

Supporting Information

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Synthesis of carbazole-based acetyl benzohydrazides targeting urease enzyme inhibition

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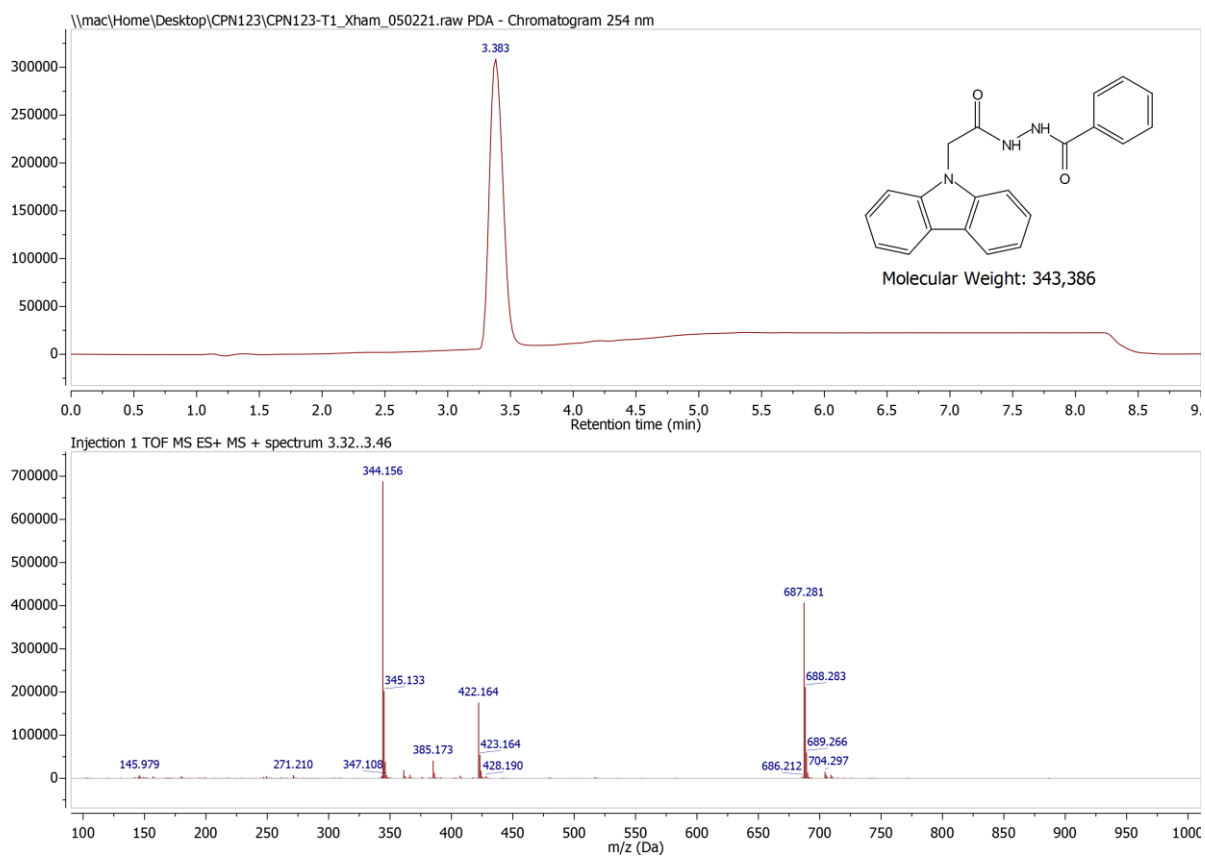


Figure S4: LC-MS spectrum of compound **3**

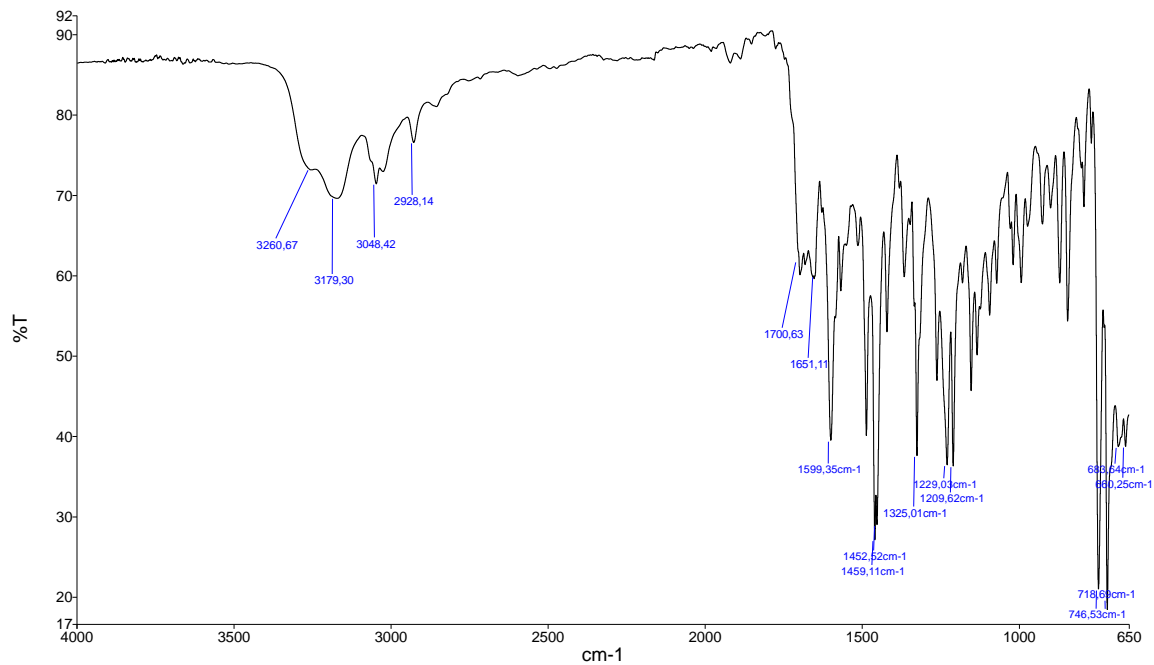


Figure S2: FT-IR spectrum of compound **3**

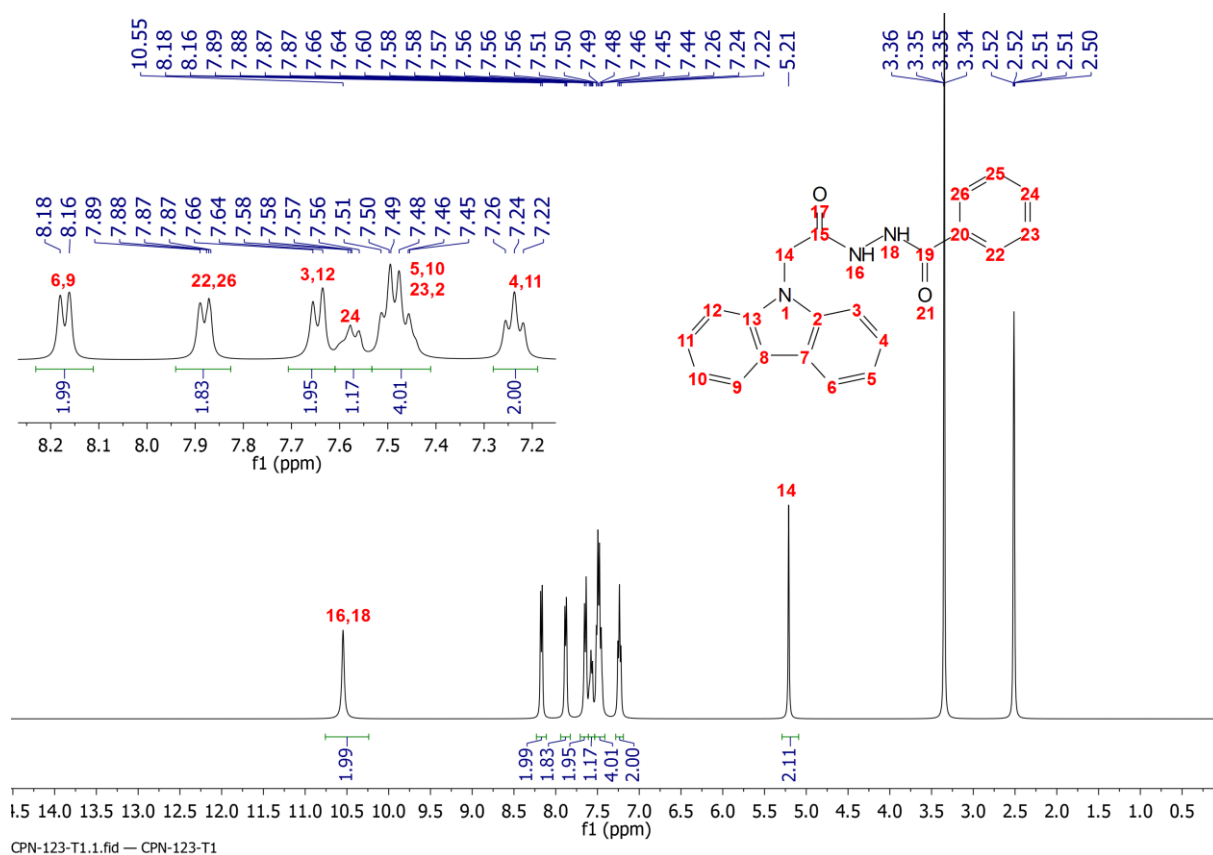


Figure S3: $^1\text{H-NMR}$ spectrum of compound 3

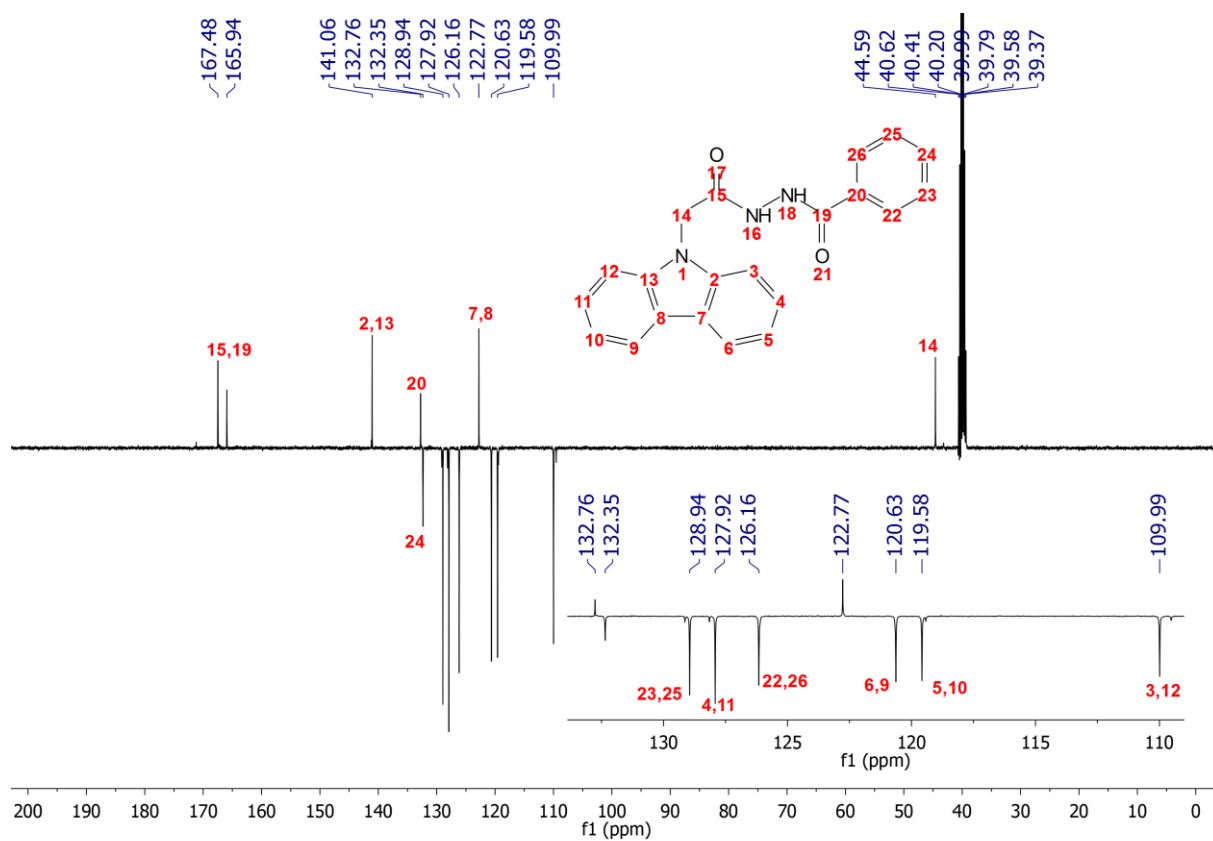


Figure S4: $^{13}\text{C}_{\text{APT-NMR}}$ spectrum of compound 3

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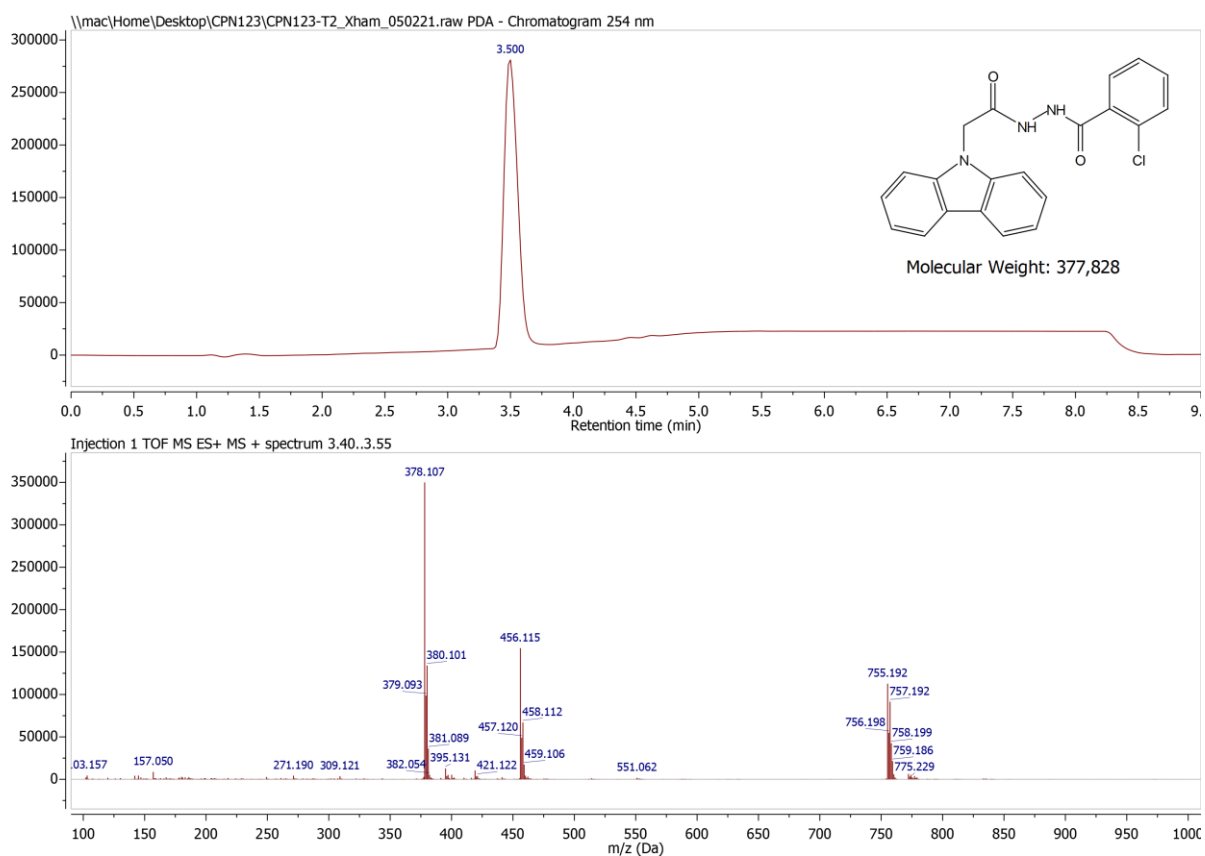


Figure S5: LC-MS spectrum of Compound 4

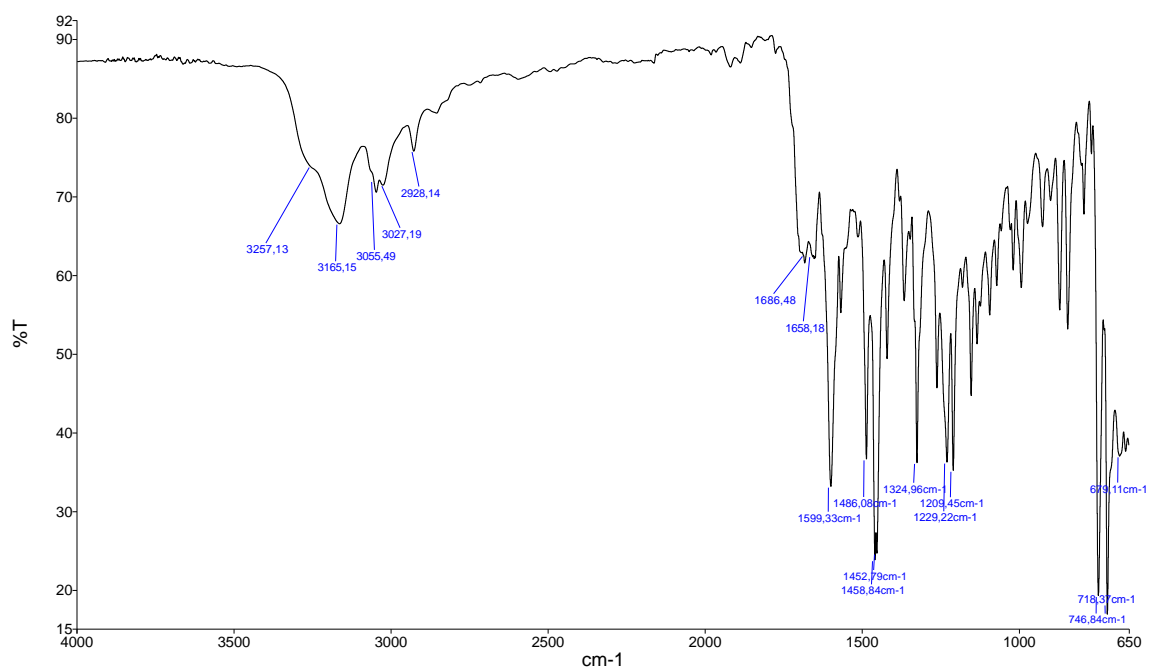
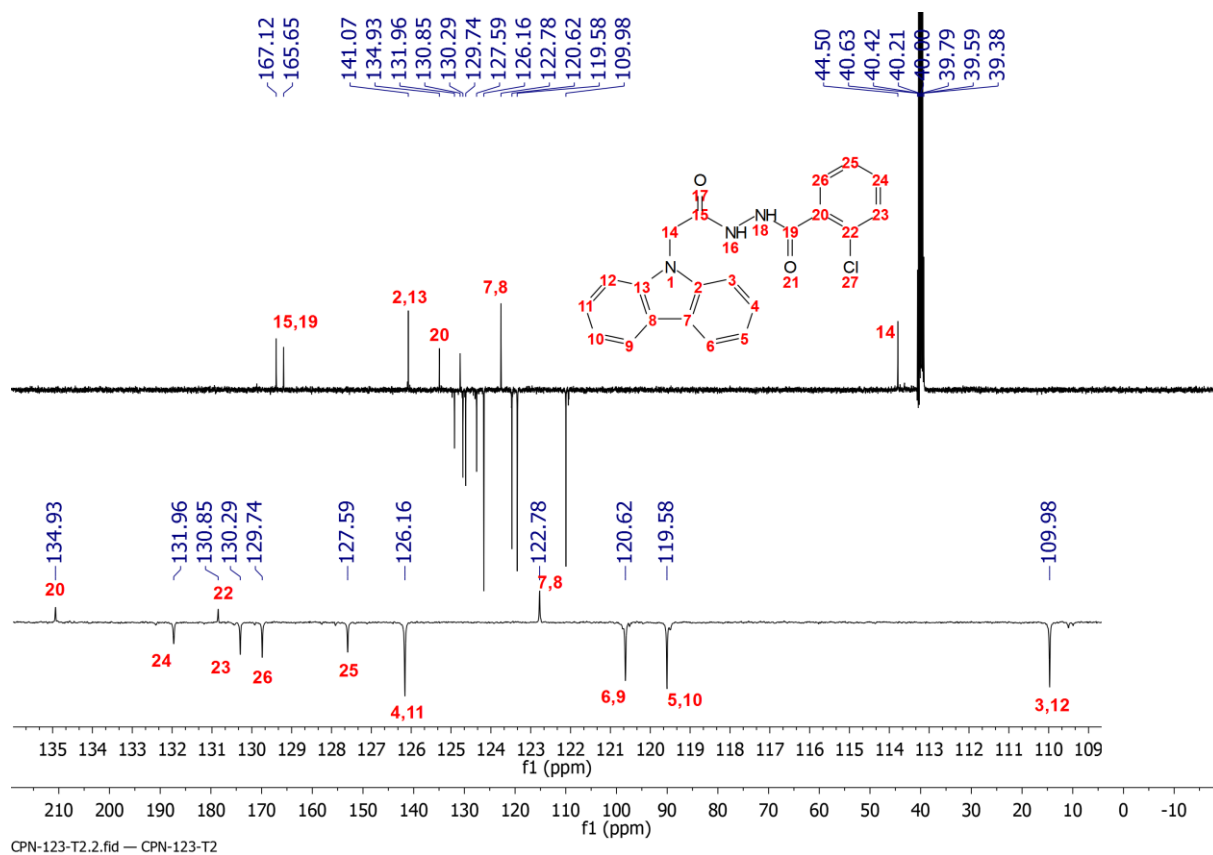
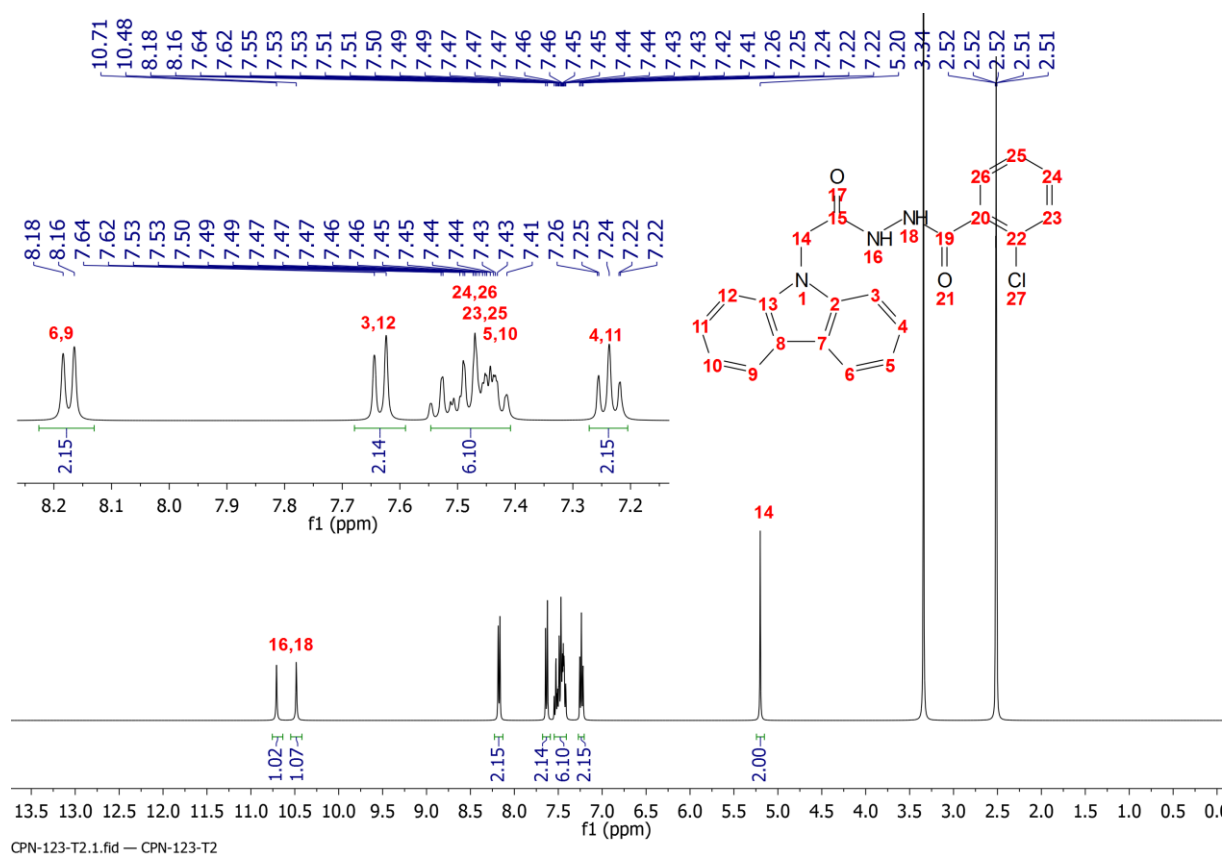


Figure S6: FT-IR spectrum of compound 4



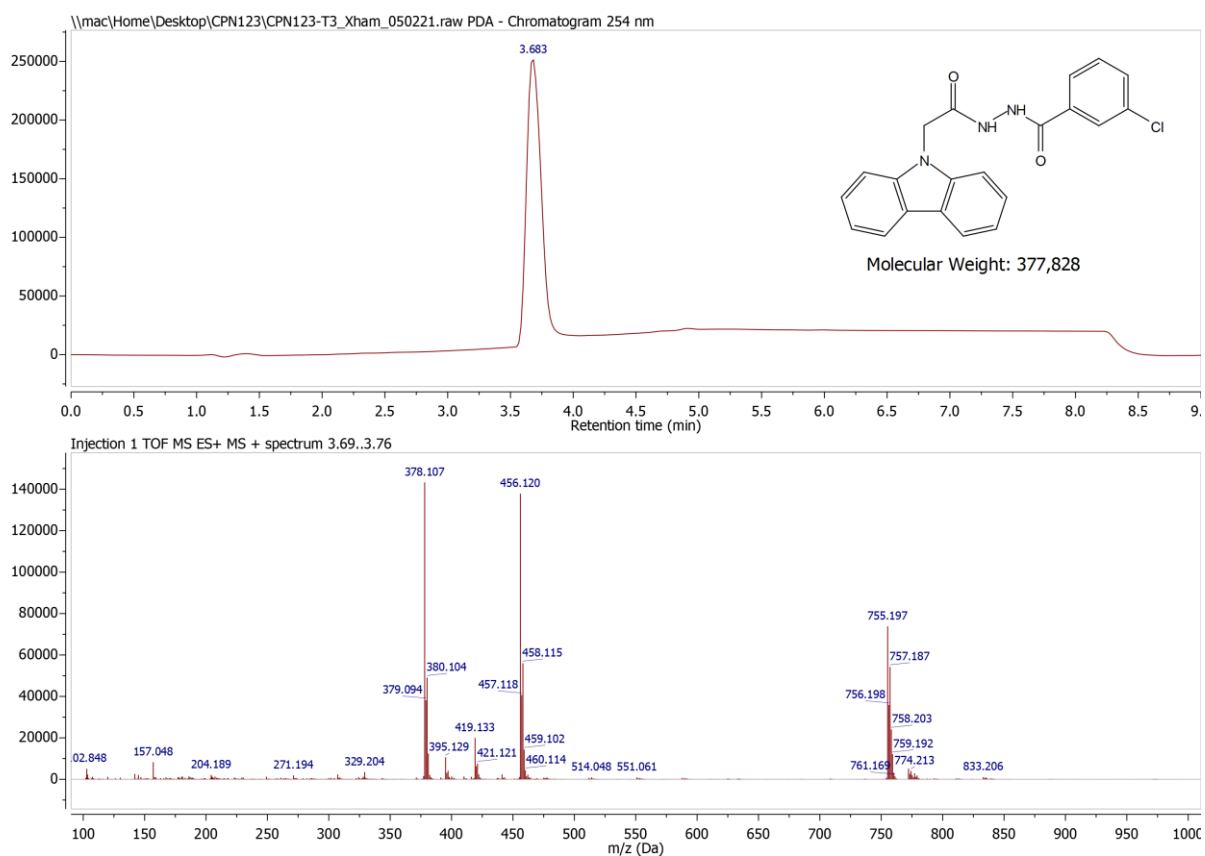


Figure S9: LC-MS spectrum of compound 5

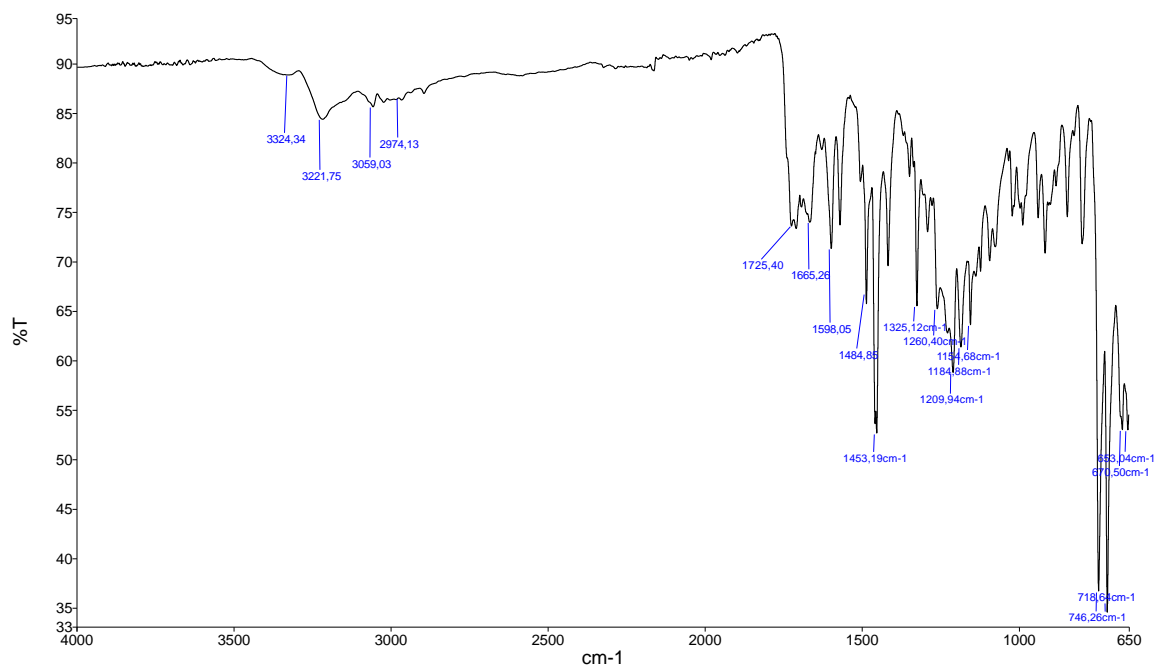


Figure S10: FT-IR spectrum of compound 5

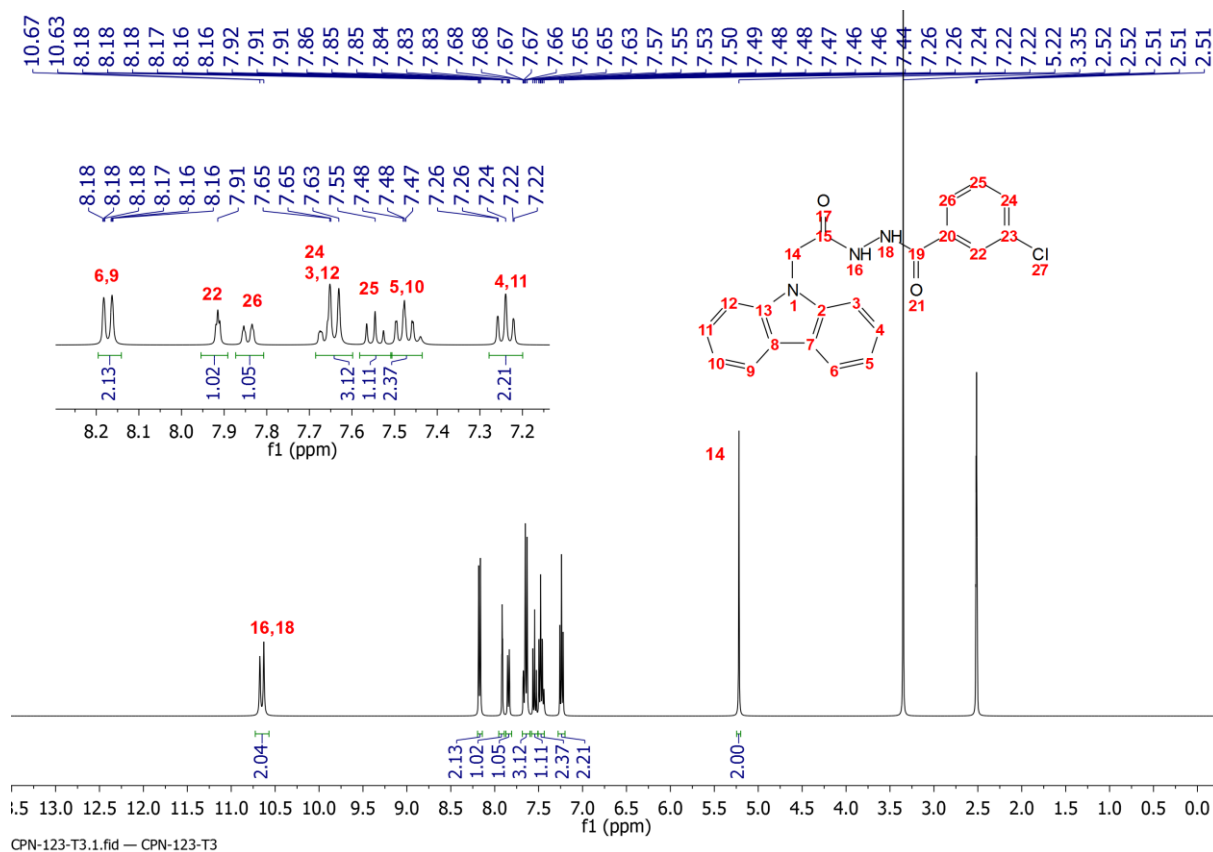


Figure S11: $^1\text{H-NMR}$ spectrum of compound **5**

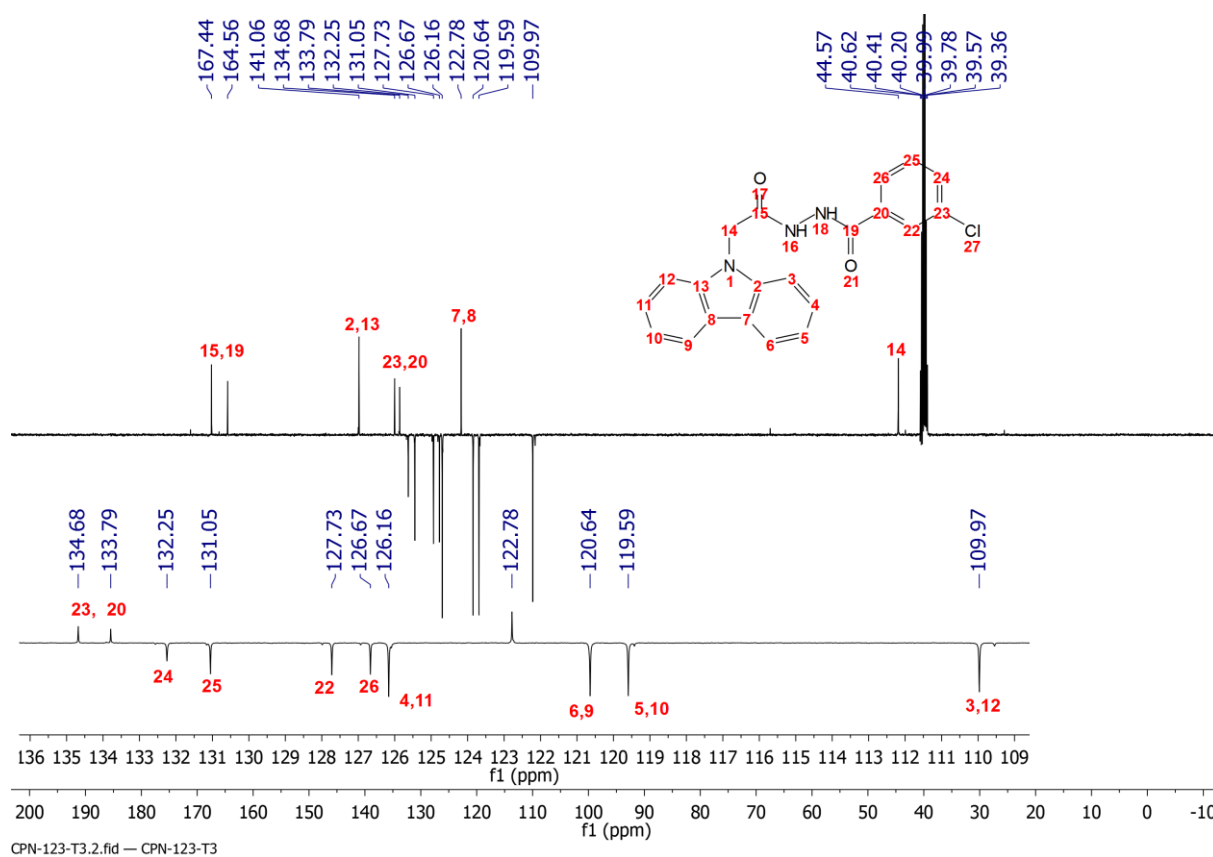


Figure S12: $^{13}\text{C}_{\text{APT-NMR}}$ spectrum of compound **5**

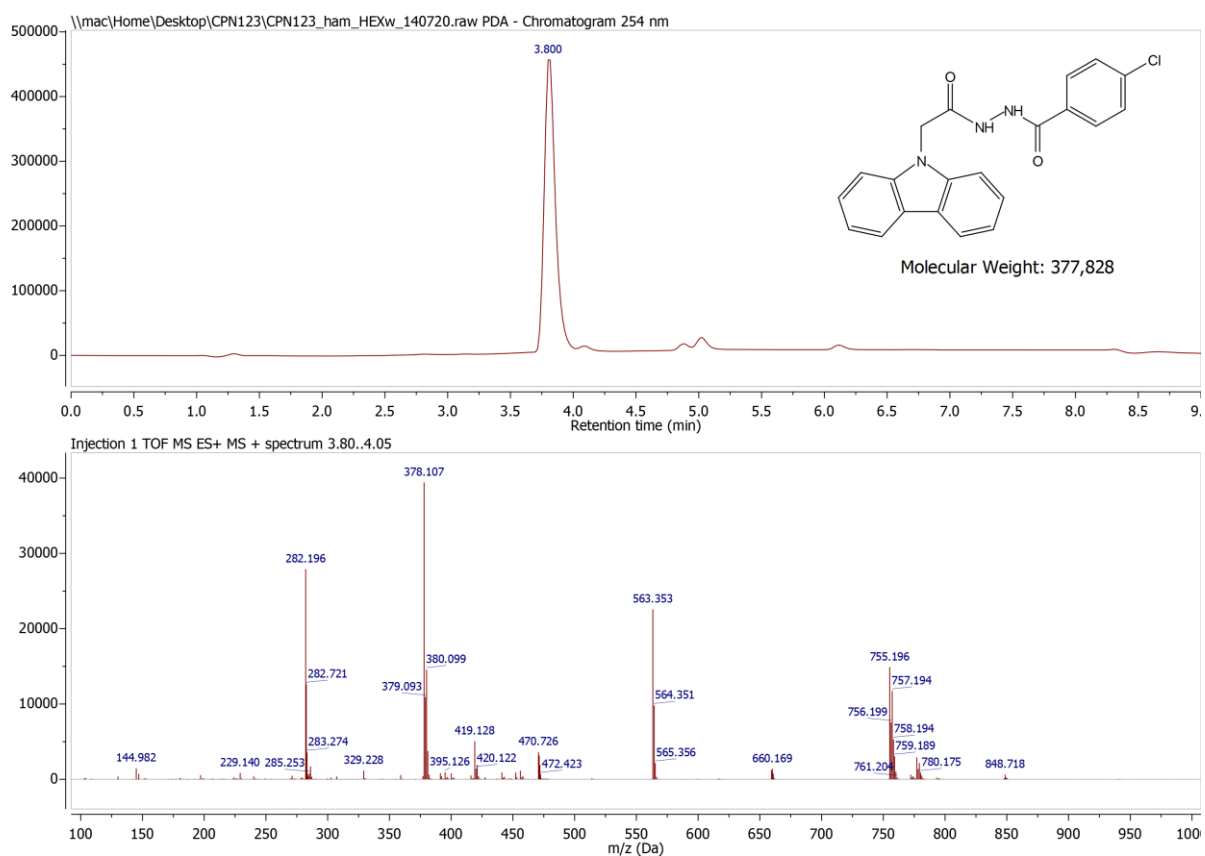


Figure S53: LC-MS spectrum of Compound 6

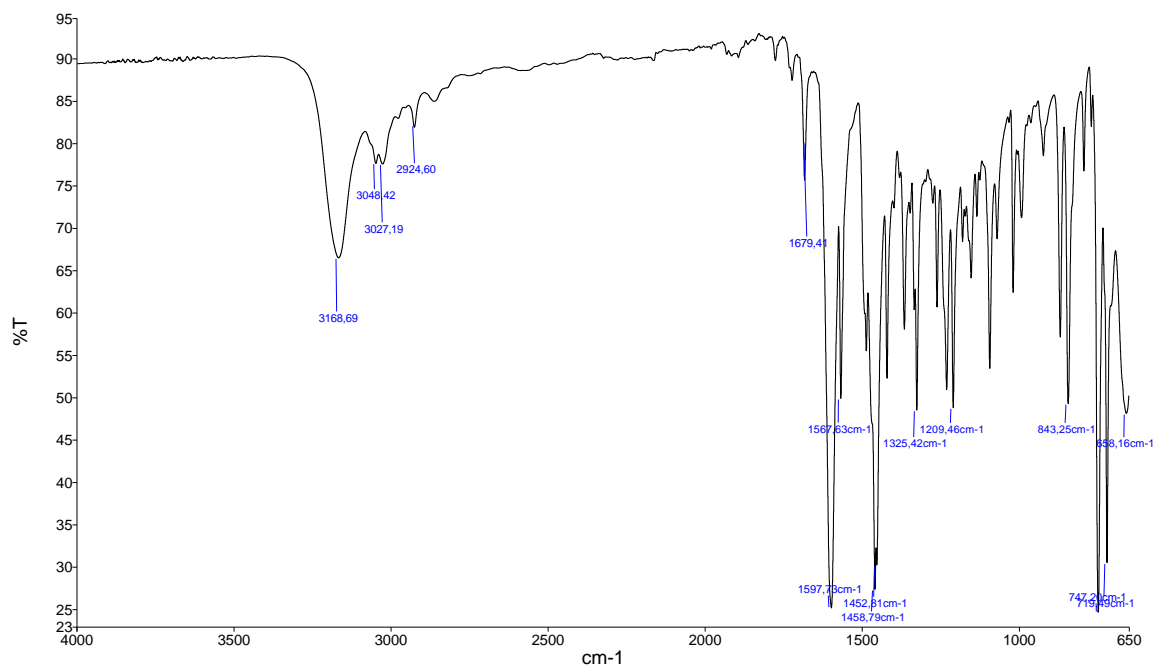
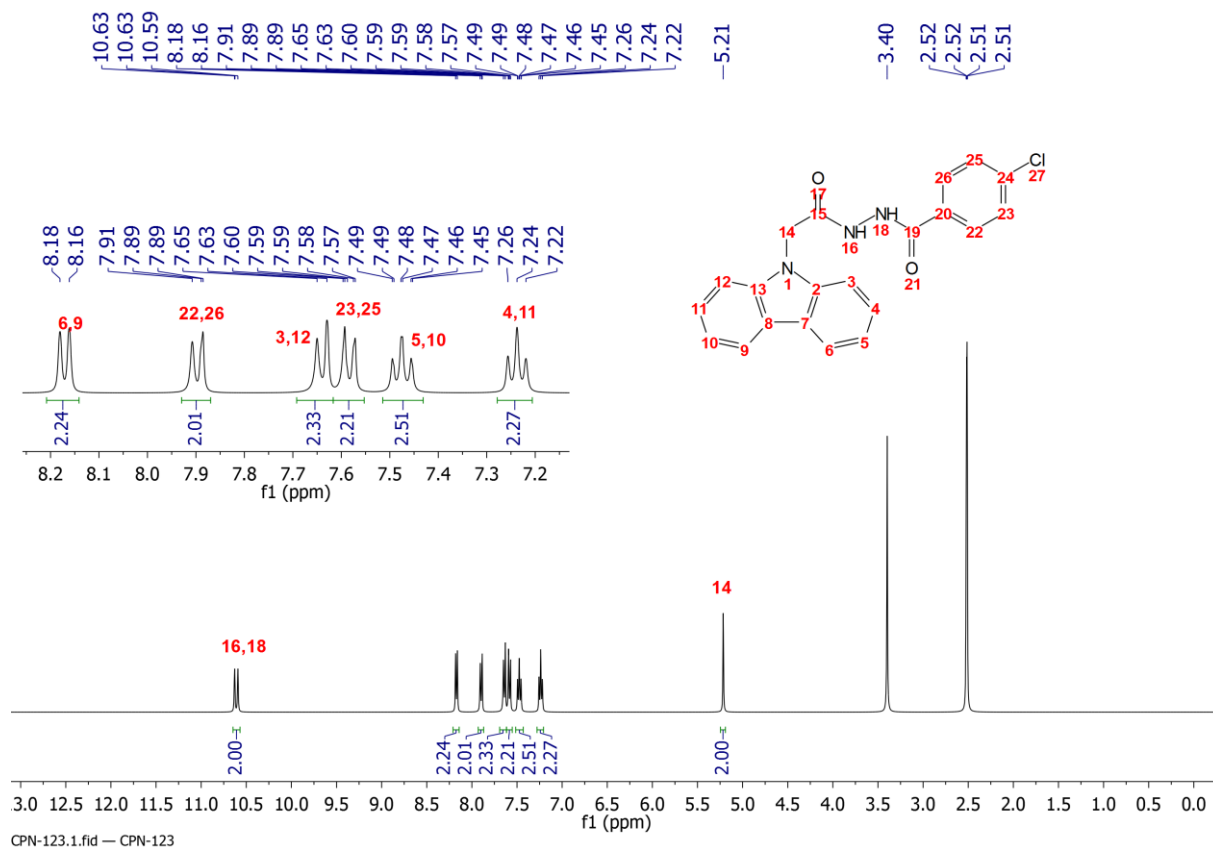
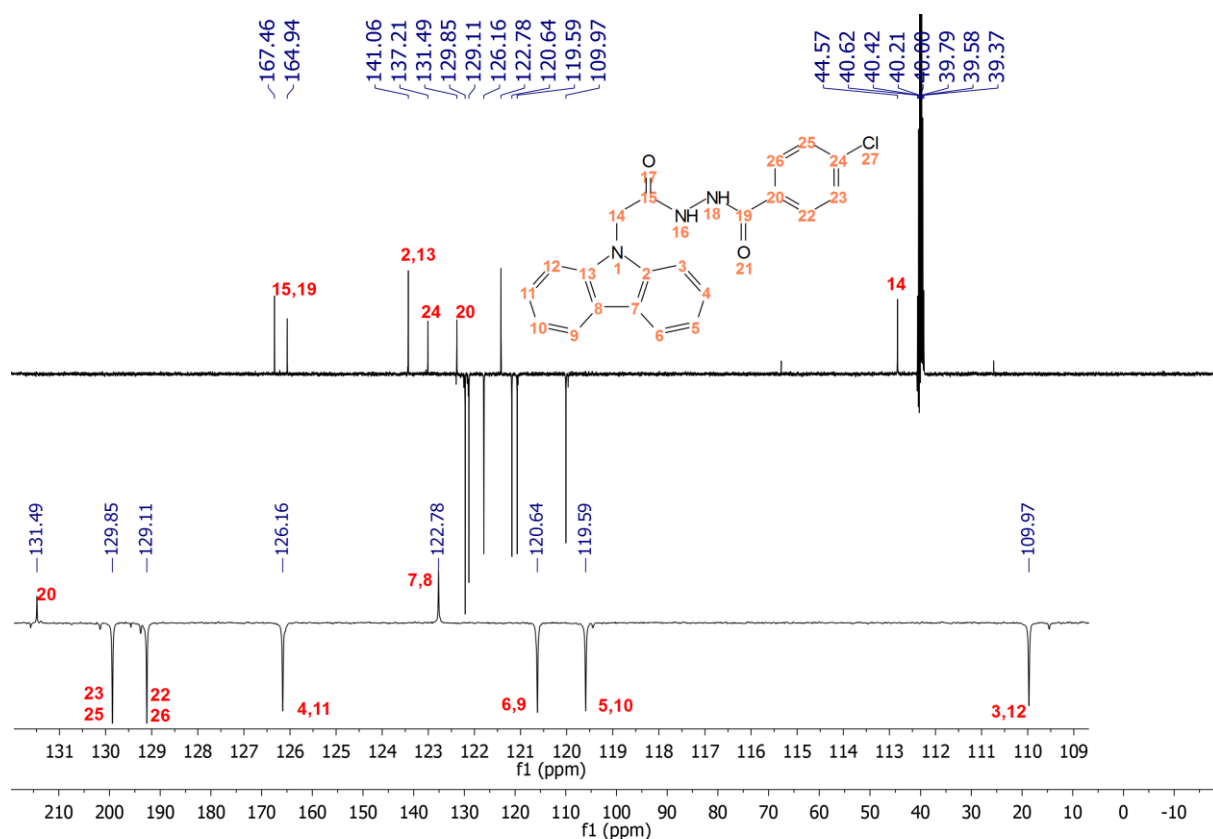


Figure 14. FT-IR spectrum of compound 6



CPN-123.1.fid — CPN-123

Figure S15: $^1\text{H-NMR}$ spectrum of compound 6



CPN-123.2.fid — CPN-123

Figure S16: $^{13}\text{C}_{\text{APT-NMR}}$ spectrum of compound 6

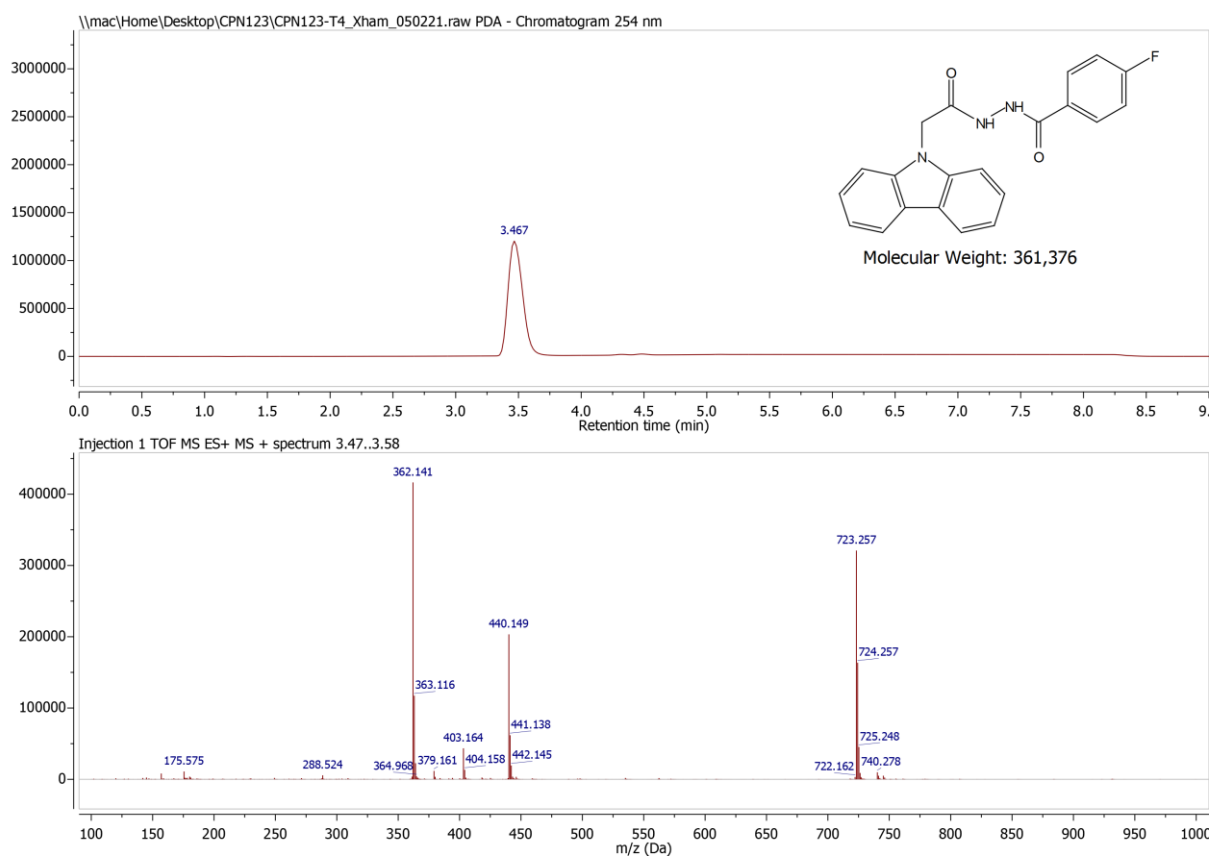


Figure S67: LC-MS spectrum of Compound 7

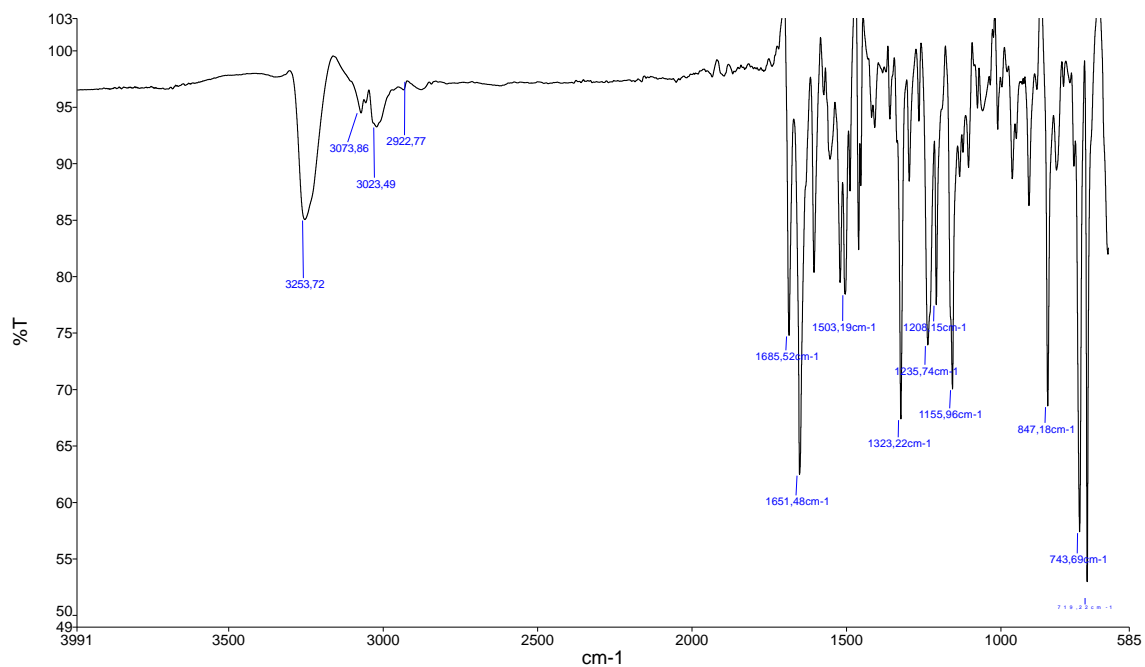


Figure S18: FT-IR spectrum of compound 7

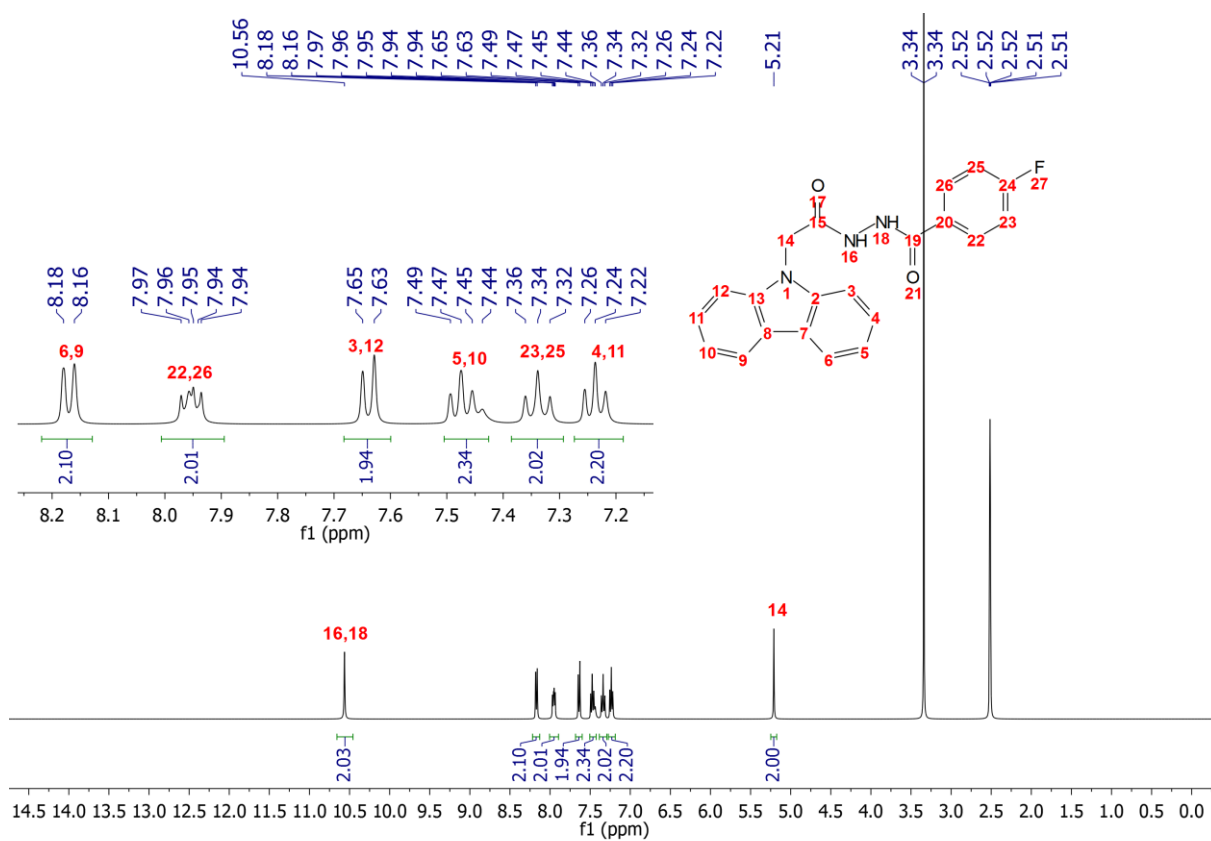


Figure S19: ¹H-NMR spectrum of compound 7

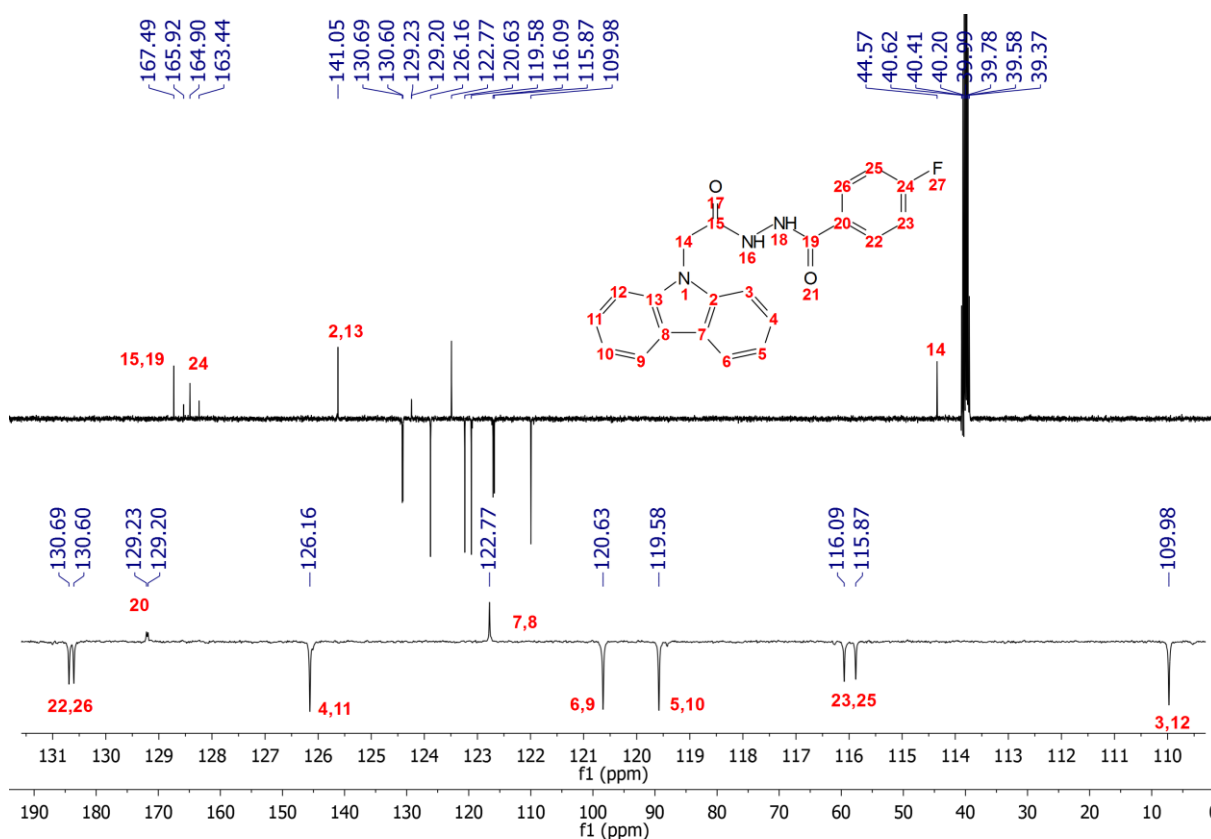


Figure S20: ¹³C_{APT}-NMR spectrum of compound 7

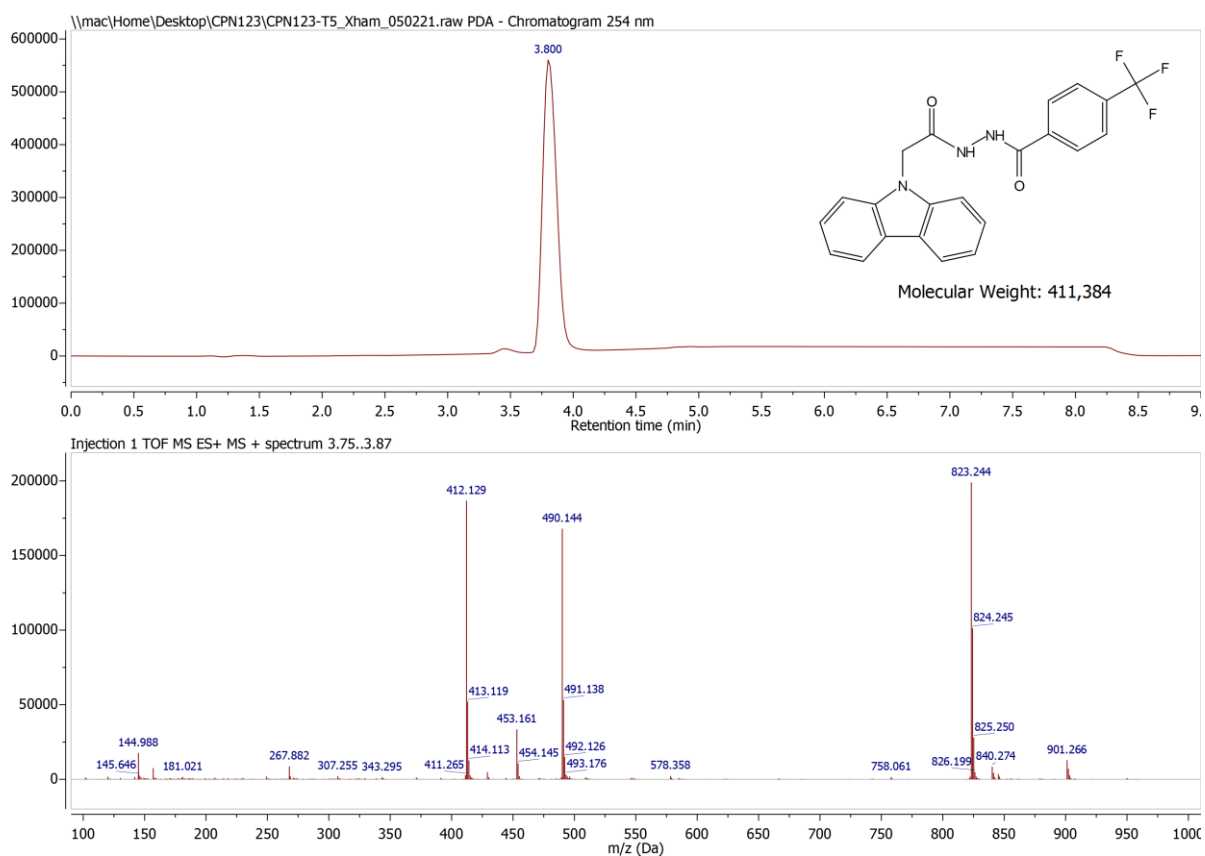


Figure S21: LC-MS spectrum of compound 8

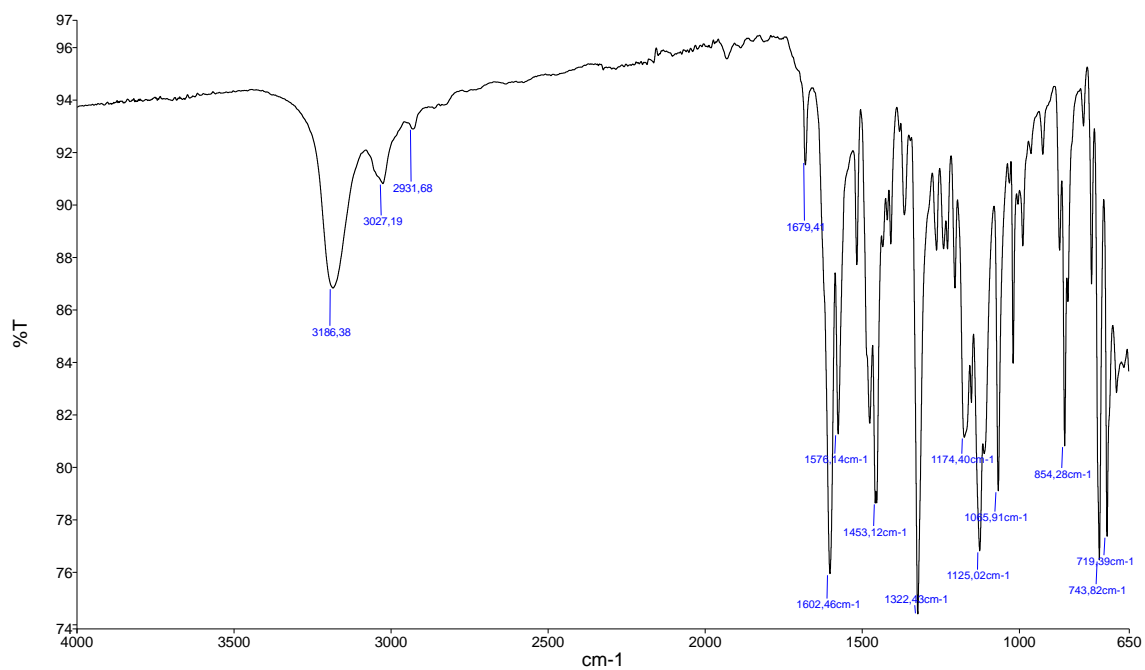
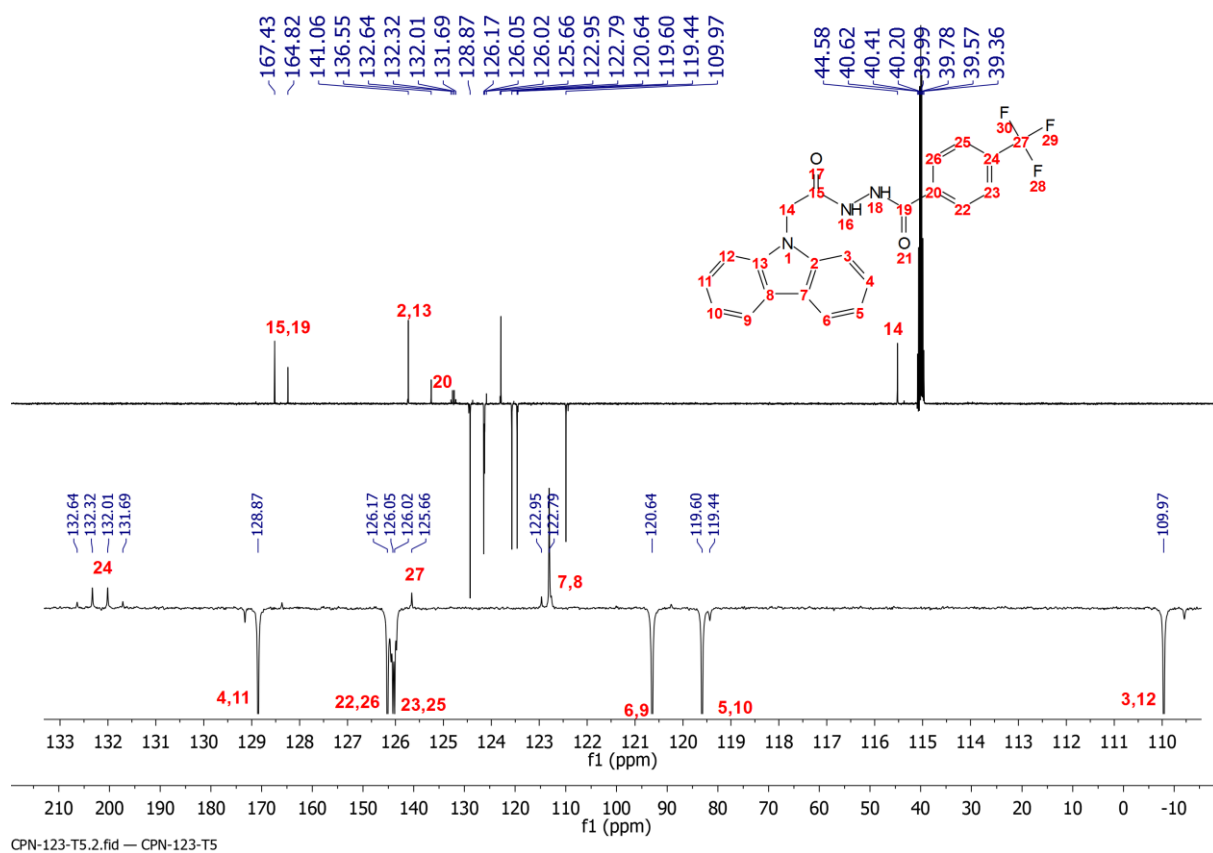
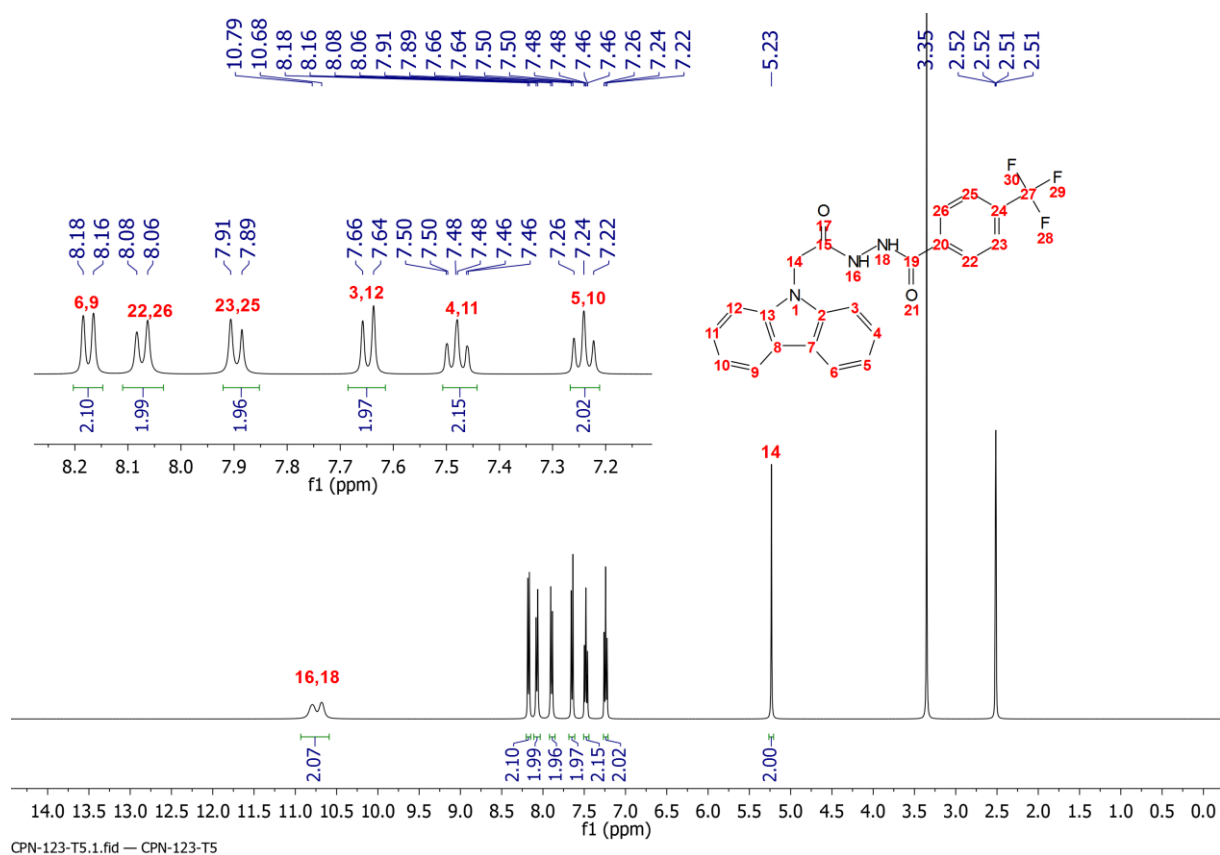


Figure S22: FT-IR spectrum of compound 8



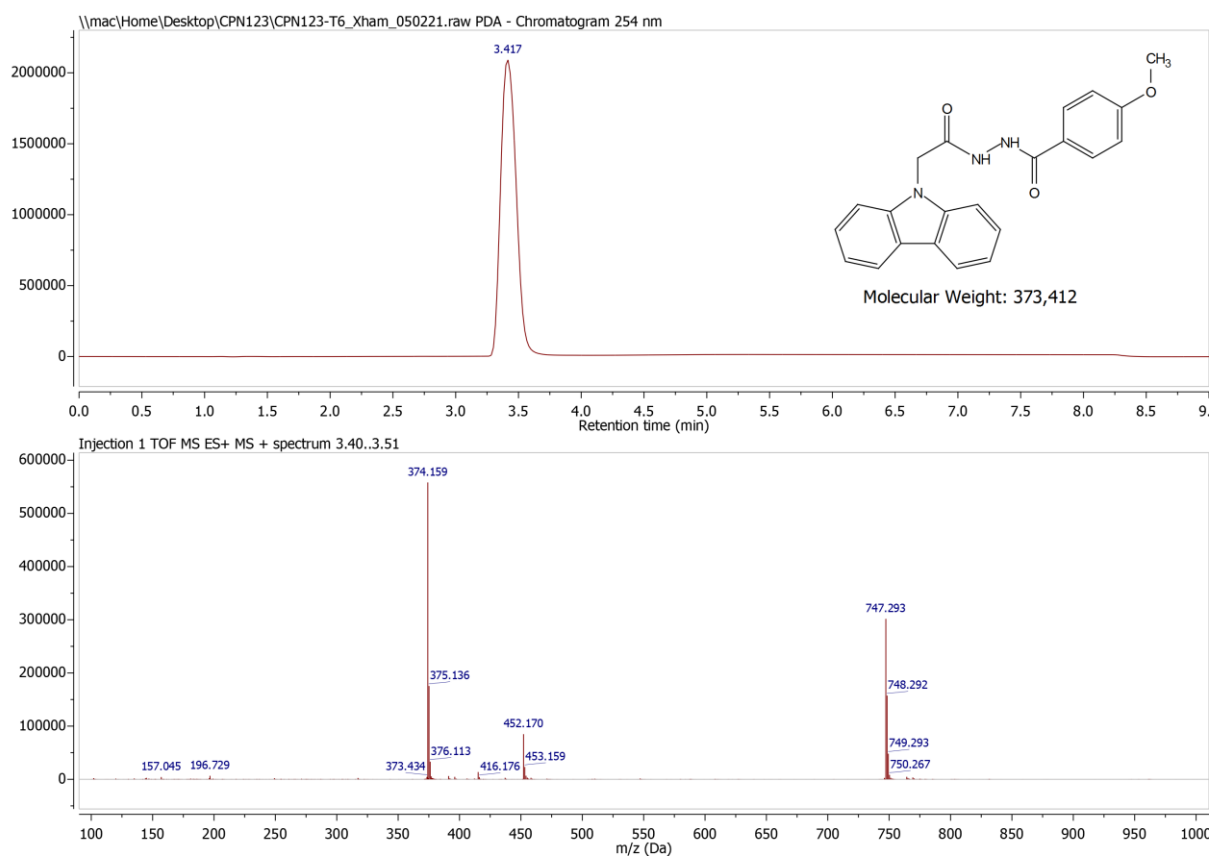


Figure S25: LC-MS spectrum of compound 9

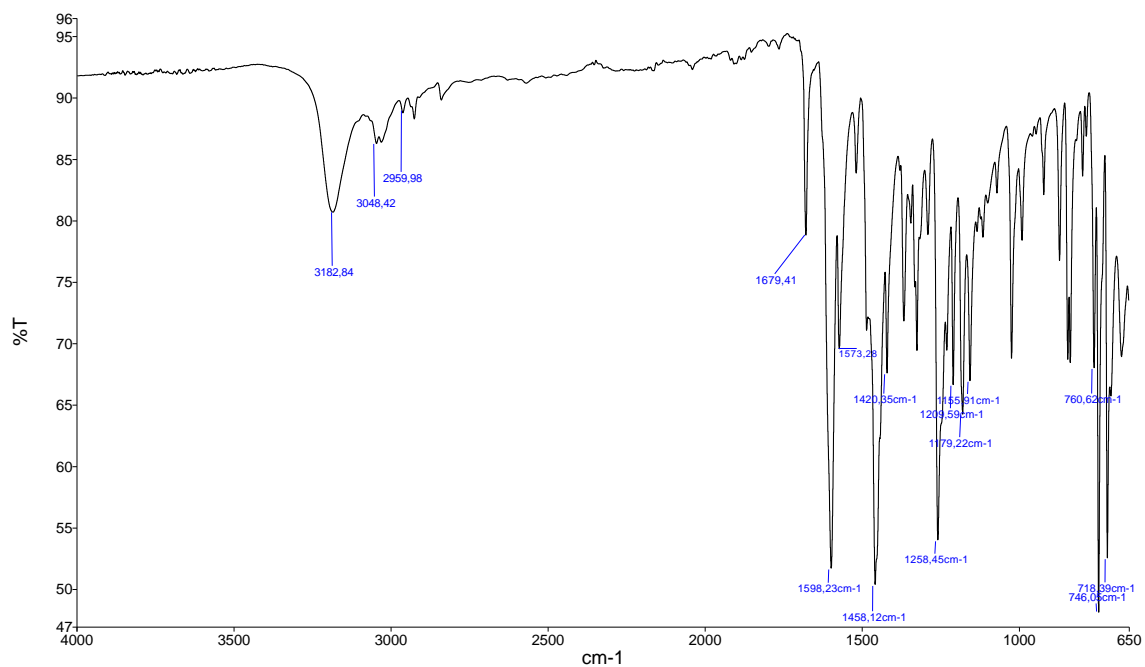


Figure S26: FT-IR spectrum of compound 9

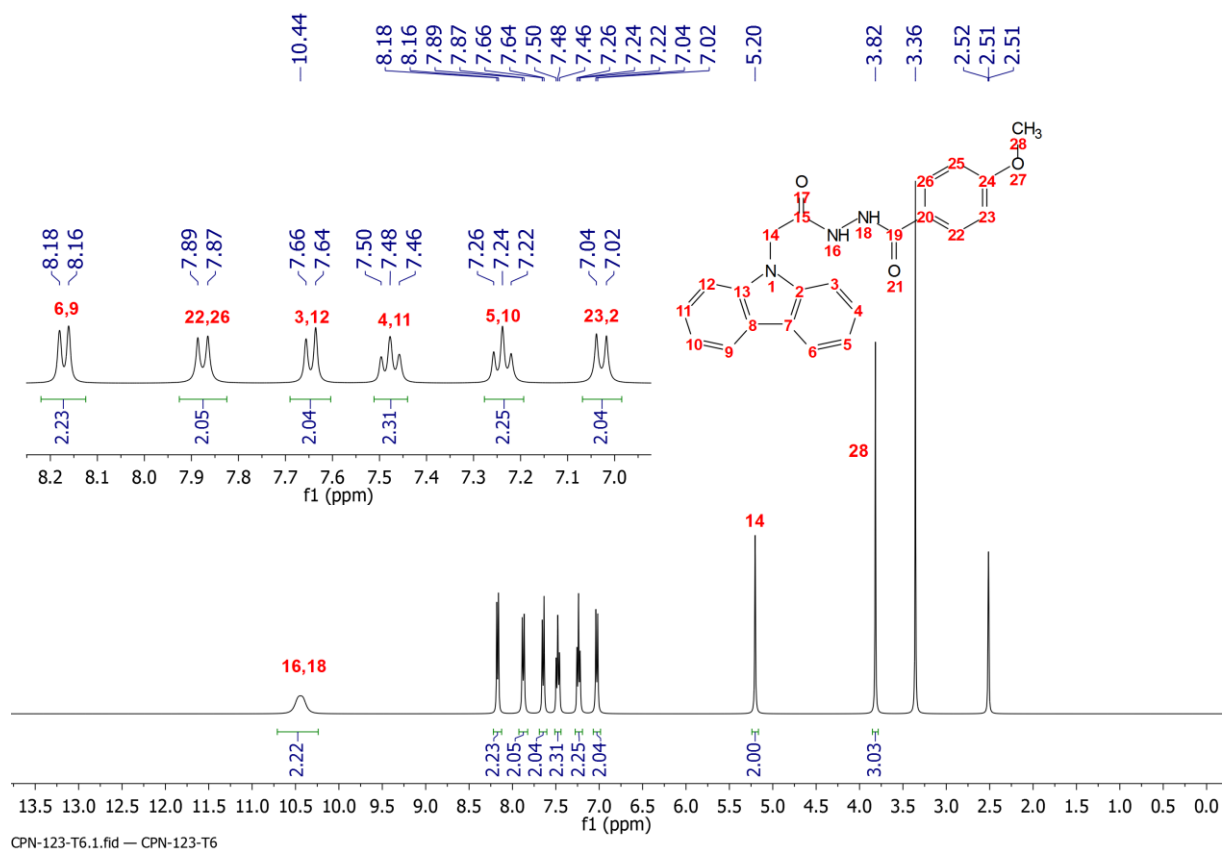


Figure S27: $^1\text{H-NMR}$ spectrum of compound 9

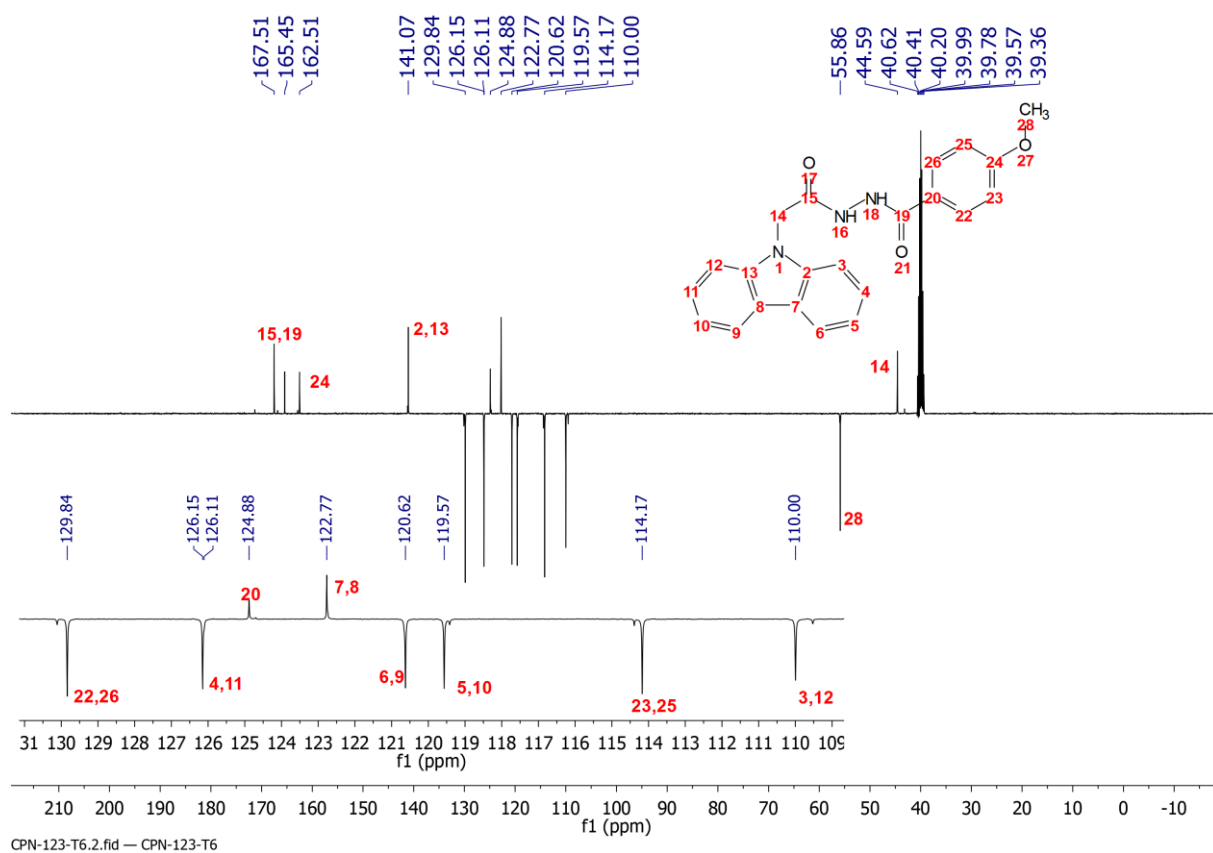


Figure S28: $^{13}\text{C}_{\text{APT-NMR}}$ spectrum of compound 9

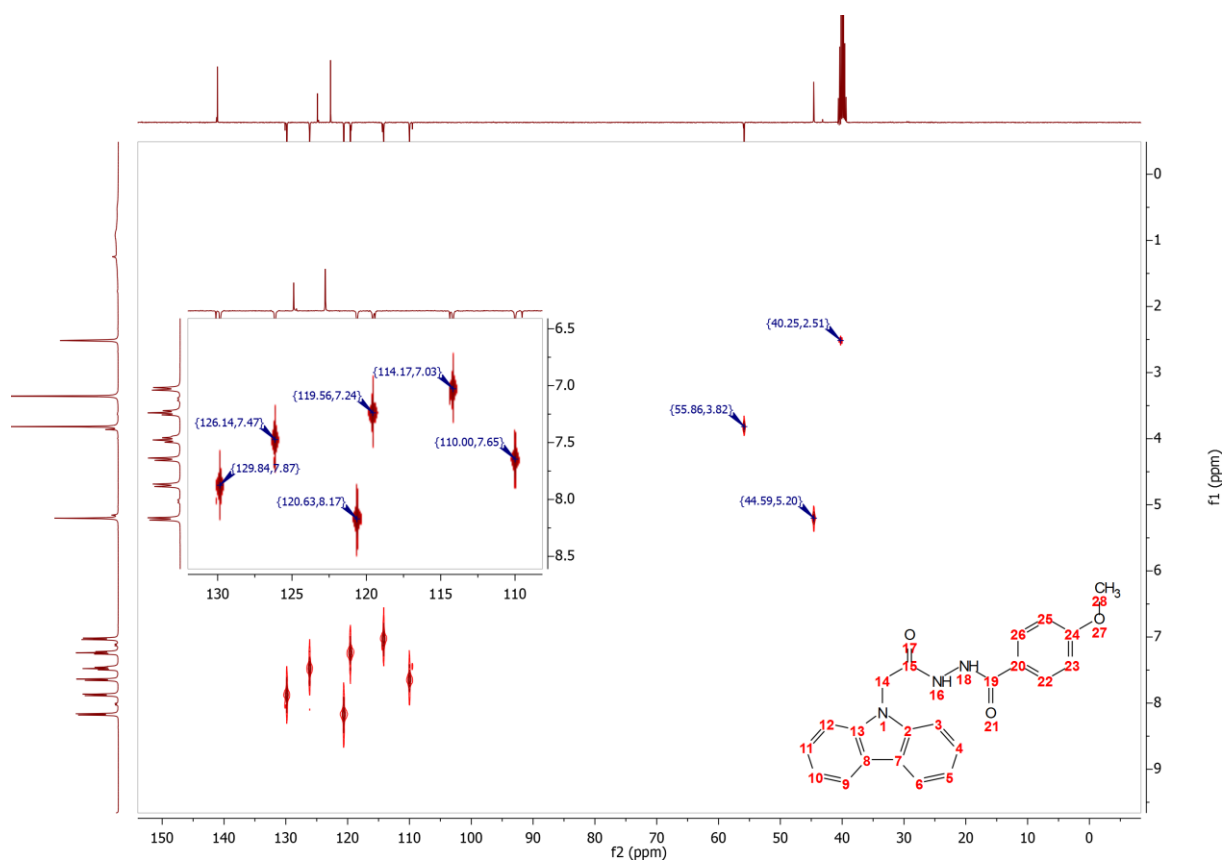
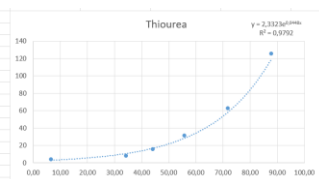


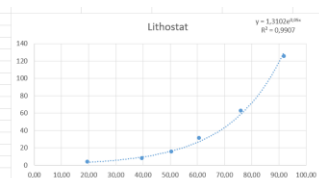
Figure S29: HETCOR-NMR spectrum of compound 9

Urease Inhibition Graphics of Compound 3-9 and Thiourea & Lithostat

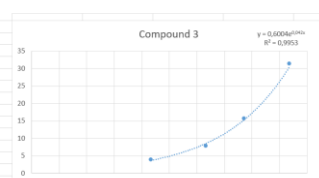
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Thiourea	Blank	0,232	0,233	0,238	0,231	*	*	*	*	*	*	*
	STD_125uM	0,301	0,308	0,273	0,294	86,78	85,63	91,38	87,93	2,48	125	1,41±0,02
	STD_62.5uM	0,383	0,388	0,363	0,378	71,07	70,31	74,14	71,84	1,66	62,5	
	STD_31.2uM	0,468	0,475	0,44	0,461	54,79	53,64	59,39	55,94	2,48	31,2	
	STD_15.6uM	0,53	0,538	0,498	0,522	42,93	41,57	48,38	44,25	2,90	15,6	
	STD_7.8uM	0,581	0,588	0,553	0,574	33,14	31,99	37,74	34,29	2,48	7,8	
	STD_3.9uM	0,723	0,728	0,703	0,718	5,94	5,17	9,00	6,70	1,66	3,9	
Inhibitorüzü	0,754	0,755	0,75	0,753	*	*	*	*	*	*	*	



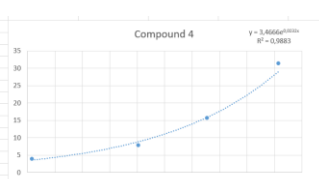
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Lithostat	Blank	0,228	0,234	0,231	0,231	*	*	*	*	*	*	*
	STD_125uM	0,293	0,275	0,253	0,273	87,93	91,77	86,03	91,90	3,11	125	15,96±0,03
	STD_62.5uM	0,37	0,362	0,34	0,357	73,61	74,30	80,29	76,06	3,00	62,5	
	STD_31.2uM	0,43	0,463	0,42	0,437	62,45	54,02	65,82	60,76	4,97	31,2	
	STD_15.6uM	0,473	0,511	0,492	0,492	54,46	44,38	52,80	50,55	4,41	15,6	
	STD_7.8uM	0,554	0,532	0,565	0,55	39,41	40,16	39,60	39,72	0,32	7,8	
	STD_3.9uM	0,682	0,656	0,629	0,655	15,61	15,26	28,03	19,63	5,94	3,9	
Inhibitorüzü	0,766	0,732	0,784	0,76	*	*	*	*	*	*	*	



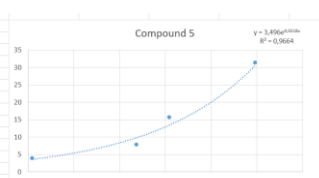
	Sample	OD1	OD2	OD3	OD Mean	%İnhibisyon1	%İnhibisyon2	%İnhibisyon3	%İnhibisyon Mean	%İnhibisyon SD	Konsantrasyon (uM)	IC50 (µM)	
Compound 3	Blank	0,239	0,24	0,235	0,238	*	*	*	*	*	*	*	
	STD_31.25	0,262	0,271	0,226	0,253	90,30	86,92	103,80	93,67	7,29	31,25	4,9±0,041	
	STD_15.62	0,298	0,304	0,274	0,292	75,11	73,00	83,54	77,22	4,56	15,62		
	STD_7.81	0,327	0,329	0,319	0,325	62,87	62,45	64,56	63,29	0,91	7,81		
	STD_3.9	0,377	0,382	0,357	0,372	41,77	40,08	48,52	43,46	3,05	3,9		
	No inhibitor	0,476	0,477	0,472	0,475	*	*	*	*	*	*		*



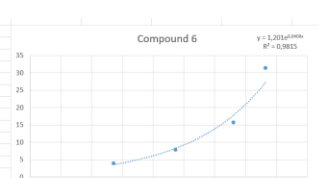
	Sample	OD1	OD2	OD3	OD Mean	%İnhibisyon1	%İnhibisyon2	%İnhibisyon3	%İnhibisyon Mean	%İnhibisyon SD	Konsantrasyon (uM)	IC50 (µM)	
Compound 4	Blank	0,236	0,237	0,232	0,235	*	*	*	*	*	*	*	
	STD_31.25	0,254	0,258	0,238	0,25	90,00	88,33	96,67	91,67	3,60	31,25	11,06±0,036	
	STD_15.62	0,305	0,313	0,273	0,297	61,67	57,78	77,22	65,56	8,40	15,62		
	STD_7.81	0,344	0,346	0,336	0,342	40,00	39,44	42,22	40,56	1,20	7,81		
	STD_3.9	0,414	0,416	0,406	0,412	1,11	0,56	3,33	1,67	1,20	3,9		
	No inhibitor	0,416	0,417	0,412	0,415	*	*	*	*	*	*		*



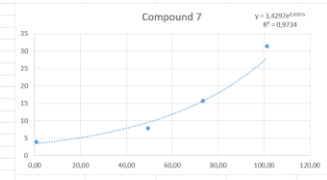
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Compound 5	Blank	0,242	0,243	0,238	0,241	*	*	*	*	*	*	*	
	STD_31.25	0,248	0,254	0,224	0,242	96,25	93,13	108,75	99,38	6,75	31,25	10,44±0,057	
	STD_15.62	0,31	0,318	0,278	0,302	51,50	53,13	75,00	63,88	9,45	15,62		
	STD_7.81	0,33	0,335	0,31	0,325	45,00	42,50	55,00	47,50	5,40	7,81		
	STD_3.9	0,4	0,402	0,392	0,398	1,25	0,62	3,75	1,88	1,35	3,9		
	No inhibitor	0,402	0,403	0,398	0,401	*	*	*	*	*	*		*



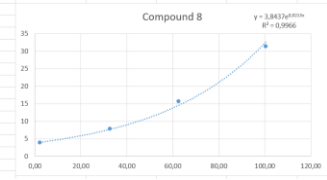
	Sample	OD1	OD2	OD3	OD Mean	%İnhibisyon1	%İnhibisyon2	%İnhibisyon3	%İnhibisyon Mean	%İnhibisyon SD	Konsantrasyon (uM)	IC50 (µM)	
Compound 6	Blank	0,252	0,253	0,248	0,251	*	*	*	*	*	*	*	
	STD_31.25	0,296	0,305	0,26	0,287	71,43	66,23	92,21	76,62	11,22	31,25	9,24±0,073	
	STD_15.62	0,308	0,313	0,288	0,303	63,64	61,04	74,03	66,23	5,61	15,62		
	STD_7.81	0,336	0,34	0,32	0,332	45,45	43,51	53,75	47,40	4,21	7,81		
	STD_3.9	0,37	0,377	0,342	0,363	23,38	19,48	38,96	27,27	8,42	3,9		
	No inhibitor	0,406	0,407	0,402	0,405	*	*	*	*	*	*		*



Sample	OD1	OD2	OD3	OD Mean	%İnhibisyon1	%İnhibisyon2	%İnhibisyon3	%İnhibisyon Mean	%İnhibisyon SD	Konsantrasyon (µM)	IC50 (µM)
Blank	0,236	0,237	0,232	0,235	*	*	*	*	*	*	*
STD 31.25	0,237	0,242	0,217	0,232	99,50	97,50	107,50	101,50	4,32	31,25	9,65±0,046
STD 15.62	0,296	0,304	0,264	0,288	70,00	66,50	84,00	73,50	7,56	15,62	
STD 7.81	0,342	0,348	0,318	0,336	47,00	44,50	57,00	49,50	5,40	7,81	
STD 3.9	0,435	0,437	0,427	0,433	0,50	0,00	2,50	1,00	1,08	3,9	
No inhibitor	0,436	0,437	0,432	0,435	*	*	*	*	*	*	



Sample	OD1	OD2	OD3	OD Mean	%İnhibisyon1	%İnhibisyon2	%İnhibisyon3	%İnhibisyon Mean	%İnhibisyon SD	Konsantrasyon (µM)	IC50 (µM)
Blank	0,235	0,236	0,231	0,234	*	*	*	*	*	*	*
STD 31.25	0,242	0,251	0,206	0,233	99,98	91,38	114,37	100,57	9,93	31,25	11,15±0,05
STD 15.62	0,306	0,313	0,278	0,299	59,21	52,71	72,99	61,64	7,45	15,62	
STD 7.81	0,354	0,357	0,342	0,351	31,61	39,46	37,76	32,76	2,48	7,81	
STD 3.9	0,406	0,408	0,398	0,404	1,72	1,15	2,30	1,24	3,9	3,9	
No inhibitor	0,409	0,41	0,405	0,408	*	*	*	*	*	*	



Sample	OD1	OD2	OD3	OD Mean	%İnhibisyon1	%İnhibisyon2	%İnhibisyon3	%İnhibisyon Mean	%İnhibisyon SD	Konsantrasyon (µM)	IC50 (µM)
Blank	0,232	0,233	0,228	0,231	*	*	*	*	*	*	*
STD 31.25	0,261	0,268	0,233	0,254	89,02	86,74	98,11	91,29	4,91	31,25	7,68±0,041
STD 15.62	0,315	0,323	0,283	0,307	68,56	65,91	79,17	71,21	5,73	15,62	
STD 7.81	0,366	0,368	0,358	0,364	49,24	48,86	50,76	49,62	0,82	7,81	
STD 3.9	0,421	0,428	0,393	0,414	28,41	26,14	37,50	30,68	4,91	3,9	
No inhibitor	0,496	0,497	0,492	0,495	*	*	*	*	*	*	

