Supplementary Information (SI) for RSC Medicinal Chemistry.
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2-Oxoindolin-Thiazoline Hybrids as Scaffold-Based Therapeutics for T2DM-Associated Cognitive Impairment: Design, Synthesis, *in vitro* and *in silico* studies

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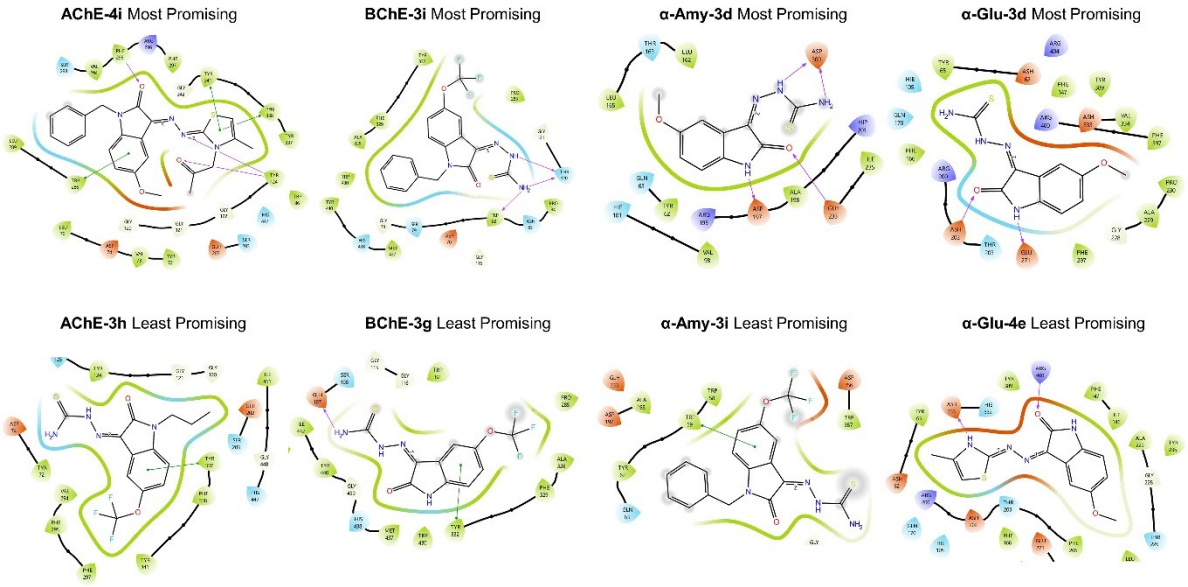


Fig. S1. Comparison of docking poses of the most and least active compounds for each target

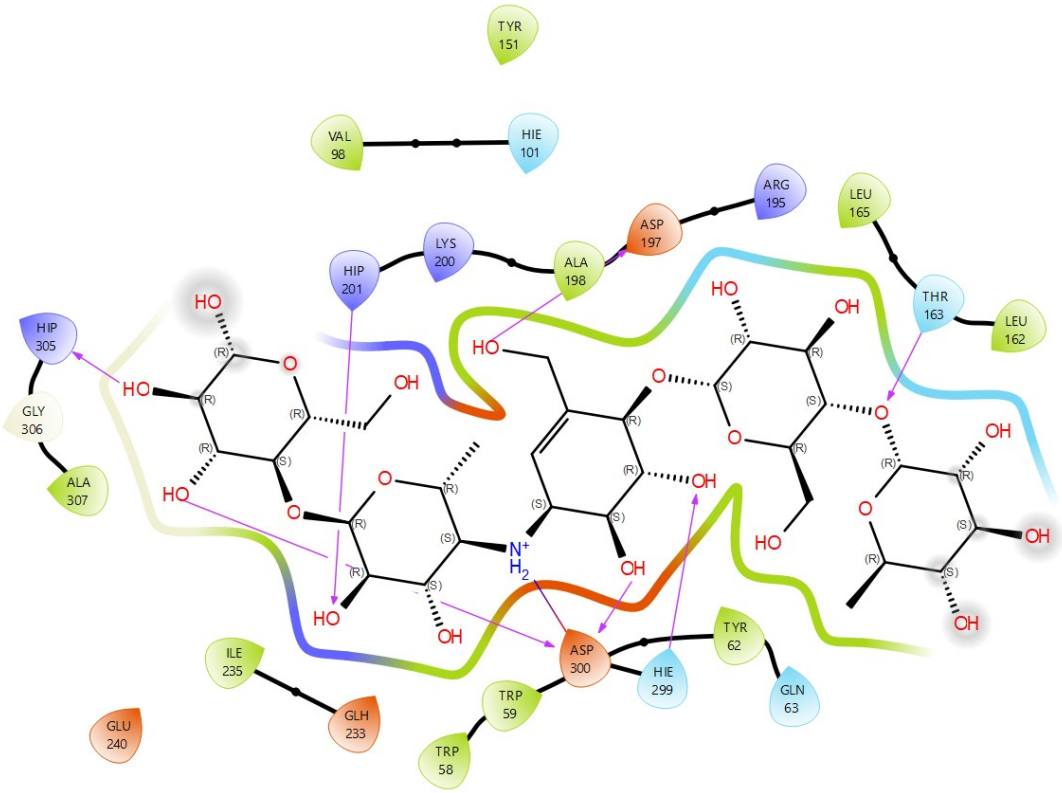


Fig. S2. 2D Ligand Protein interactions of Acarbose-α-Amy complex

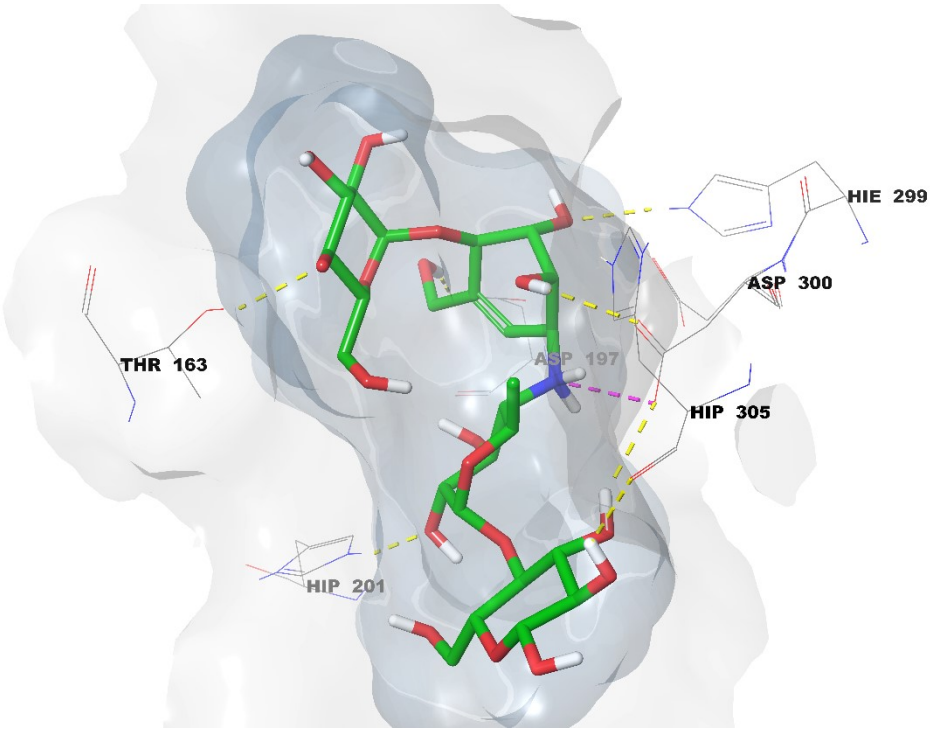


Fig. S3. 3D Ligand Protein interactions of Acarbose-α-Amy complex

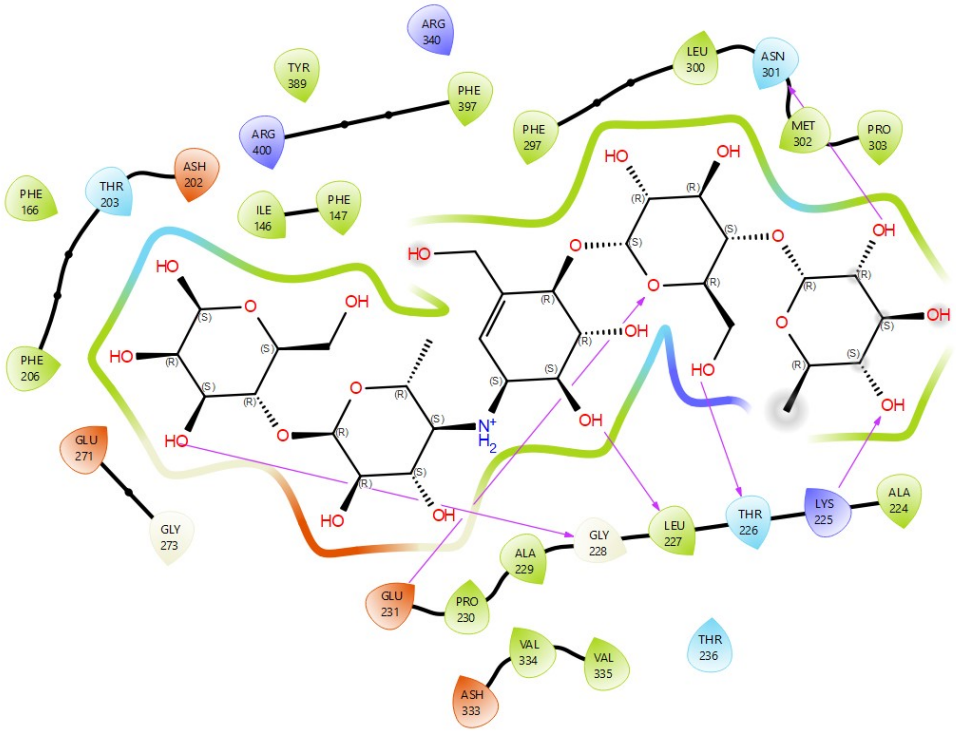


Fig. S4. 2D Ligand Protein interactions of Acarbose-α-Glu complex

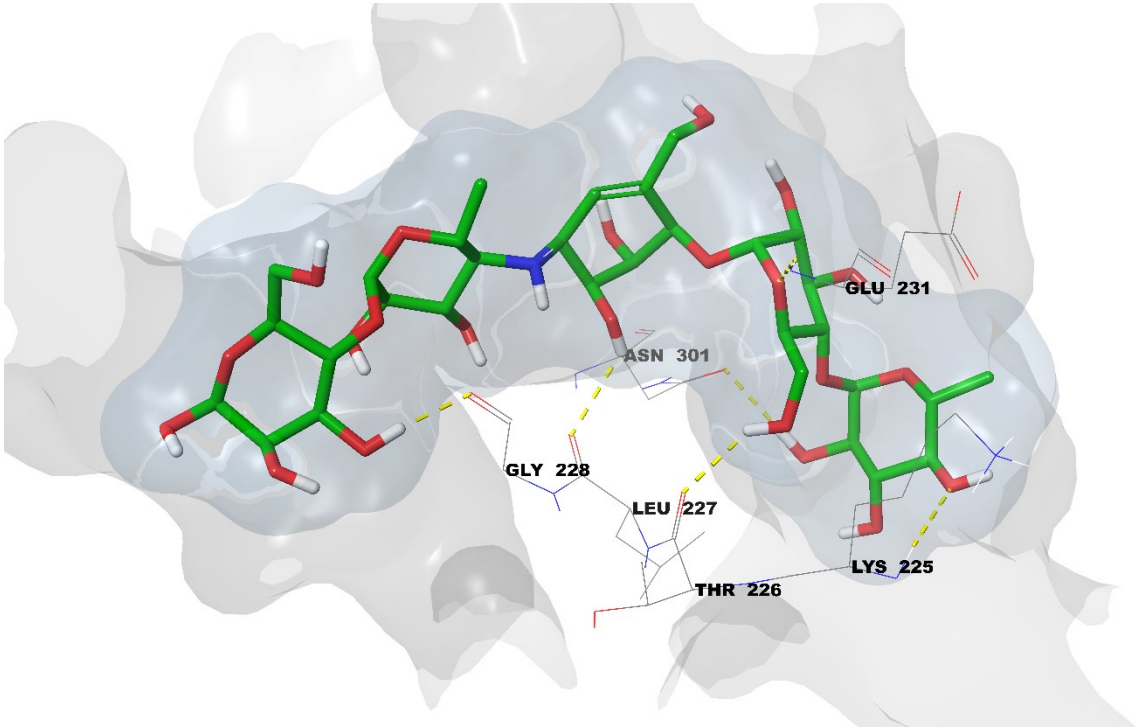


Fig. S5. 3D Ligand Protein interactions of Acarbose-α-Glu complex

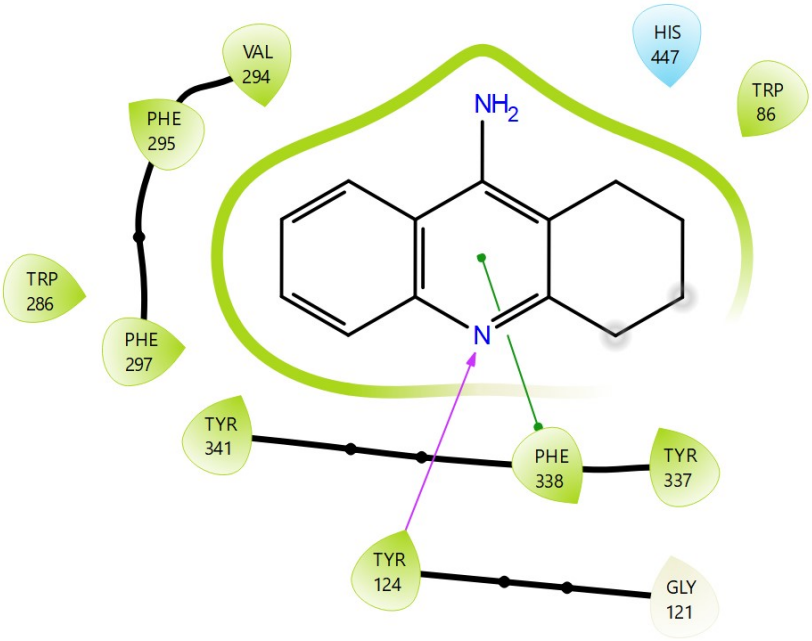


Fig. S6. 2D Ligand Protein interactions of Tacrine-AChE complex

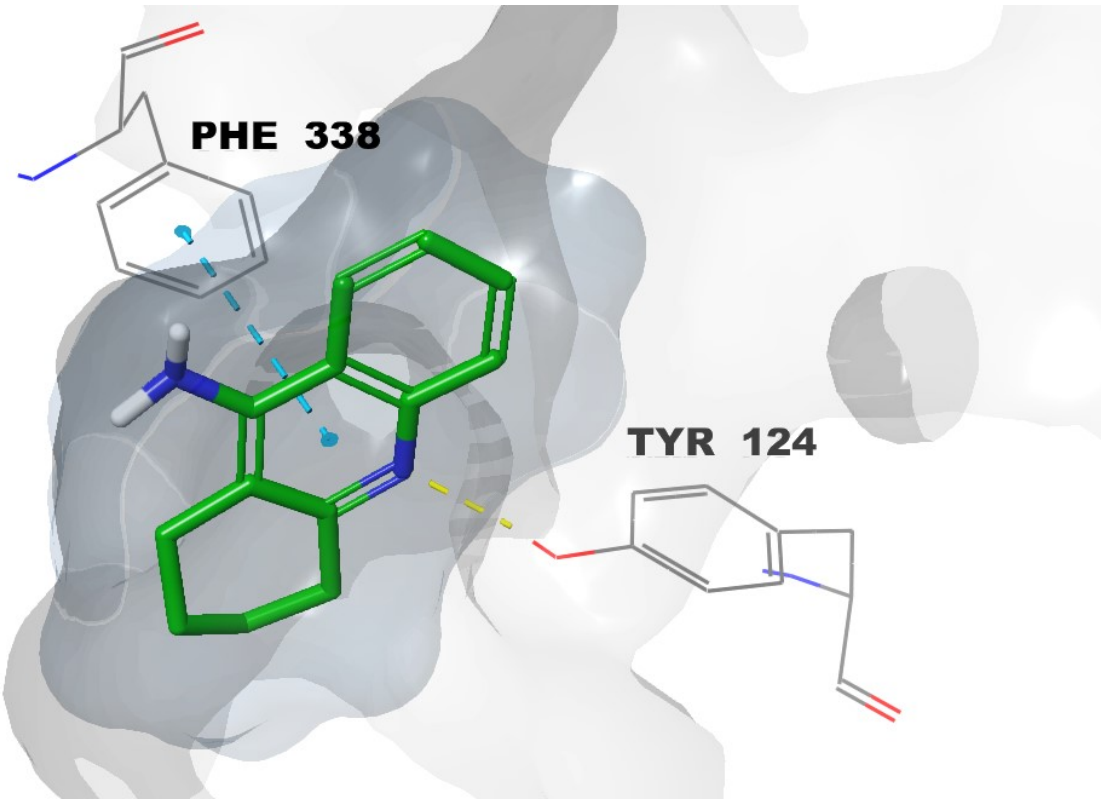


Fig. S7. 3D Ligand Protein interactions of Tacrine-AChE complex

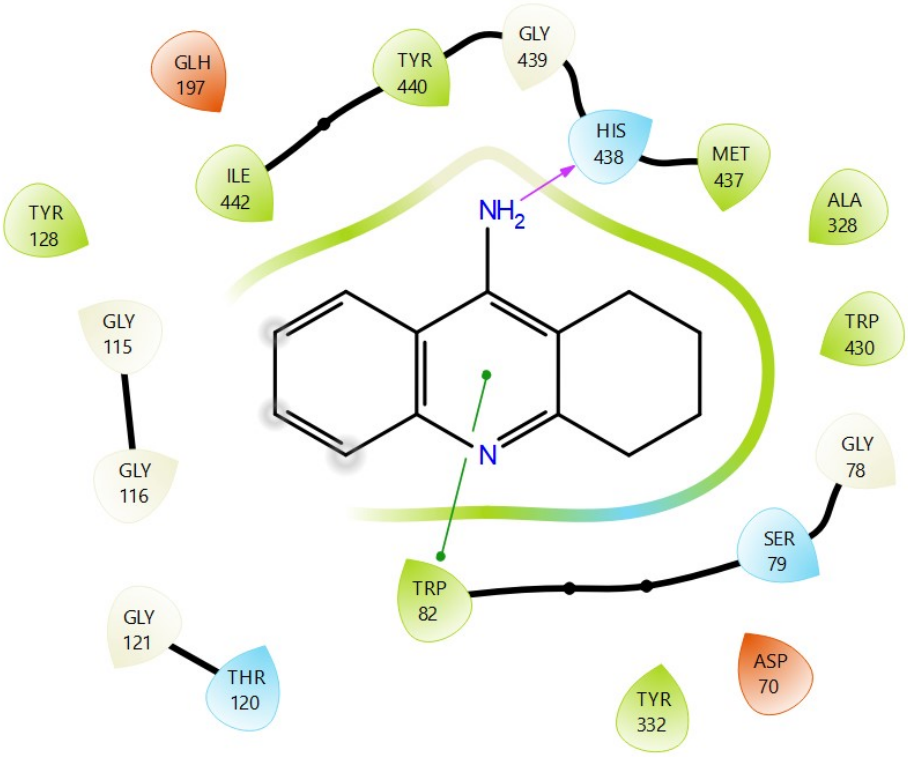


Fig. S8. 2D Ligand Protein interactions of Tacrine-BChE complex

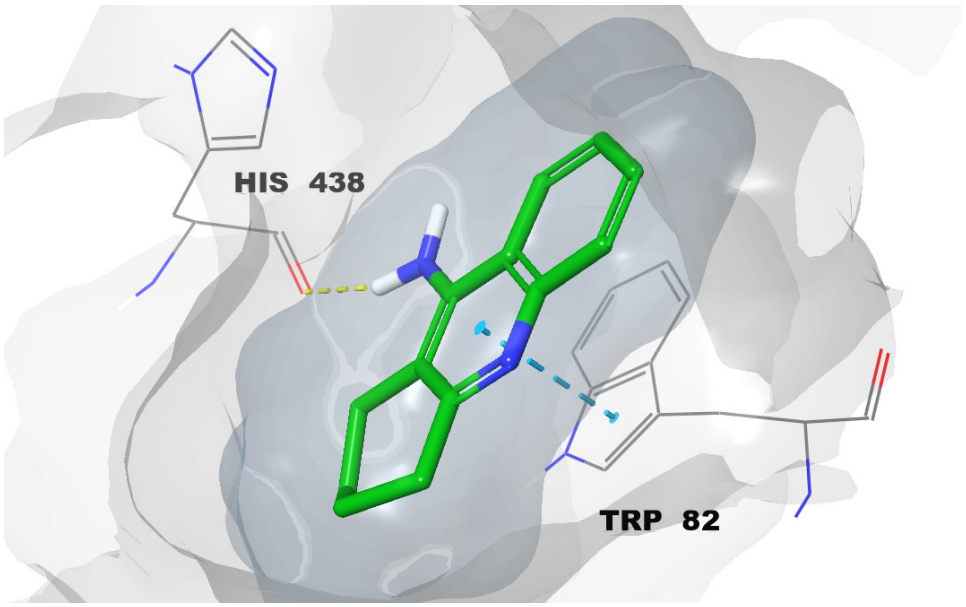
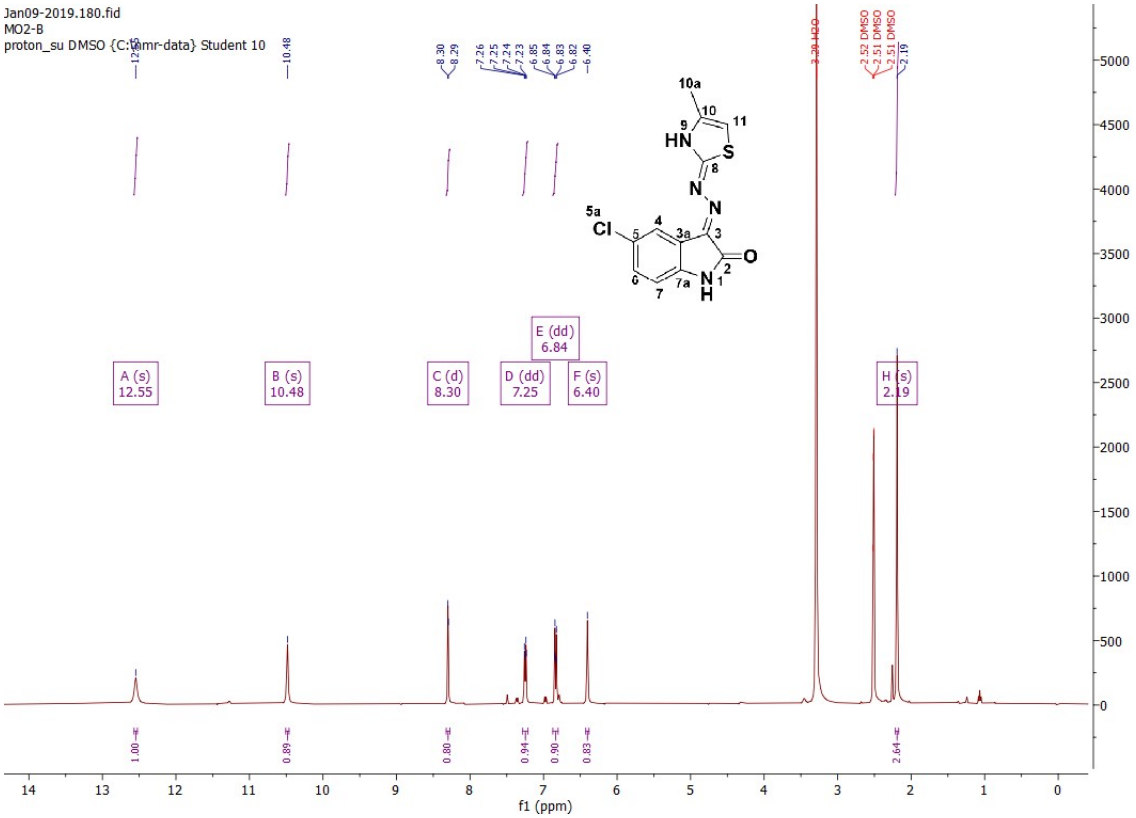
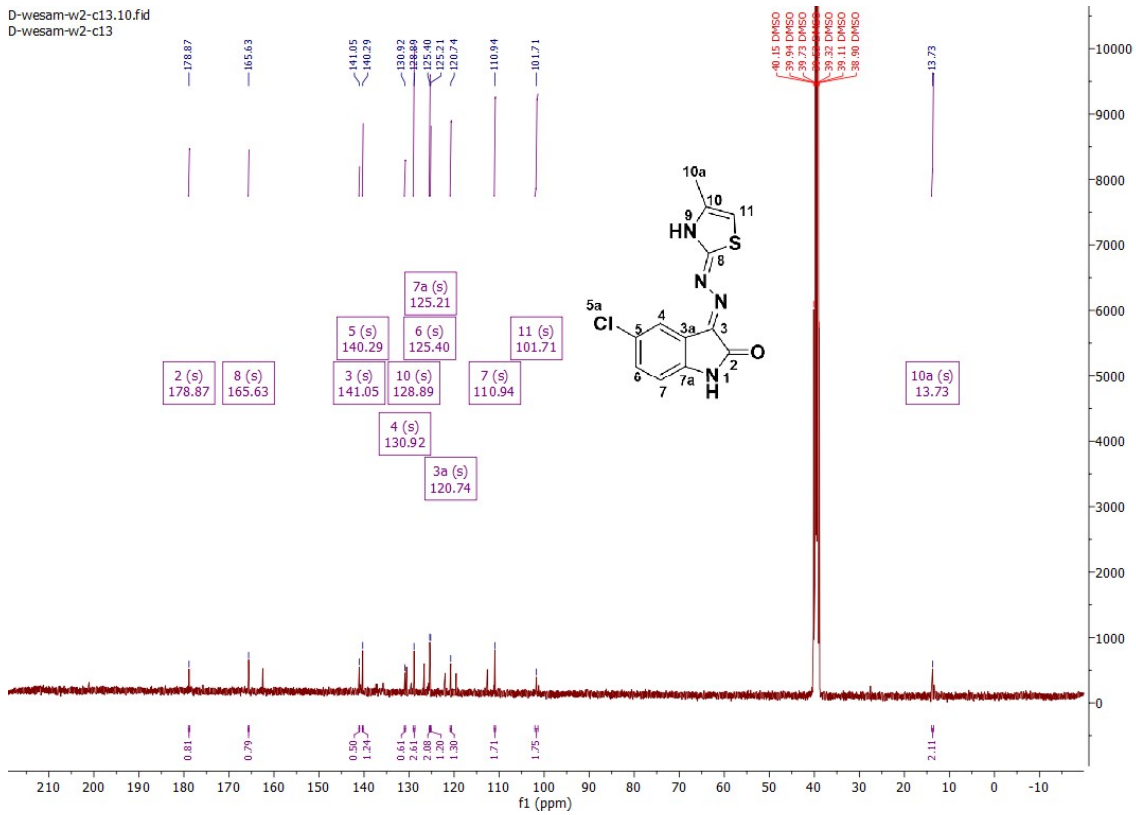


Fig. S9. 3D Ligand Protein interactions of Tacrine-BChE complex

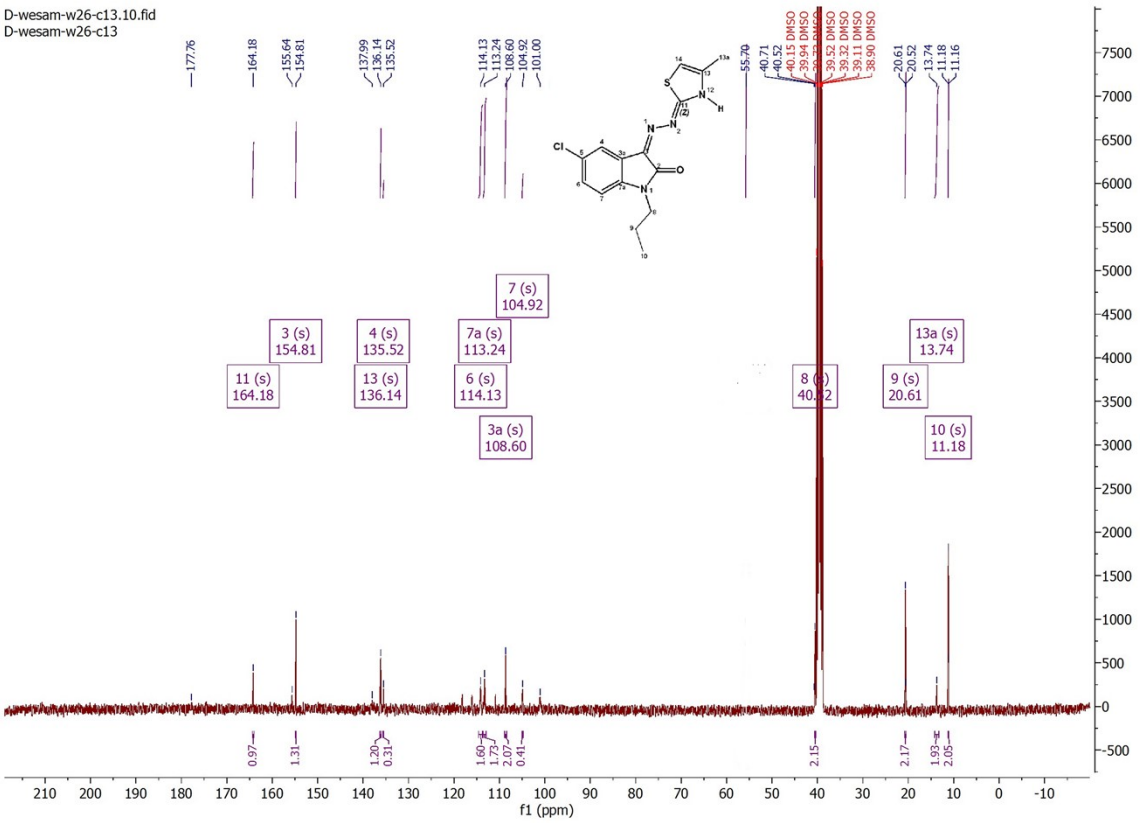
Compound Characterization

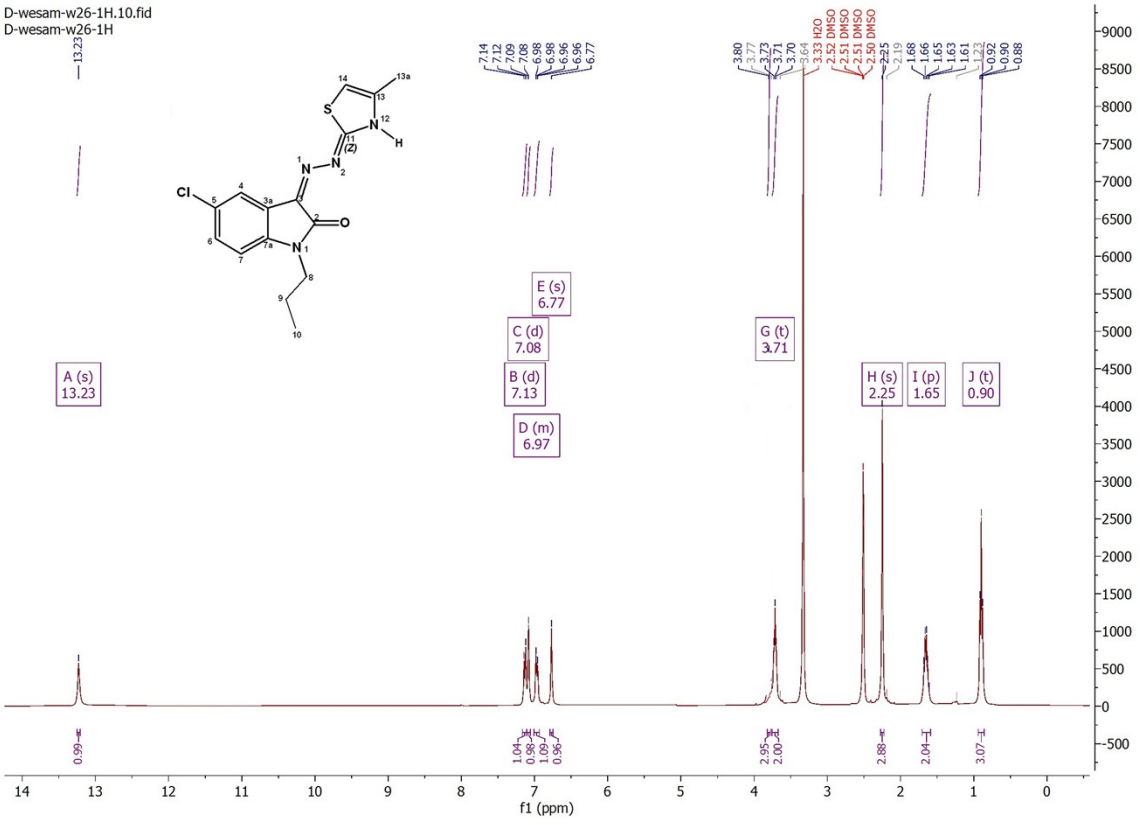
^{1}H and ^{13}C NMR spectra of compound **4a**



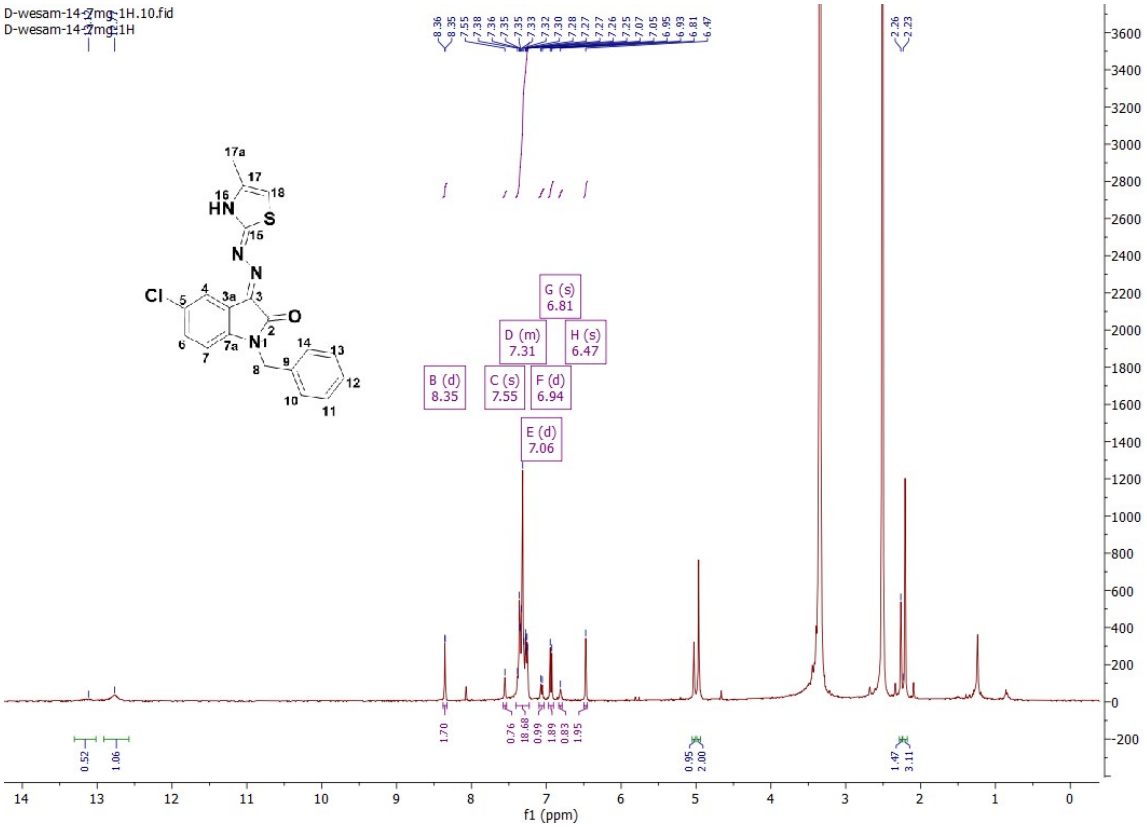


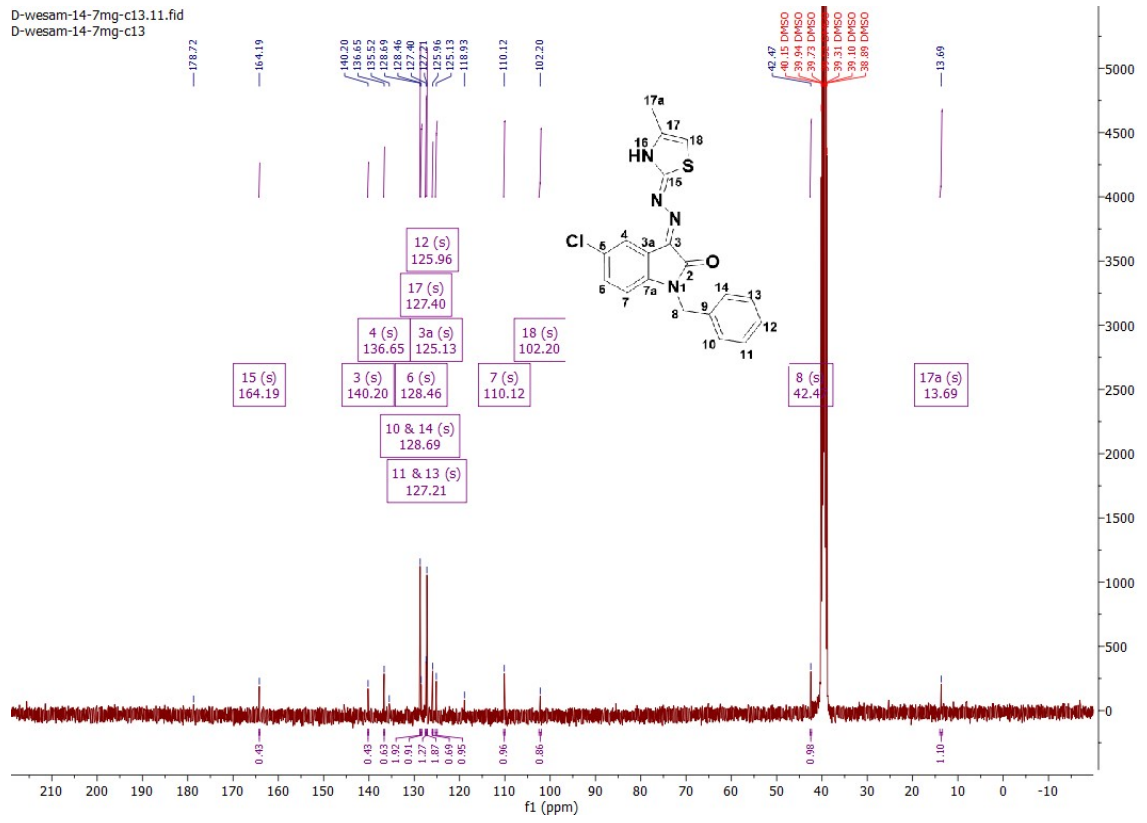
^{1}H and ^{13}C NMR spectra of compound **4b**



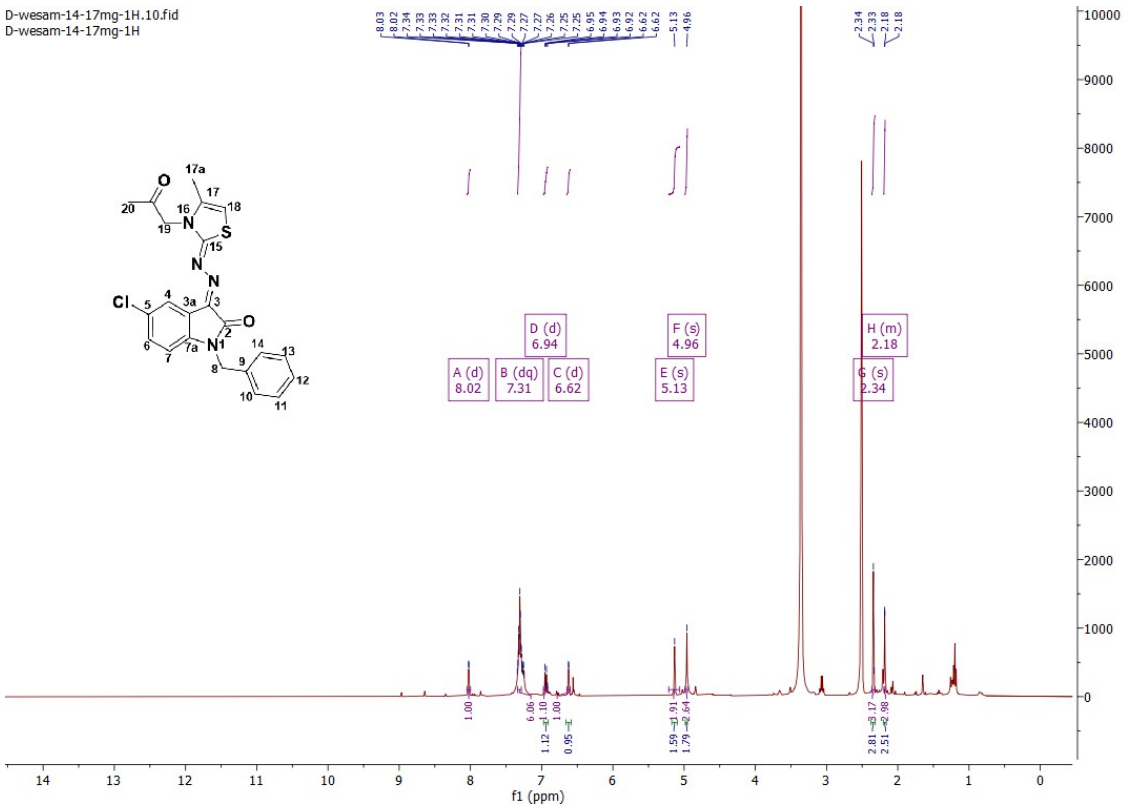


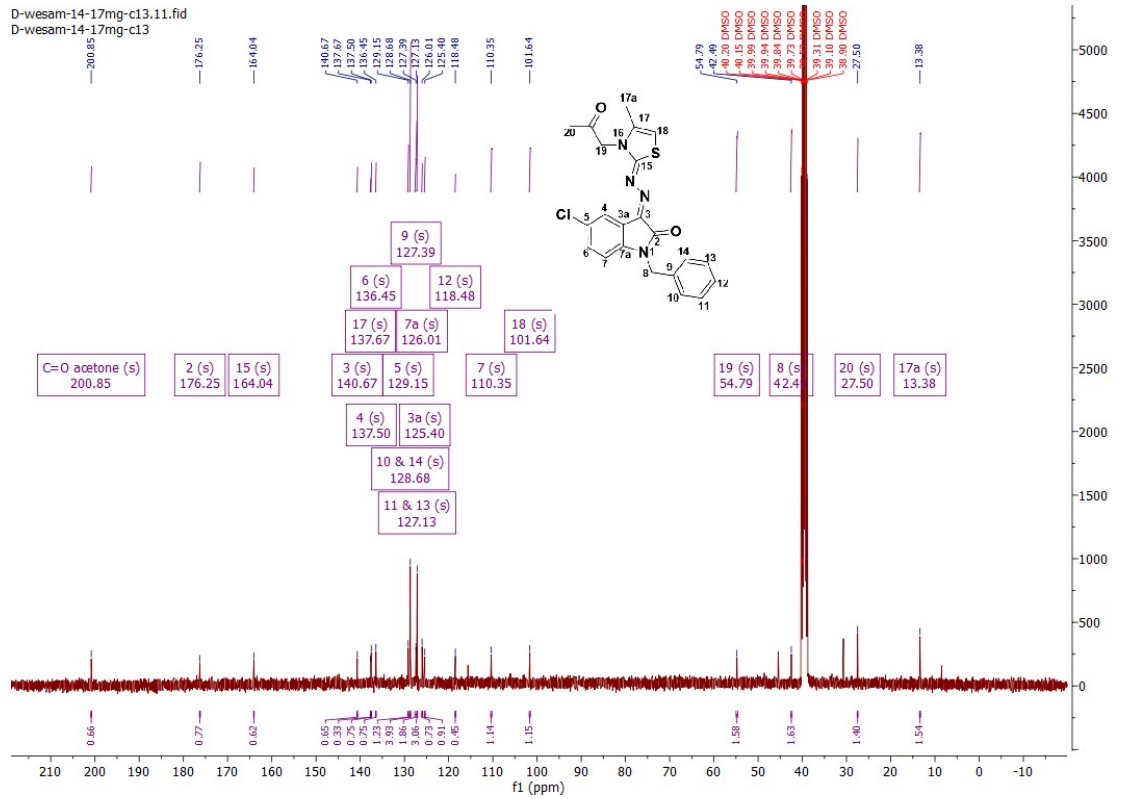
^{1}H and ^{13}C NMR spectra of compound **4c**



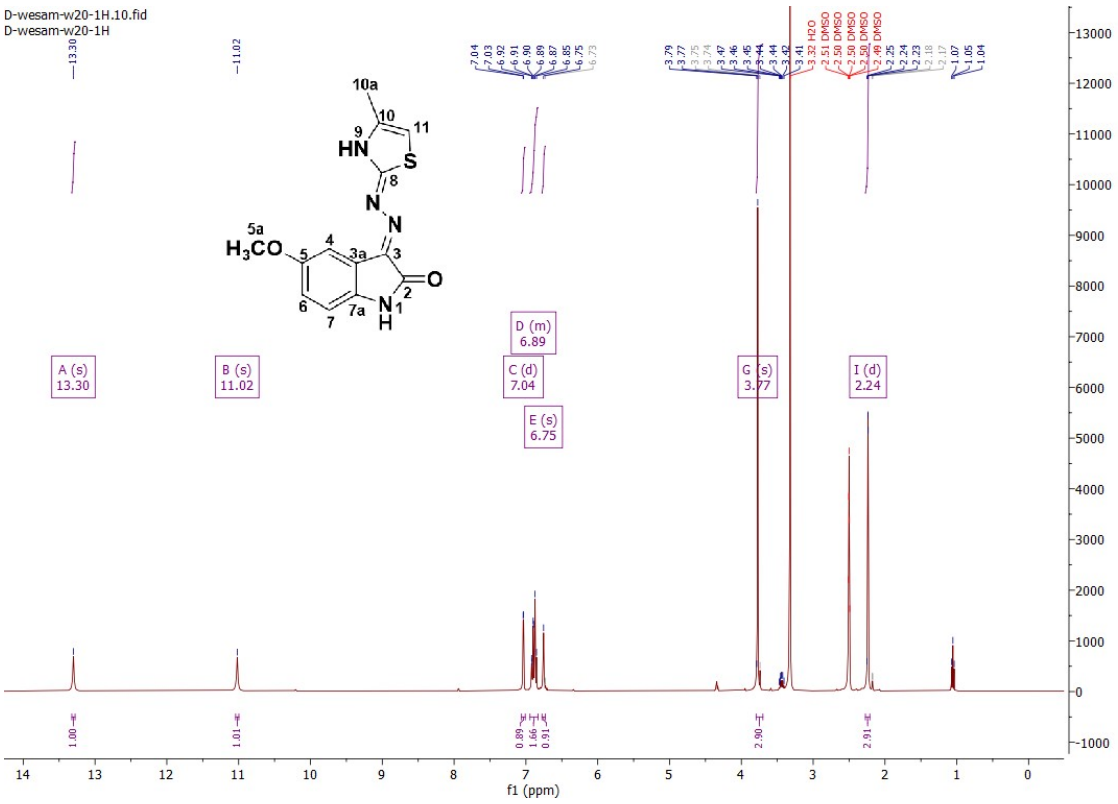


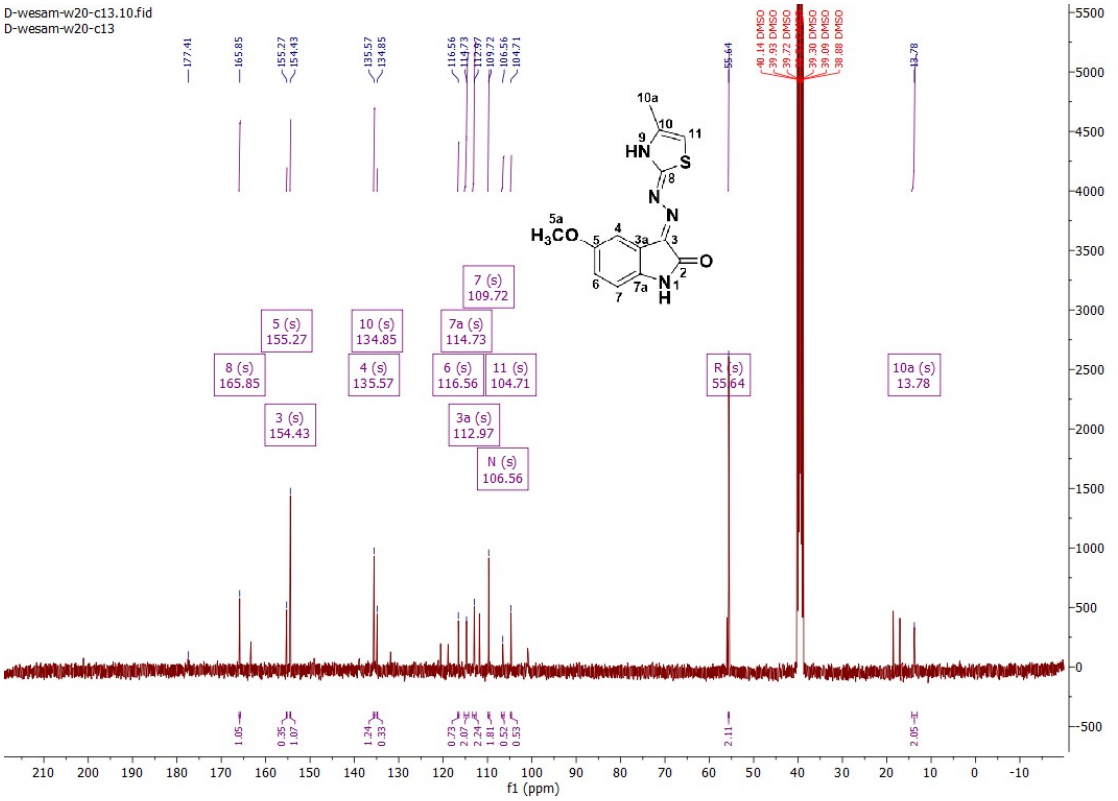
^{1}H and ^{13}C NMR spectra of compound **4d**



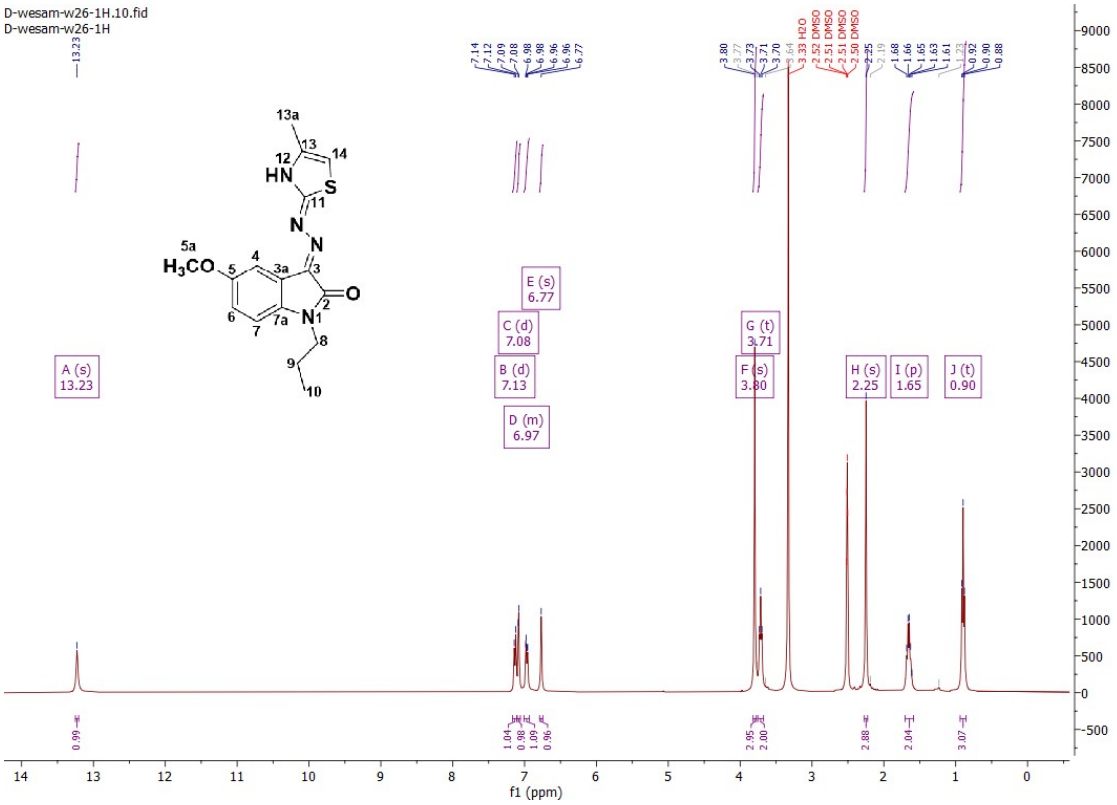


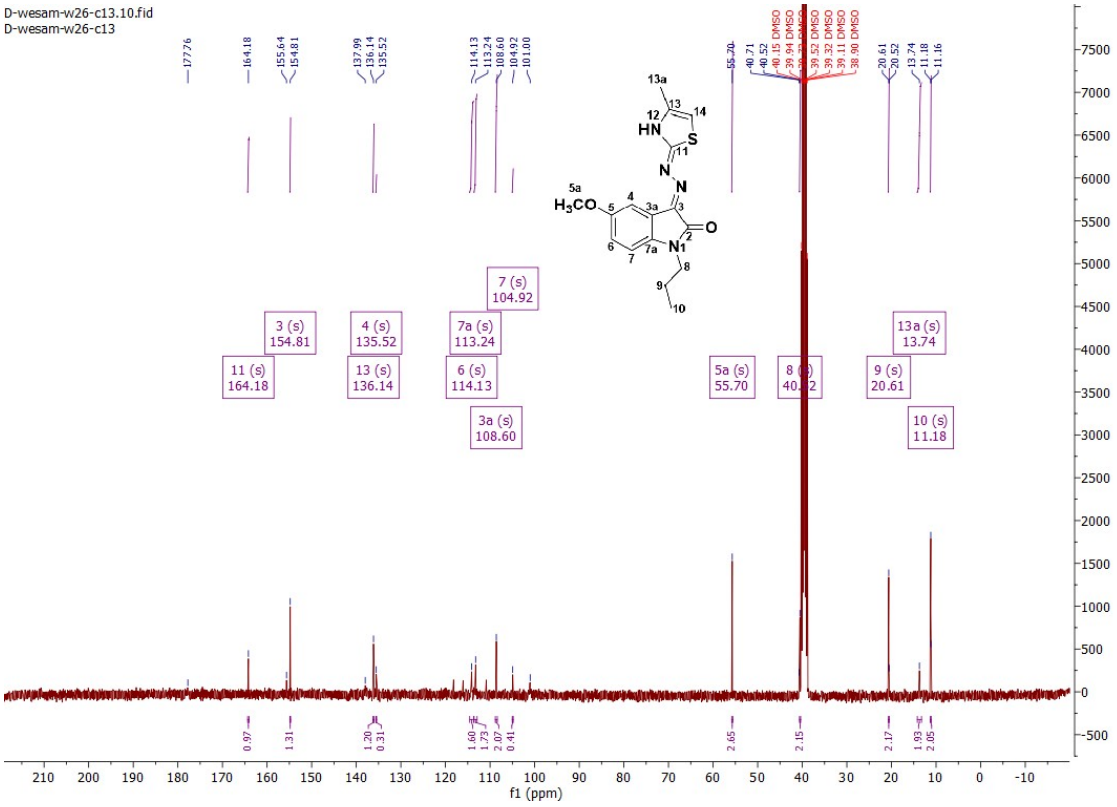
^{1}H and ^{13}C NMR spectra of compound **4e**



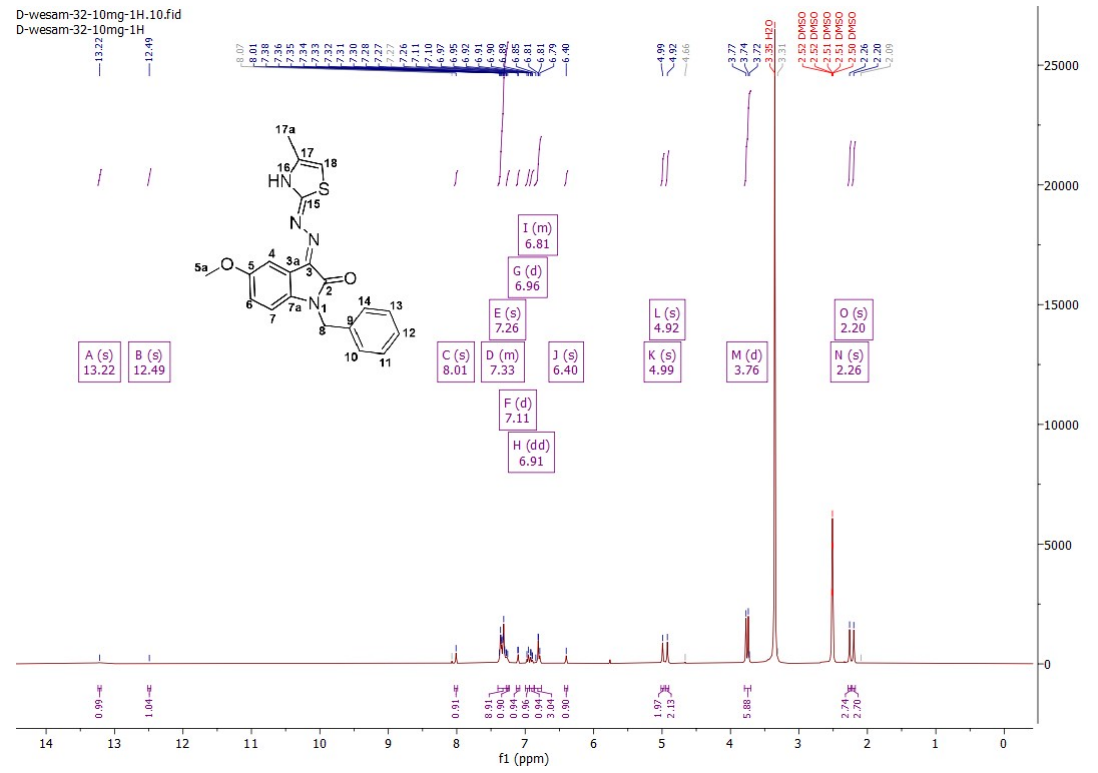


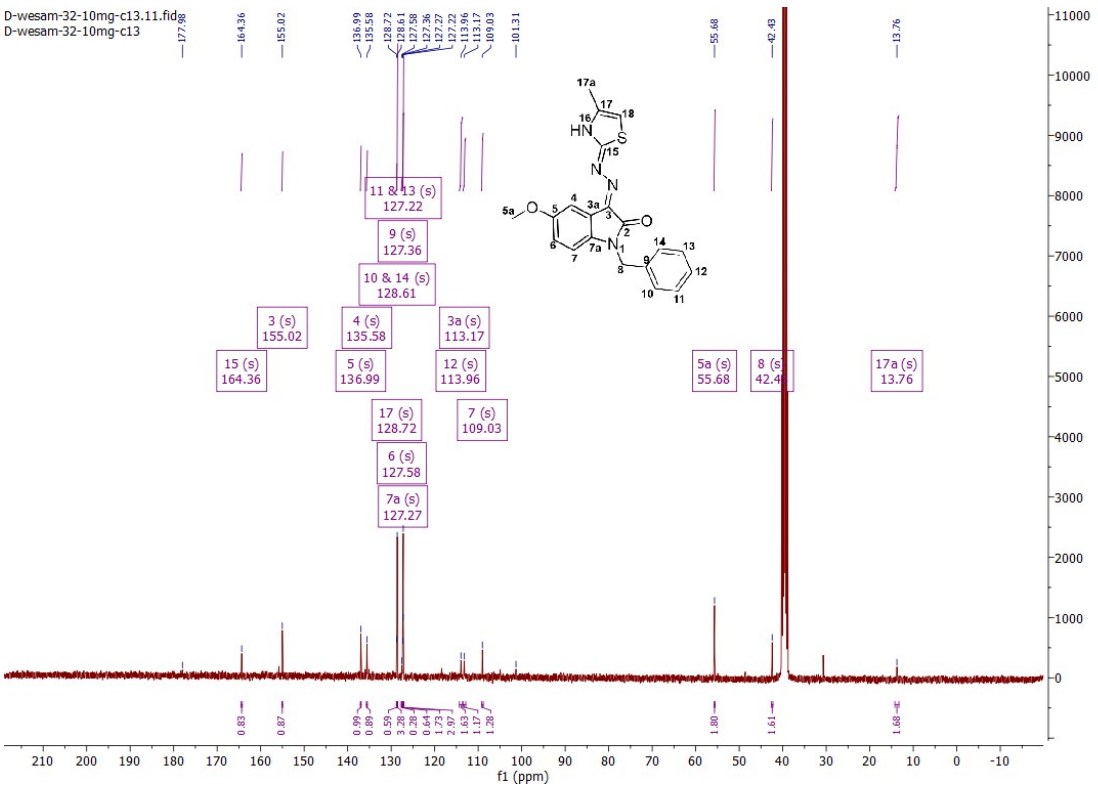
^{1}H and ^{13}C NMR spectra of compound **4f**



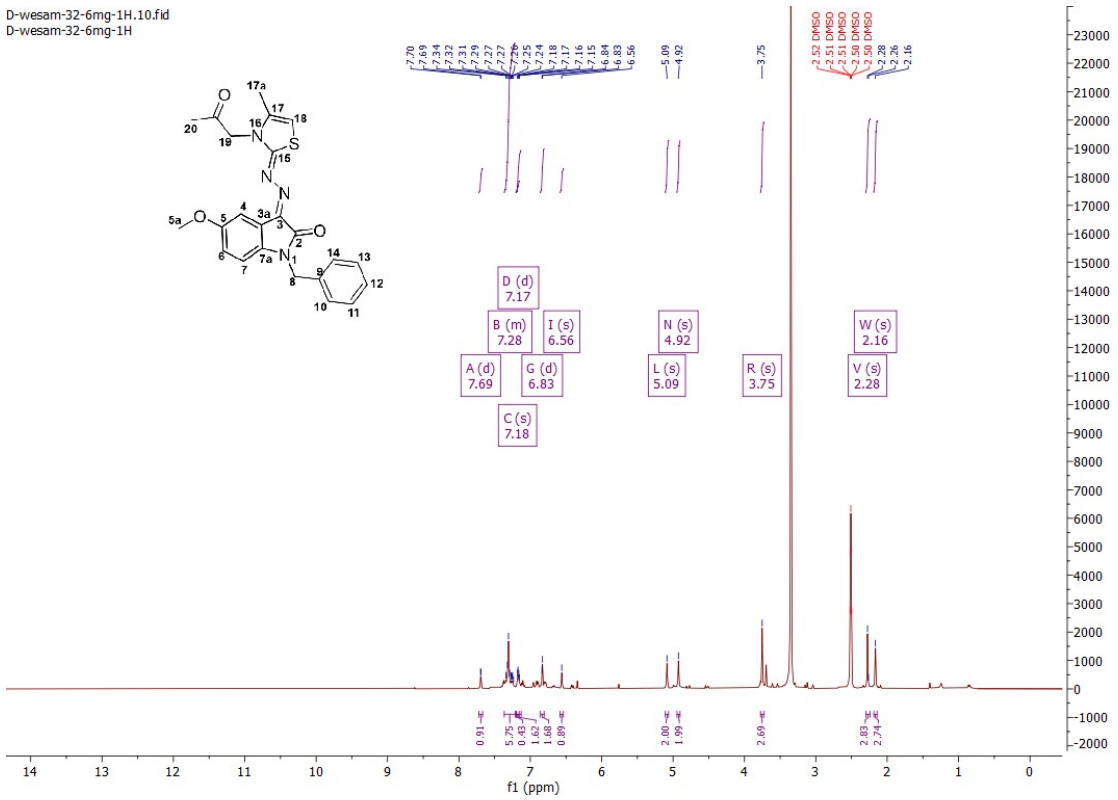


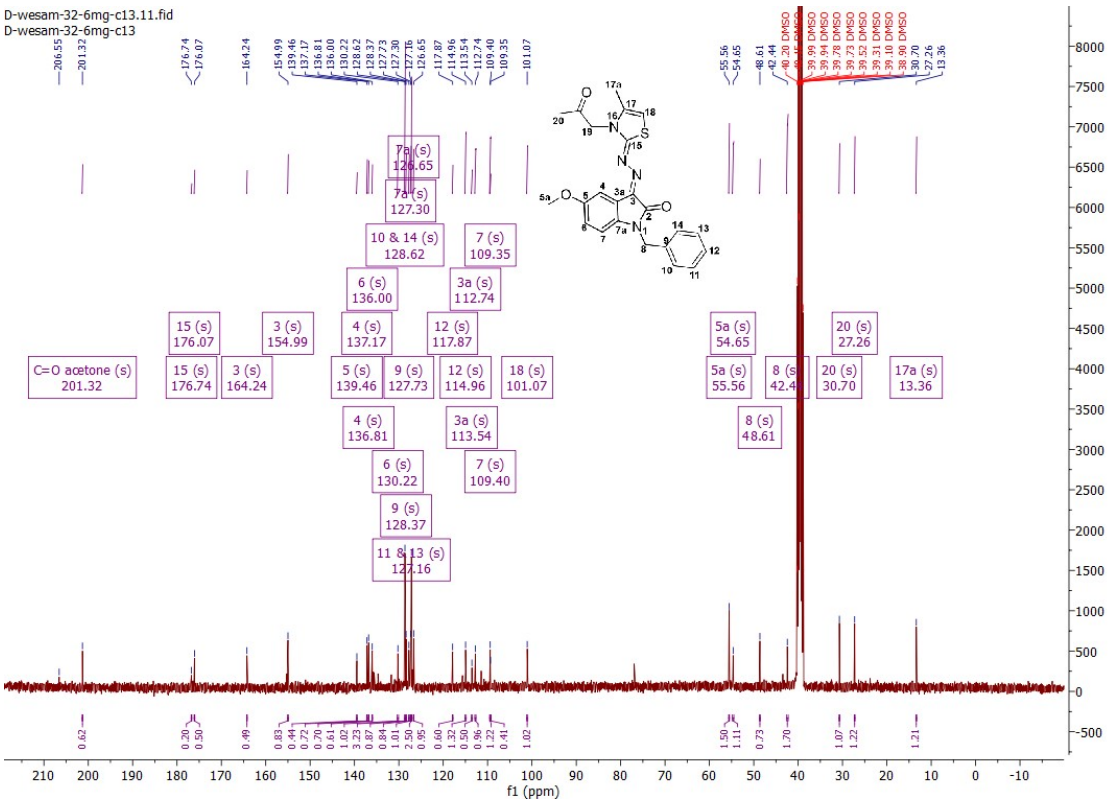
^{1}H and ^{13}C NMR spectra of compound **4g**



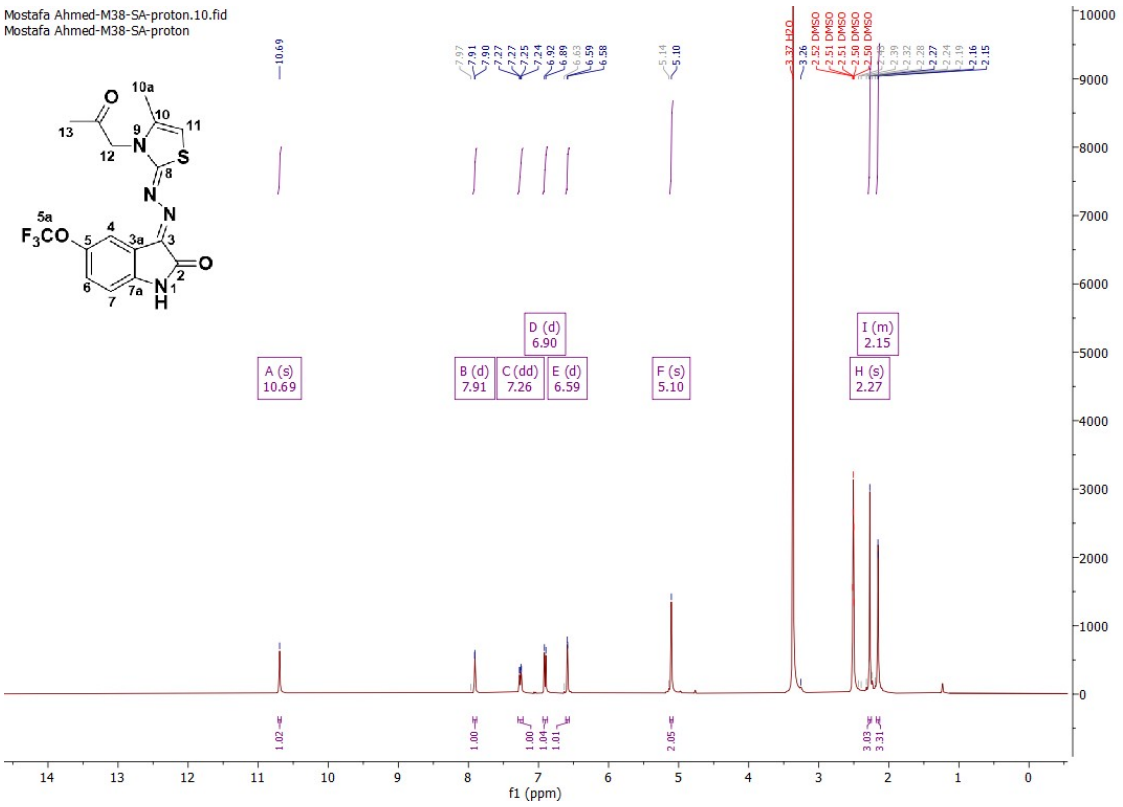


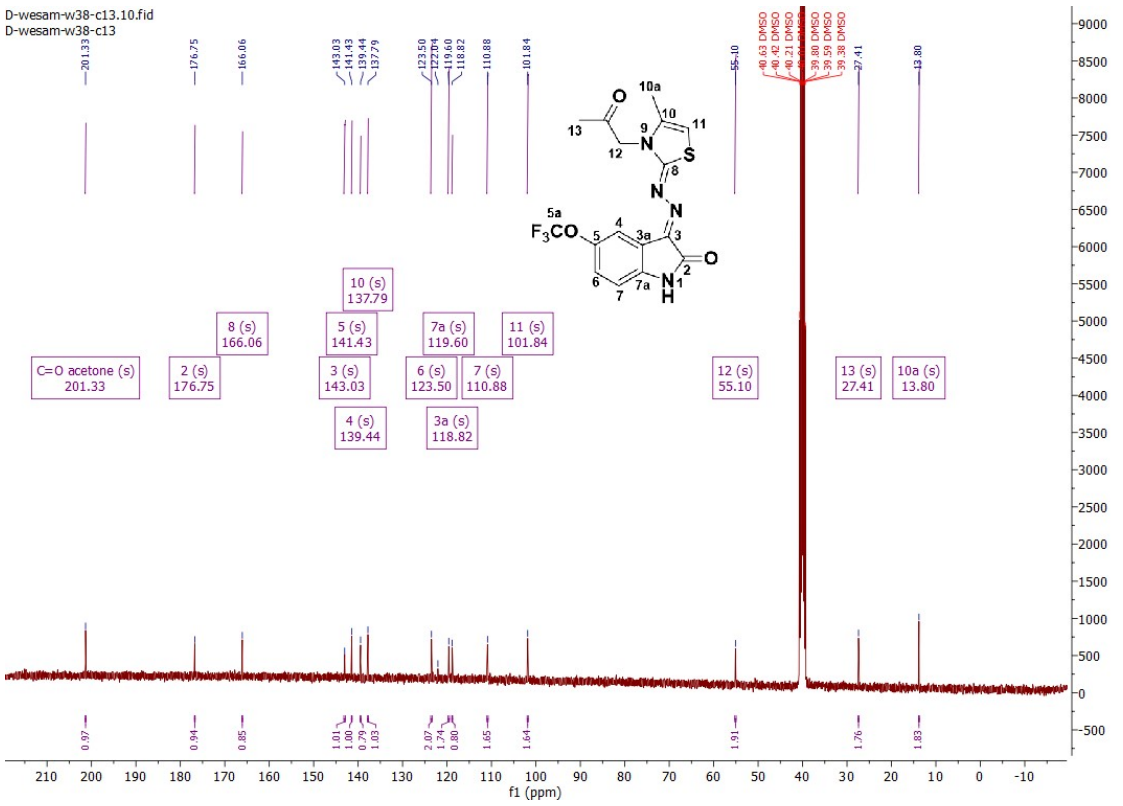
^{1}H and ^{13}C NMR spectra of compound **4h**



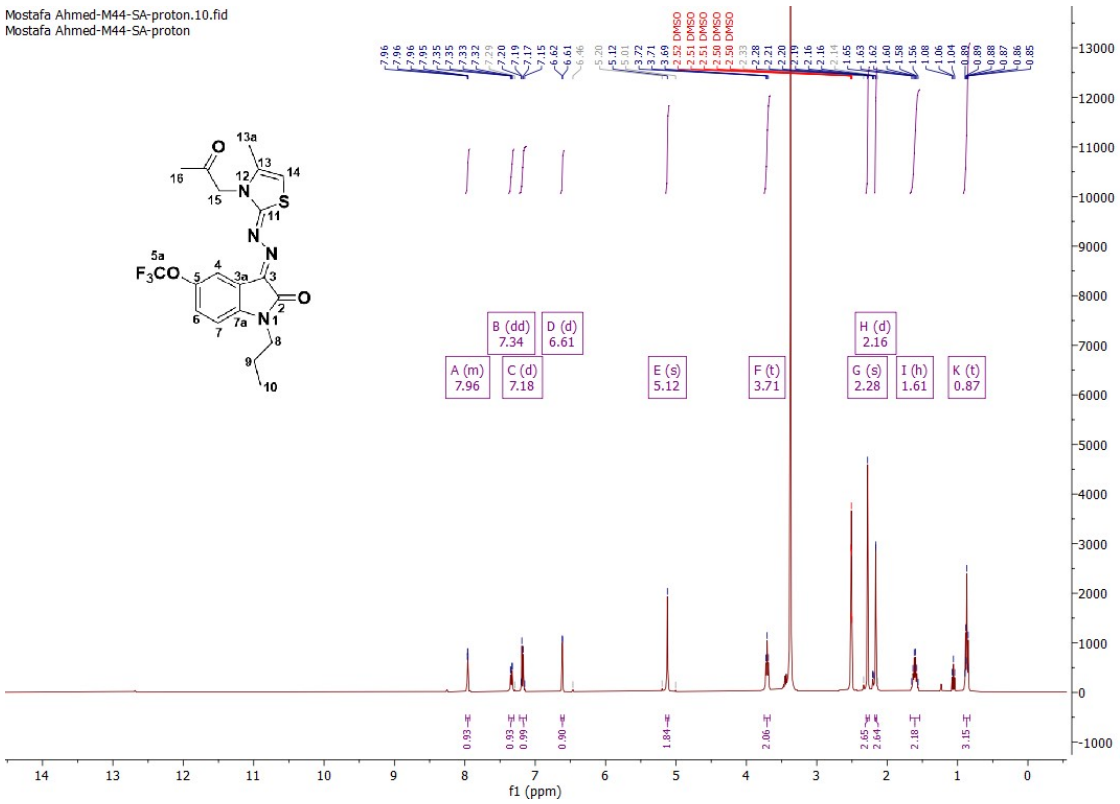


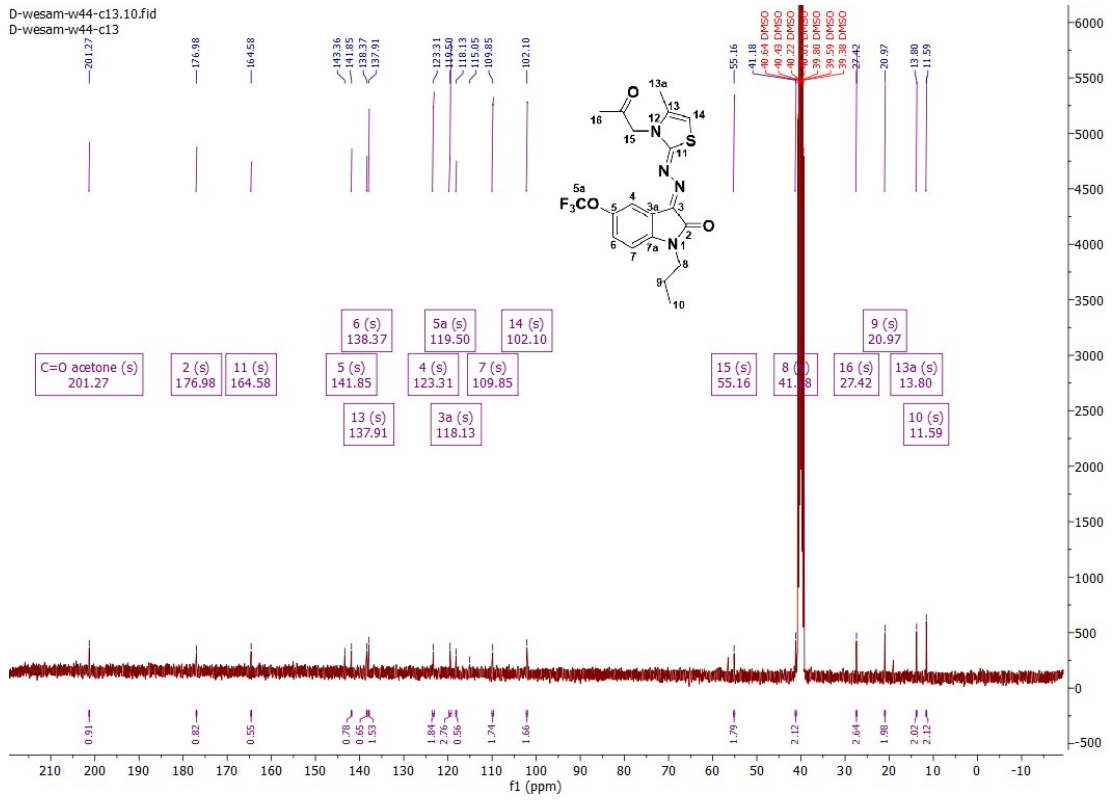
^{1}H and ^{13}C NMR spectra of compound **4i**



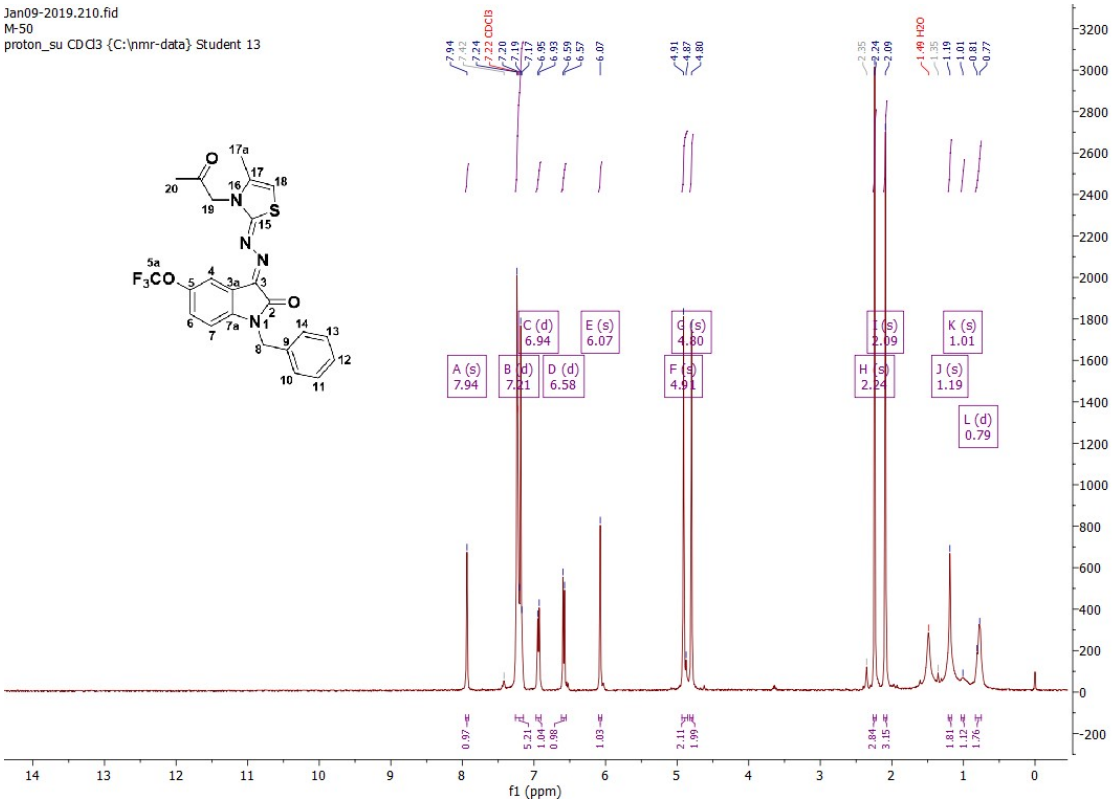


^{1}H and ^{13}C NMR spectra of compound **4j**





^{1}H and ^{13}C NMR spectra of compound **4k**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M-50
proton_su CDCl3 {C:\nmr-data} Student 13
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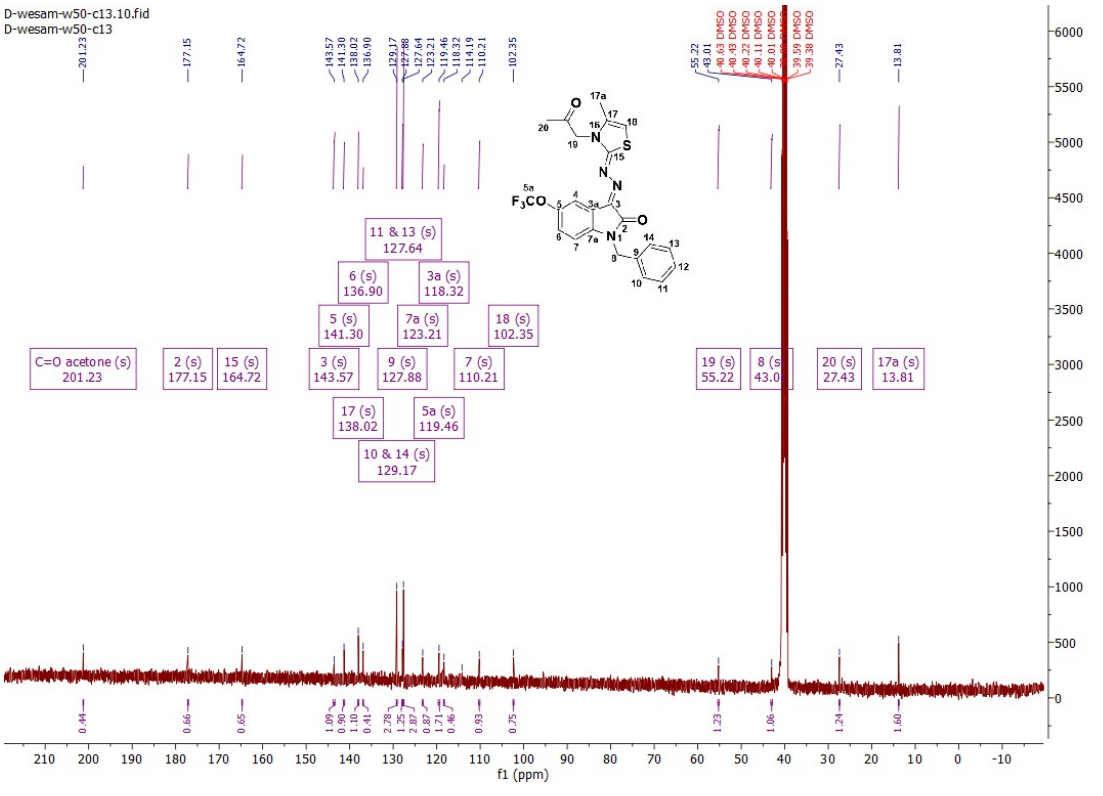
B (d) 7.21
C (d) 6.94
D (d) 6.58
E (s) 6.07
F (s) 4.91
G (s) 4.80
H (s) 2.24
I (s) 2.09
J (s) 1.19
K (s) 1.01
L (d) 0.79
f1 (ppm)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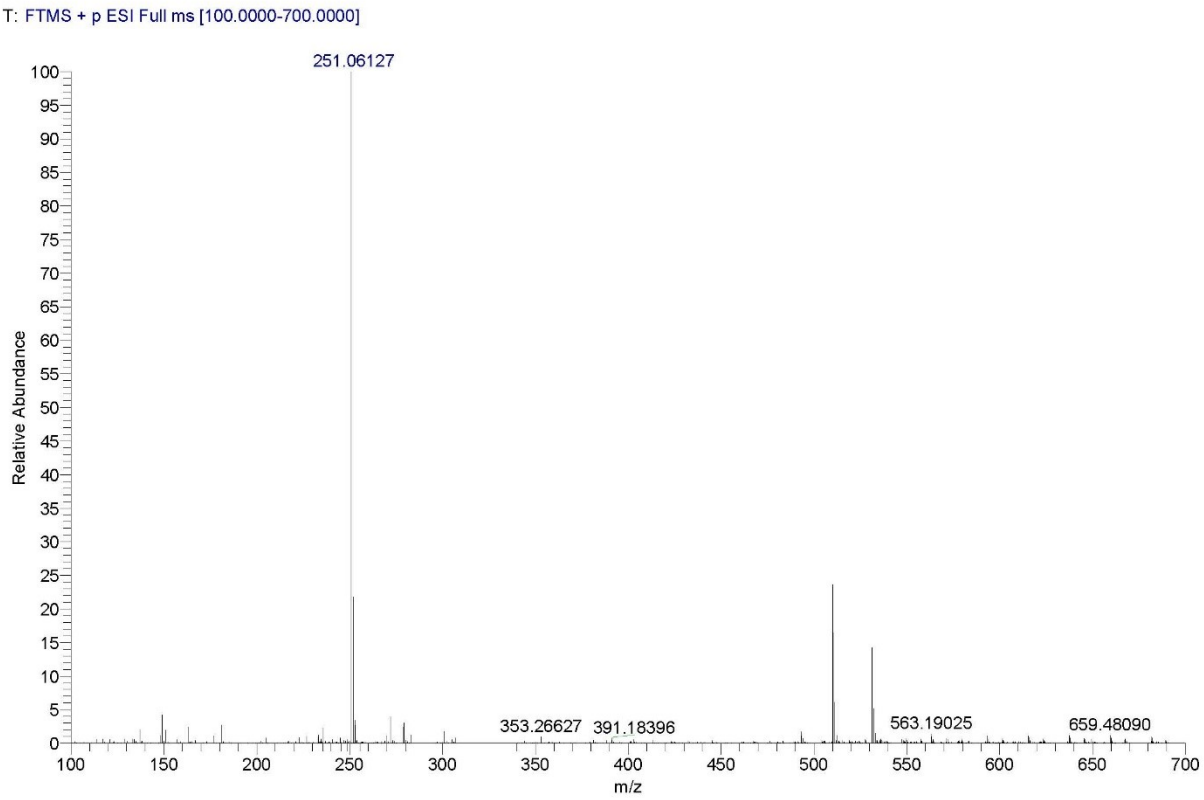
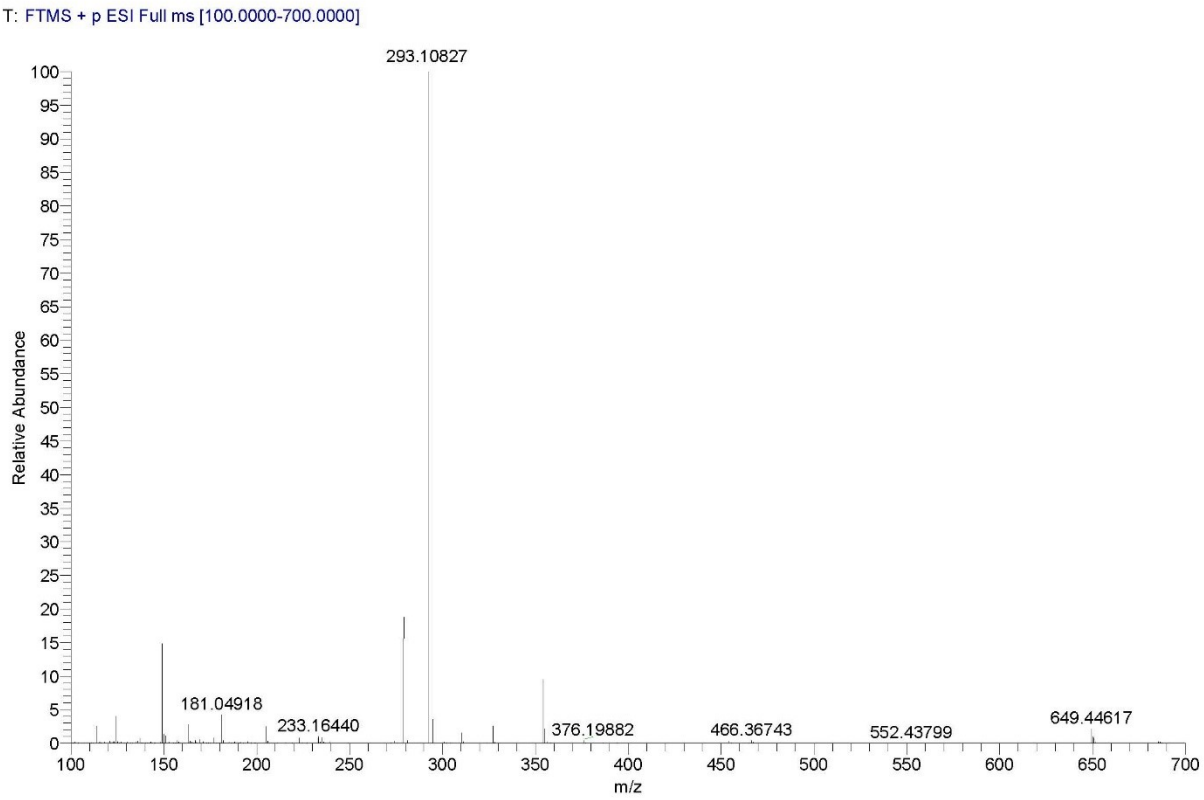
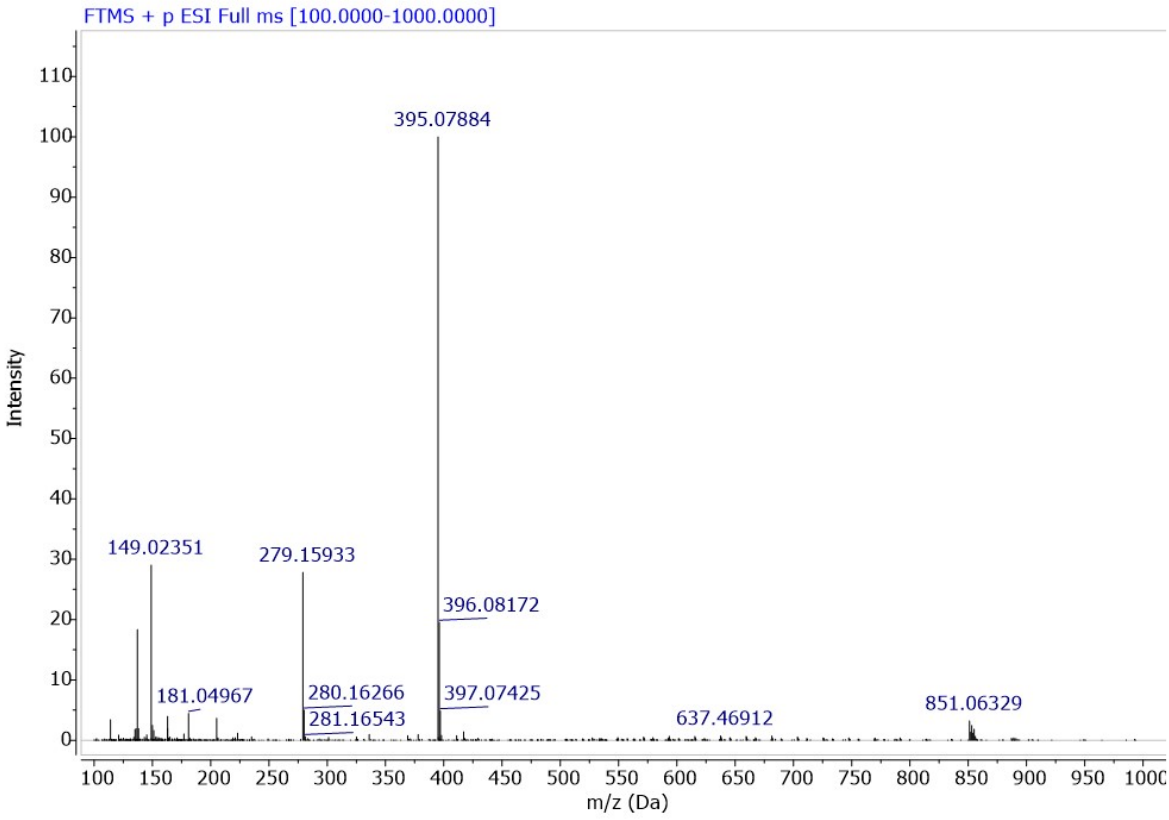
D-wesam-w50-c13
C=O acetone (s) 201.23
2 (s) 177.15
15 (s) 164.72
3 (s) 143.57
17 (s) 138.02
6 (s) 136.90
10 & 14 (s) 129.17
11 & 13 (s) 127.64
9 (s) 127.88
3a (s) 118.32
5a (s) 119.46
5 (s) 141.30
7a (s) 123.21
7 (s) 110.21
18 (s) 102.35
19 (s) 55.22
8 (s) 43.0
20 (s) 27.43
17a (s) 13.81
f1 (ppm)



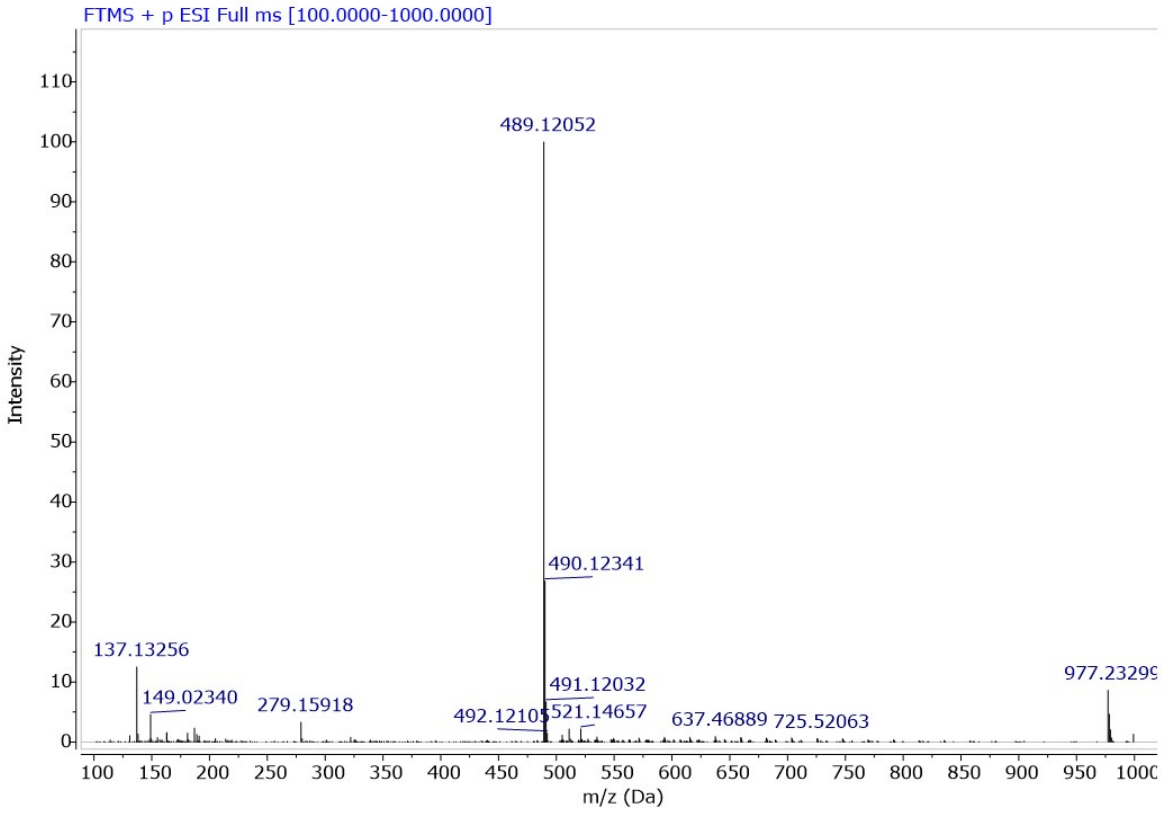
ESI-HRMS Spectrum of Compound **3d**



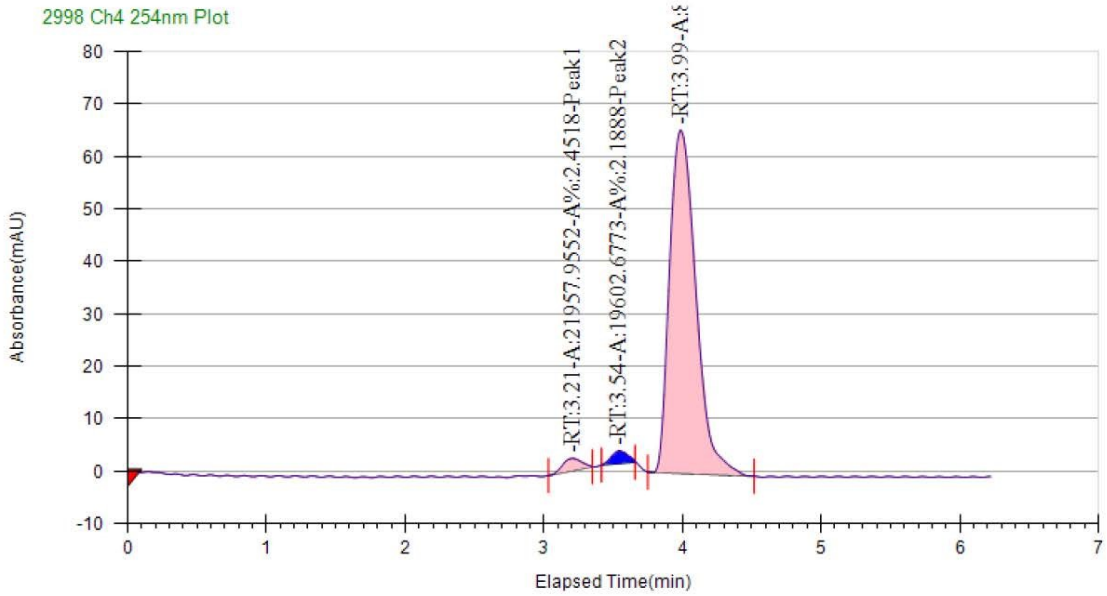
ESI-HRMS Spectrum of Compound **3h**



ESI-HRMS Spectrum of Compound **3i**



ESI-HRMS Spectrum of Compound **4i**



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Run Information

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Peak Information

Peak No	% Area	Area	Ret. Time	Height	Cap. Factor
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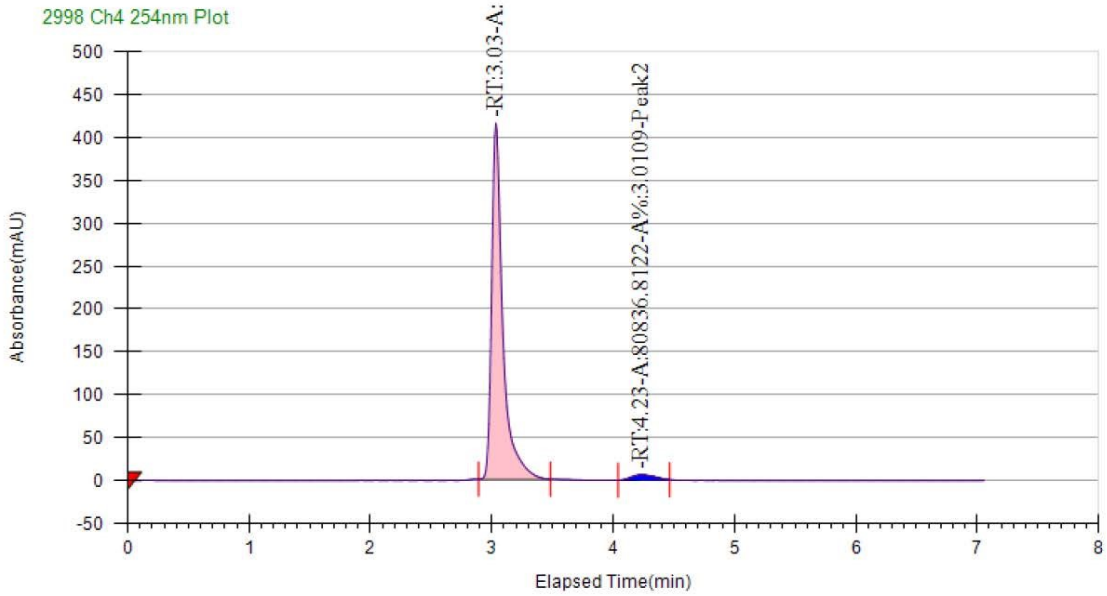
2	2.1888	19602.6773	3.54 min	2.417	3540.6667
3	95.3595	854040.6659	3.99 min	65.4151	3990.6667

HPLC Purity analysis of compound **3d**



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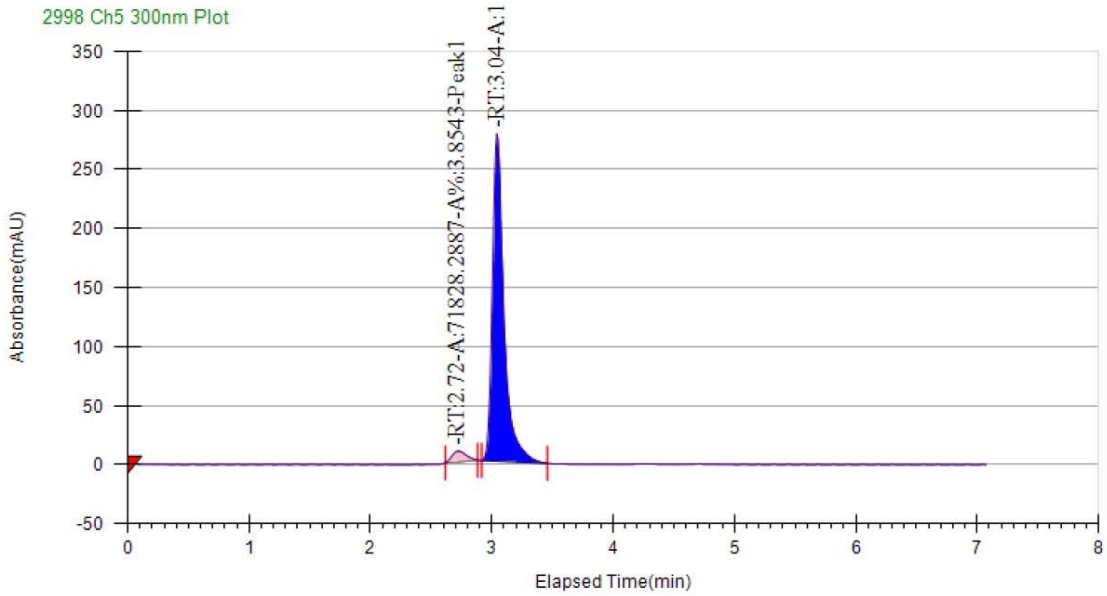
Peak Information

Peak No	% Area	Area	Ret. Time	Height	Cap. Factor
1	96.9891	2603995.0791	3.03 min	414.7027	0
2	3.0109	80836.8122	4.23 min	6.2272	0

HPLC Purity analysis of compound **3h**



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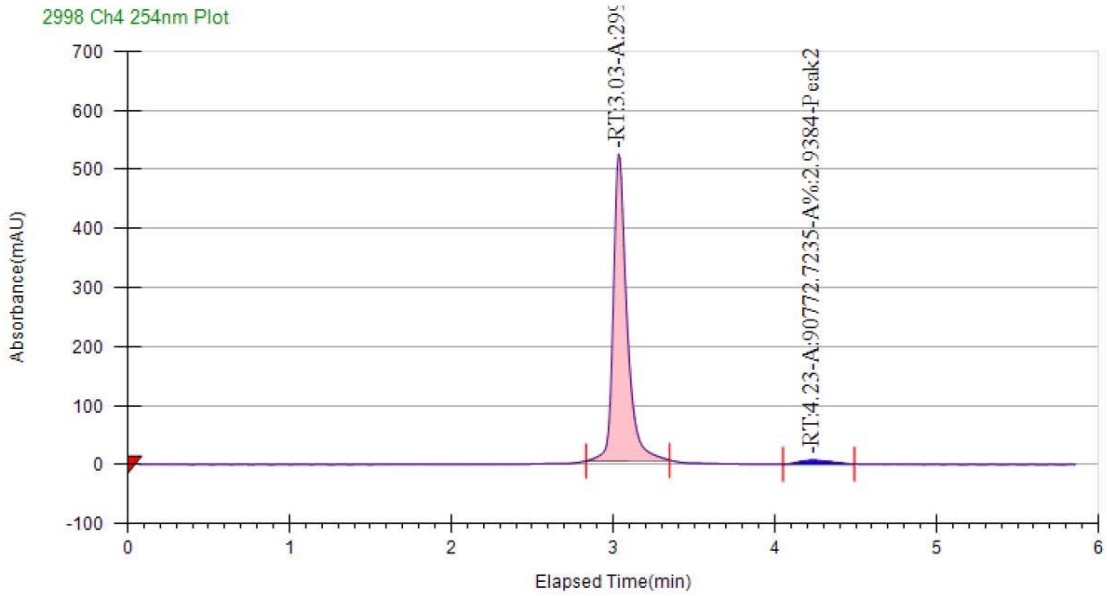
HPLC Purity analysis of compound **3i**



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Run Information

Instrument Method	Inj. Vol. (uL)	Sample	Well Location	Flow (ml/min)	Pressure
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Peak Information

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1	97.0616	2998394.5526	3.03 min	519.7087	0
2	2.9384	90772.7235	4.23 min	6.6846	0

HPLC Purity analysis of compound **4i**