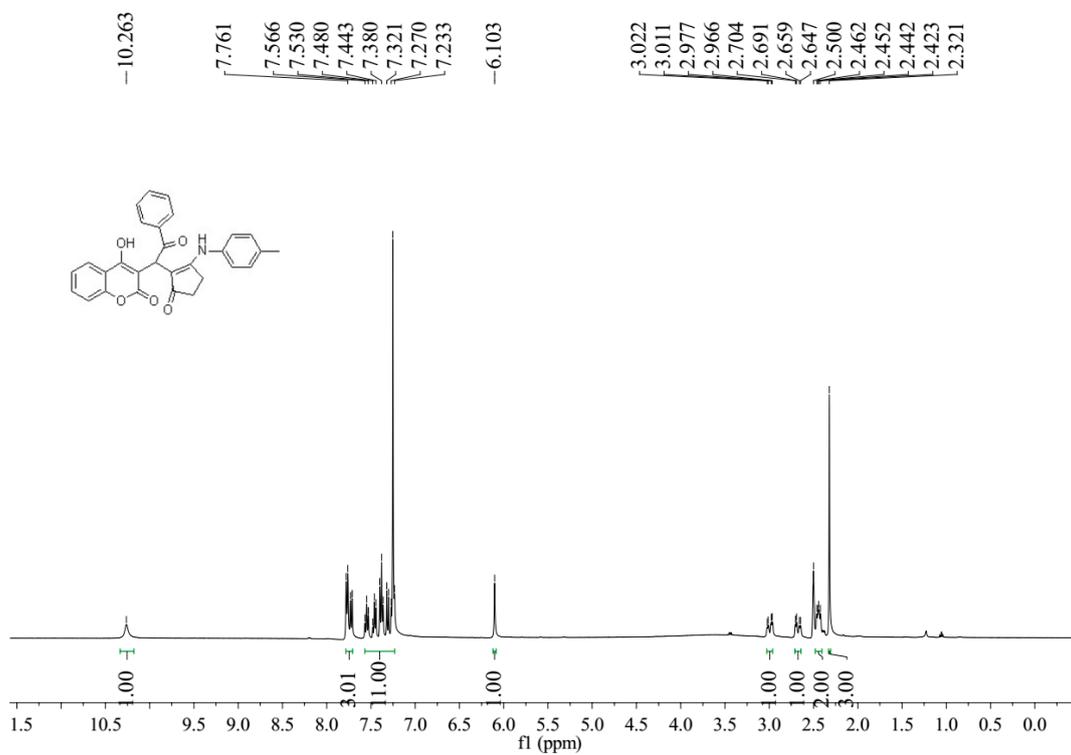


(Supplementary Materials)

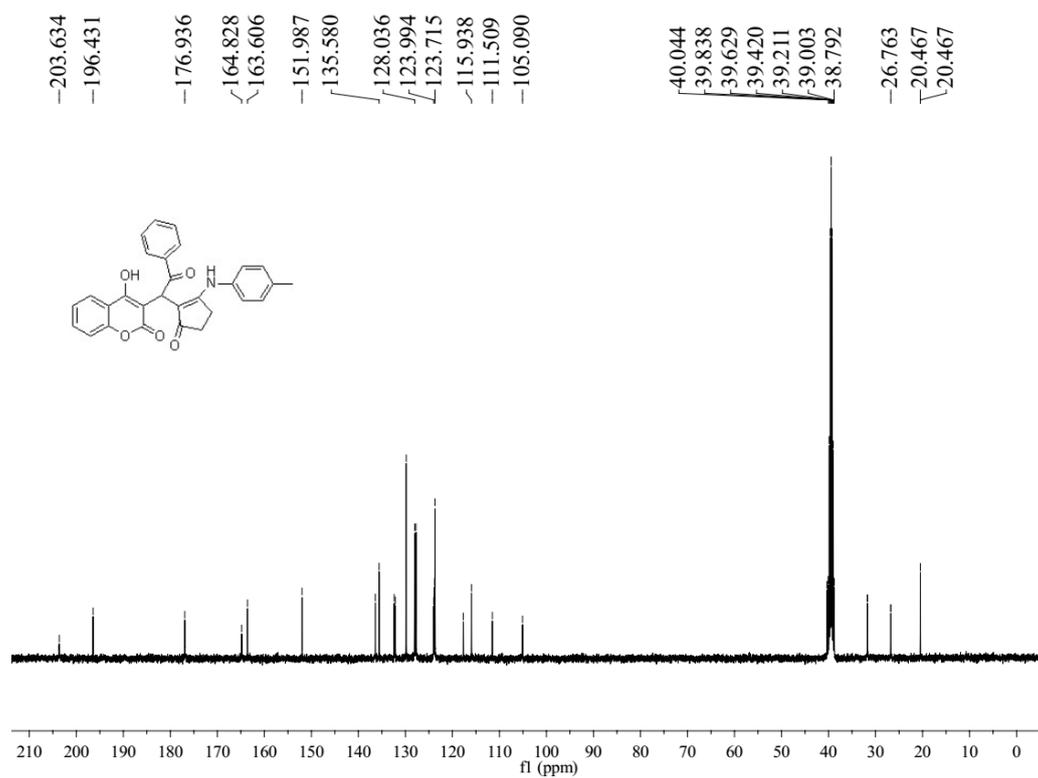
One-Pot Synthesis of 3-Functionalized 4-Hydroxy- coumarin under Catalyst-Free Conditions

Yang Gao ¹, Guoning Zhang², Juxian Wang², Xiaoguang Bai², Yiliang Li^{3,*} and Yucheng Wang ^{2,*}

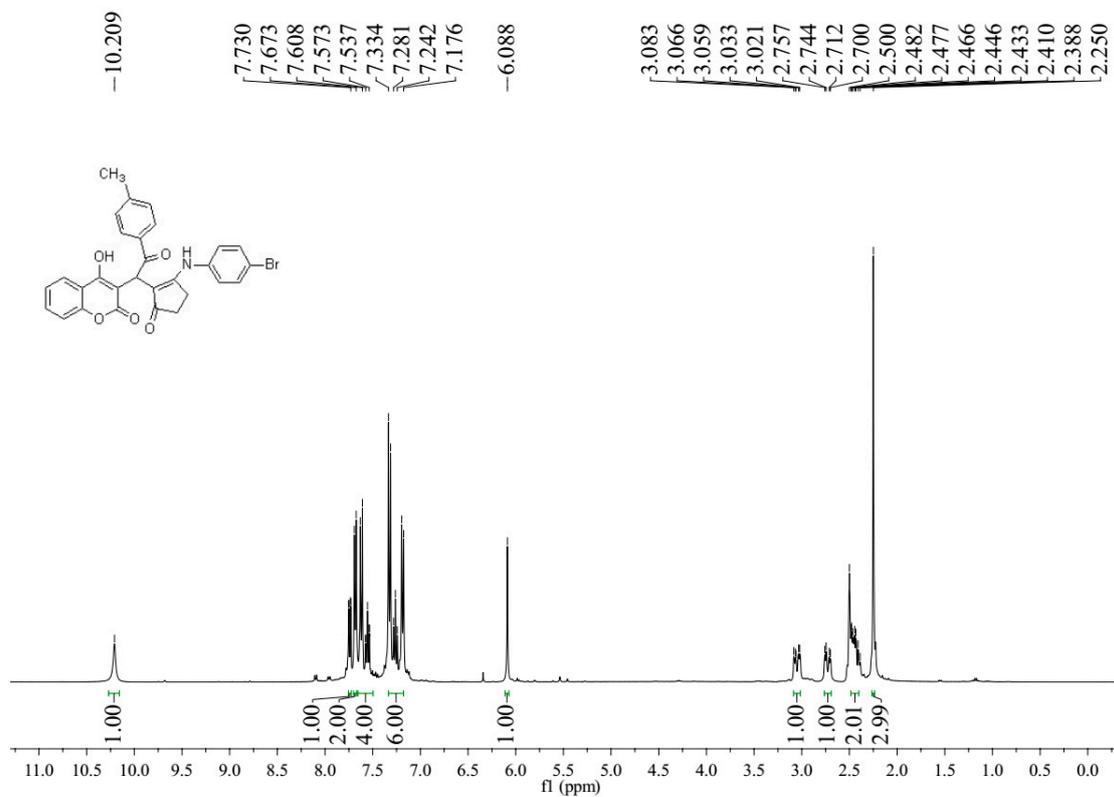
¹H NMR of compound **4a**



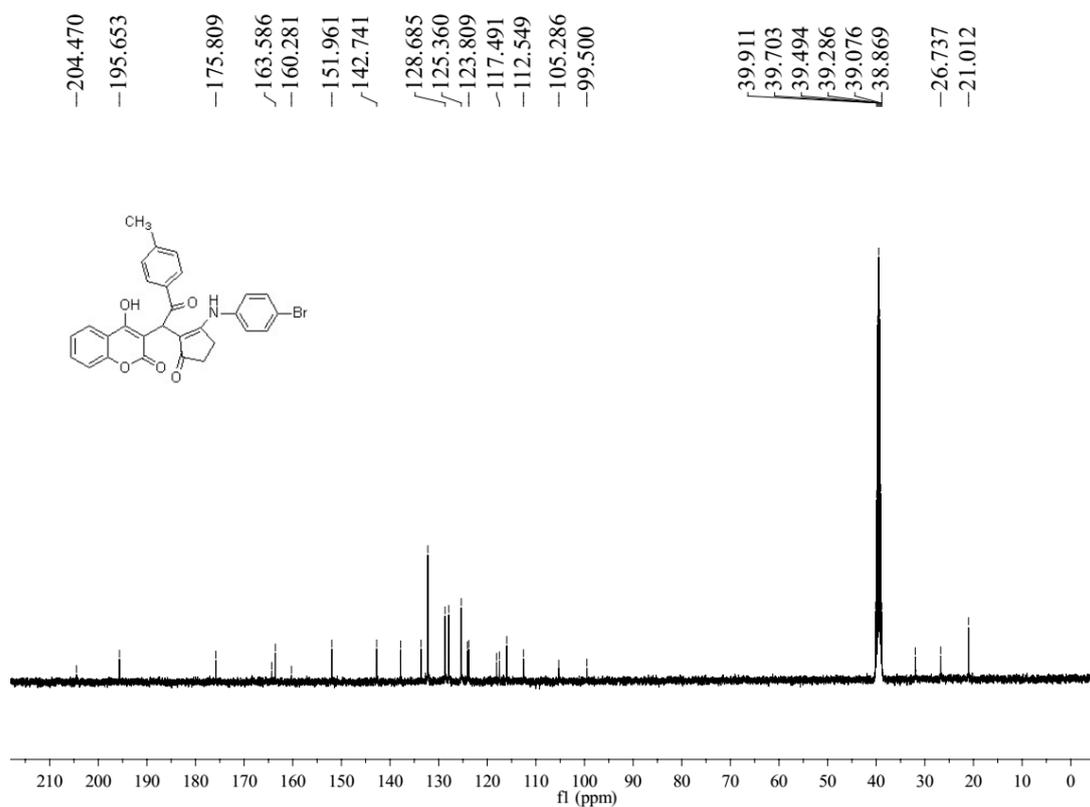
¹³C NMR of compound **4a**



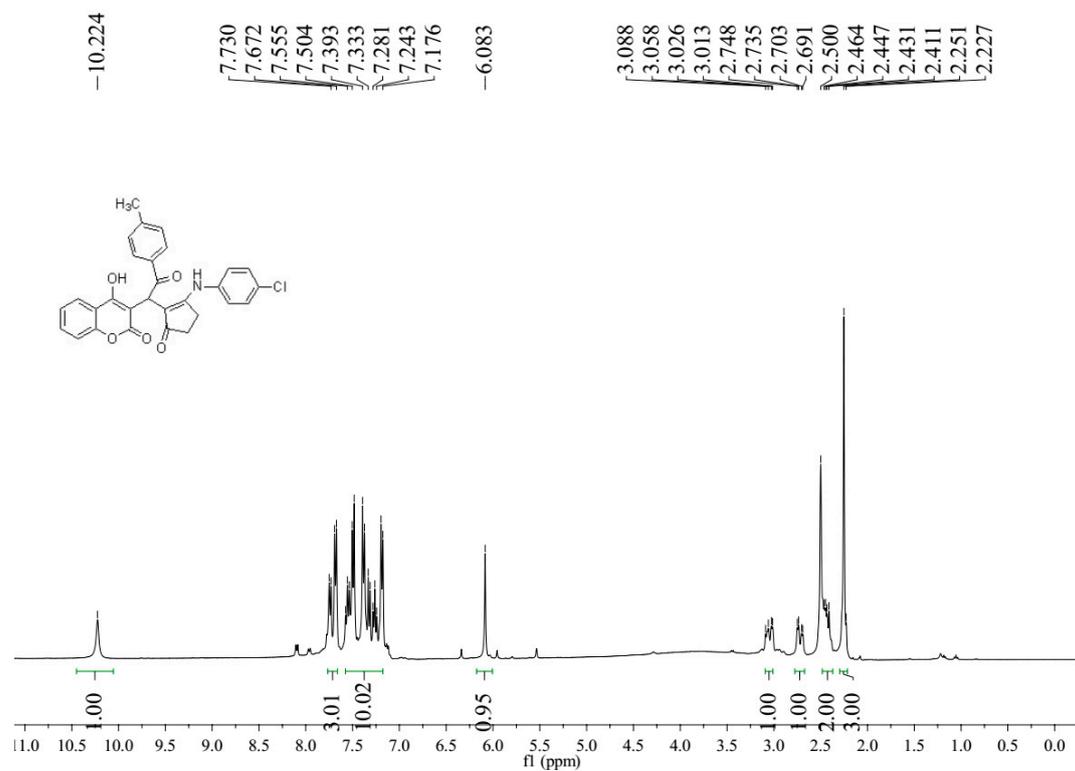
¹H NMR of compound **4b**



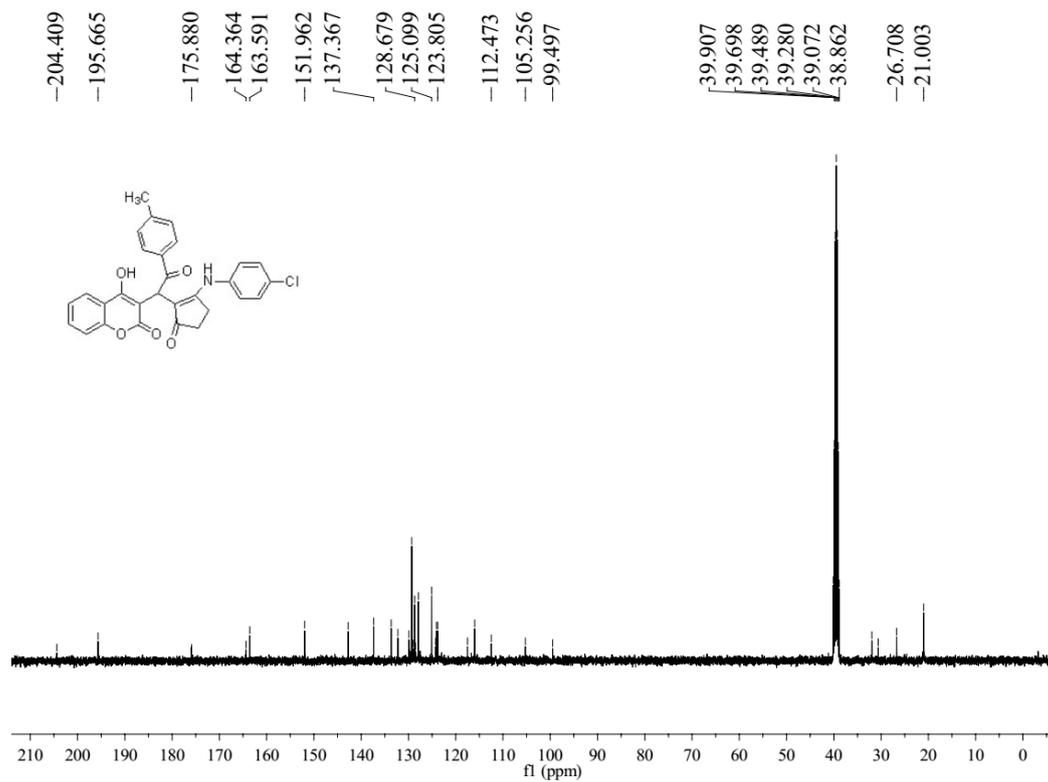
¹³C NMR of compound **4b**



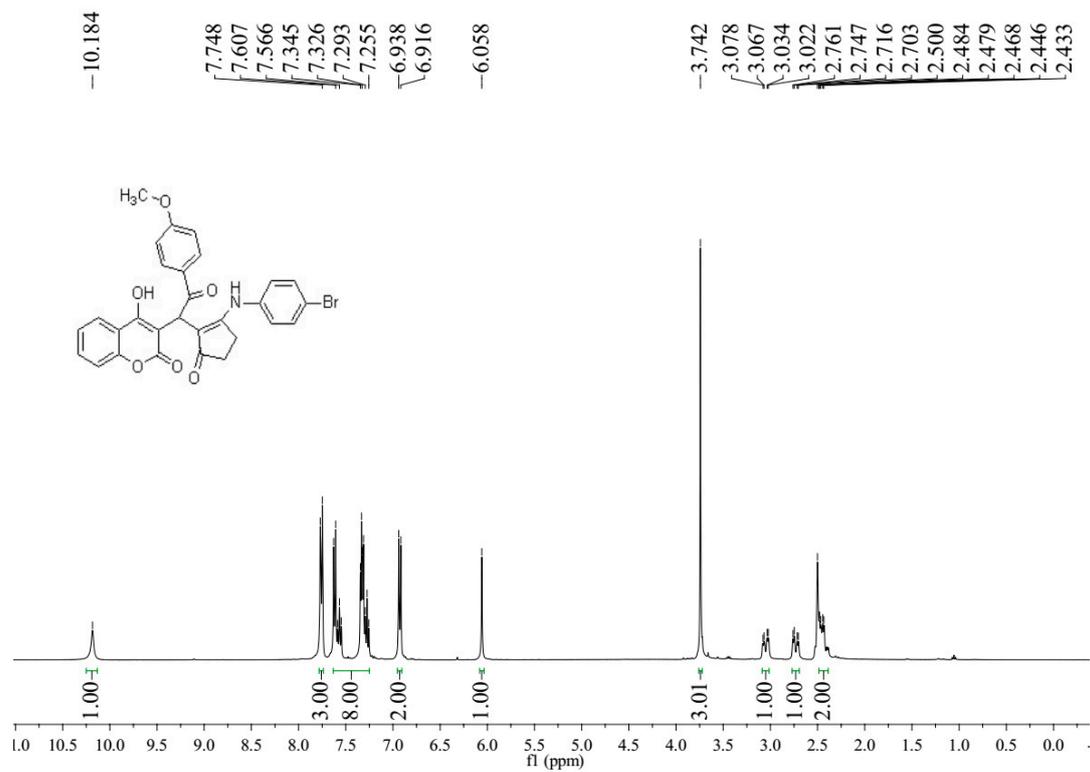
¹H NMR of compound **4c**



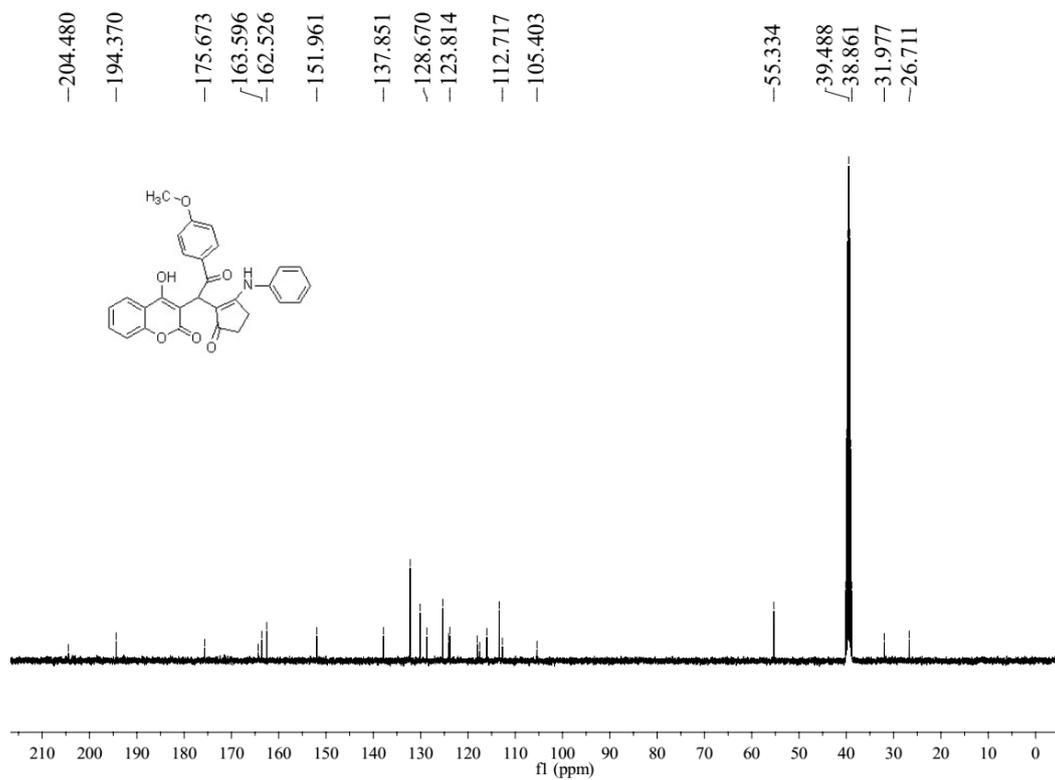
¹³C NMR of compound **4c**



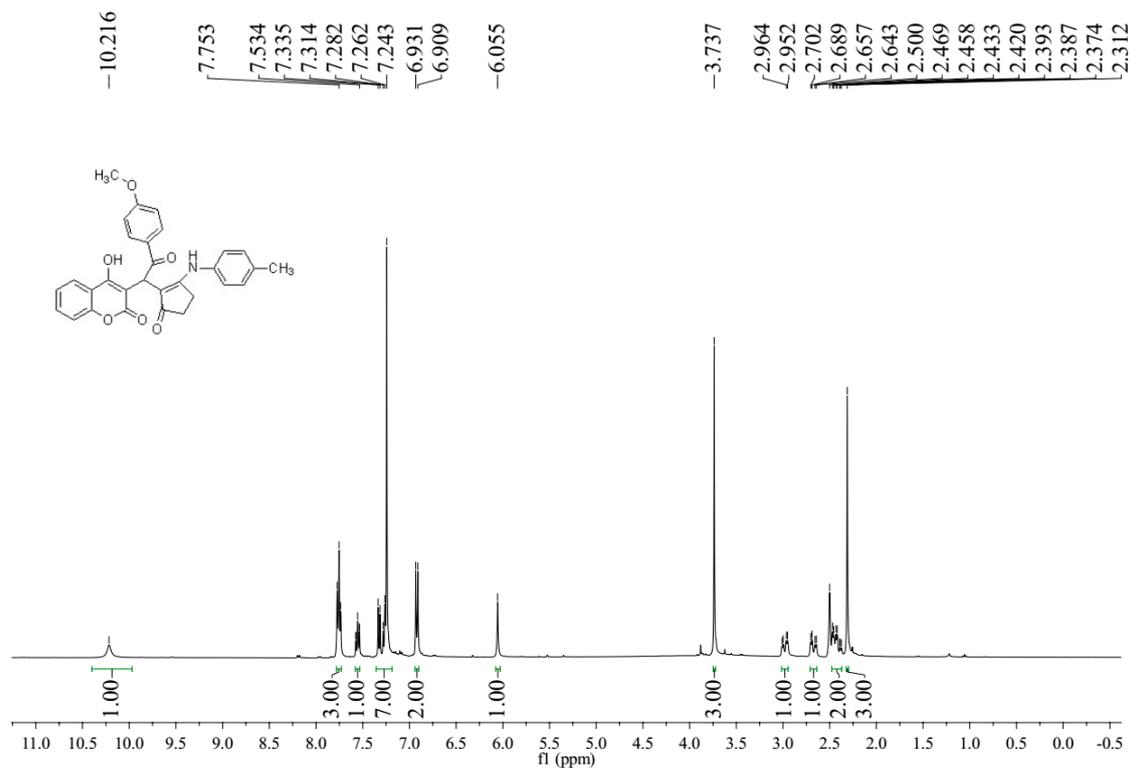
¹H NMR of compound **4d**



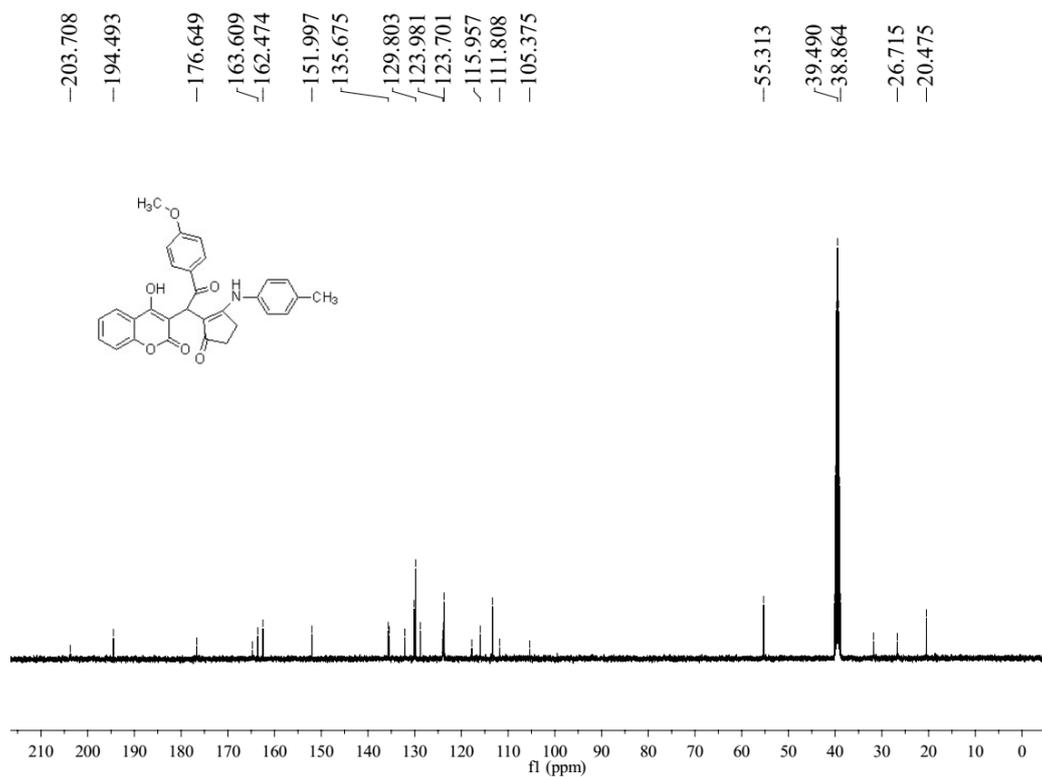
¹³C NMR of compound **4d**



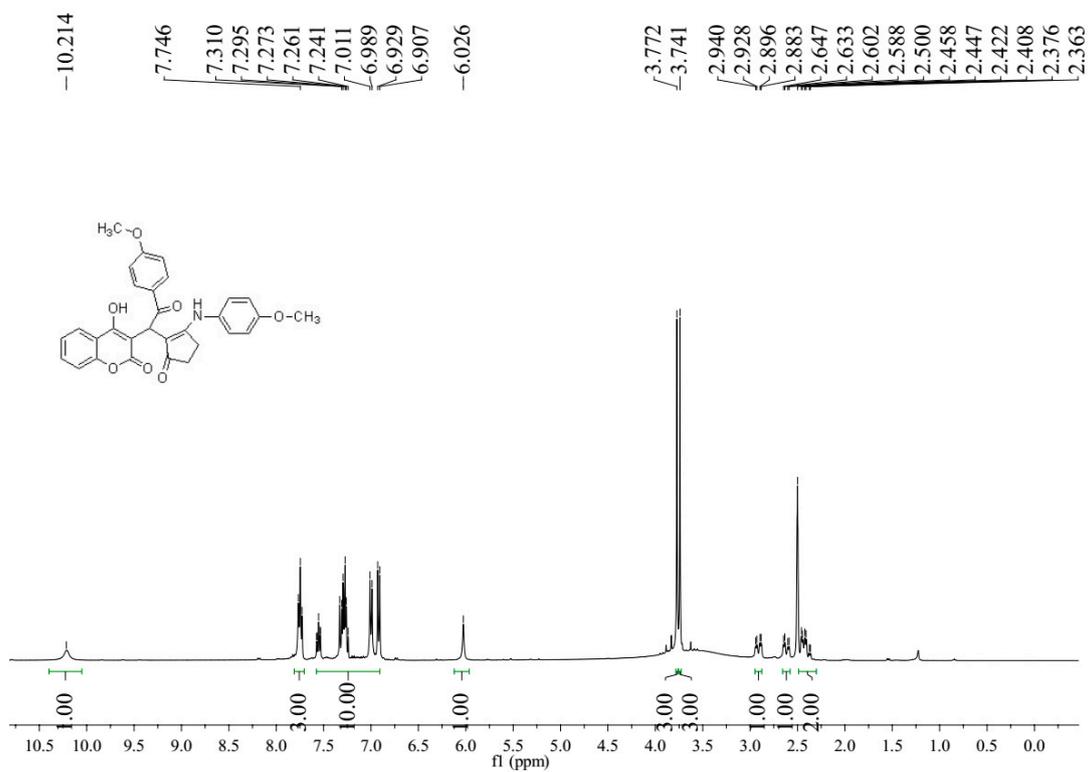
¹H NMR of compound **4e**



¹³C NMR of compound **4e**

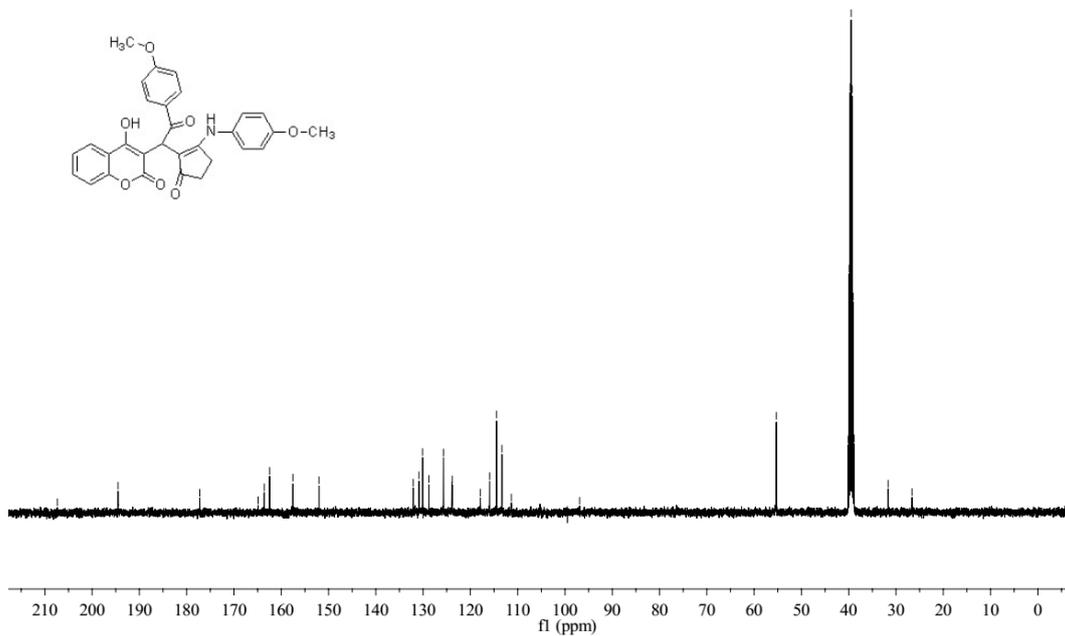
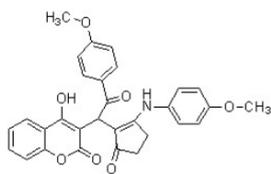


¹H NMR of compound **4f**



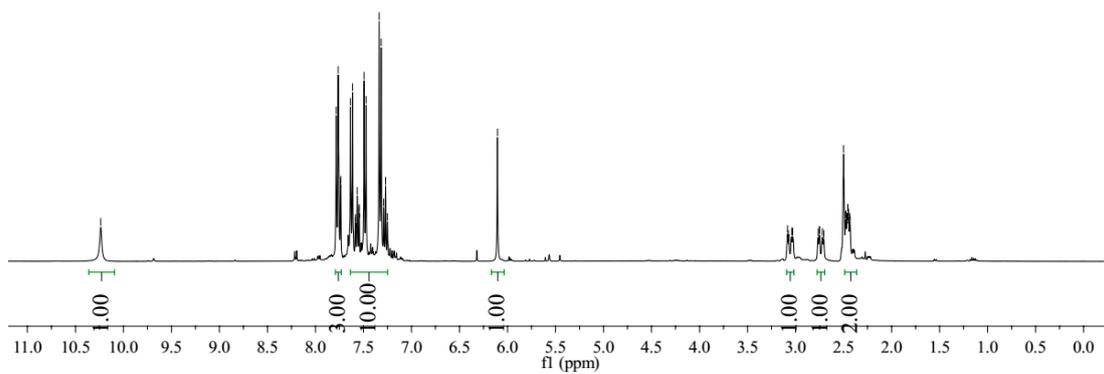
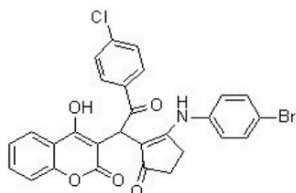
¹³C NMR of compound **4f**

-207.361
 -194.515
 -177.210
 -163.595
 -162.468
 -157.551
 -152.013
 -130.100
 -125.687
 -123.937
 -123.847
 -114.481
 -113.328
 -111.343
 -96.897
 -55.300
 -39.486
 -38.860
 -31.656
 -26.605

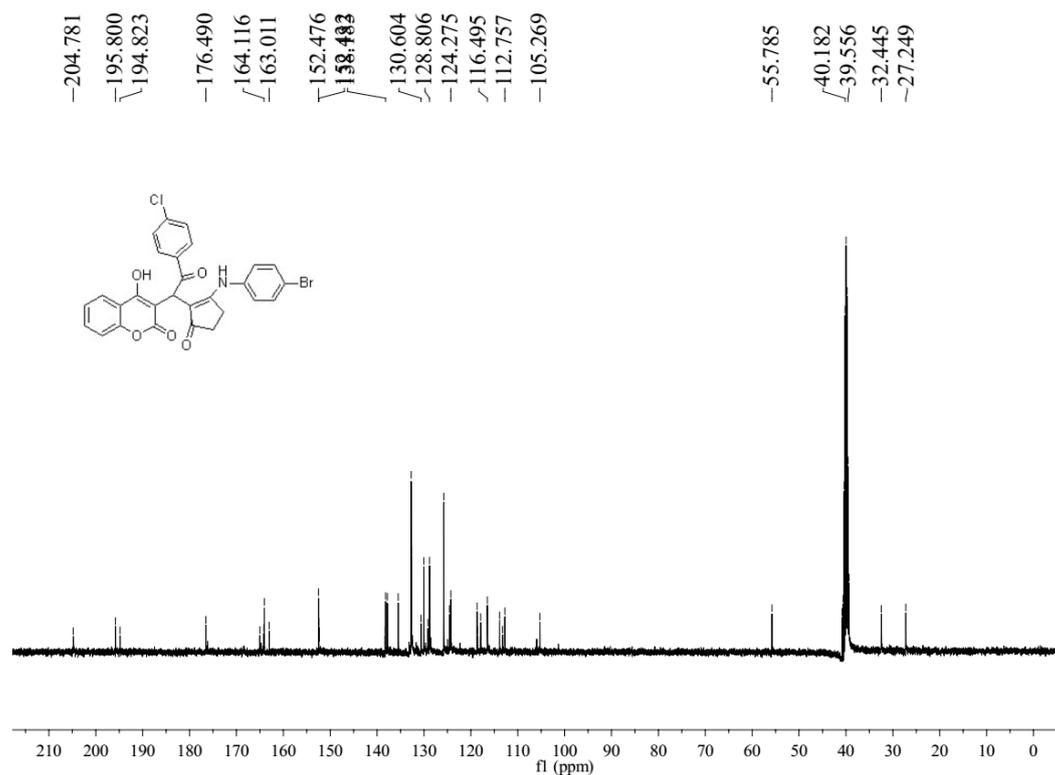


¹H NMR of compound **4g**

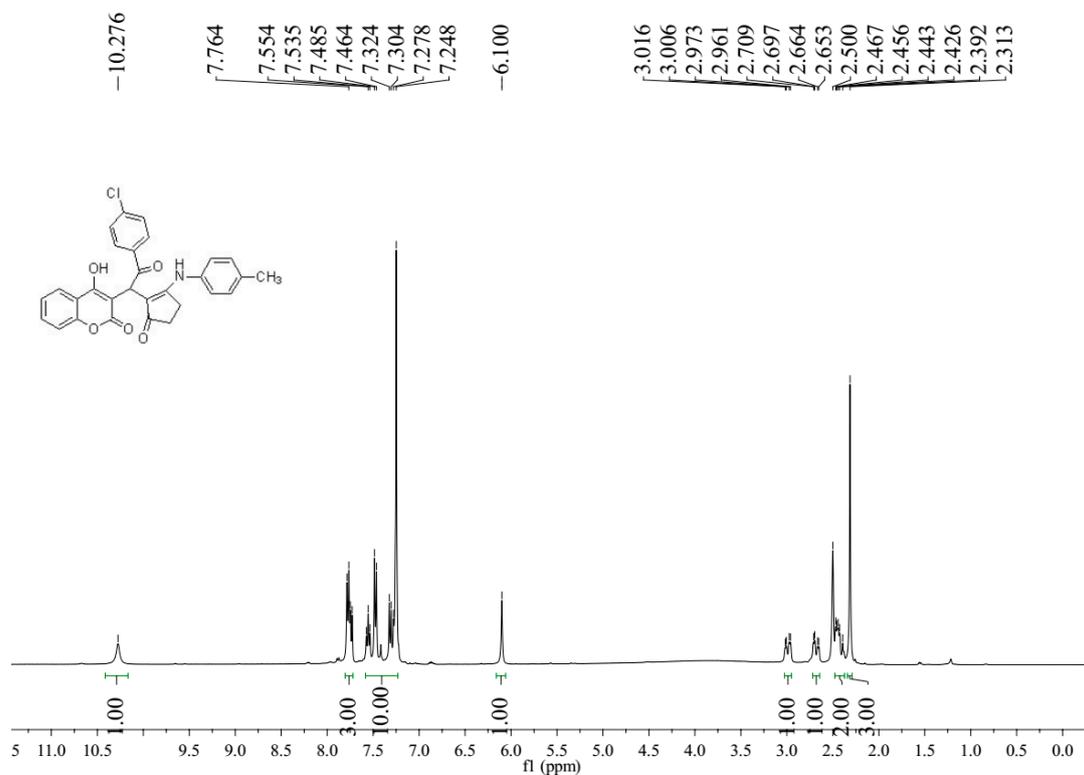
-10.236
 7.764
 7.737
 7.613
 7.583
 7.547
 7.494
 7.337
 7.289
 7.251
 -6.105
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 3.075
 3.068
 3.040
 3.029
 2.765
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 2.480
 2.474
 2.464
 2.455
 2.449
 2.437
 2.432



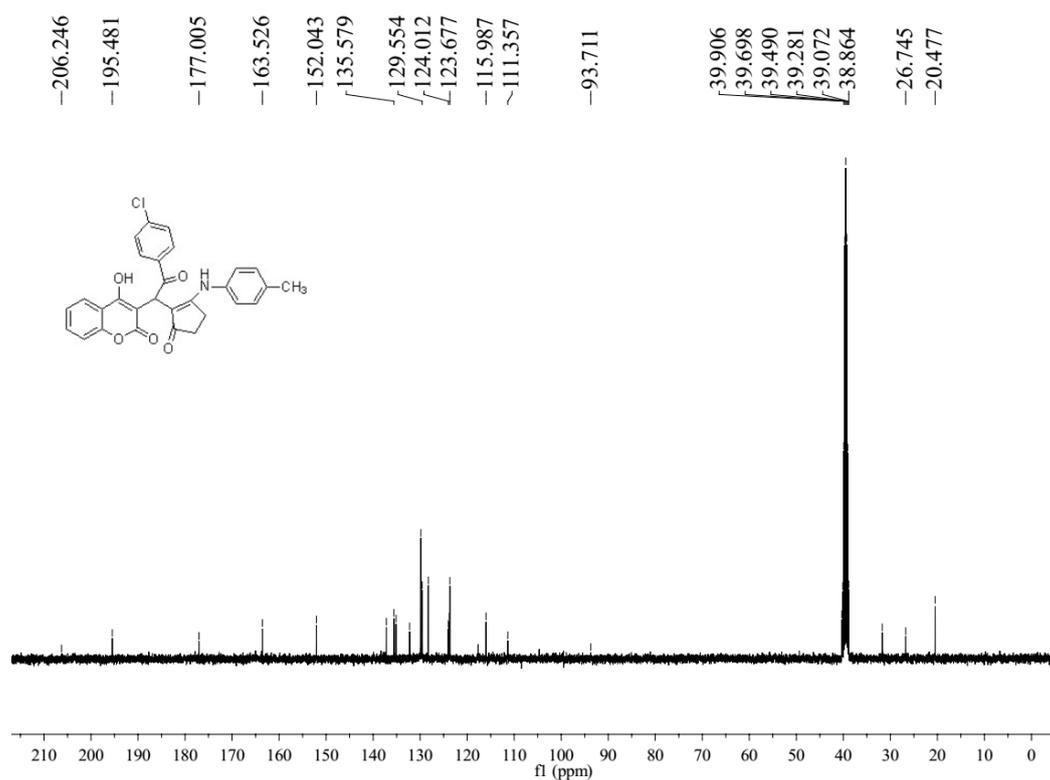
¹³C NMR of compound **4g**



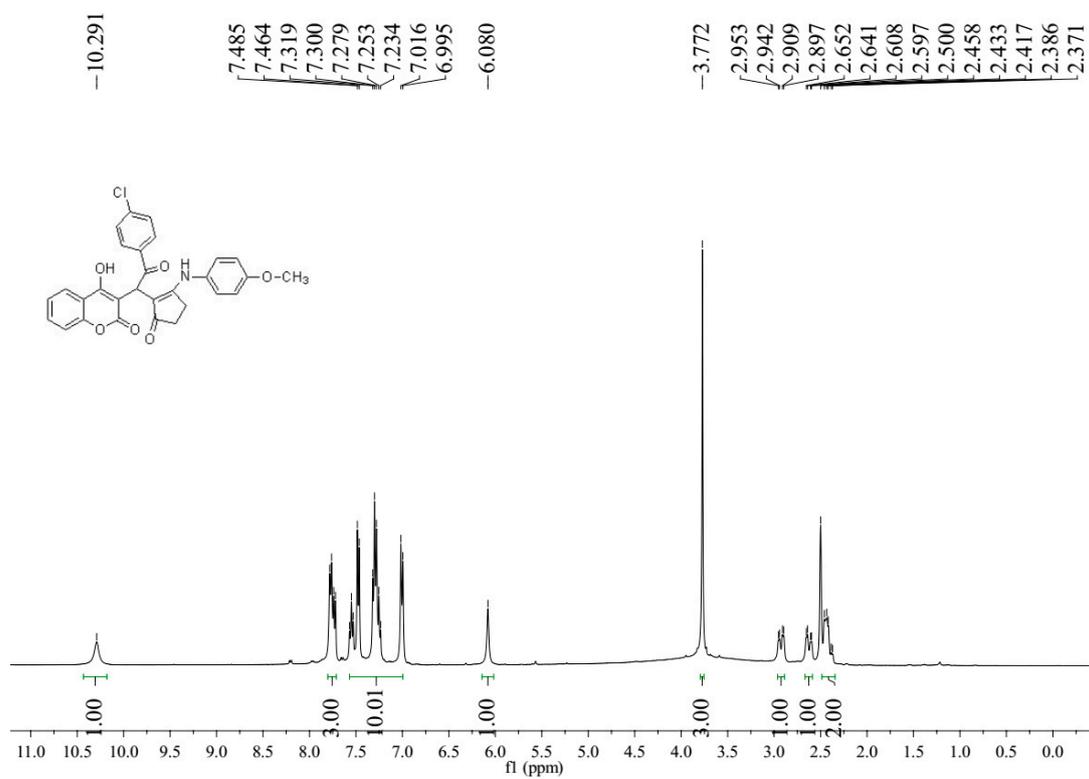
¹H NMR of compound **4h**



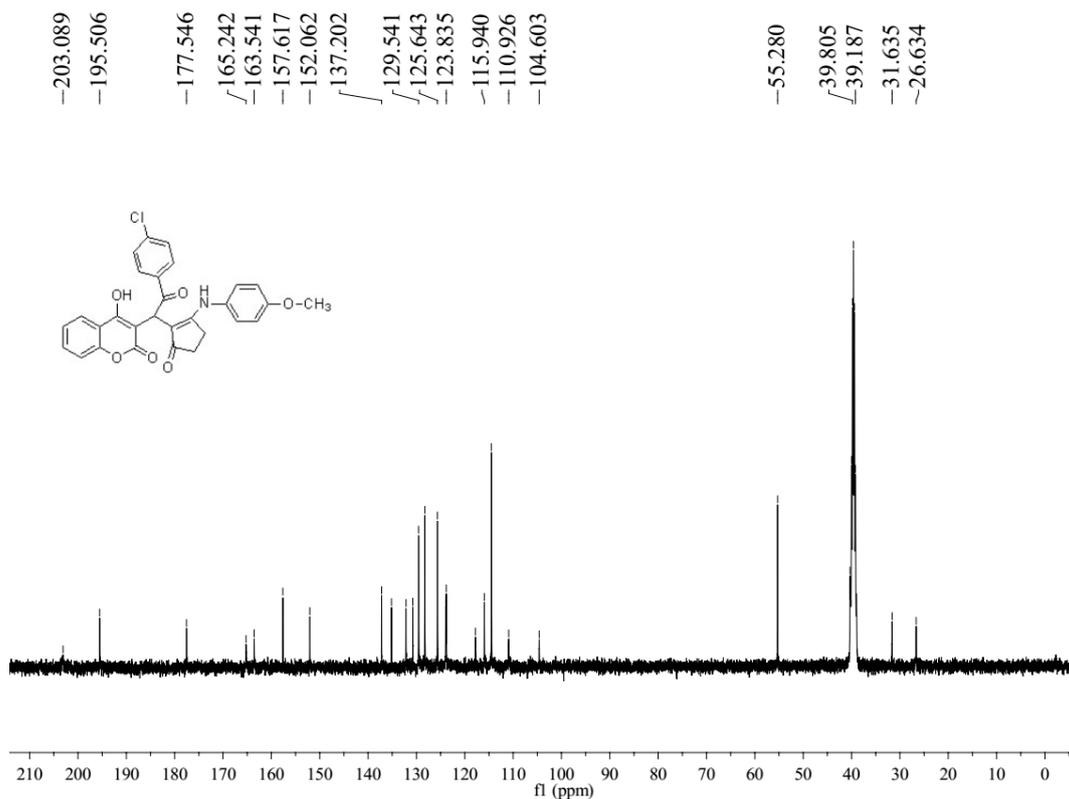
¹³C NMR of compound **4h**



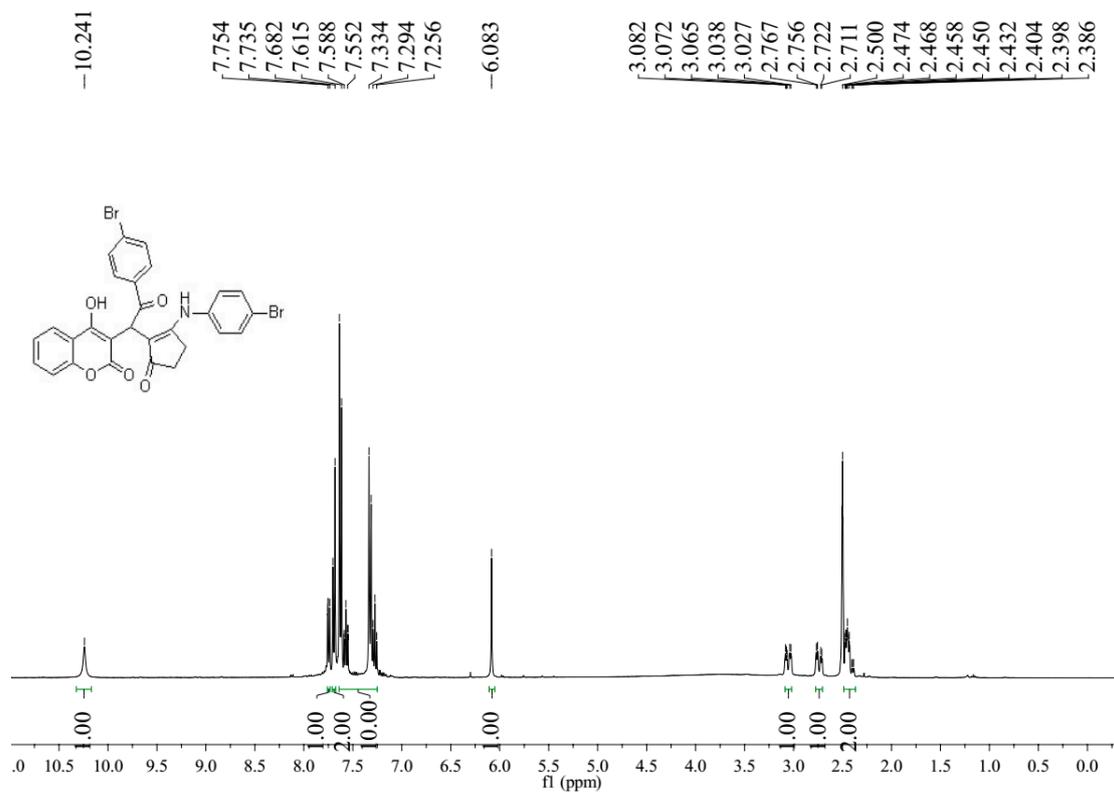
¹H NMR of compound **4i**



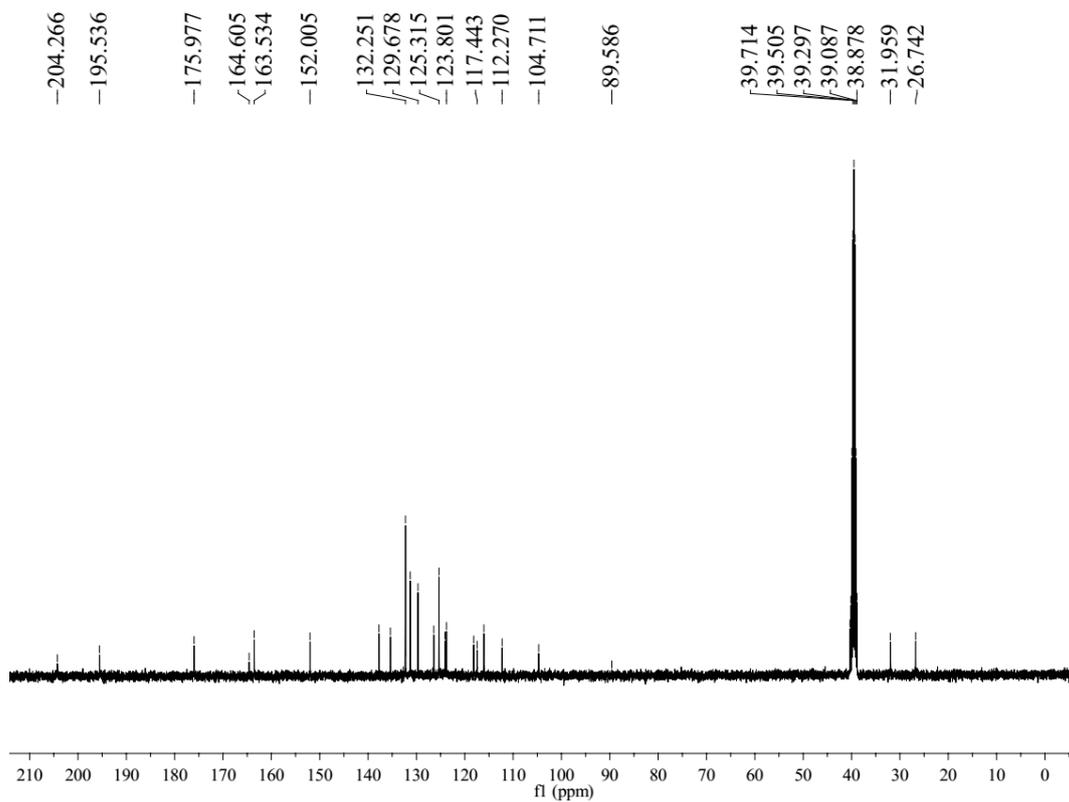
^{13}C NMR of compound **4i**



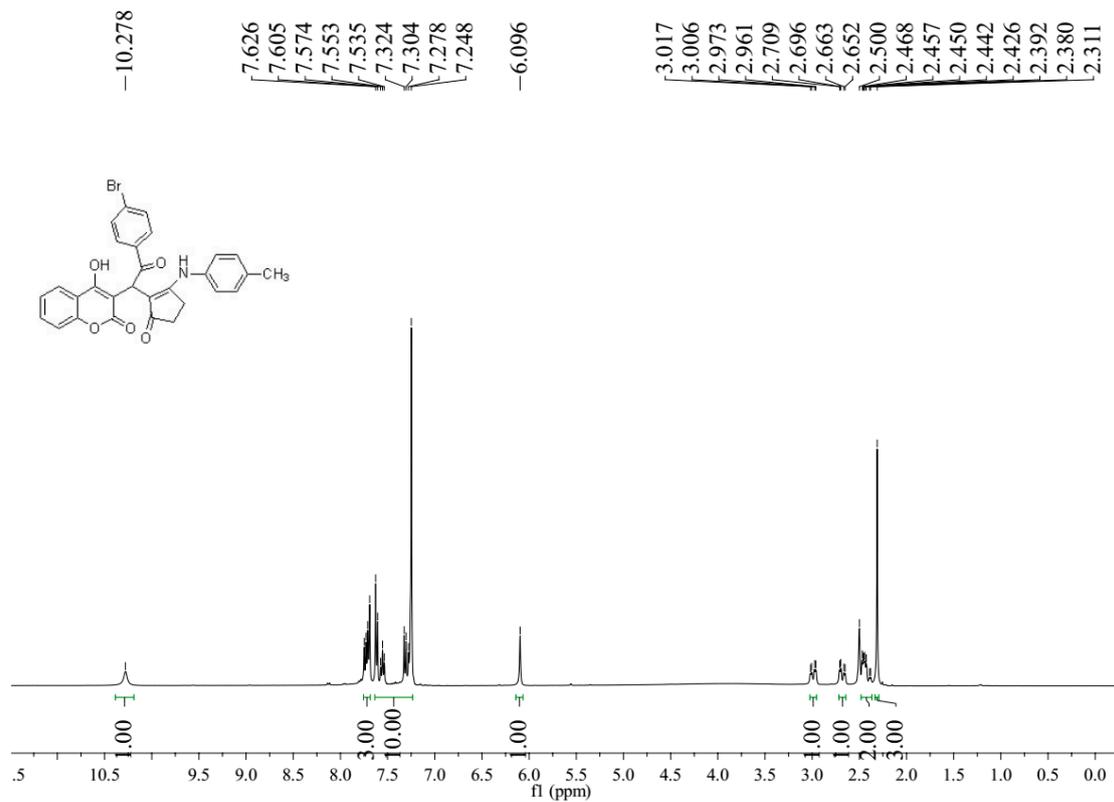
^1H NMR of compound **4j**



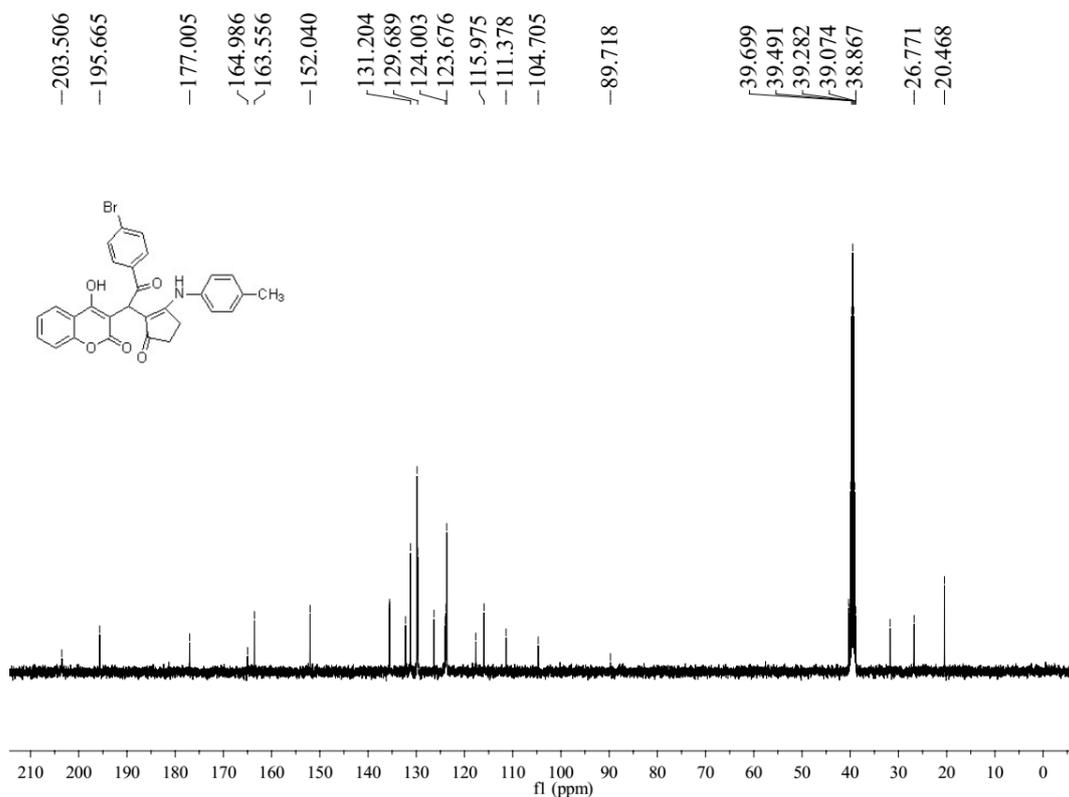
¹³C NMR of compound **4j**



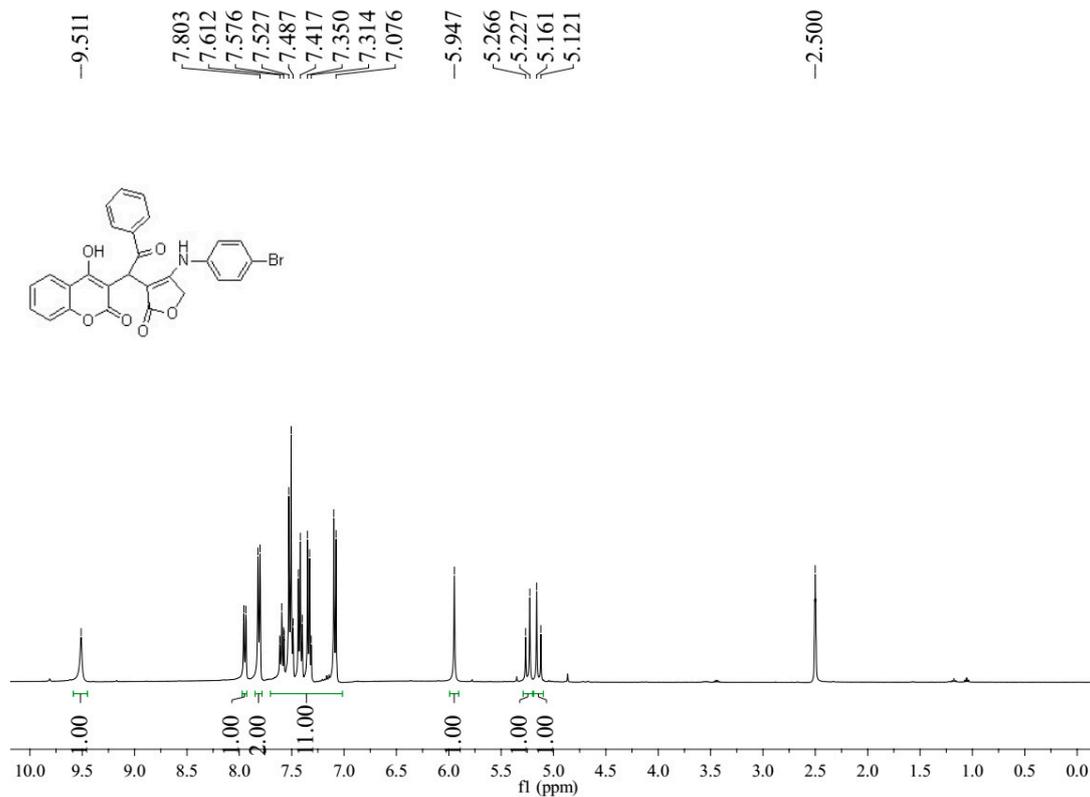
¹H NMR of compound **4k**



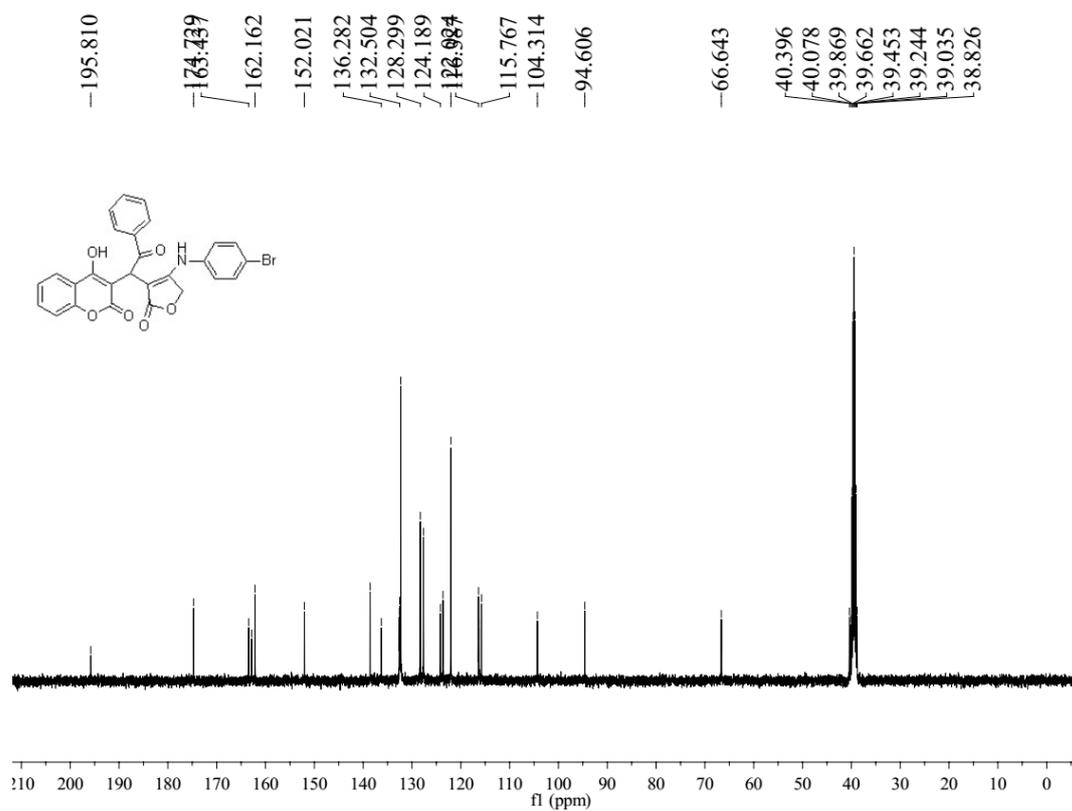
^{13}C NMR of compound **4k**



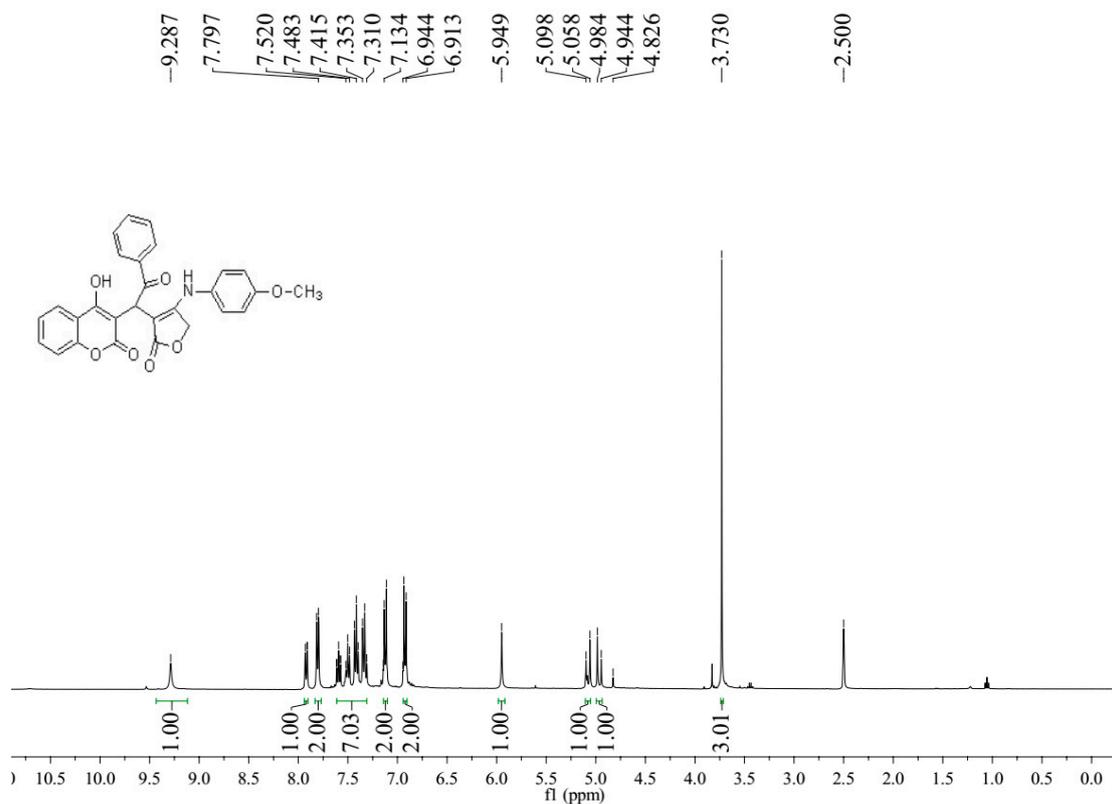
^1H NMR of compound **6a**



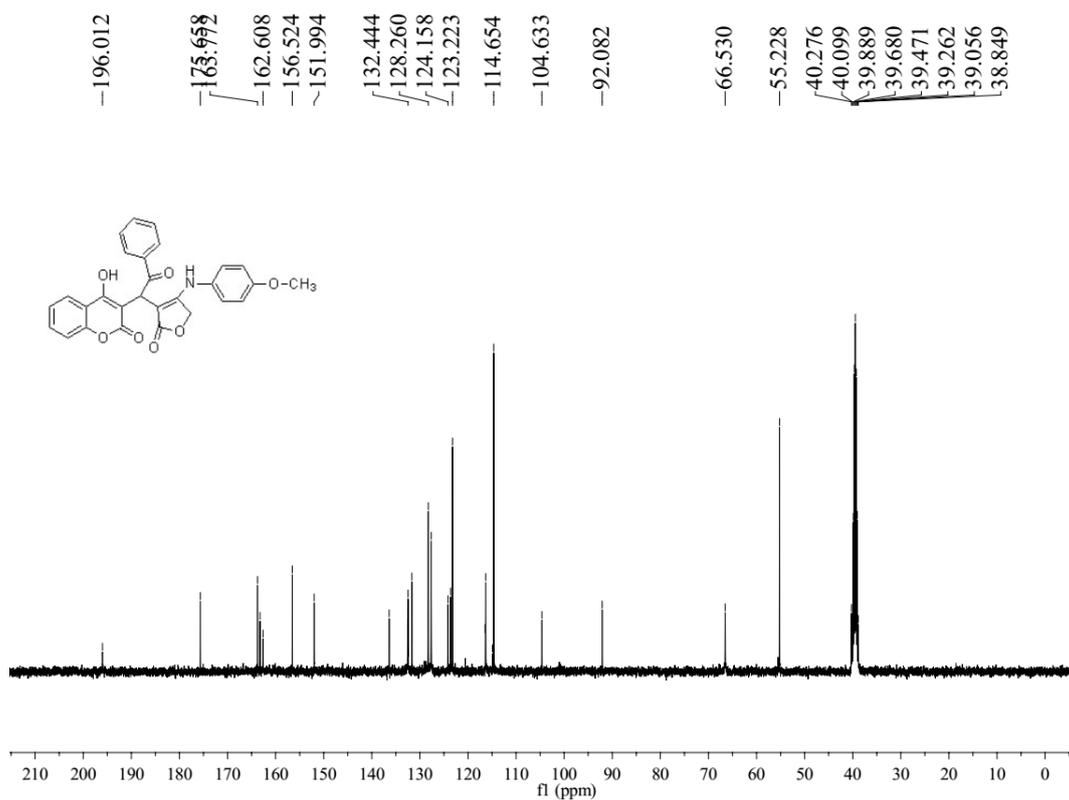
¹³C NMR of compound **6a**



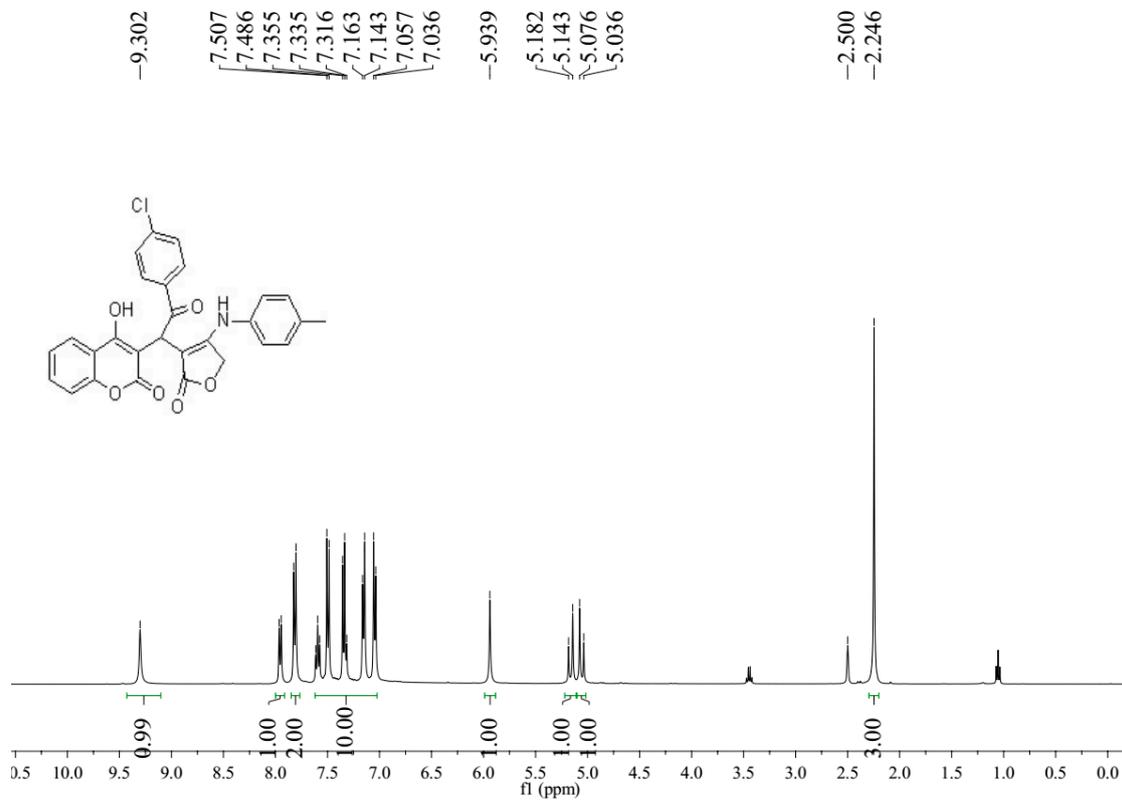
¹H NMR of compound **6b**



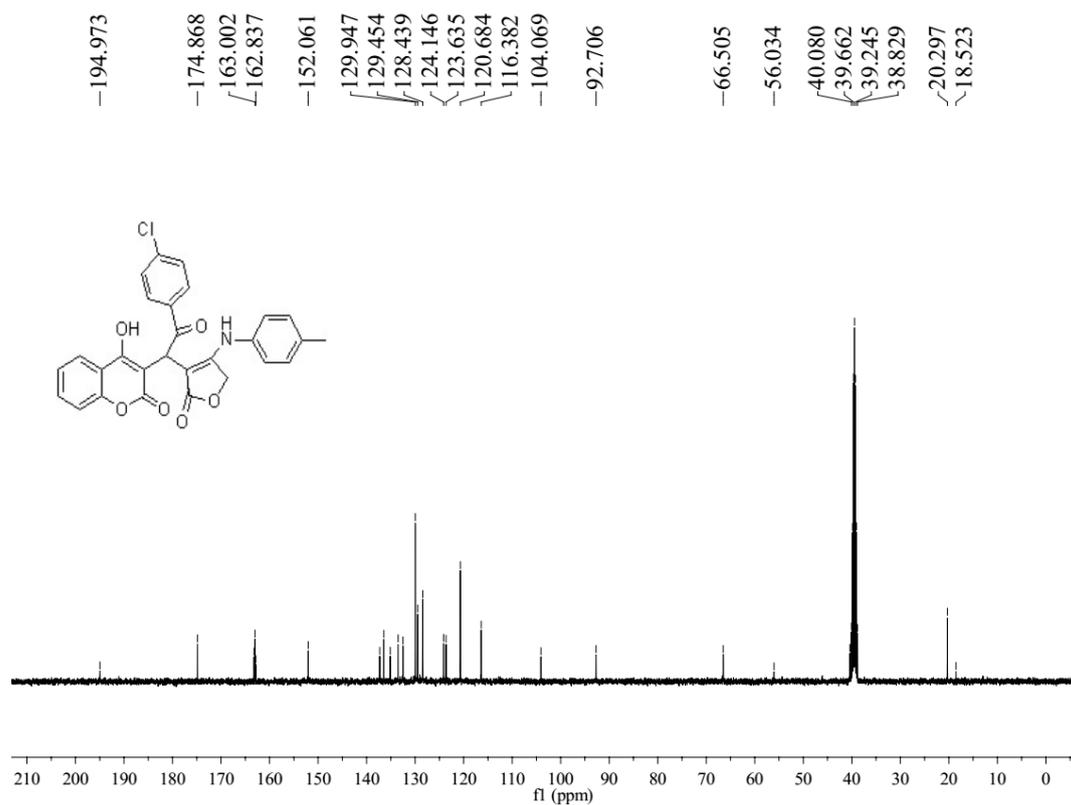
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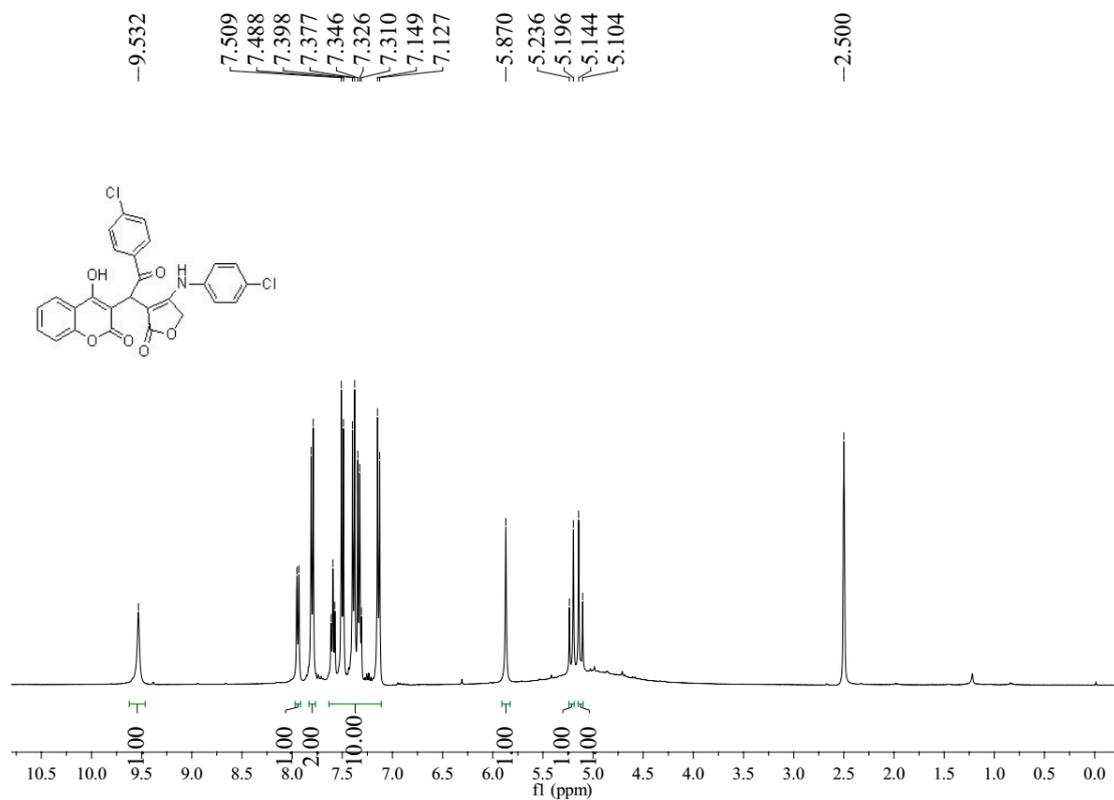
¹H NMR of compound **6c**



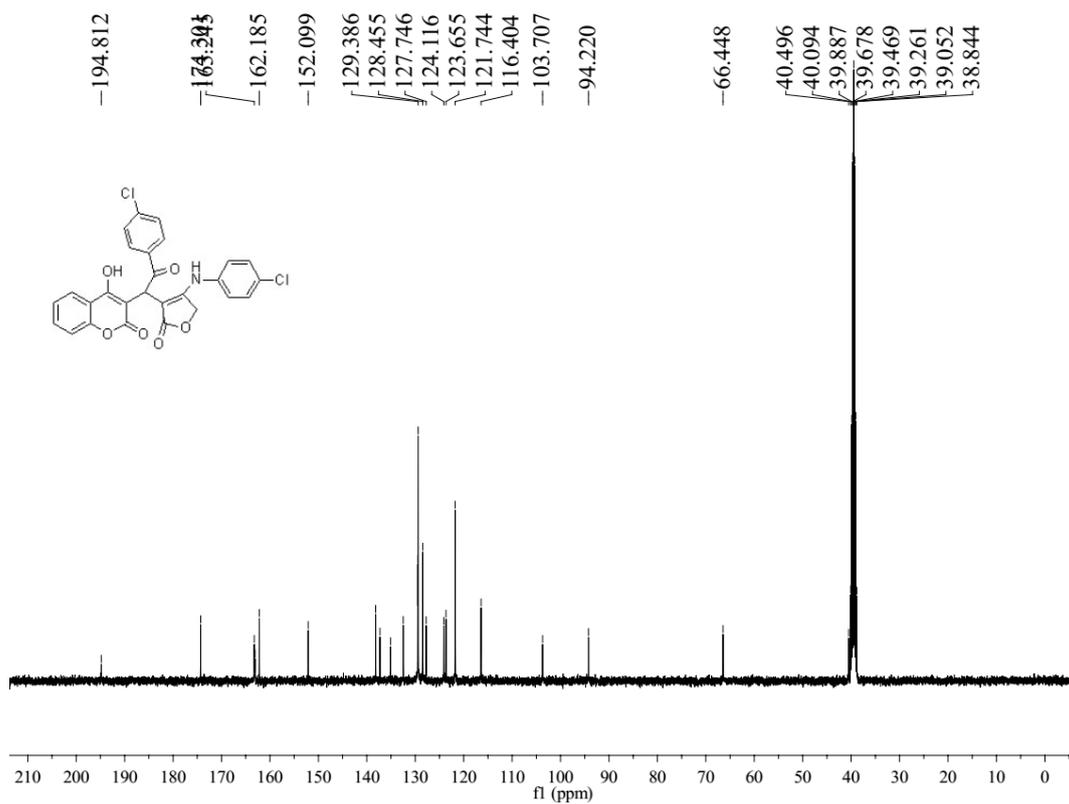
¹³C NMR of compound **6c**



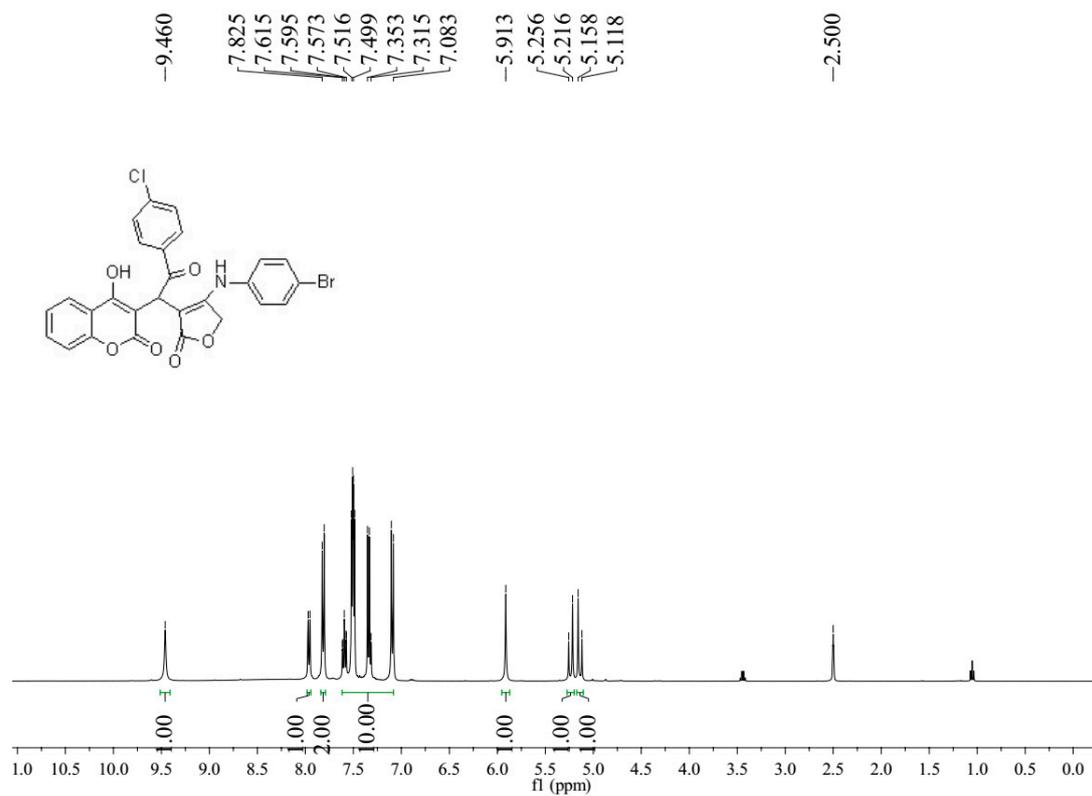
¹H NMR of compound **6d**



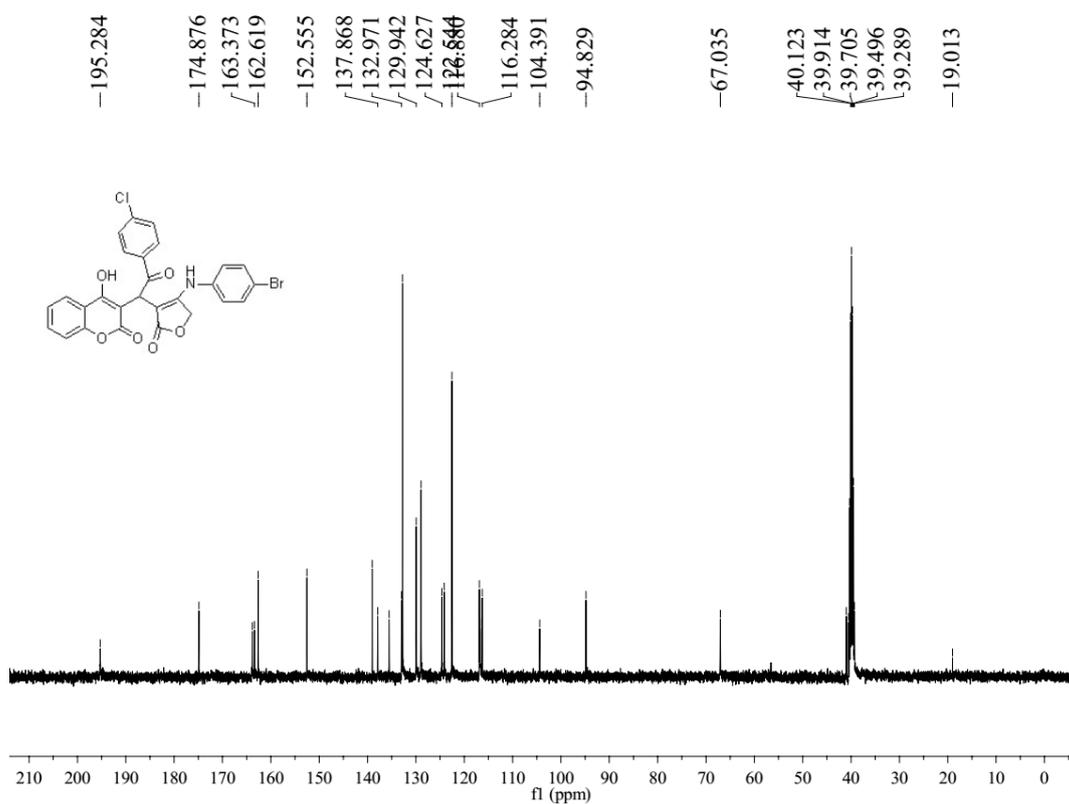
¹³C NMR of compound **6d**



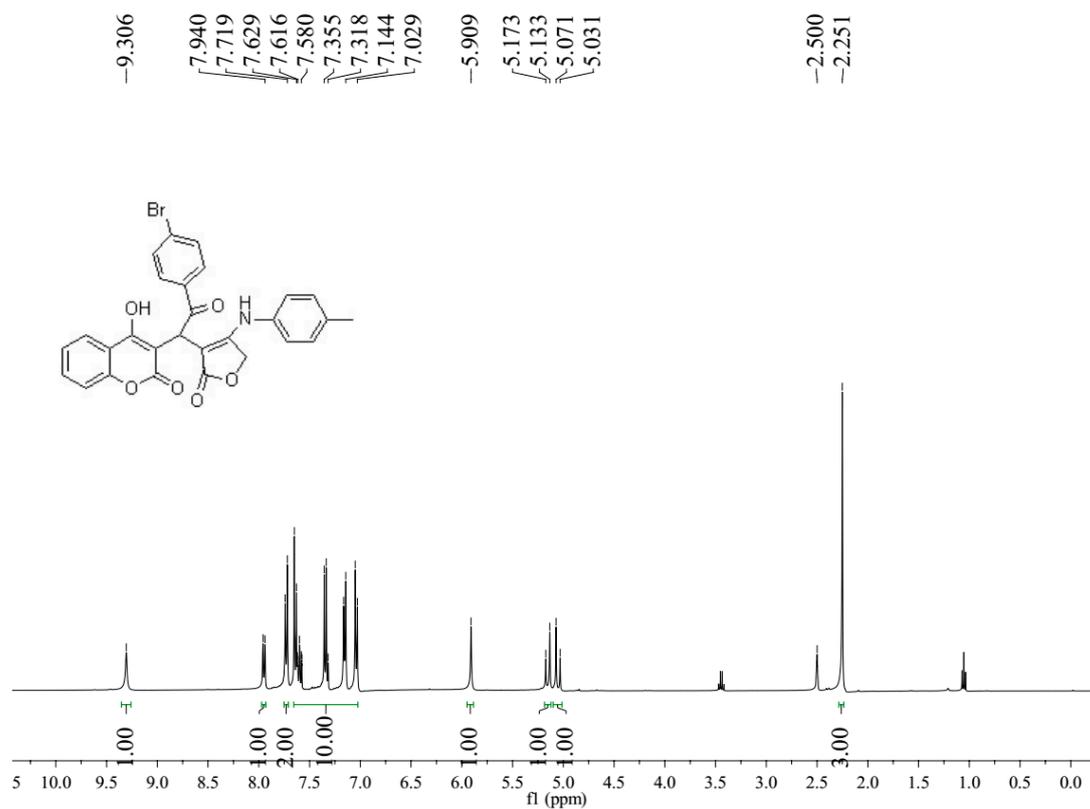
¹H NMR of compound **6e**



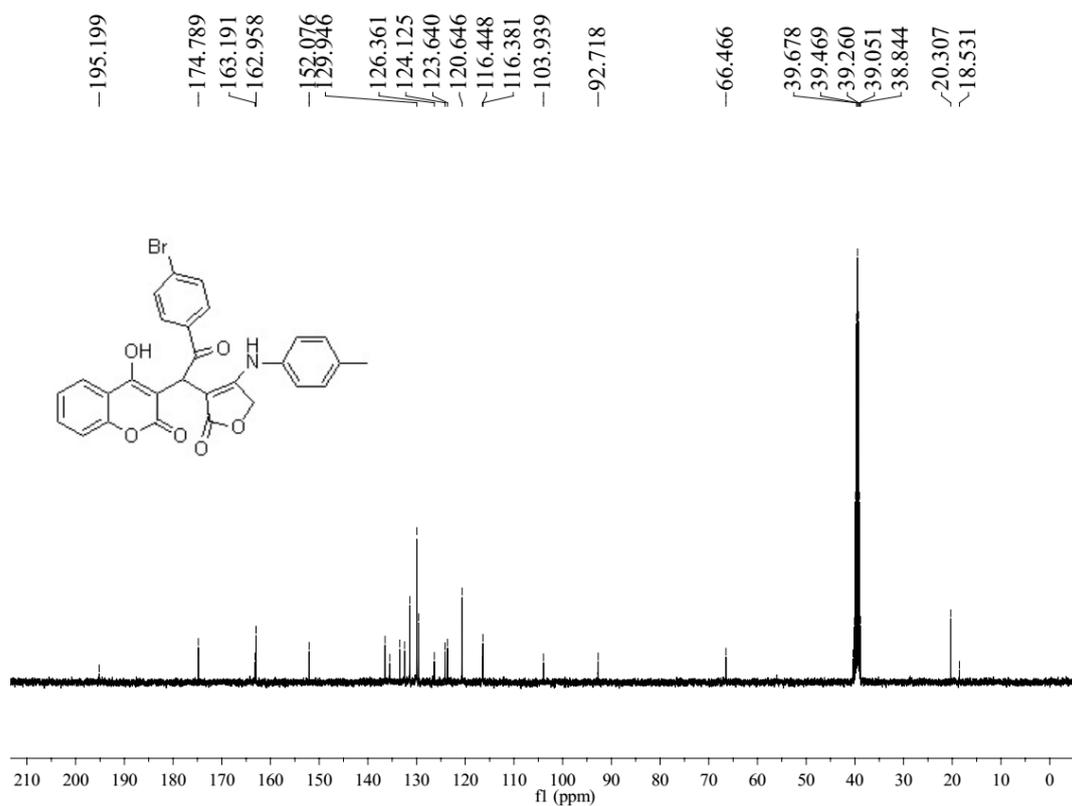
¹³C NMR of compound **6e**



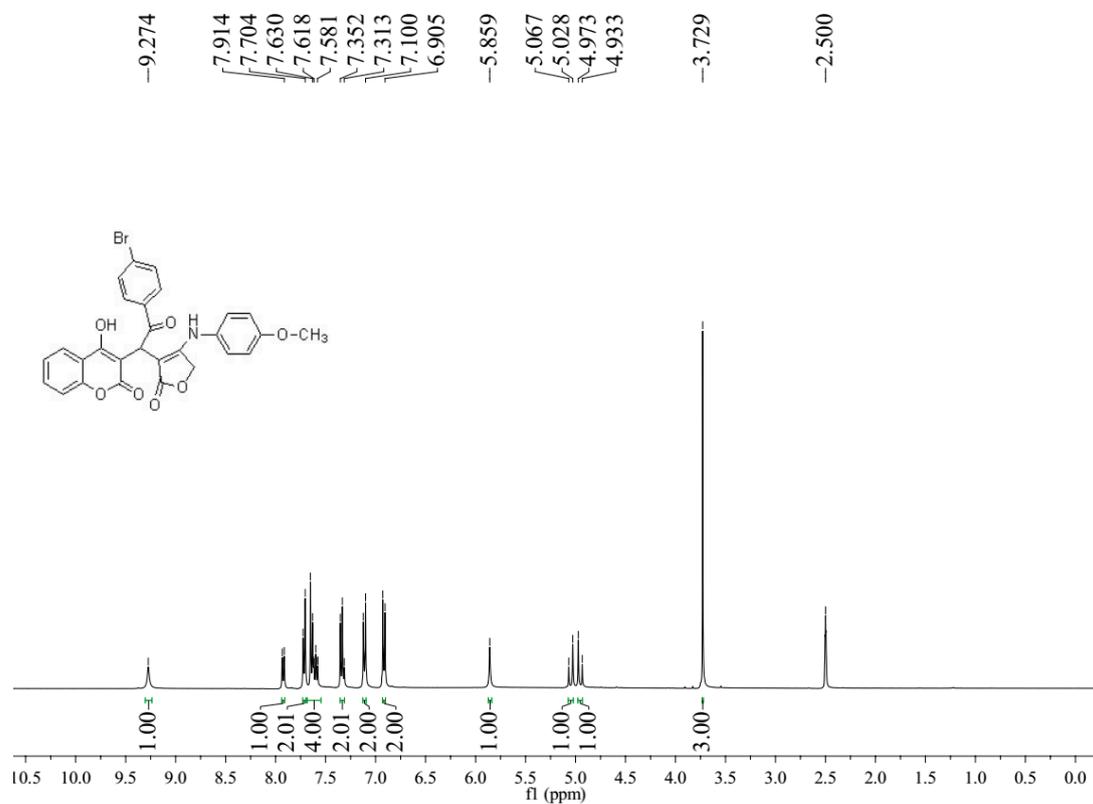
¹H NMR of compound **6f**



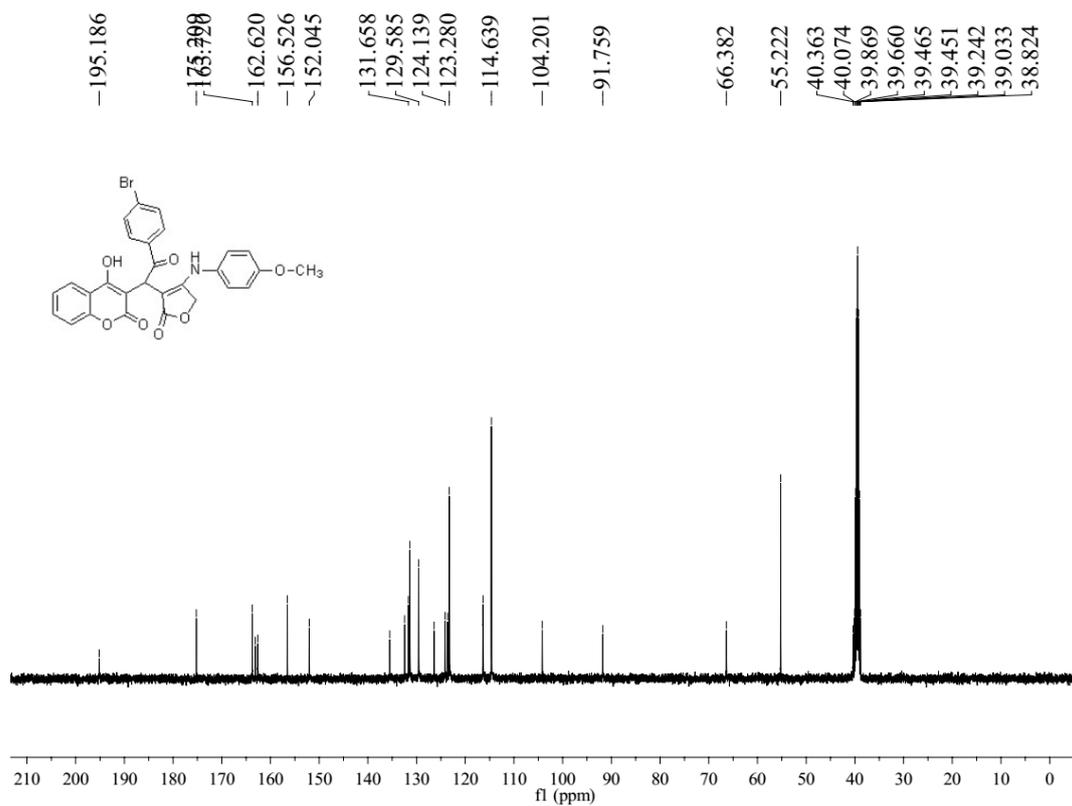
^{13}C NMR of compound **6f**



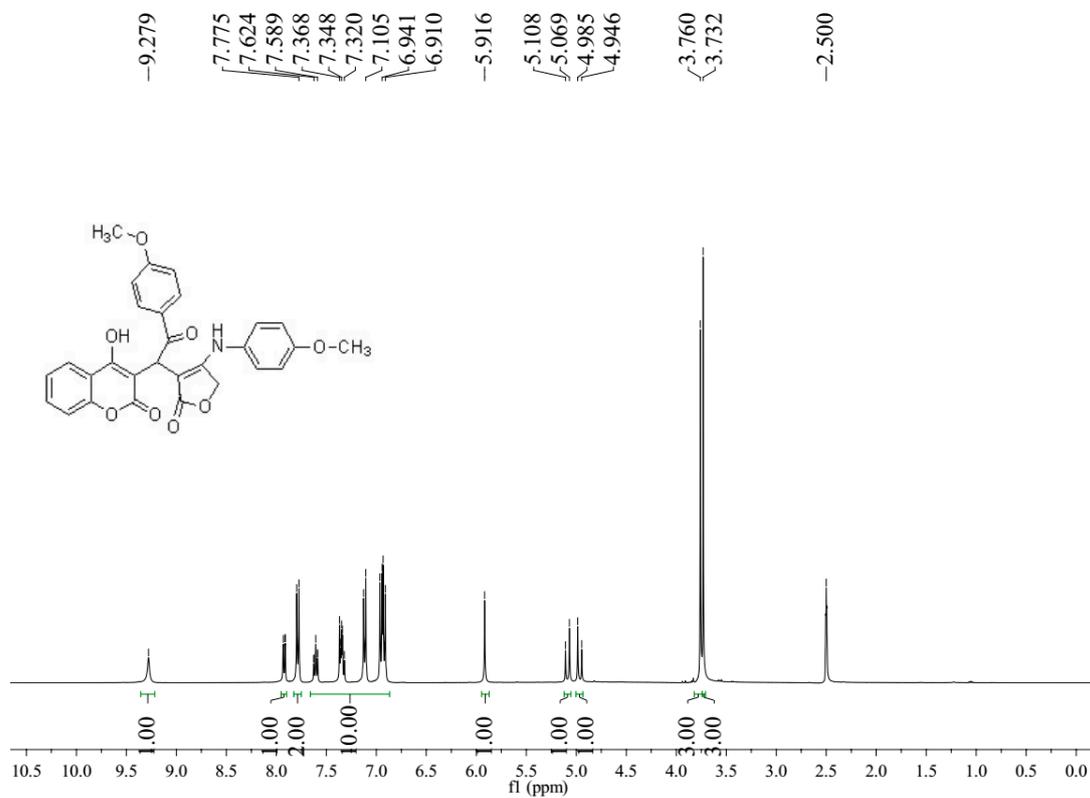
^1H NMR of compound **6g**



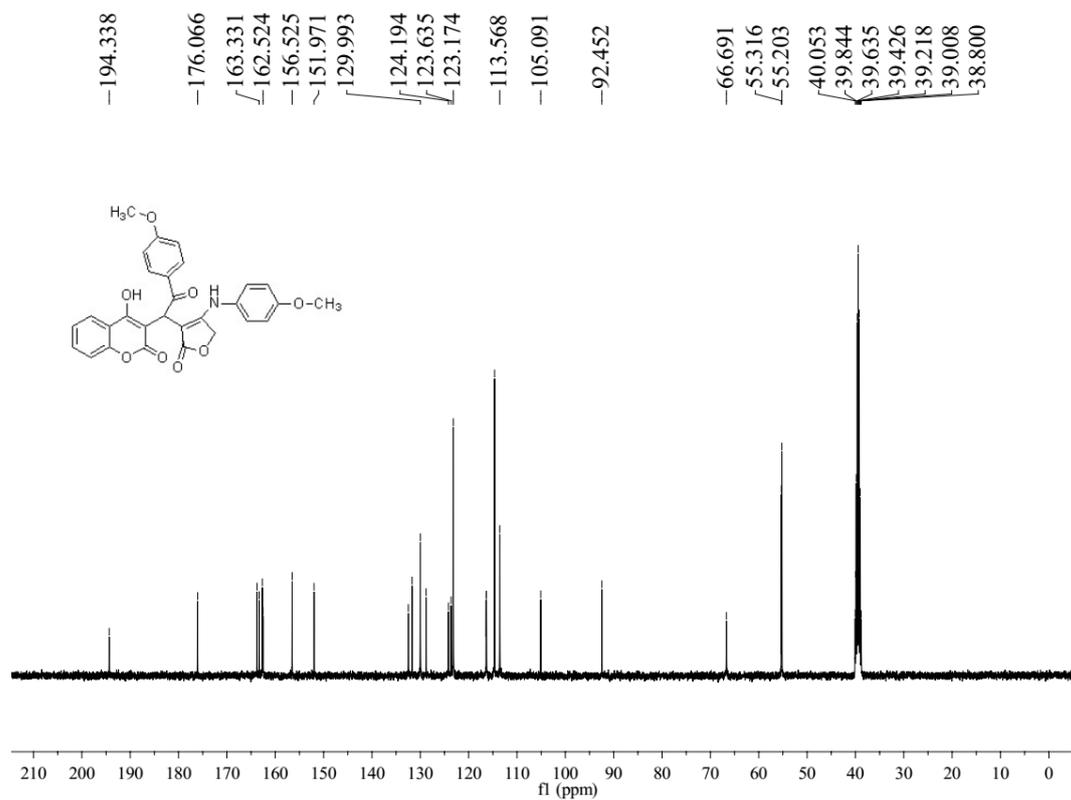
¹³C NMR of compound **6g**



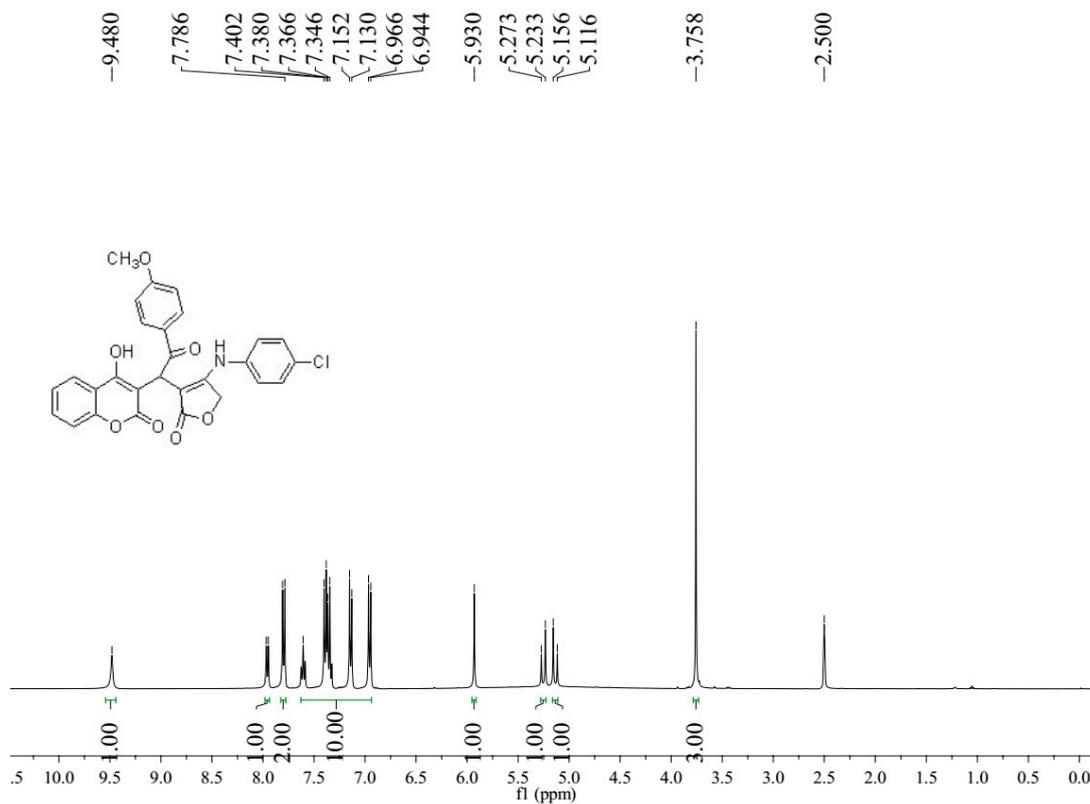
¹H NMR of compound **6h**



¹³C NMR of compound **6h**



¹H NMR of compound **6i**



¹³C NMR of compound **6i**

