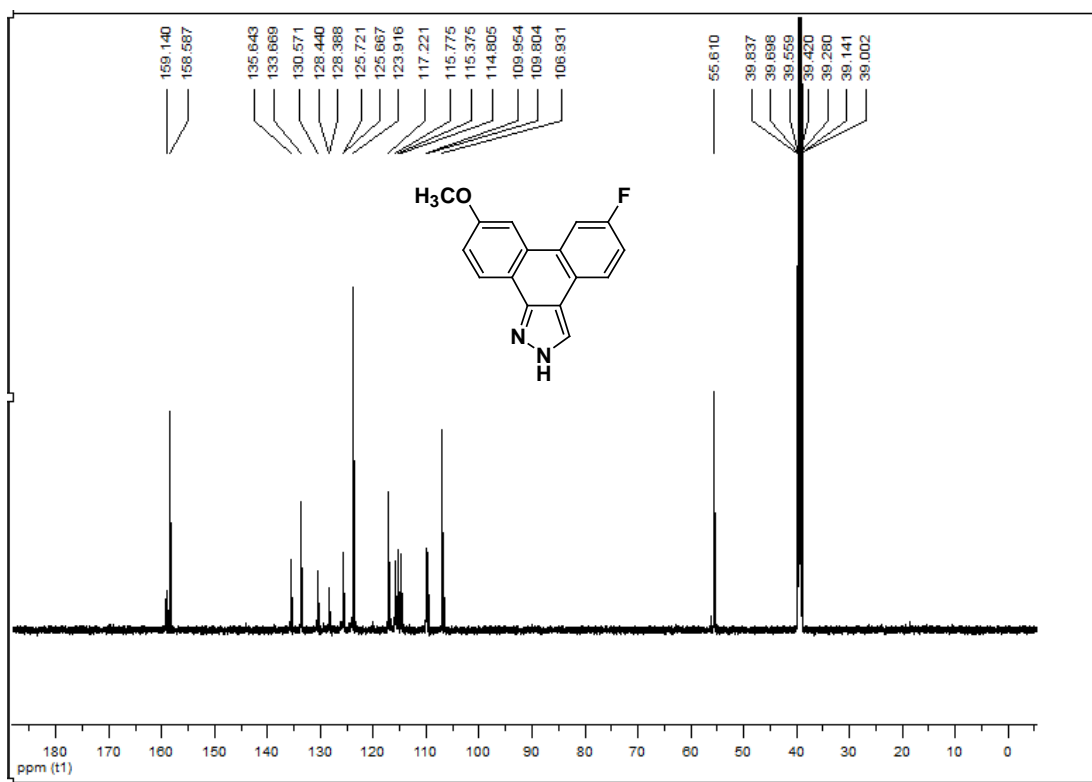
Compound 1r ^{13}C NMR(DMSO- d_6)



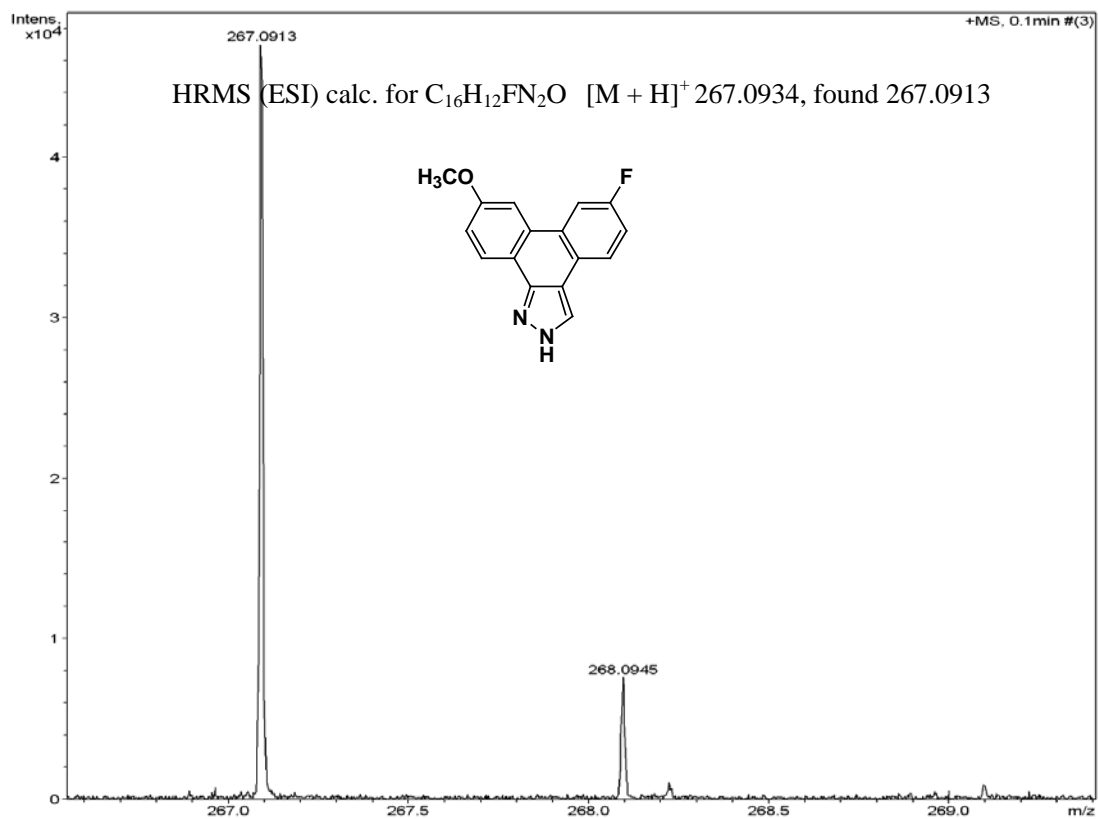
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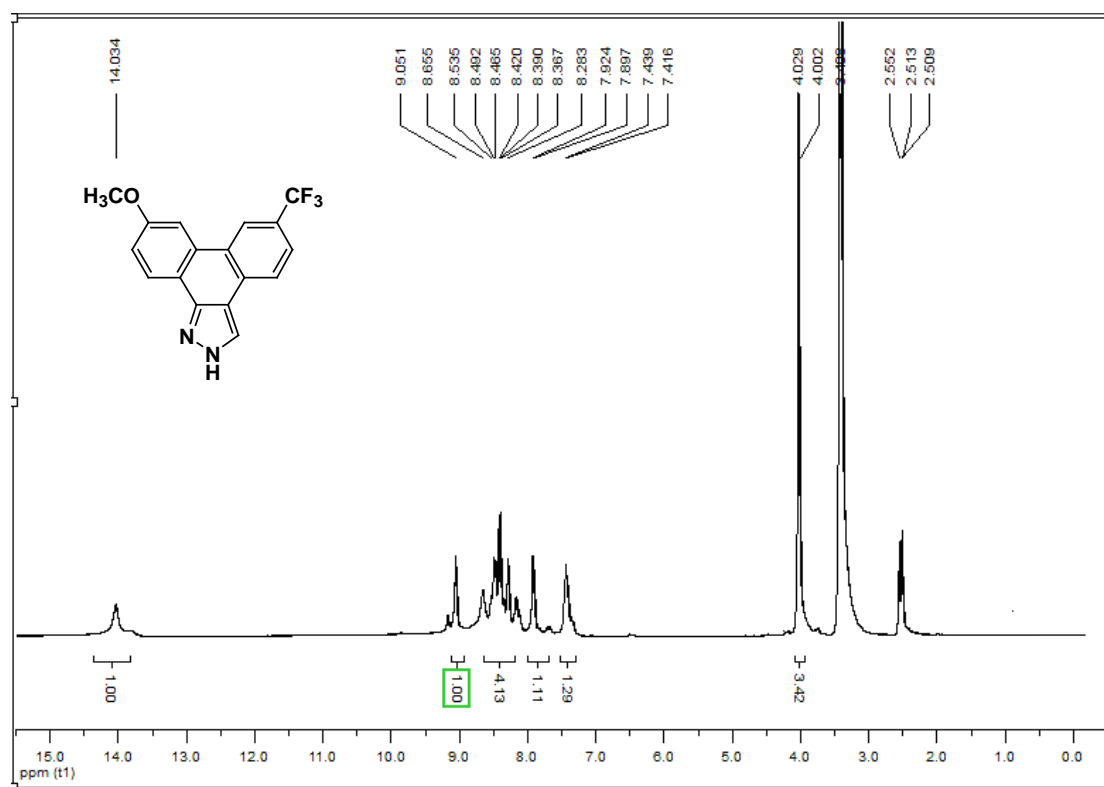
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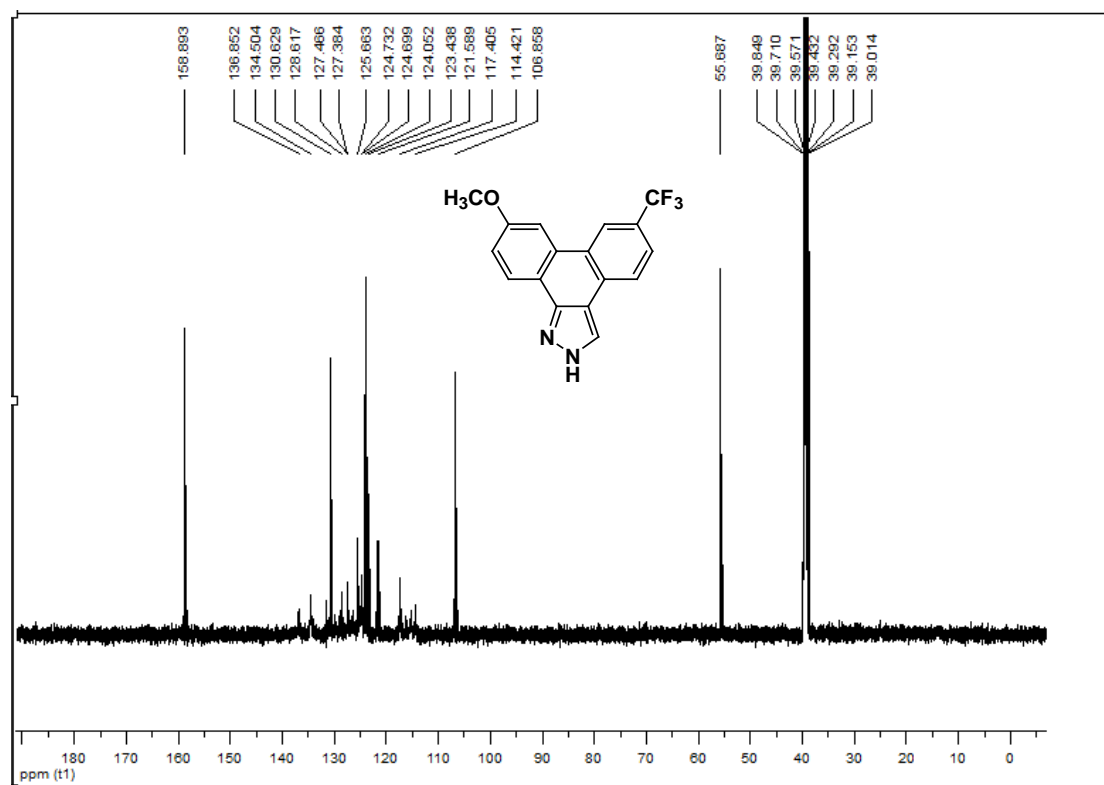
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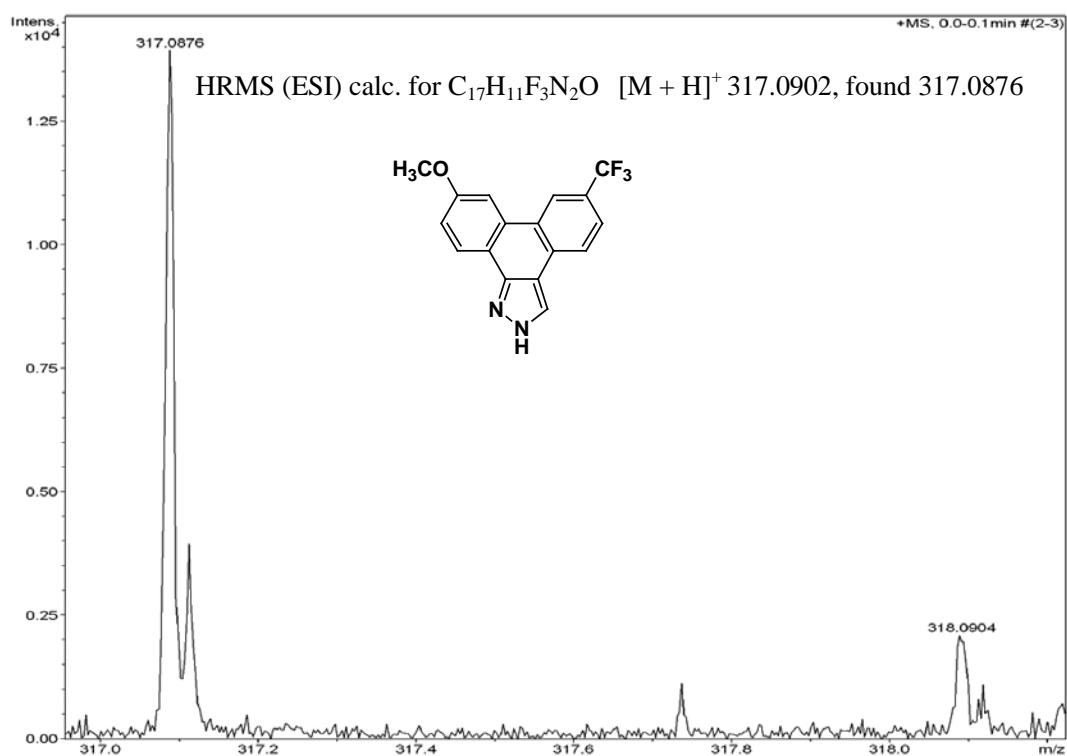
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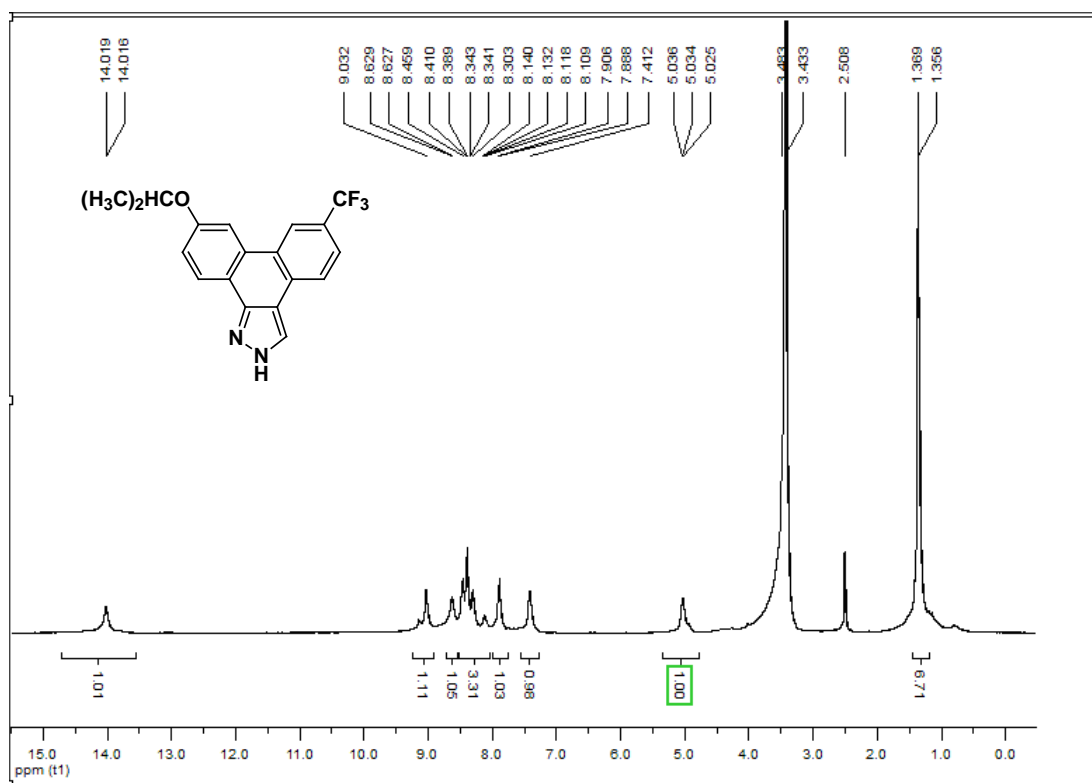
Compound 1t ^1H NMR(DMSO- d_6)



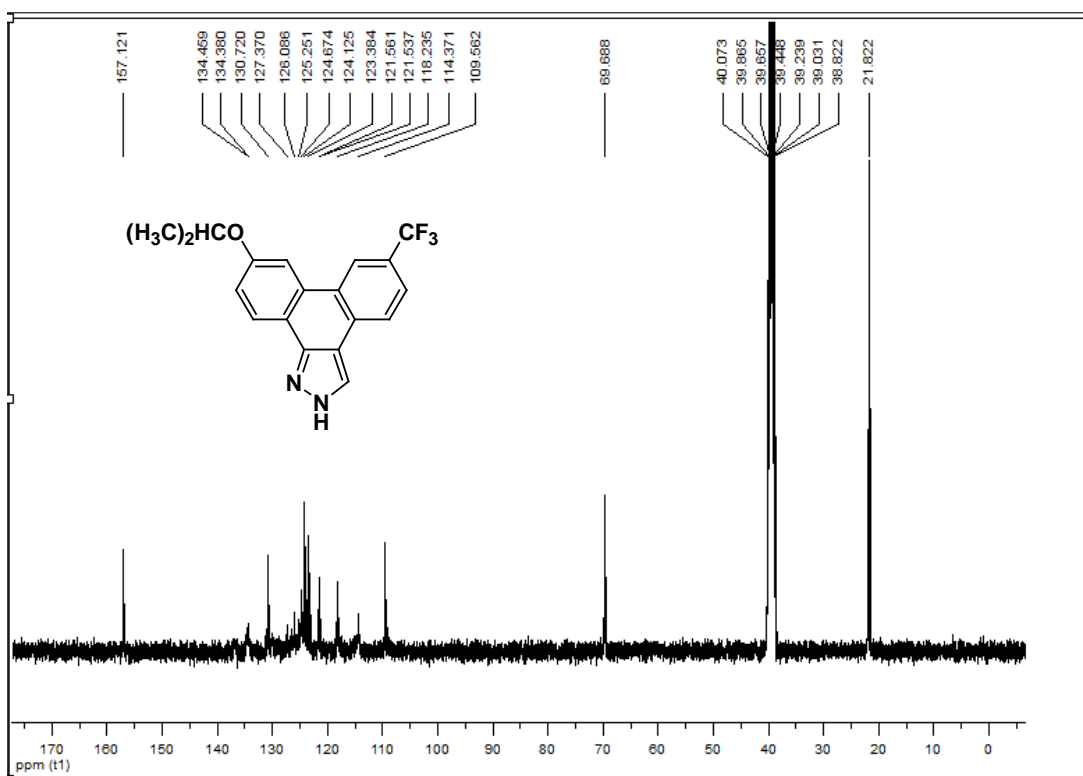
Compound 1t ^{13}C NMR(DMSO- d_6)



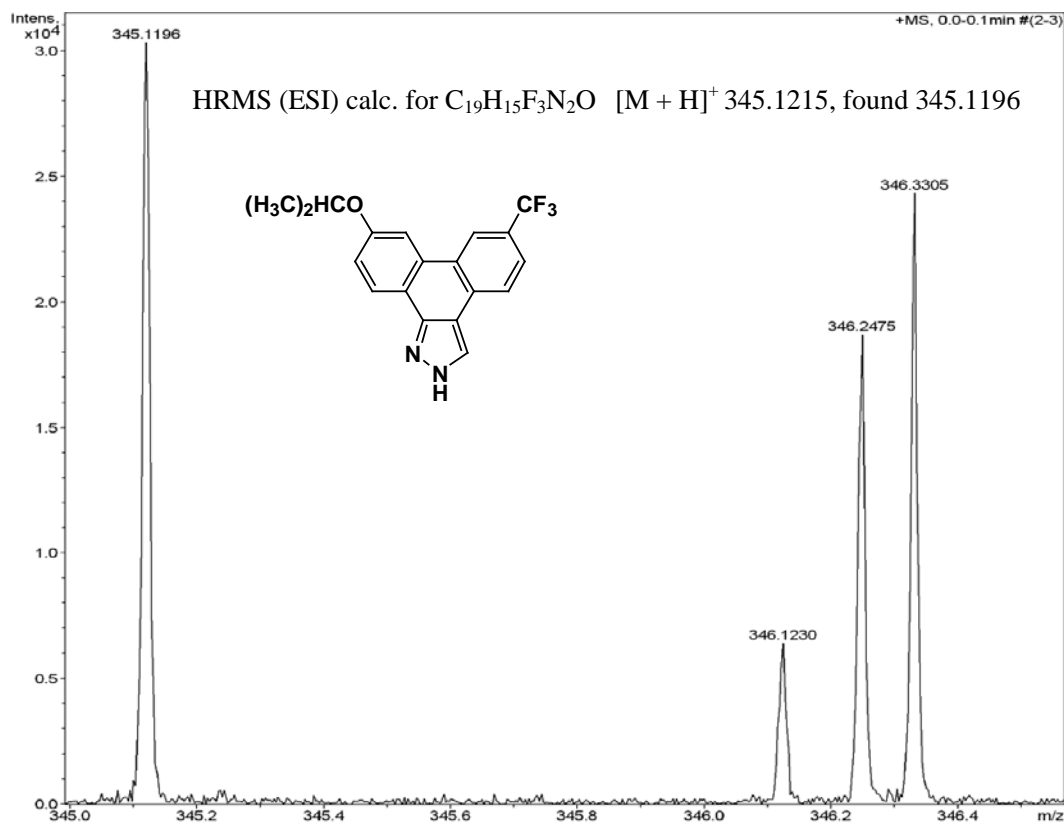
Compound 1t HRMS(MeOH)



Compound 1u 1H NMR(DMSO- d_6)



Compound 1u ¹³C NMR(DMSO-d₆)



Compound 1u HRMS(MeOH)