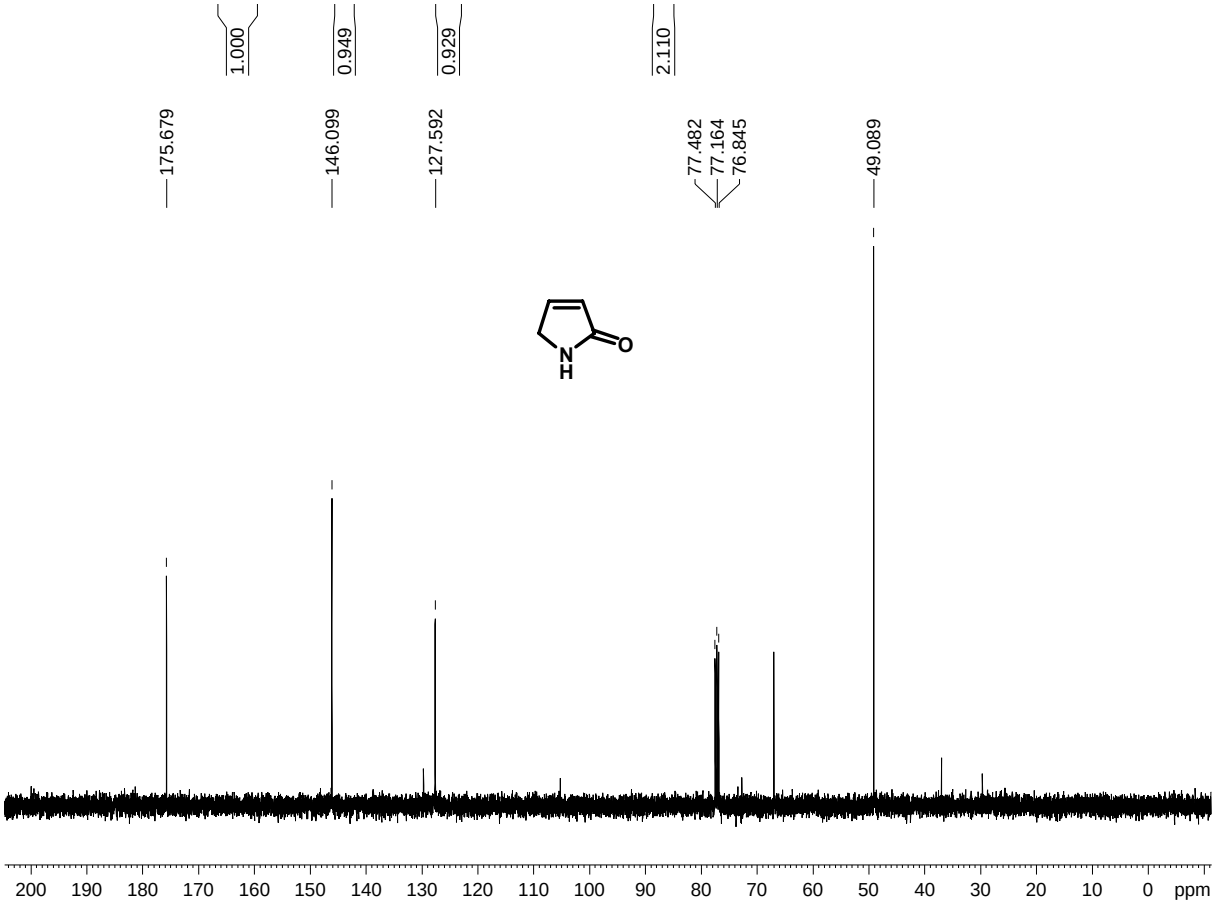
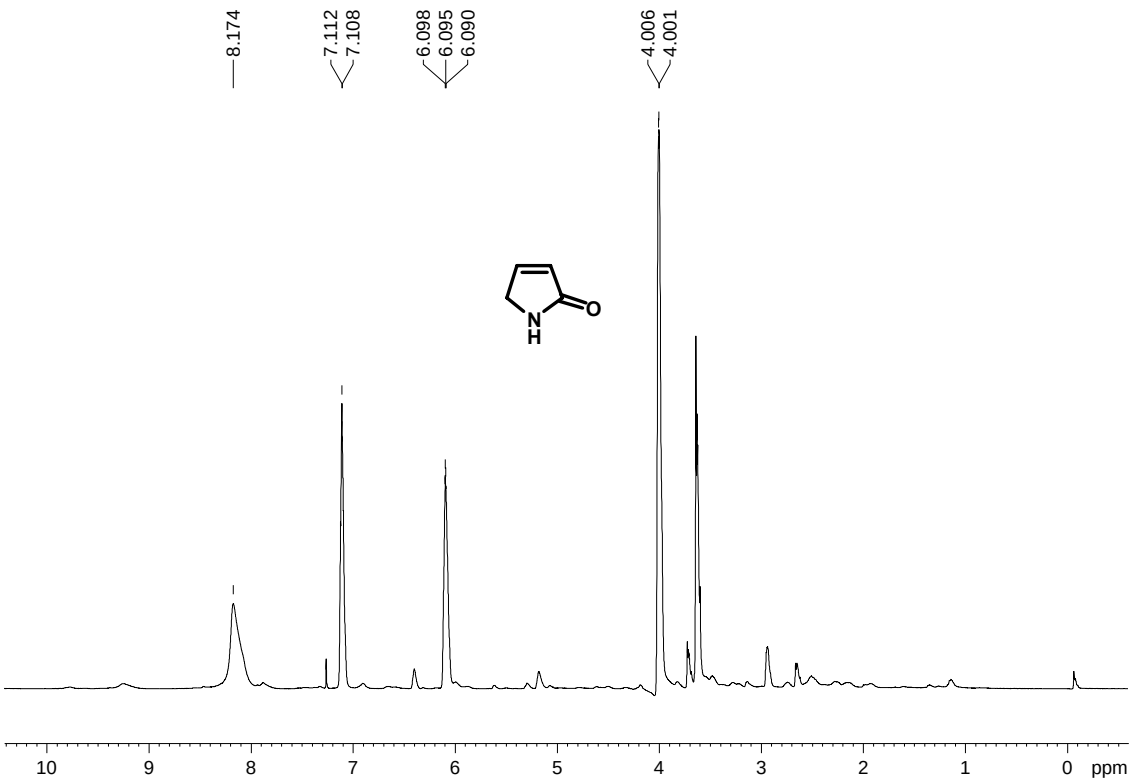


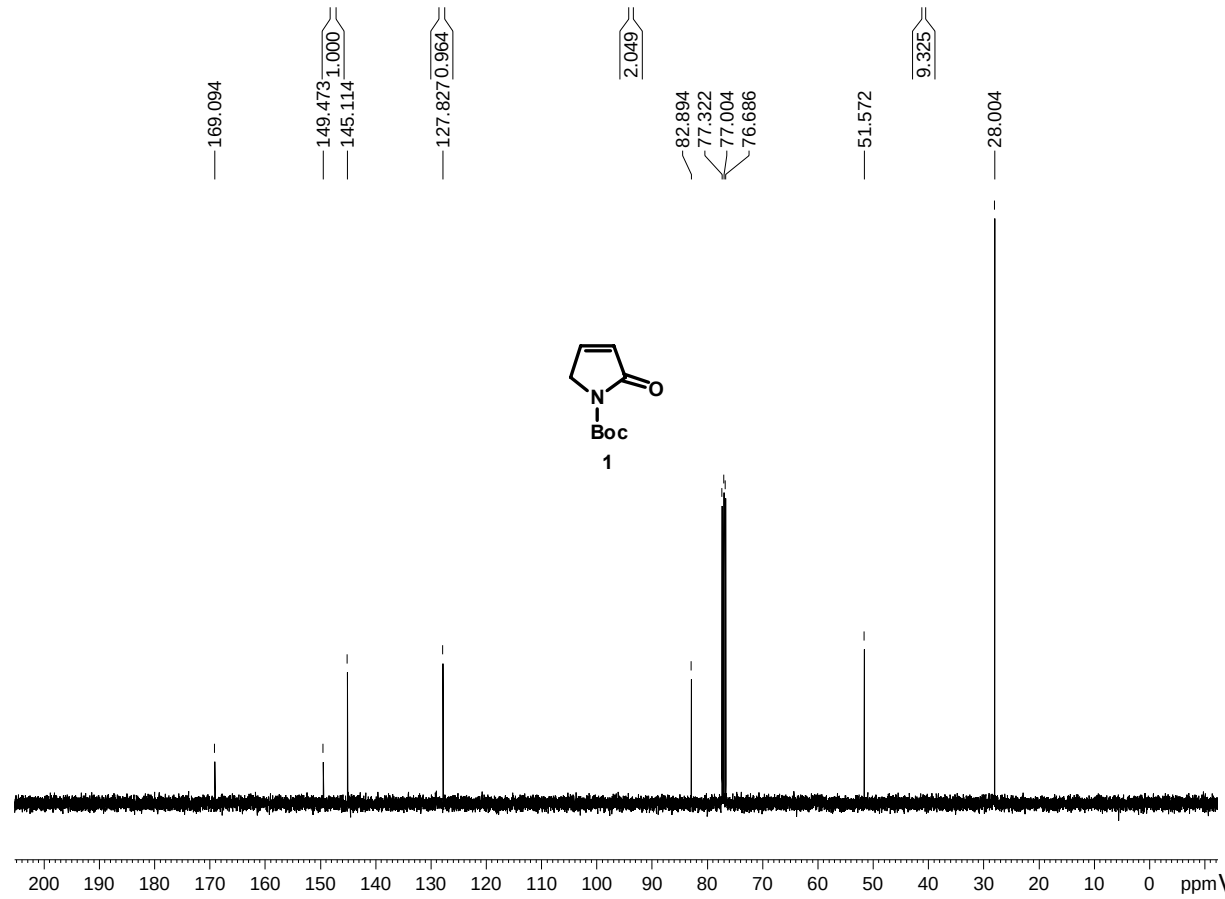
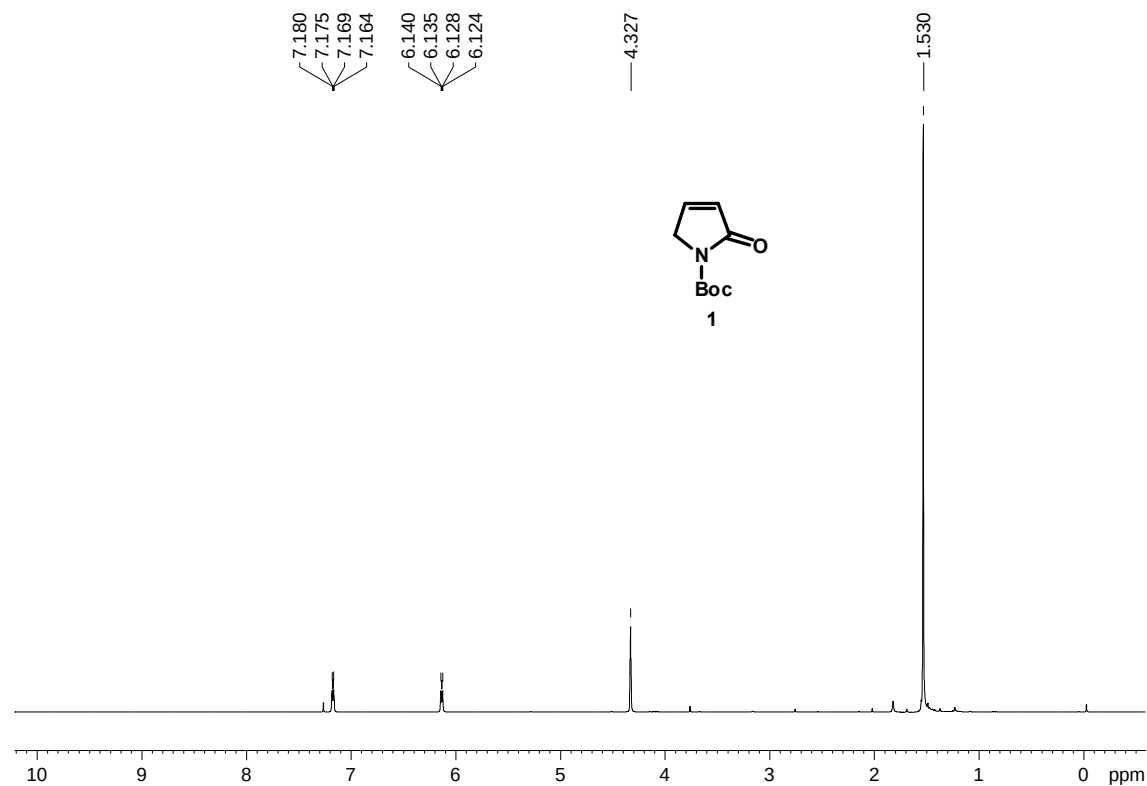
Organocatalytic asymmetric direct vinylogous Michael addition of α,β -unsaturated γ -butyrolactam to nitroolefins

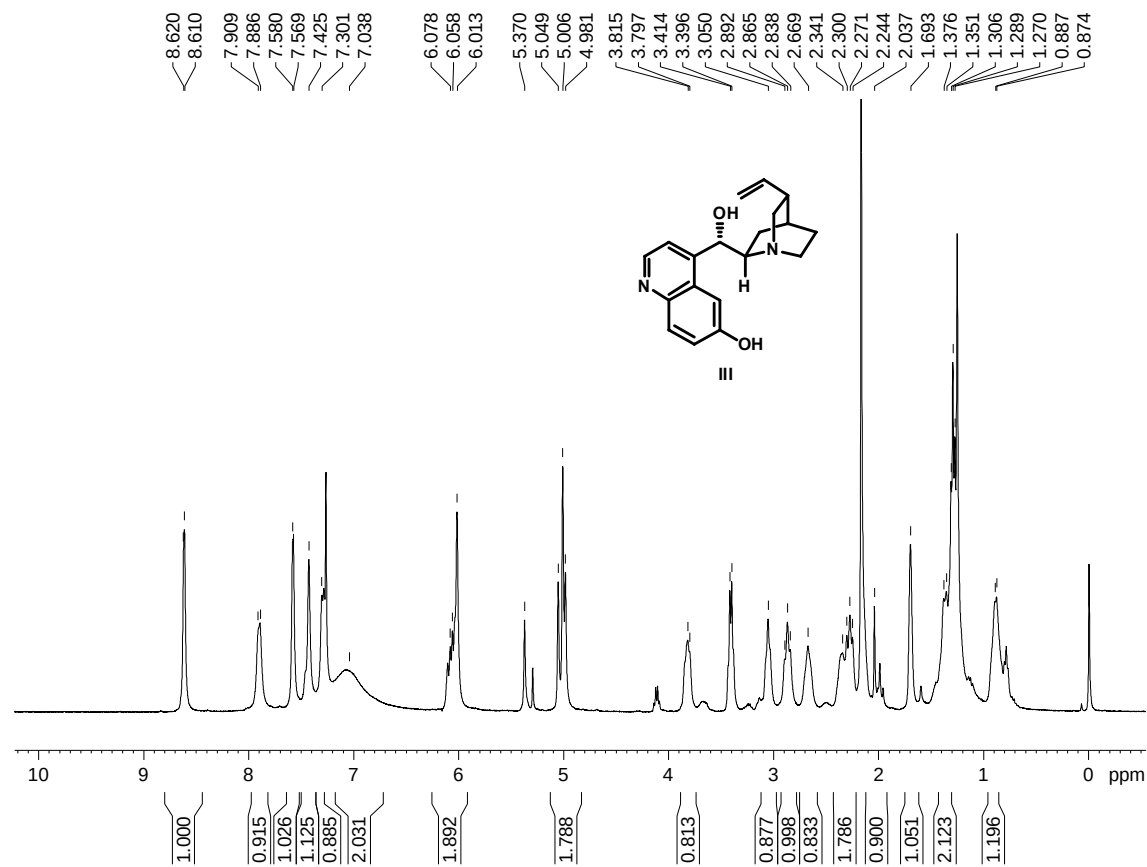
Abhijnan Ray Choudhury and Santanu Mukherjee*

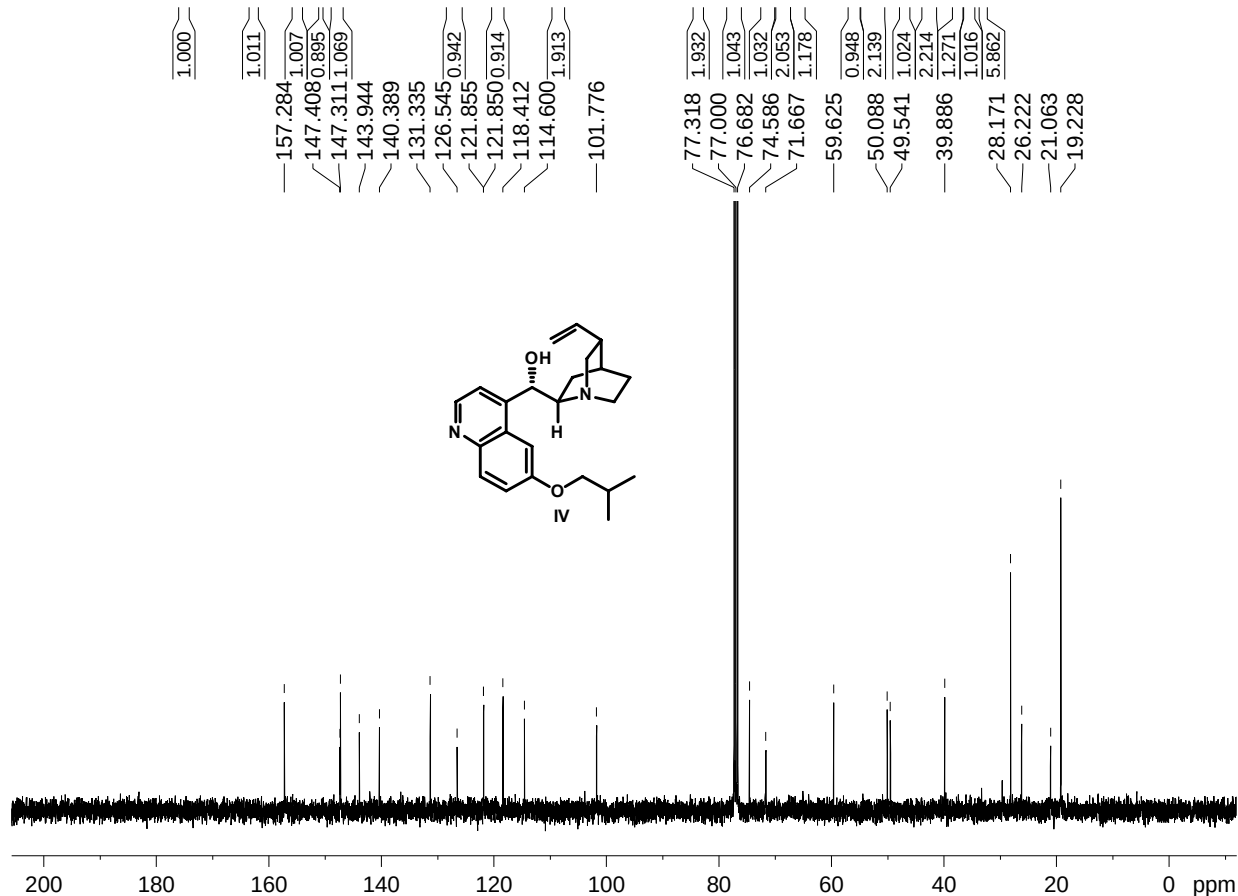
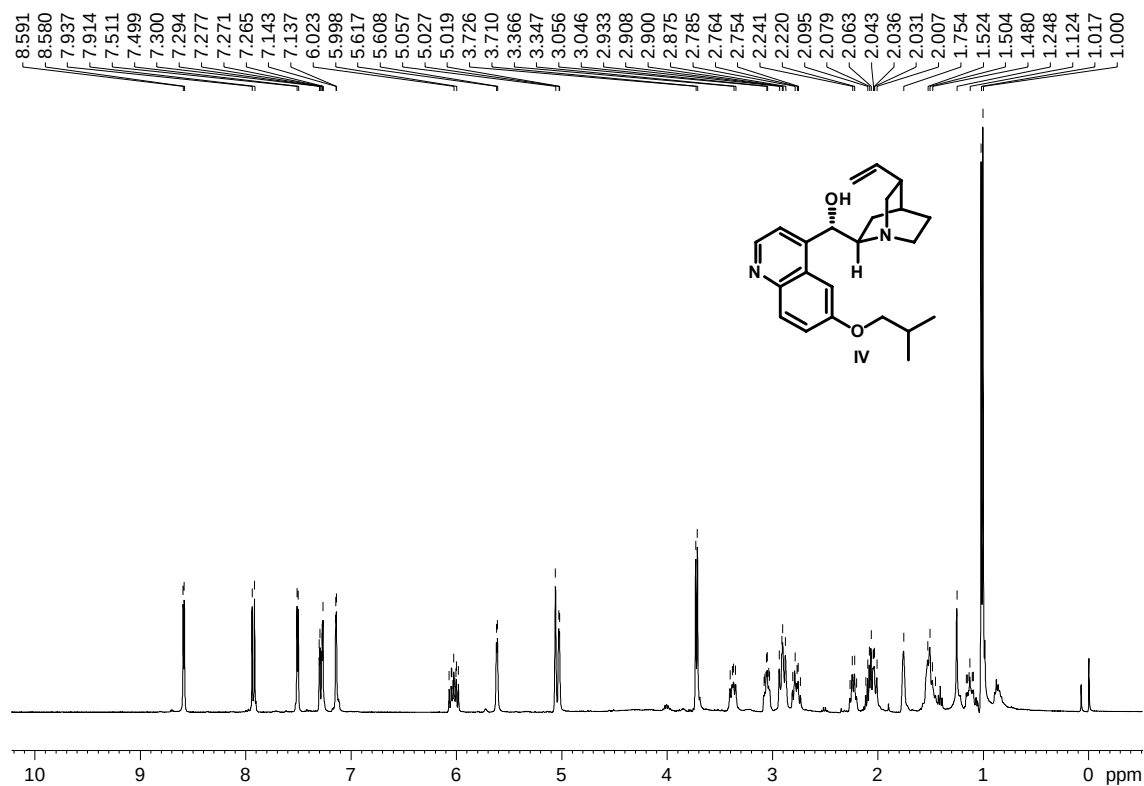
Department of Organic Chemistry, Indian Institute of Science, Bangalore 560 012, INDIA
sm@orgchem.iisc.ernet.in

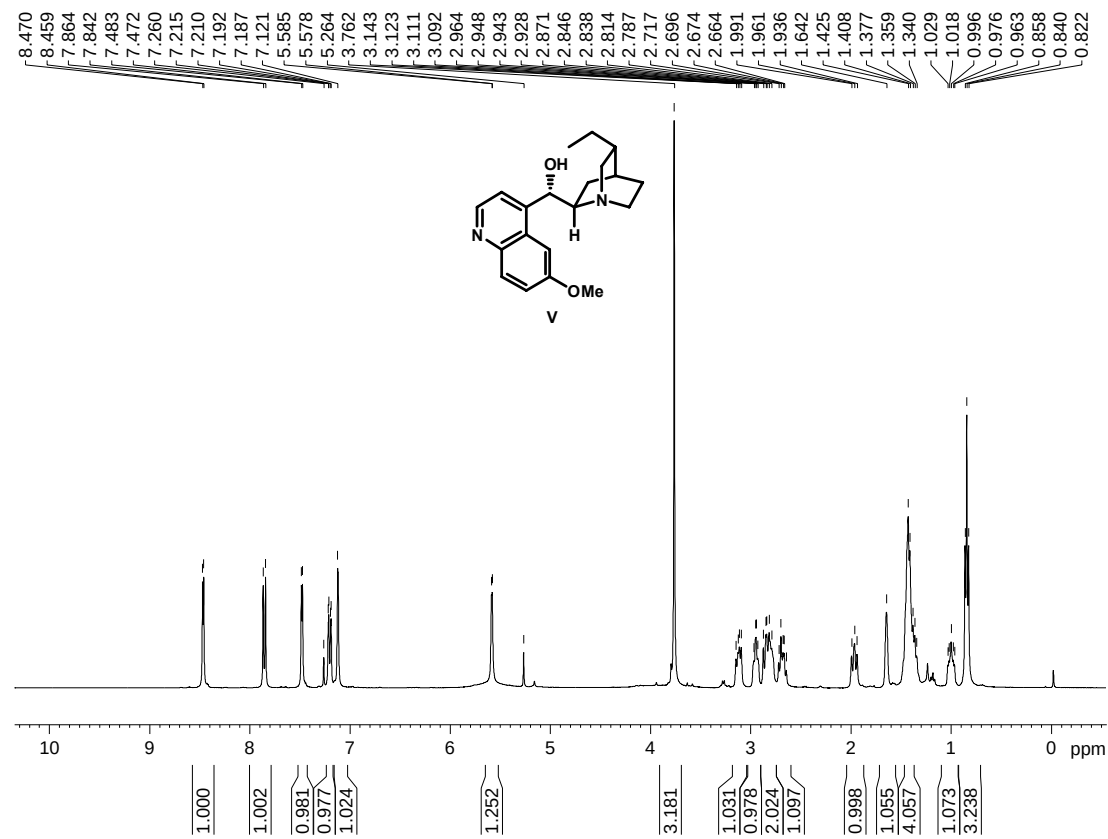
SUPPORTING INFORMATION: PART B

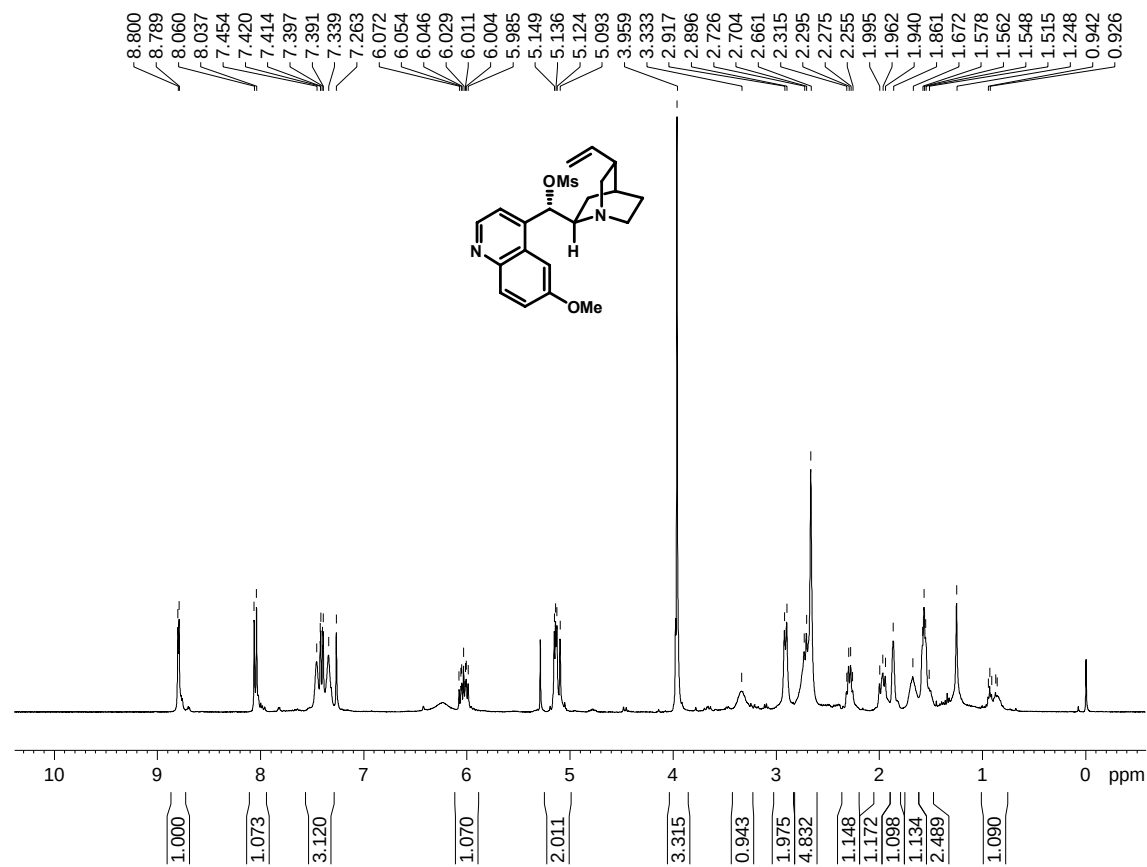


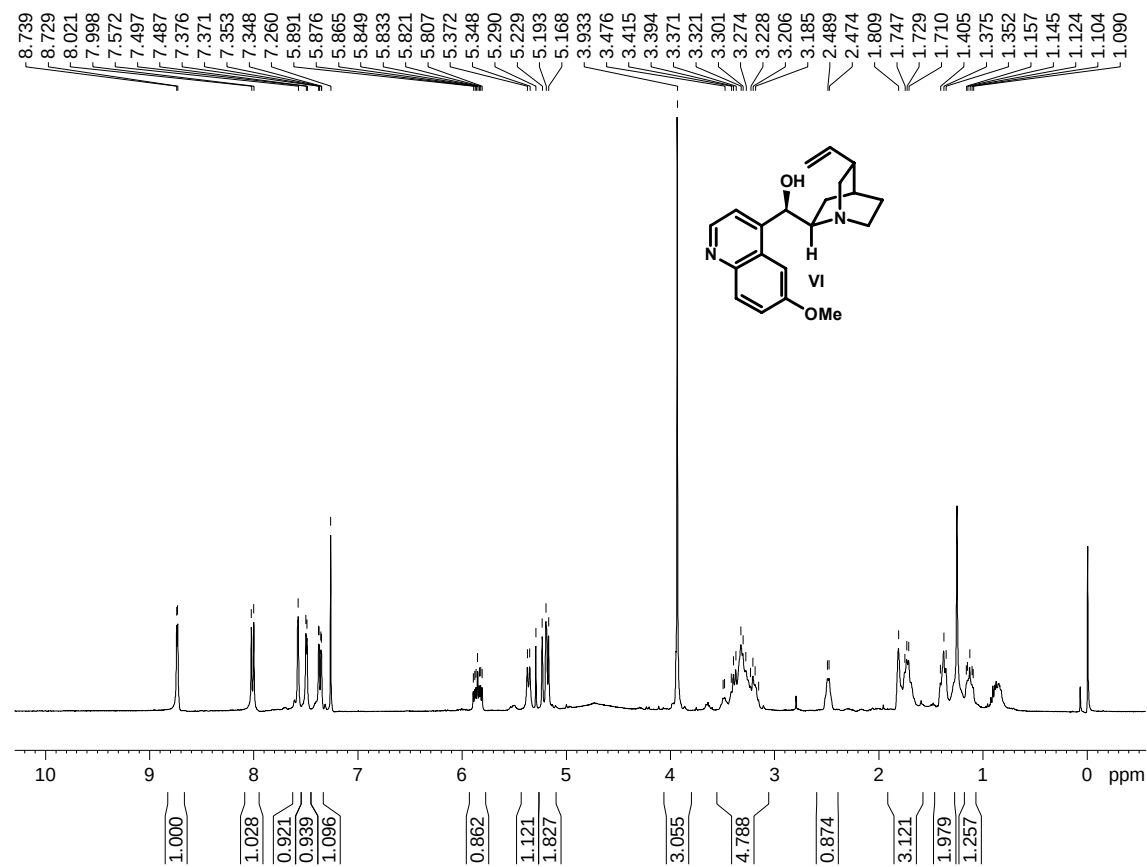


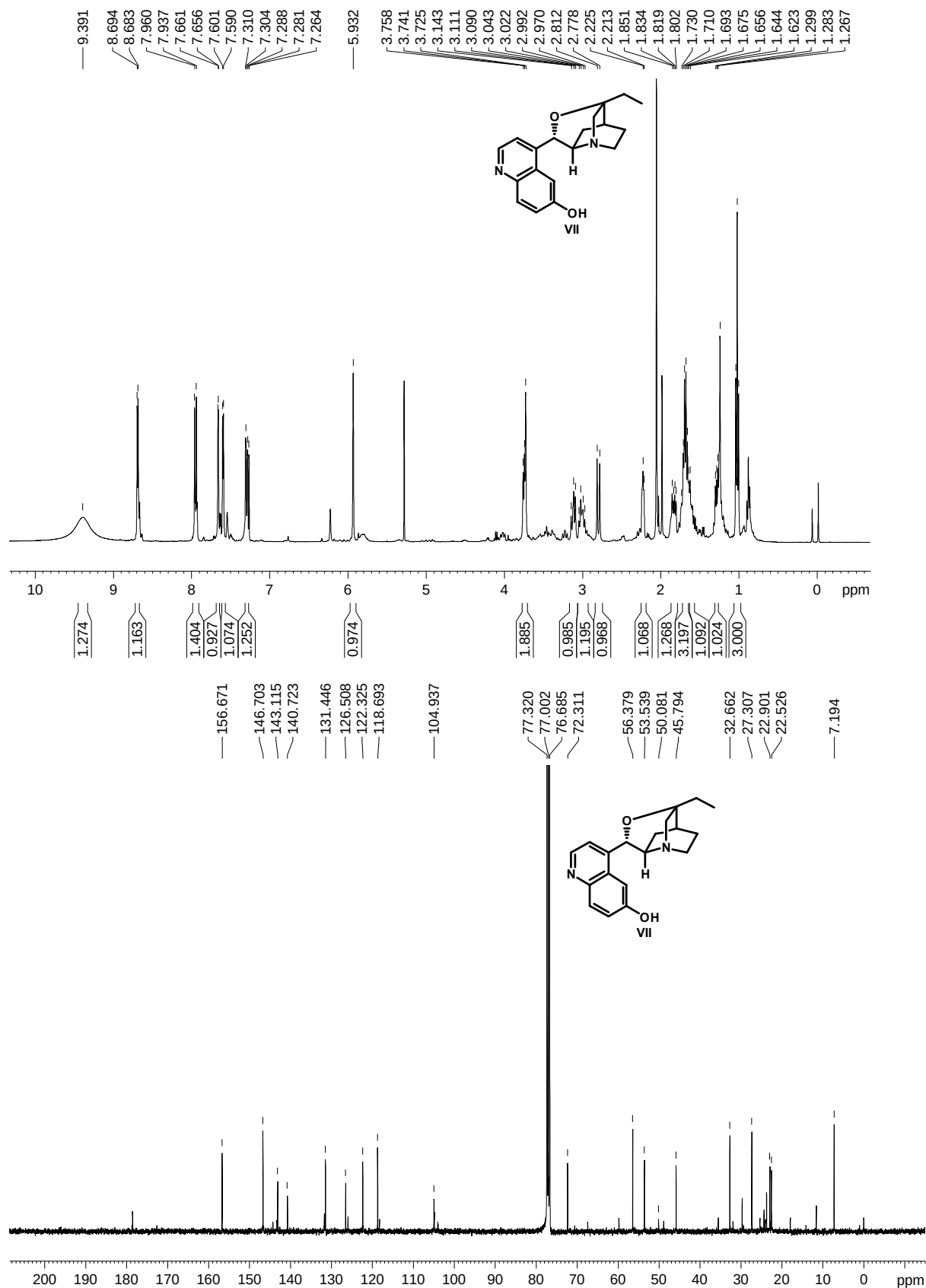


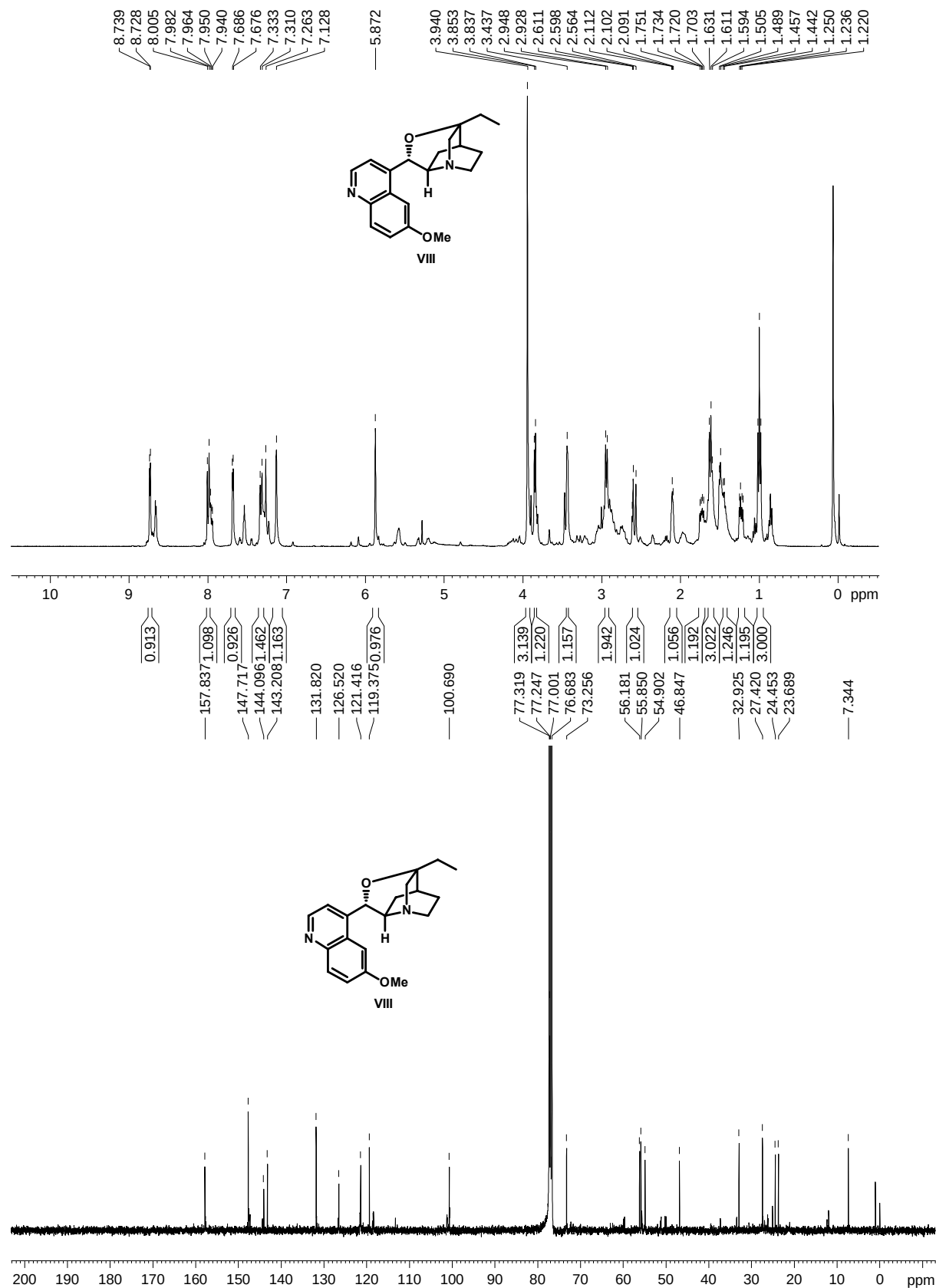


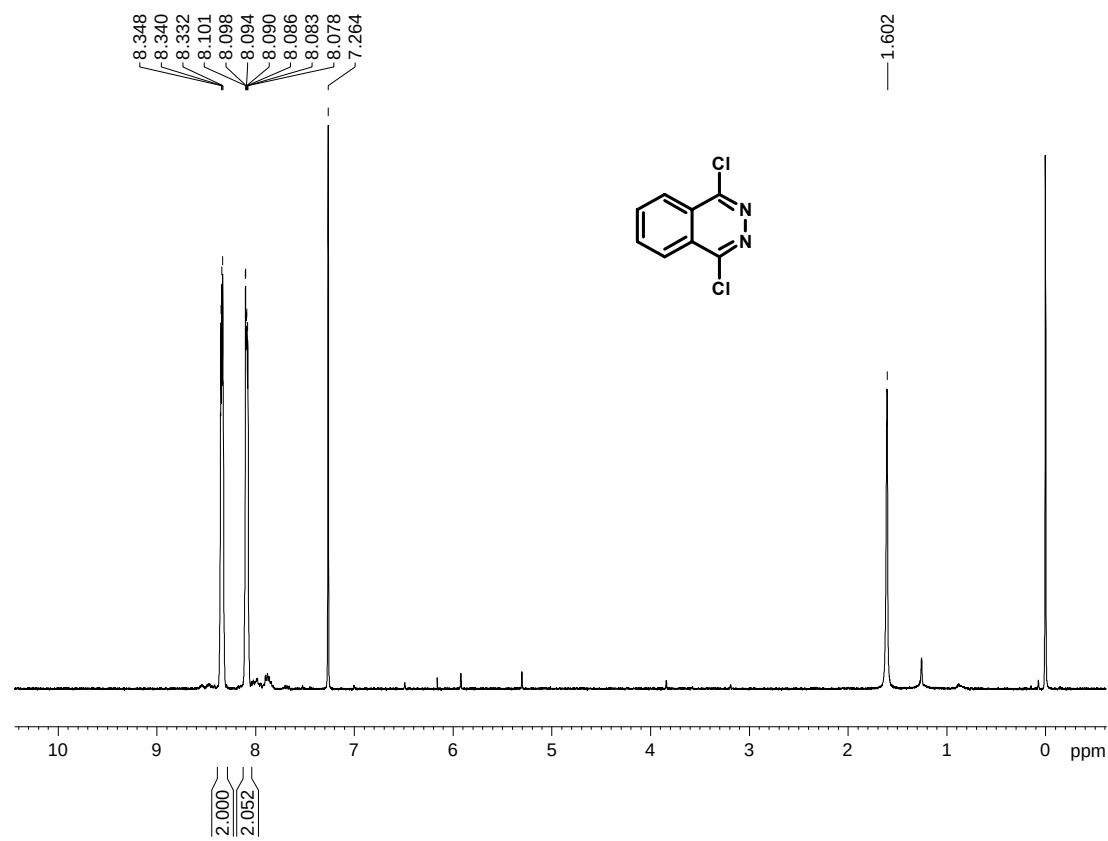


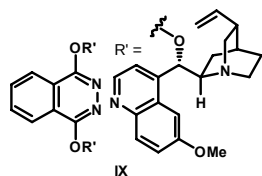
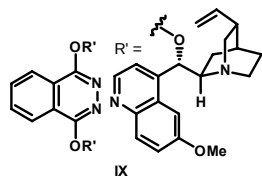


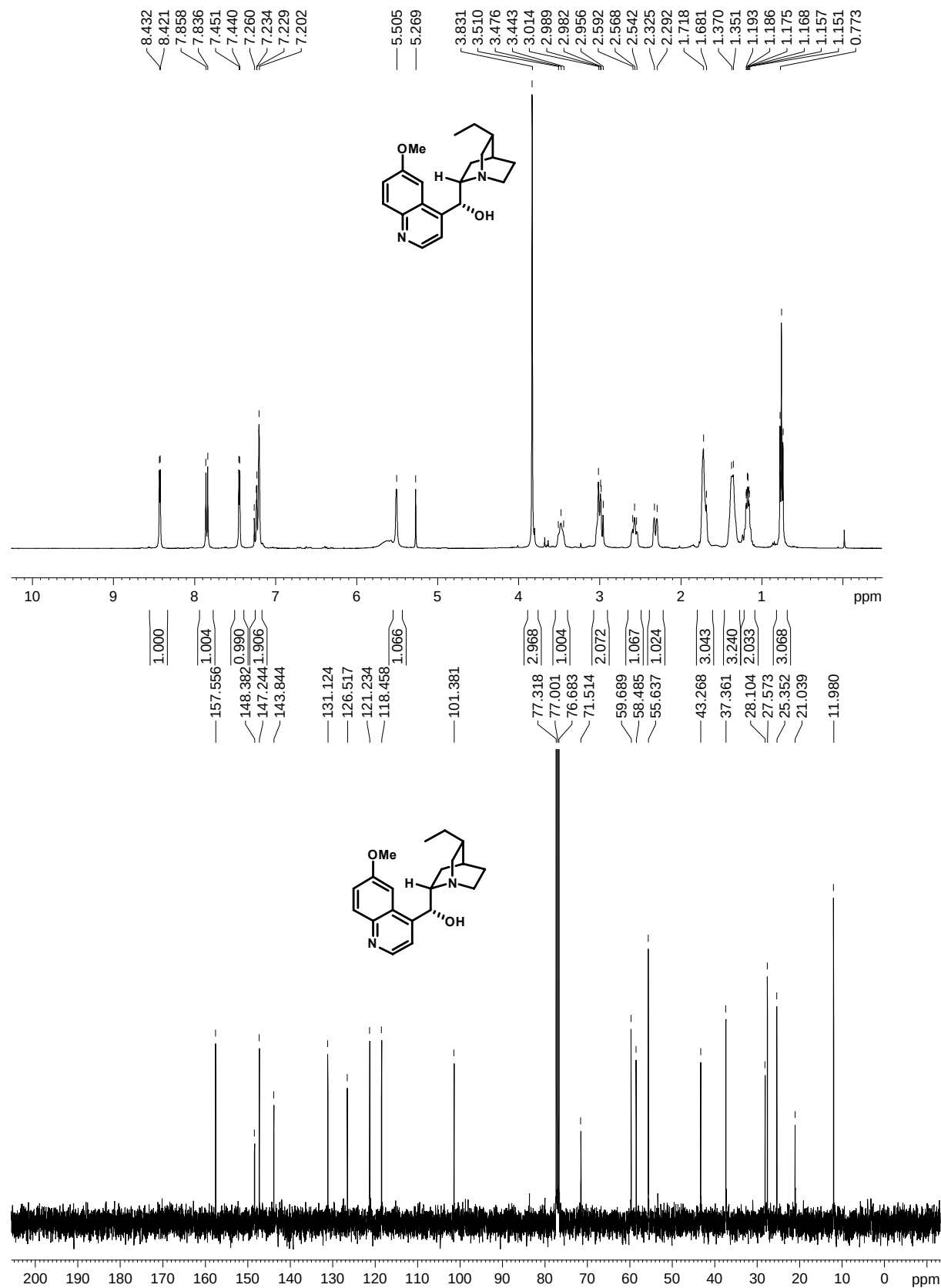


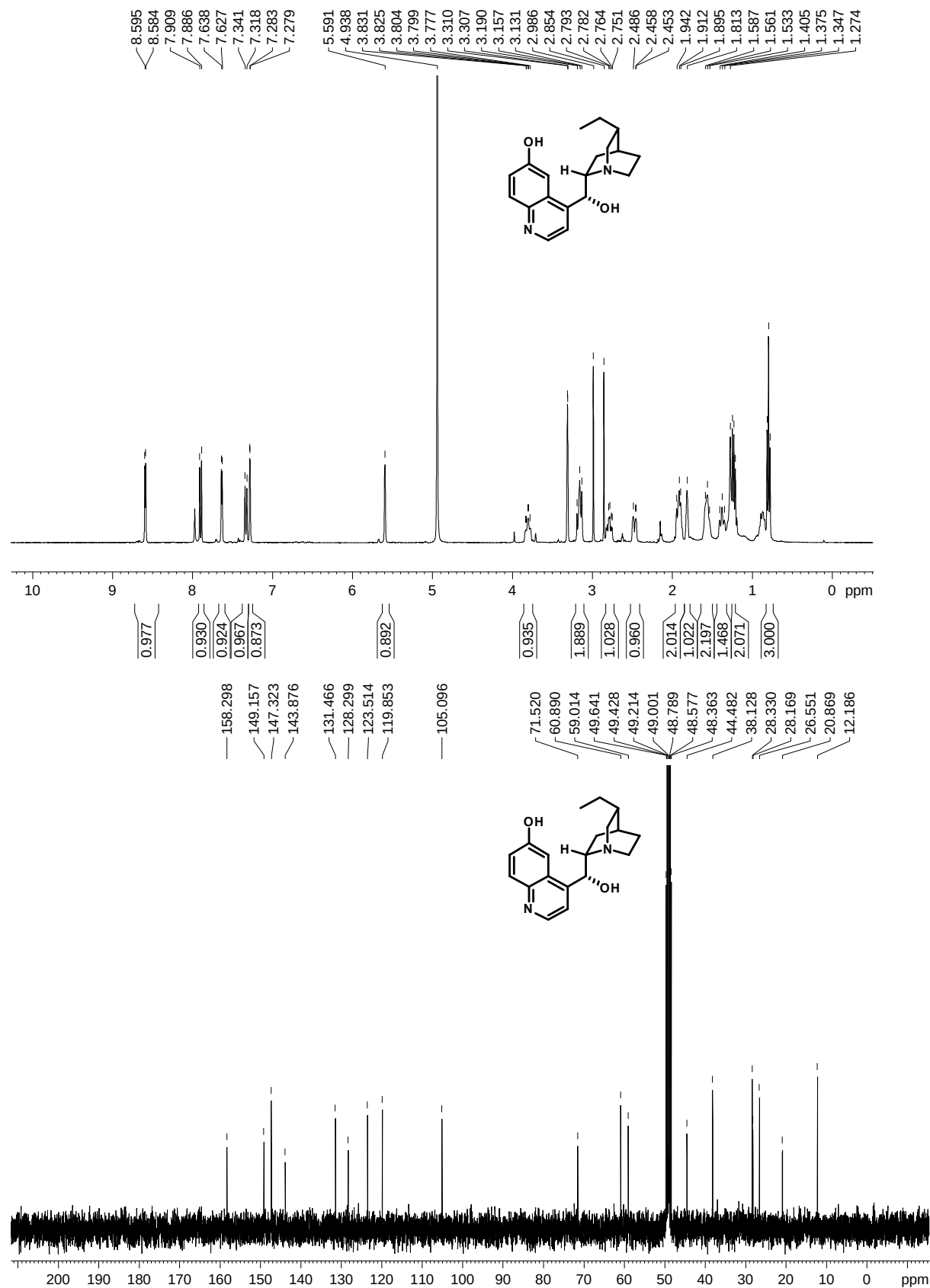


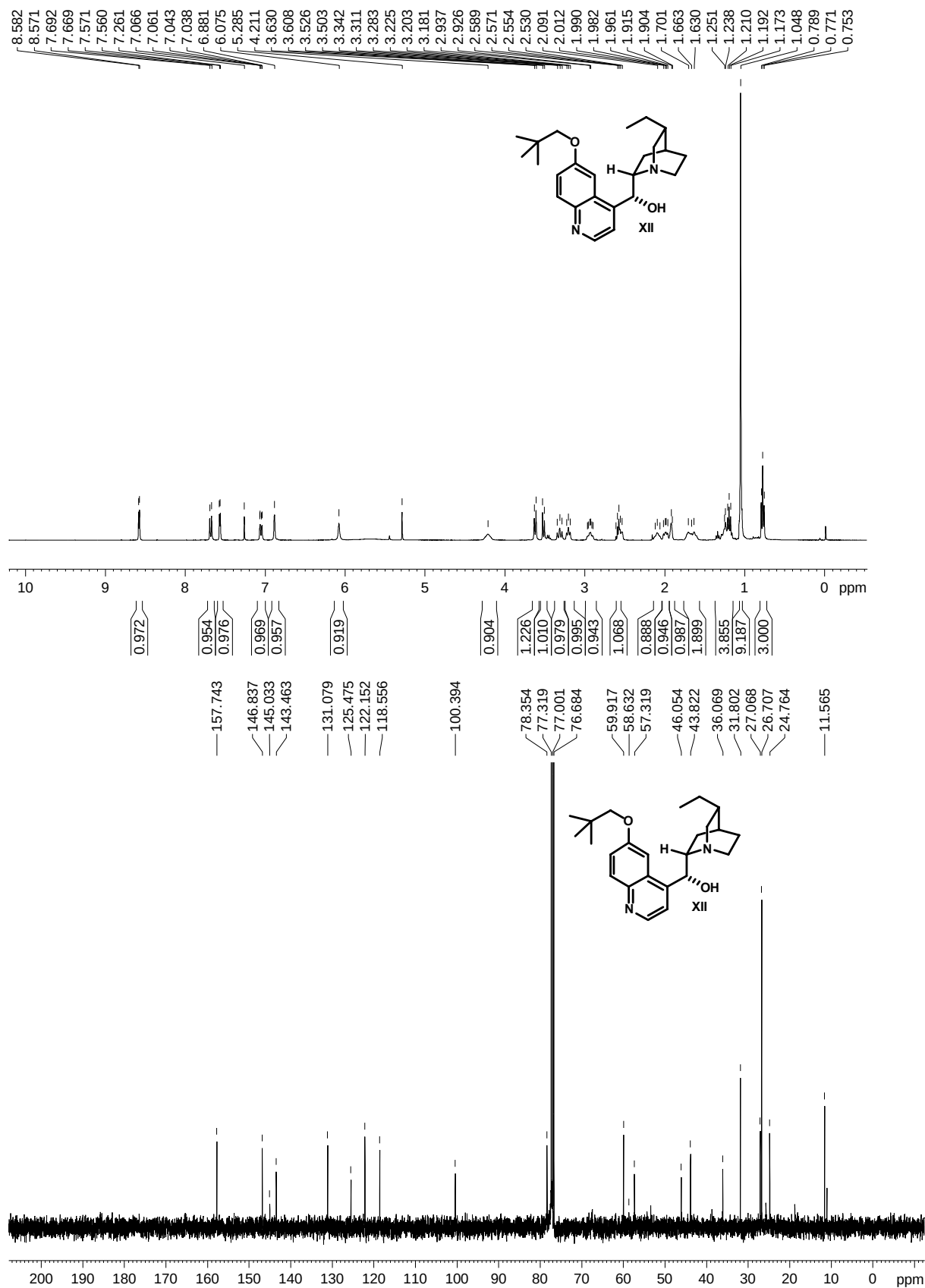


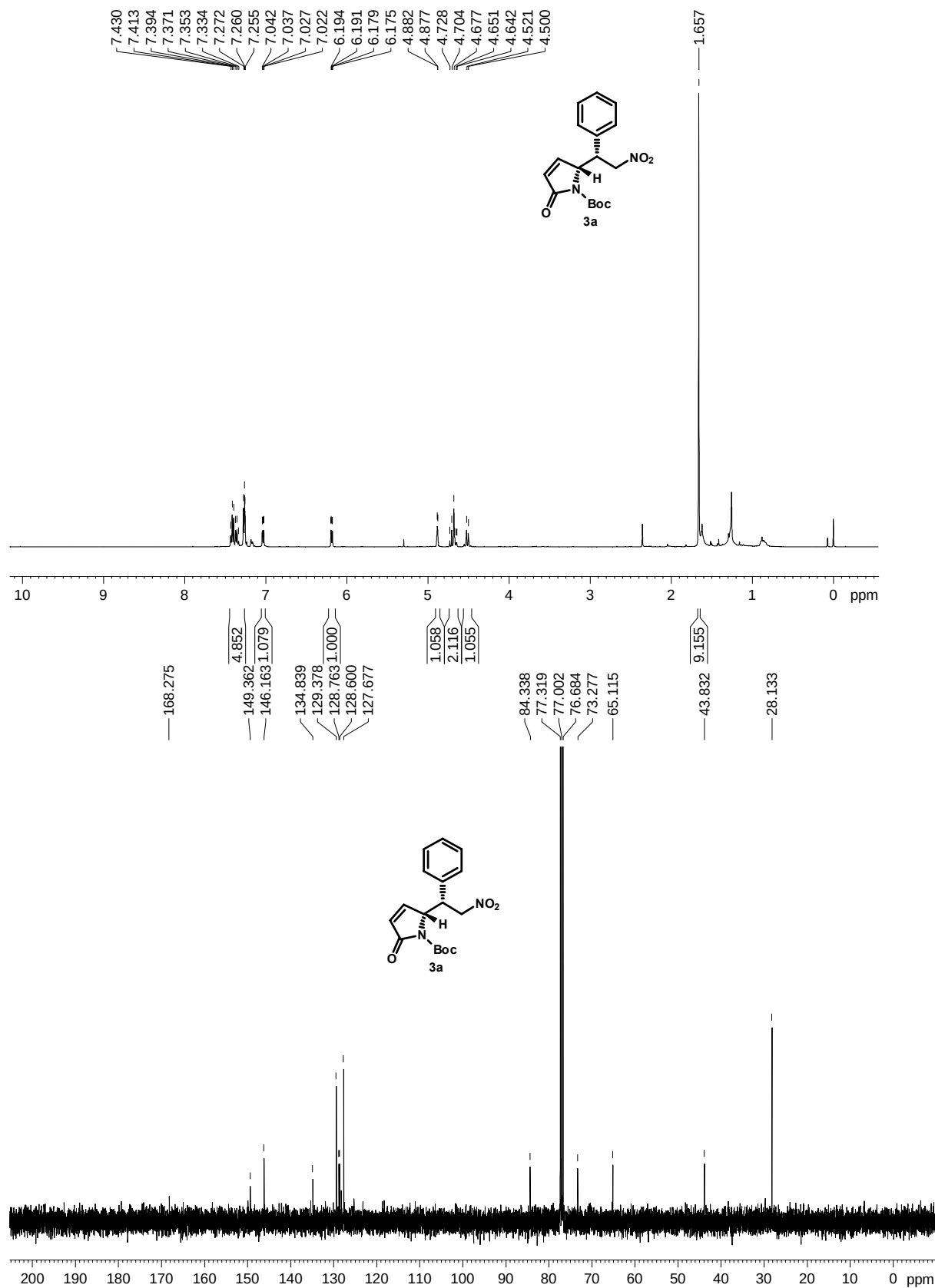


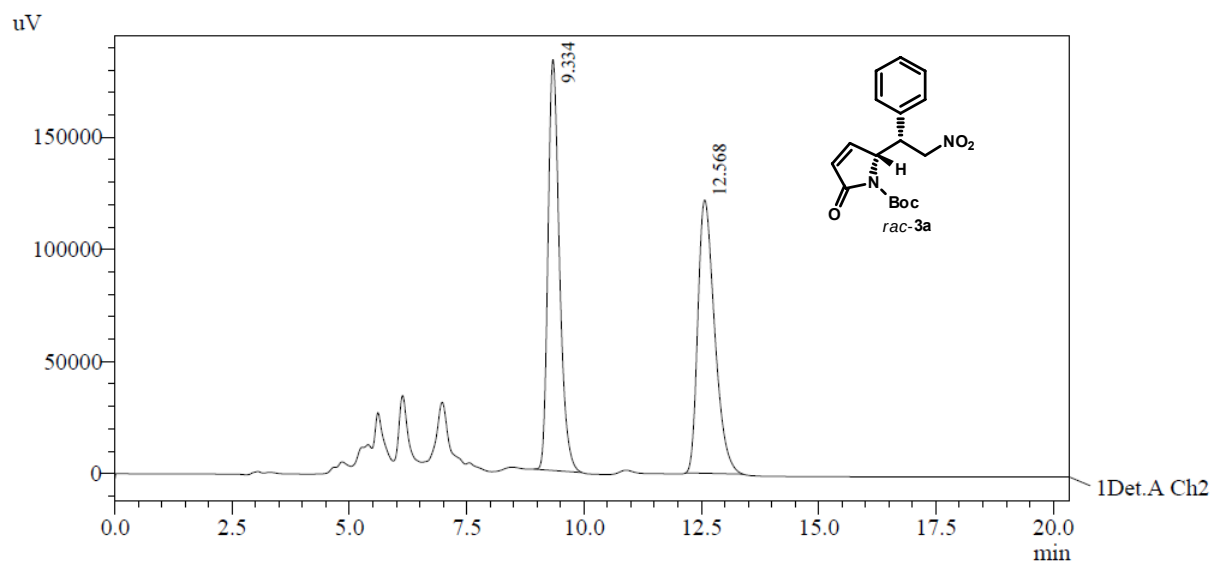








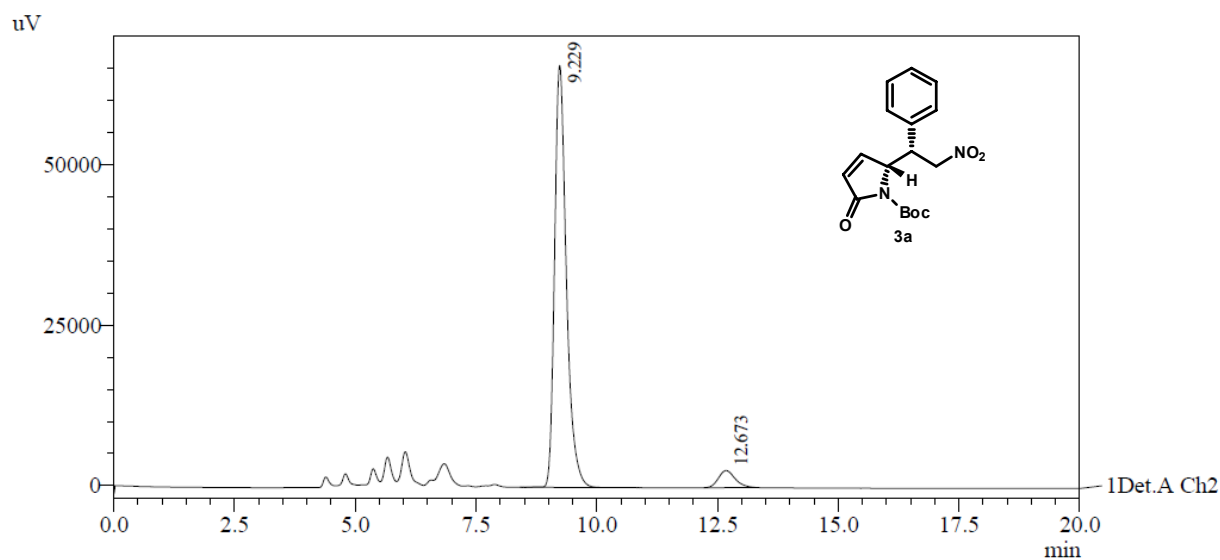




PeakTable

Detector A Ch2 254nm

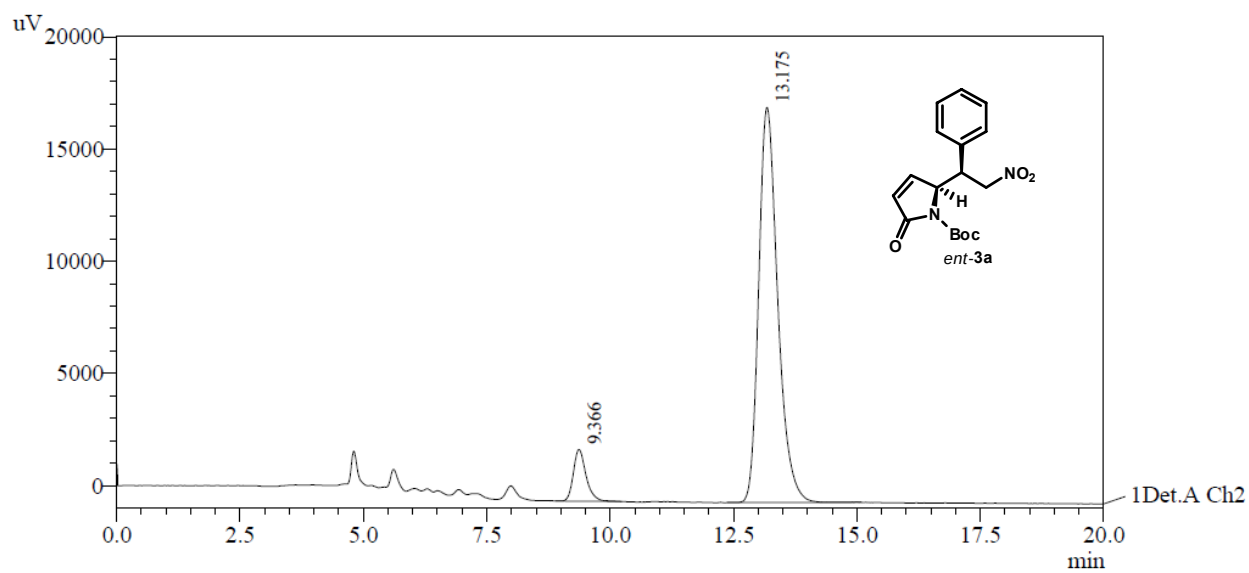
Peak#	Ret. Time	Area	Area %	Resolution
1	9.334	3100486	50.507	0.000
2	12.568	3038292	49.493	5.886
Total		6138778	100.000	



PeakTable

Detector A Ch2 254nm

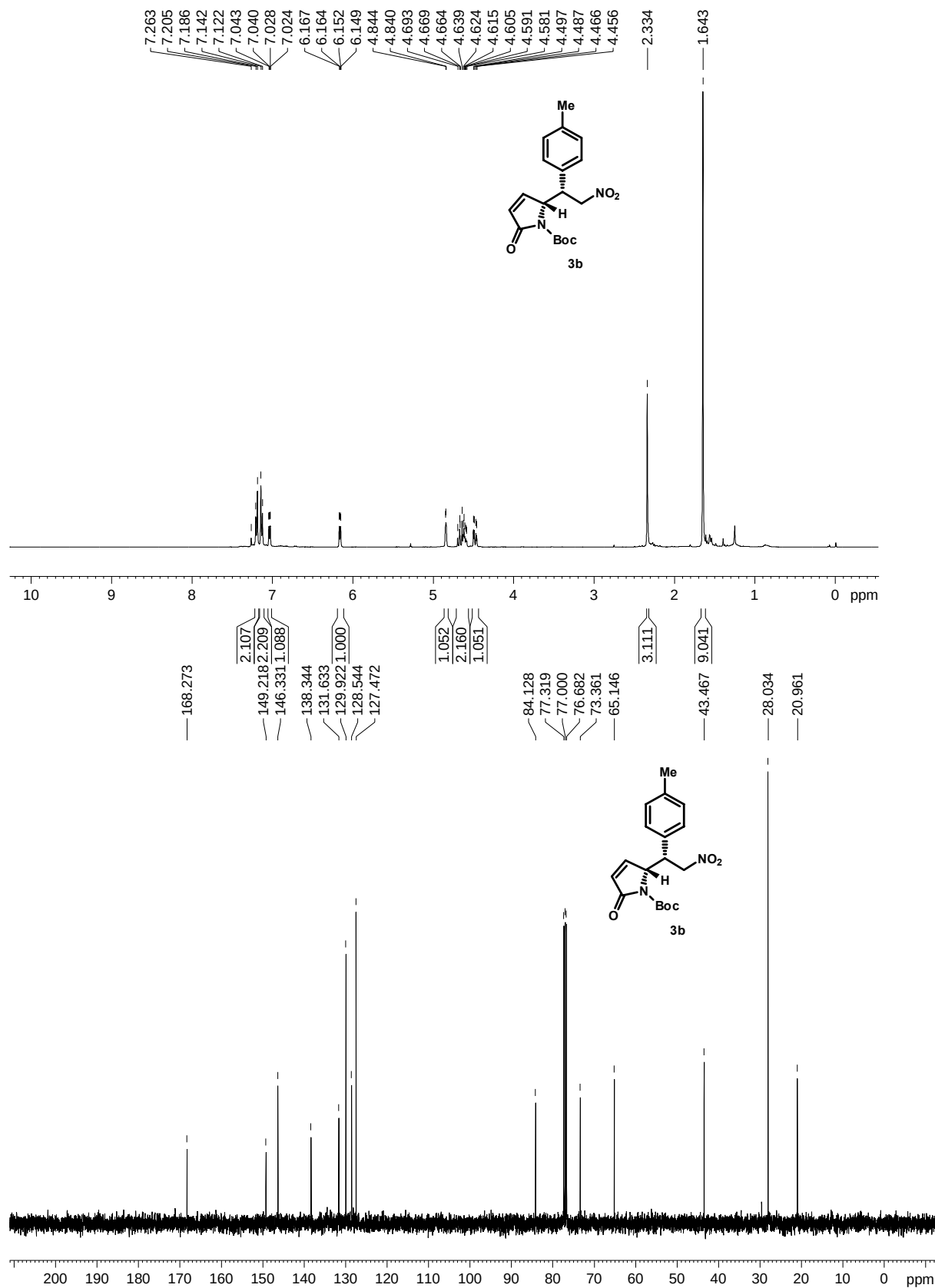
Peak#	Ret. Time	Area	Area %	Resolution
1	9.229	1117981	94.567	0.000
2	12.673	64230	5.433	6.457
Total		1182211	100.000	

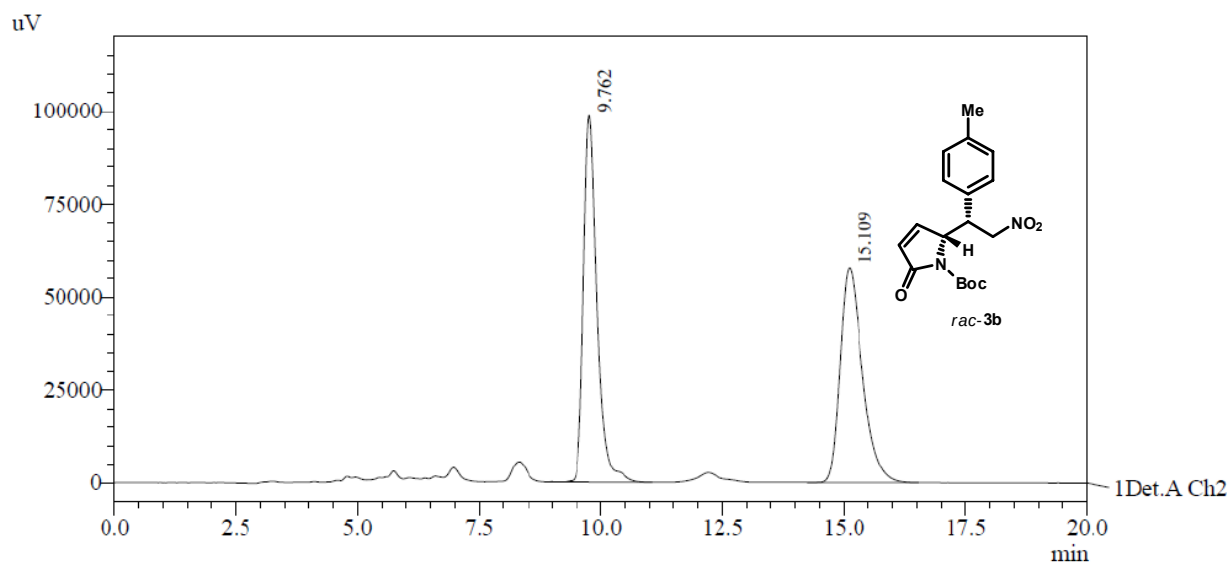


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	9.366	41246	8.035	0.000
2	13.175	472111	91.965	6.626
Total		513357	100.000	

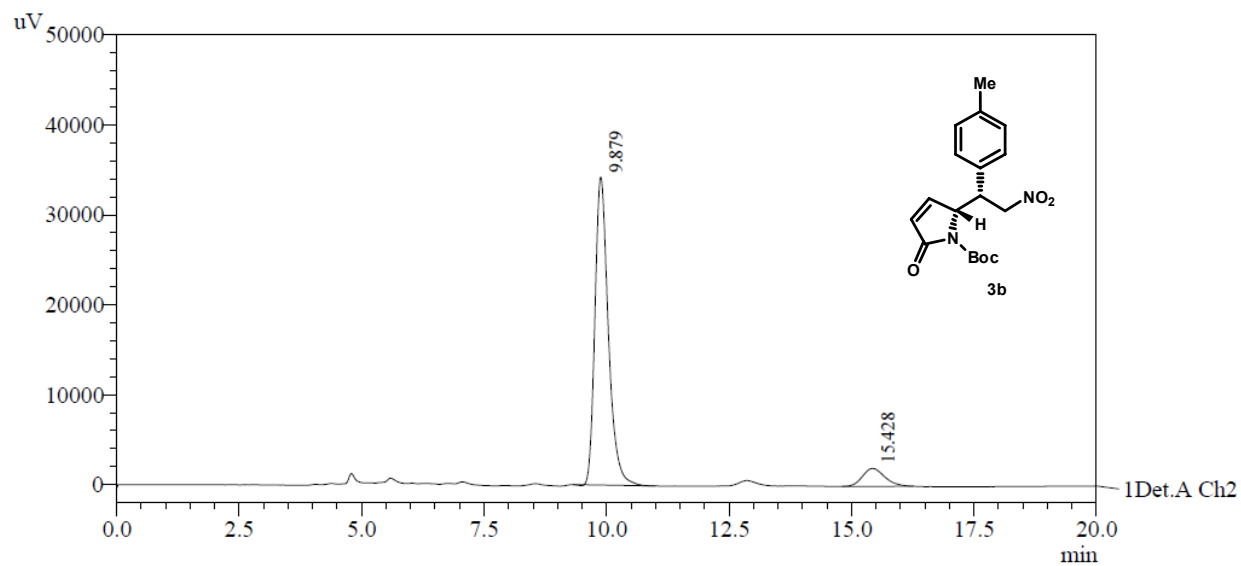




PeakTable

Detector A Ch2 254nm

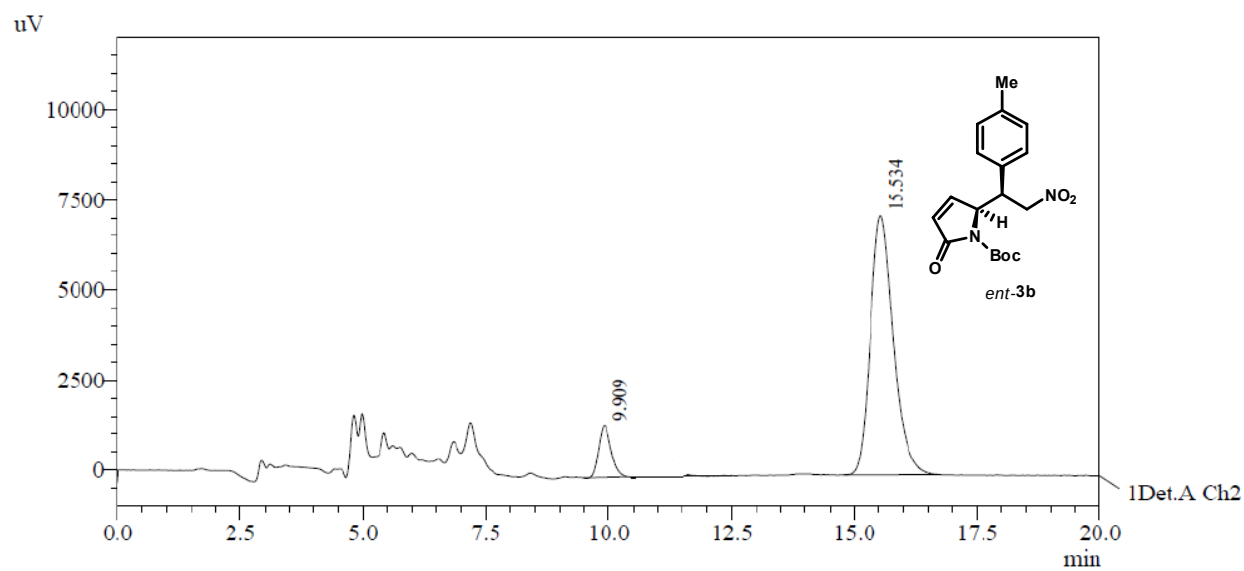
Peak#	Ret. Time	Area	Area %	Resolution
1	9.762	1899495	50.727	0.000
2	15.109	1845055	49.273	8.141
Total		3744550	100.000	



PeakTable

Detector A Ch2 254nm

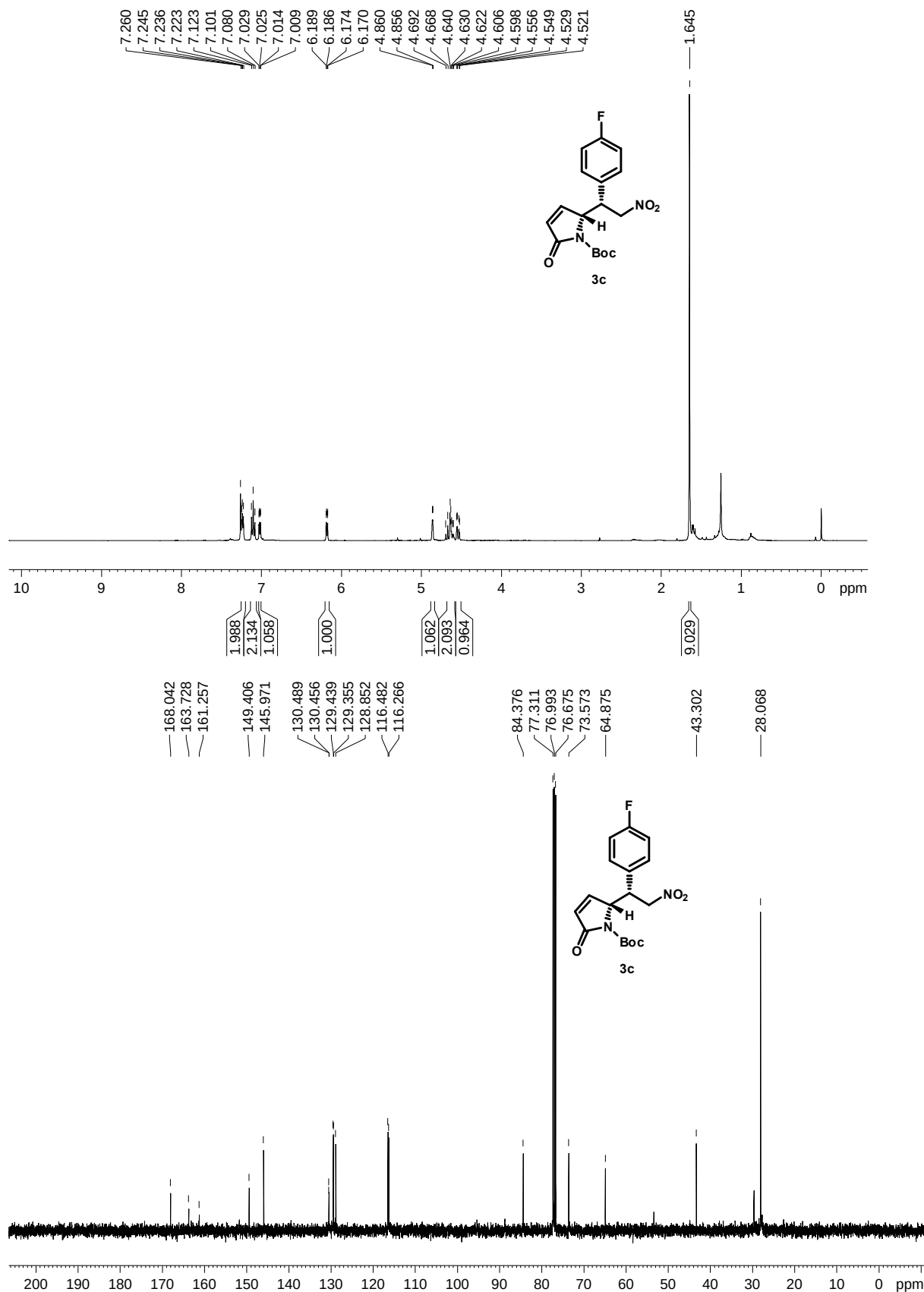
Peak#	Ret. Time	Area	Area %	Resolution
1	9.879	651309	91.149	0.000
2	15.428	63249	8.851	8.432
Total		714558	100.000	

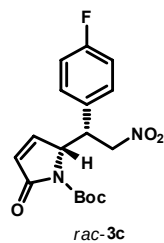


PeakTable

Detector A Ch2 254nm

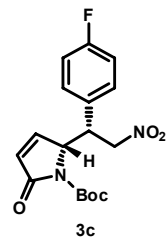
Peak#	Ret. Time	Area	Area %	Resolution
1	9.909	25470	9.833	0.000
2	15.534	233559	90.167	8.510
Total		259029	100.000	





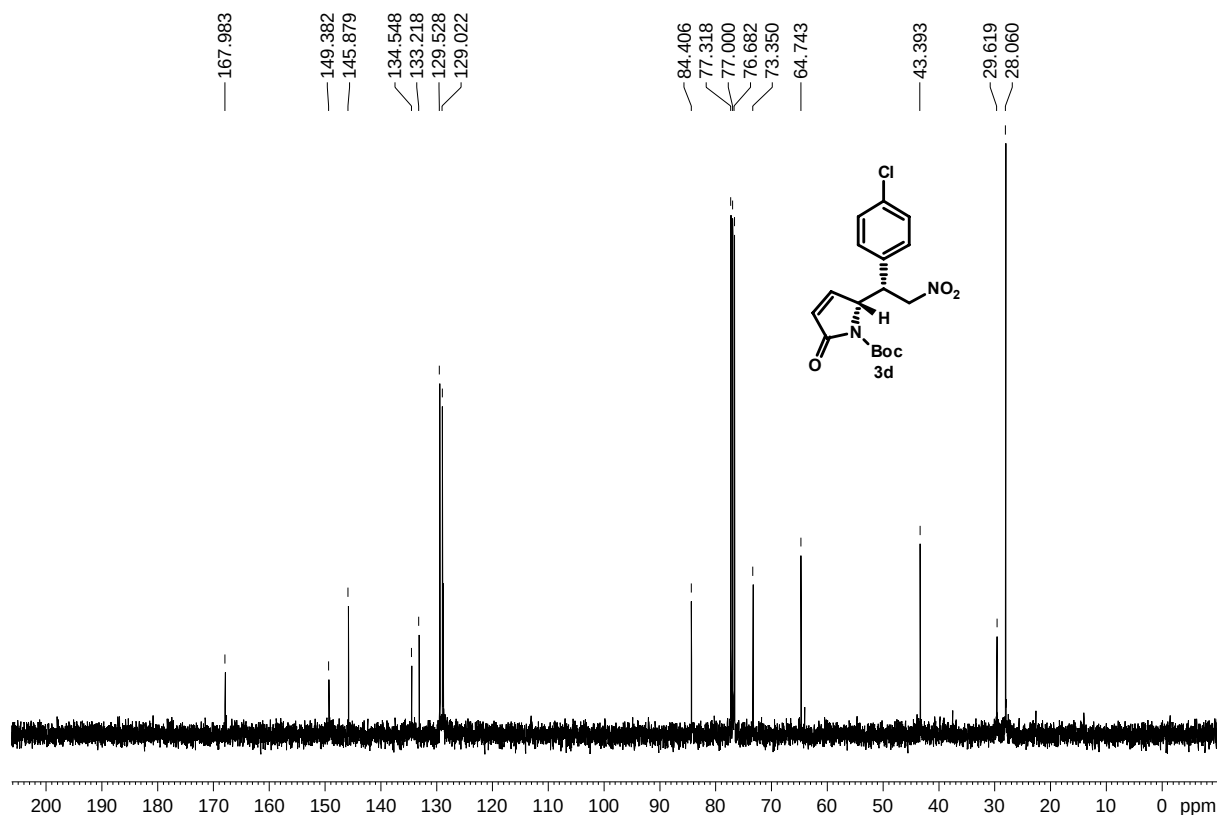
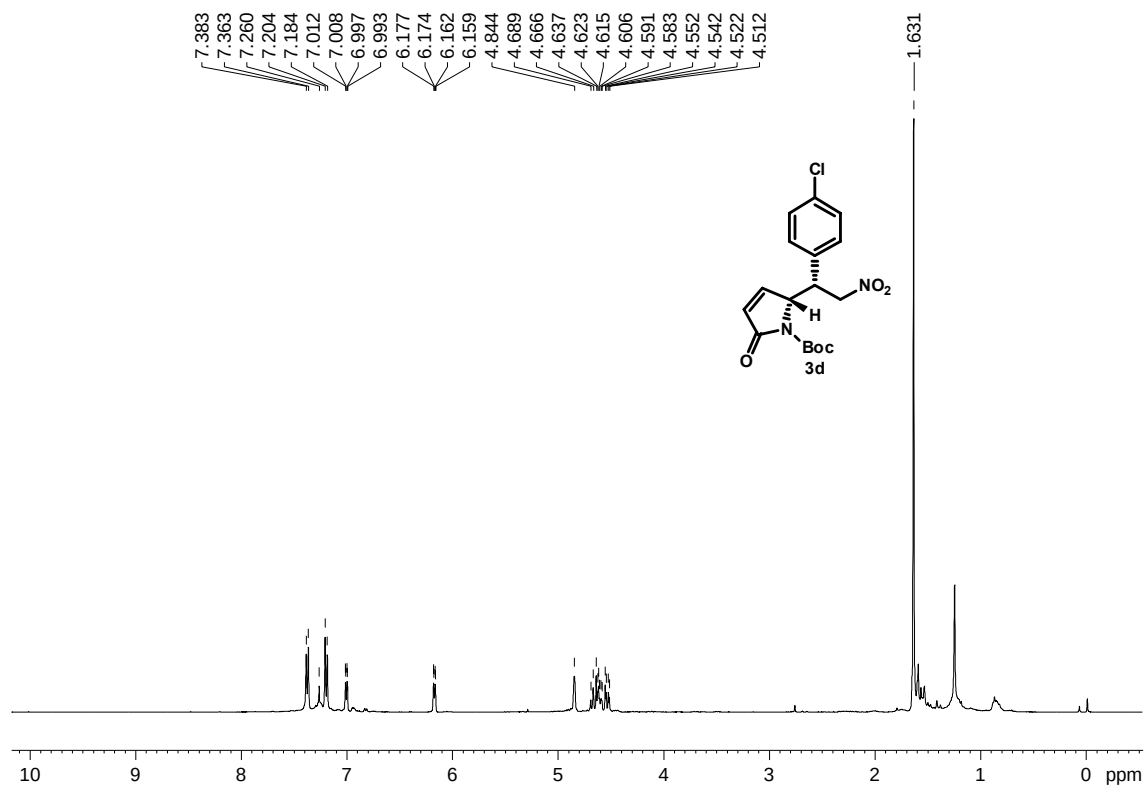
Detector A Ch2 254nm

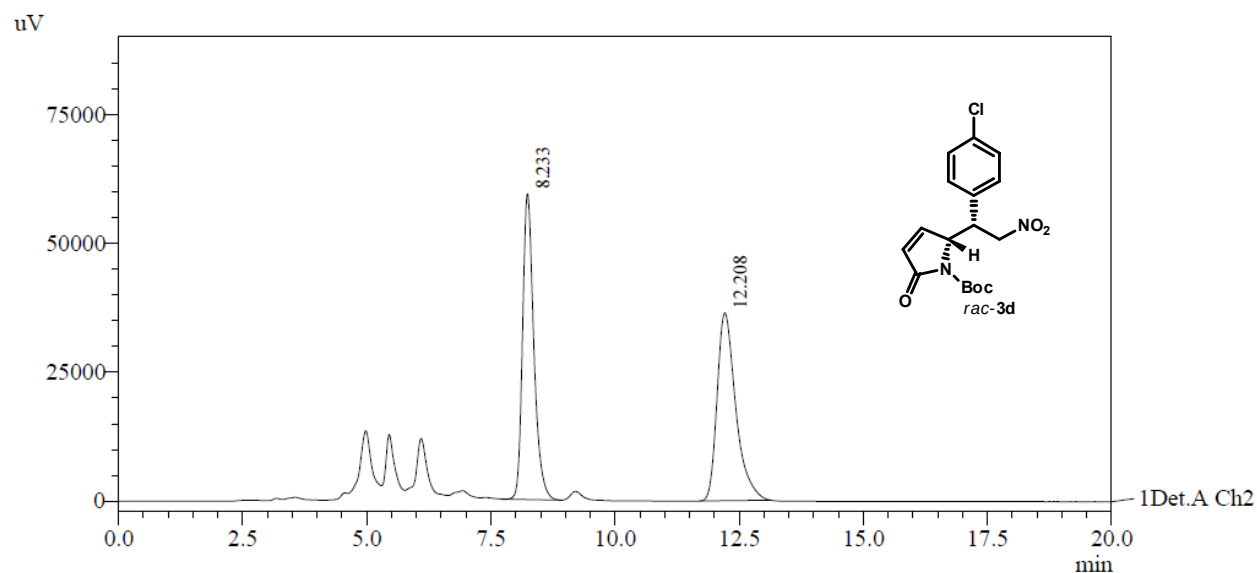
Peak#	Ret. Time	Area	Area %	Resolution
1	7.918	467598	50.584	0.000
2	11.559	456800	49.416	7.265
Total		924398	100.000	



Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	7.960	1244353	84.759	0.000
2	11.520	223747	15.241	7.242
Total		1468100	100.000	

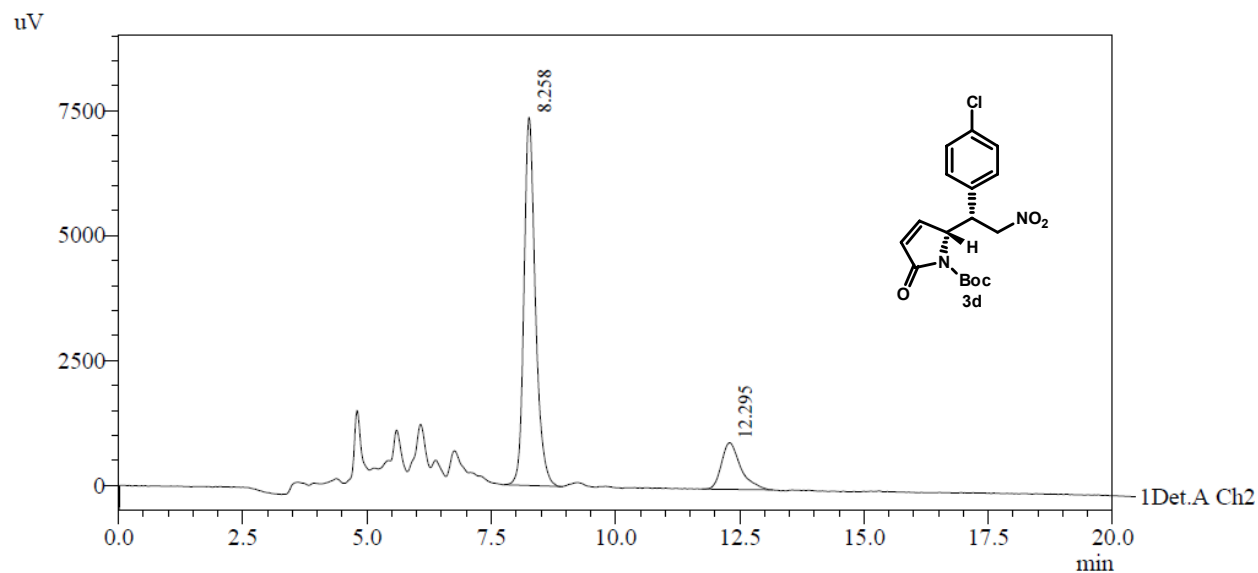




PeakTable

Detector A Ch2 254nm

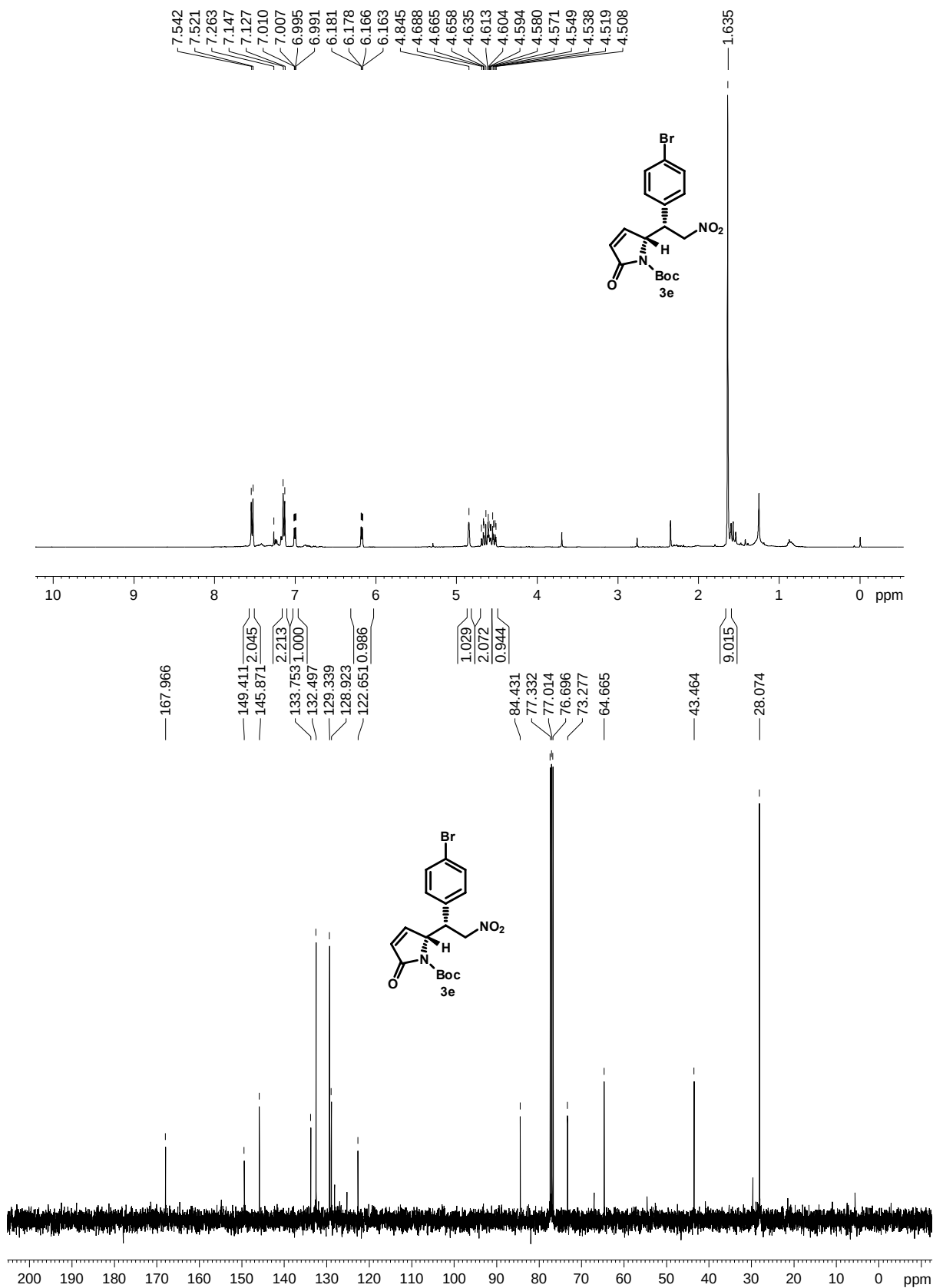
Peak#	Ret. Time	Area	Area %	Resolution
1	8.233	935380	49.508	0.000
2	12.208	953973	50.492	7.397
Total		1889353	100.000	

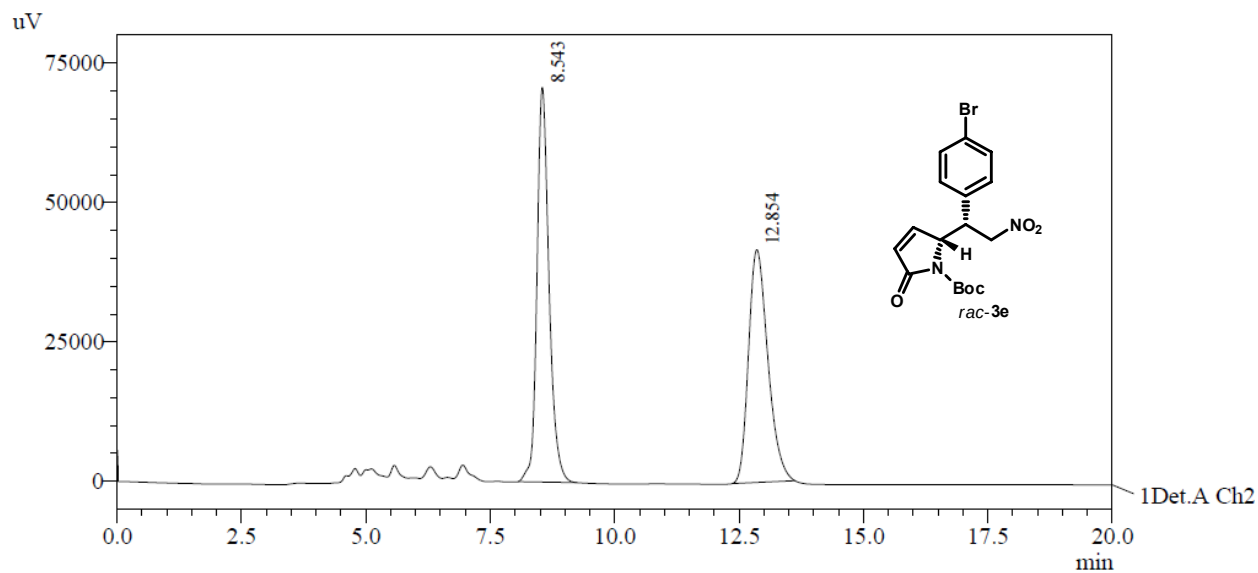


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	8.258	117709	82.411	0.000
2	12.295	25123	17.589	7.417
Total		142832	100.000	

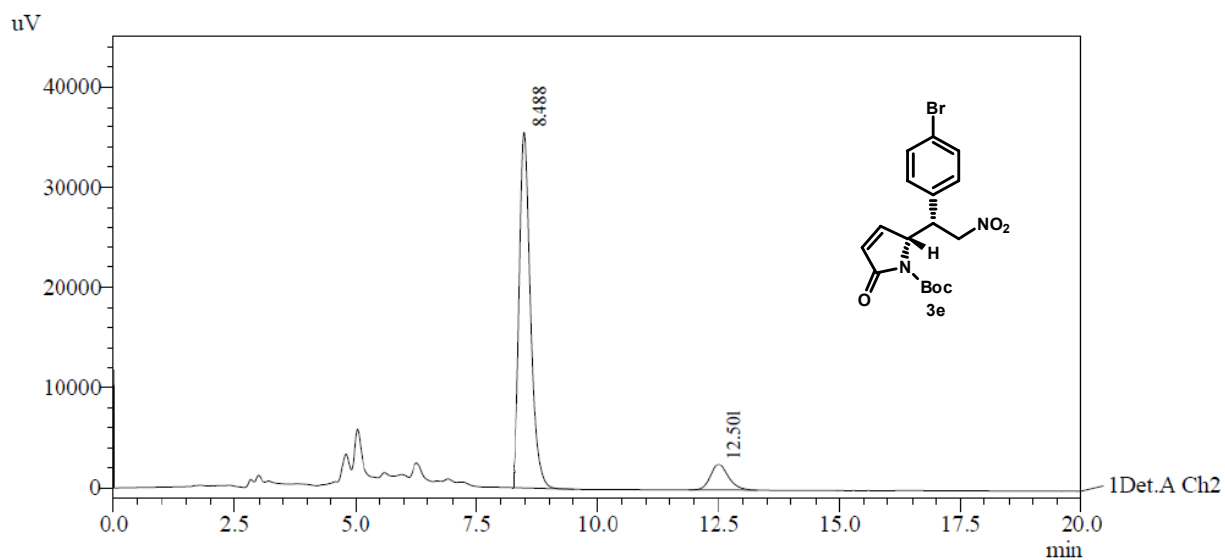




PeakTable

Detector A Ch2 254nm

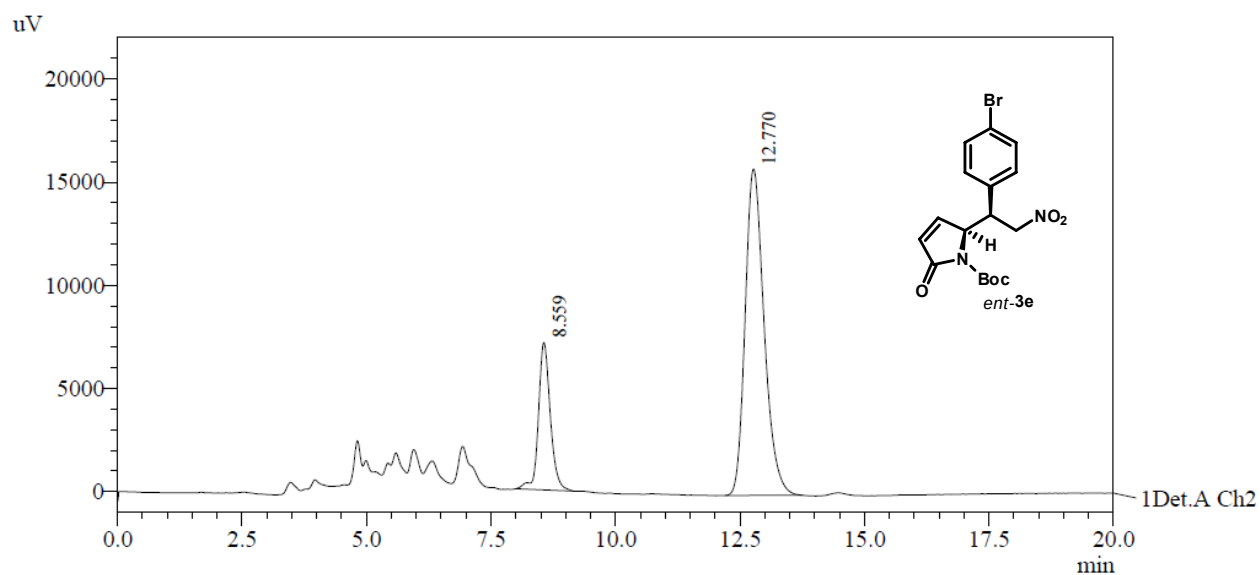
Peak#	Ret. Time	Area	Area %	Resolution
1	8.543	1193627	51.341	0.000
2	12.854	1131291	48.659	7.546
Total		2324918	100.000	



PeakTable

Detector A Ch2 254nm

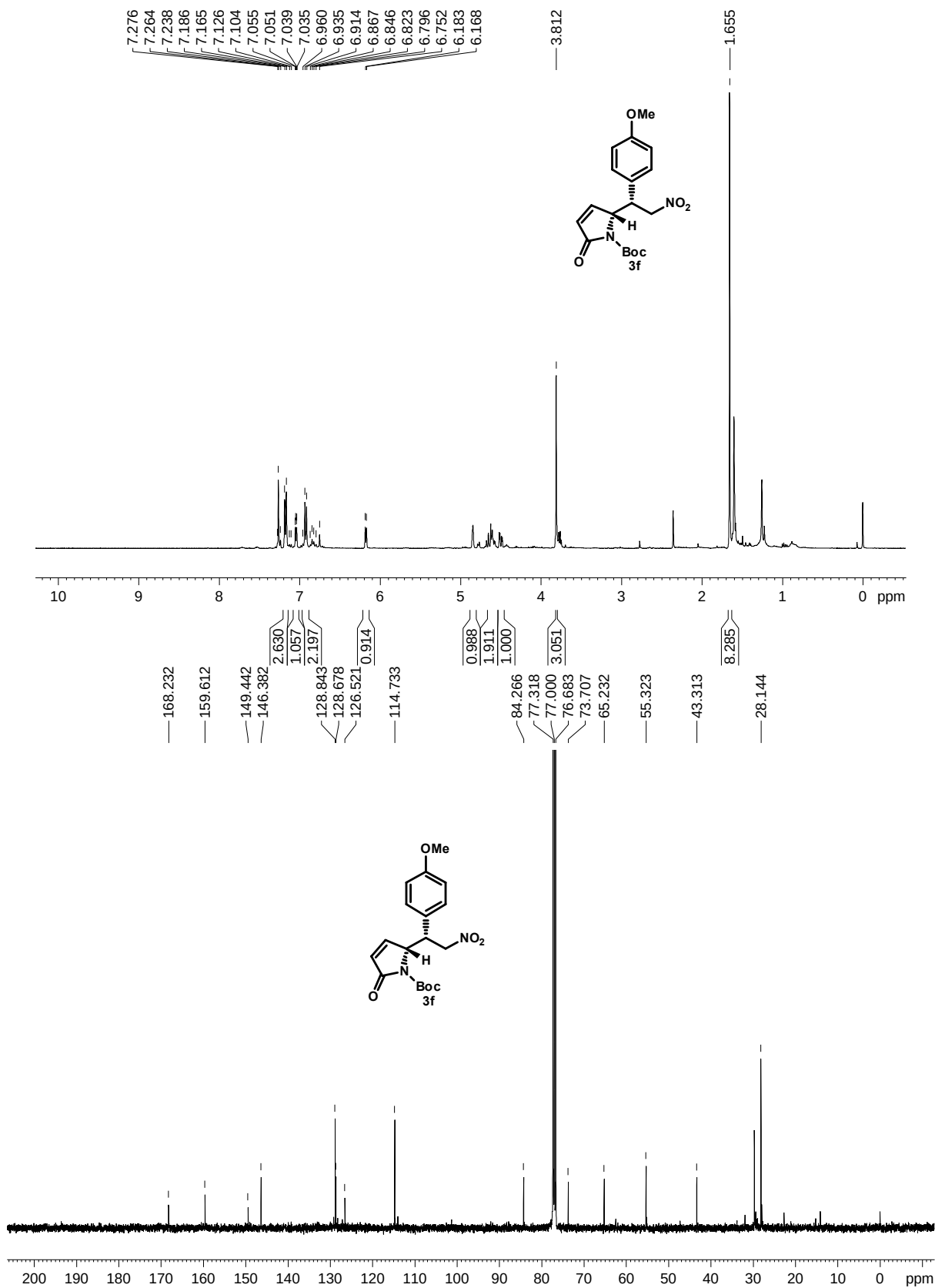
Peak#	Ret. Time	Area	Area %	Resolution
1	8.488	591758	89.750	0.000
2	12.501	67581	10.250	7.317
Total		659339	100.000	

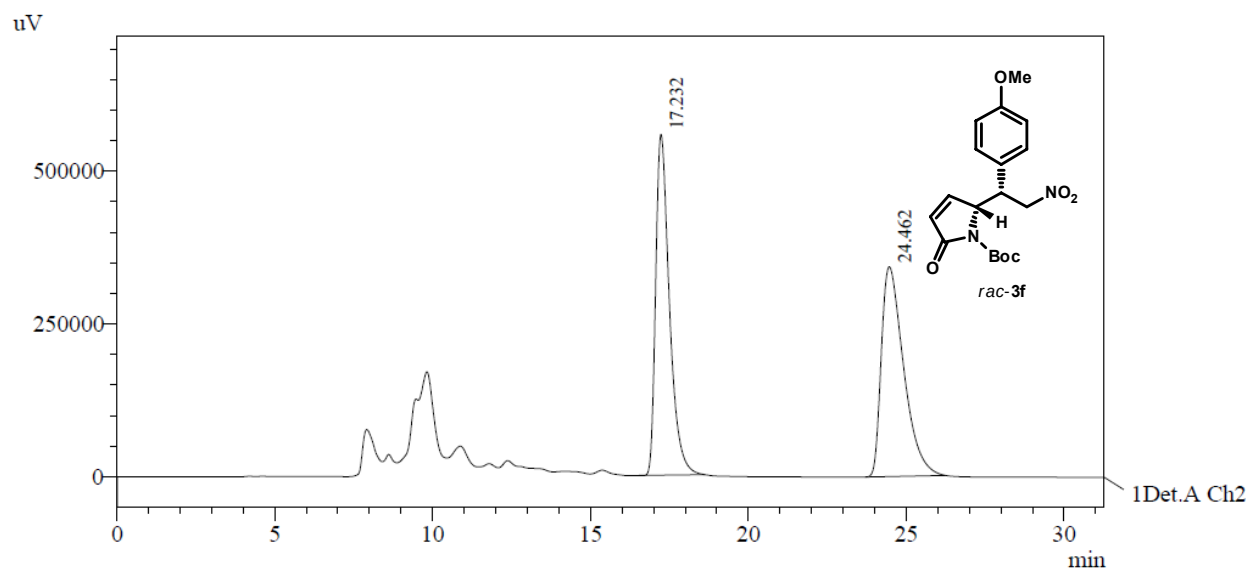


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	8.559	118562	22.033	0.000
2	12.770	419546	77.967	7.569
Total		538108	100.000	

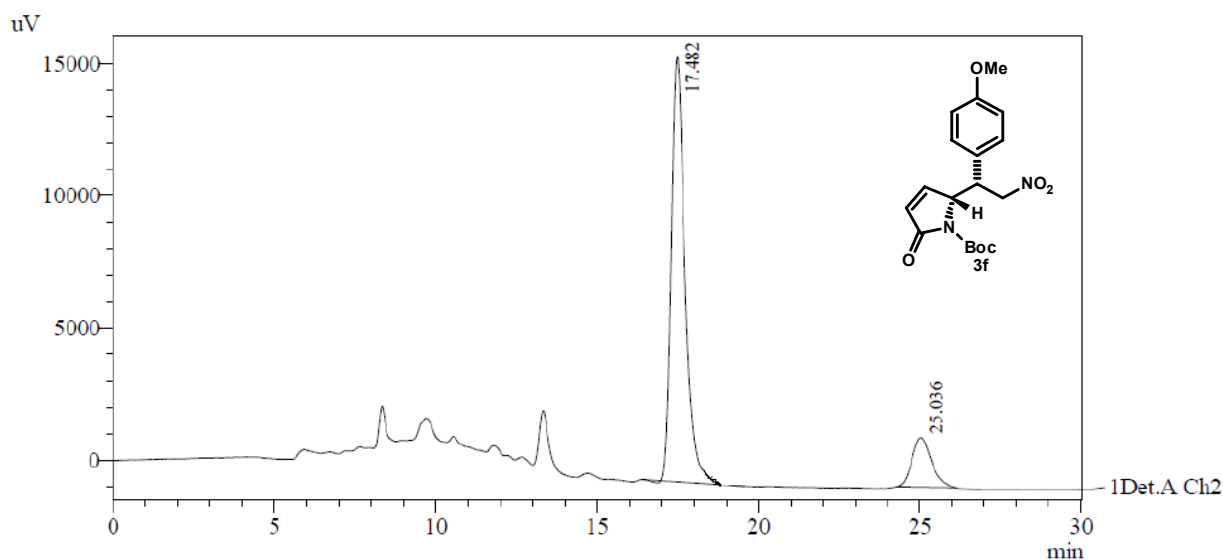




PeakTable

Detector A Ch2 254nm

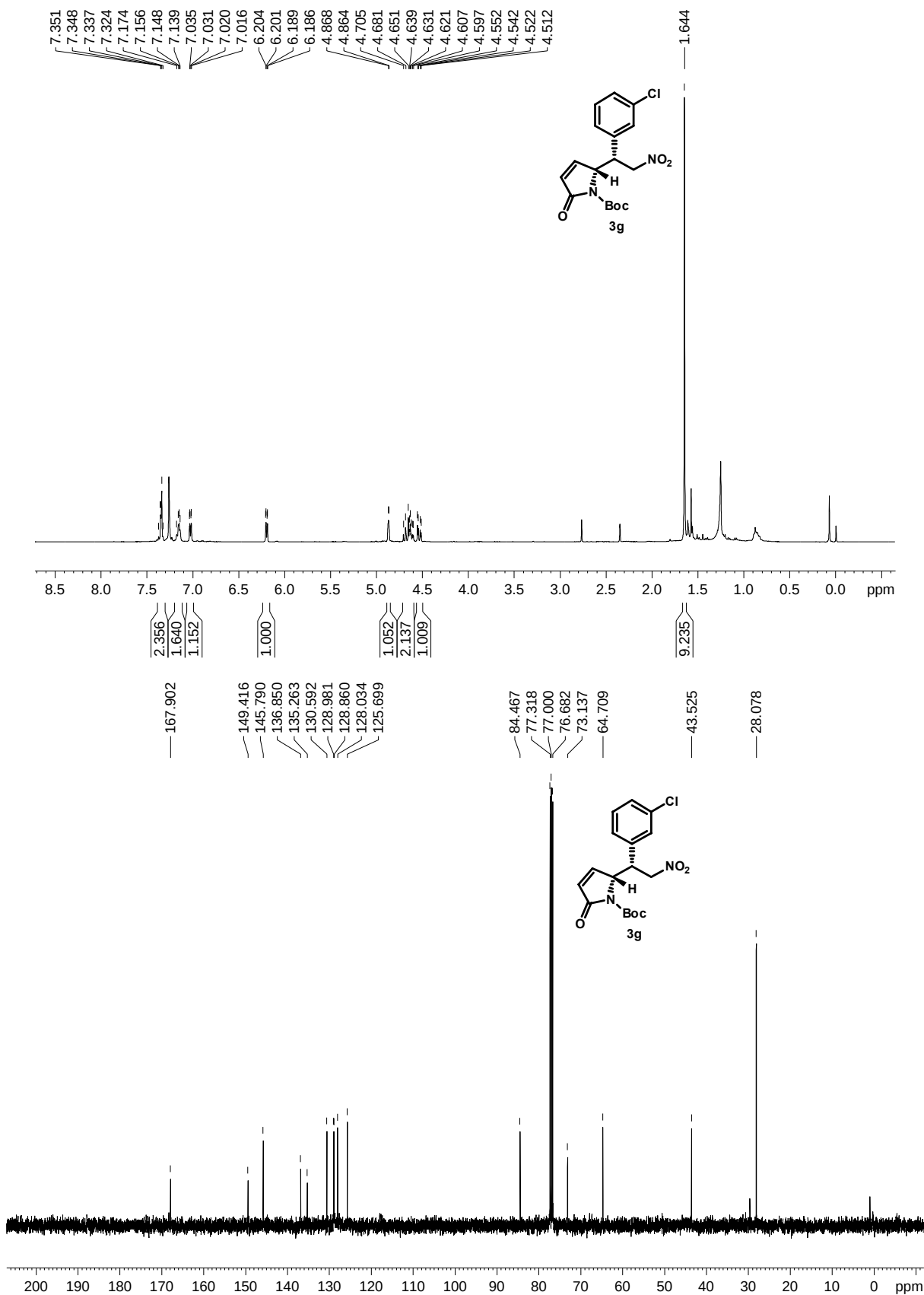
Peak#	Ret. Time	Area	Area %	Resolution
1	17.232	16867459	49.988	0.000
2	24.462	16875284	50.012	7.045
Total		33742743	100.000	

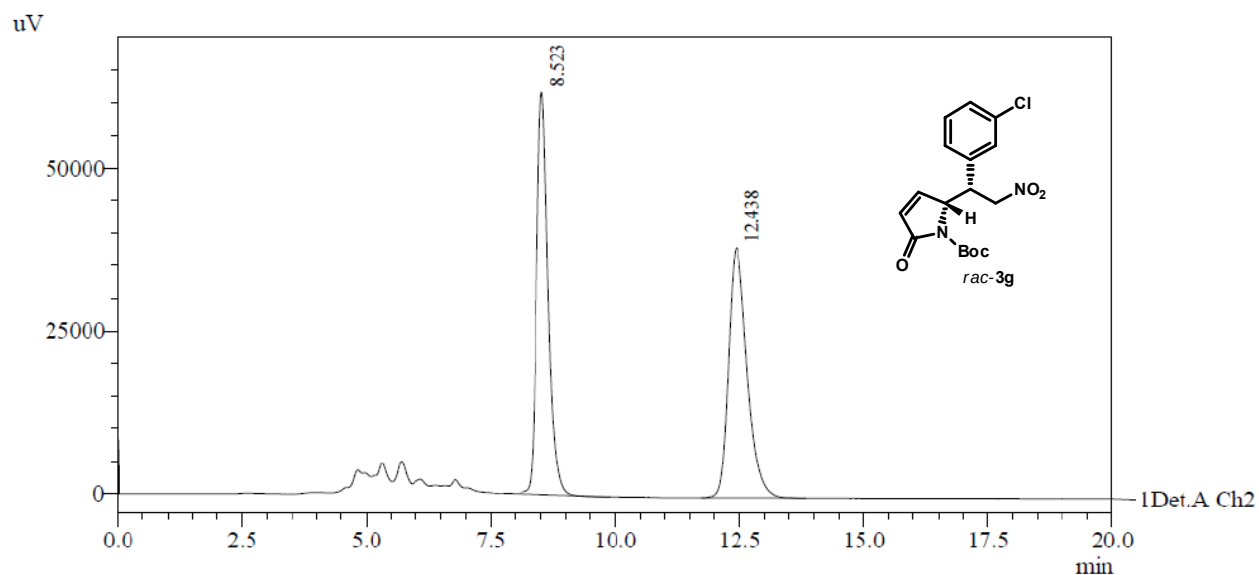


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	17.482	478344	85.986	0.000
2	25.036	77958	14.014	8.192
Total		556302	100.000	

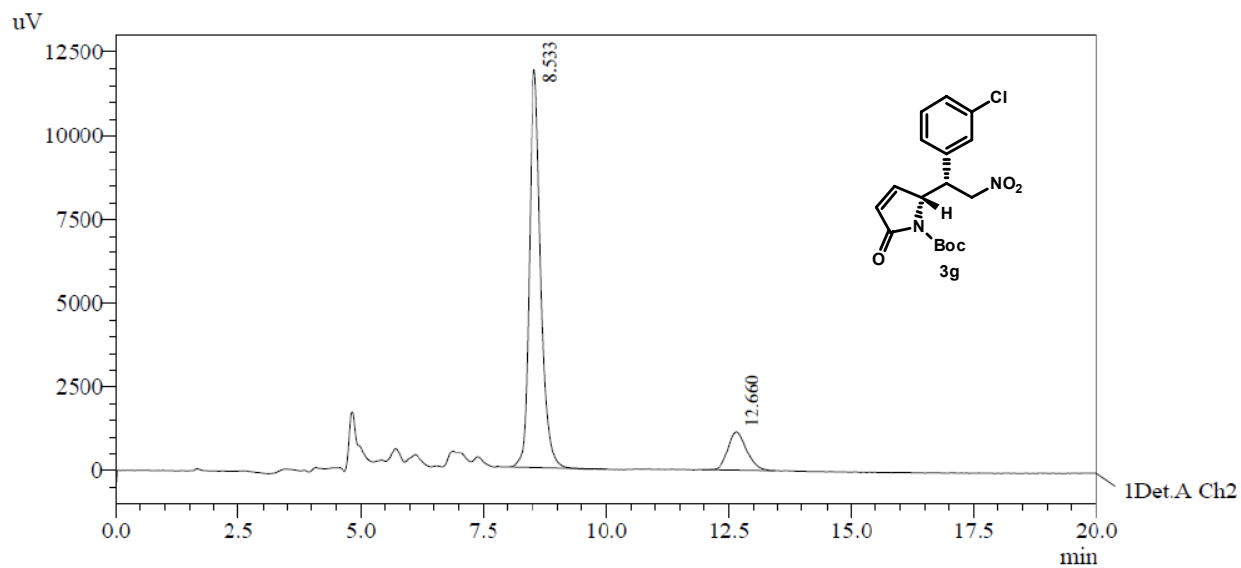




PeakTable

Detector A Ch2 254nm

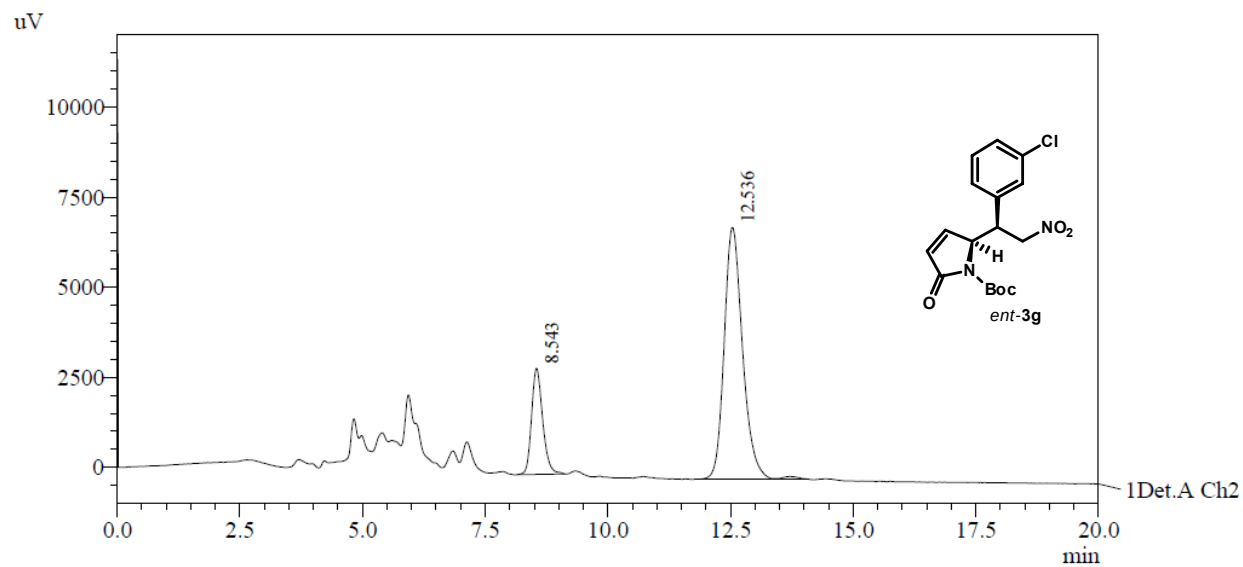
Peak#	Ret. Time	Area	Area %	Resolution
1	8.523	1011590	50.237	0.000
2	12.438	1002030	49.763	7.180
Total		2013620	100.000	



PeakTable

Detector A Ch2 254nm

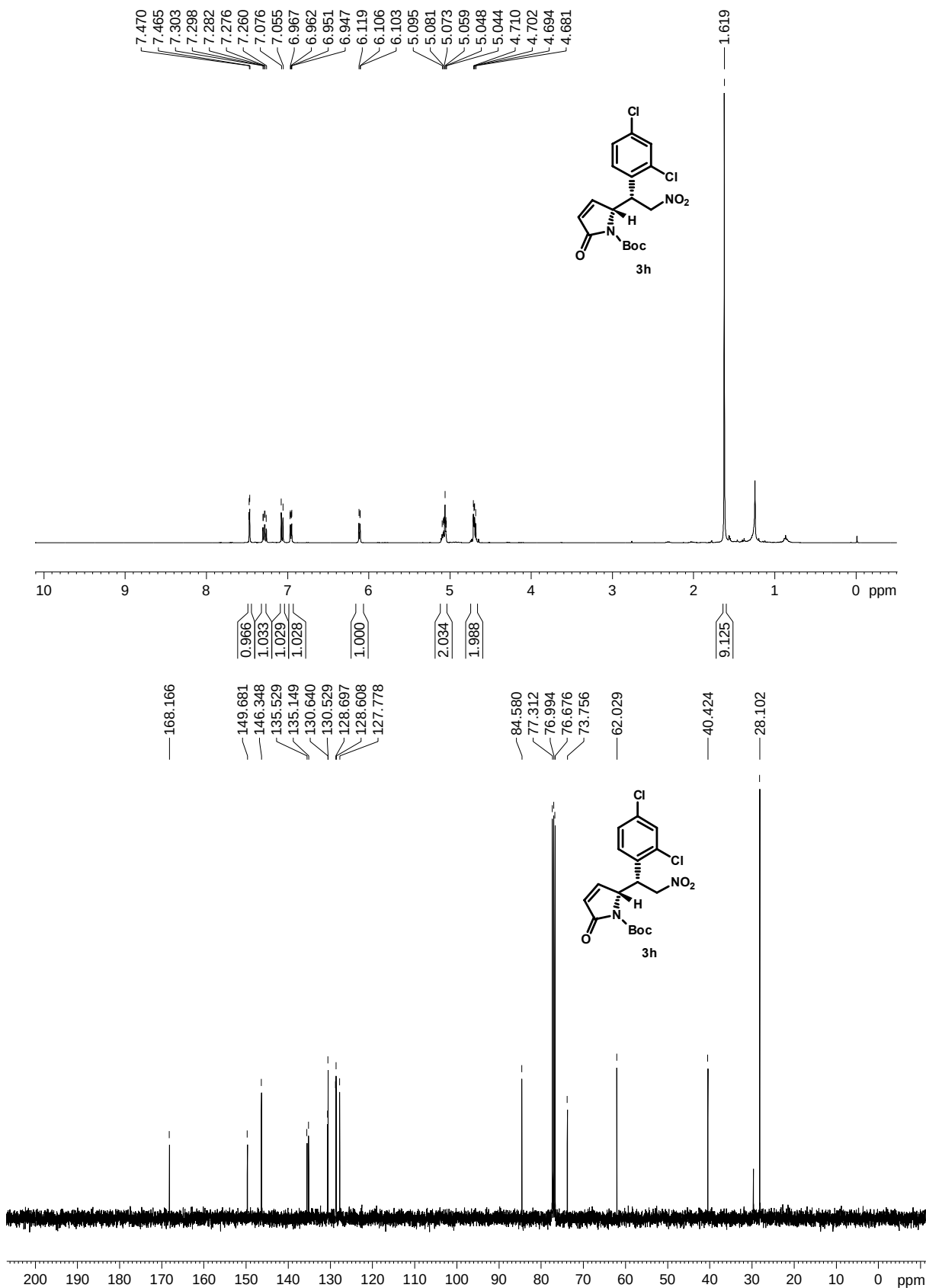
Peak#	Ret. Time	Area	Area %	Resolution
1	8.533	197576	86.799	0.000
2	12.660	30049	13.201	7.422
Total		227624	100.000	

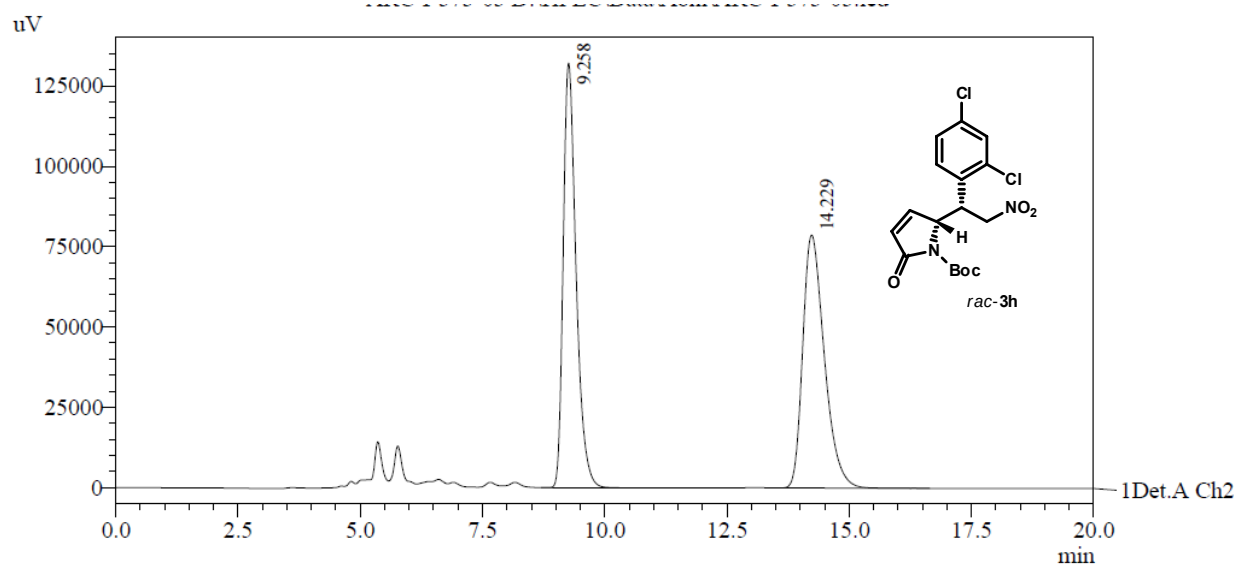


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	8.543	46629	20.245	0.000
2	12.536	183696	79.755	7.328
Total		230325	100.000	

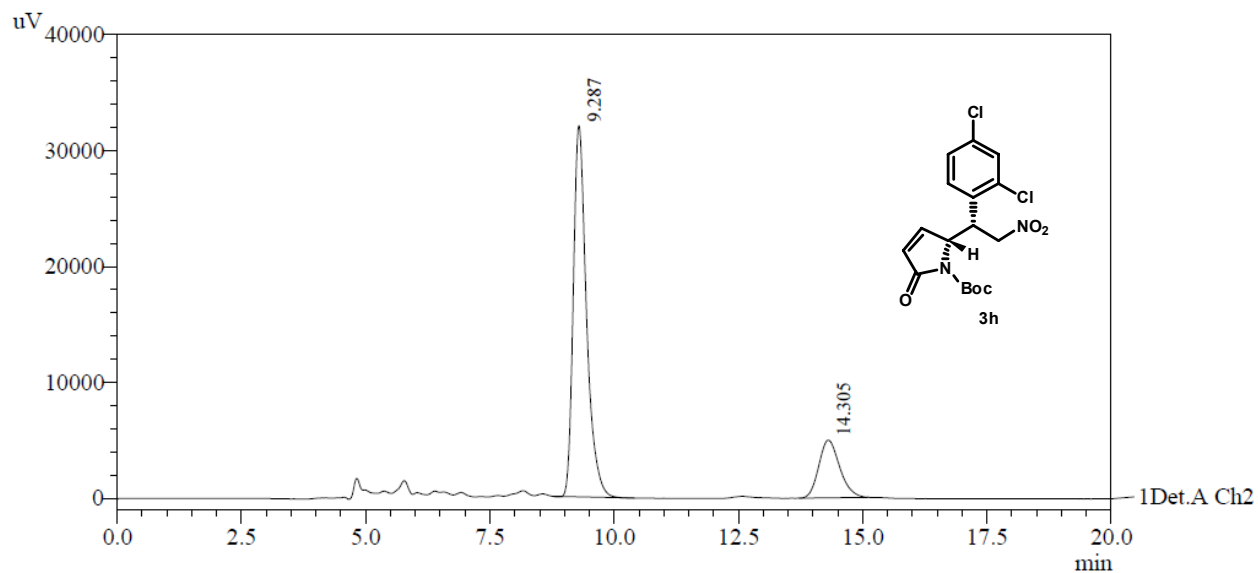




PeakTable

Detector A Ch2 254nm

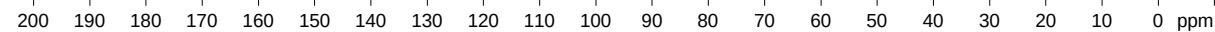
Peak#	Ret. Time	Area	Area %	Resolution
1	9.258	2422986	50.107	0.000
2	14.229	2412604	49.893	7.797
Total		4835590	100.000	

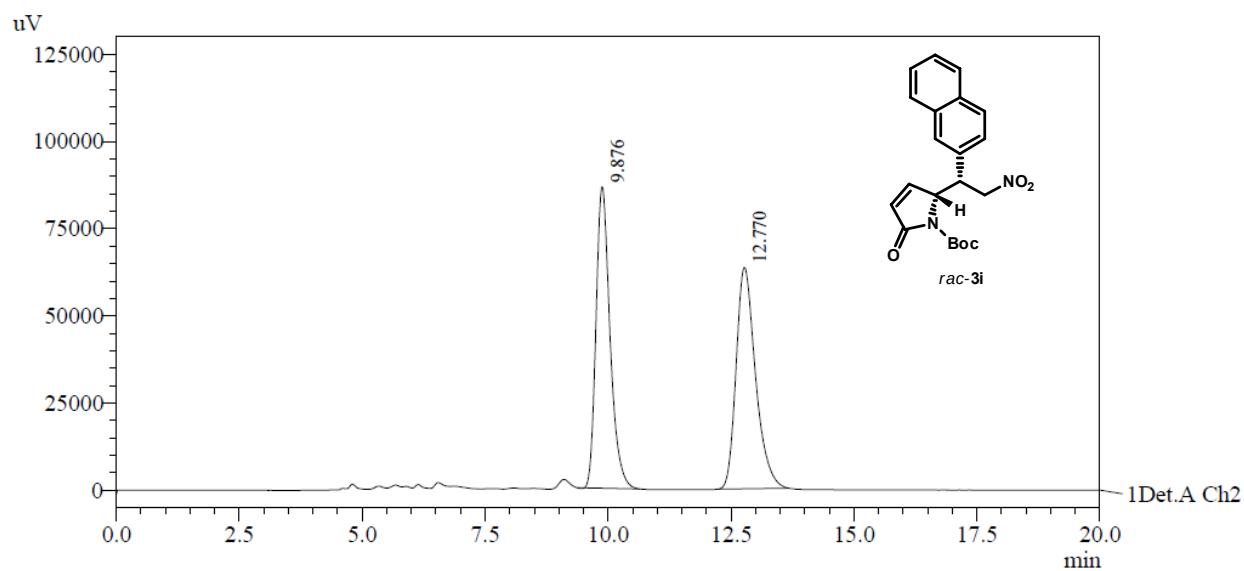


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	9.287	591437	80.258	0.000
2	14.305	145481	19.742	8.068
Total		736918	100.000	

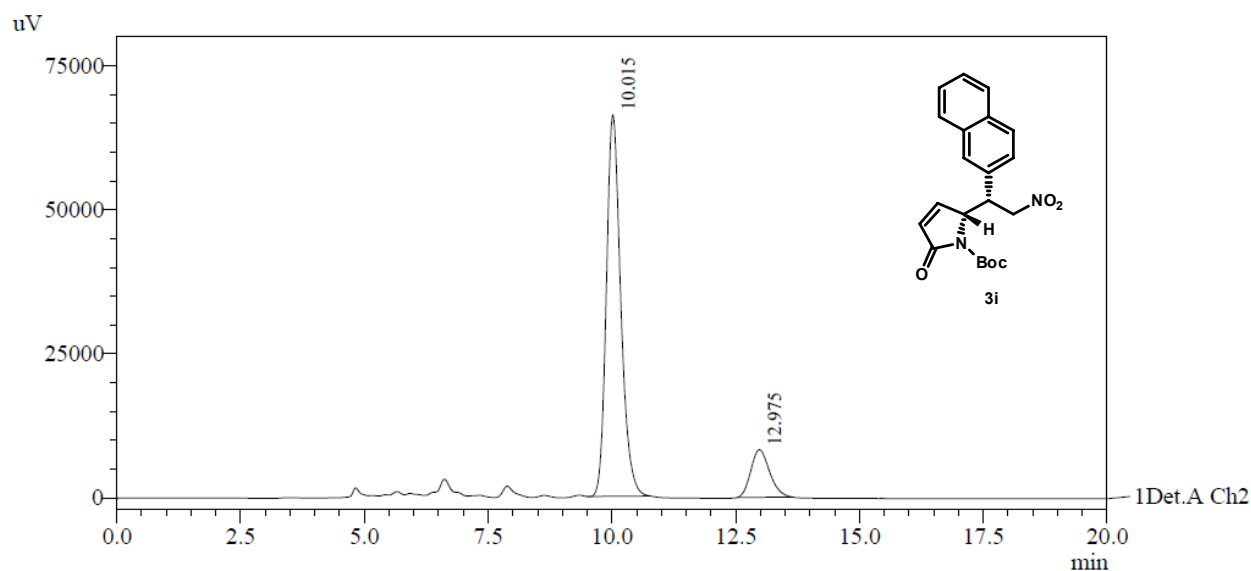




PeakTable

Detector A Ch2 254nm

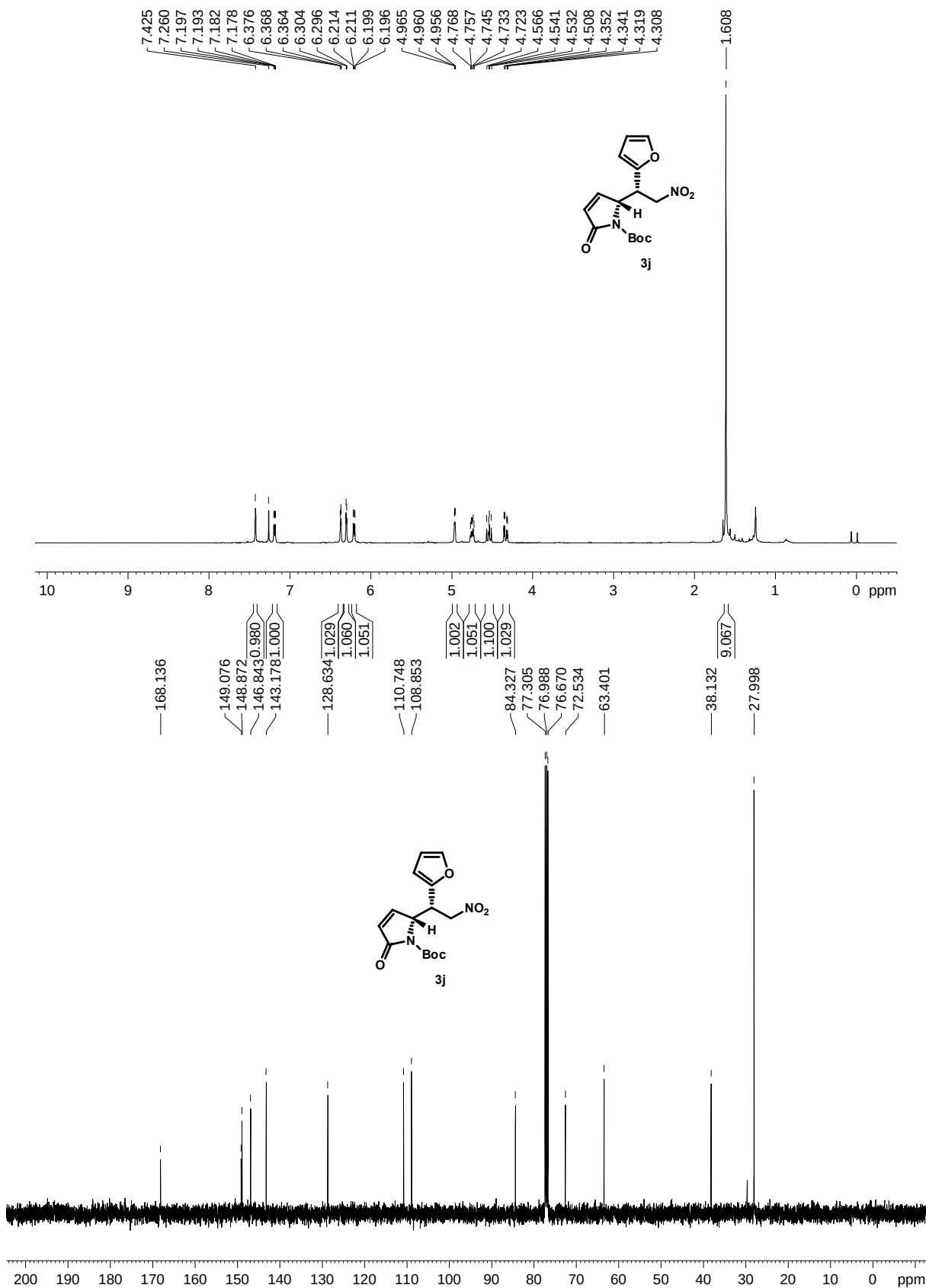
Peak#	Ret. Time	Area	Area %	Resolution
1	9.876	1713311	49.566	0.000
2	12.770	1743292	50.434	4.735
Total		3456603	100.000	

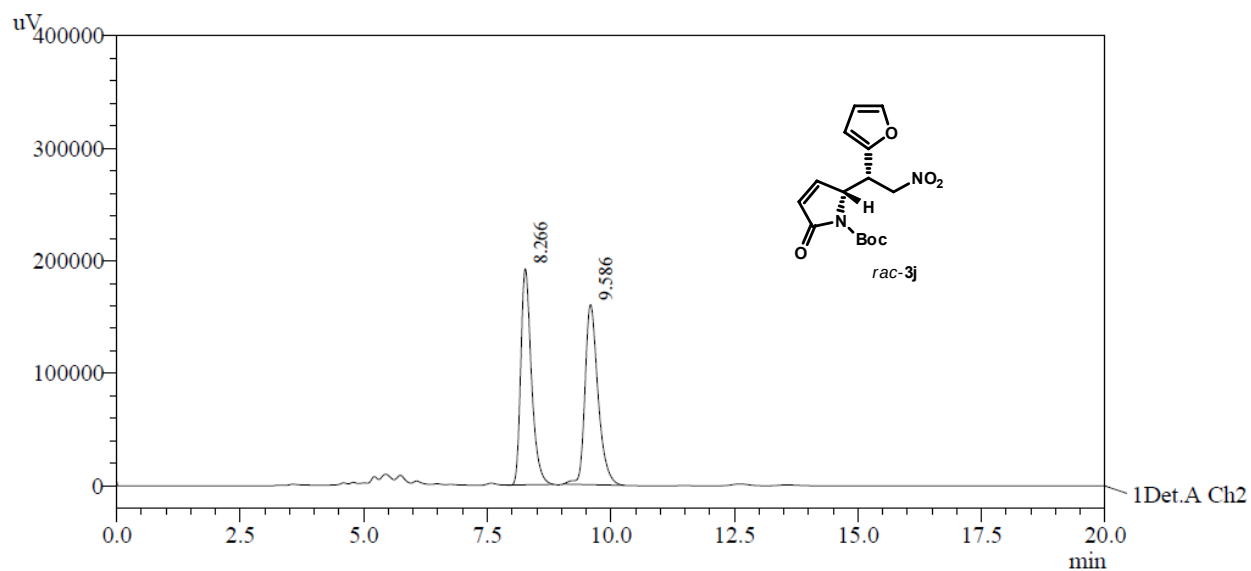


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	10.015	1337200	85.956	0.000
2	12.975	218485	14.044	4.831
Total		1555684	100.000	

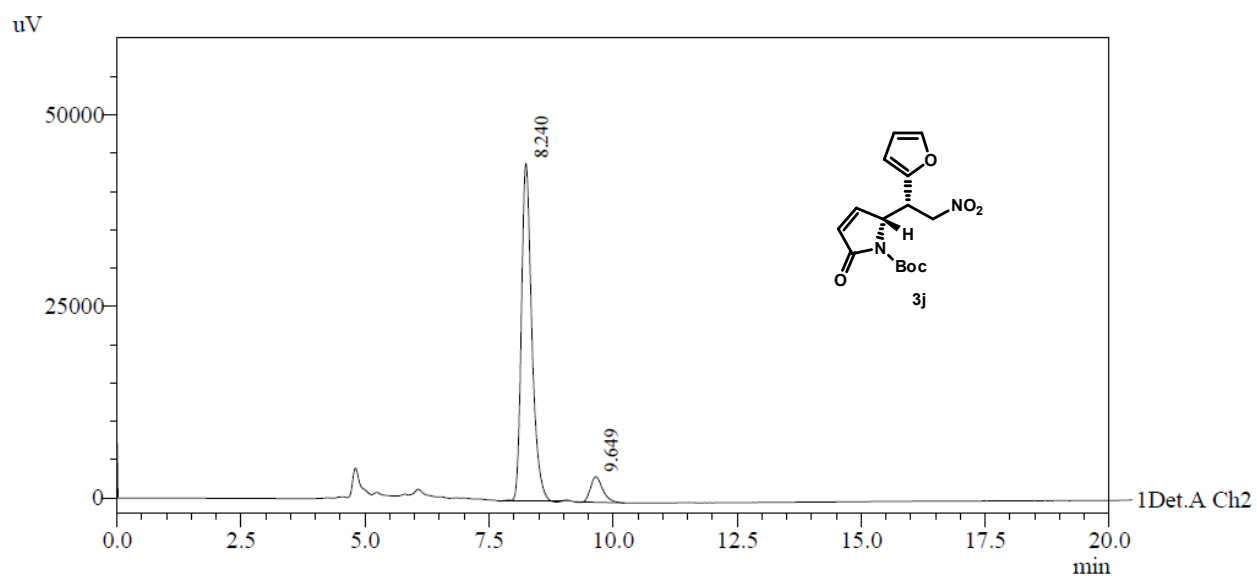




PeakTable

Detector A Ch2 254nm

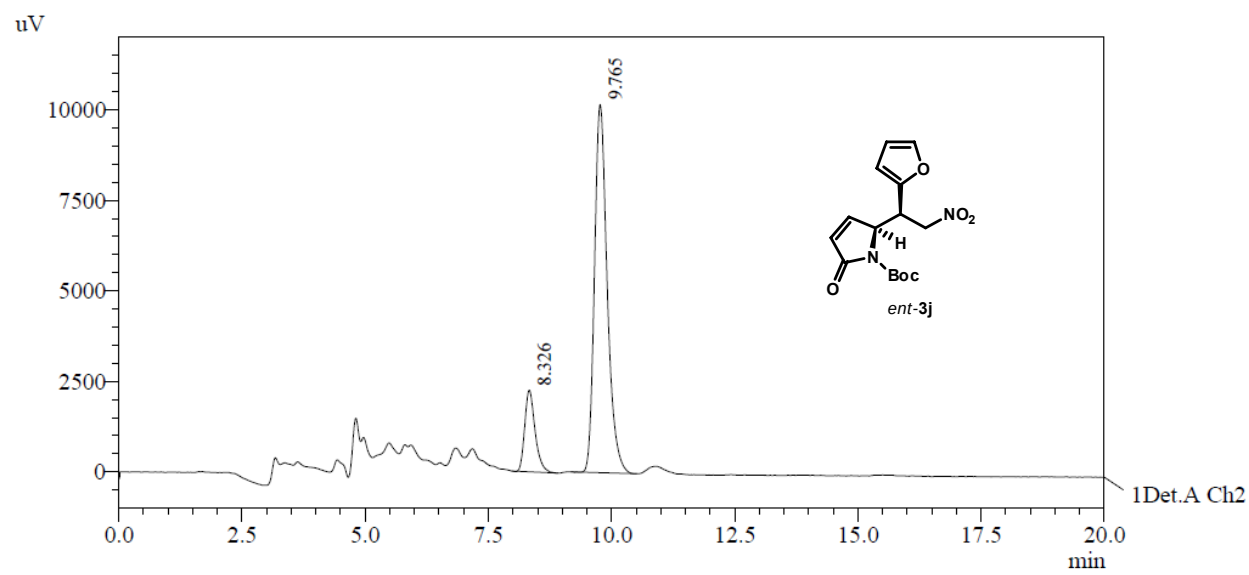
Peak#	Ret. Time	Area	Area %	Resolution
1	8.266	2882369	49.442	0.000
2	9.586	2947384	50.558	3.071
Total		5829753	100.000	



PeakTable

Detector A Ch2 254nm

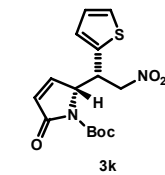
Peak#	Ret. Time	Area	Area %	Resolution
1	8.240	641130	91.879	0.000
2	9.649	56670	8.121	3.406
Total		697800	100.000	

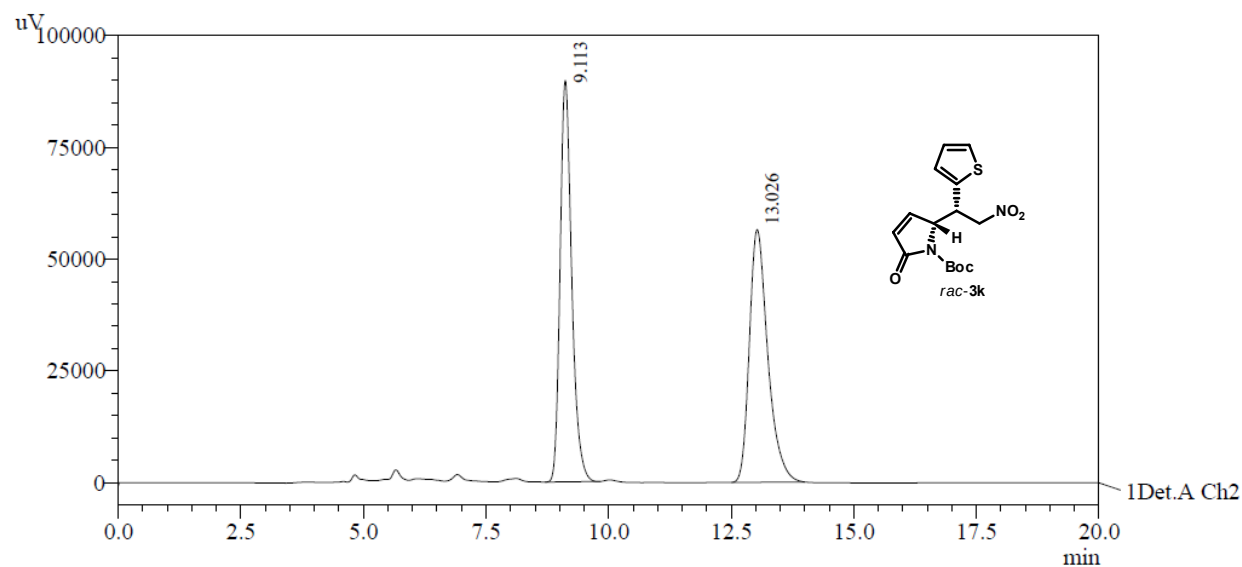


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	8.326	32912	15.295	0.000
2	9.765	182265	84.705	3.397
Total		215176	100.000	

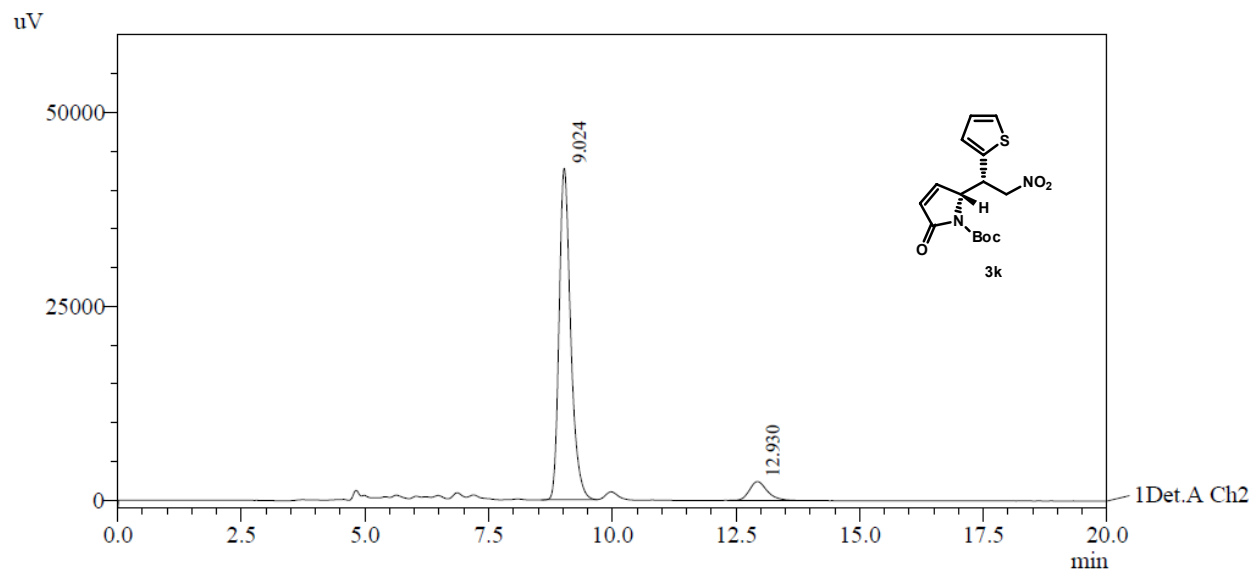




PeakTable

Detector A Ch2 254nm

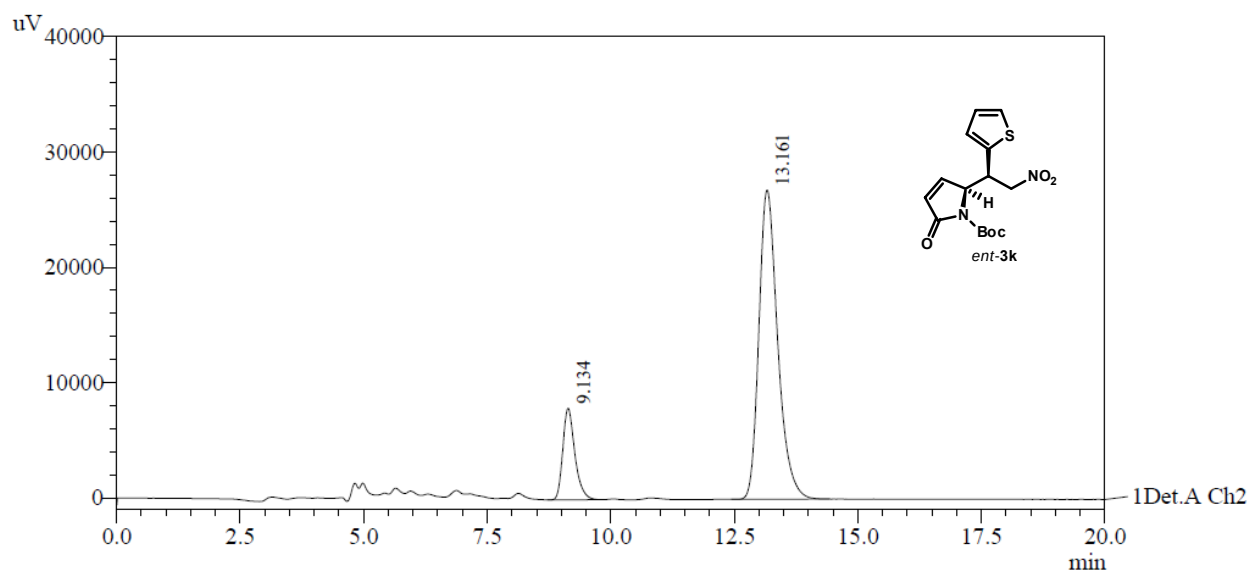
Peak#	Ret. Time	Area	Area %	Resolution
1	9.113	1483365	50.046	0.000
2	13.026	1480655	49.954	7.122
Total		2964020	100.000	



PeakTable

Detector A Ch2 254nm

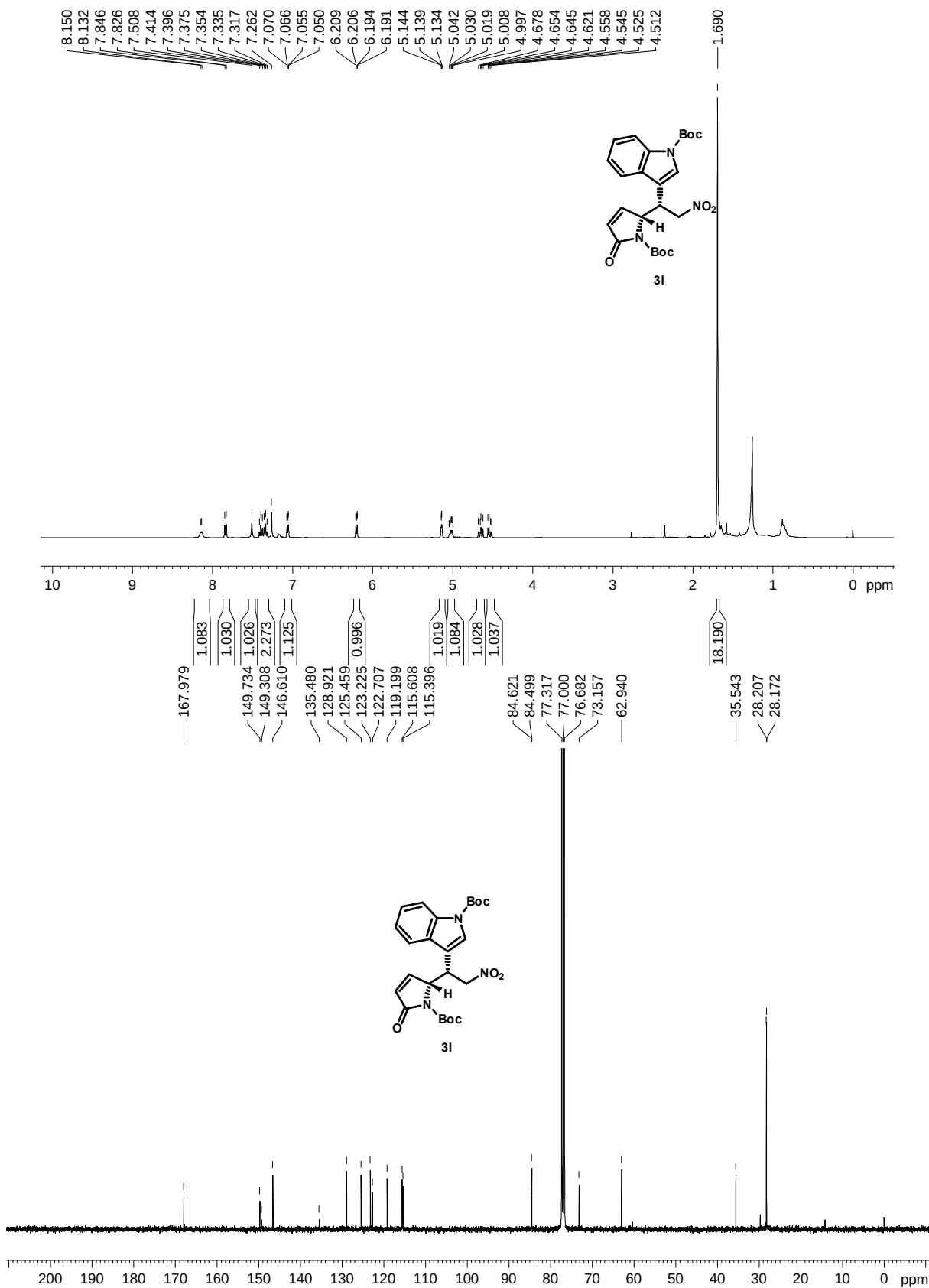
Peak#	Ret. Time	Area	Area %	Resolution
1	9.024	695513	91.967	0.000
2	12.930	60748	8.033	7.335
Total		756262	100.000	

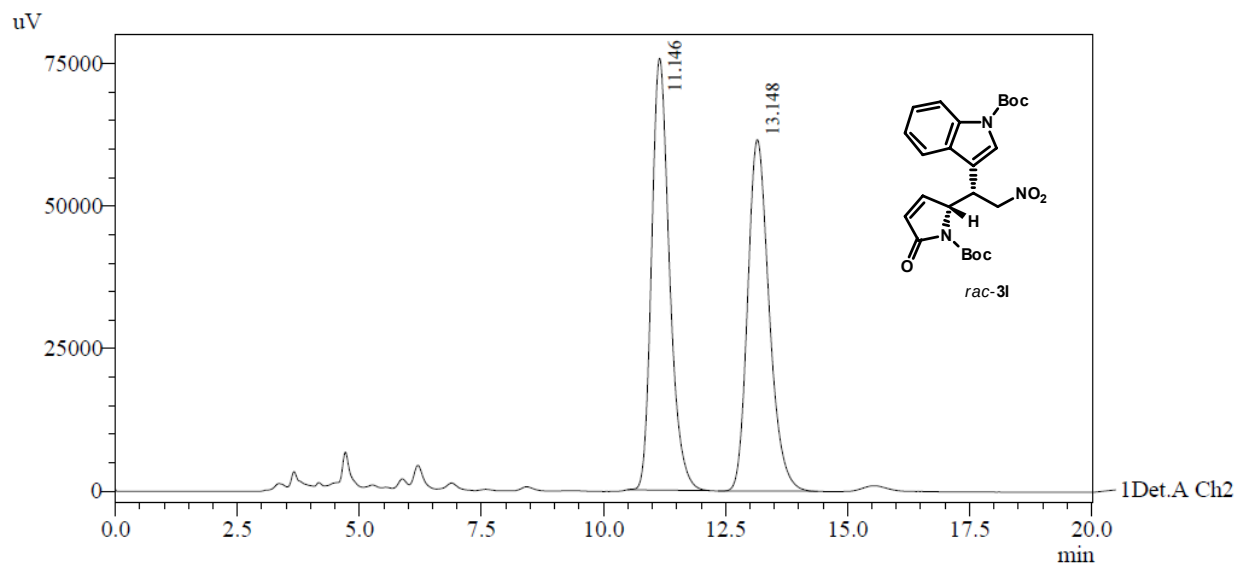


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	9.134	134800	15.946	0.000
2	13.161	710565	84.054	7.183
Total		845364	100.000	

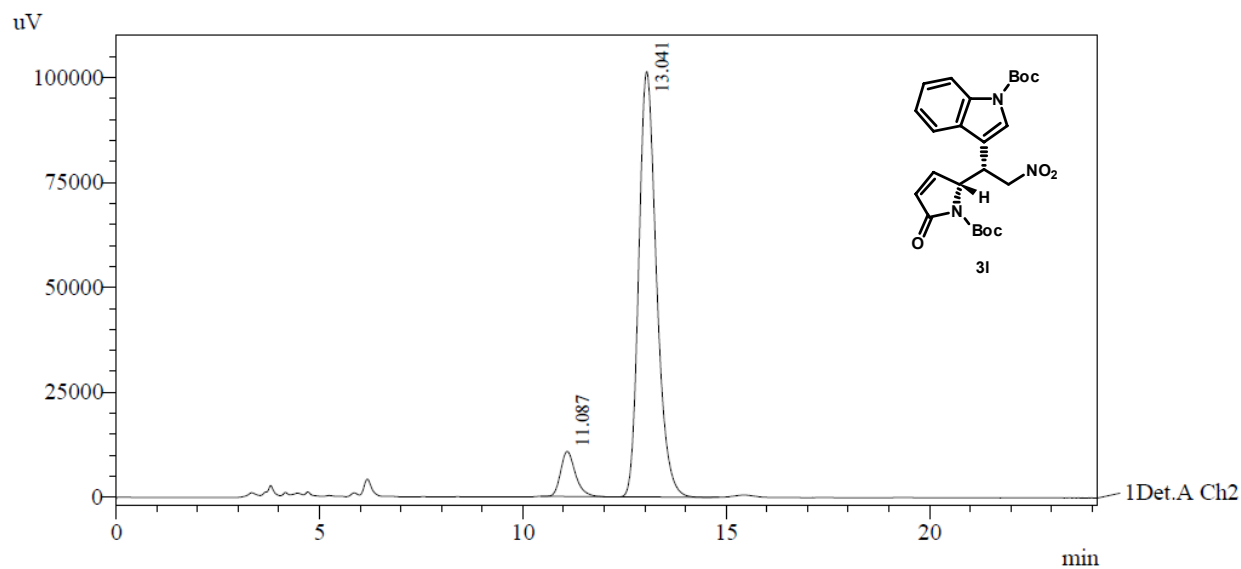




PeakTable

Detector A Ch2 254nm

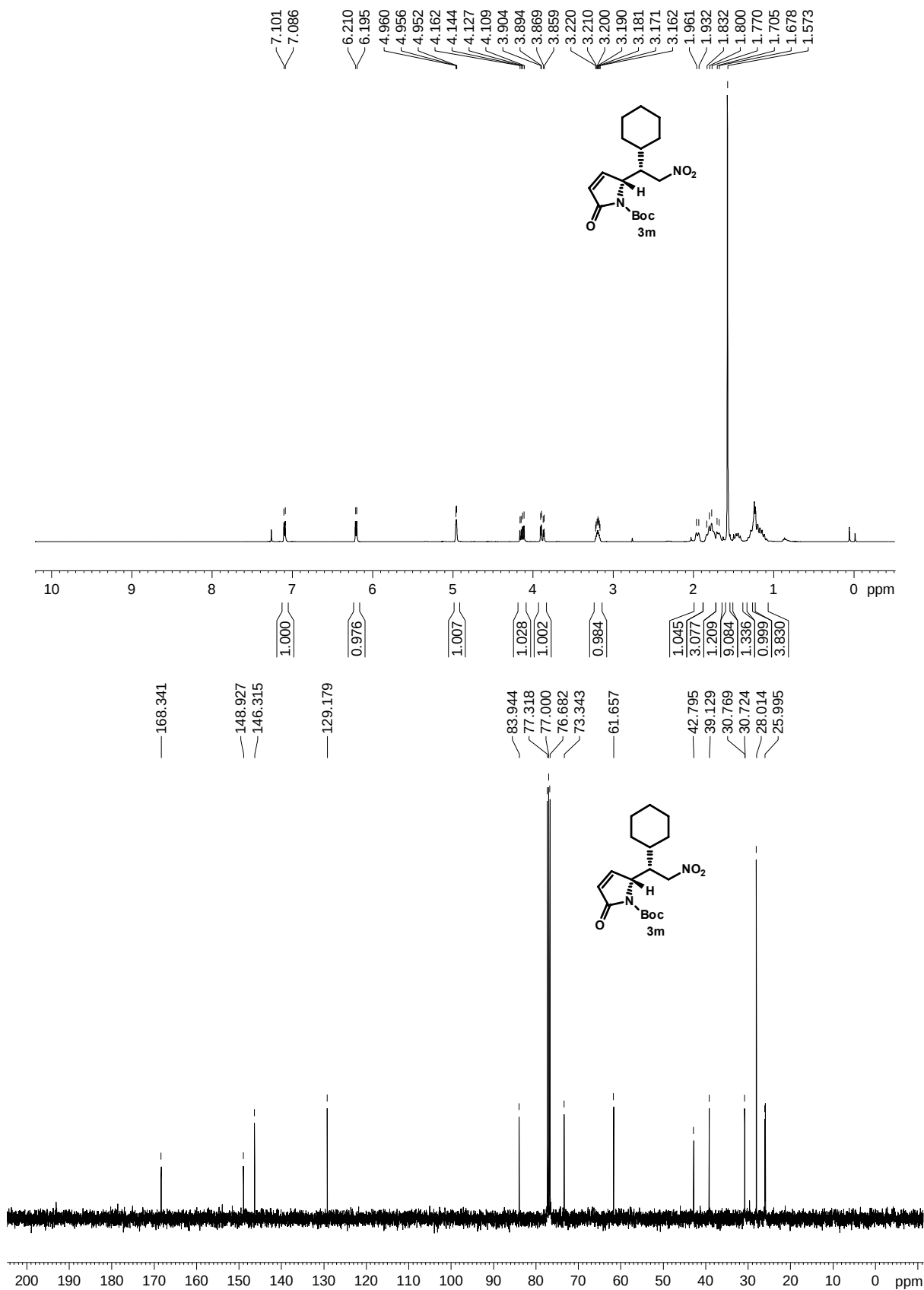
Peak#	Ret. Time	Area	Area %	Resolution
1	11.146	1932179	50.548	0.000
2	13.148	1890263	49.452	2.746
Total		3822442	100.000	

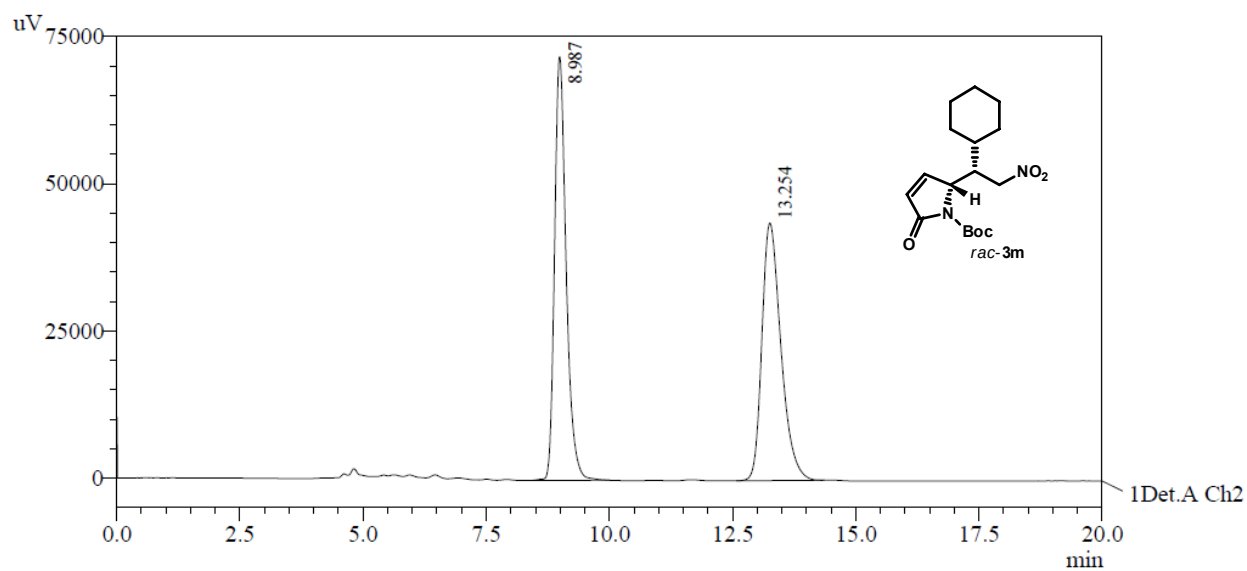


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	11.087	272222	8.145	0.000
2	13.041	3069907	91.855	2.712
Total		3342129	100.000	

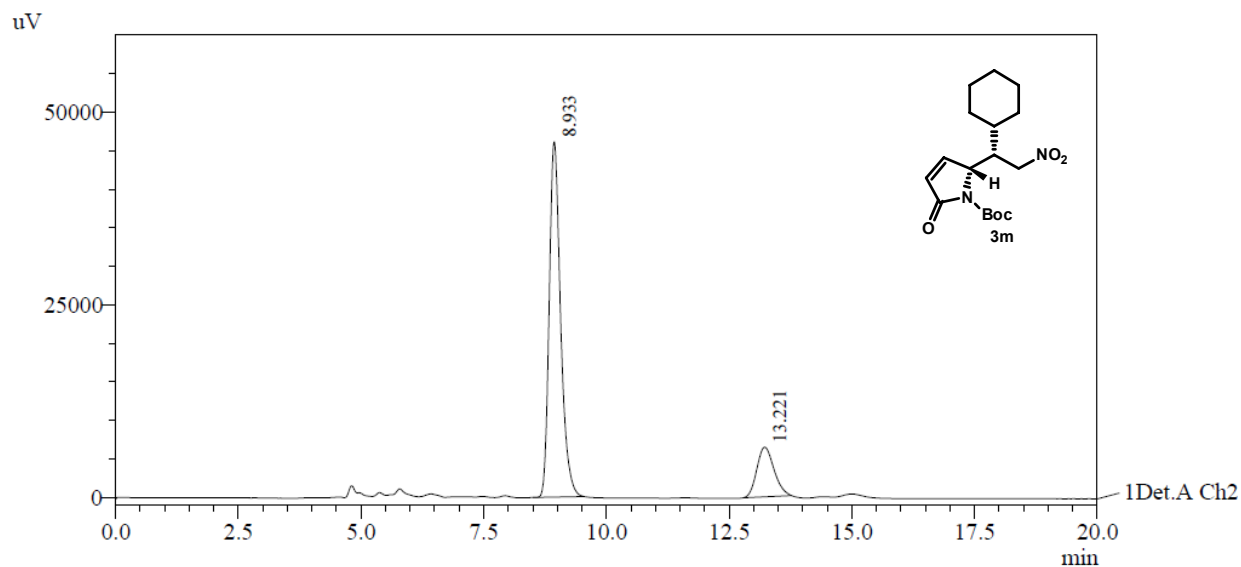




PeakTable

Detector A Ch2 254nm

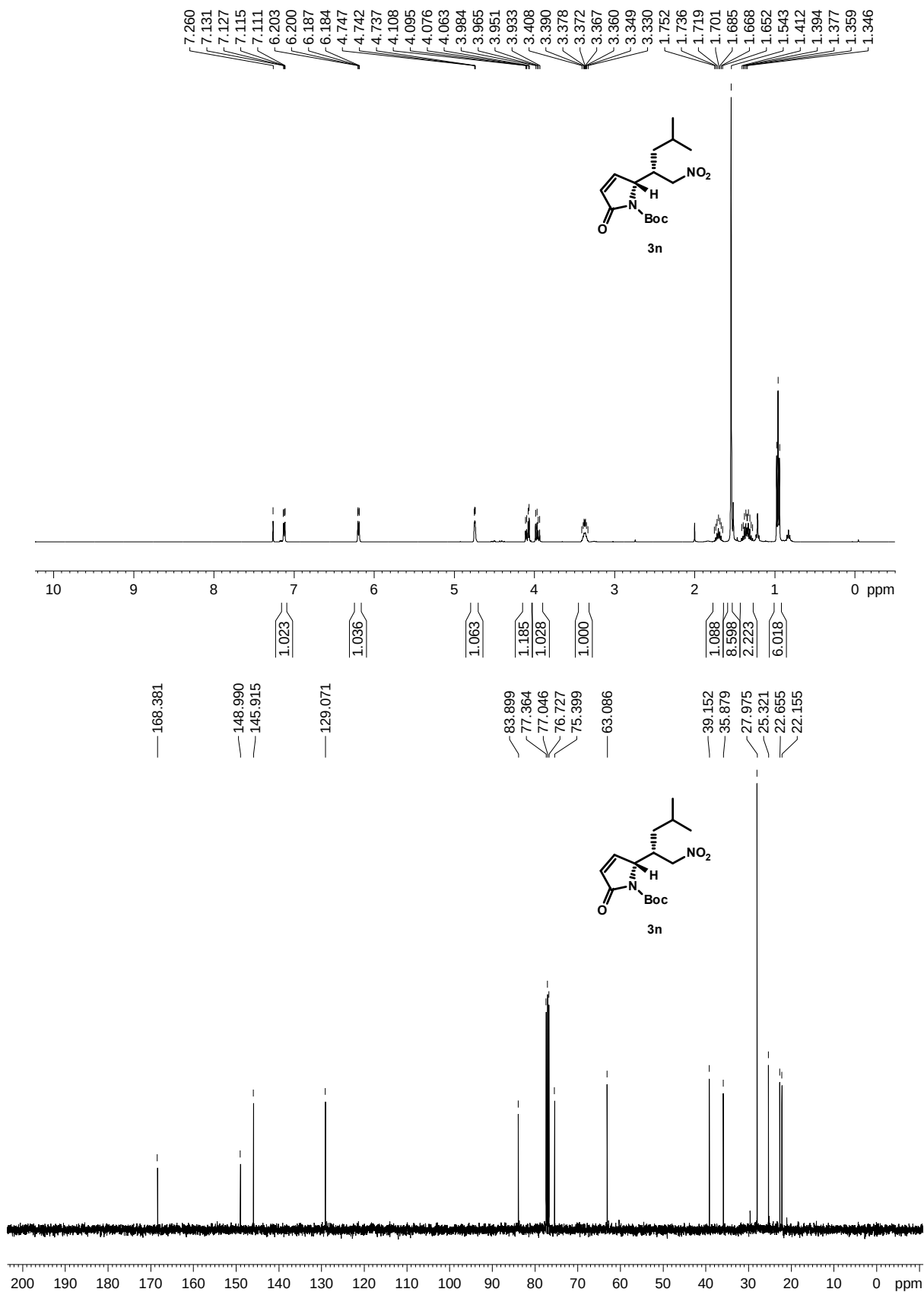
Peak#	Ret. Time	Area	Area %	Resolution
1	8.987	1181274	50.122	0.000
2	13.254	1175508	49.878	7.623
Total		2356782	100.000	

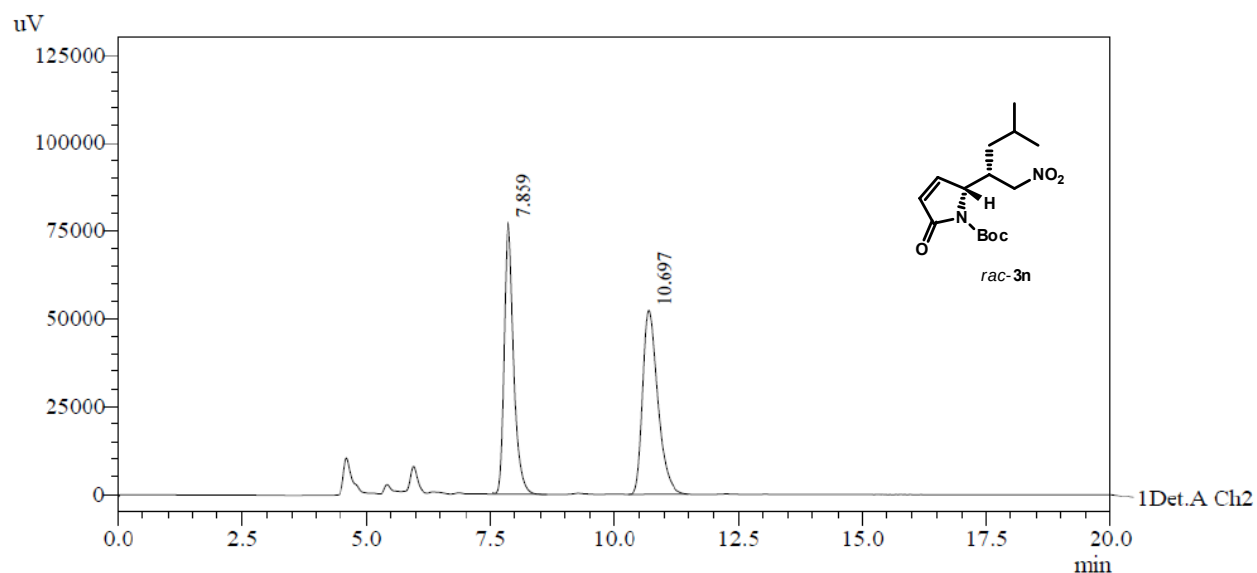


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	8.933	741129	82.508	0.000
2	13.221	157117	17.492	8.026
Total		898246	100.000	

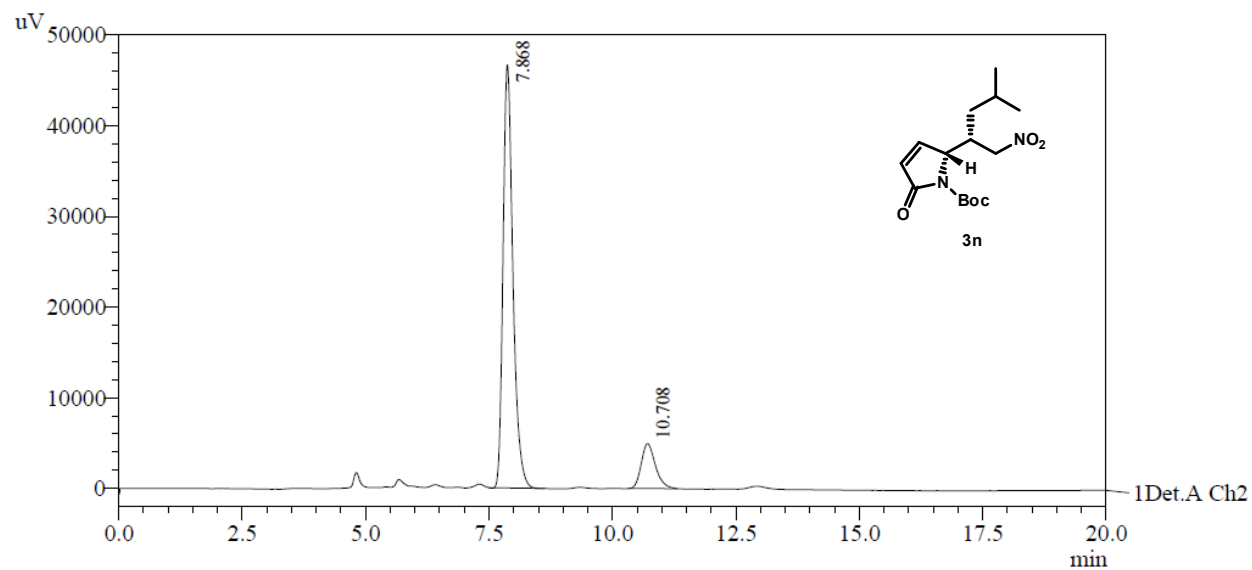




PeakTable

Detector A Ch2 254nm

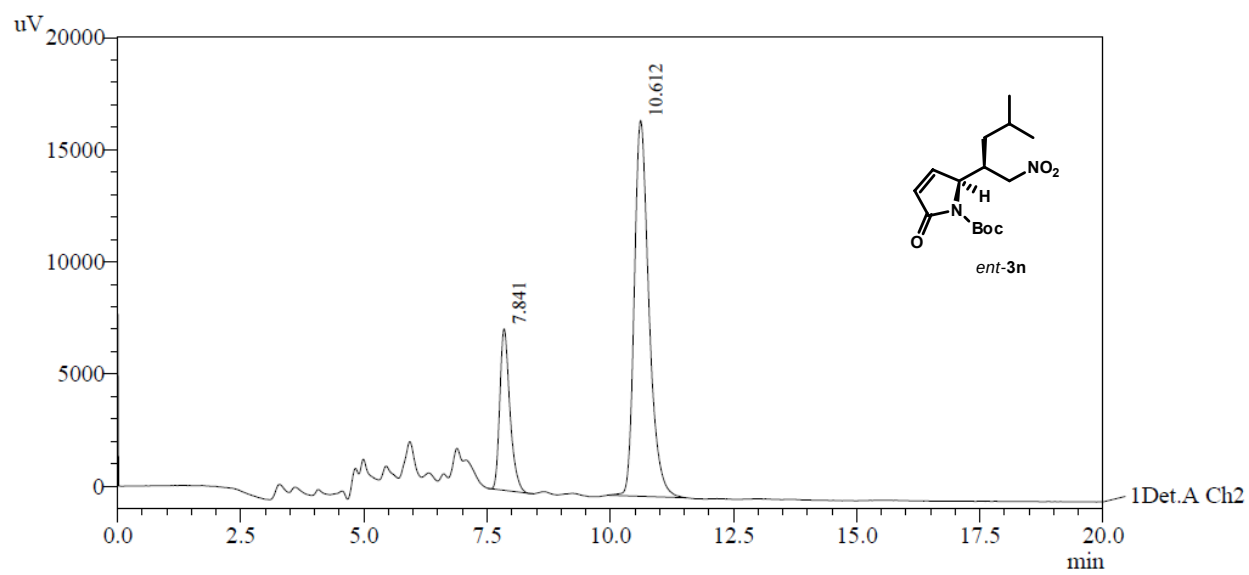
Peak#	Ret. Time	Area	Area %	Resolution
1	7.859	1154524	51.539	0.000
2	10.697	1085569	48.461	6.290
Total		2240093	100.000	



PeakTable

Detector A Ch2 254nm

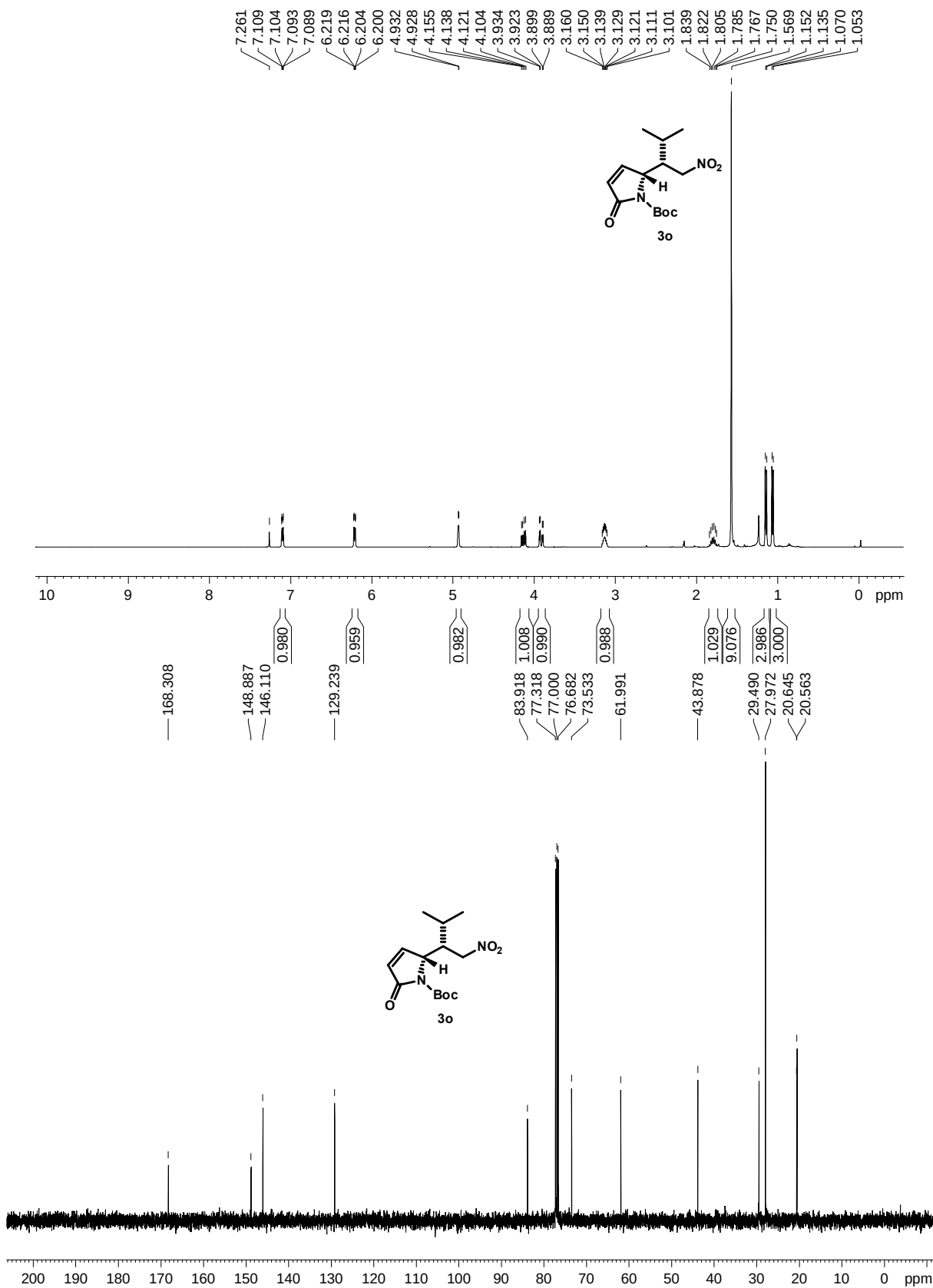
Peak#	Ret. Time	Area	Area %	Resolution
1	7.868	650442	86.777	0.000
2	10.708	99111	13.223	6.427
Total		749553	100.000	

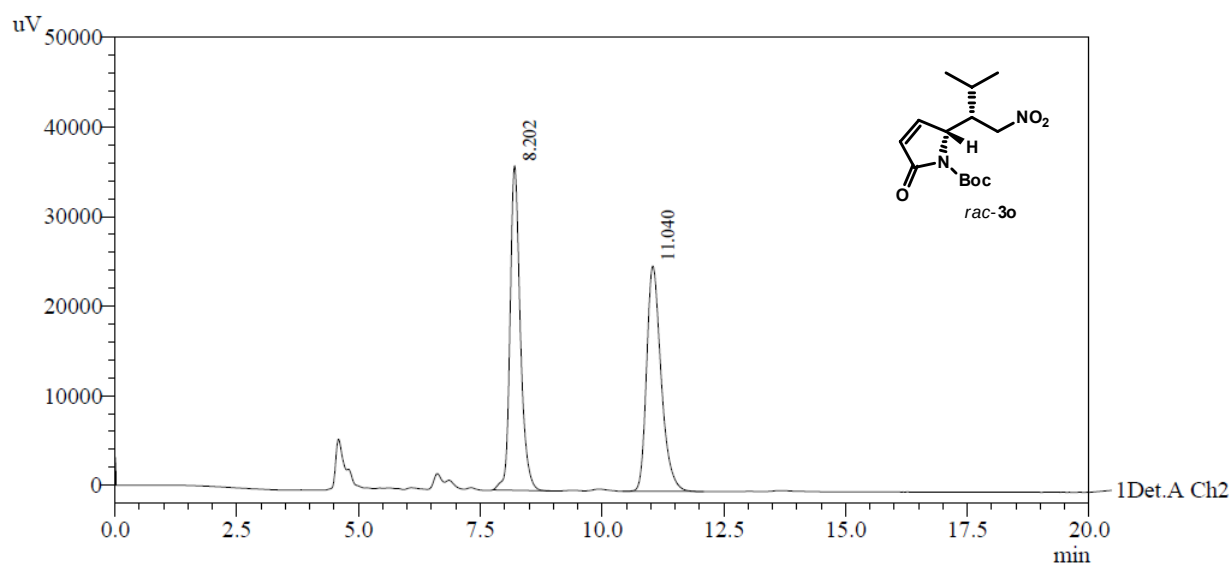


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	7.841	102521	22.779	0.000
2	10.612	347549	77.221	6.120
Total		450069	100.000	

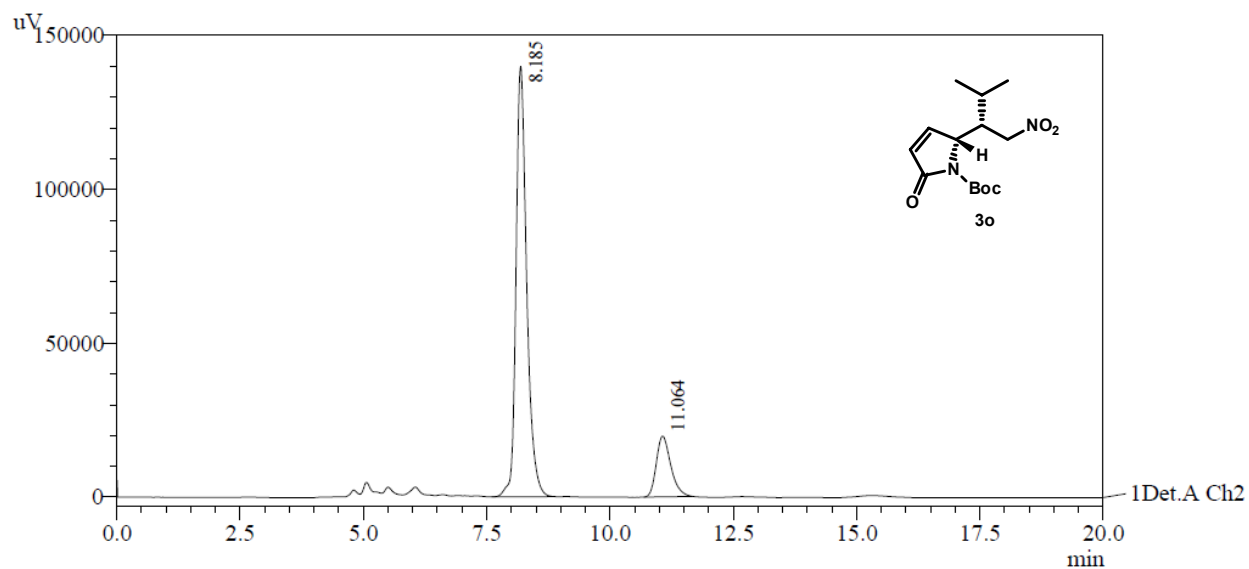




PeakTable

Detector A Ch2 254nm

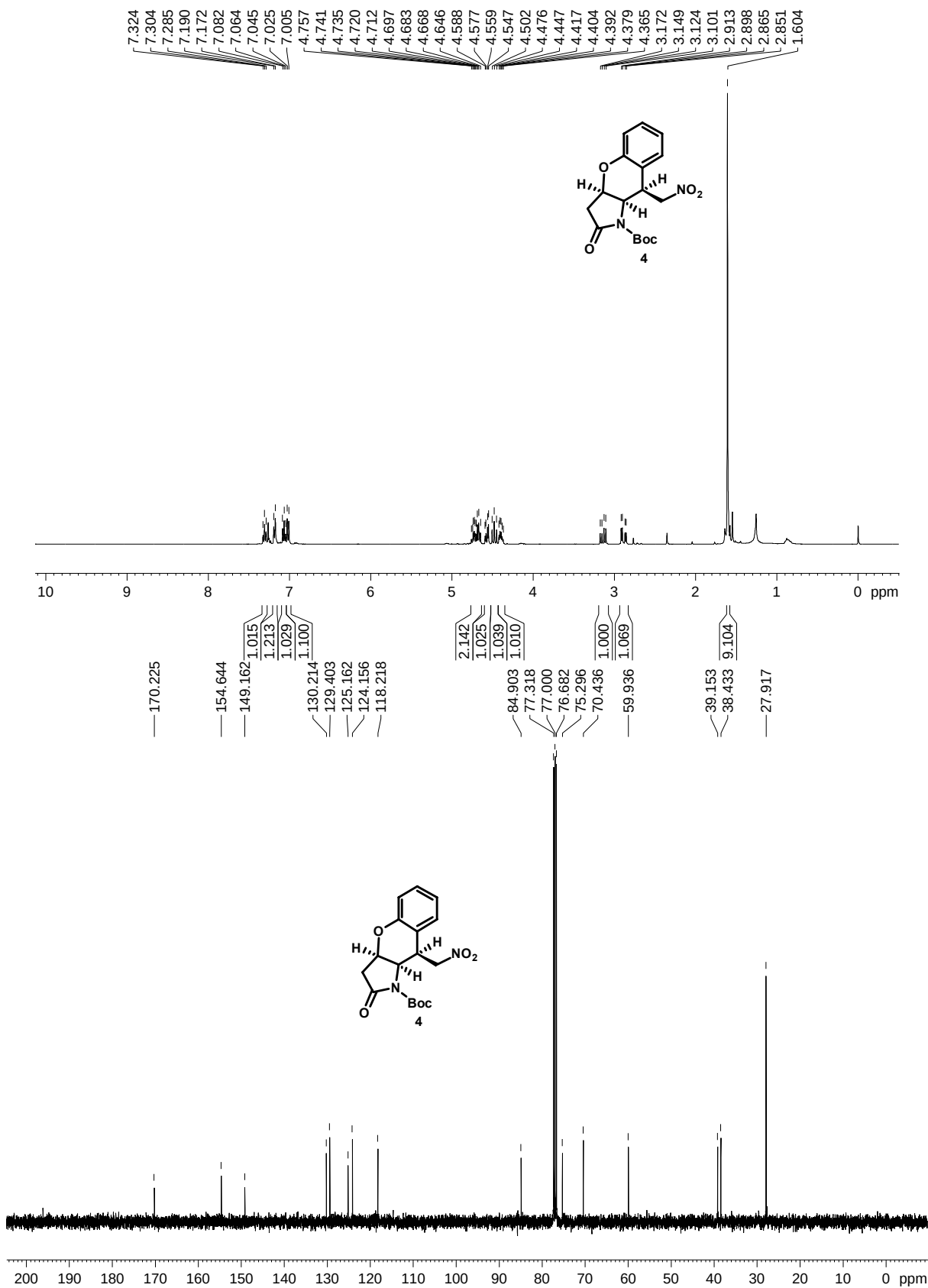
Peak#	Ret. Time	Area	Area %	Resolution
1	8.202	530555	50.373	0.000
2	11.040	522696	49.627	6.241
Total		1053251	100.000	

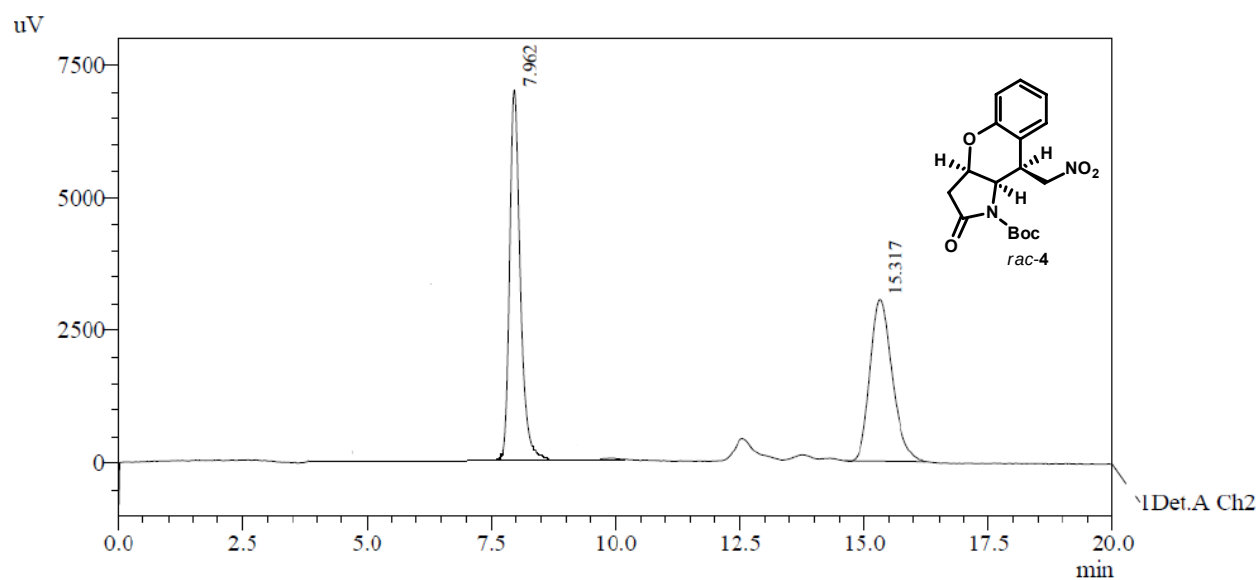


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	8.185	2109299	83.985	0.000
2	11.064	402217	16.015	6.285
Total		2511516	100.000	

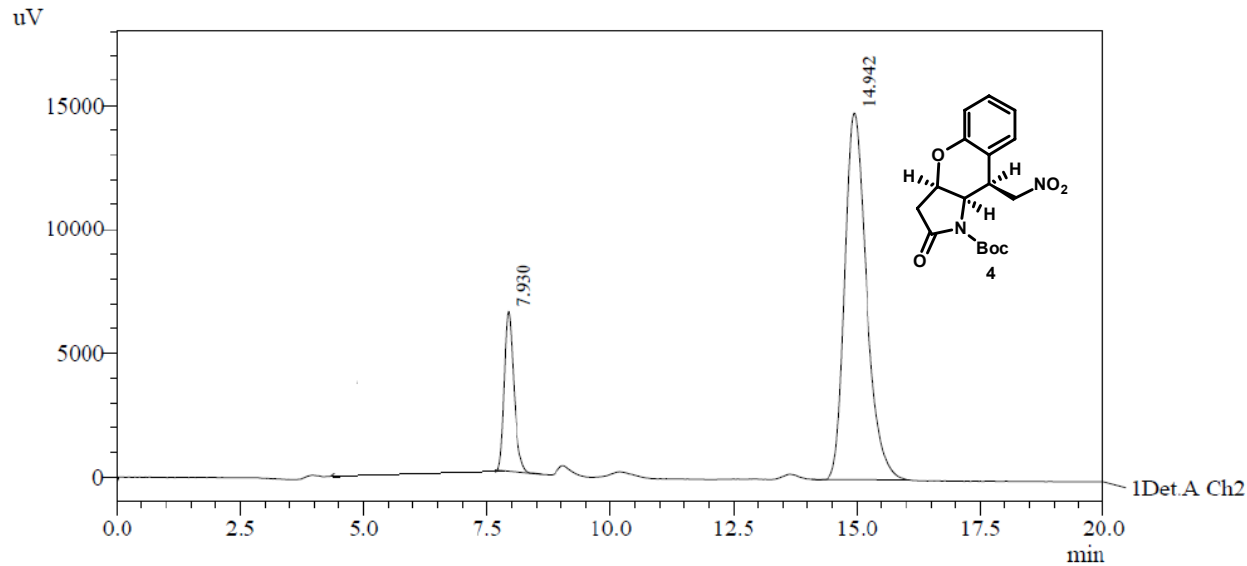




PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	7.962	93760	49.844	0.000
2	15.317	94347	50.156	12.609
Total		188107	100.000	



PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %	Resolution
1	7.930	87390	16.207	0.000
2	14.942	451835	83.793	12.131
Total		539225	100.000	