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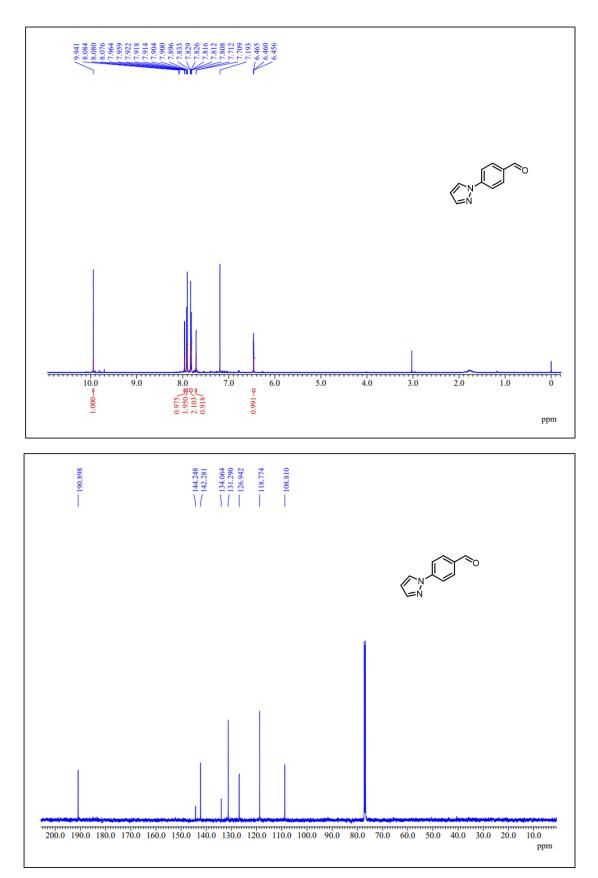
# Supporting File

# Novel Fused Pyran Derivatives Induce Apoptosis and Target Cell Cycle Progression in Anticancer Efficacy against Multiple Cell Lines

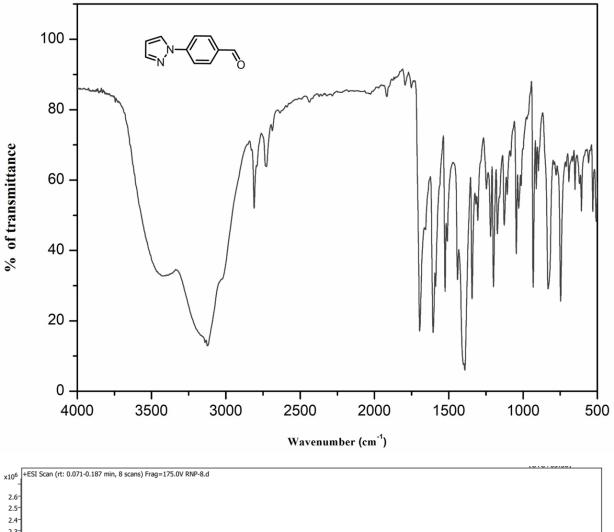
Fabitha K<sup>a</sup>, Anoop Kallingal,<sup>b</sup> Natalia Maciejewska<sup>b</sup>, Arya C G<sup>a</sup>, Munugala Chandrakanth<sup>a</sup>, Neethu Mariam Thomas<sup>a</sup>, Yupeng Li<sup>c</sup>, Ramesh Gondru<sup>d</sup>, Manne Munikumar<sup>d</sup>, Janardhan Banothu<sup>a</sup>\*

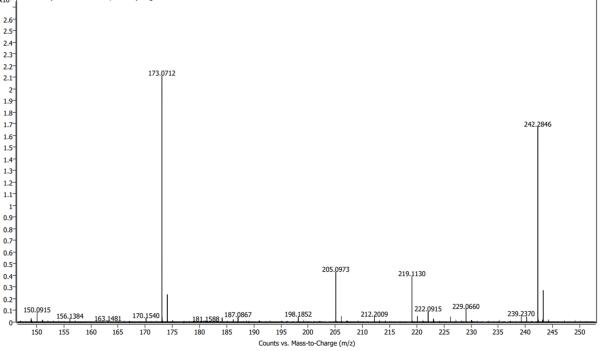
<sup>1</sup>H NMR, <sup>13</sup>C NMR, FT-IR, and LC-HRMS spectra of the compounds **3a-e**, **6a-e**, **8a-e**, **10a-e**, **12a-e** and **14a-e**.

# <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **3a**

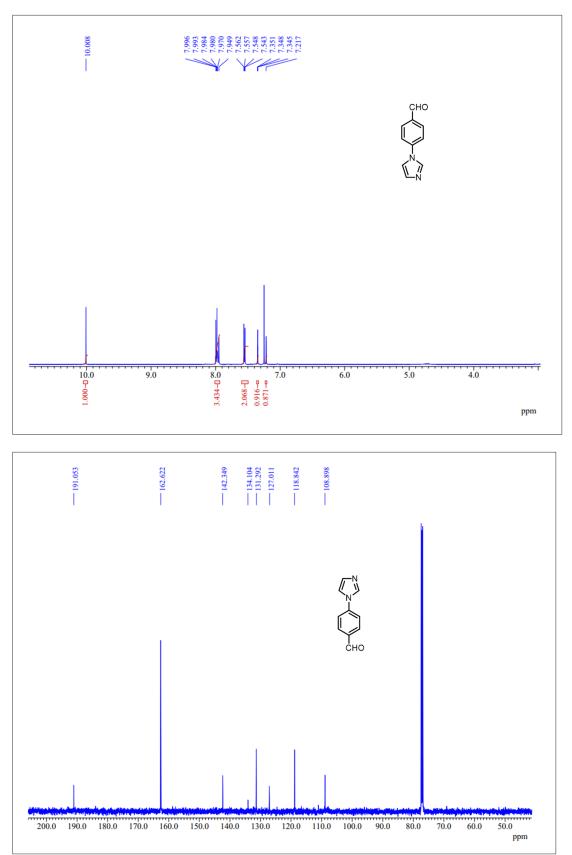


### FTIR and HRMS Spectrum of compound 3a

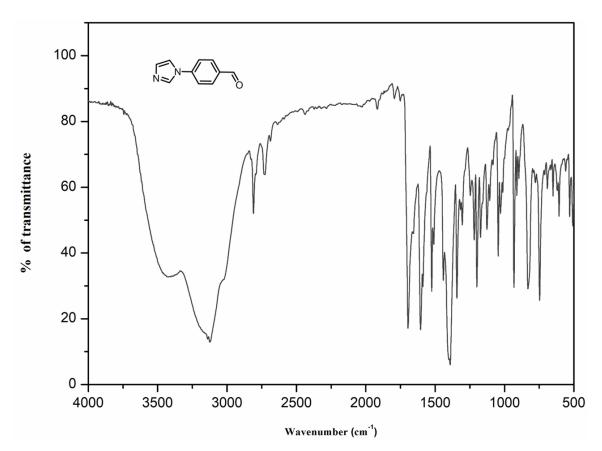


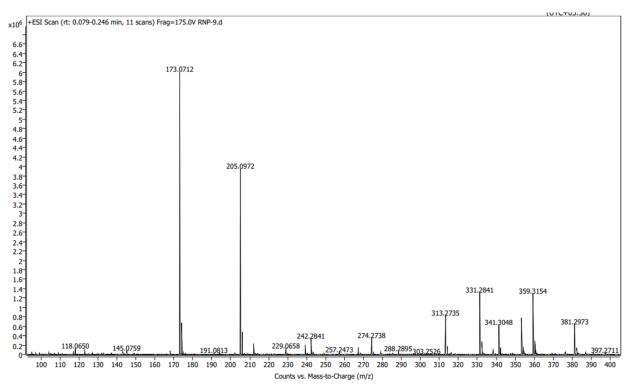


# <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **3b**

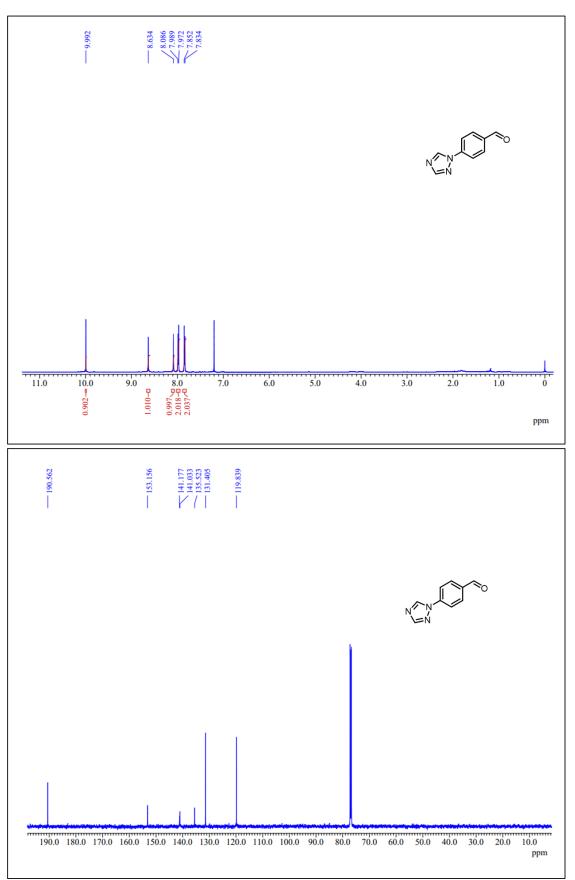


## FTIR and HRMS Spectrum of compound 3b

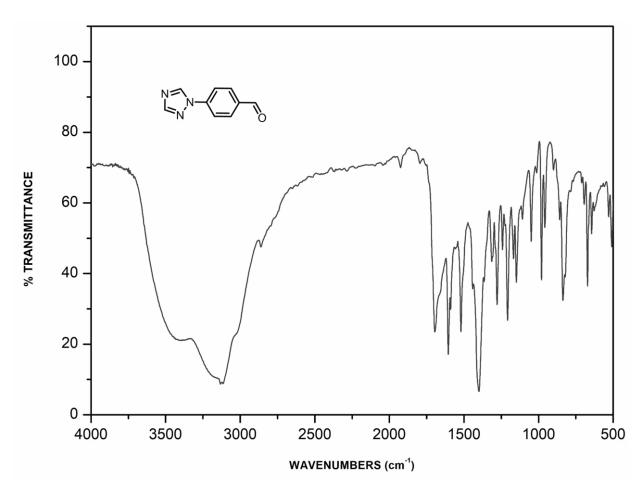


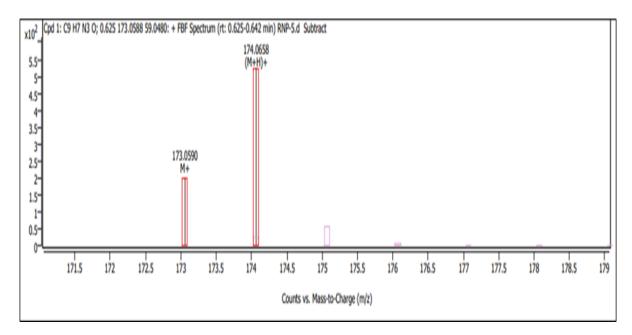


# <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **3c**

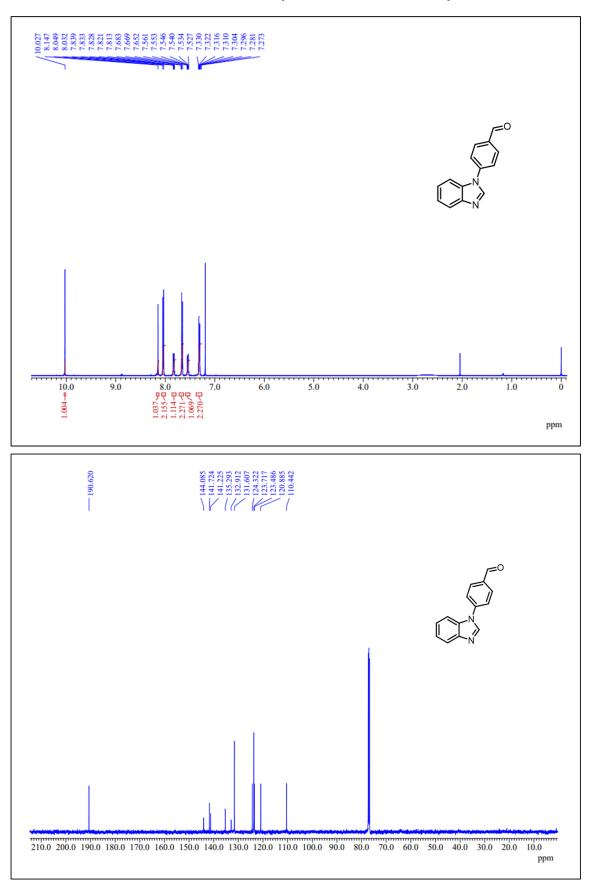


### FTIR and HRMS Spectrum of compound 3c

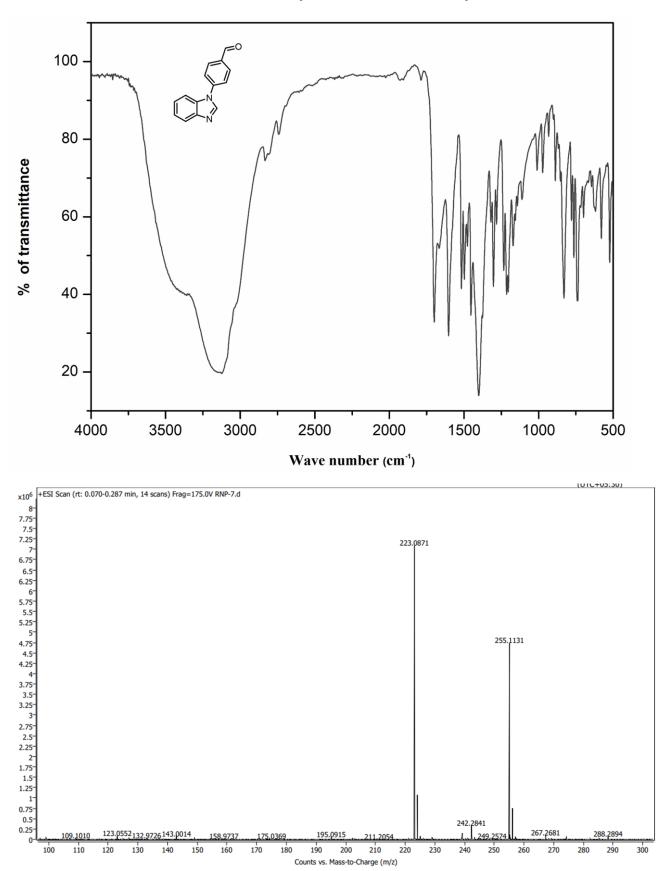




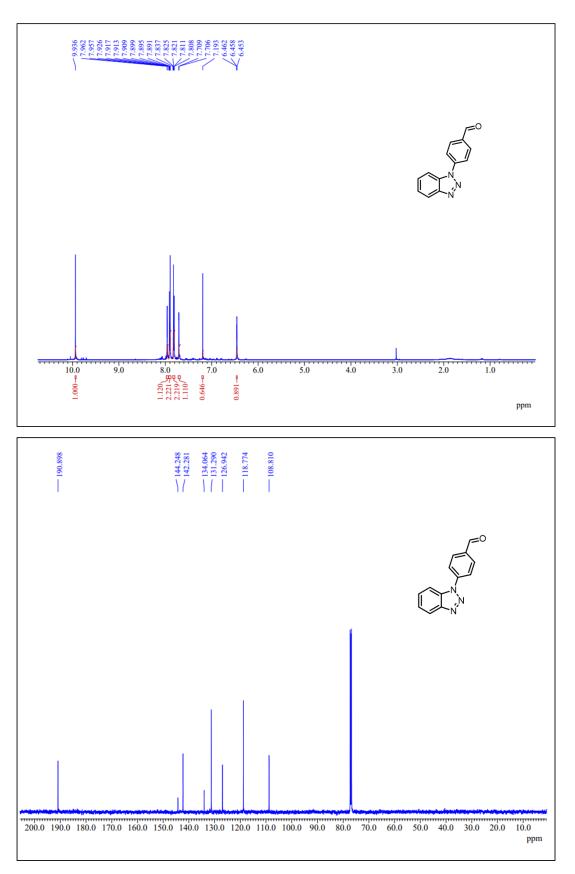
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **3d** 



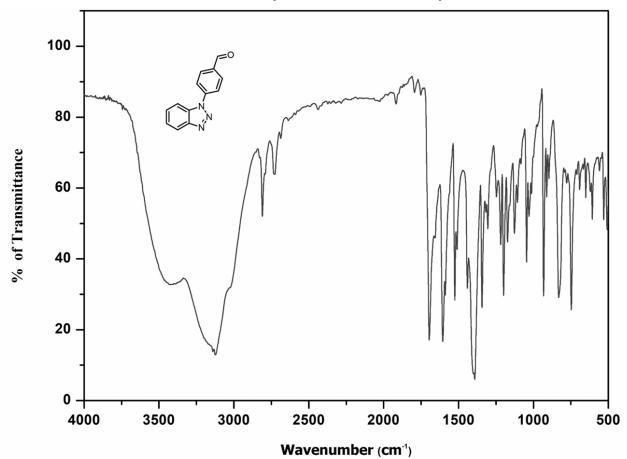
### FTIR and HRMS Spectrum of compound 3d

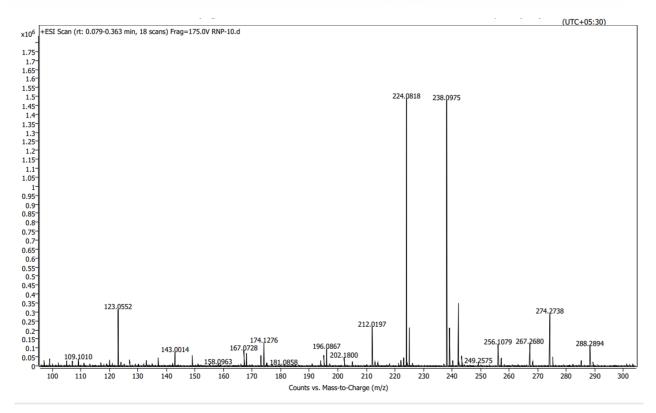


# <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **3e**

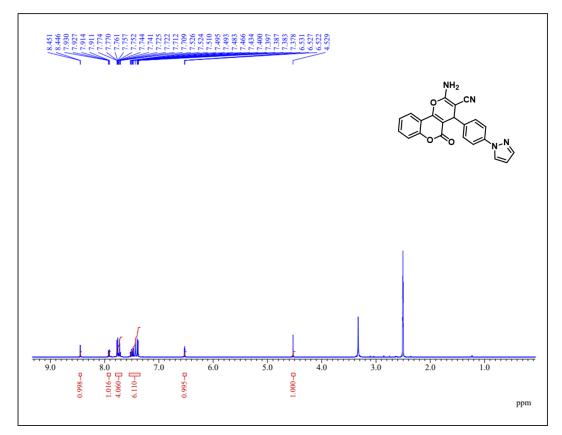


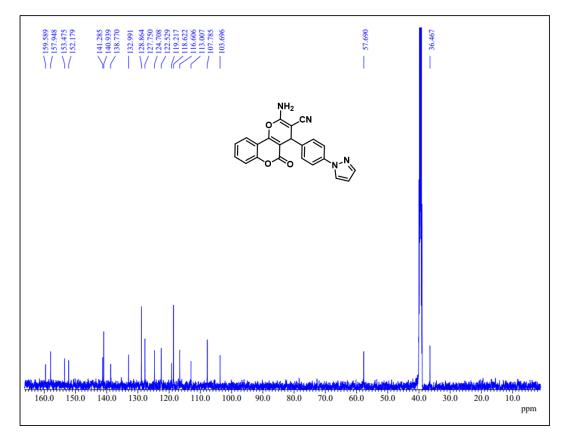
### FTIR and HRMS Spectrum of compound 3e



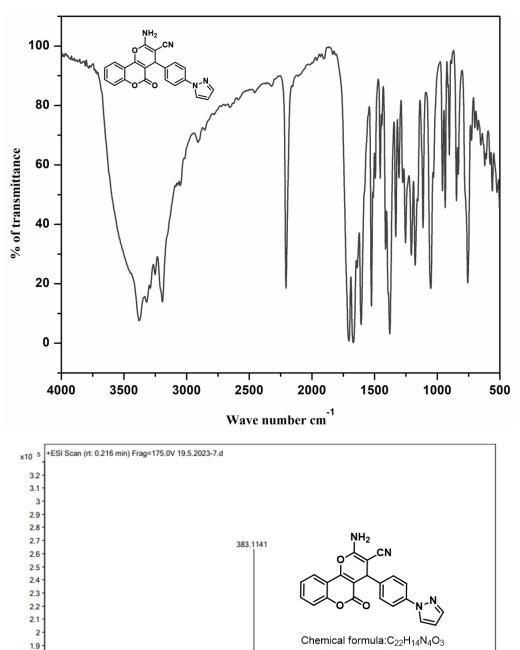


#### <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **6a**





FTIR and HRMS Spectrum of compound 6a

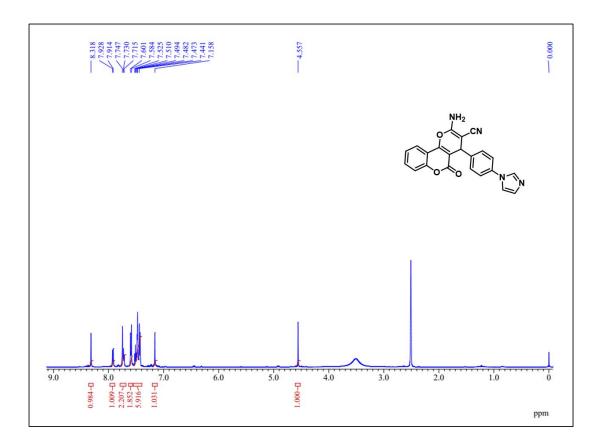


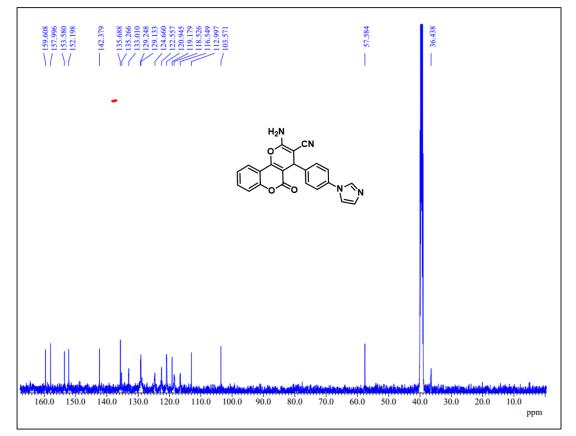
Exact mass:383.1139

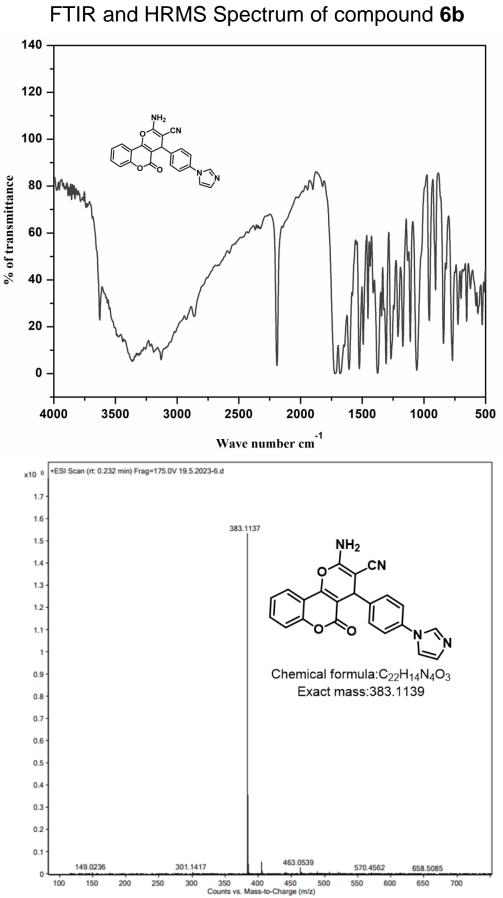
1.7 1.6 1.5 1.4 1.3 405.0957 1.2 1.1 1 0.9 0.8 0.7 0.6 441.1667 0.5 0.4 0.3 421.0696 301.1411 338.2313 360.1342 463.0539 496.4201 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 Counts vs. Mass-to-Charge (m/z)

1.8

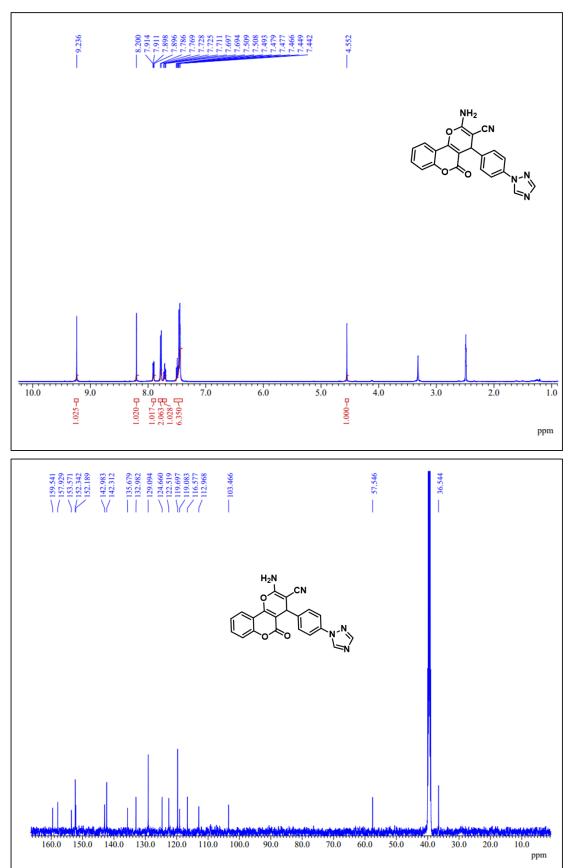
#### <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **6b**



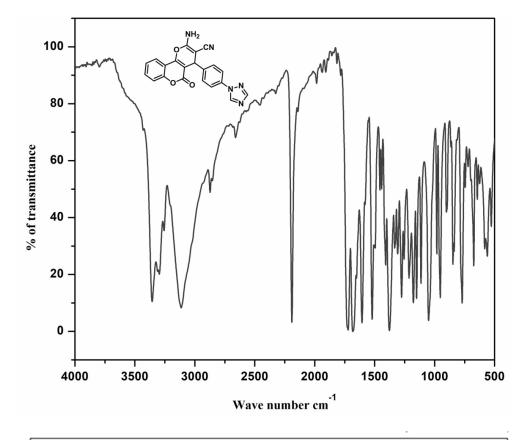


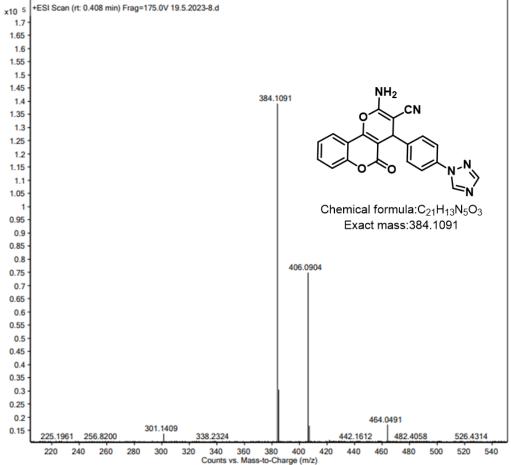


#### <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **6C**



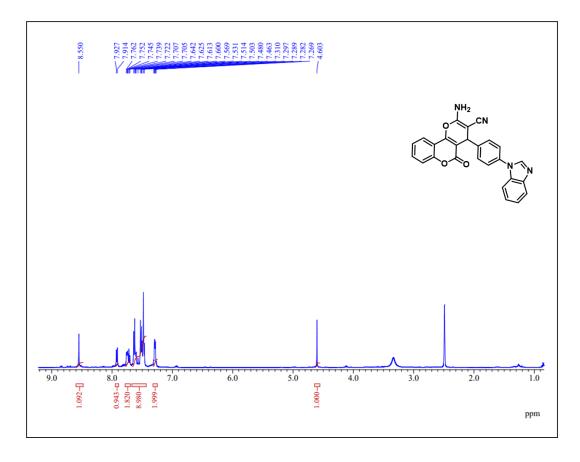
FTIR and HRMS Spectrum of compound 6C

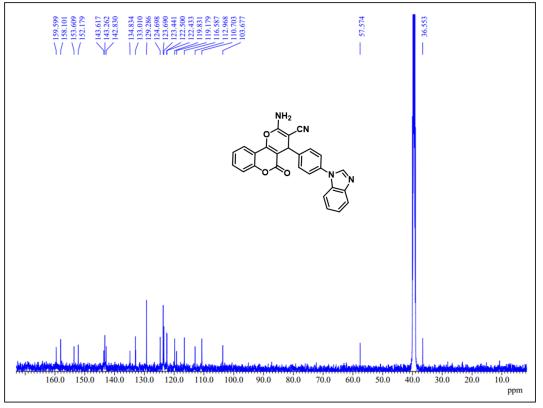




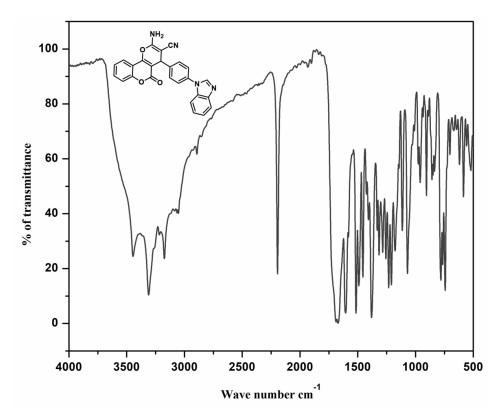
17

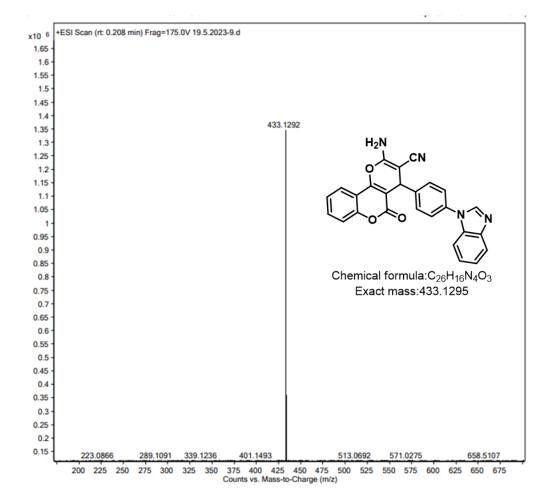
#### <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **6d**



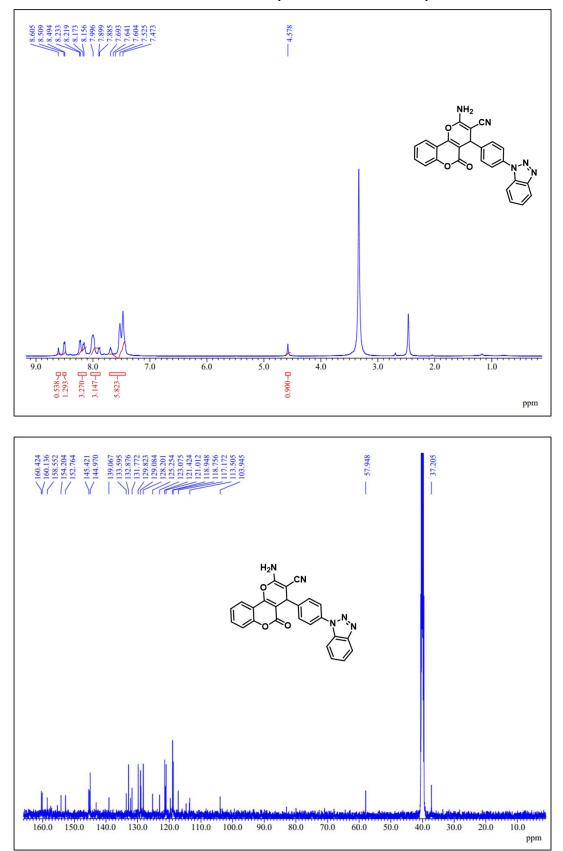


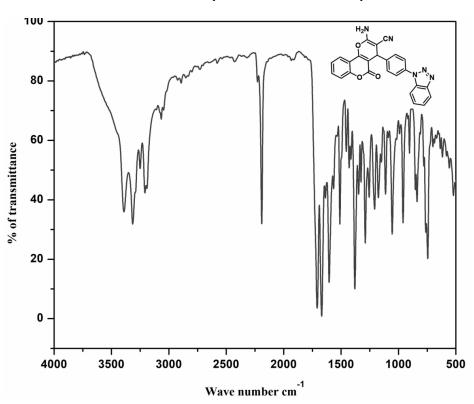
FTIR and HRMS Spectrum of compound 6d

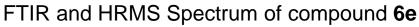


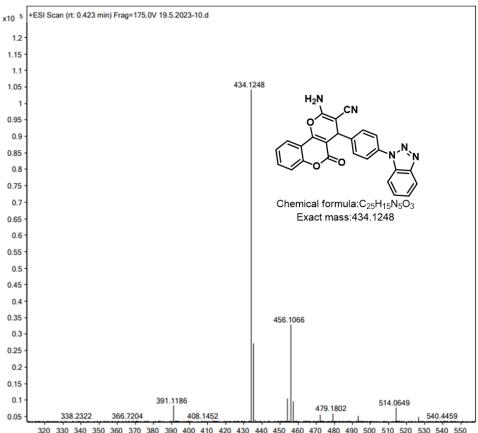


<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **6e** 

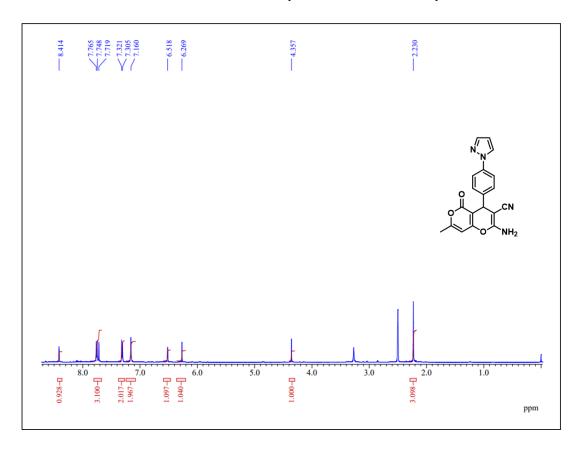


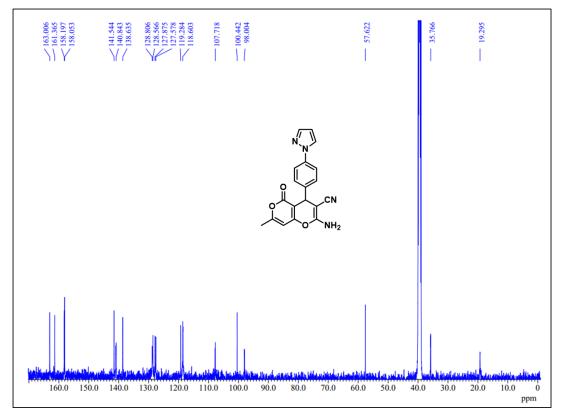




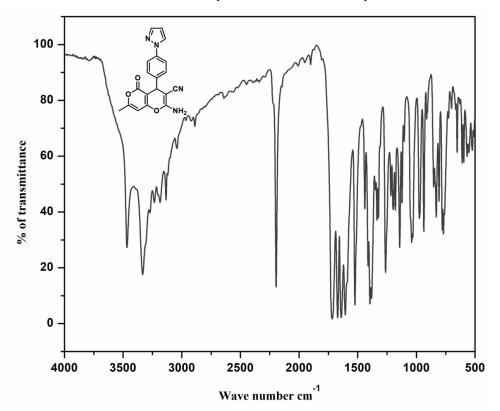


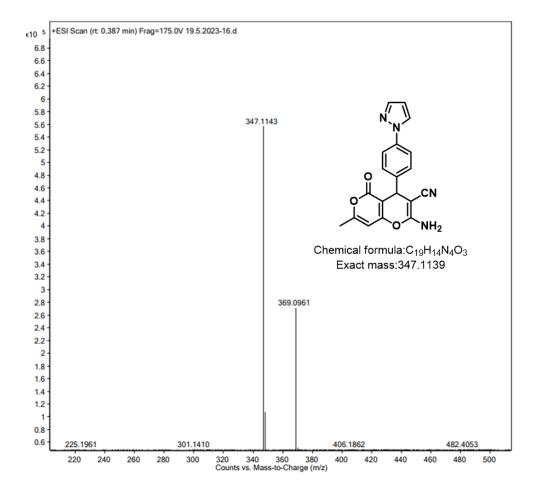
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound 8a



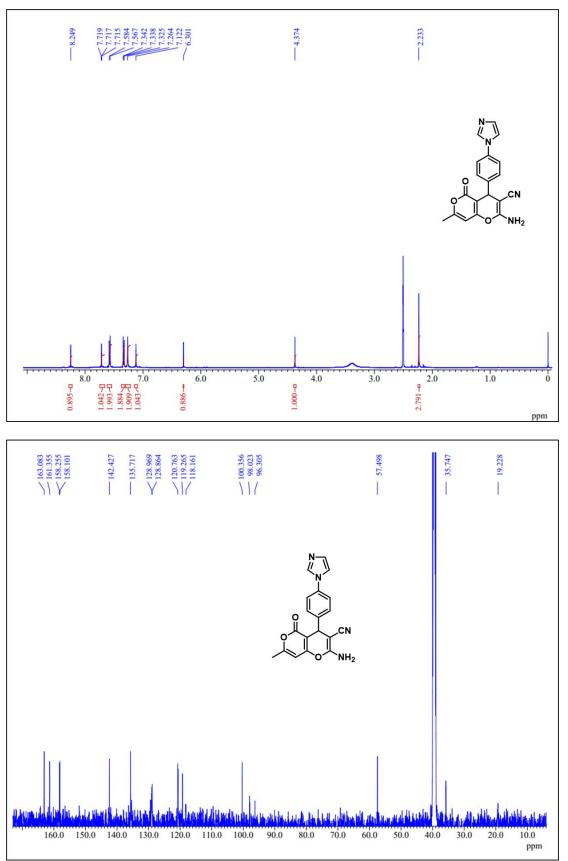


FTIR and HRMS Spectrum of compound 8a

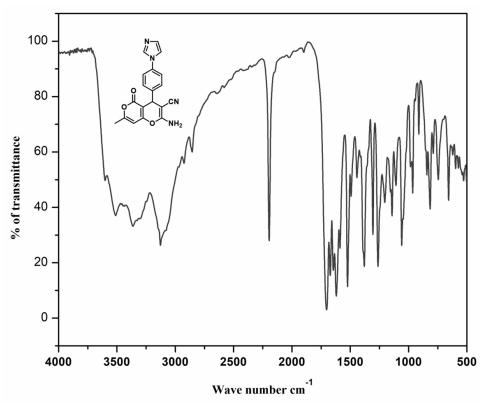


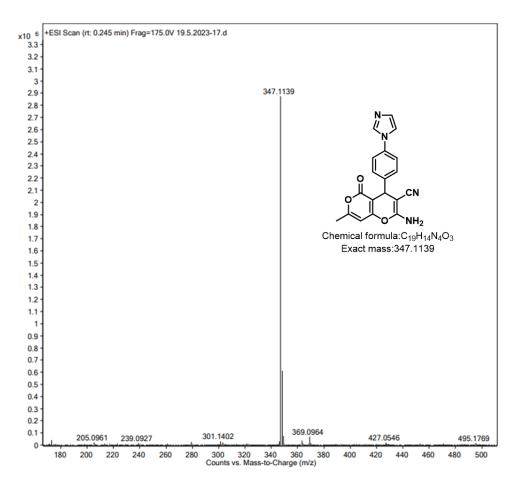


### <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **8b**

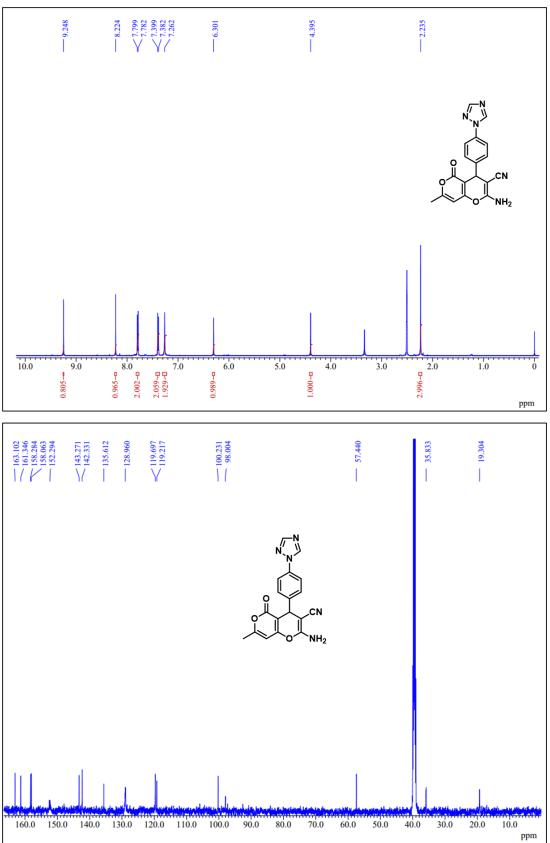


FTIR and HRMS Spectrum of compound 8b

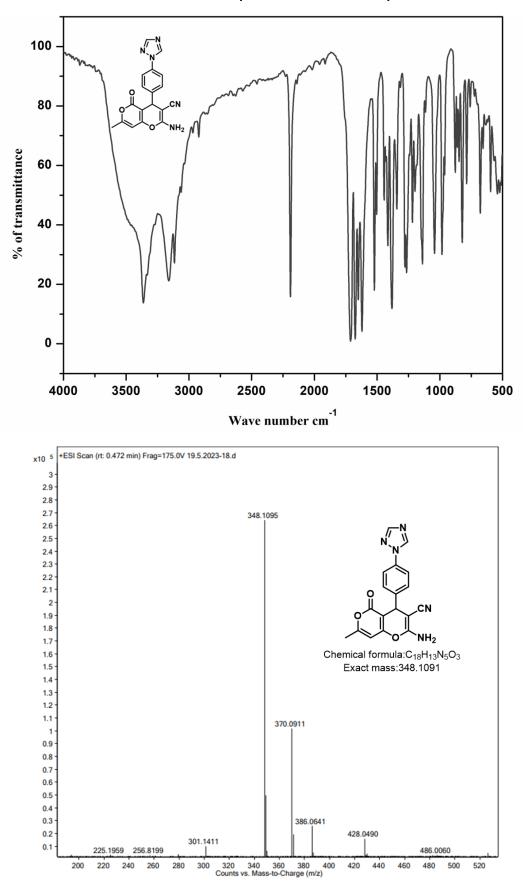




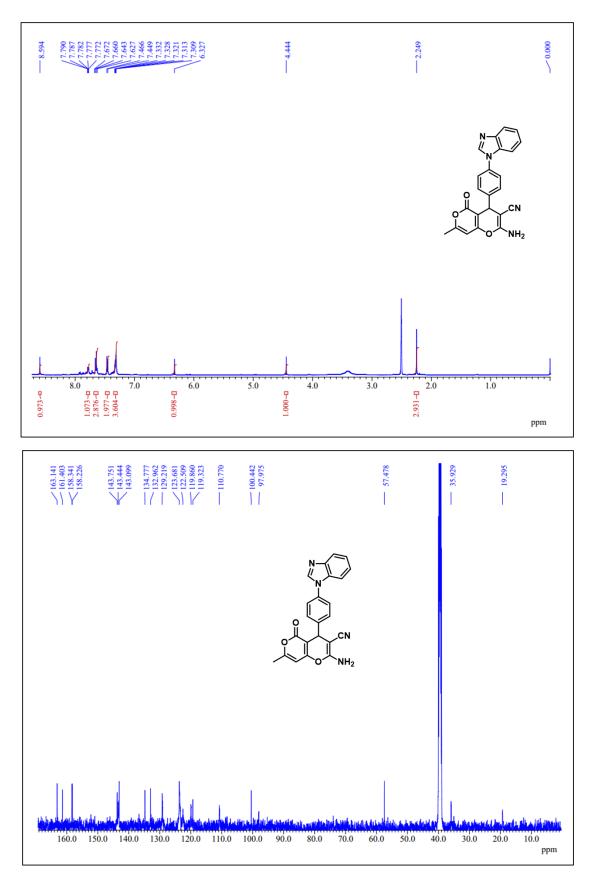
### <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **8C**



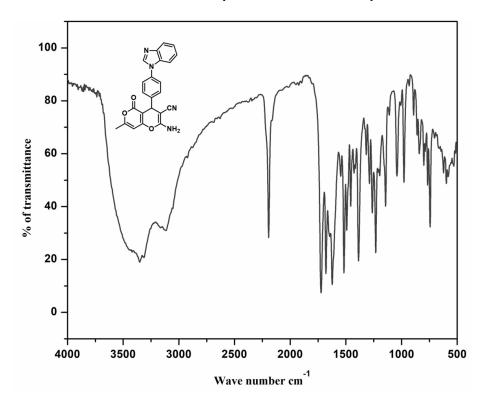
FTIR and HRMS Spectrum of compound 8c

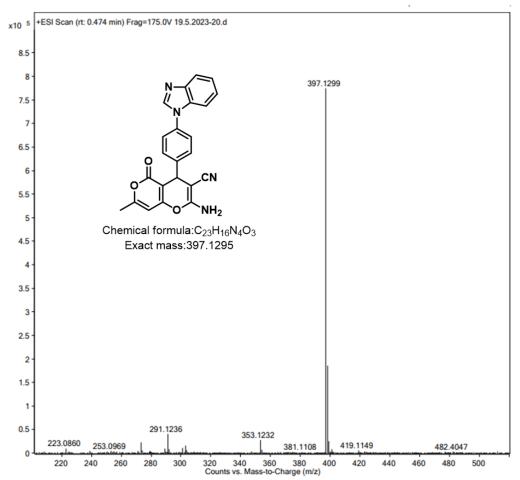


## <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound 8d

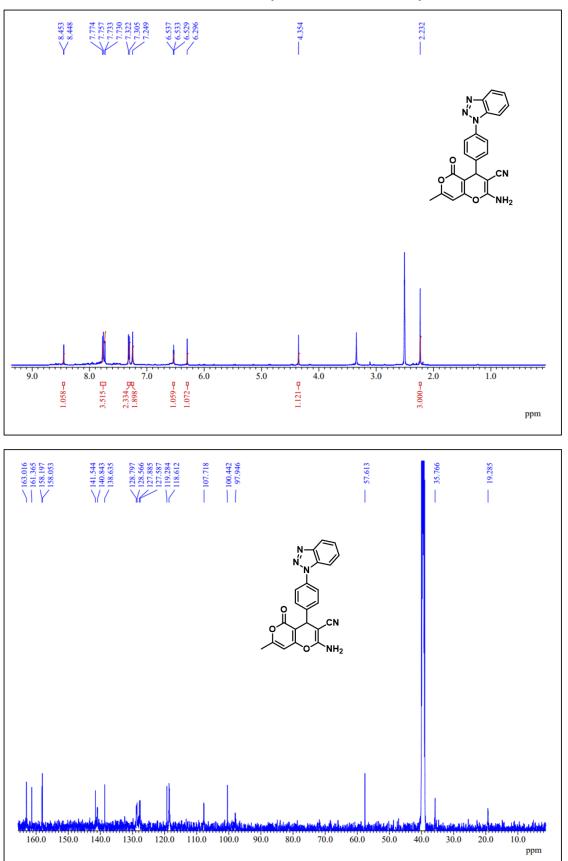


FTIR and HRMS Spectrum of compound 8d

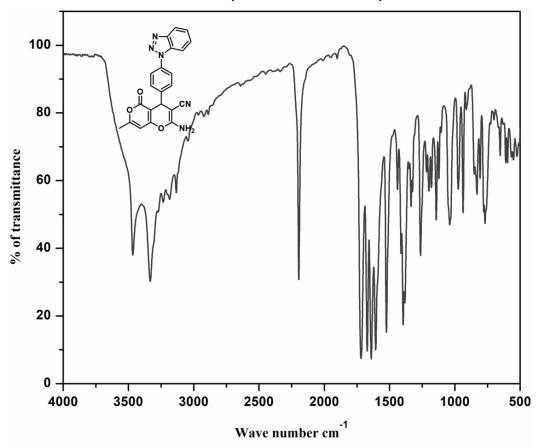


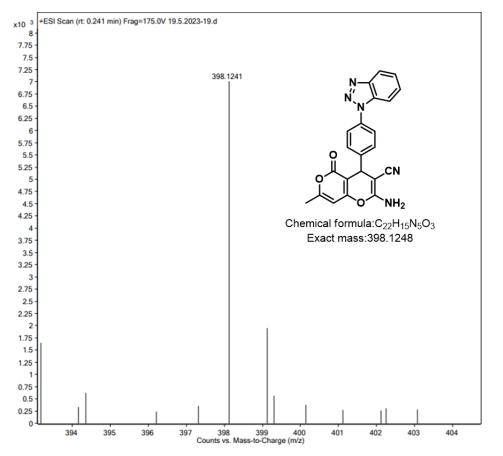


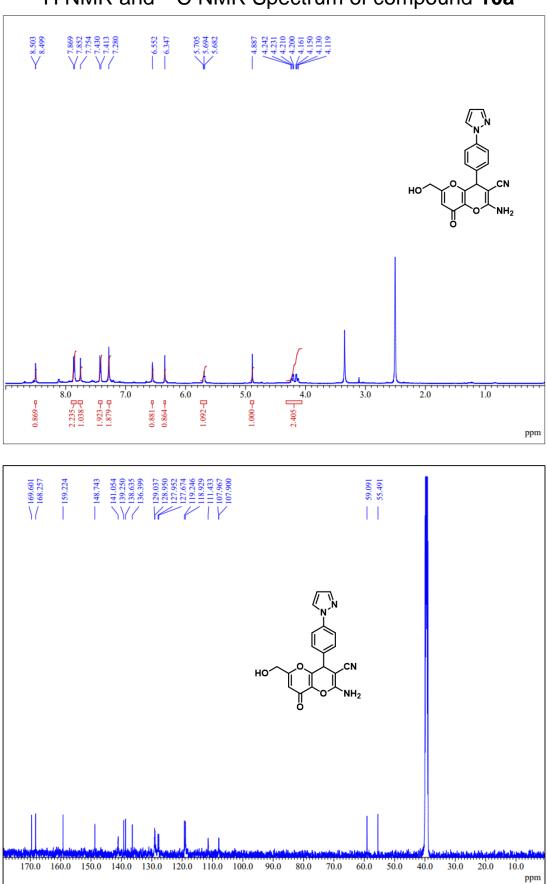
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound 8e



FTIR and HRMS Spectrum of compound 8e

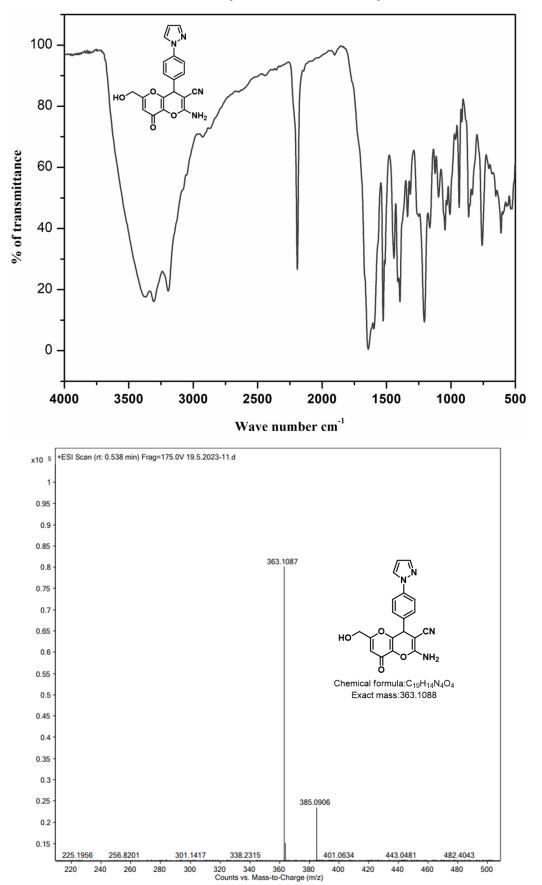




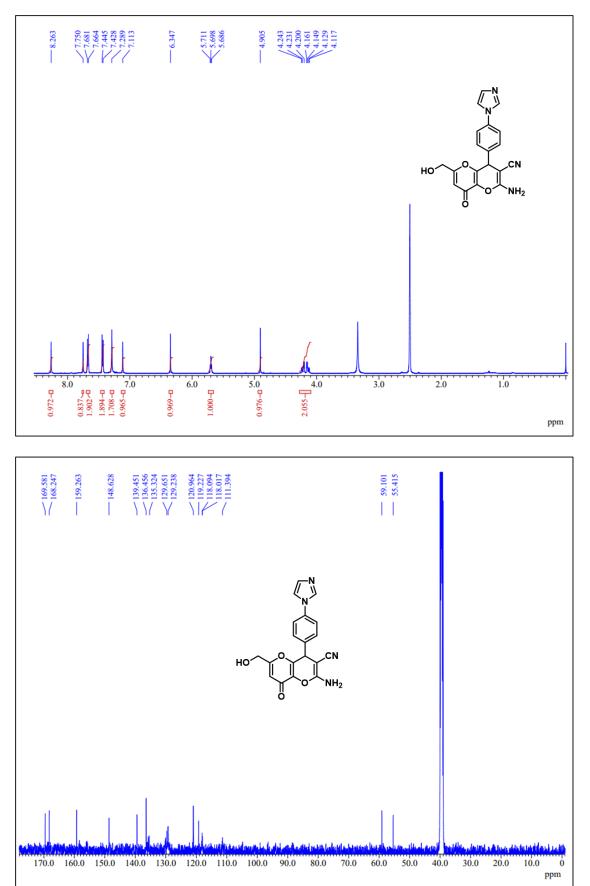


<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **10a** 

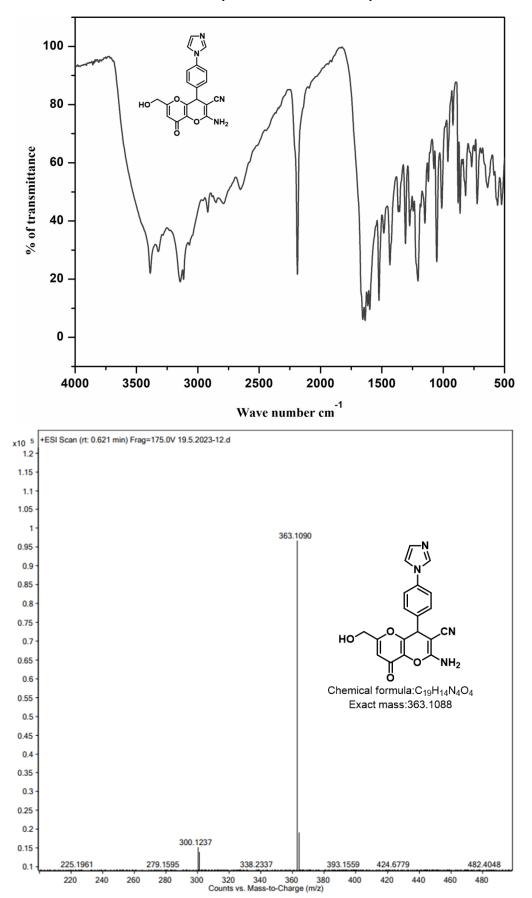
FTIR and HRMS Spectrum of compound 10a

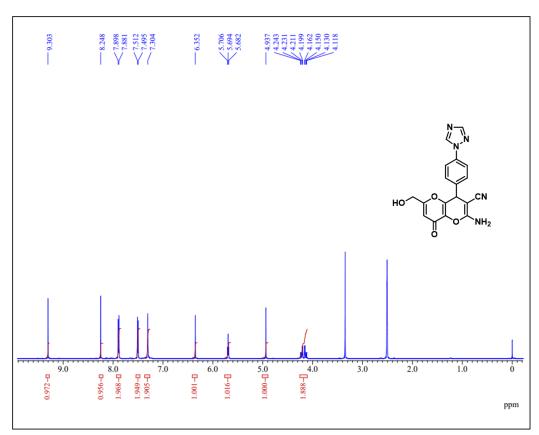


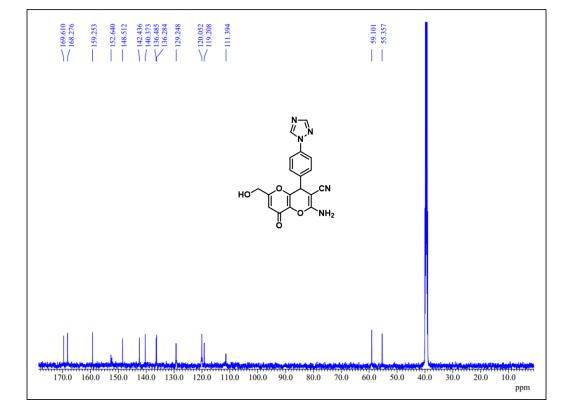
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **10b** 



FTIR and HRMS Spectrum of compound 10b

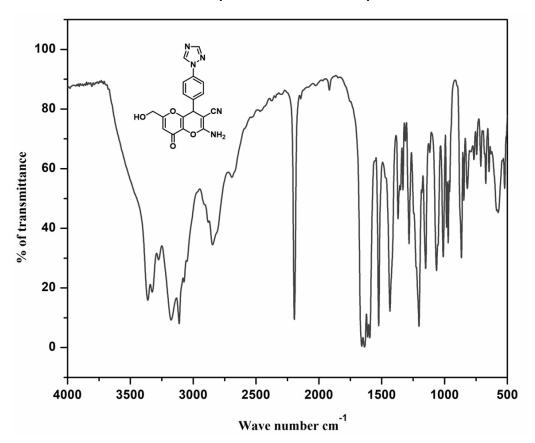


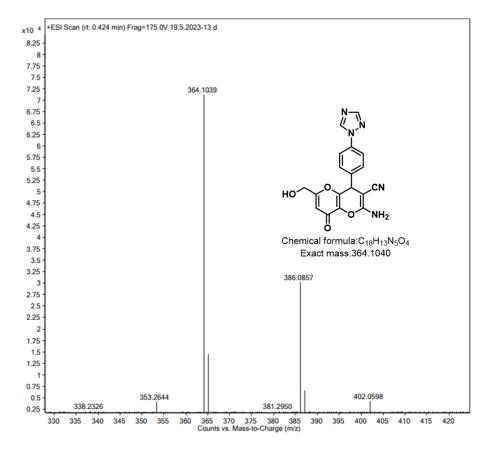




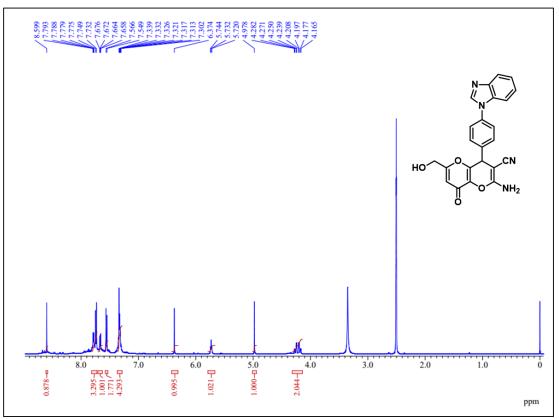
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **10c** 

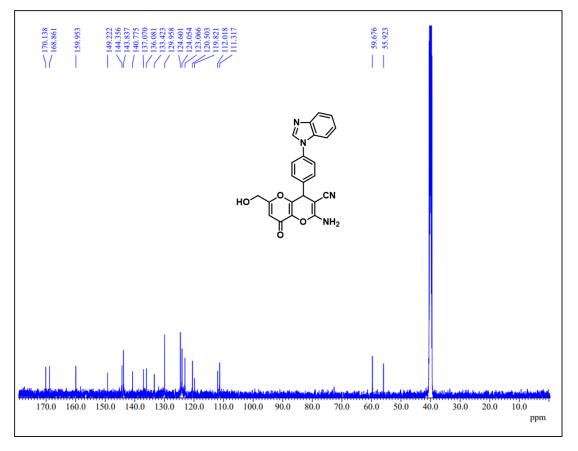
FTIR and HRMS Spectrum of compound 10c



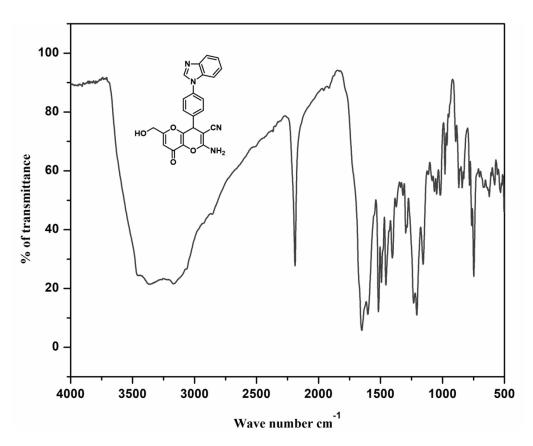


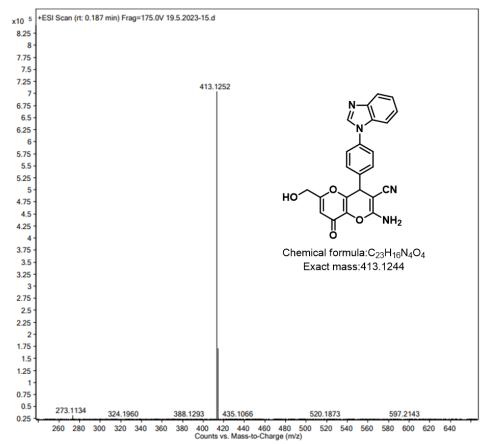
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **10d** 



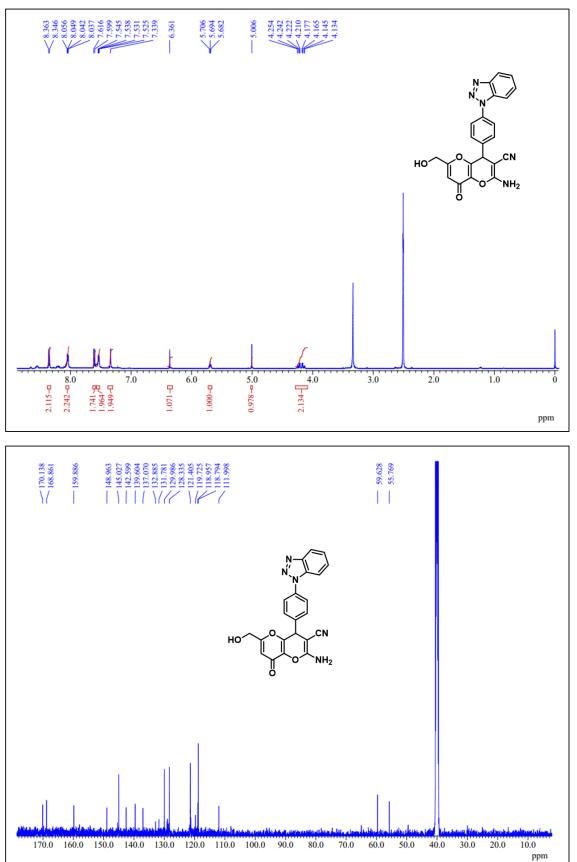


FTIR and HRMS Spectrum of compound 10d

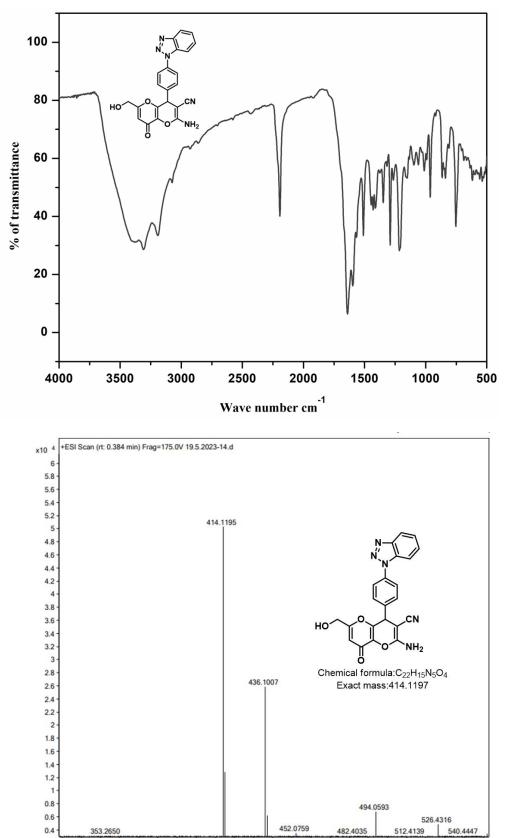




<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **10e** 

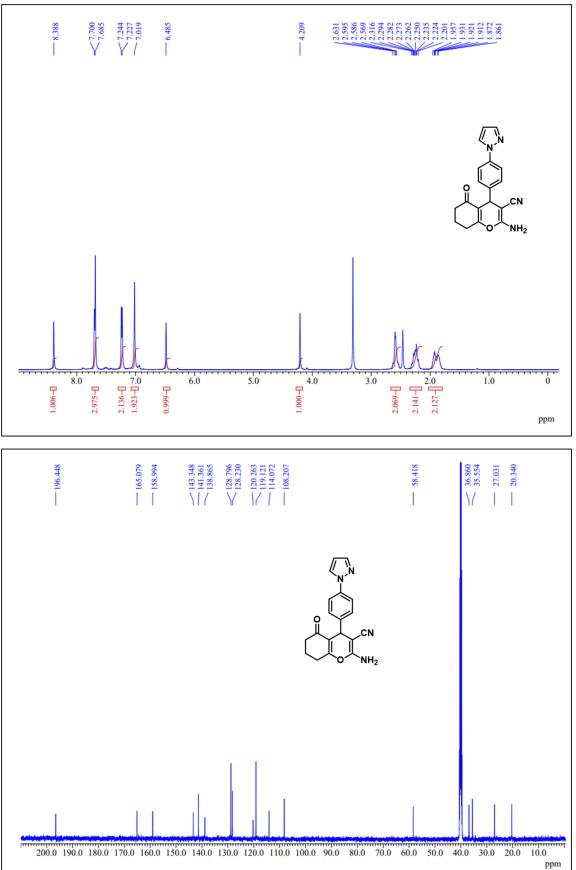


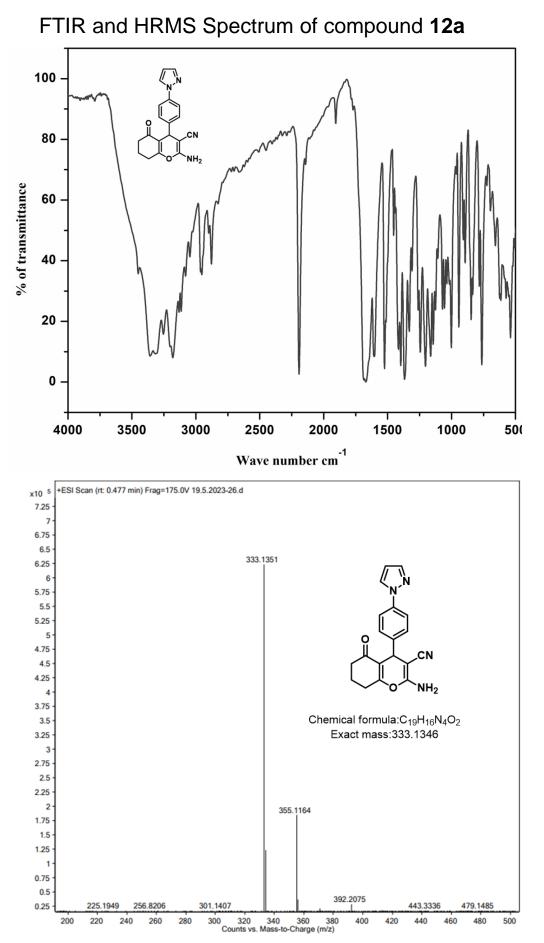
FTIR and HRMS Spectrum of compound 10e

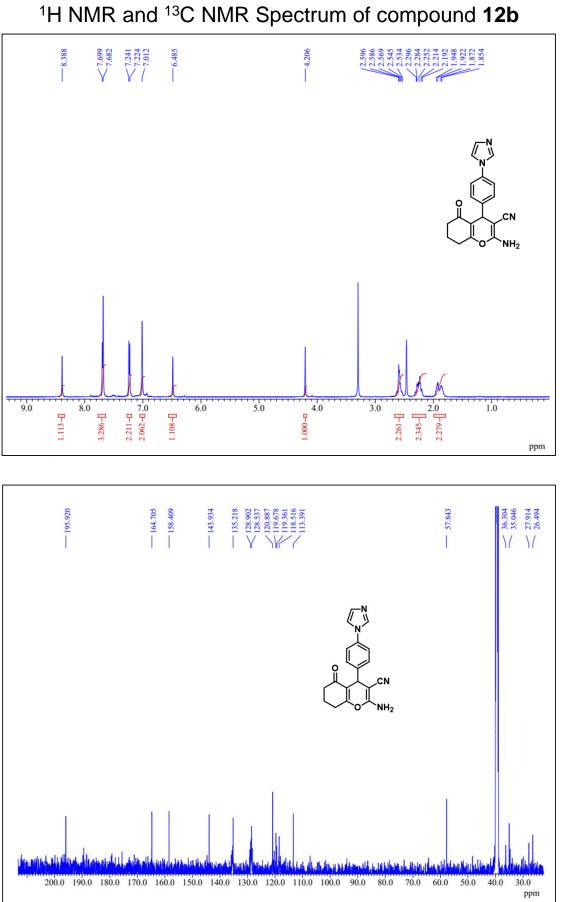


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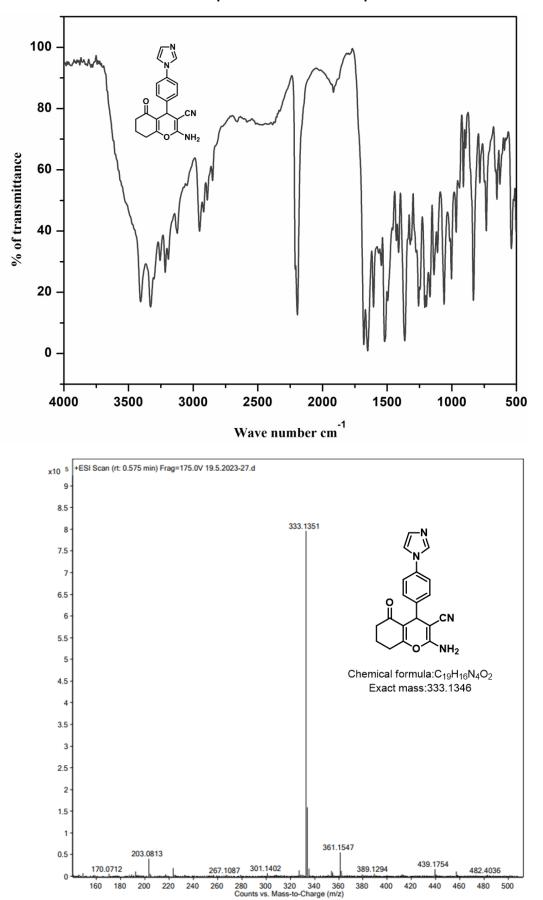
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **12a** 



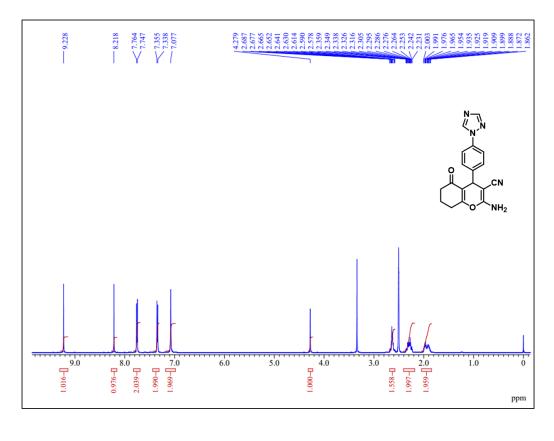


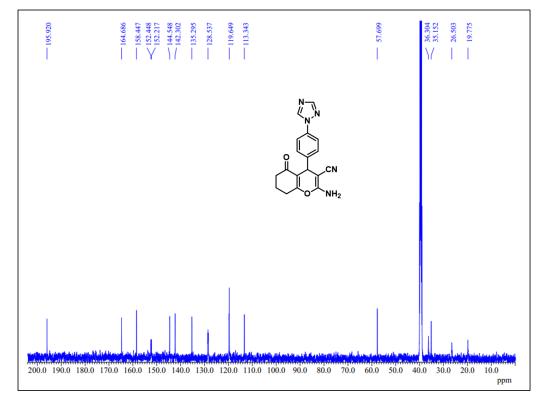


FTIR and HRMS Spectrum of compound 12b

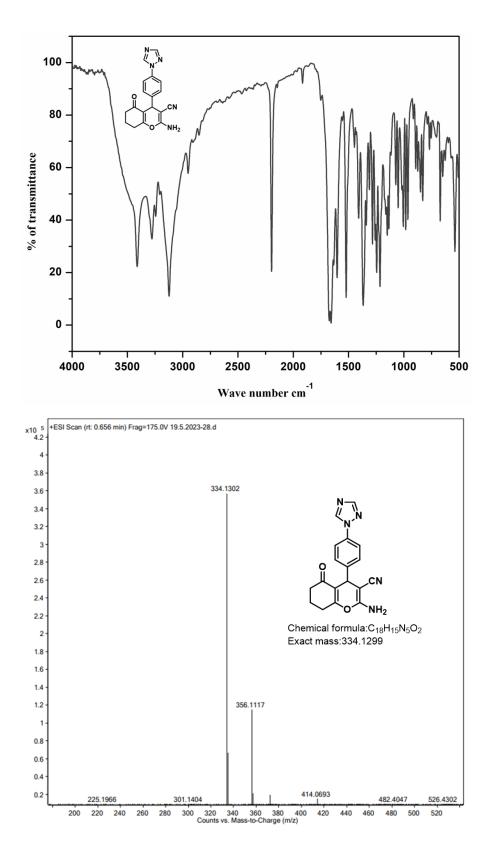


<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **12c** 

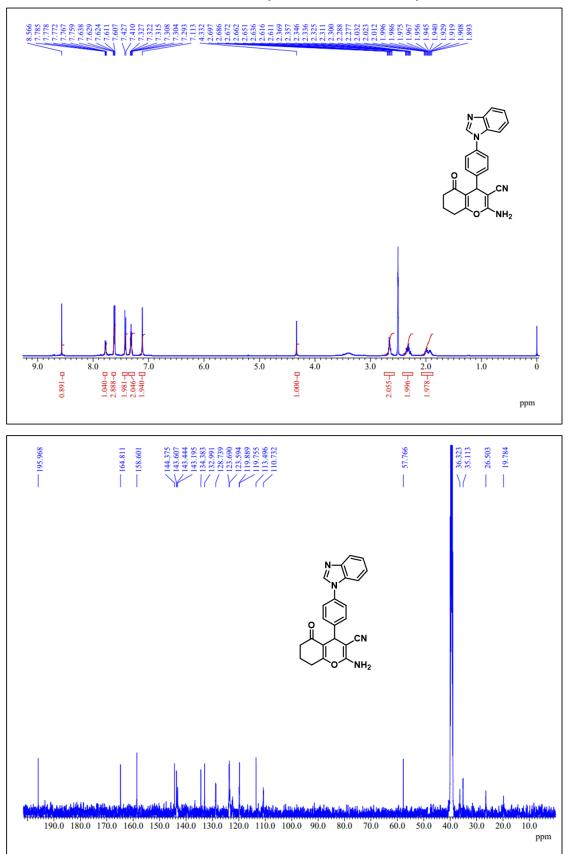




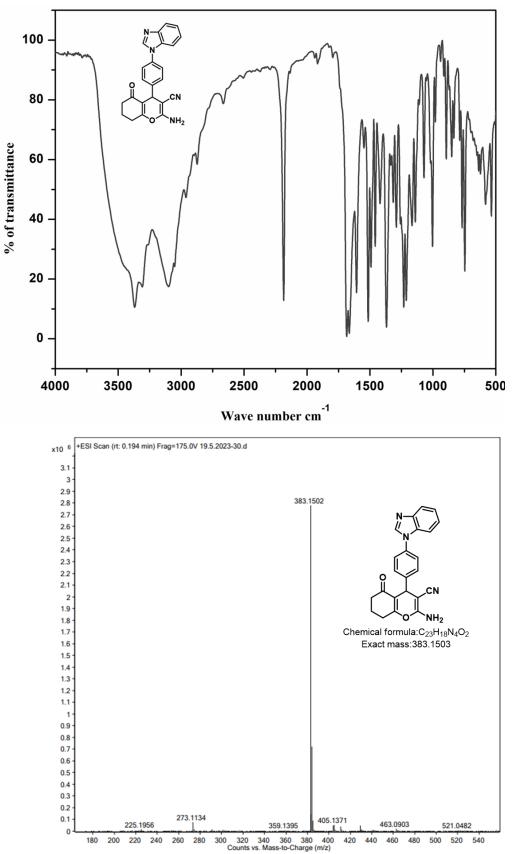
# FTIR and HRMS Spectrum of compound 12c



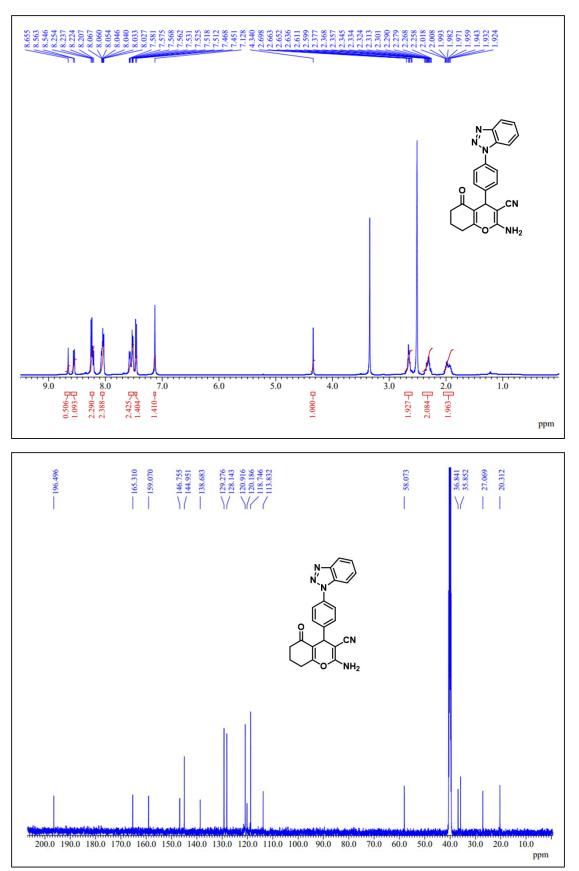
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **12d** 



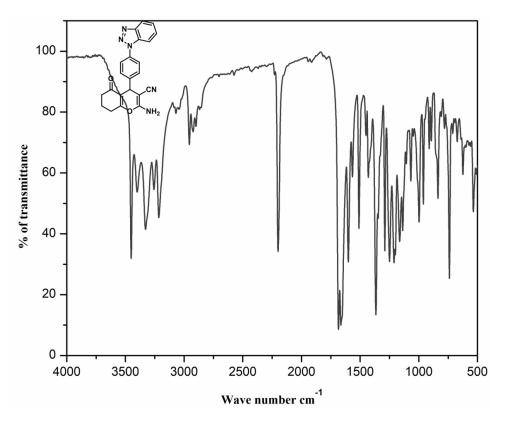
FTIR and HRMS Spectrum of compound 12d

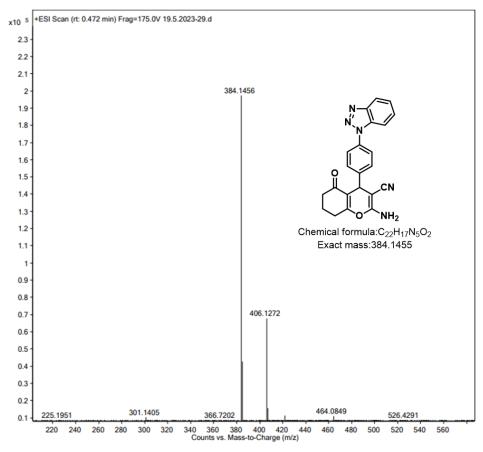


# <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **12e**

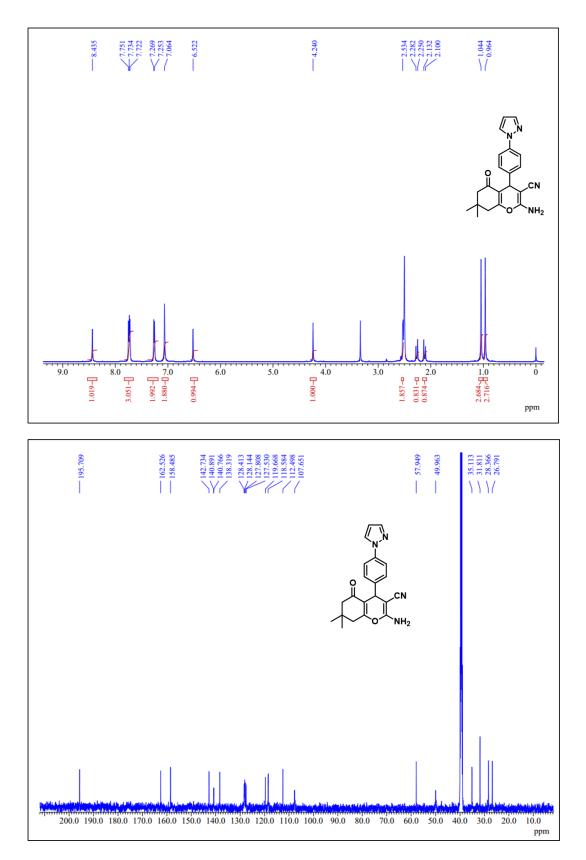


FTIR and HRMS Spectrum of compound 12e

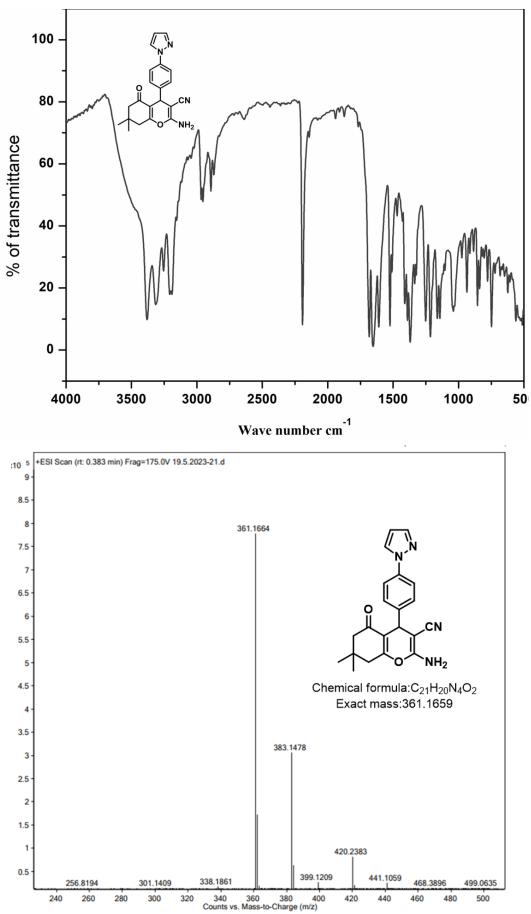




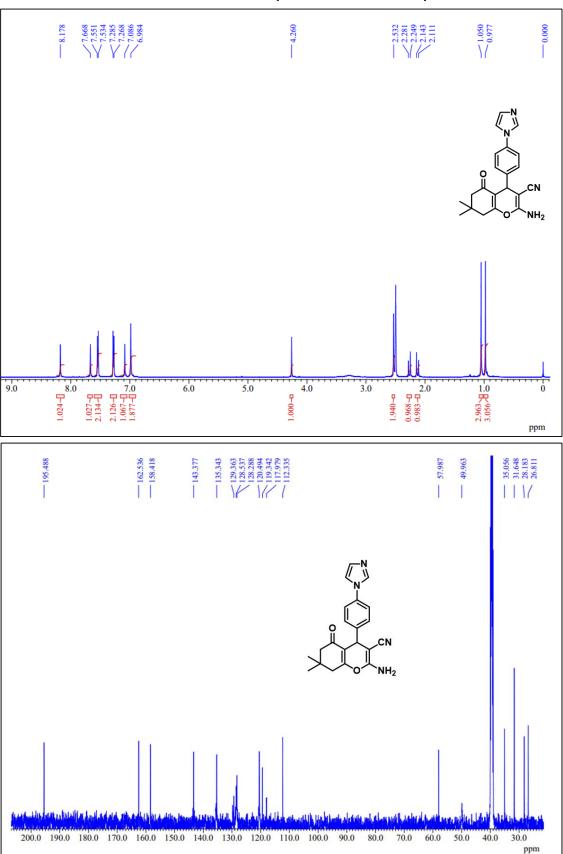
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **14a** 



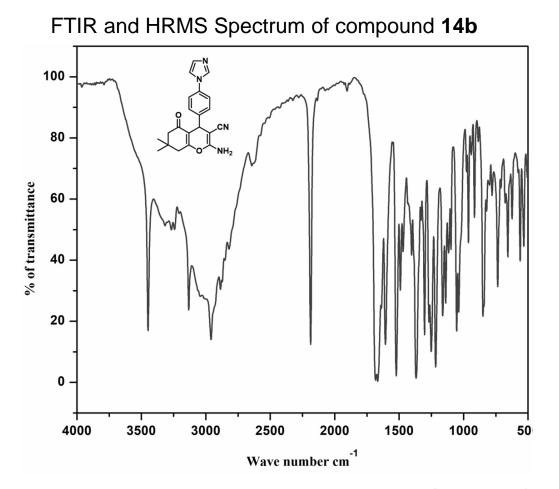
FTIR and HRMS Spectrum of compound 14a

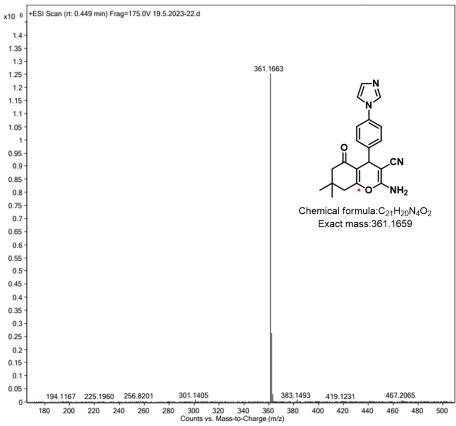


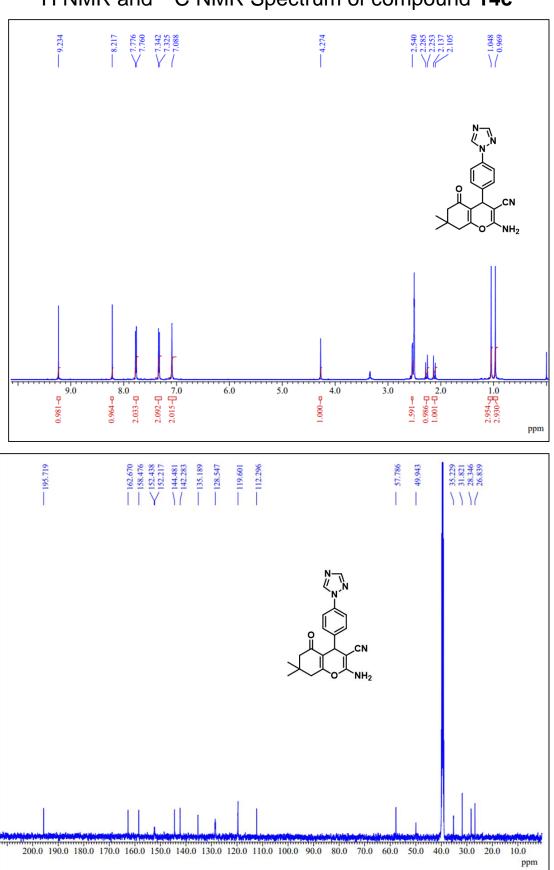
53



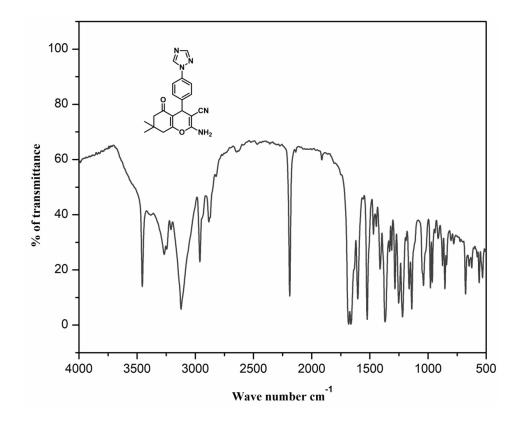
<sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **14b** 

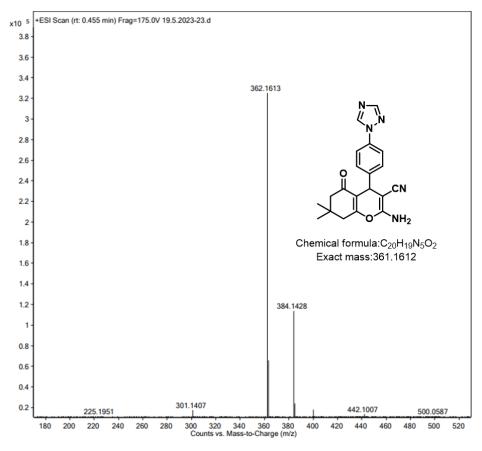


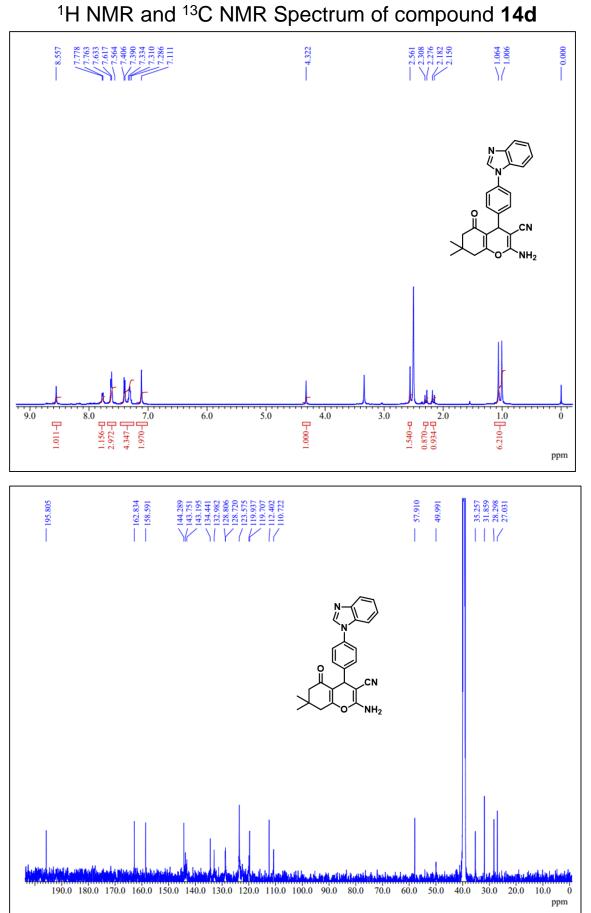




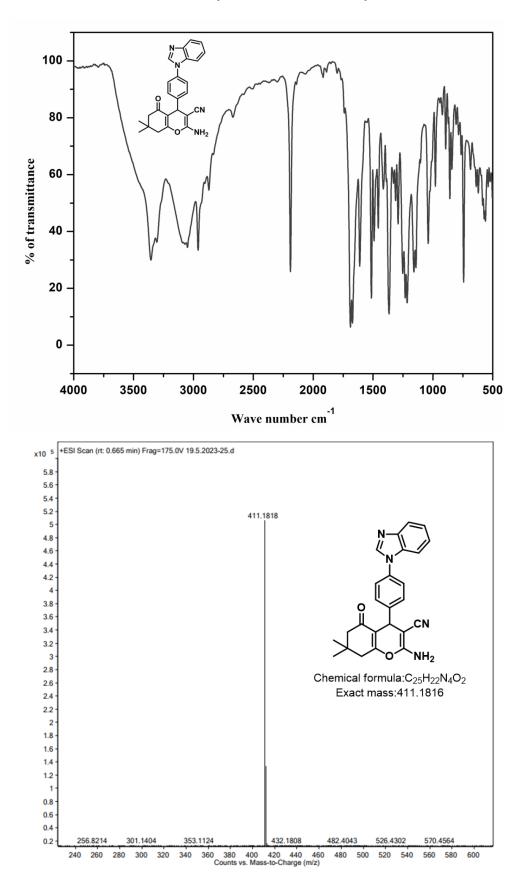
# FTIR and HRMS Spectrum of compound 14c

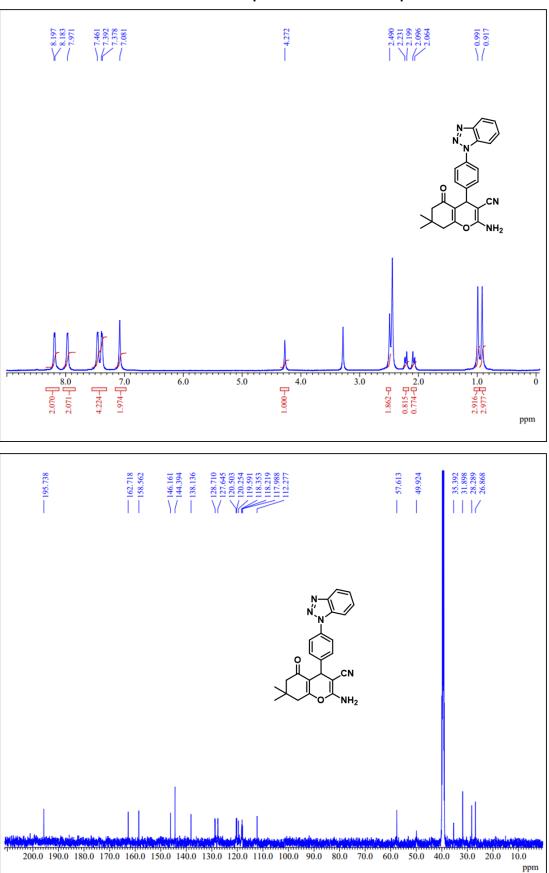






FTIR and HRMS Spectrum of compound 14d





# <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compound **14e**

# FTIR and HRMS Spectrum of compound 14e

