

## Electronic Supporting Information

### Solvent-free implementation of two dissimilar reactions using recyclable CuO nanoparticle under ball-milling conditions: Green synthesis of new oxindole-triazole pharmacophores

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<sup>b</sup>Siddhartha Institute of Pharmaceutical Sciences, Narasaraopet, Jonnalagadda-522601, Andhra Pradesh, India

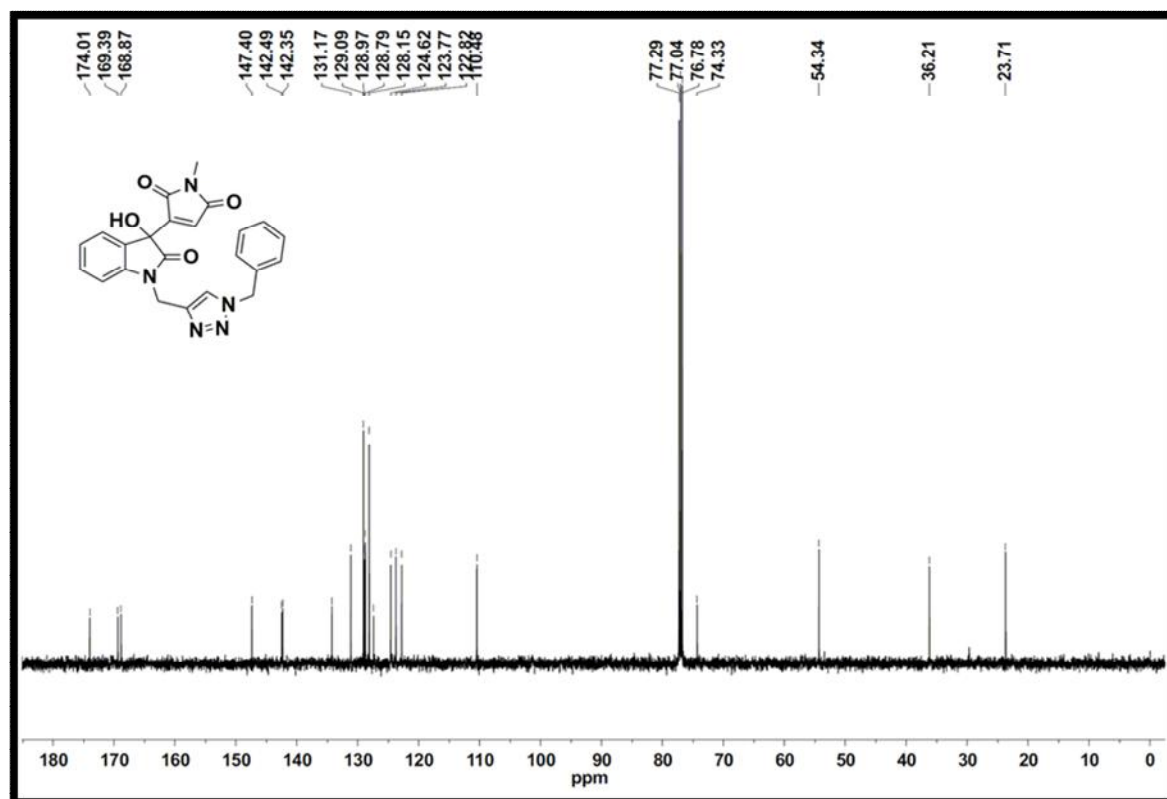
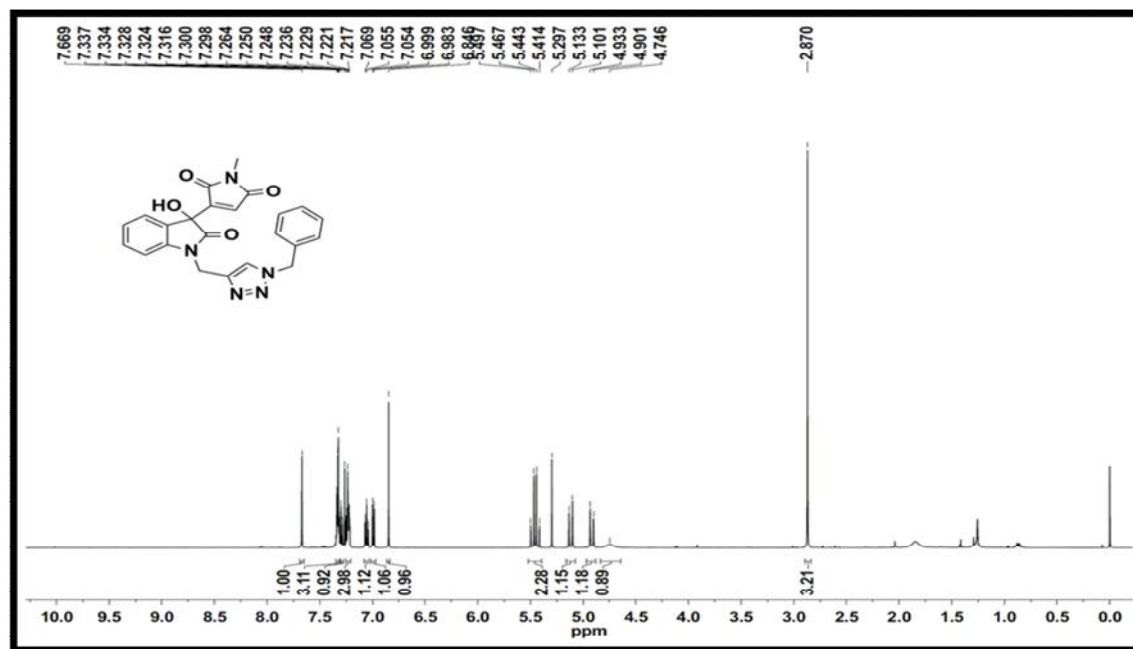
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<sup>d</sup>Functional Materials Division, CSIR-Central Electrochemical Research Institute, Karaikudi-630003, Tamil Nadu, India.

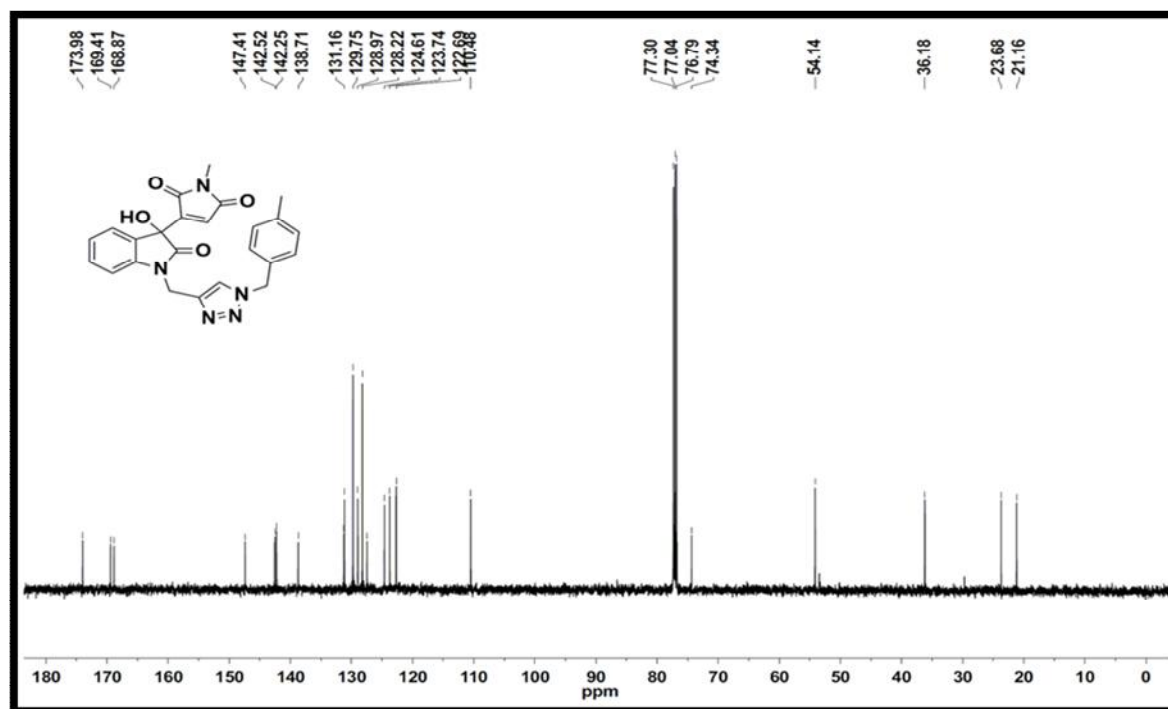
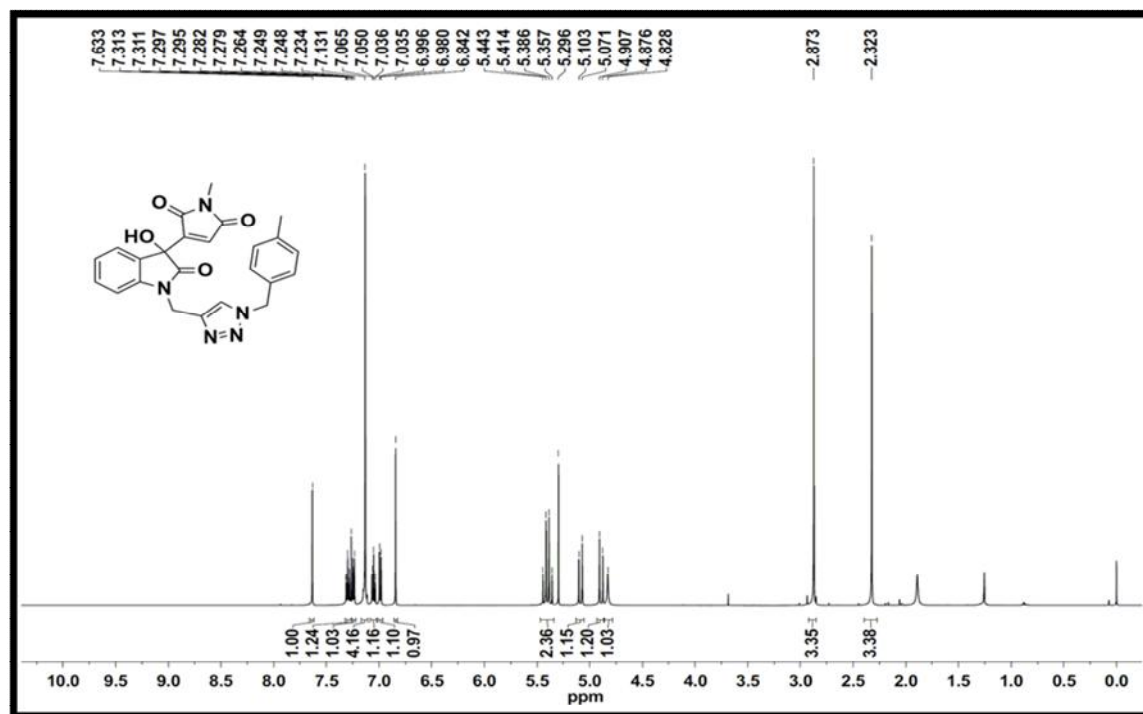
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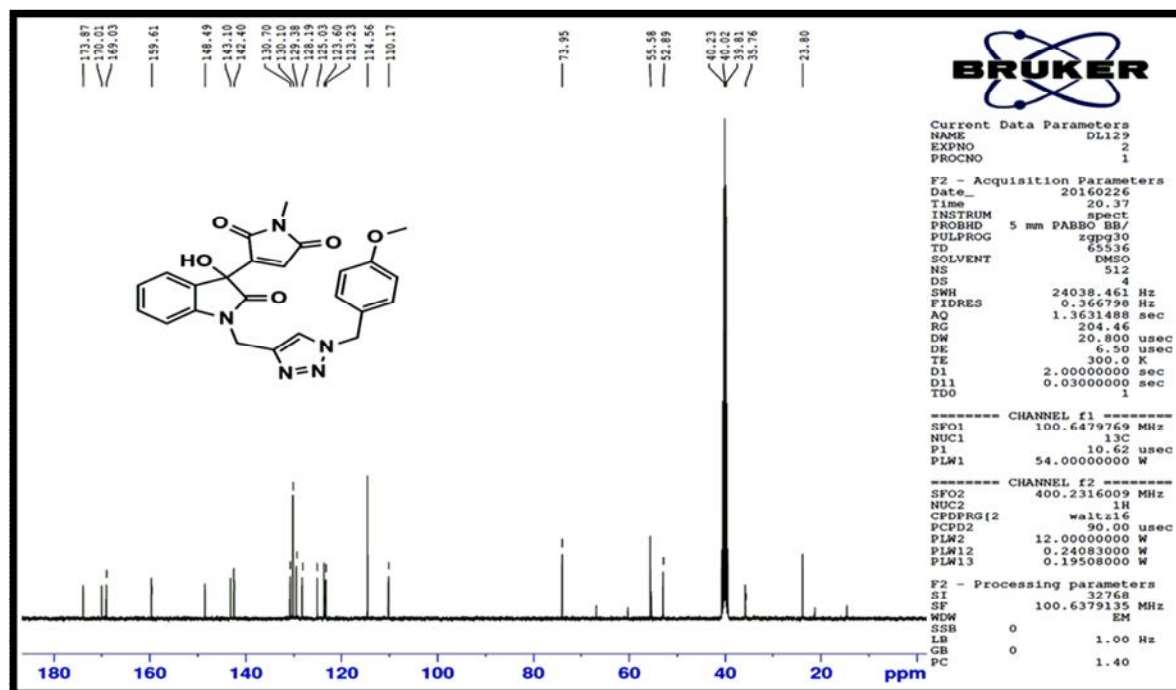
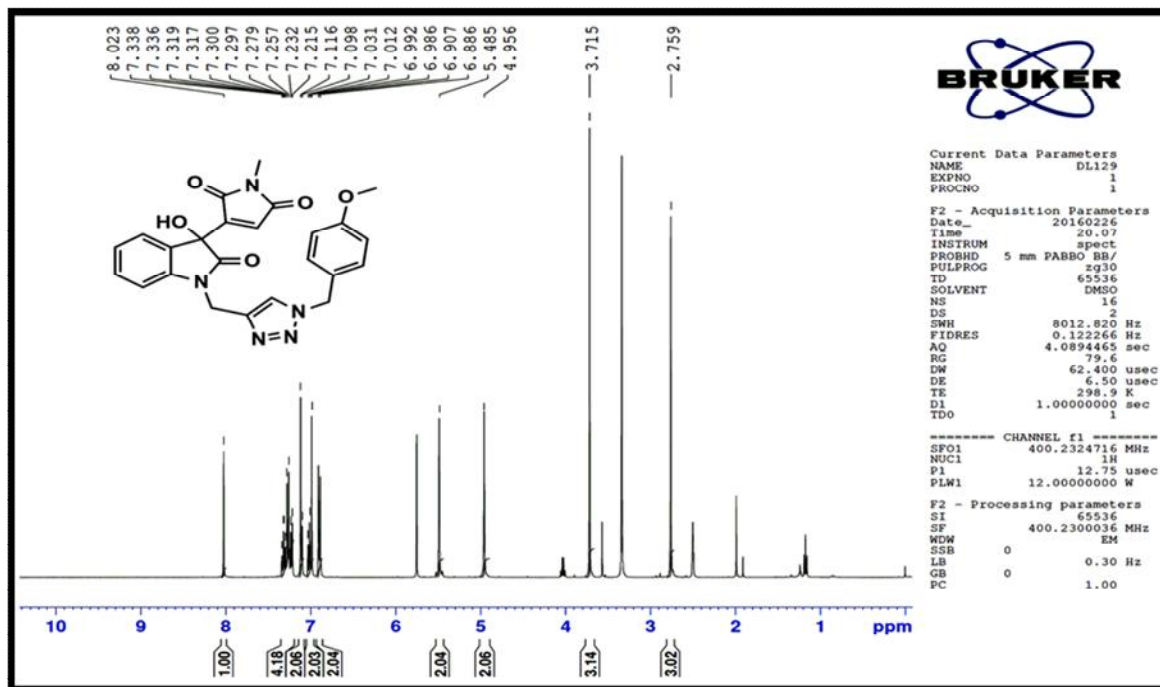
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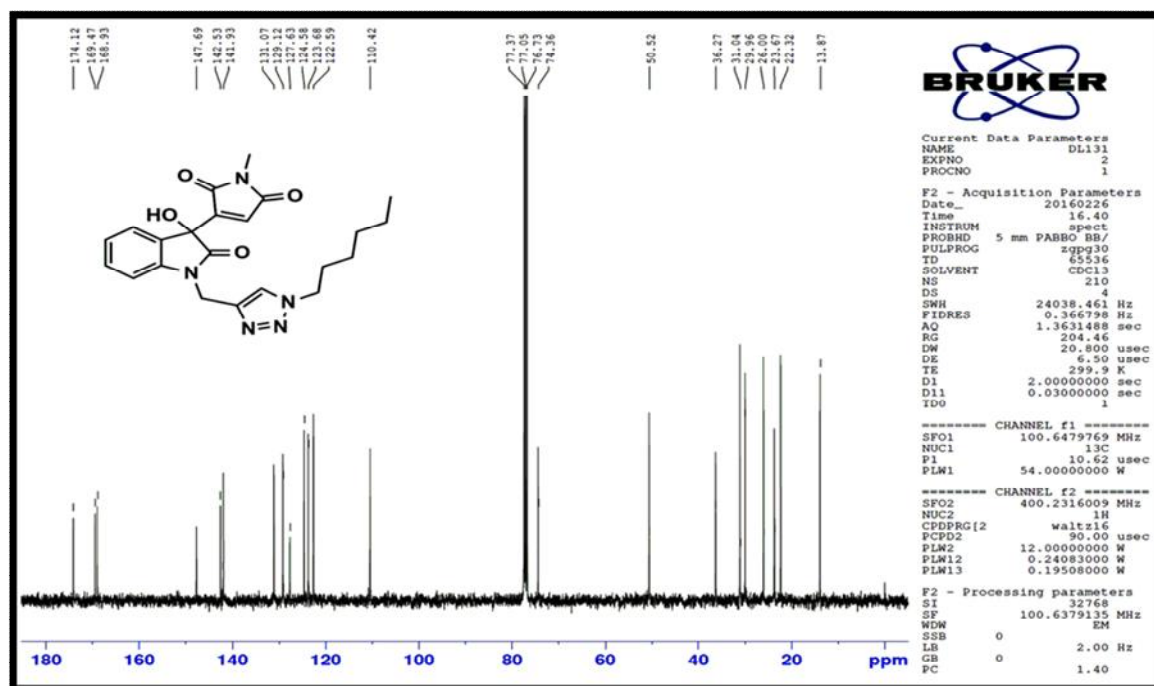
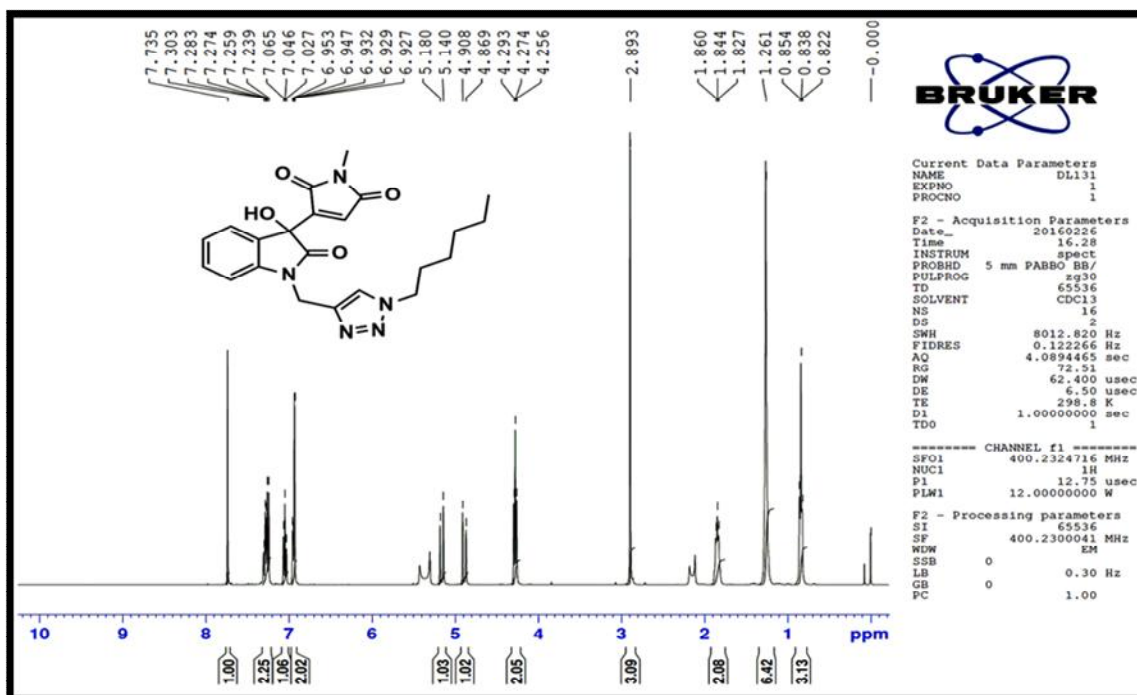
**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4a (500 MHz, CDCl<sub>3</sub>)**



**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4b (500 MHz, CDCl<sub>3</sub>)**

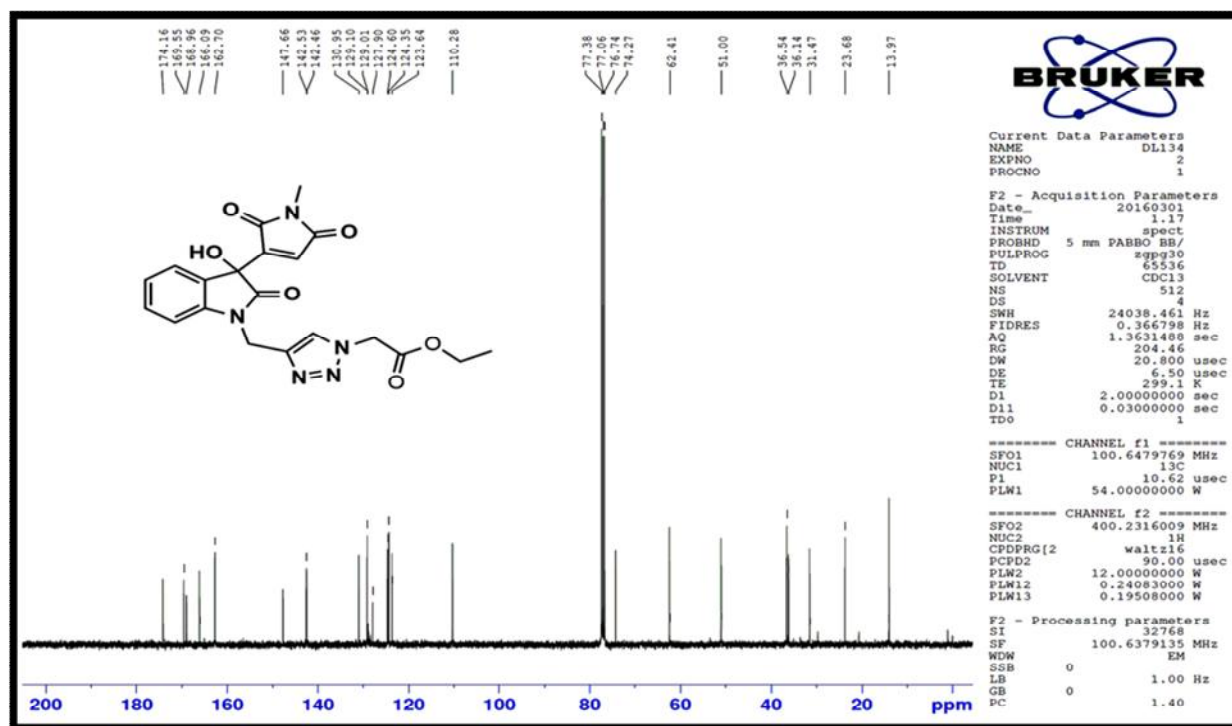
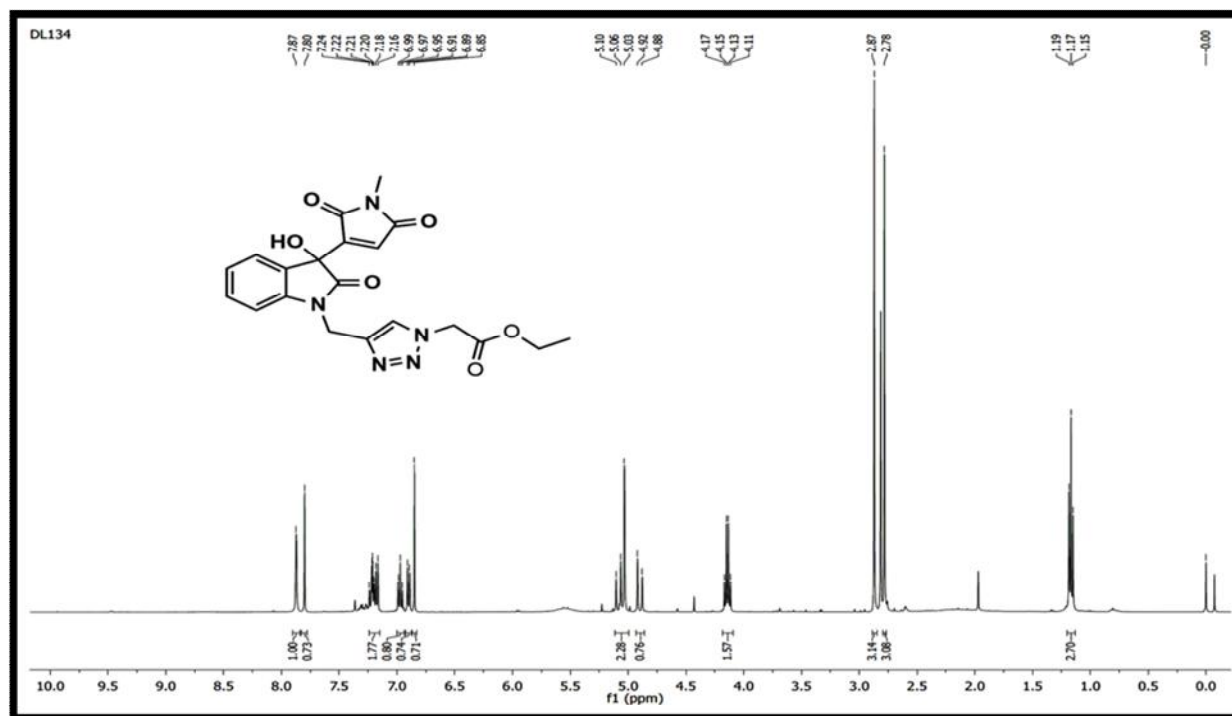


**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4c (400 MHz, DMSO-d<sub>6</sub>)**



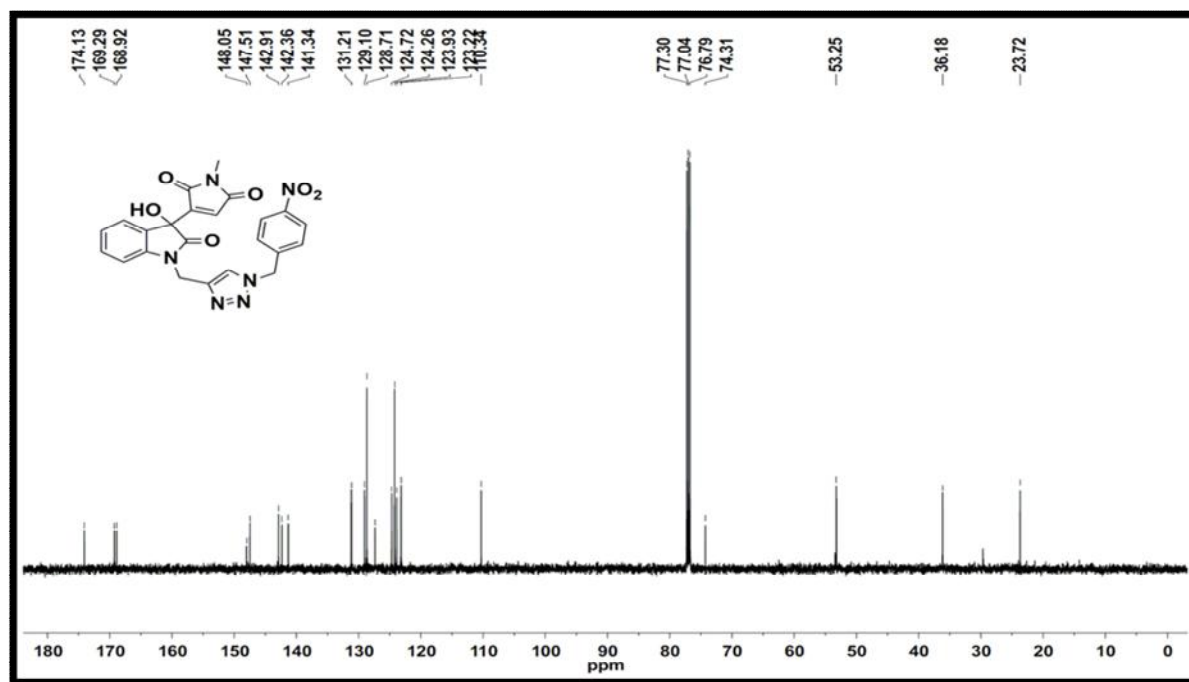
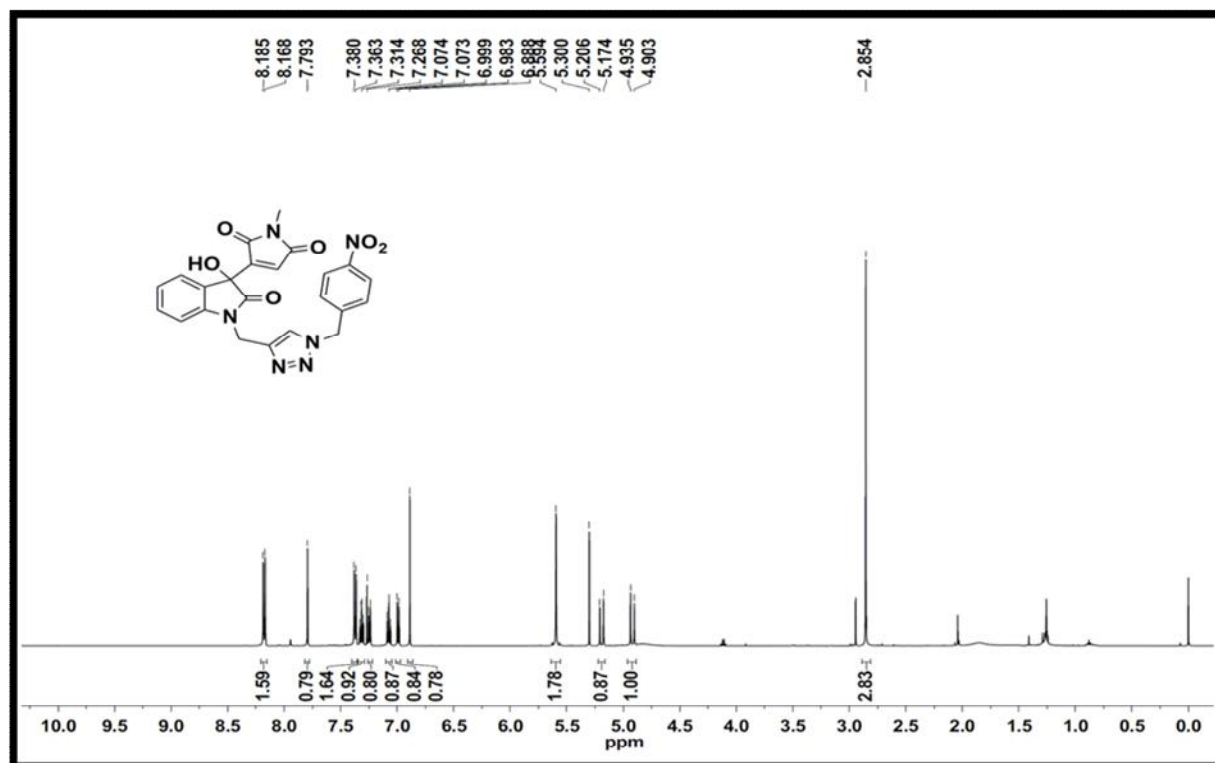
**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4d (400 MHz, CDCl<sub>3</sub>)**





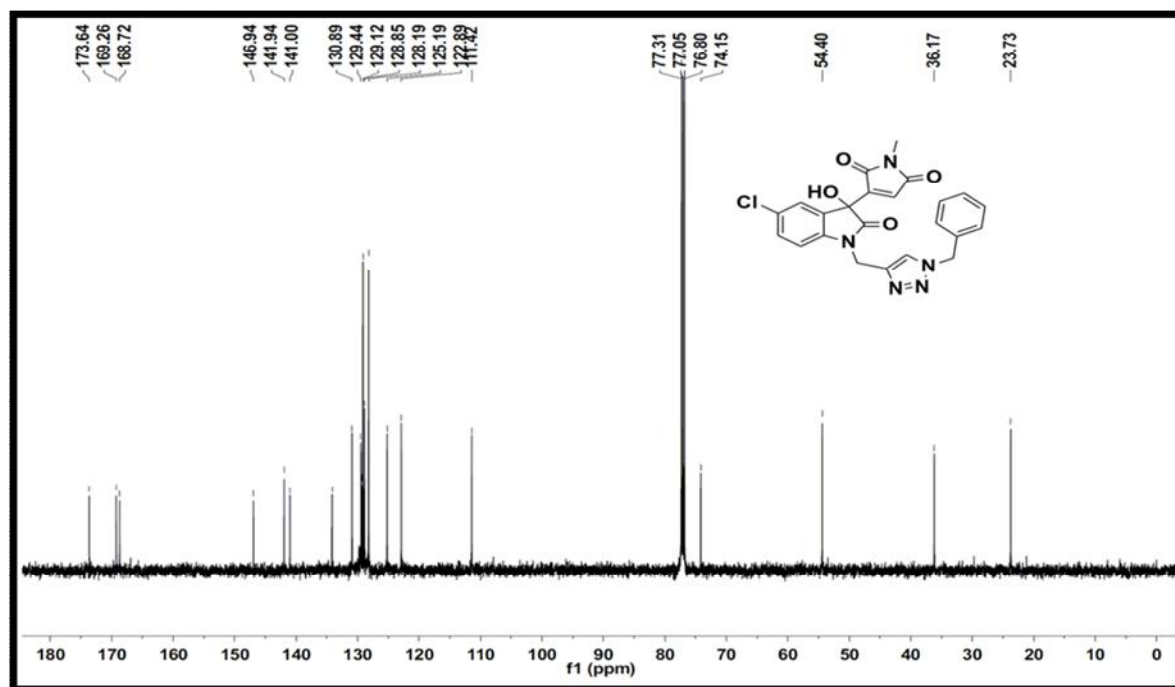
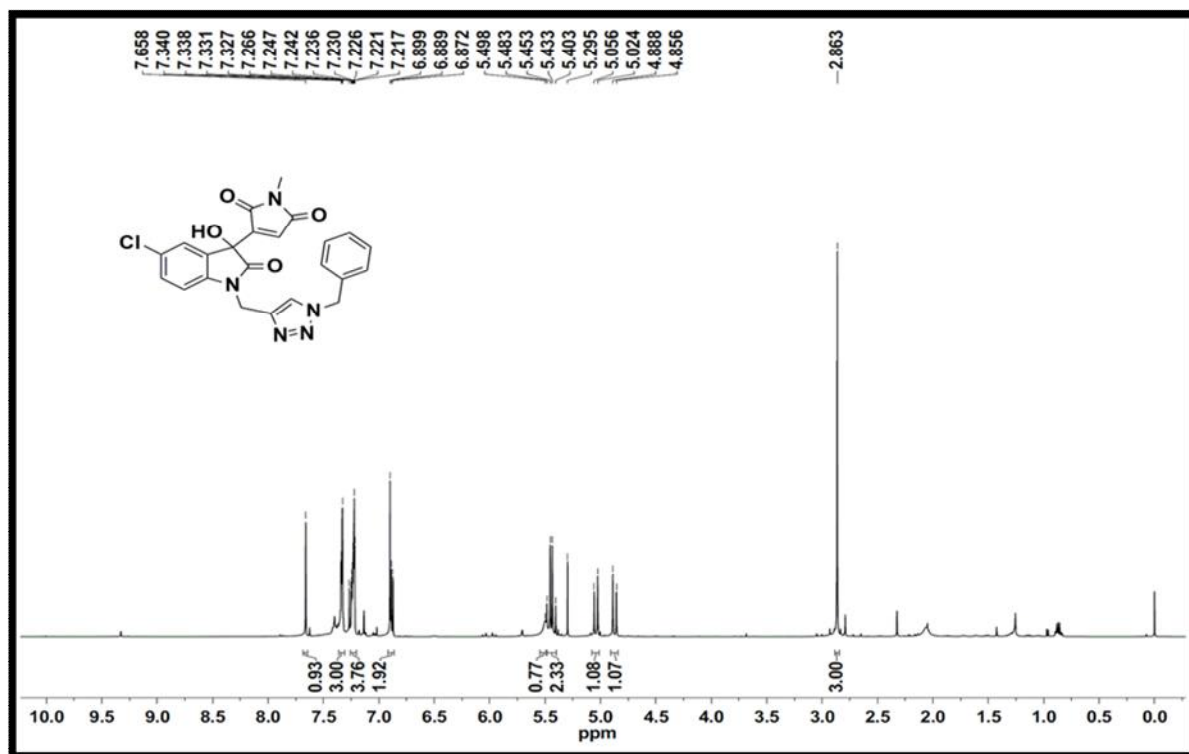
$^1\text{H}$  and  $^{13}\text{C}$  NMR Spectrum of Compound 4f (400 MHz,  $\text{CDCl}_3$ )



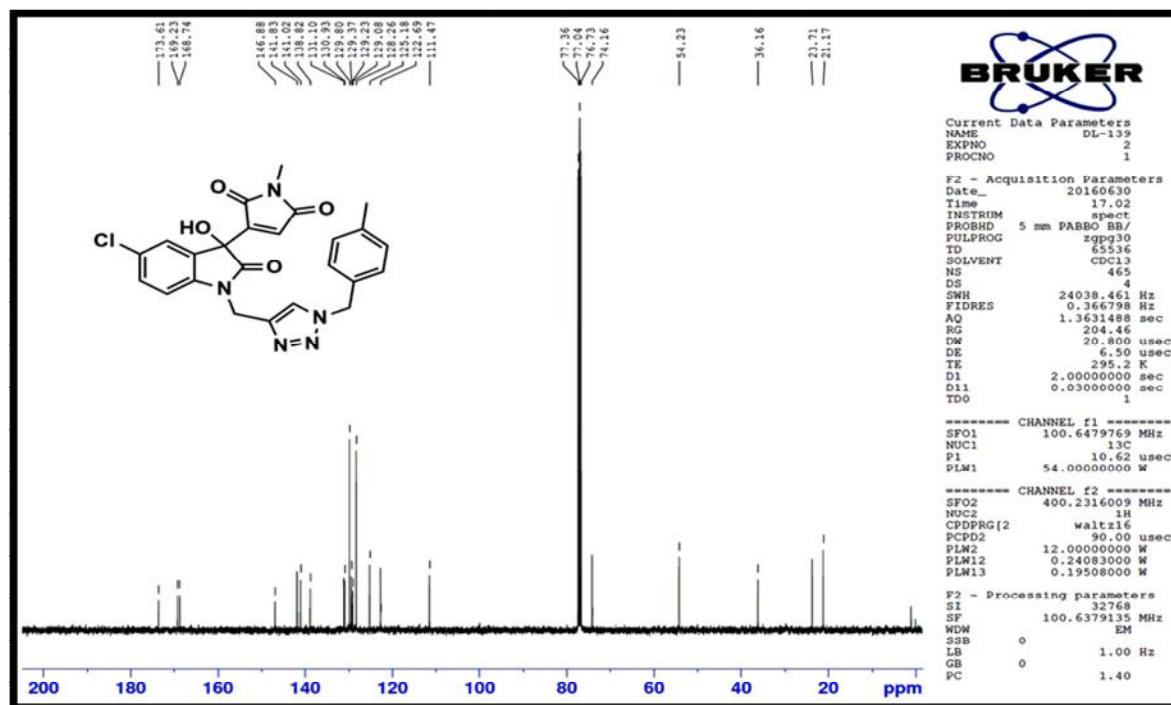
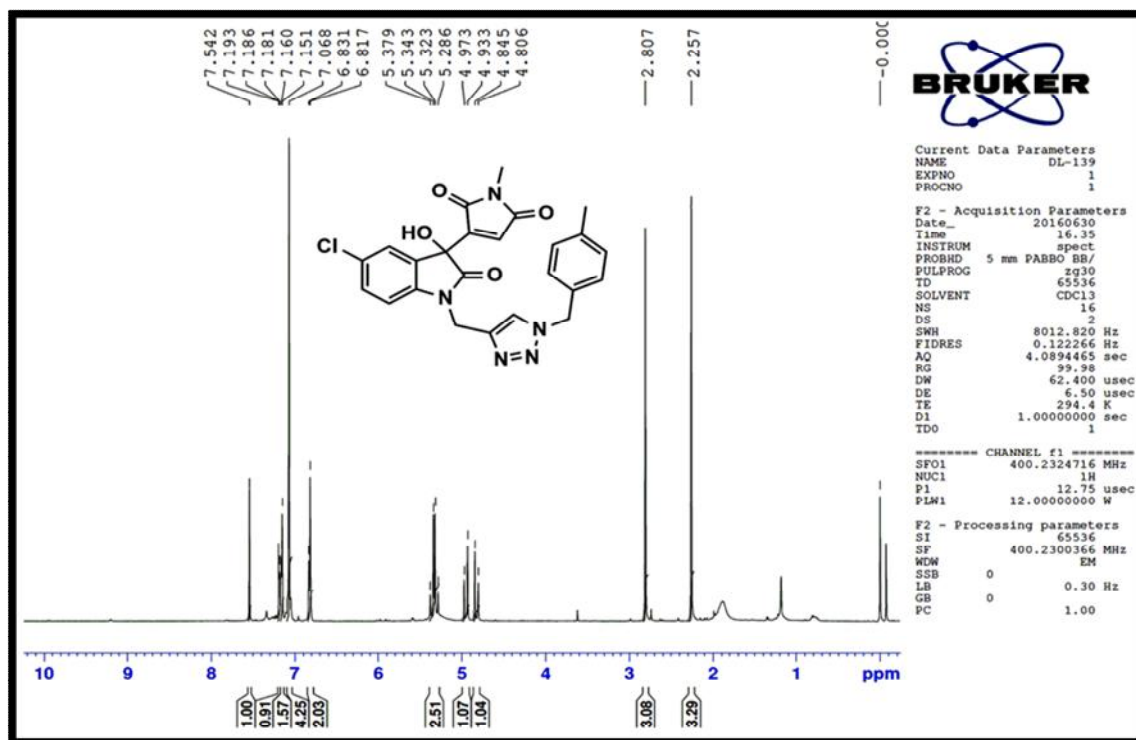


**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4g (500 MHz, CDCl<sub>3</sub>)**

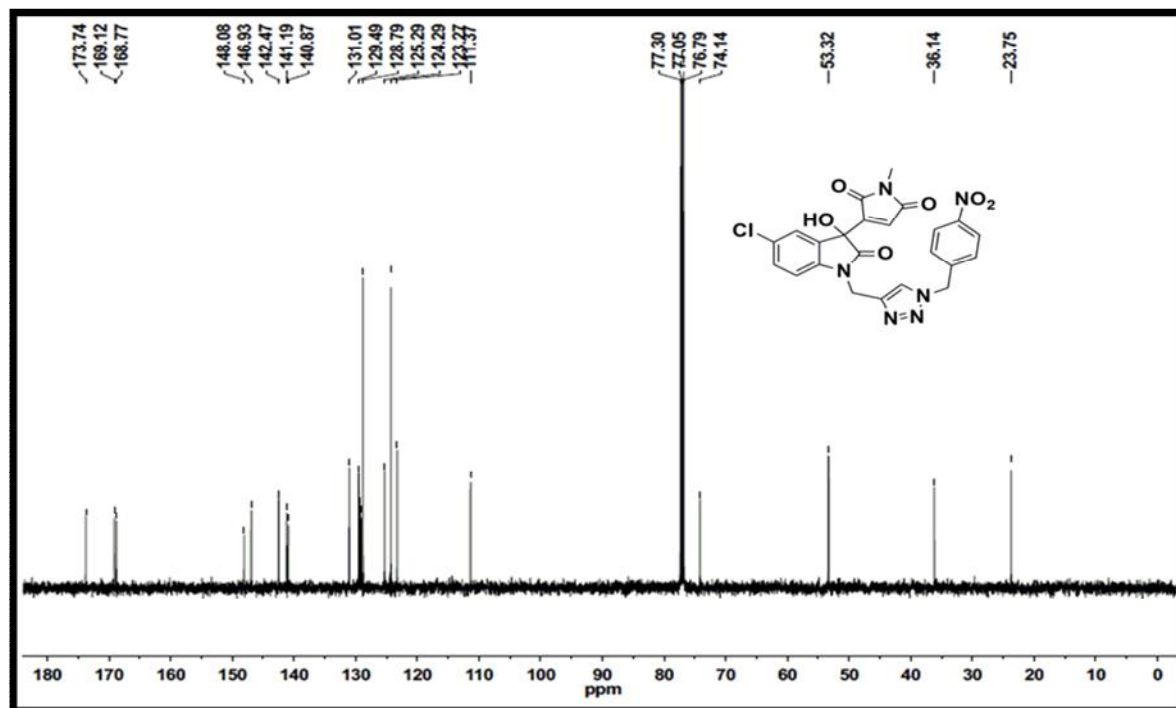
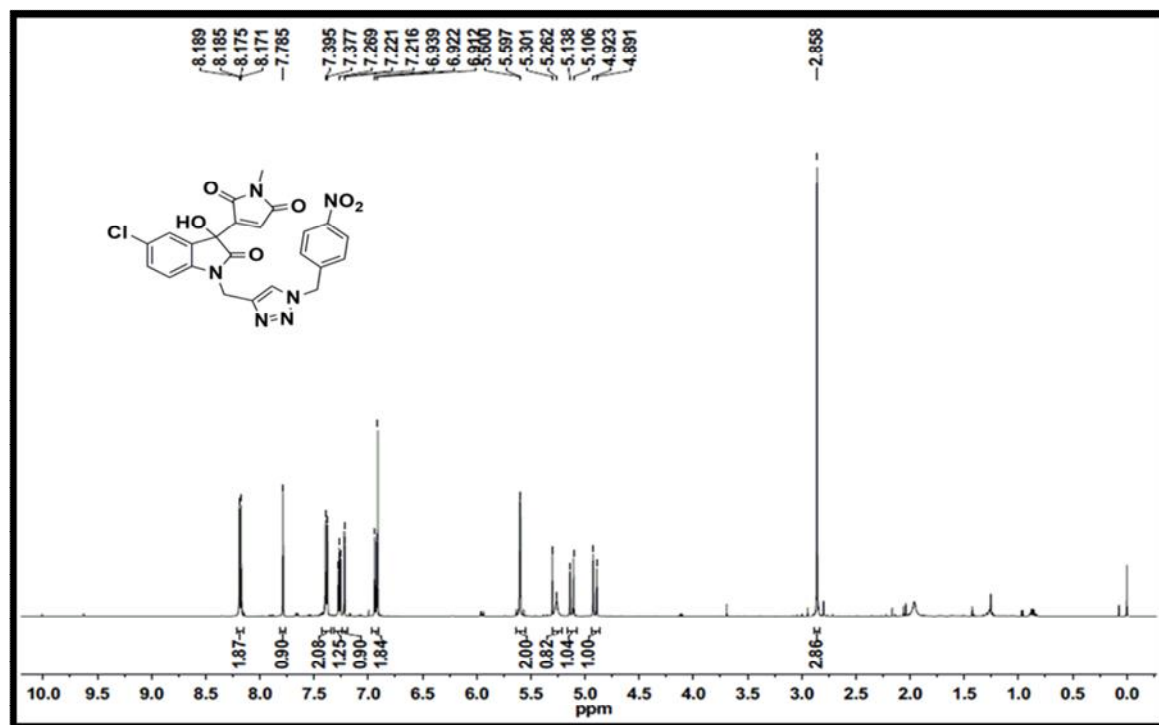




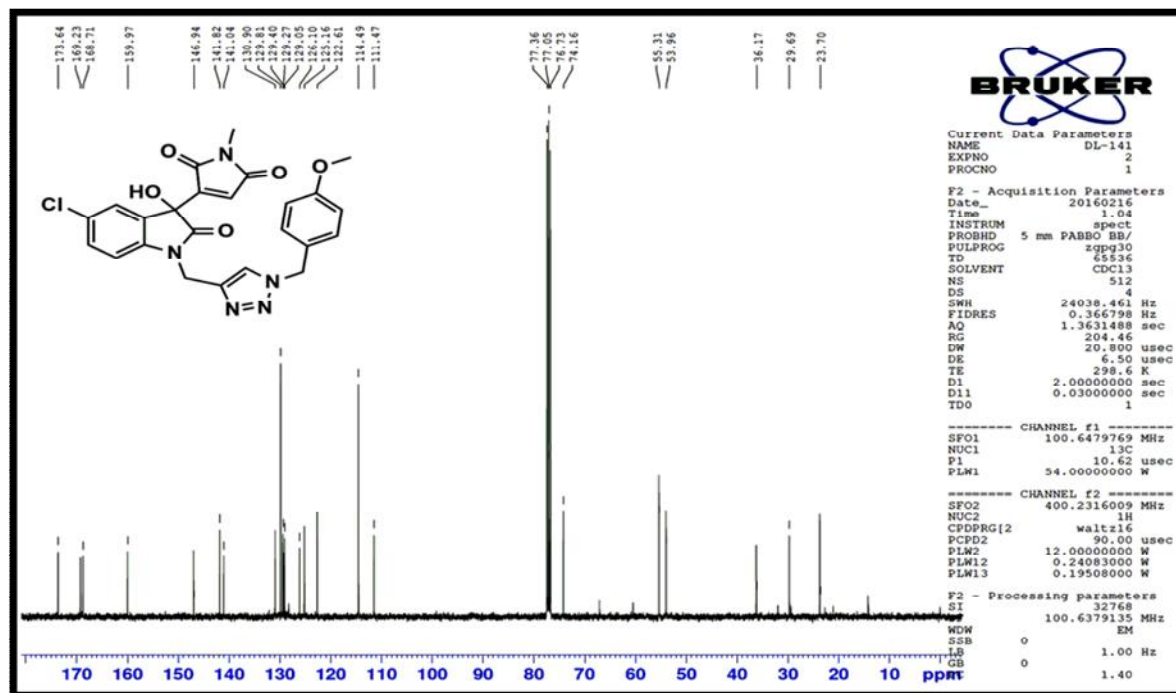
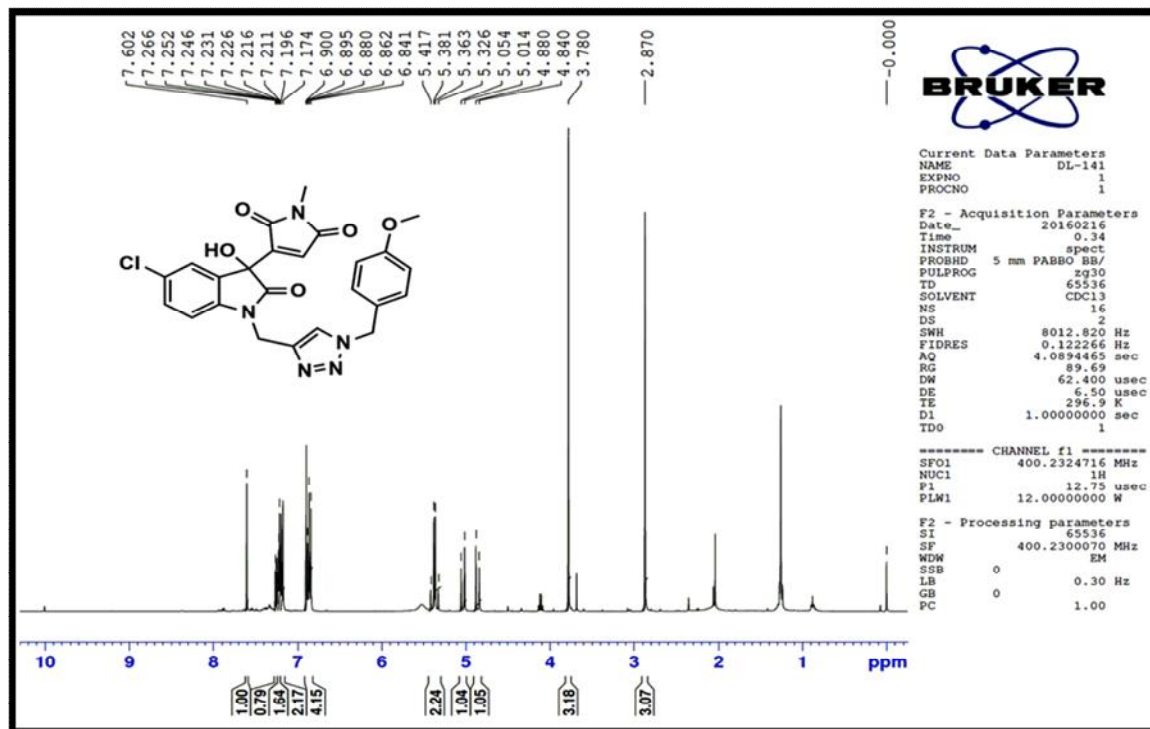
**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4h (500 MHz, CDCl<sub>3</sub>)**



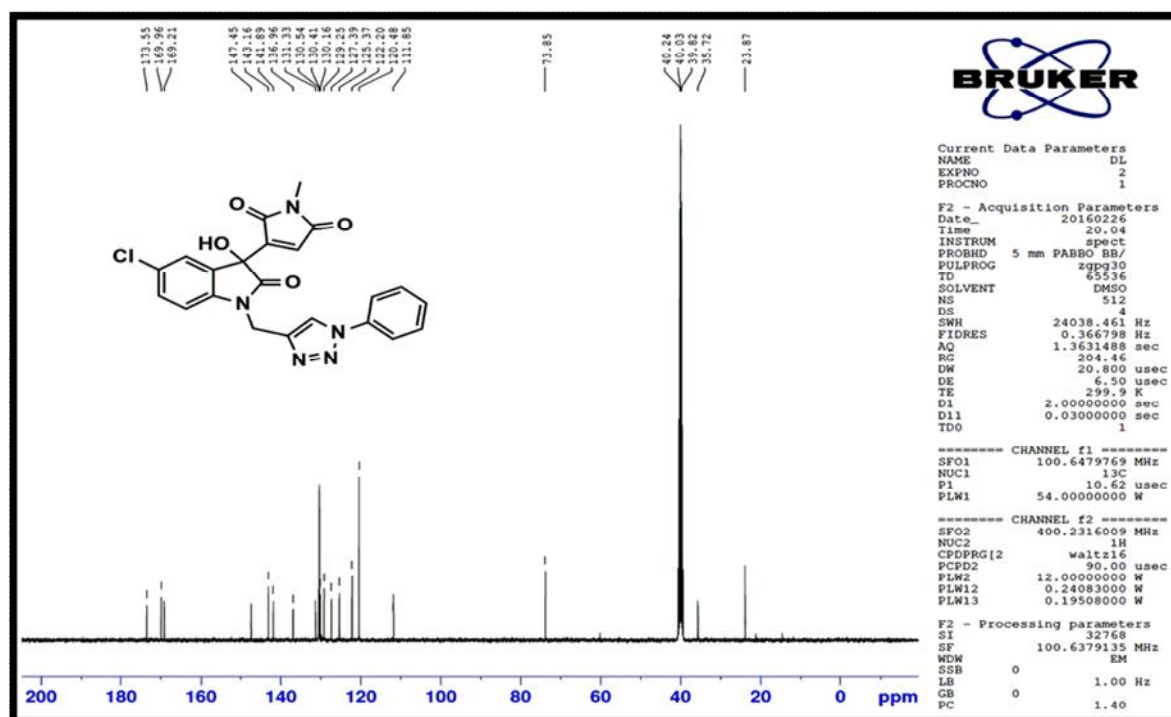
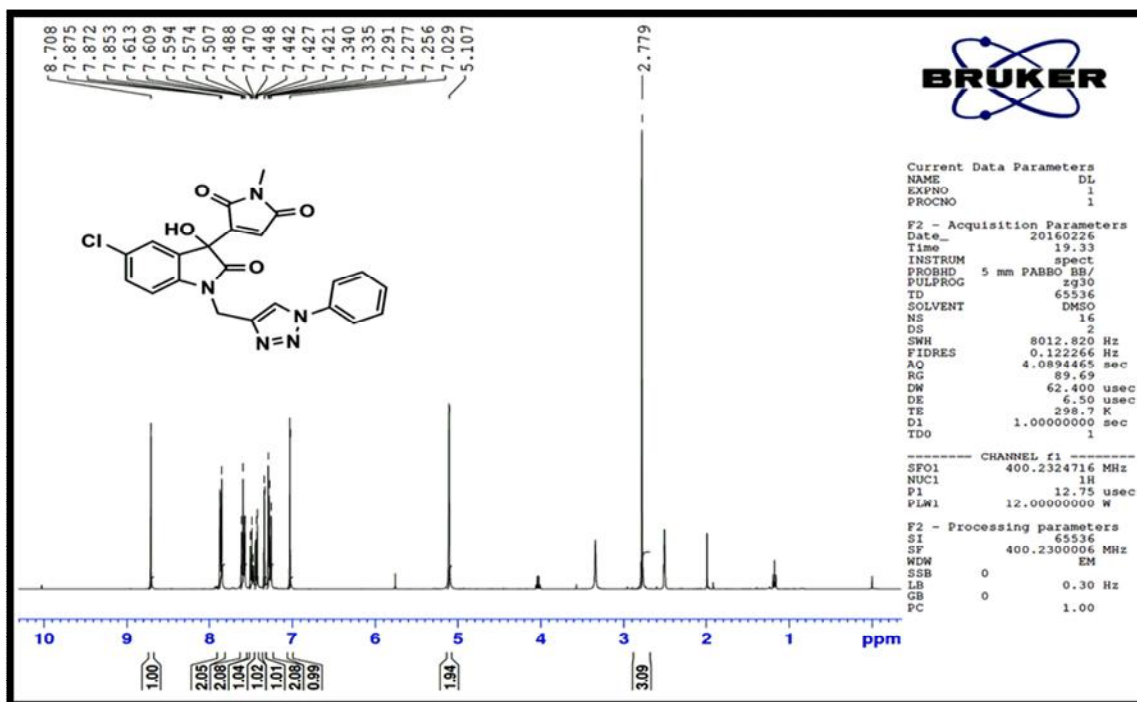
**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4i (400 MHz, CDCl<sub>3</sub>)**



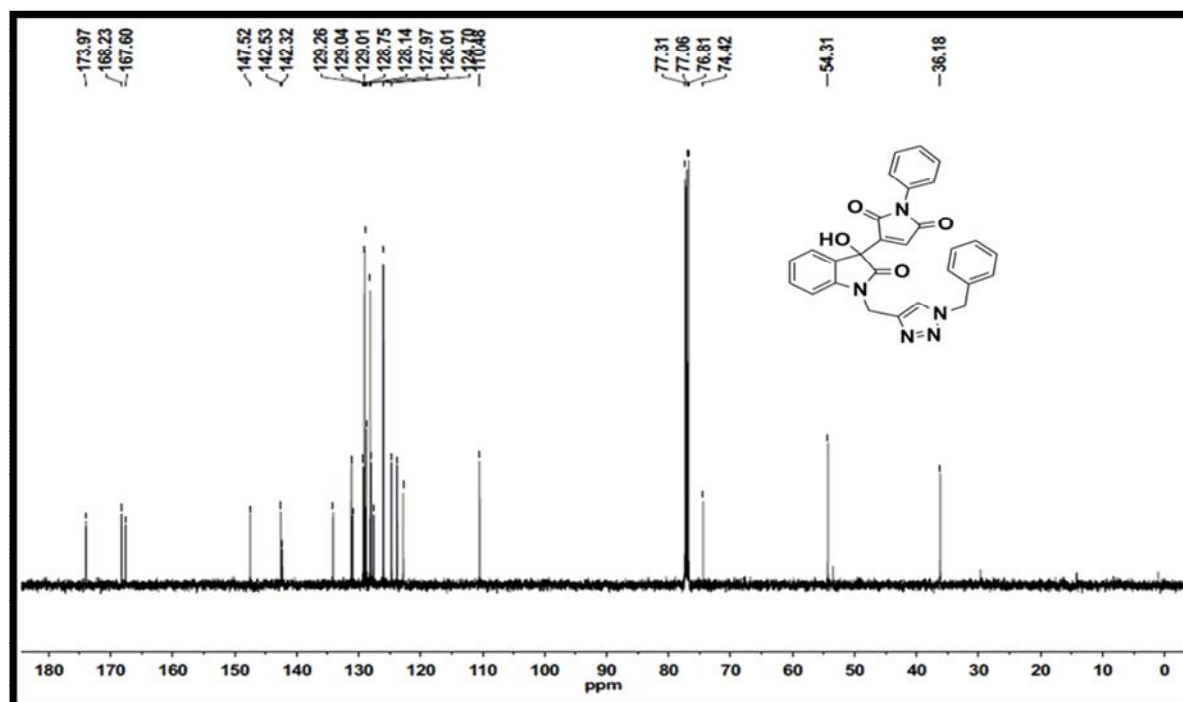
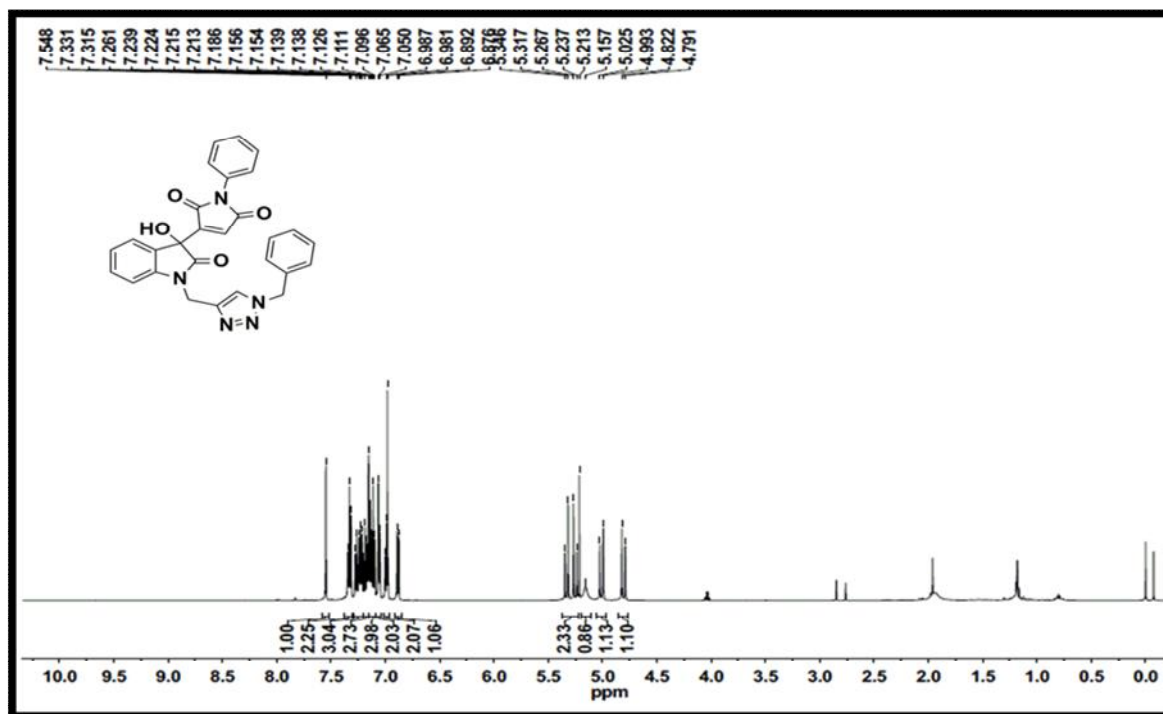
**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4j (500 MHz, CDCl<sub>3</sub>)**



**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4k (400 MHz, CDCl<sub>3</sub>)**

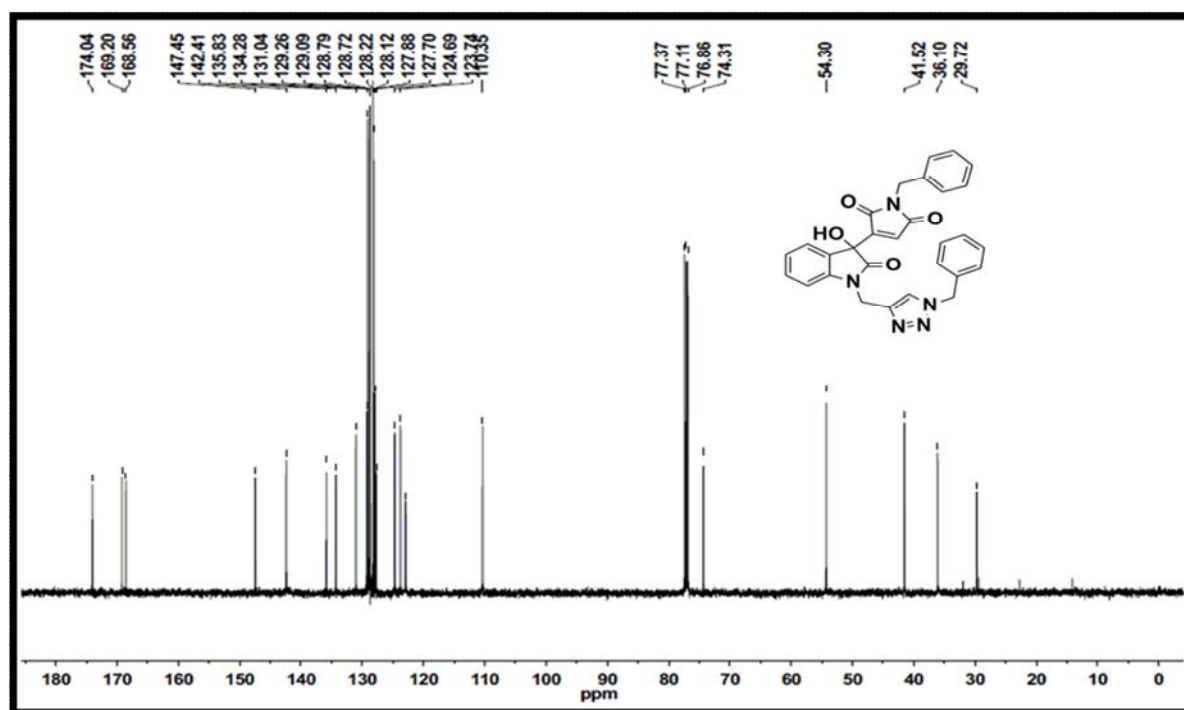
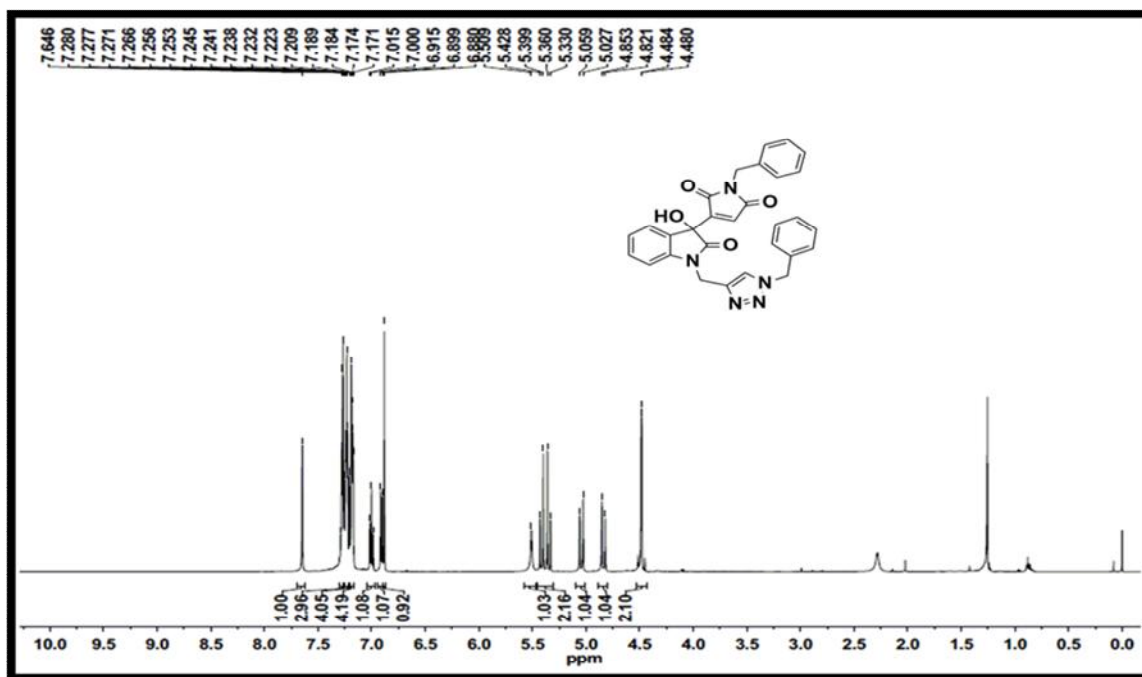


**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4l (500 MHz, DMSO-d<sub>6</sub>)**



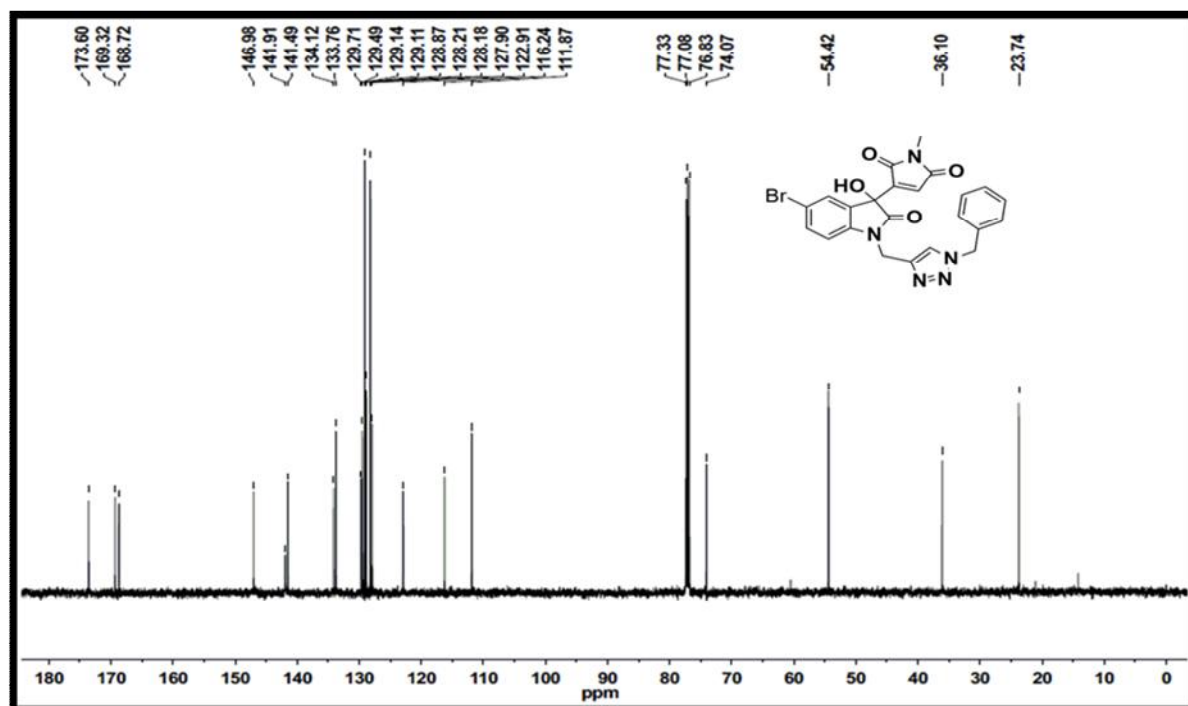
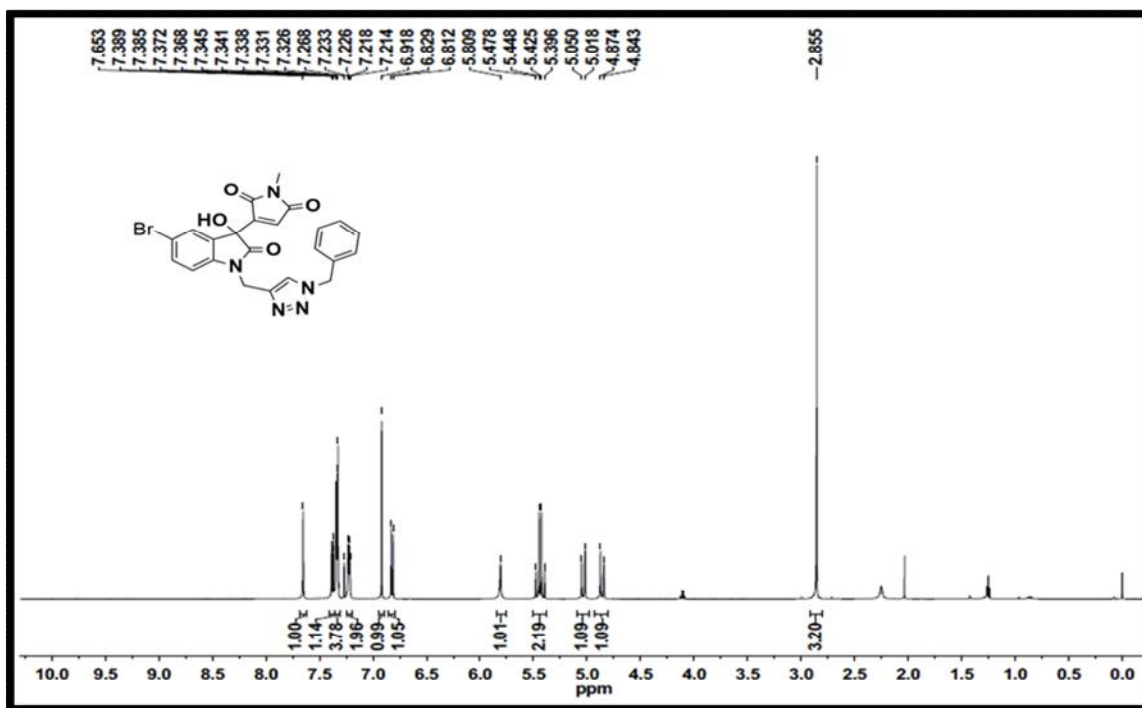
**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4m (500 MHz, CDCl<sub>3</sub>)**



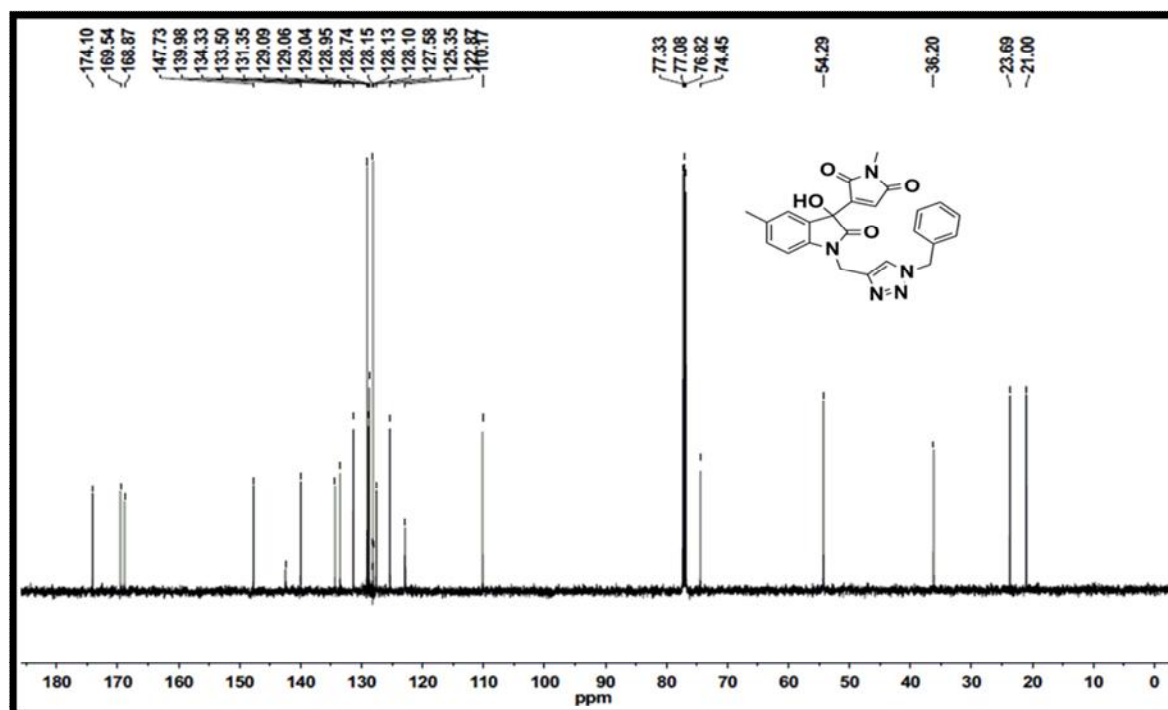
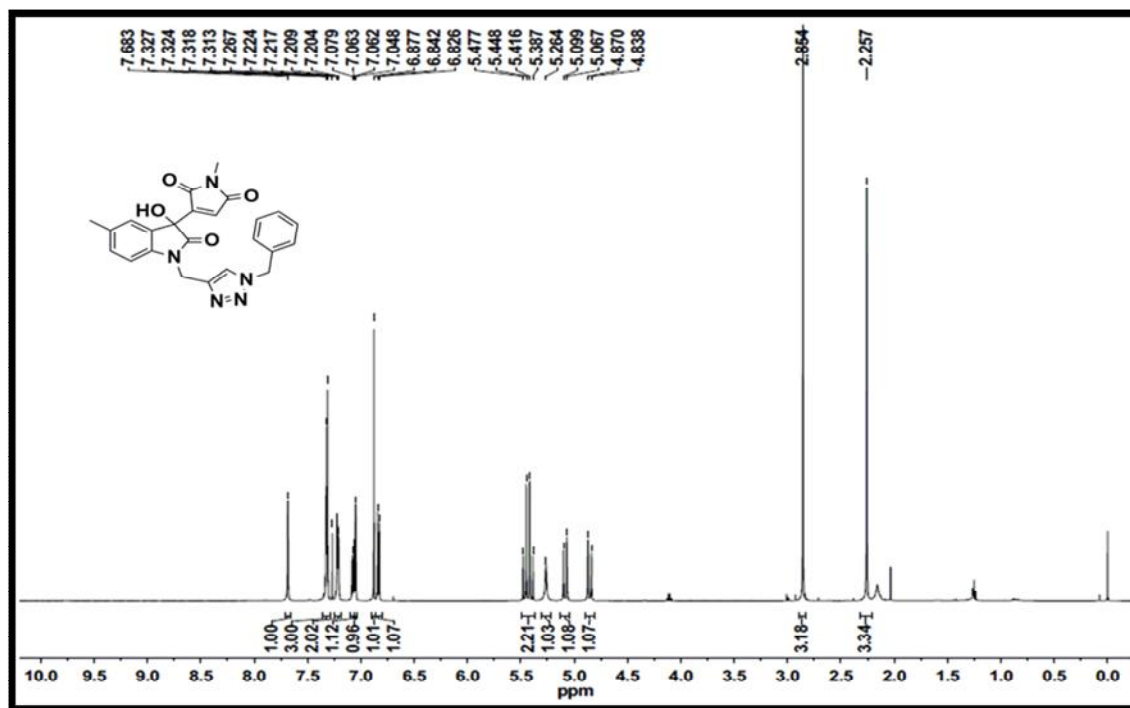


**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4n (500 MHz, CDCl<sub>3</sub>)**



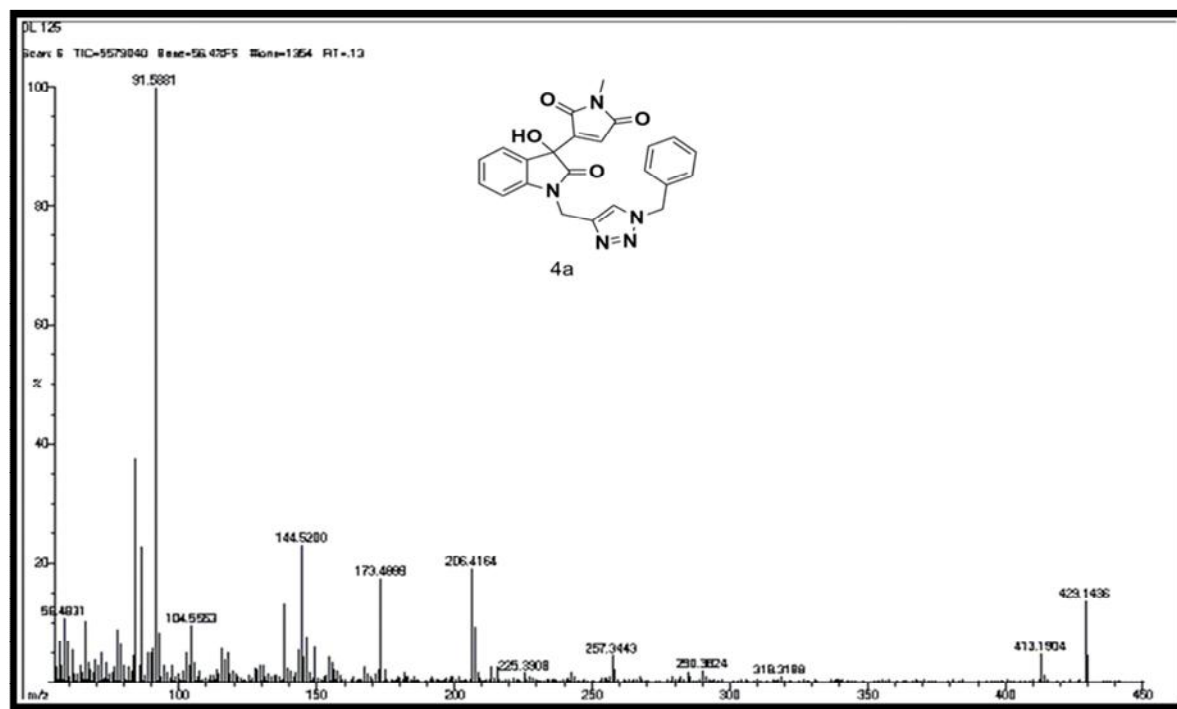


**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4o (500 MHz, CDCl<sub>3</sub>)**

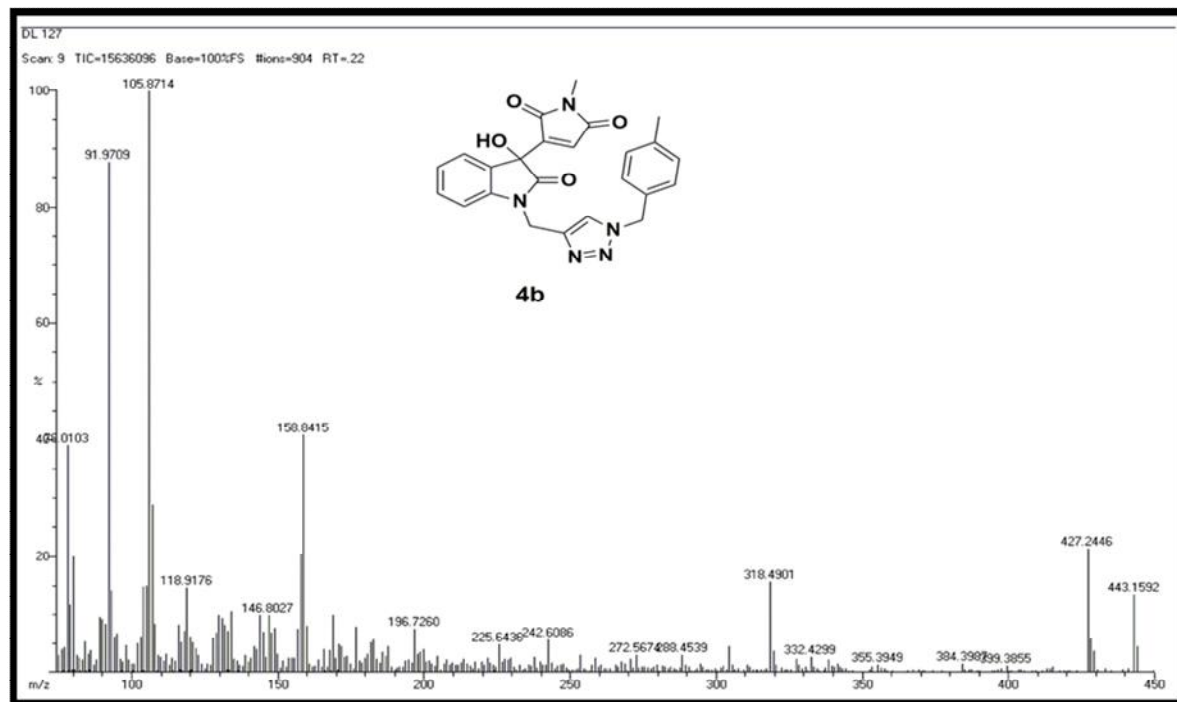


**<sup>1</sup>H and <sup>13</sup>C NMR Spectrum of Compound 4p (500 MHz, CDCl<sub>3</sub>)**

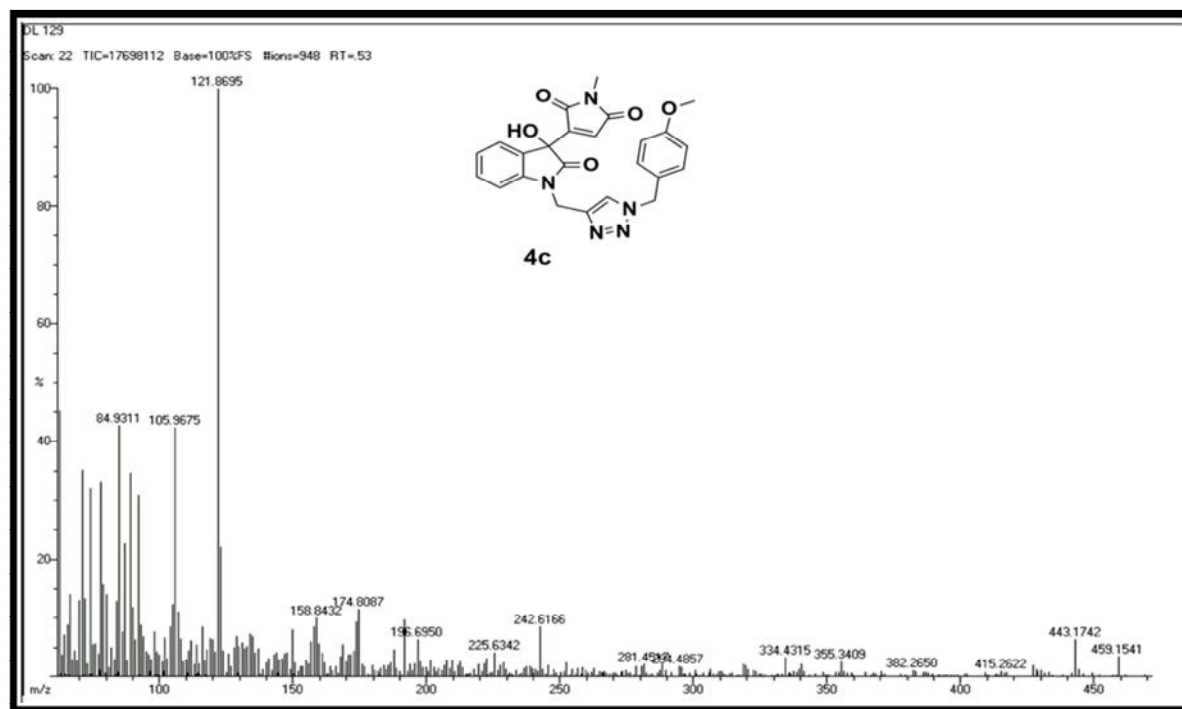
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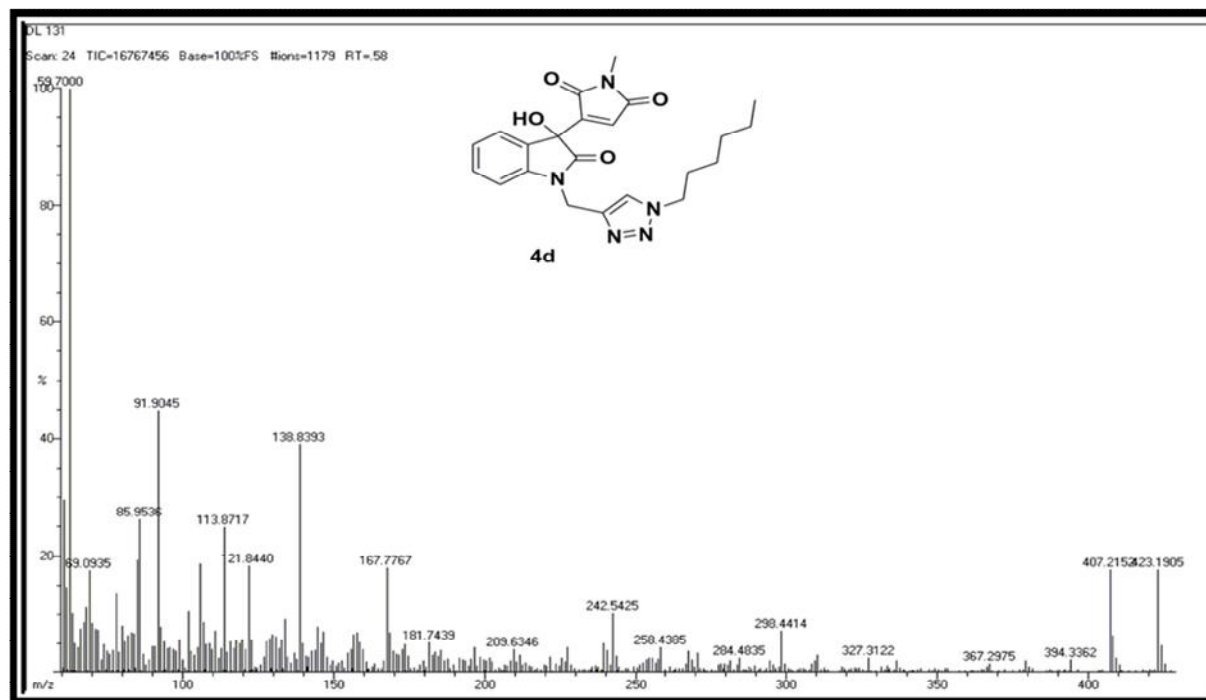
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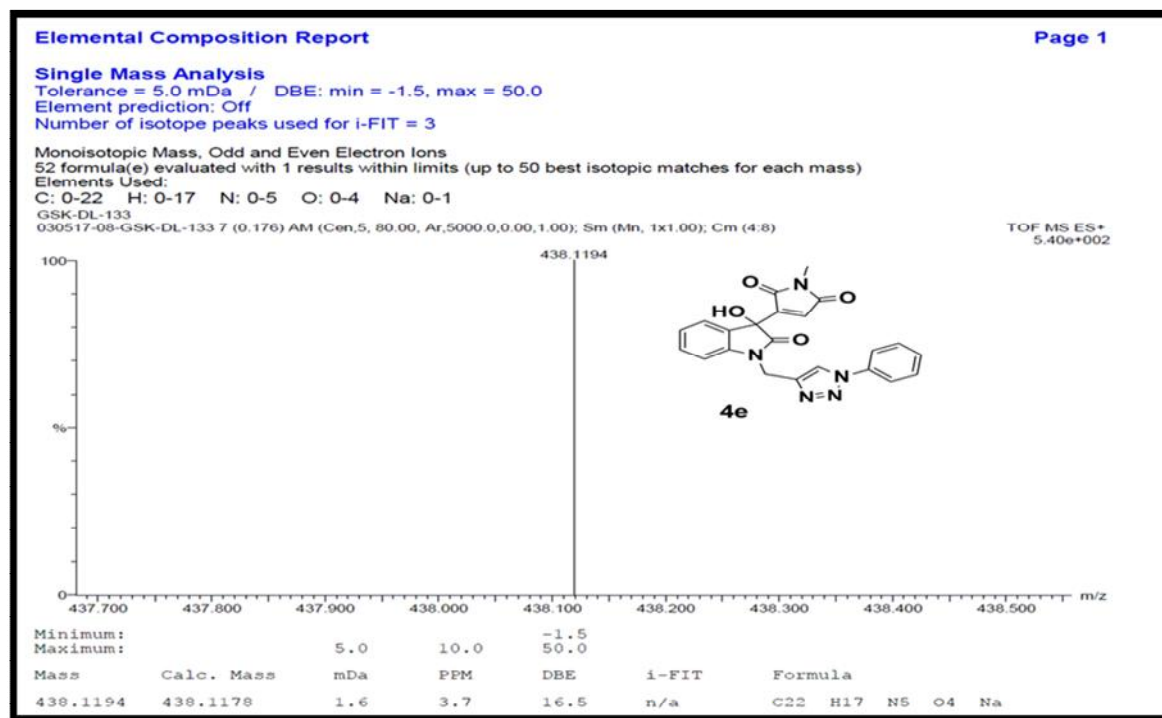
## HRMS Spectrum of Compound 4c



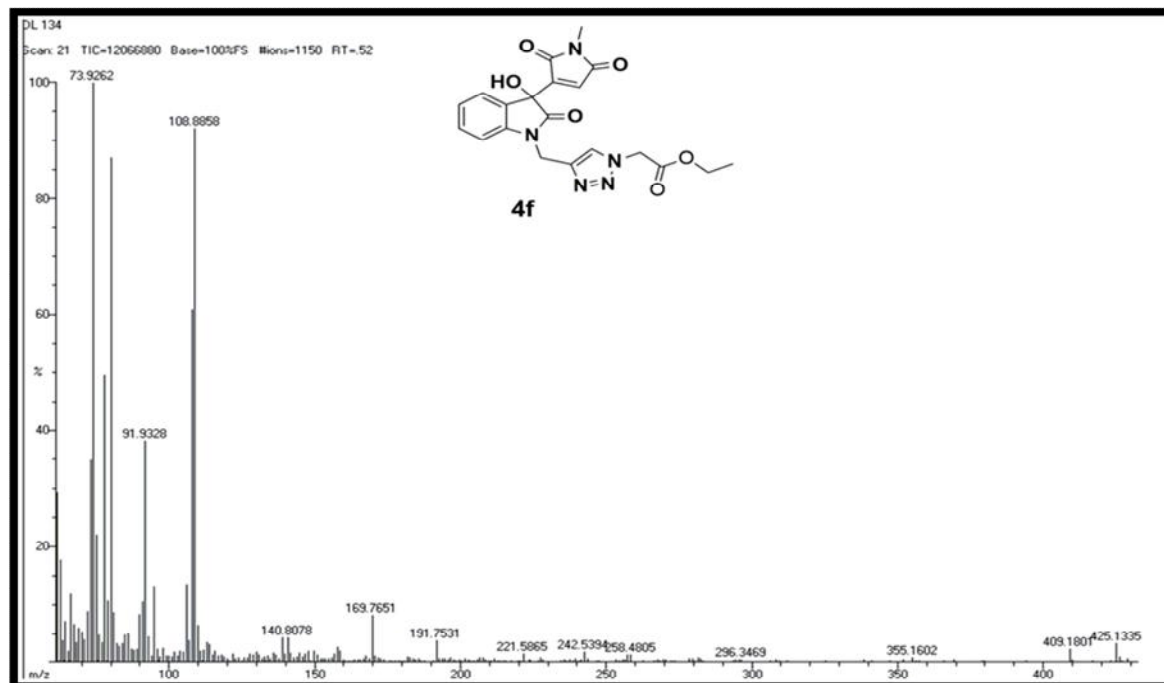
## HRMS Spectrum of Compound 4d



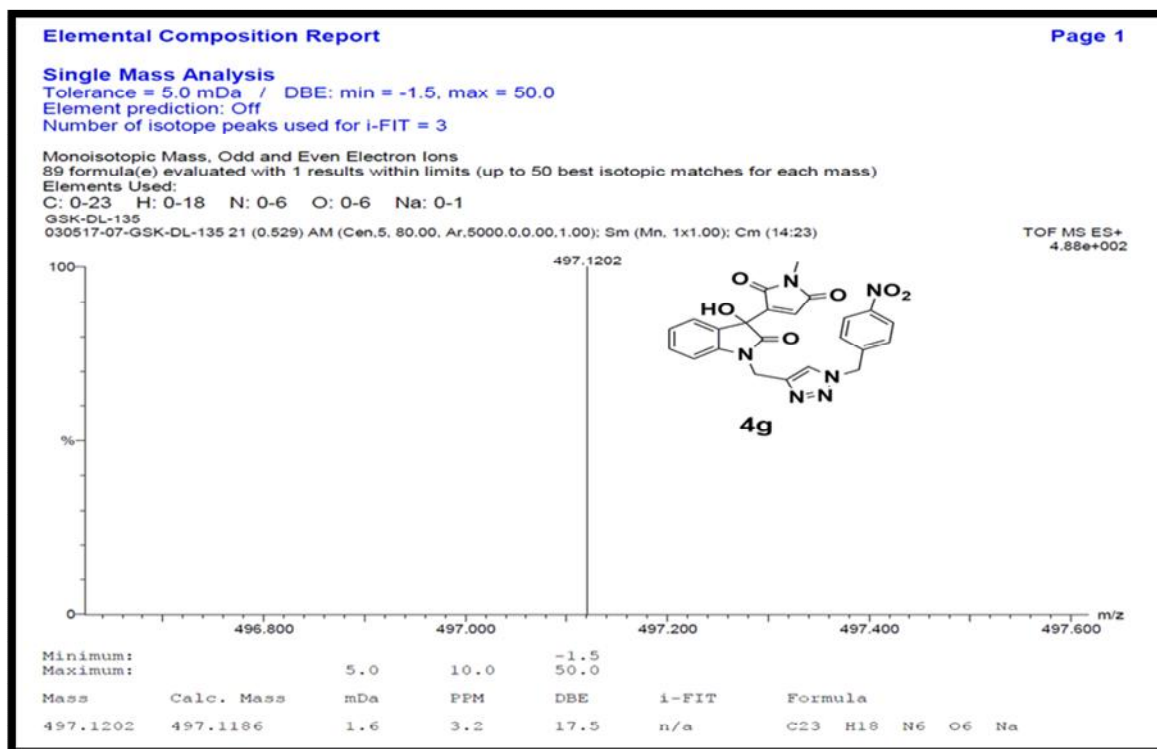
## HRMS Spectrum of Compound 4e



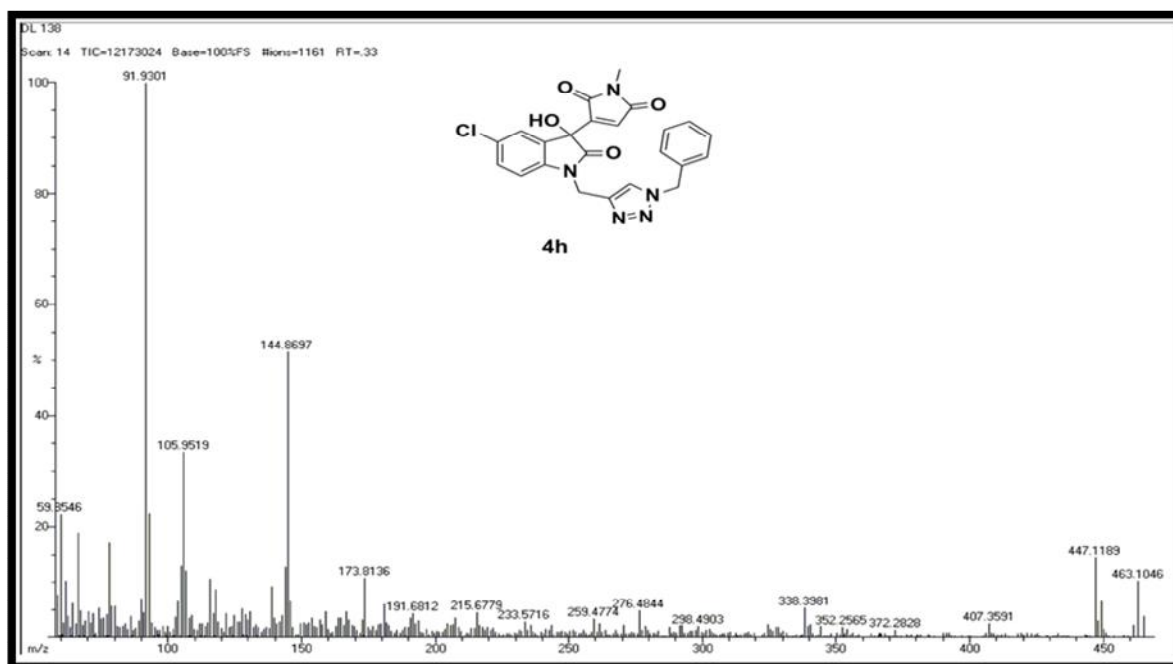
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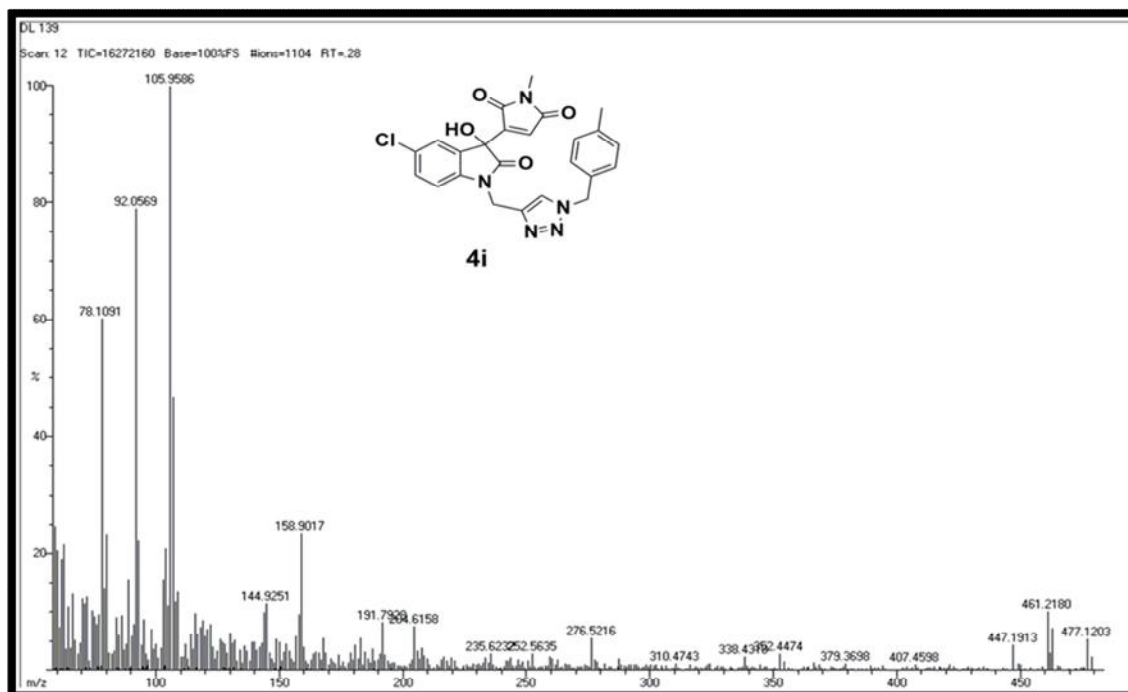
## HRMS Spectrum of Compound 4g



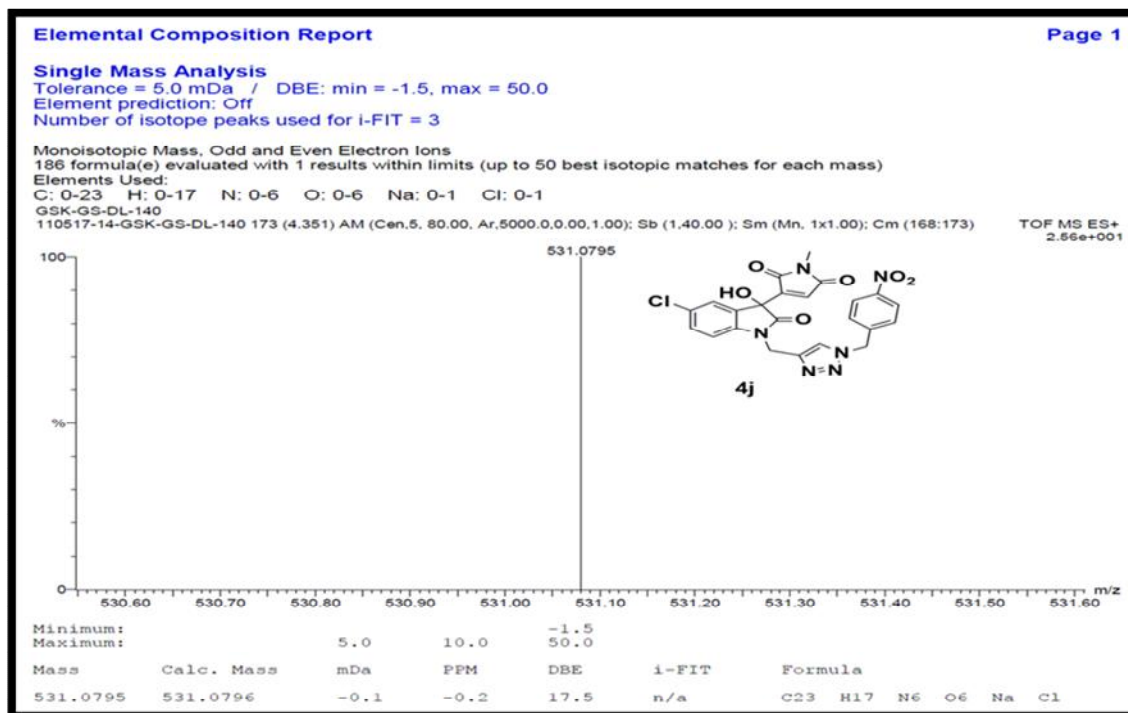
## HRMS Spectrum of Compound 4h



## HRMS Spectrum of Compound 4i

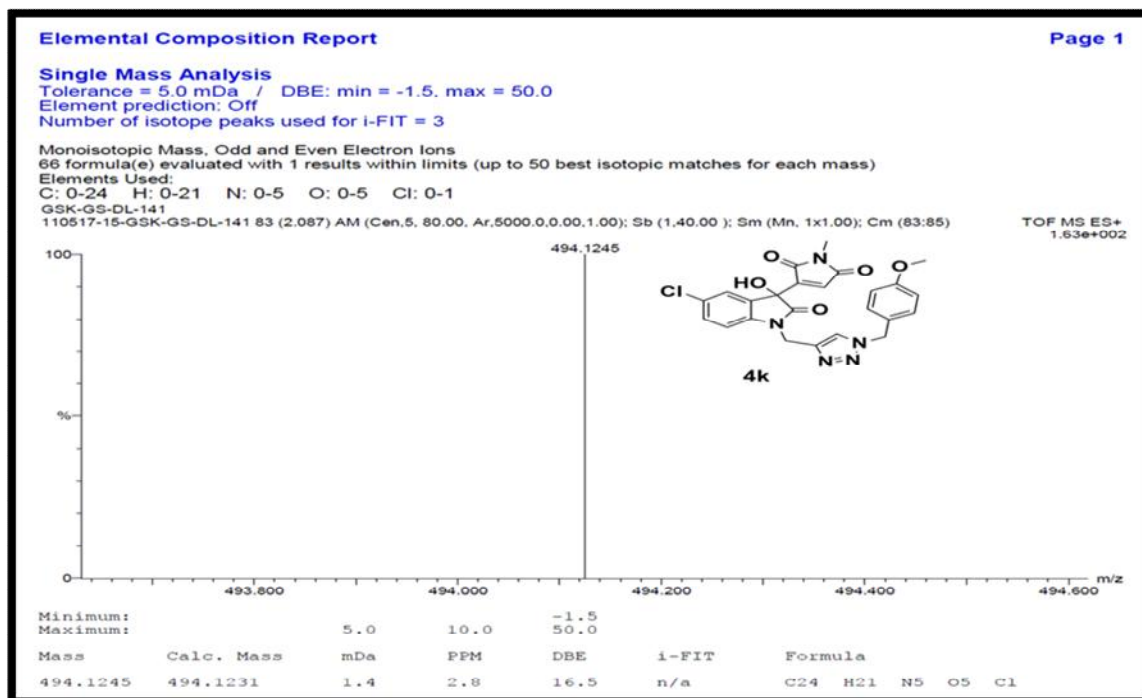


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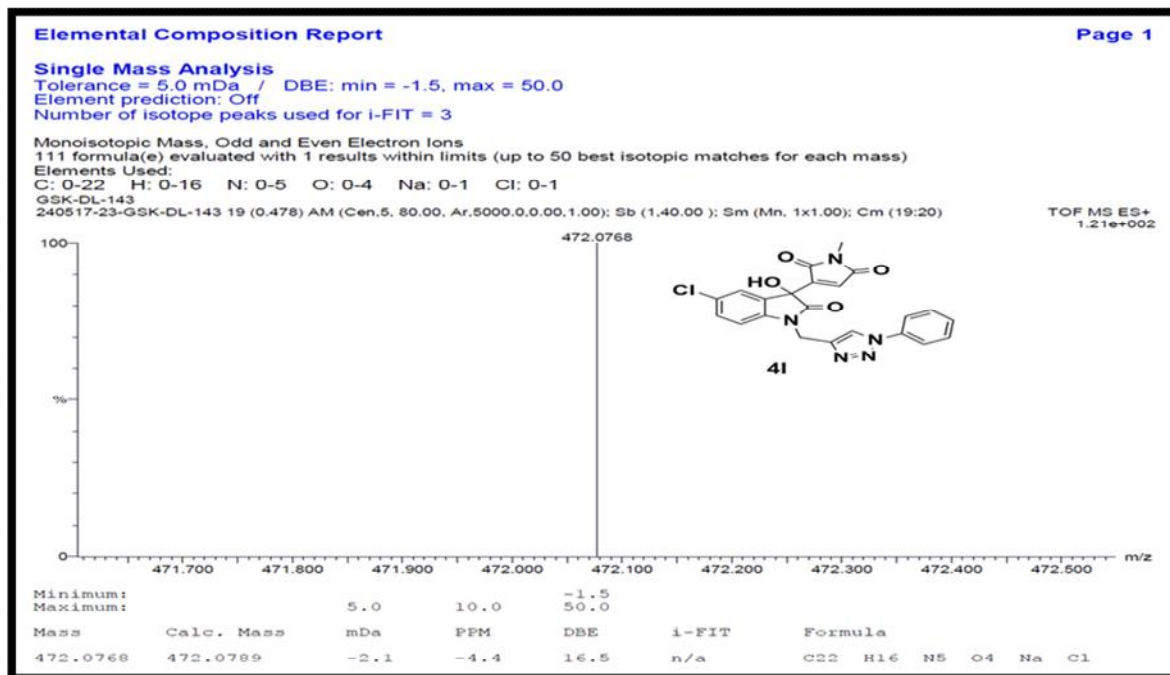




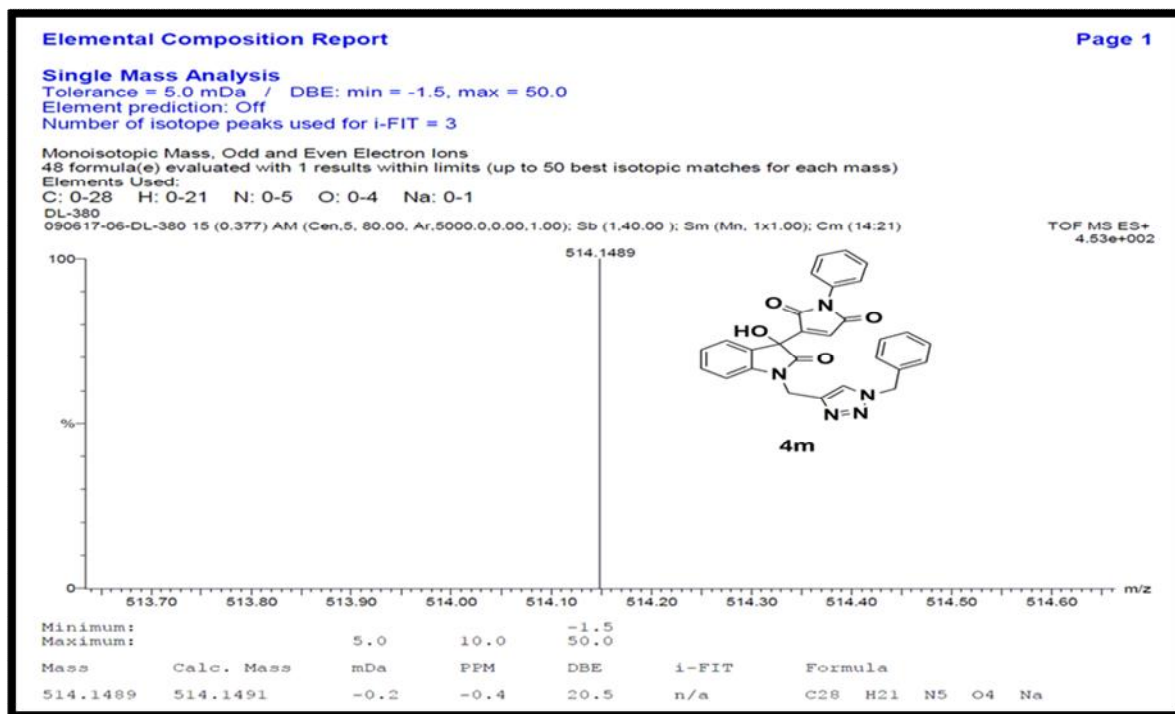
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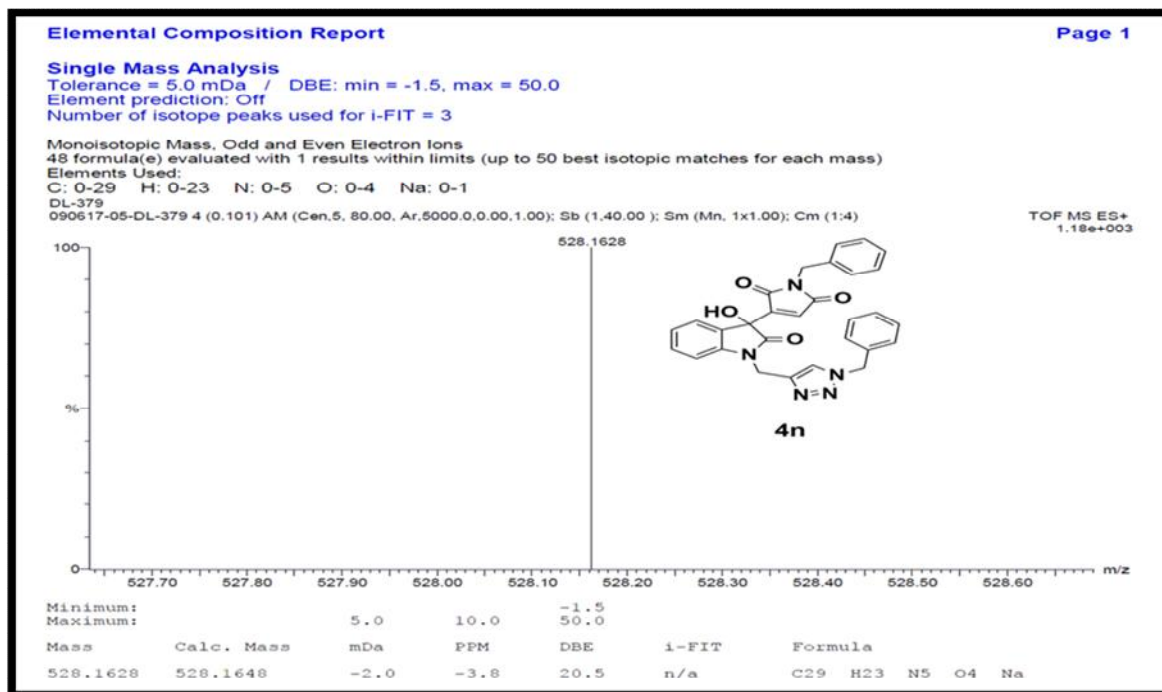
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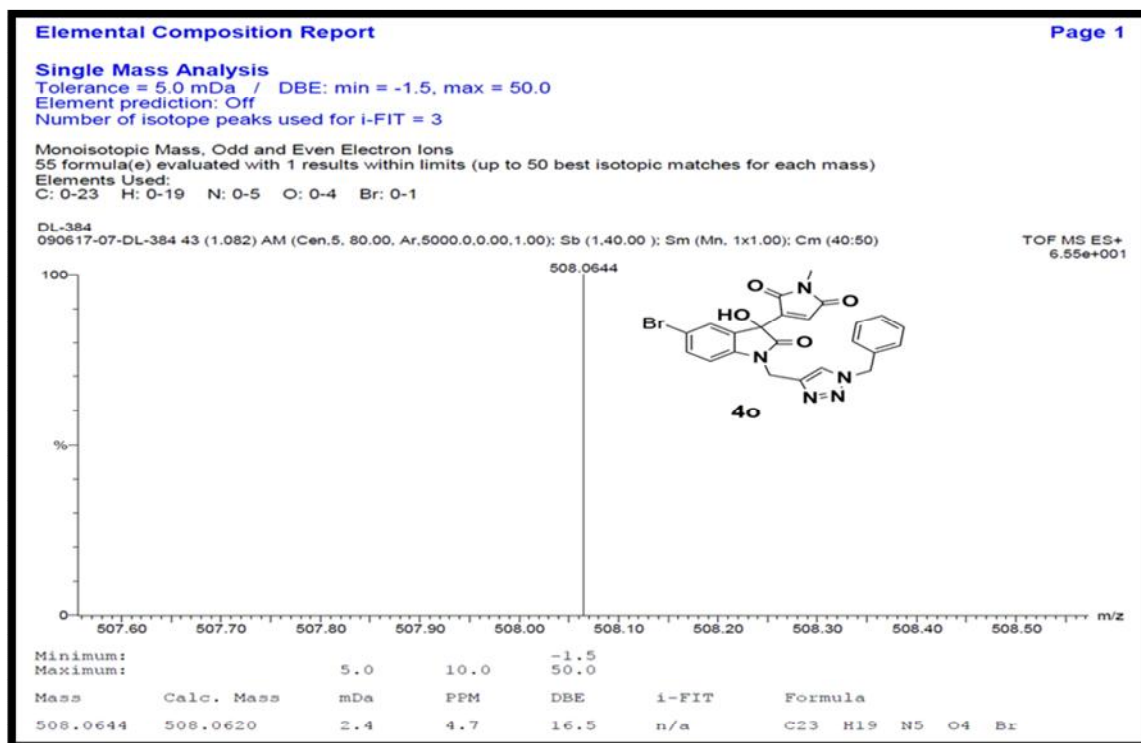
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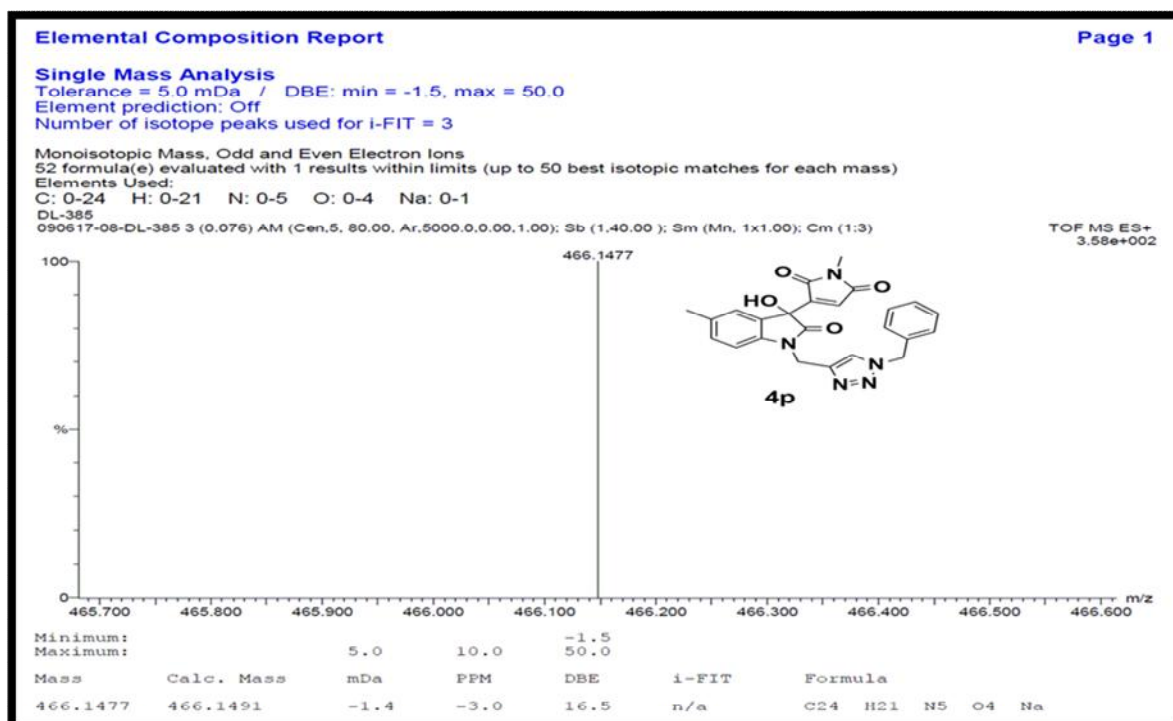
## HRMS Spectrum of Compound 4n



## HRMS Spectrum of Compound 4o



## HRMS Spectrum of Compound 4p



## Crystal parameters of Compound 4e

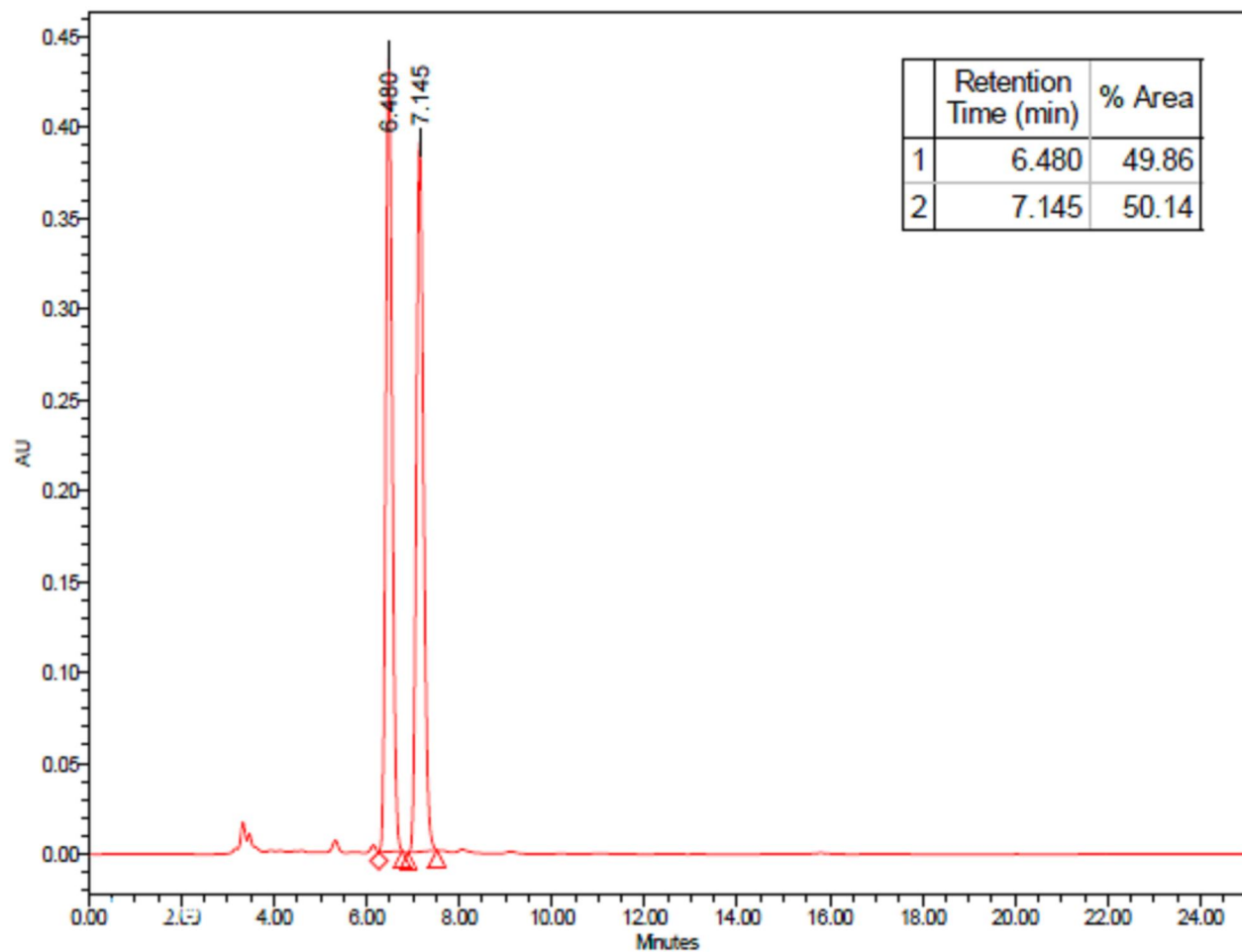
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       alpha=80.421(1) beta=70.629(1) gamma=65.931(1)  
 Temperature: 296 K

	Calculated	Reported
Volume	1037.01(6)	1037.01(6)
Space group	P -1	P -1
Hall group	-P 1	-P 1
Moiety formula	C22 H17 N5 O4, H2 O	C22 H19 N5 O5
Sum formula	C22 H19 N5 O5	C22 H19 N5 O5
Mr	433.42	433.42
Dx, g cm <sup>-3</sup>	1.388	1.388
Z	2	2
Mu (mm <sup>-1</sup> )	0.101	0.101
F000	452.0	452.0
F000'	452.22	
h,k,lmax	12,12,15	12,12,15
Nref	4266	4242
Tmin,Tmax	0.982,0.988	0.982,0.988
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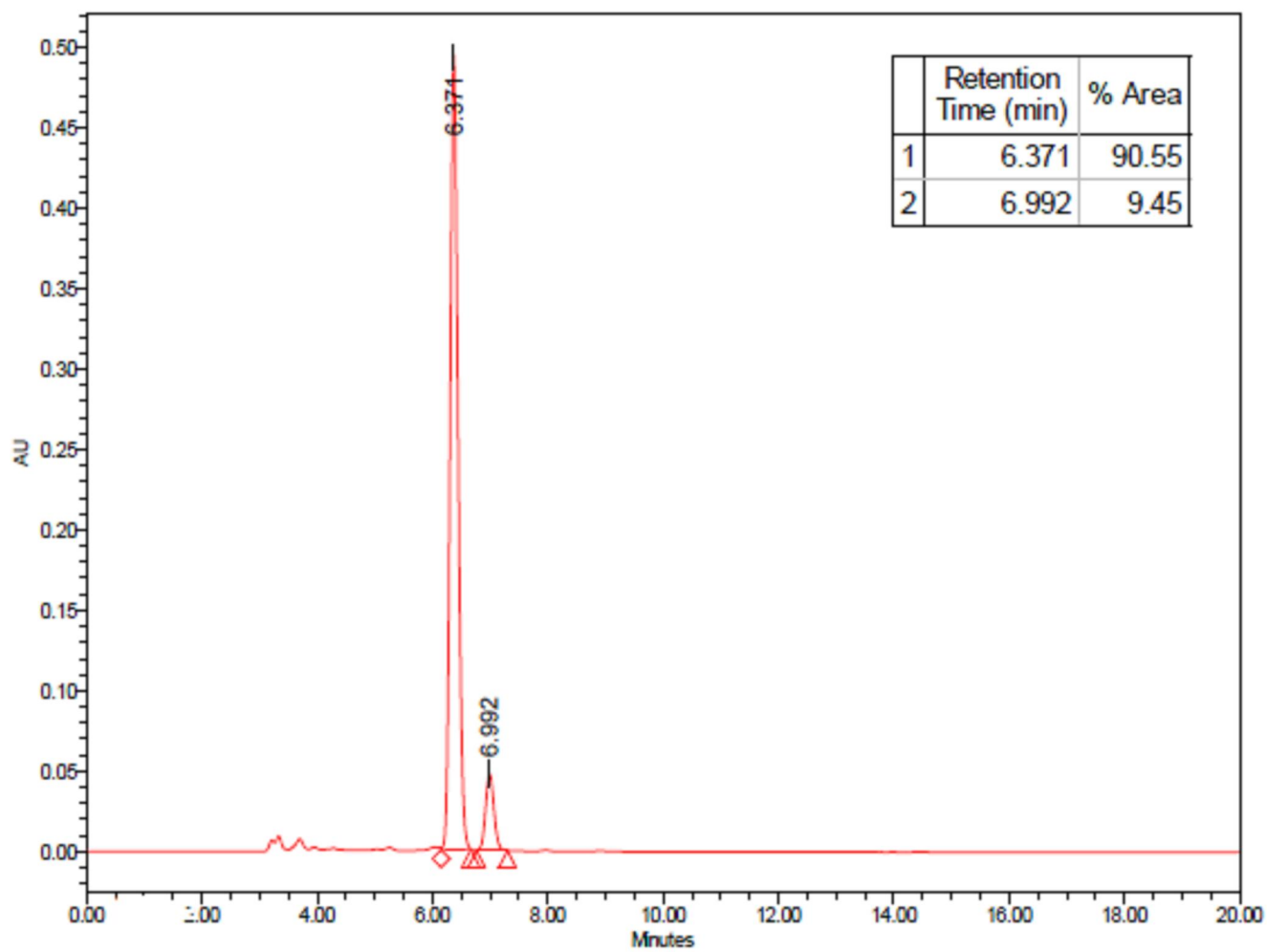
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 MULTI-SCAN

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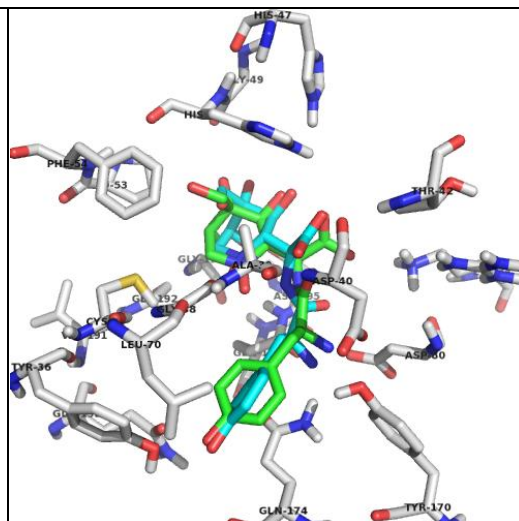
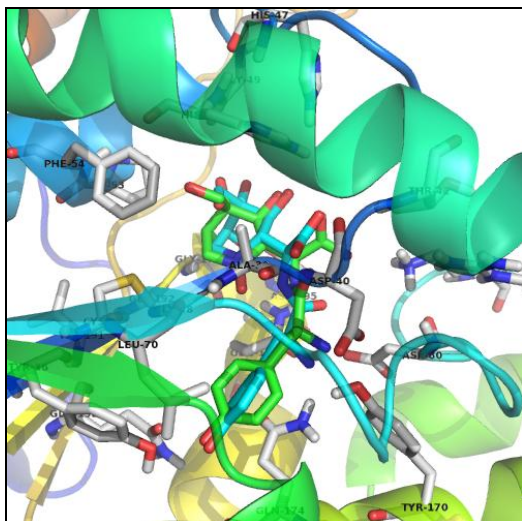
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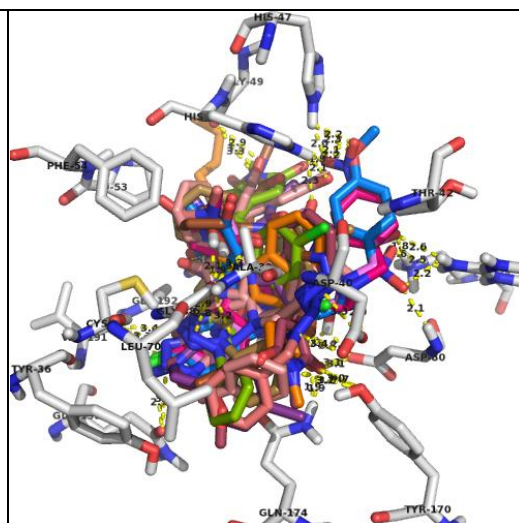
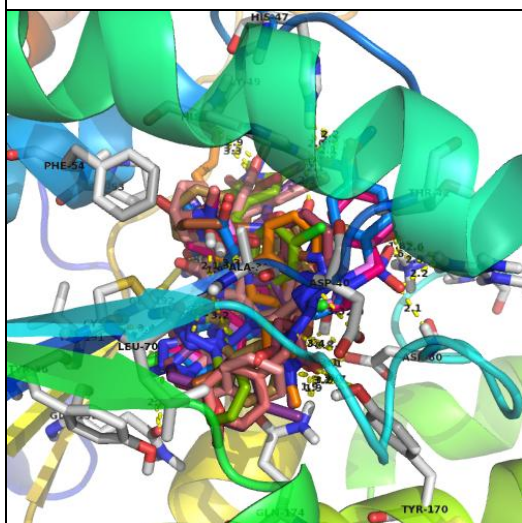
## HPLC of enantioexcess 4a'





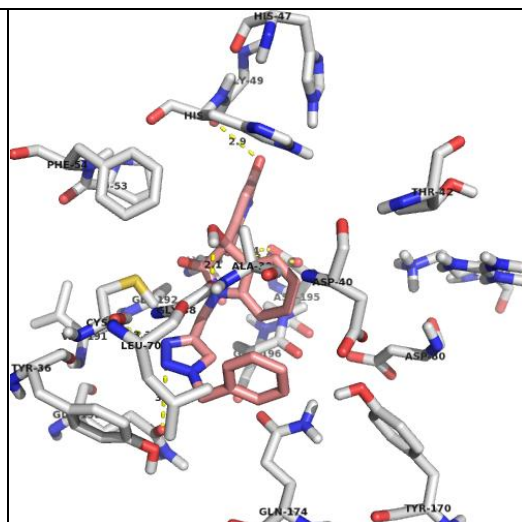
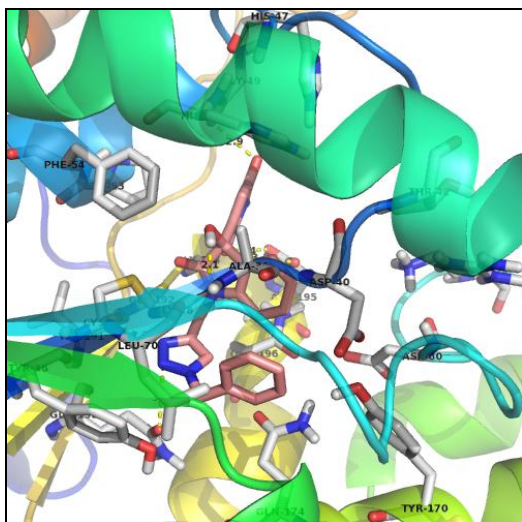


**Method validation using crystallised and docked ligand with 1JIJ receptor**

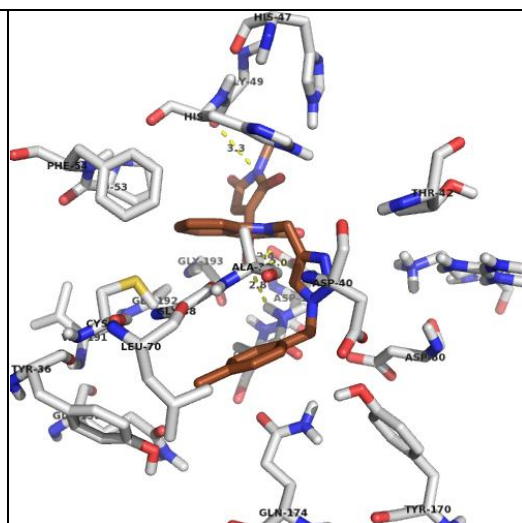
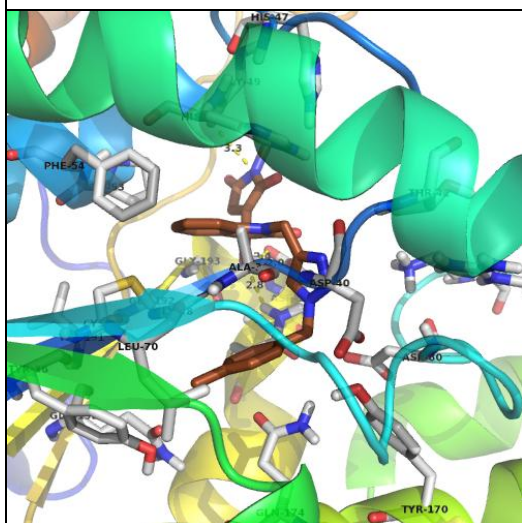


**Docking mode of all the compounds in the active site of 1JIJ receptor**

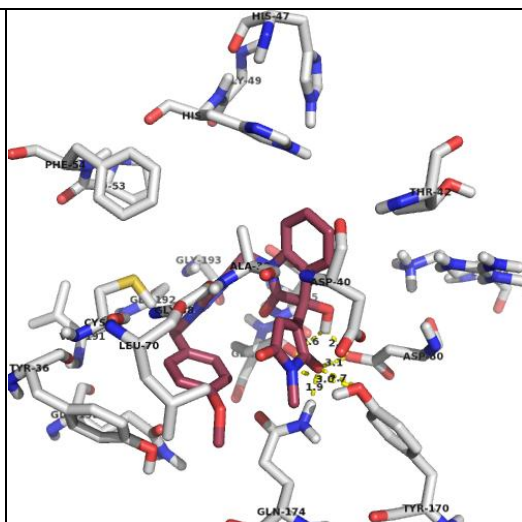




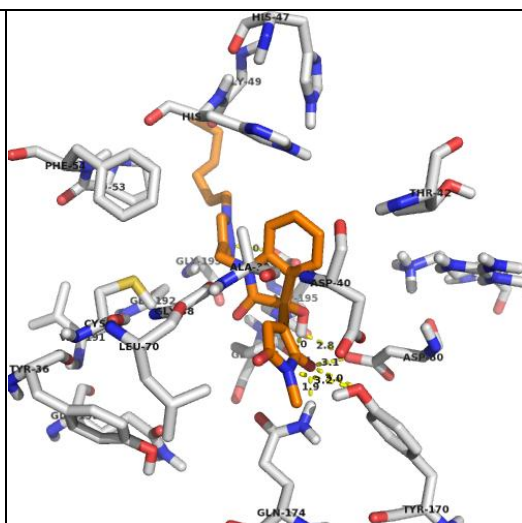
**Docking mode of the compound 4a in the active site of 1JIJ**



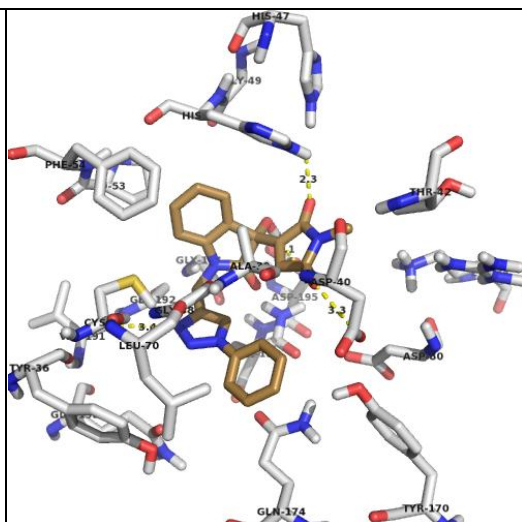
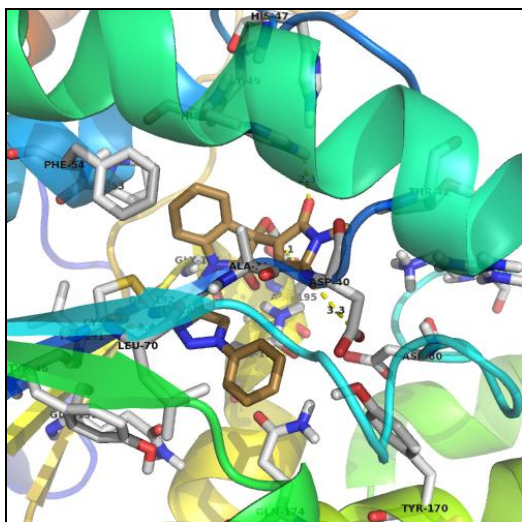
**Docking mode of the compound 4b in the active site of 1JIJ**



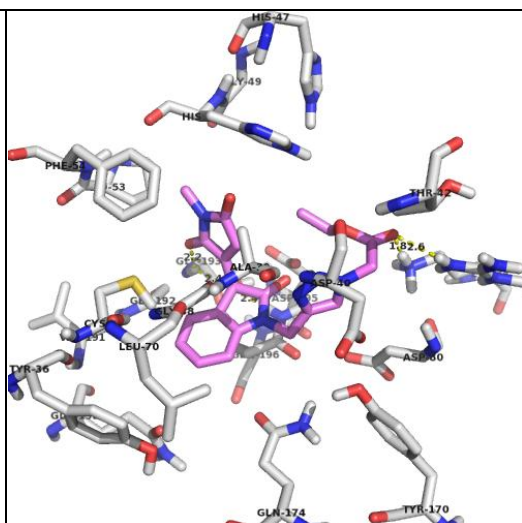
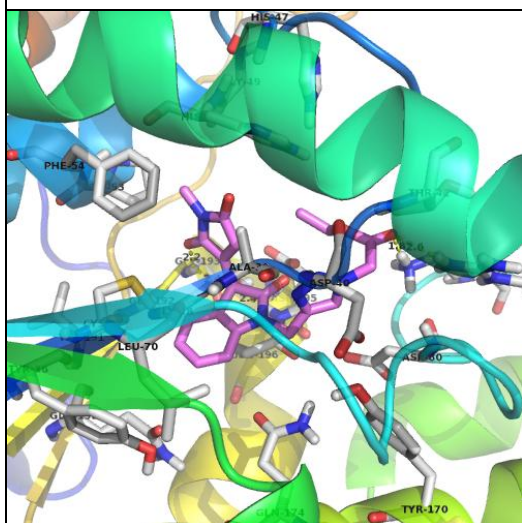
### Docking mode of the compound 4c in the active site of 1JJ



### Docking mode of the compound 4d in the active site of 1JJJ

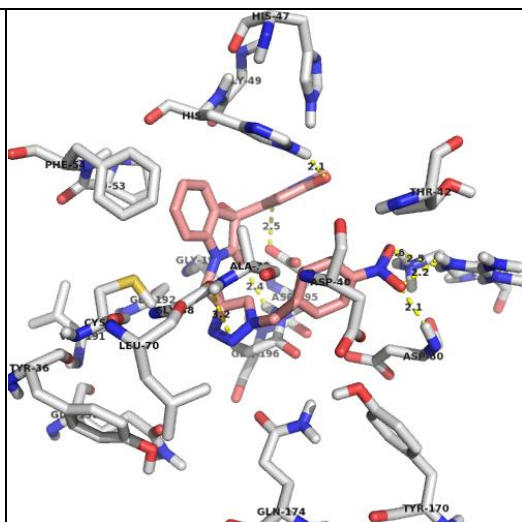


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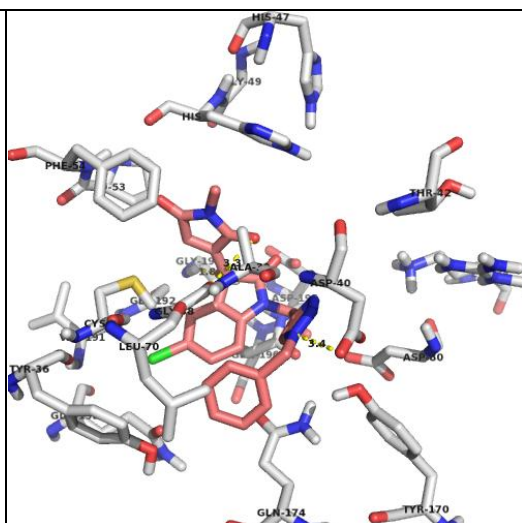


**Docking mode of the compound 4f in the active site of 1JIJ**

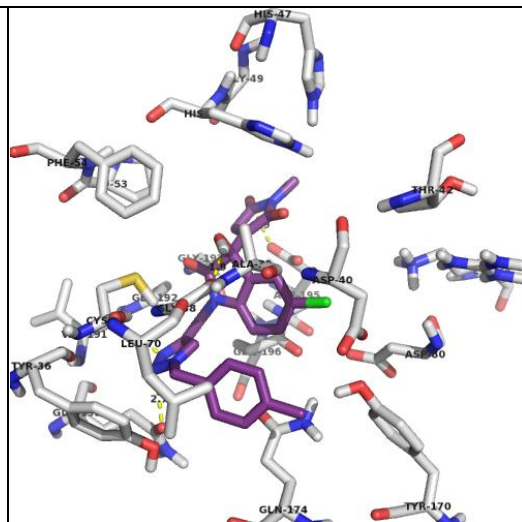
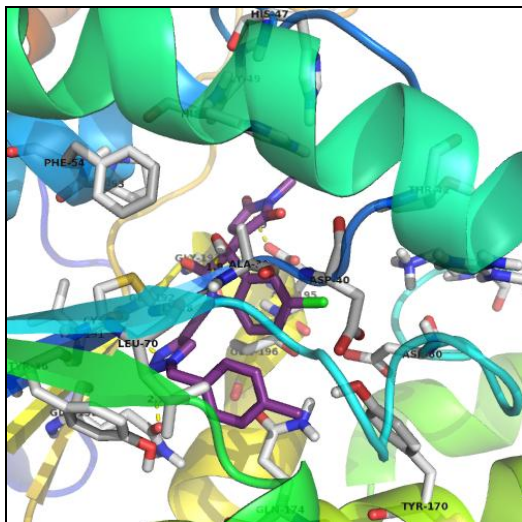




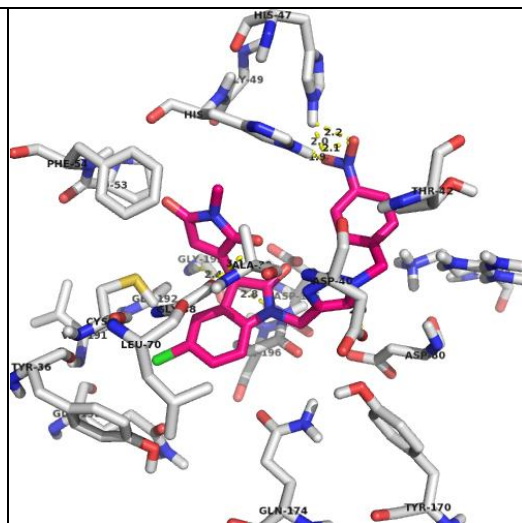
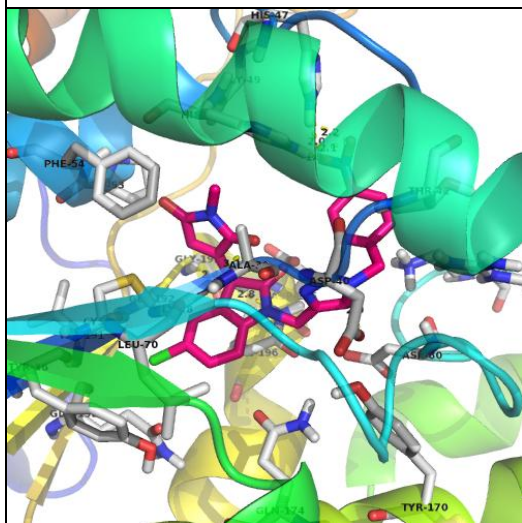
### Docking mode of the compound 4g in the active site of 1JJJ



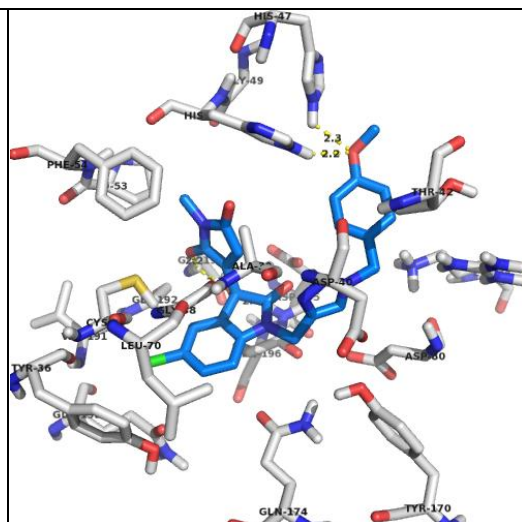
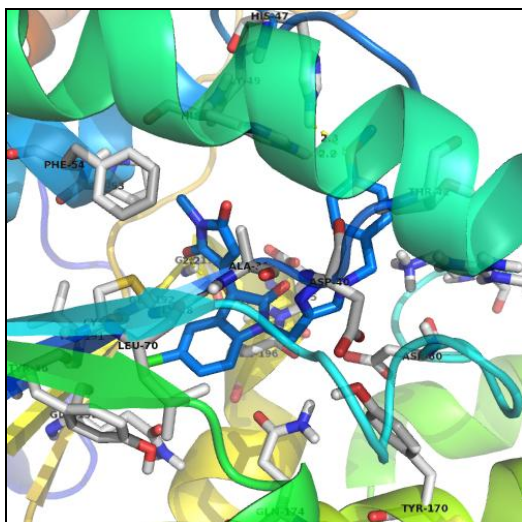
### Docking mode of the compound 4h in the active site of 1JIJ



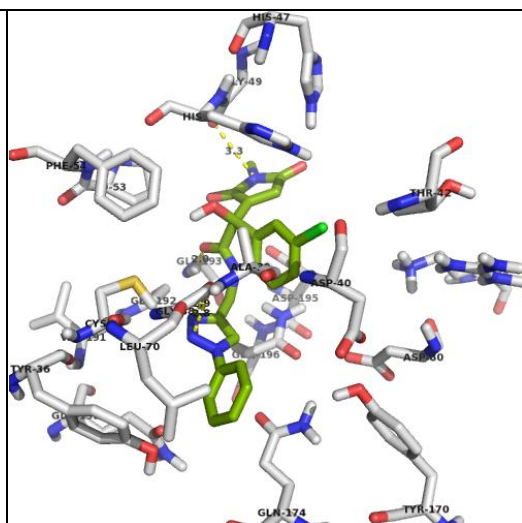
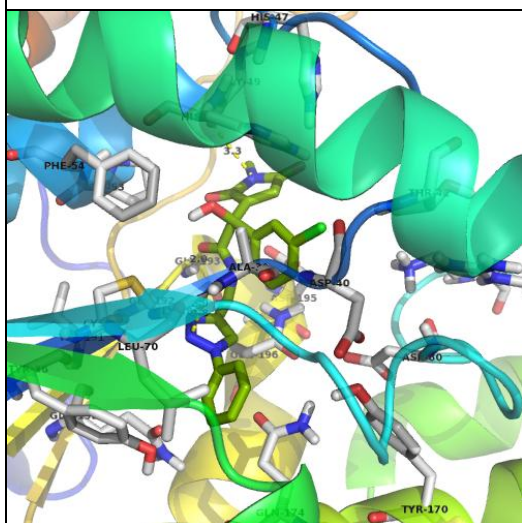
**Docking mode of the compound 4i in the active site of 1JIJ**



**Docking mode of the compound 4j in the active site of 1JIJ**

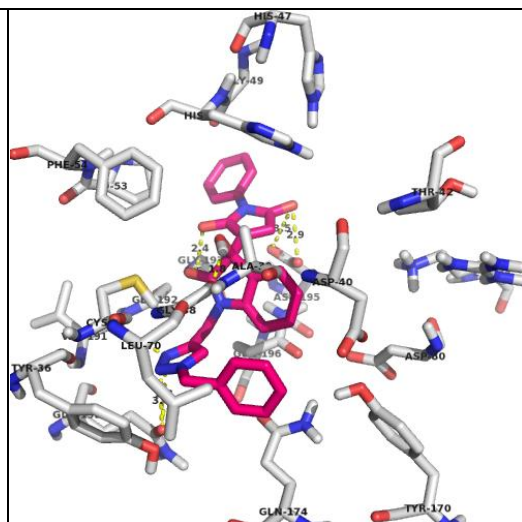
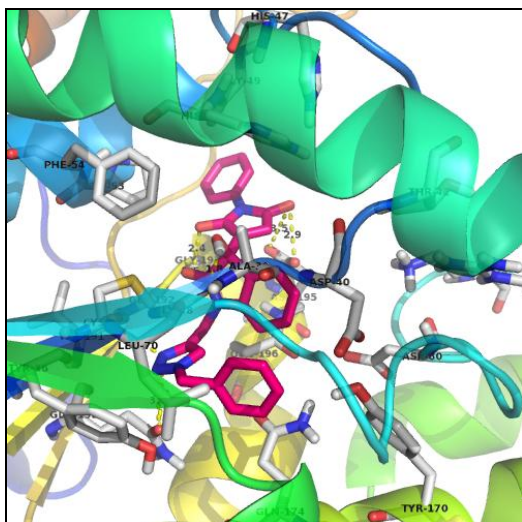


**Docking mode of the compound 4k in the active site of 1JIJ**

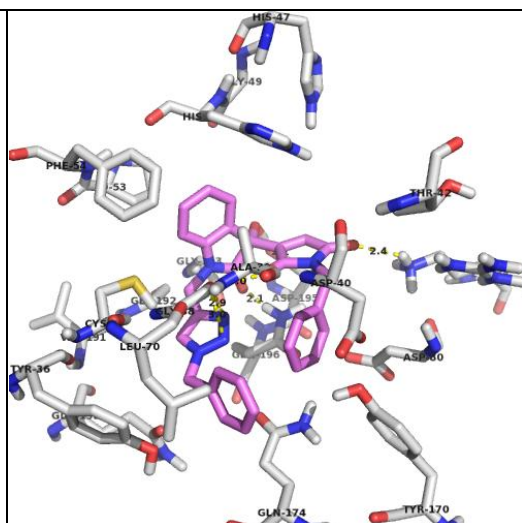
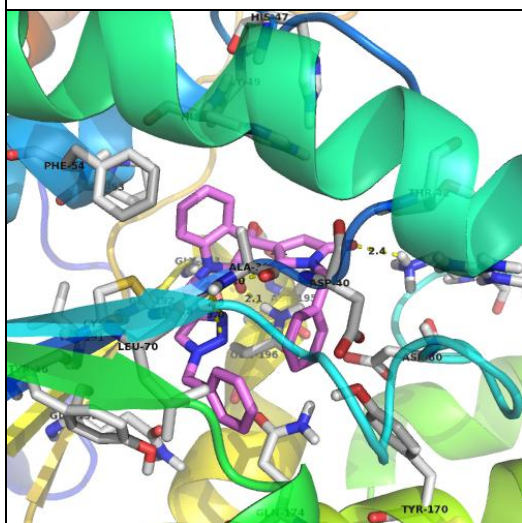


**Docking mode of the compound 4l in the active site of 1JIJ**



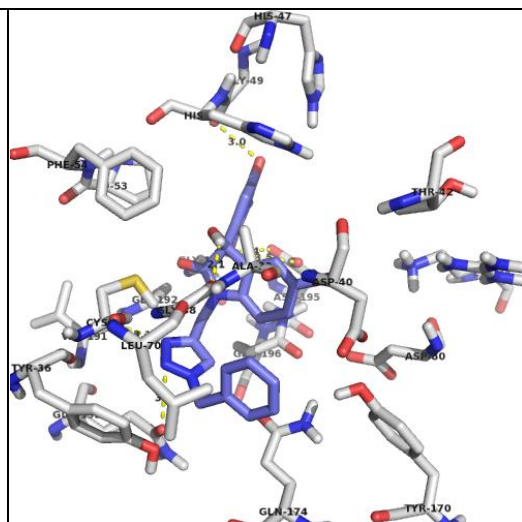
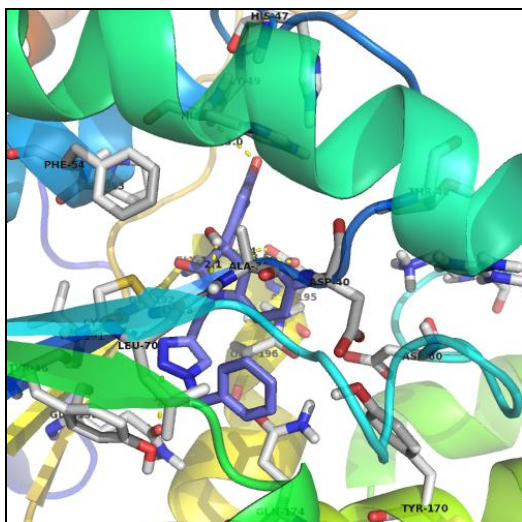


**Docking mode of the compound 4min the active site of 1JIJ**

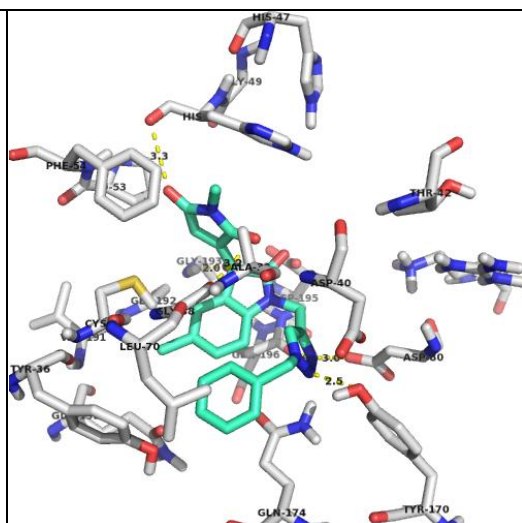
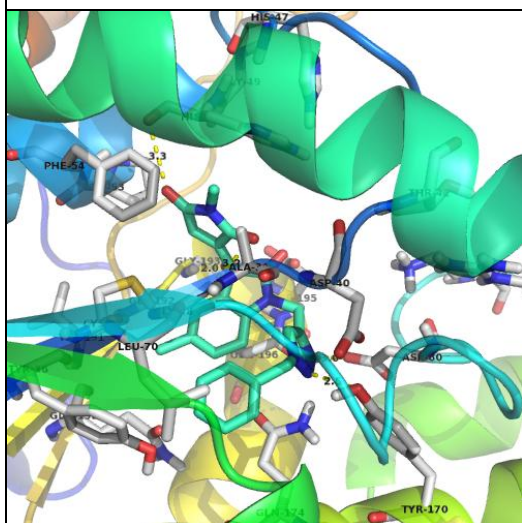


**Docking mode of the compound 4n in the active site of 1JIJ**





**Docking mode of the compound 4o in the active site of 1JIJ**



**Docking mode of the compound 4p in the active site of 1JIJ**