

Fig. S1. NMR of 9a

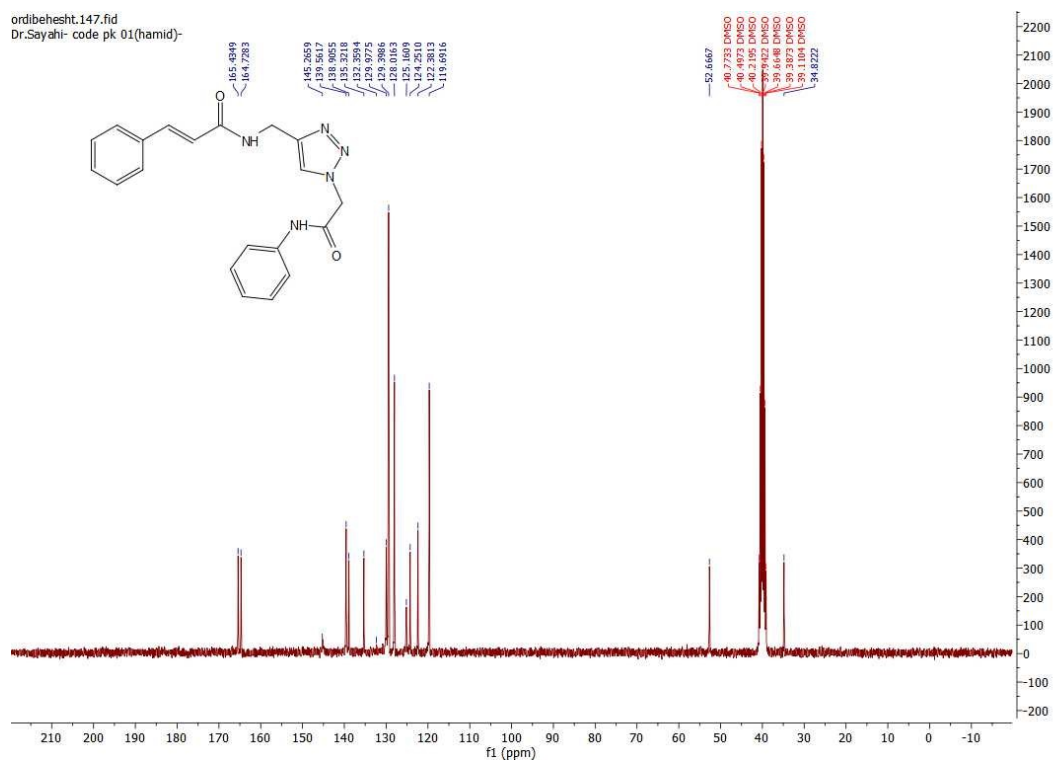
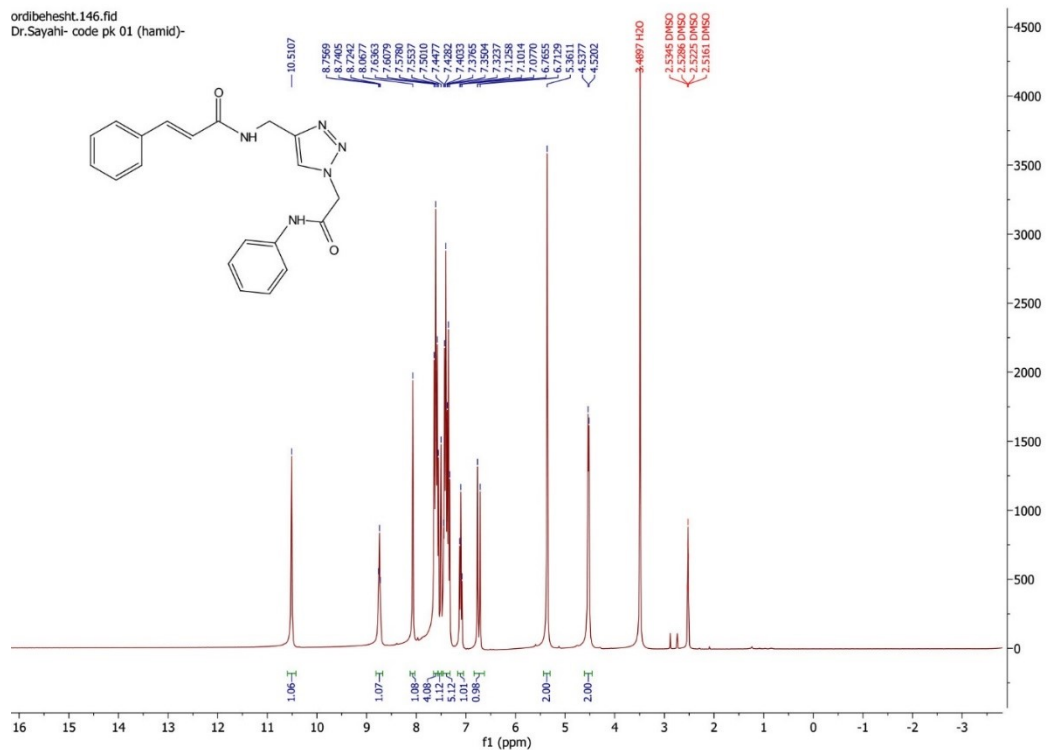


Fig. S2. NMR of 9b

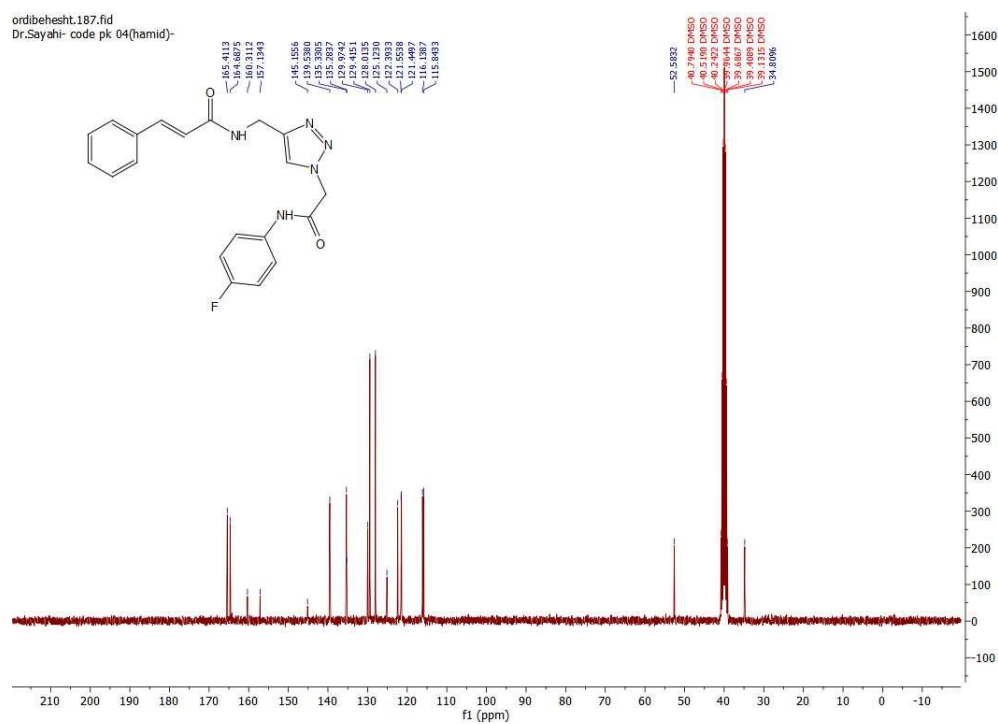
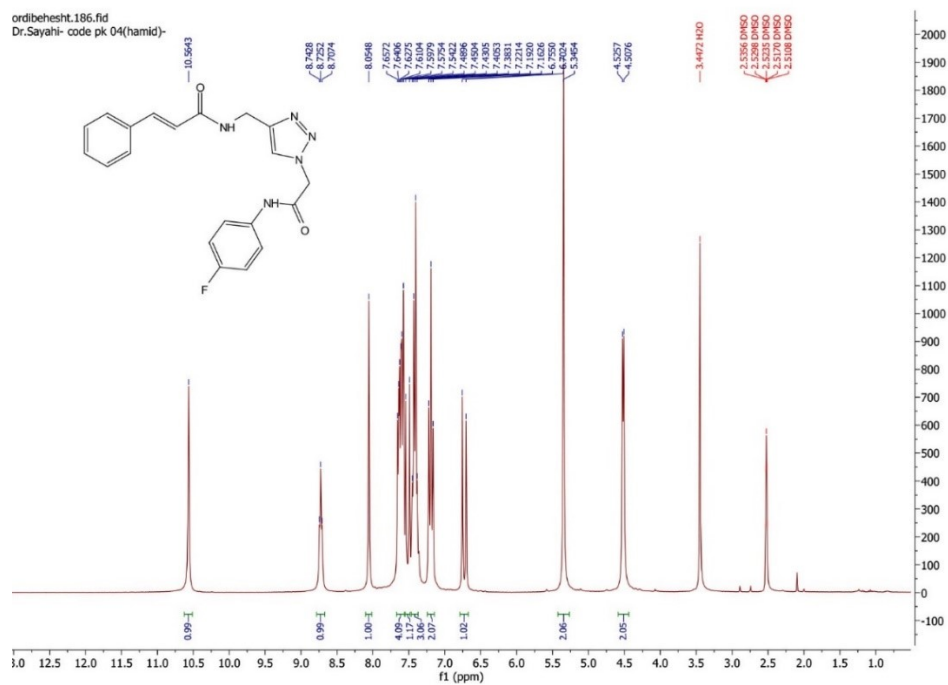


Fig. S3. NMR of 9c

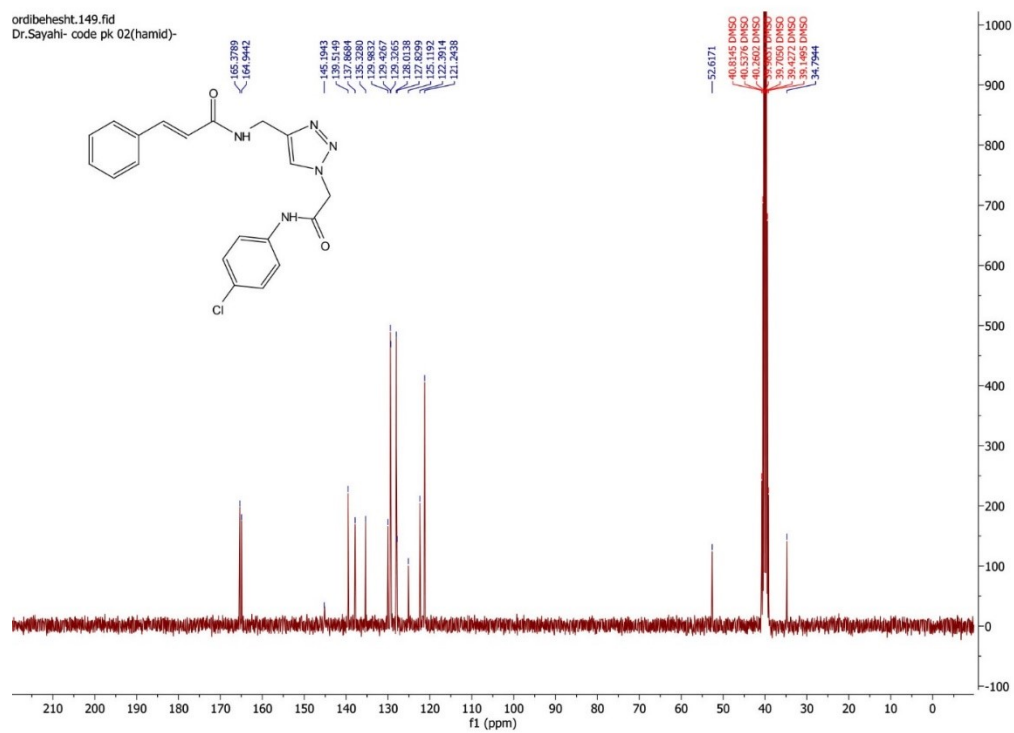
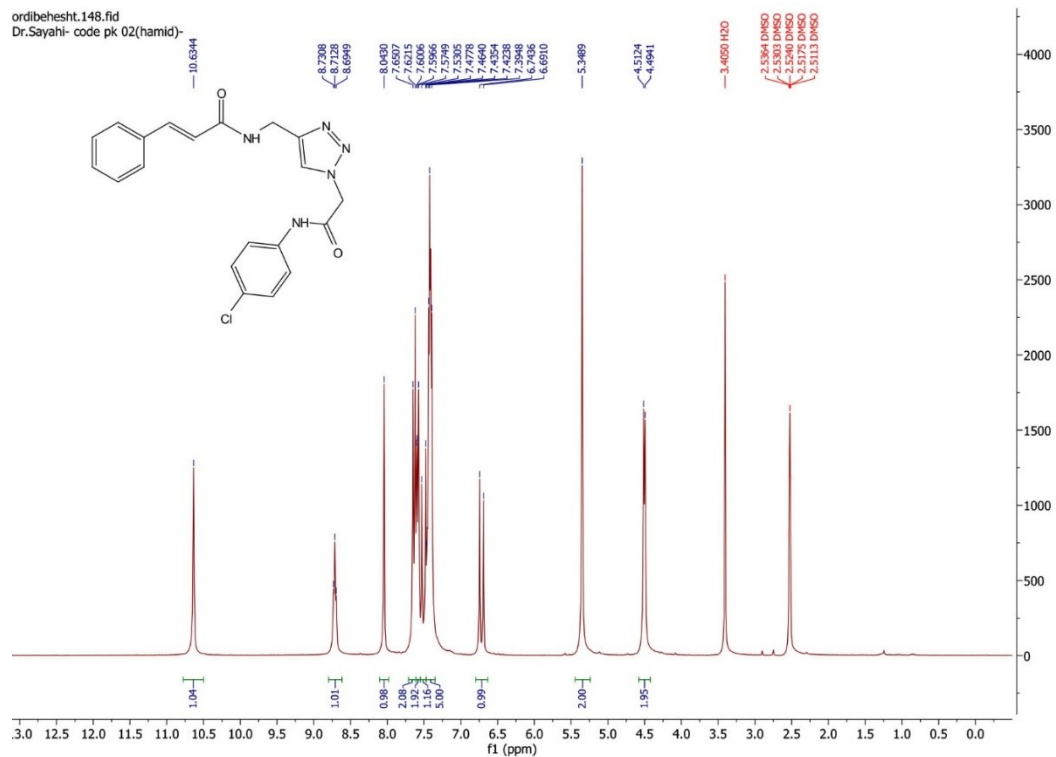


Fig. S4. NMR of 9d

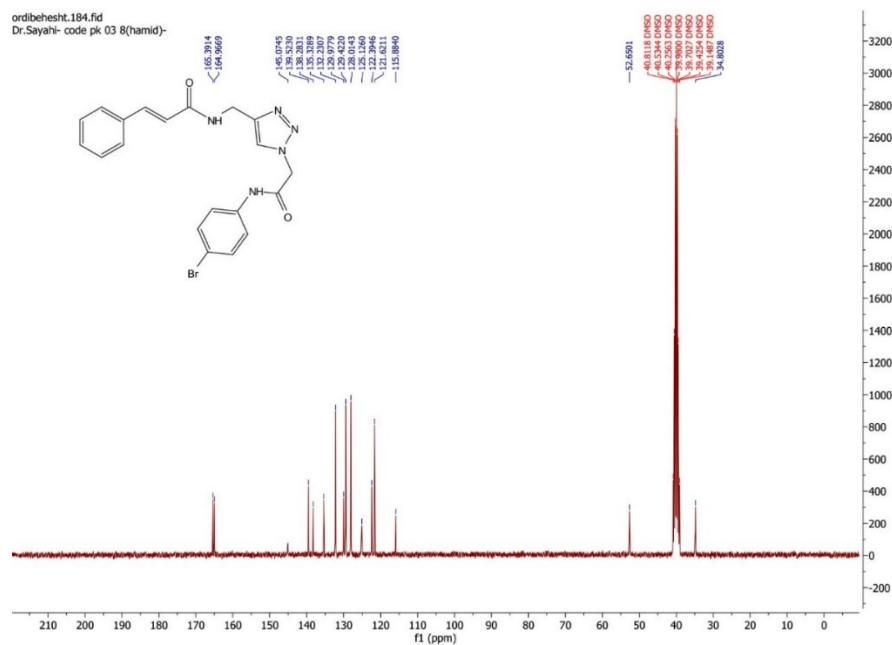
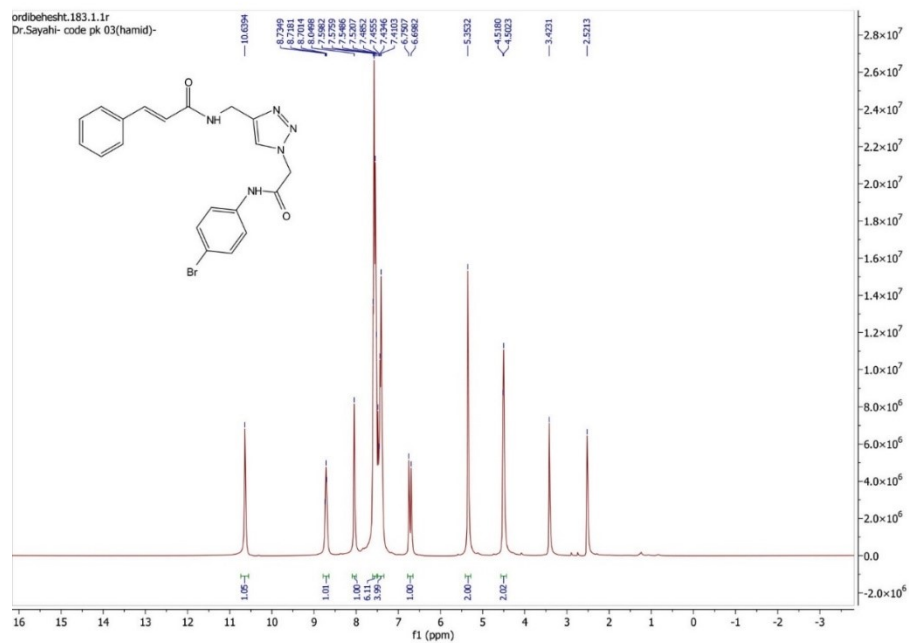


Fig. S5. NMR of 9e

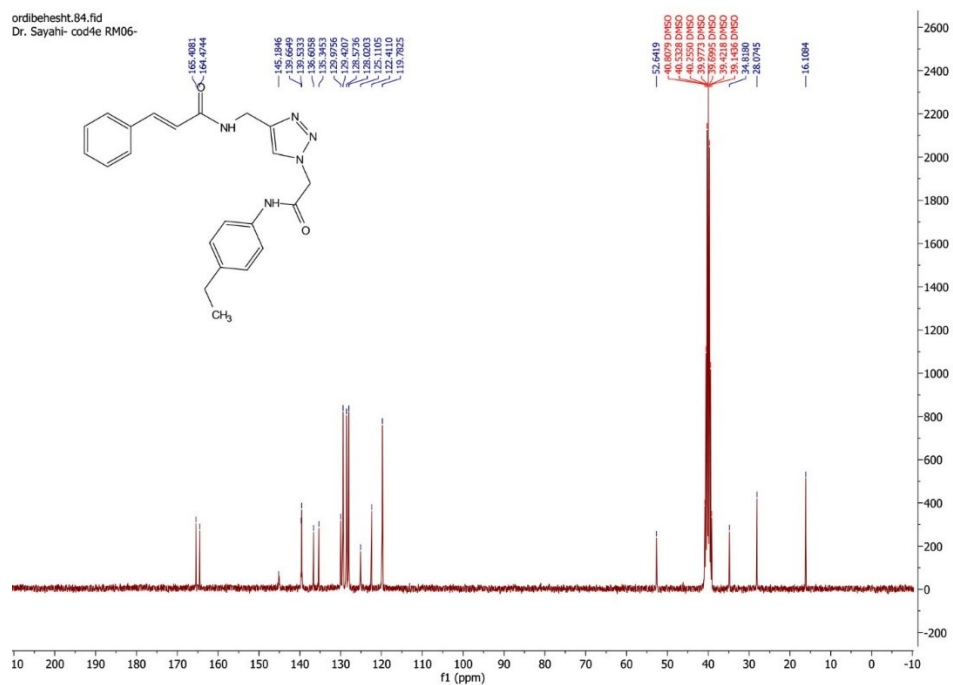
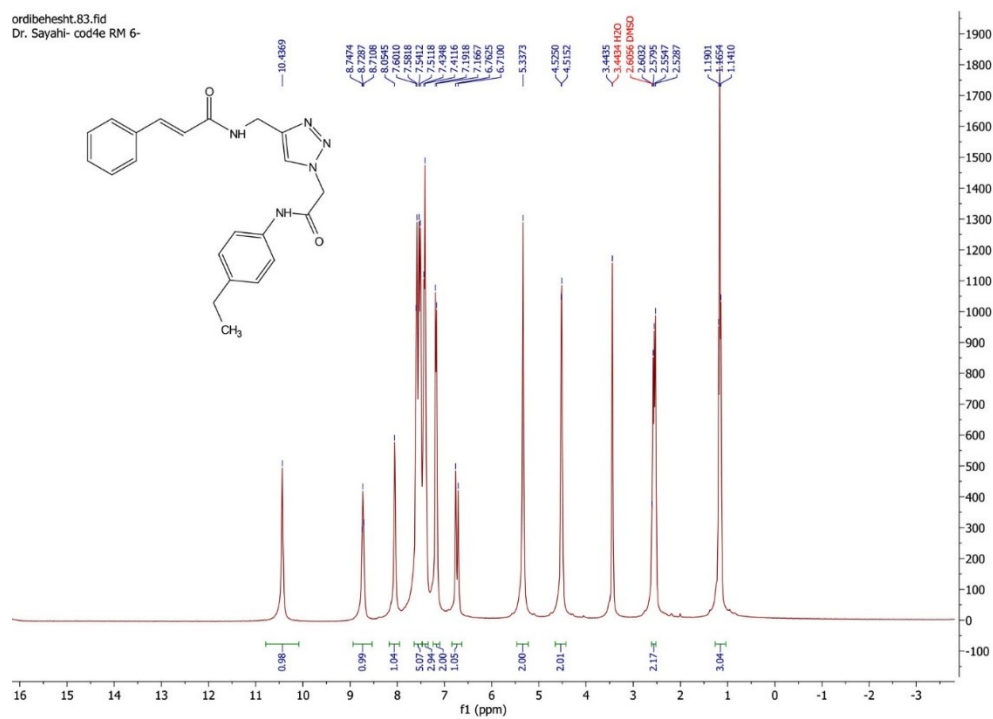
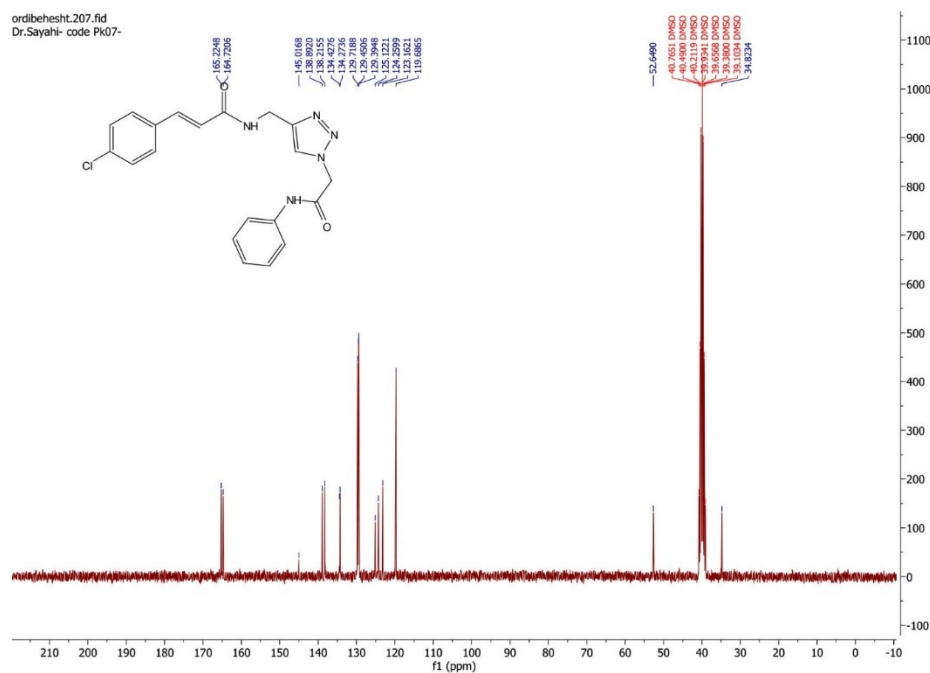
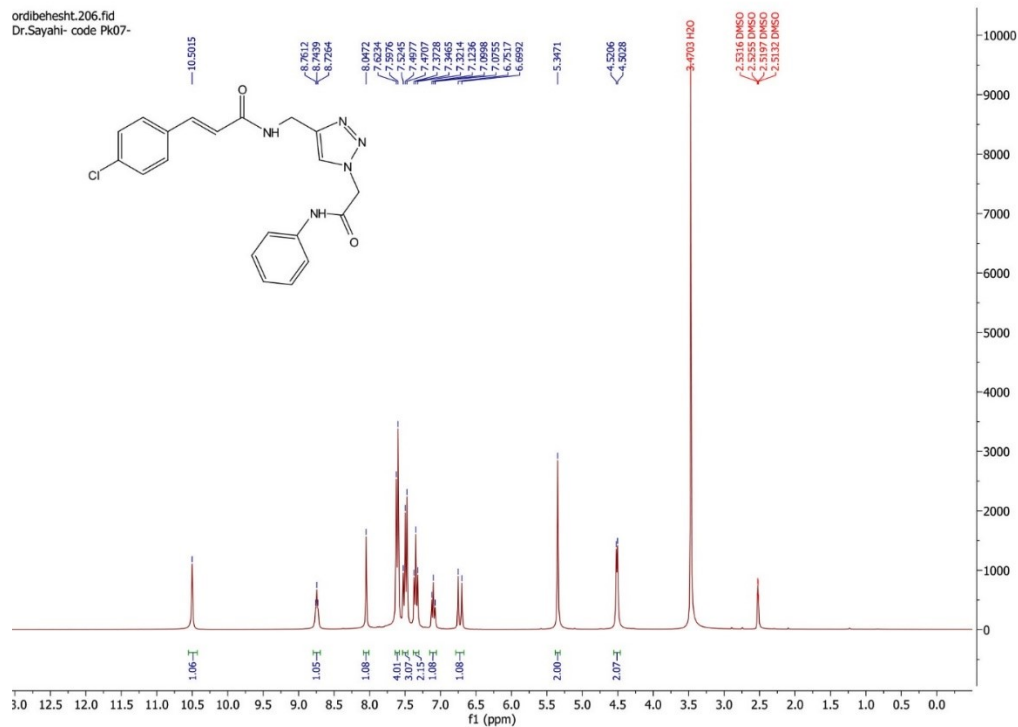


Fig. S6. NMR of 9f



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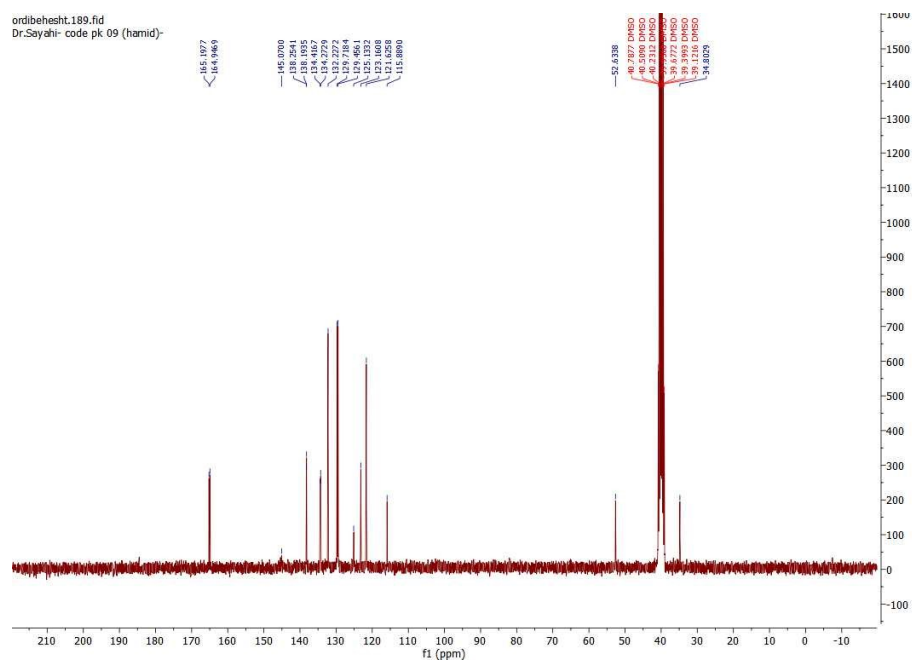
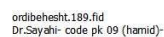
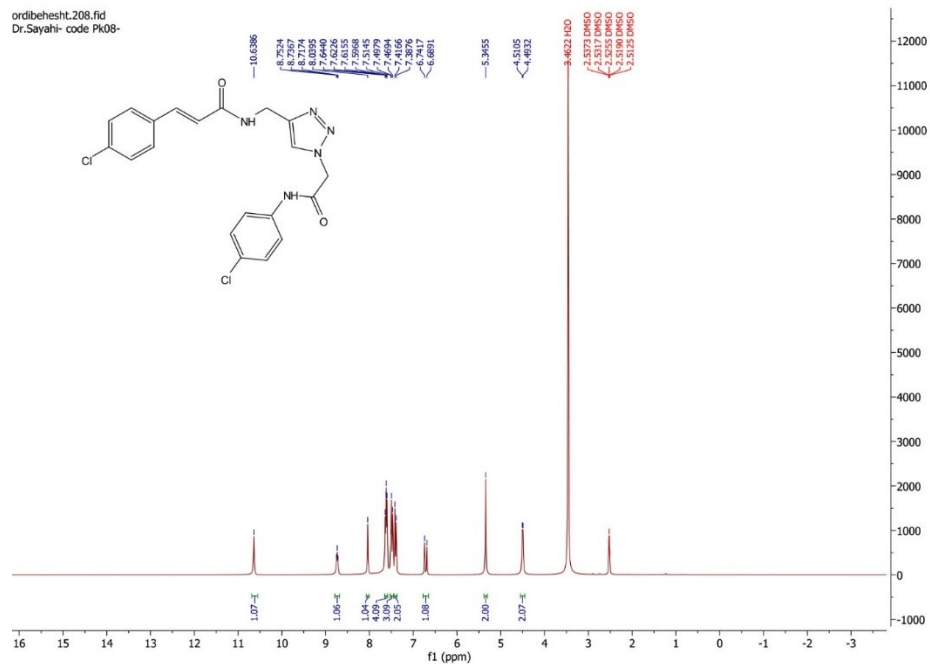


Fig. S8. NMR of 9h



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Chemical structure of compound 10b is shown above the spectrum:

O=C(NC1=CN=C(C1)NC(=O)Nc2ccc(Br)cc2)C=Cc3ccc(Cl)cc3

¹H NMR spectrum (CDCl₃) data:

Chemical Shift (ppm)	Integration
8.7624, 8.7538, 8.7503, 8.0312, 7.6233, 7.5699, 7.5669, 7.5609, 7.5011, 7.4981, 6.7566, 6.5839	1.08, 1.14, 1.10, 2.98, 3.30, 1.13
5.3375	2.00
4.855	2.09
3.4382 (CDCl ₃)	
2.5947, 2.5923, 2.5900, 2.5876, 2.5853, 2.5829, 2.5805	

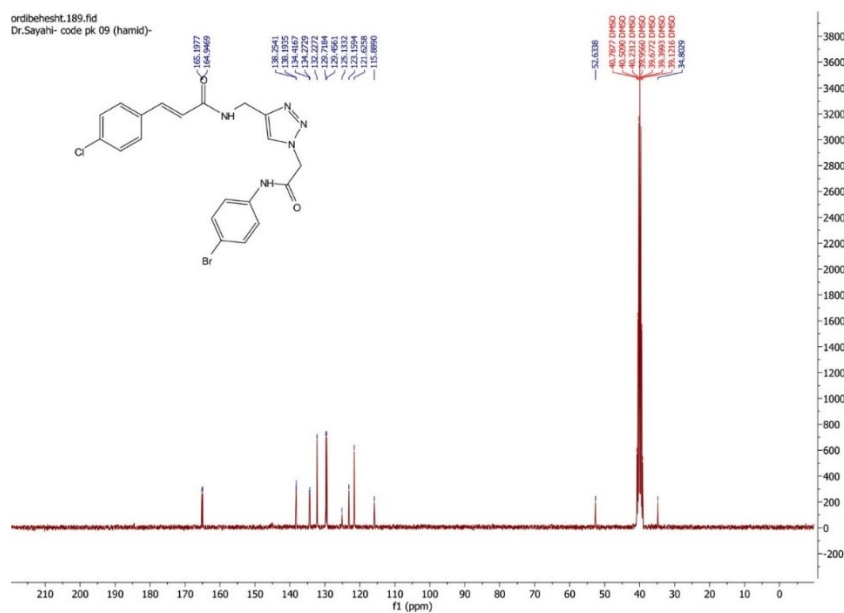


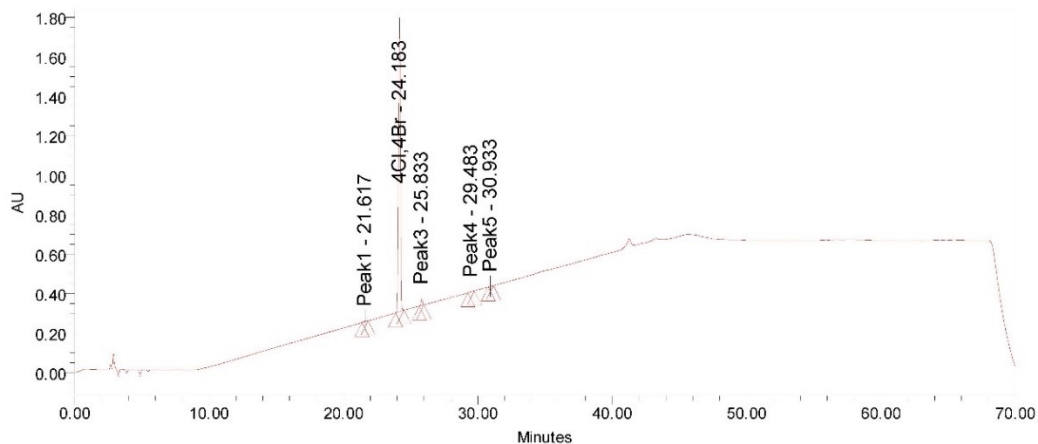
Fig. S10. HPLC of 9i



SAMPLE INFORMATION

Sample Name:	4-Cl,4Br	Acquired By:	System
Sample Type:	Control	Sample Set Name:	4Cl,4Br
Vial:	6	Acq. Method Set:	
Injection #:	1	Processing Method:	4Cl
Injection Volume:	10.00 ul	Channel Name:	W2489 ChA
Run Time:	70.0 Minutes	Proc. Chnl. Descr.:	W2489 ChA 205nm
Date Acquired: 8/19/2025 10:54:10 PM GST			
Date Processed: 9/6/2025 3:54:26 PM GST			

Auto-Scaled Chromatogram



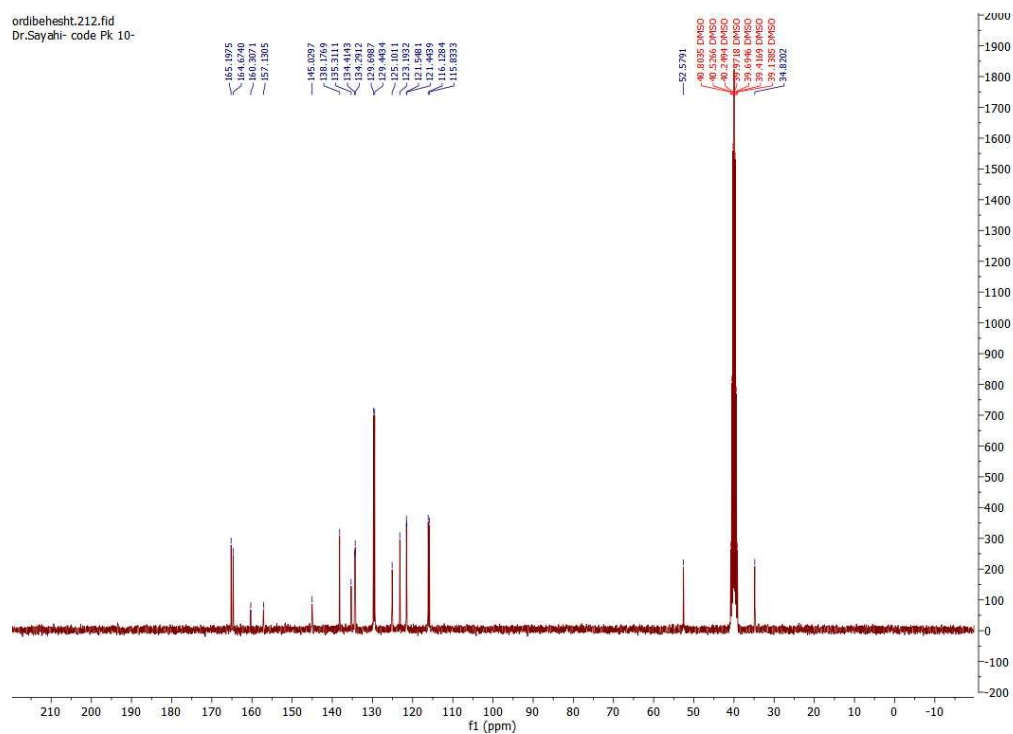
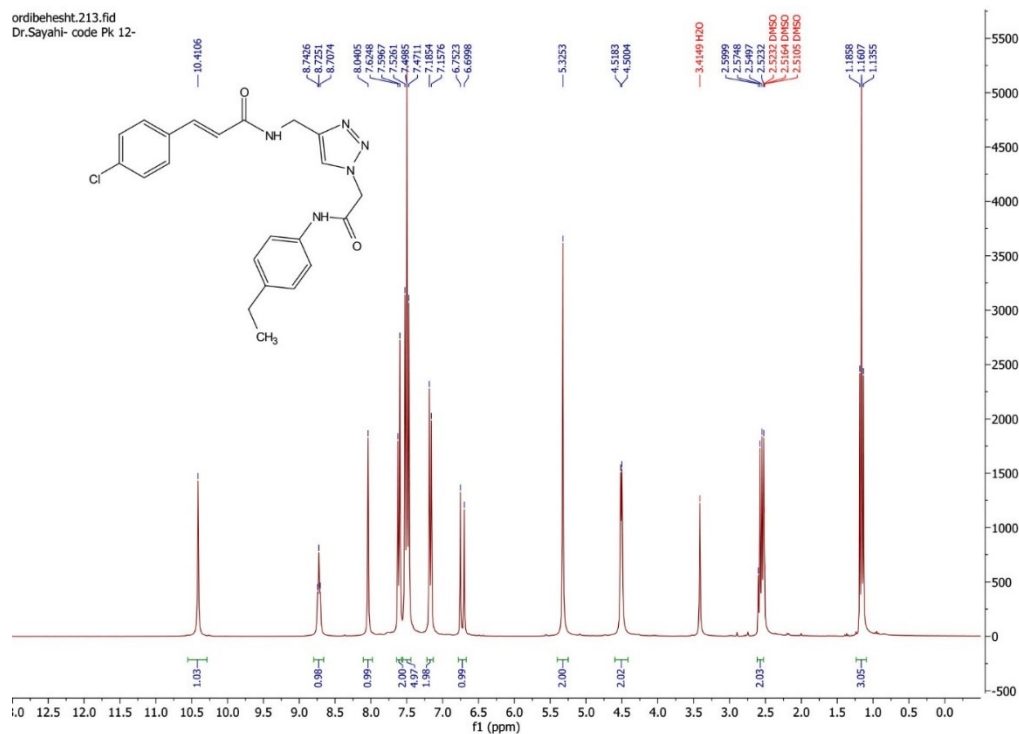
Peak Results

	Name	RT	Area	Height	% Area
1	Peak1	21.617	50030	3068	0.35
2	4Cl,4Br	24.183	14005441	1436464	97.42
3	Peak3	25.833	279388	33563	1.94
4	Peak4	29.483	26118	1747	0.18
5	Peak5	30.933	14907	1445	0.10

Reported by User: System
 Report Method: lmsReport
 Method ID: 2 2073 Page: 1 of
 1

Project Name: 4Cl,4Br
 Date Printed:
 9/6/2025
 4:03:16 PM Asia/Dubai

Fig. S11. NMR of 9j



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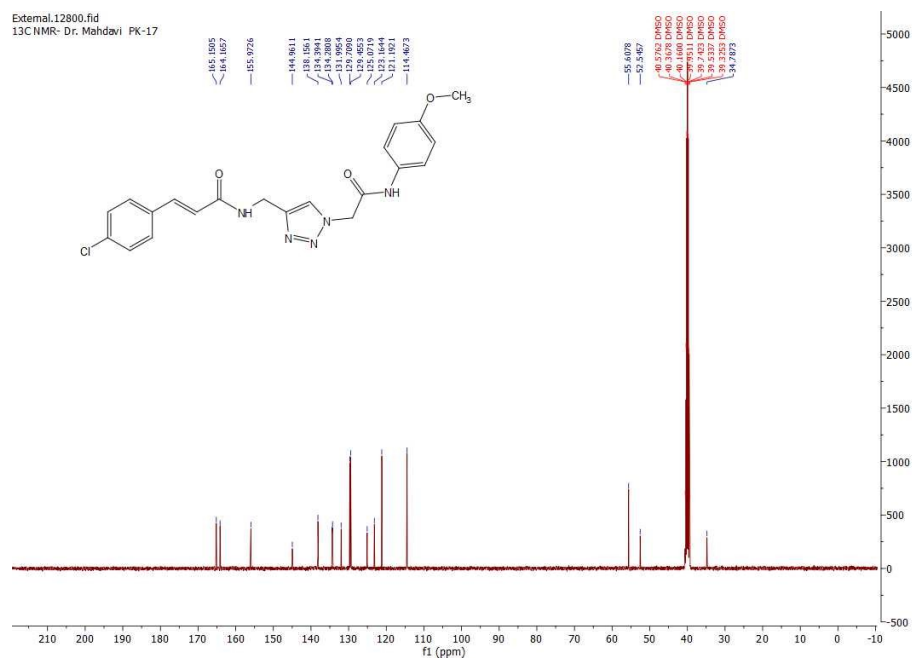


Fig. S13. NMR of 9l

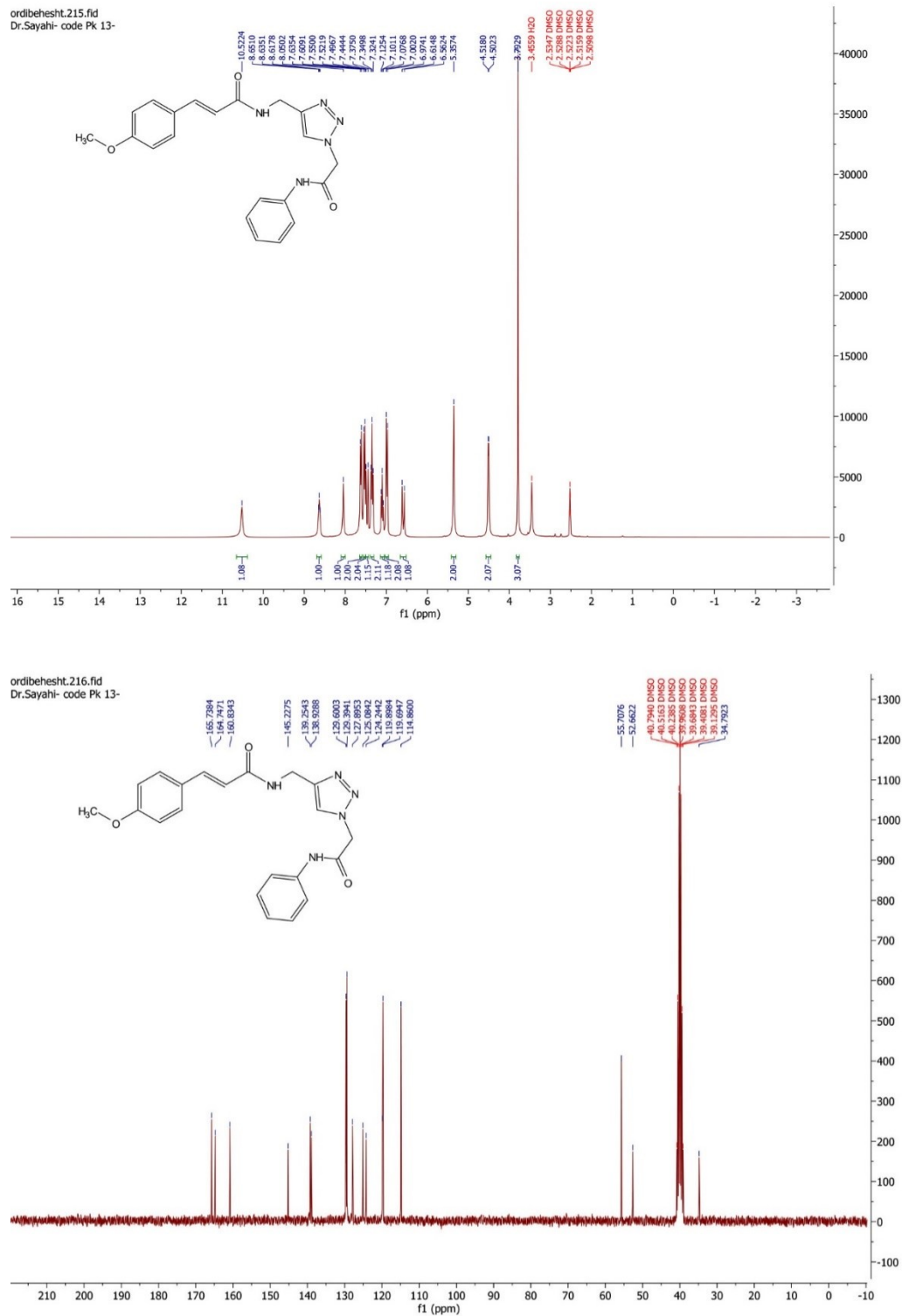
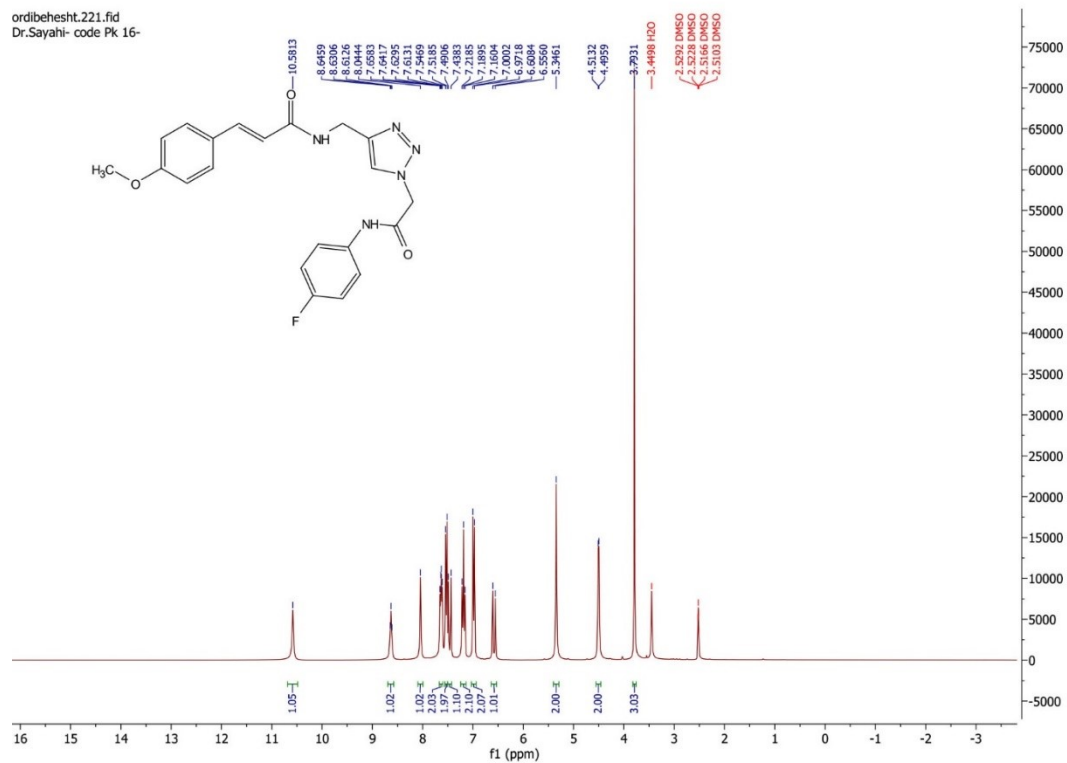


Fig. S14. NMR of 9m

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Dr.Sayahi- code Pk 16-

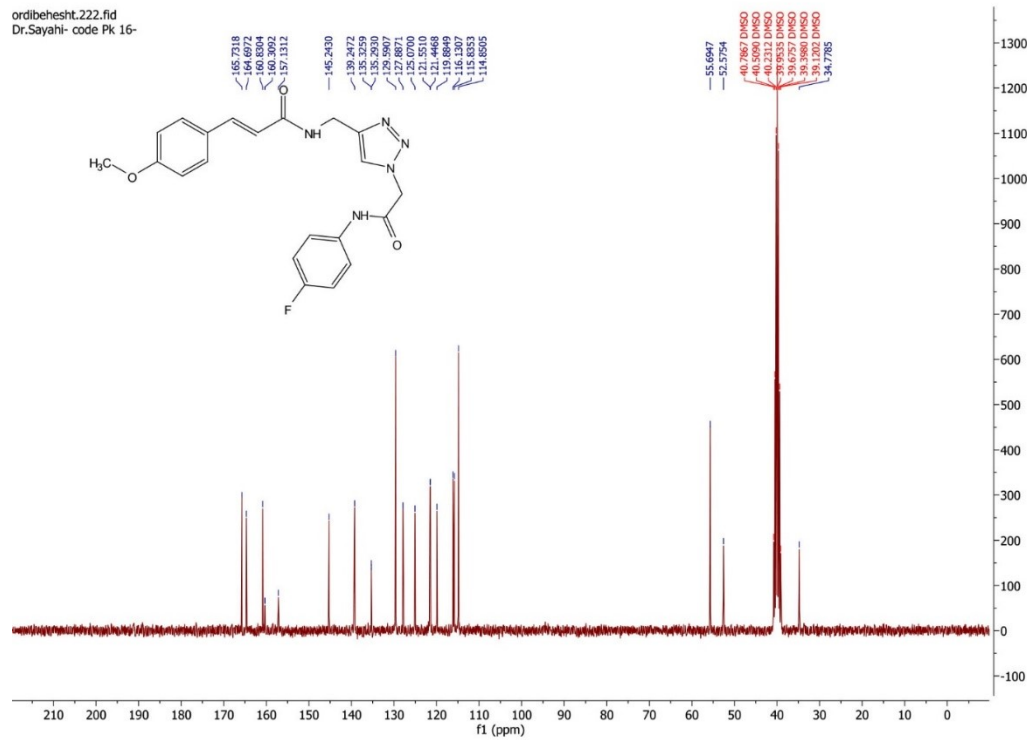


Fig. S15. NMR of 9n

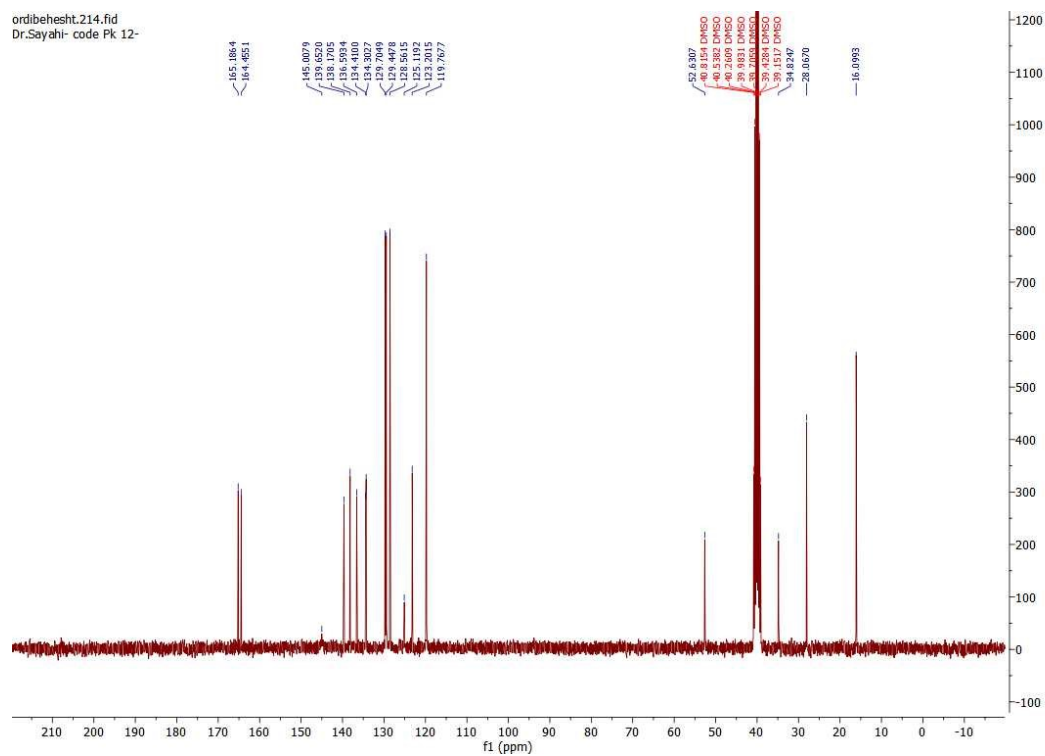
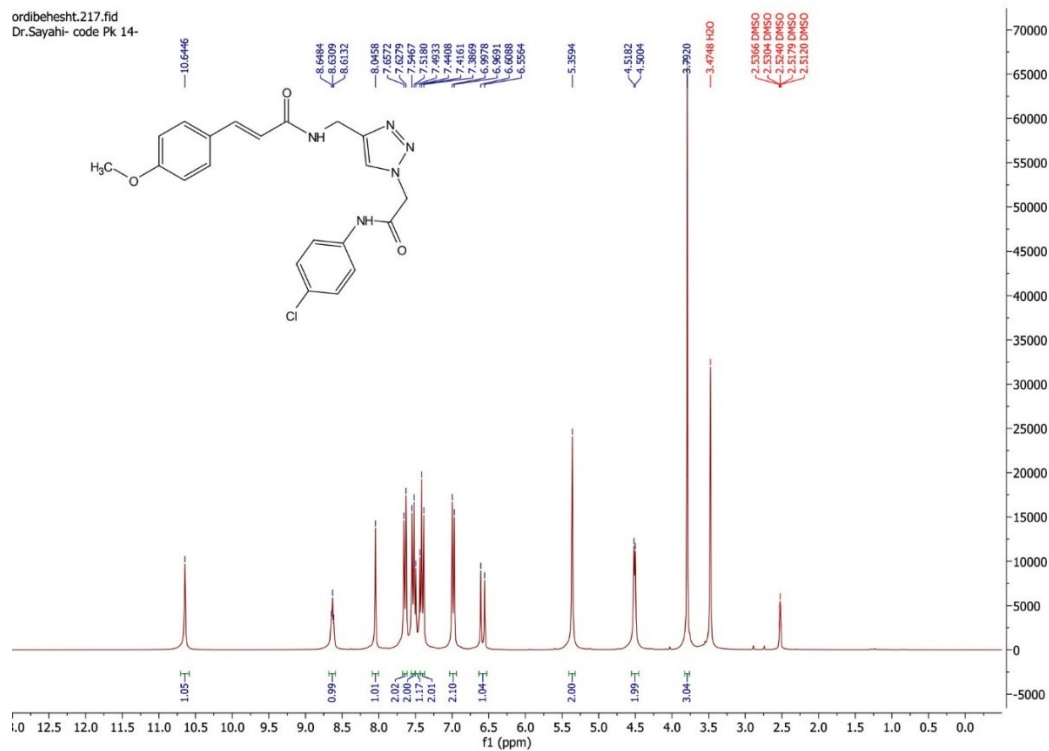


Fig. S16. NMR of 9o

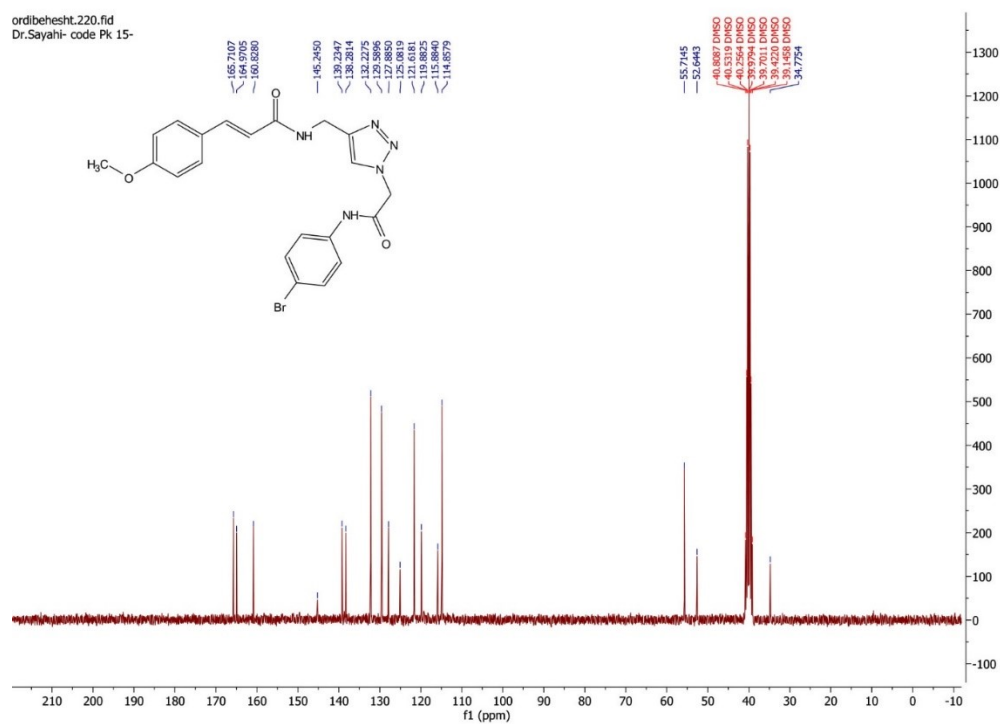
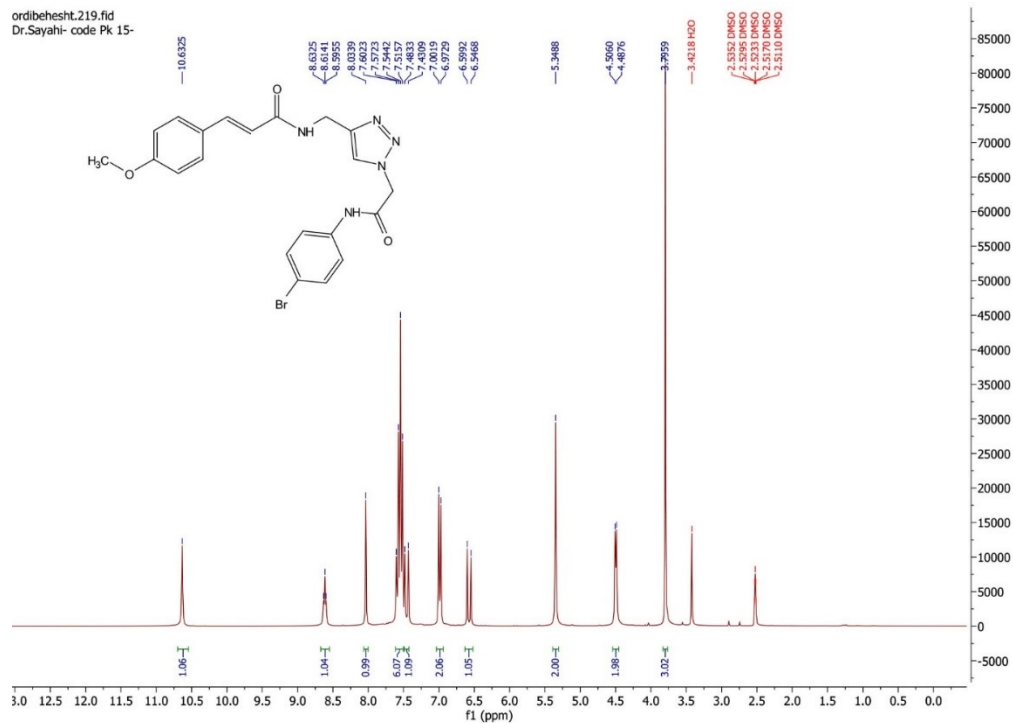
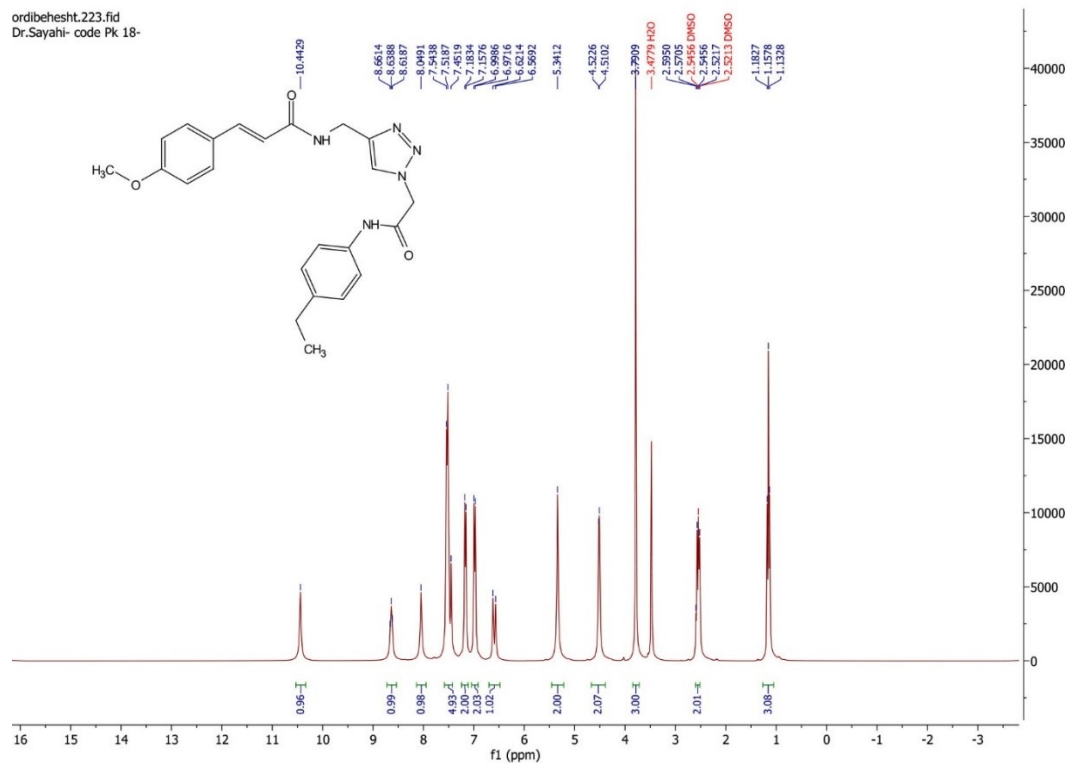
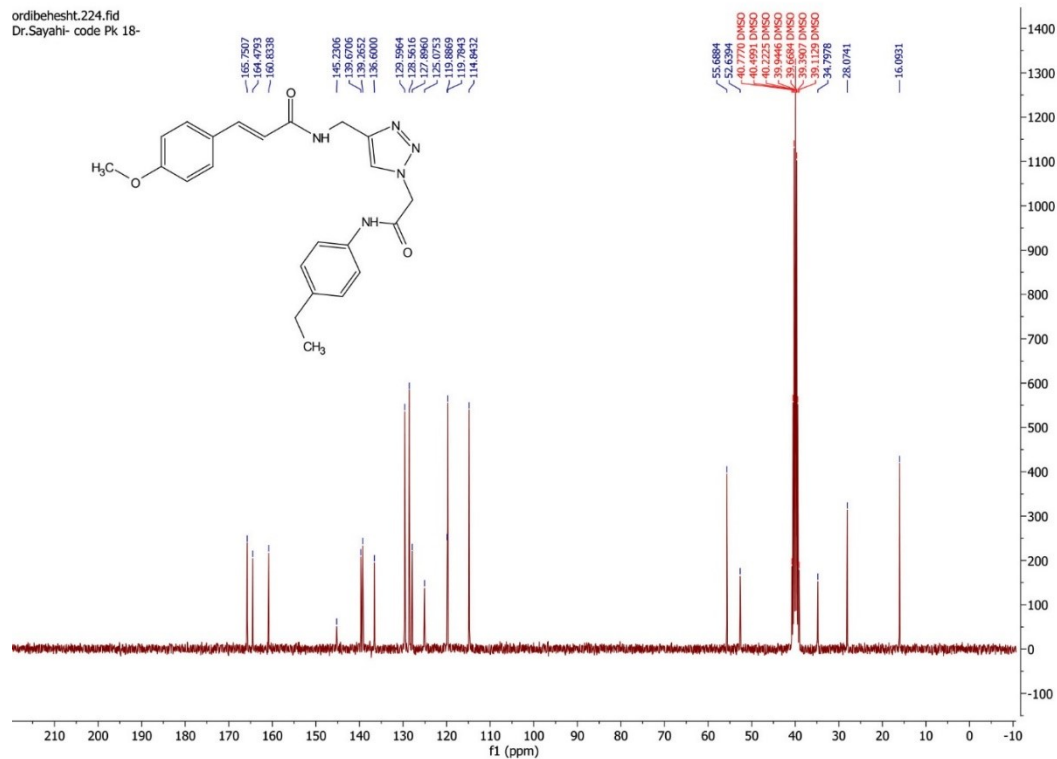


Fig. S17. NMR of 9p

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ordibehesht.224.fid
Dr.Sayahi- code Pk 18-



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1H NMR- Dr. Mahdavi PK-16

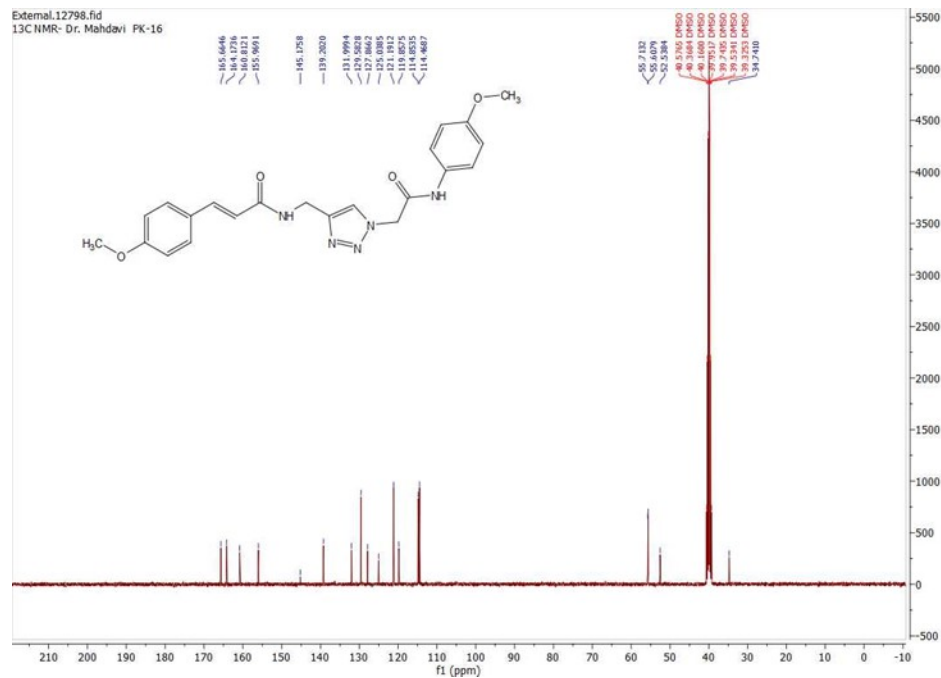
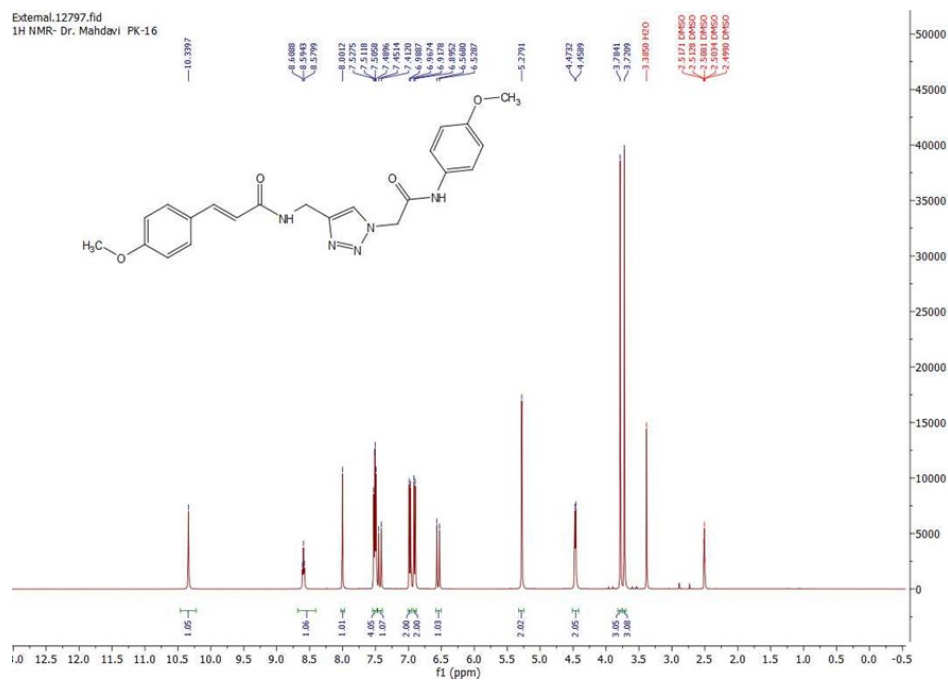


Fig. S19. Mass of 9q

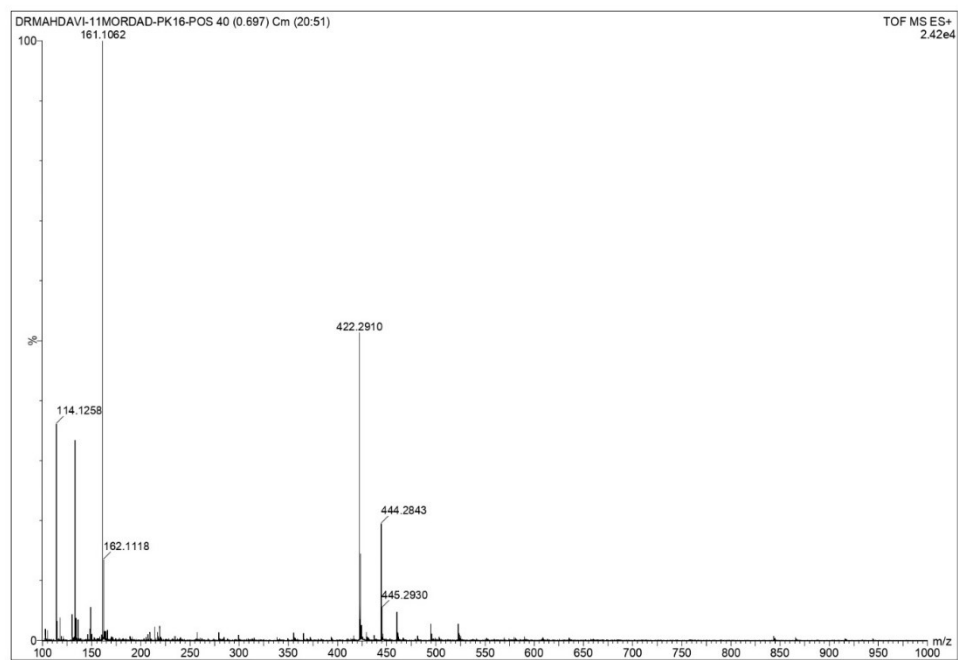


Fig. S20. Ramachandran plot of tyrosinase

