

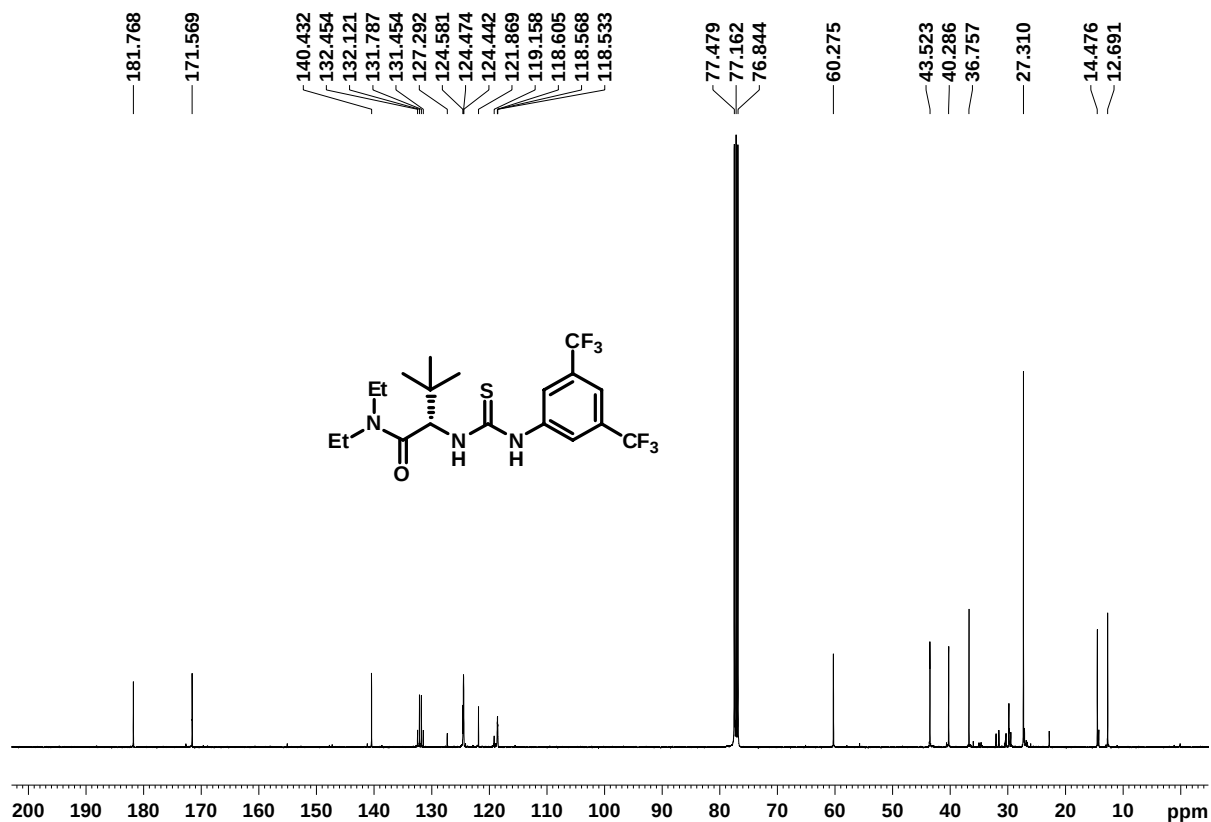
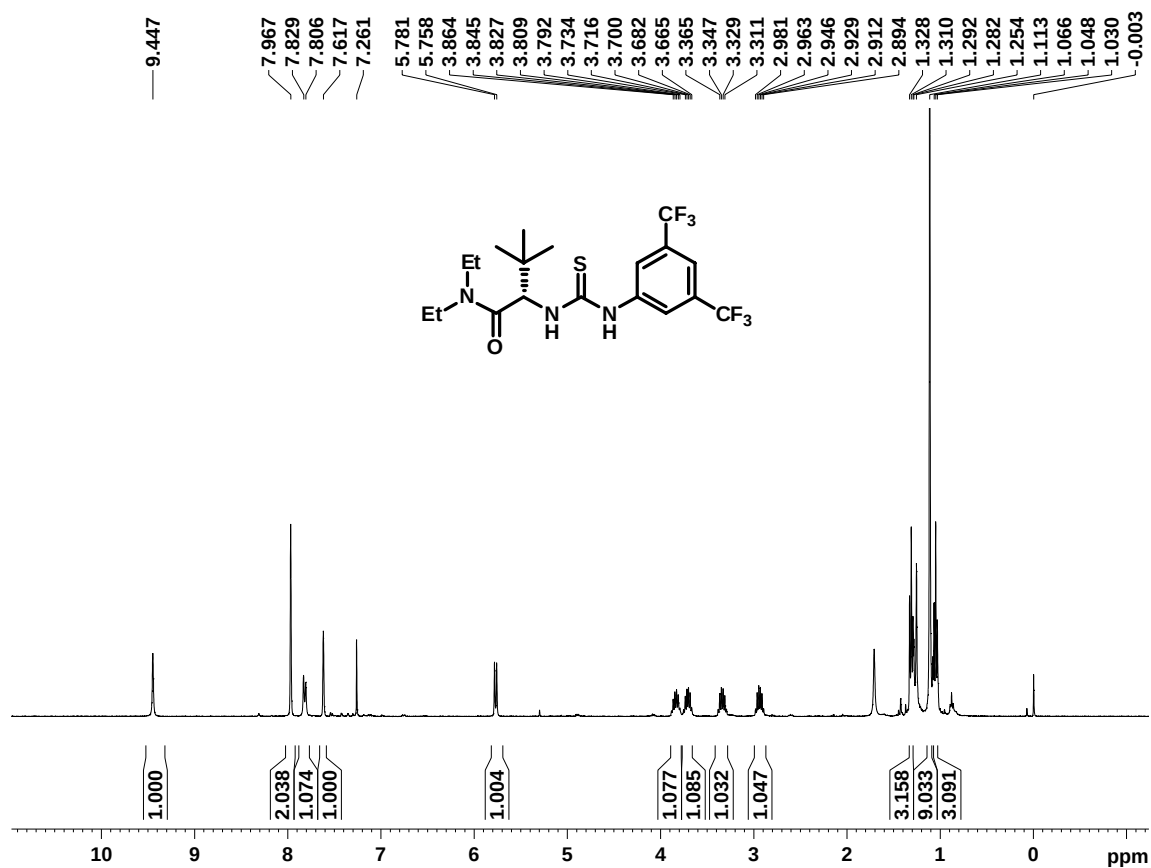
Synergistic Lewis base and anion-binding catalysis for the enantioselective vinylogous addition of deconjugated butenolides to allenoates

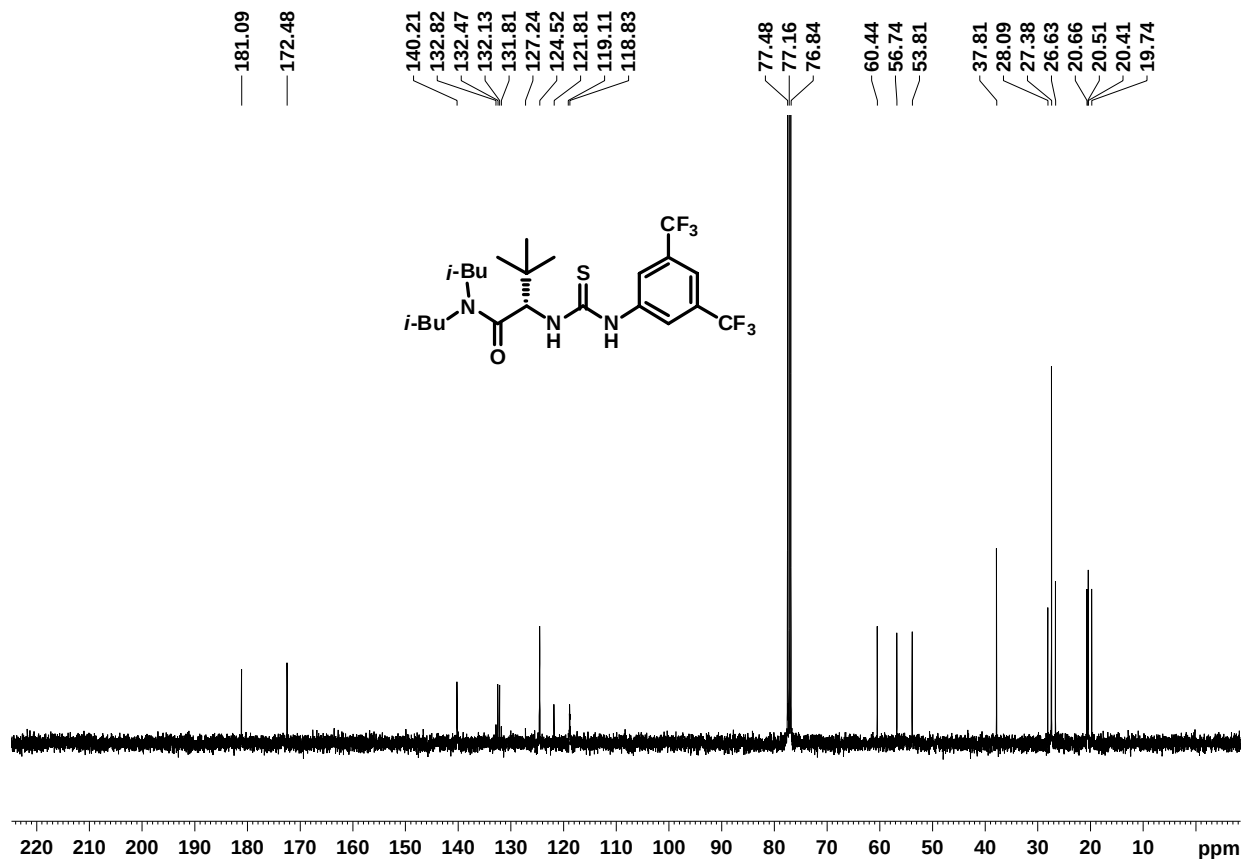
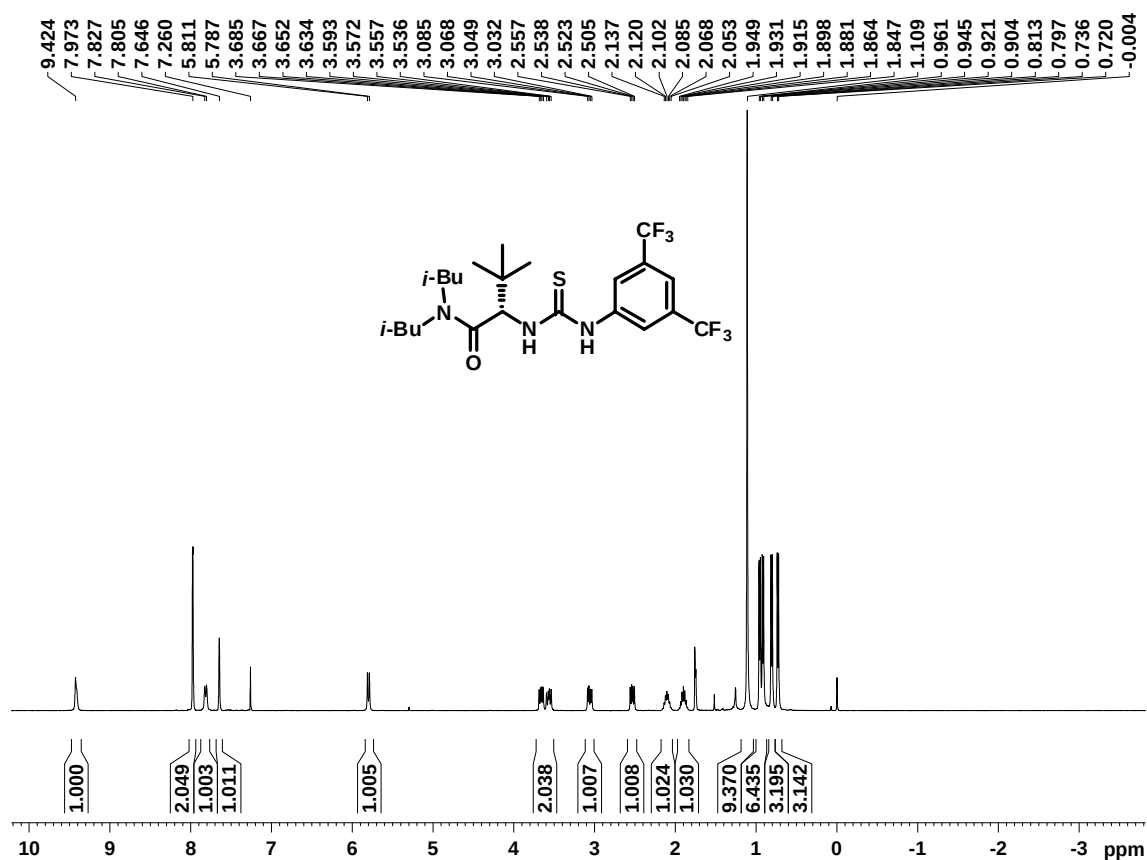
Vikas Kumar and Santanu Mukherjee*

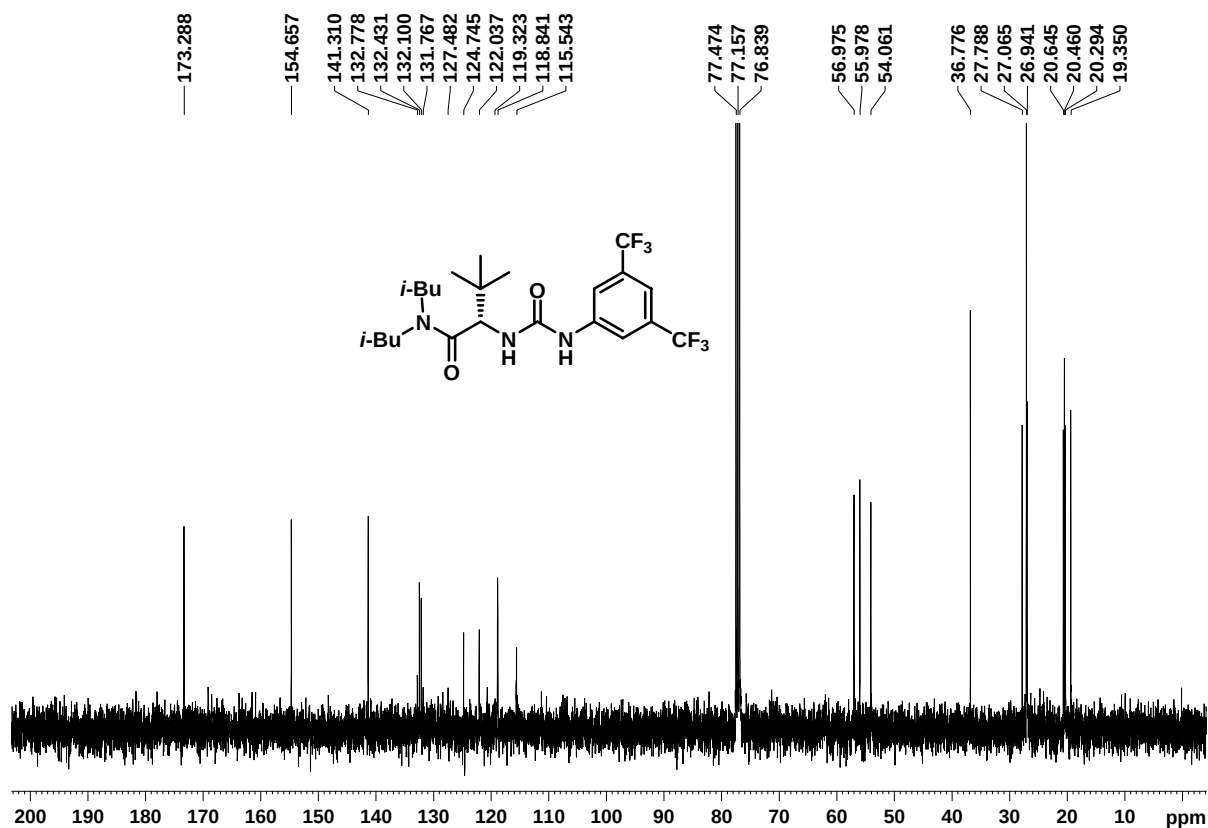
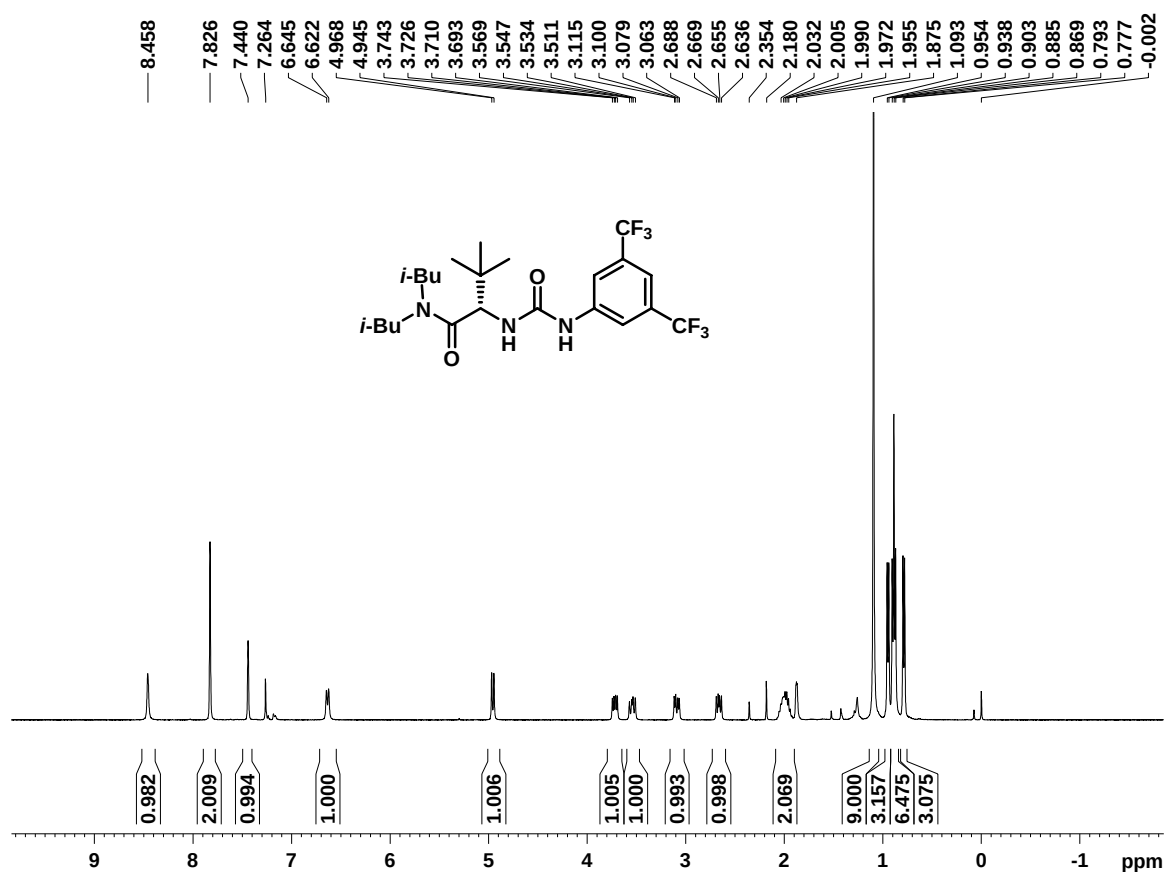
Department of Organic Chemistry, Indian Institute of Science, Bangalore 560 012, INDIA

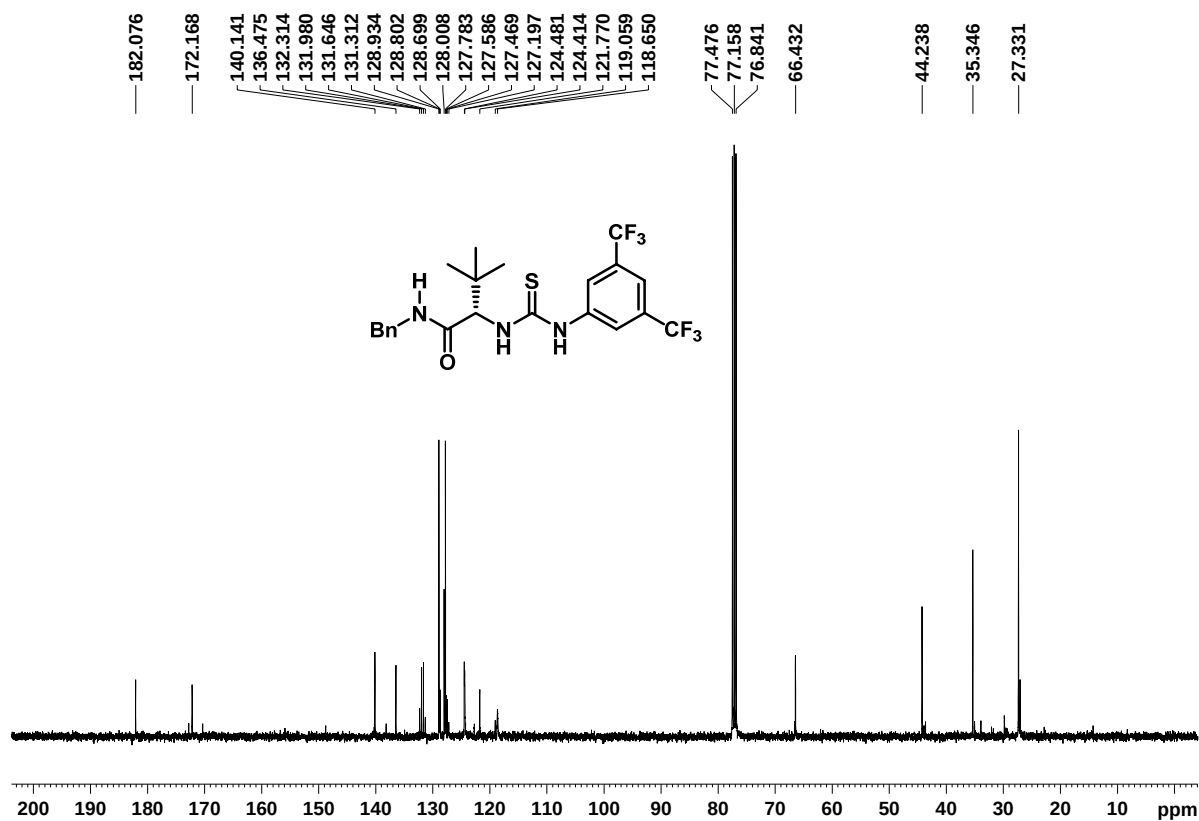
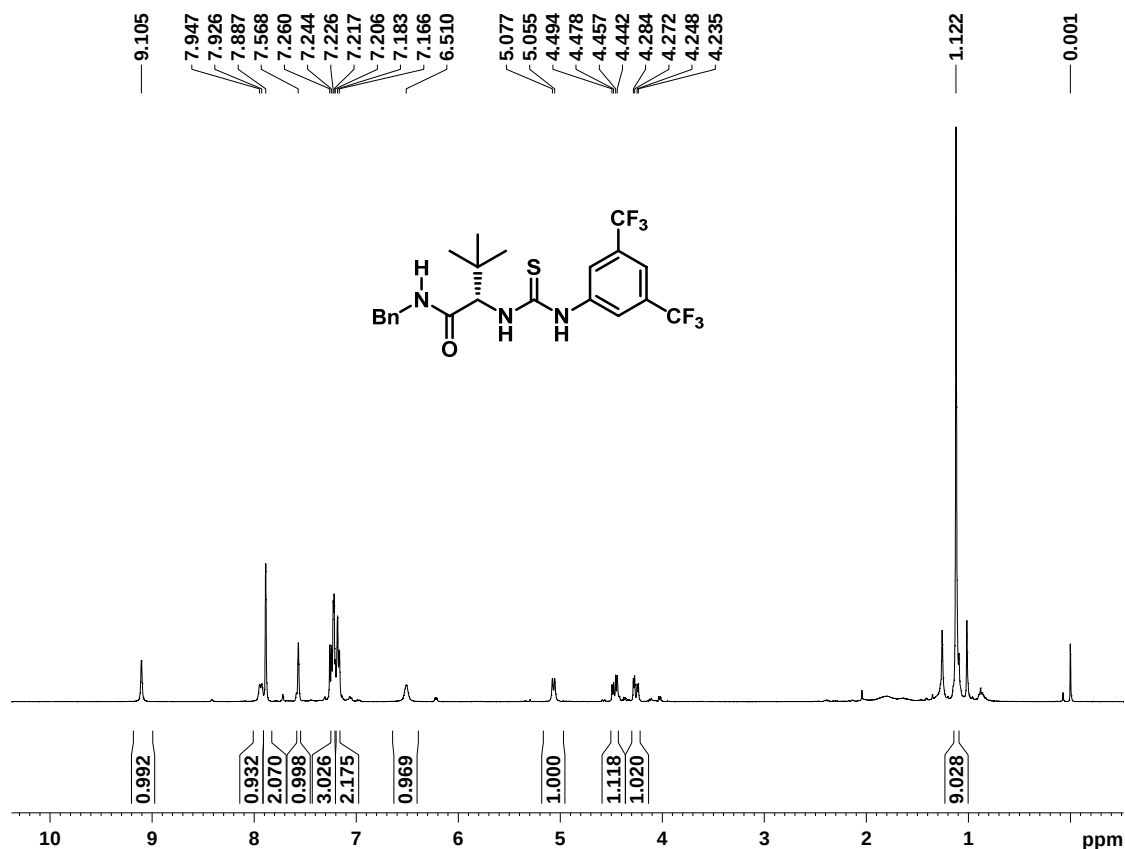
sm@orgchem.iisc.ernet.in

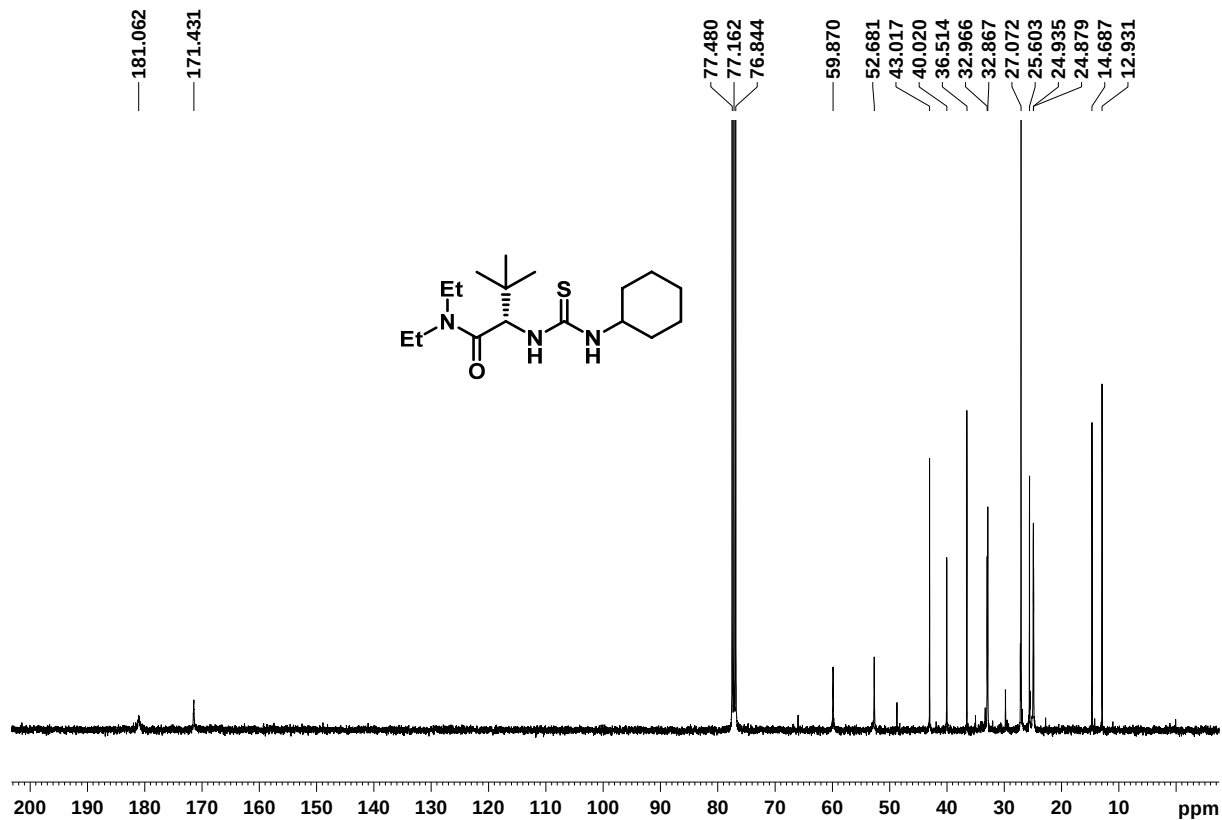
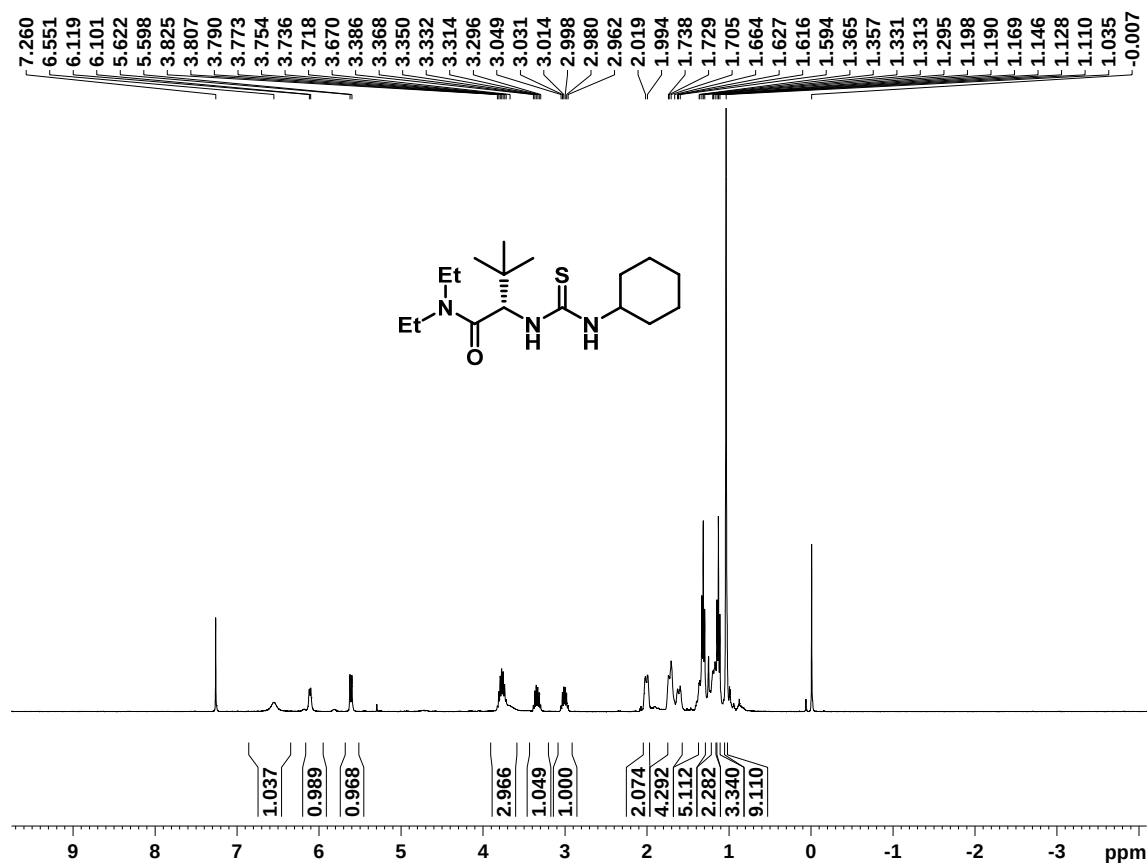
SUPPORTING INFORMATION: PART B

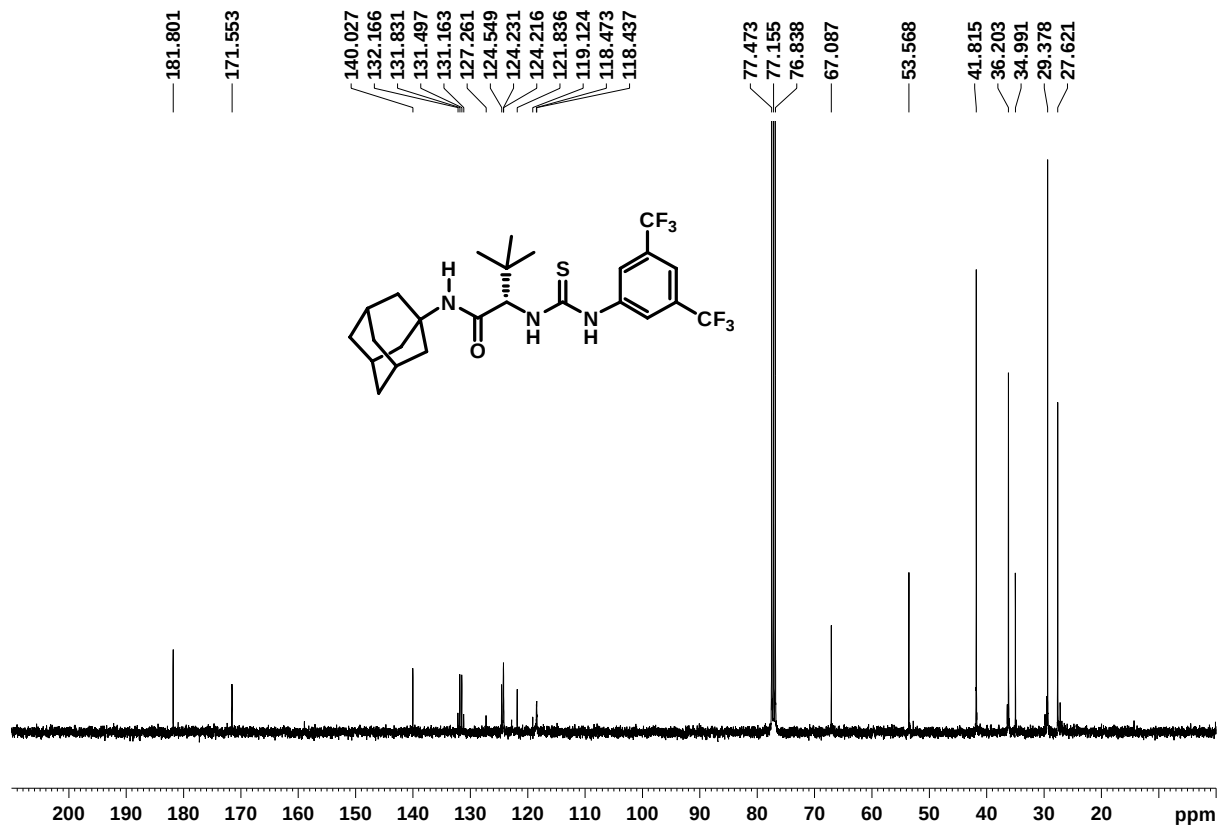


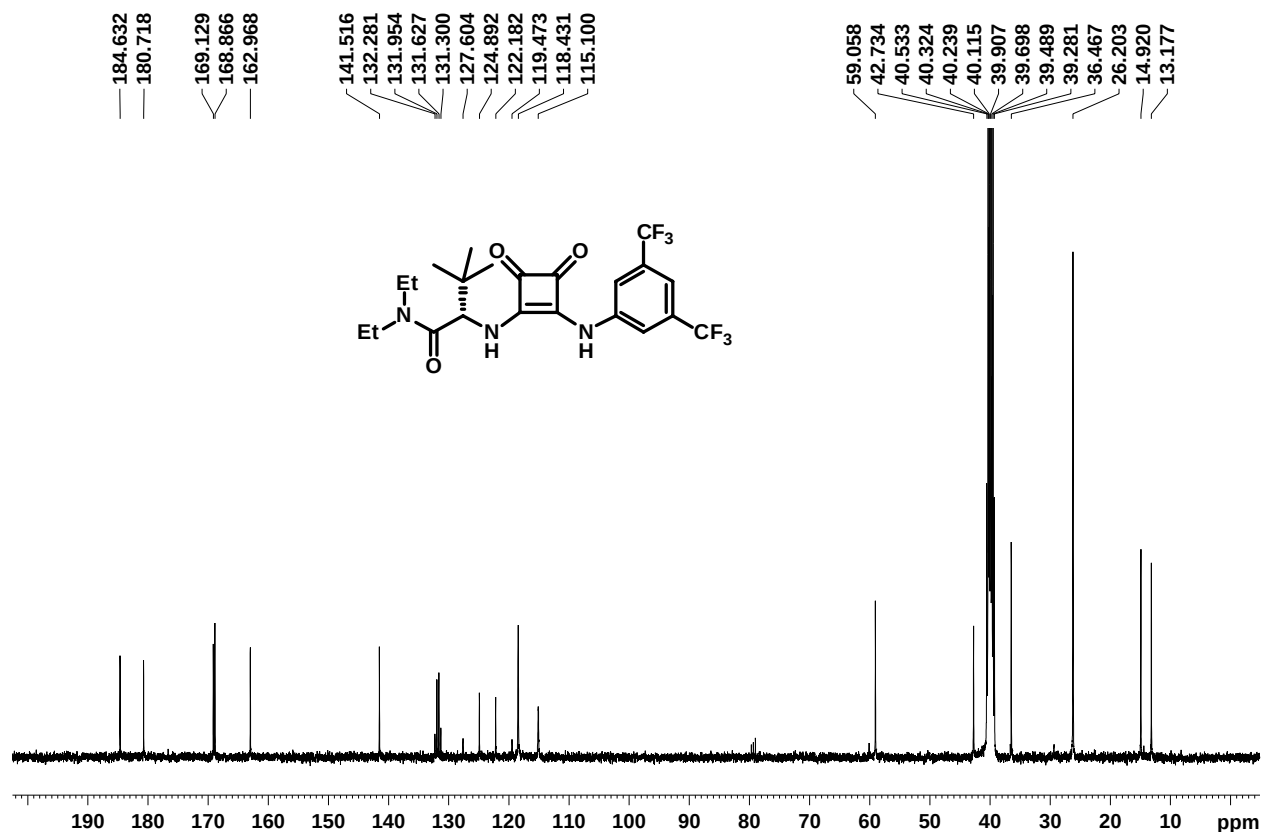
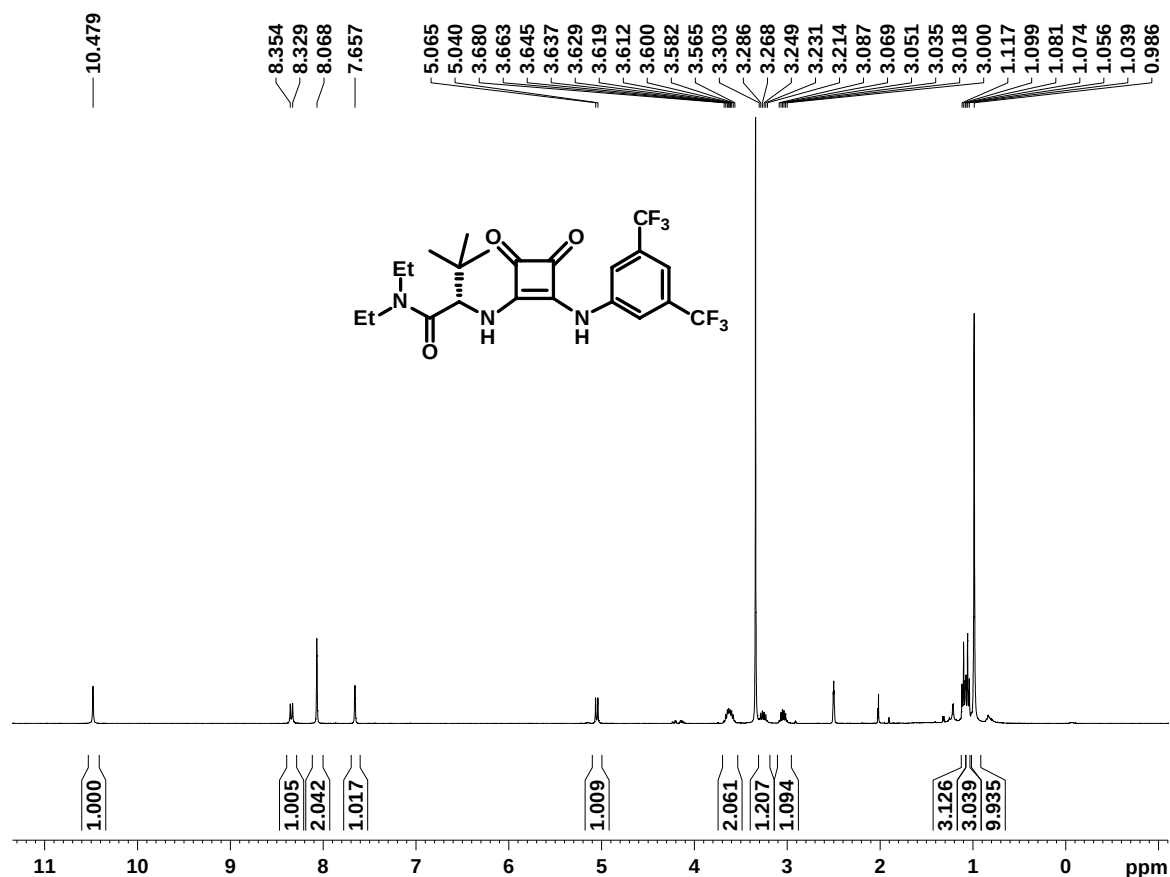


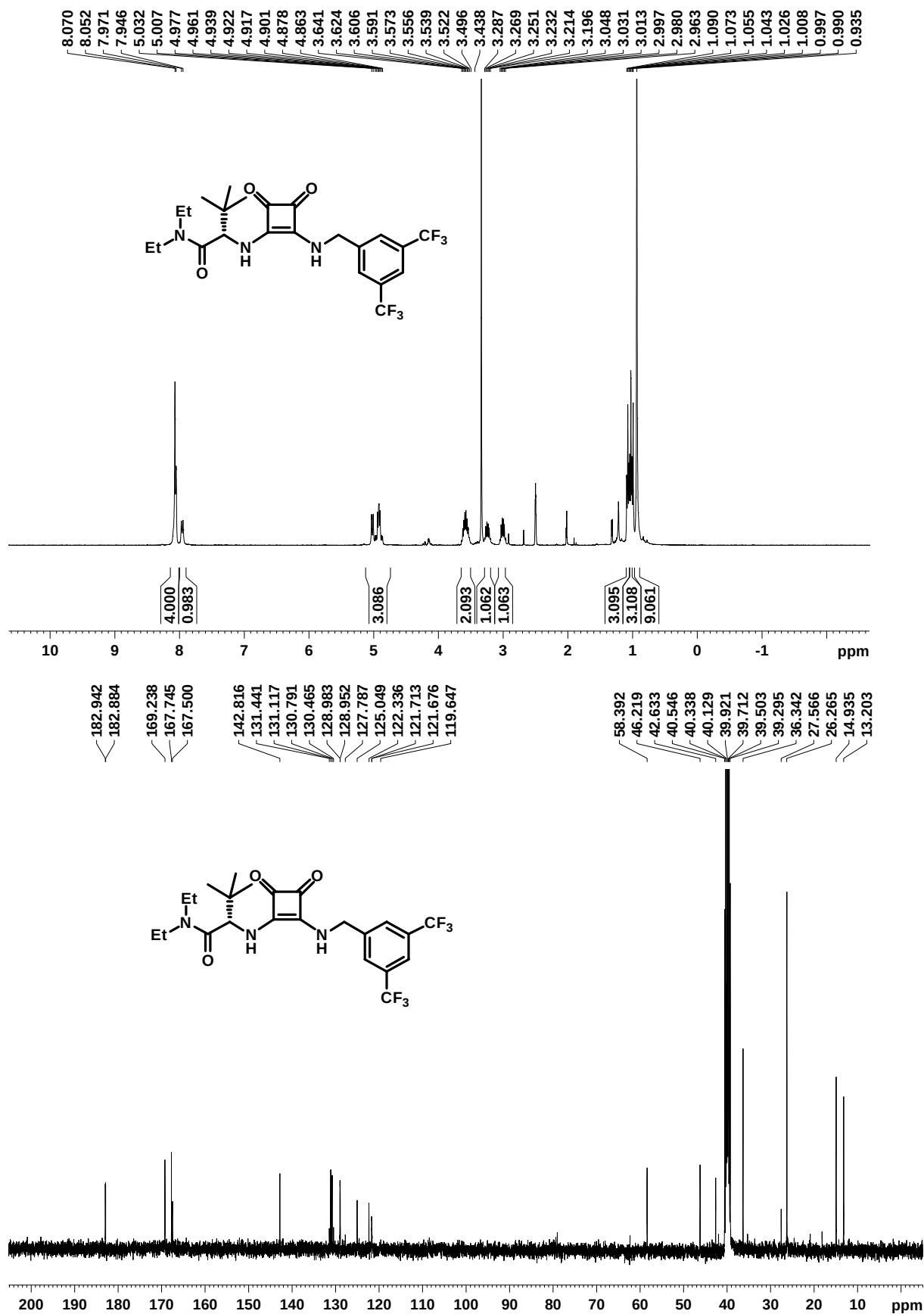


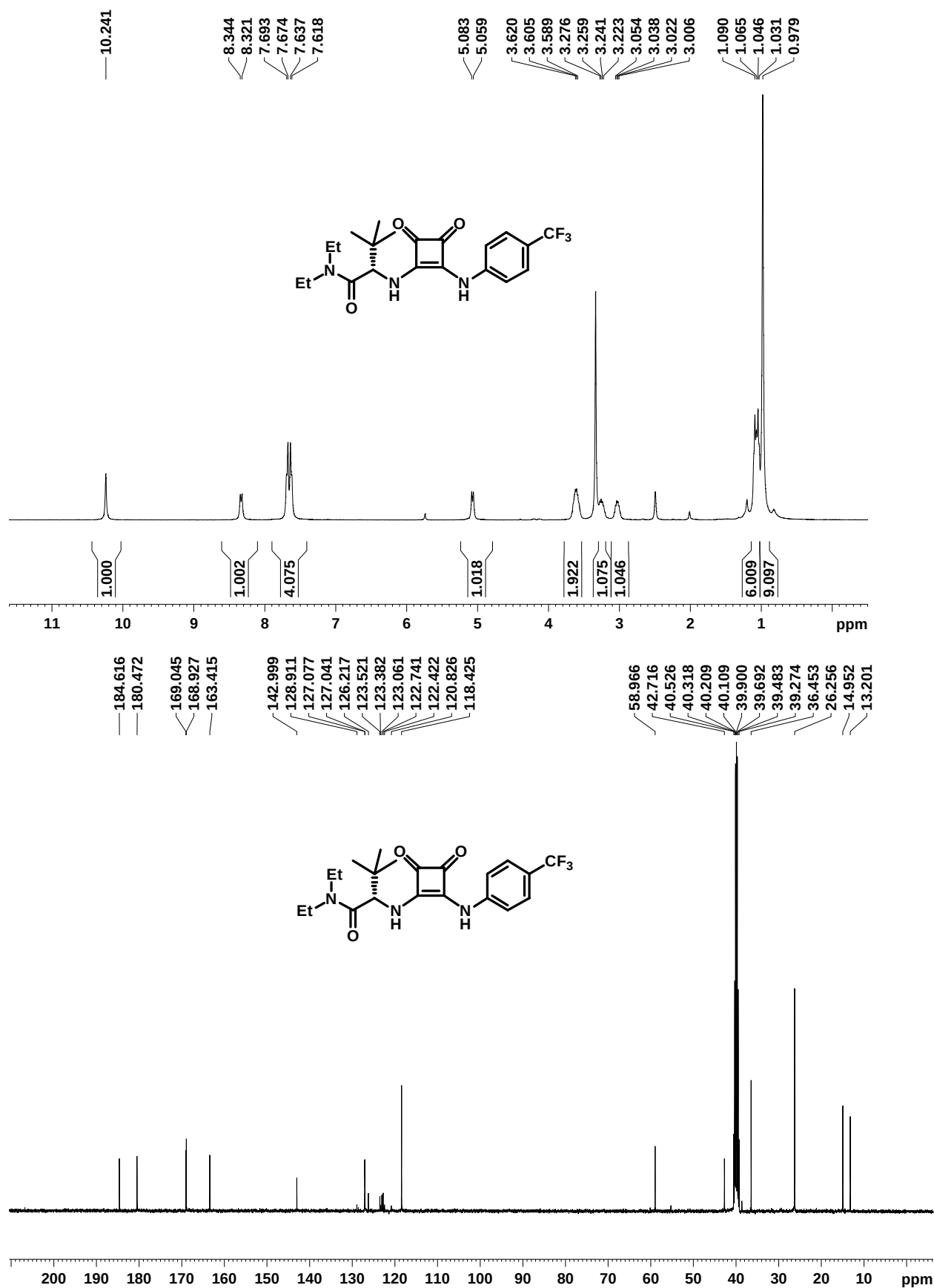


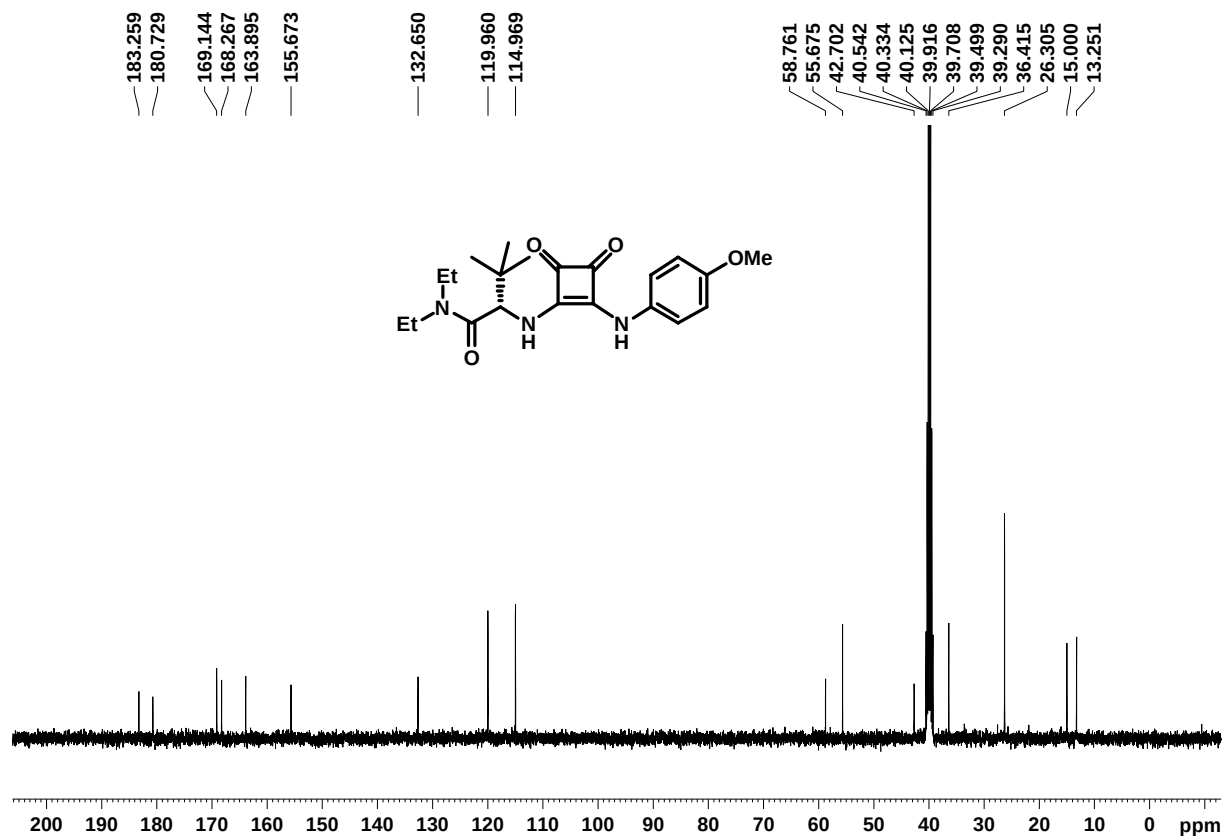
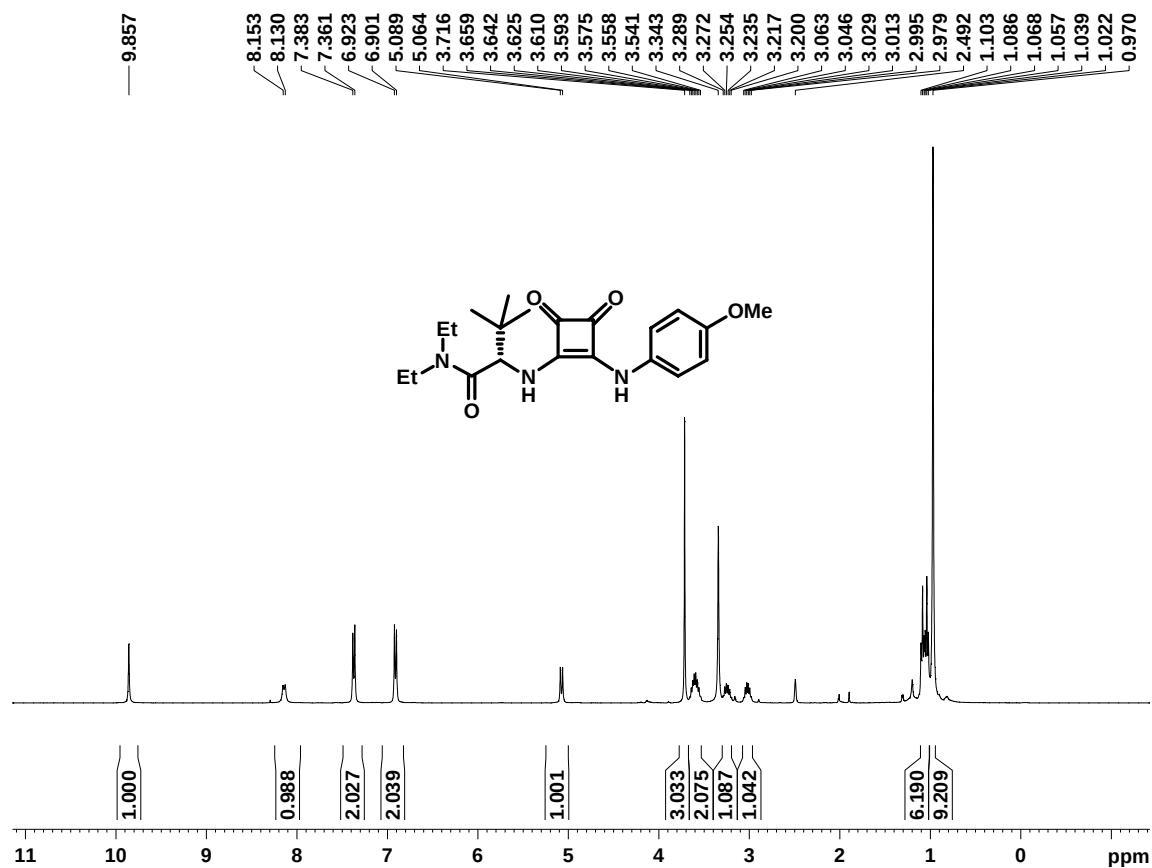


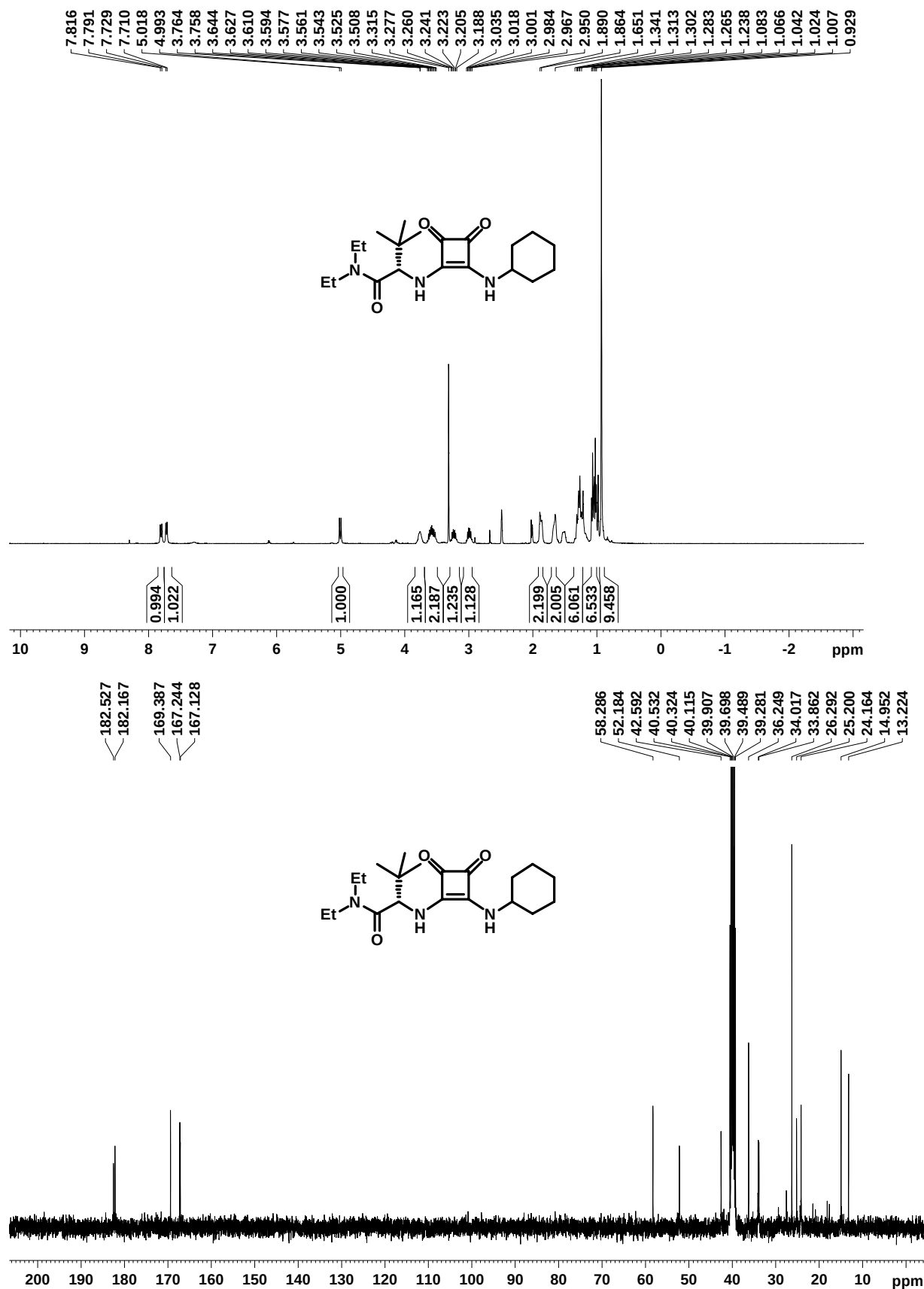




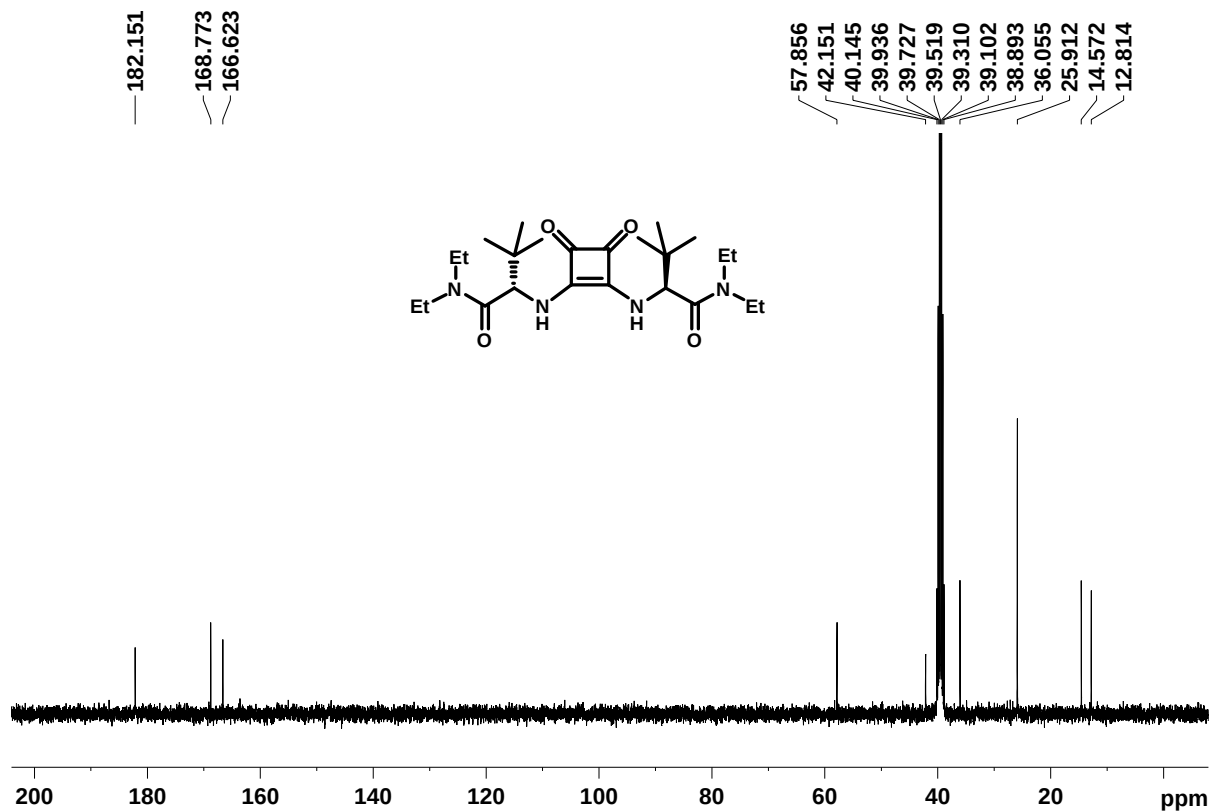
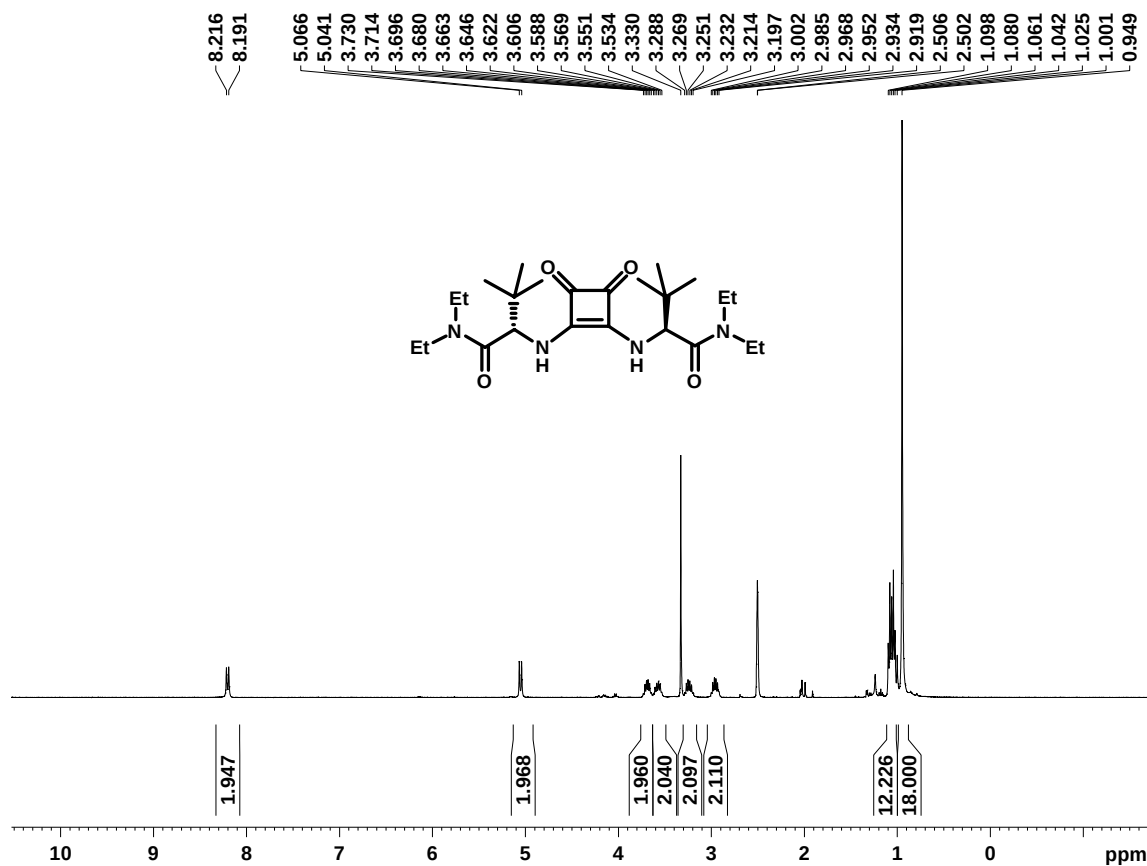


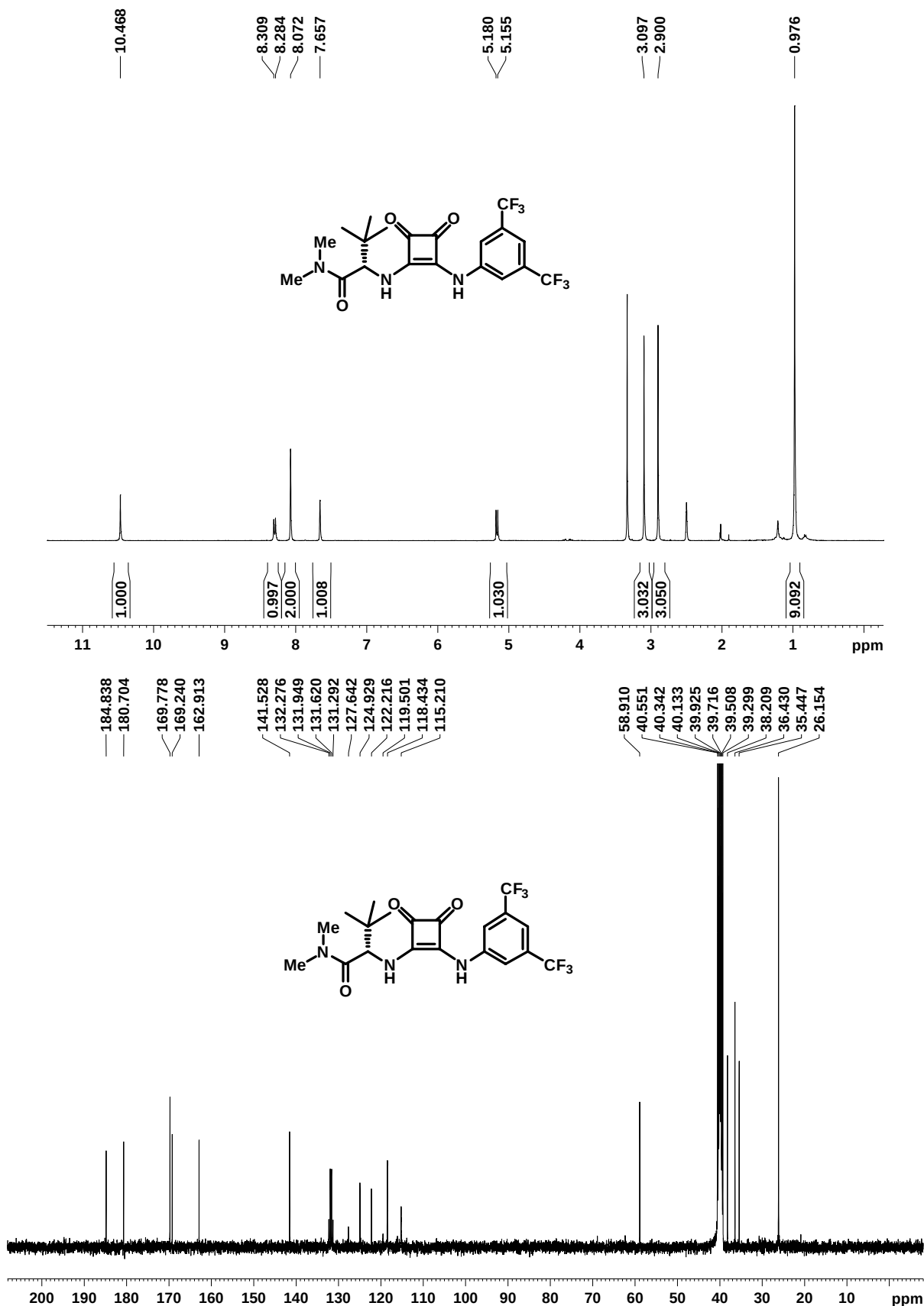


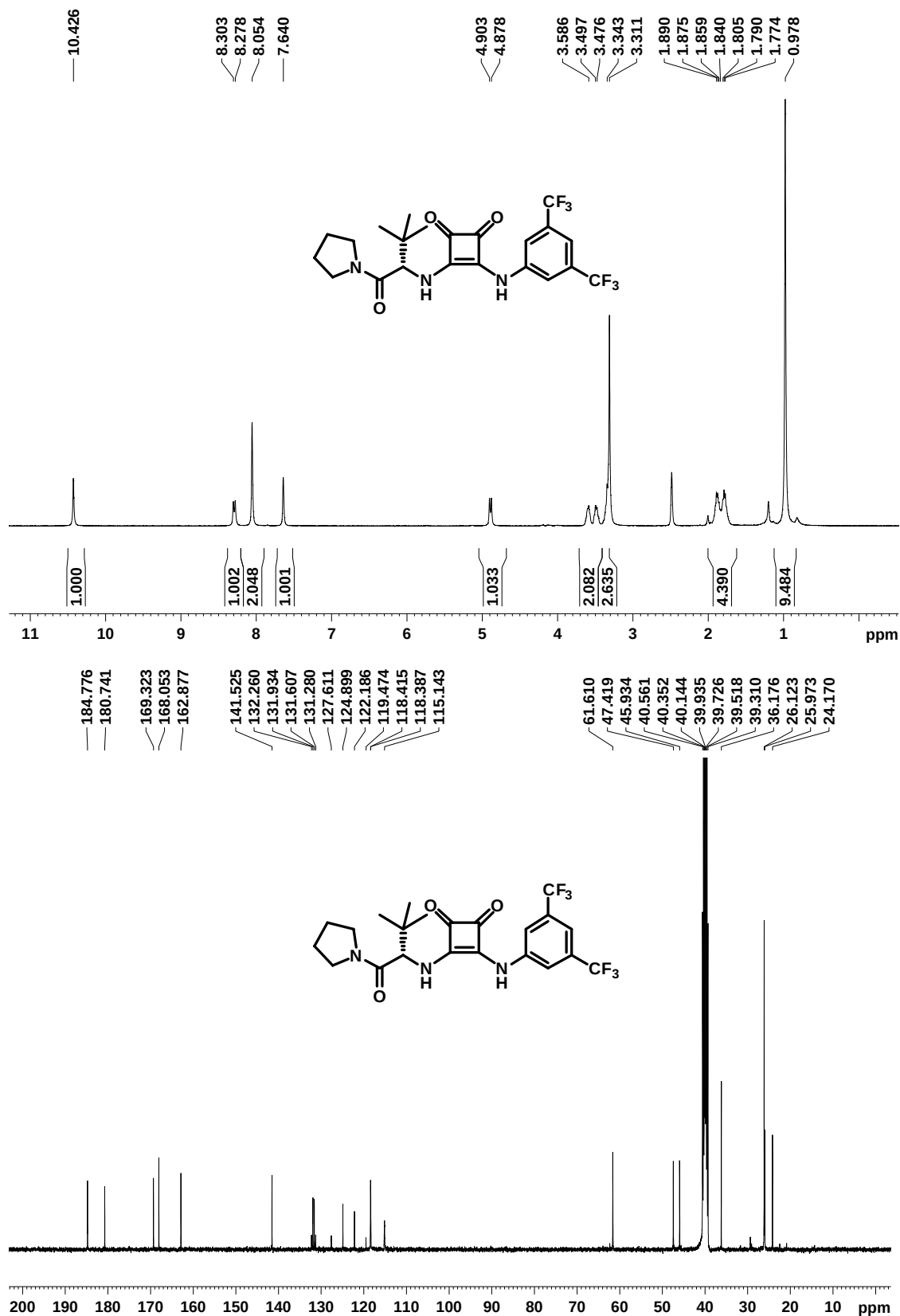


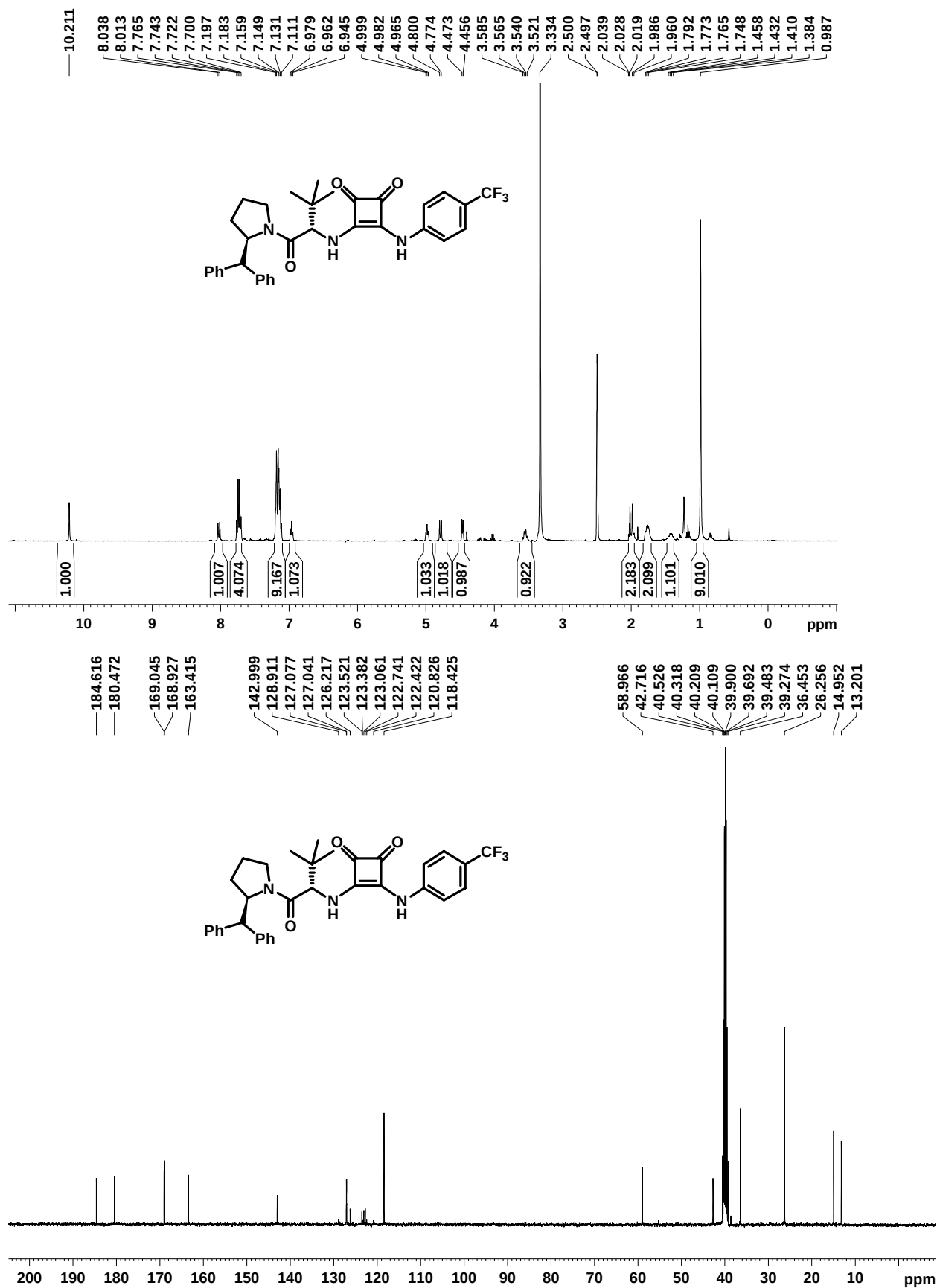


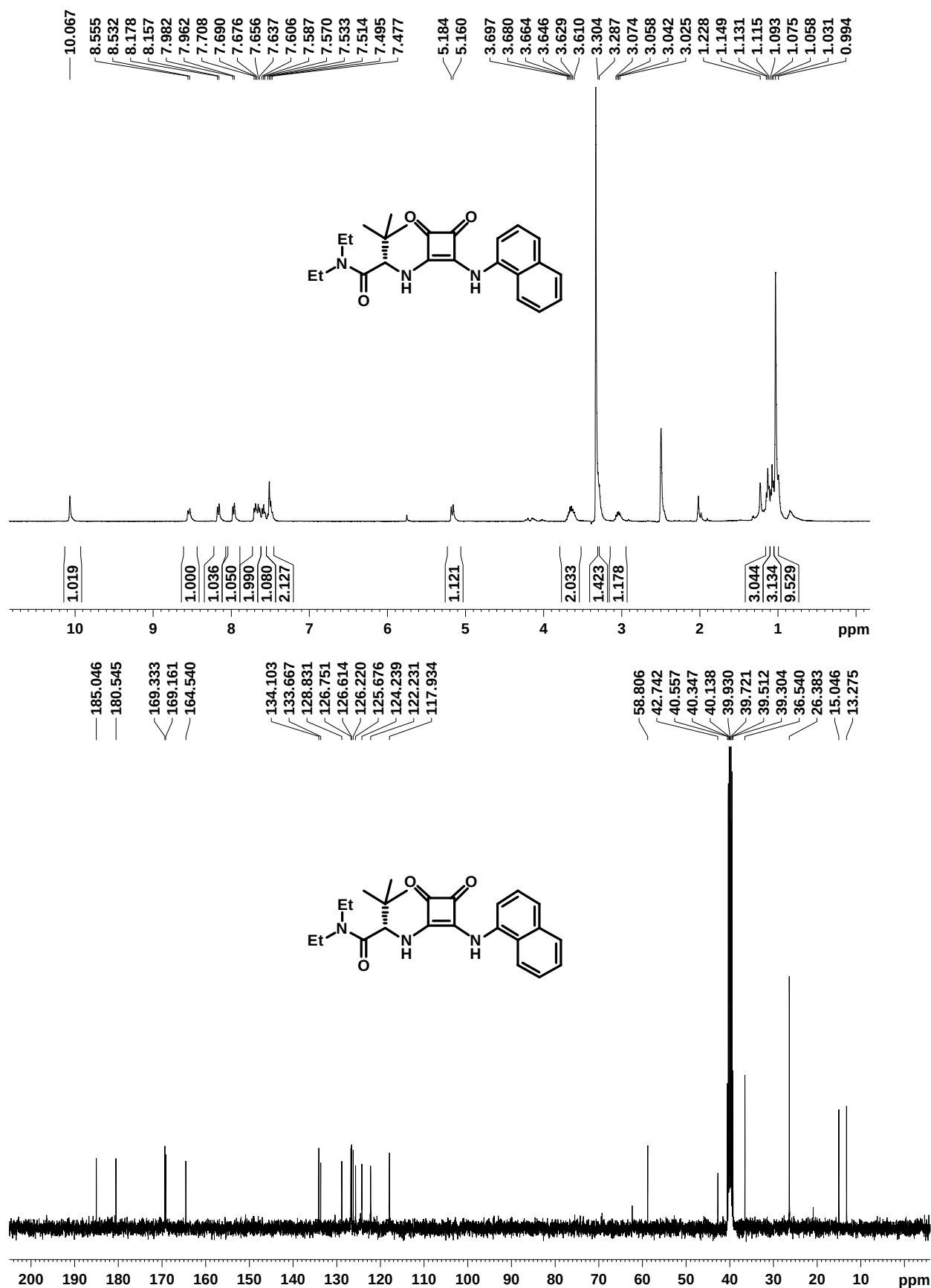


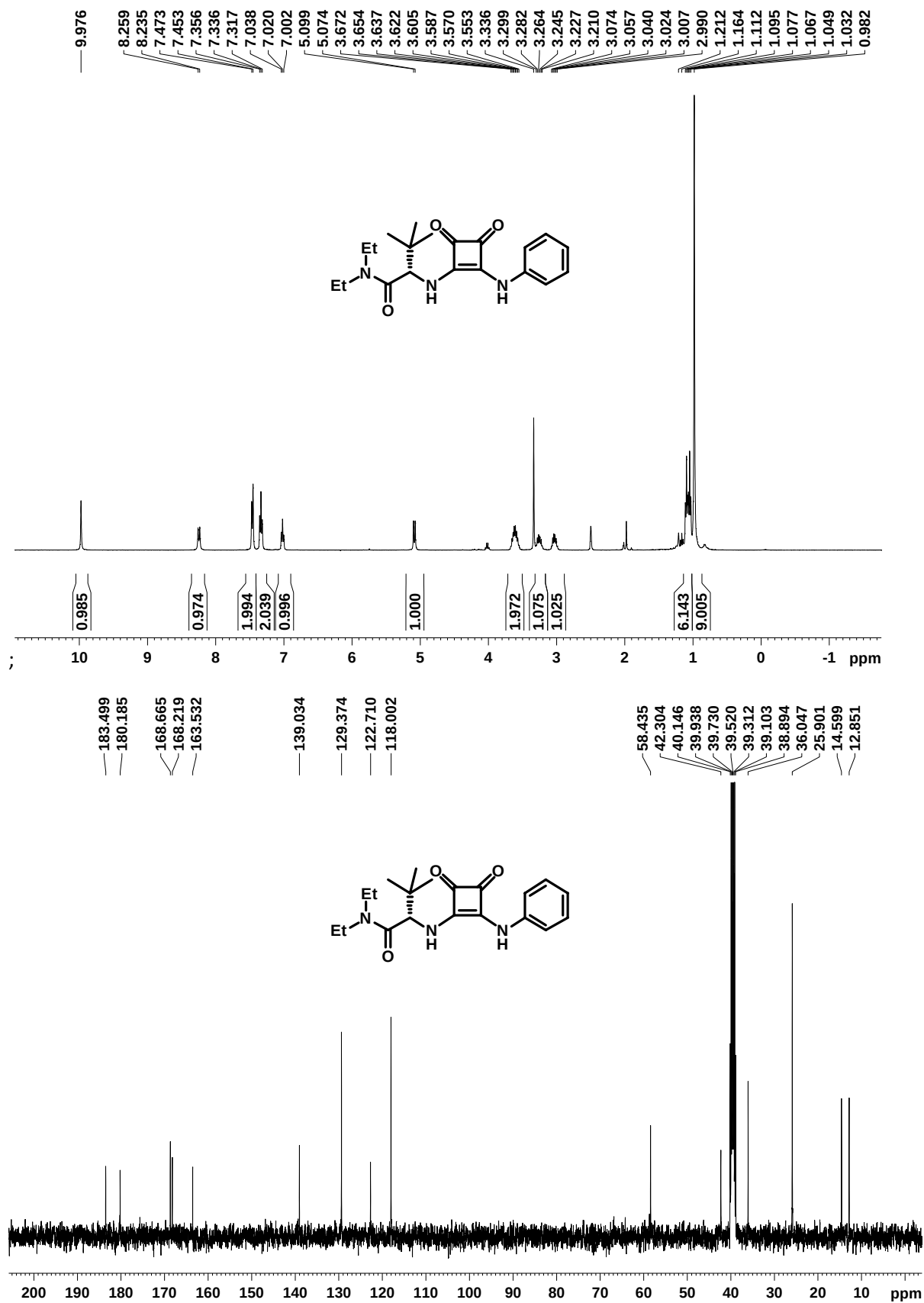


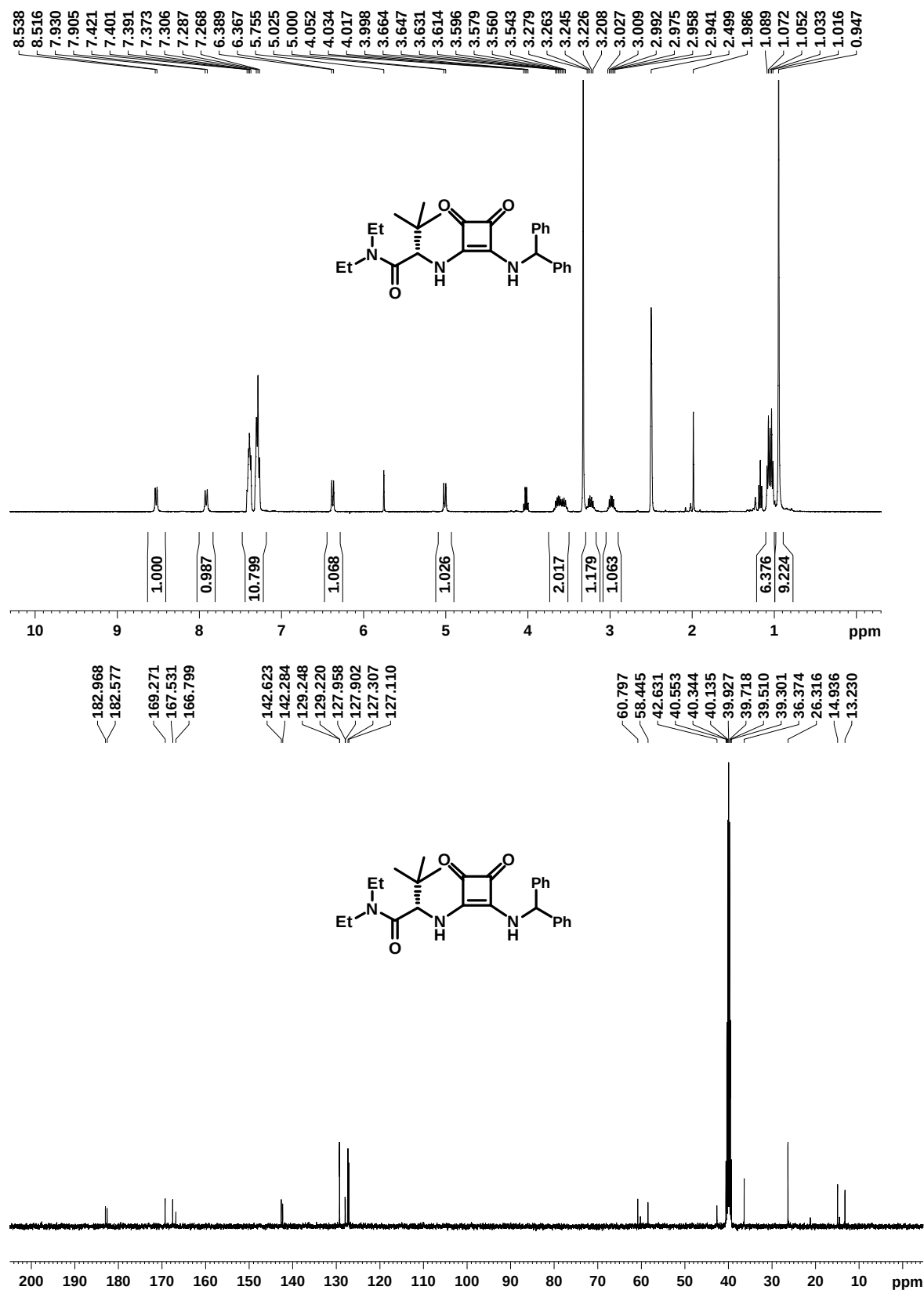


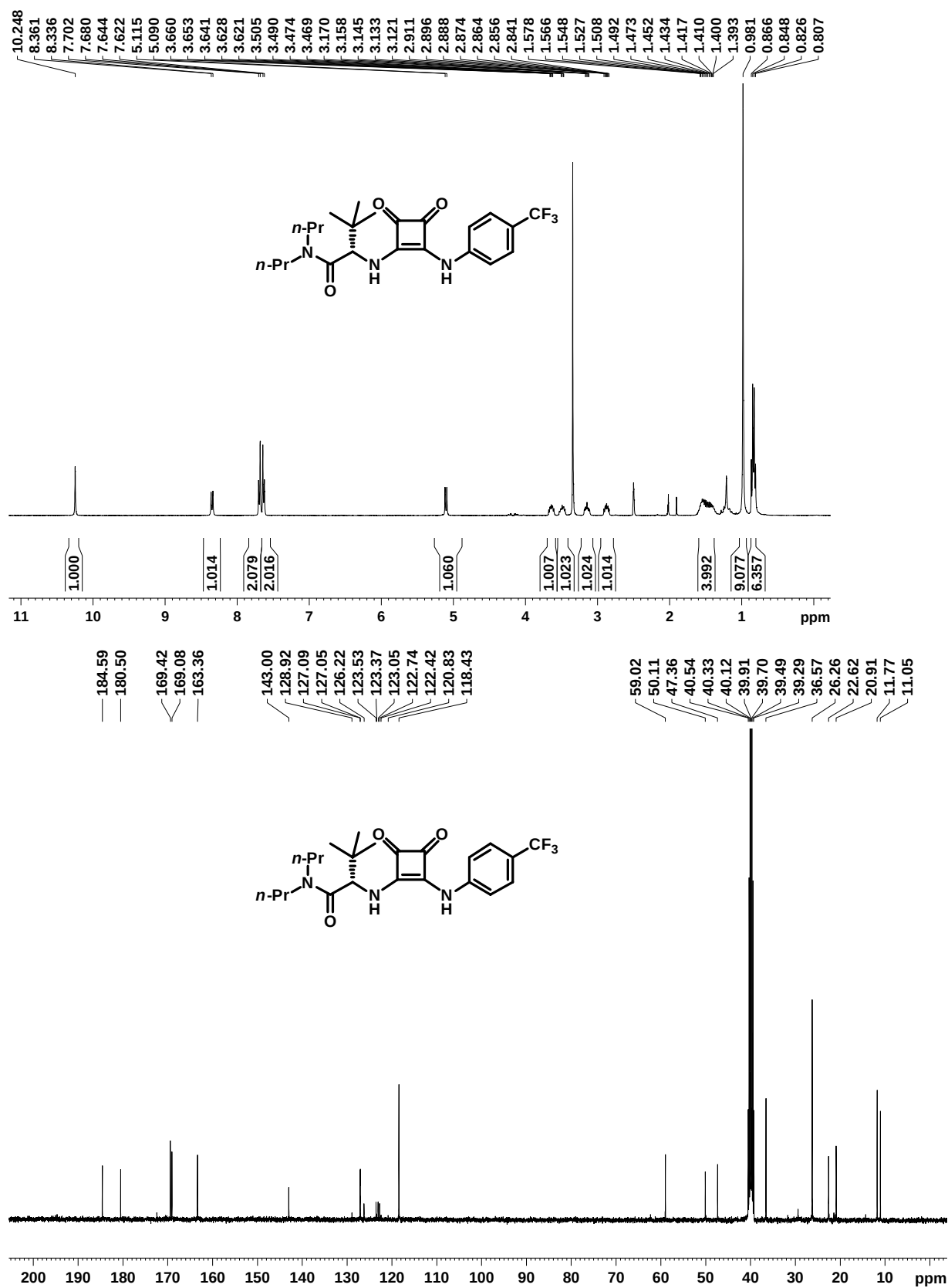


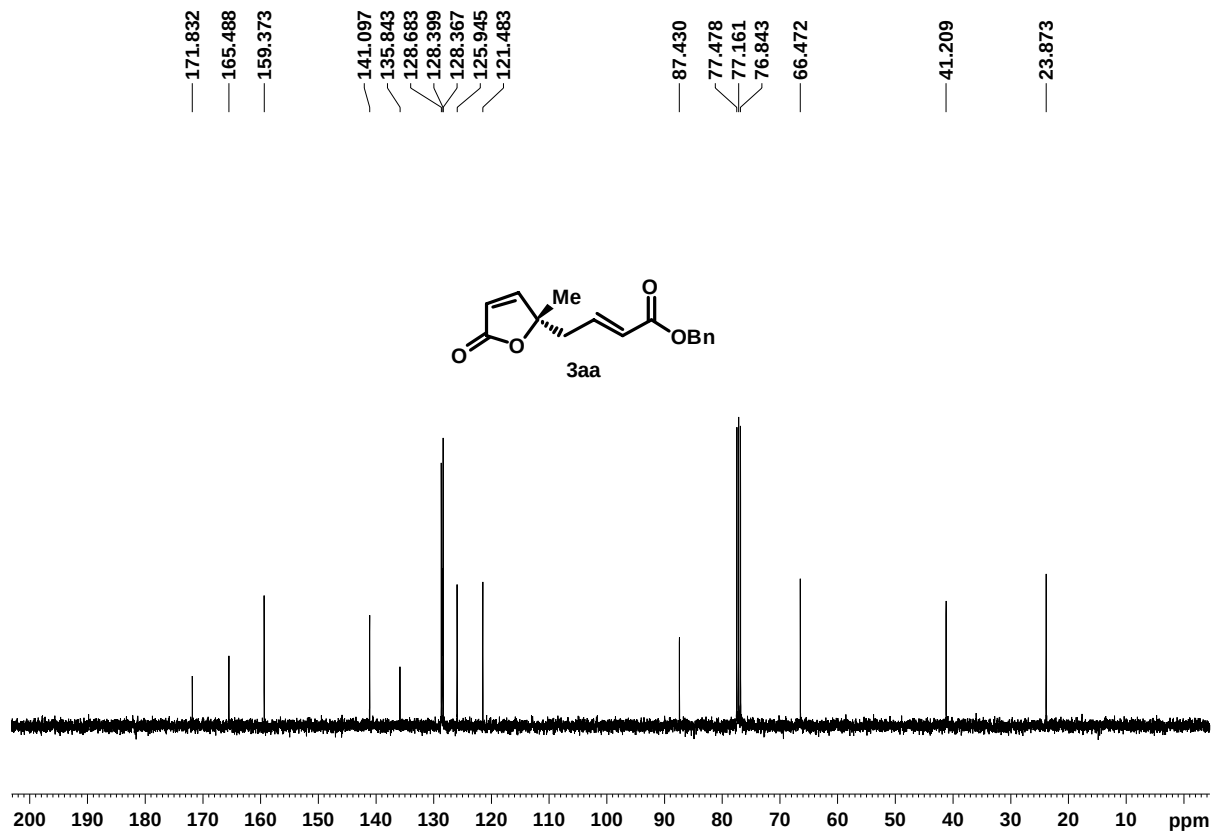
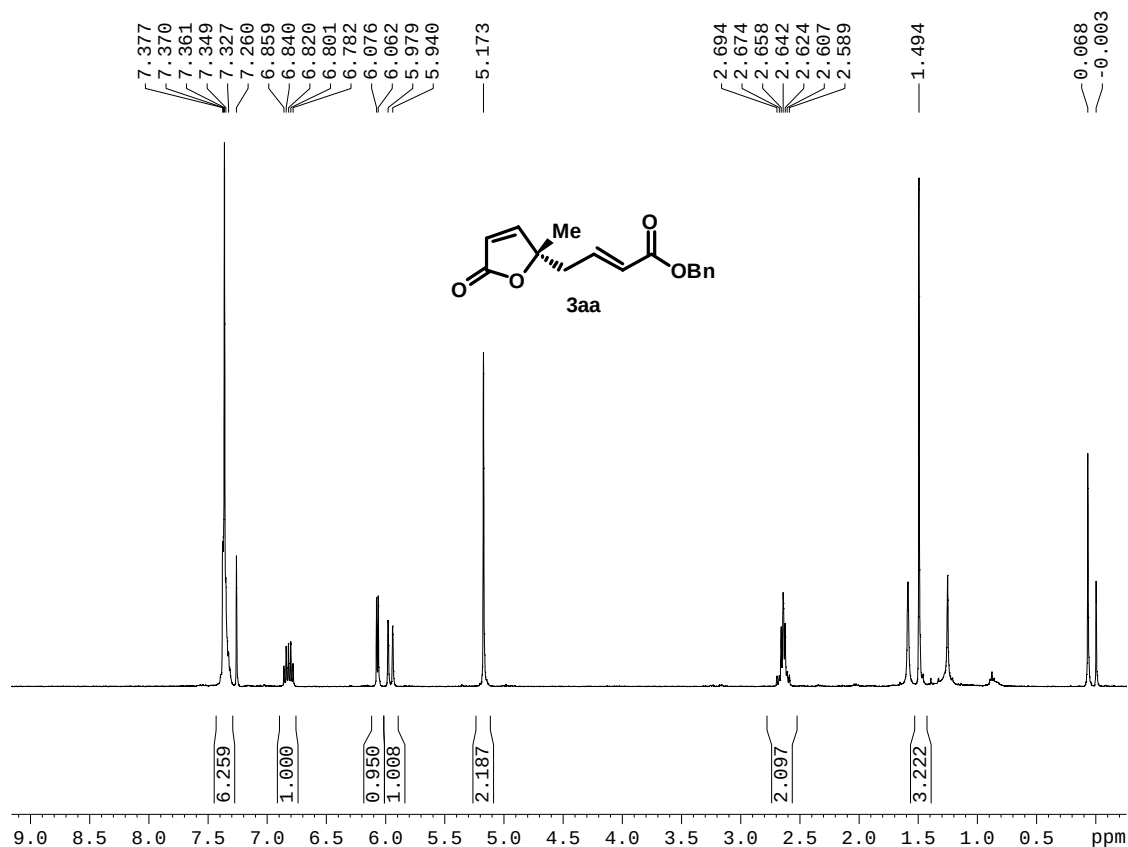


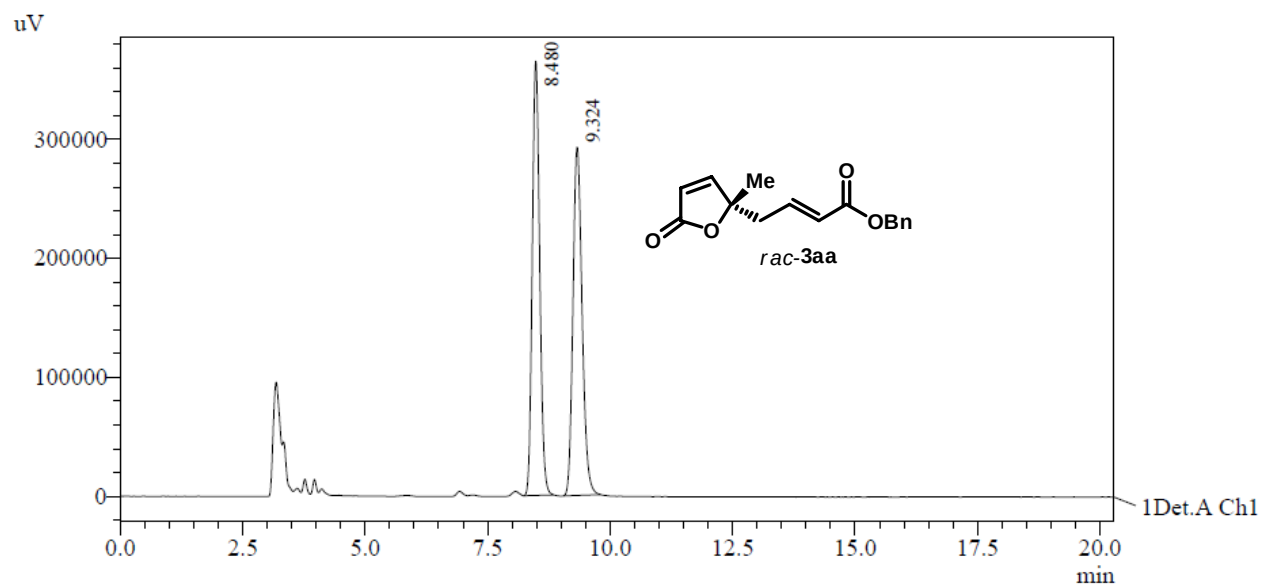








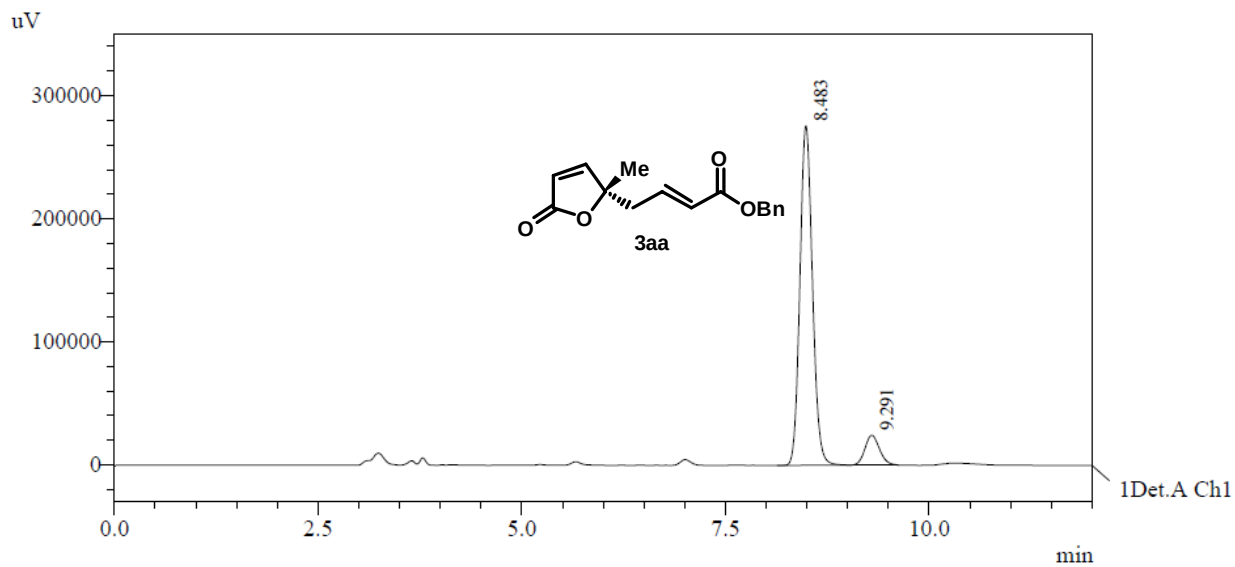




PeakTable

Detector A Ch1 210nm

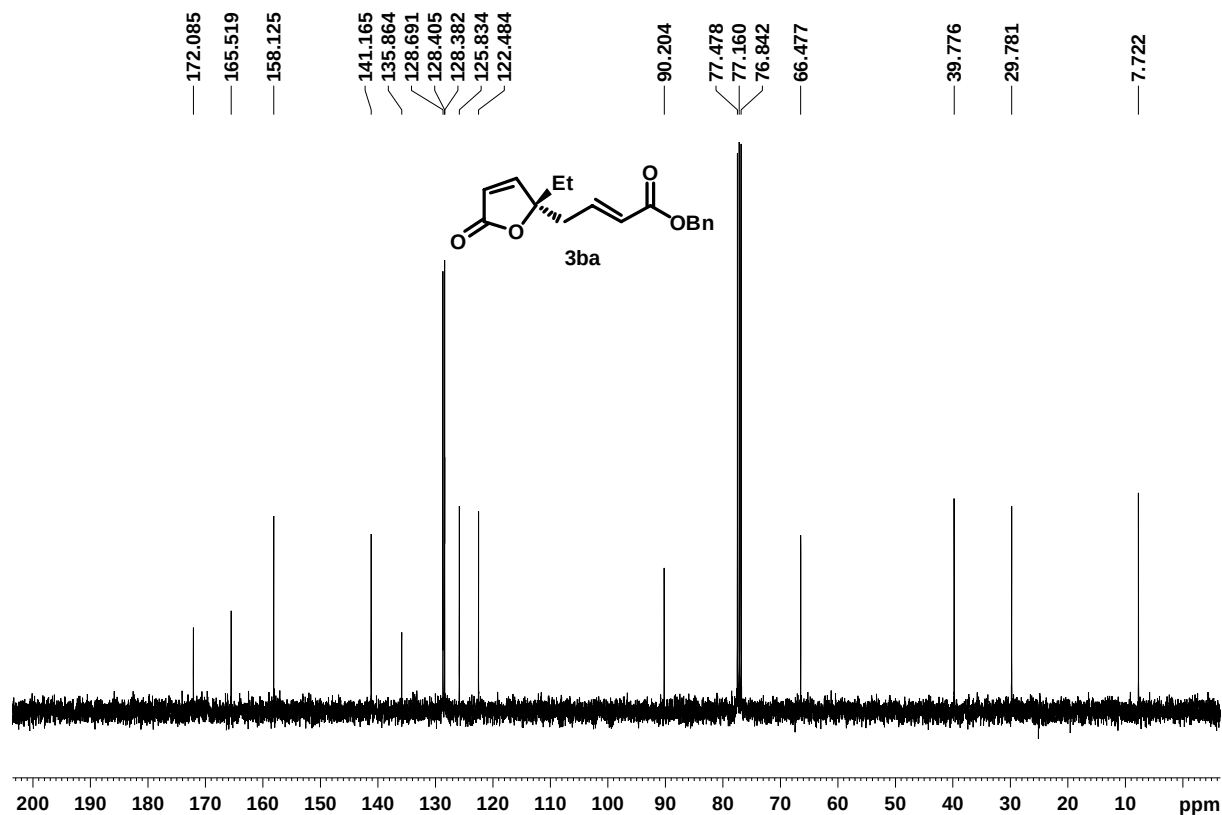
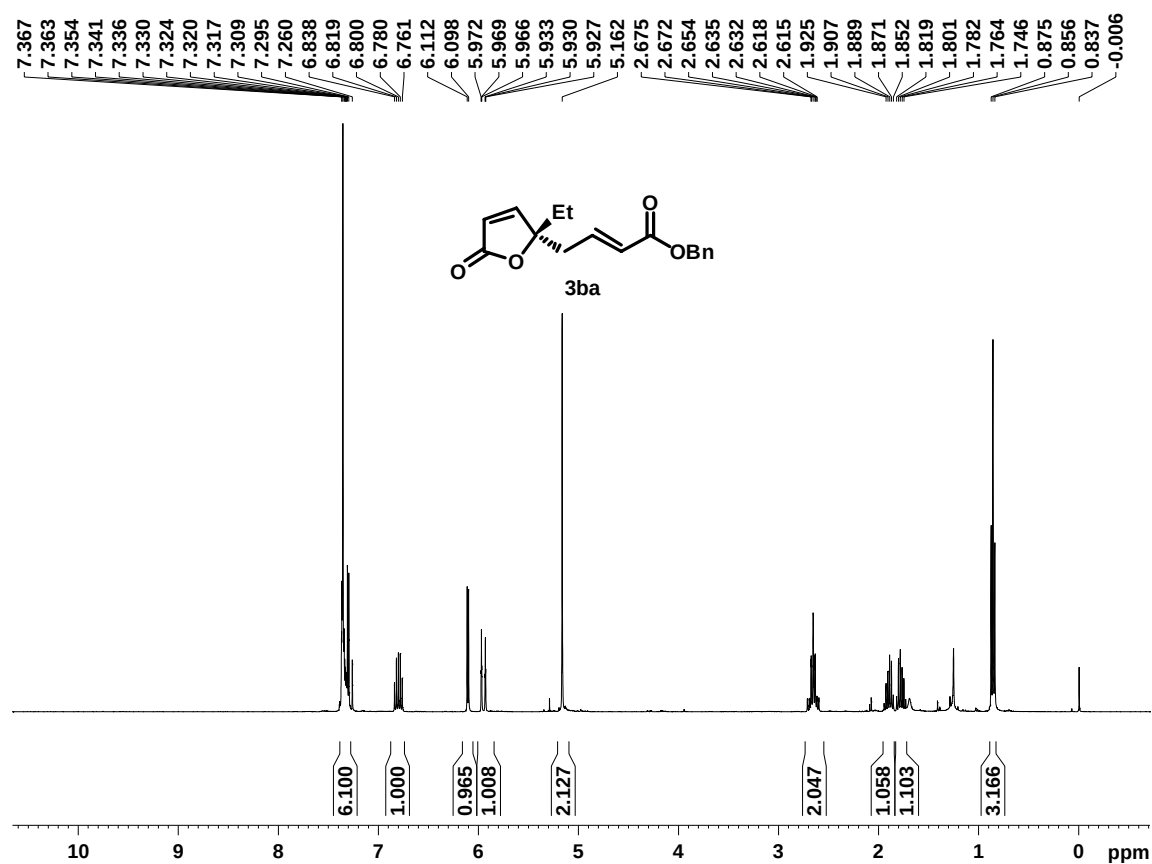
Peak#	Ret. Time	Area	Area %
1	8.480	3838500	50.278
2	9.324	3795985	49.722
Total		7634485	100.000

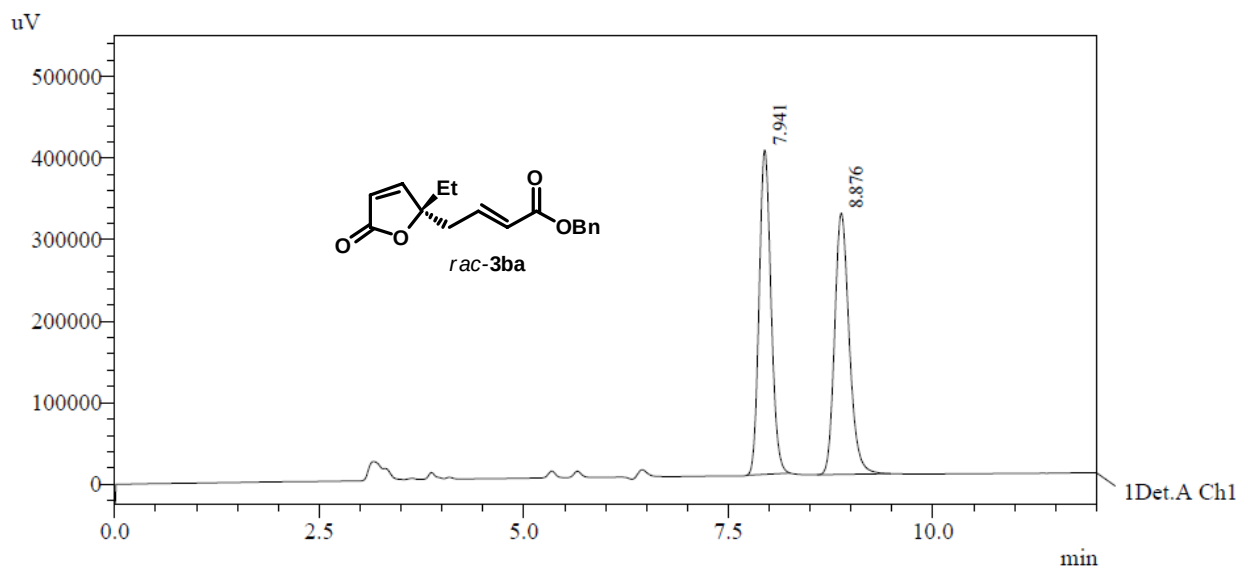


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	8.483	2951763	90.859
2	9.291	296960	9.141
Total		3248723	100.000

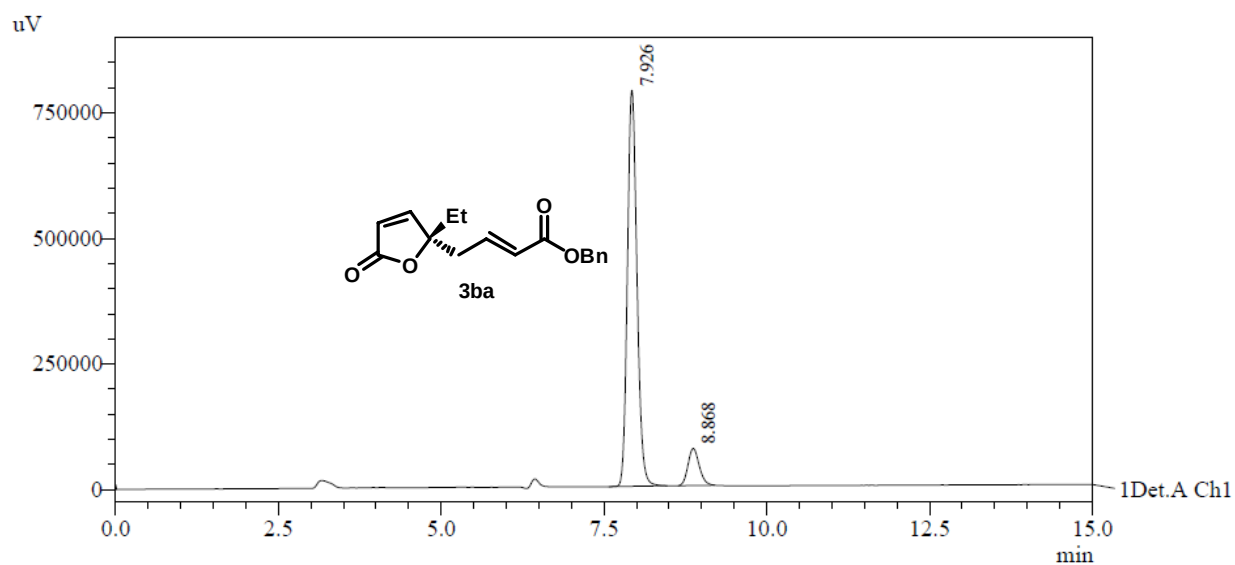




PeakTable

Detector A Ch1 210nm

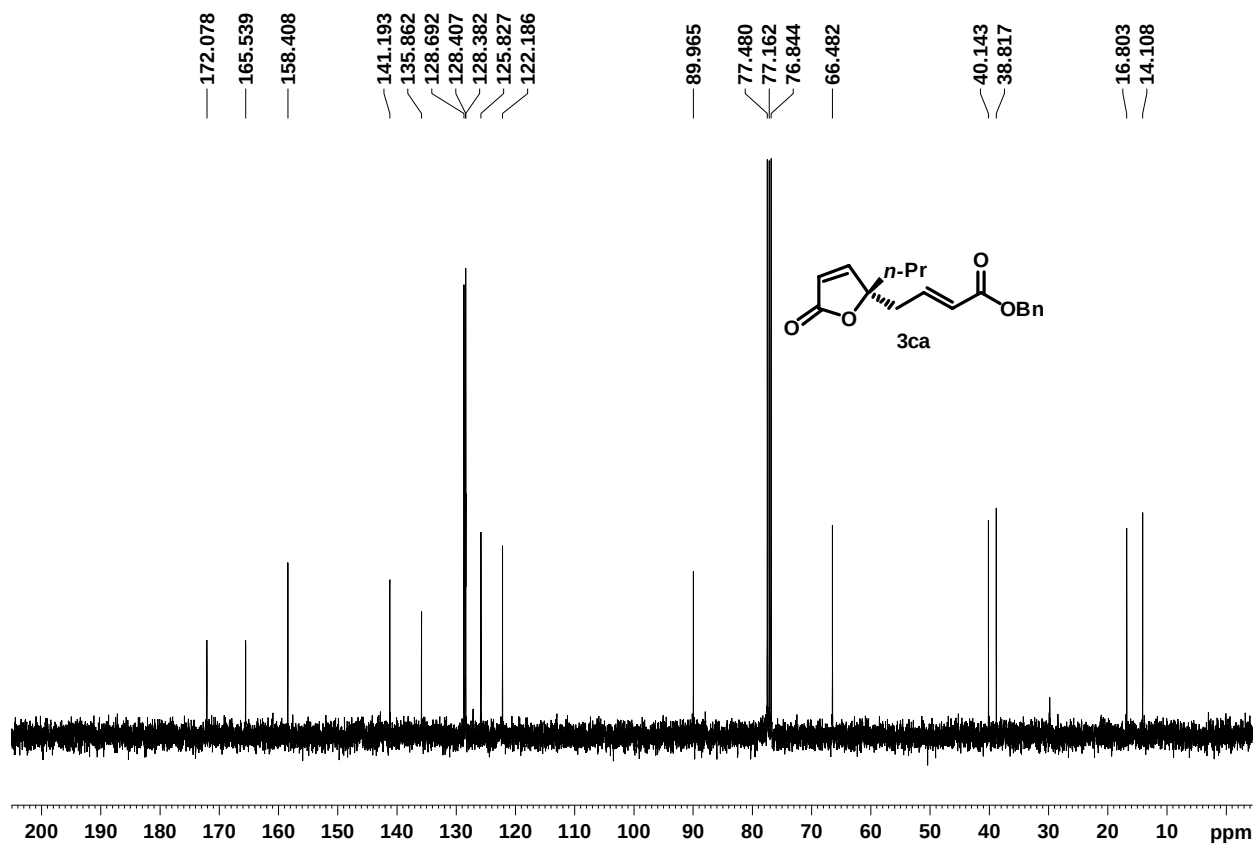
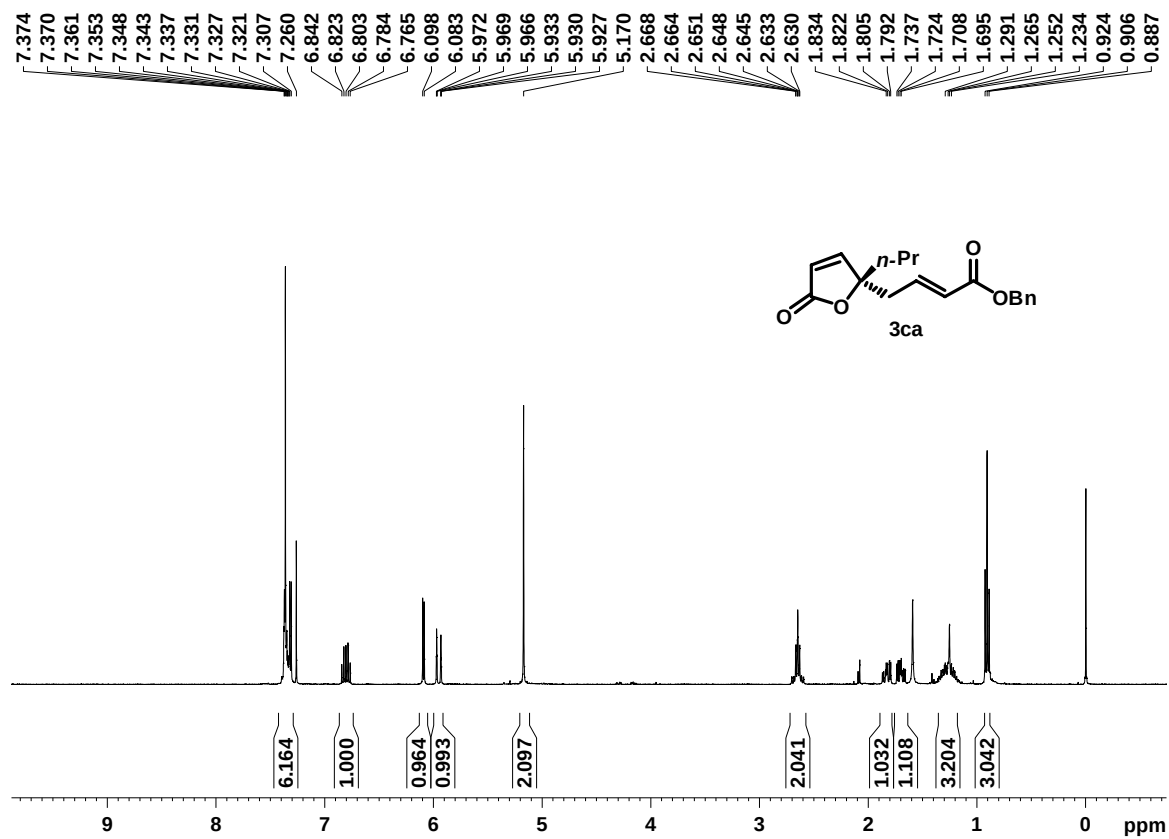
Peak#	Ret. Time	Area	Area %
1	7.941	4015426	50.242
2	8.876	3976799	49.758
Total		7992225	100.000

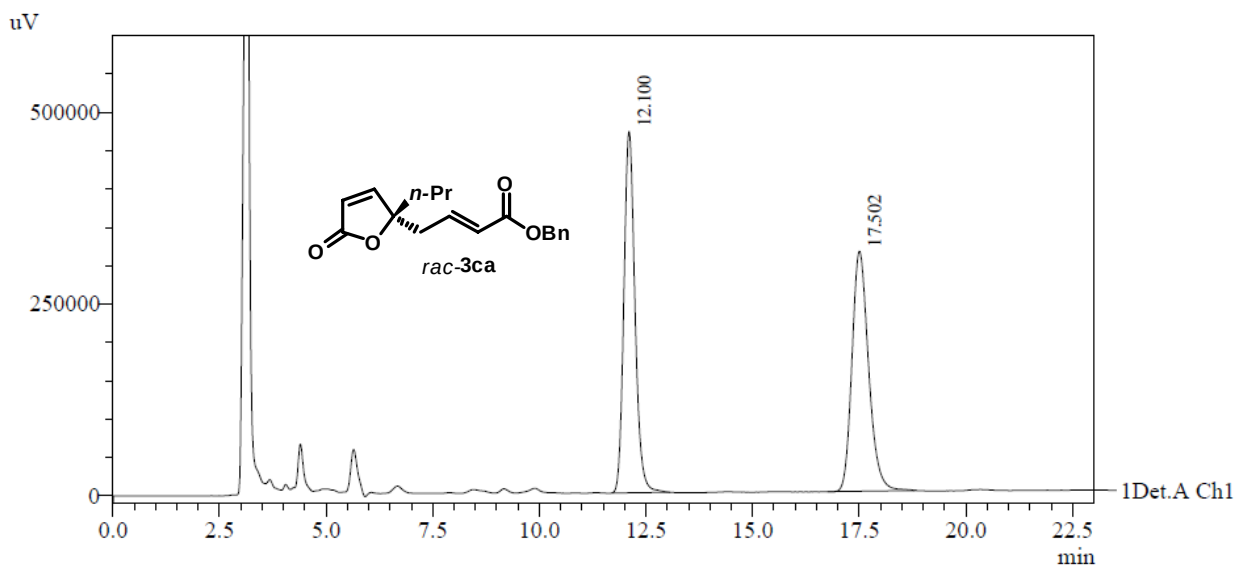


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	7.926	8057224	90.102
2	8.868	885129	9.898
Total		8942353	100.000

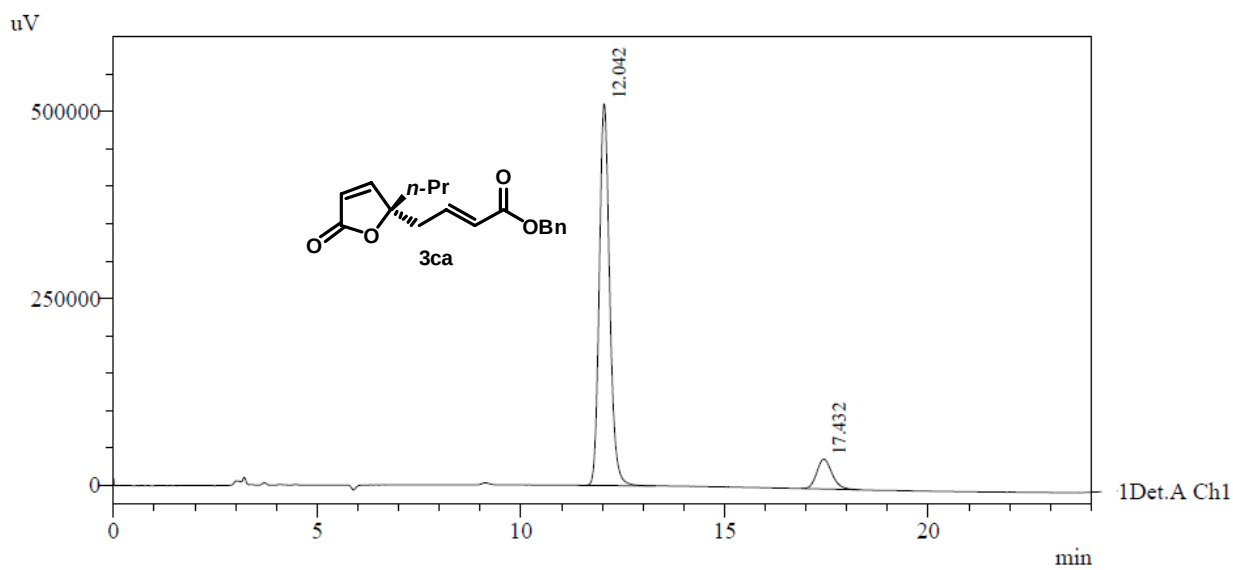




PeakTable

Detector A Ch1 210nm

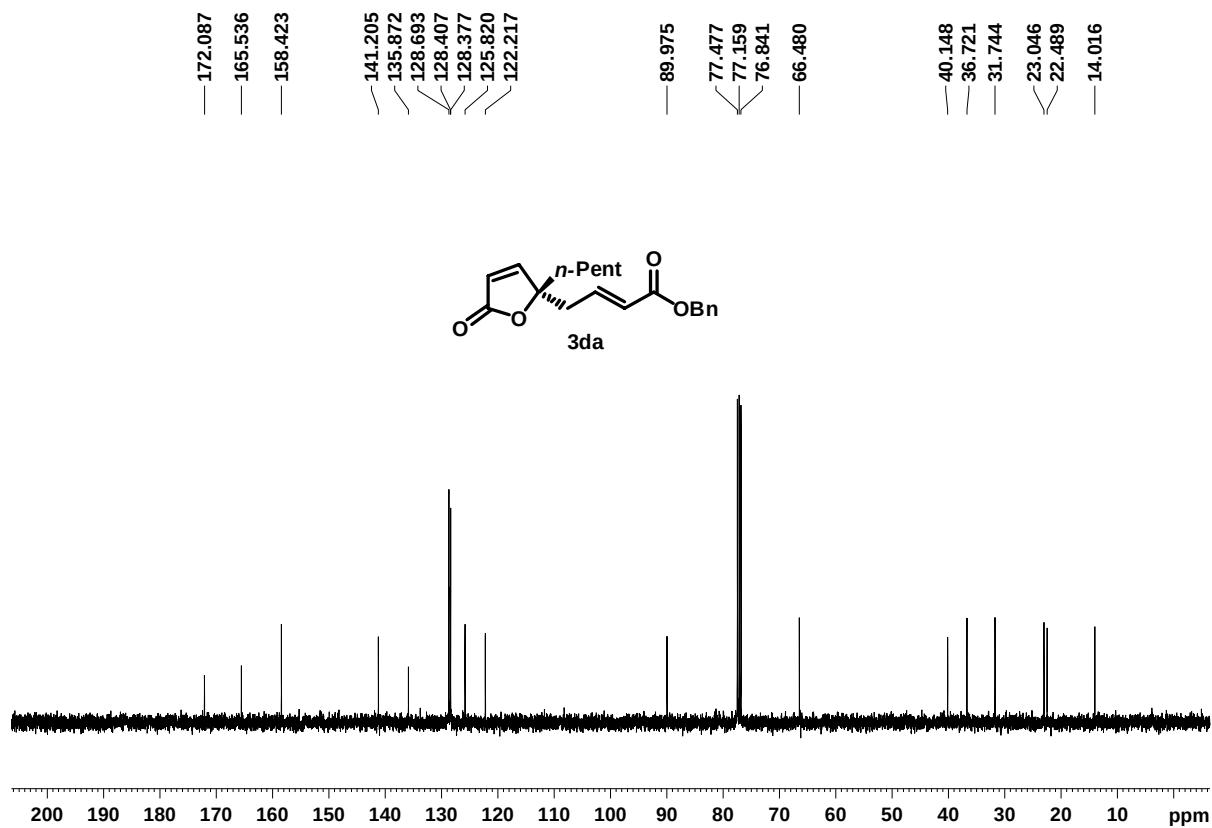
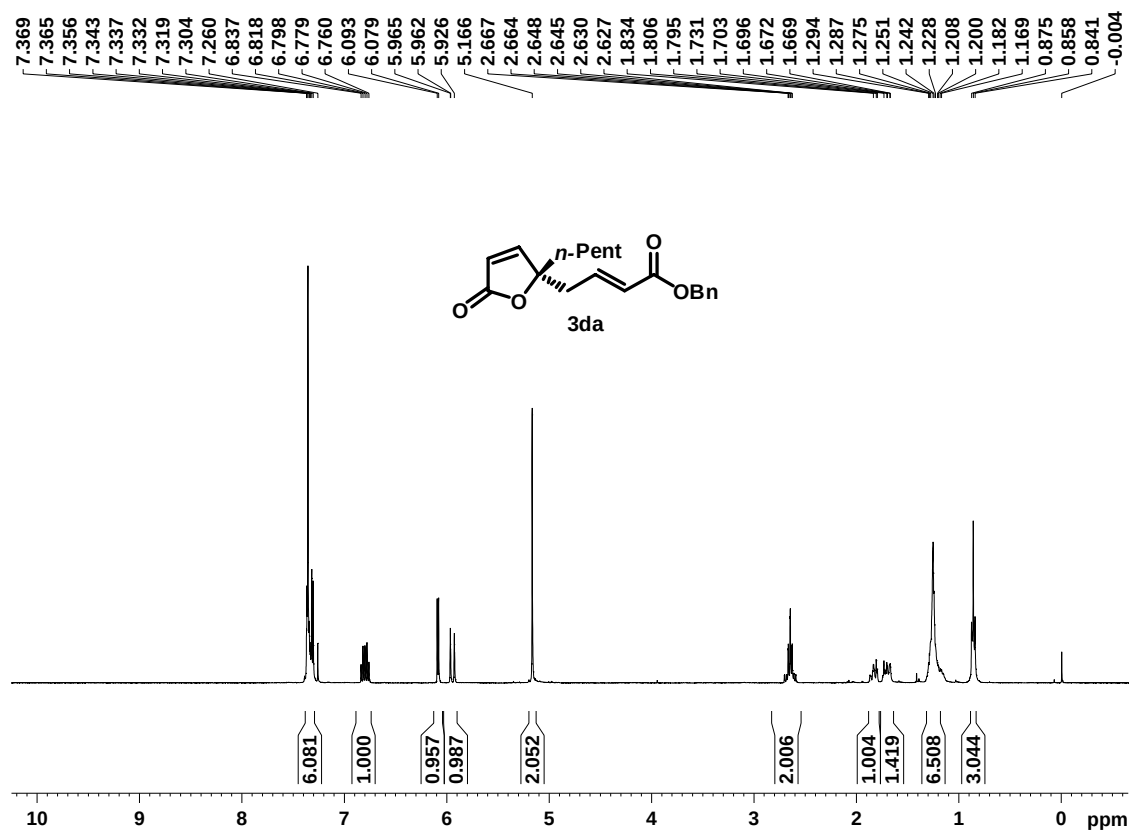
Peak#	Ret. Time	Area	Area %
1	12.100	8519452	50.086
2	17.502	8490345	49.914
Total		17009797	100.000

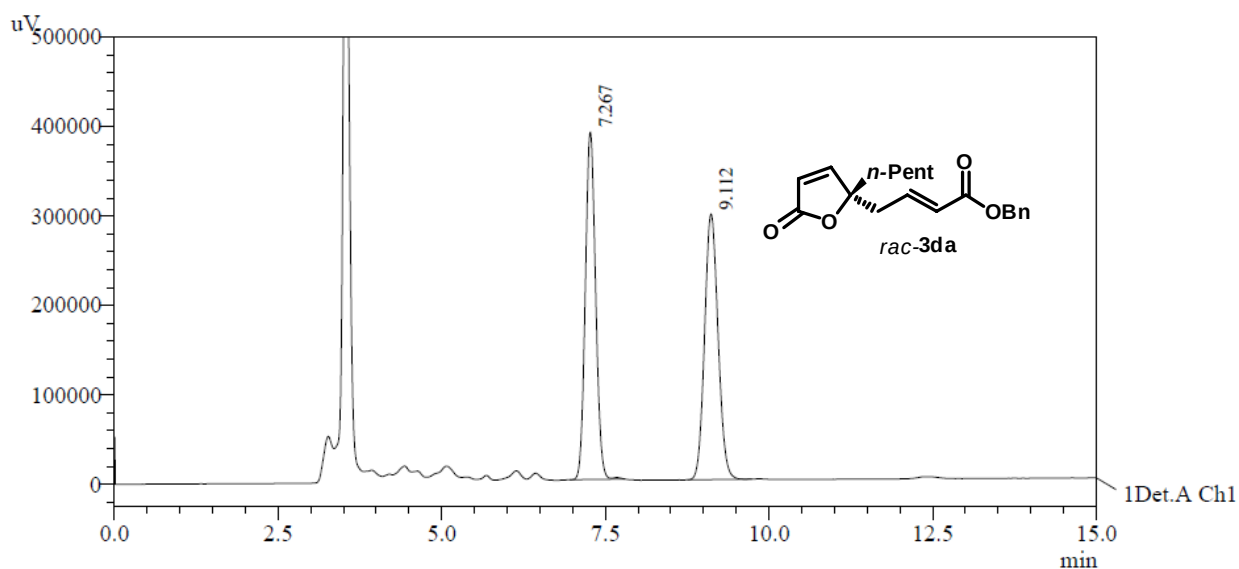


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	12.042	9036356	89.693
2	17.432	1038375	10.307
Total		10074730	100.000

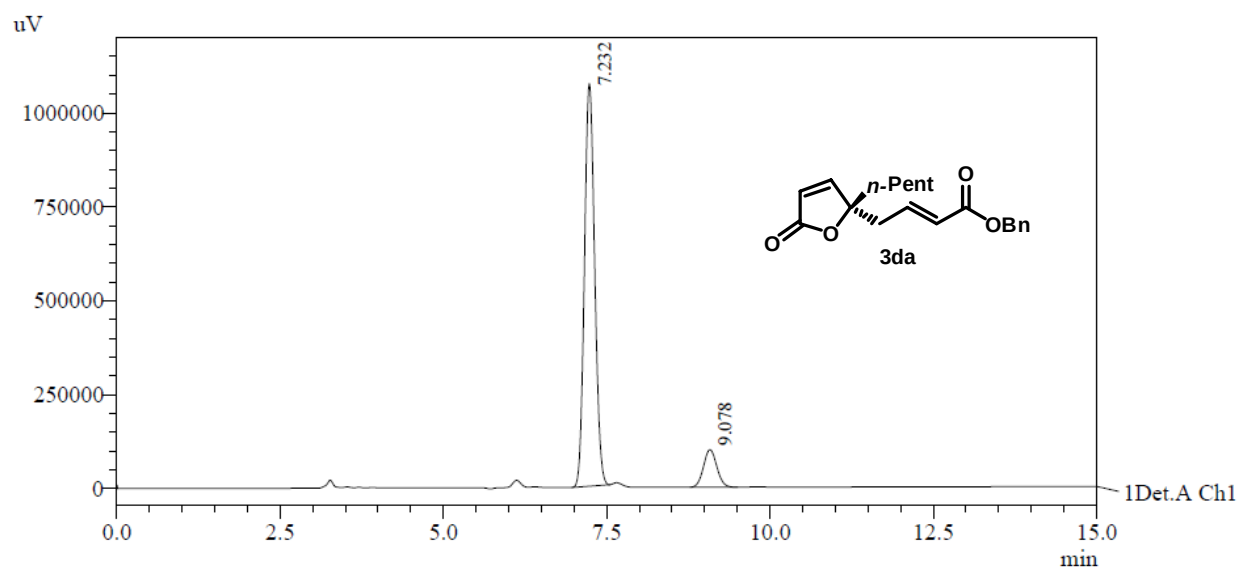




PeakTable

Detector A Ch1 210nm

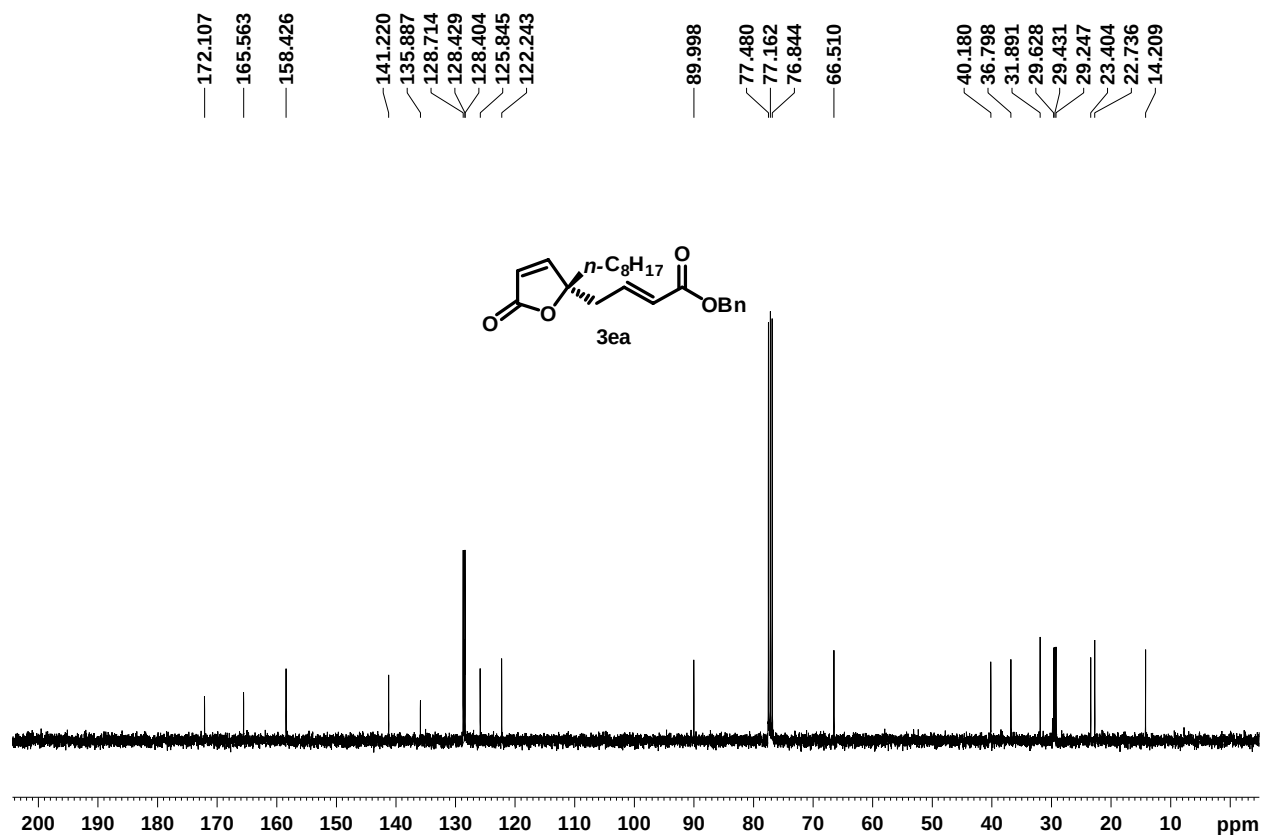
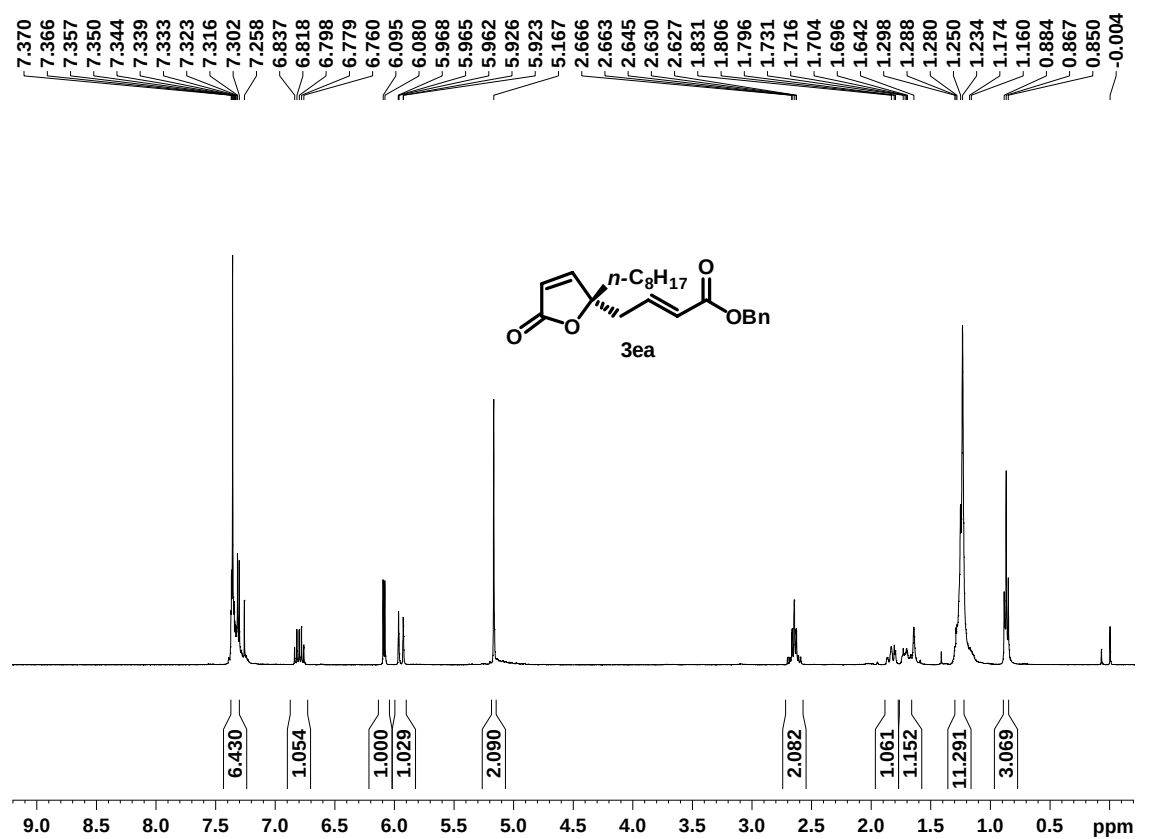
Peak#	Ret. Time	Area	Area %
1	7.267	4249386	50.001
2	9.112	4249219	49.999
Total		8498606	100.000

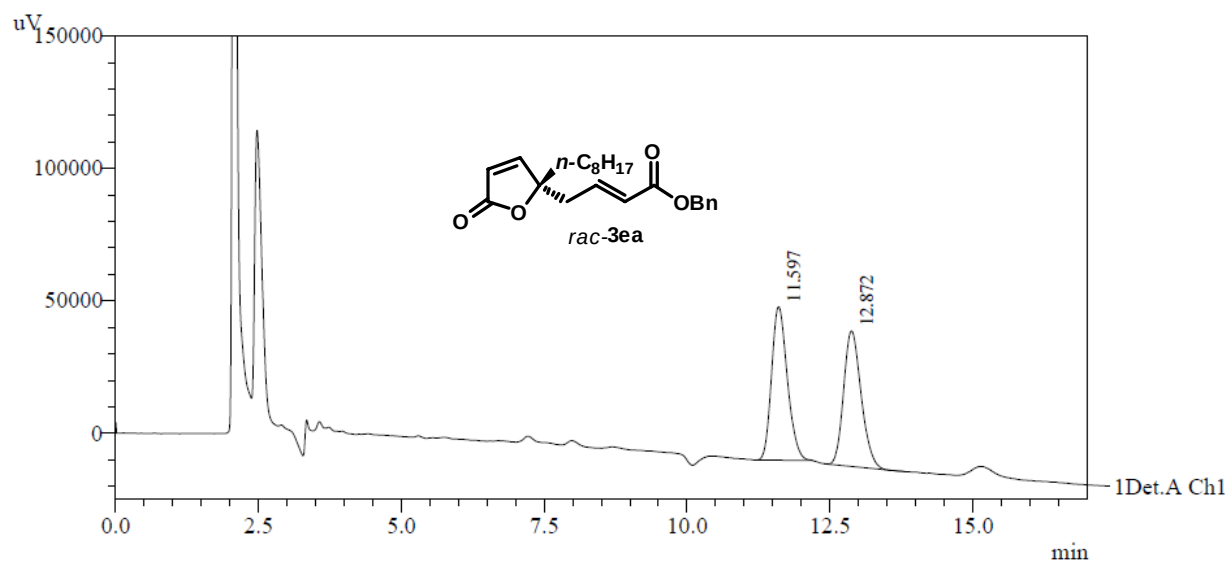


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	7.232	11645221	89.206
2	9.078	1409106	10.794
Total		13054327	100.000

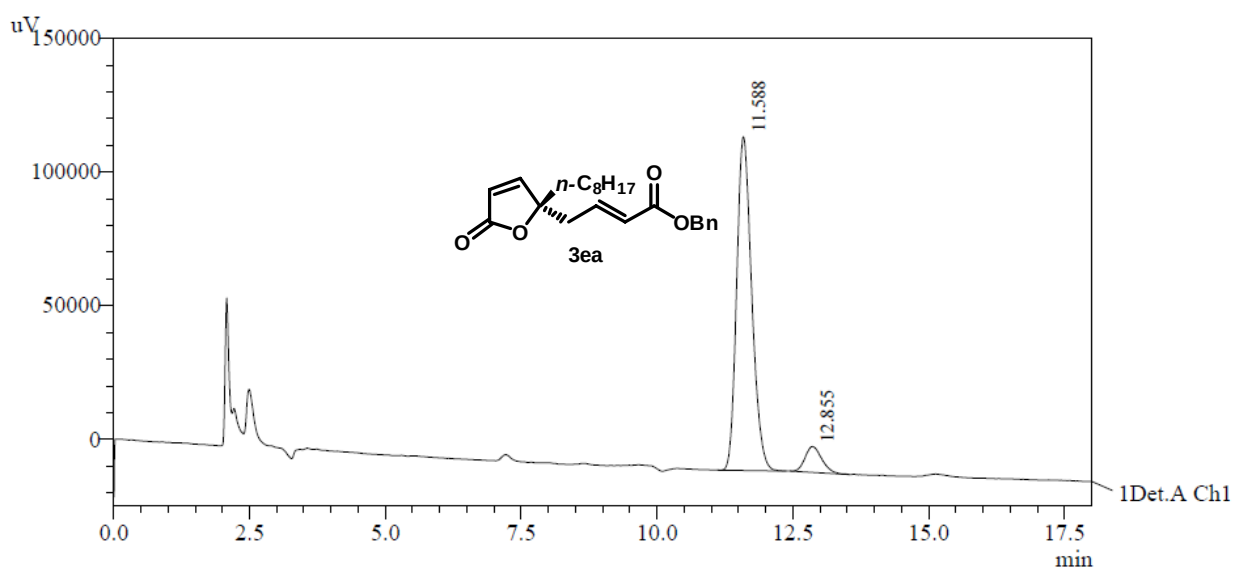




PeakTable

Detector A Ch1 210nm

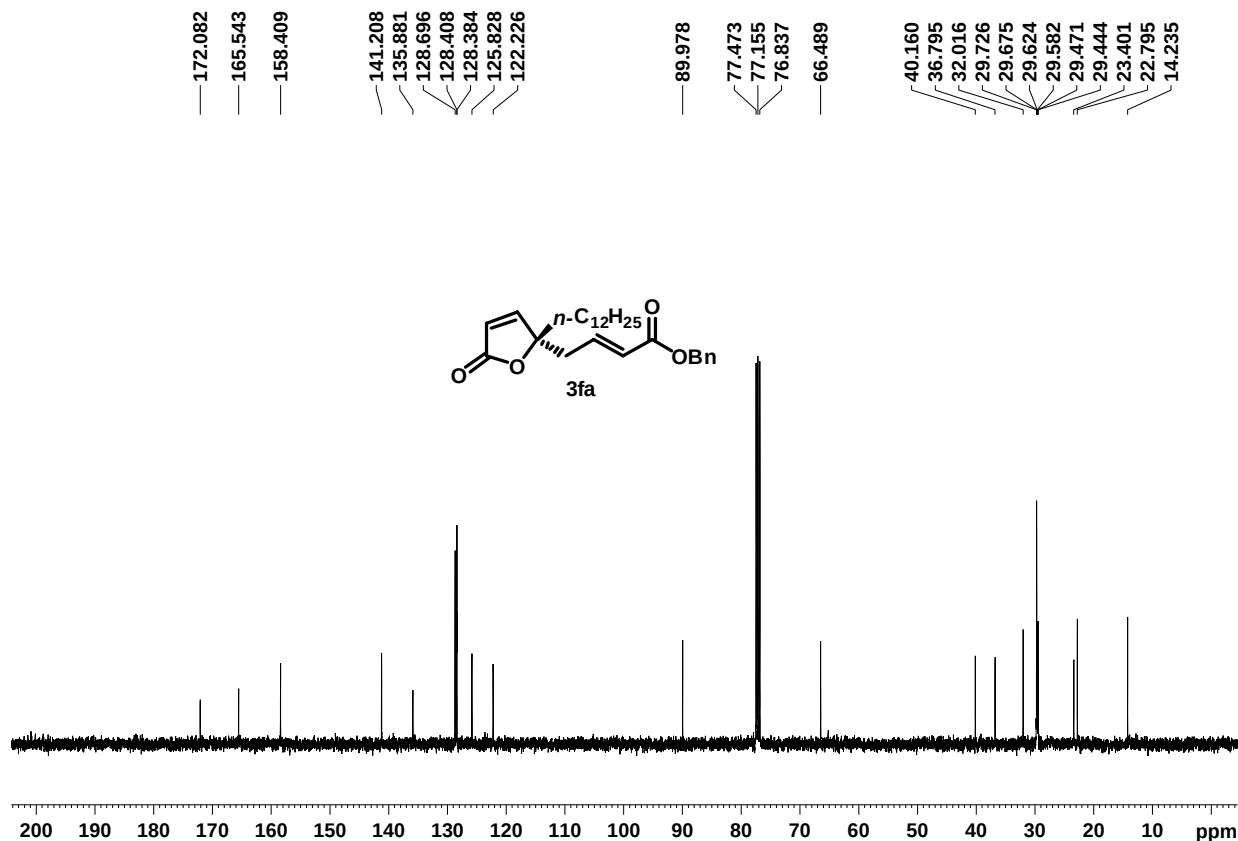
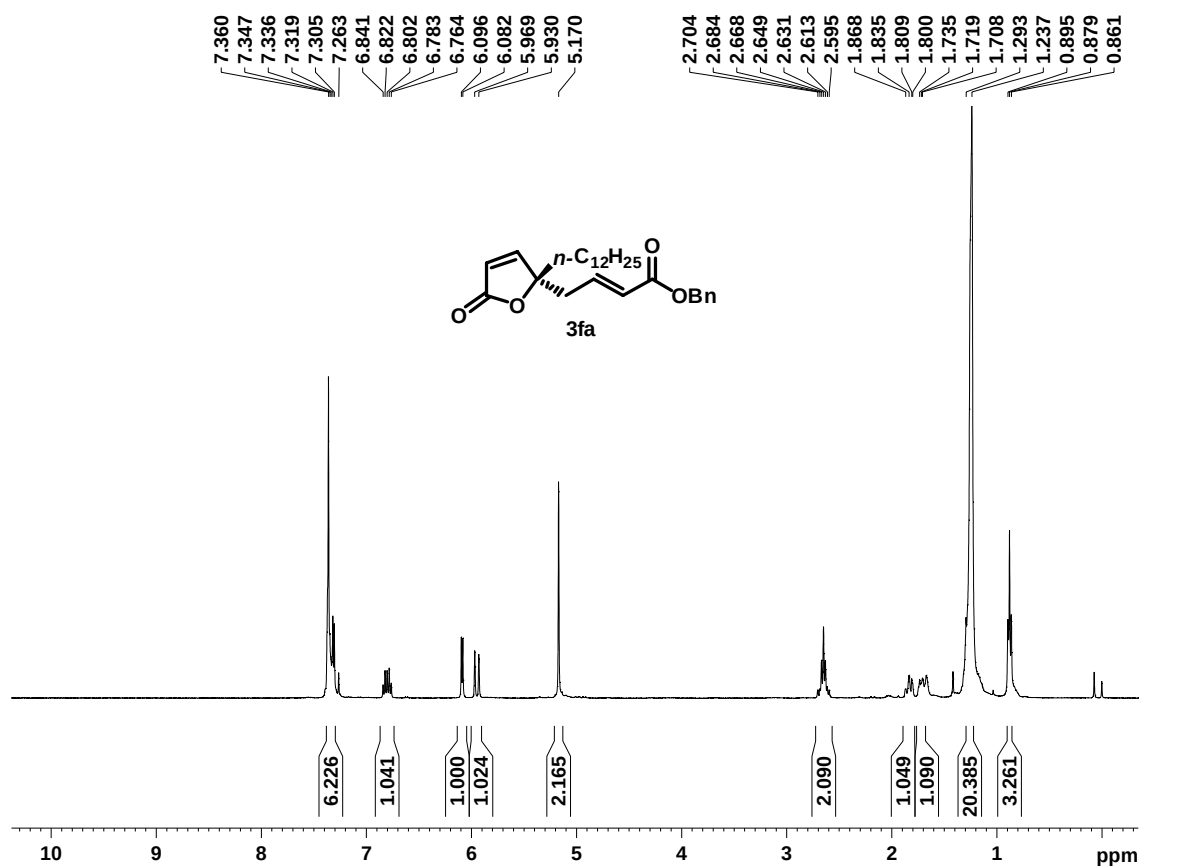
Peak#	Ret. Time	Area	Area %
1	11.597	1115660	50.515
2	12.872	1092899	49.485
Total		2208559	100.000

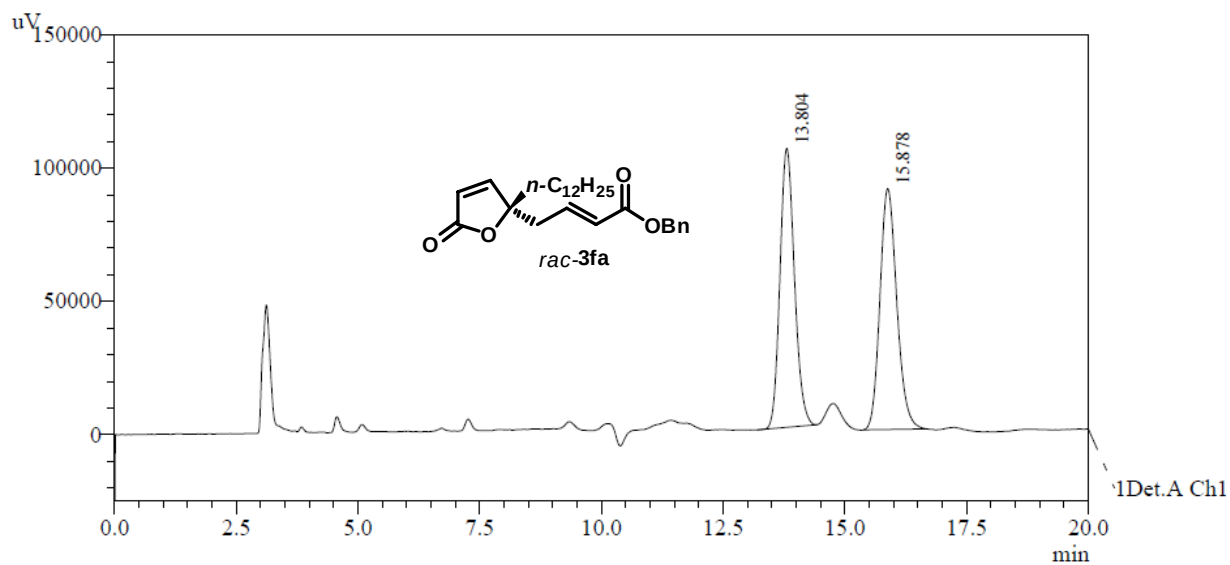


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	11.588	2409167	92.057
2	12.855	207869	7.943
Total		2617036	100.000

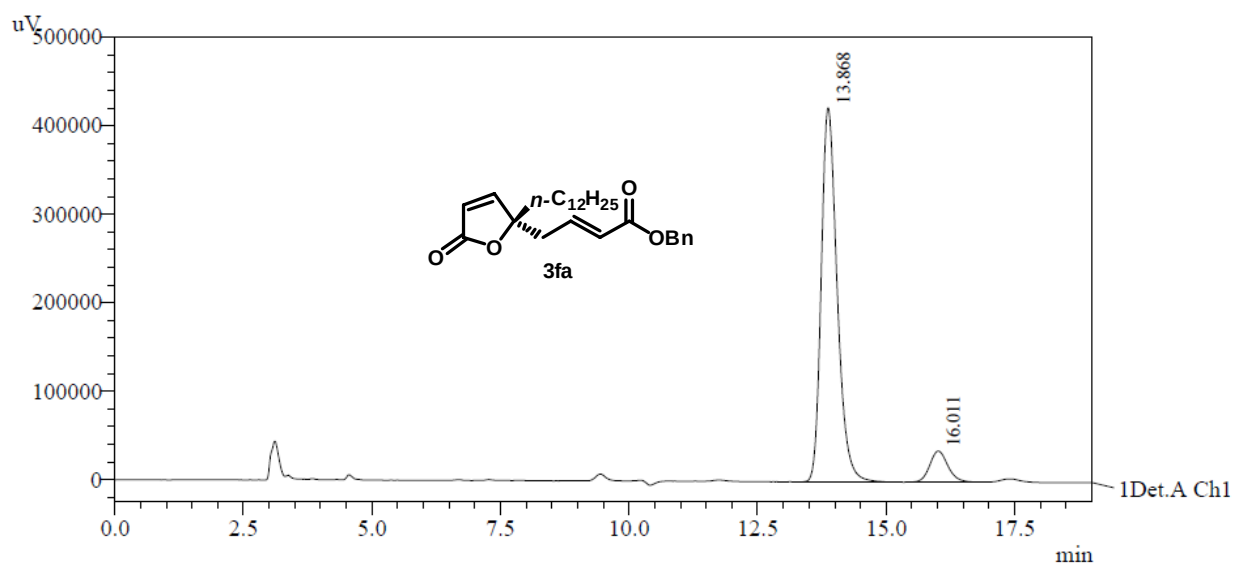




PeakTable

Detector A Ch1 210nm

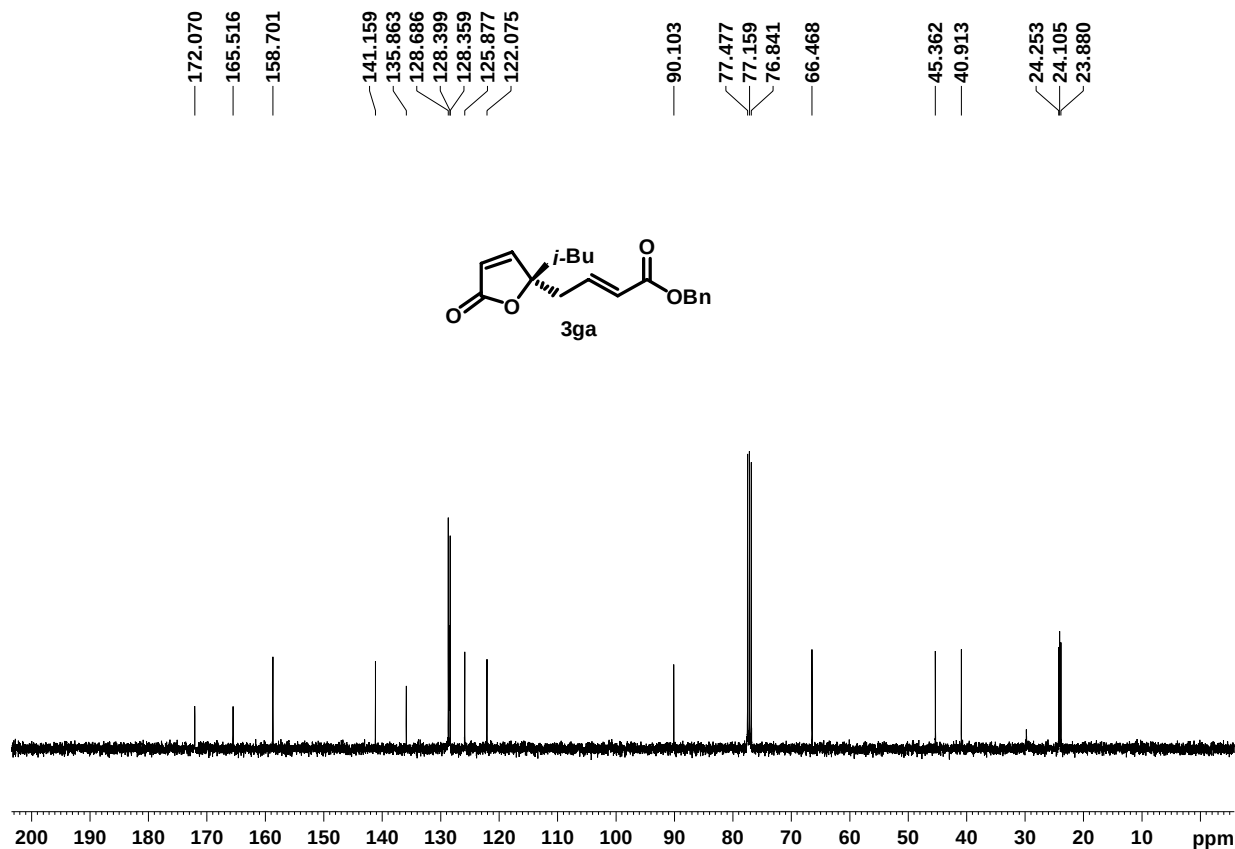
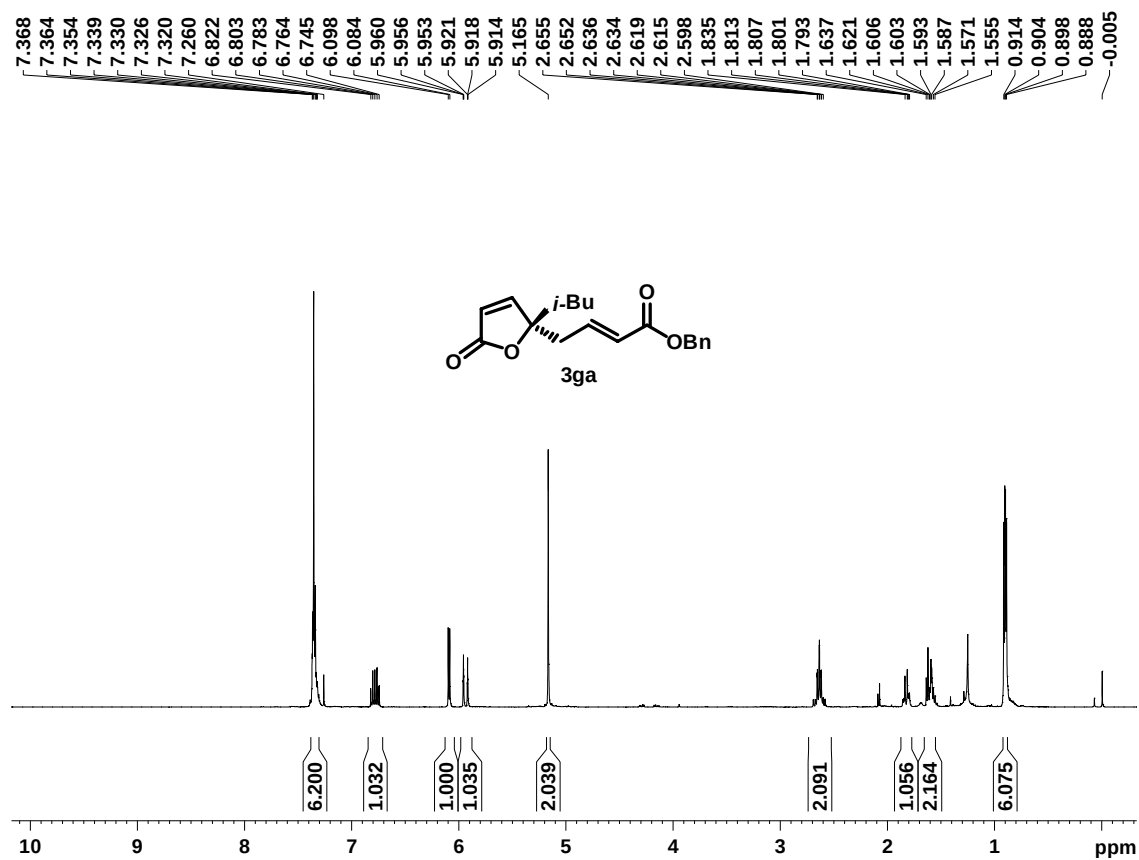
Peak#	Ret. Time	Area	Area %
1	13.804	2168201	49.887
2	15.878	2177984	50.113
Total		4346185	100.000

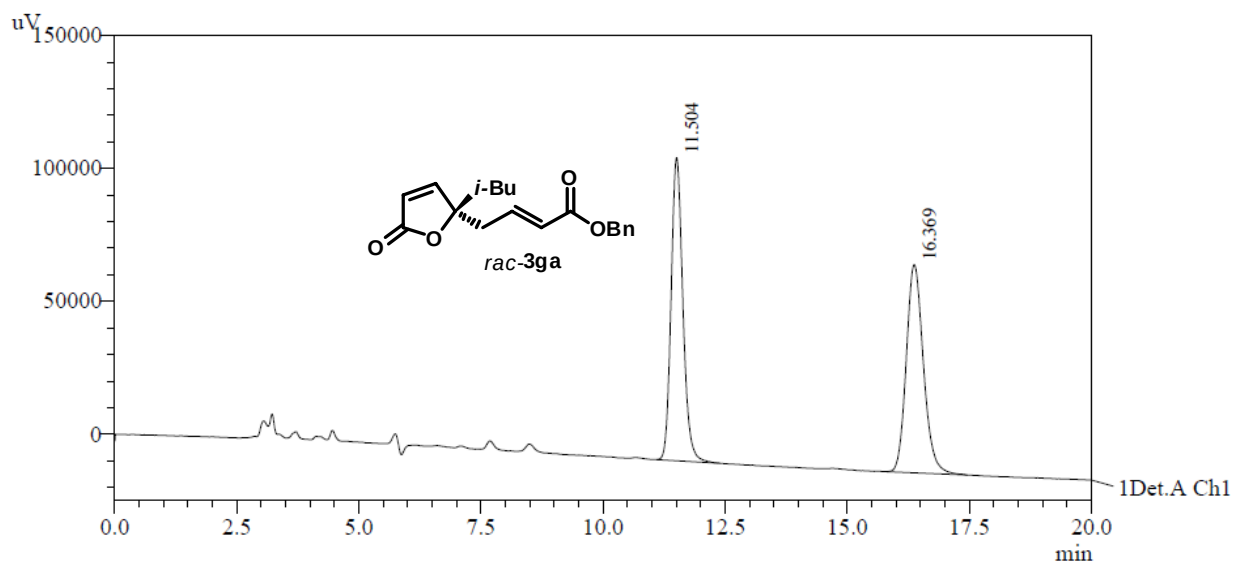


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	13.868	9124954	91.445
2	16.011	853669	8.555
Total		9978623	100.000

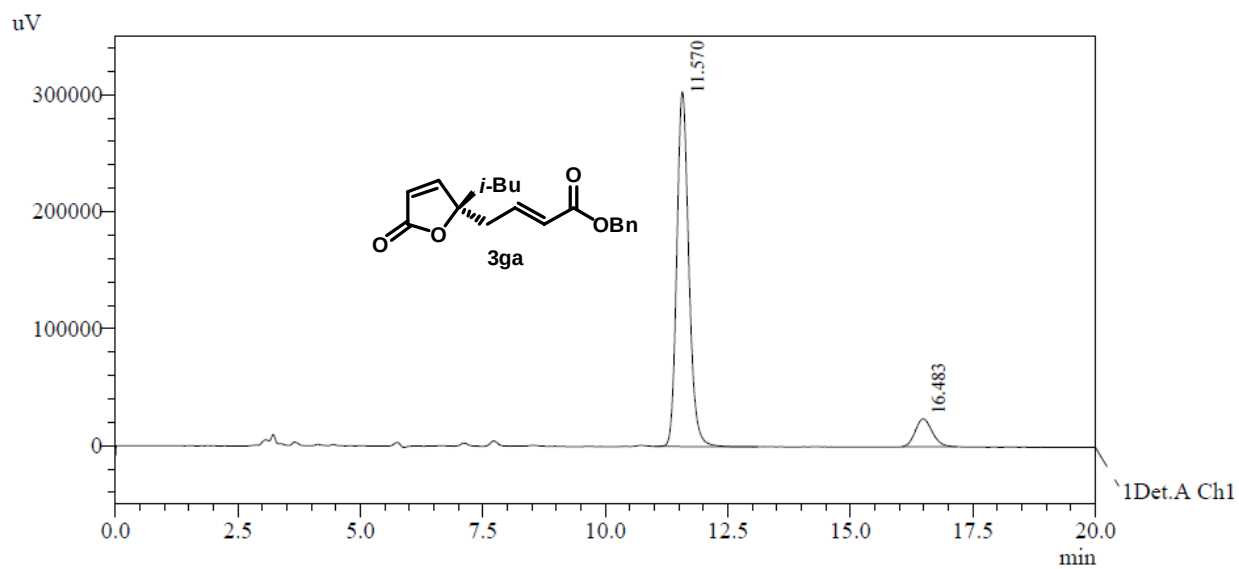




PeakTable

Detector A Ch1 210nm

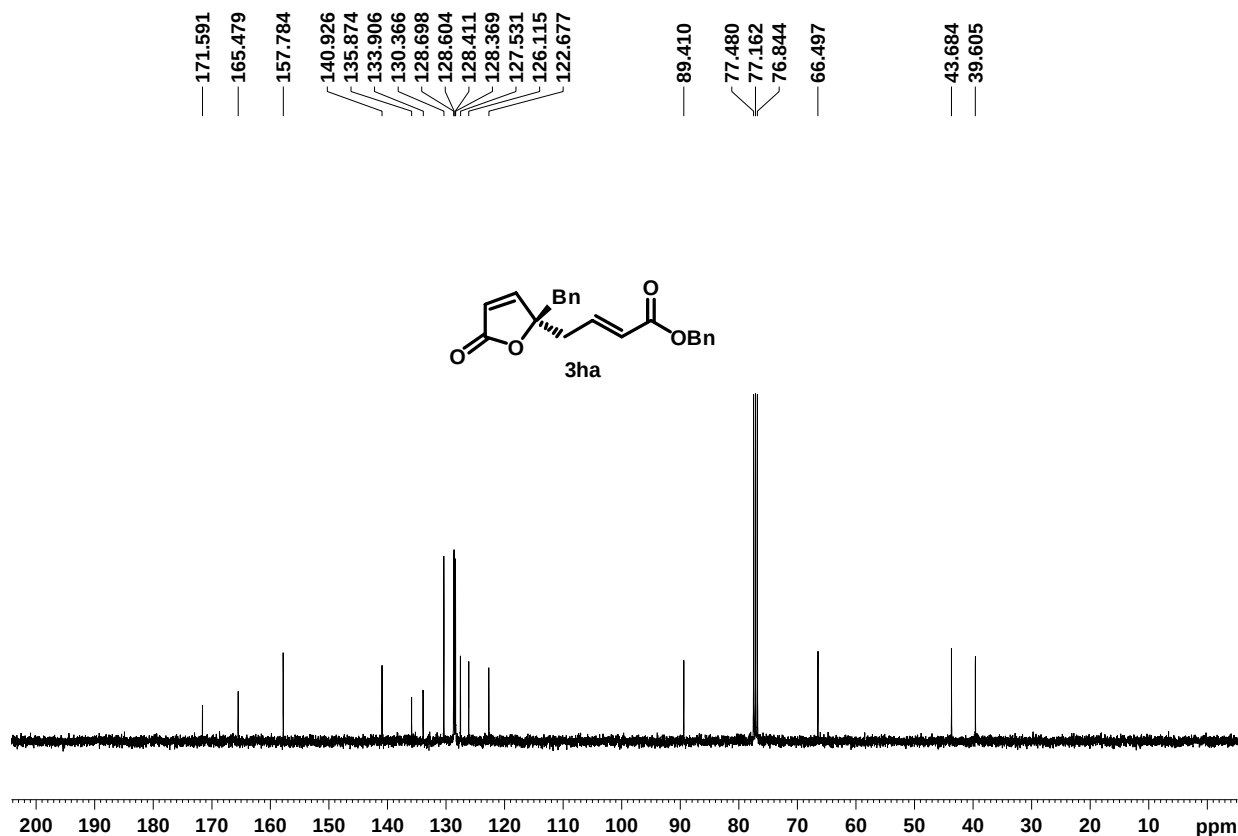
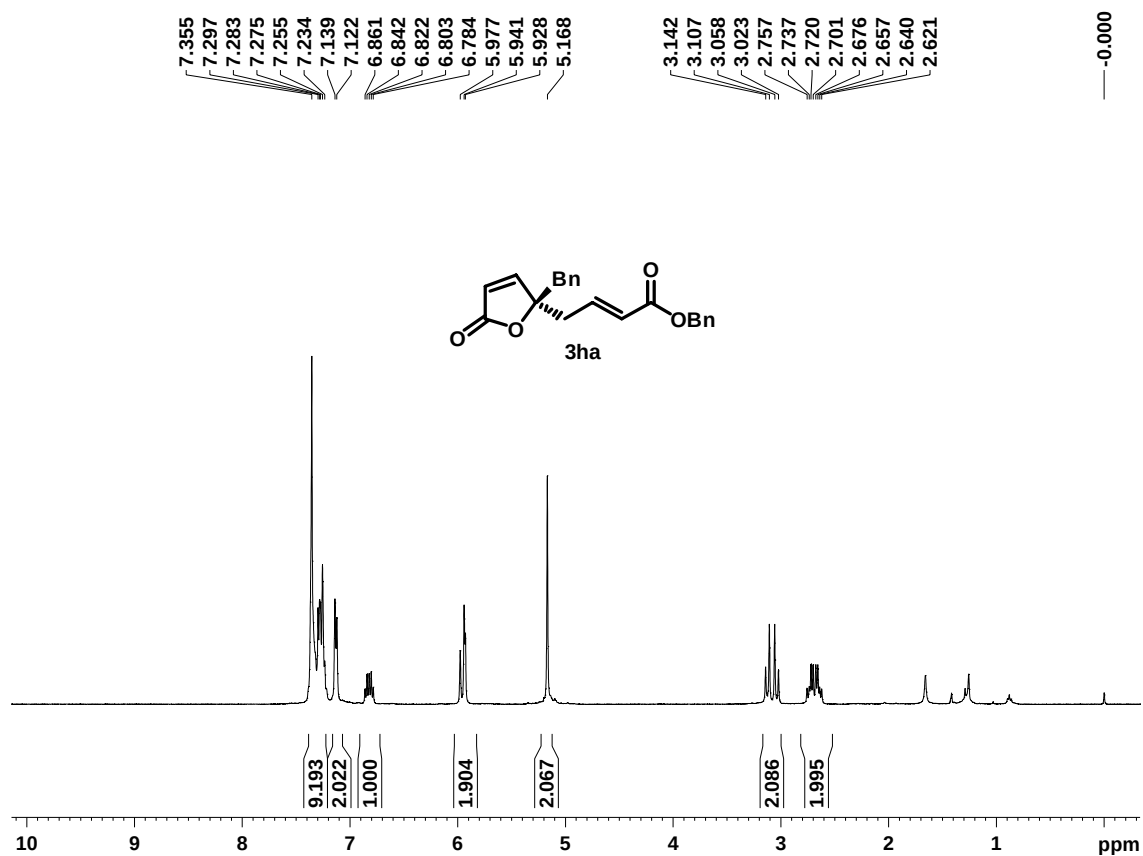
Peak#	Ret. Time	Area	Area %
1	11.504	1913971	49.984
2	16.369	1915202	50.016
Total		3829174	100.000

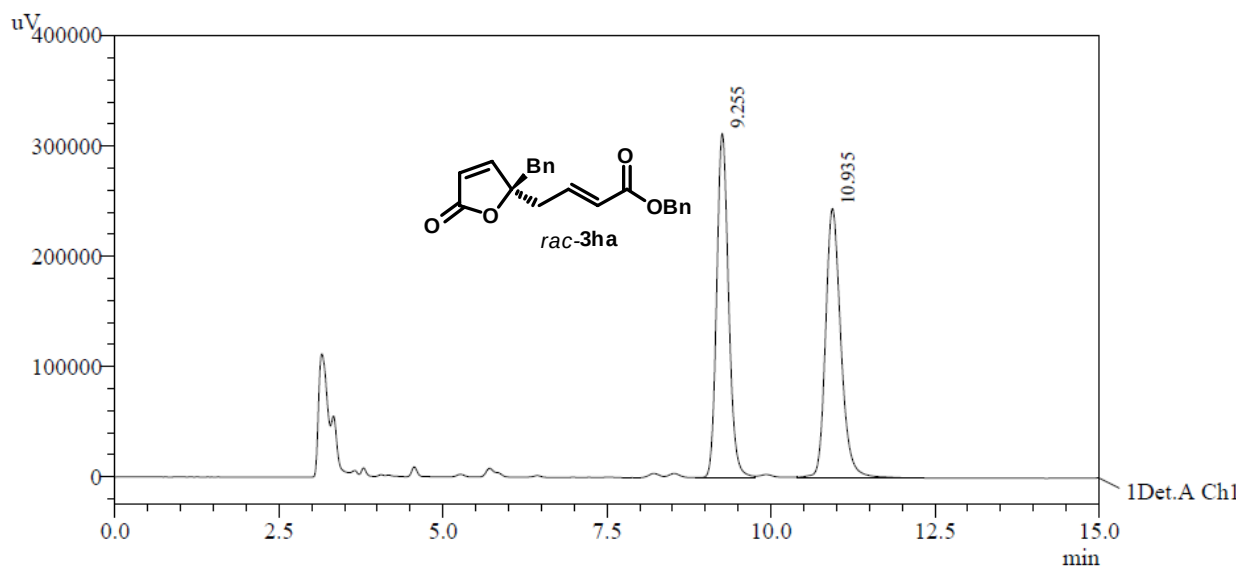


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	11.570	5175363	90.005
2	16.483	574700	9.995
Total		5750062	100.000

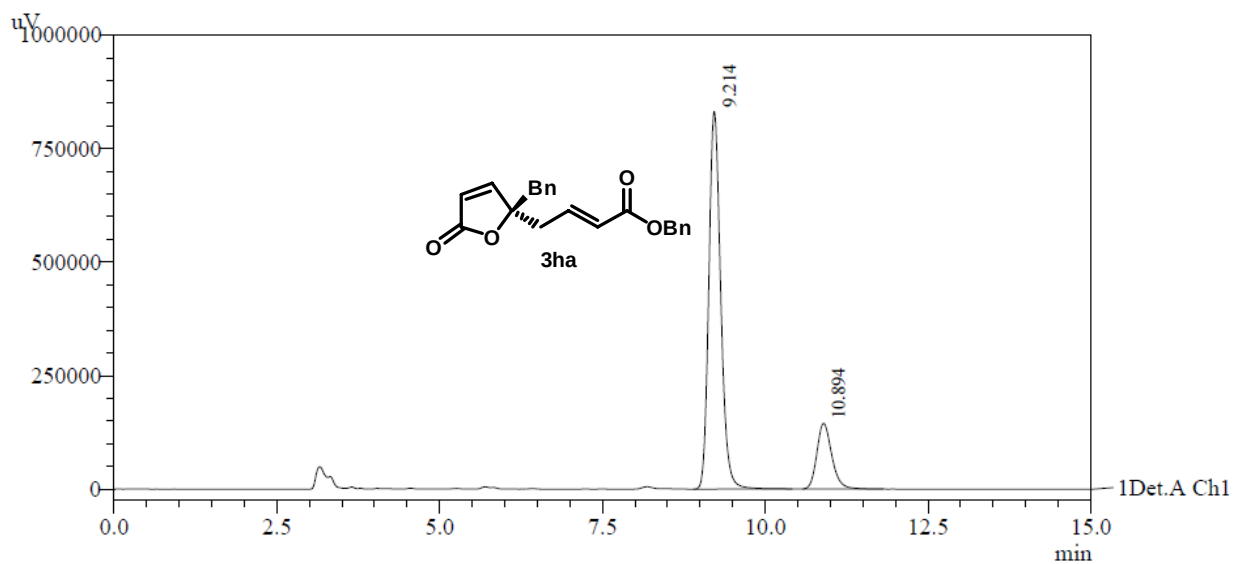




PeakTable

Detector A Ch1 210nm

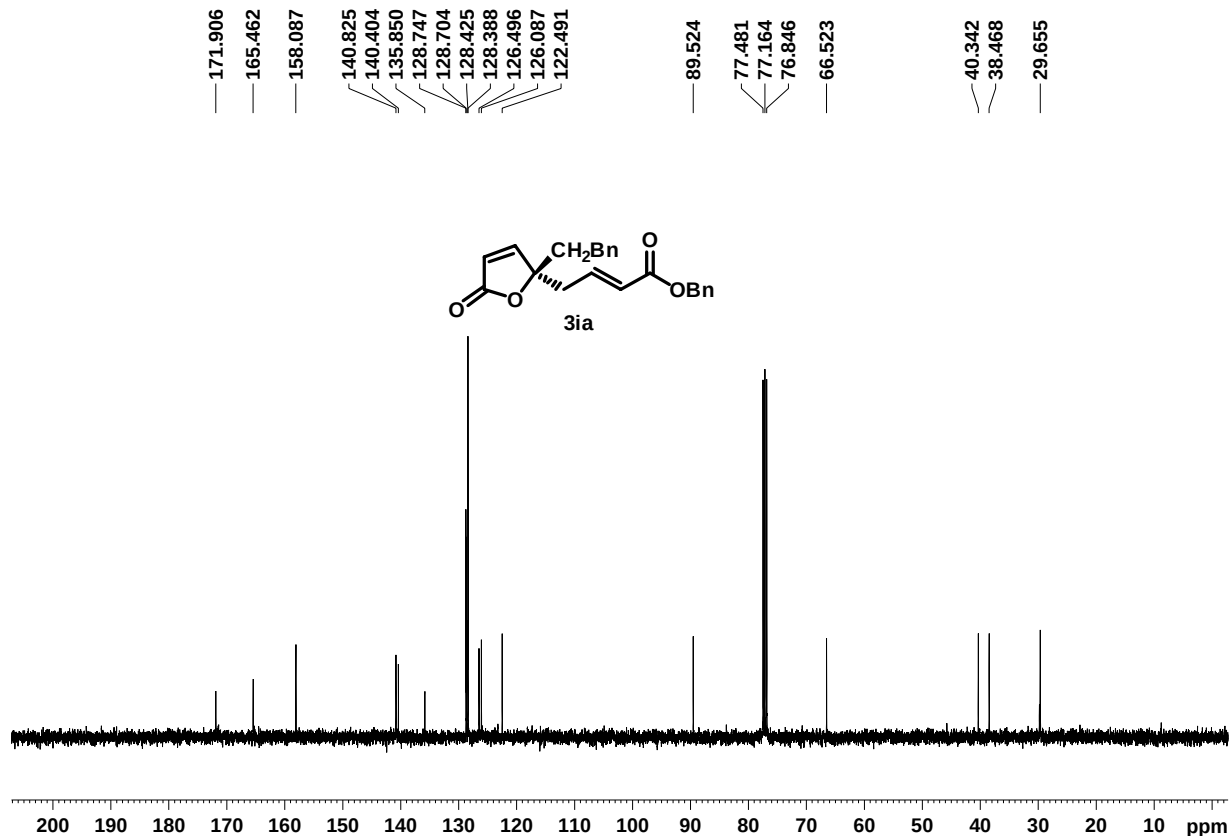
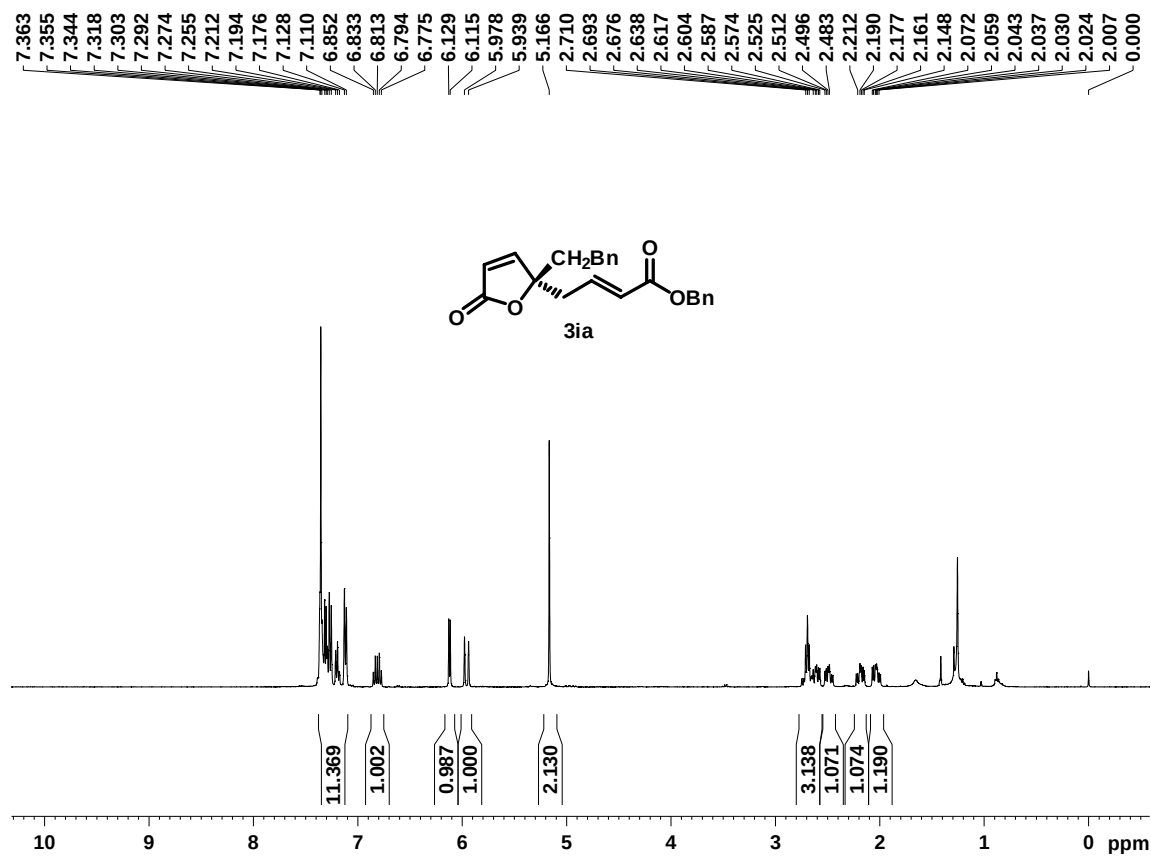
Peak#	Ret. Time	Area	Area %
1	9.255	3949317	49.877
2	10.935	3968867	50.123
Total		7918183	100.000

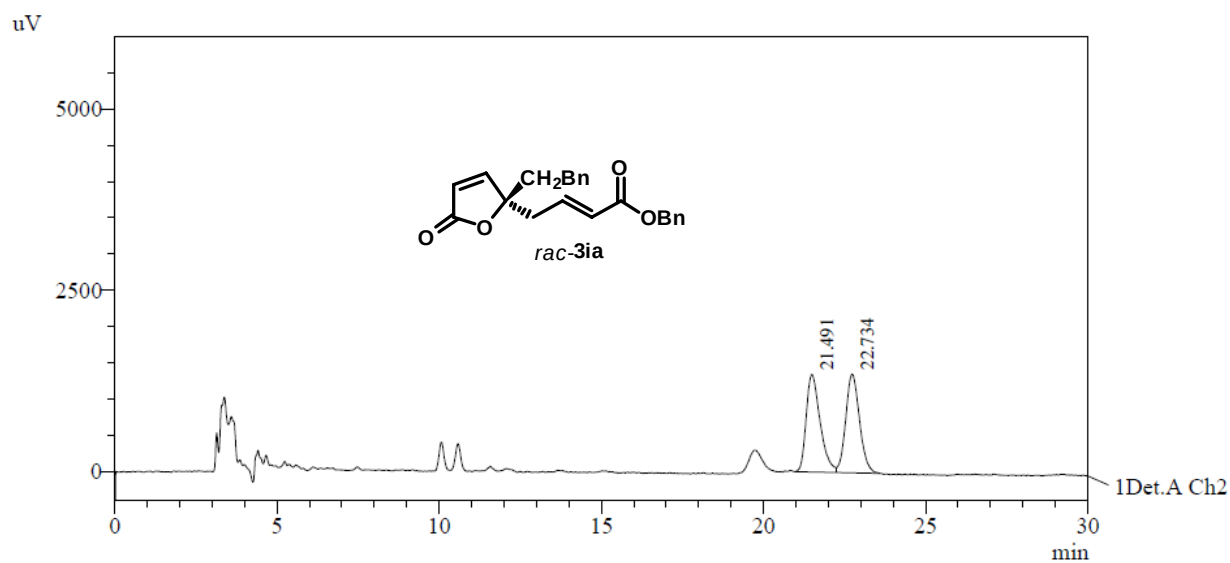


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	9.214	10568645	82.084
2	10.894	2306812	17.916
Total		12875457	100.000

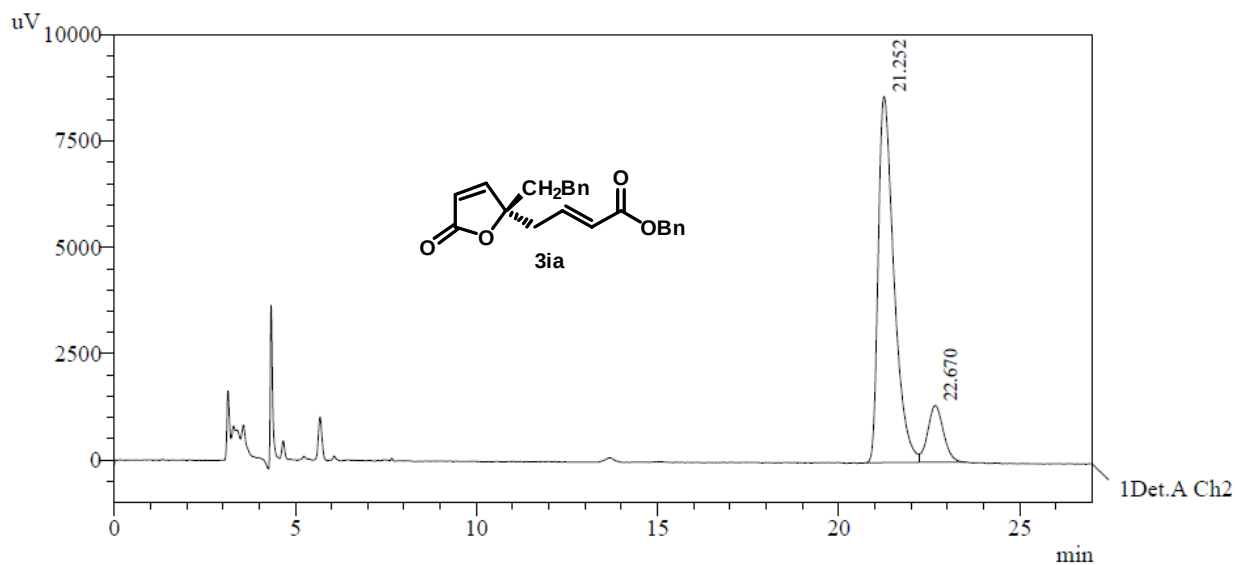




PeakTable

Detector A Ch2 254nm

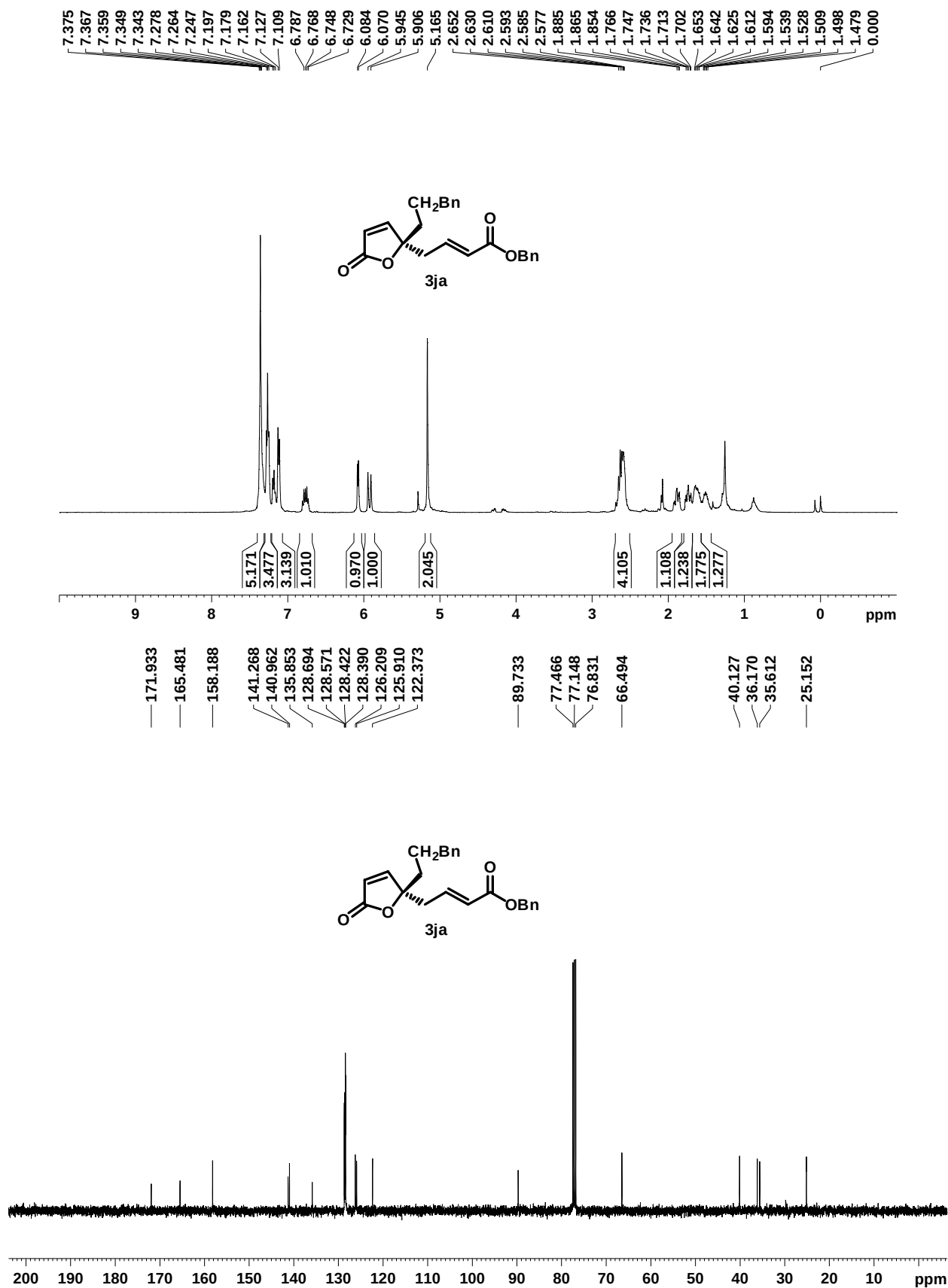
Peak#	Ret. Time	Area	Area %
1	21.491	40272	49.957
2	22.734	40341	50.043
Total		80613	100.000

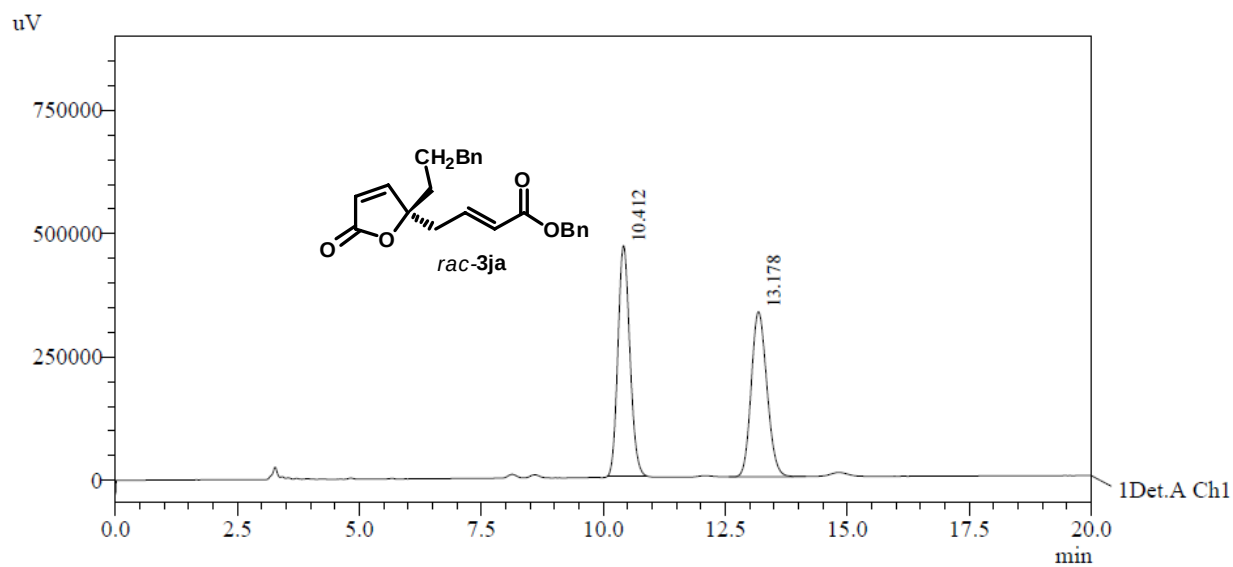


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %
1	21.252	260031	86.644
2	22.670	40085	13.356
Total		300116	100.000

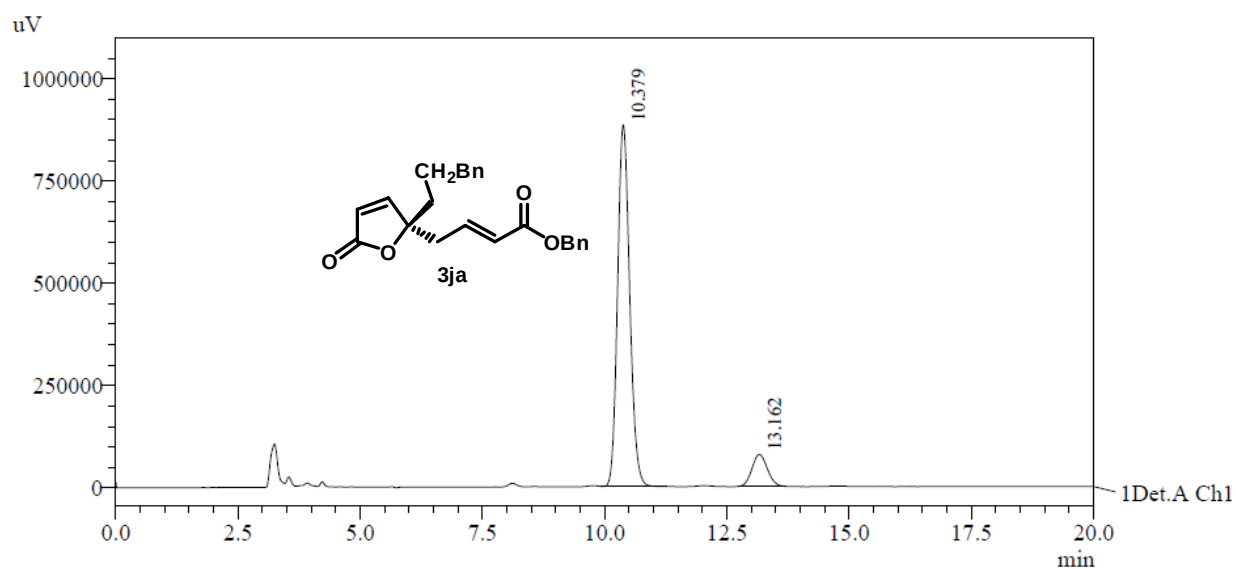




PeakTable

Detector A Ch1 210nm

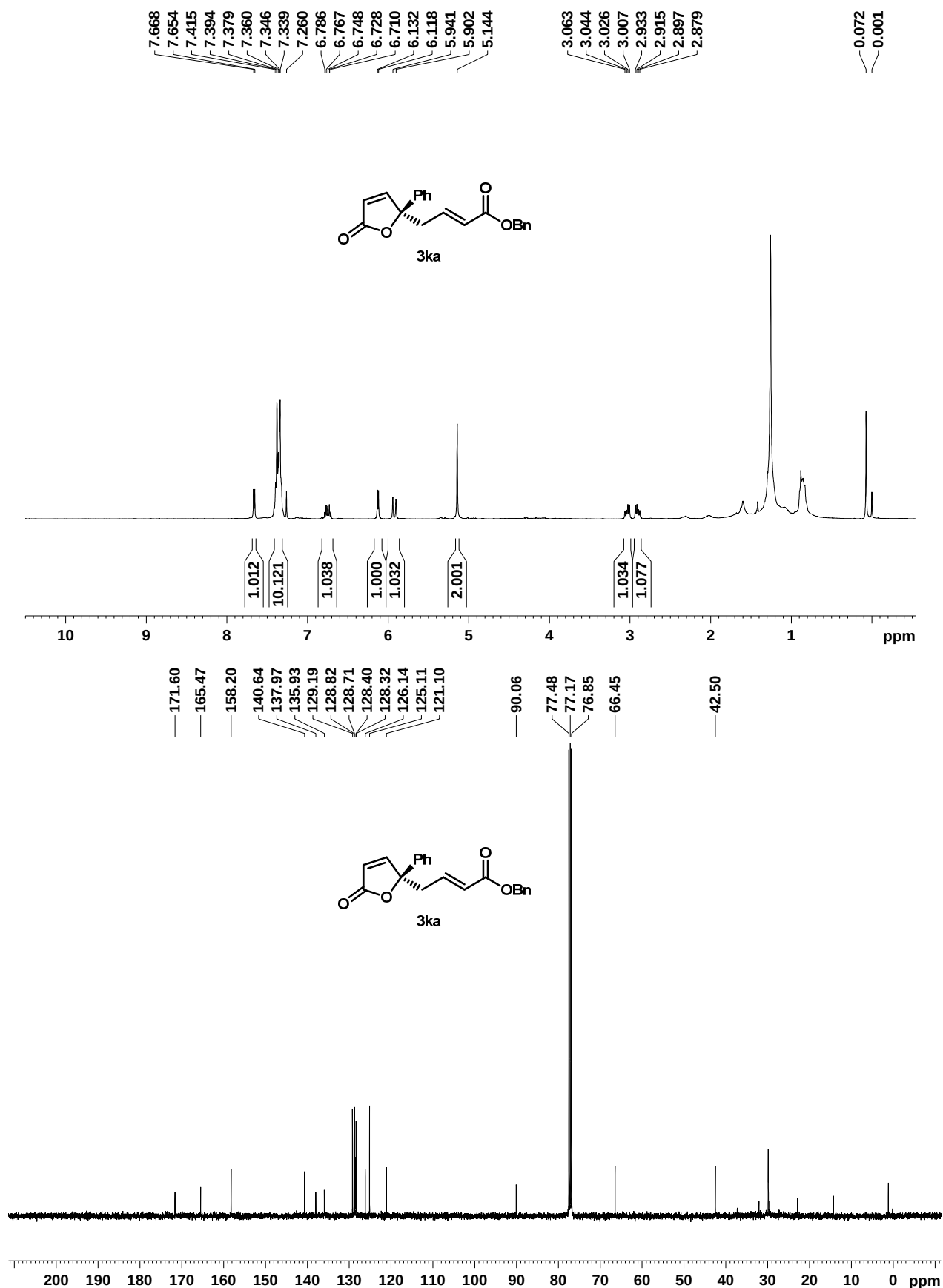
Peak#	Ret. Time	Area	Area %
1	10.412	7953581	51.464
2	13.178	7501099	48.536
Total		15454680	100.000

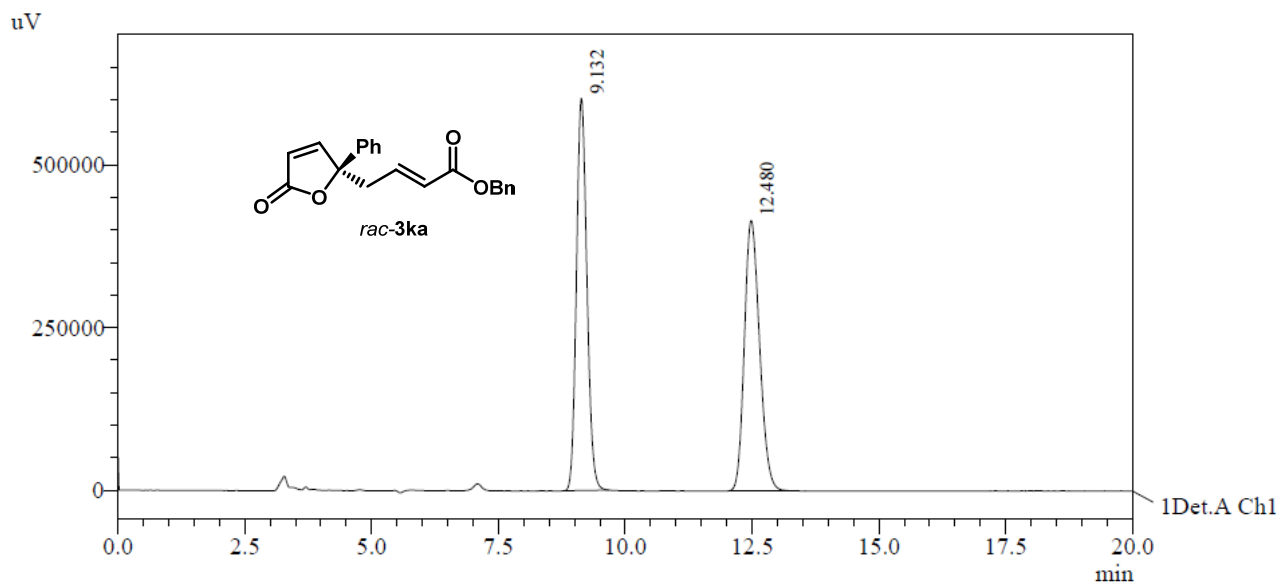


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	10.379	15233936	89.940
2	13.162	1704027	10.060
Total		16937963	100.000

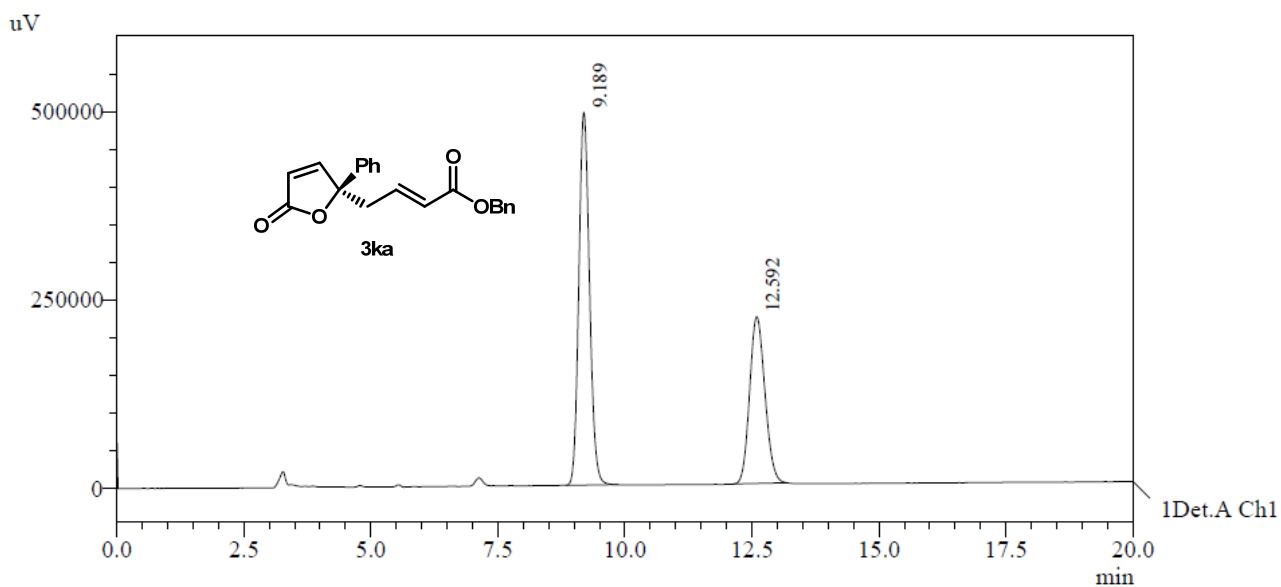




PeakTable

Detector A Ch1 210nm

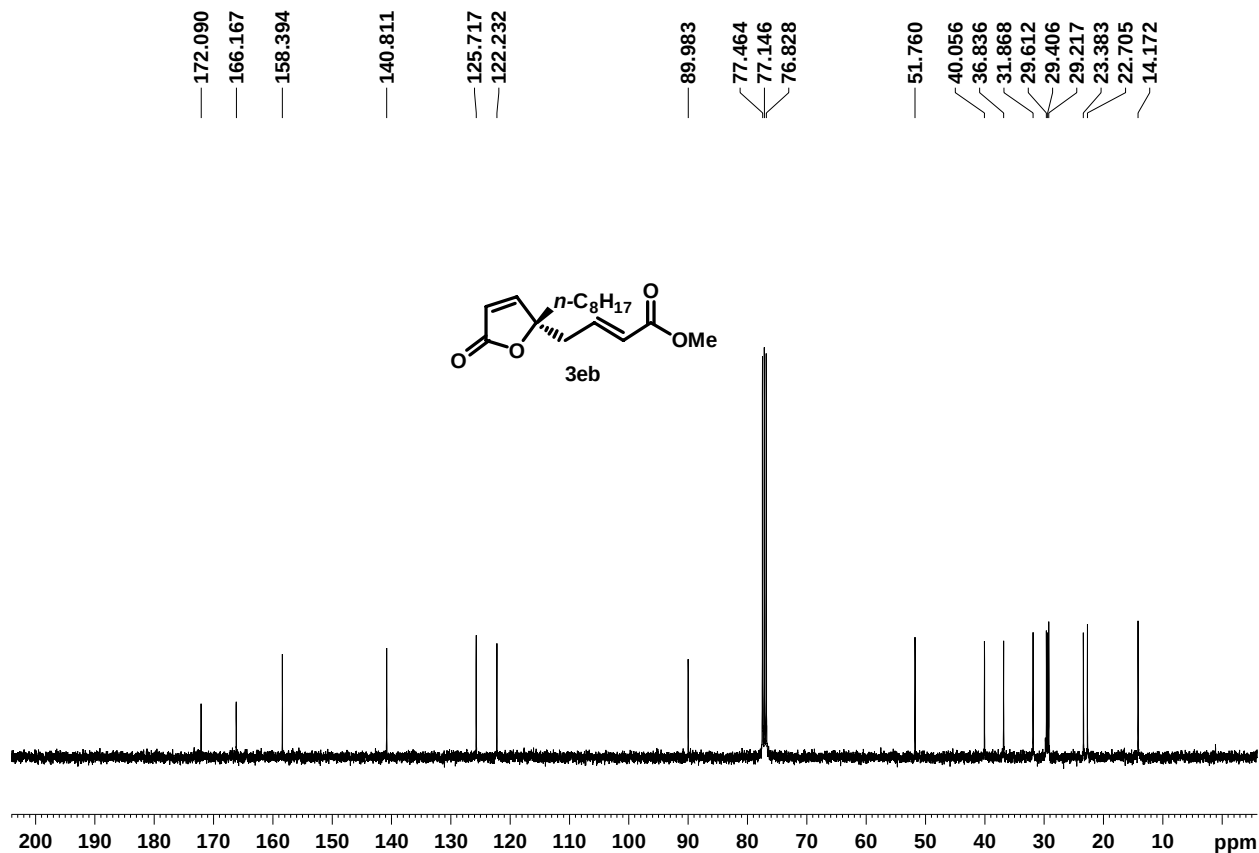
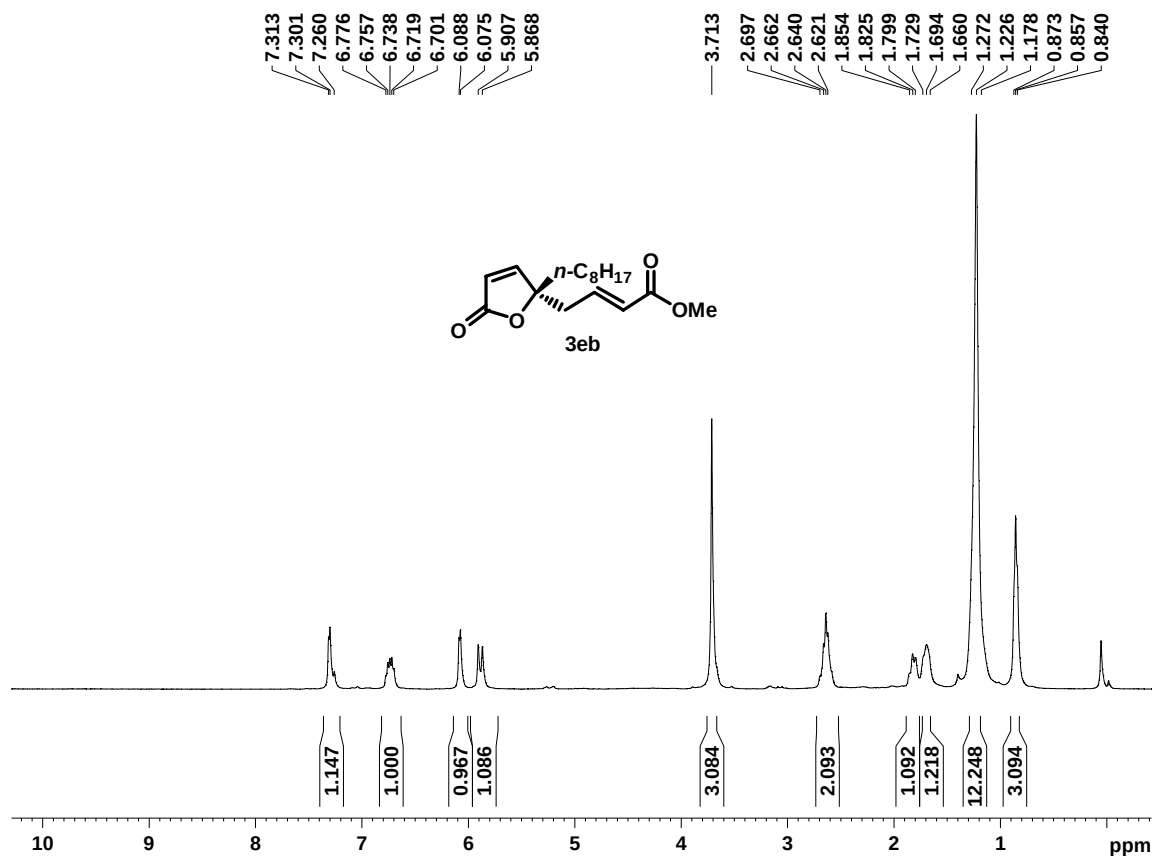
Peak#	Ret. Time	Area	Area %
1	9.132	8673580	50.062
2	12.480	8652228	49.938
Total		17325809	100.000

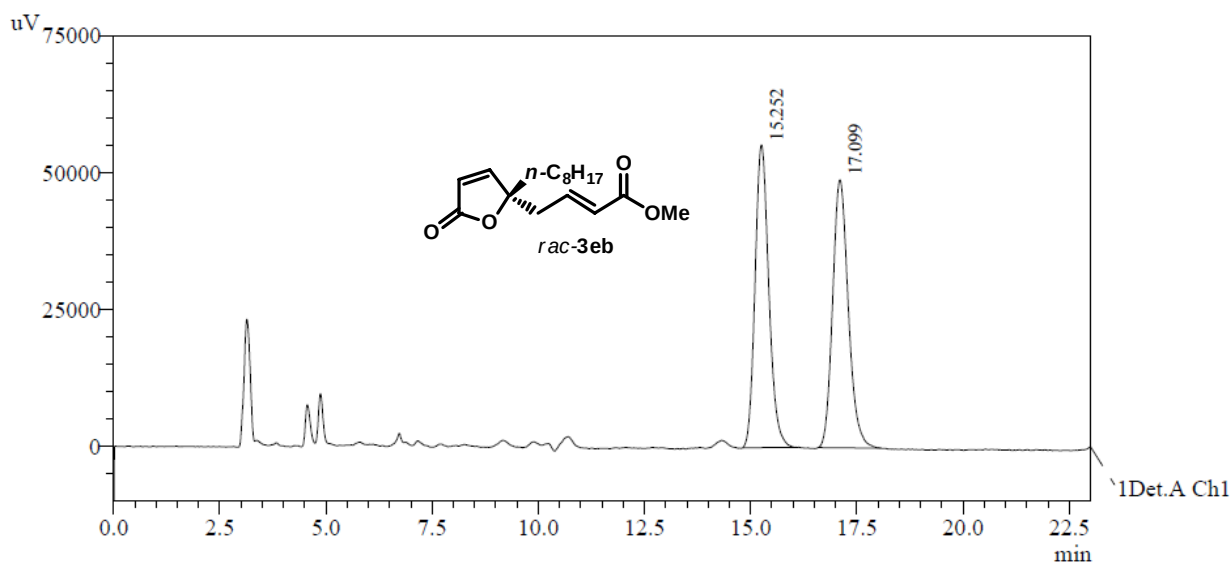


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	9.189	7227852	60.955
2	12.592	4629822	39.045
Total		11857674	100.000

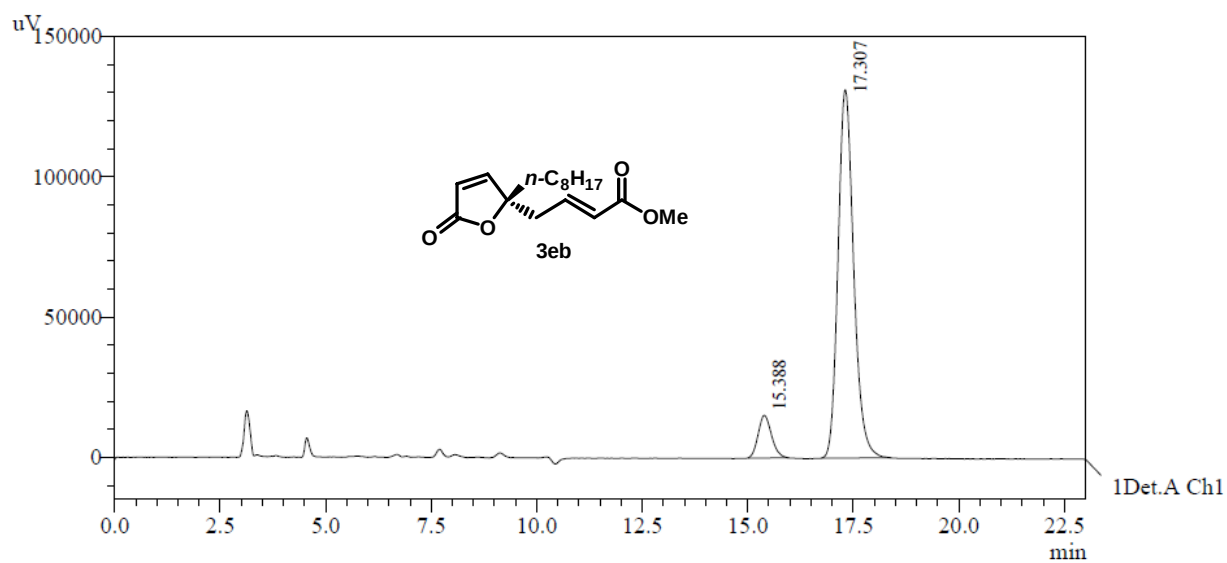




PeakTable

Detector A Ch1 210nm

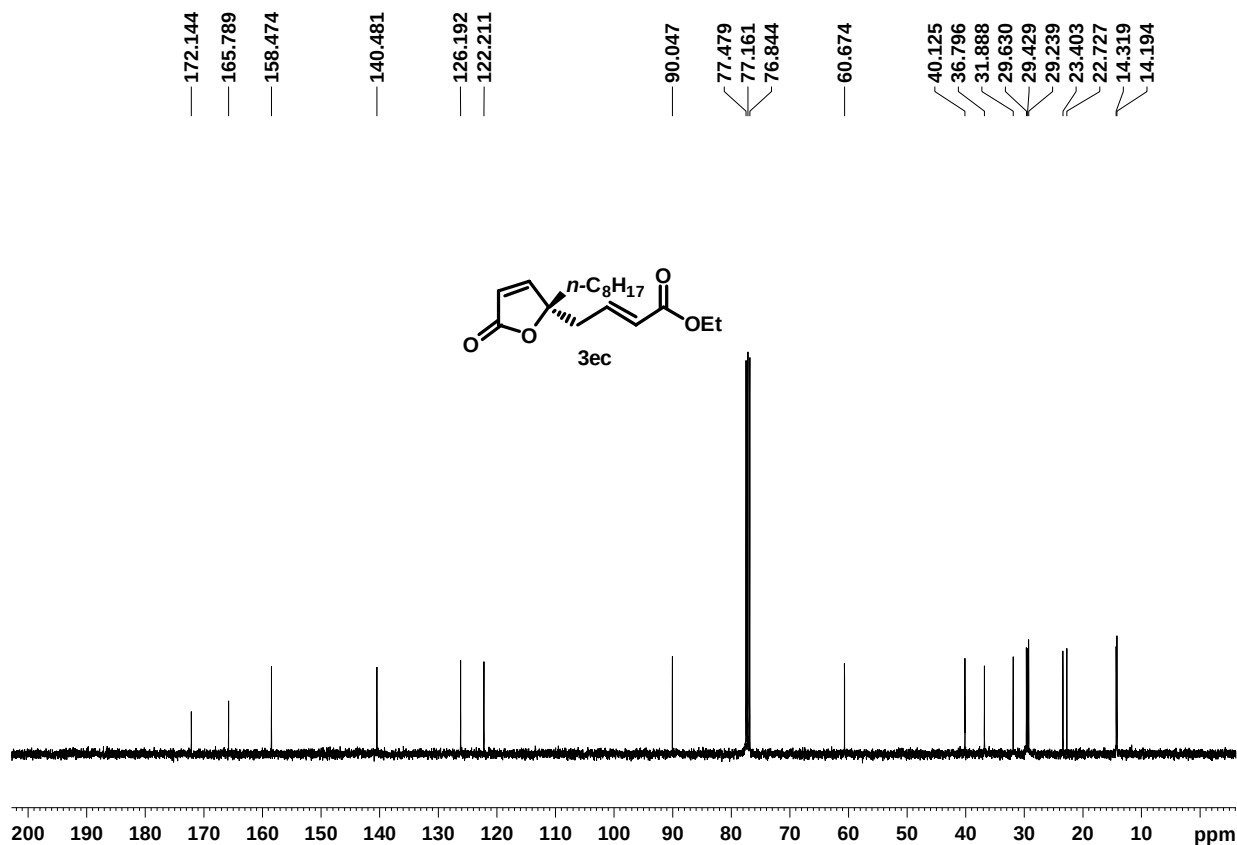
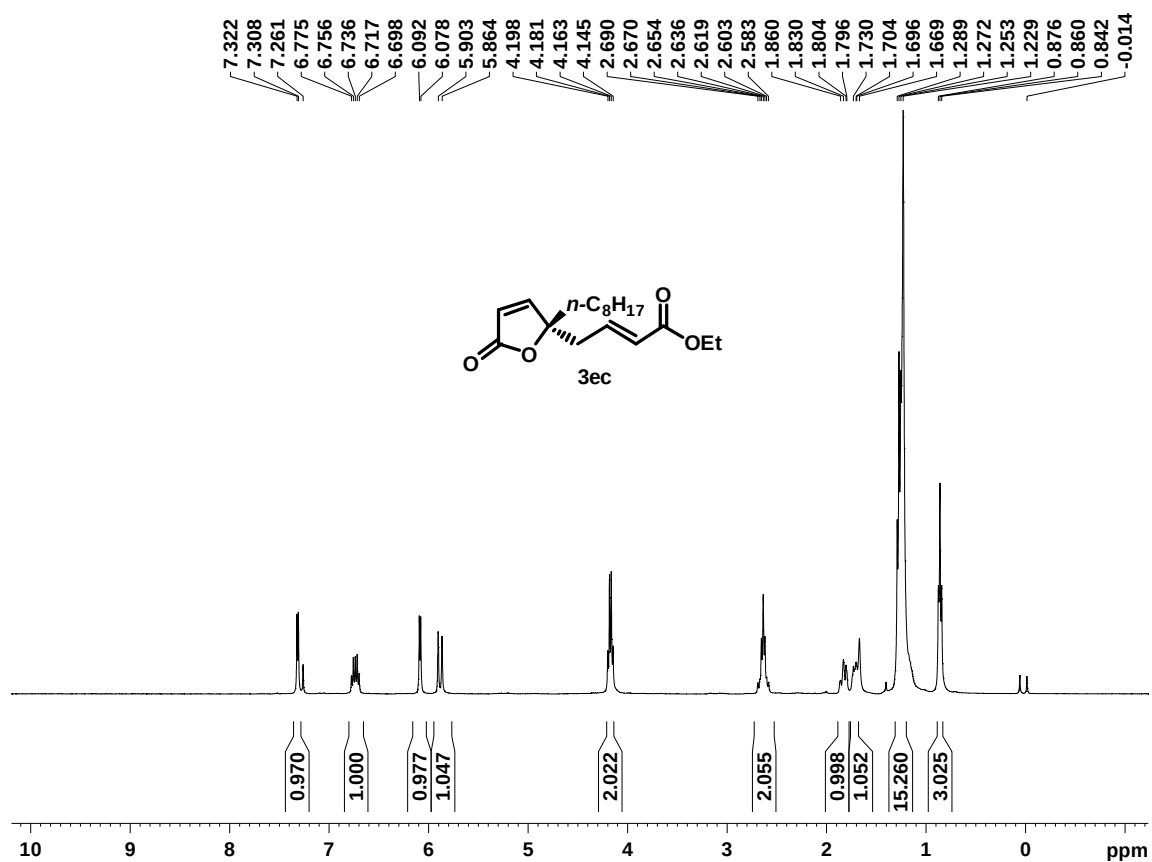
Peak#	Ret. Time	Area	Area %
1	15.252	1248064	49.813
2	17.099	1257424	50.187
Total		2505488	100.000

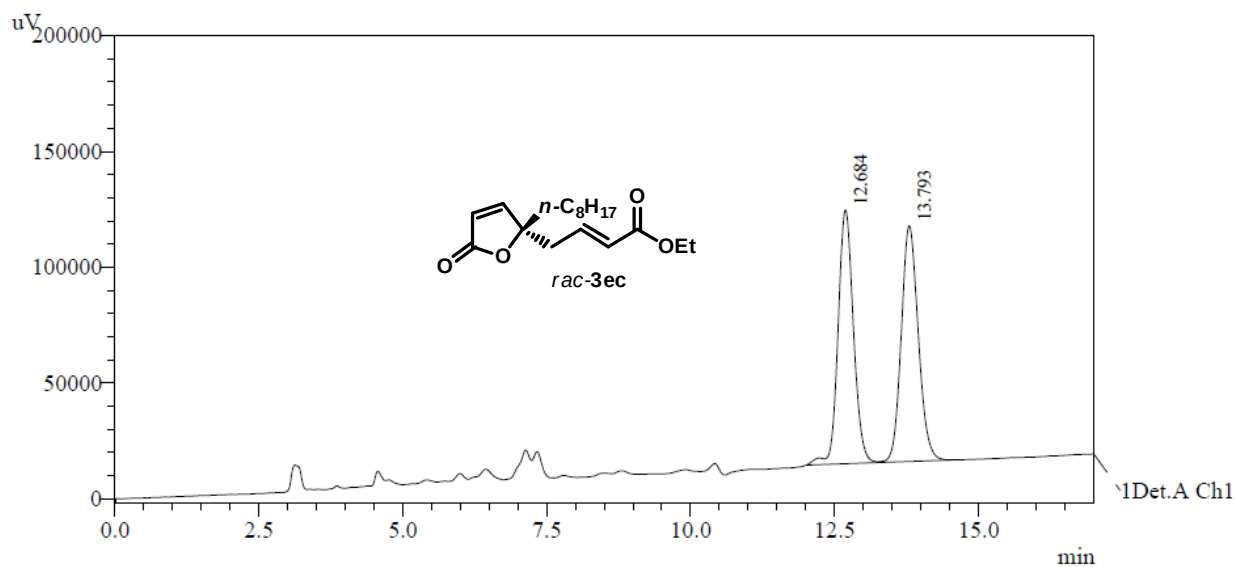


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	15.388	334680	8.987
2	17.307	3389185	91.013
Total		3723864	100.000

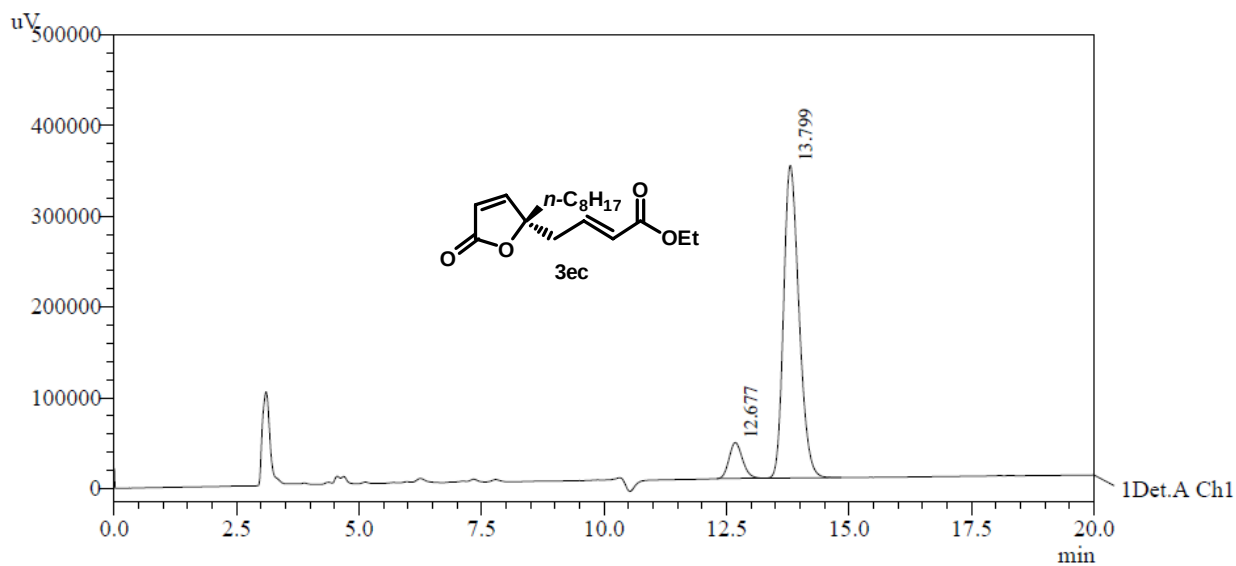




PeakTable

Detector A Ch1 210nm

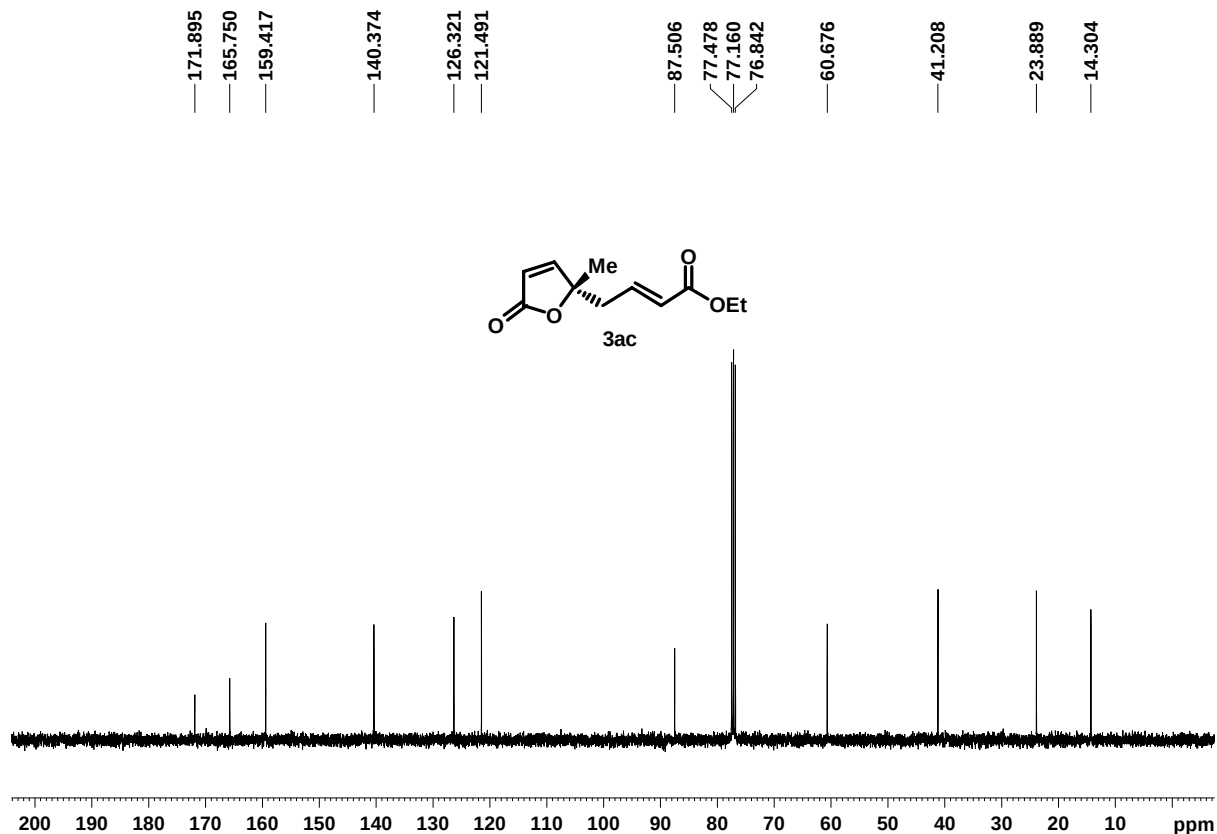
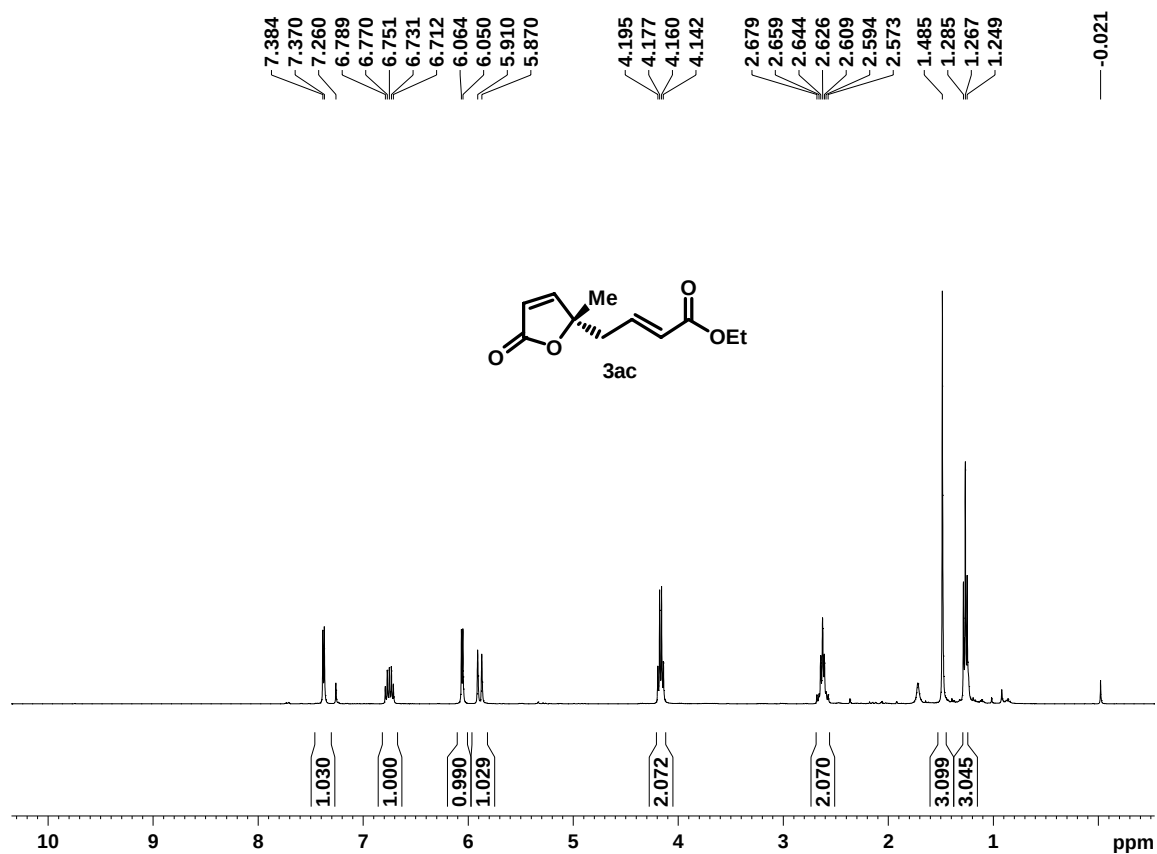
Peak#	Ret. Time	Area	Area %
1	12.684	2046694	49.468
2	13.793	2090676	50.532
Total		4137370	100.000

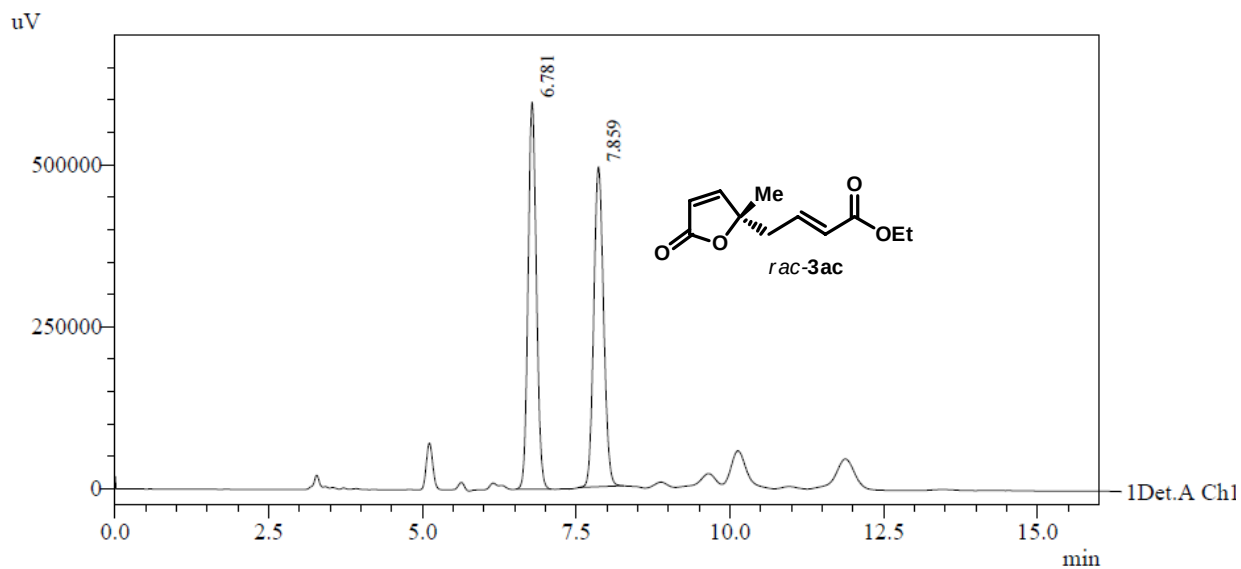


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	12.677	749457	9.053
2	13.799	7529493	90.947
Total		8278950	100.000

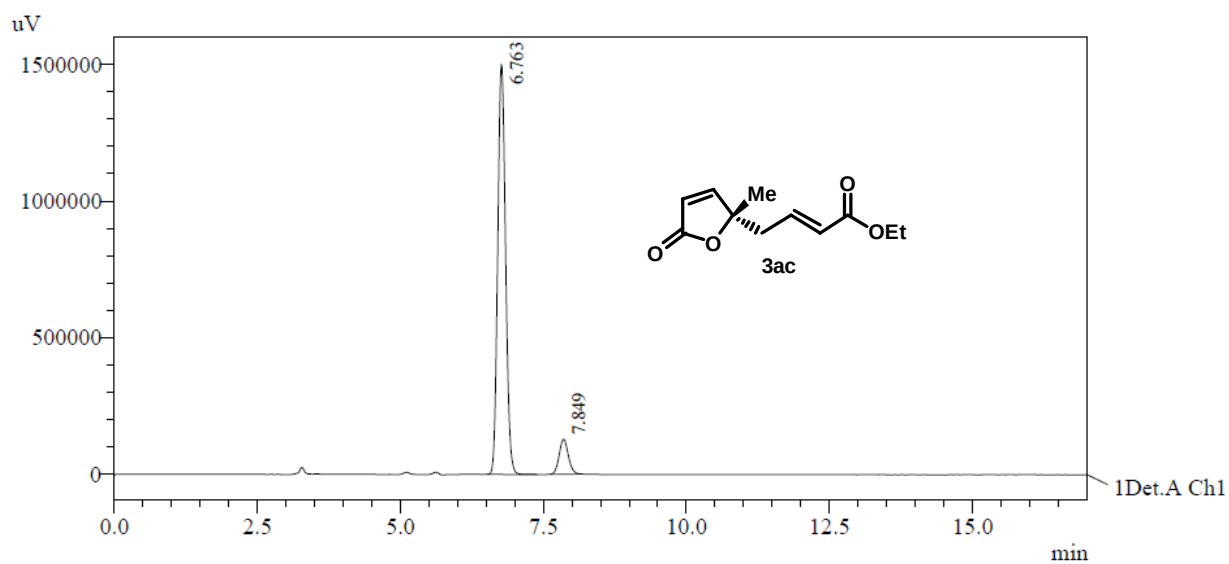




PeakTable

Detector A Ch1 210nm

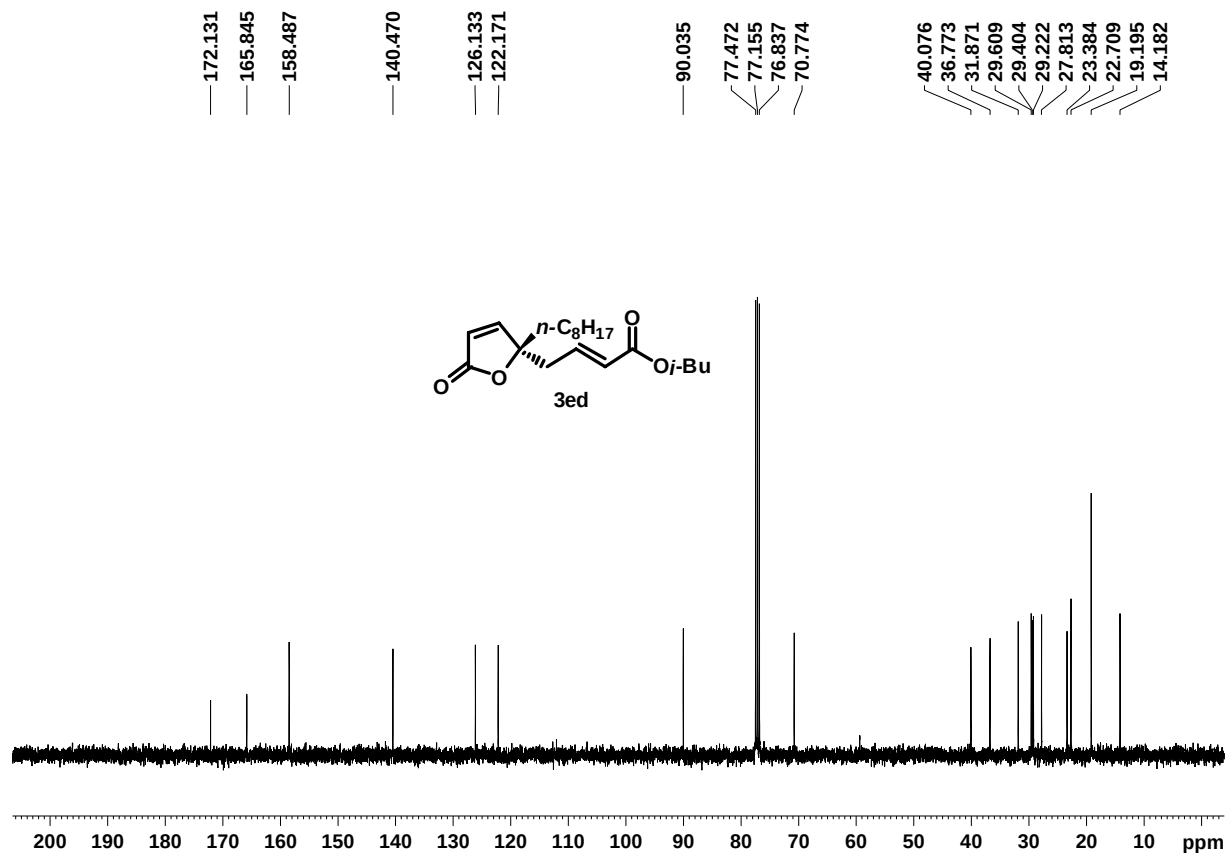
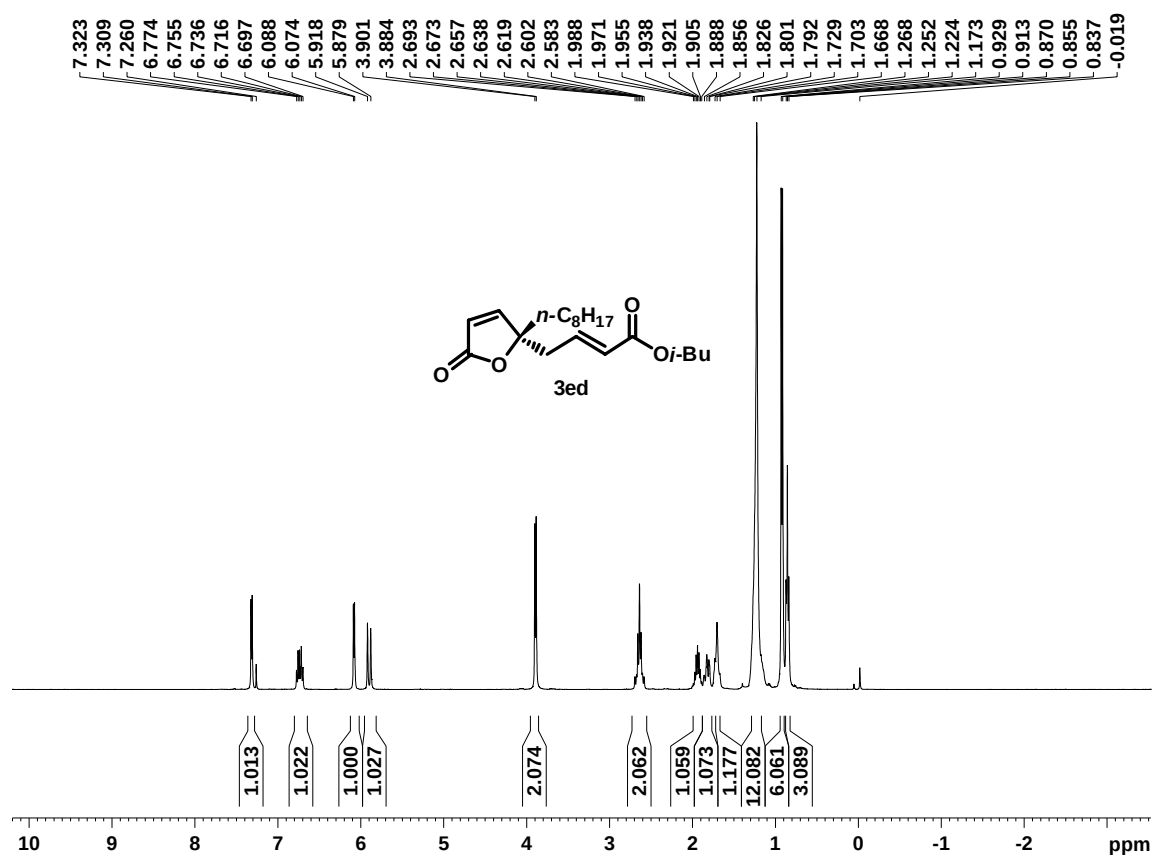
Peak#	Ret. Time	Area	Area %
1	6.781	5616161	50.538
2	7.859	5496690	49.462
Total		11112852	100.000

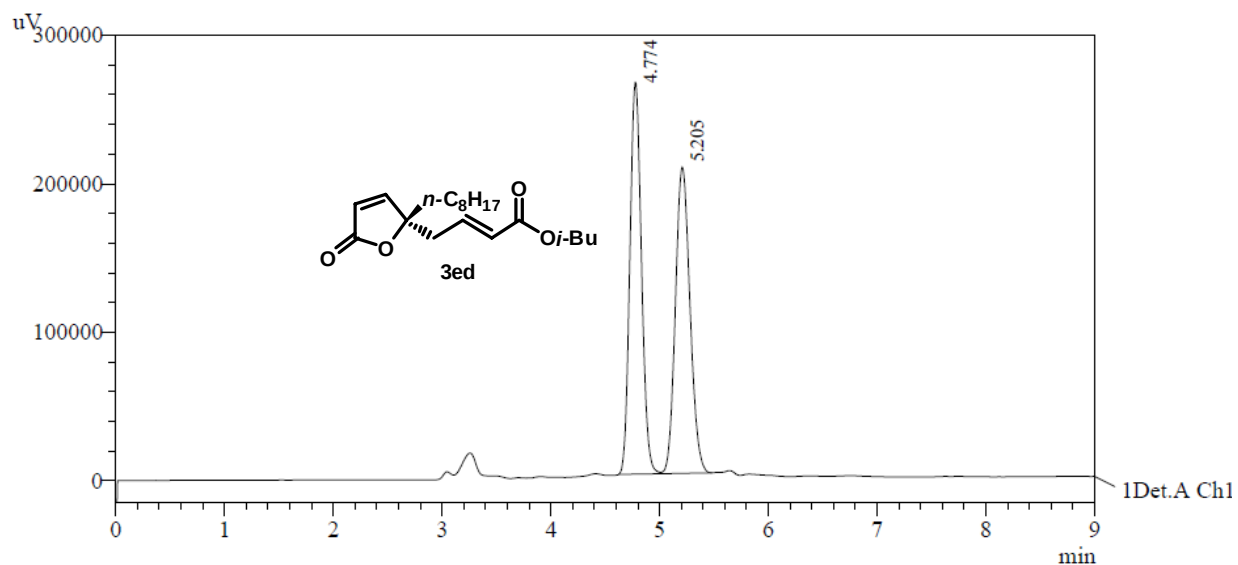


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	6.763	14325635	90.945
2	7.849	1426330	9.055
Total		15751965	100.000

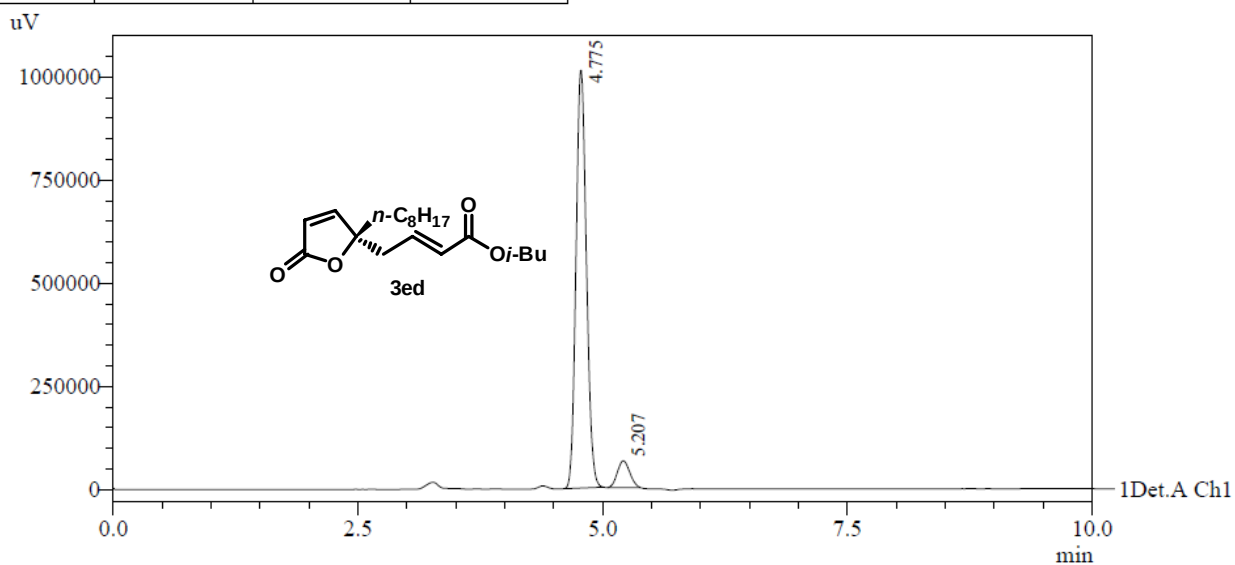




PeakTable

Detector A Ch1 210nm

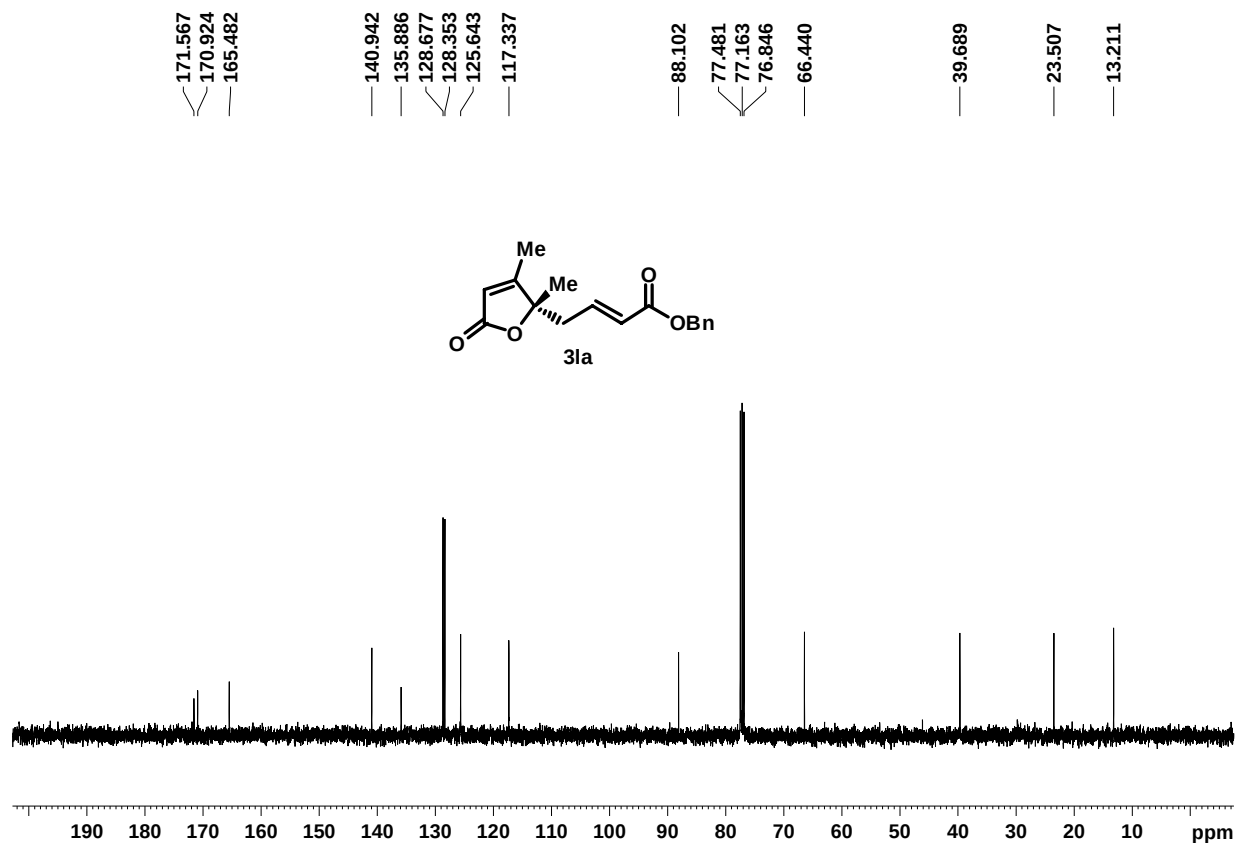
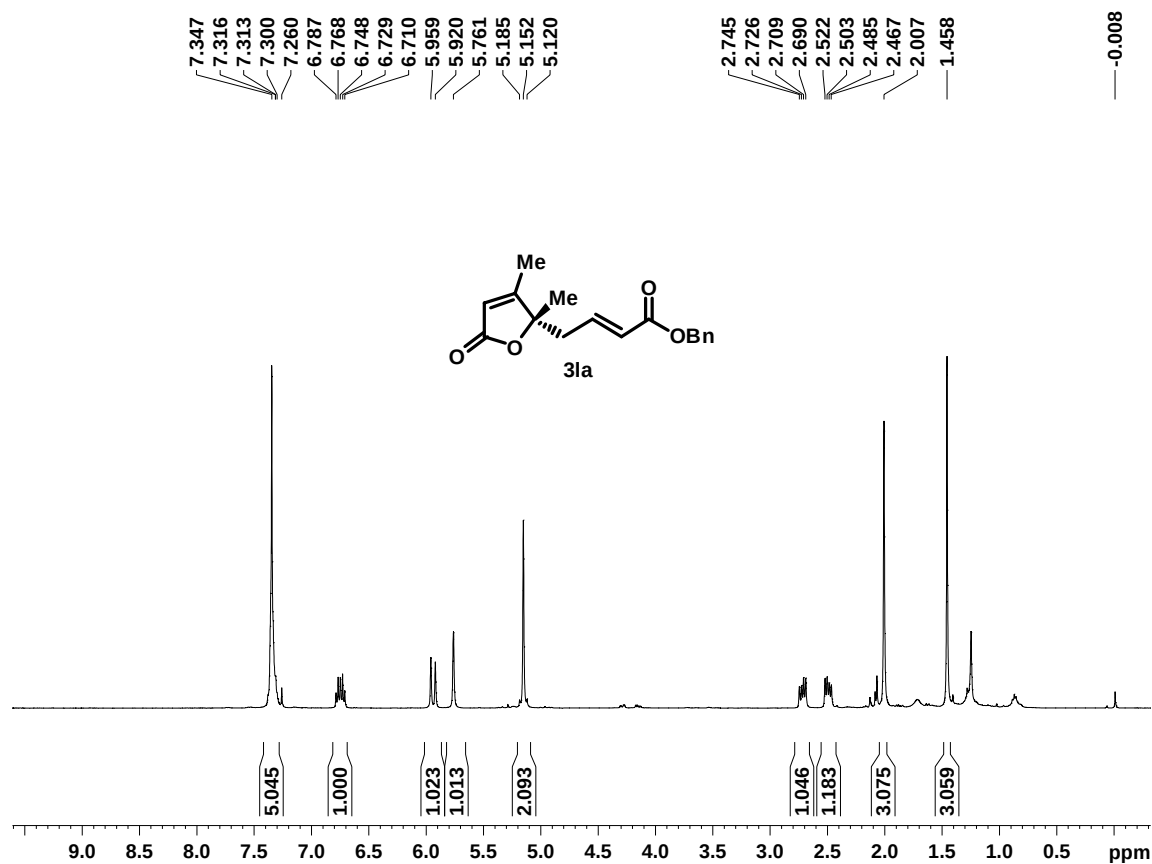
Peak#	Ret. Time	Area	Area %
1	4.774	1954327	50.378
2	5.205	1924980	49.622
Total		3879307	100.000

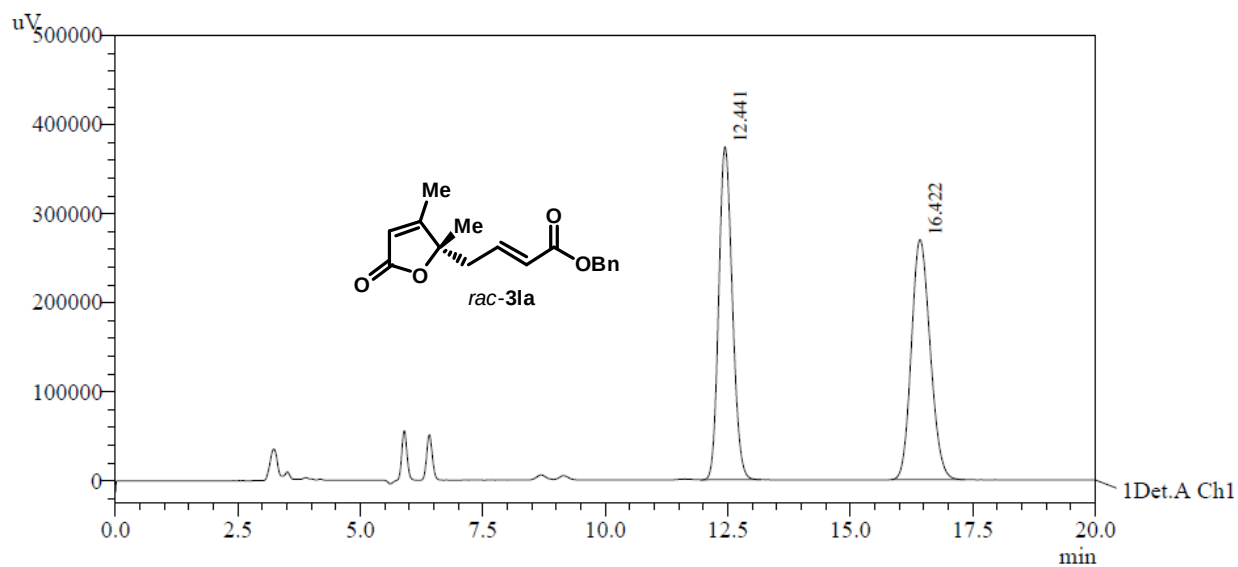


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	4.775	7469769	92.947
2	5.207	566807	7.053
Total		8036576	100.000

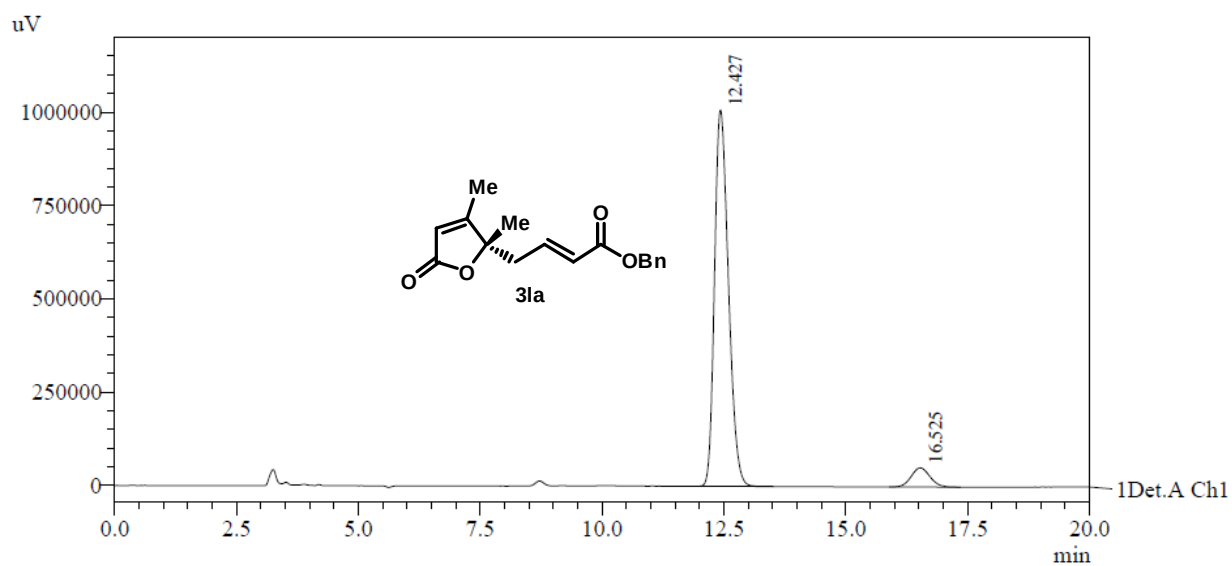




PeakTable

Detector A Ch1 210nm

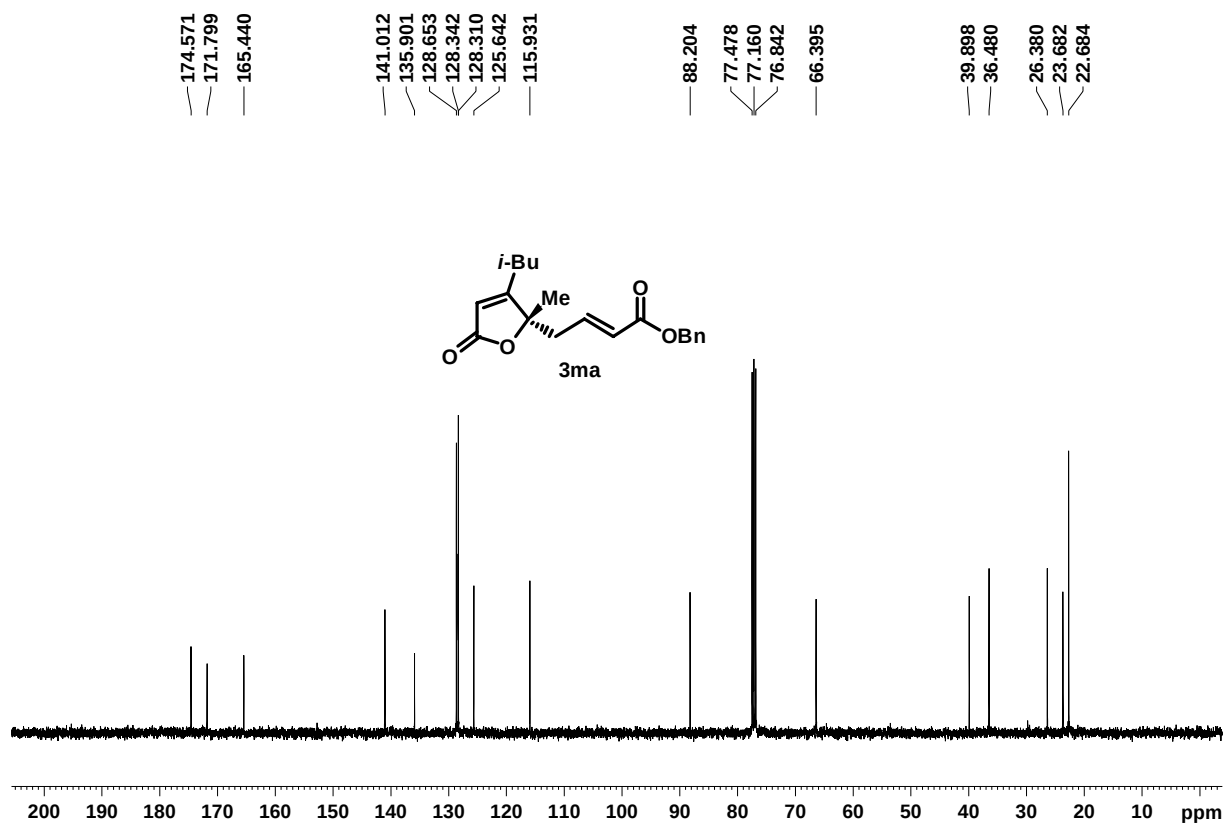
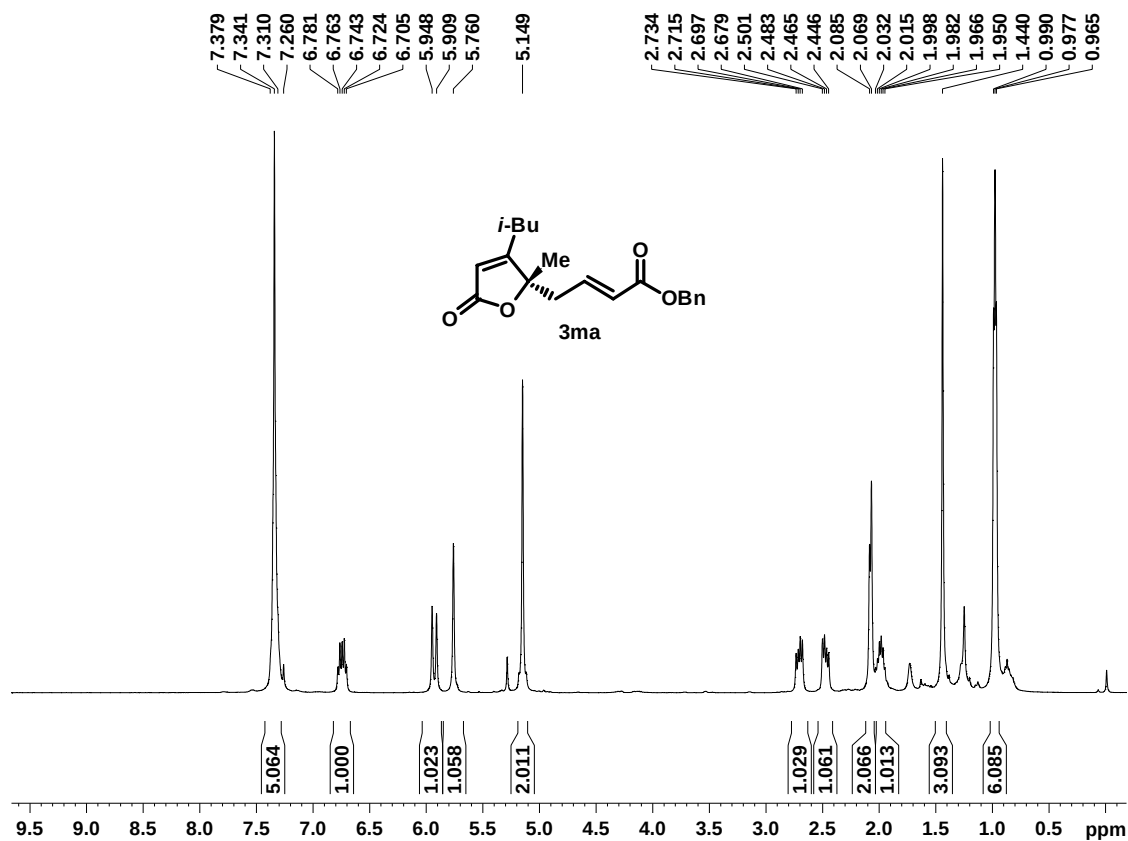
Peak#	Ret. Time	Area	Area %
1	12.441	7204899	50.002
2	16.422	7204243	49.998
Total		14409141	100.000

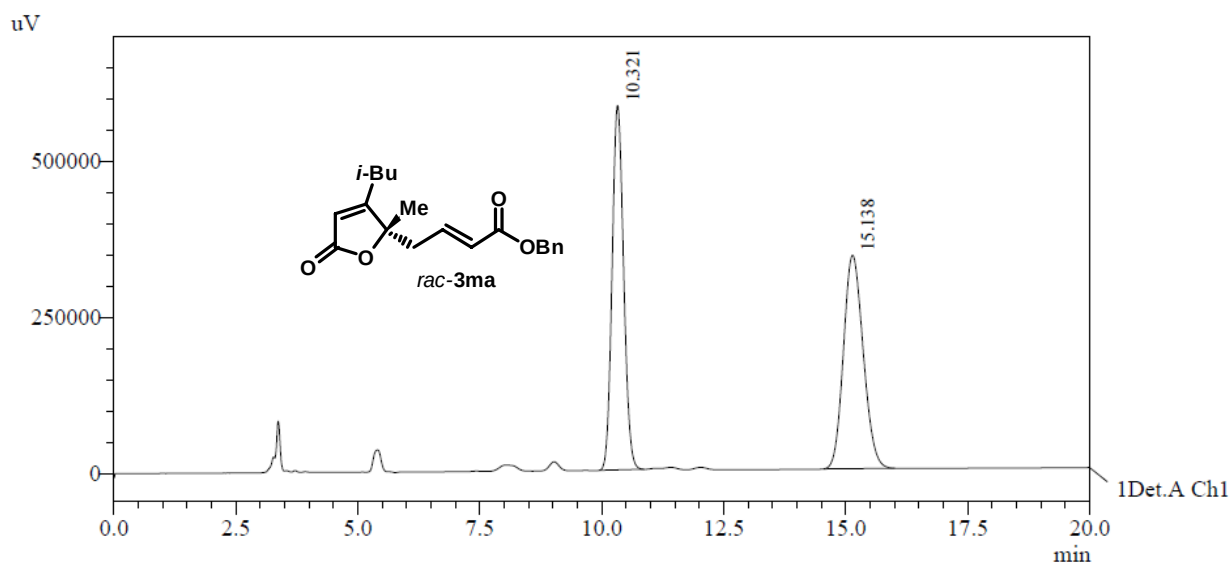


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	12.427	19987483	93.608
2	16.525	1364746	6.392
Total		21352229	100.000

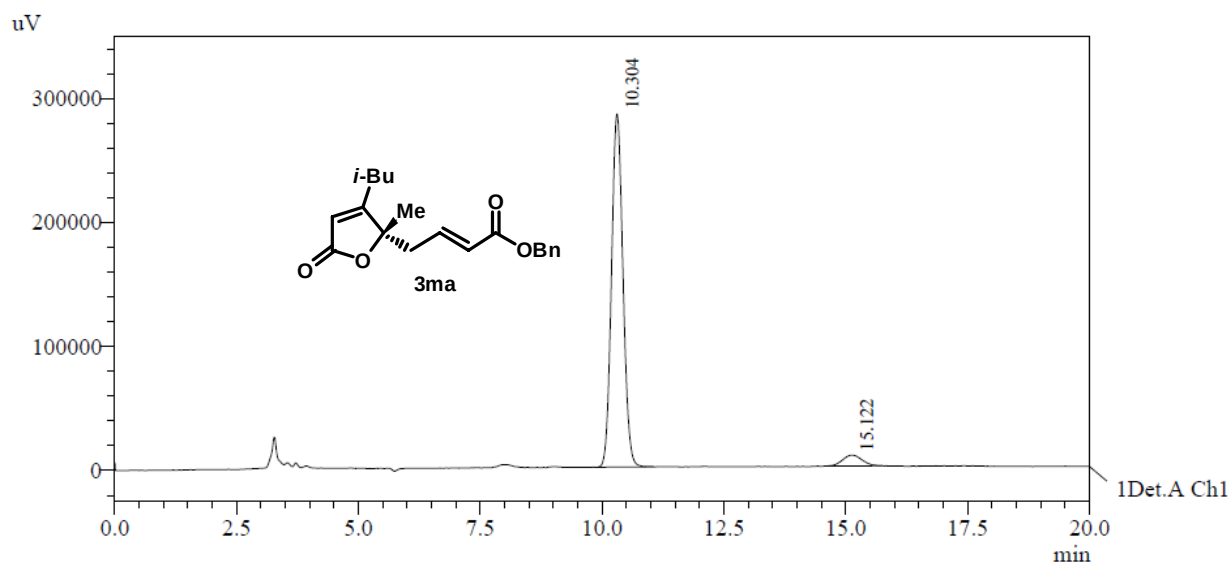




PeakTable

Detector A Ch1 210nm

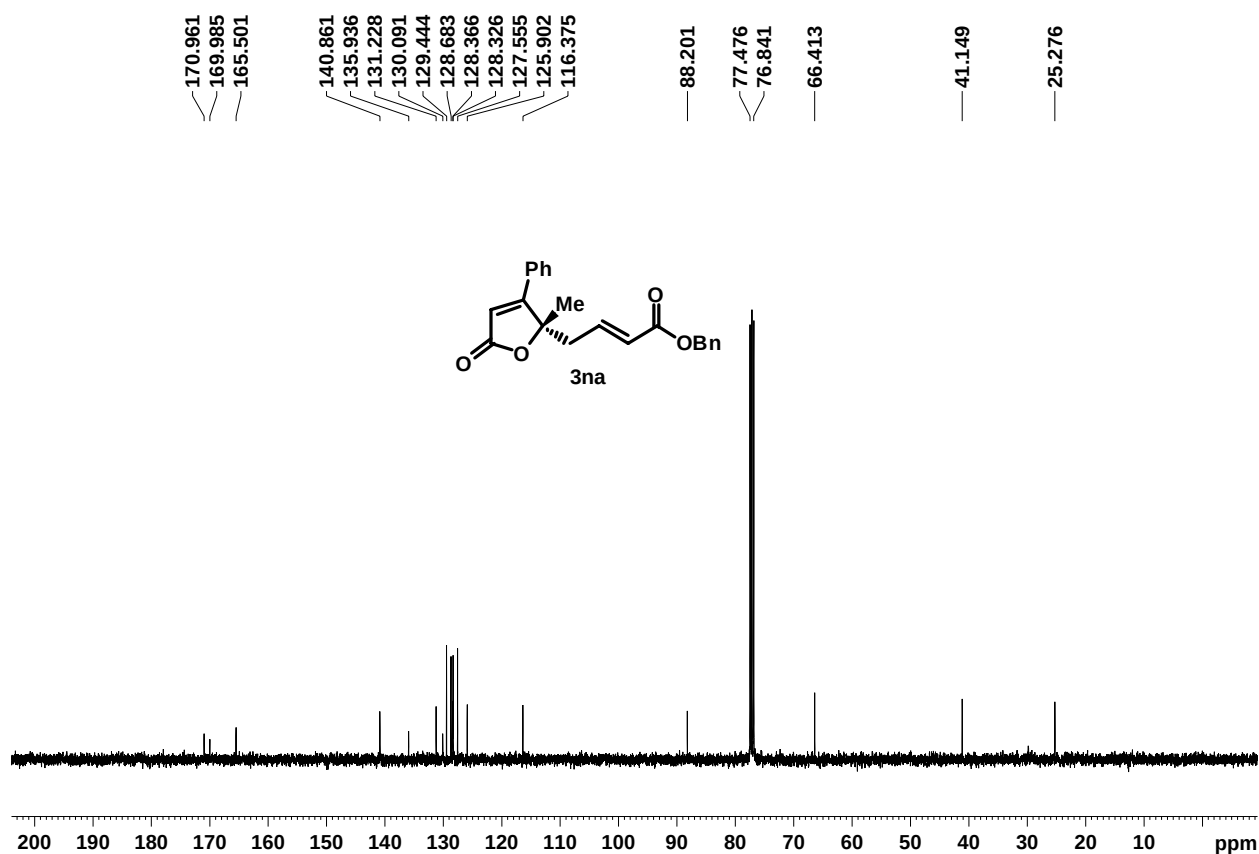
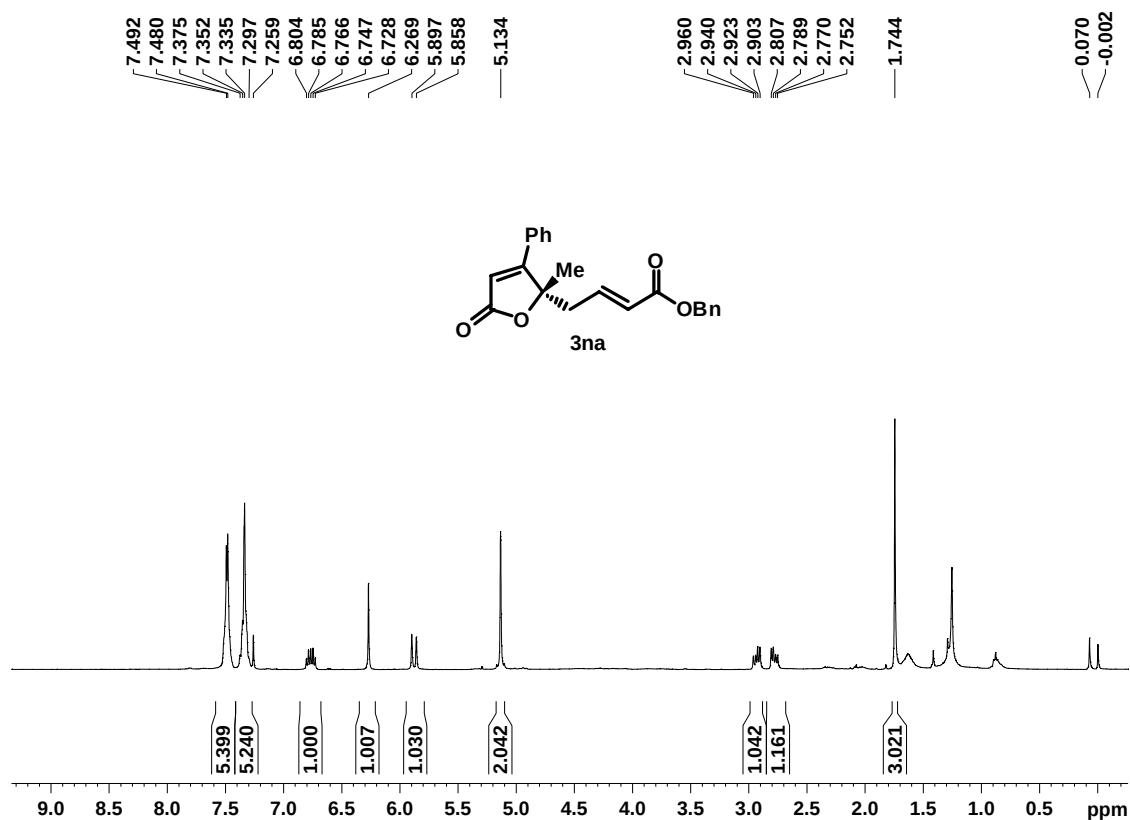
Peak#	Ret. Time	Area	Area %
1	10.321	9597132	49.916
2	15.138	9629293	50.084
Total		19226425	100.000

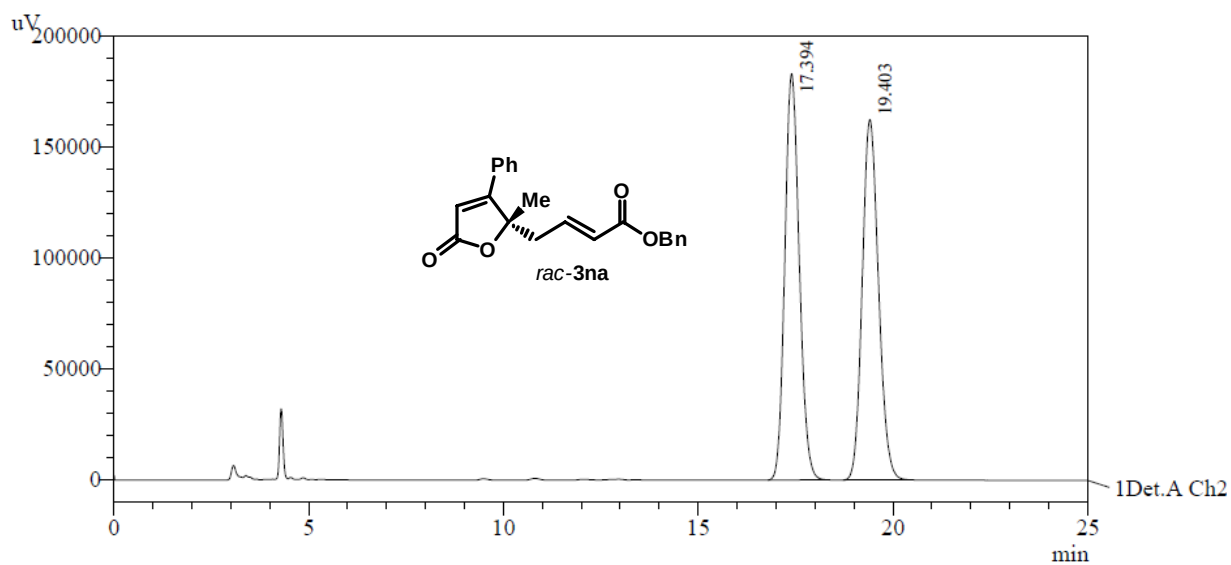


PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	10.304	4664705	95.098
2	15.122	240445	4.902
Total		4905150	100.000

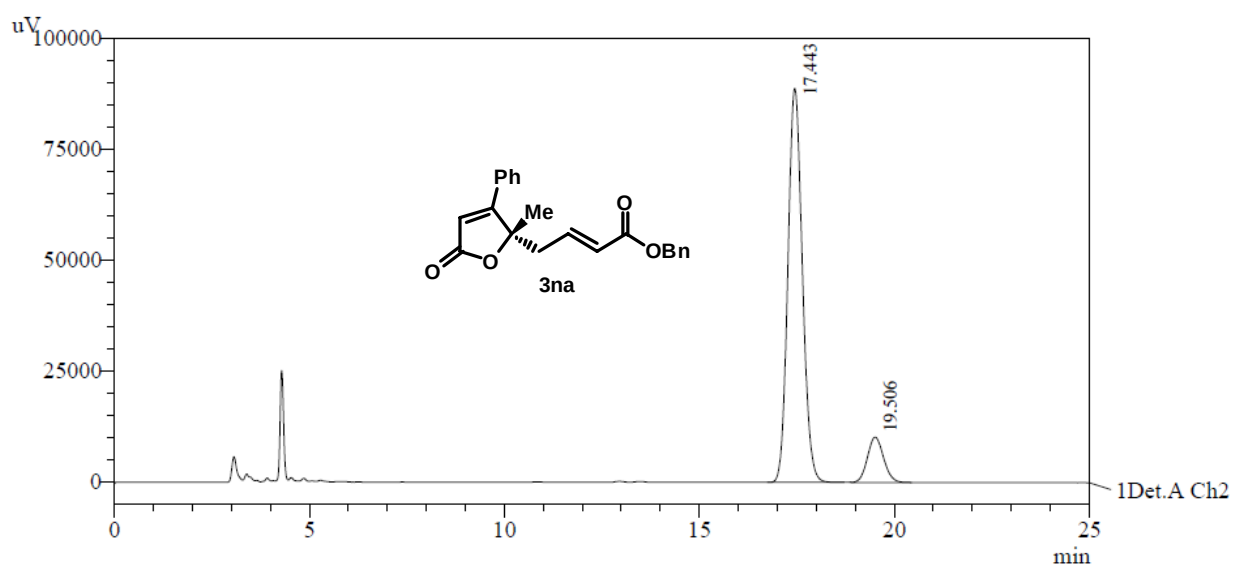




PeakTable

Detector A Ch2 254nm

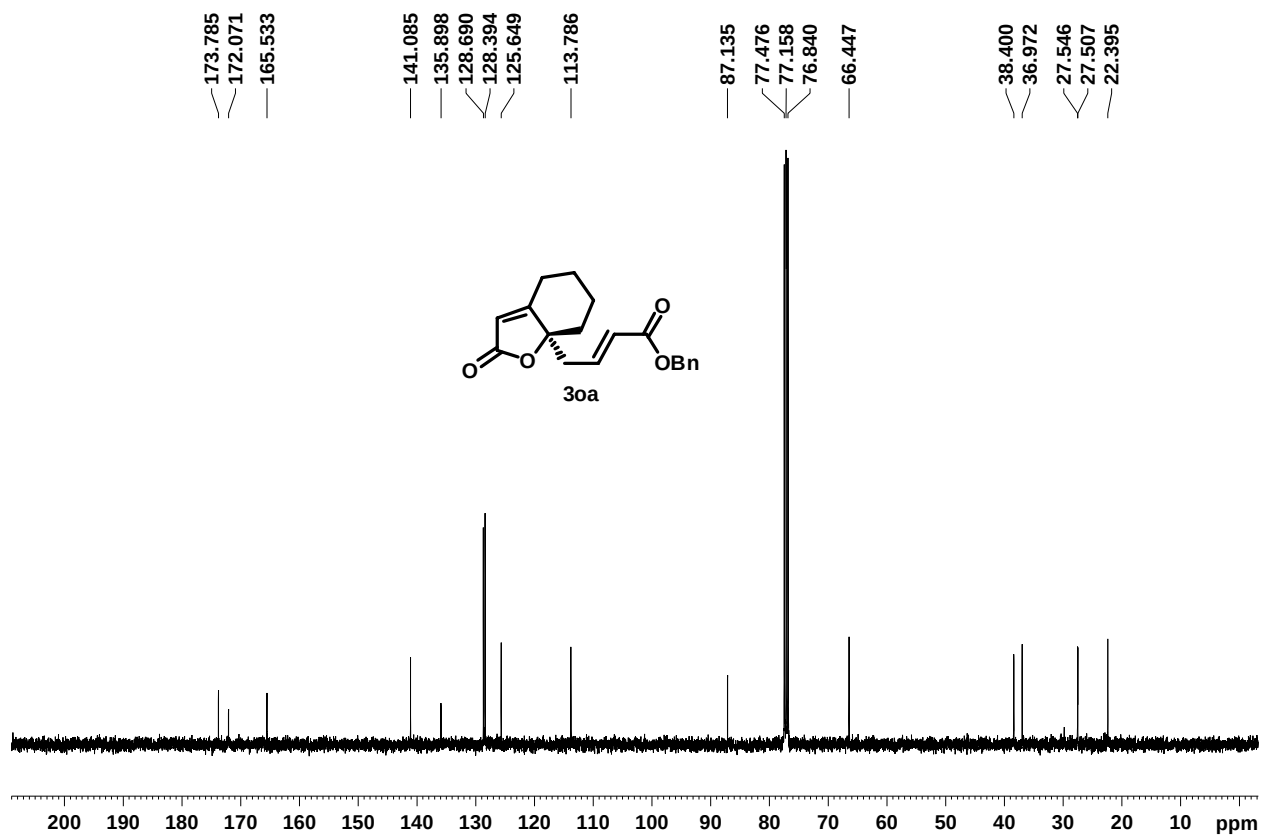
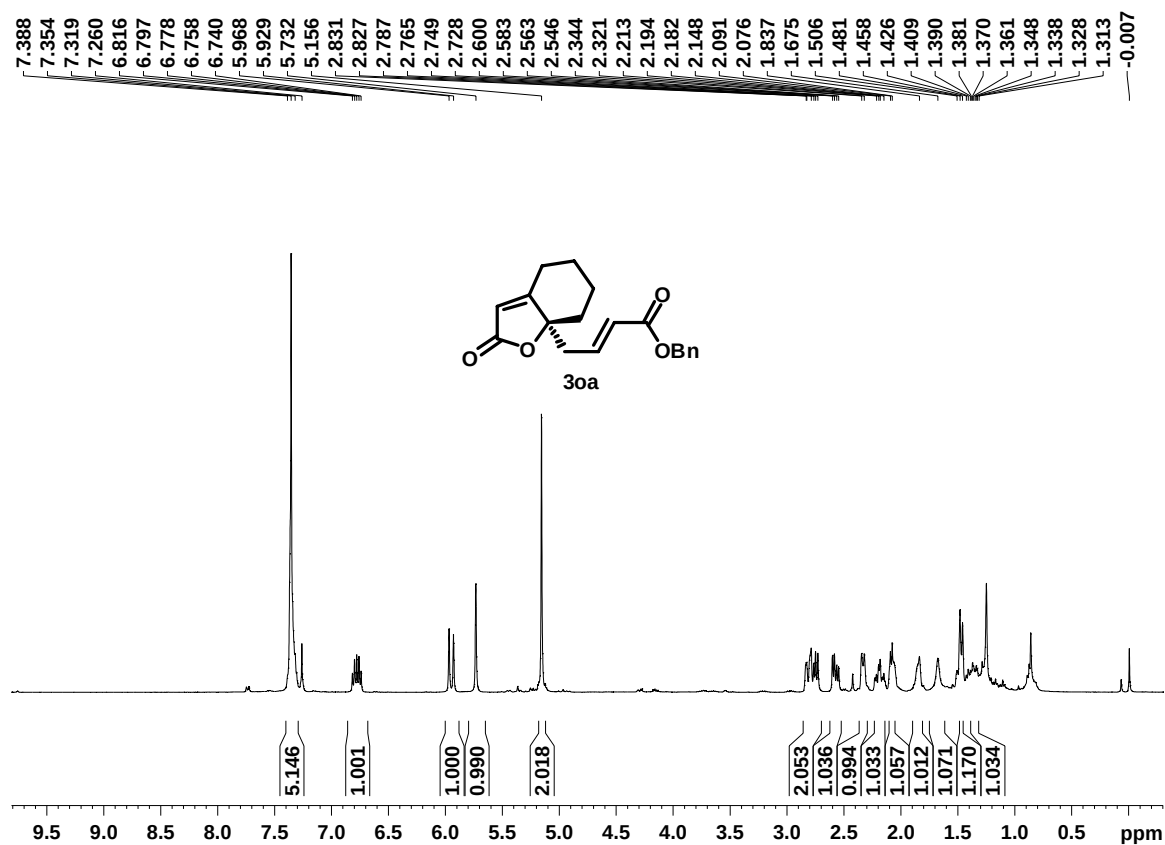
Peak#	Ret. Time	Area	Area %
1	17.394	4712727	50.006
2	19.403	4711542	49.994
Total		9424269	100.000

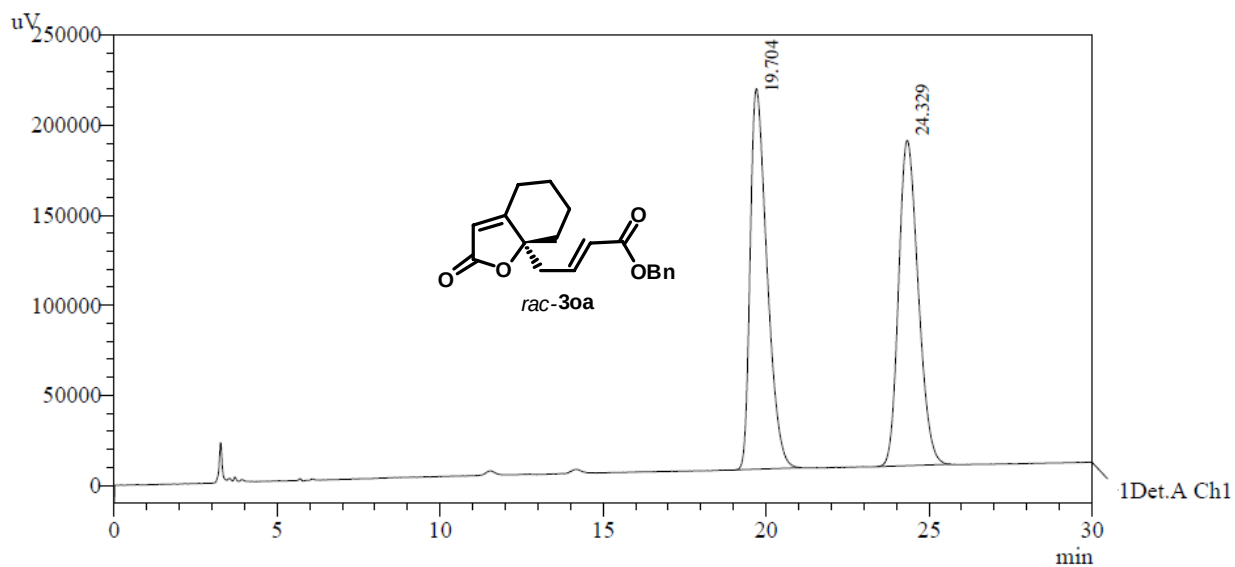


PeakTable

Detector A Ch2 254nm

Peak#	Ret. Time	Area	Area %
1	17.443	2291523	88.606
2	19.506	294678	11.394
Total		2586201	100.000

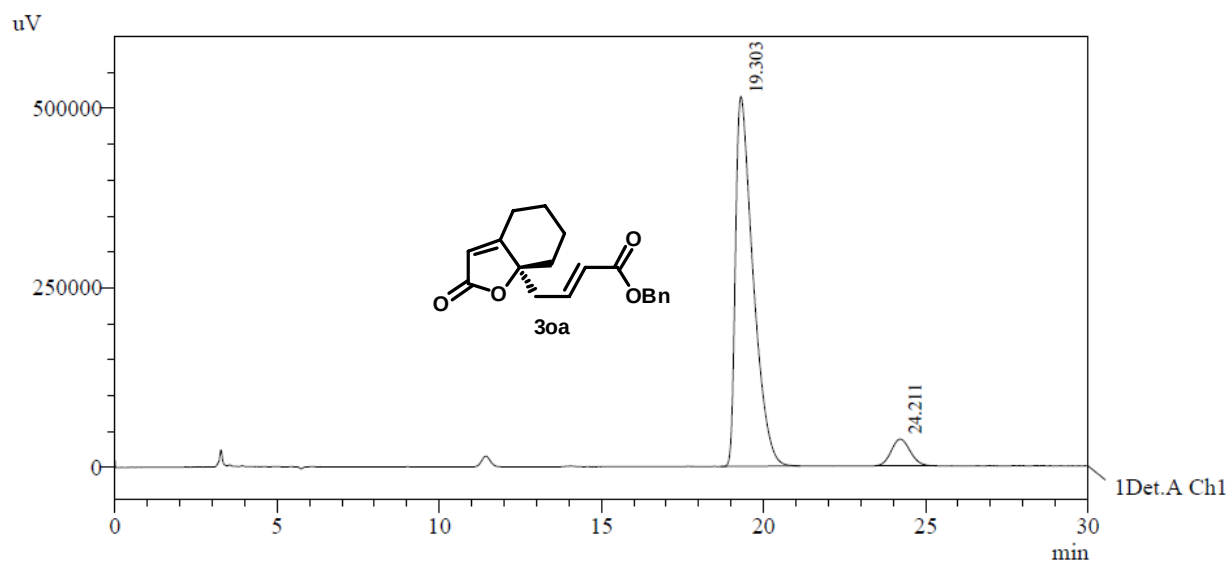




PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	19.704	7591915	50.089
2	24.329	7565024	49.911
Total		15156939	100.000



PeakTable

Detector A Ch1 210nm

Peak#	Ret. Time	Area	Area %
1	19.303	19441220	92.933
2	24.211	1478342	7.067
Total		20919562	100.000

