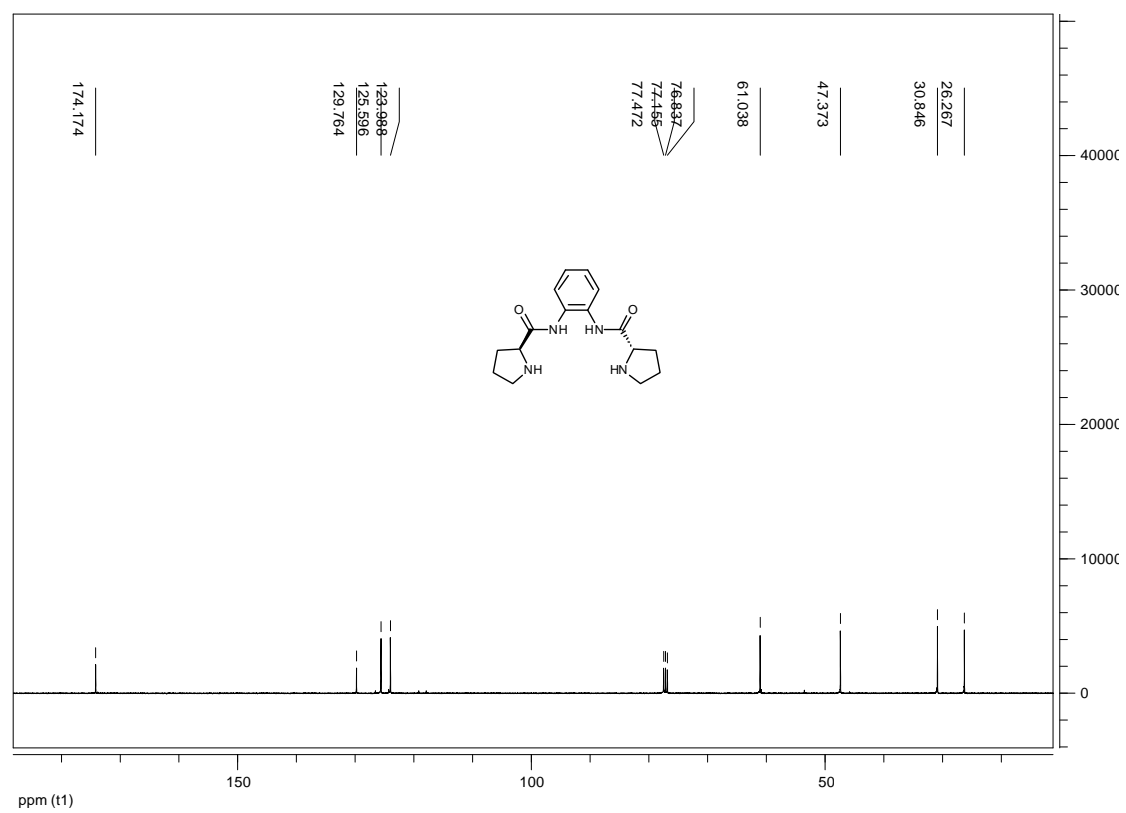
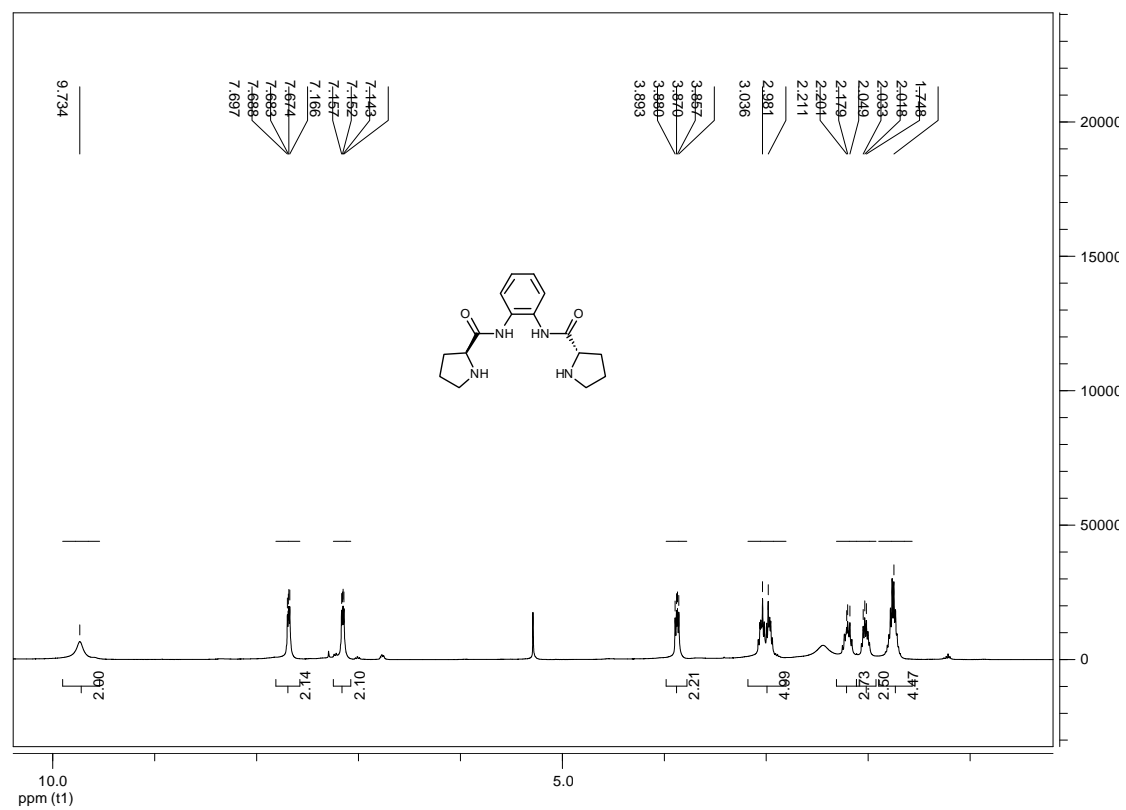
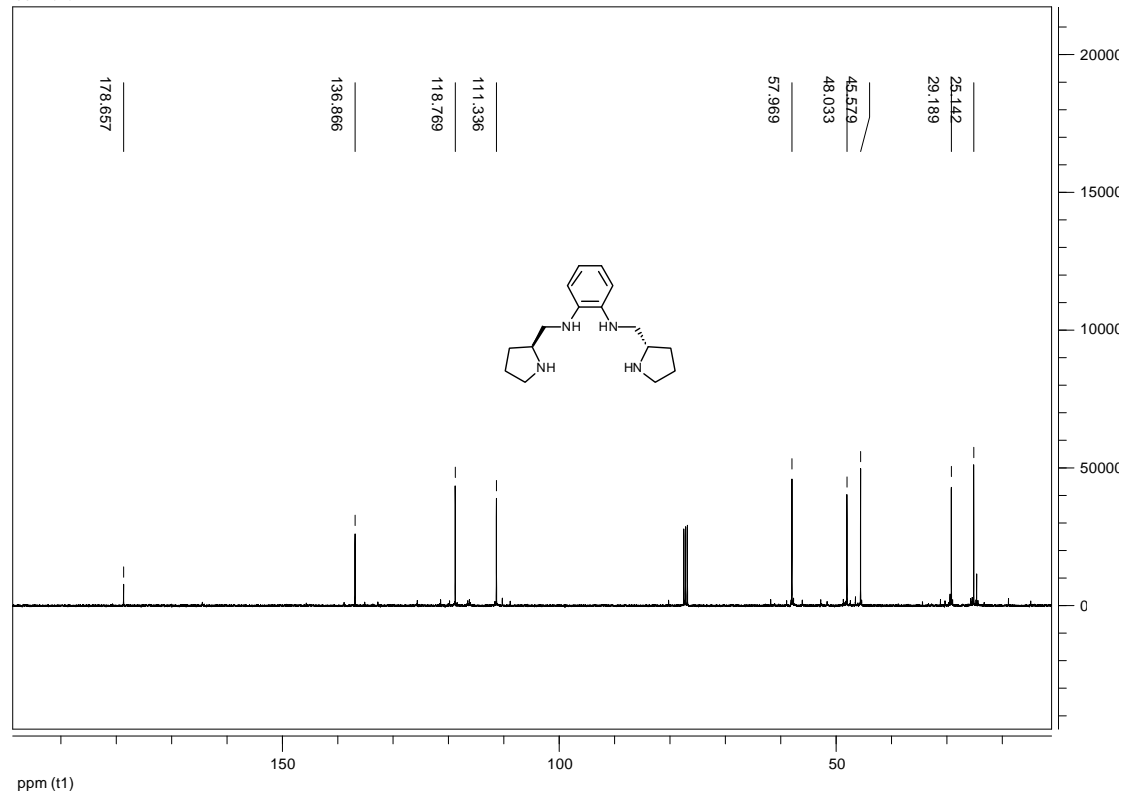
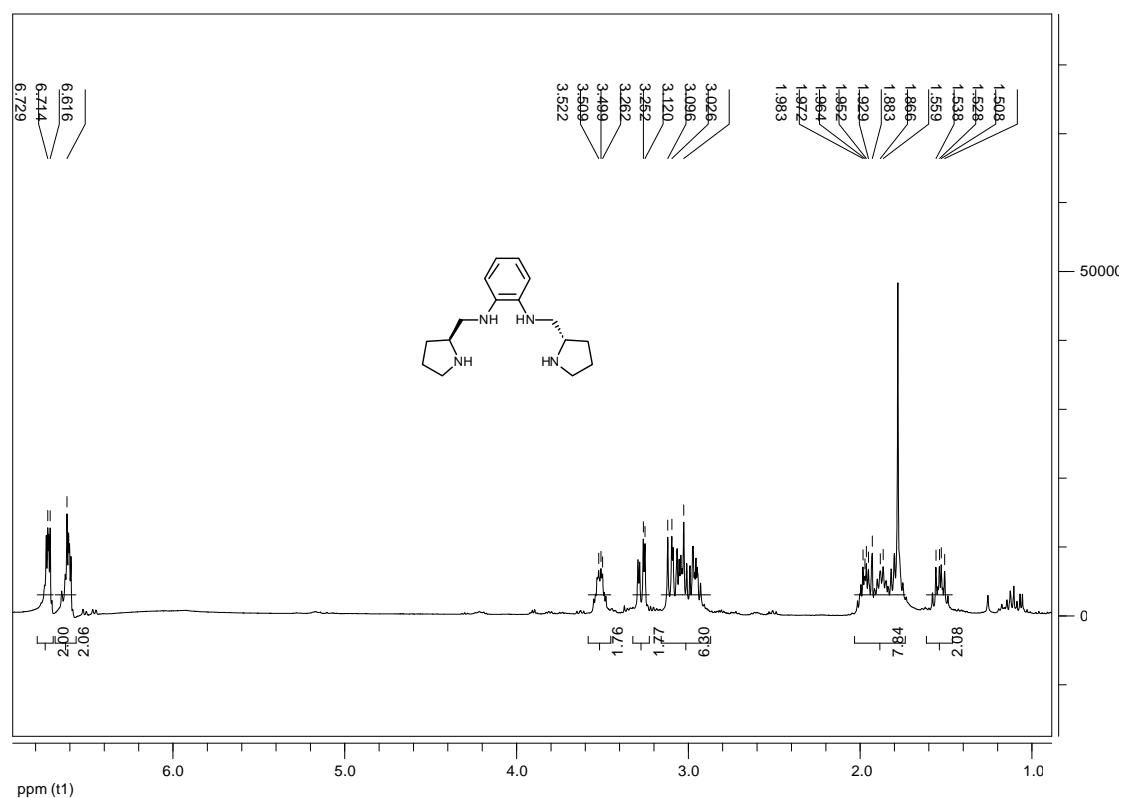
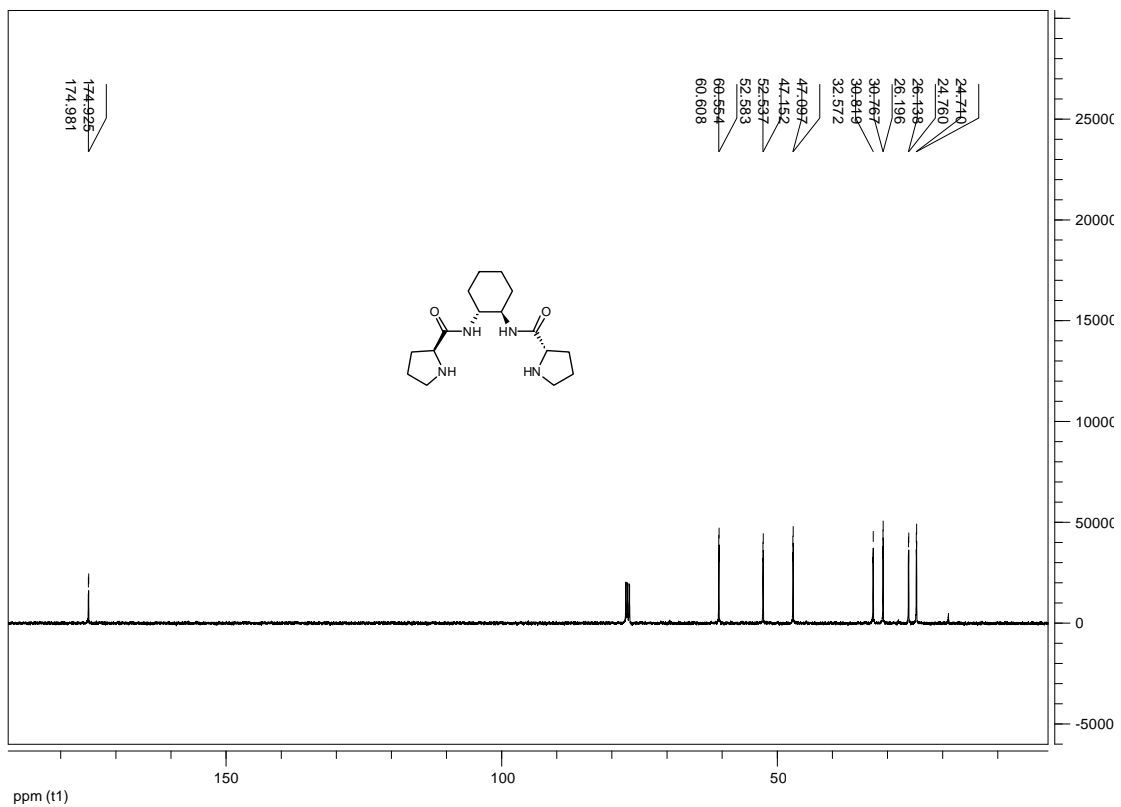
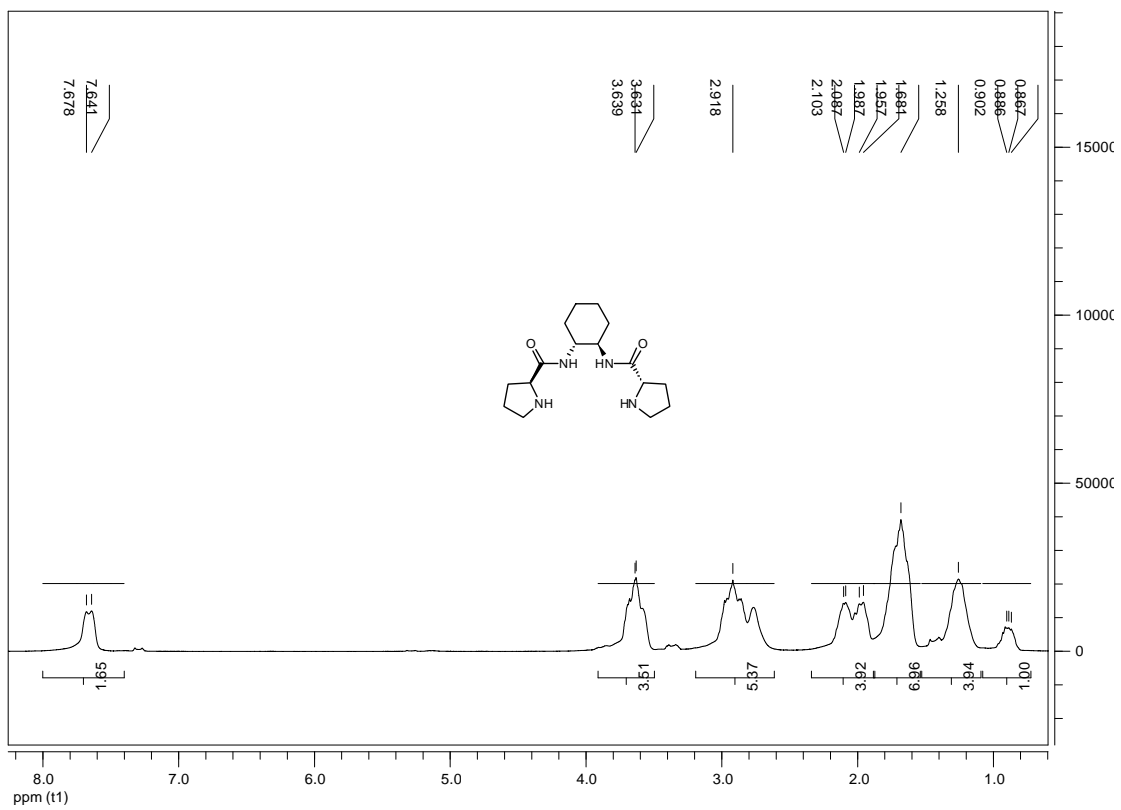
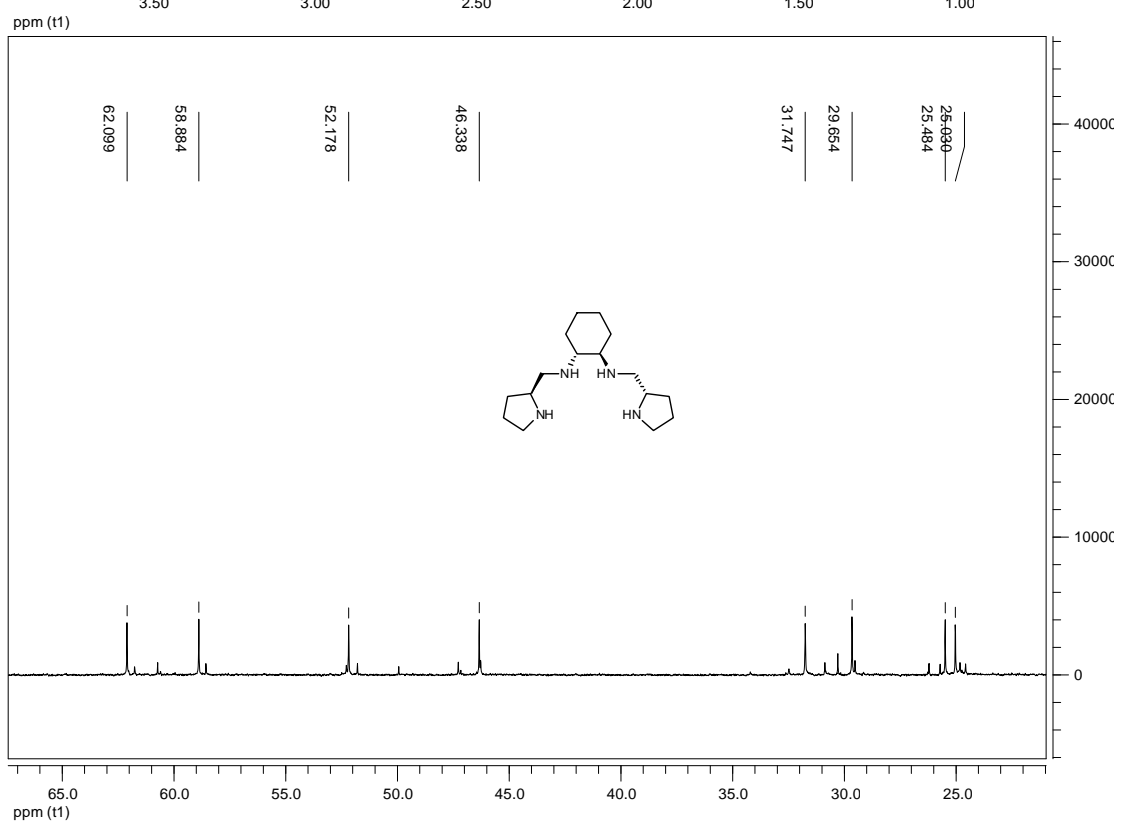
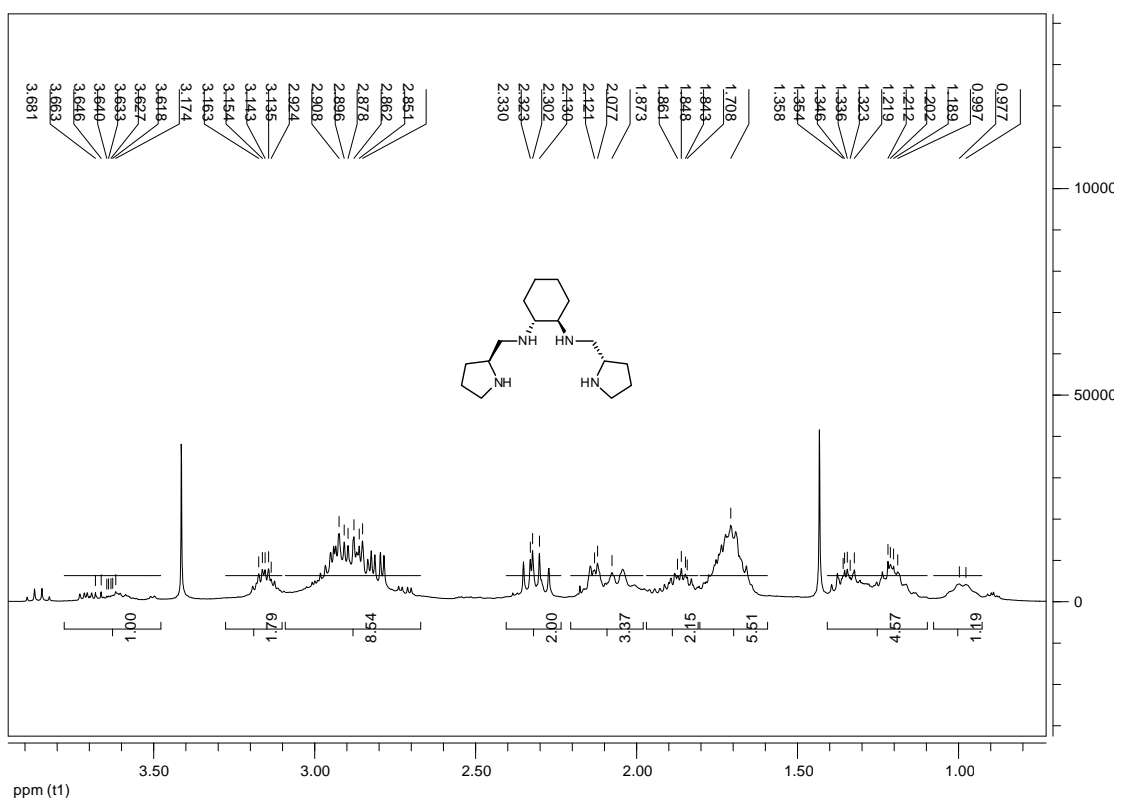


### $^1\text{H}$ NMR and $^{13}\text{C}$ NMR of catalysts

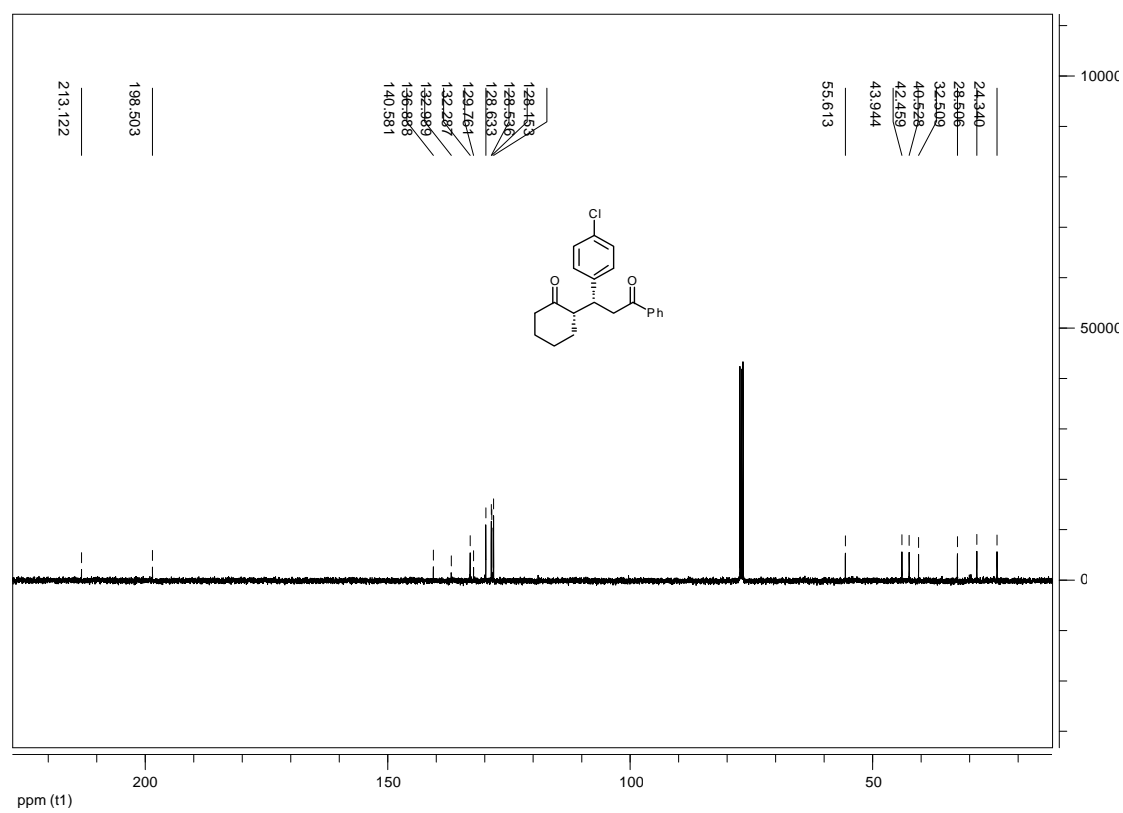
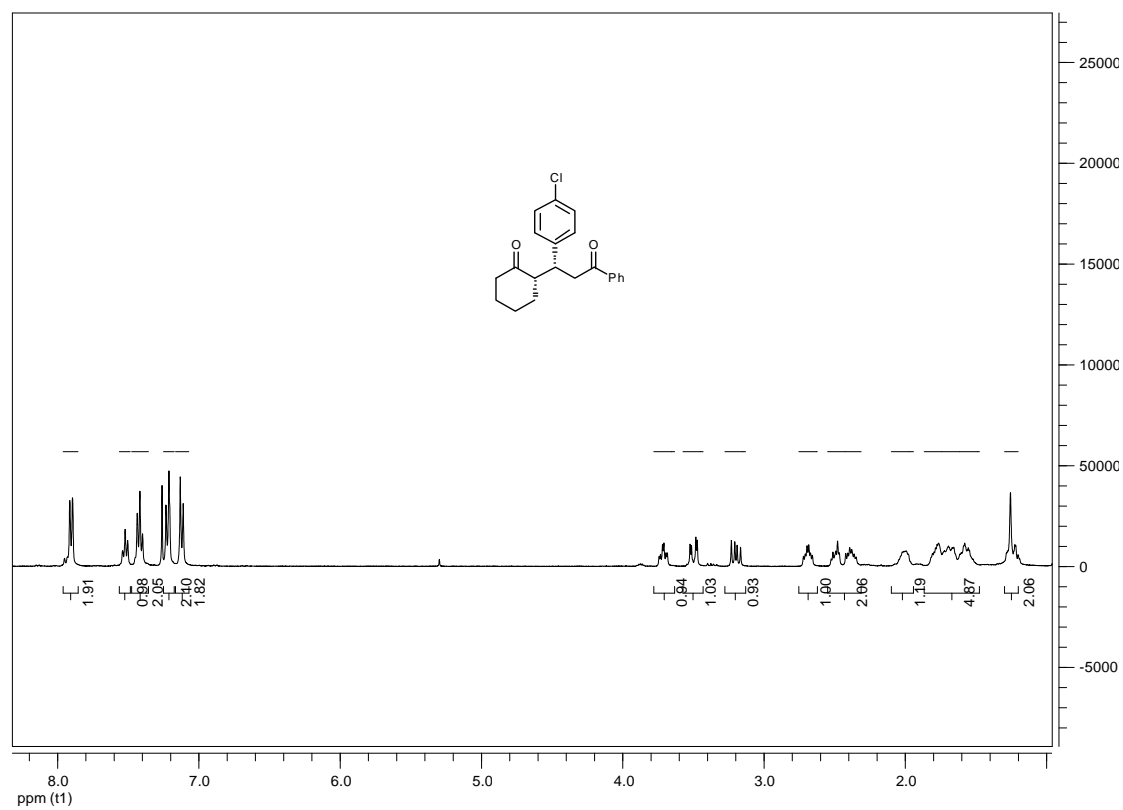


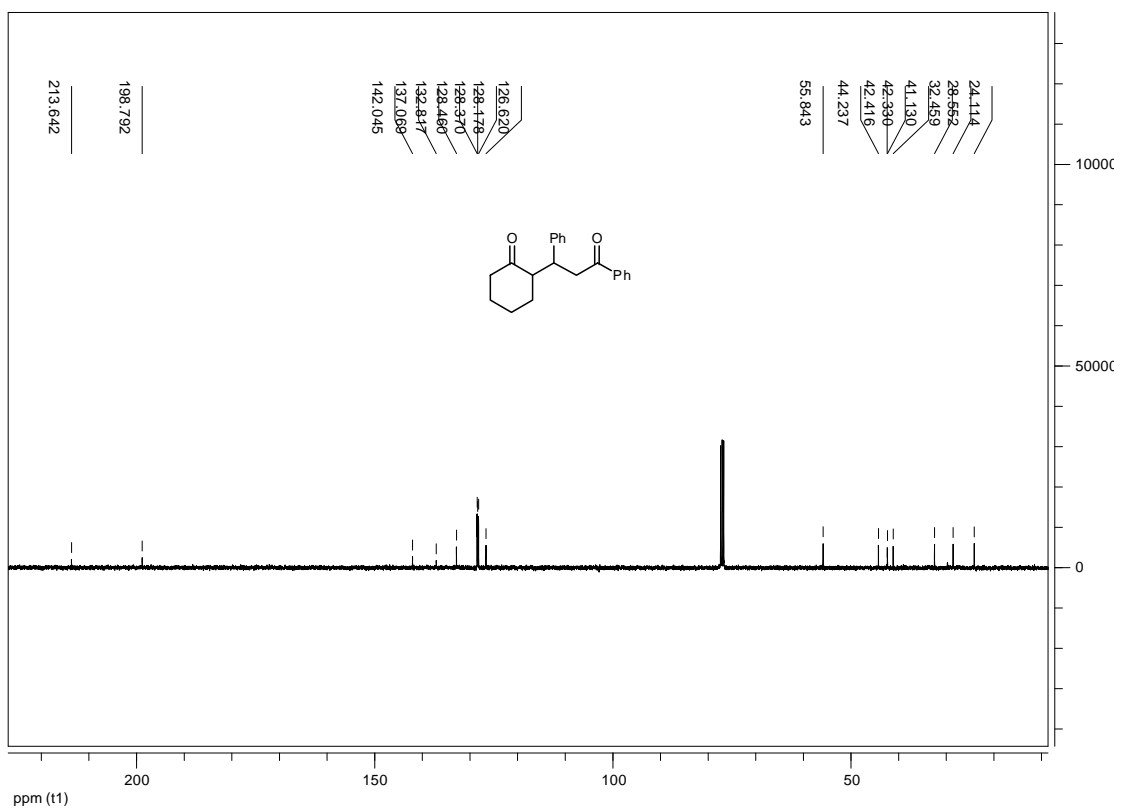
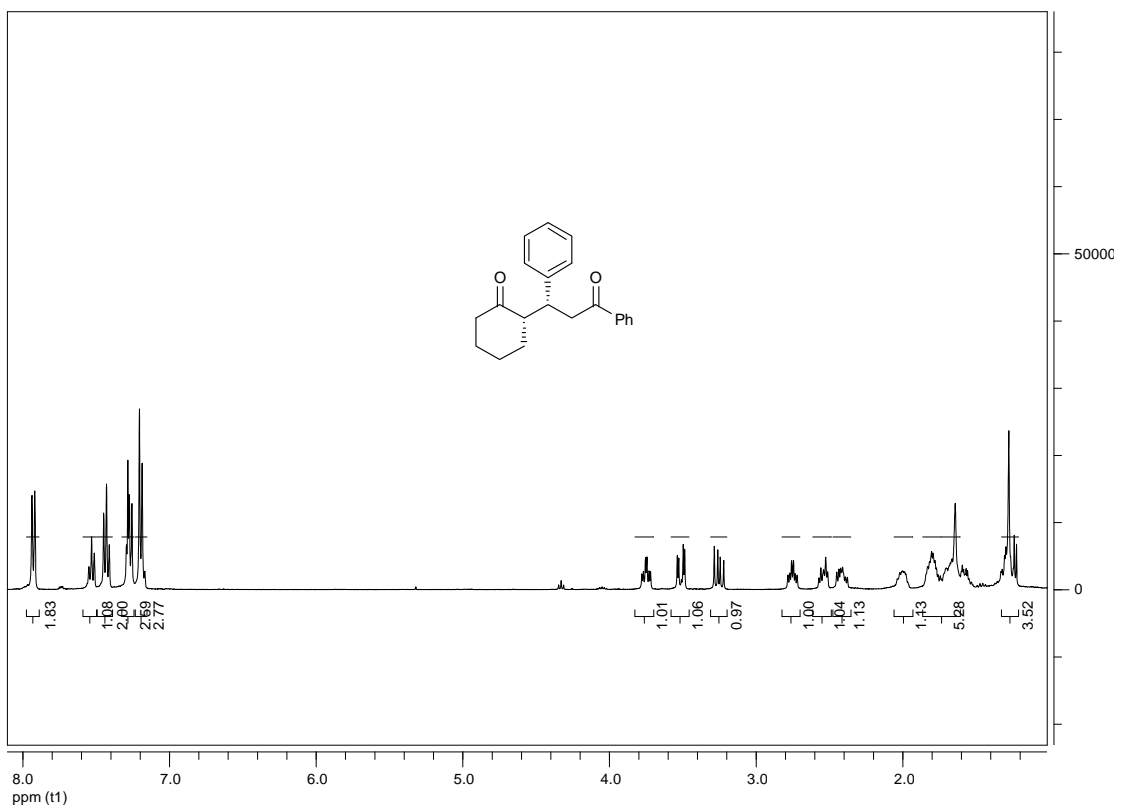


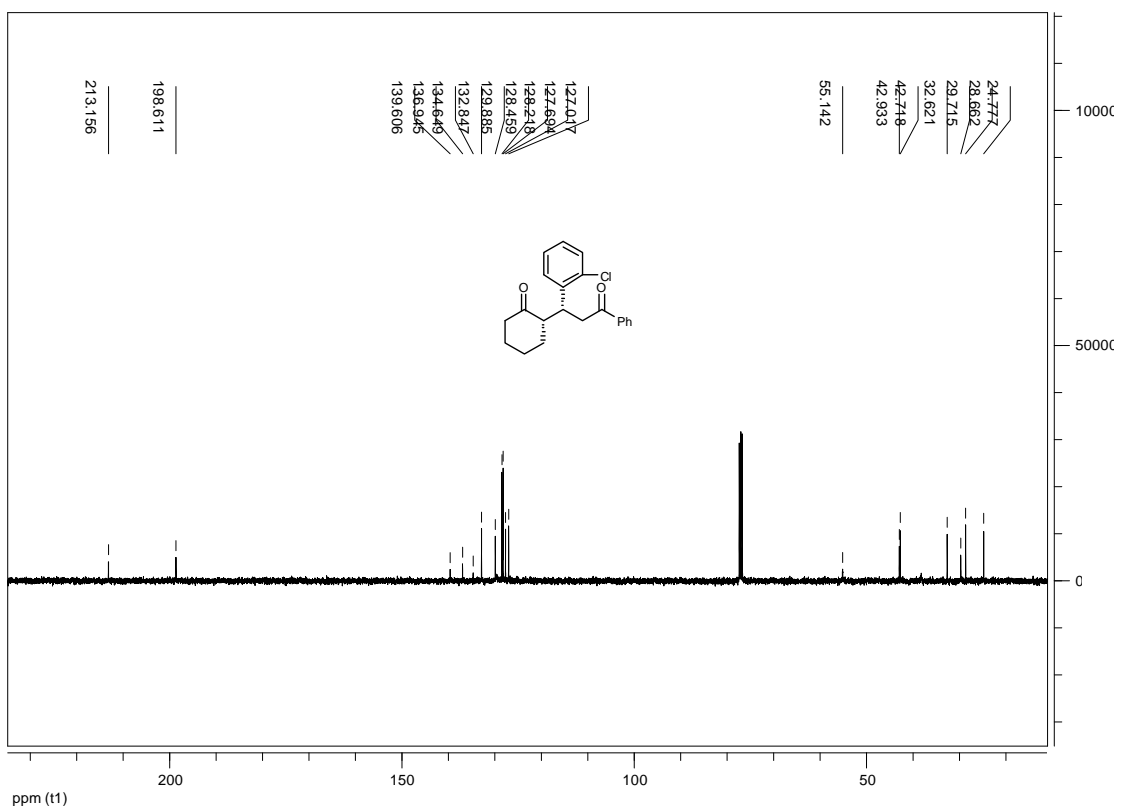
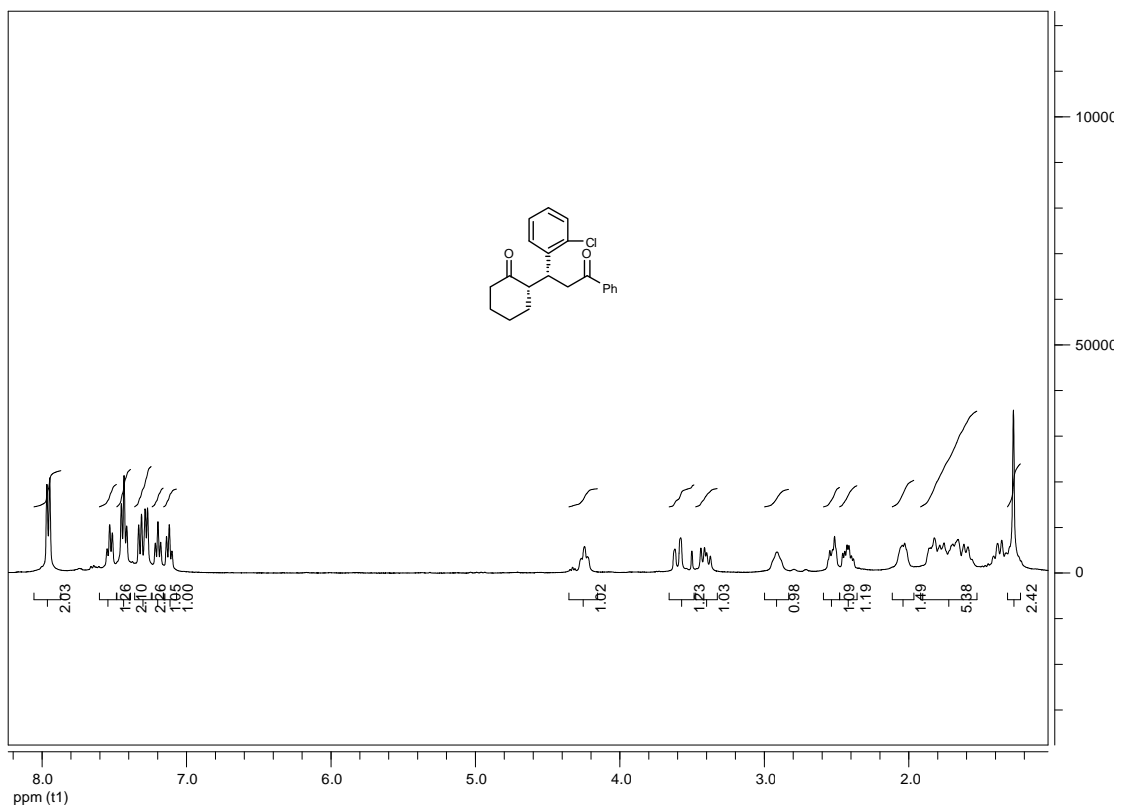


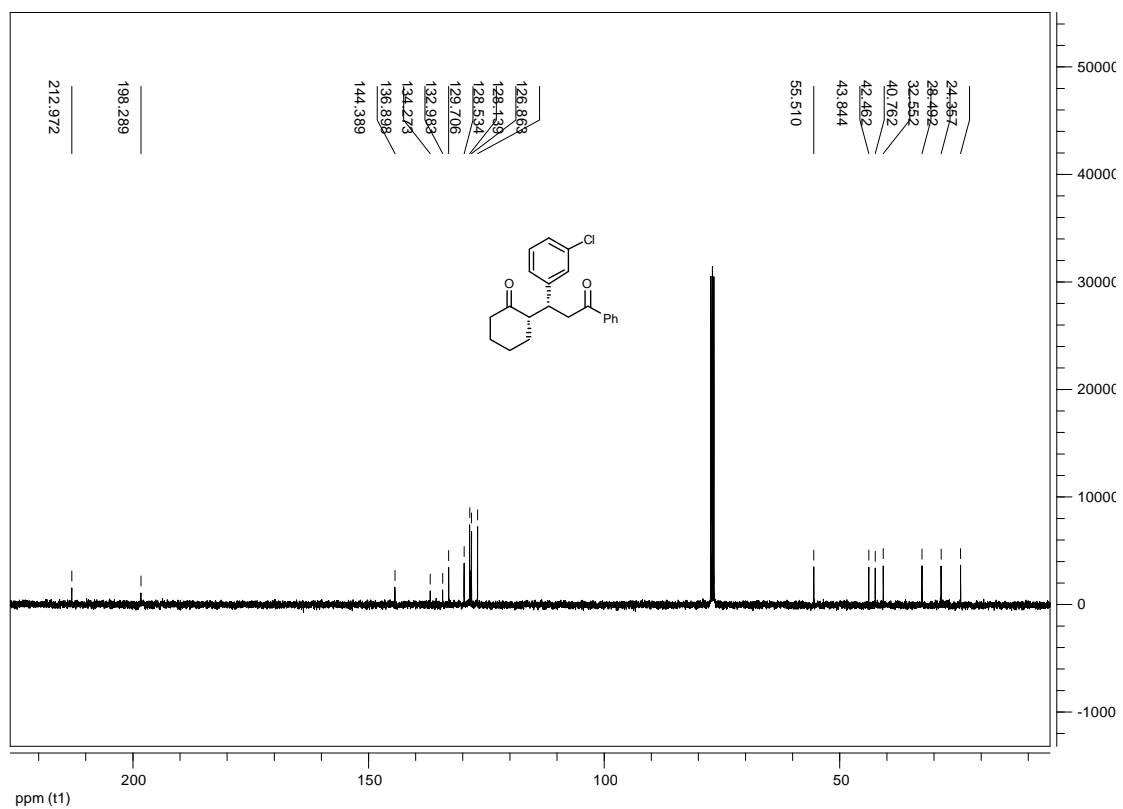
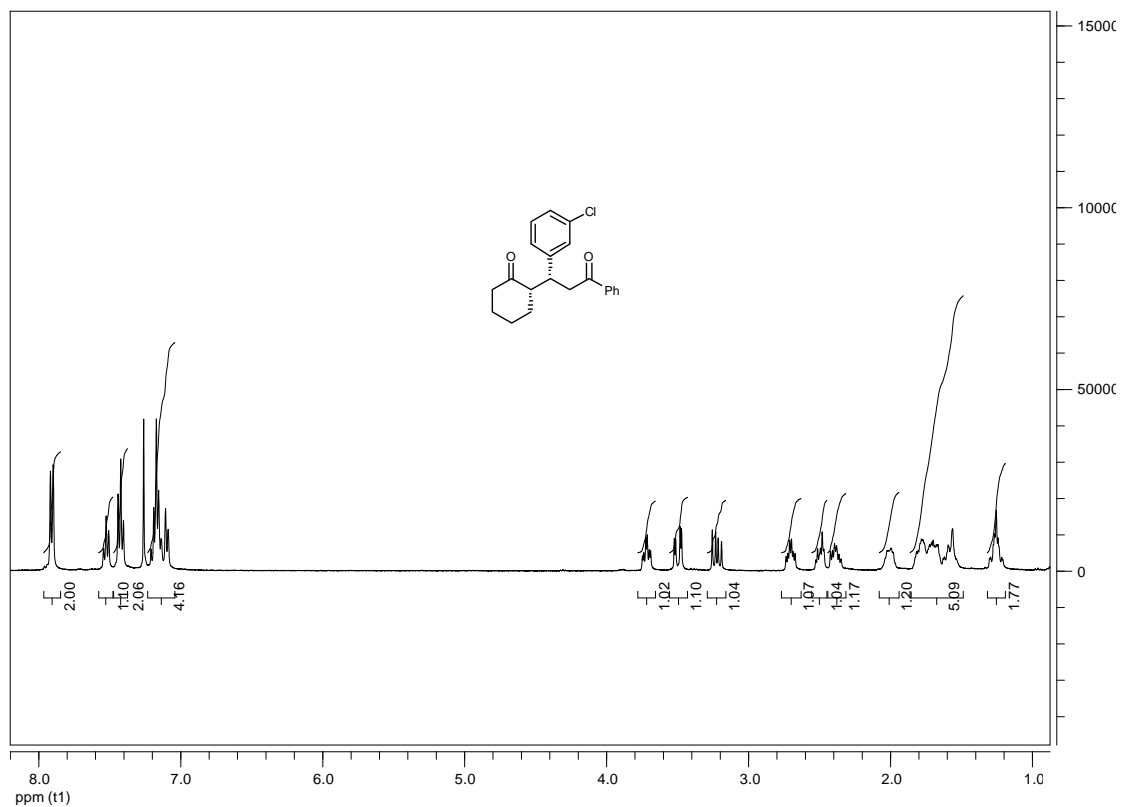


### $^1\text{H}$ NMR and $^{13}\text{C}$ NMR of Michael products

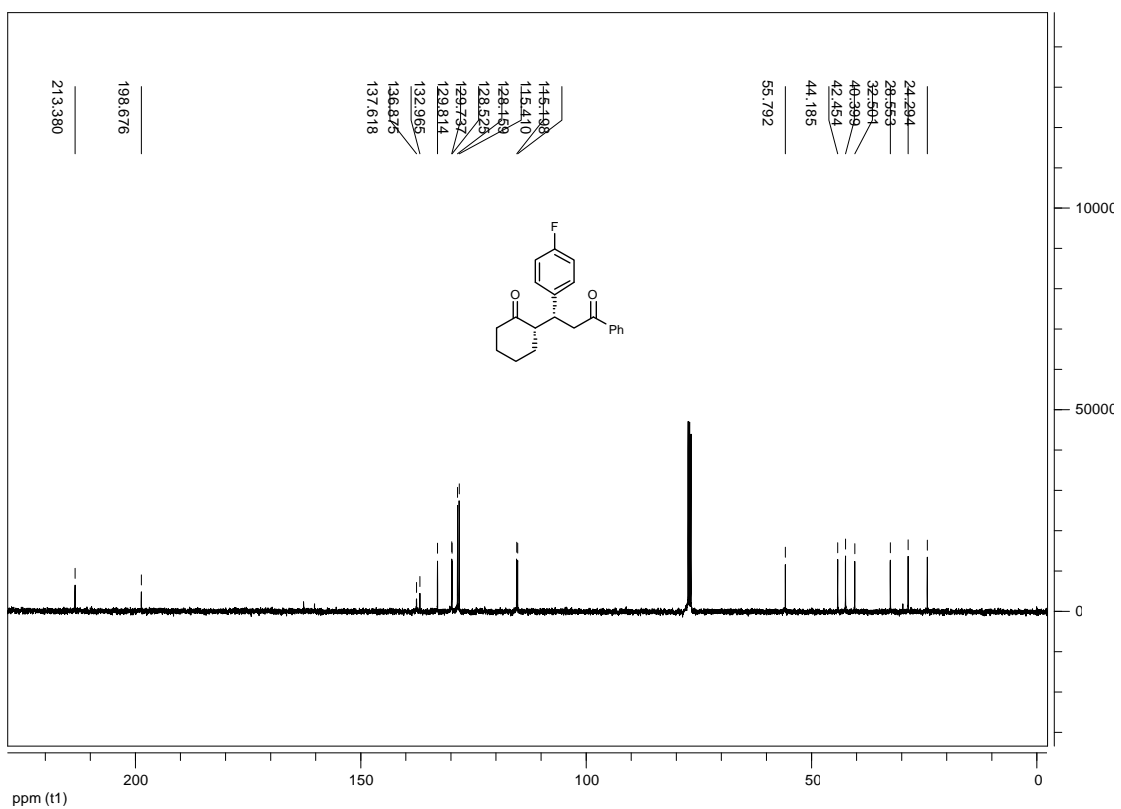
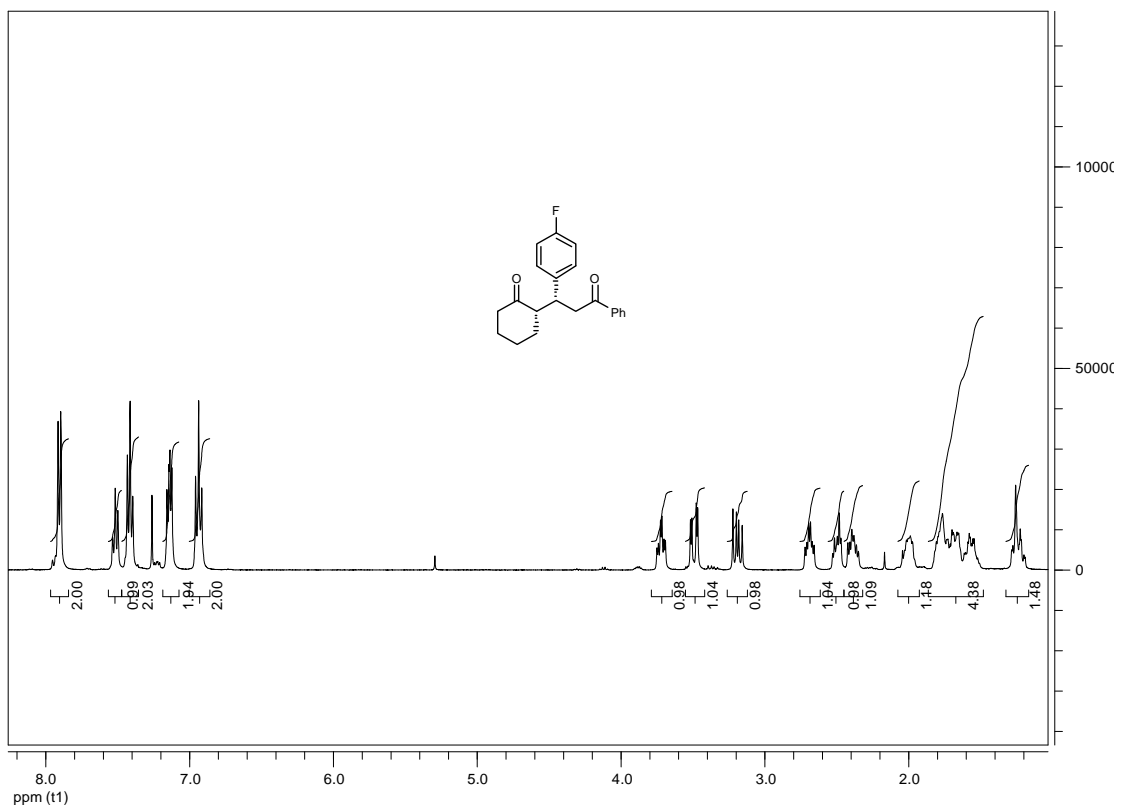


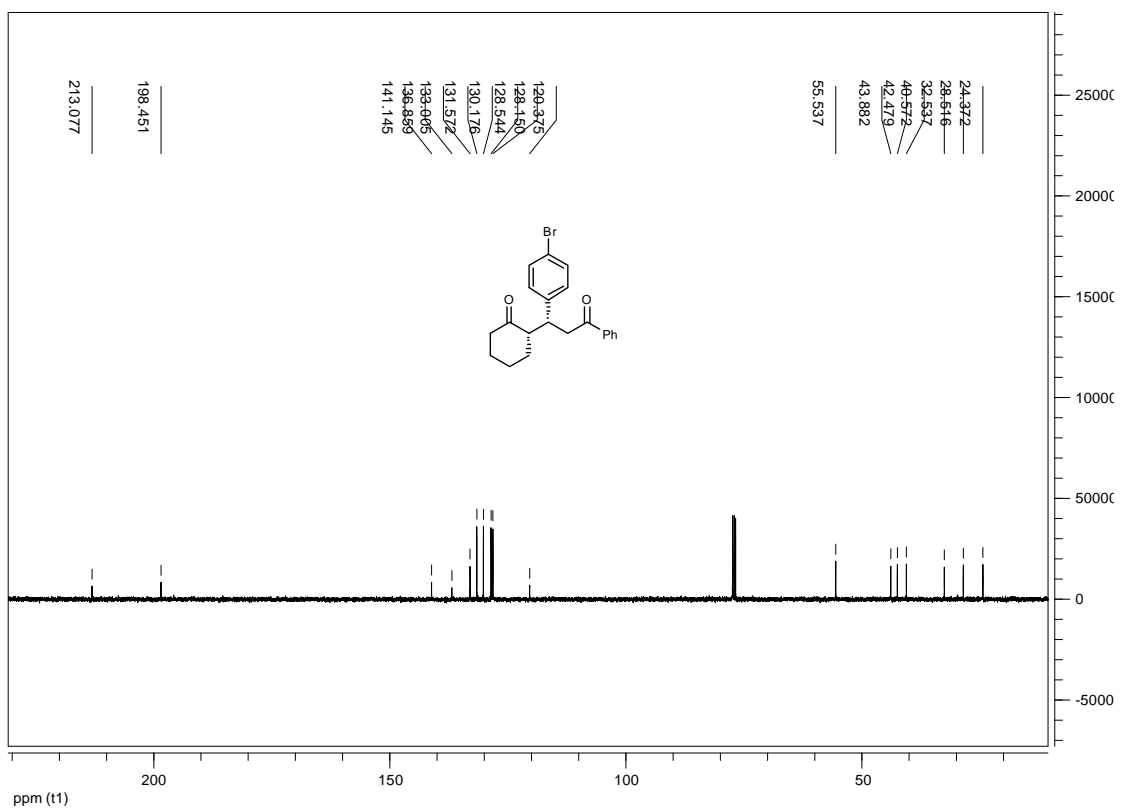
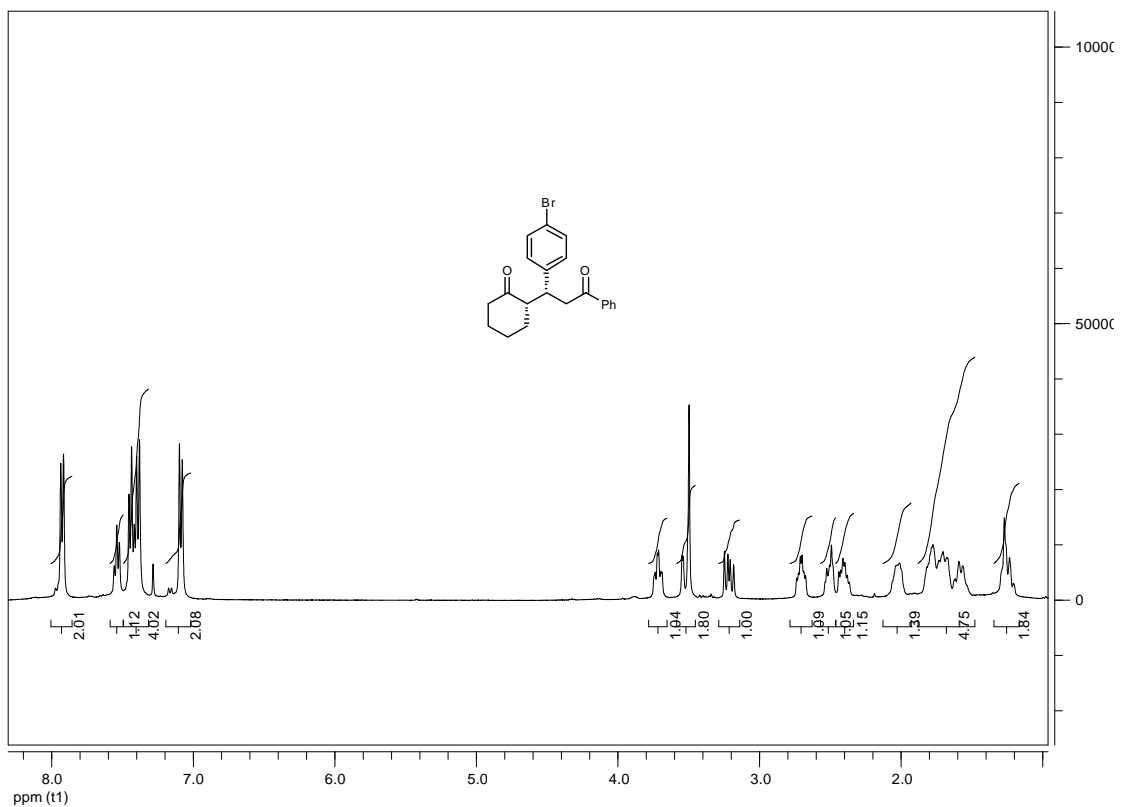


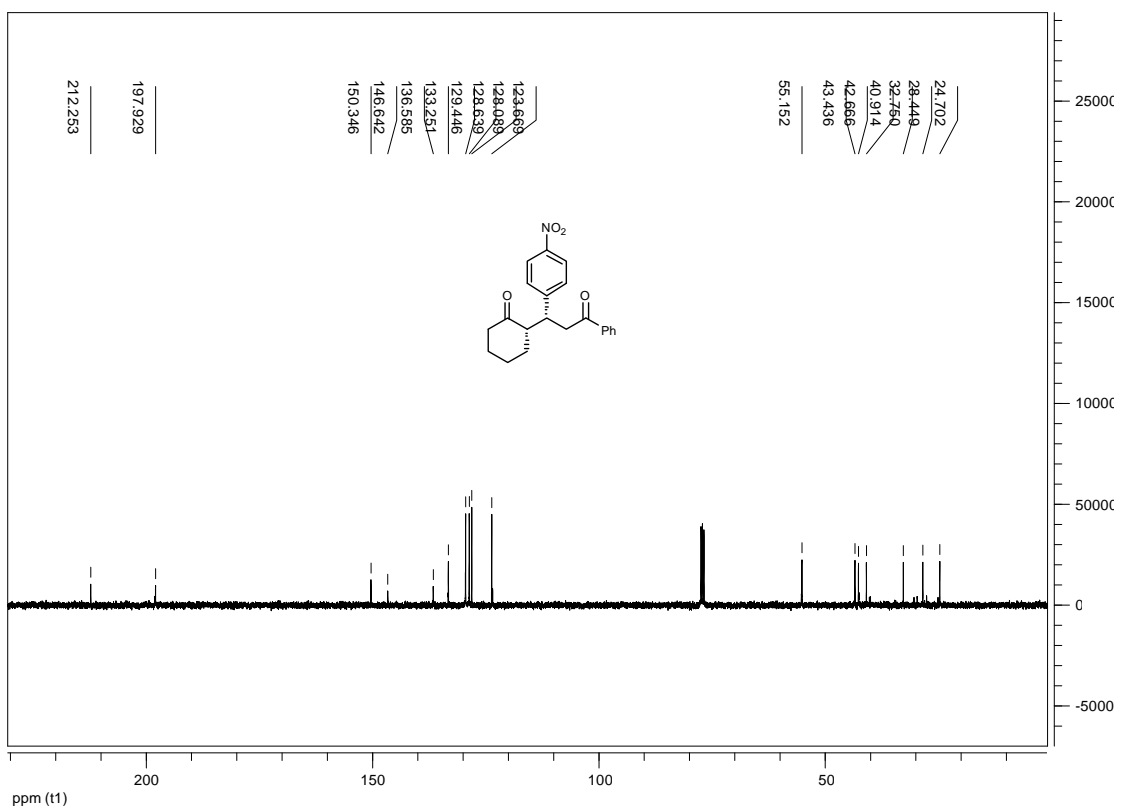
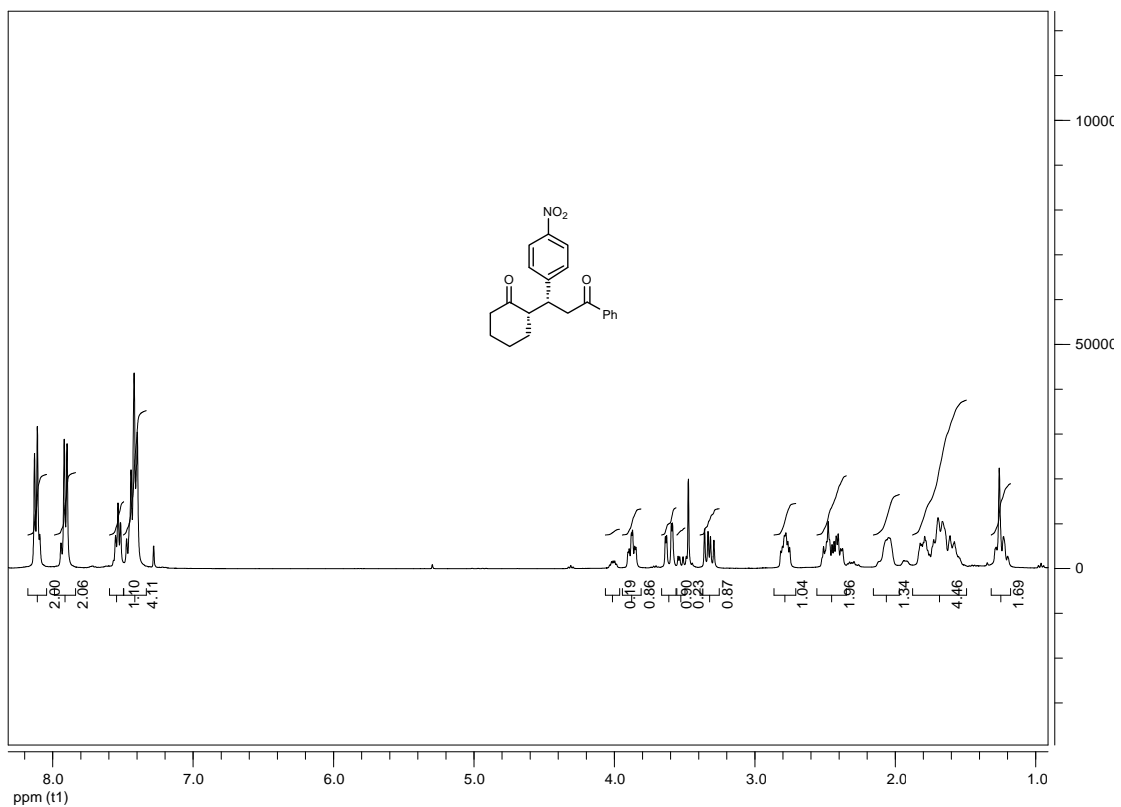


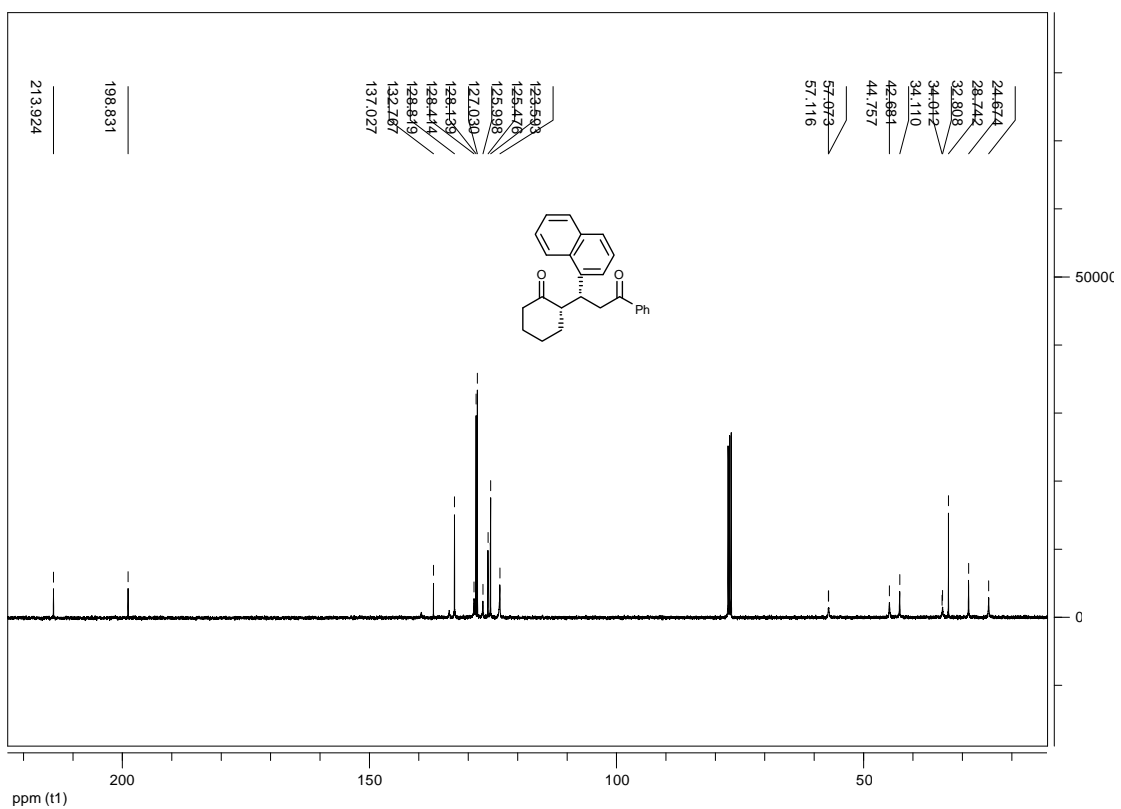
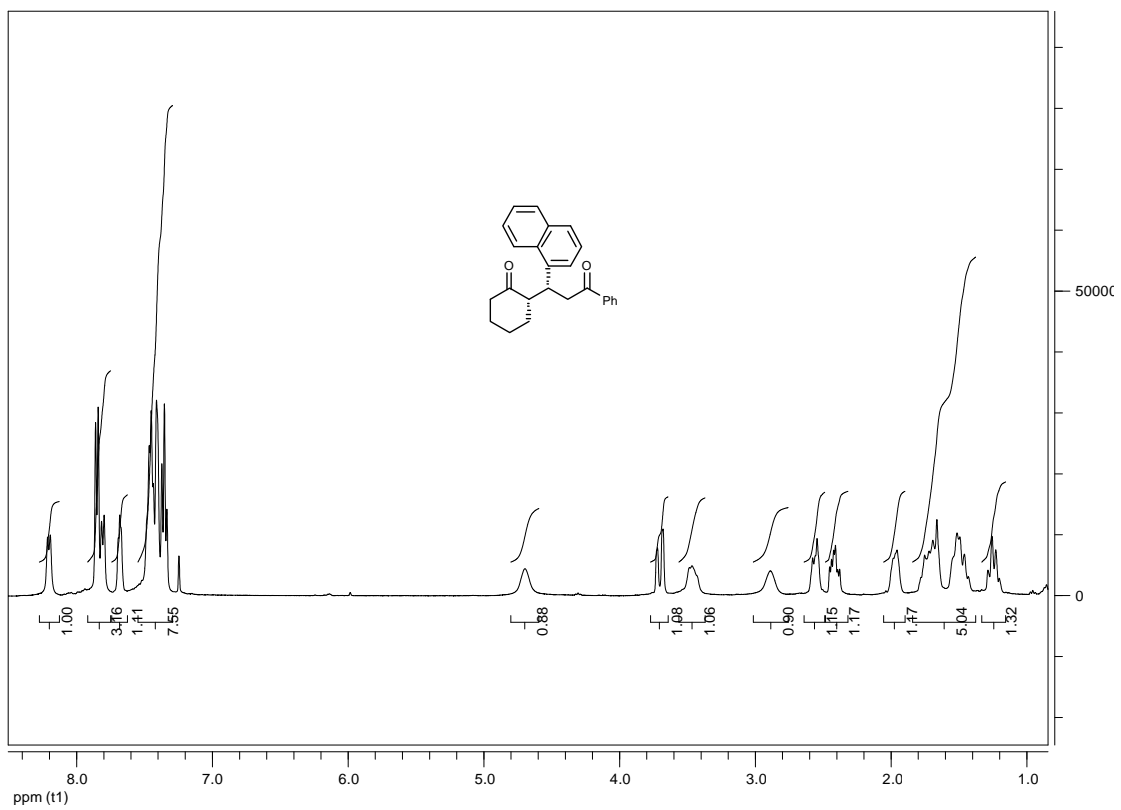


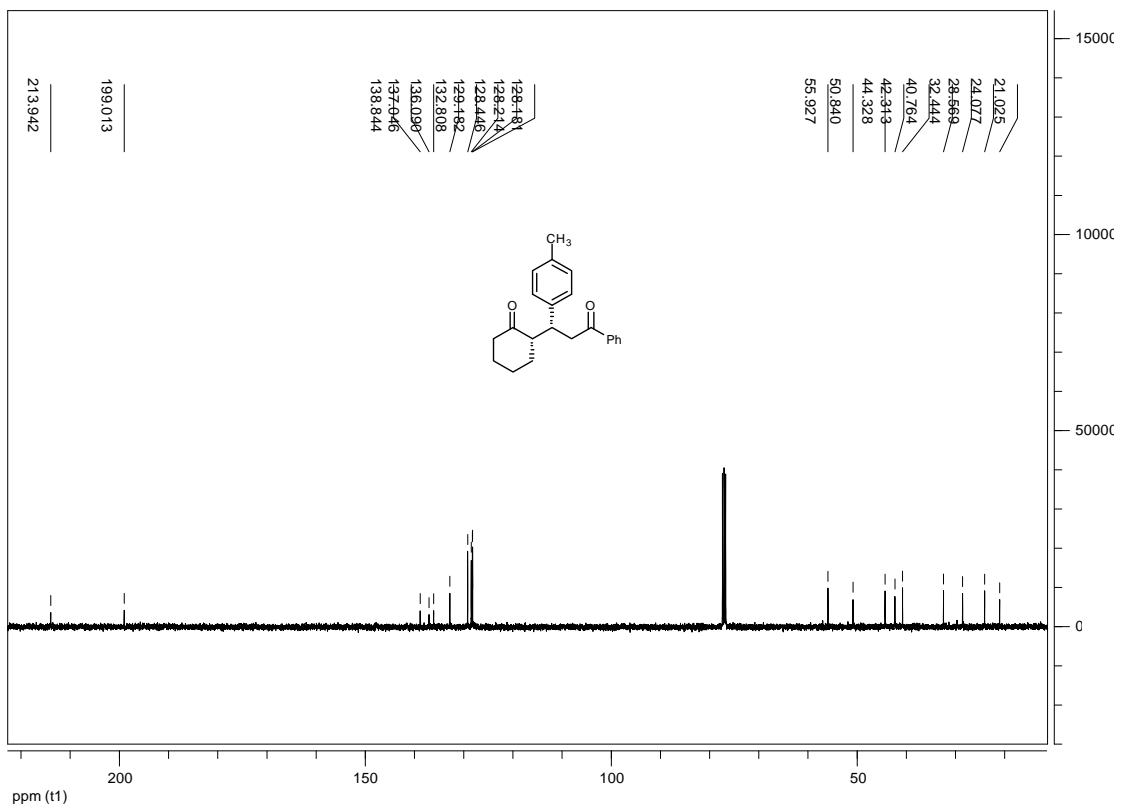
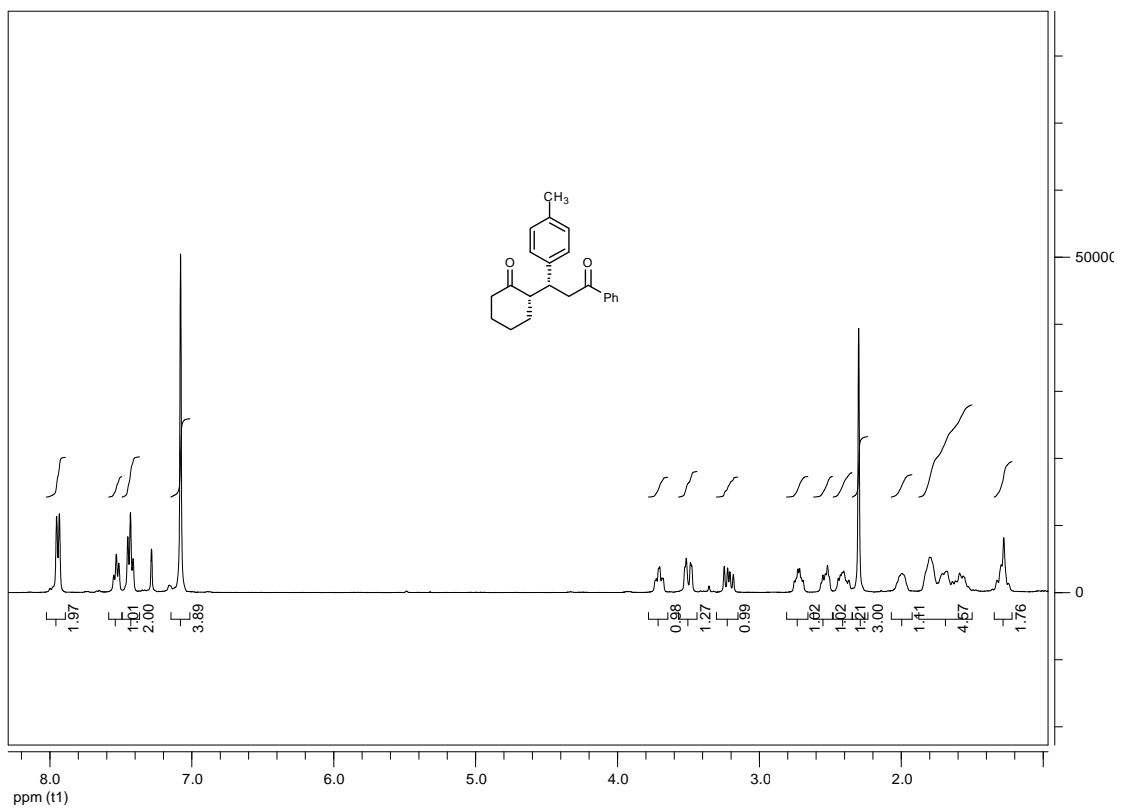


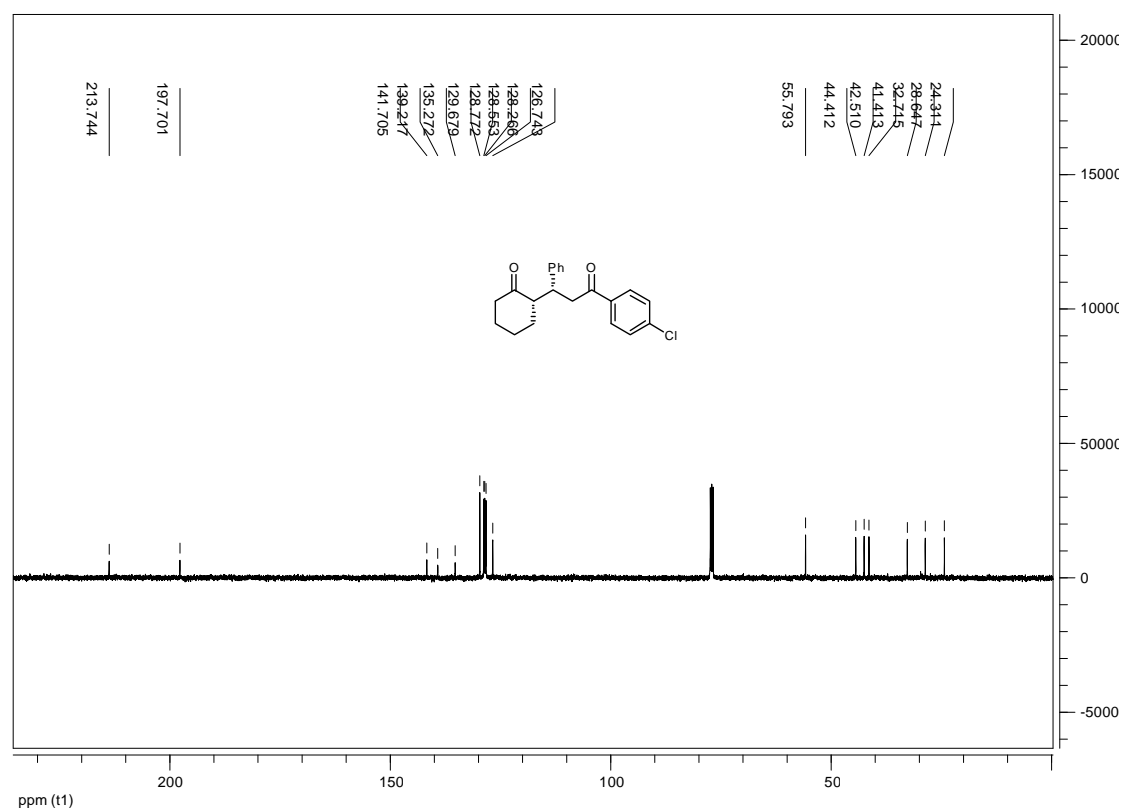
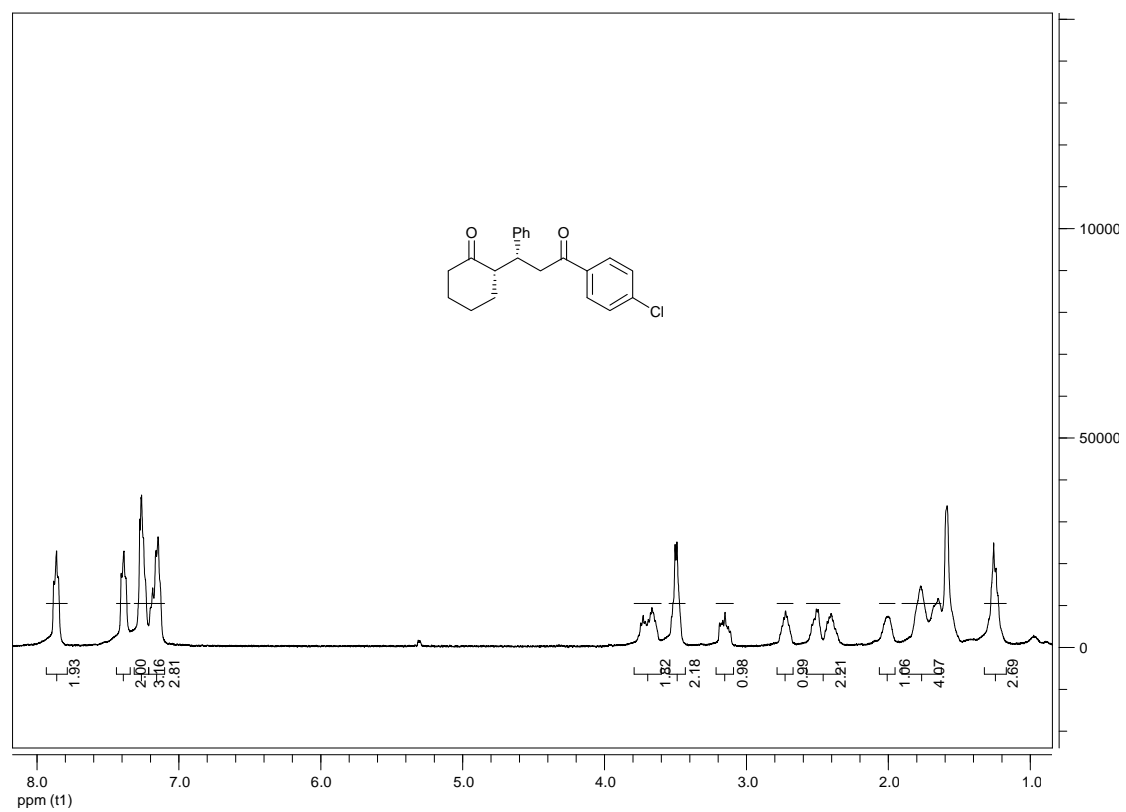


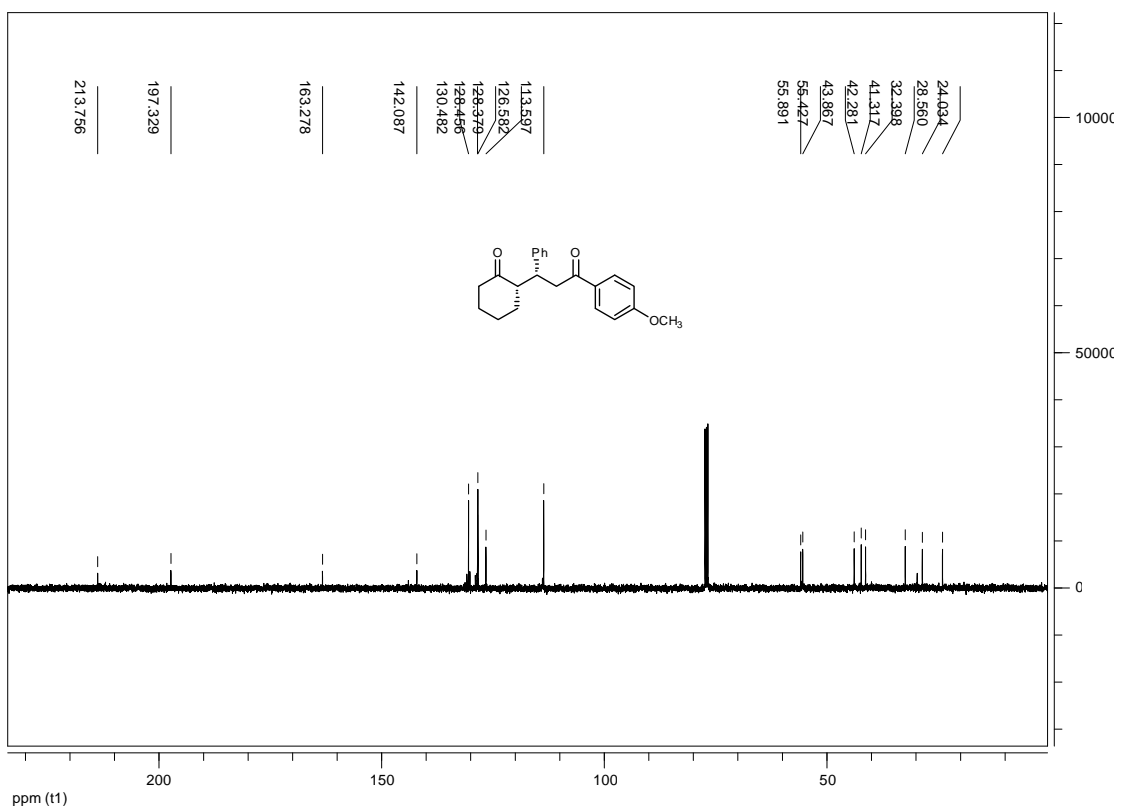
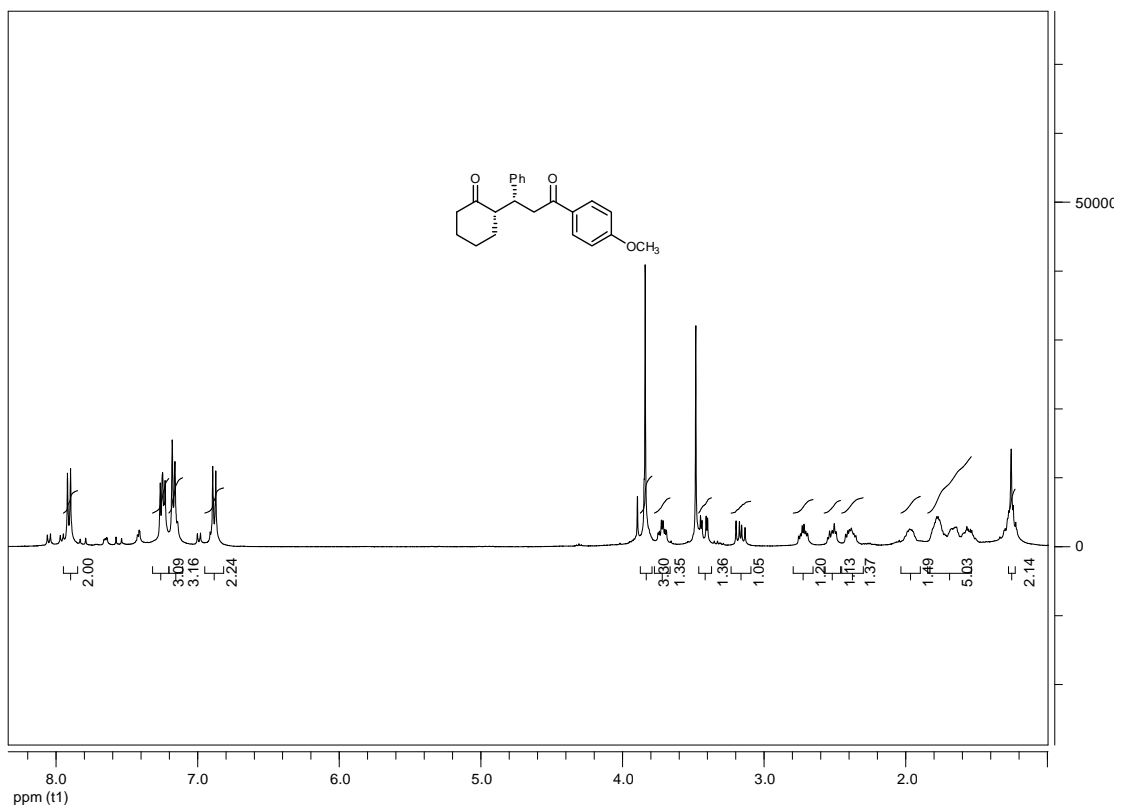


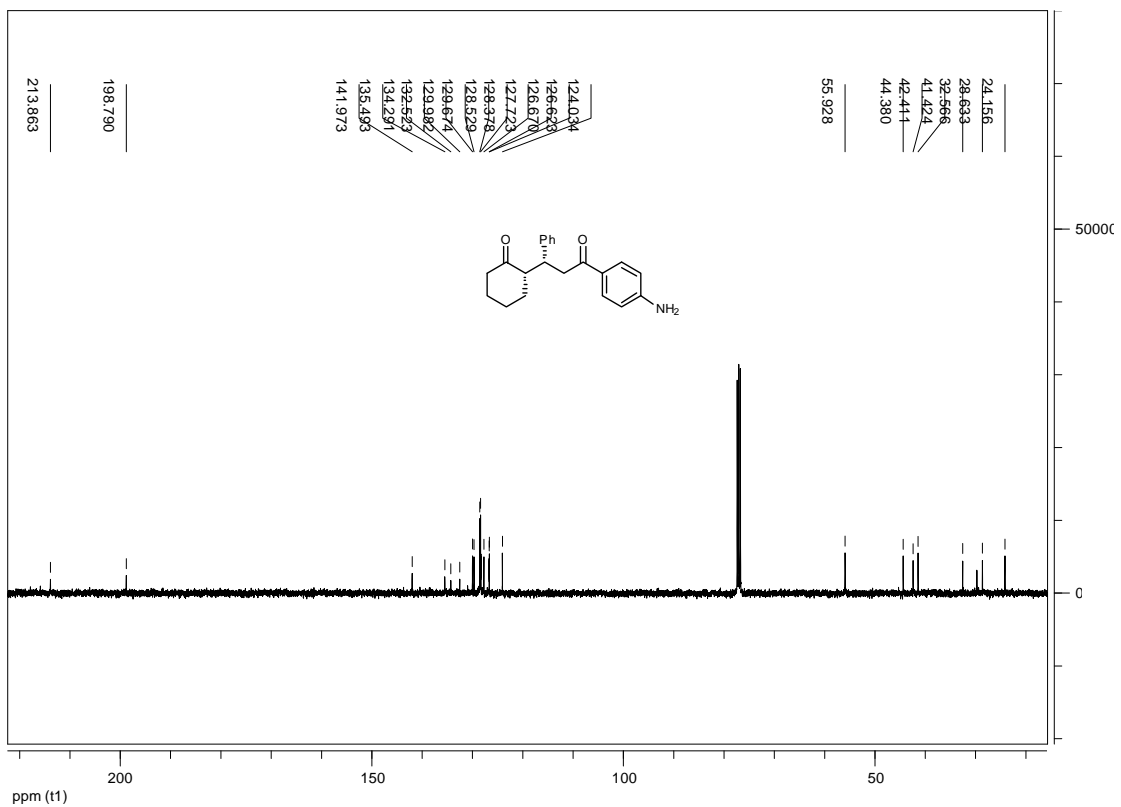
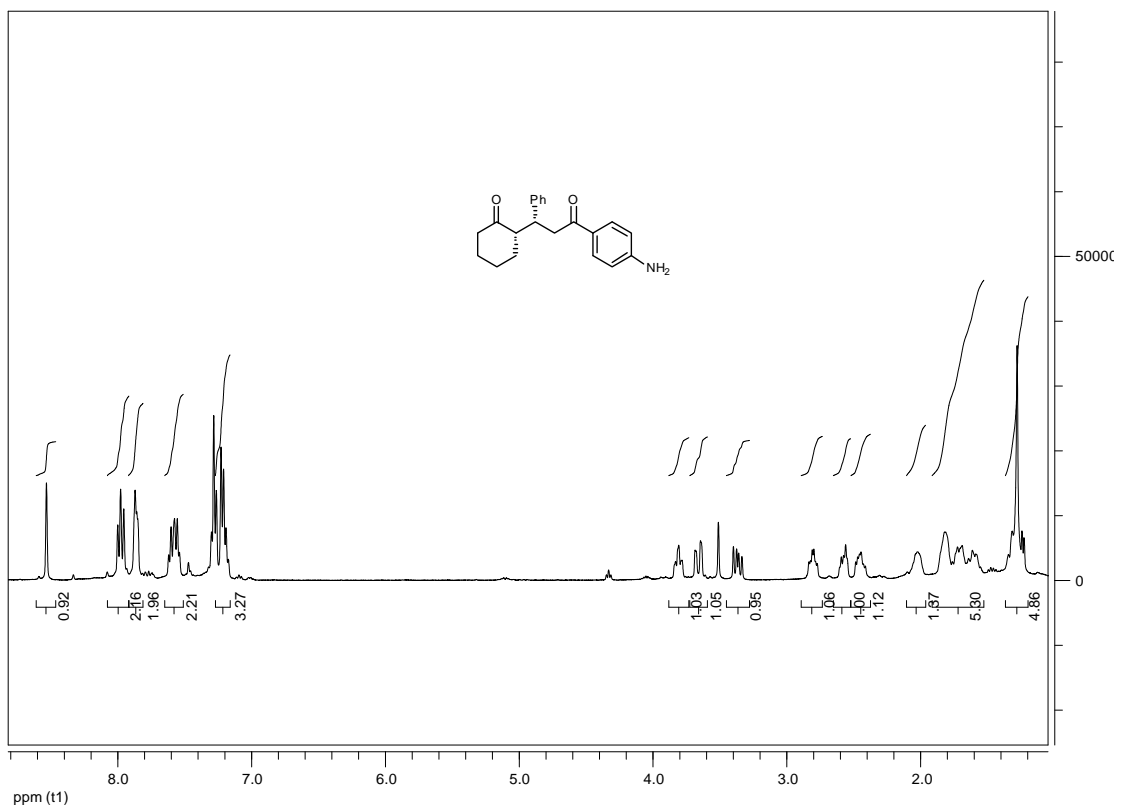




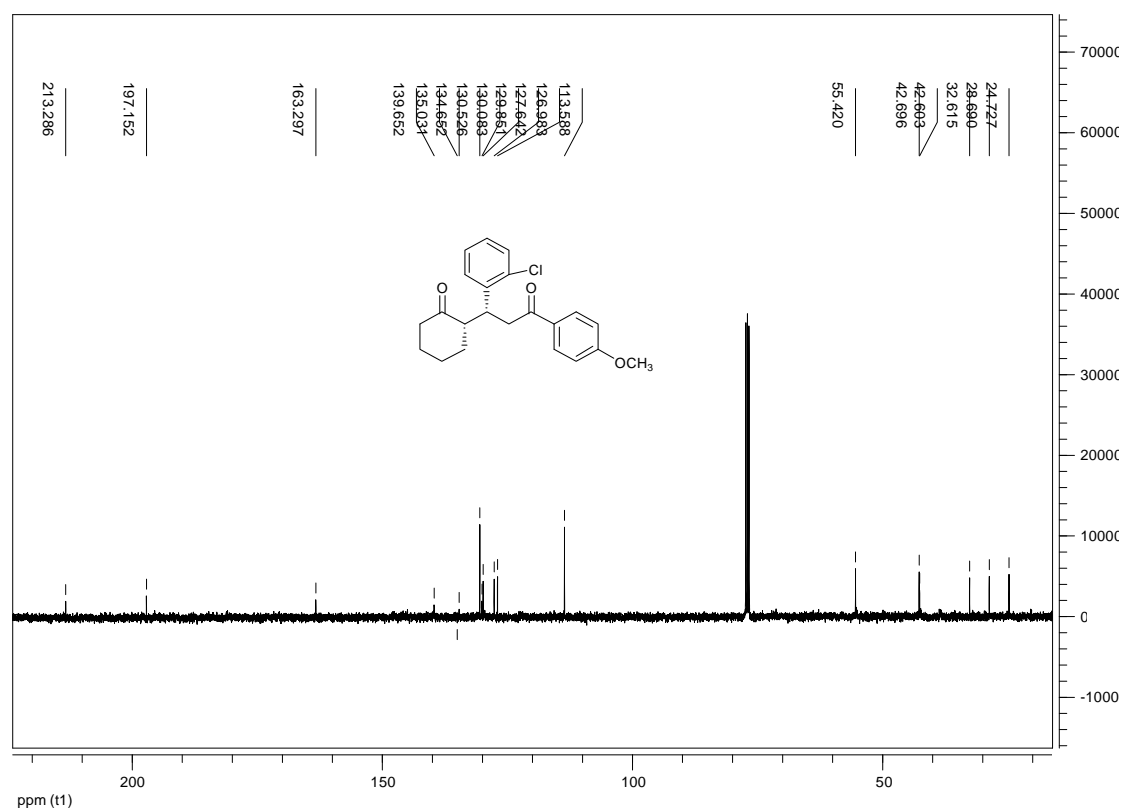
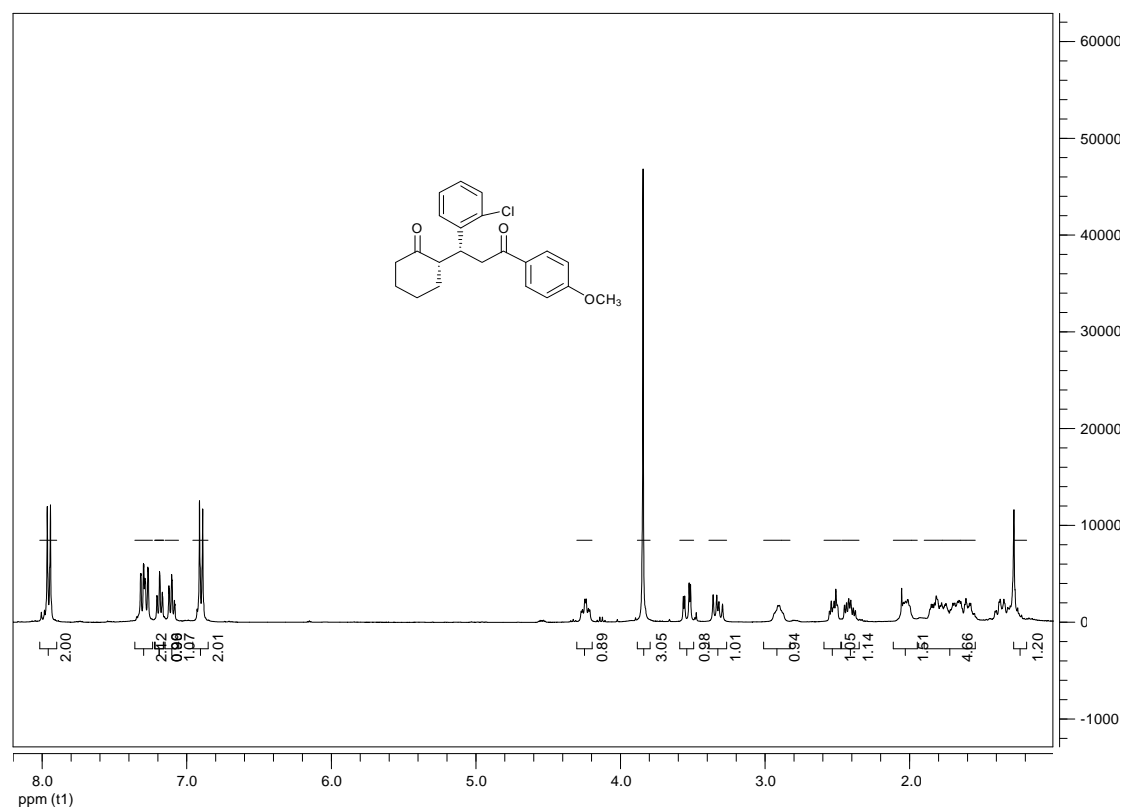


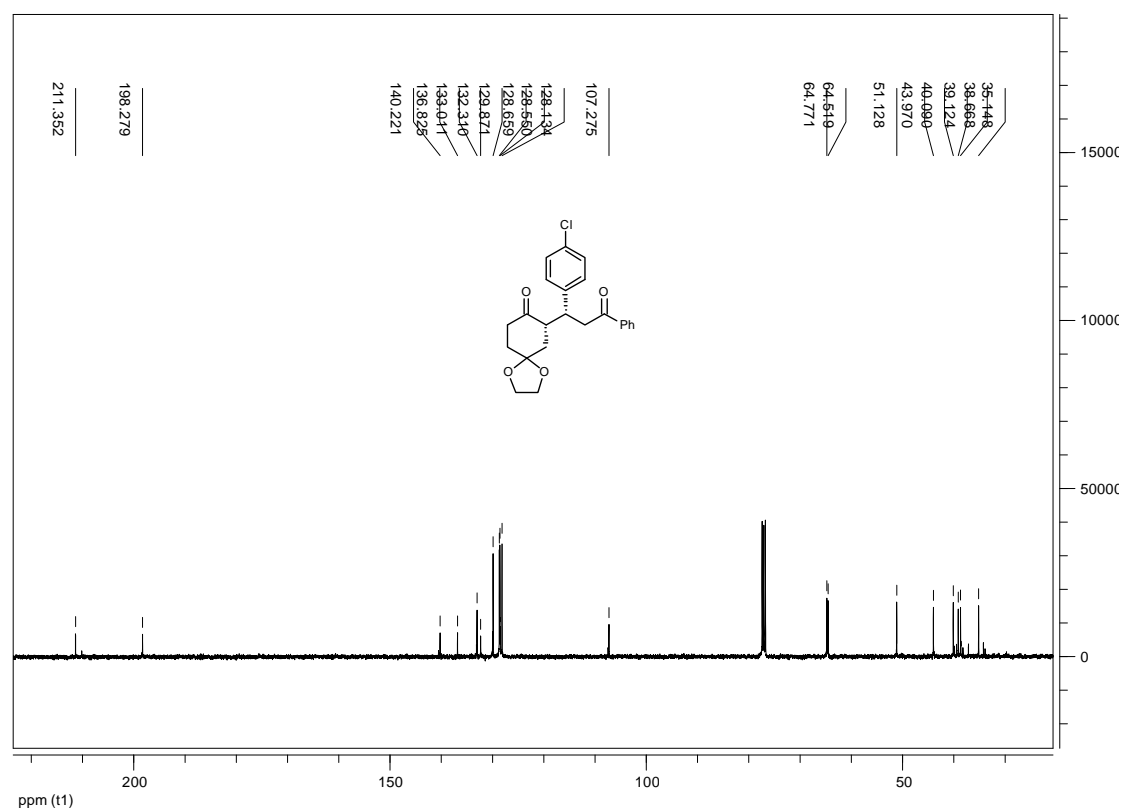
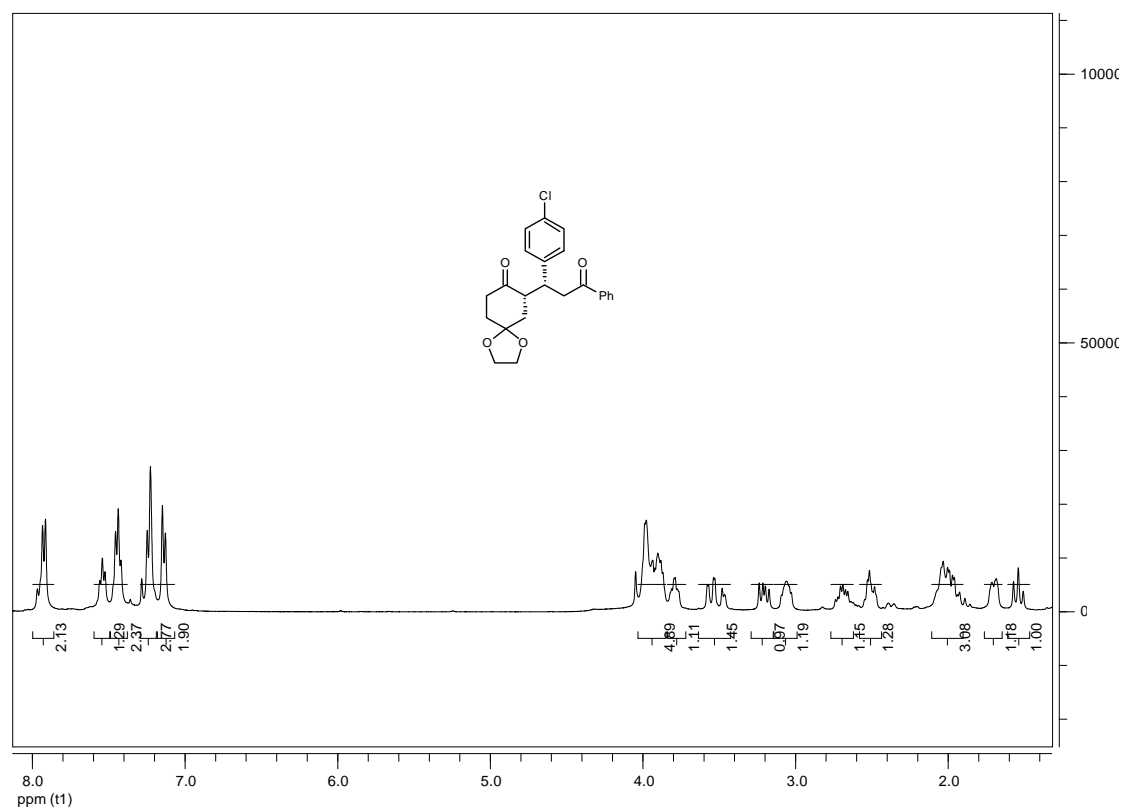


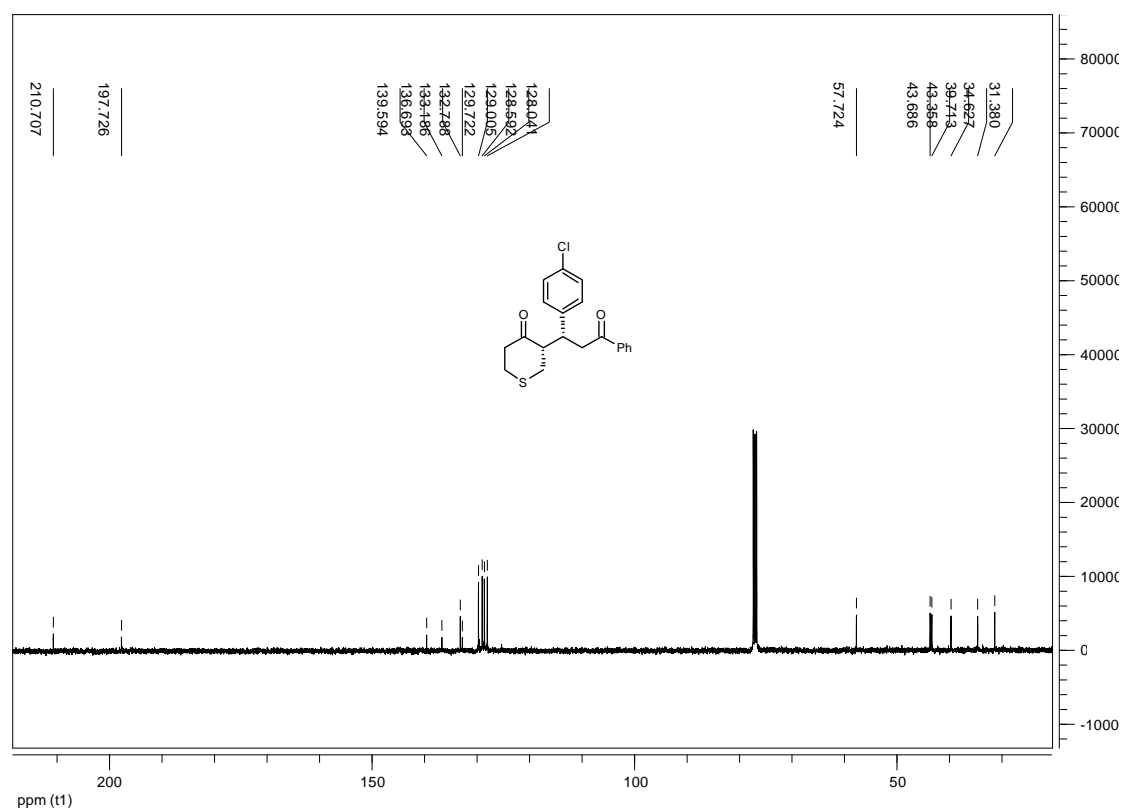
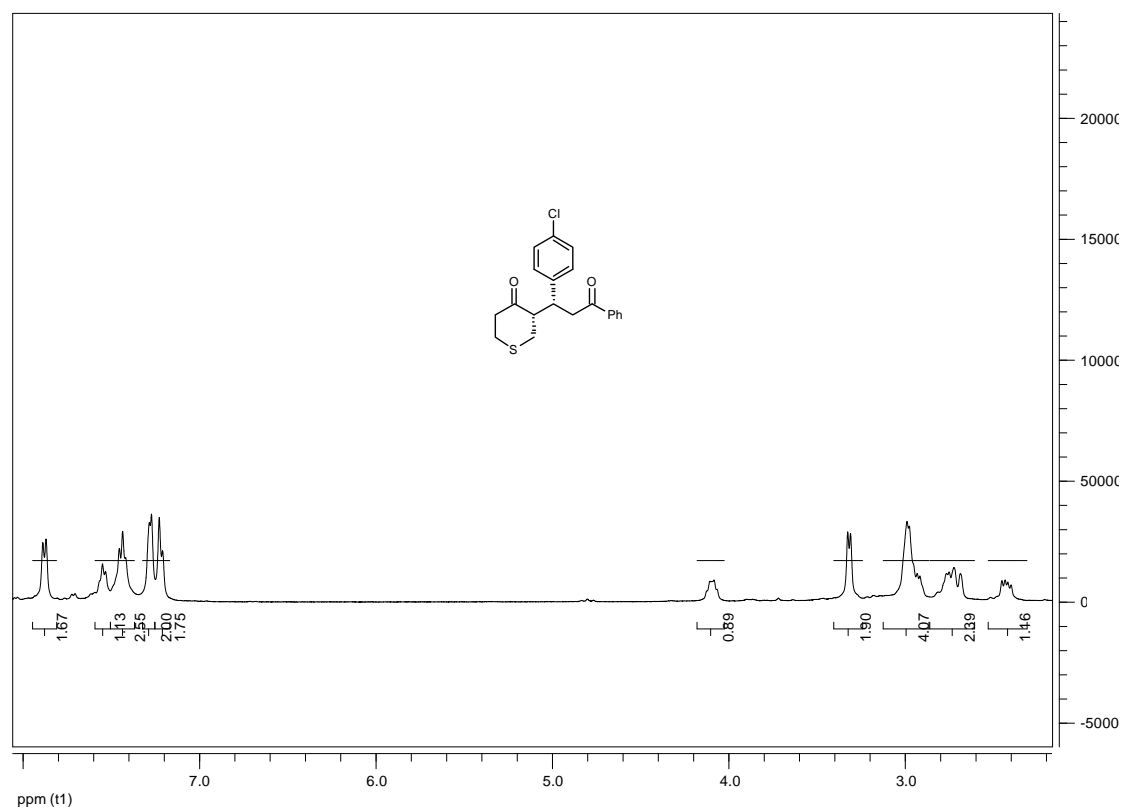


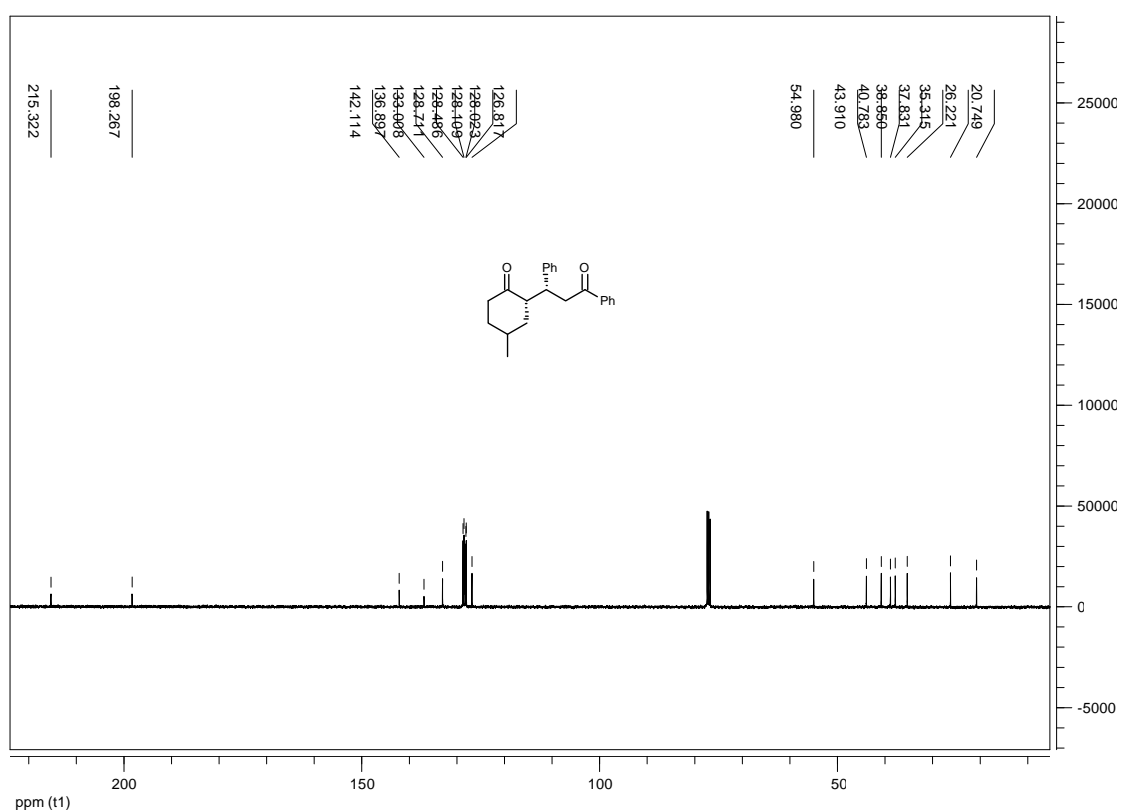
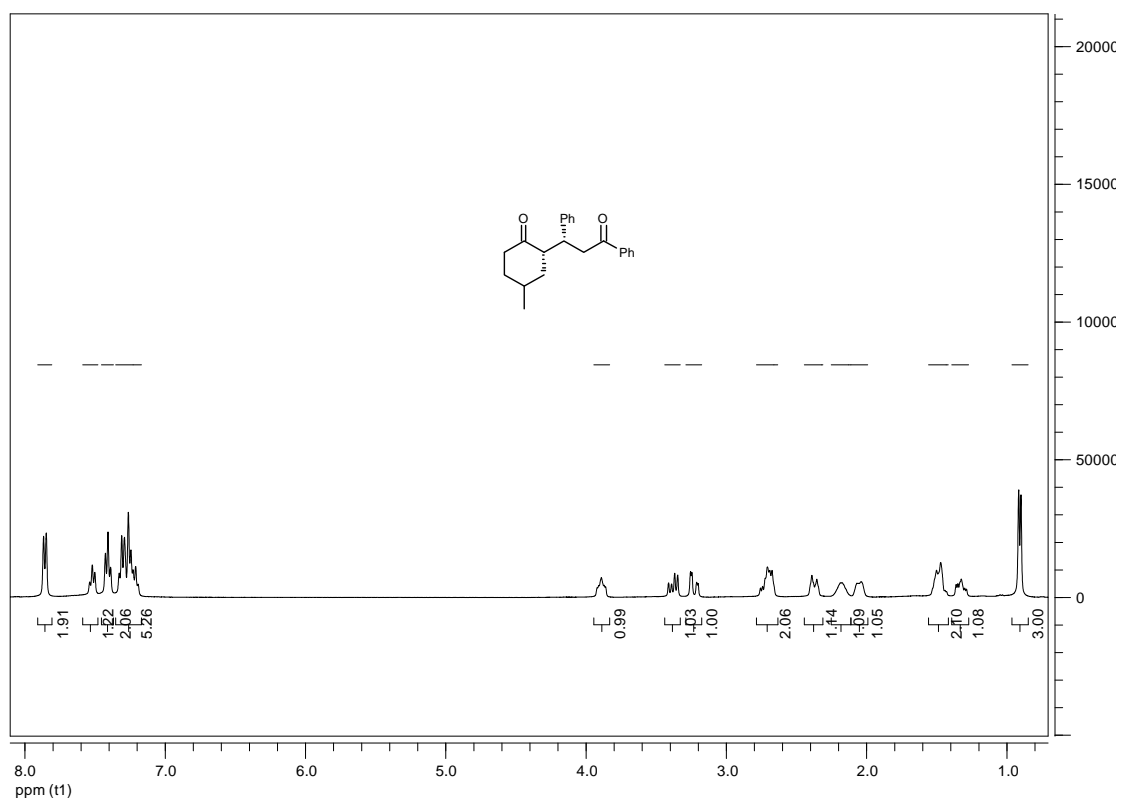


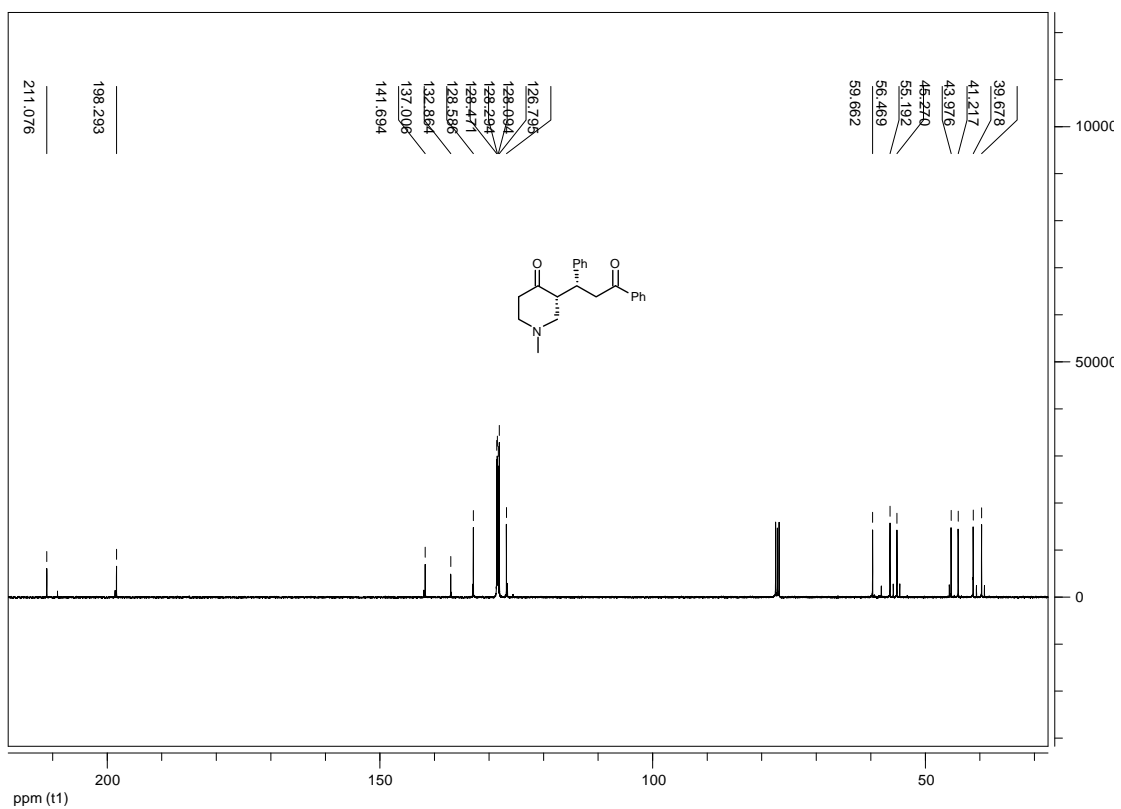
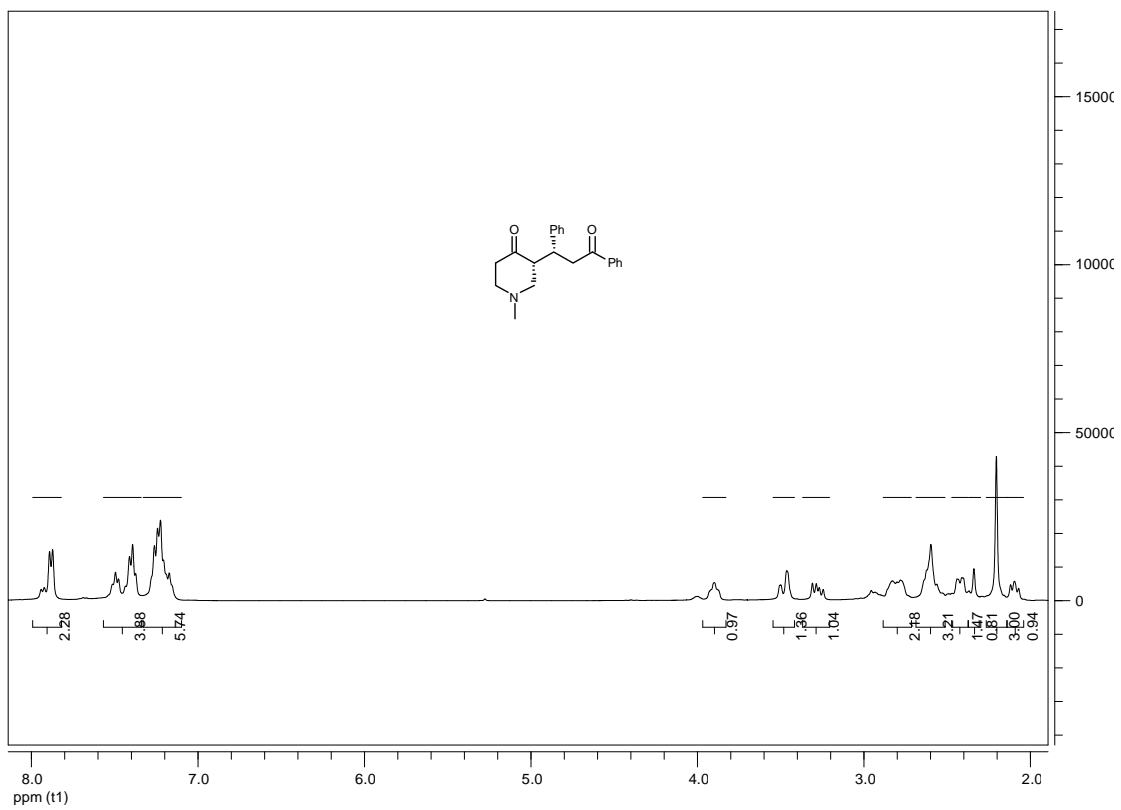


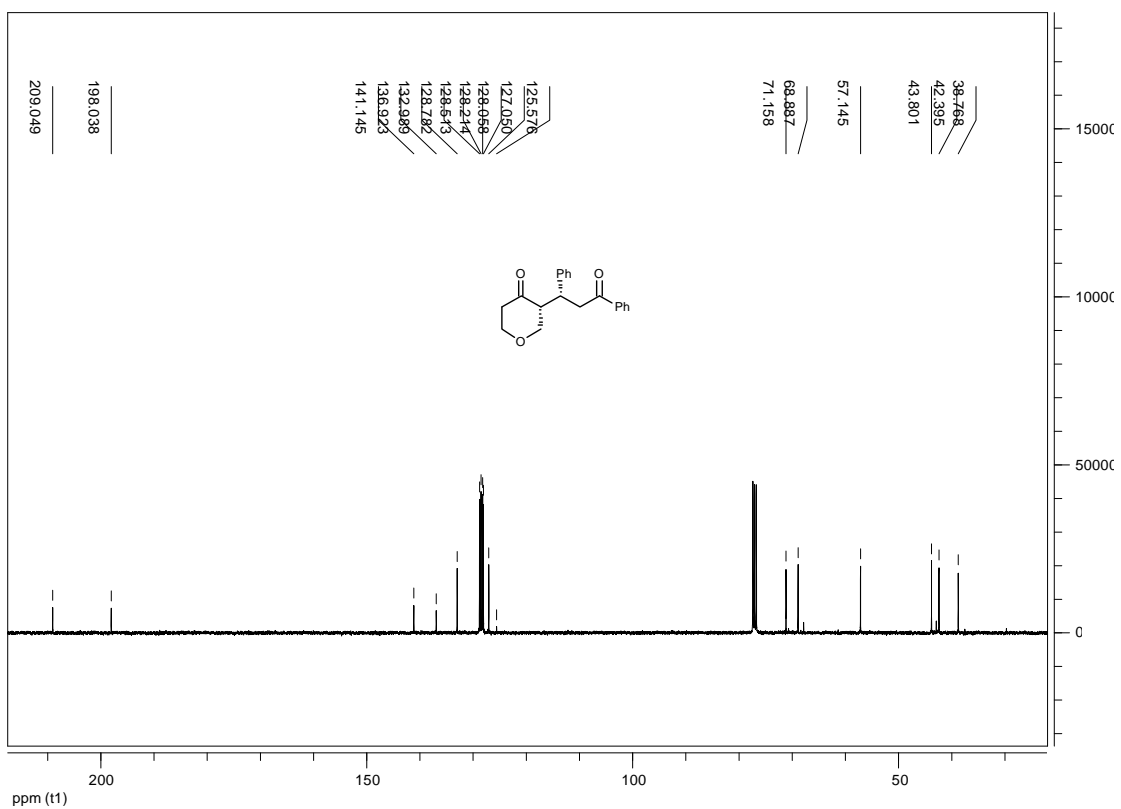
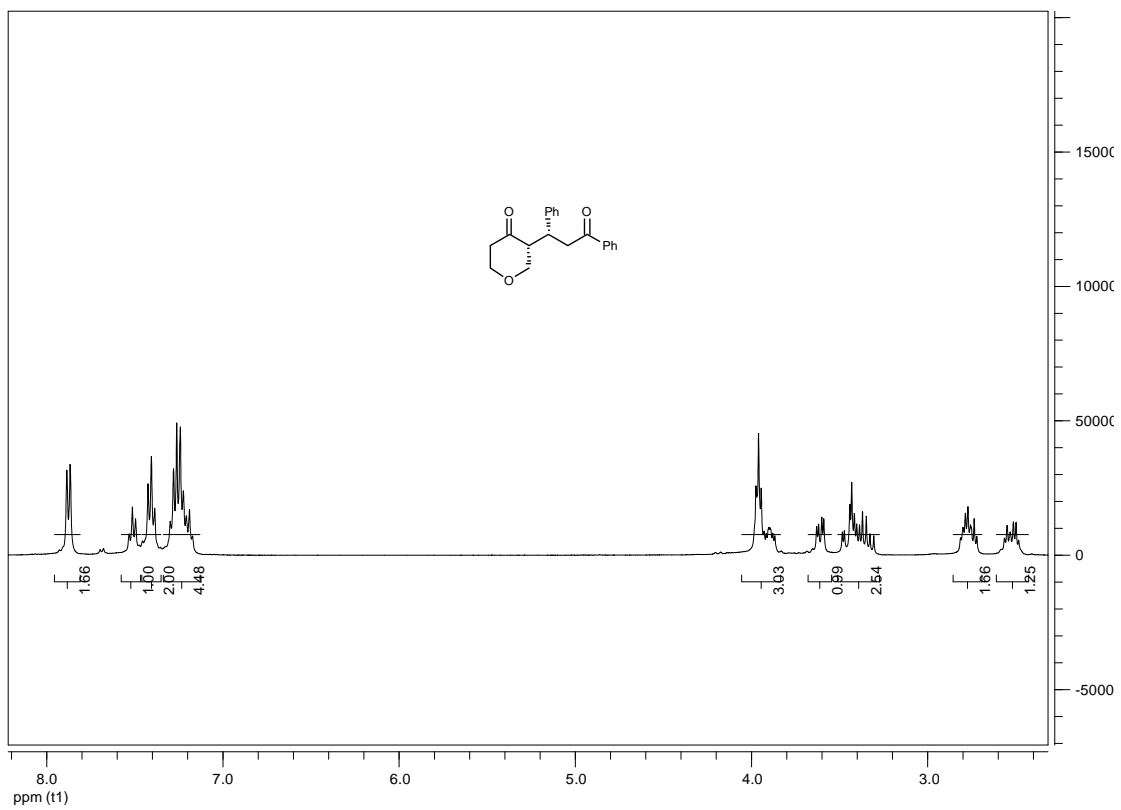


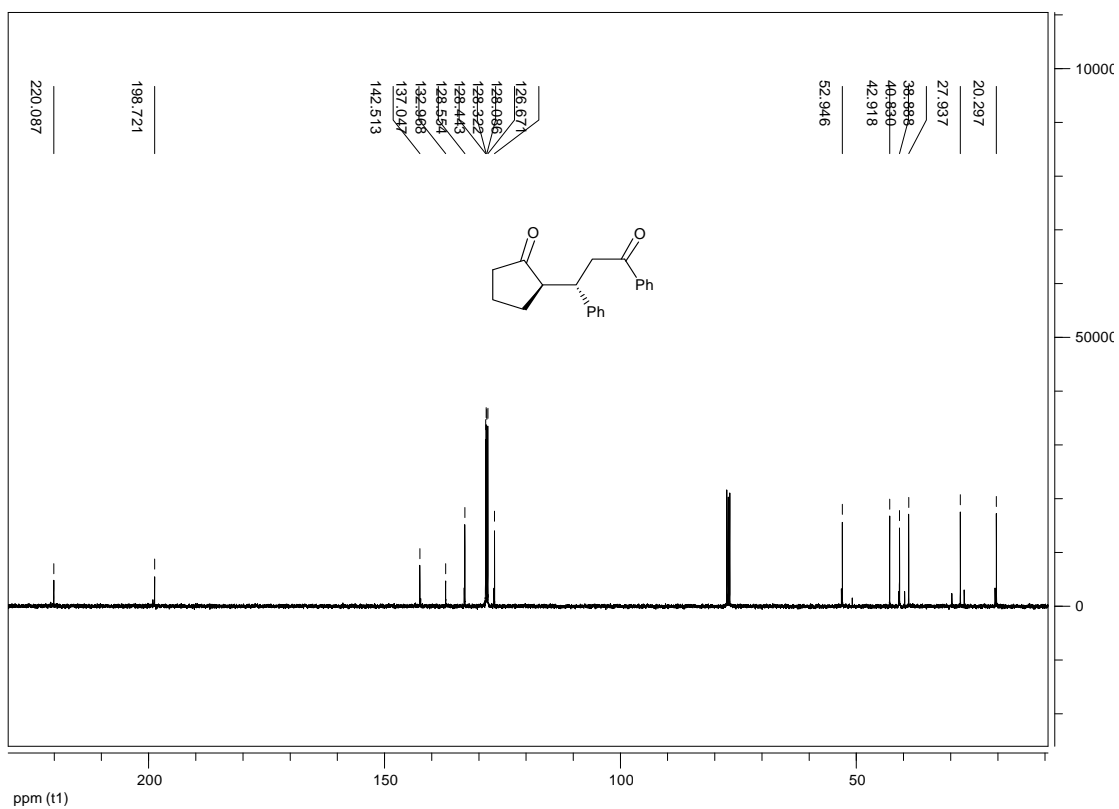
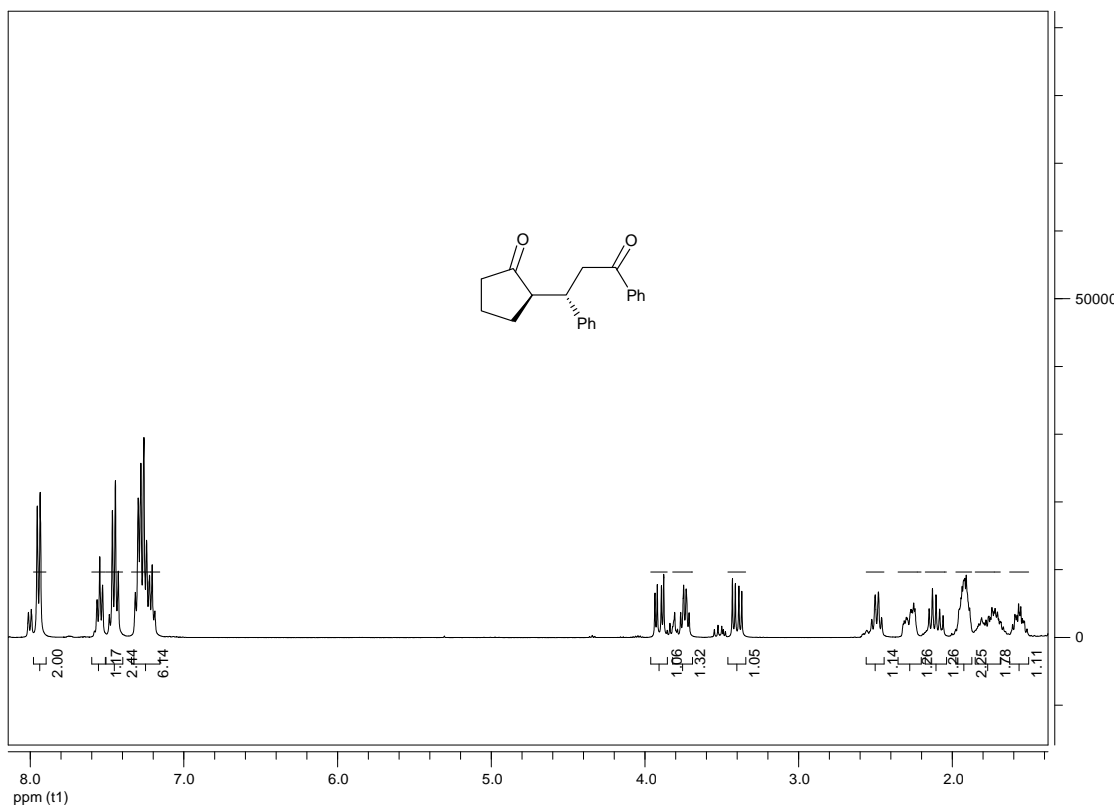


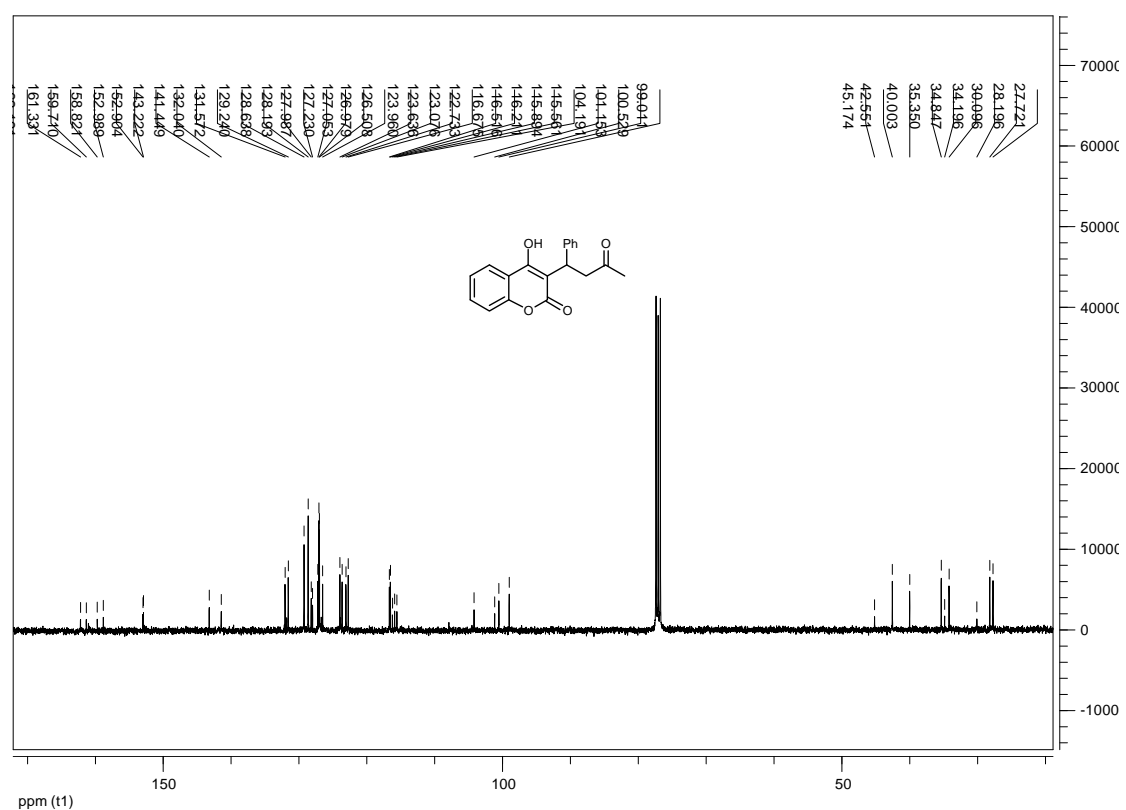
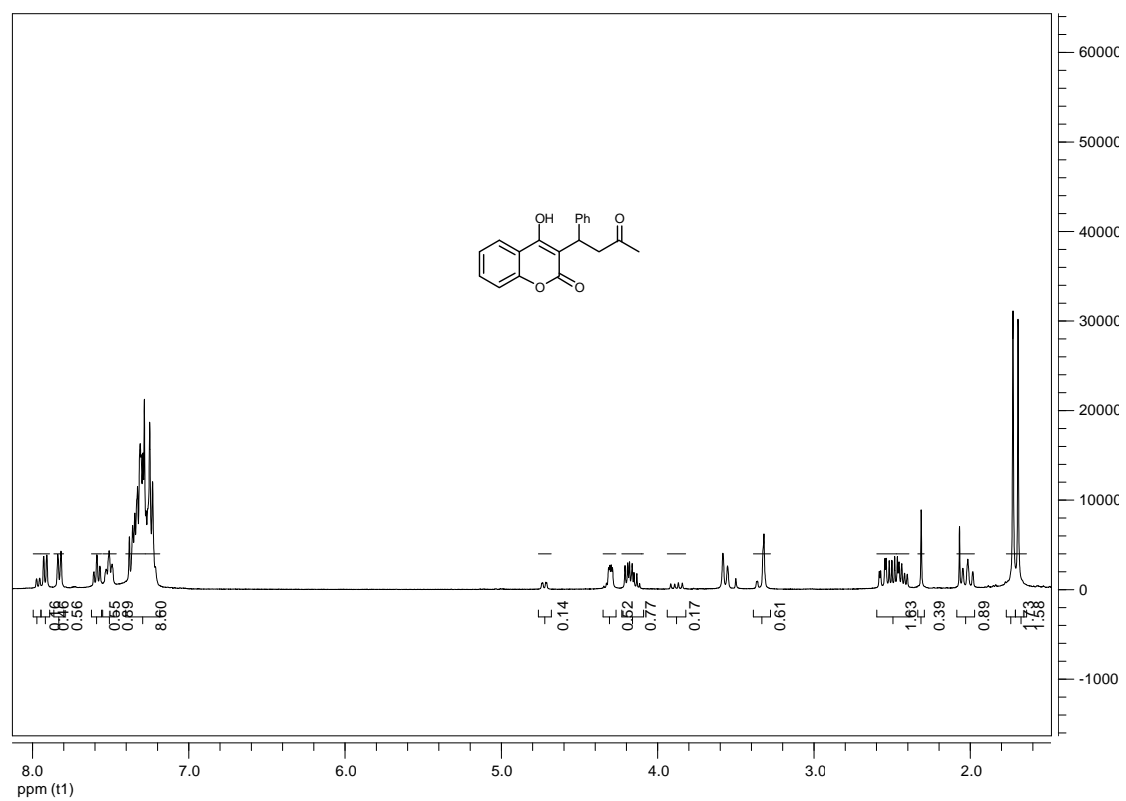






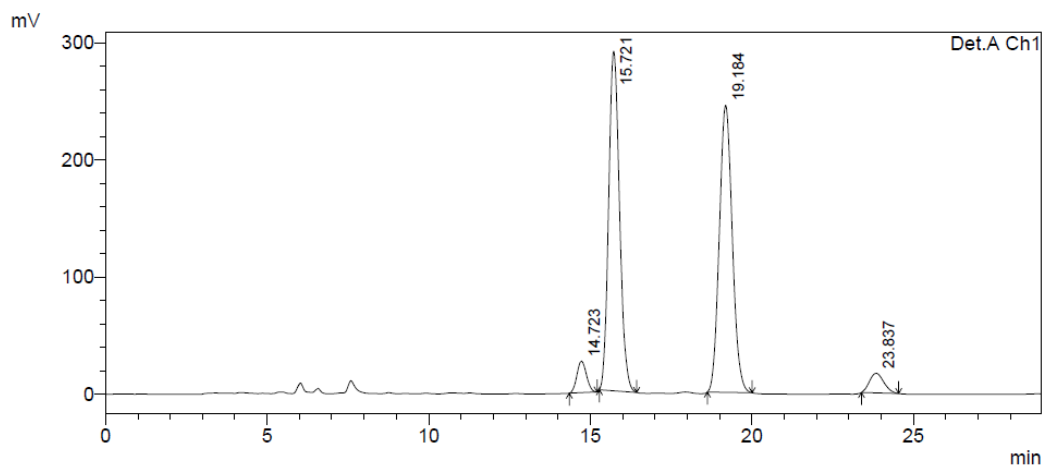
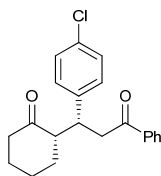








## HPLC of Michael products

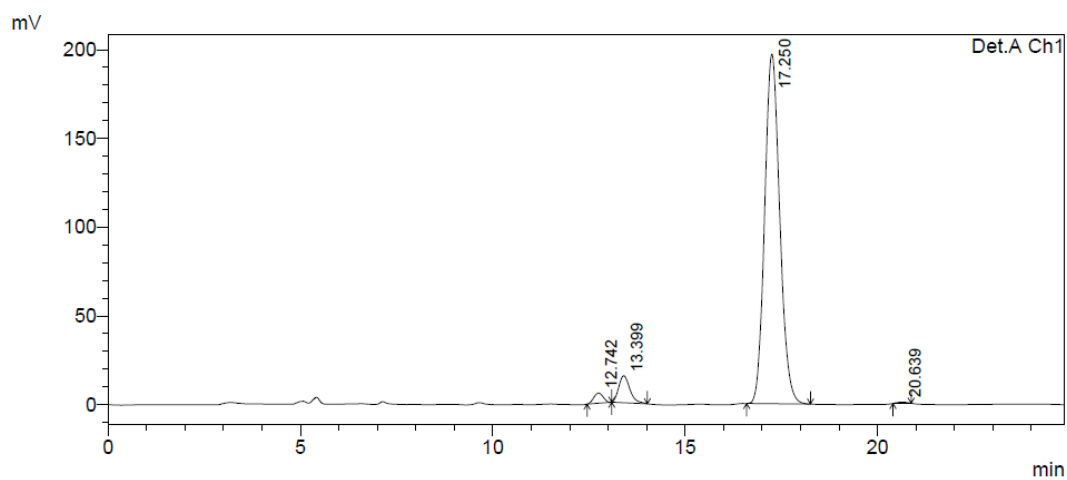


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	14.723	551129	27029	3.753	4.668
2	15.721	6776555	290047	46.142	50.088
3	19.184	6839739	245223	46.572	42.347
4	23.837	518887	16777	3.533	2.897
Total		14686309	579076	100.000	100.000

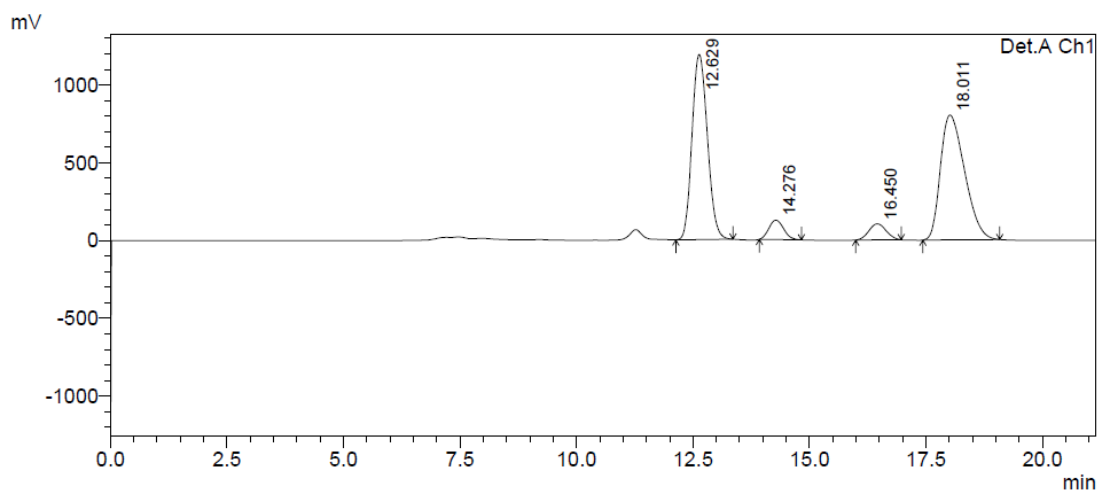
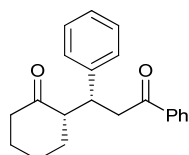


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.742	97246	5740	1.679	2.626
2	13.399	306519	15177	5.293	6.942
3	17.250	5375315	197021	92.824	90.125
4	20.639	11806	670	0.204	0.306
Total		5790886	218607	100.000	100.000

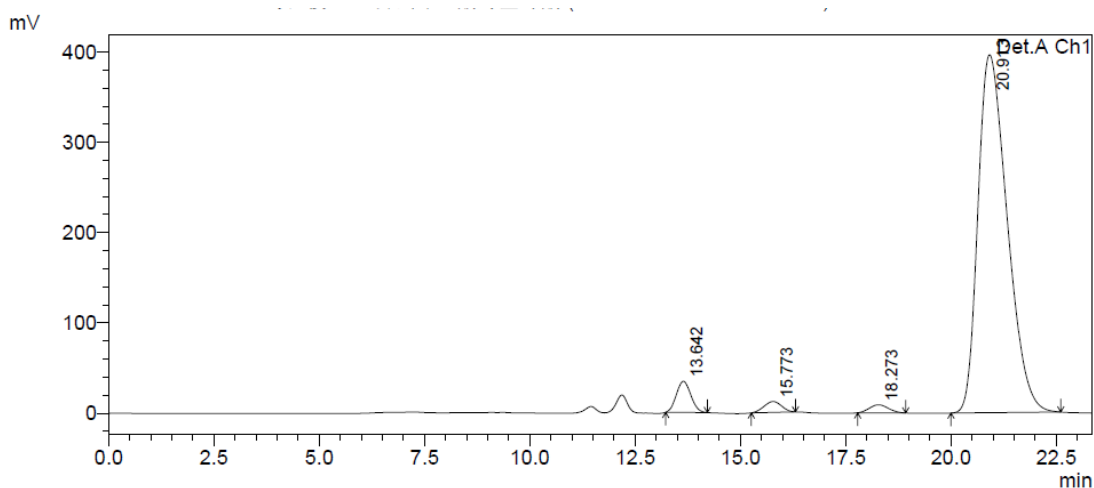


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.629	27326813	1190520	44.306	53.595
2	14.276	2733105	124961	4.431	5.625
3	16.450	2667143	103553	4.324	4.662
4	18.011	28950338	802304	46.938	36.118
Total		61677398	2221338	100.000	100.000

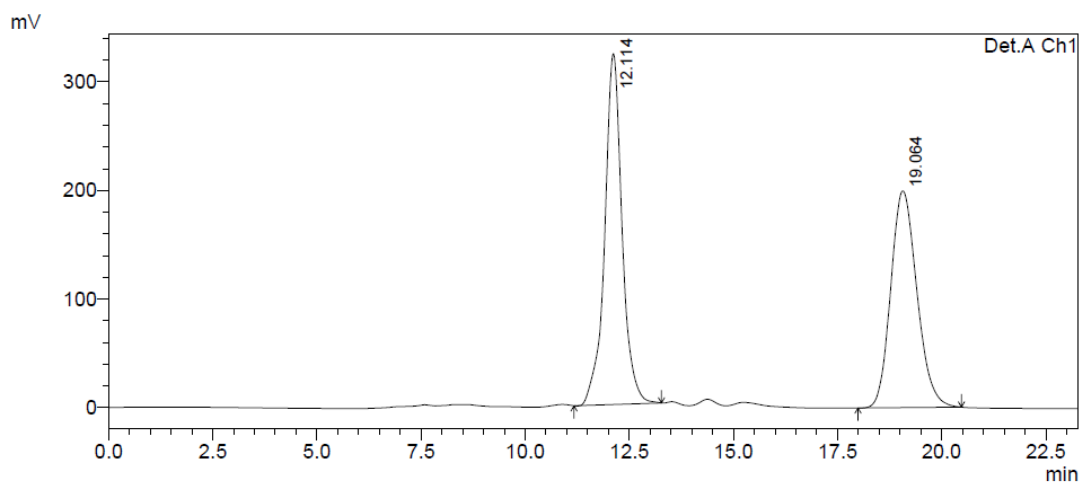
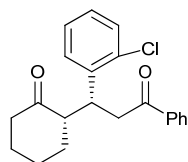


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.642	828180	34462	4.022	7.626
2	15.773	348442	12058	1.692	2.668
3	18.273	279910	8932	1.359	1.977
4	20.913	19134629	396427	92.926	87.729
Total		20591161	451878	100.000	100.000

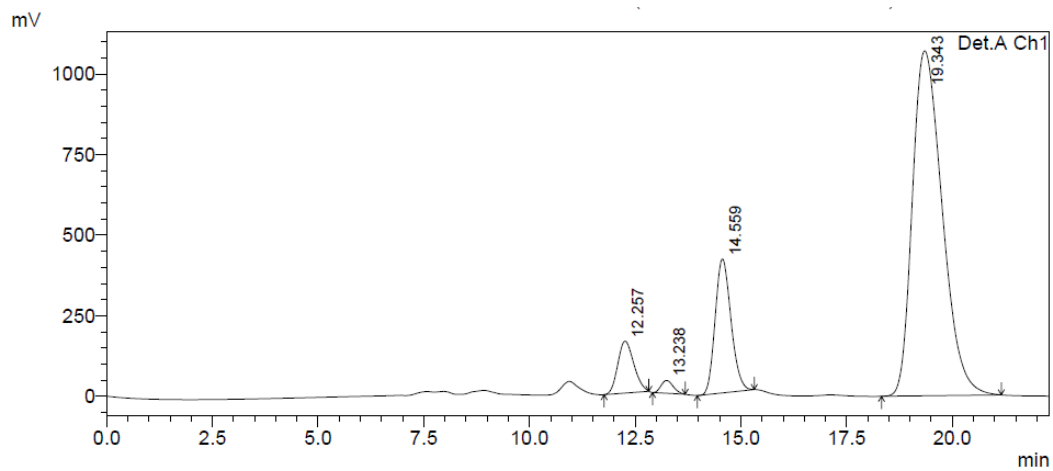


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.114	9385672	323113	51.836	61.817
2	19.064	8720959	199577	48.164	38.183
Total		18106631	522690	100.000	100.000

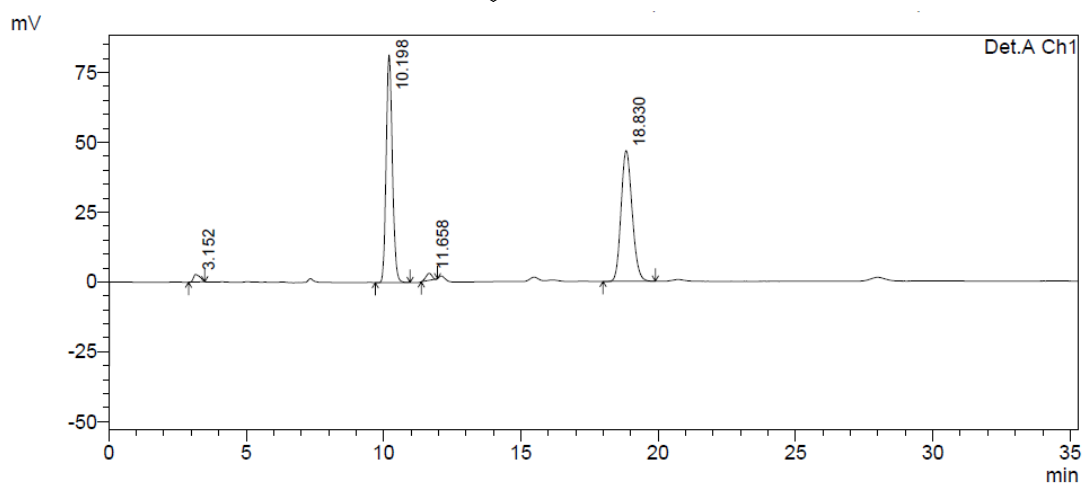
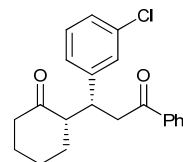


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.257	4245428	161099	6.195	9.547
2	13.238	797571	40000	1.164	2.370
3	14.559	10833404	415825	15.809	24.641
4	19.343	52650186	1070593	76.832	63.442
Total		68526589	1687516	100.000	100.000

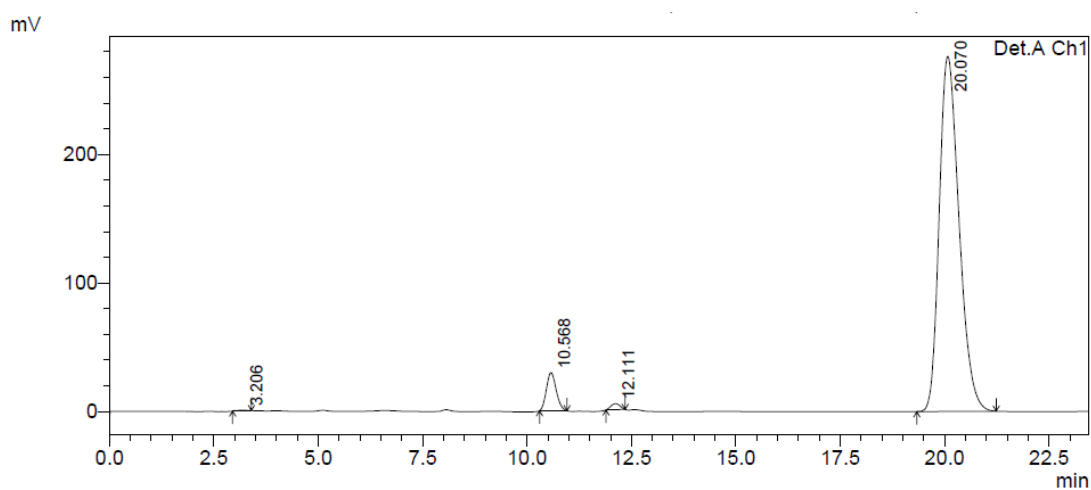


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	3.152	44891	2764	1.680	2.069
2	10.198	1278989	81511	47.857	61.023
3	11.658	37111	2490	1.389	1.864
4	18.830	1311516	46808	49.074	35.043
Total		2672506	133573	100.000	100.000

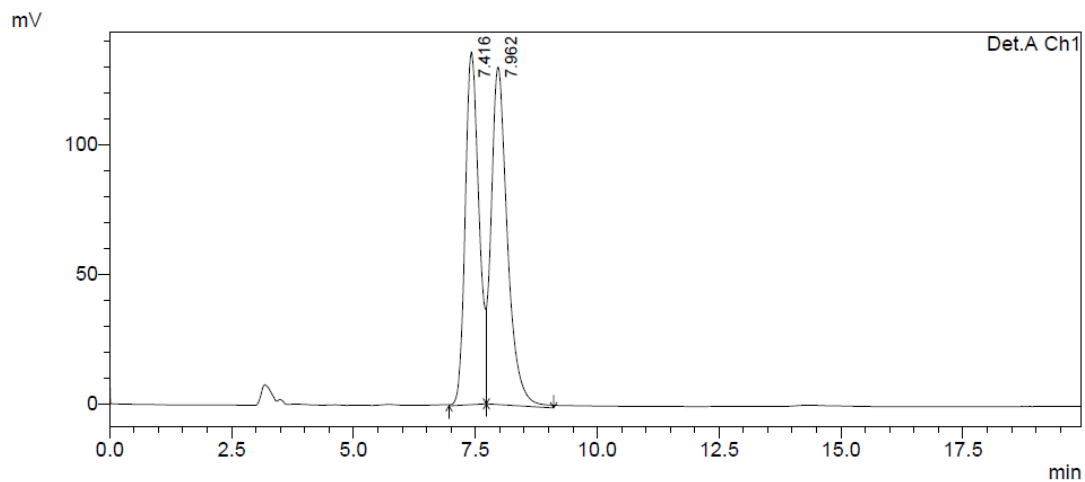
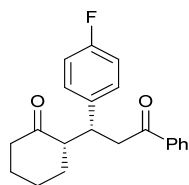


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	3.206	5578	341	0.058	0.110
2	10.568	481814	29667	4.969	9.531
3	12.111	71035	4767	0.733	1.532
4	20.070	9137634	276502	94.241	88.828
Total		9696061	311278	100.000	100.000

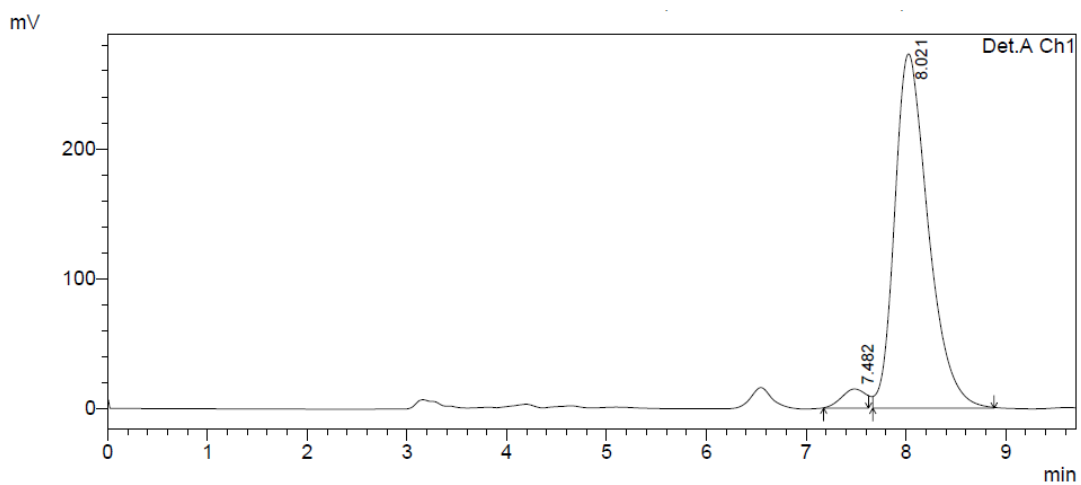


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.416	2667197	136078	47.008	51.118
2	7.962	3006710	130127	52.992	48.882
Total		5673908	266205	100.000	100.000

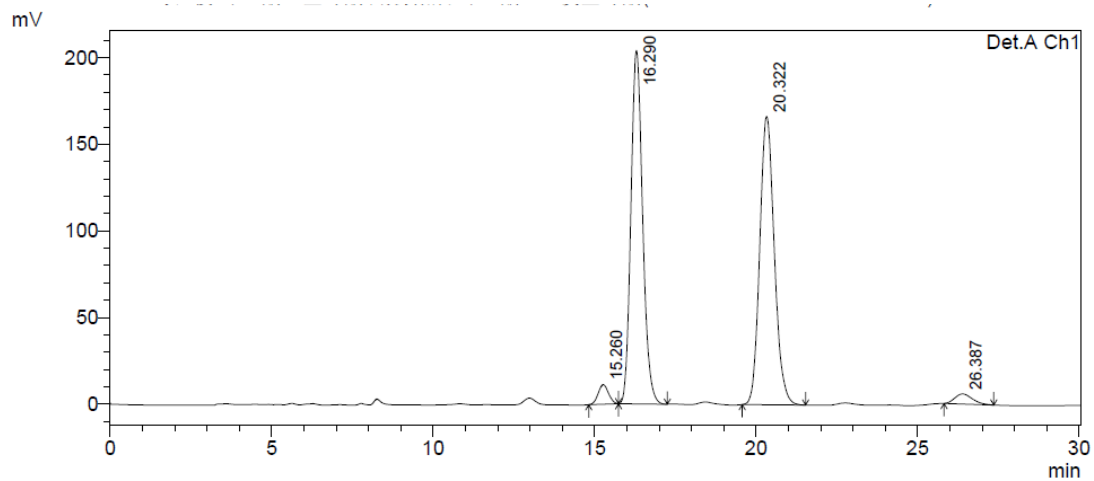
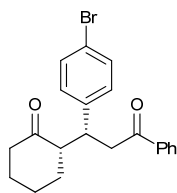


1 Det.A Ch1/254n

PeakTable

Detector A Ch1 254nm

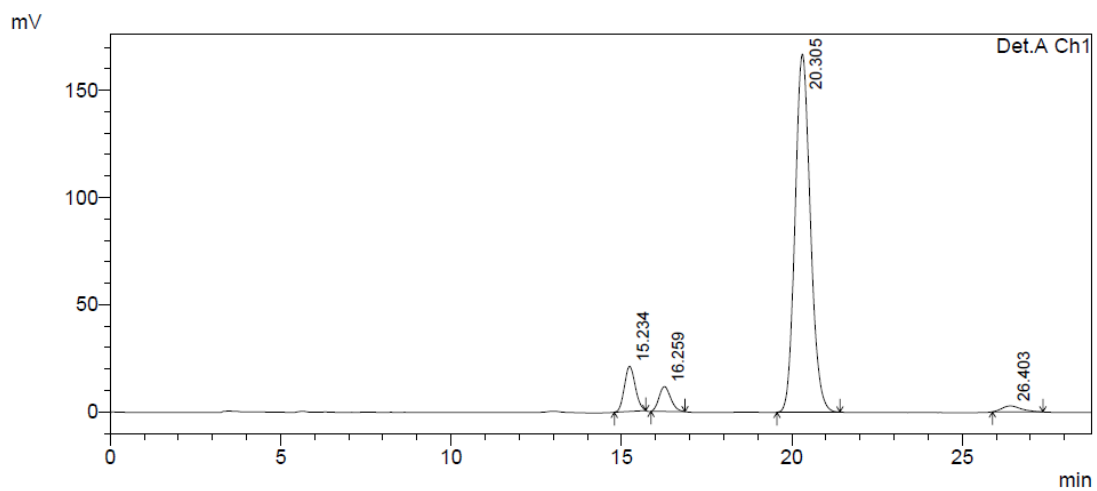
Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.482	243584	14815	3.668	5.148
2	8.021	6396730	272957	96.332	94.852
Total		6640314	287772	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

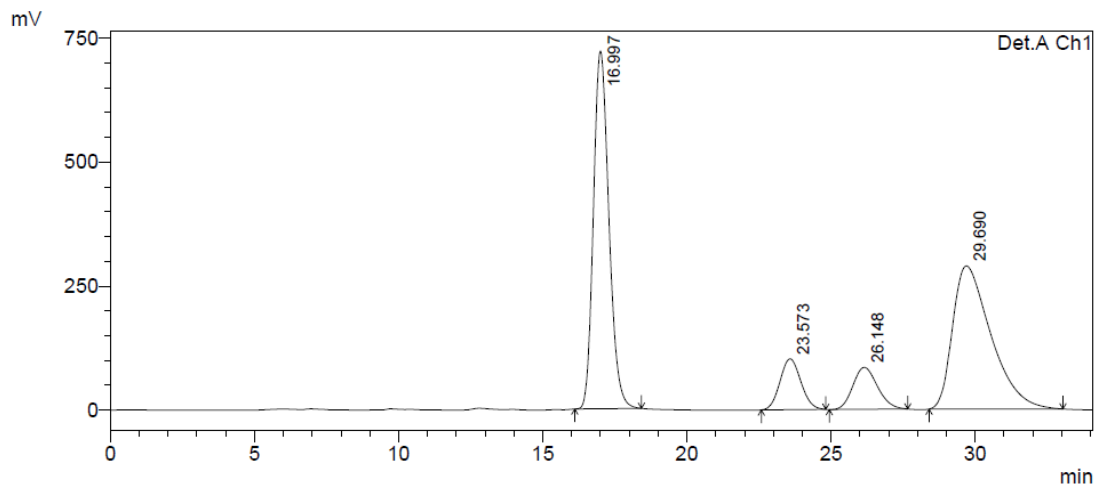
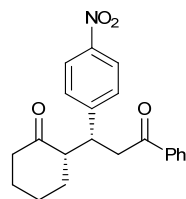
Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.260	251416	11337	2.320	2.926
2	16.290	5143562	203881	47.472	52.620
3	20.322	5218243	166397	48.162	42.945
4	26.387	221615	5847	2.045	1.509
Total		10834836	387461	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

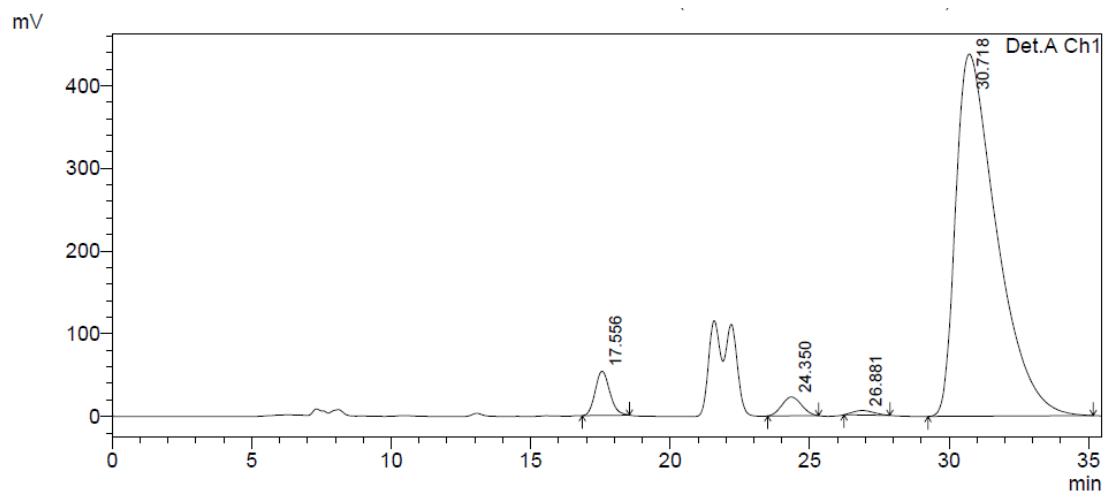
Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.234	468527	21068	7.699	10.406
2	16.259	275824	11586	4.532	5.722
3	20.305	5232454	167055	85.978	82.508
4	26.403	109020	2762	1.791	1.364
Total		6085826	202470	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

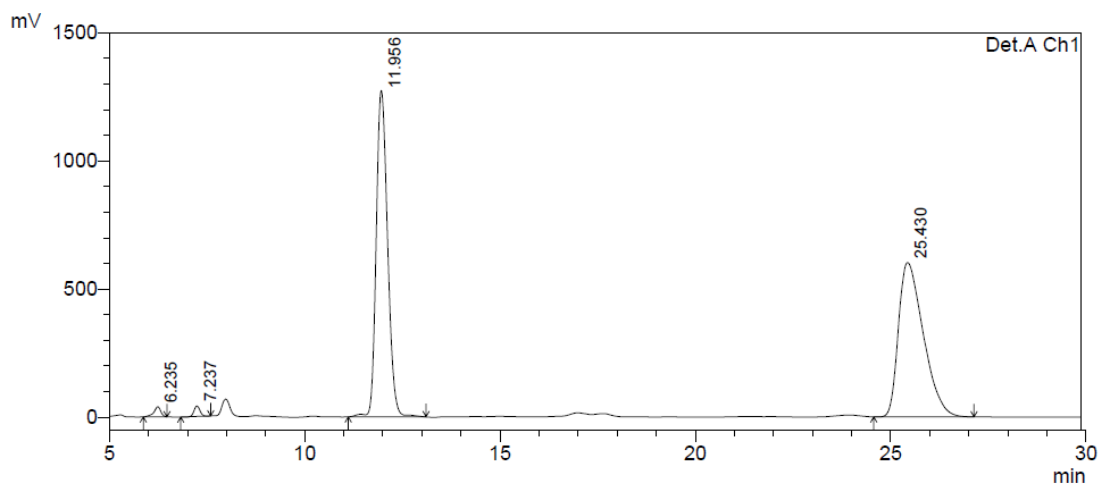
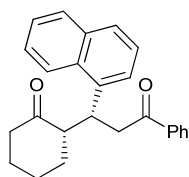
Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.997	26944880	721462	42.205	60.260
2	23.573	5153882	102607	8.073	8.570
3	26.148	5032227	84593	7.882	7.066
4	29.690	26712532	288583	41.841	24.104
Total		63843520	1197245	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	17.556	1934798	53360	4.029	10.273
2	24.350	1117800	22830	2.328	4.395
3	26.881	284274	5425	0.592	1.045
4	30.718	44679202	437805	93.051	84.287
Total		48016075	519420	100.000	100.000

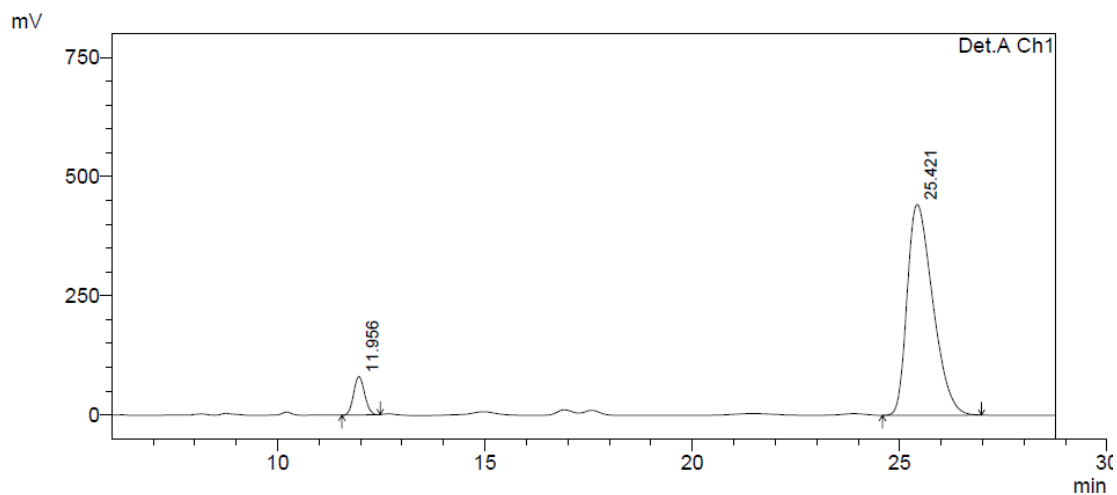


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	6.235	482188	39163	0.905	2.002
2	7.237	409990	40635	0.770	2.078
3	11.956	25729591	1273630	48.293	65.117
4	25.430	26656859	602493	50.033	30.804
Total		53278627	1955920	100.000	100.000



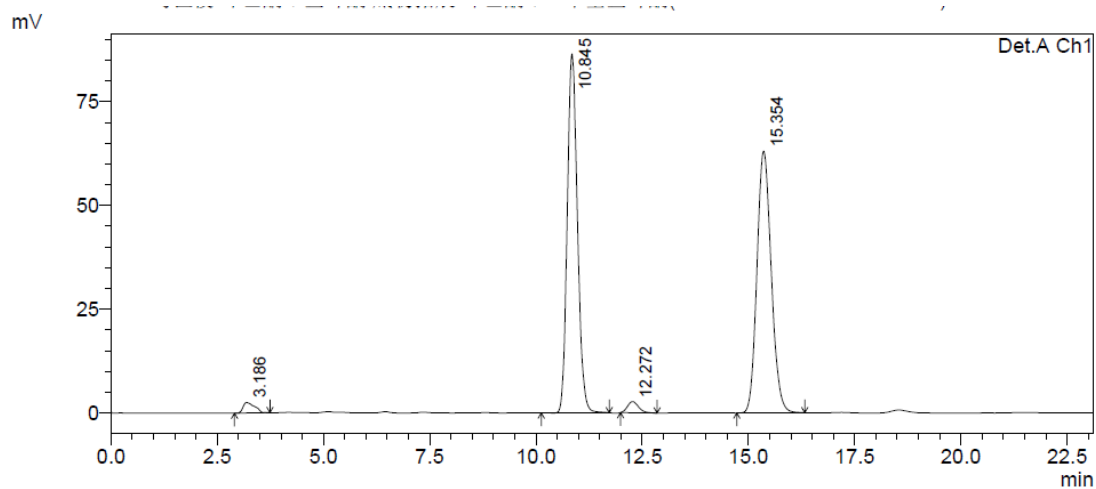
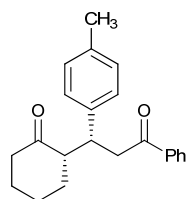
1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.956	1490262	80552	7.260	15.407
2	25.421	19037891	442285	92.740	84.593
Total		20528153	522836	100.000	100.000



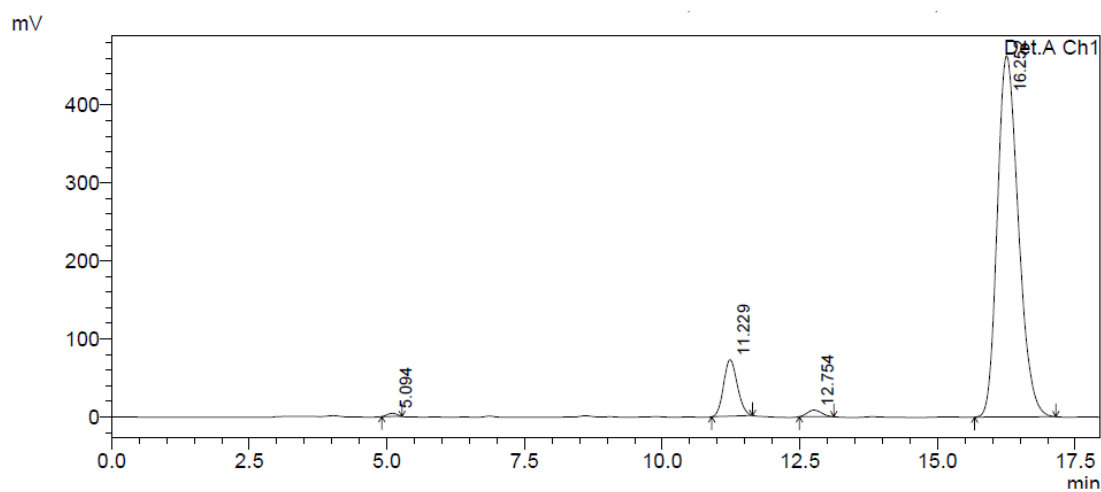


1 Det.A Ch1/254n

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	3.186	47361	2549	1.574	1.647
2	10.845	1442100	86466	47.919	55.879
3	12.272	47967	2686	1.594	1.736
4	15.354	1472004	63036	48.913	40.737
Total		3009432	154737	100.000	100.000

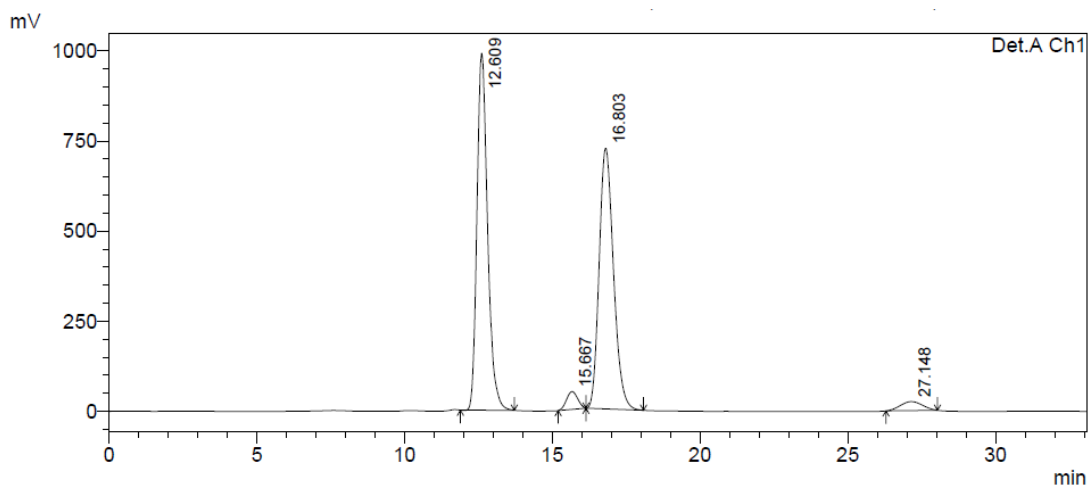
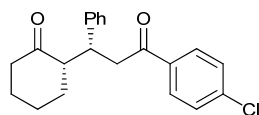


1 Det.A Ch1/254n

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.094	50892	4091	0.369	0.747
2	11.229	1257102	72438	9.111	13.220
3	12.754	152177	8482	1.103	1.548
4	16.252	12338146	462941	89.418	84.486
Total		13798317	547952	100.000	100.000

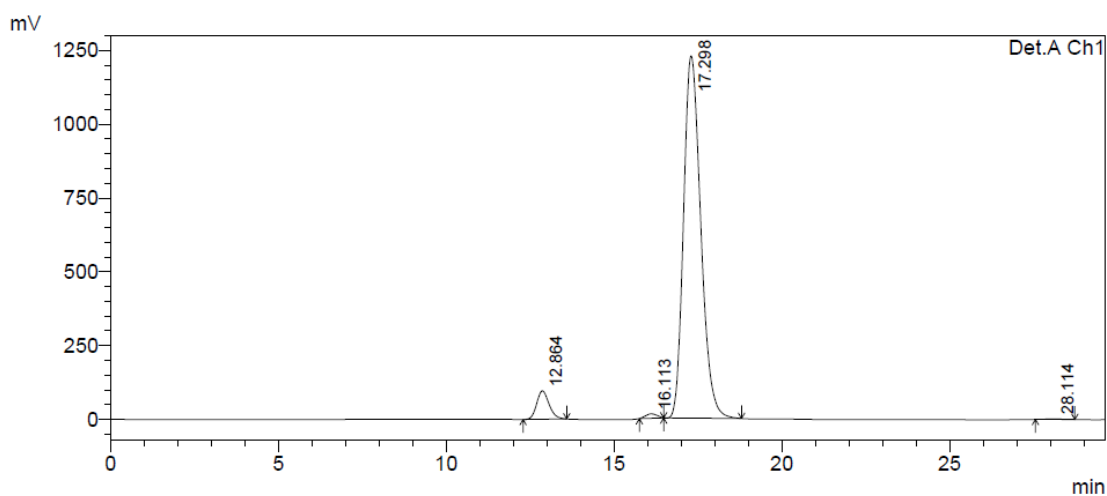


1 Det.A Ch1/254nr

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.609	24729993	990327	47.811	55.370
2	15.667	1296710	49672	2.507	2.777
3	16.803	24407599	723699	47.187	40.463
4	27.148	1290556	24852	2.495	1.390
Total		51724858	1788550	100.000	100.000

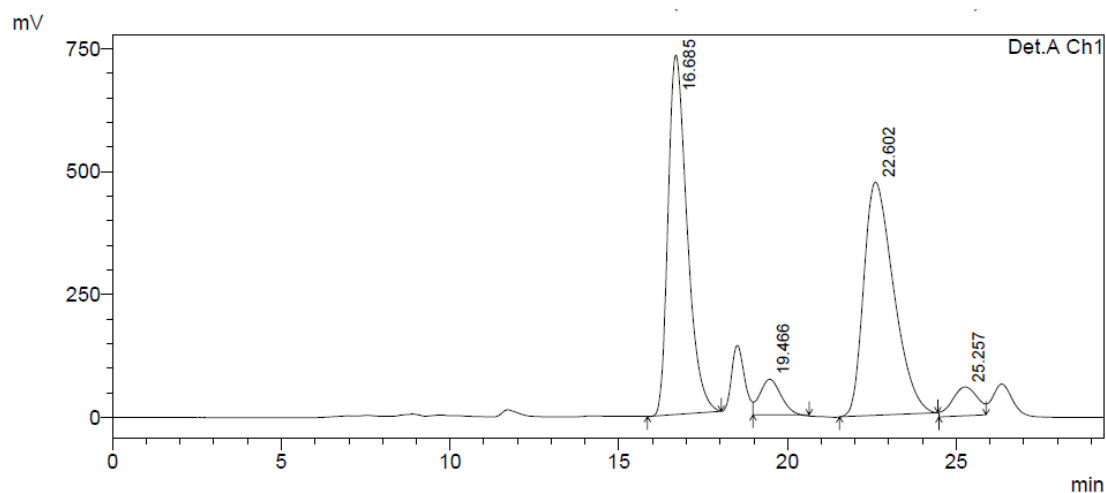
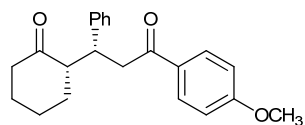


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.864	2469275	96513	5.293	7.200
2	16.113	353111	14823	0.757	1.106
3	17.298	43775353	1227792	93.832	91.595
4	28.114	55001	1322	0.118	0.099
Total		46652740	1340450	100.000	100.000

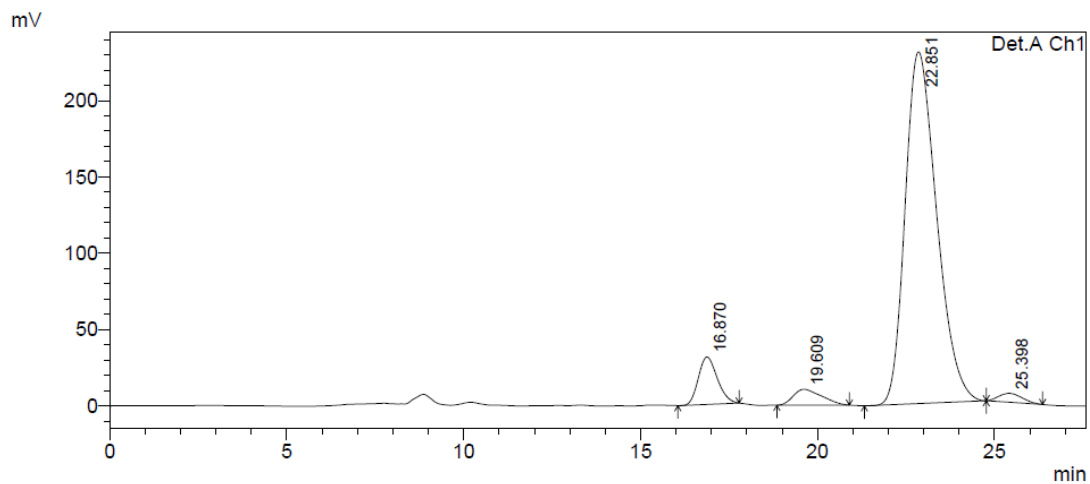


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.685	28703005	731685	44.705	54.715
2	19.466	3123963	72267	4.866	5.404
3	22.602	29311392	474616	45.653	35.492
4	25.257	3066880	58688	4.777	4.389
Total		64205240	1337256	100.000	100.000

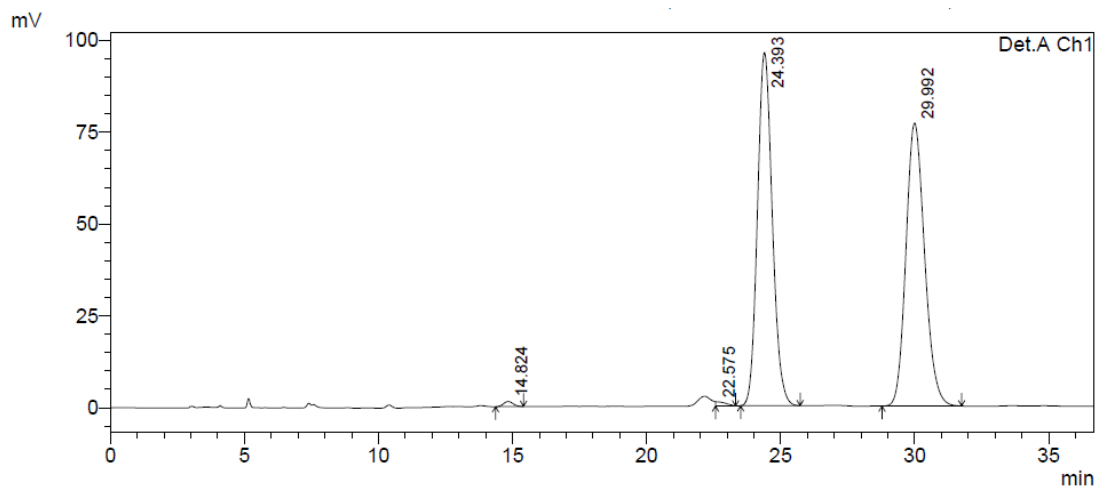
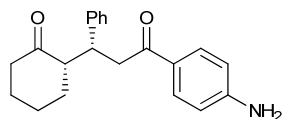


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

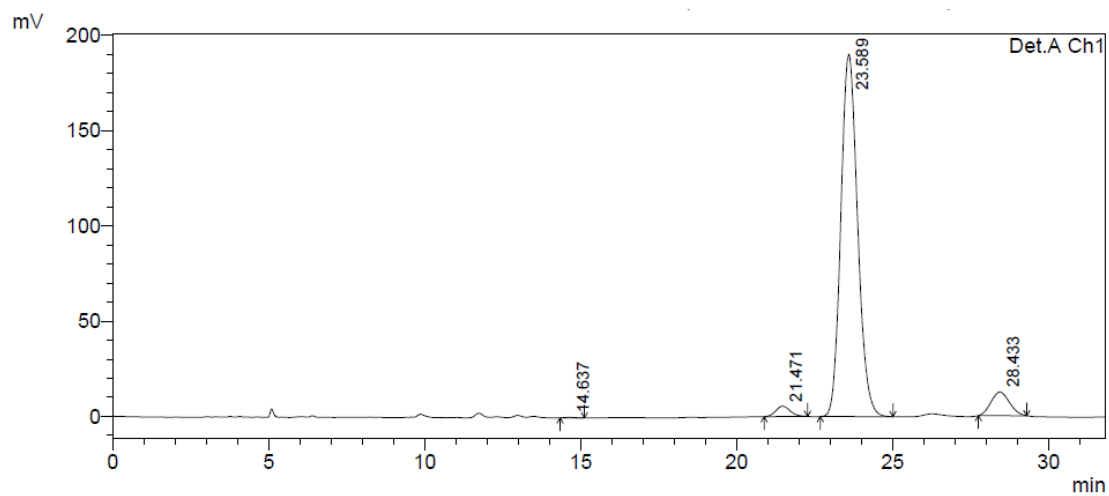
Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.870	1156429	31111	7.092	11.197
2	19.609	581390	10431	3.566	3.754
3	22.851	14298417	230511	87.693	82.962
4	25.398	268906	5798	1.649	2.087
Total		16305143	277850	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

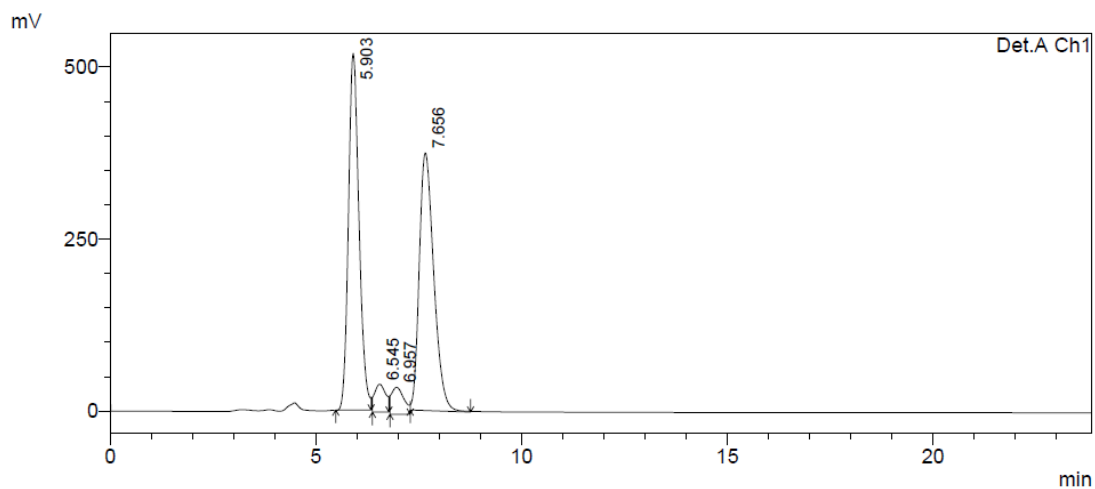
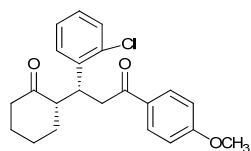
Peak#	Ret. Time	Area	Height	Area %	Height %
1	14.824	34408	1401	0.459	0.797
2	22.575	29830	1160	0.398	0.660
3	24.393	3698138	96152	49.334	54.708
4	29.992	3733770	77040	49.809	43.834
Total		7496147	175753	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

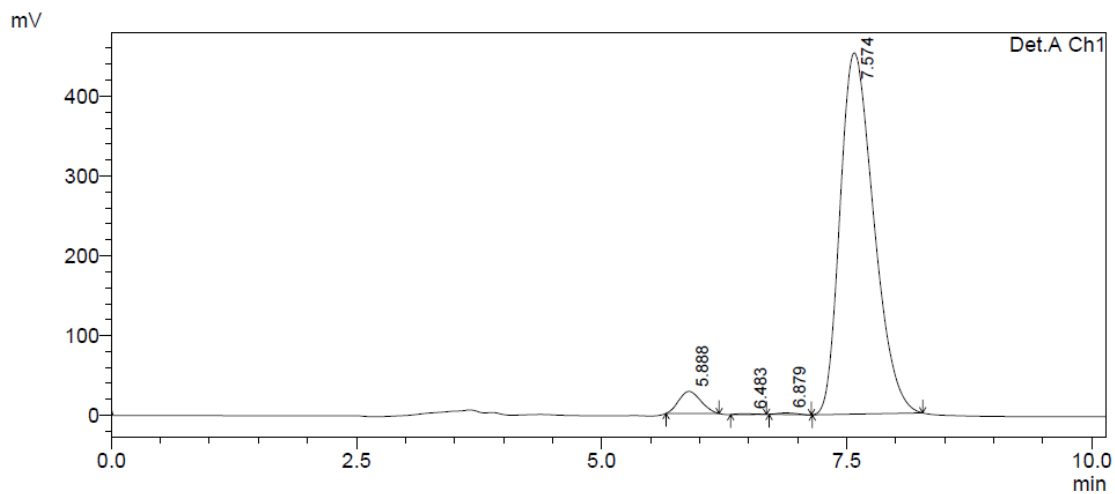
Peak#	Ret. Time	Area	Height	Area %	Height %
1	14.637	5906	297	0.076	0.142
2	21.471	175664	5500	2.253	2.637
3	23.589	7103406	190376	91.108	91.280
4	28.433	511752	12390	6.564	5.941
Total		7796729	208563	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

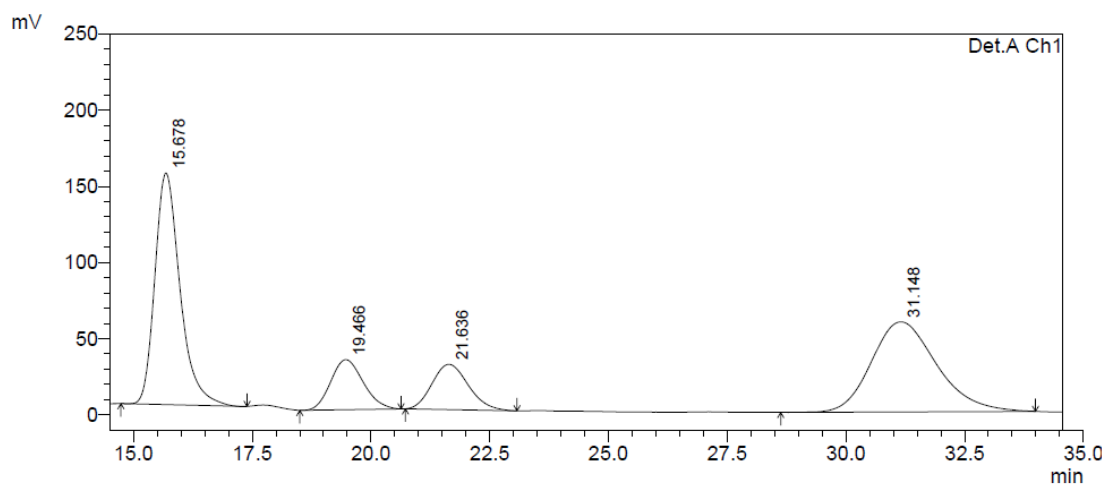
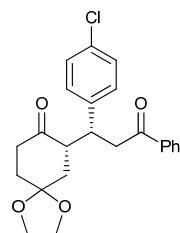
Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.903	9251152	518273	46.210	53.296
2	6.545	759226	40587	3.792	4.174
3	6.957	818633	39140	4.089	4.025
4	7.656	9190604	374435	45.908	38.505
Total		20019614	972435	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.888	435503	27728	3.853	5.735
2	6.483	11155	1026	0.099	0.212
3	6.879	27428	2054	0.243	0.425
4	7.574	10828692	452696	95.806	93.628
Total		11302777	483503	100.000	100.000

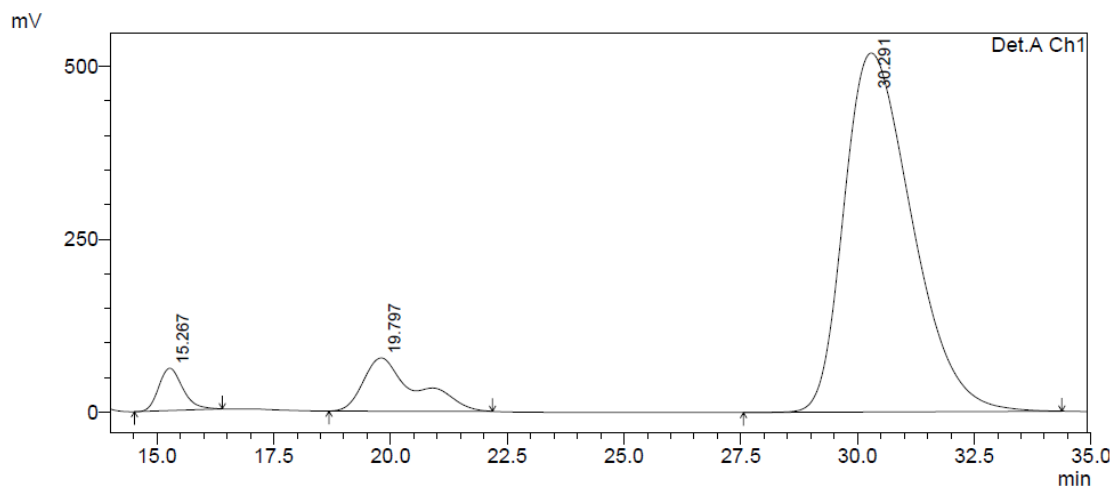


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.678	5606608	151969	38.921	55.529
2	19.466	1560666	32827	10.834	11.995
3	21.636	1581387	29705	10.978	10.854
4	31.148	5656252	59173	39.266	21.622
Total		14404913	273674	100.000	100.000

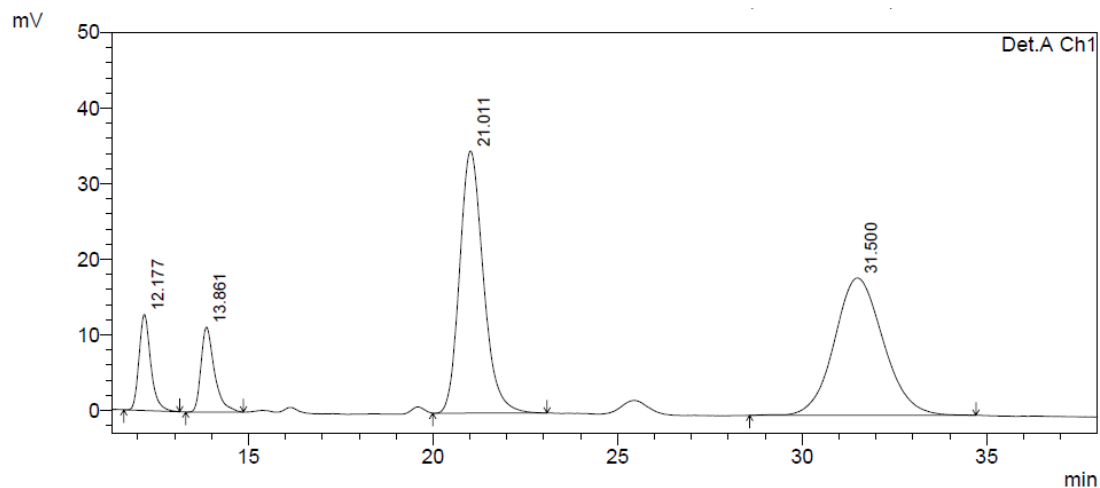
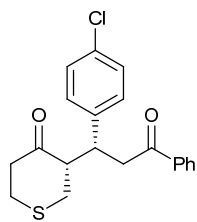


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

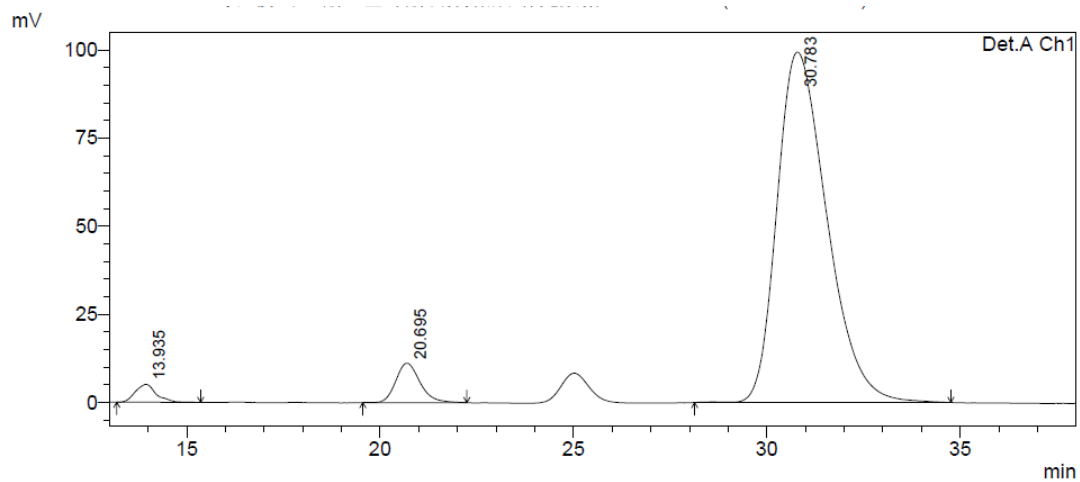
Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.267	2189829	61175	3.615	9.316
2	19.797	5985846	76822	9.881	11.699
3	30.291	52403956	518663	86.504	78.985
Total		60579632	656659	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

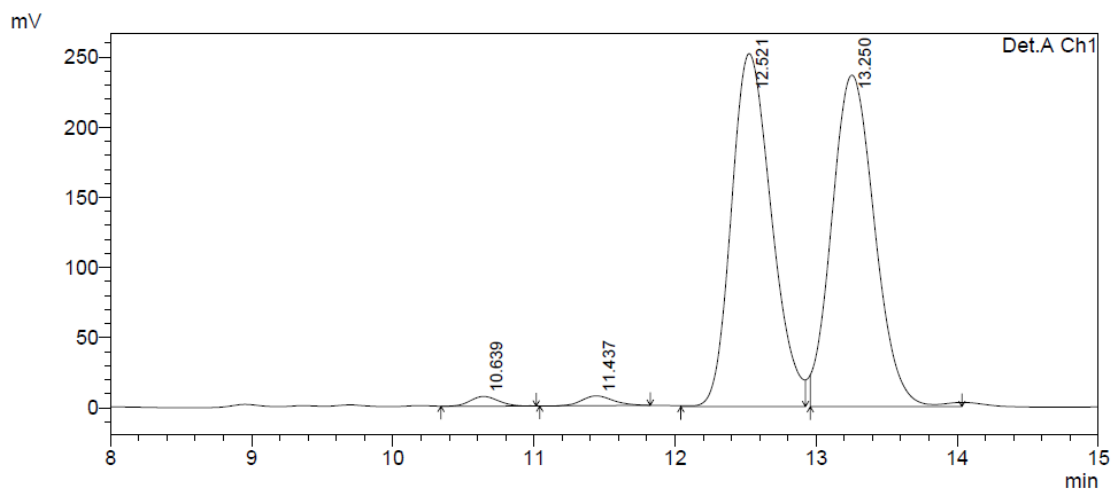
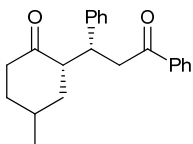
Detector A Ch1 254nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.177	280695	12716	7.398	16.552
2	13.861	283830	11238	7.480	14.627
3	21.011	1551758	34689	40.896	45.153
4	31.500	1678115	18183	44.226	23.668
Total		3794398	76826	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.935	191532	5079	1.998	4.394
2	20.695	485231	11156	5.062	9.651
3	30.783	8908375	99361	92.939	85.955
Total		9585138	115597	100.000	100.000

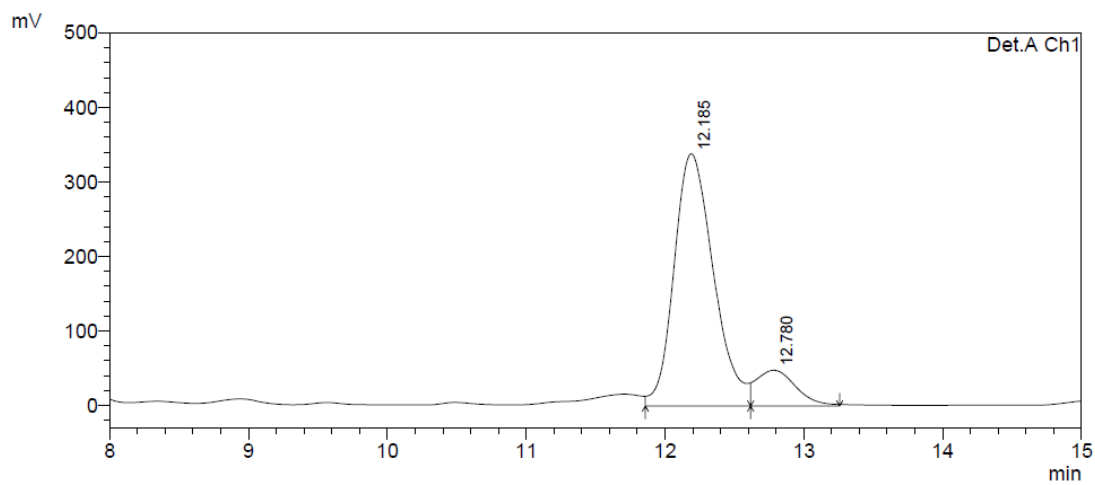


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	10.639	94344	6872	0.928	1.369
2	11.437	108053	6989	1.063	1.393
3	12.521	4966157	251726	48.863	50.160
4	13.250	4994980	236254	49.146	47.077
Total		10163534	501841	100.000	100.000



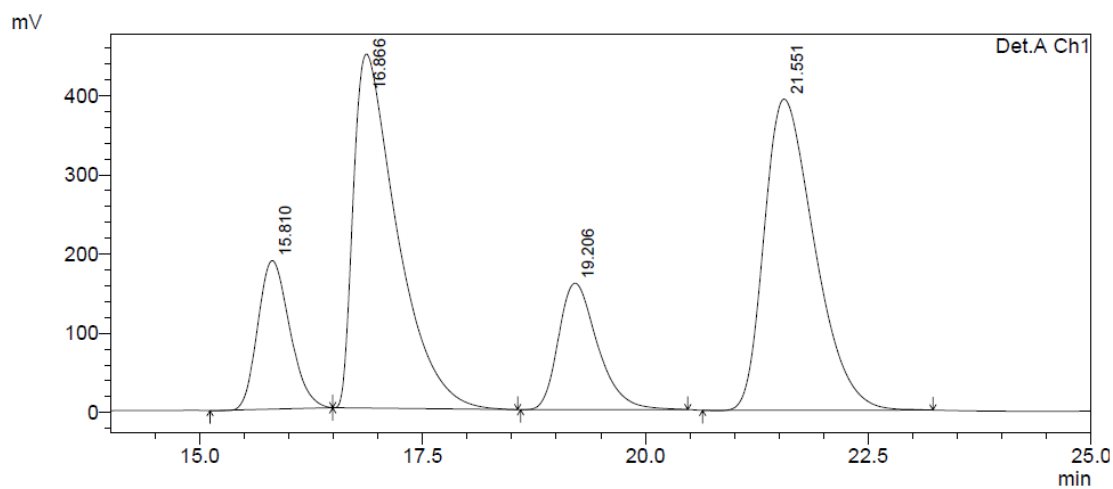
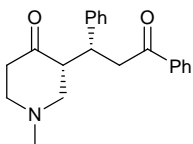
1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.185	6696469	338610	87.603	87.554
2	12.780	947670	48132	12.397	12.446
Total		7644139	386743	100.000	100.000



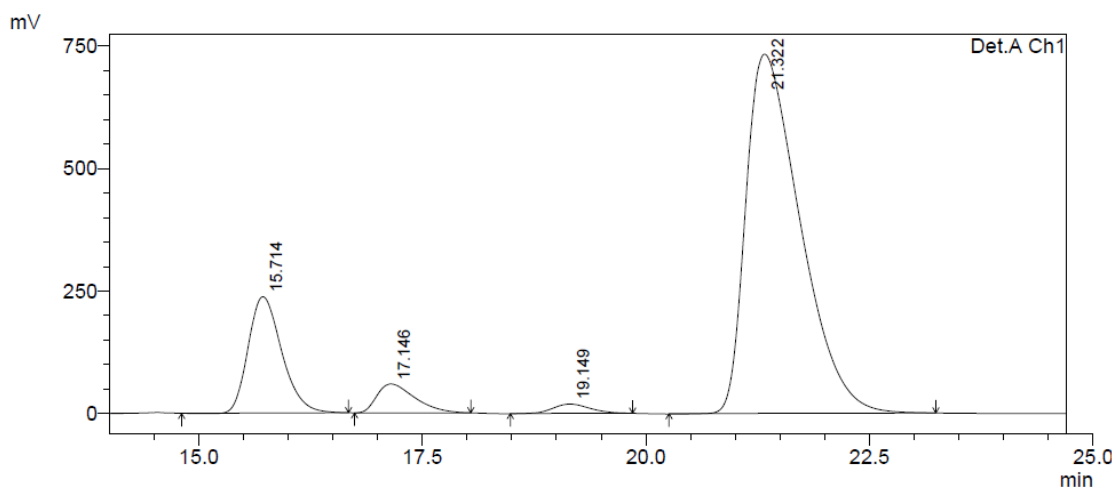


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.810	4661738	187422	11.604	15.794
2	16.866	15233152	446806	37.917	37.652
3	19.206	4880665	159721	12.148	13.459
4	21.551	15399693	392738	38.331	33.095
Total		40175248	1186687	100.000	100.000

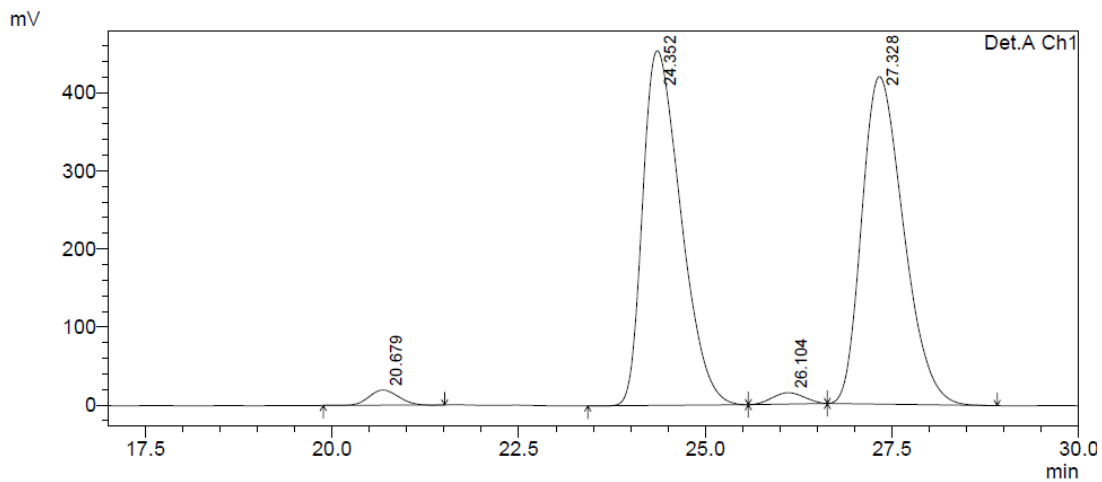
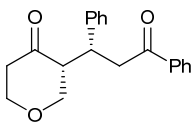


1 Det.A Ch1/254nm

PeakTable

Detector A Ch1 254nm

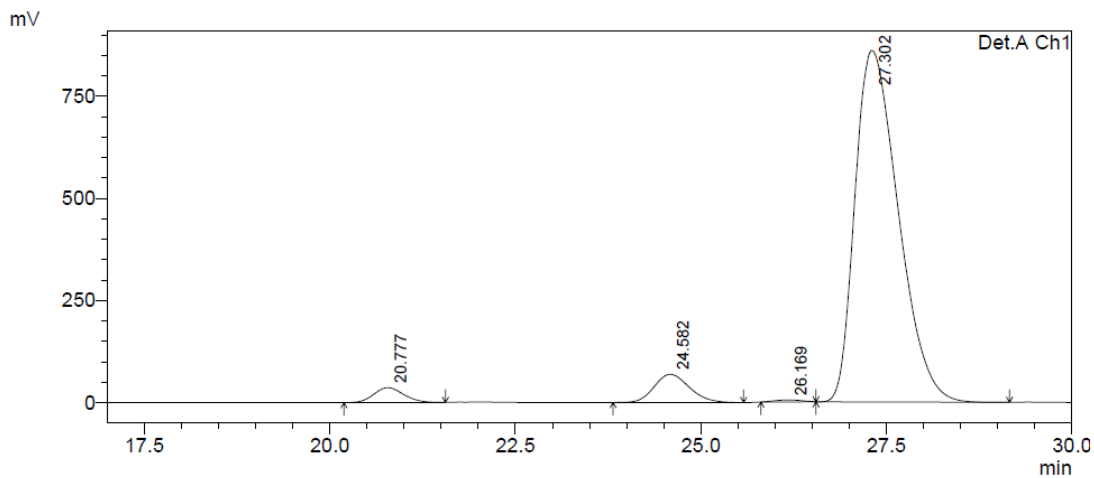
Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.714	6186604	237534	15.687	22.644
2	17.146	1742593	59043	4.419	5.628
3	19.149	545639	19033	1.384	1.814
4	21.322	30963429	733391	78.511	69.913
Total		39438264	1049001	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

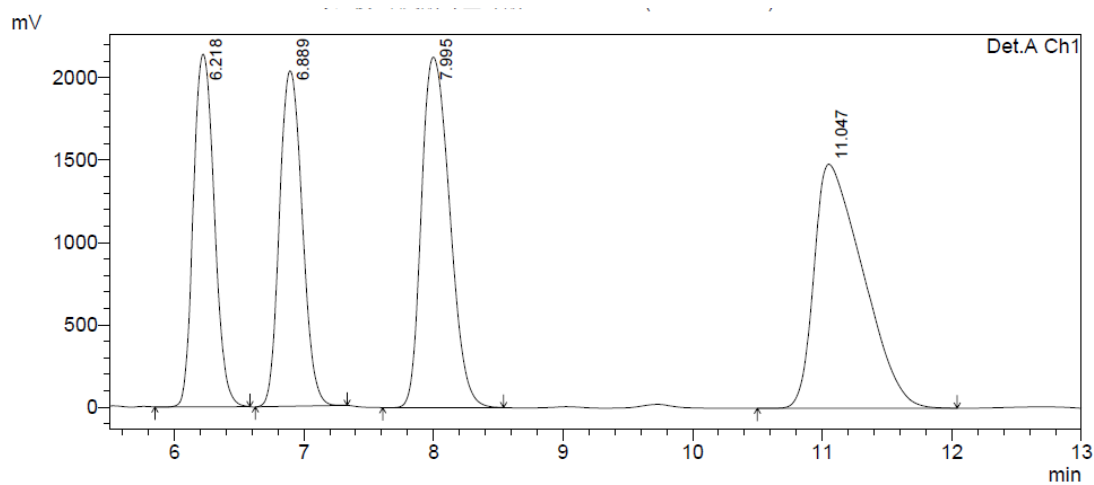
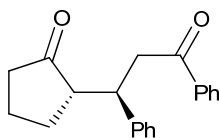
Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.679	522801	19430	1.567	2.142
2	24.352	16096466	454102	48.235	50.053
3	26.104	430322	14430	1.290	1.591
4	27.328	16321271	419287	48.909	46.215
Total		33370860	907249	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

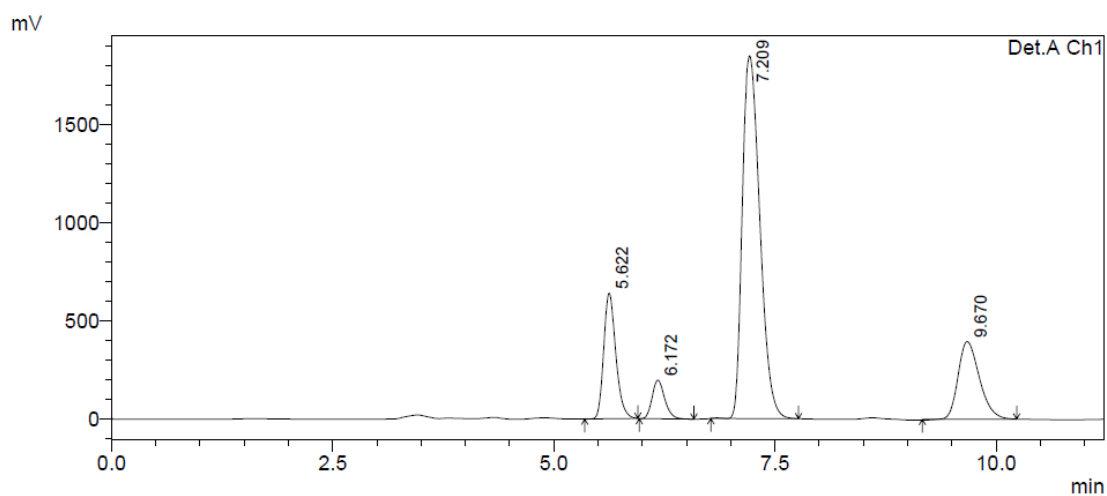
Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.777	1015148	36389	2.645	3.749
2	24.582	2275043	68989	5.928	7.108
3	26.169	119438	4754	0.311	0.490
4	27.302	34965189	860492	91.115	88.653
Total		38374818	970624	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

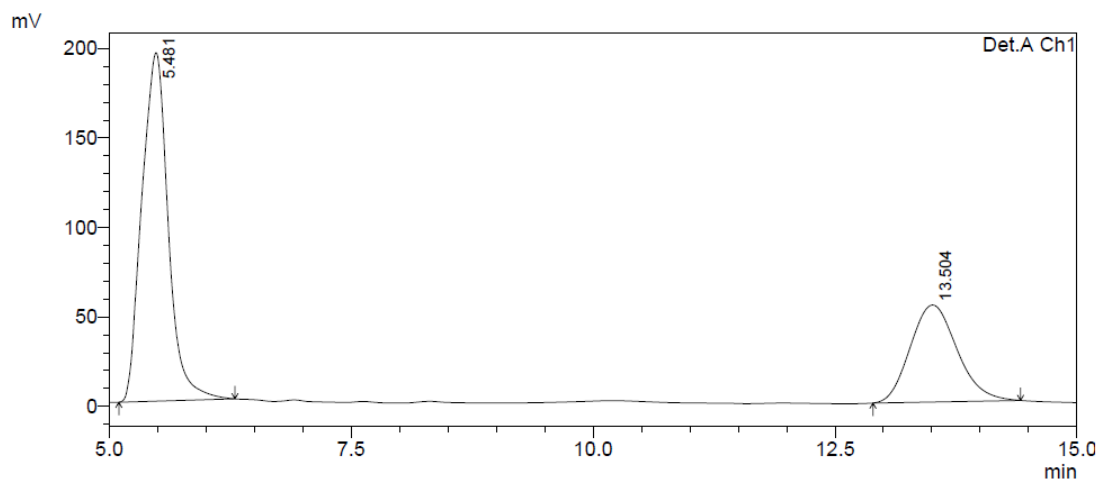
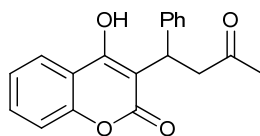
Detector A Ch1 254nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	6.218	24025324	2140008	20.027	27.493
2	6.889	24918579	2036028	20.771	26.157
3	7.995	32239757	2126834	26.874	27.323
4	11.047	38783438	1481040	32.328	19.027
Total		119967098	7783910	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

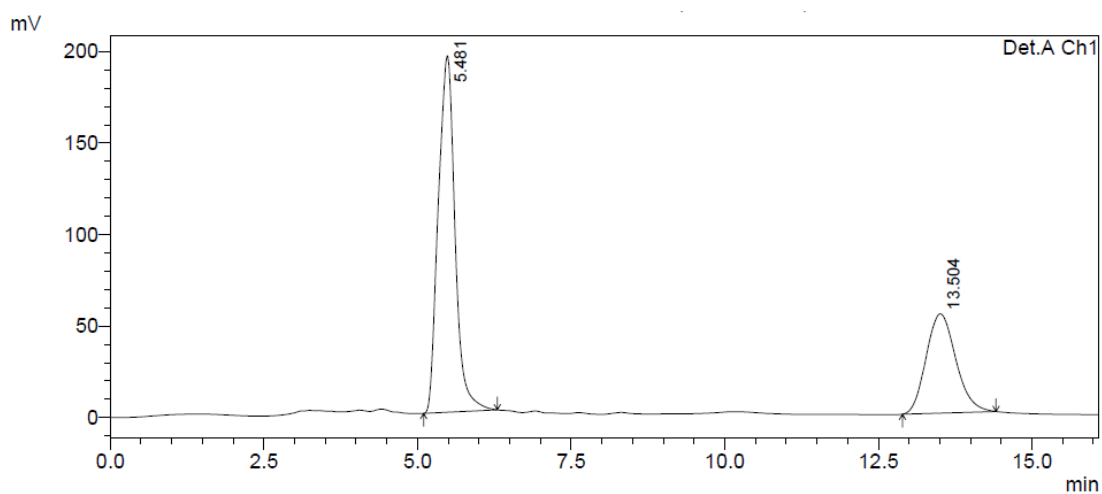
Detector A Ch1 254nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.622	6080782	640124	15.149	20.785
2	6.172	1939835	196631	4.833	6.385
3	7.209	25490749	1847672	63.507	59.993
4	9.670	6627278	395372	16.511	12.838
Total		40138643	3079799	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.481	3693734	194837	66.916	78.224
2	13.504	1826198	54237	33.084	21.776
Total		5519933	249075	100.000	100.000



1 Det.A Ch1/254nm

PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.481	3693734	194837	66.916	78.224
2	13.504	1826198	54237	33.084	21.776
Total		5519933	249075	100.000	100.000