Figure 1 Supplementary Information: Stability of select amino acids after 24 hours of exposure to 80 °C. Results are average of triplicate measurements, with error bars representing +/- one standard deviation.

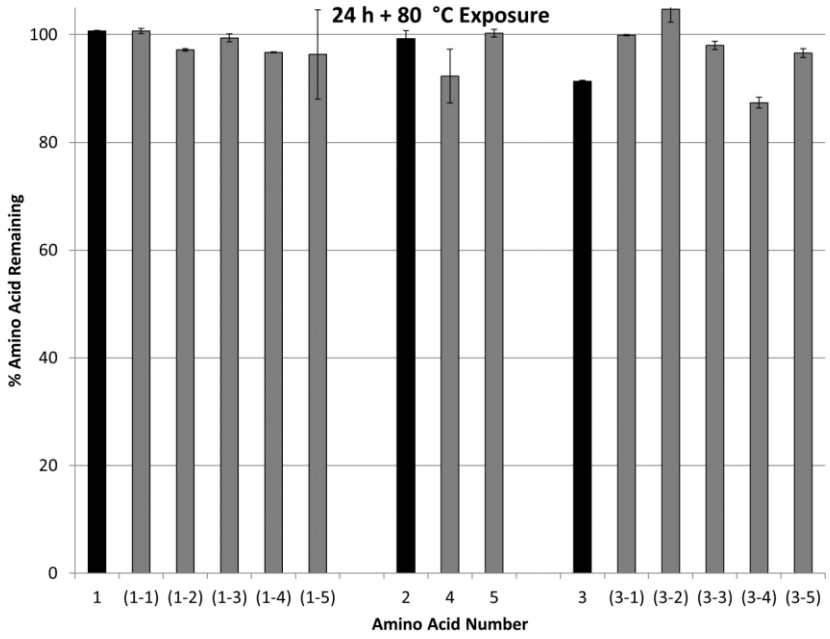
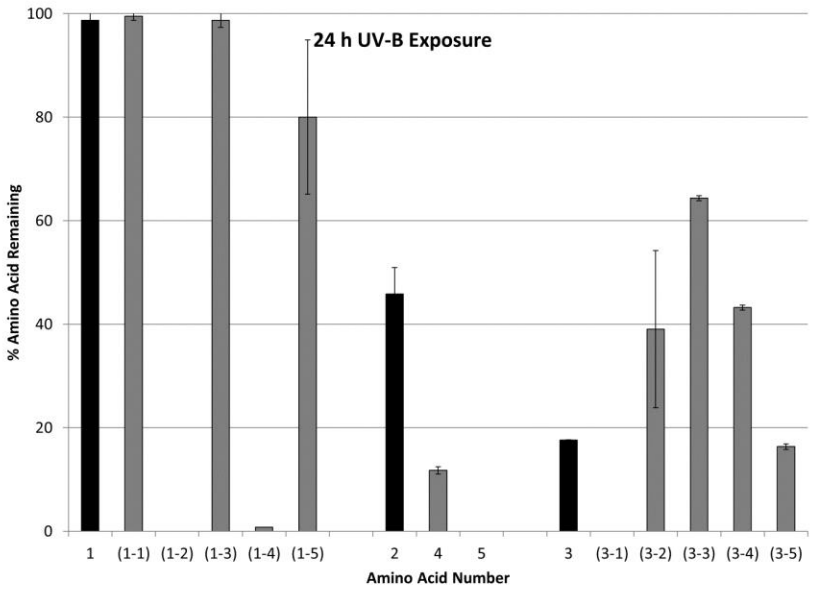
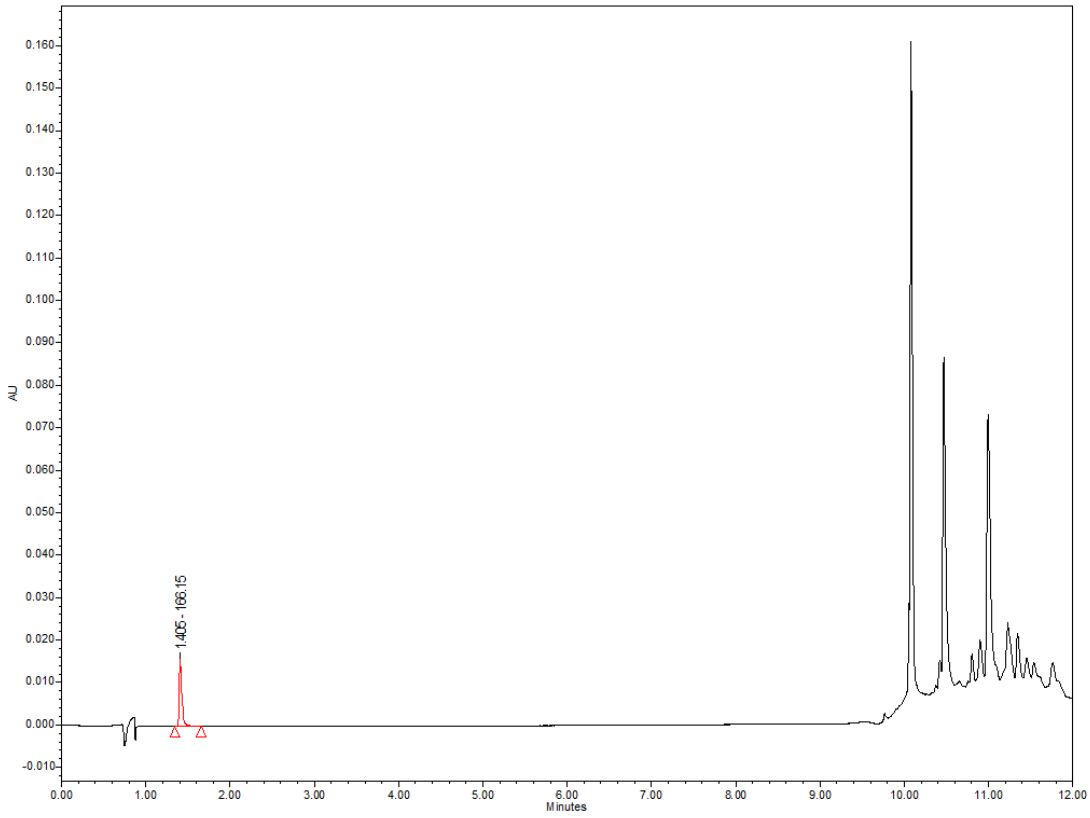


Figure 2 Supplementary Information: Stability of select amino acids after being exposed to UV-B radiation for 24 h. Bars are the average of triplicate measurements, and error bars represent +/- one standard deviation.



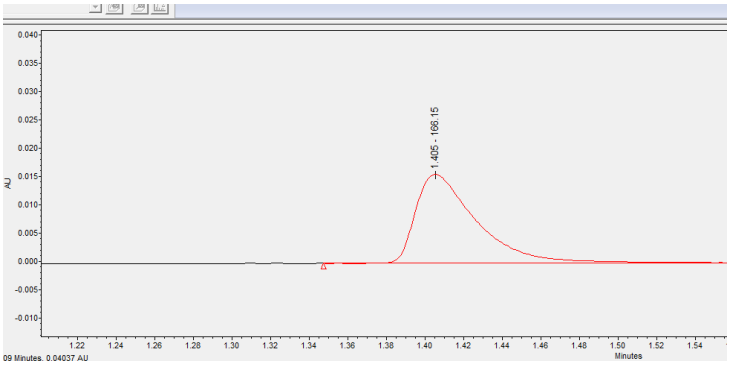
UV Exposure data (pg 2-117) of LC absorbance at 254 nm, with integrated area, and corresponding extracted mass spectrum. One sample chromatogram of each control (number not followed by any other identifying information, such as UVA, UVB, UVC), and UVA, UVB, and UVC irradiated samples are shown. Graphs in paper were produced by averaging the results of triplicate measurements. Amino acid identified with number in Tables 1 and 2, 1 for example, is Phe.

1 LC PDA Detector Data with Integrated Peak

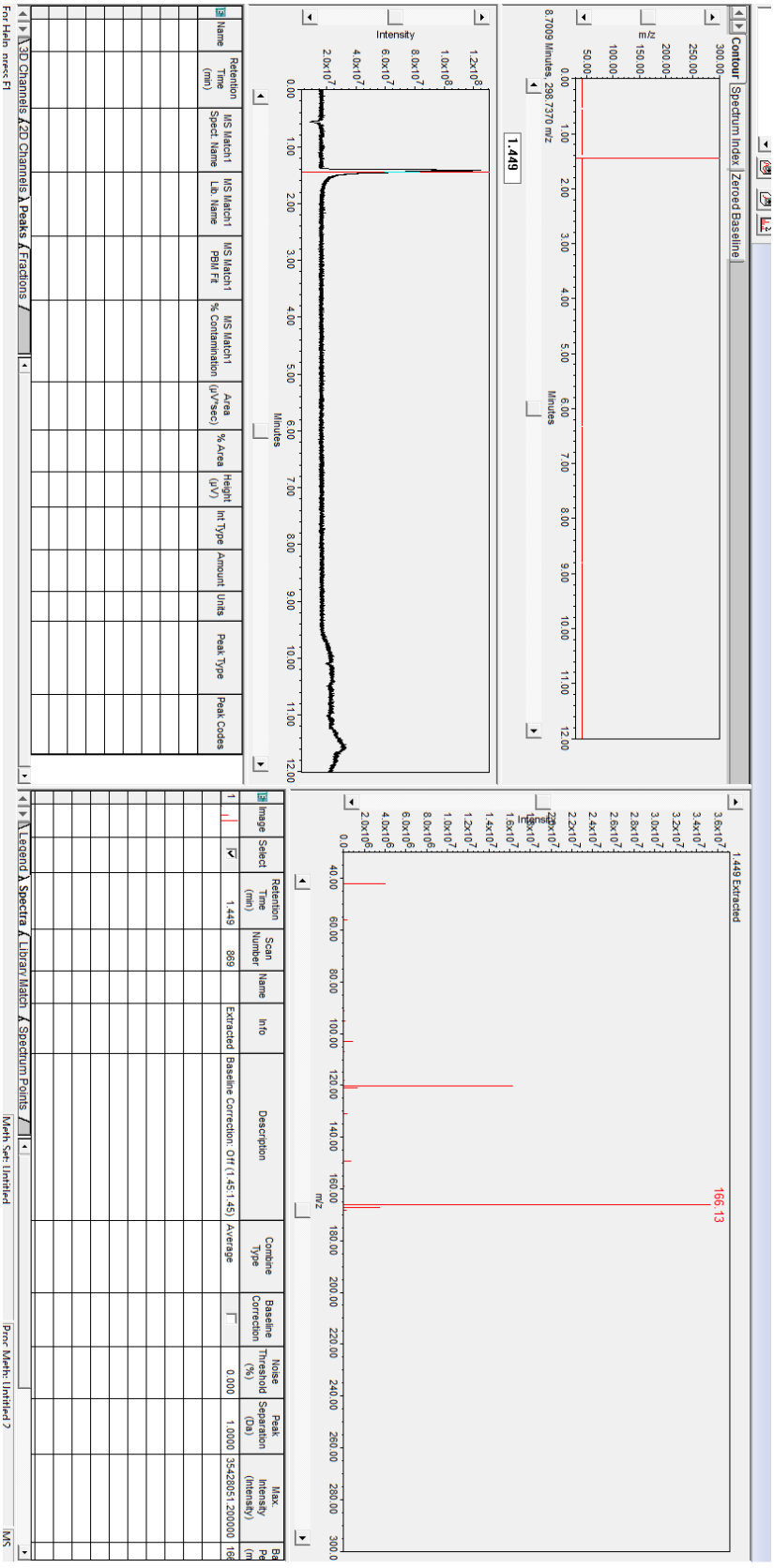


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.405	35021	100.00	15687	bb			Unknown

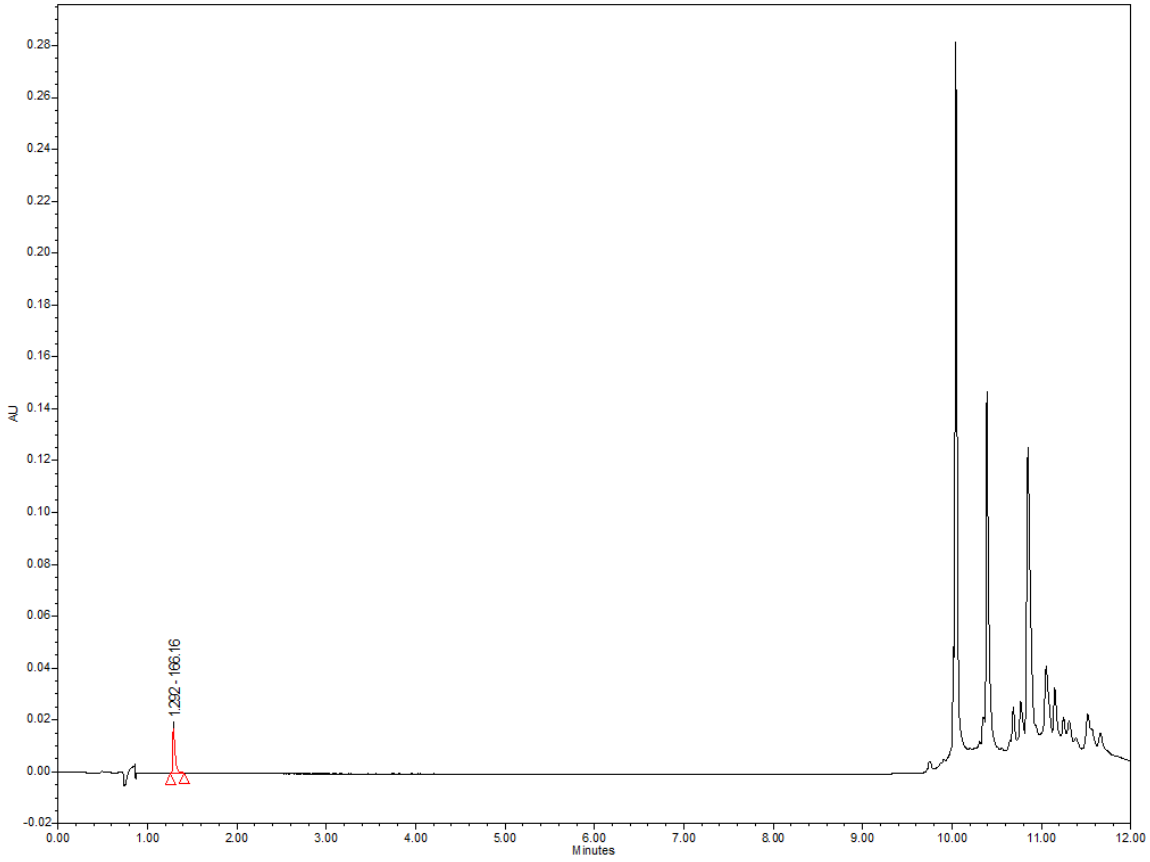
Zoom in of integrated peak shown above:



1 Mass Spectrum

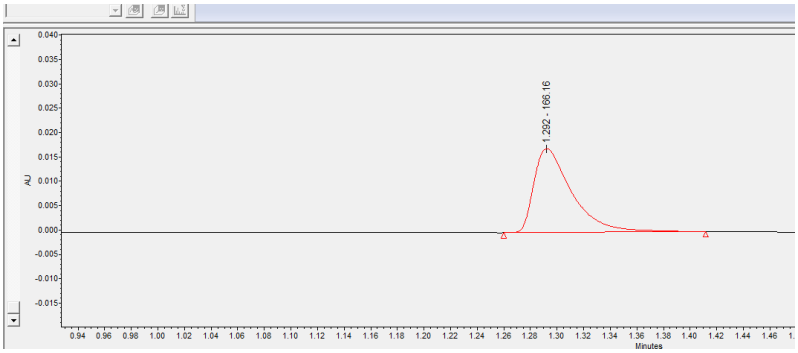


1 UV-A LC PDA Detector Data with Integrated Peak



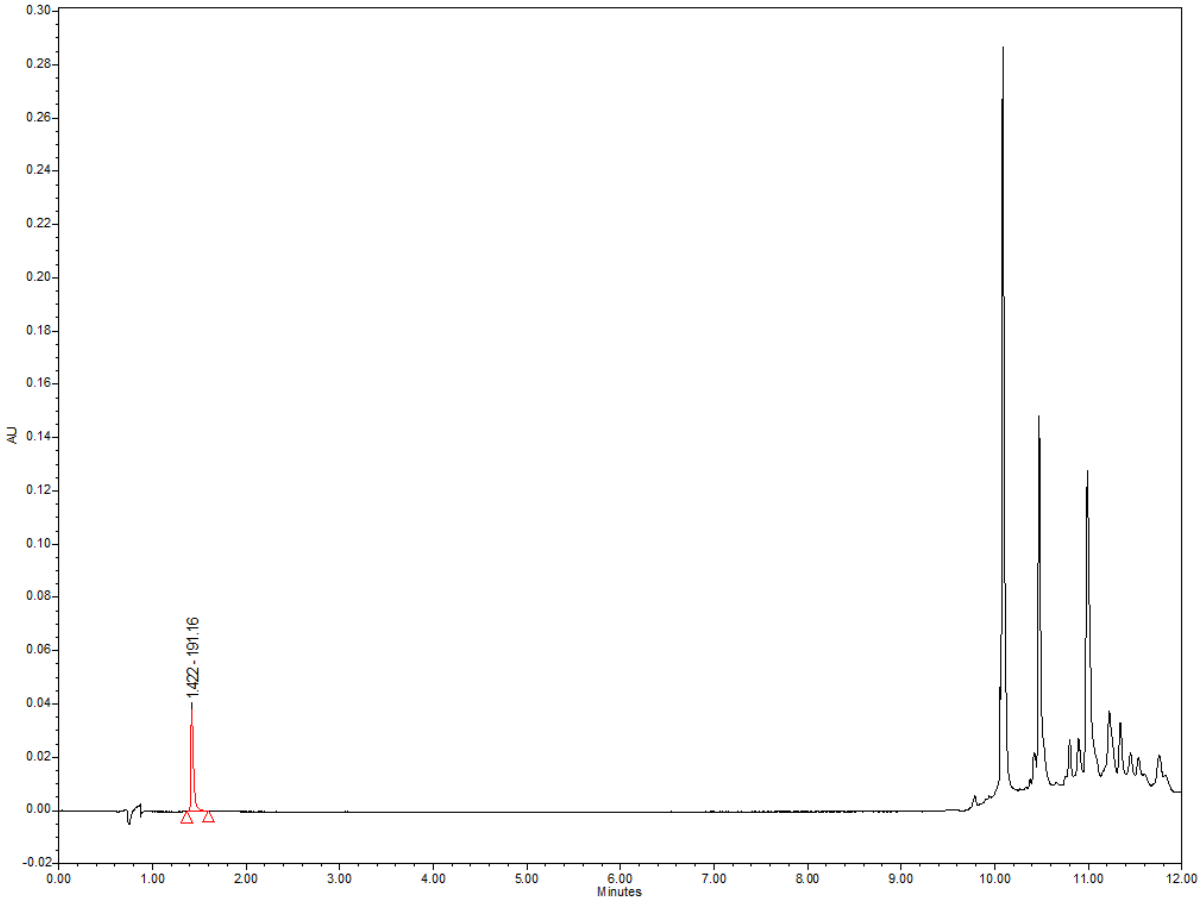
	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.292	34000	100.00	17219	bb			Unknown	

Zoom in of integrated peak shown above:



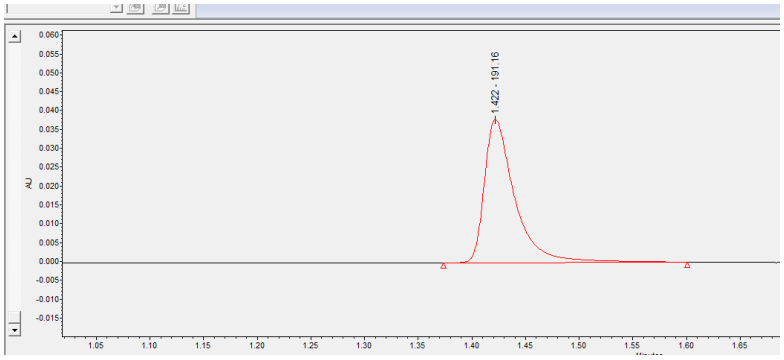
1 UVA Mass Spectrum

1-1 LC PDA Detector Data with Integrated Peak

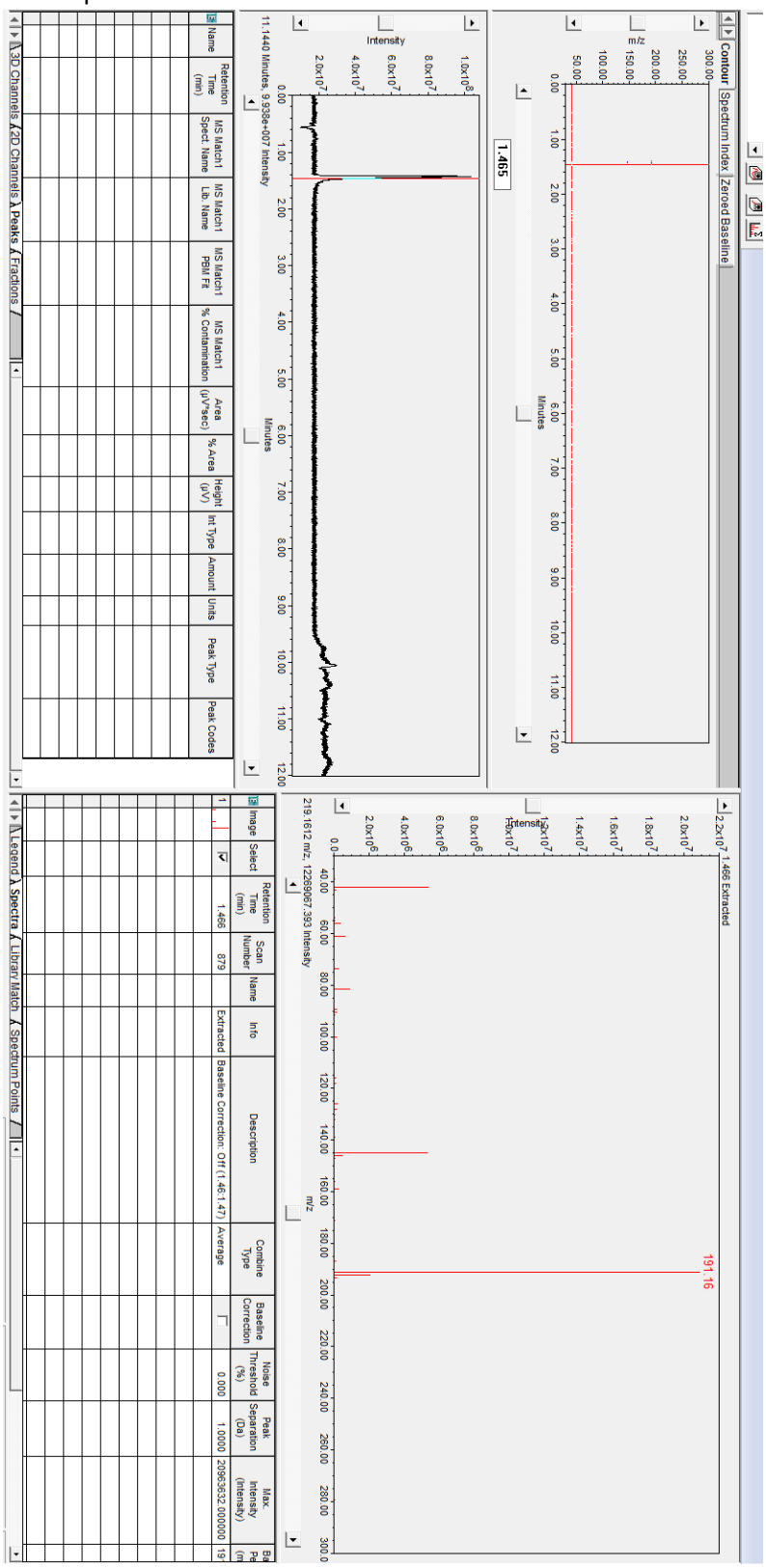


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.422	74917	100.00	37971	bb			Unknown	

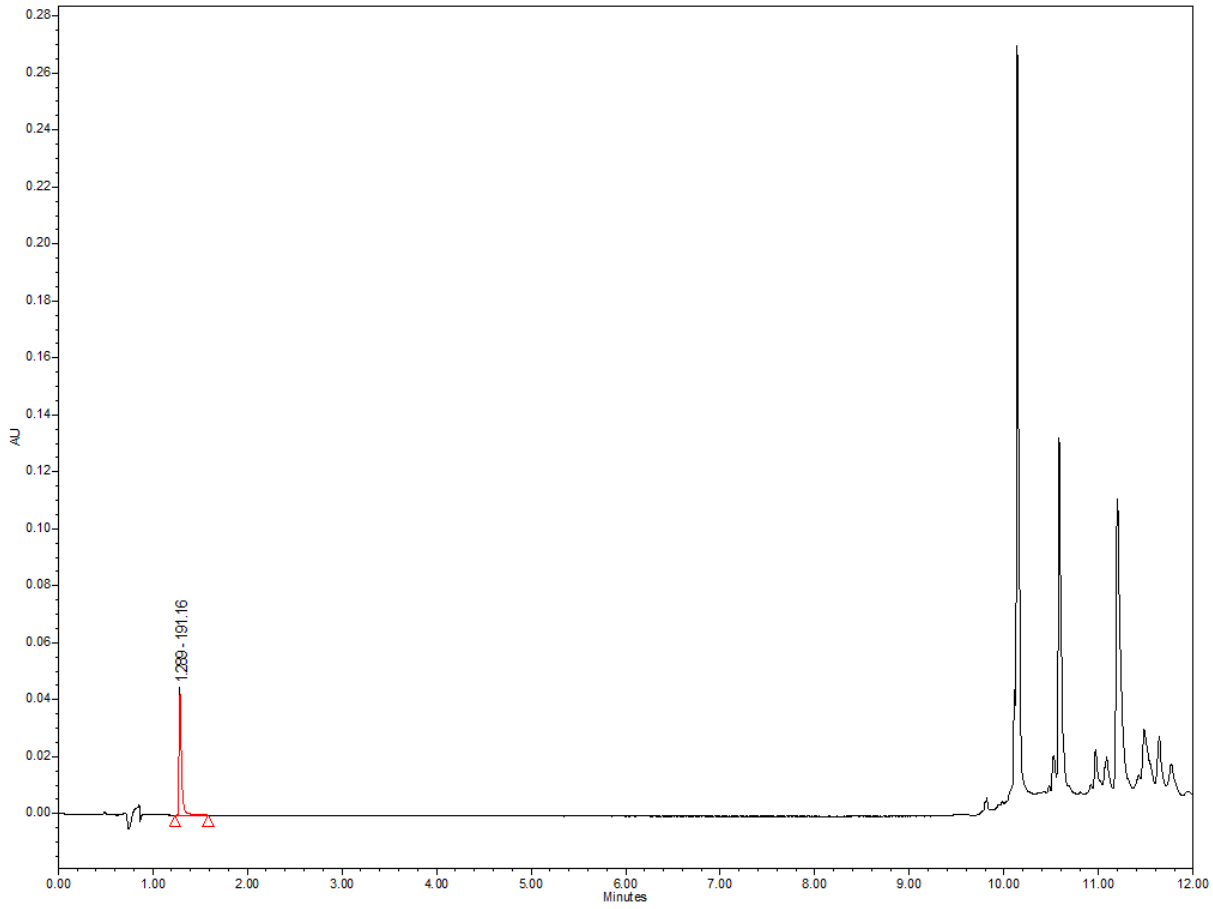
Zoom in of integrated peak shown above:



1-1 Mass Spectrum

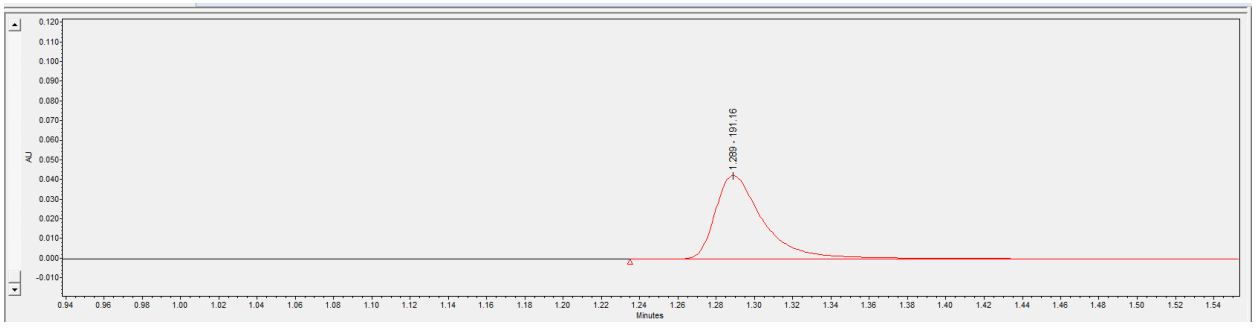


1-1 UV-A LC PDA Detector Data with Integrated Peak

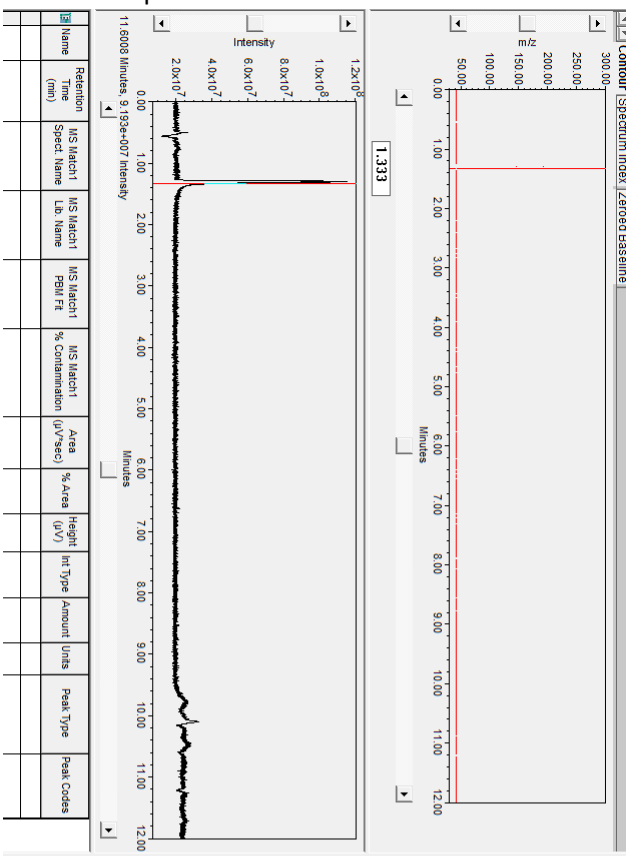


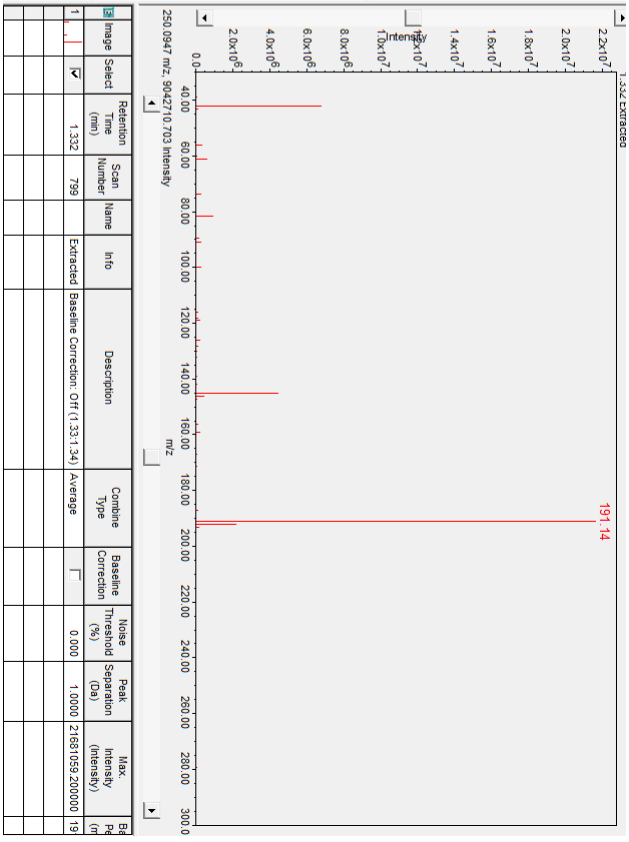
	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.289	76760	100.00	42543	bb			Unknown	

Zoom in of integrated peak shown above:



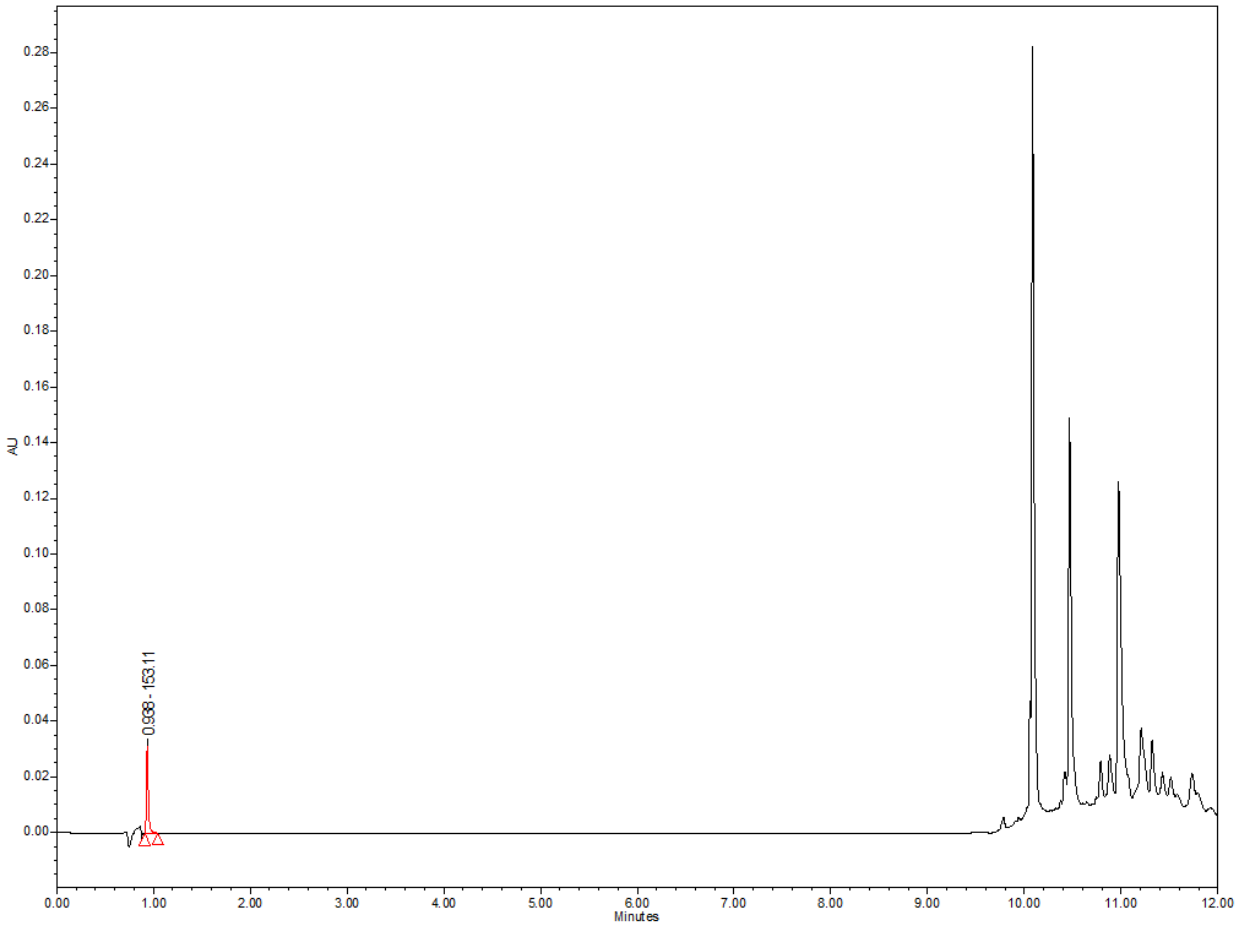
1-1 UVA Mass Spectrum





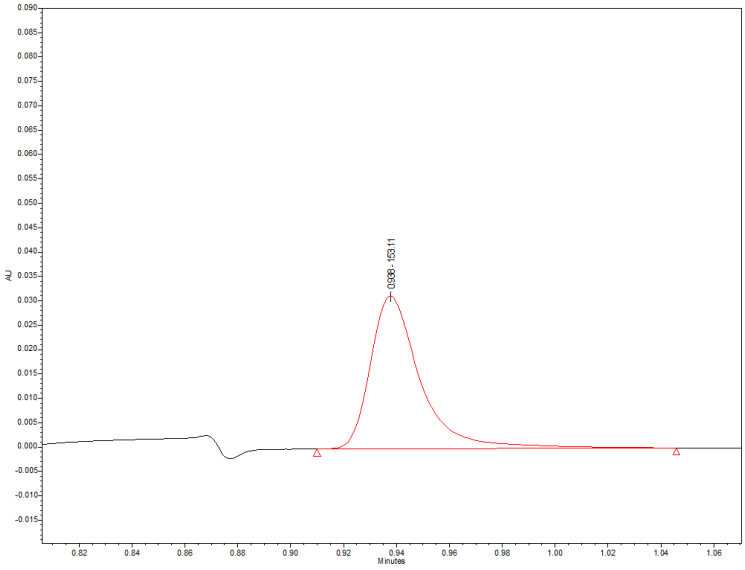
1-2

1-3 LC PDA Detector Data with Integrated Peak

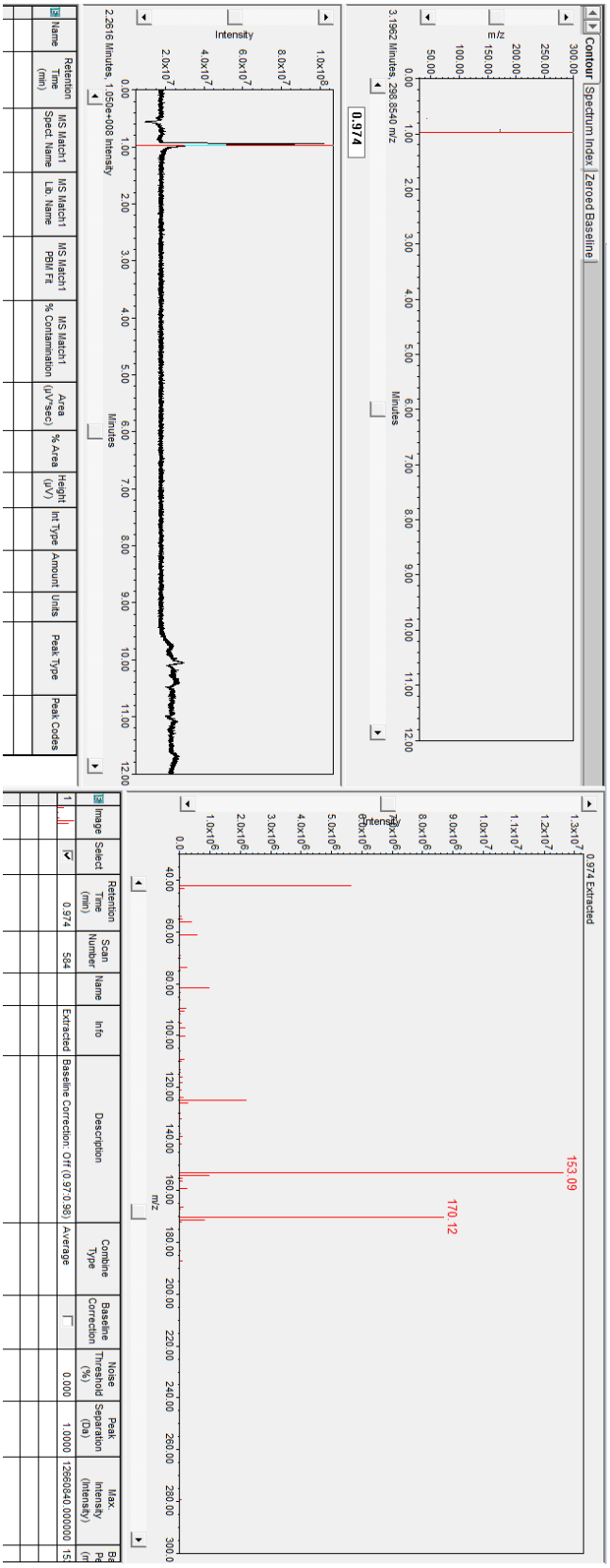


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.938	41162	100.00	31358	bb			Unknown	

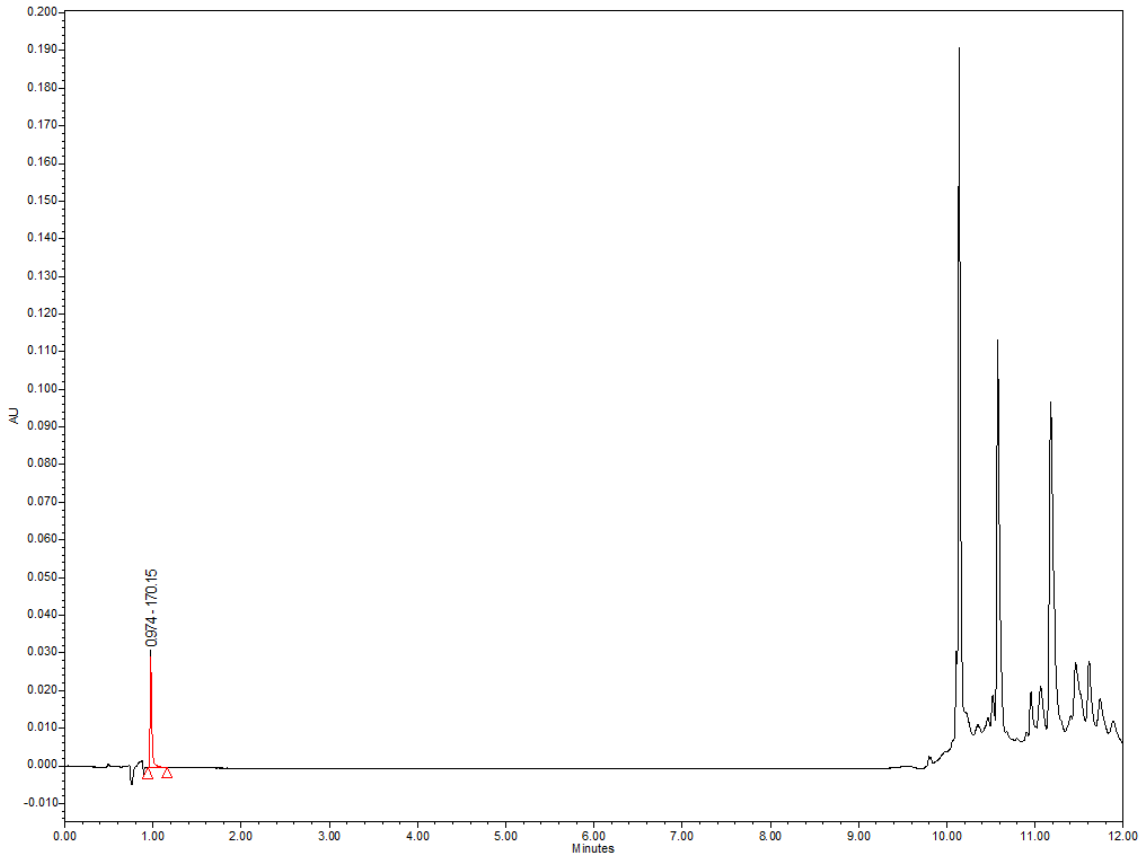
Zoom in of integrated peak shown above:



1-3 Mass Spectrum

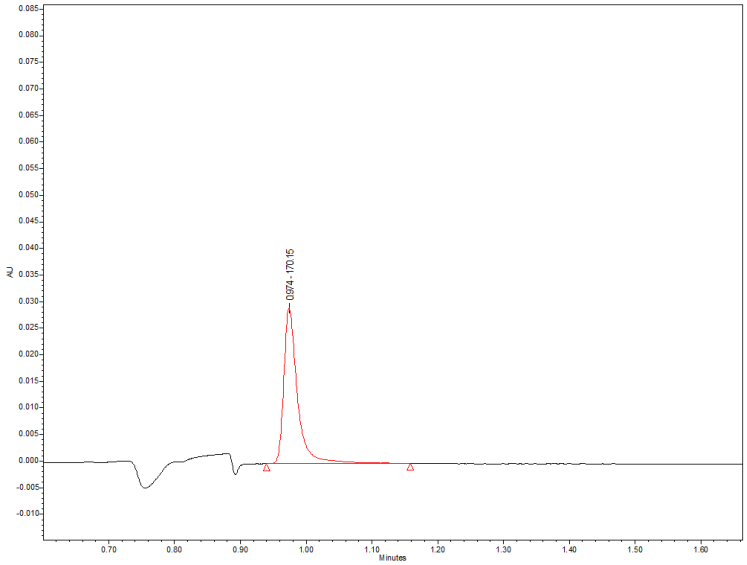


1-3 UV-A LC PDA Detector Data with Integrated Peak

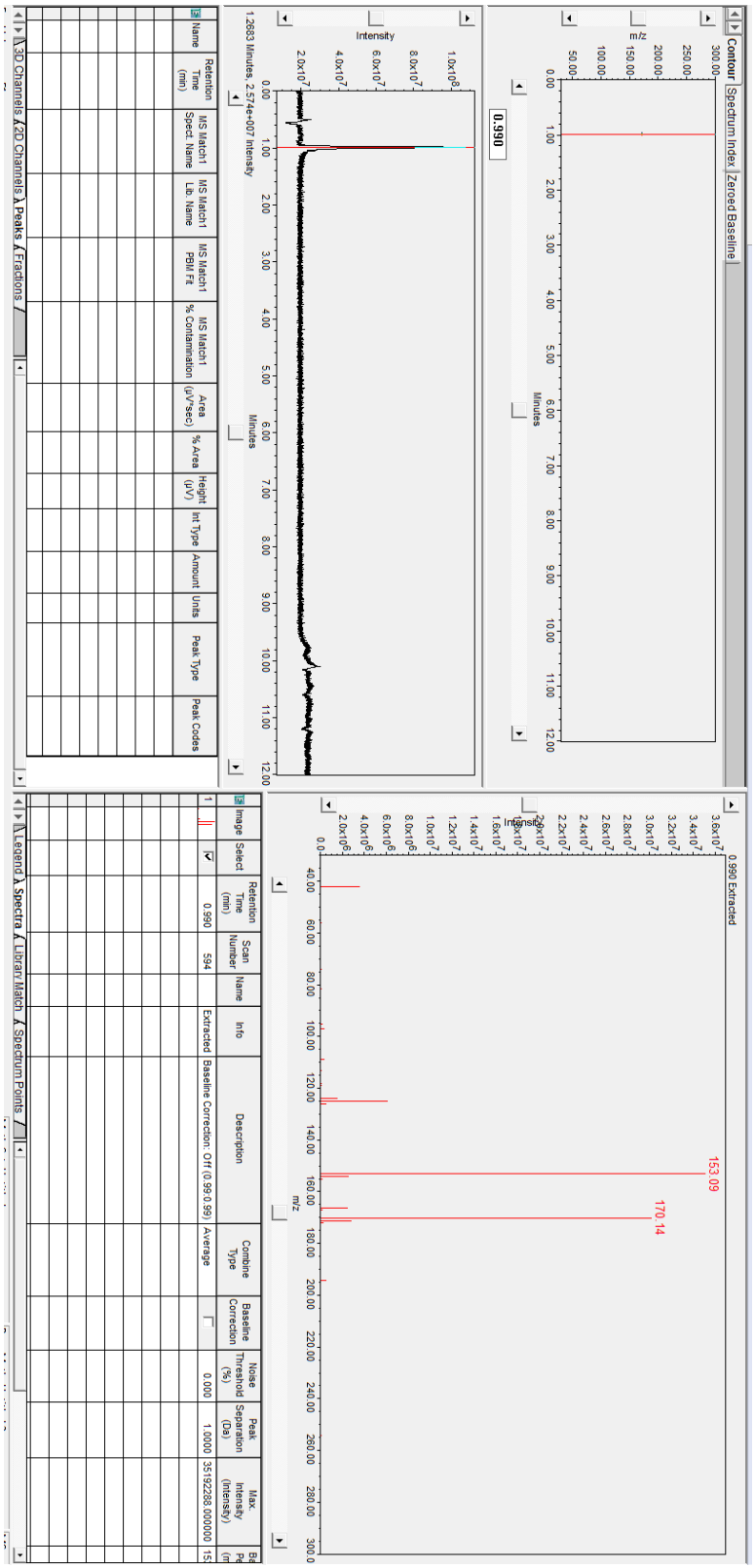


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.974	42426	100.00	29318	bb			Unknown

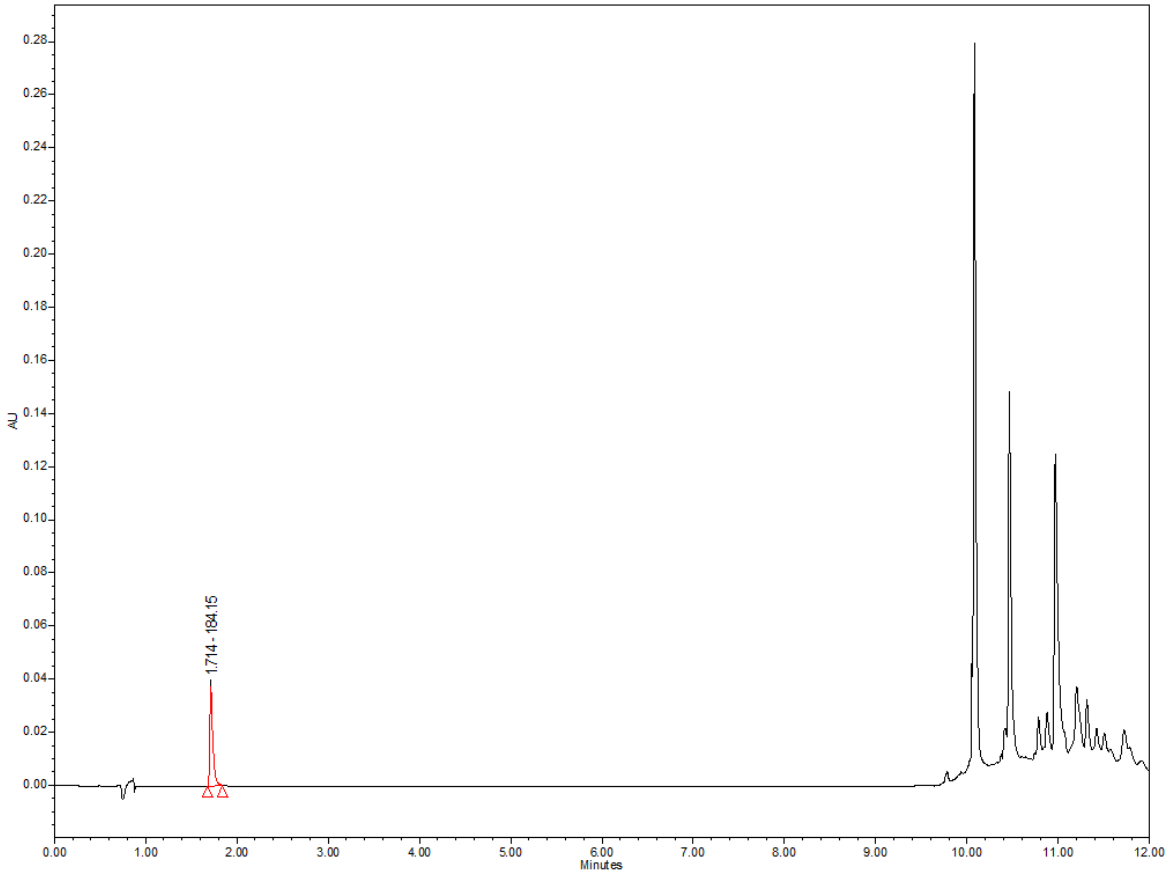
Zoom in of integrated peak shown above:



1-3 UVA Mass Spectrum

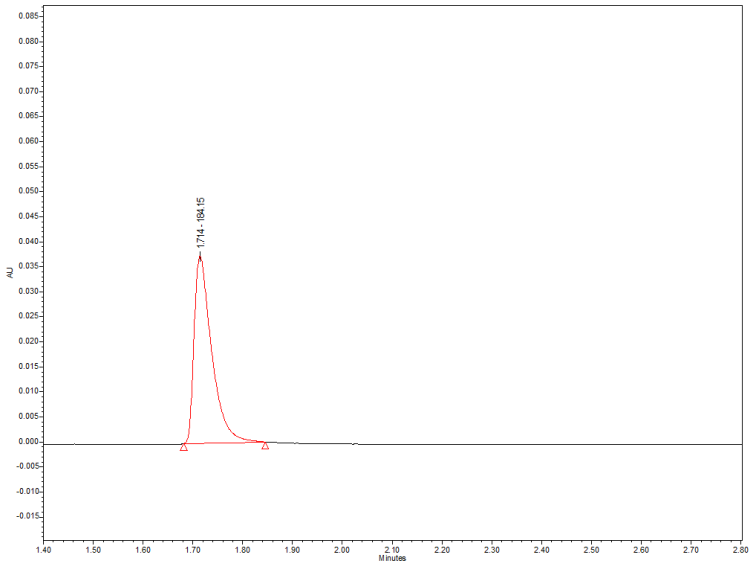


1-6 LC PDA Detector Data with Integrated Peak

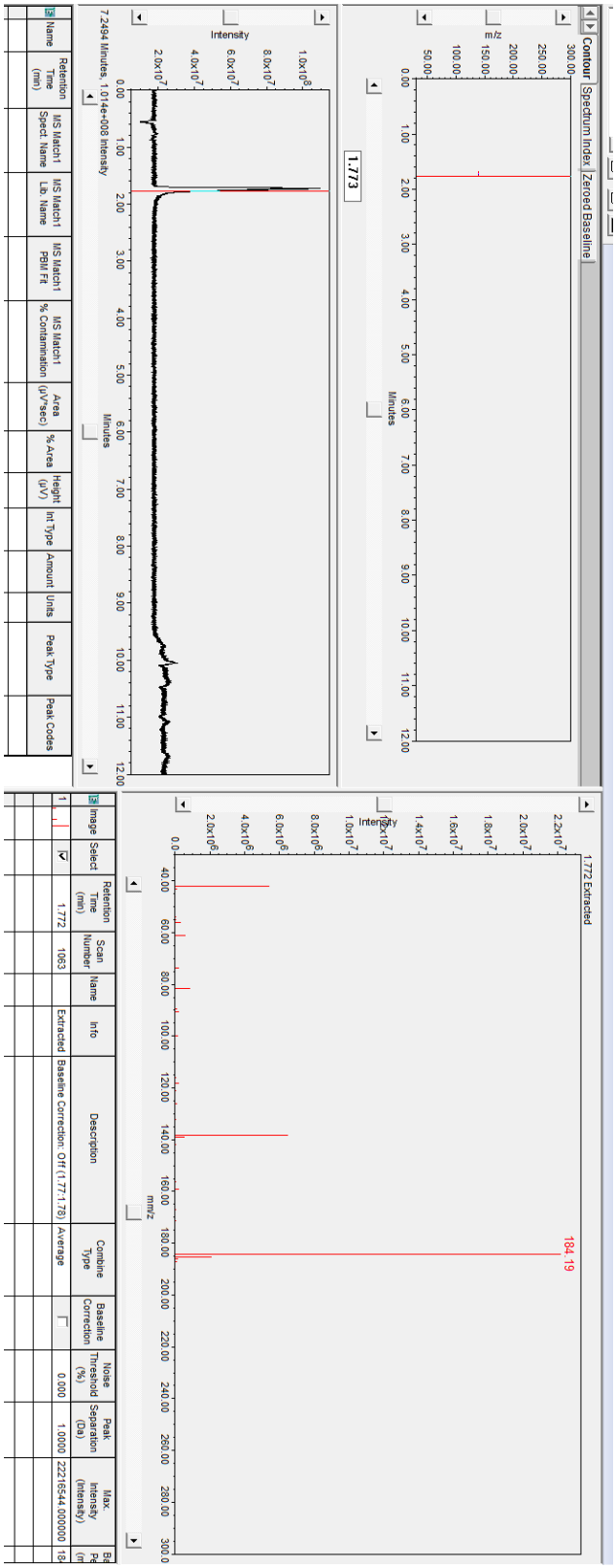


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.714	91863	100.00	37449	bb			Unknown

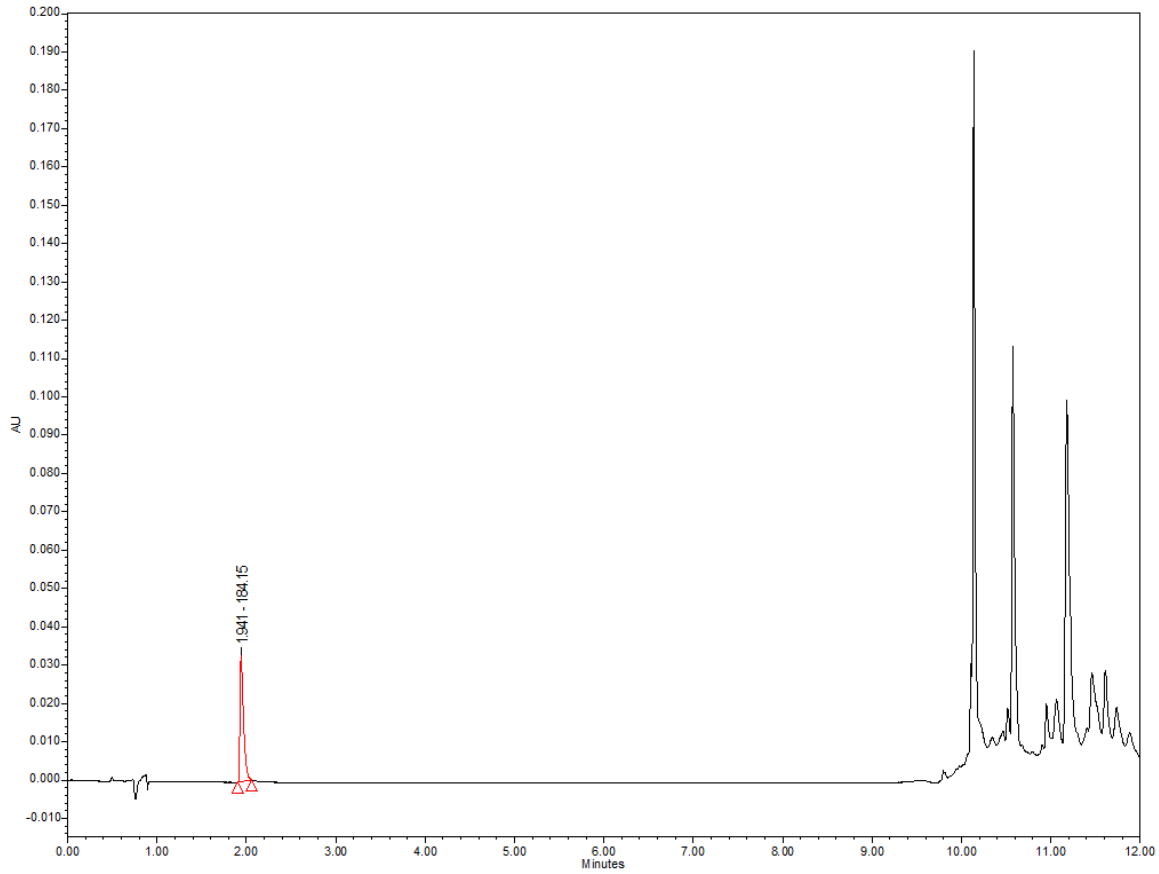
Zoom in of integrated peak shown above:



1-6 Mass Spectrum

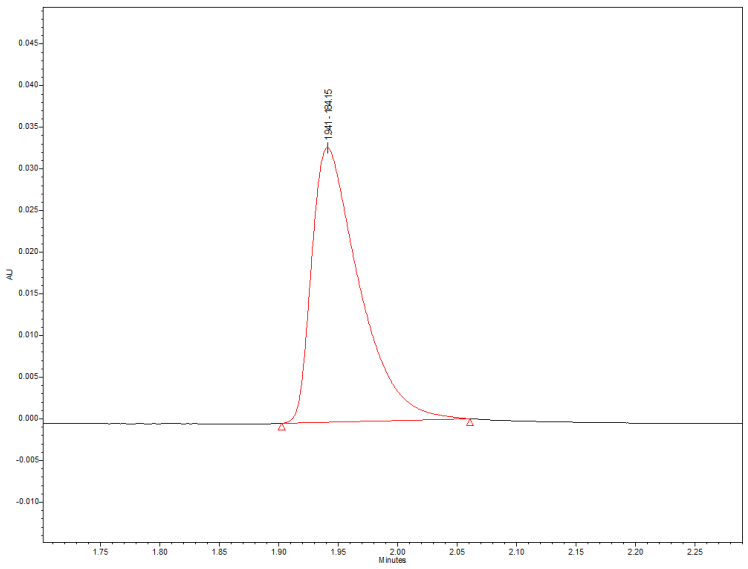


1-6 UV-A LC PDA Detector Data with Integrated Peak

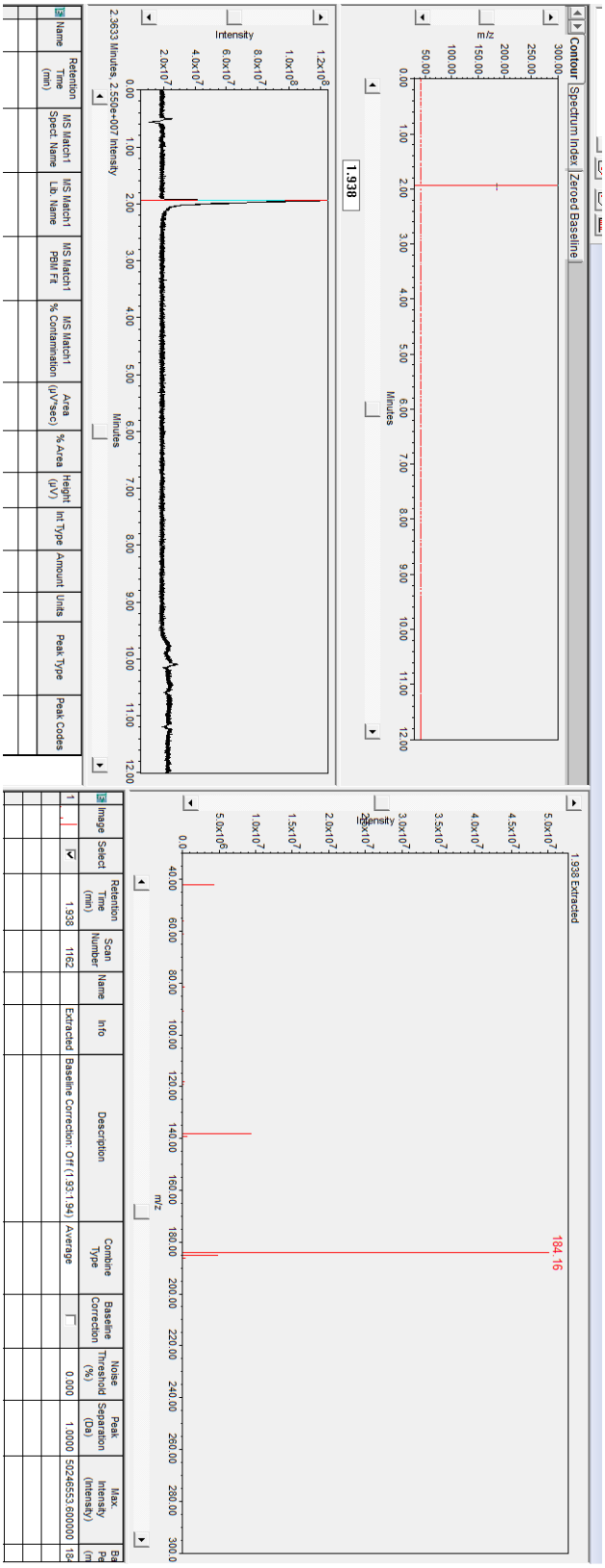


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.941	91434	100.00	32967	bb			Unknown

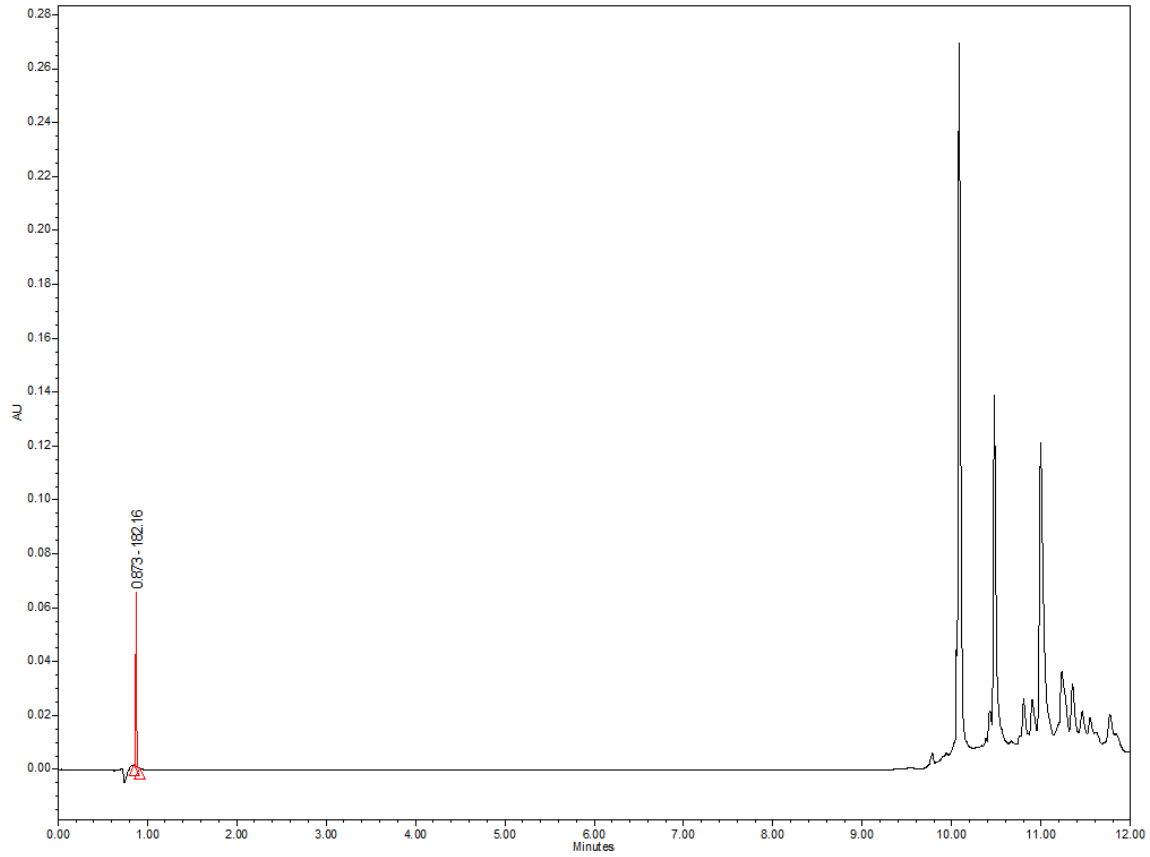
Zoom in of integrated peak shown above:



1-6 UVA Mass Spectrum

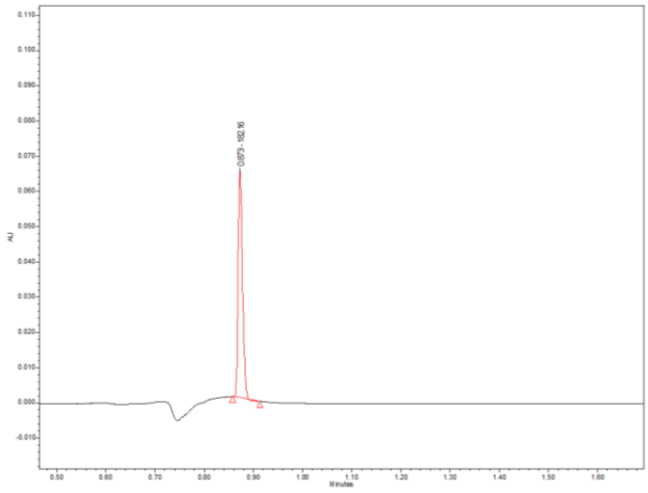


2 LC PDA Detector Data with Integrated Peak

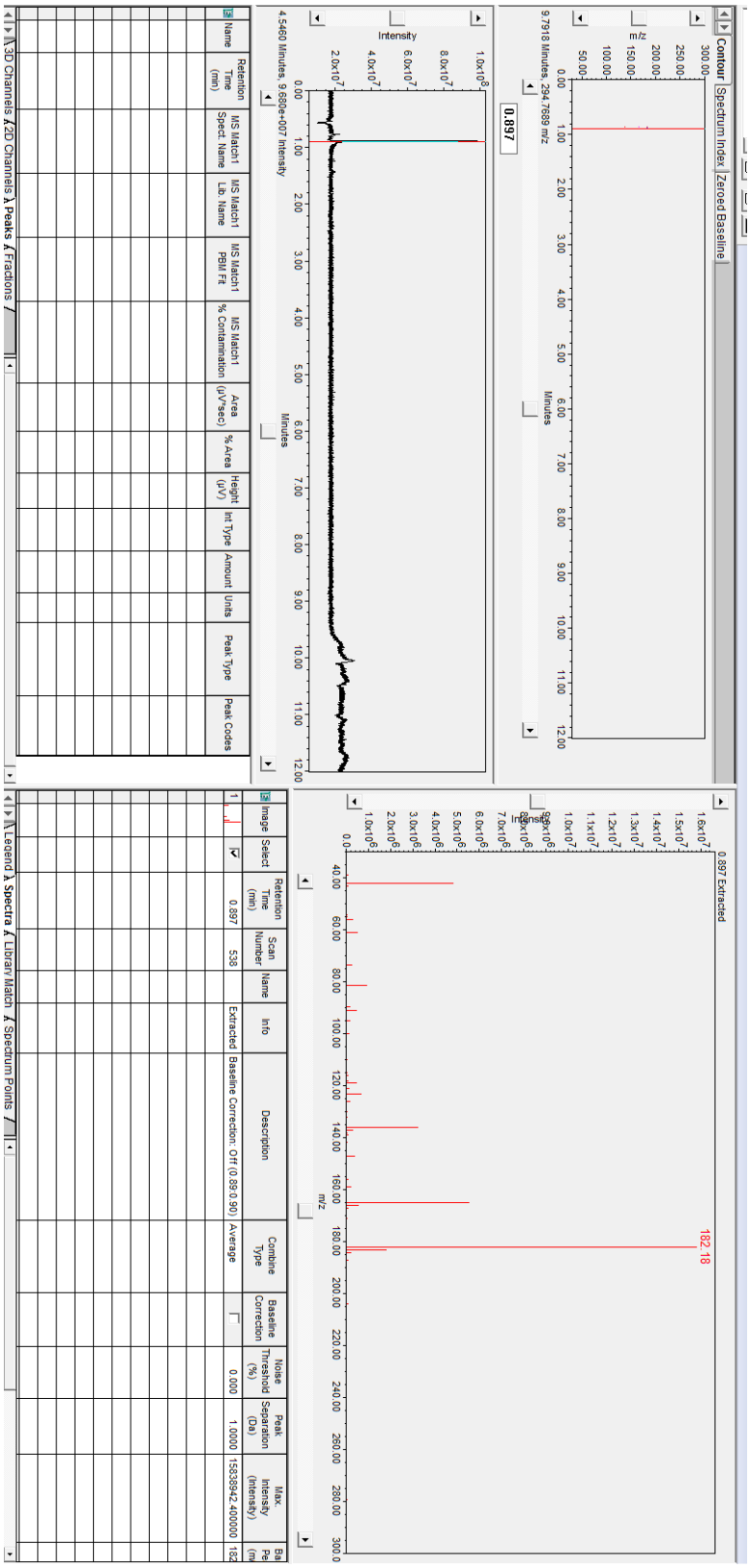


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.873	40039	100.00	64255	bb			Unknown

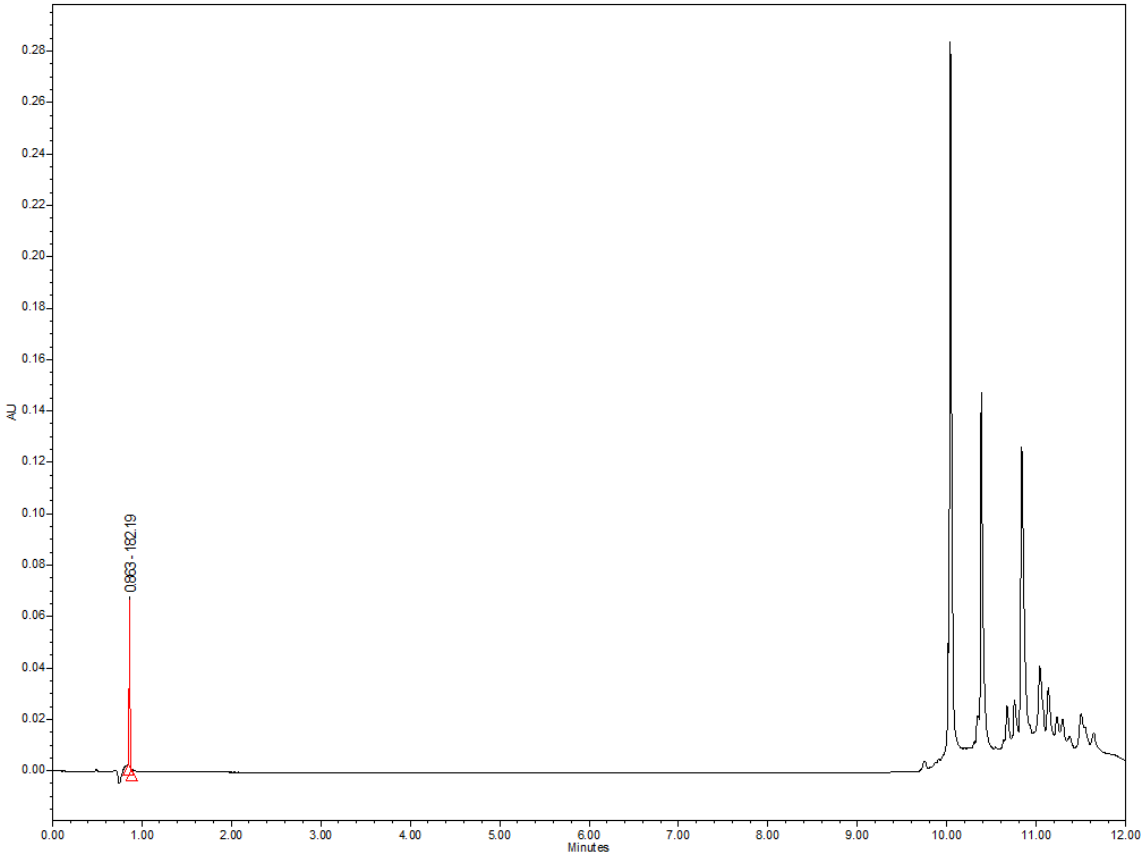
Zoom in of integrated peak above:



2 Mass Spectrum

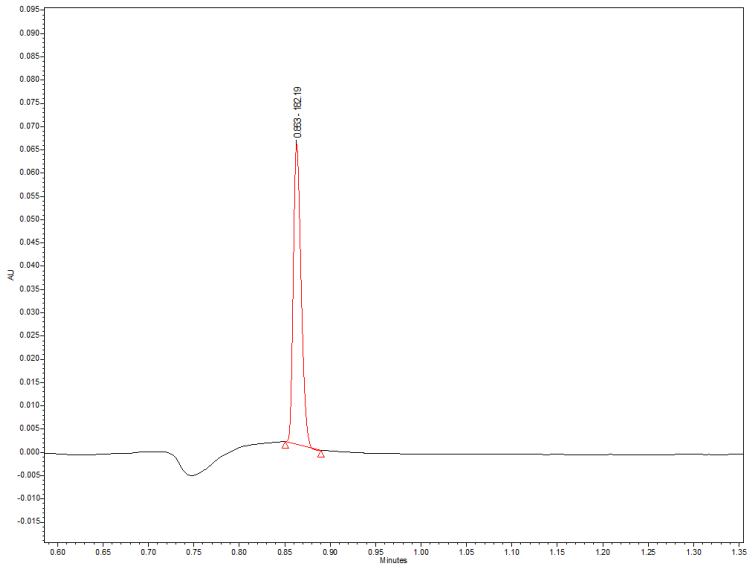


2 UV-A LC PDA Detector Data with Integrated Peak

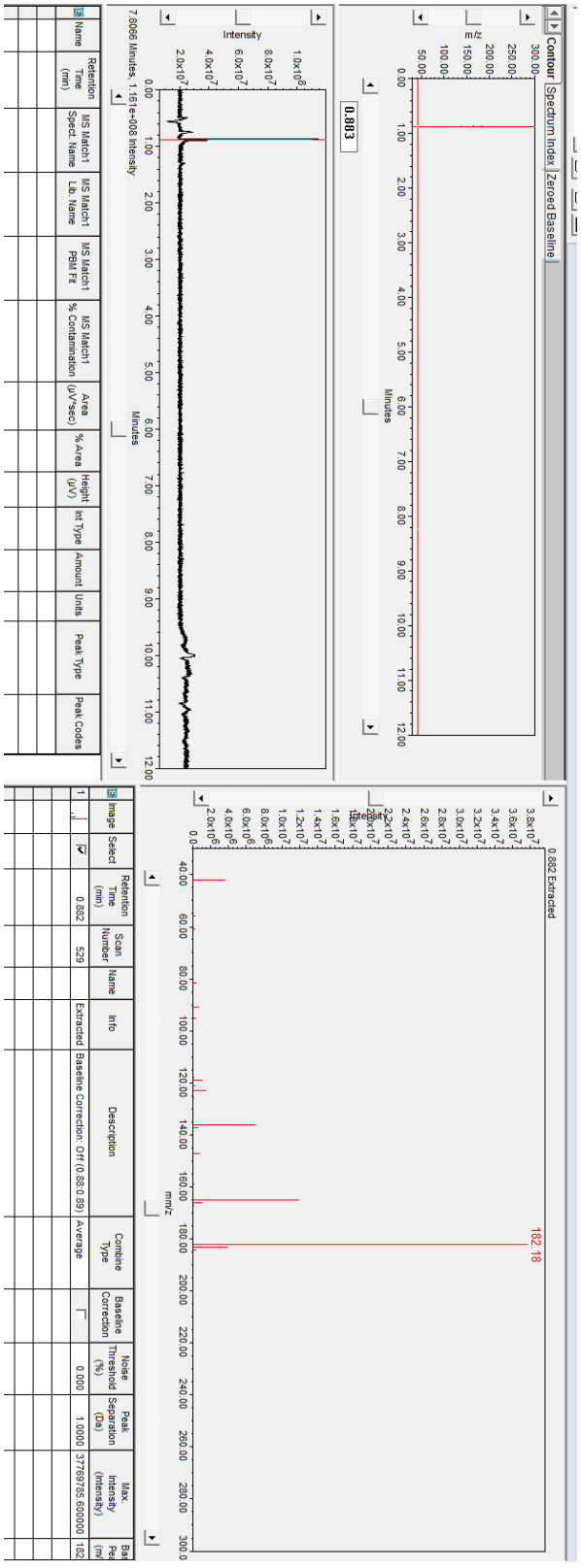


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.863	39363	100.00	64509	bb			Unknown

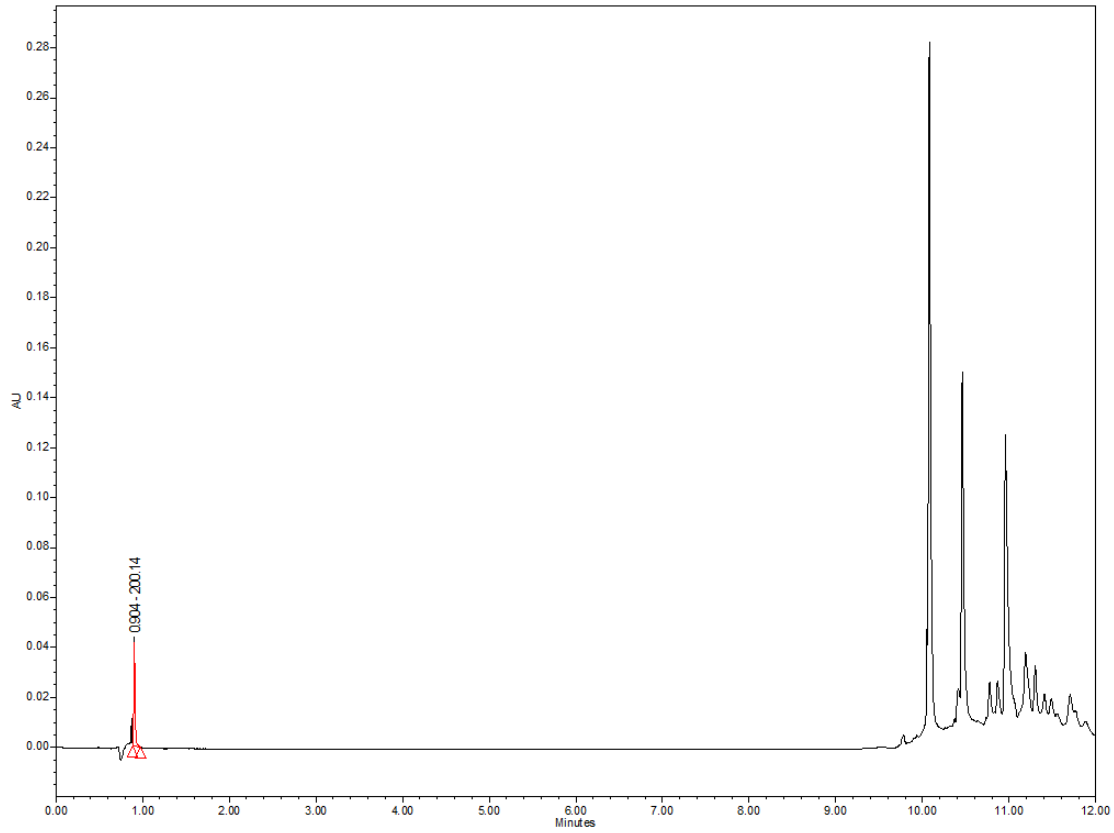
Zoom in of integrated peak shown above:



2 UVA Mass Spectrum

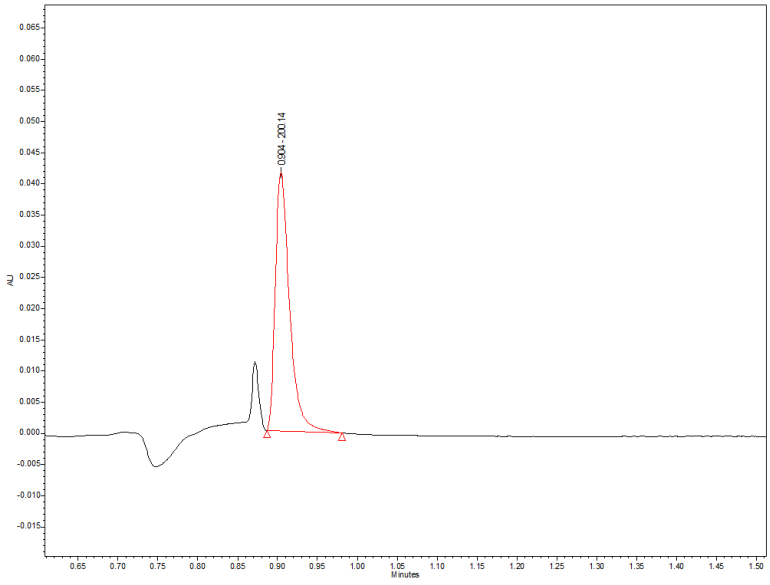


2-1 LC PDA Detector Data with Integrated Peak

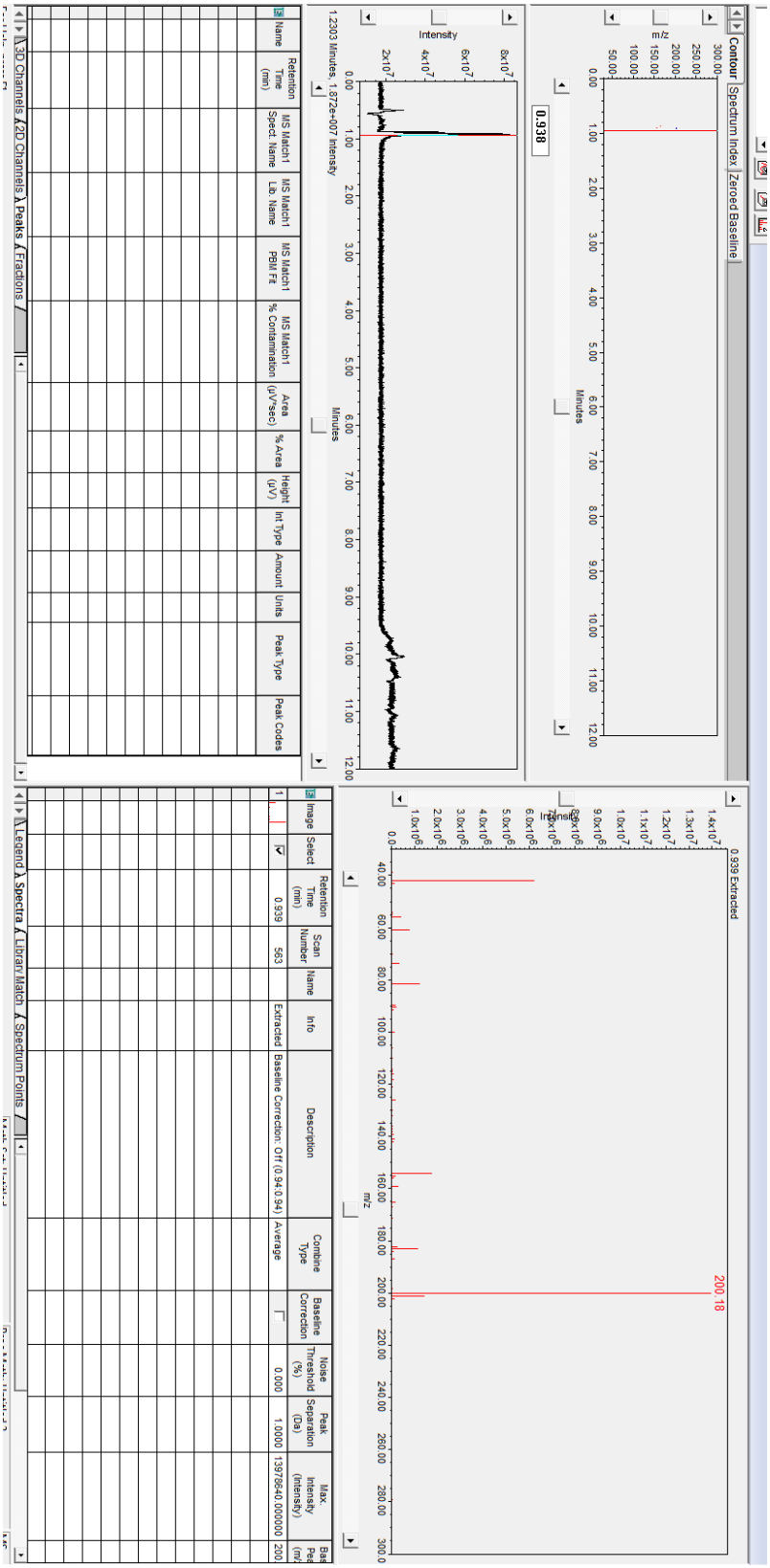


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.904	51406	100.00	41438	bb			Unknown

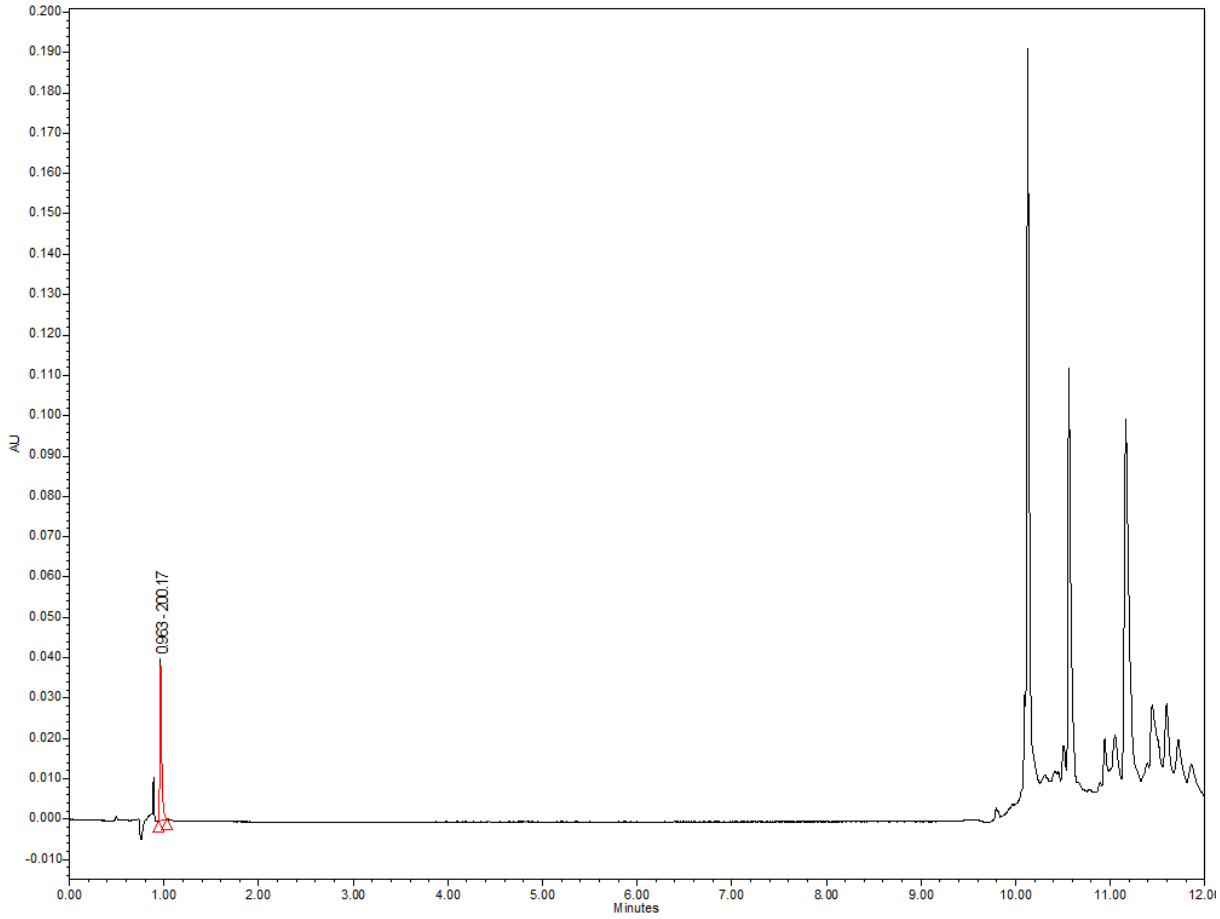
Zoom in of integrated peak shown above:



2-1 Mass Spectrum

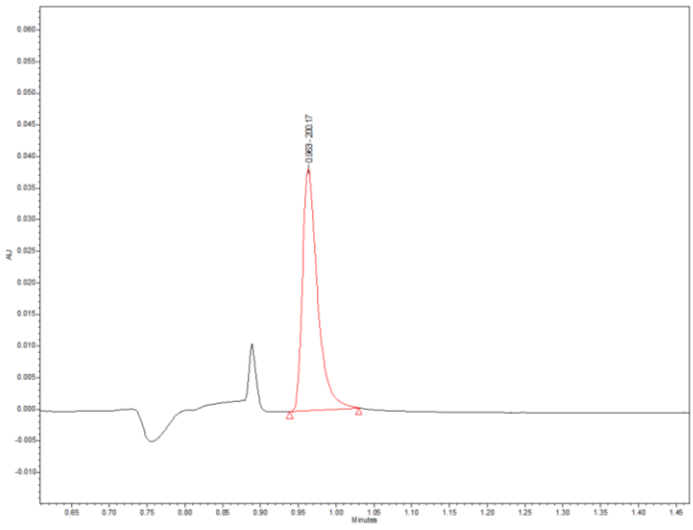


2-1 UV-A LC PDA Detector Data with Integrated Peak

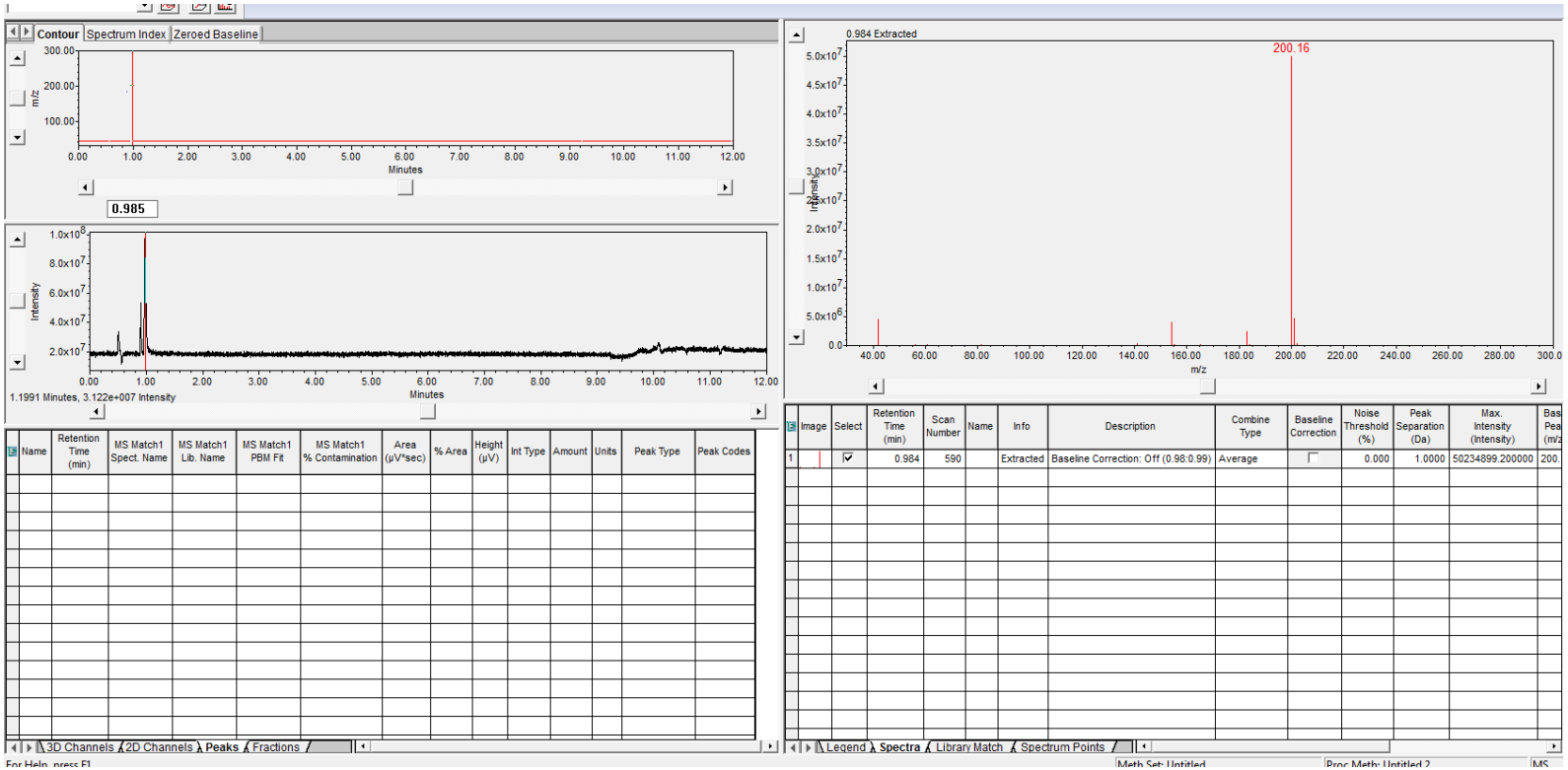


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.963	52738	100.00	38233	bb			Unknown

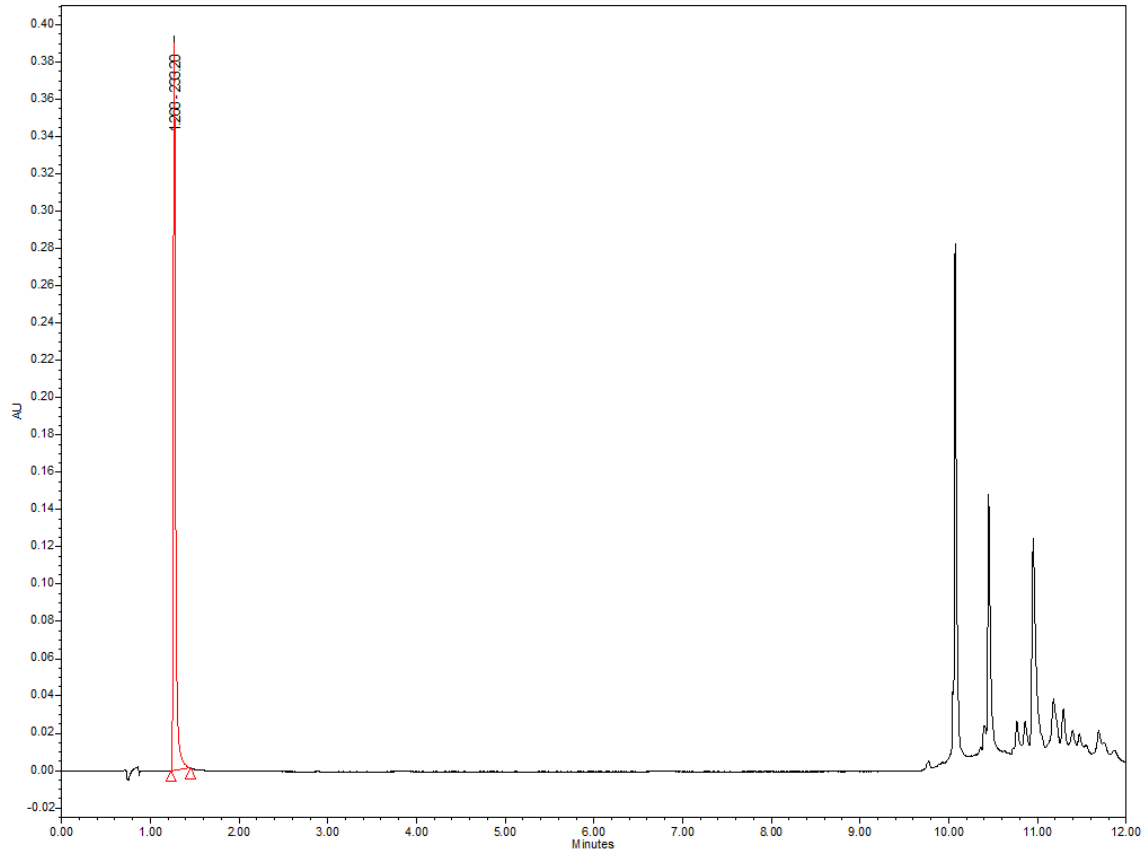
Zoom in of integrated peak shown above:



2-1 UVA Mass Spectrum

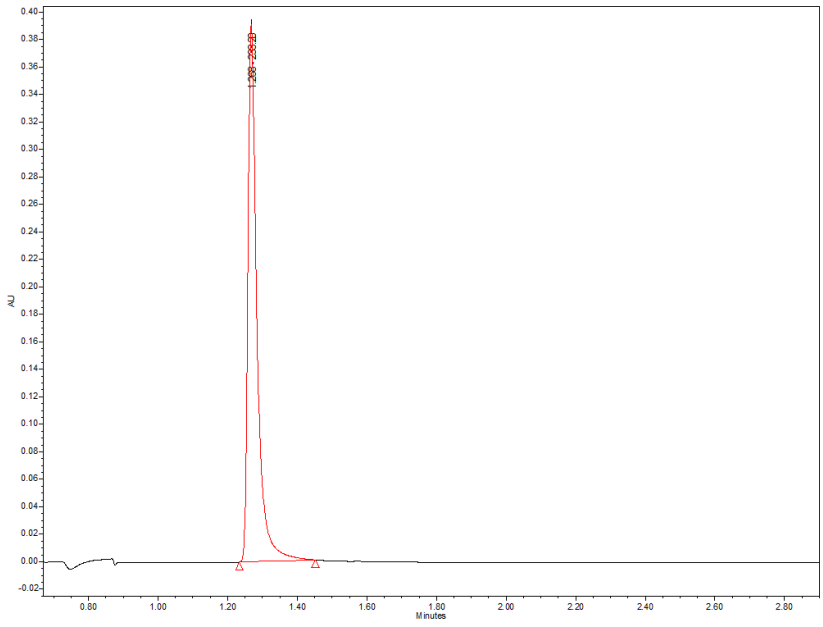


4 LC PDA Detector Data with Integrated Peak

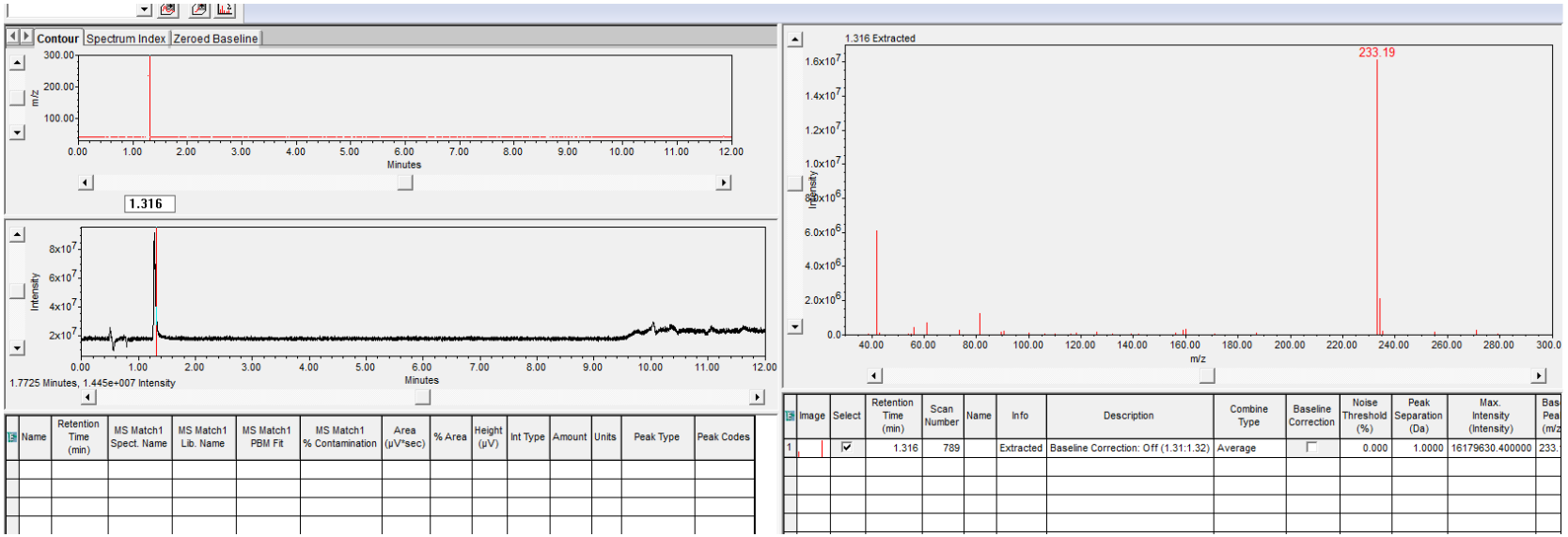


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.268	709654	100.00	390718	bb			Unknown

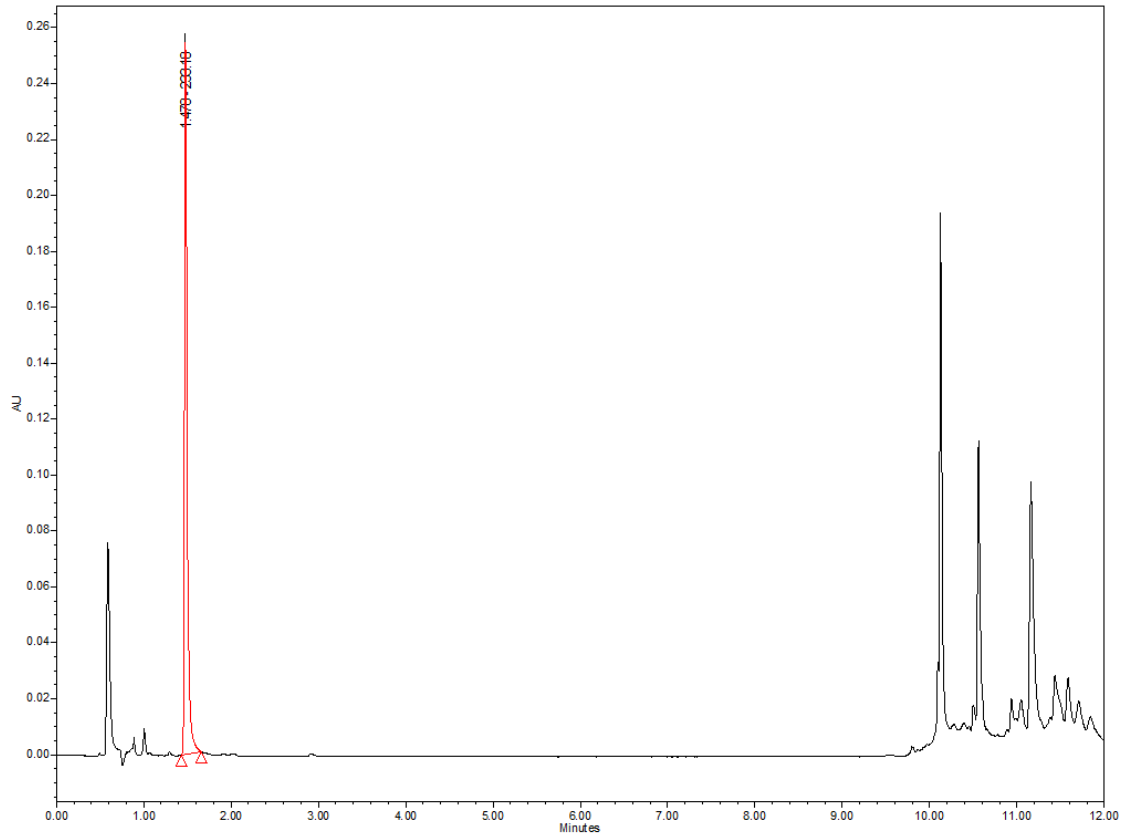
Zoom in of integrated peak shown above:



4 Mass Spectrum

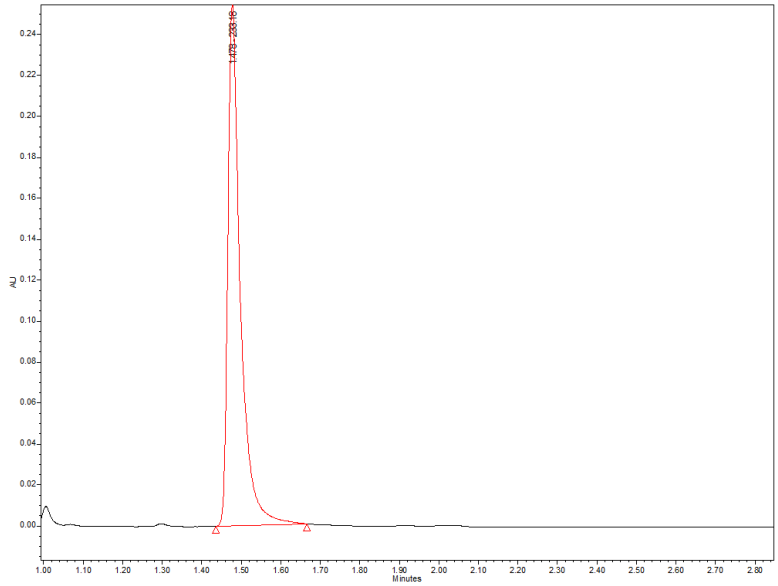


4 UV-A LC PDA Detector Data with Integrated Peak

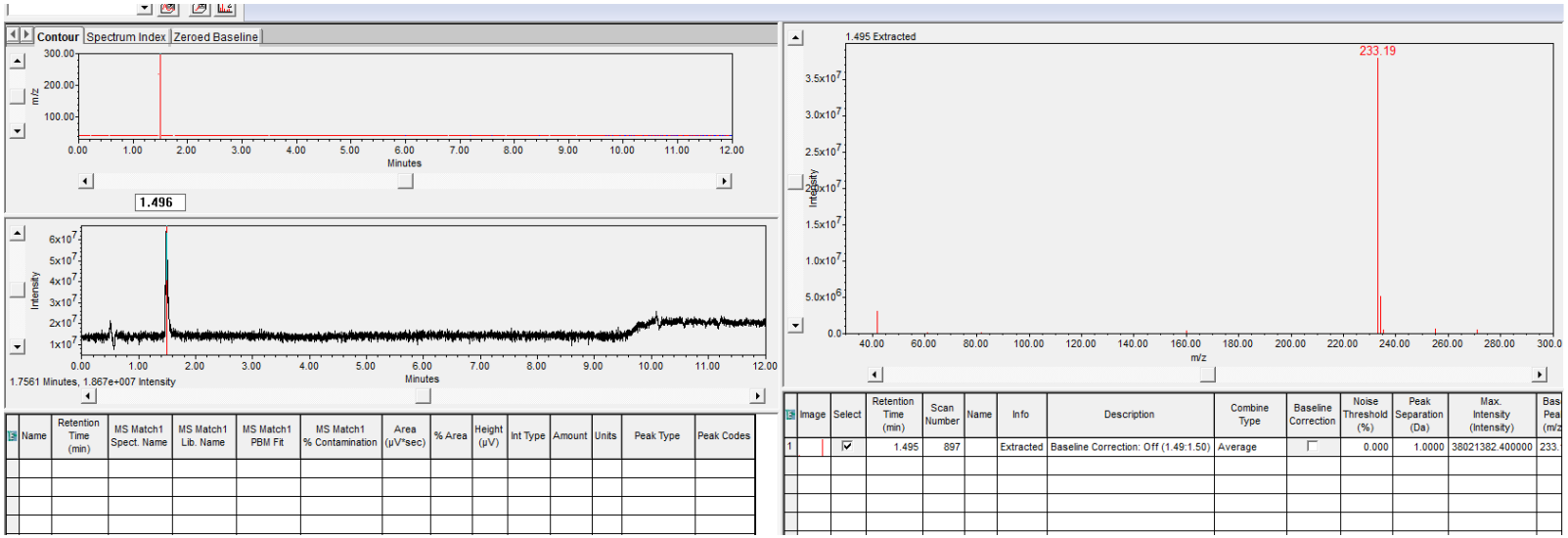


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.478	559742	100.00	254738	bb			Unknown

Zoom in of integrated peak above:



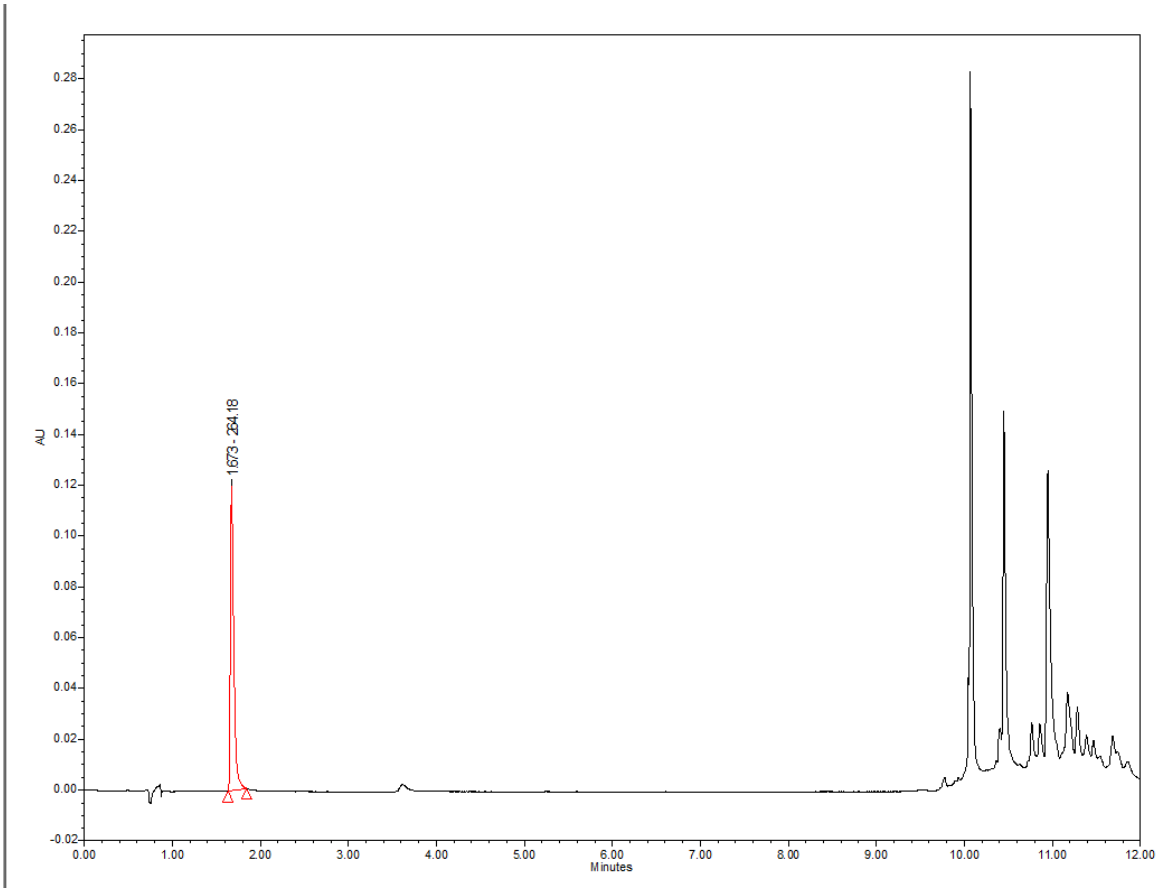
4 UVA Mass Spectrum



Name	Retention Time (min)	MS Match1 Spect. Name	MS Match1 Lib. Name	MS Match1 PBM Fit	MS Match1 % Contamination	Area (µV*sec)	% Area	Height (µV)	Int Type	Amount	Units	Peak Type	Peak Codes

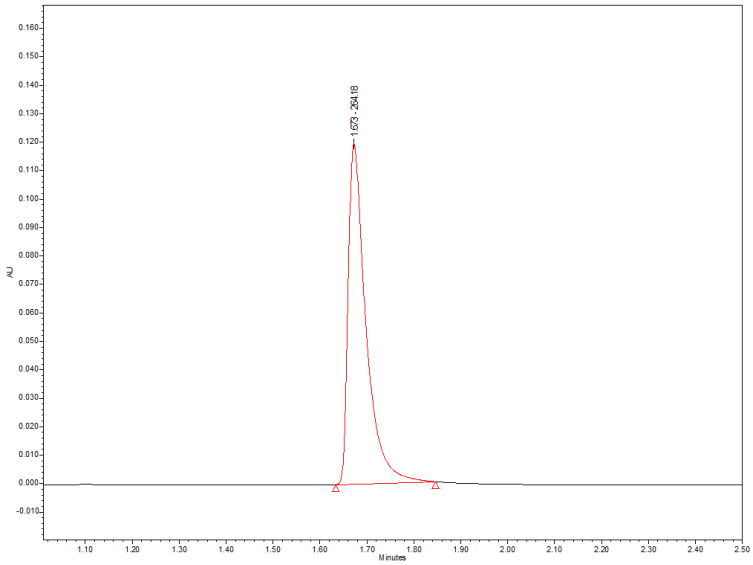
Image	Select	Retention Time (min)	Scan Number	Name	Info	Description	Combine Type	Baseline Correction	Noise Threshold (%)	Peak Separation (Da)	Max. Intensity (Intensity)	Bas Pea (m/z
1	☑	1.495	897		Extracted	Baseline Correction: Off (1.49:1.50)	Average	☐	0.000	1.0000	38021382.400000	233.

5 LC PDA Detector Data with Integrated Peak

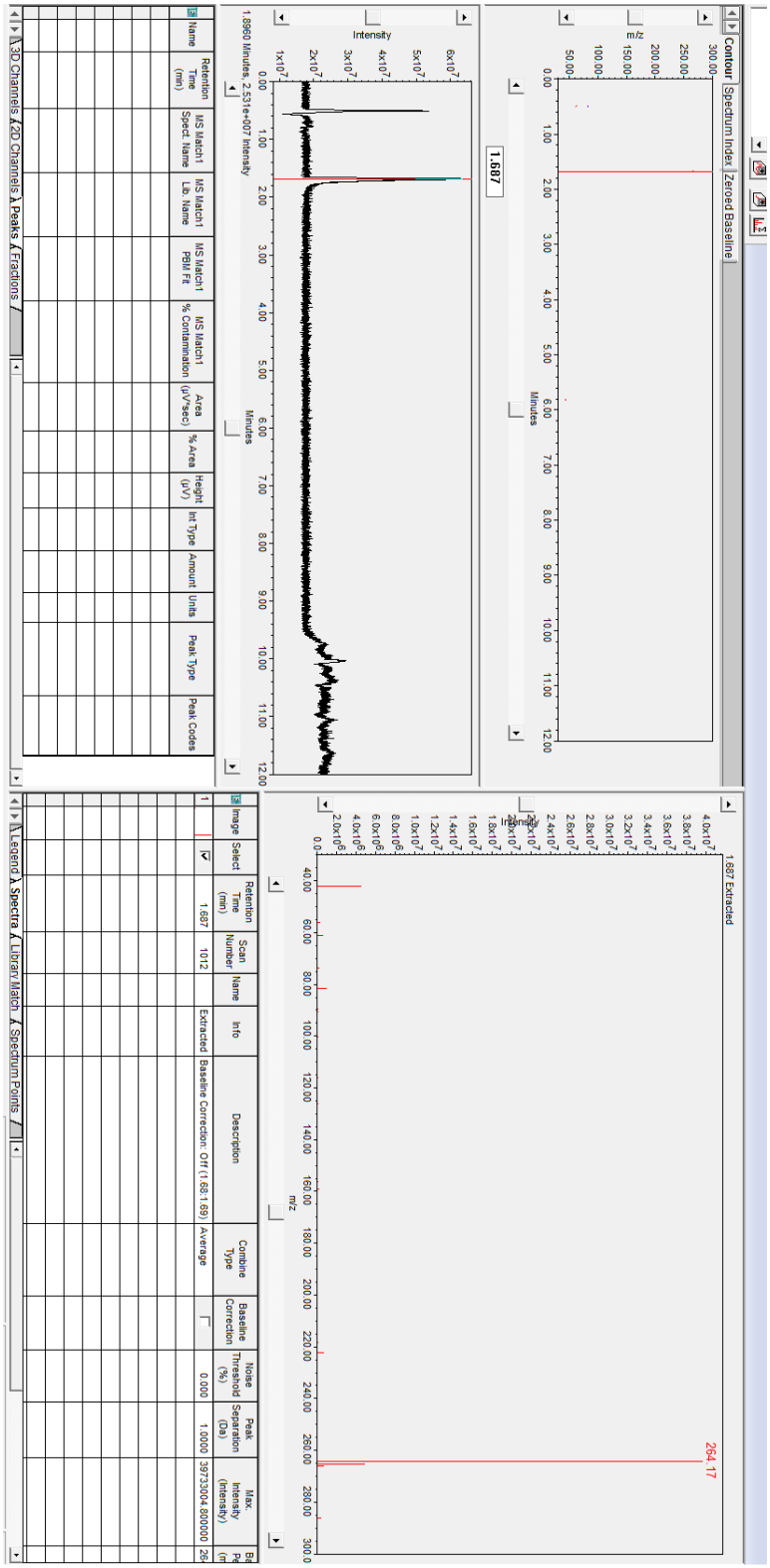


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.673	315272	100.00	119647	bb			Unknown

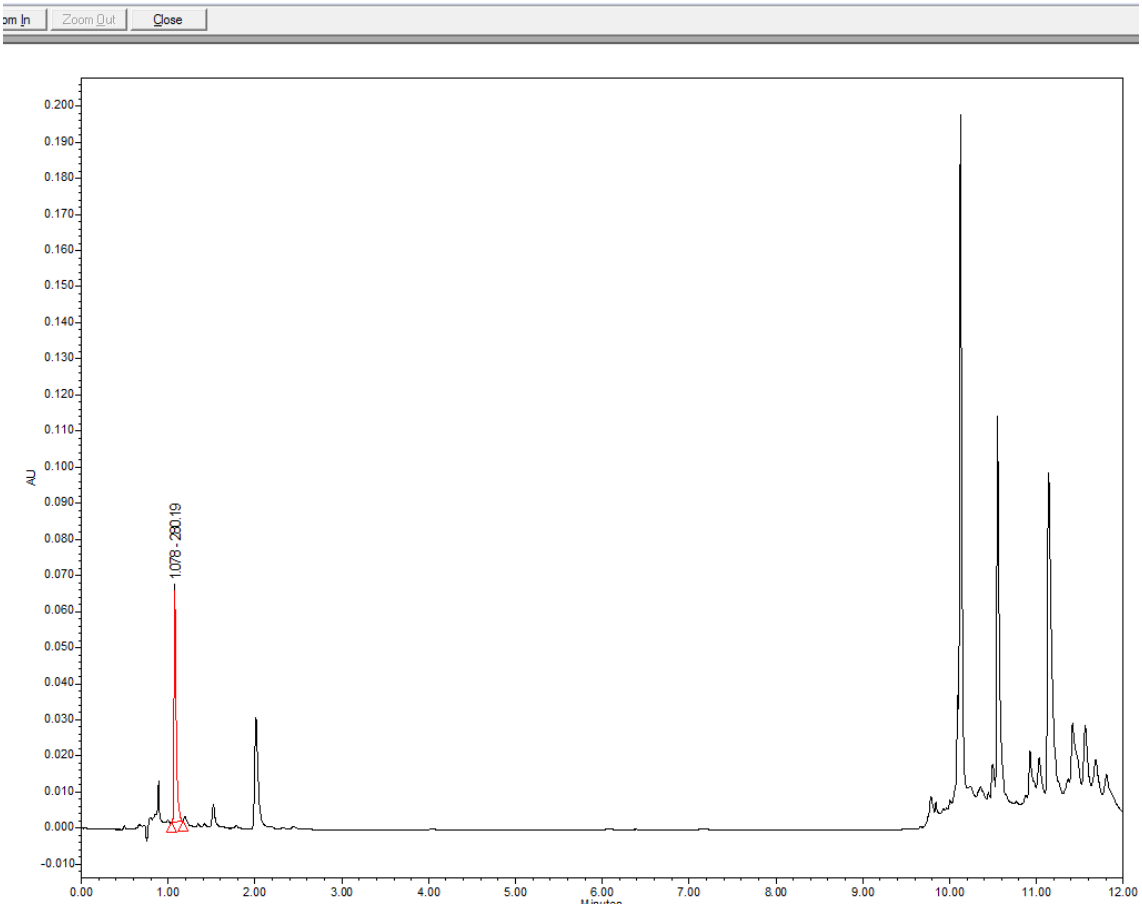
Zoom in of integrated peak shown above:



5 Mass Spectrum

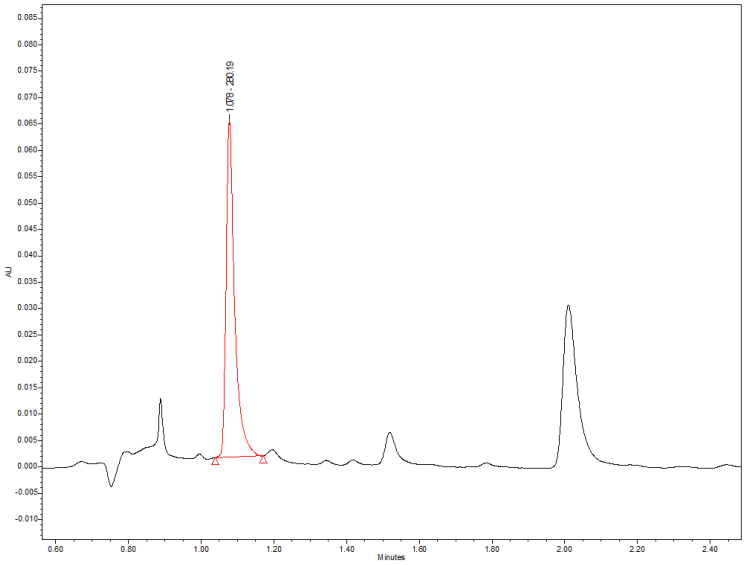


5 UV-A LC PDA Detector Data with Integrated Peak

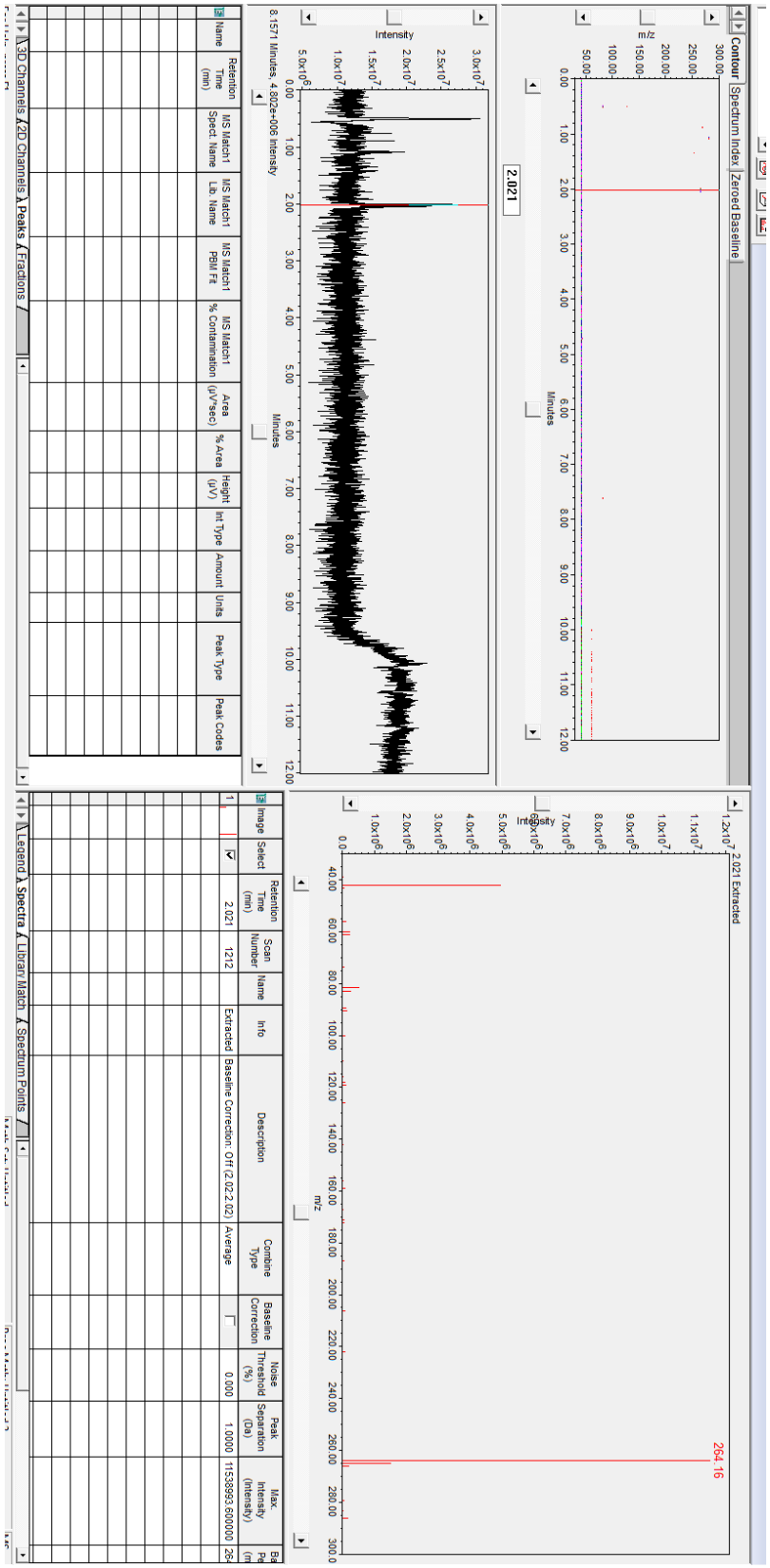


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.078	104654	100.00	64021	bb			Unknown	

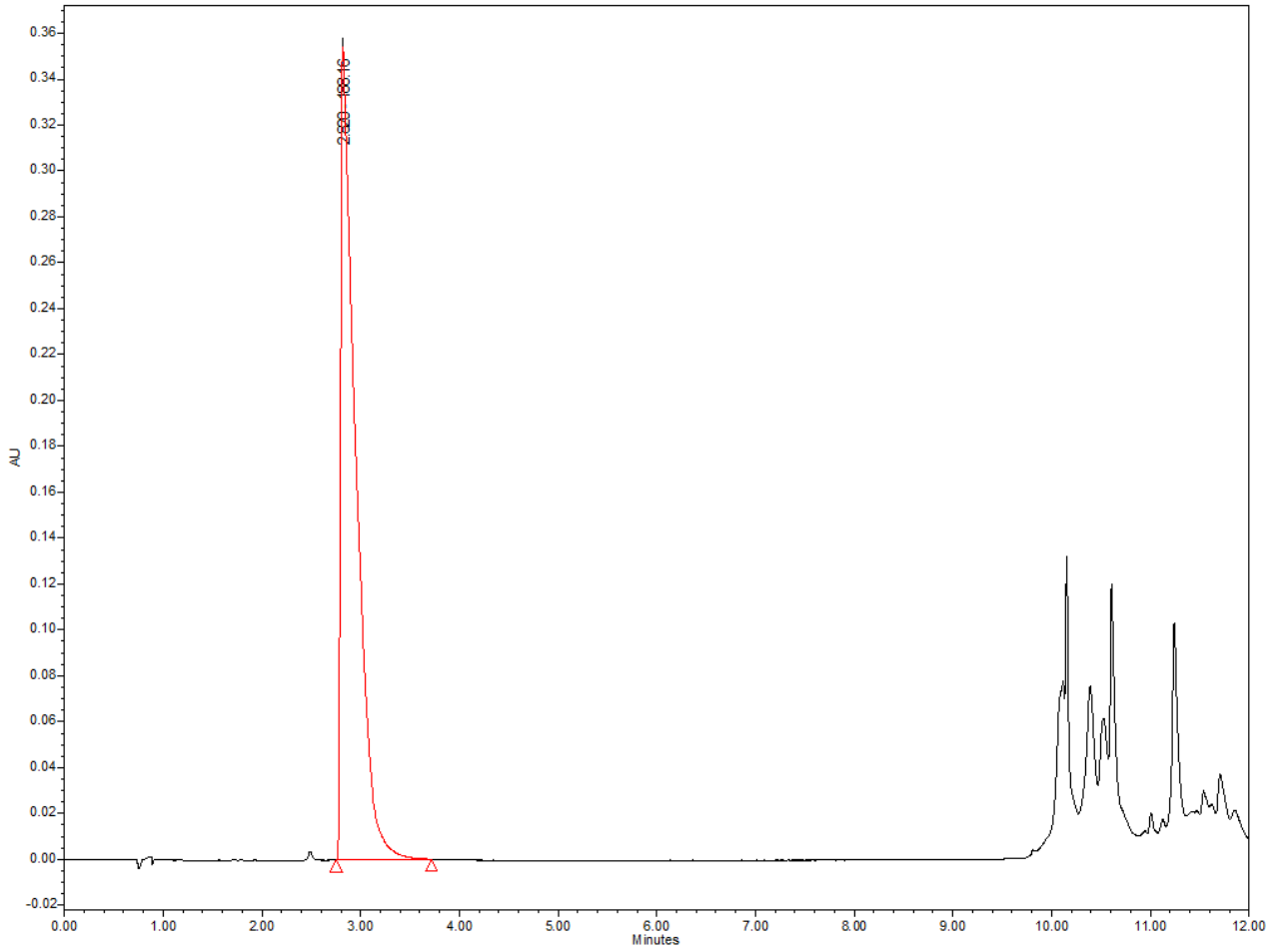
Zoom in on integrated peak shown above:



5 UVA Mass Spectrum

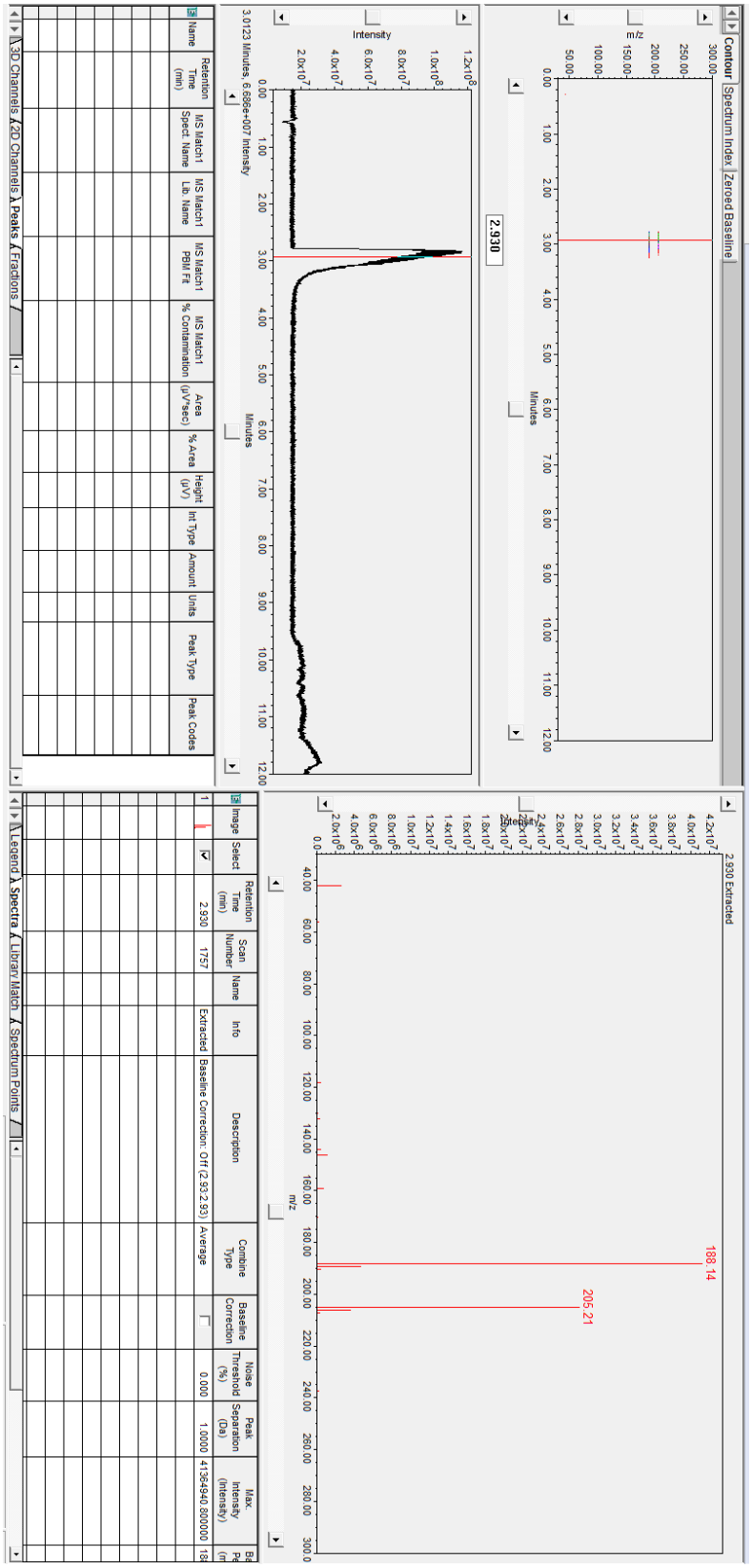


3 LC PDA Detector Data with Integrated Peak

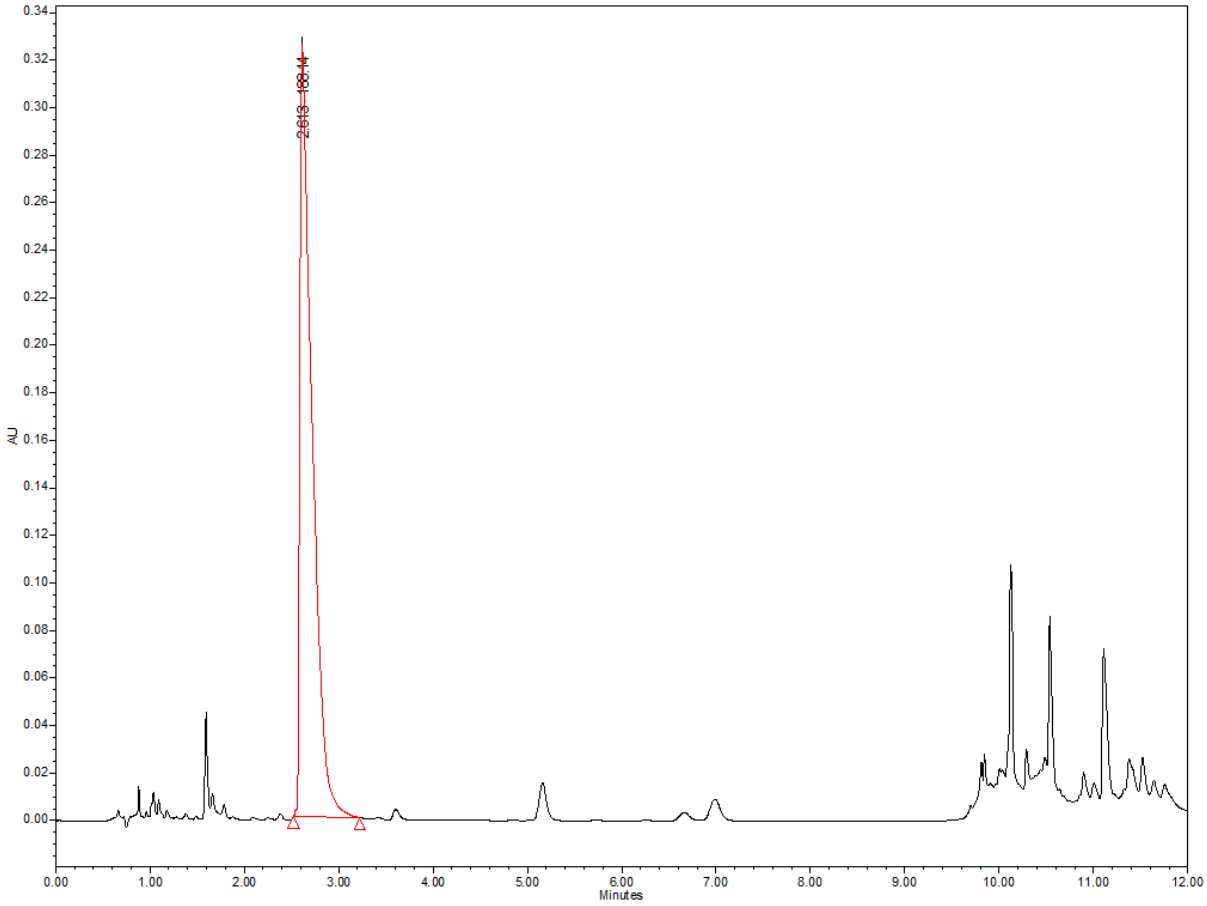


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.820	3782818	100.00	354418	bb			Unknown

3 Mass Spectrum

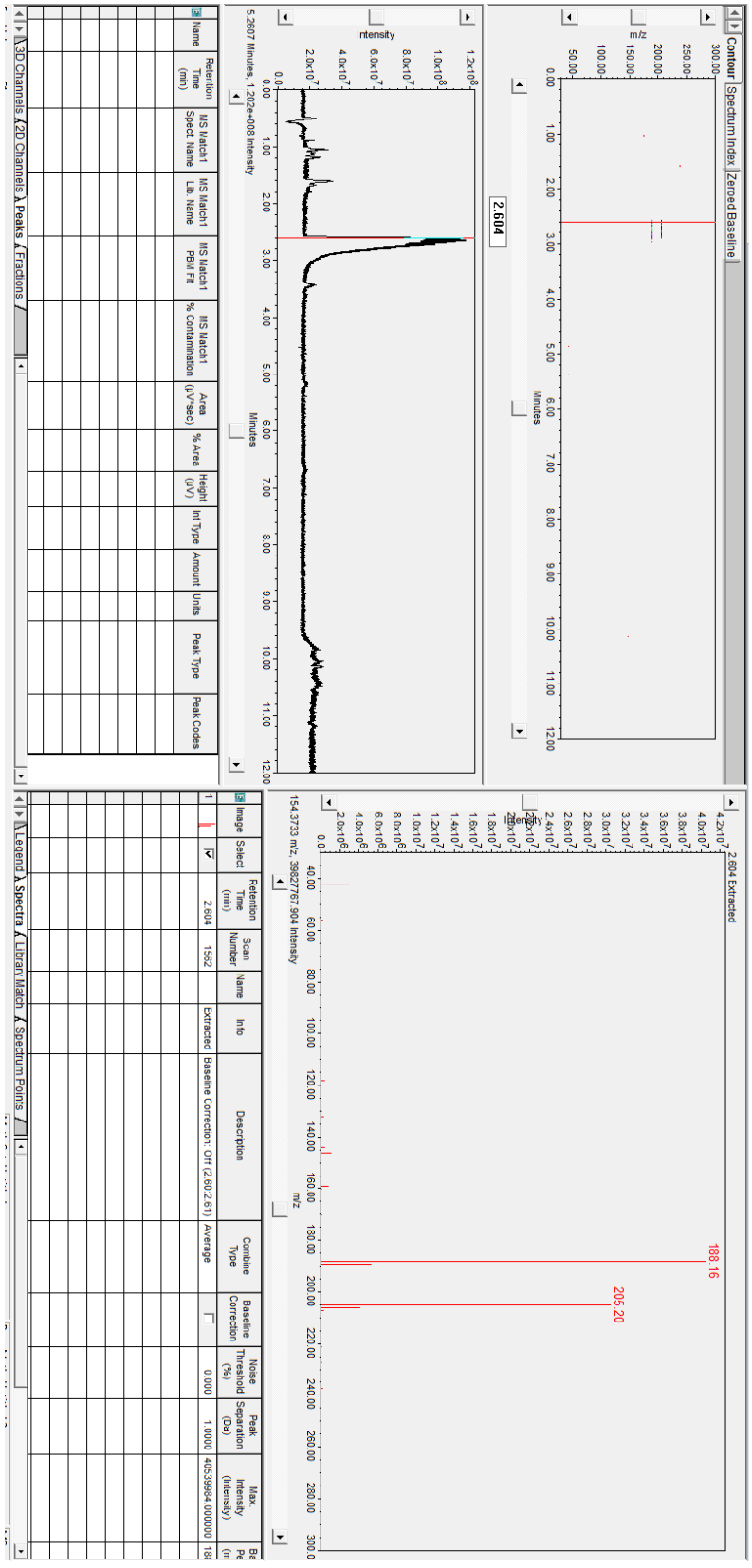


3 UV-A LC PDA Detector Data with Integrated Peak

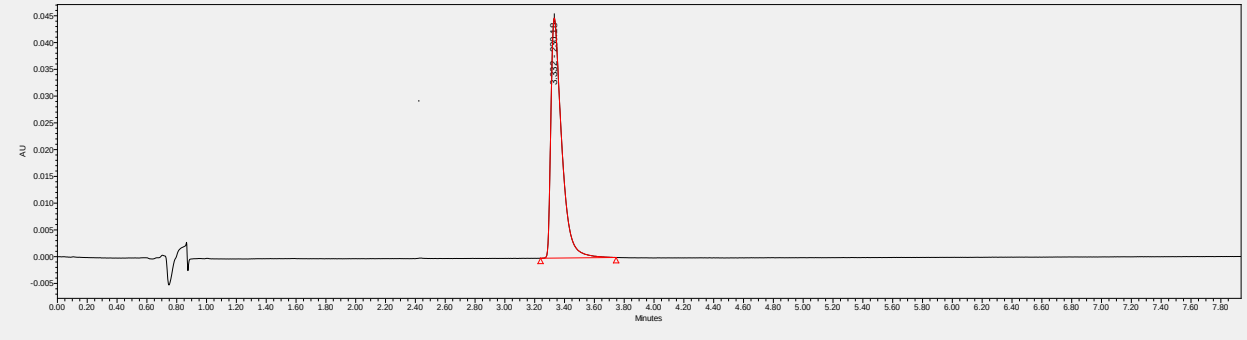


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.613	2938355	100.00	324841	bb			Unknown

3 UVA Mass Spectrum

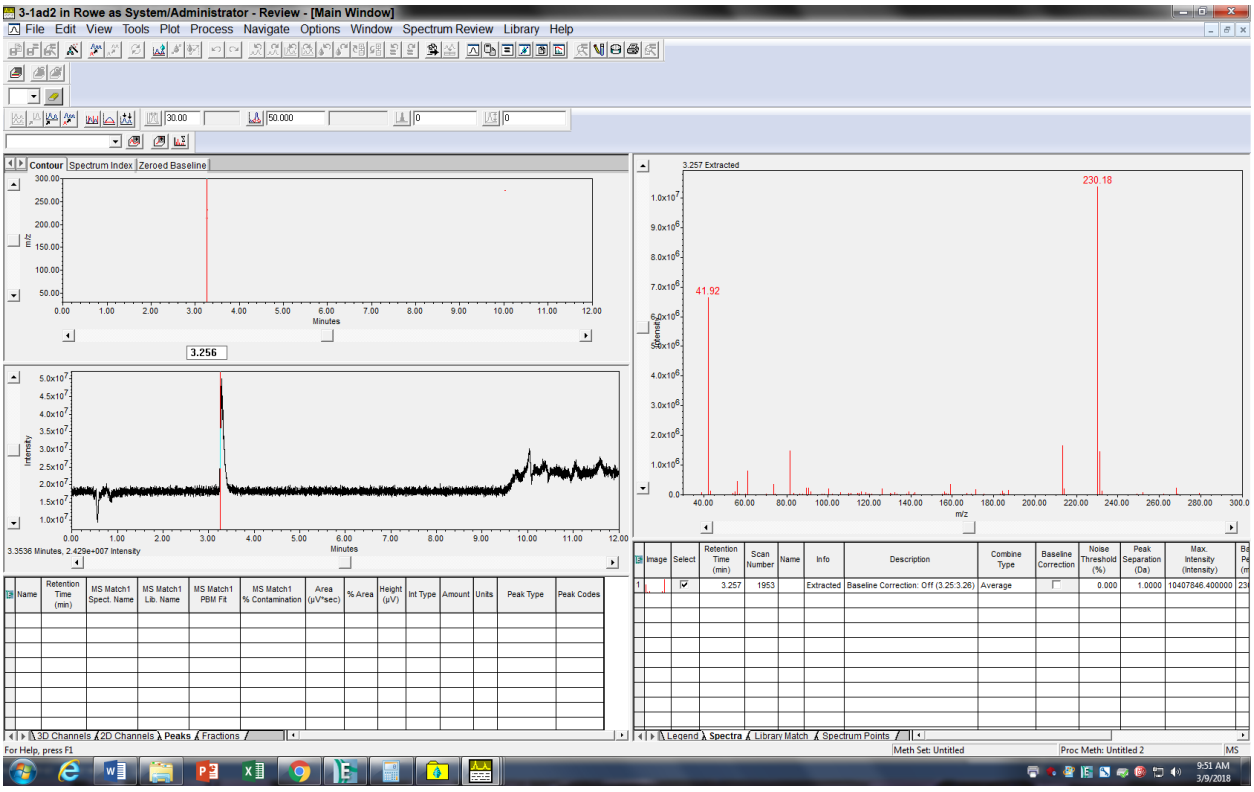


3-1 LC PDA Detector Data with Integrated Peak

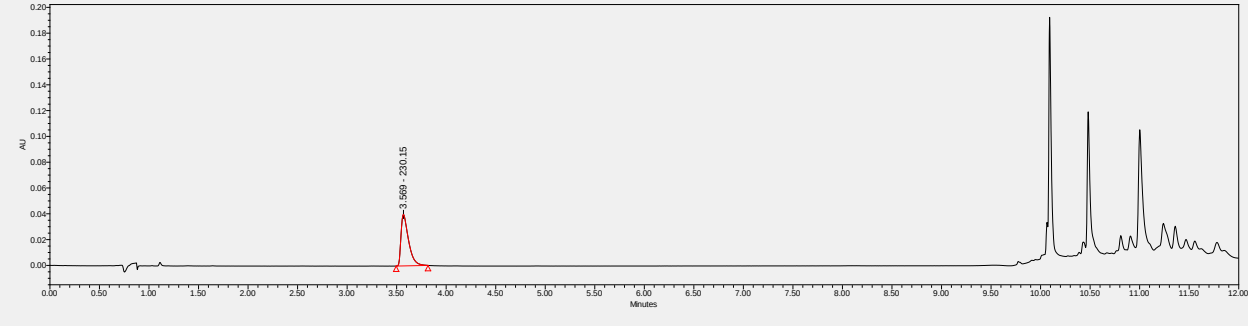


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.332	224855	100.00	44862	bb			Unknown

3-1 Mass Spectrum

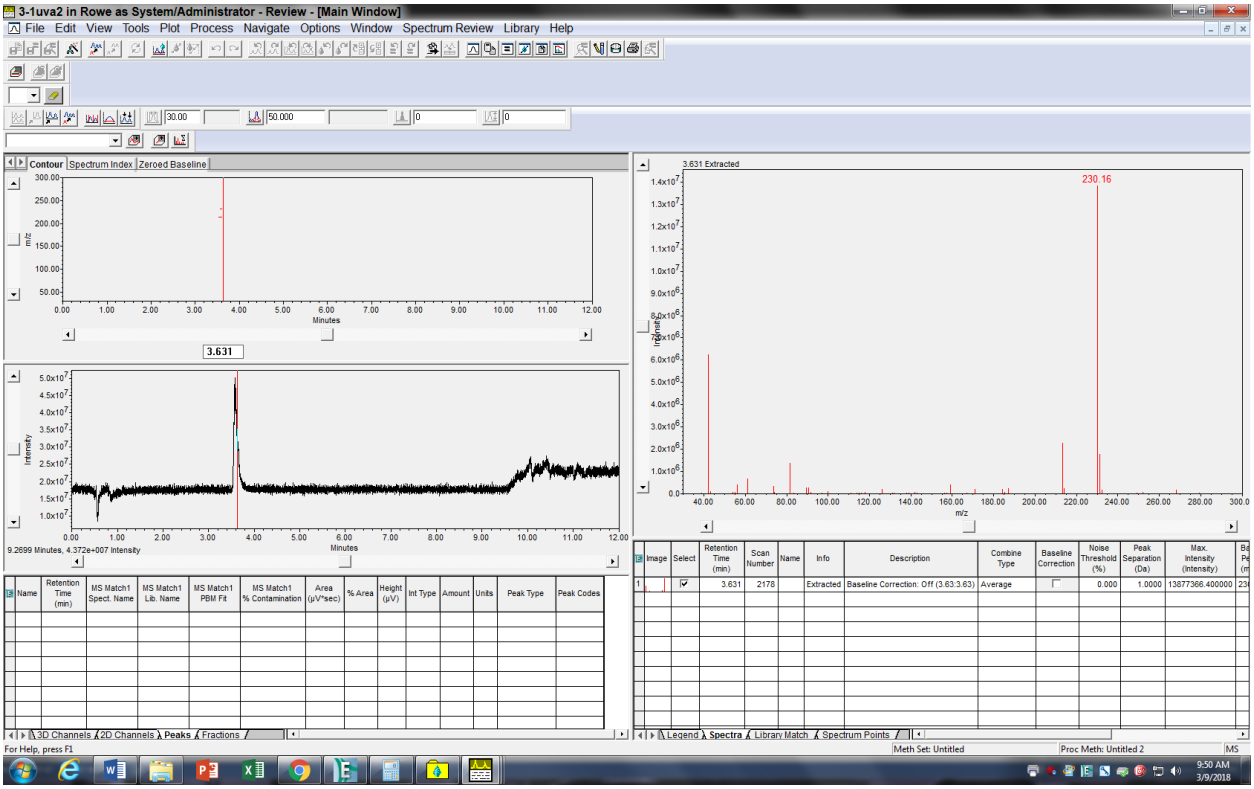


3-1 UV-A LC PDA Detector Data with Integrated Peak

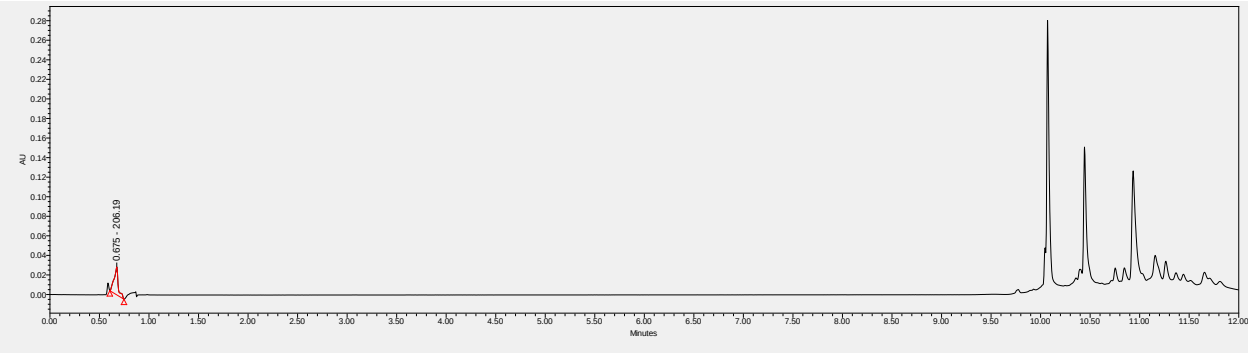


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.569	210426	100.00	39944	bb			Unknown

3-1 UVA Mass Spectrum

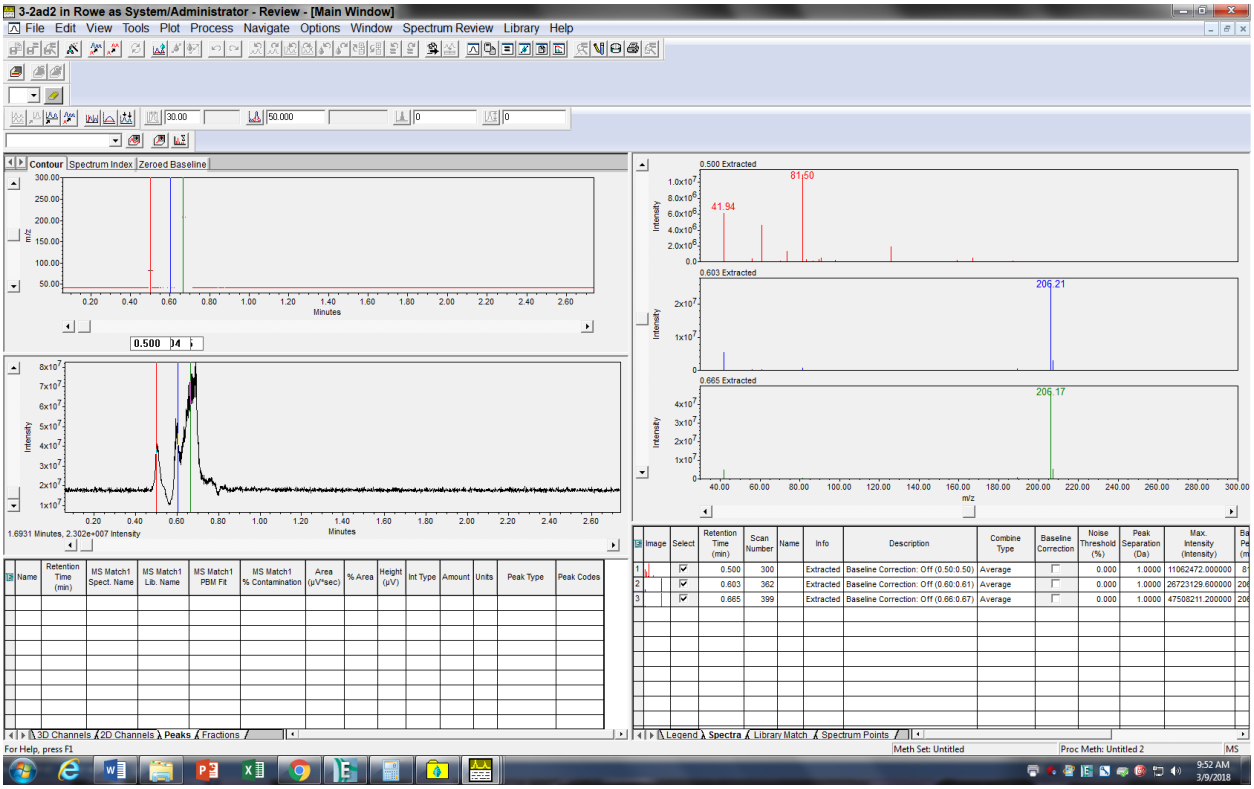


3-2 LC PDA Detector Data with Integrated Peak

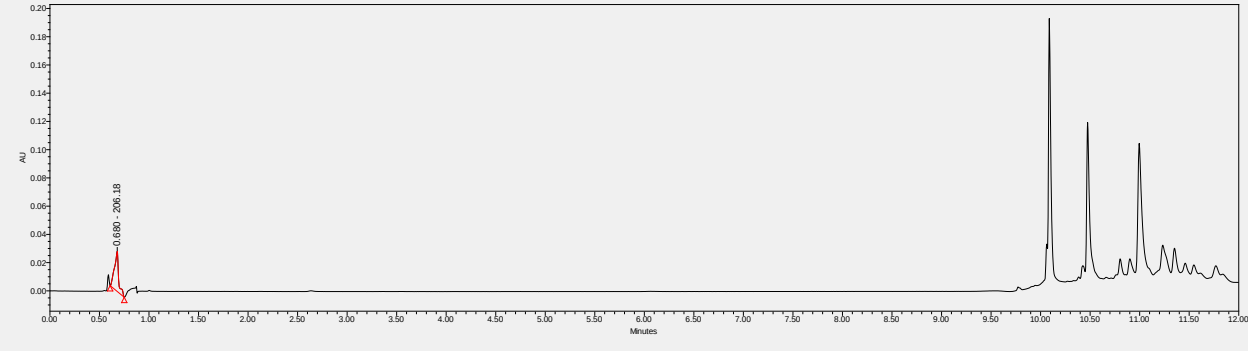


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.675	83012	100.00	28505	bb			Unknown

3-2 Mass Spectrum

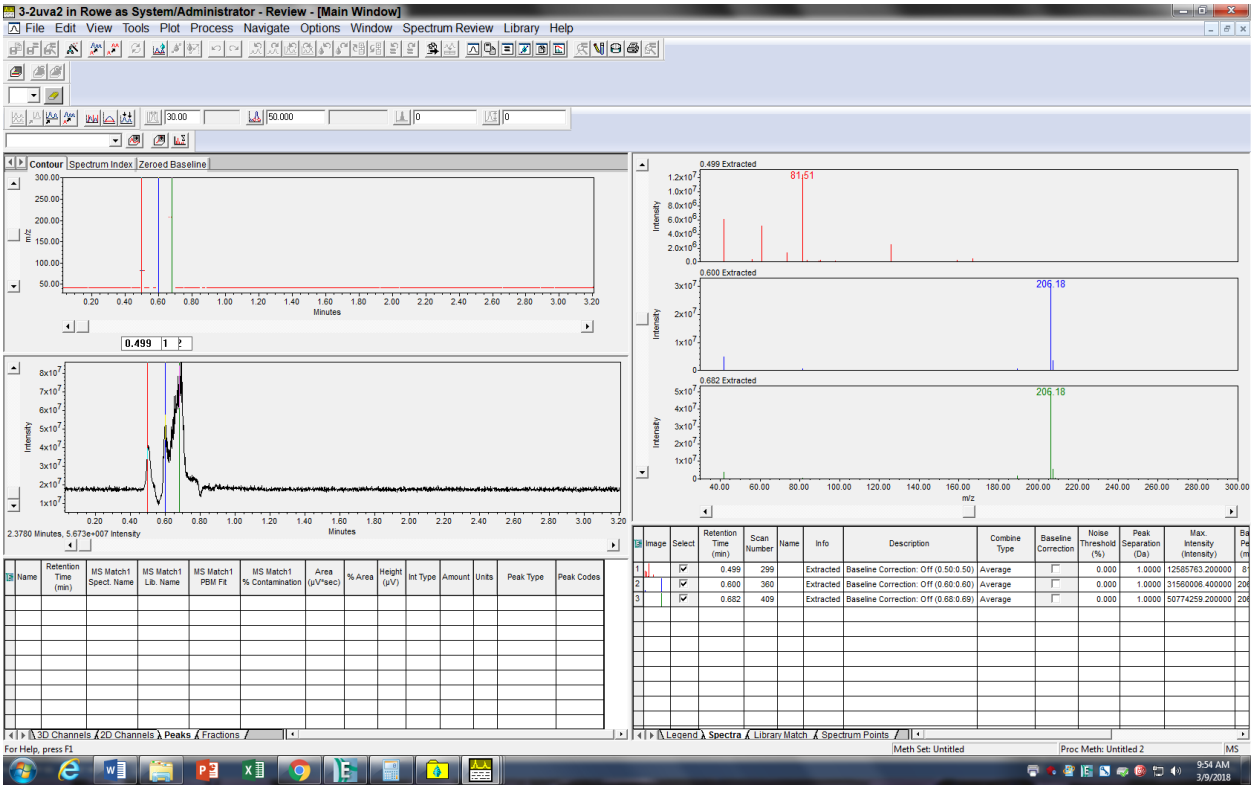


3-2 UV-A LC PDA Detector Data with Integrated Peak

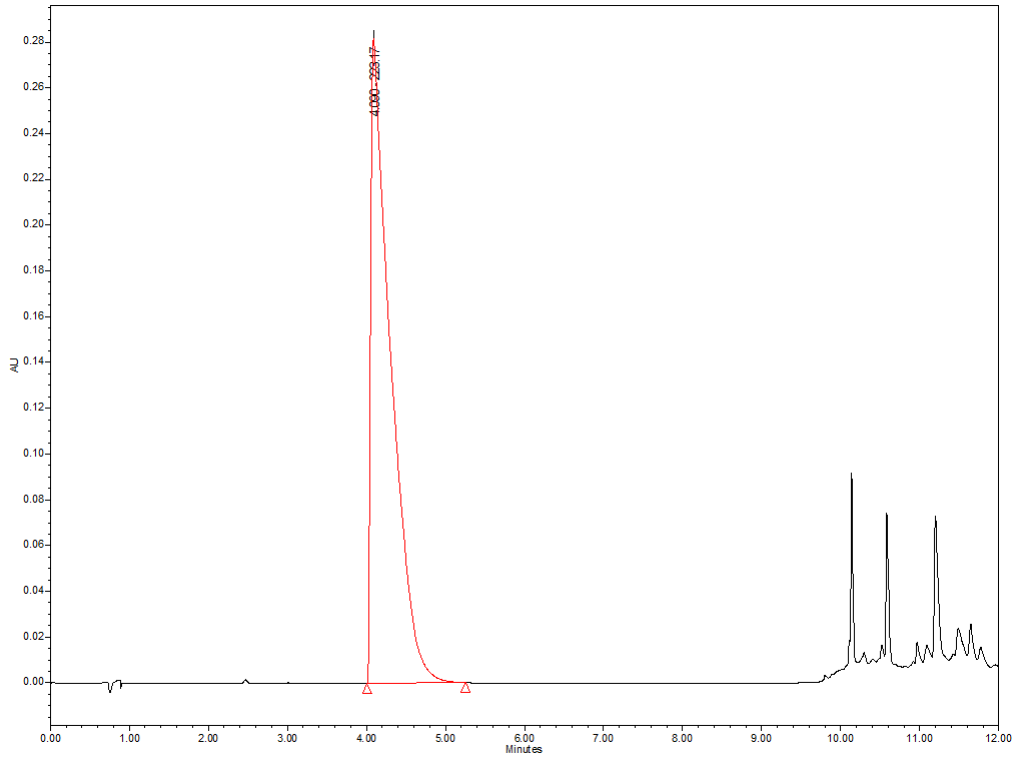


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.680	83099	100.00	28441	bb			Unknown

3-2 UVA Mass Spectrum

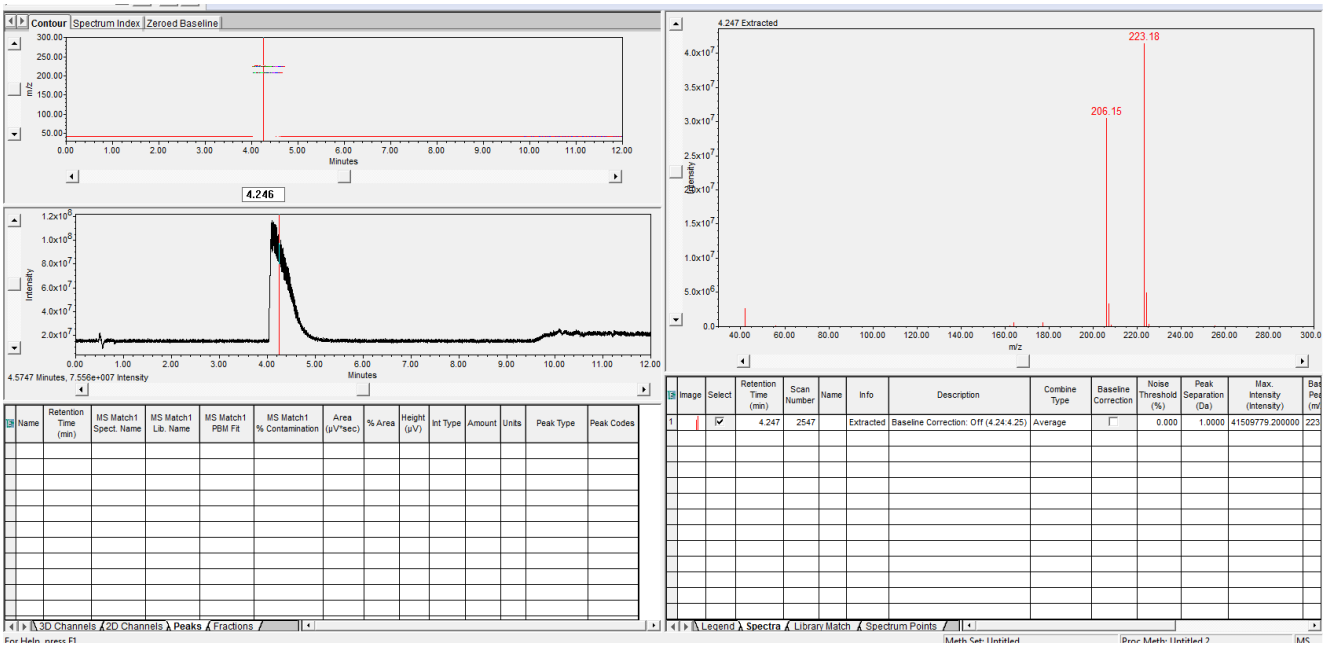


3-3 LC PDA Detector Data with Integrated Peak

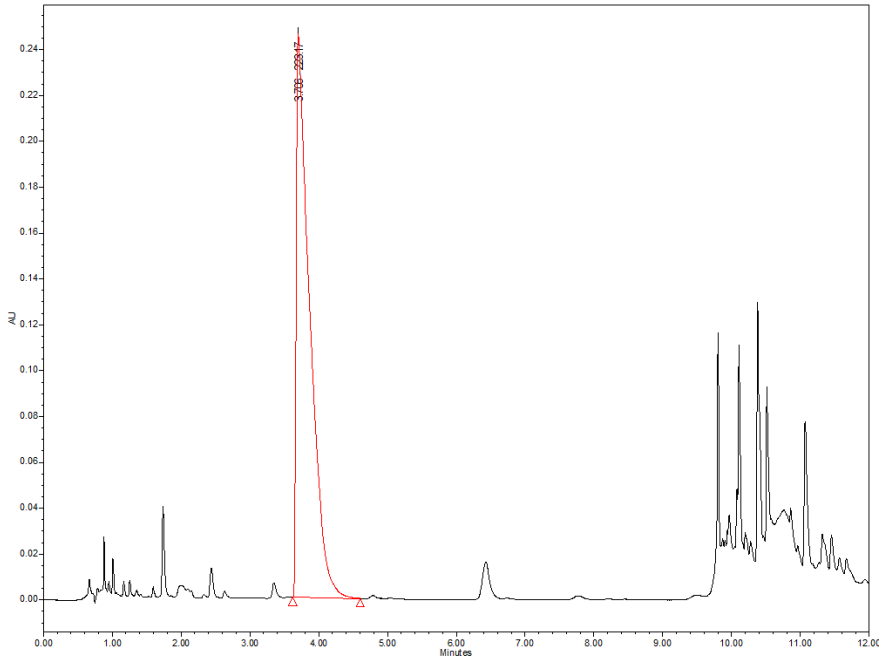


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.090	4951822	100.00	281952	bb			Unknown

3-3 Mass Spectrum

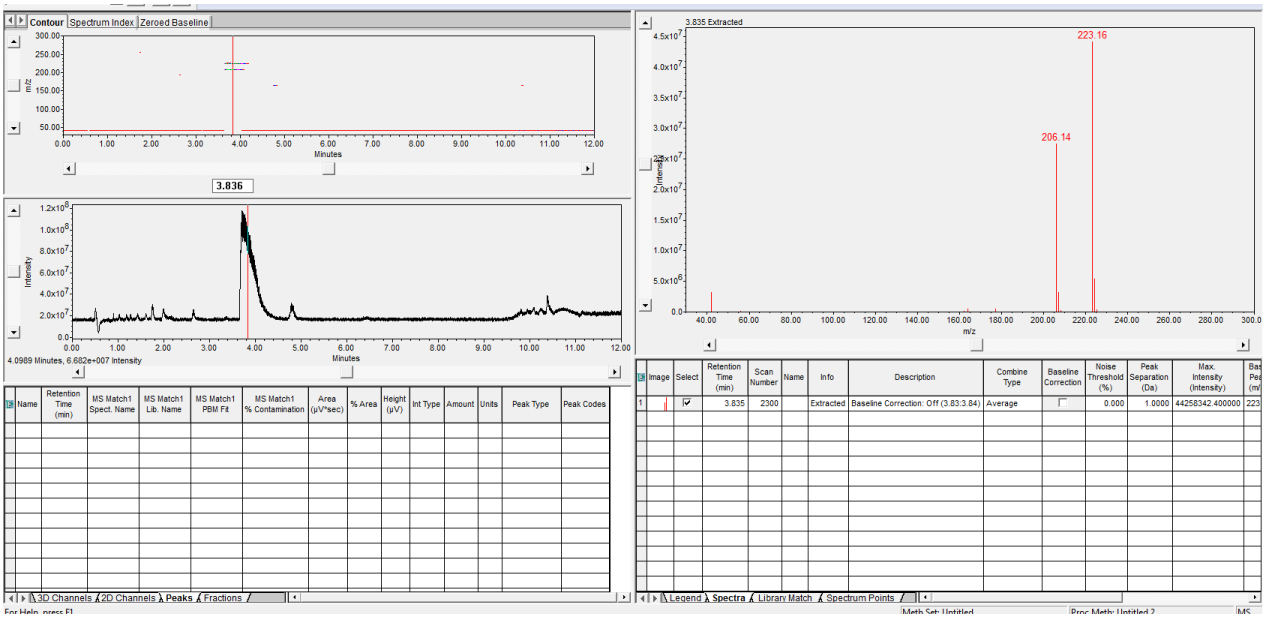


3-3 UV-A LC PDA Detector Data with Integrated Peak

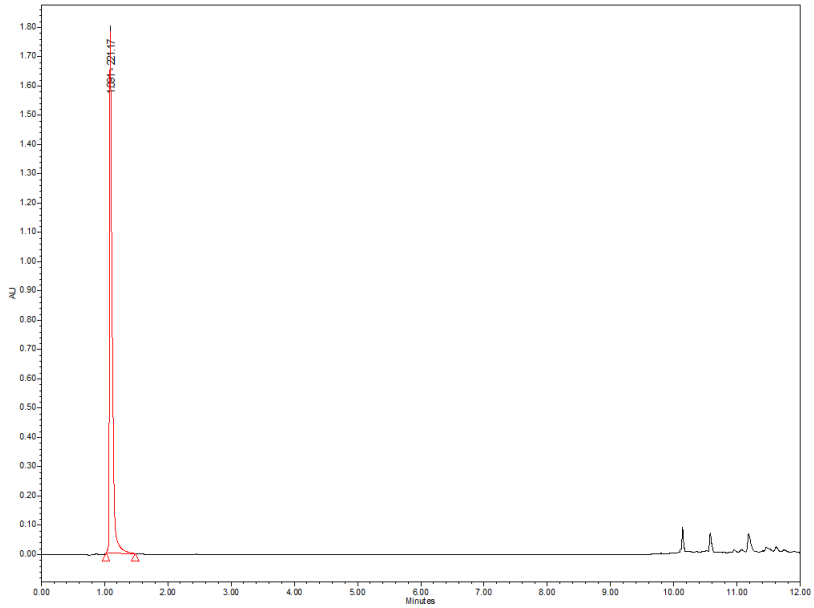


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.706	3346975	100.00	245919	bb			Unknown

3-3 UVA Mass Spectrum

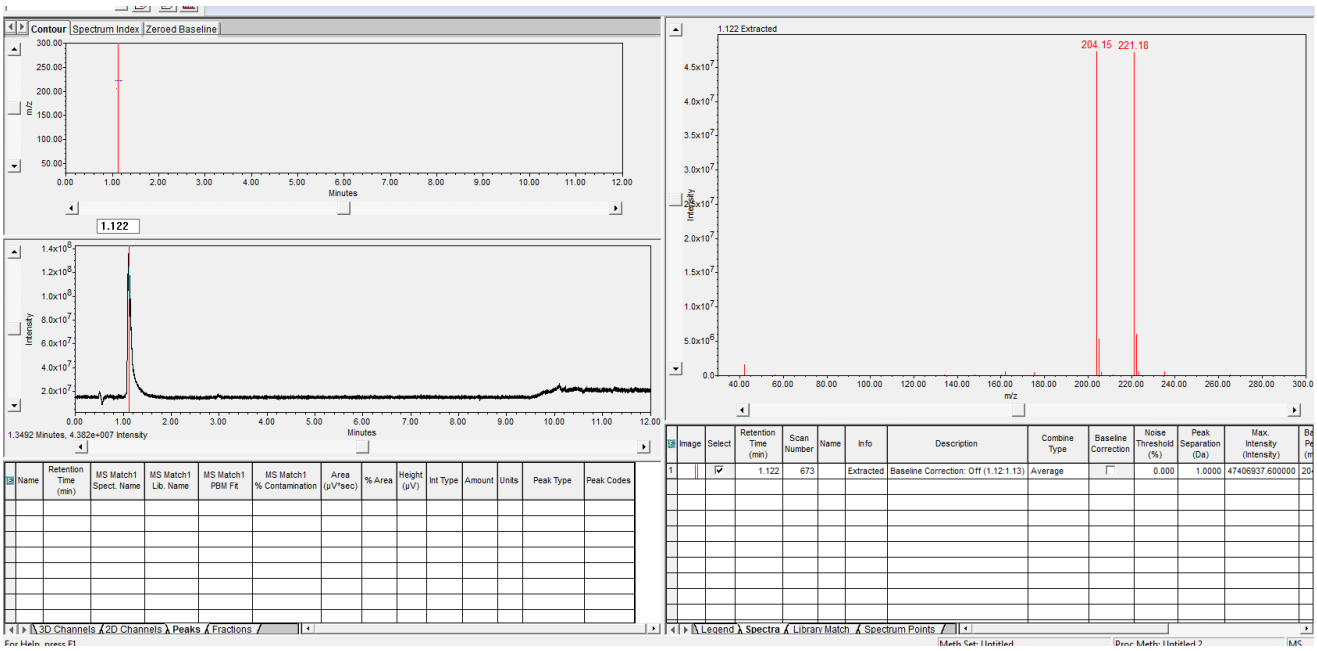


3-4 LC PDA Detector Data with Integrated Peak

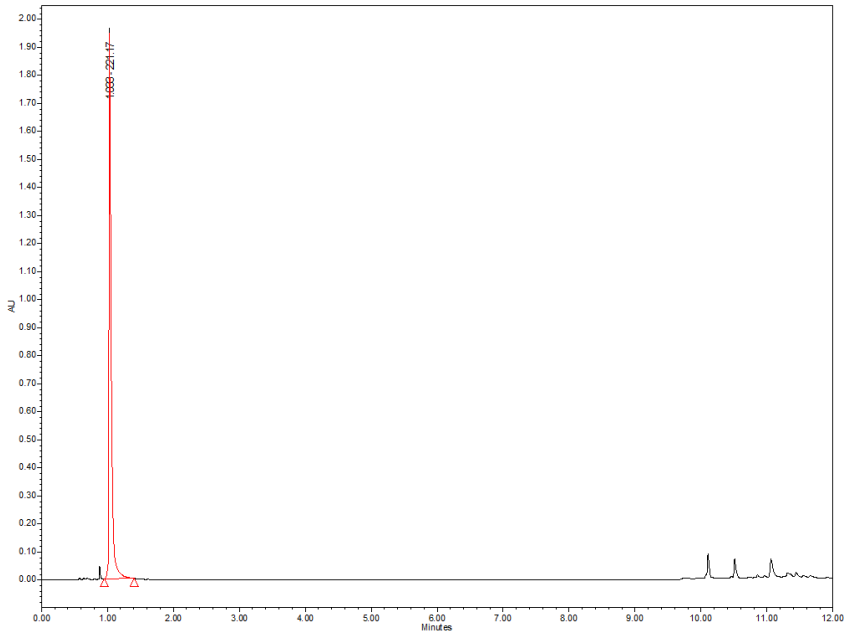


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.091	4974185	100.00	1783005	bb			Unknown

3-4 Mass Spectrum

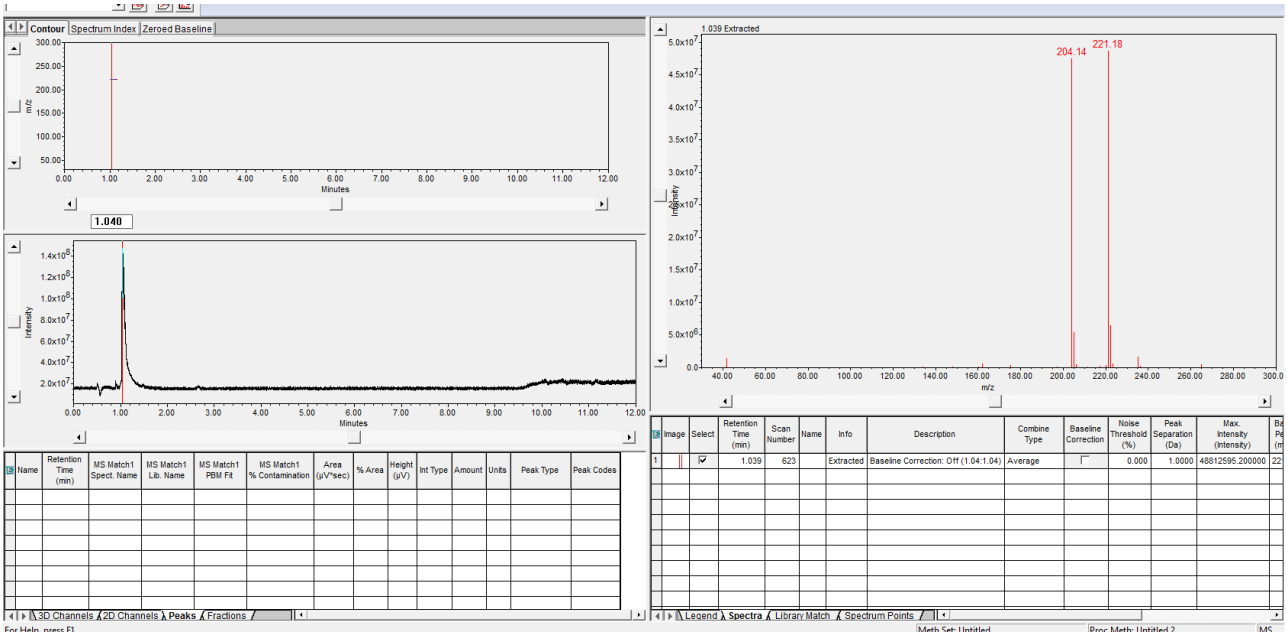


3-4 UV-A LC PDA Detector Data with Integrated Peak

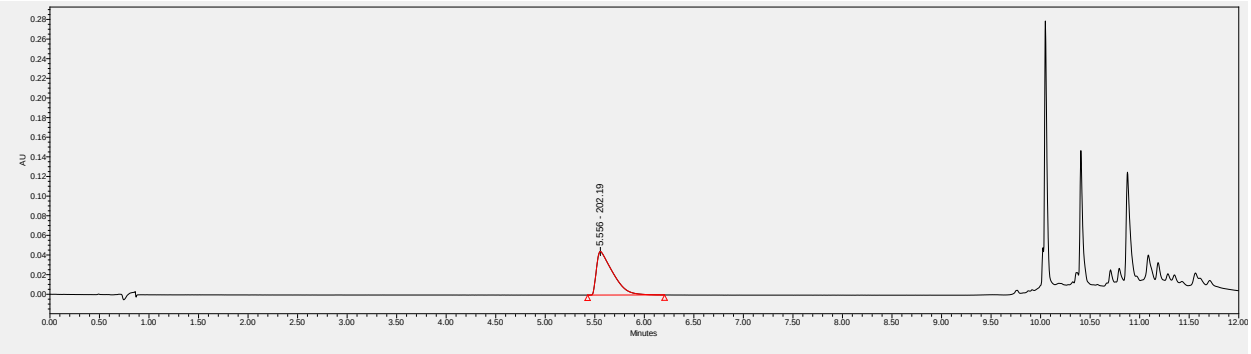


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.033	4802318	100.00	1946698	bb			Unknown

3-4 UVA Mass Spectrum

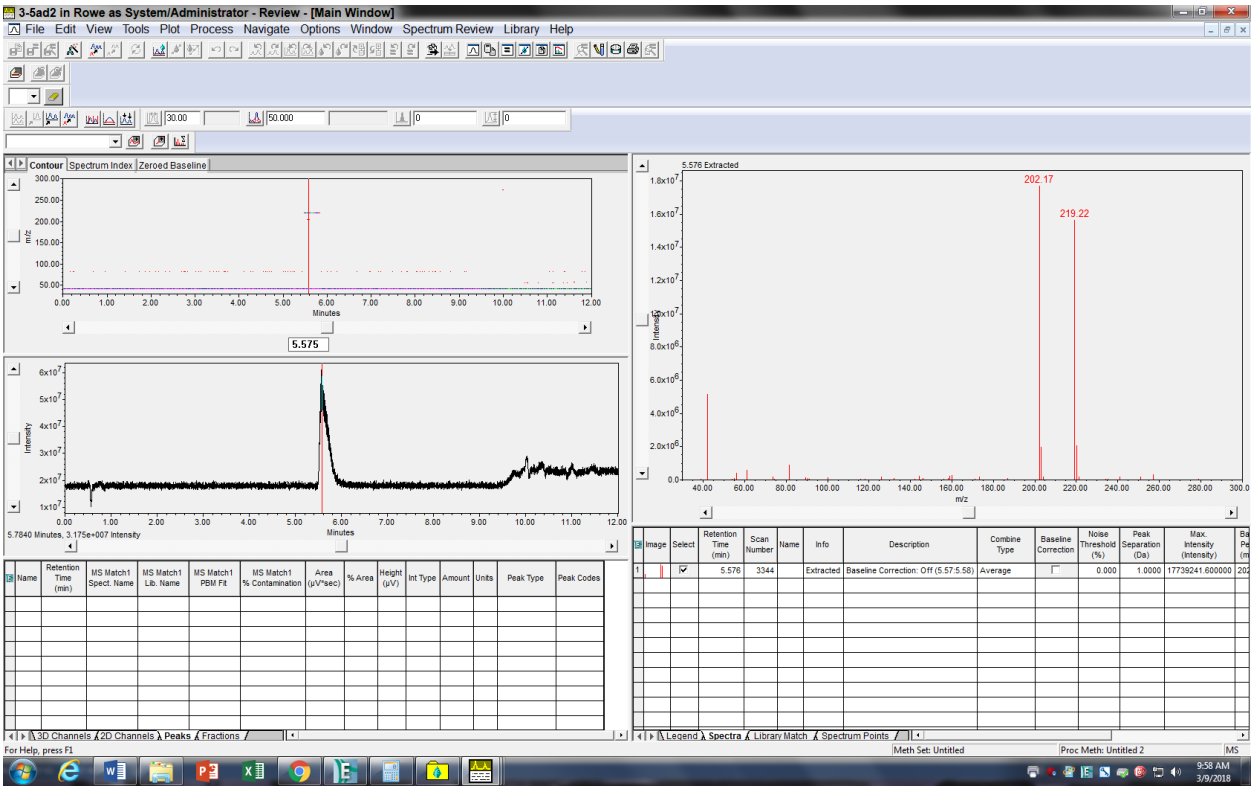


3-5 LC PDA Detector Data with Integrated Peak

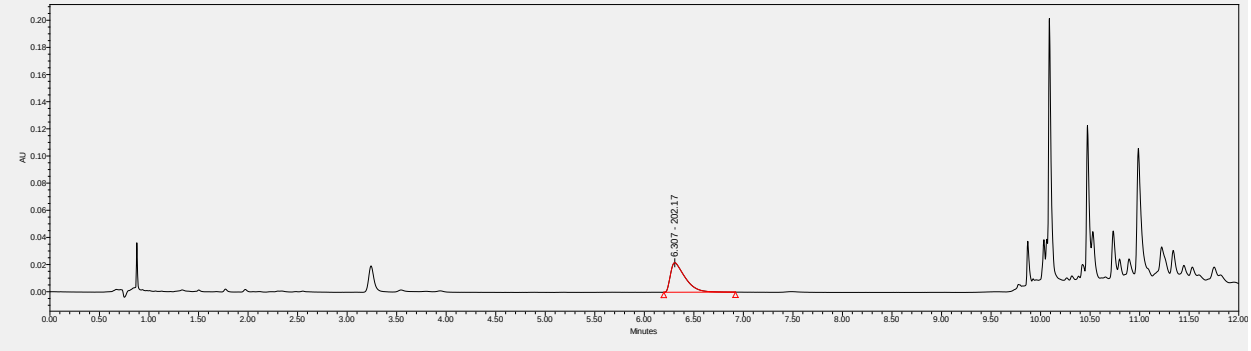


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		5.556	507269	100.00	44401	bb			Unknown

3-5 Mass Spectrum

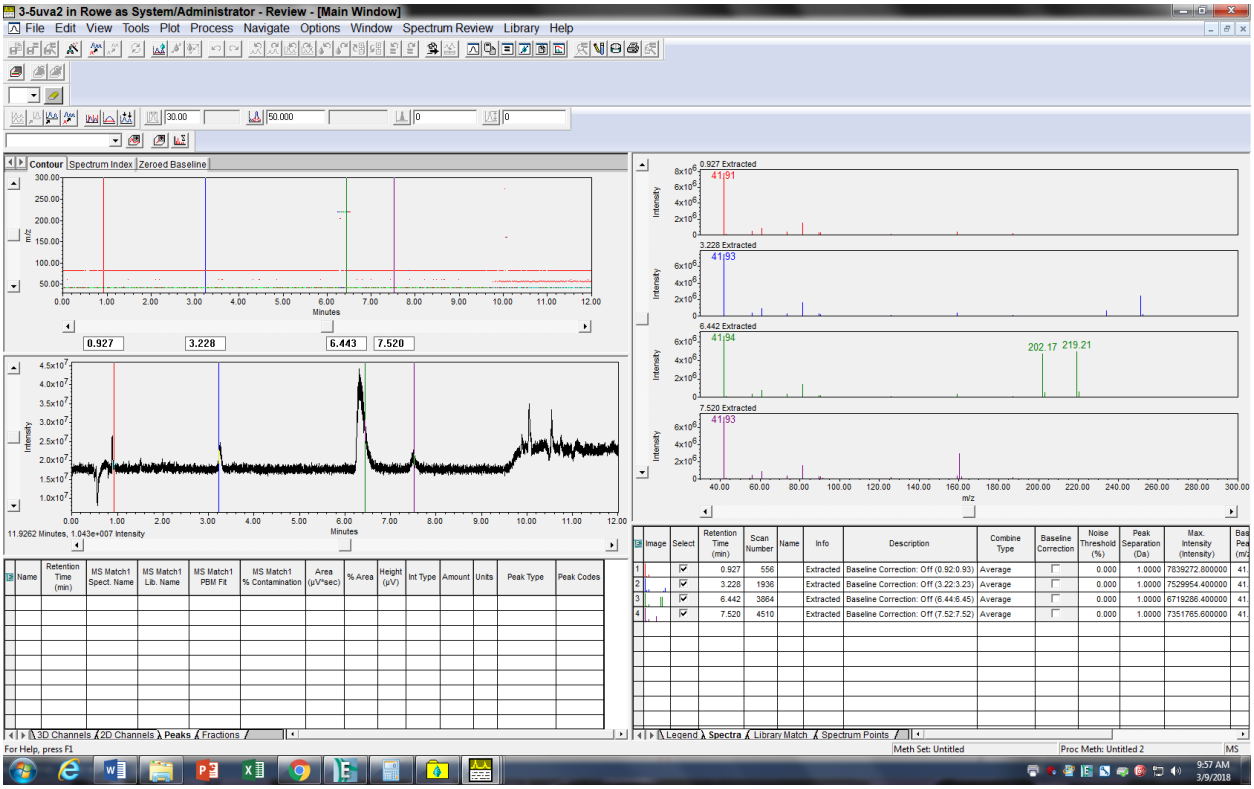


3-5 UV-A LC PDA Detector Data with Integrated Peak

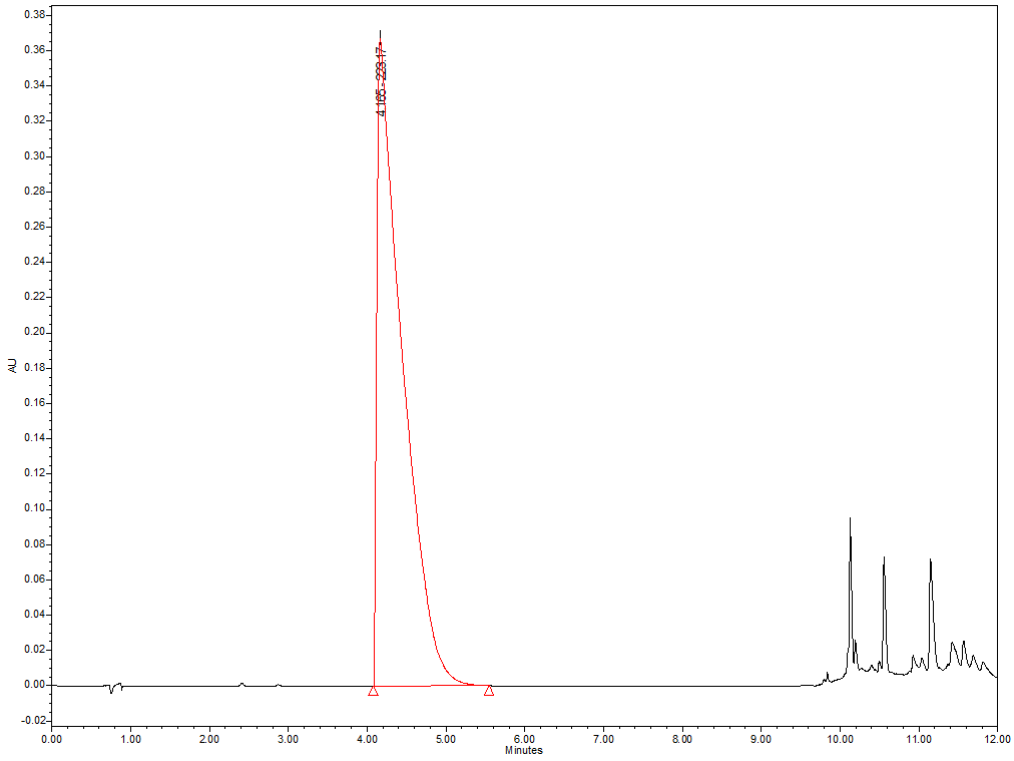


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		6.307	222723	100.00	21758	bb			Unknown	

3-5 UVA Mass Spectrum

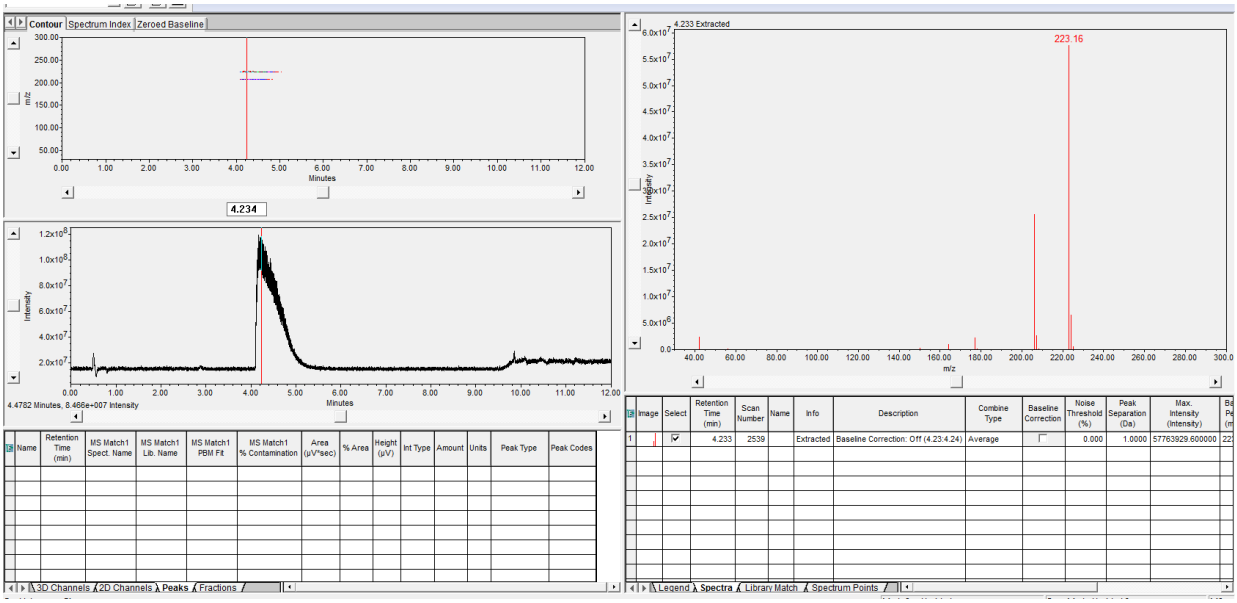


3-6 LC PDA Detector Data with Integrated Peak

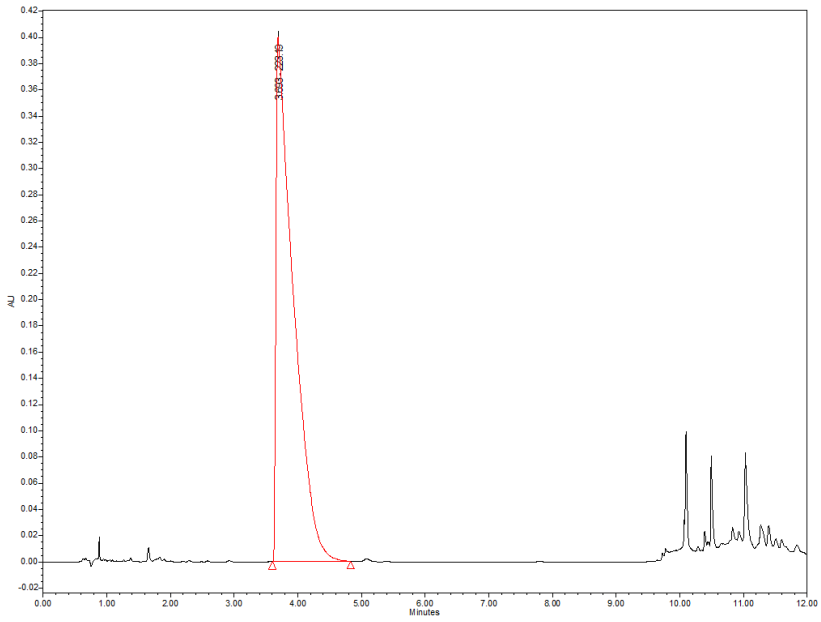


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.165	8174336	100.00	367331	bb			Unknown

3-6 Mass Spectrum

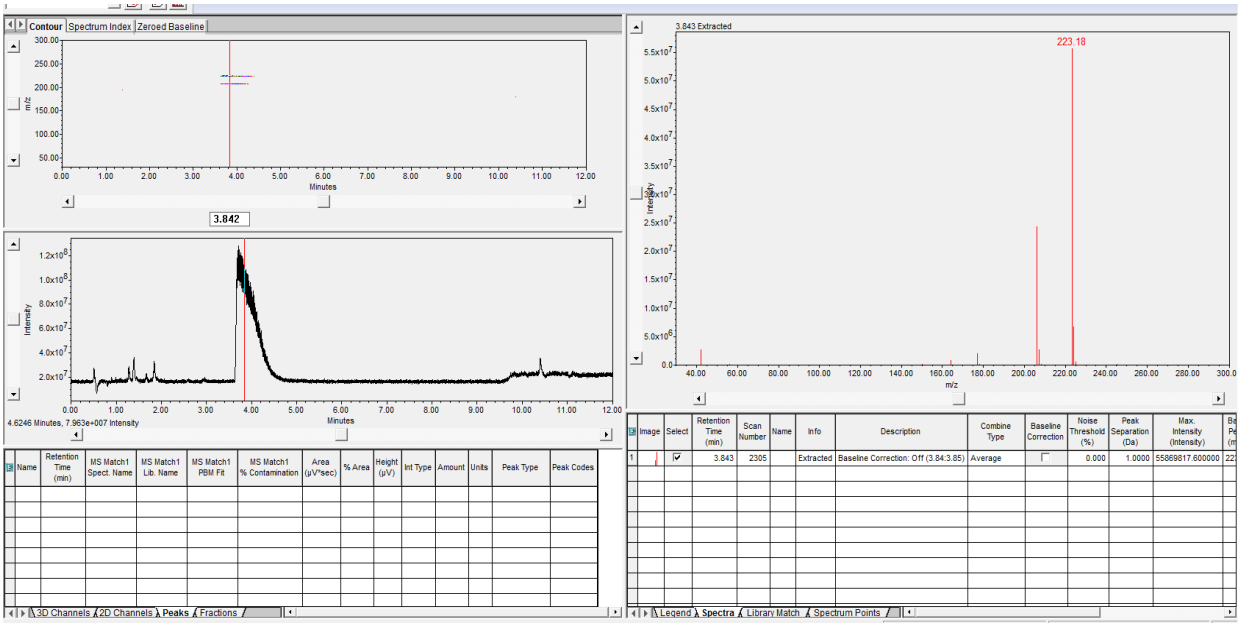


3-6 UV-A LC PDA Detector Data with Integrated Peak

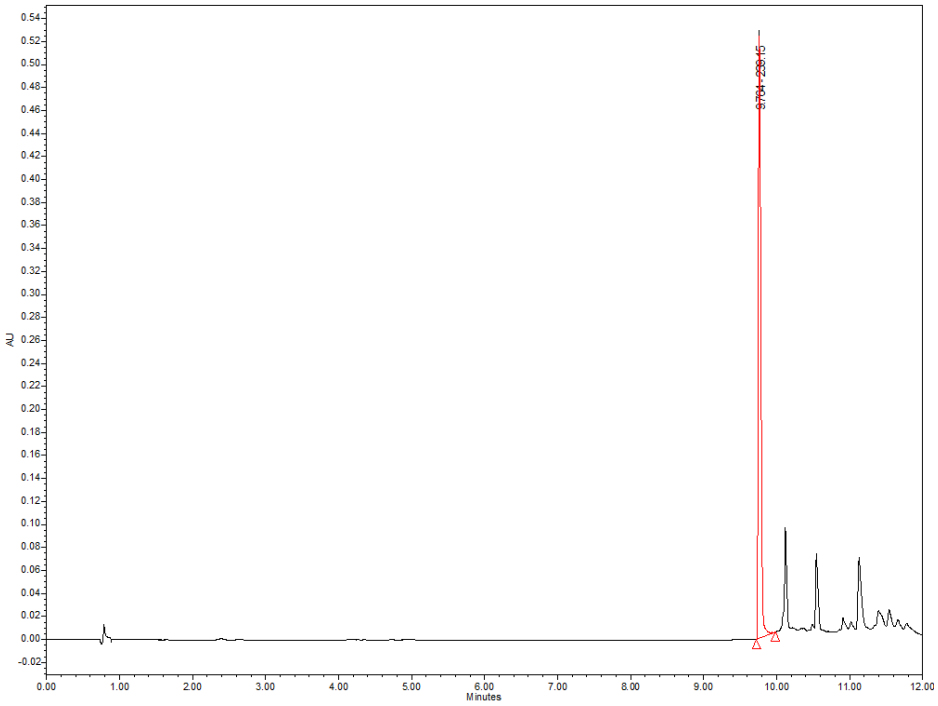


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.693	7561231	100.00	400448	bb			Unknown

3-6 UVA Mass Spectrum

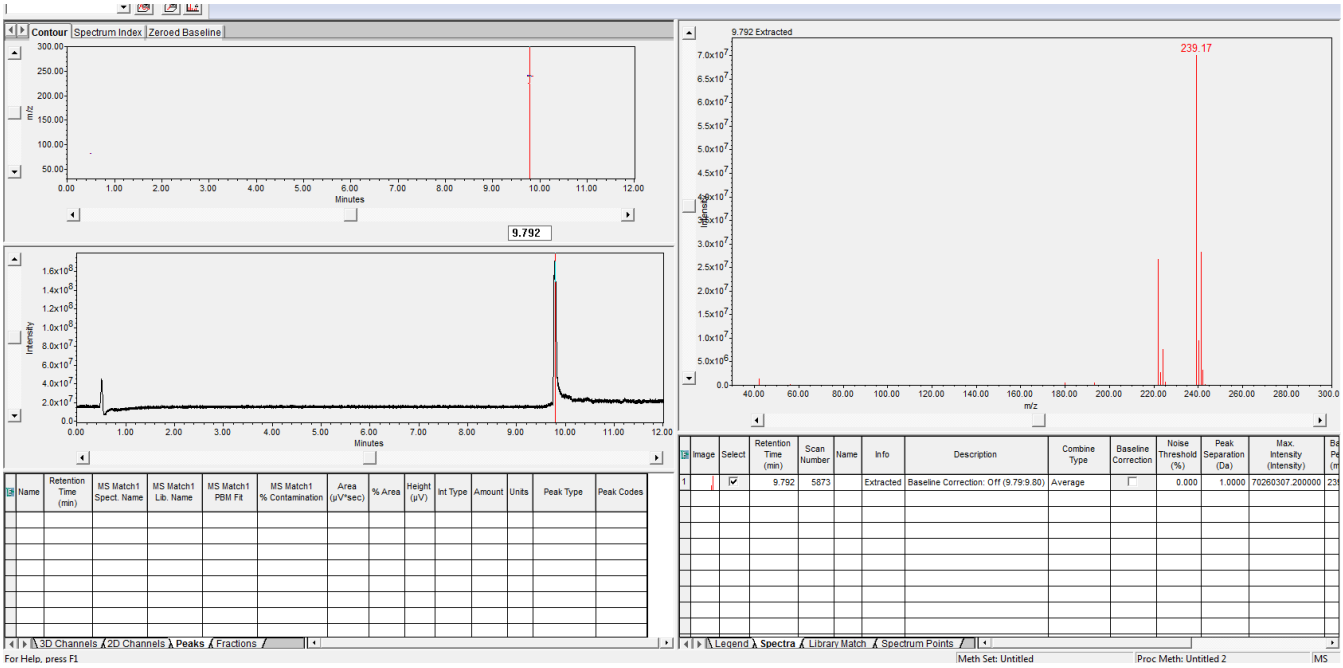


3-7 LC PDA Detector Data with Integrated Peak

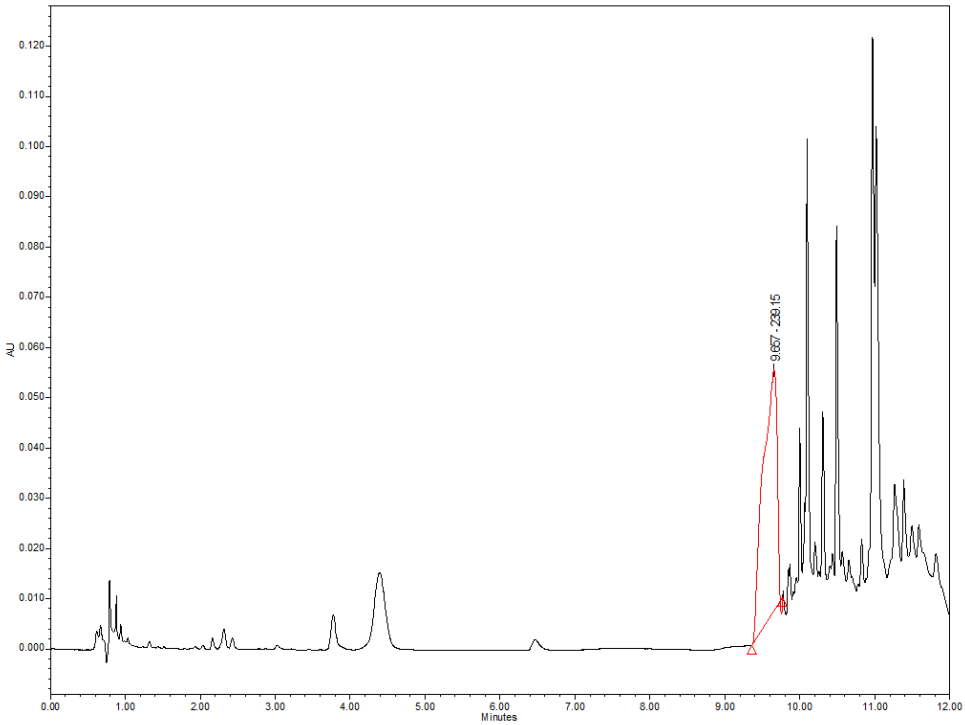


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.764	1219395	100.00	524181	bb			Unknown

3-7 Mass Spectrum

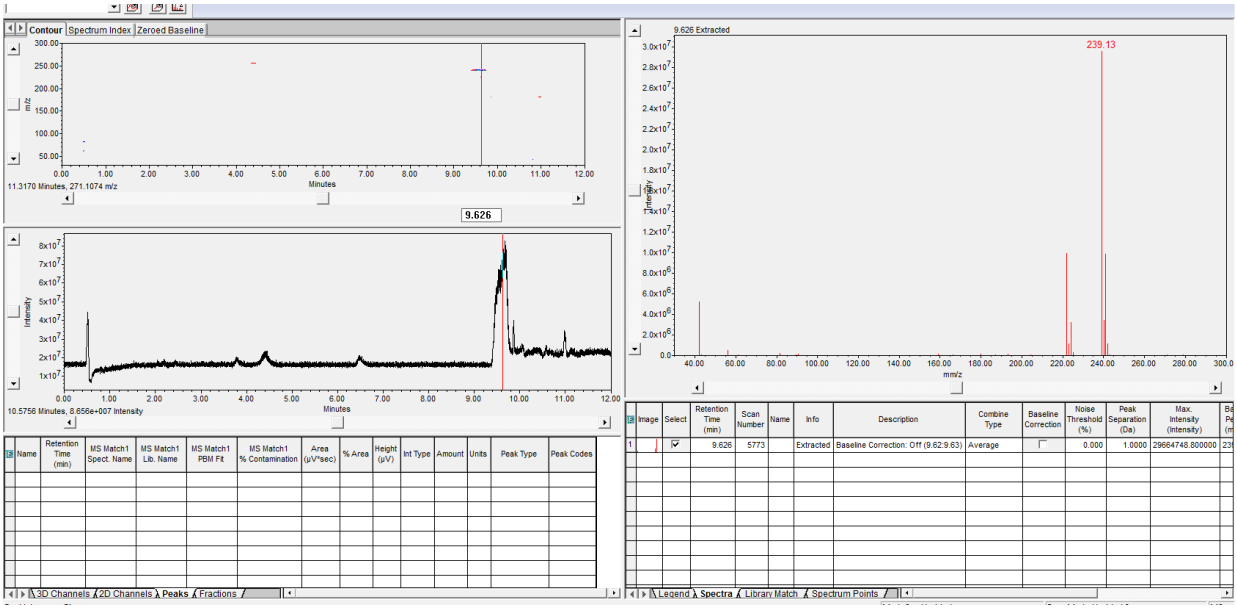


3-7 UV-A LC PDA Detector Data with Integrated Peak

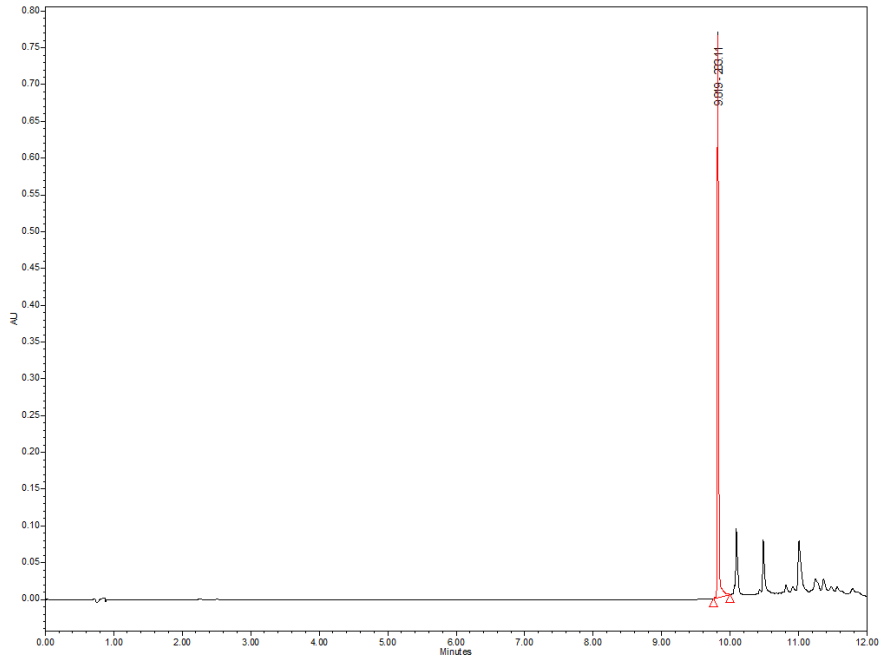


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.657	635231	100.00	47919	bb			Unknown

3-7 UVA Mass Spectrum

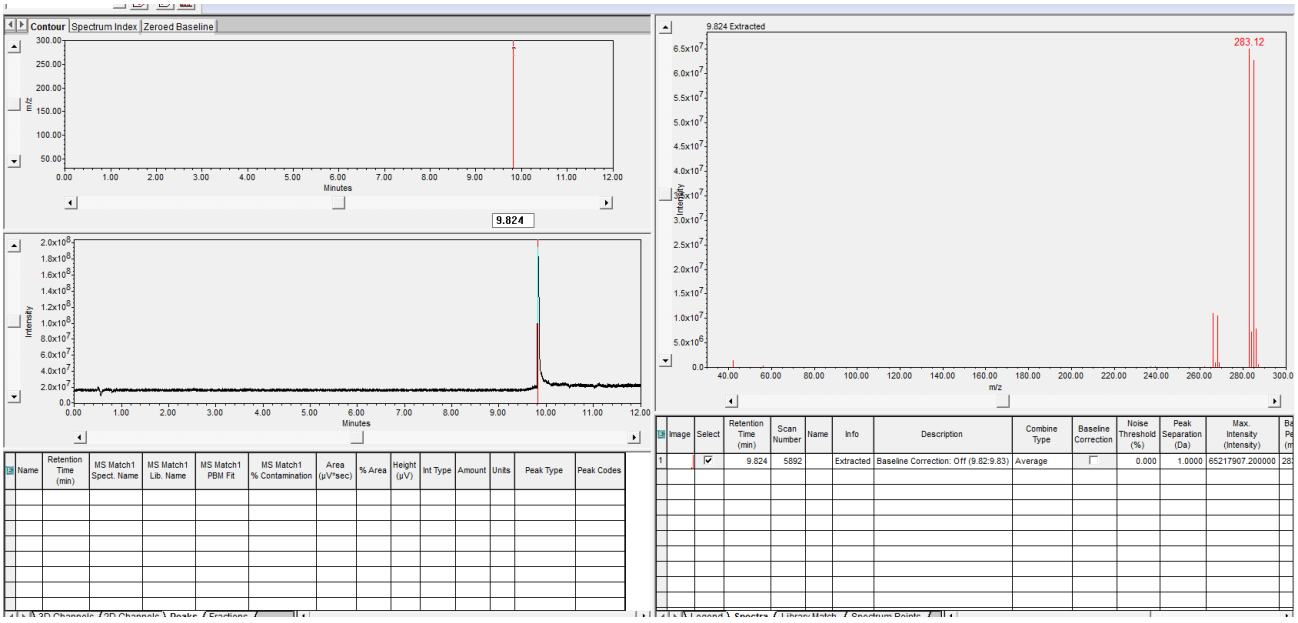


3-8 LC PDA Detector Data with Integrated Peak

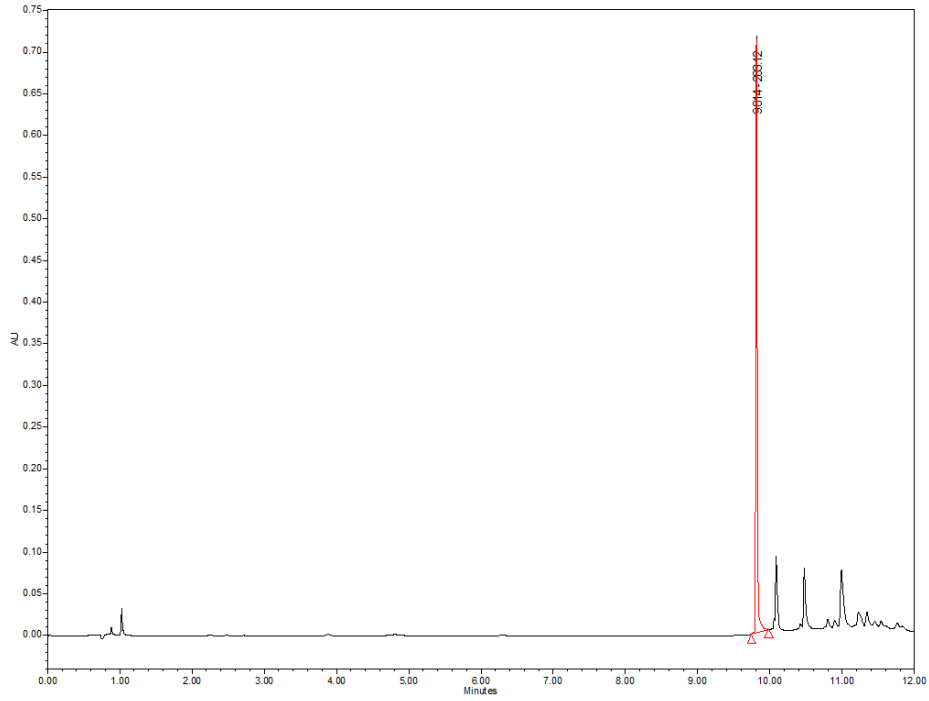


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.819	1146865	100.00	765053	bb			Unknown

3-8 Mass Spectrum

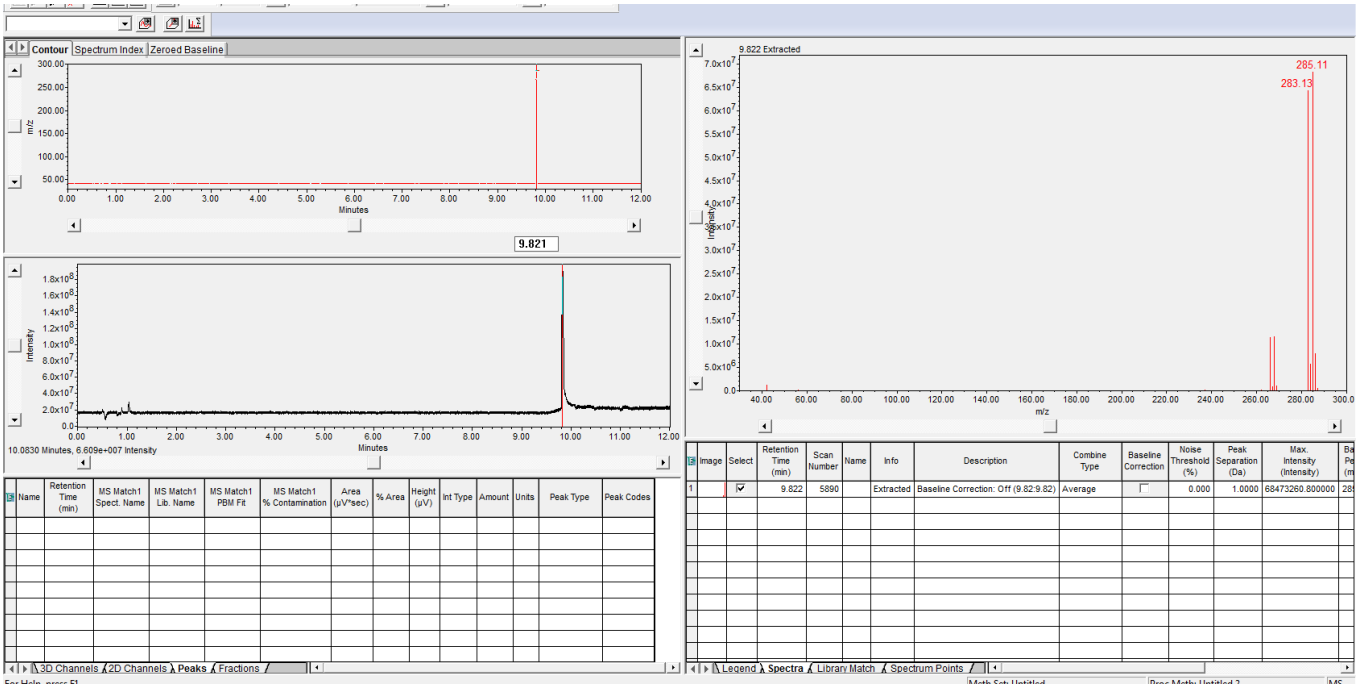


3-8 UV-A LC PDA Detector Data with Integrated Peak

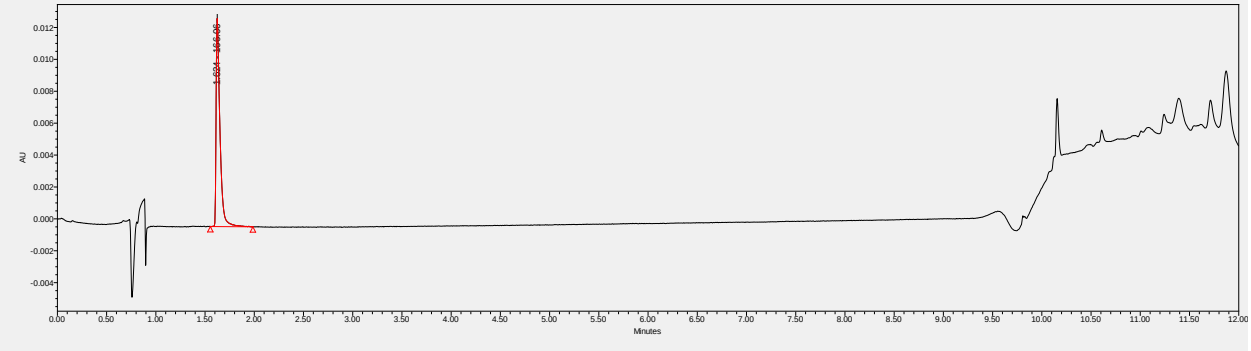


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.814	1071974	100.00	712569	bb			Unknown

3-8 UVA Mass Spectrum

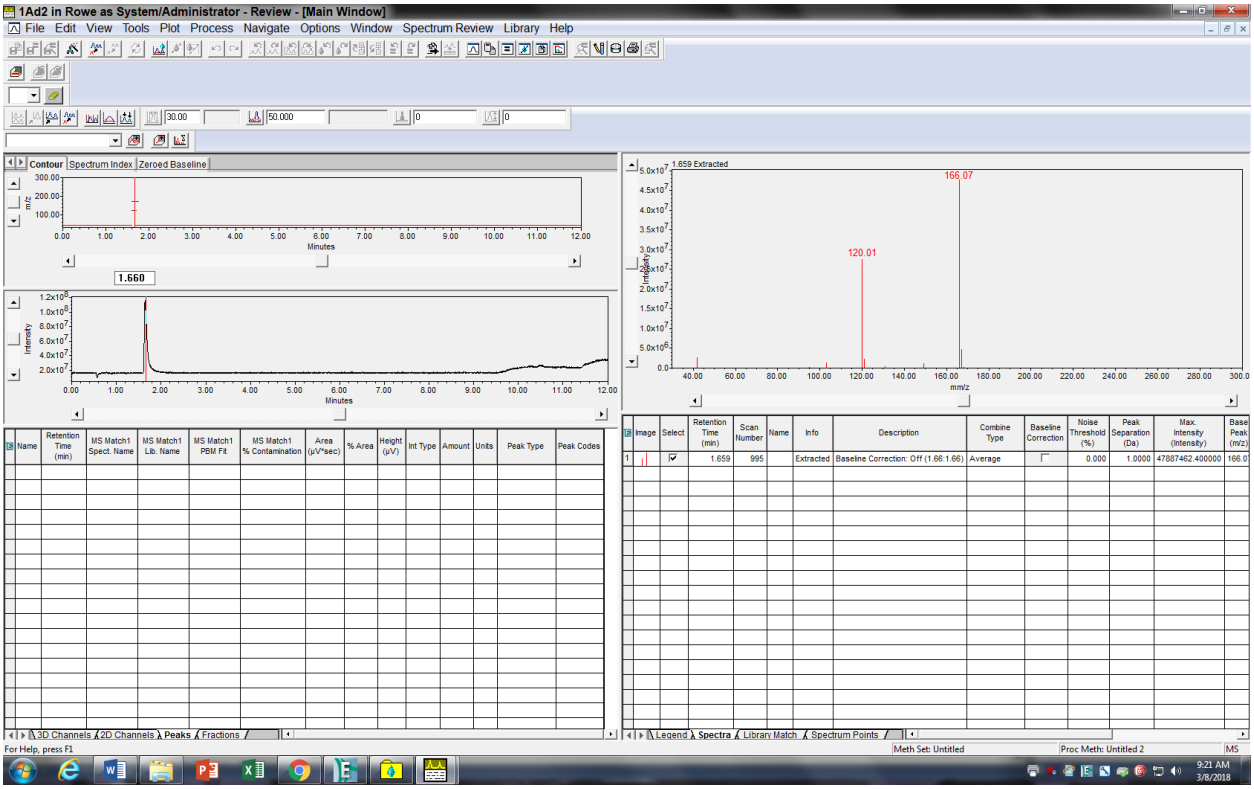


1 LC PDA Detector Data with Integrated Peak

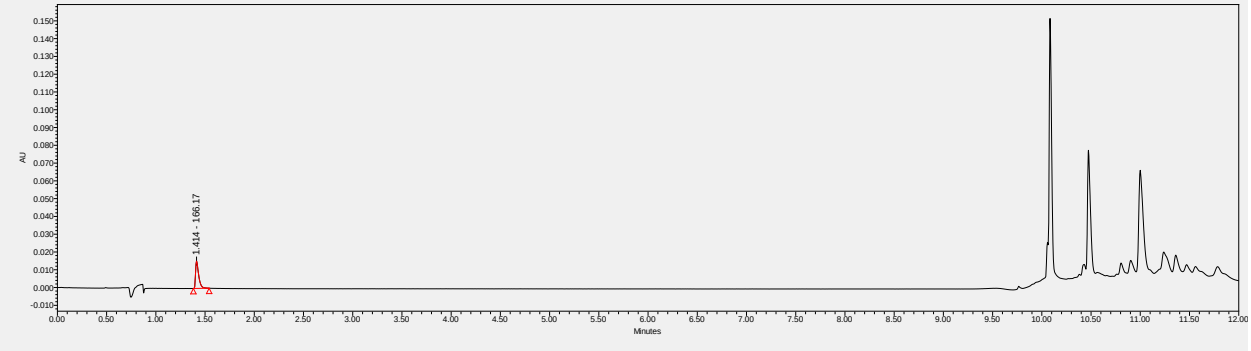


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.624	35449	100.00	13046	bb			Unknown	

1 Mass Spectrum

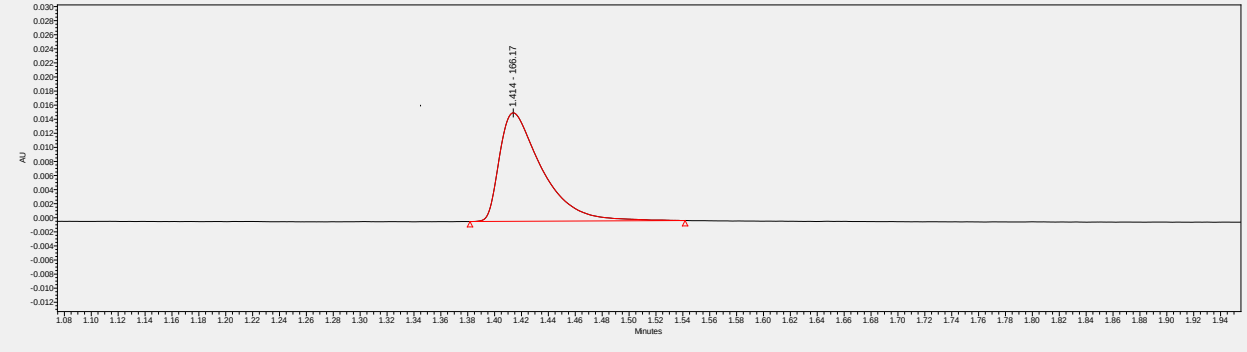


1 UV-B LC PDA Detector Data with Integrated Peak

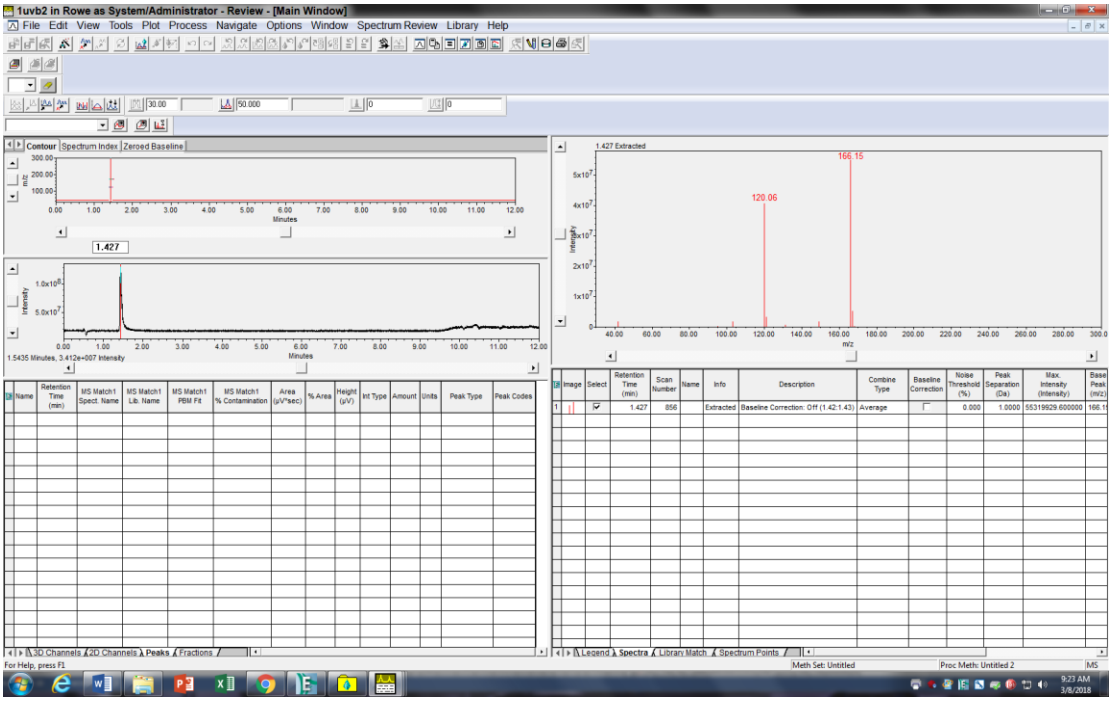


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.414	33814	100.00	15412	bb			Unknown	

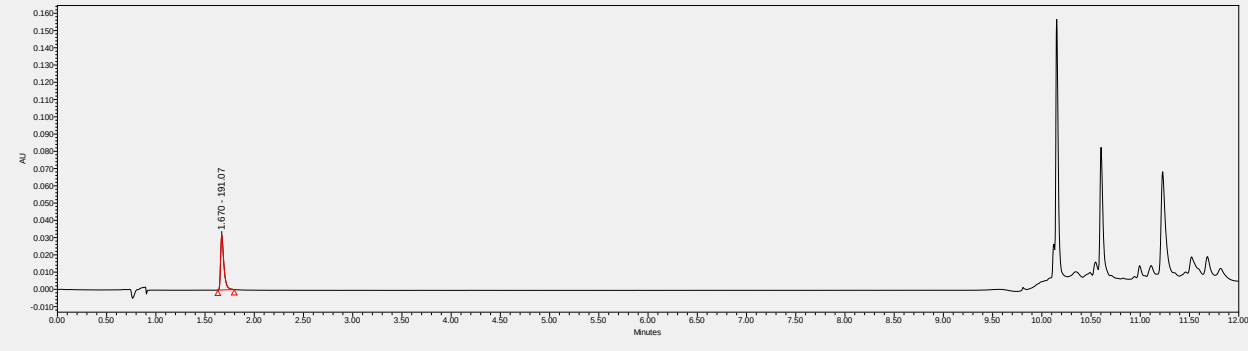
Zoom in of integrated peak shown above:



1 UVB Mass Spectrum

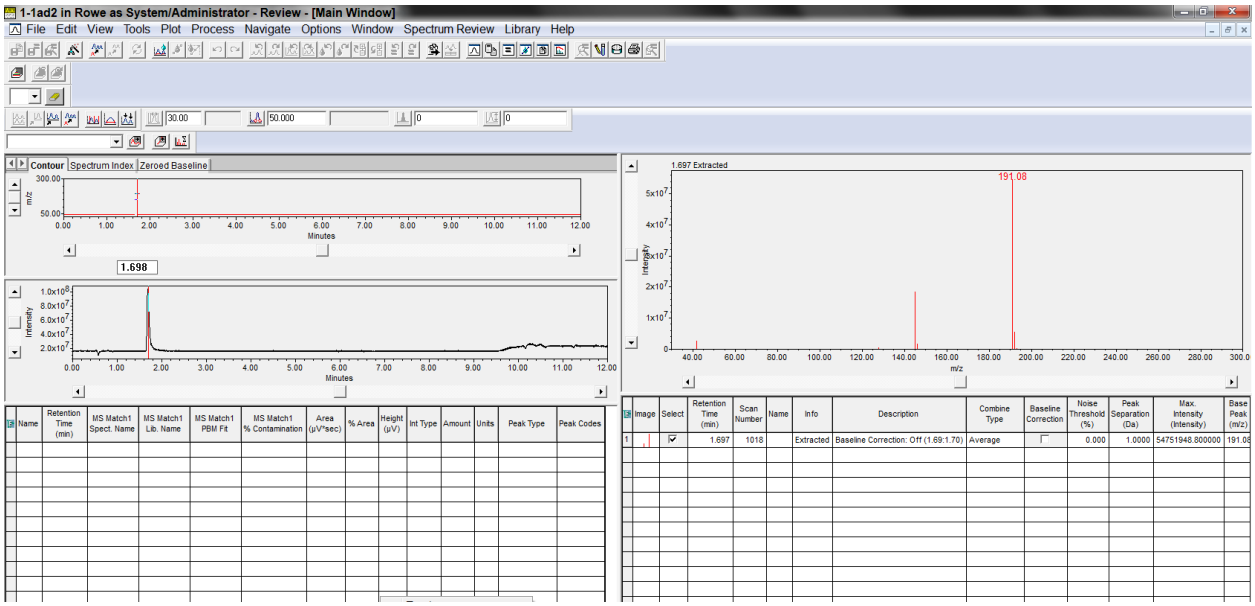


1-1 LC PDA Detector Data with Integrated Peak

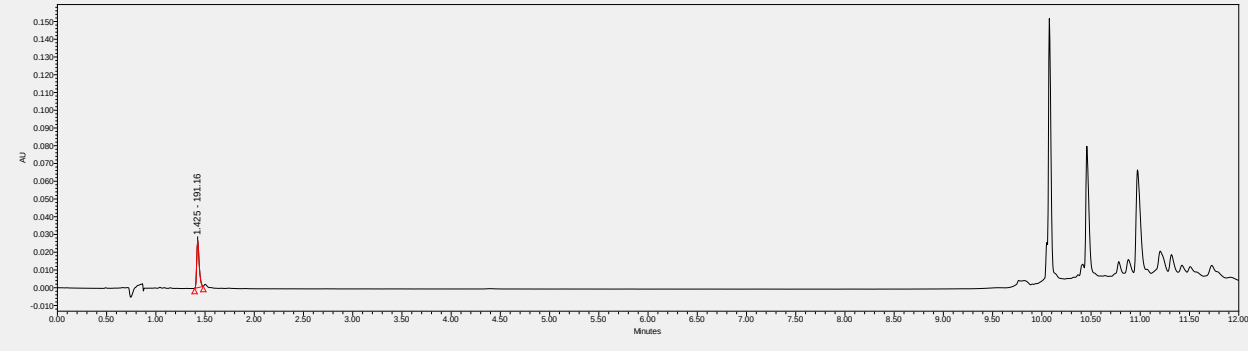


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.670	72903	100.00	31568	bb			Unknown

1-1 Mass Spectrum

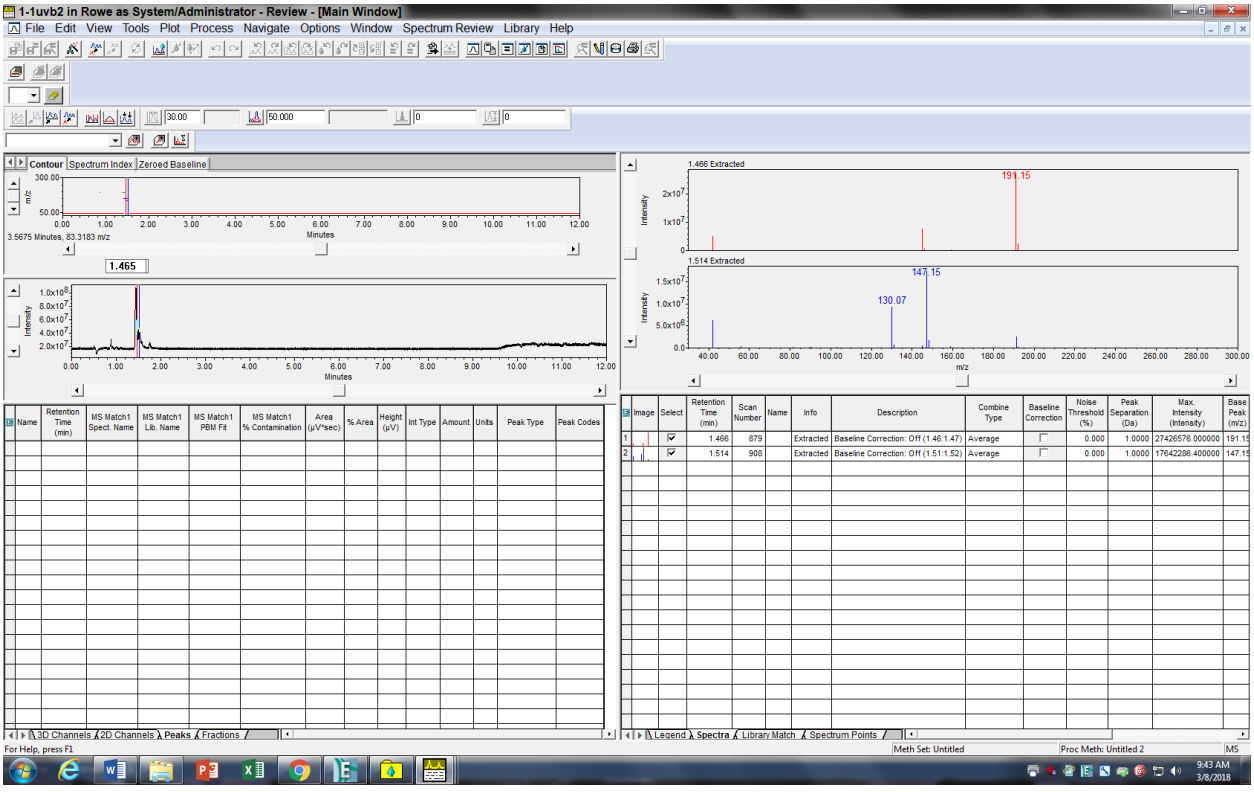


1-1UV-B LC PDA Detector Data with Integrated Peak

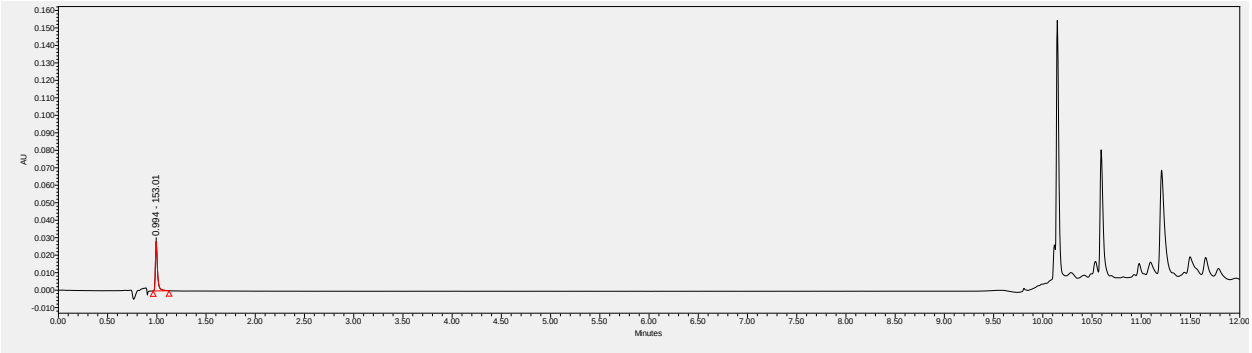


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.425	46285	100.00	26404	bb			Unknown

1-1 UVB Mass Spectrum

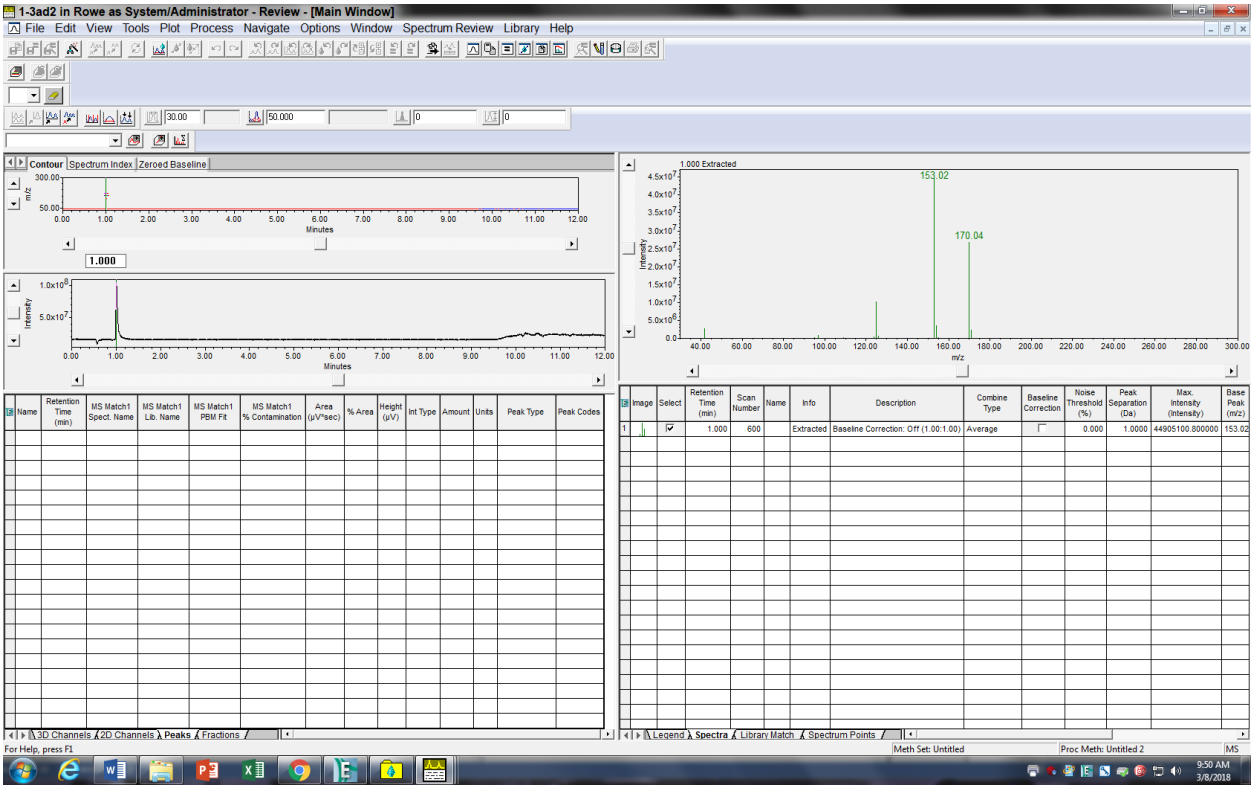


1-3 LC PDA Detector Data with Integrated Peak

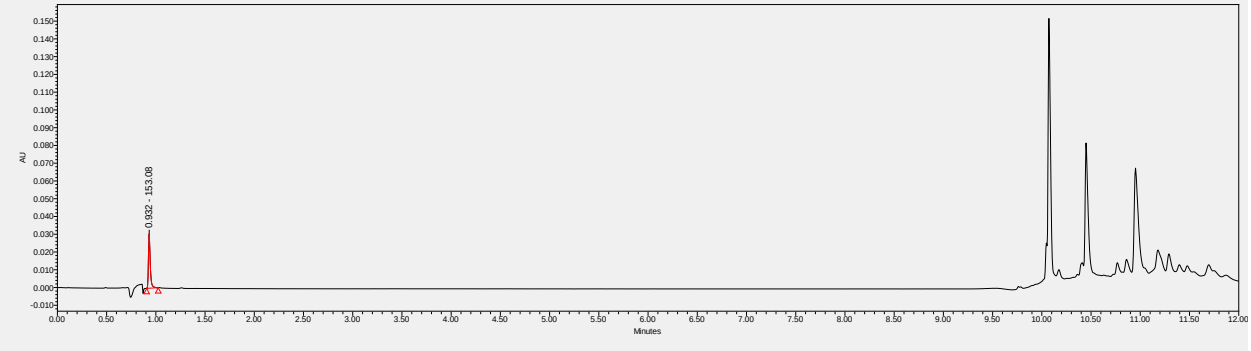


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.994	41530	100.00	28142	bb			Unknown	

1-3 Mass Spectrum

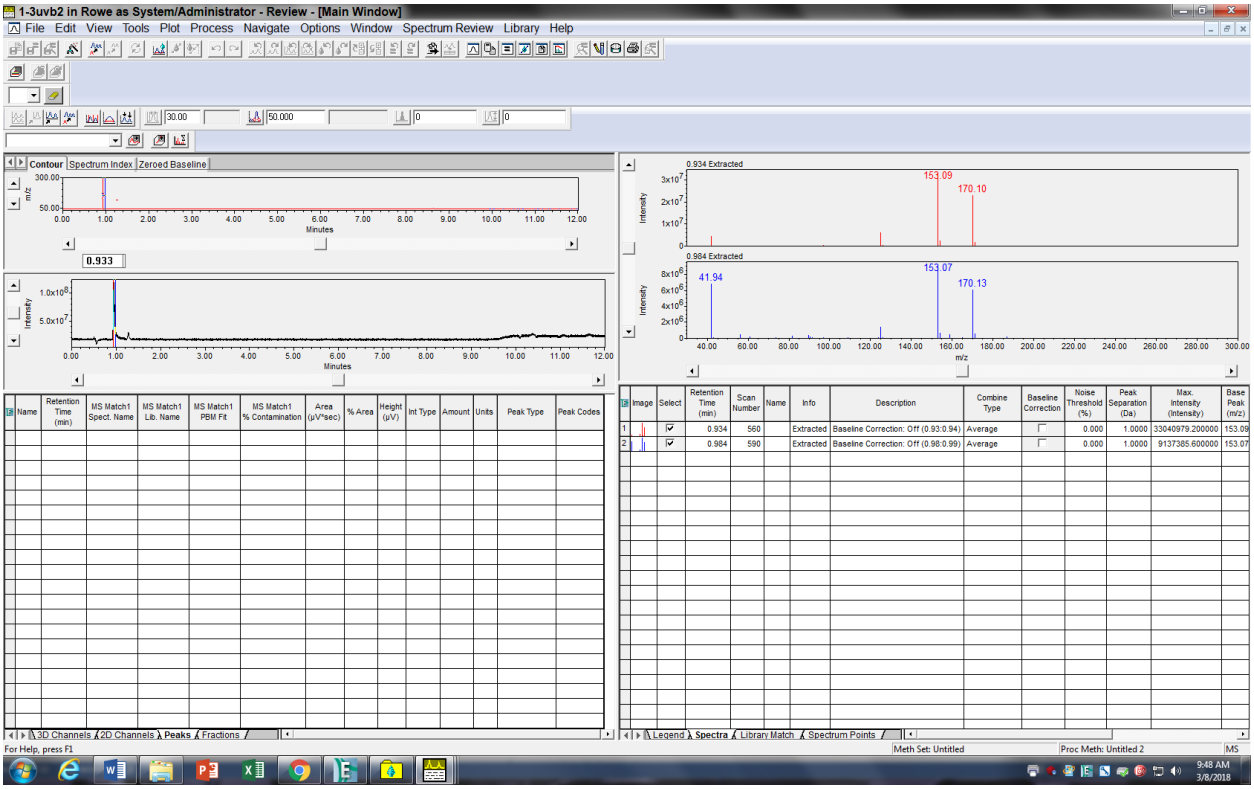


1-3 UV-B LC PDA Detector Data with Integrated Peak

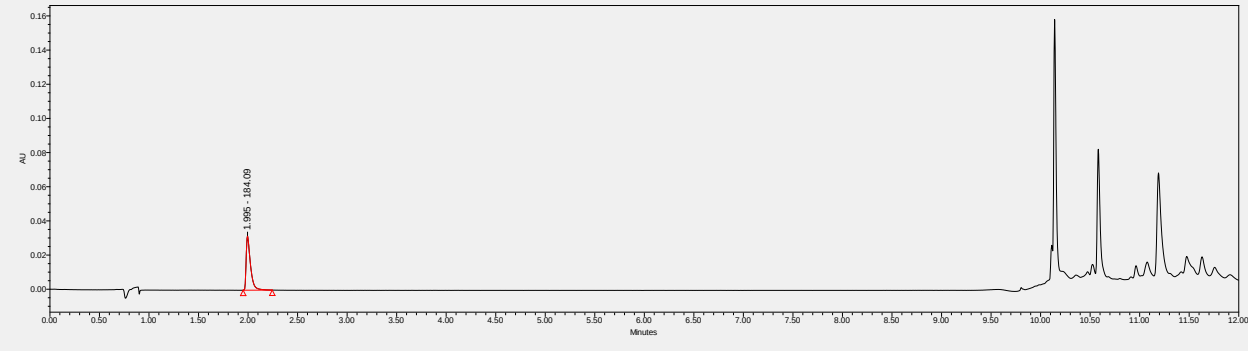


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.932	39169	100.00	30526	bb			Unknown

1-3 UVB Mass Spectrum

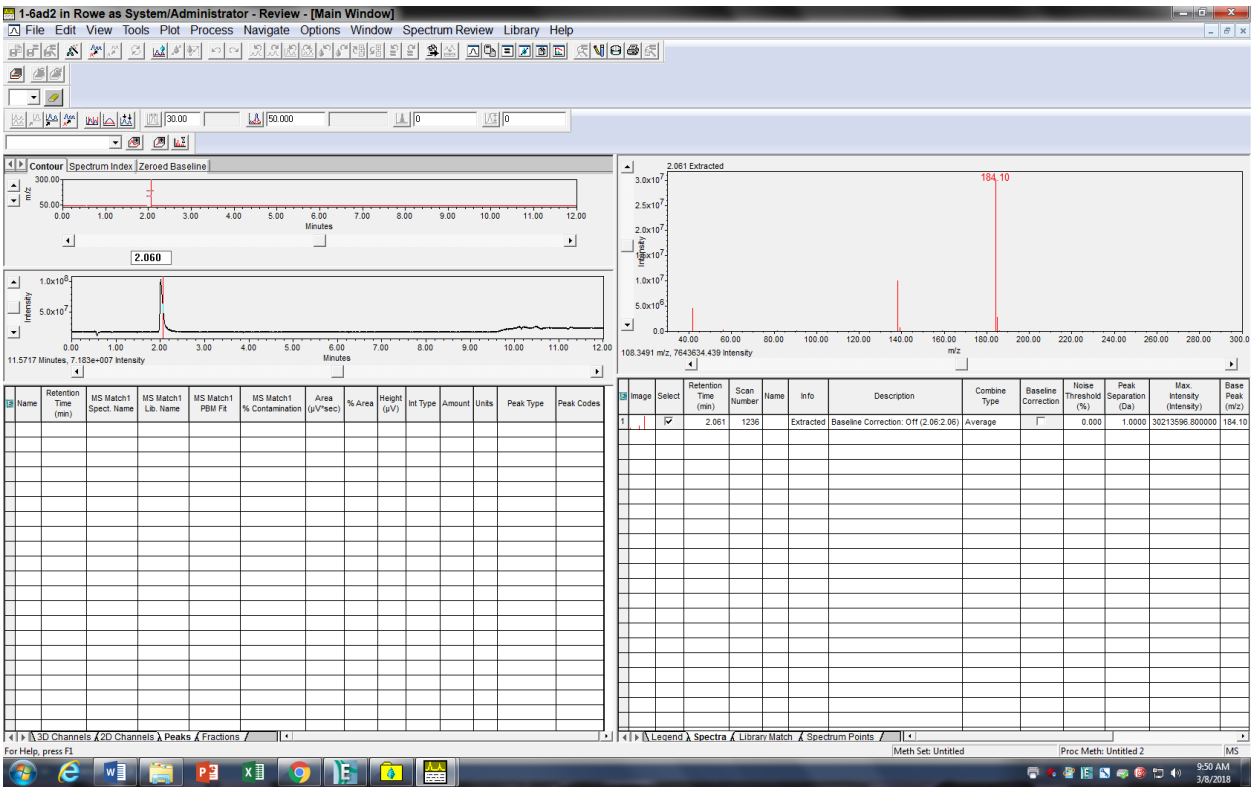


1-6 LC PDA Detector Data with Integrated Peak

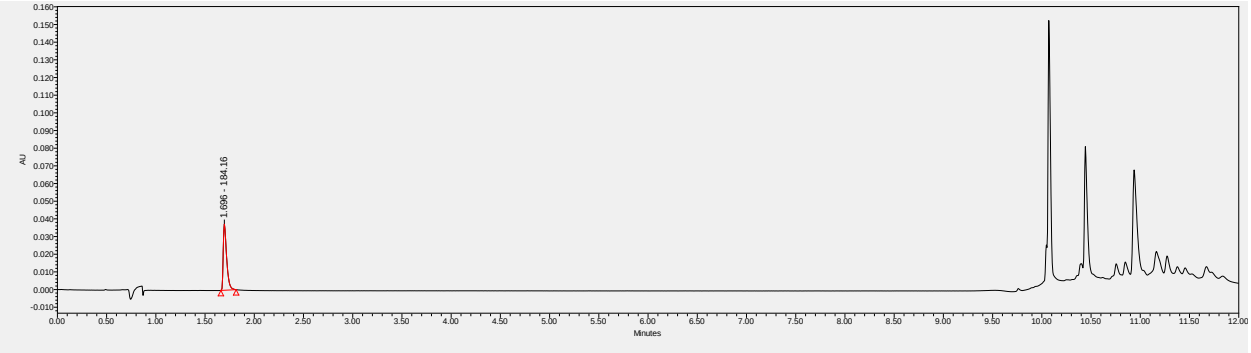


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.995	95629	100.00	31613	bb			Unknown	

1-6 Mass Spectrum

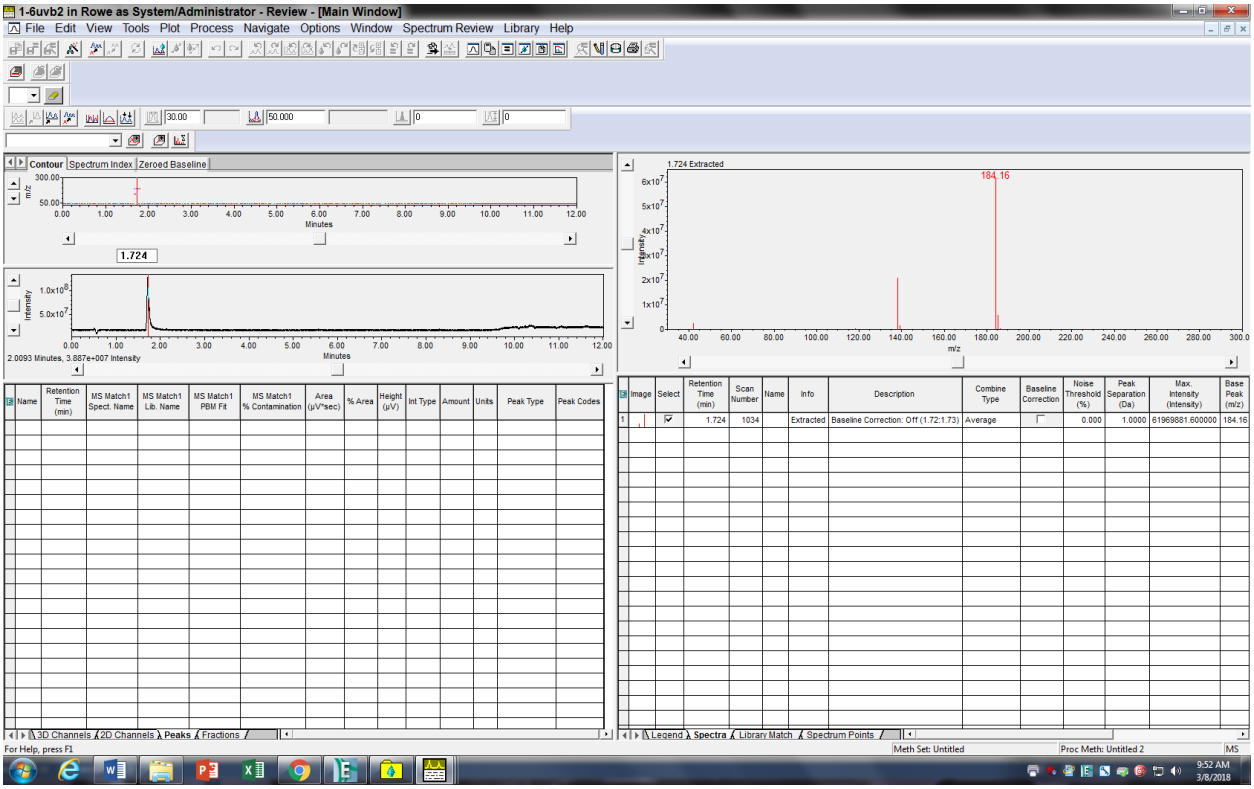


1-6 UV-B LC PDA Detector Data with Integrated Peak

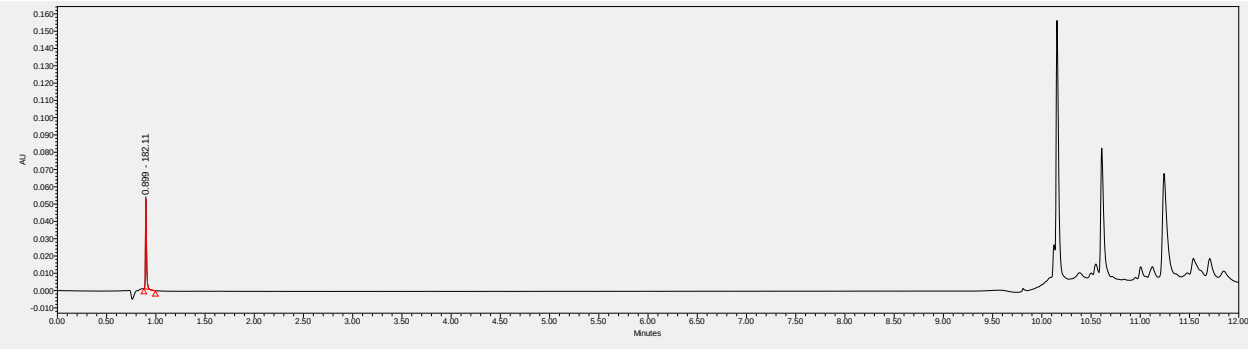


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.696	90617	100.00	37460	bb			Unknown	

1-6 UVB Mass Spectrum

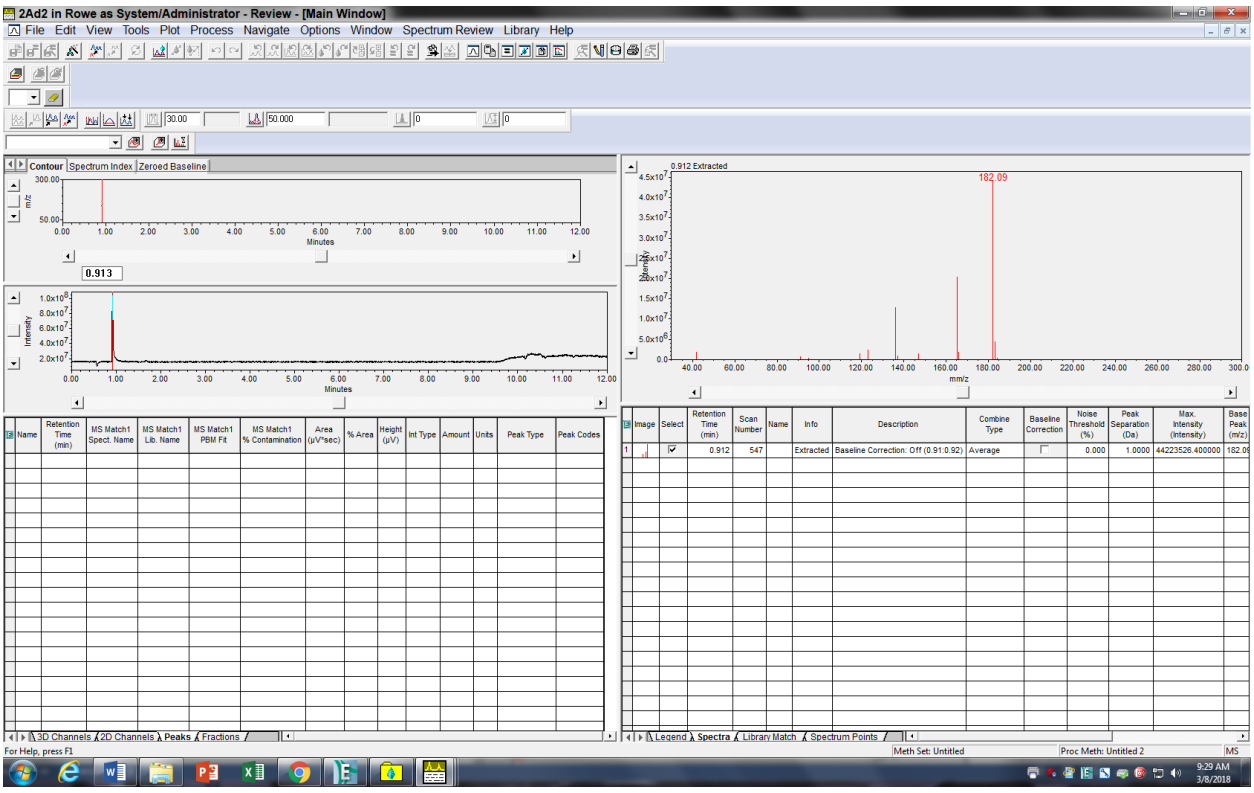


2 LC PDA Detector Data with Integrated Peak

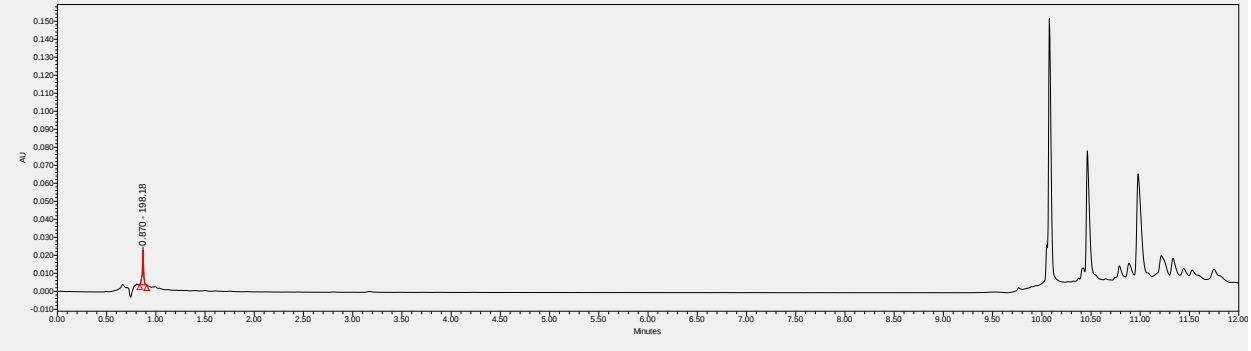


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.899	39379	100.00	52026	bb			Unknown

2 Mass Spectrum

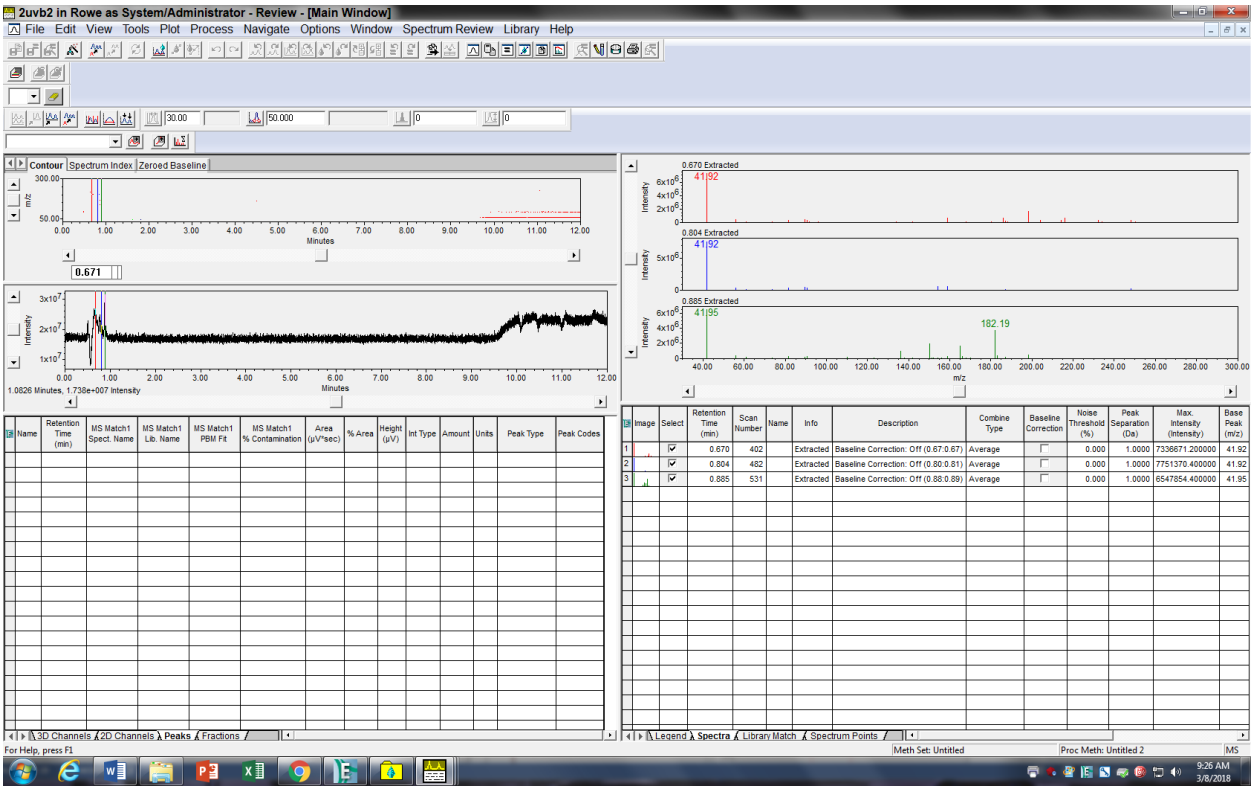


2 UV-B LC PDA Detector Data with Integrated Peak

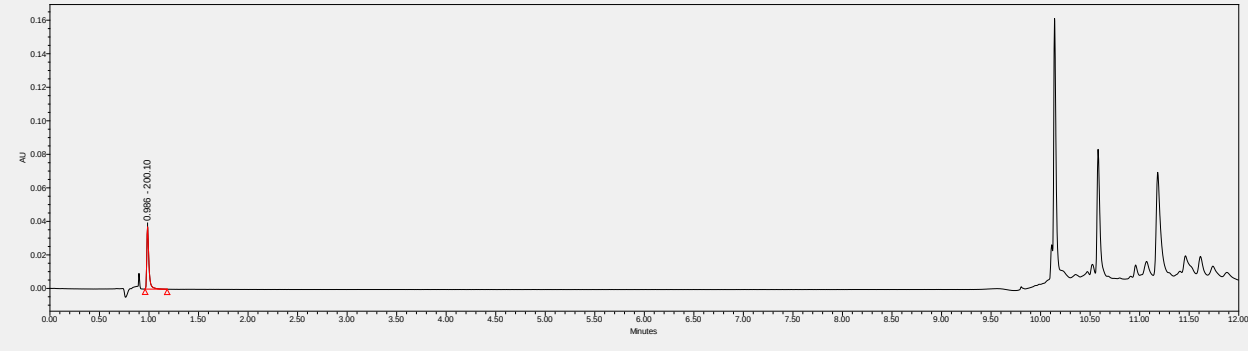


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.870	17015	100.00	18986	bb			Unknown

2 UVB Mass Spectrum

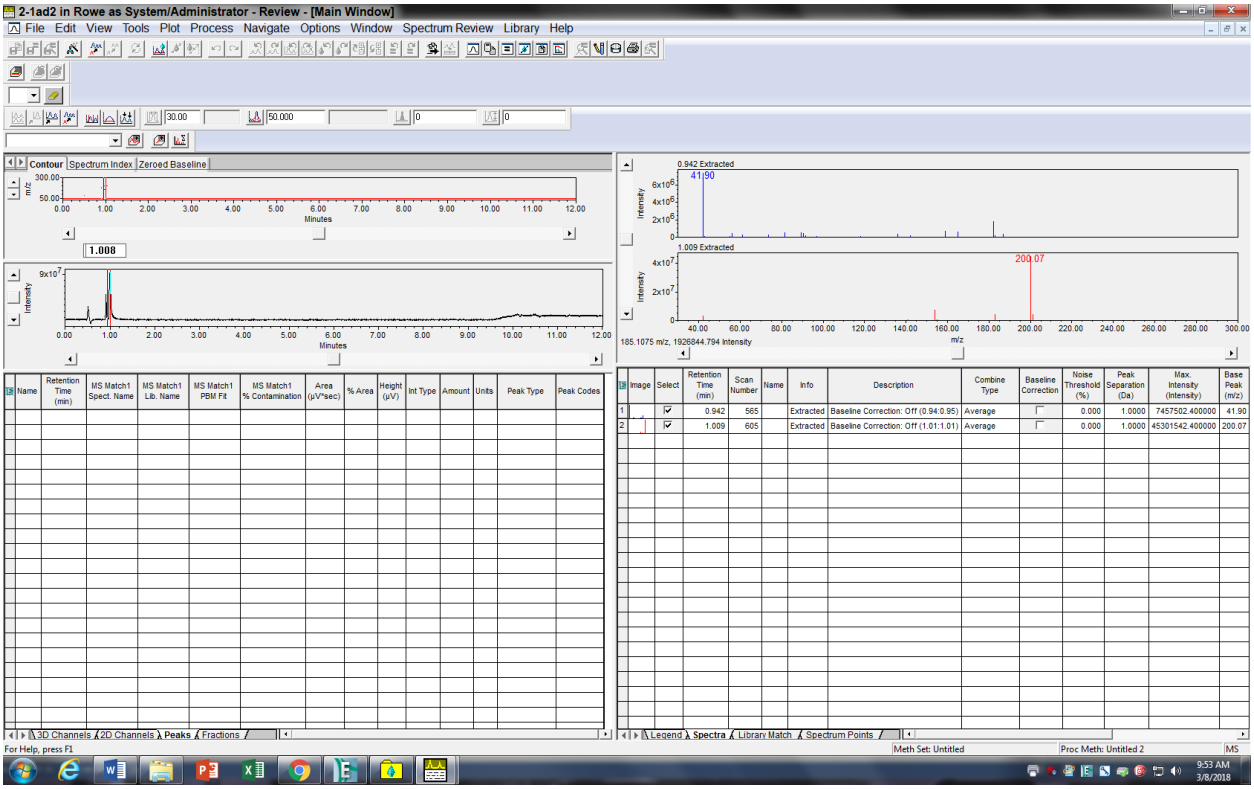


2-1 LC PDA Detector Data with Integrated Peak

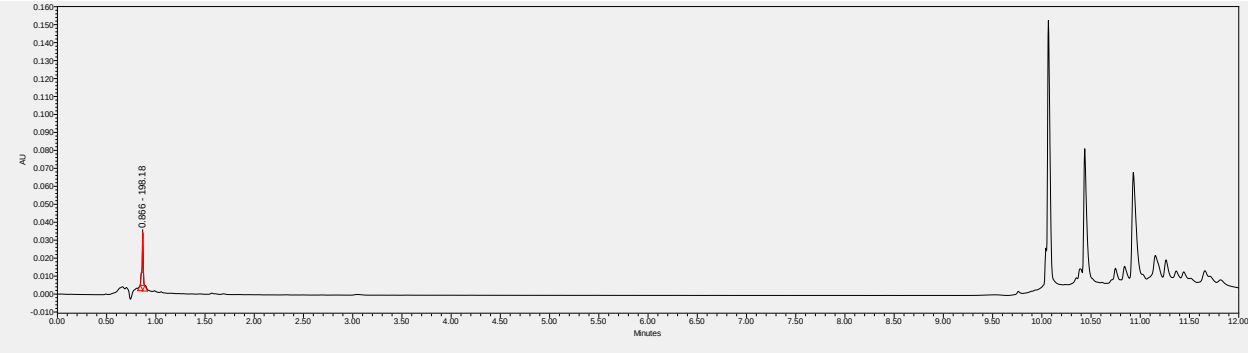


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.986	55681	100.00	37139	bb			Unknown	

2-1 Mass Spectrum

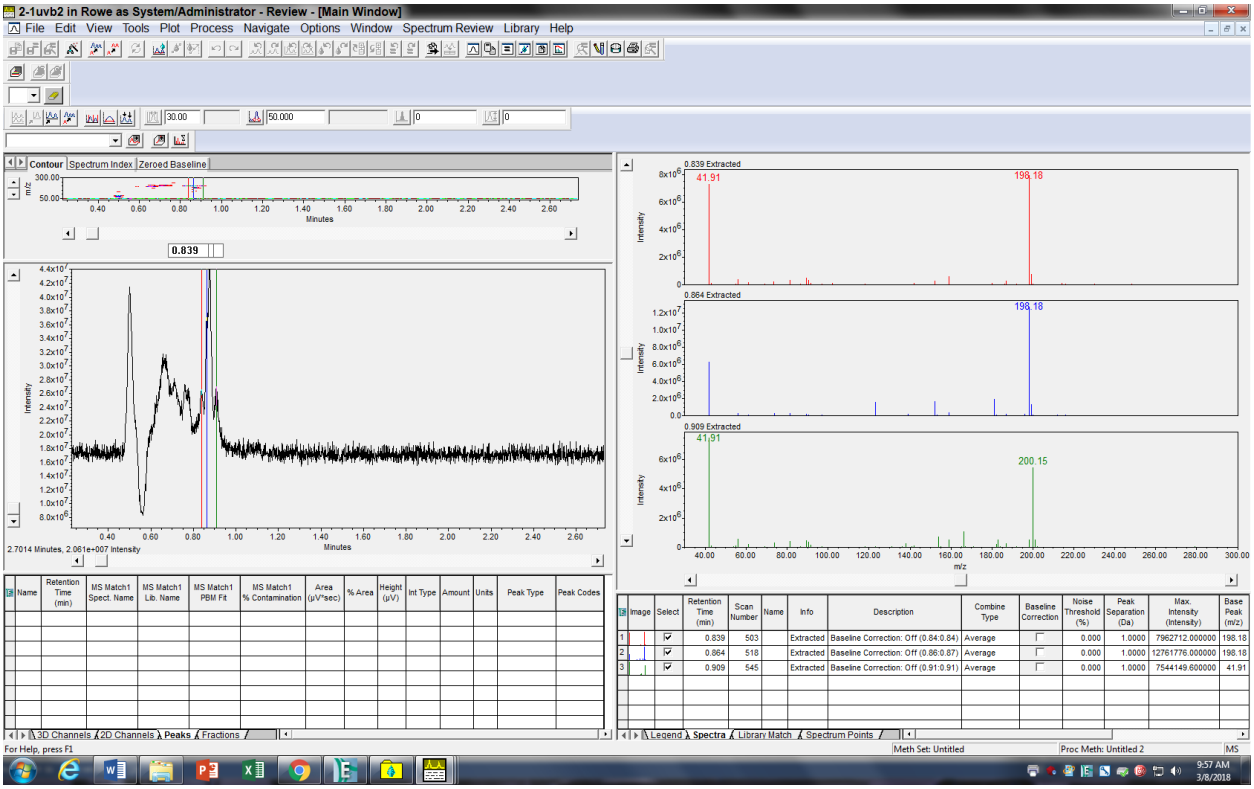


2-1 UV-B LC PDA Detector Data with Integrated Peak

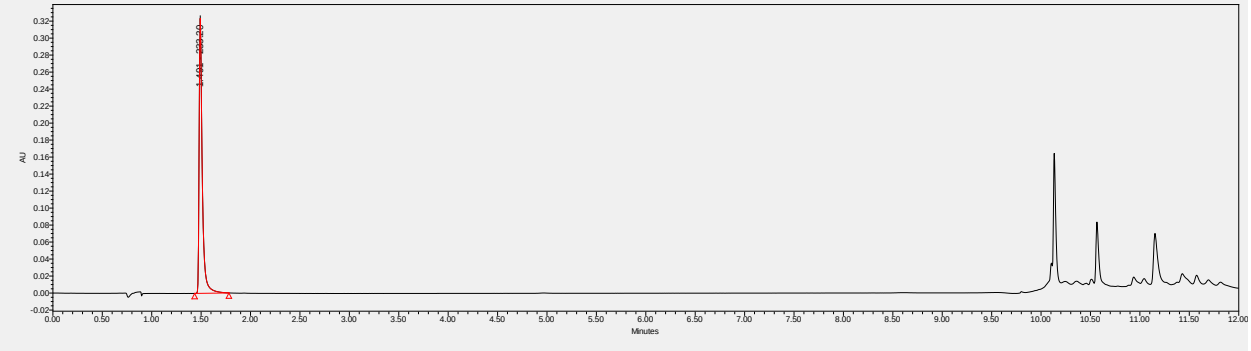


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.866	24197	100.00	29484	bb			Unknown	

2-1 UVB Mass Spectrum

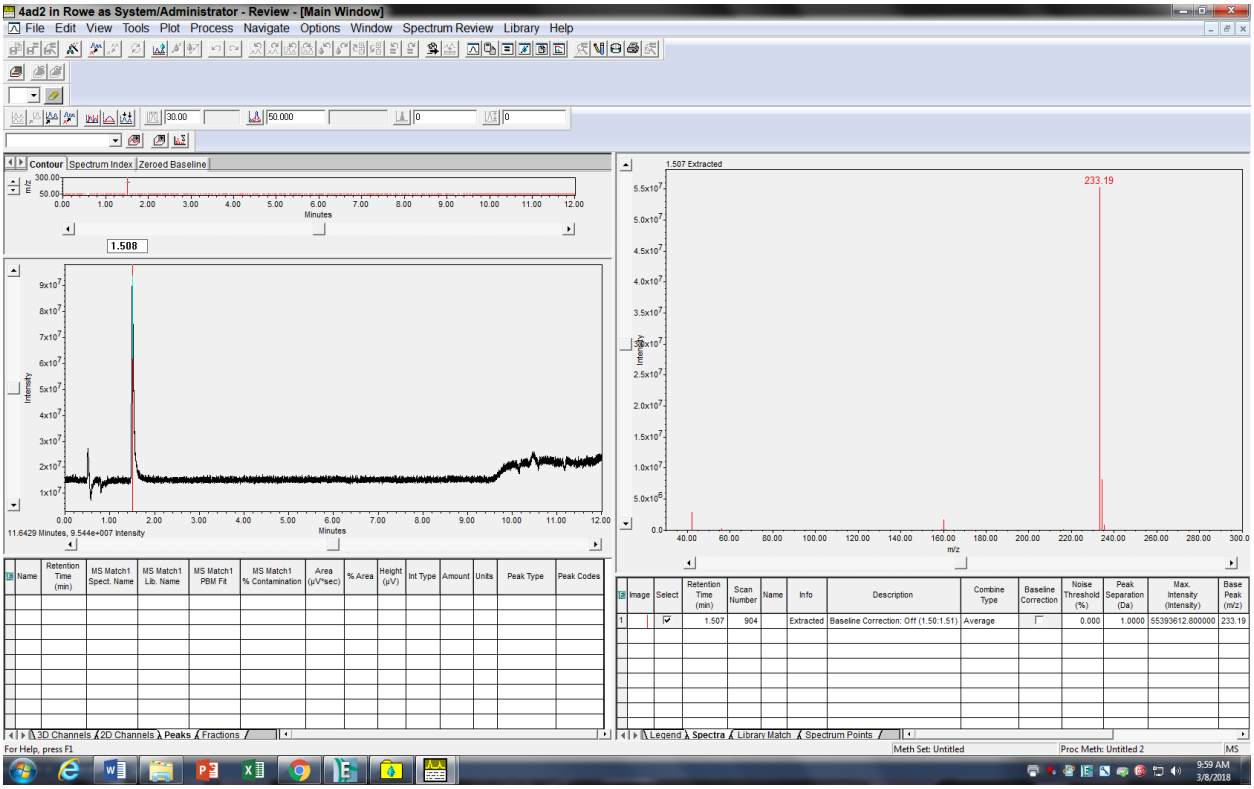


4 LC PDA Detector Data with Integrated Peak

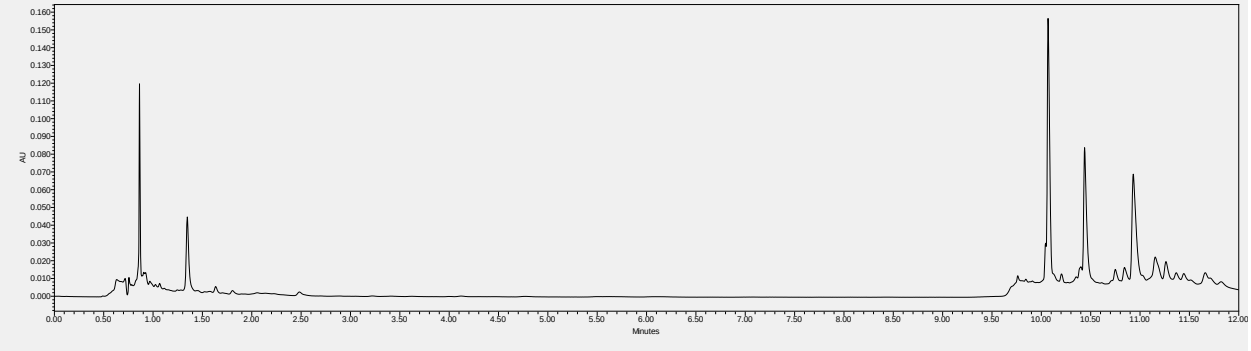


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.491	716988	100.00	323502	bb			Unknown

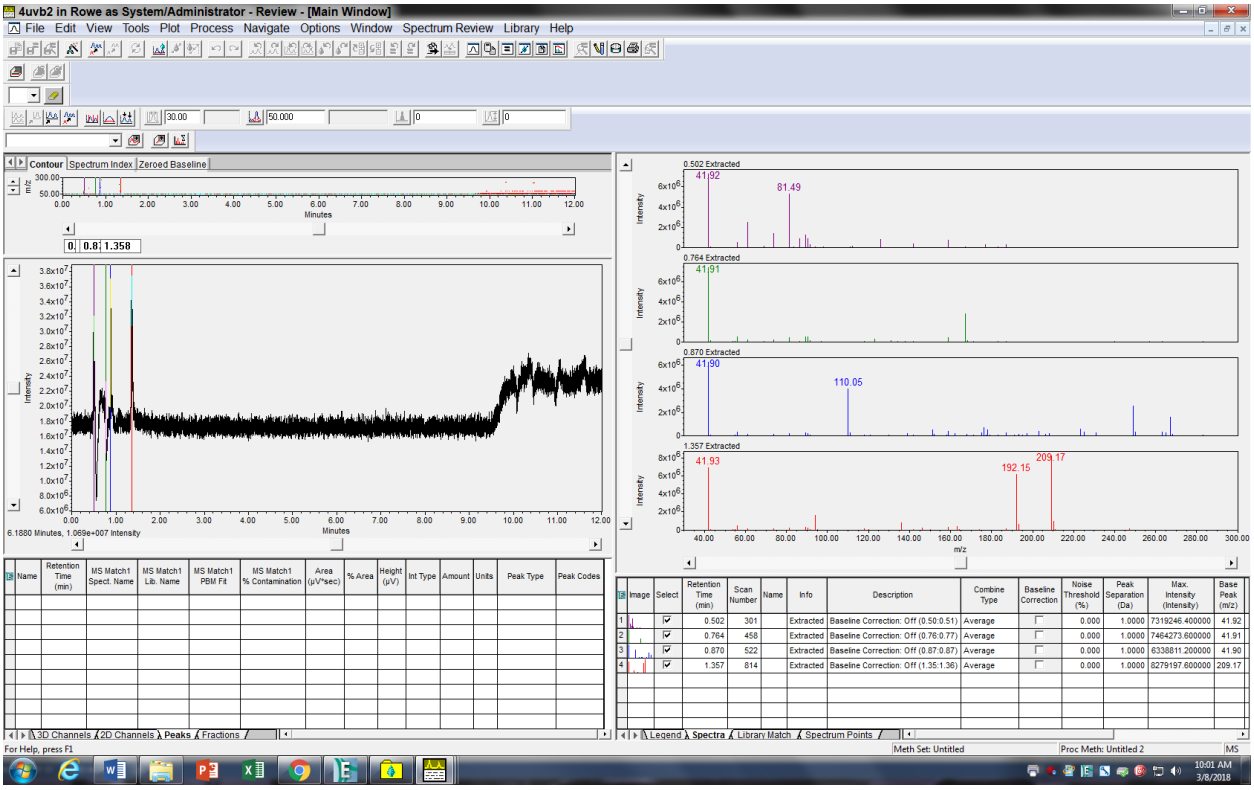
4 Mass Spectrum



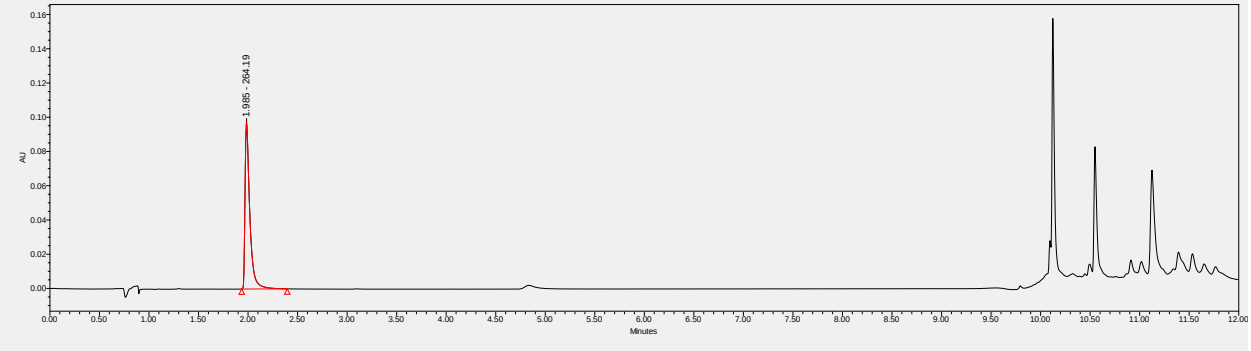
4 UV-B LC PDA Detector Data with Integrated Peak



4 UVB Mass Spectrum

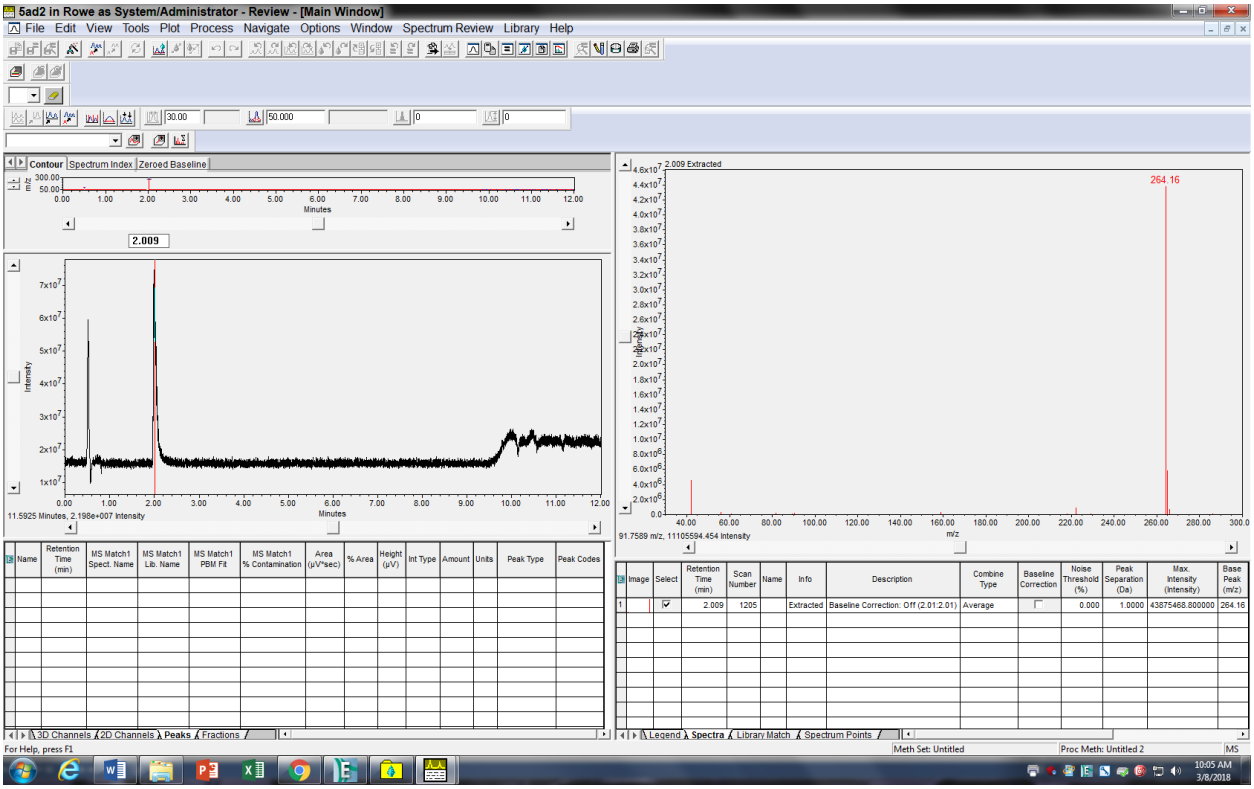


5 LC PDA Detector Data with Integrated Peak

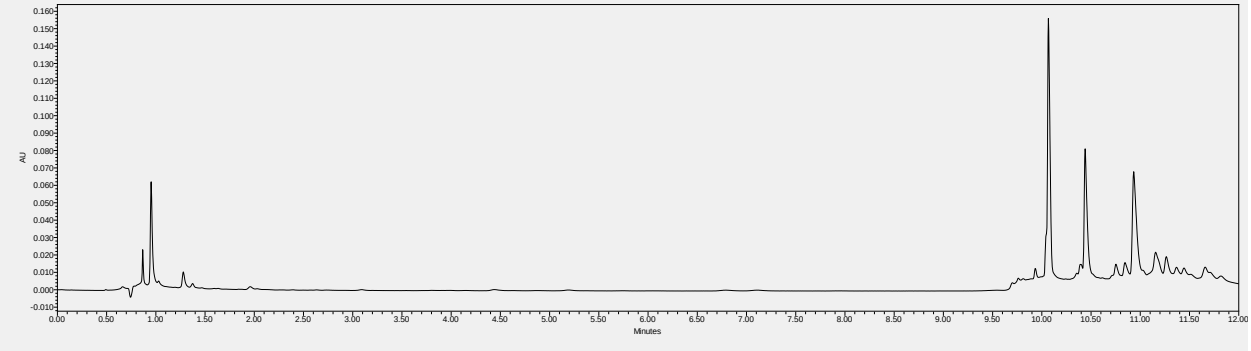


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.985	327286	100.00	97203	bb			Unknown	

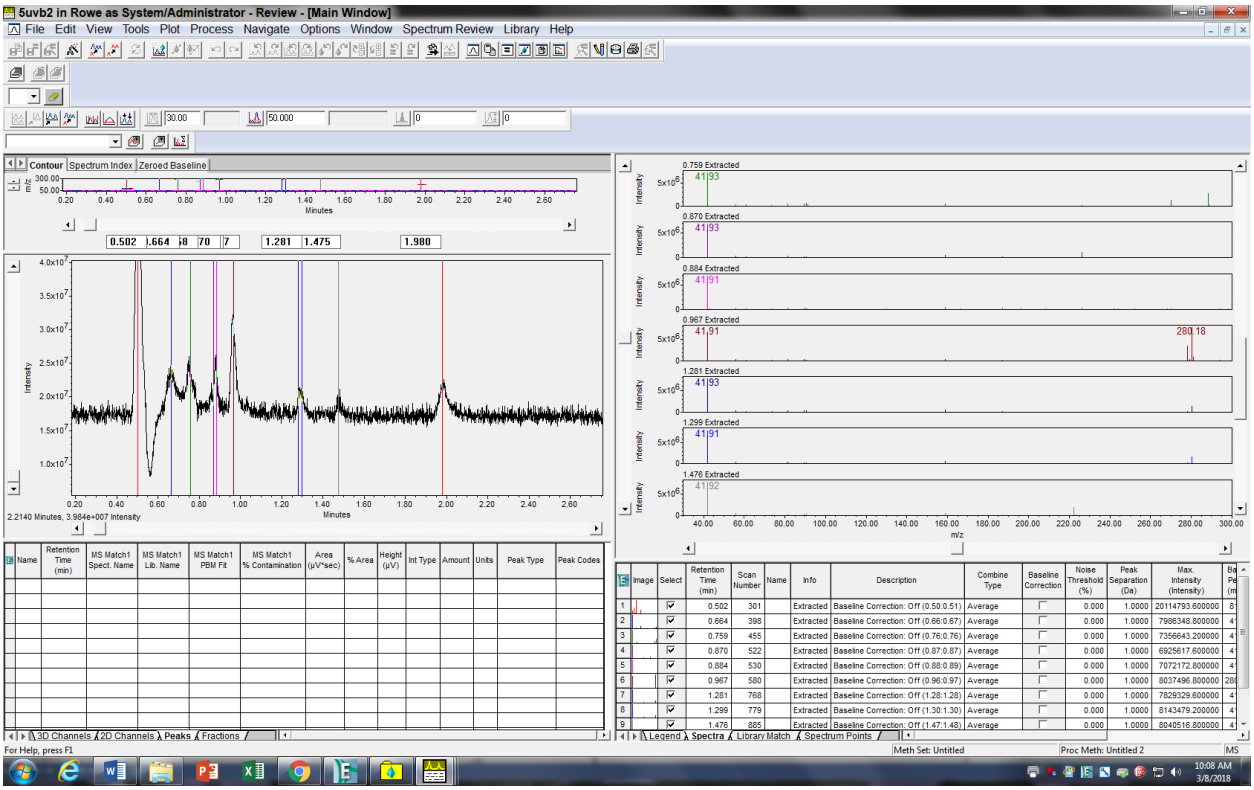
5 Mass Spectrum



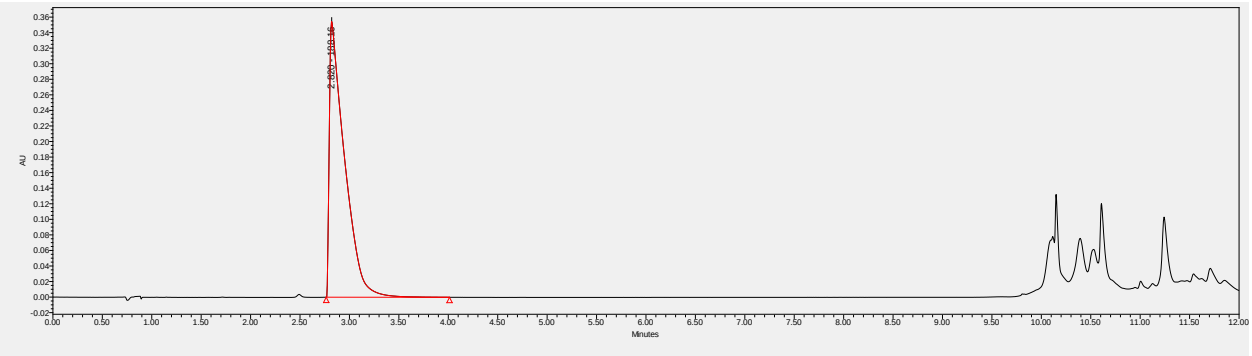
5 UV-B LC PDA Detector Data with Integrated Peak



5 UVB Mass Spectrum

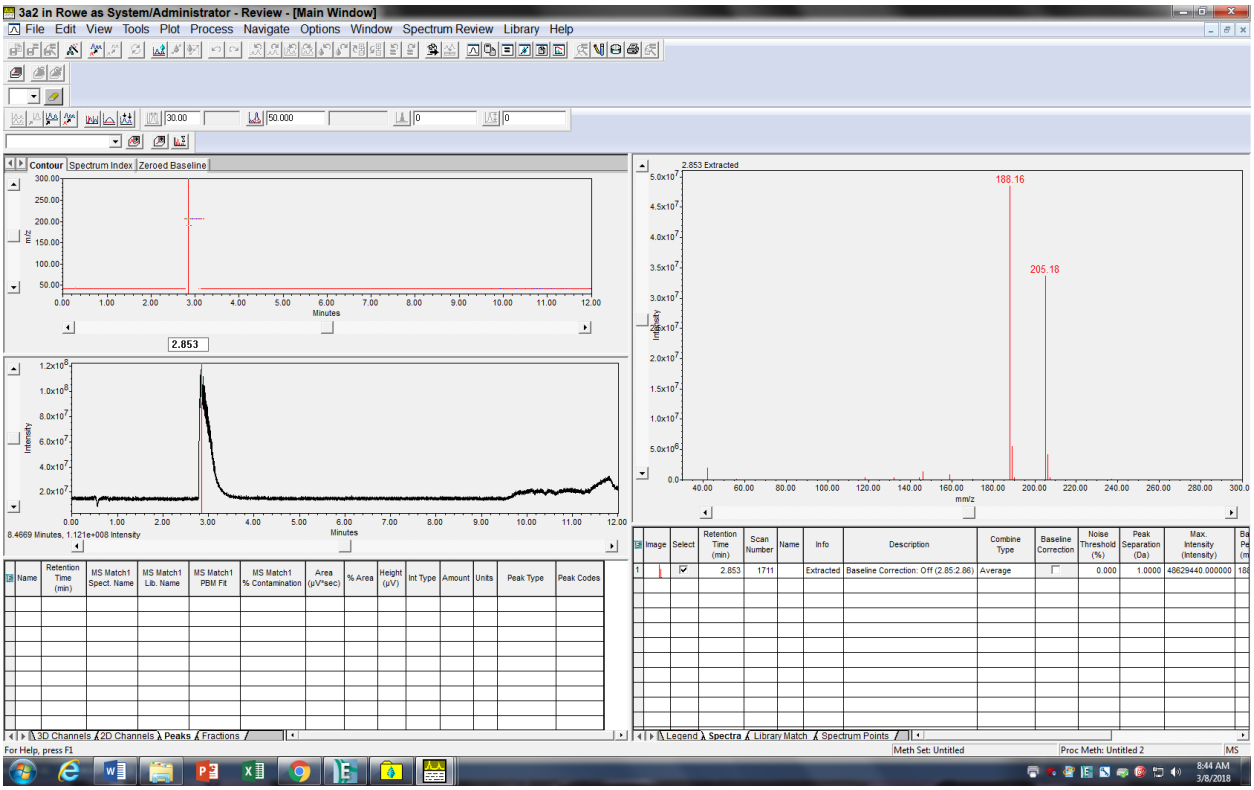


3 LC PDA Detector Data with Integrated Peak

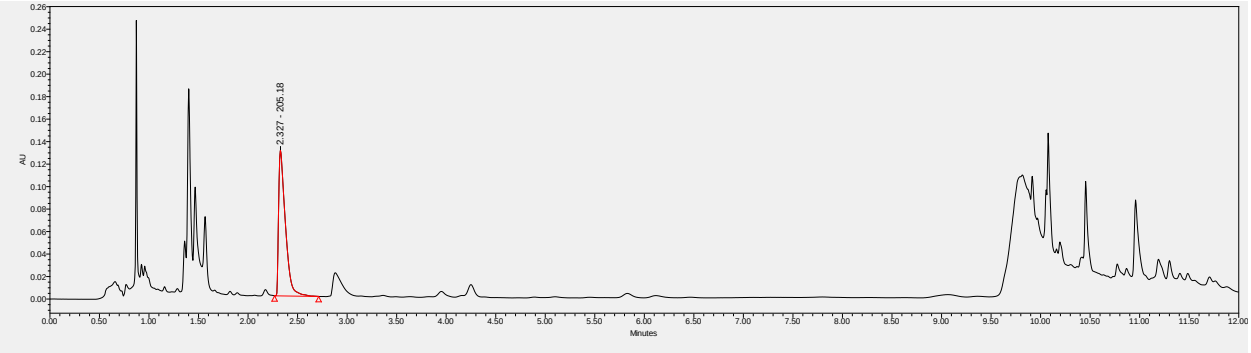


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.820	3792679	100.00	354425	bb			Unknown

3 Mass Spectrum

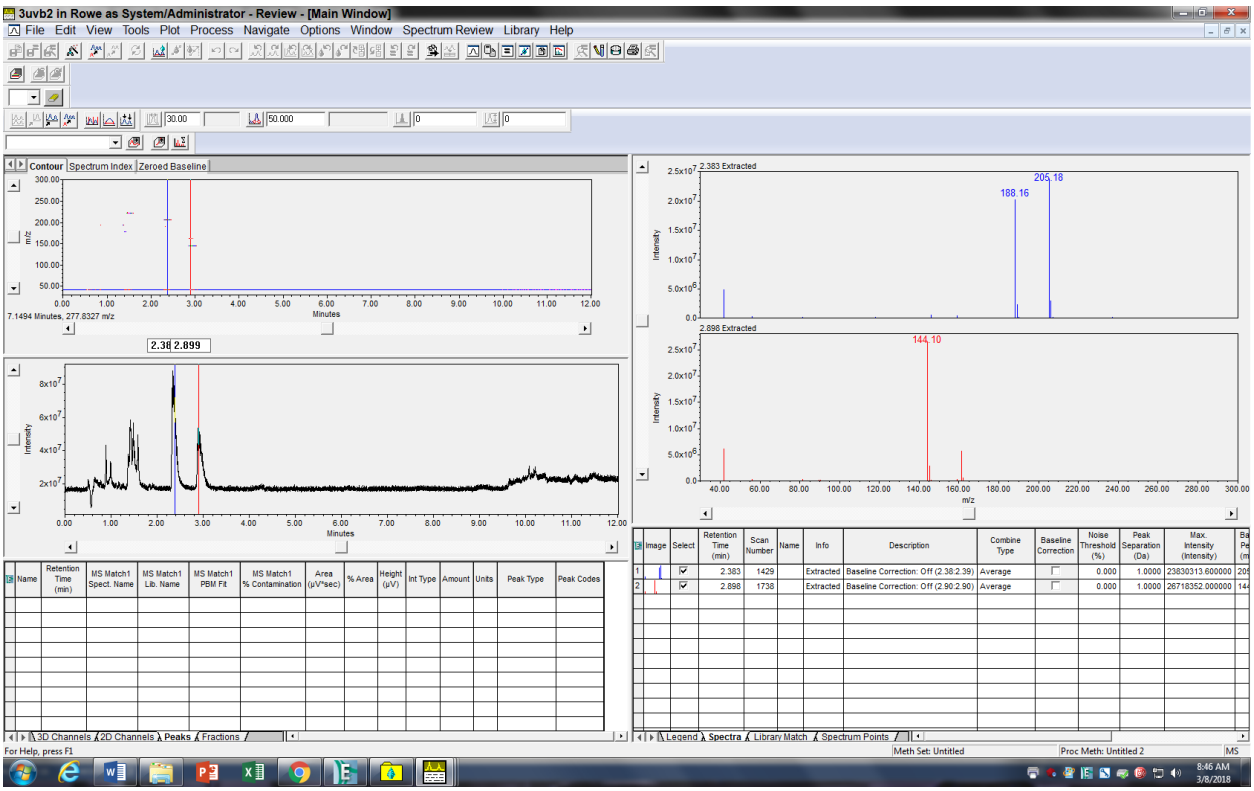


3 UV-B LC PDA Detector Data with Integrated Peak

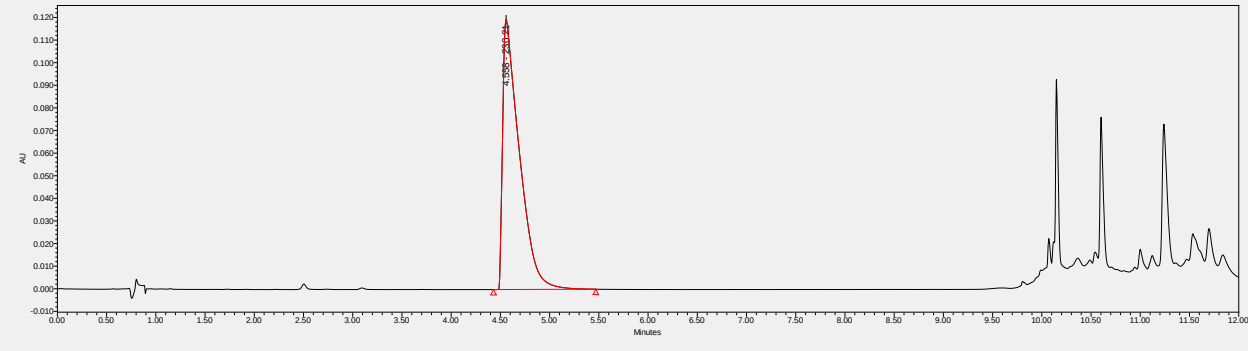


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.327	615698	100.00	129284	bb			Unknown

3 UVB Mass Spectrum

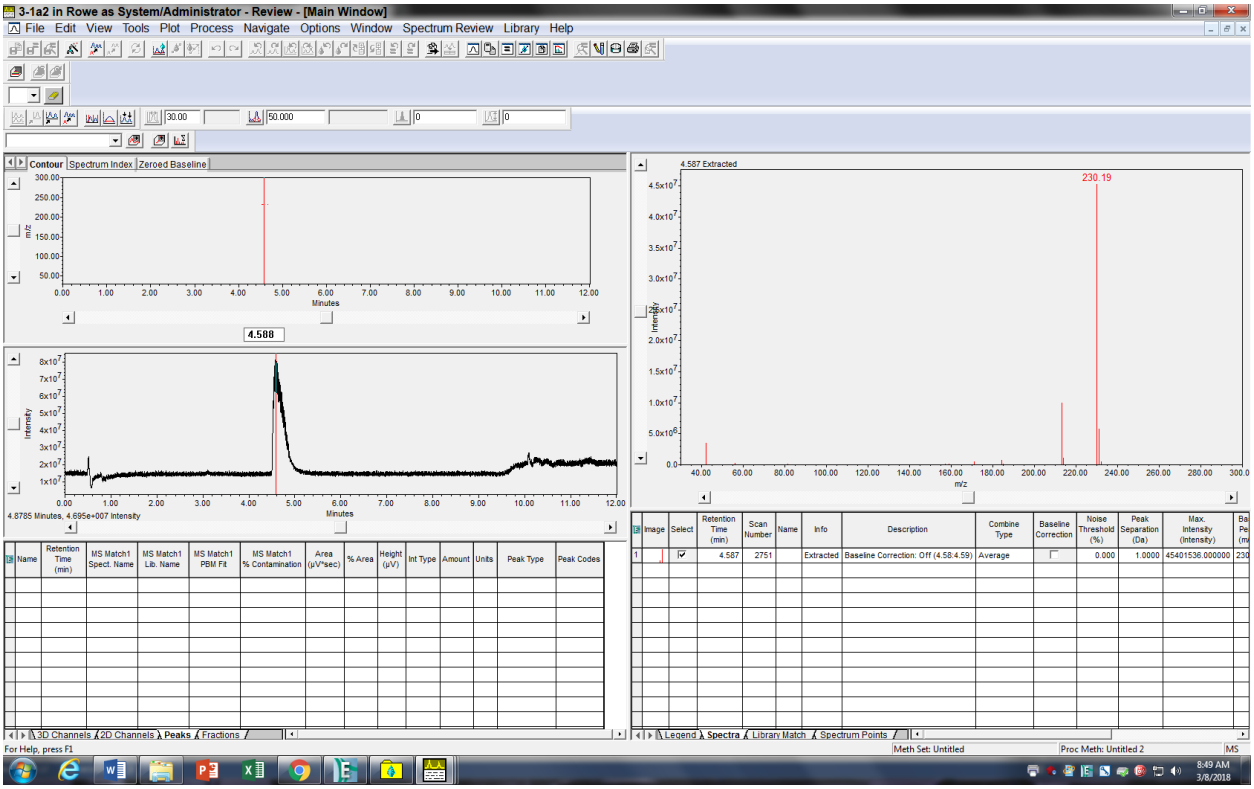


3-1 LC PDA Detector Data with Integrated Peak

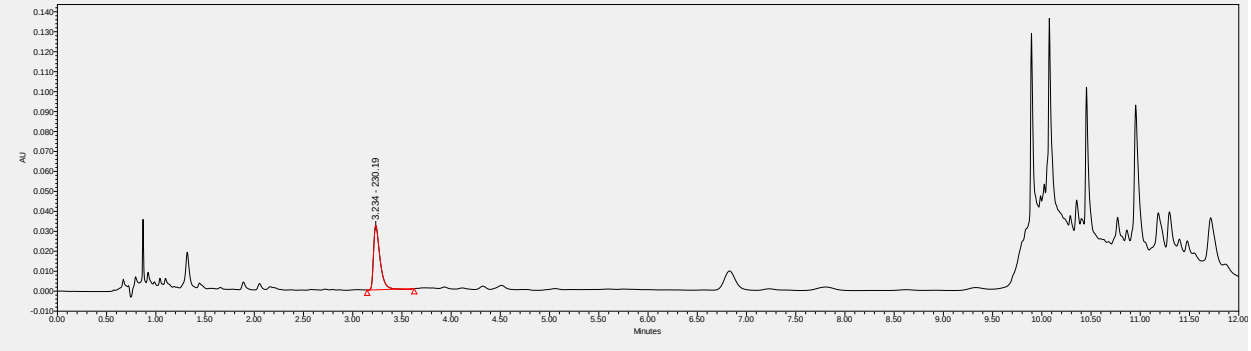


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.558	1402762	100.00	119451	bb			Unknown

3-1 Mass Spectrum

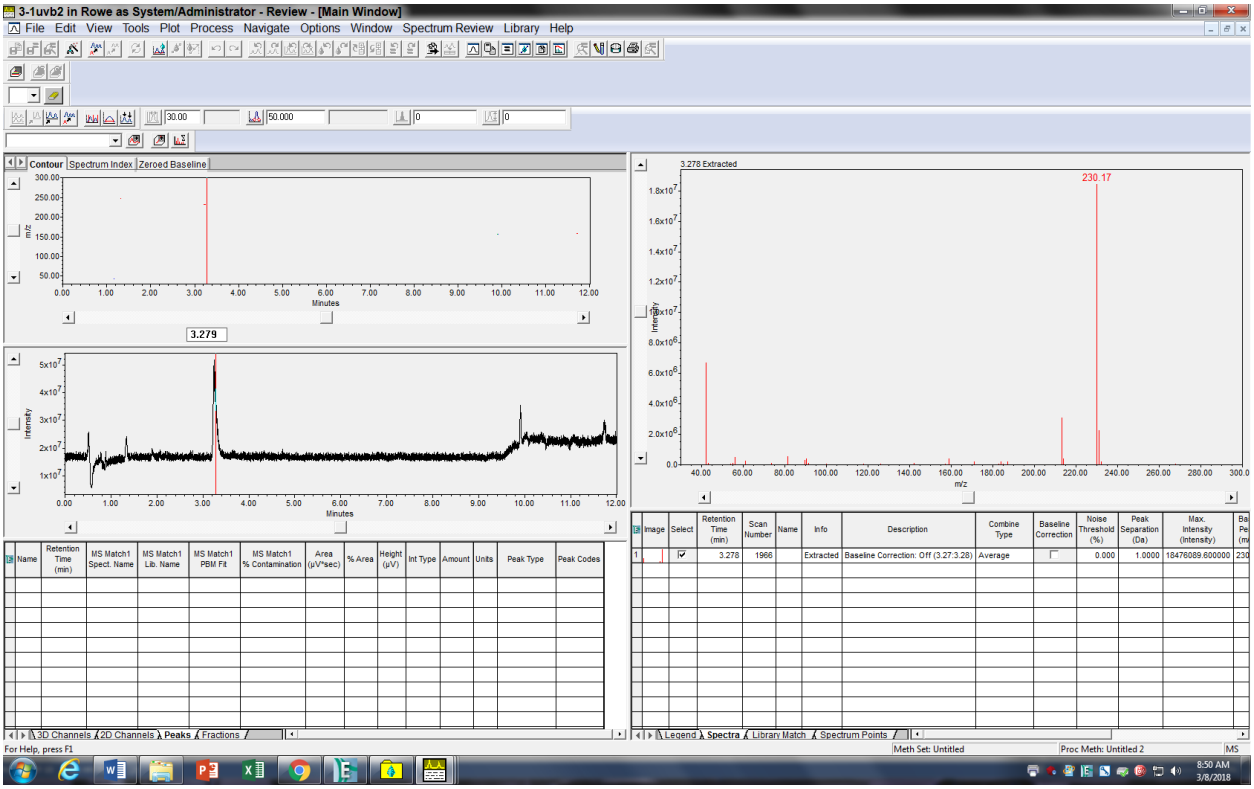


3-1 UV-B LC PDA Detector Data with Integrated Peak

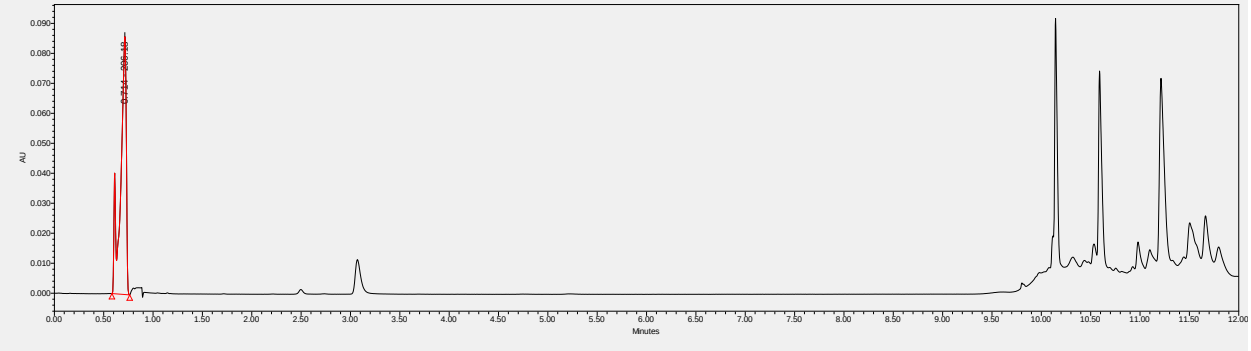


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.234	148564	100.00	32255	bb			Unknown

3-1 UVB Mass Spectrum

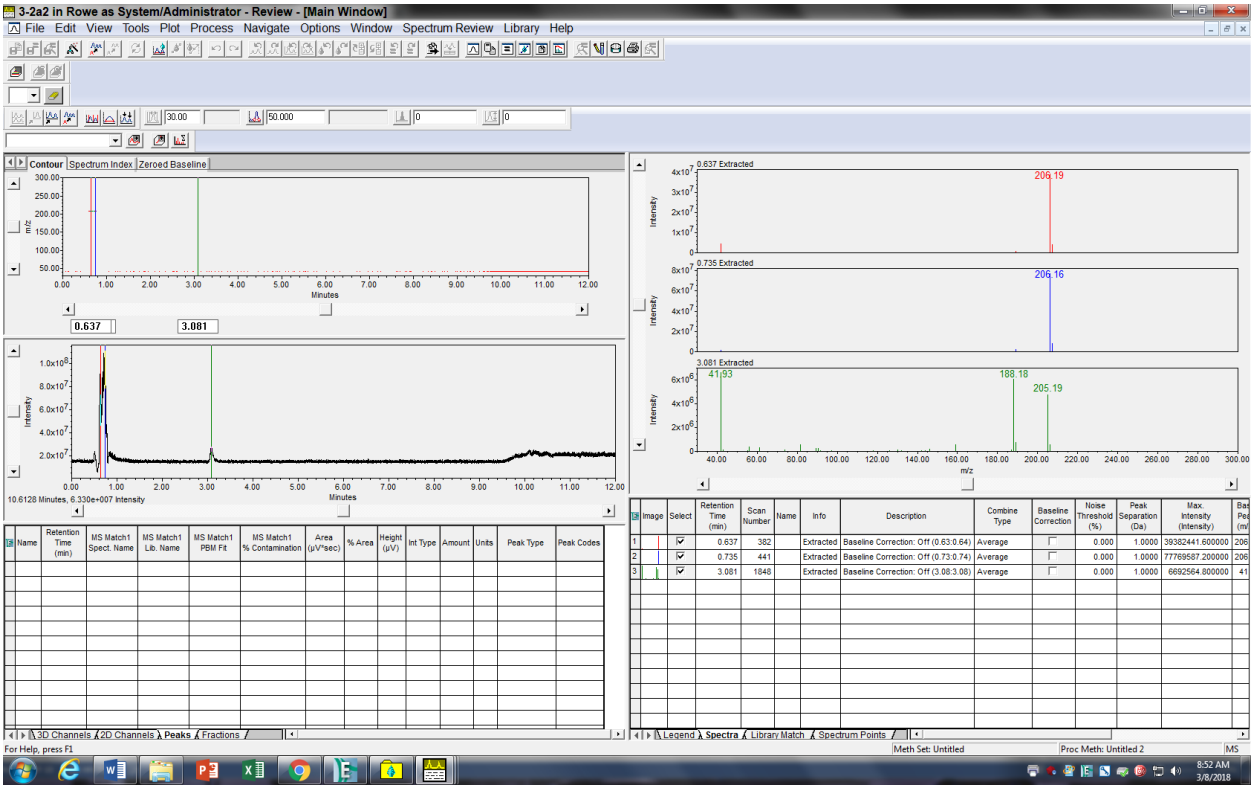


3-2 LC PDA Detector Data with Integrated Peak

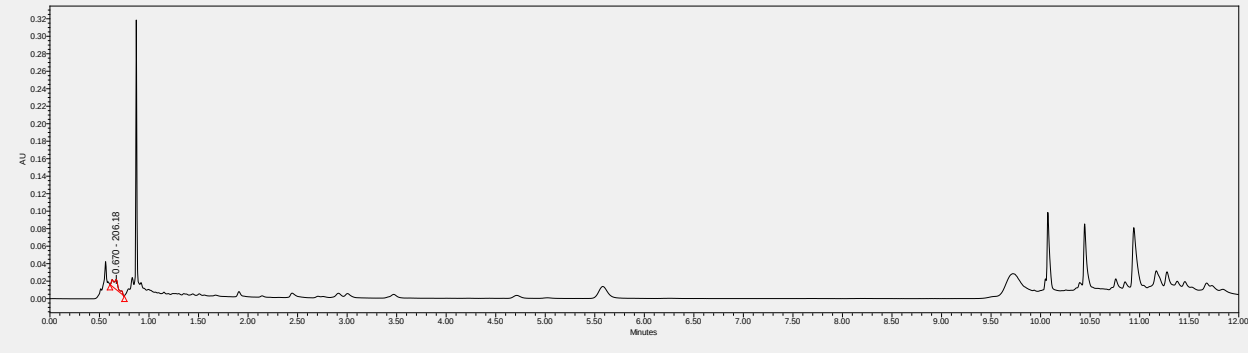


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.714	345619	100.00	85986	bb			Unknown

3-2 Mass Spectrum

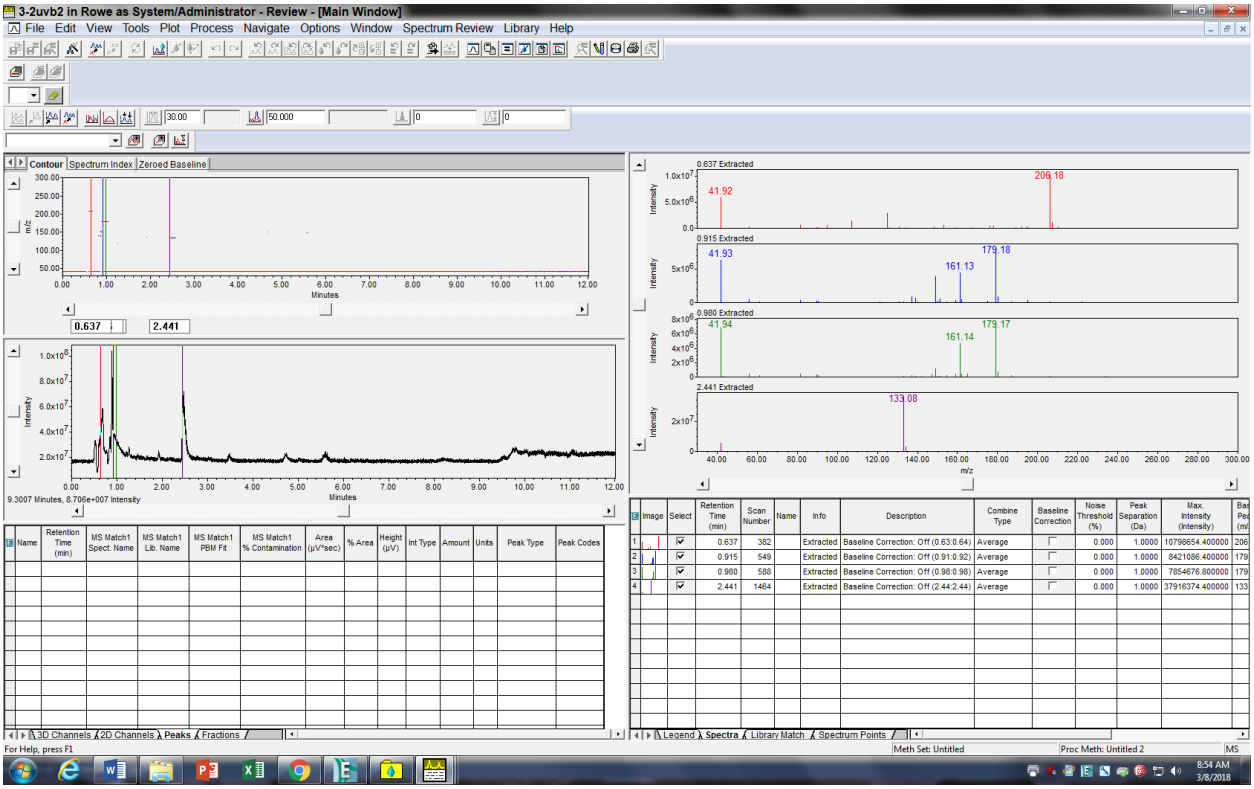


3-2 UV-B LC PDA Detector Data with Integrated Peak

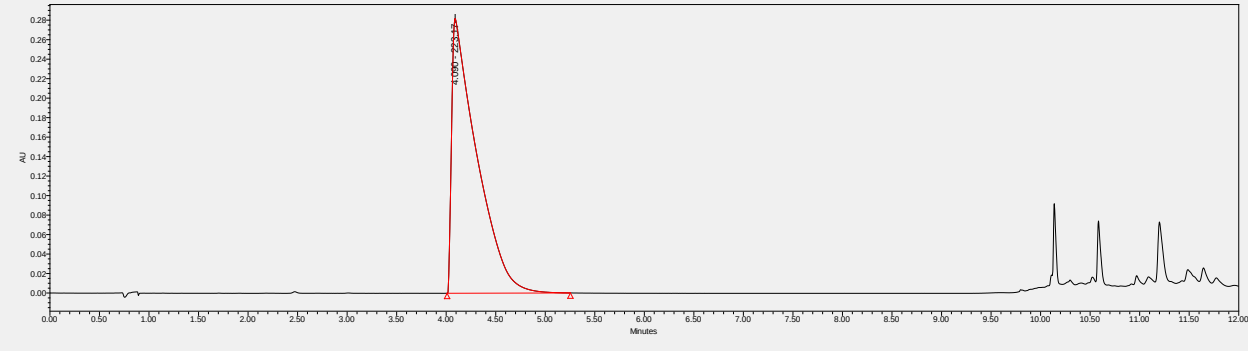


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.670	42294	100.00	11676	bb			Unknown

3-2 UVB Mass Spectrum

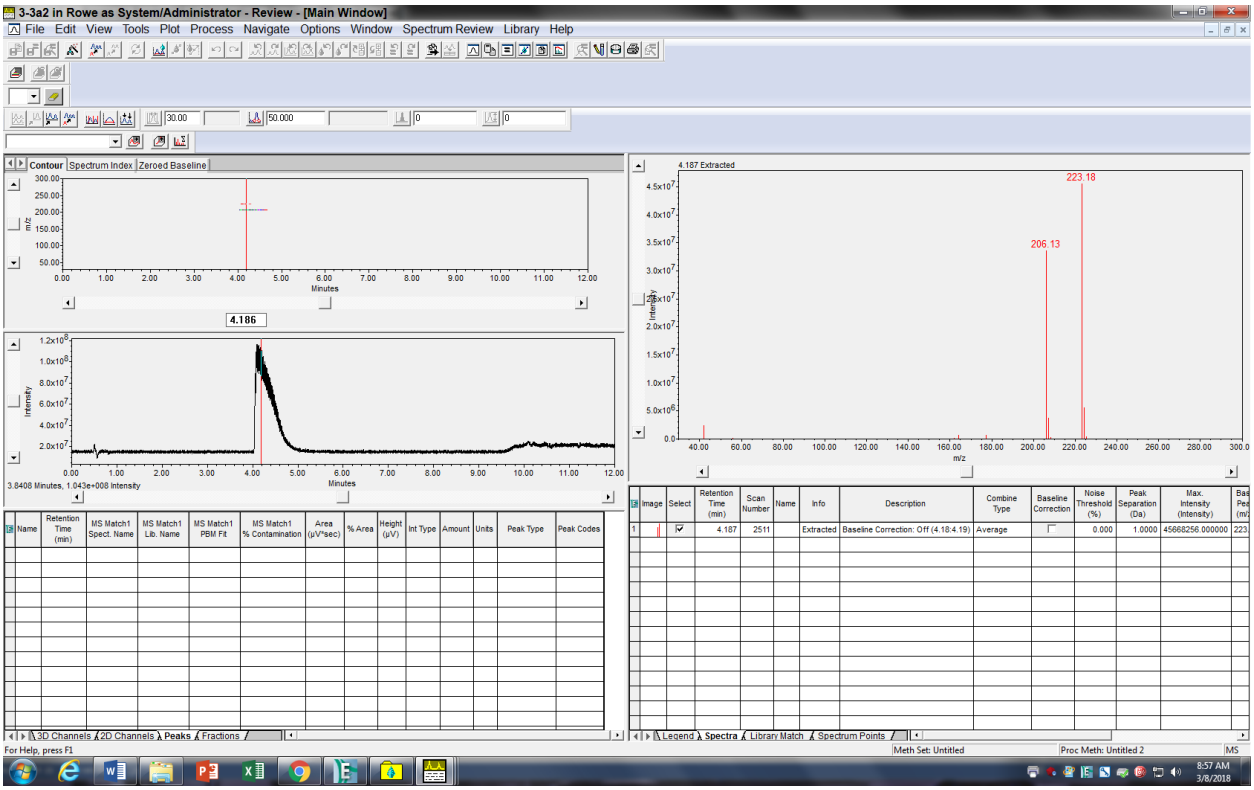


3-3 LC PDA Detector Data with Integrated Peak

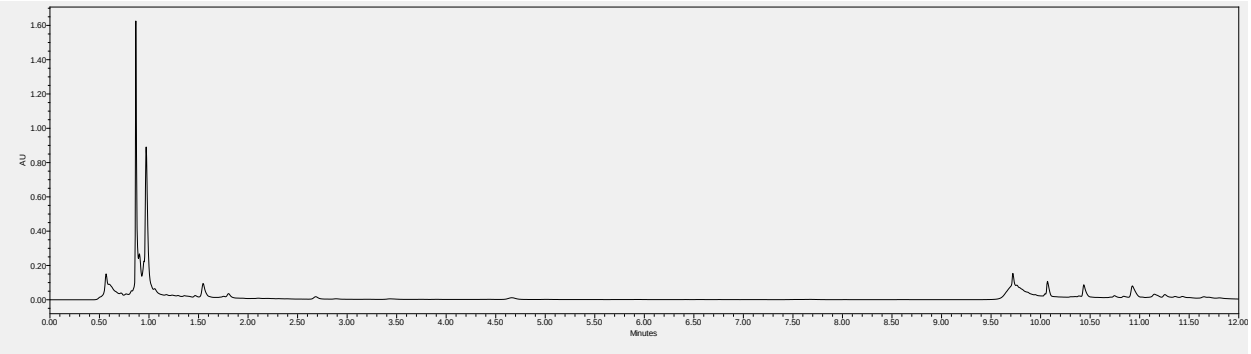


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.090	4951822	100.00	281952	bb			Unknown

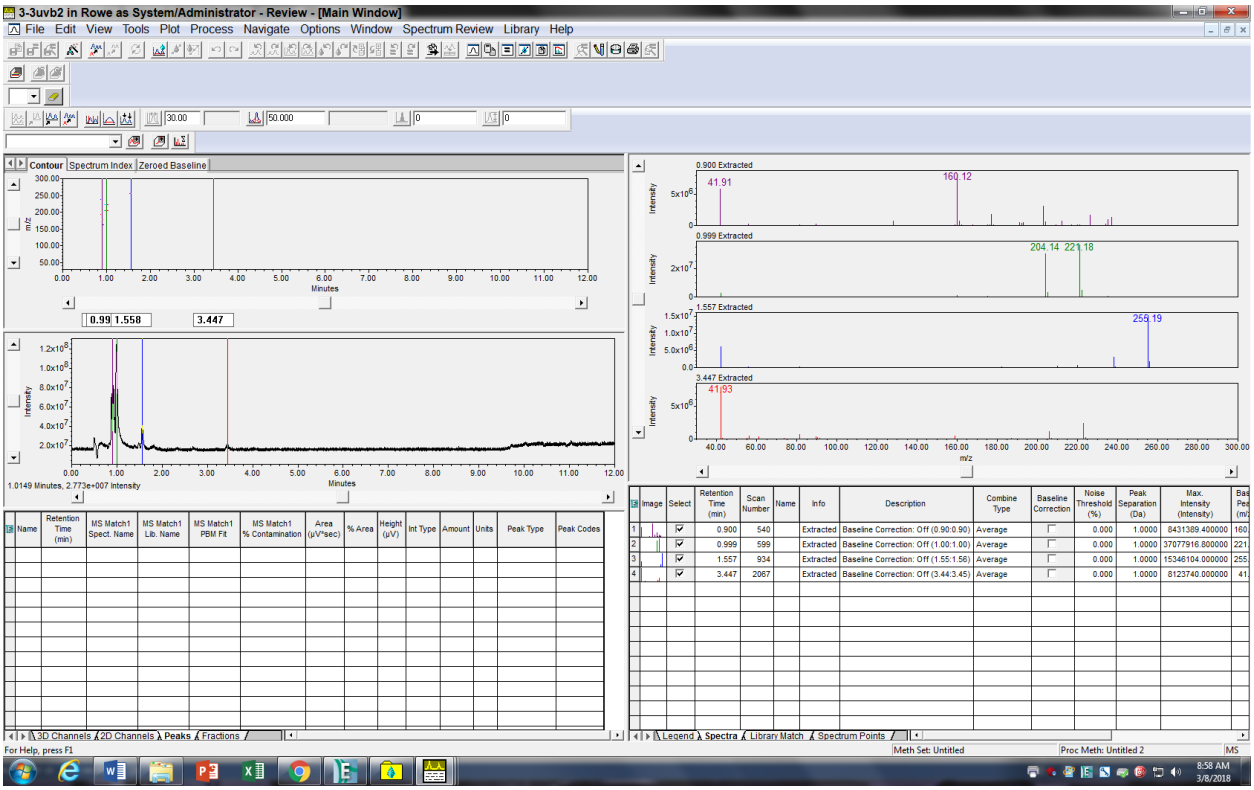
3-3 Mass Spectrum



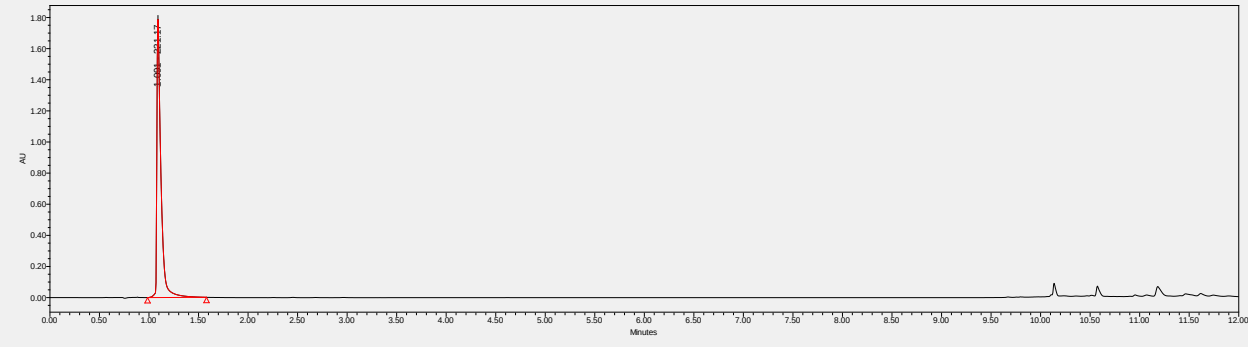
3-3 UV-B LC PDA Detector Data with Integrated Peak



3-3 UVB Mass Spectrum

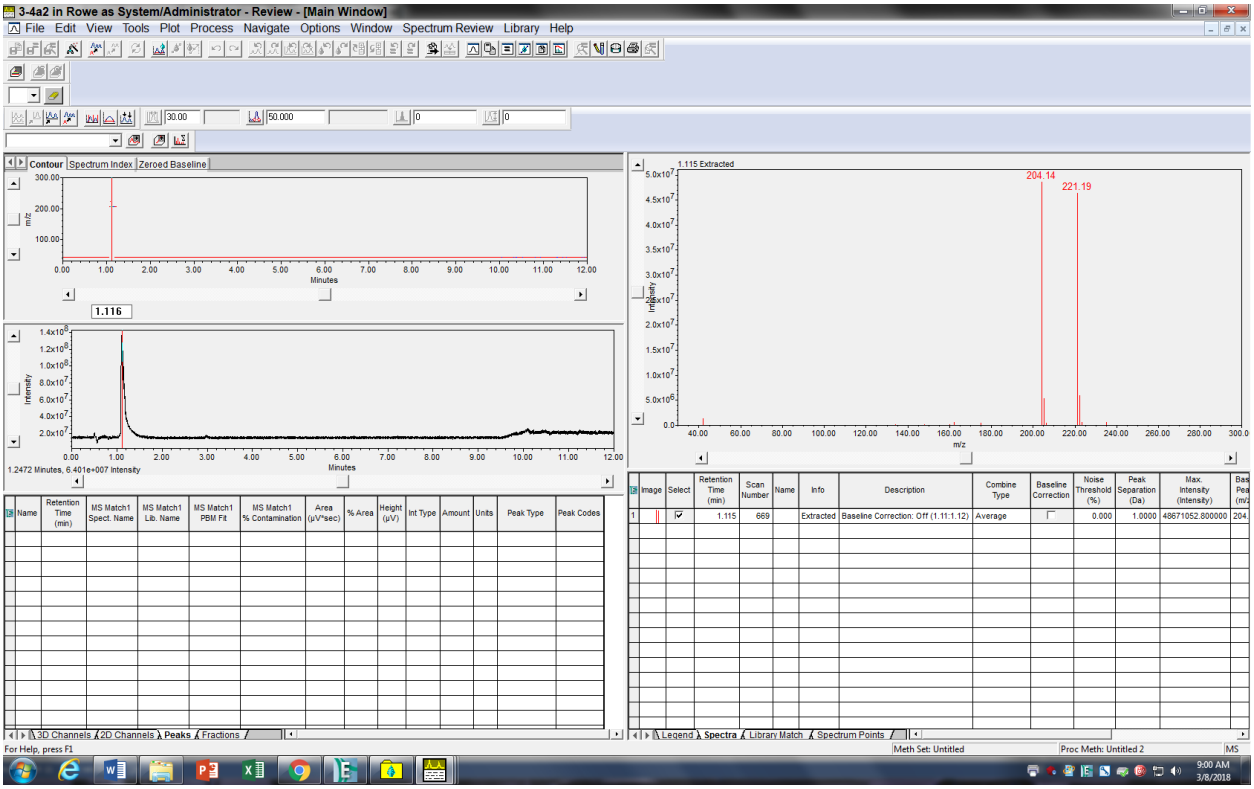


3-4 LC PDA Detector Data with Integrated Peak

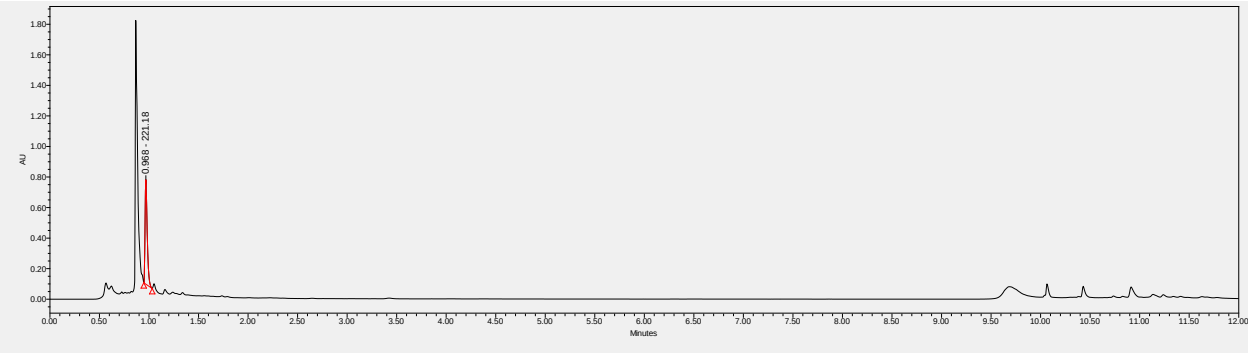


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.091	5071661	100.00	1787026	bb			Unknown

3-4 Mass Spectrum

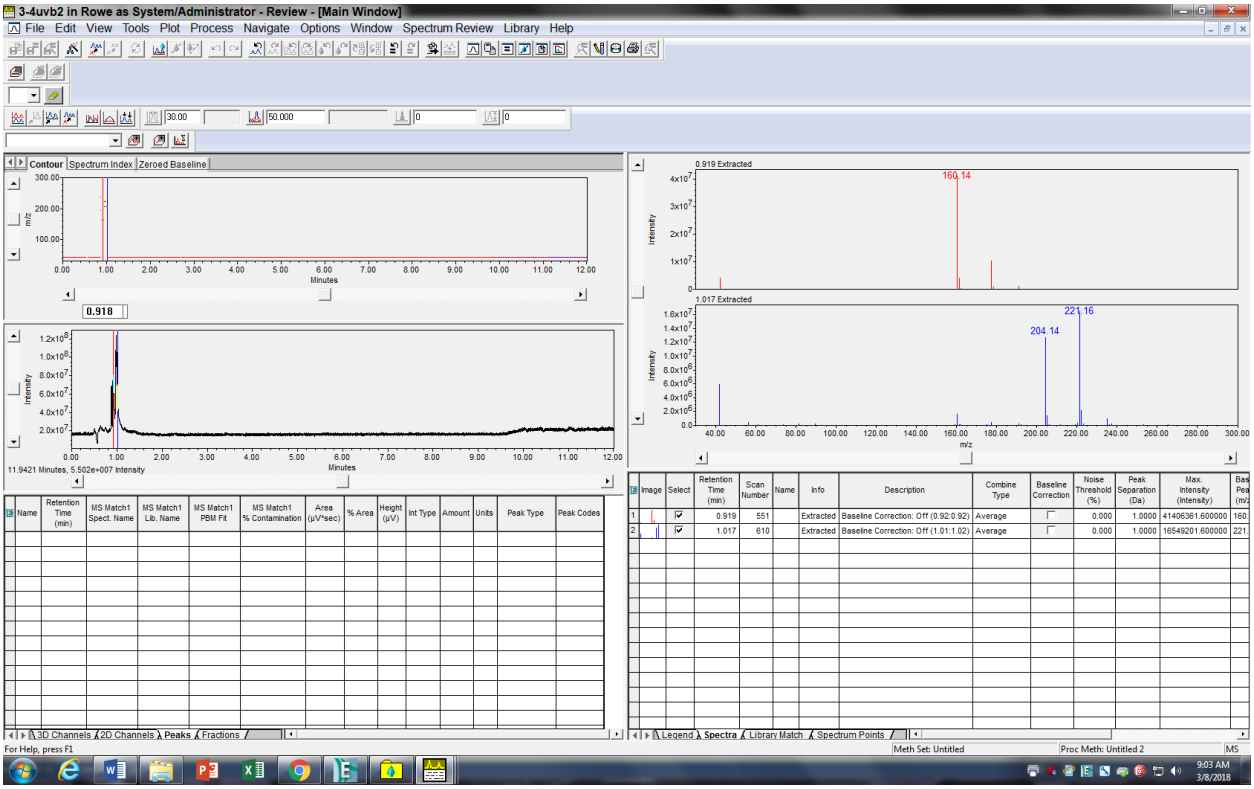


3-4 UV-B LC PDA Detector Data with Integrated Peak

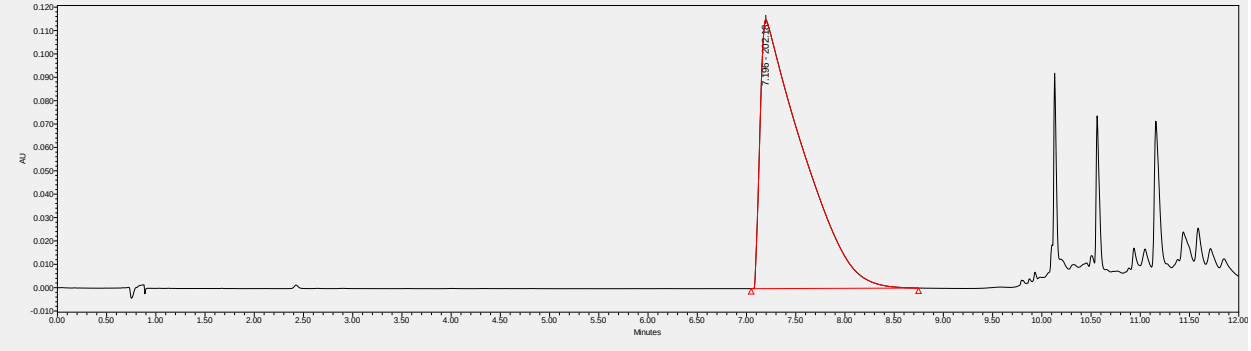


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.968	1043865	100.00	683634	bb			Unknown

3-4 UVB Mass Spectrum

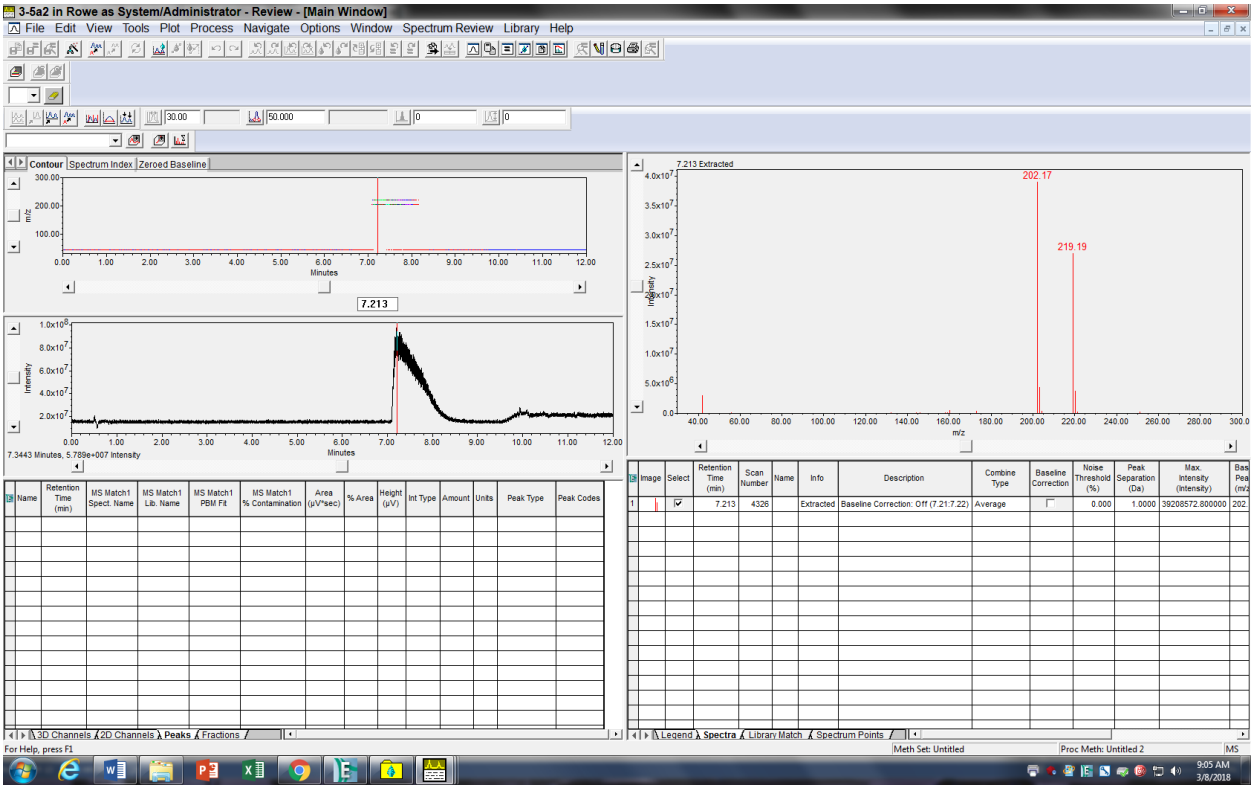


3-5 LC PDA Detector Data with Integrated Peak

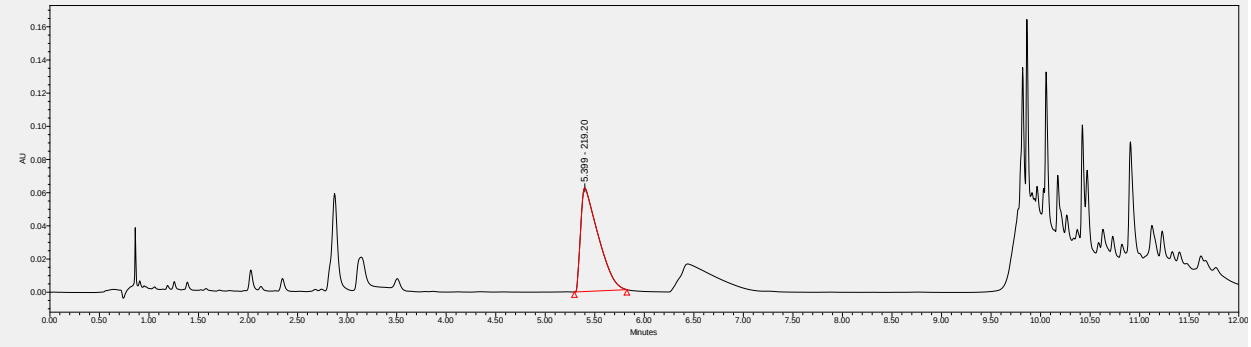


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		7.196	3441249	100.00	115120	bb			Unknown

3-5 Mass Spectrum

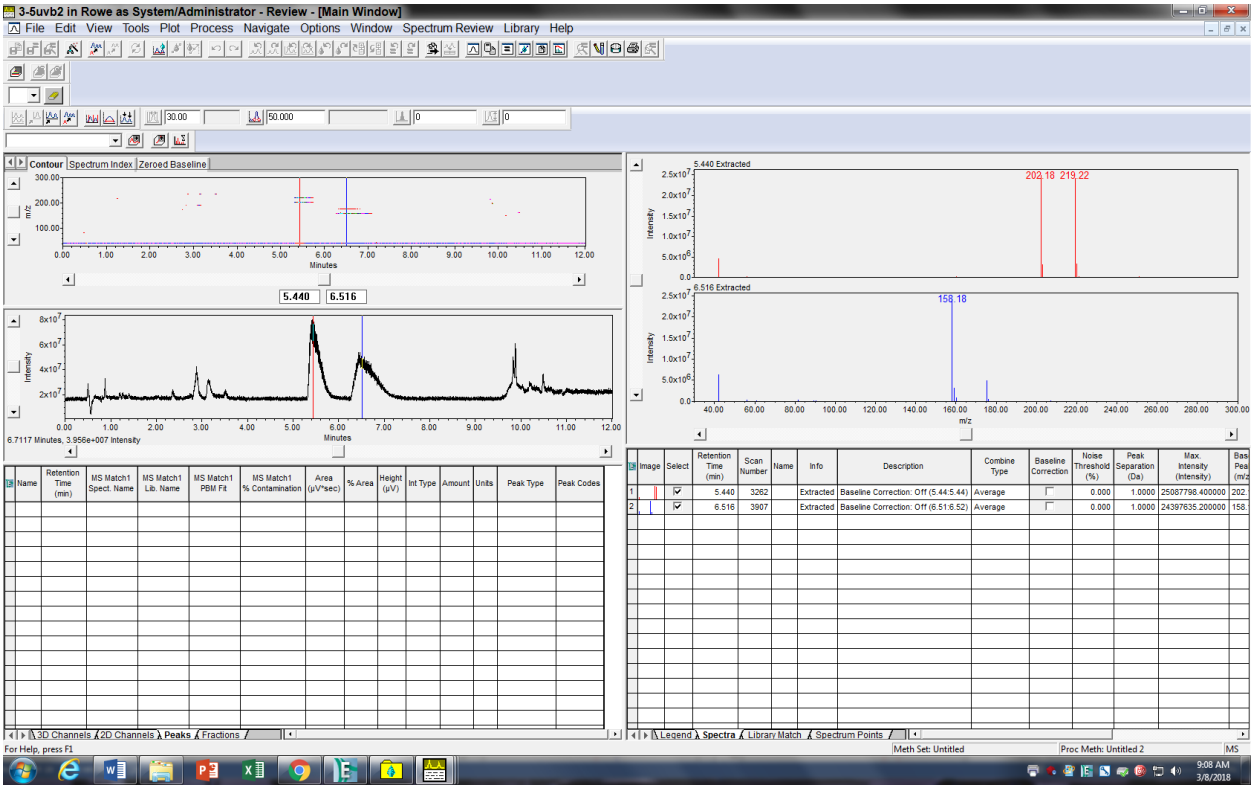


3-5 UV-B LC PDA Detector Data with Integrated Peak

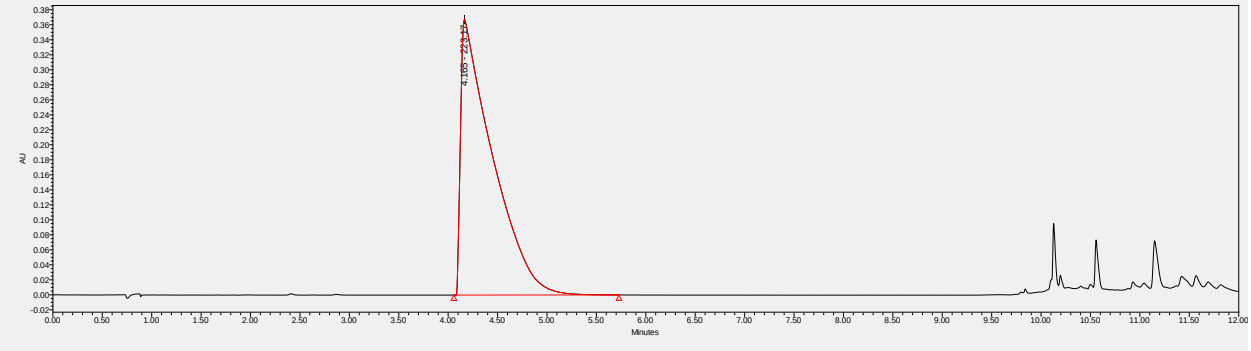


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		5.399	771254	100.00	62540	bb			Unknown

3-5 UVB Mass Spectrum

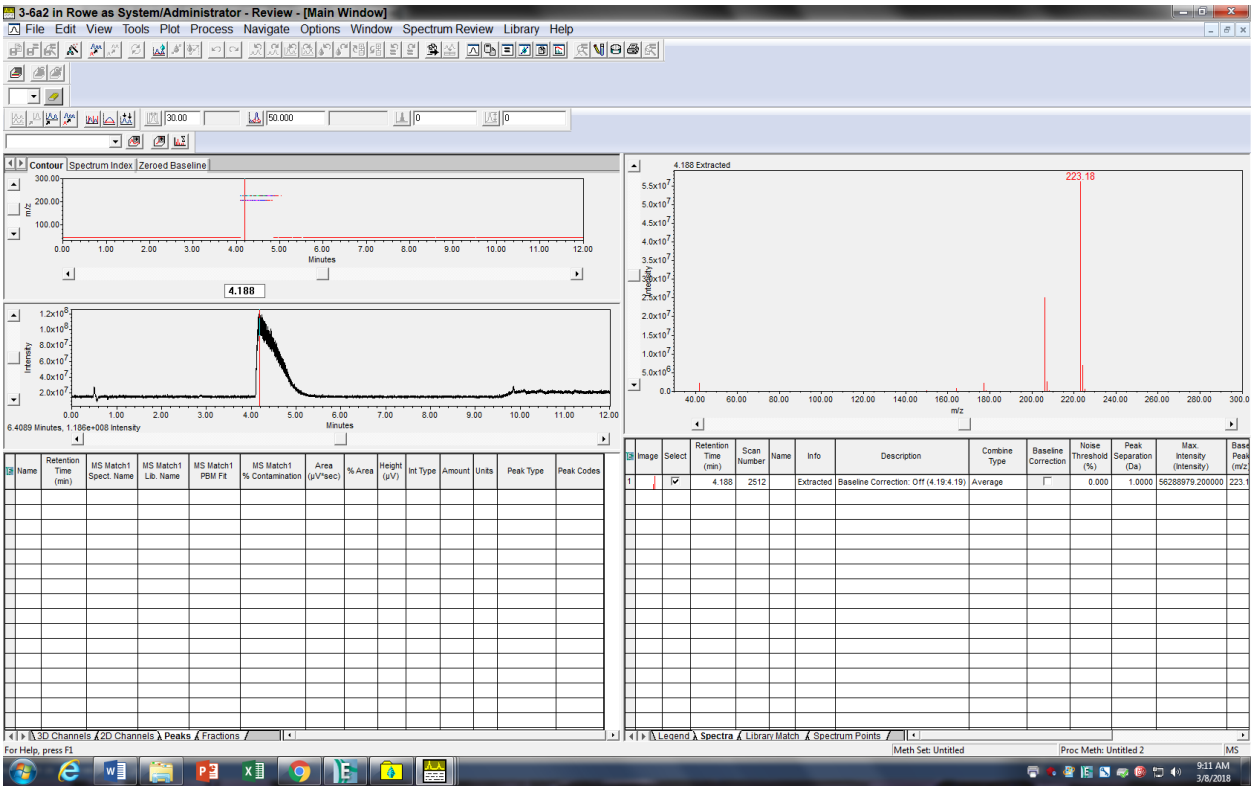


3-6 LC PDA Detector Data with Integrated Peak

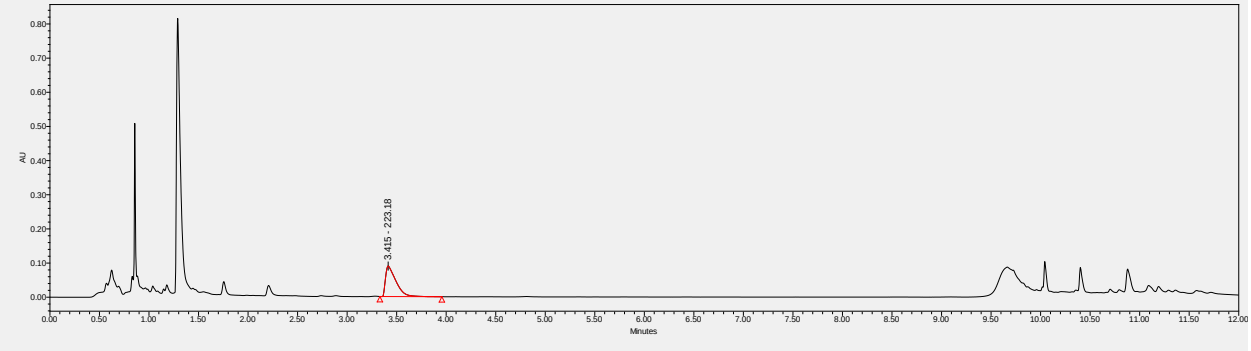


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.165	8184661	100.00	367356	bb			Unknown

3-6 Mass Spectrum

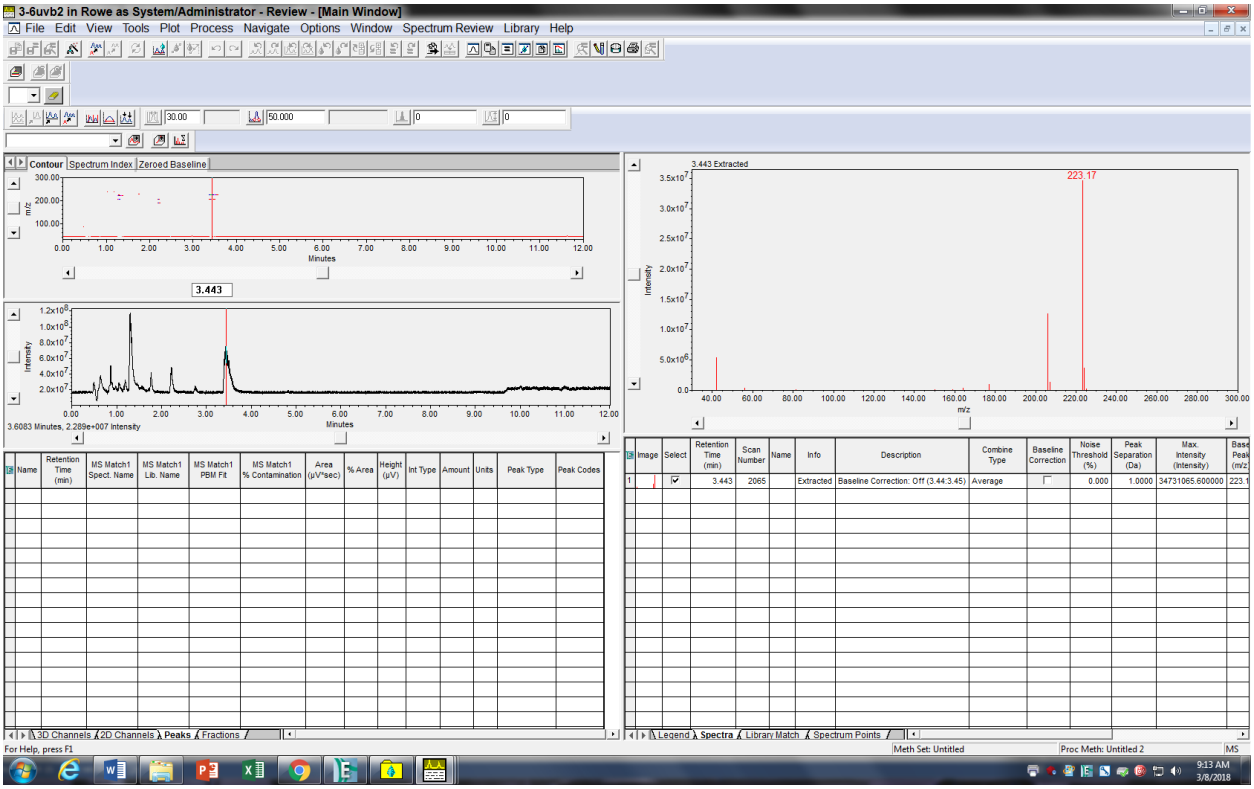


3-6 UV-B LC PDA Detector Data with Integrated Peak

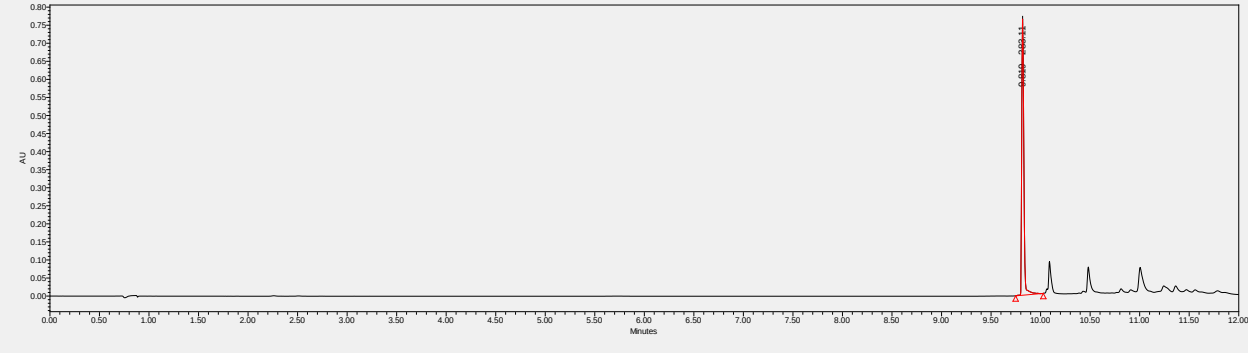


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.415	648197	100.00	89369	bb			Unknown

3-6 UVB Mass Spectrum

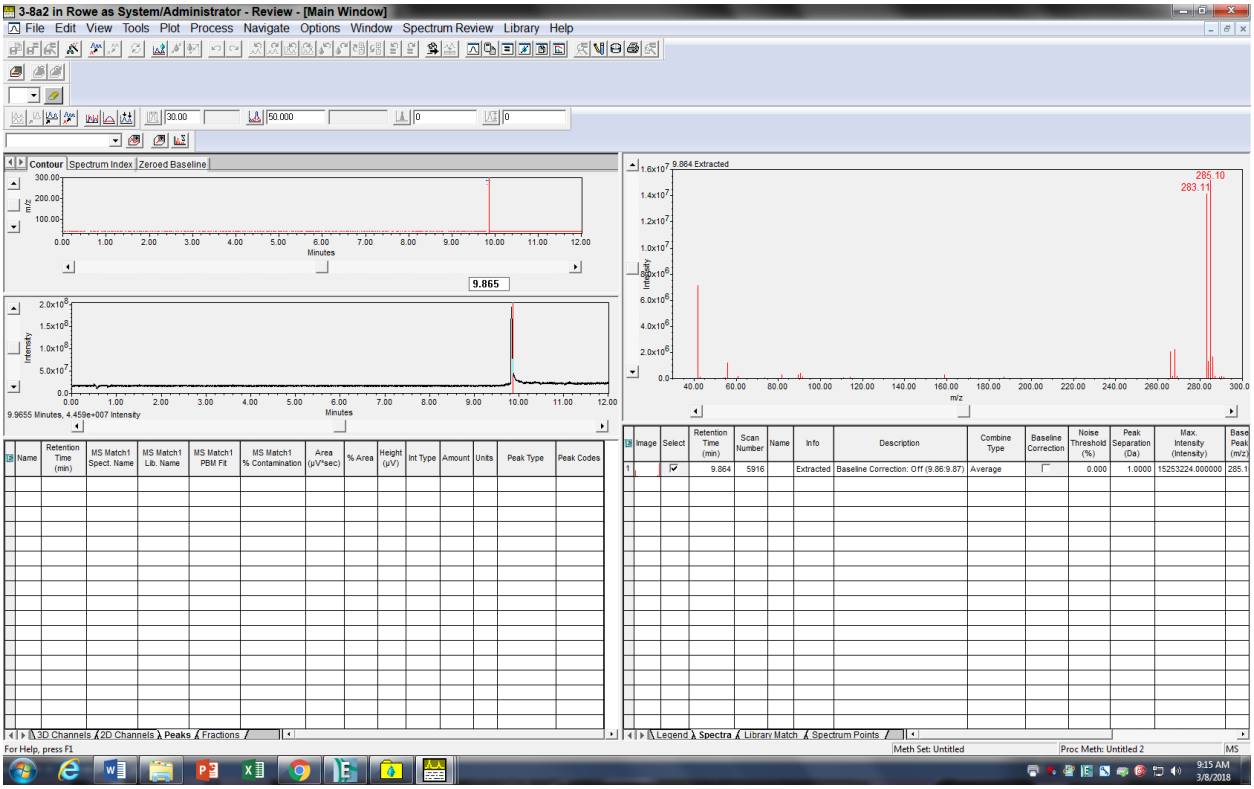


3-8 LC PDA Detector Data with Integrated Peak

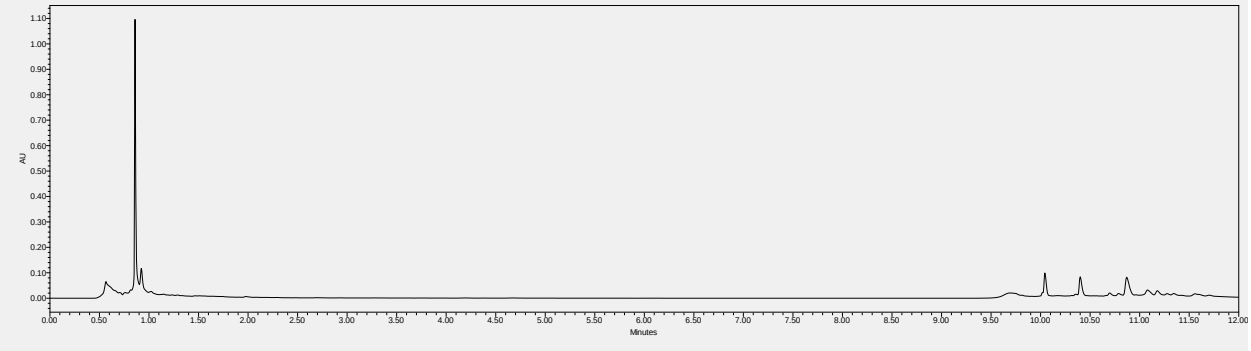


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.819	1148094	100.00	765144	bb			Unknown

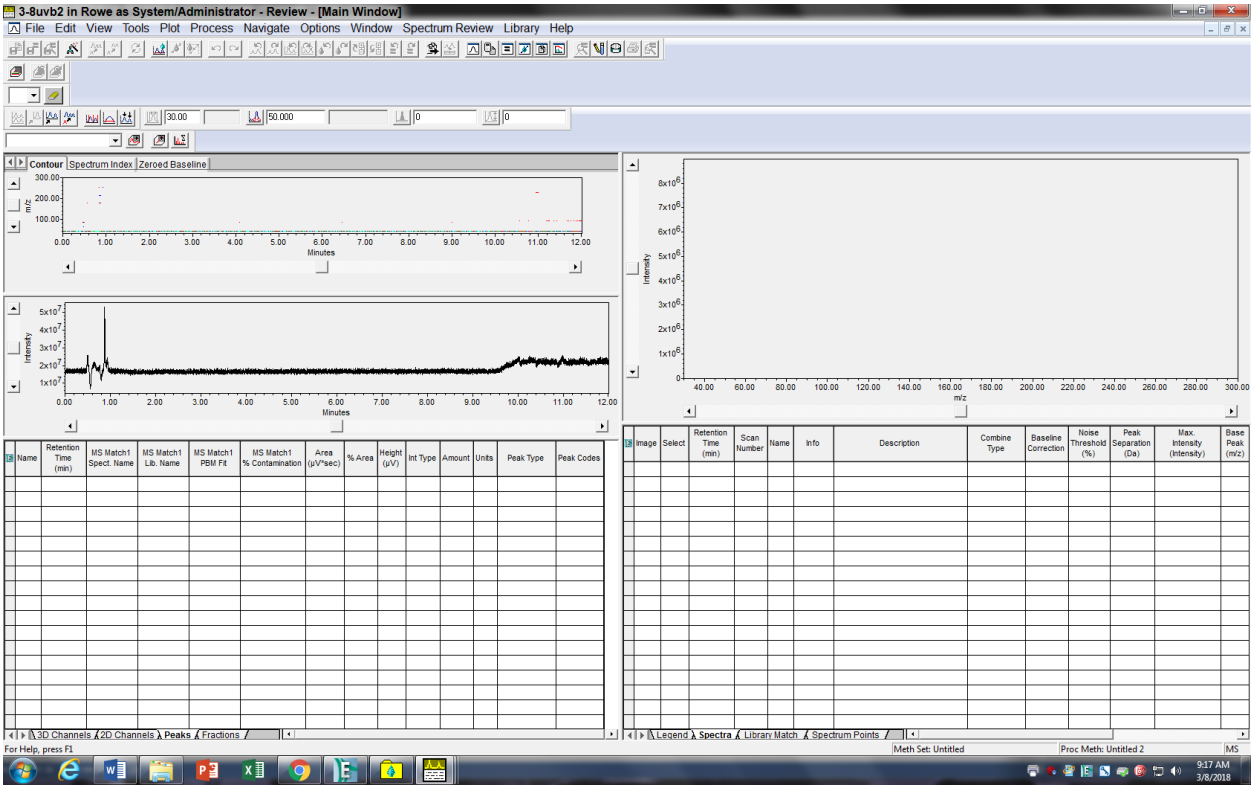
3-8 Mass Spectrum



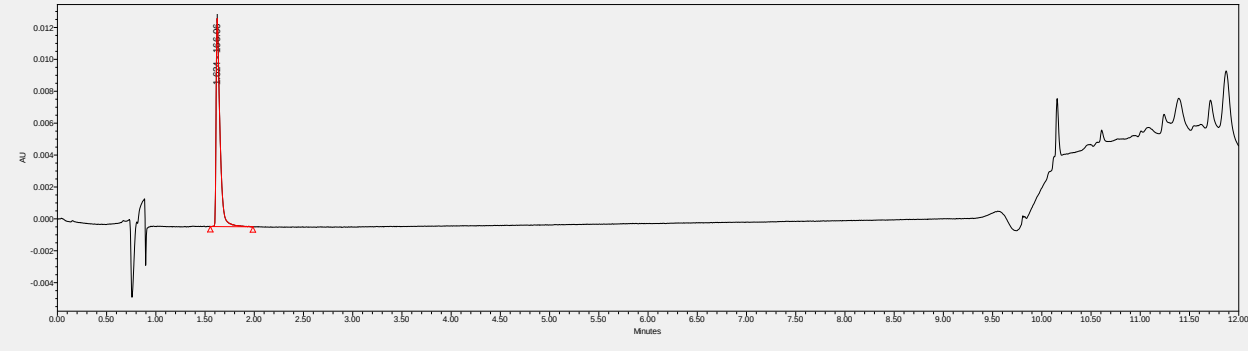
3-8 UV-B LC PDA Detector Data with Integrated Peak



3-8 UVB Mass Spectrum

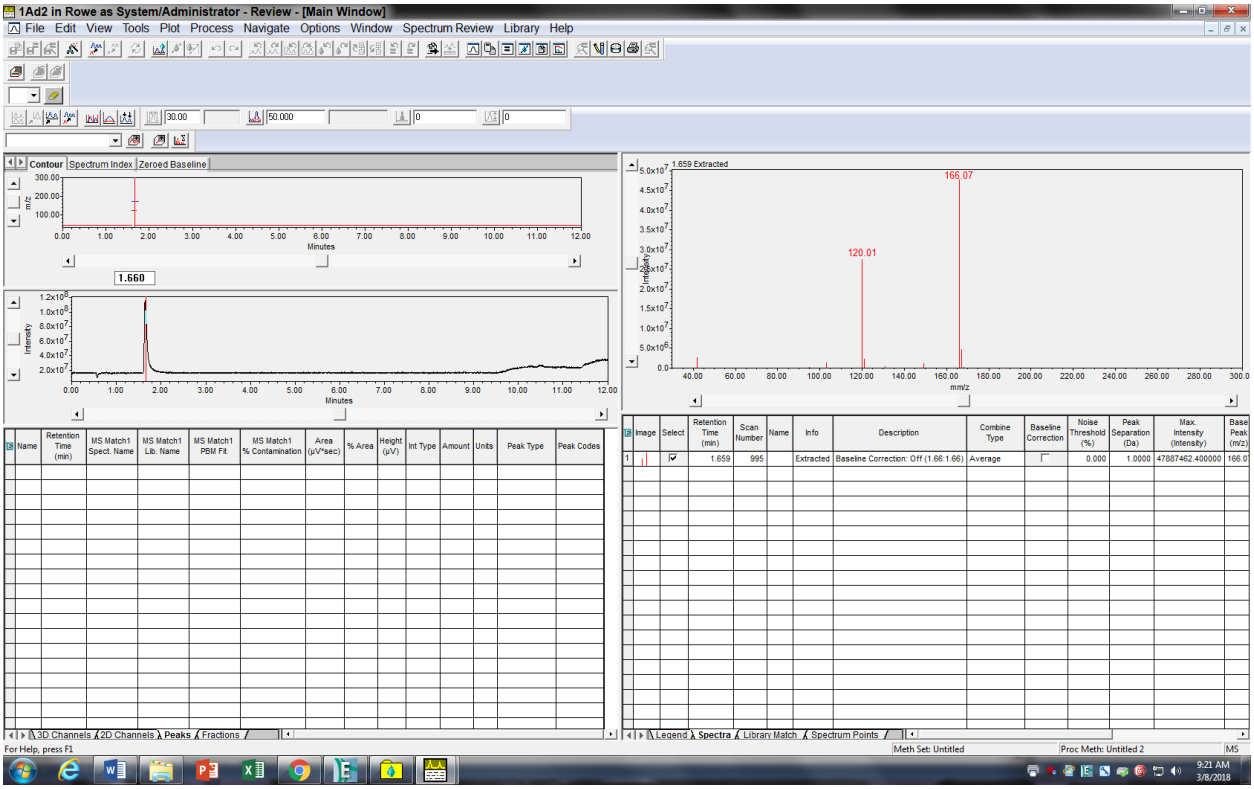


1 LC PDA Detector Data with Integrated Peak

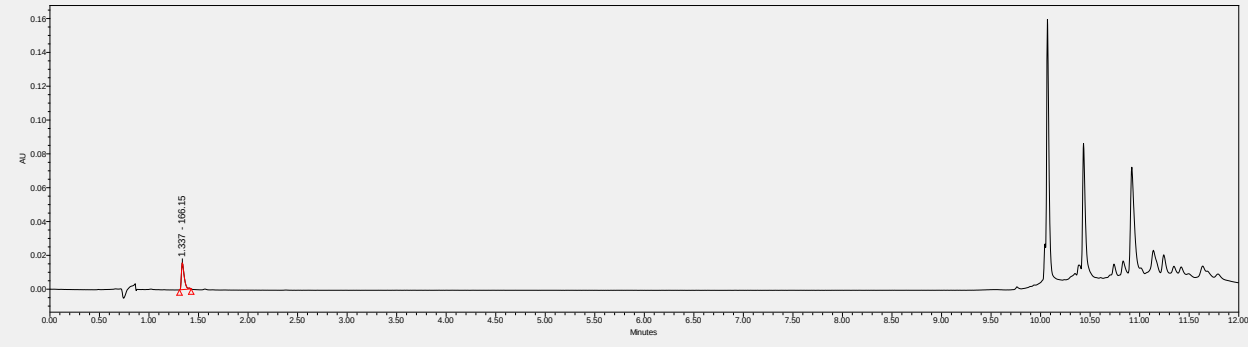


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.624	35449	100.00	13046	bb			Unknown	

1 Mass Spectrum

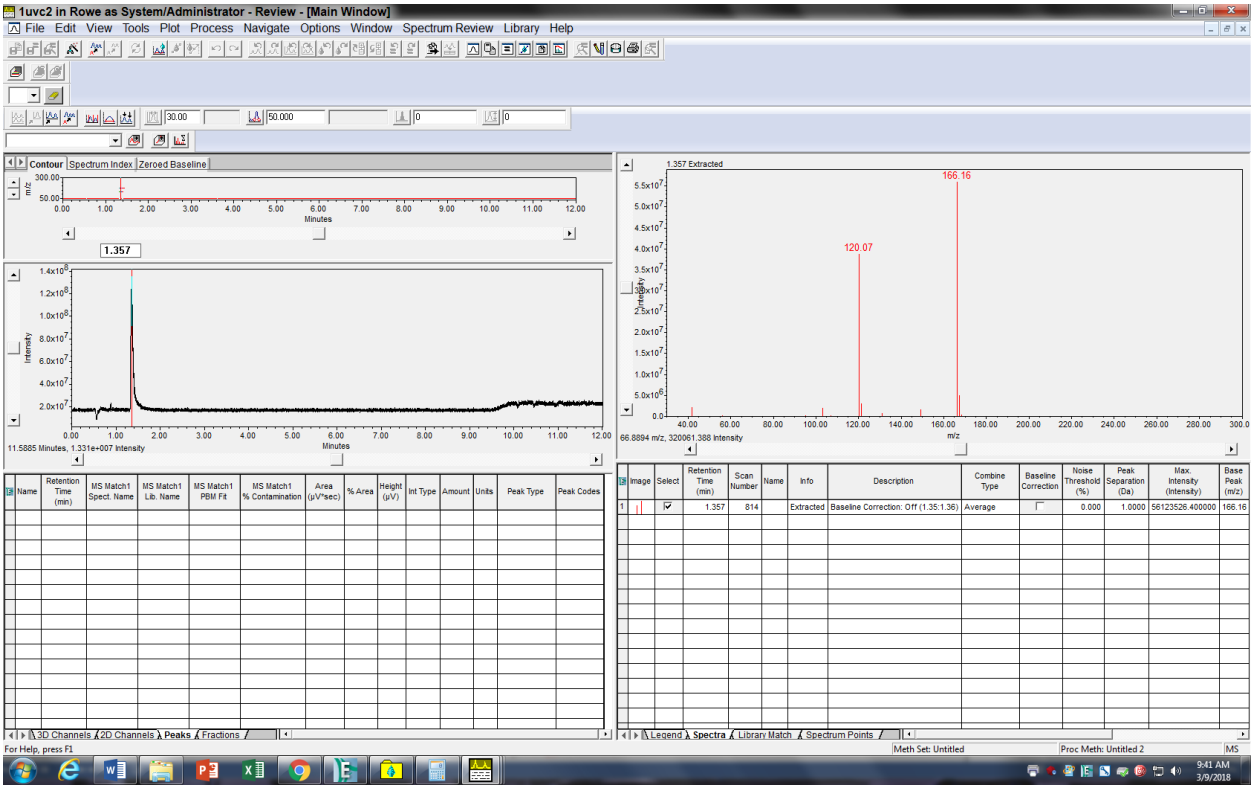


1 UV-C LC PDA Detector Data with Integrated Peak

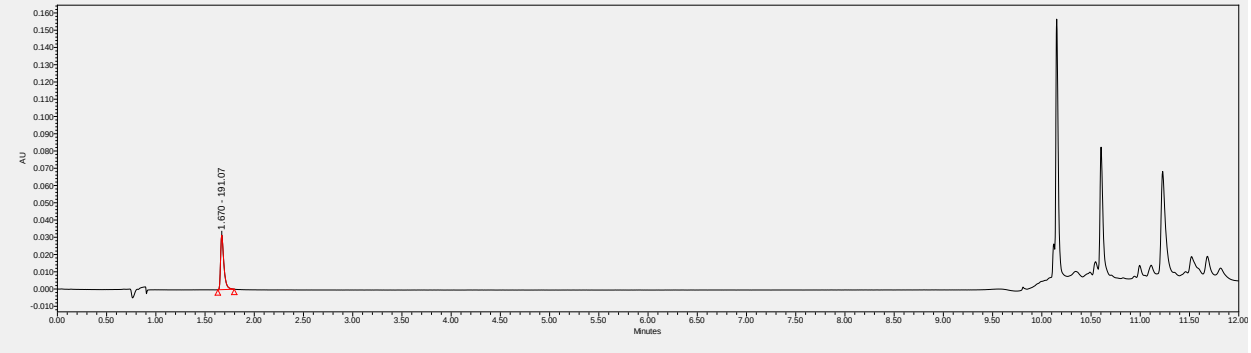


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.337	31687	100.00	15868	bb			Unknown

1 UVC Mass Spectrum

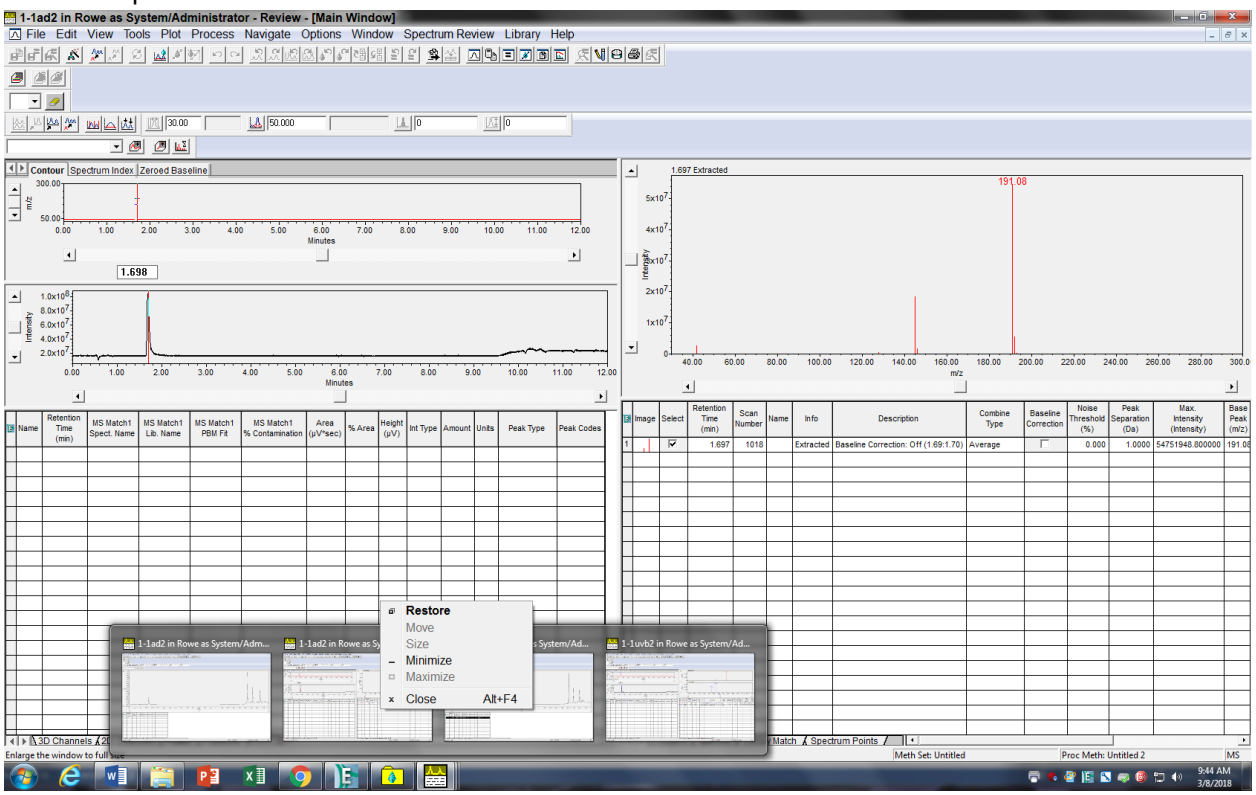


1-1 LC PDA Detector Data with Integrated Peak

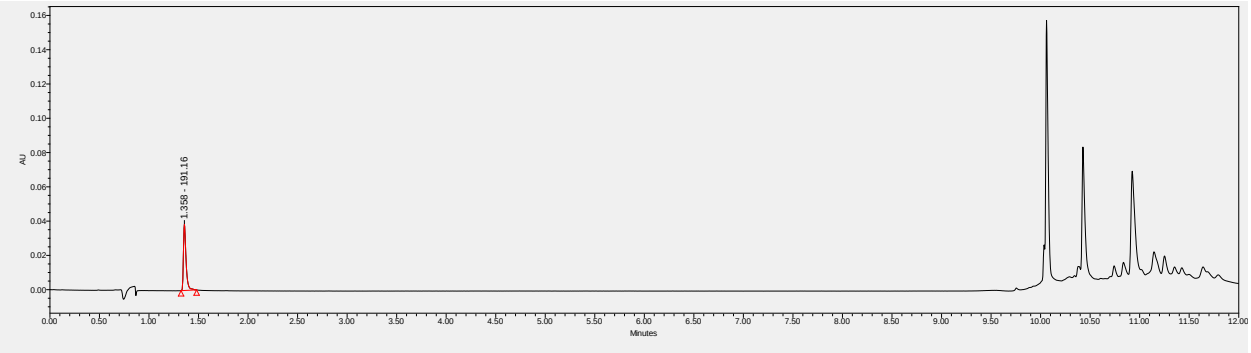


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.670	72903	100.00	31568	bb			Unknown	

1-1 Mass Spectrum

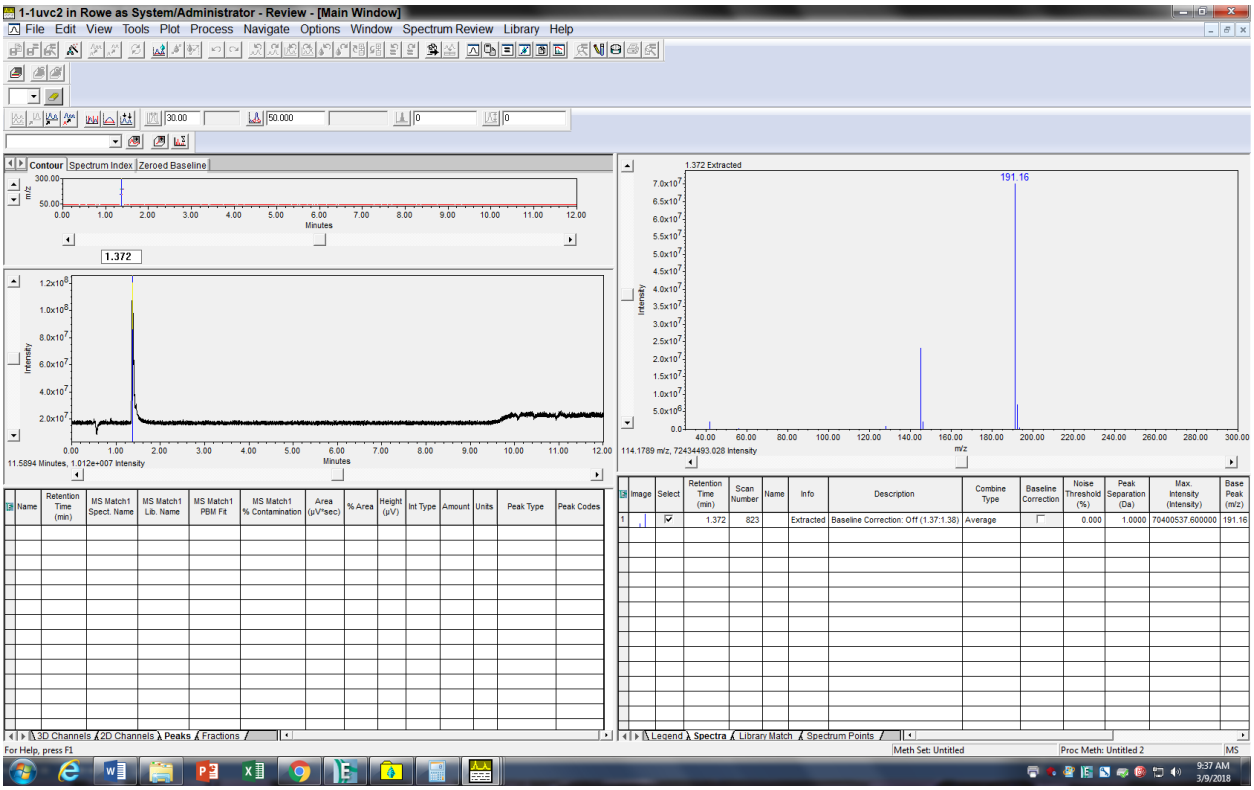


1-1UV-C LC PDA Detector Data with Integrated Peak

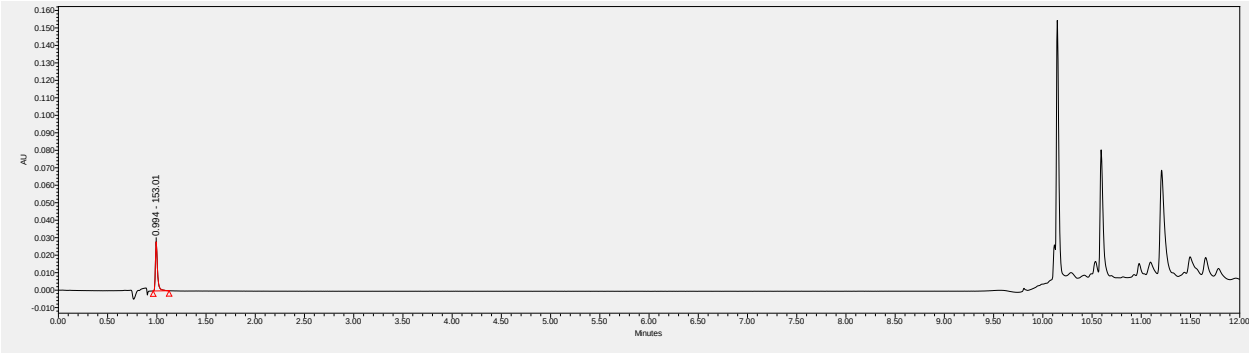


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.358	70672	100.00	38472	bb			Unknown

1-1UVC Mass Spectrum

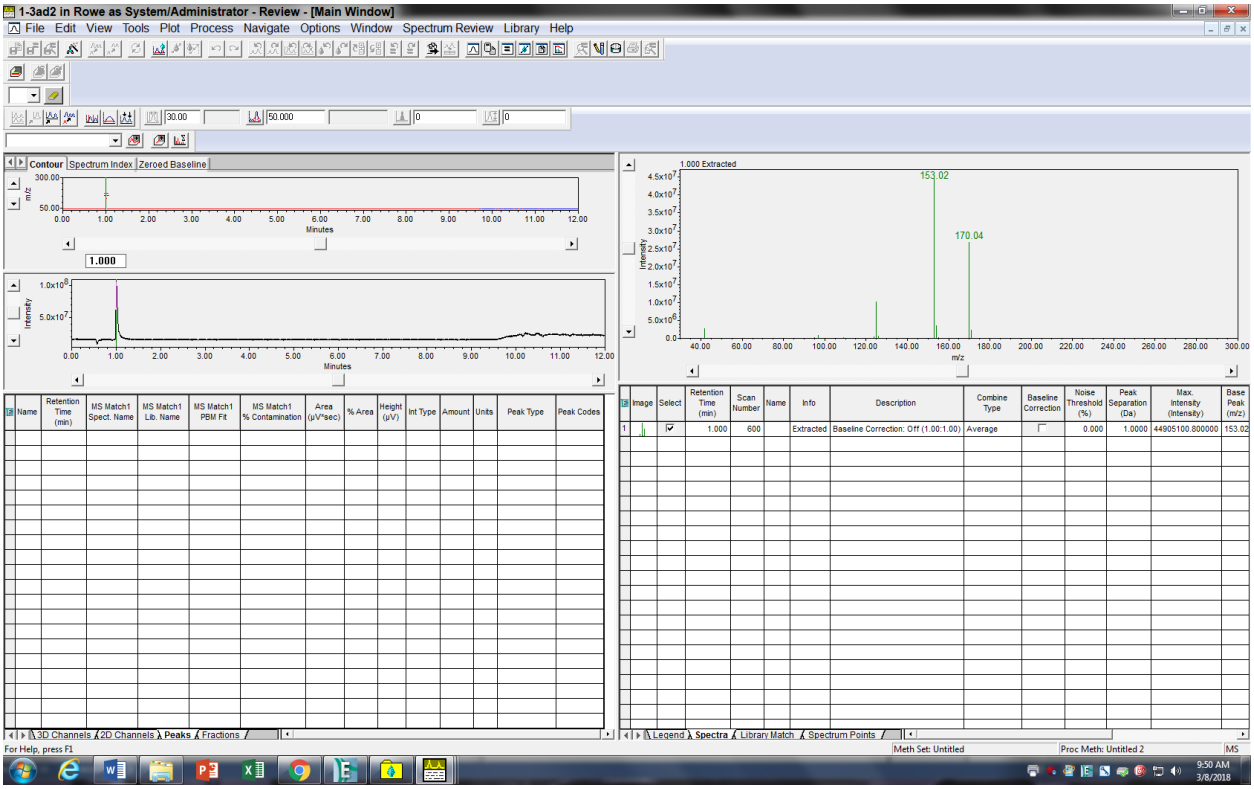


1-3 LC PDA Detector Data with Integrated Peak

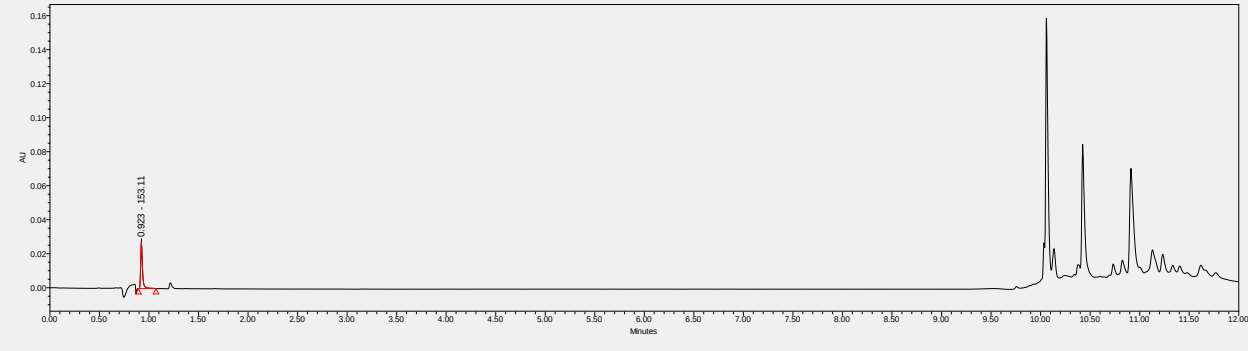


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.994	41530	100.00	28142	bb			Unknown	

1-3 Mass Spectrum

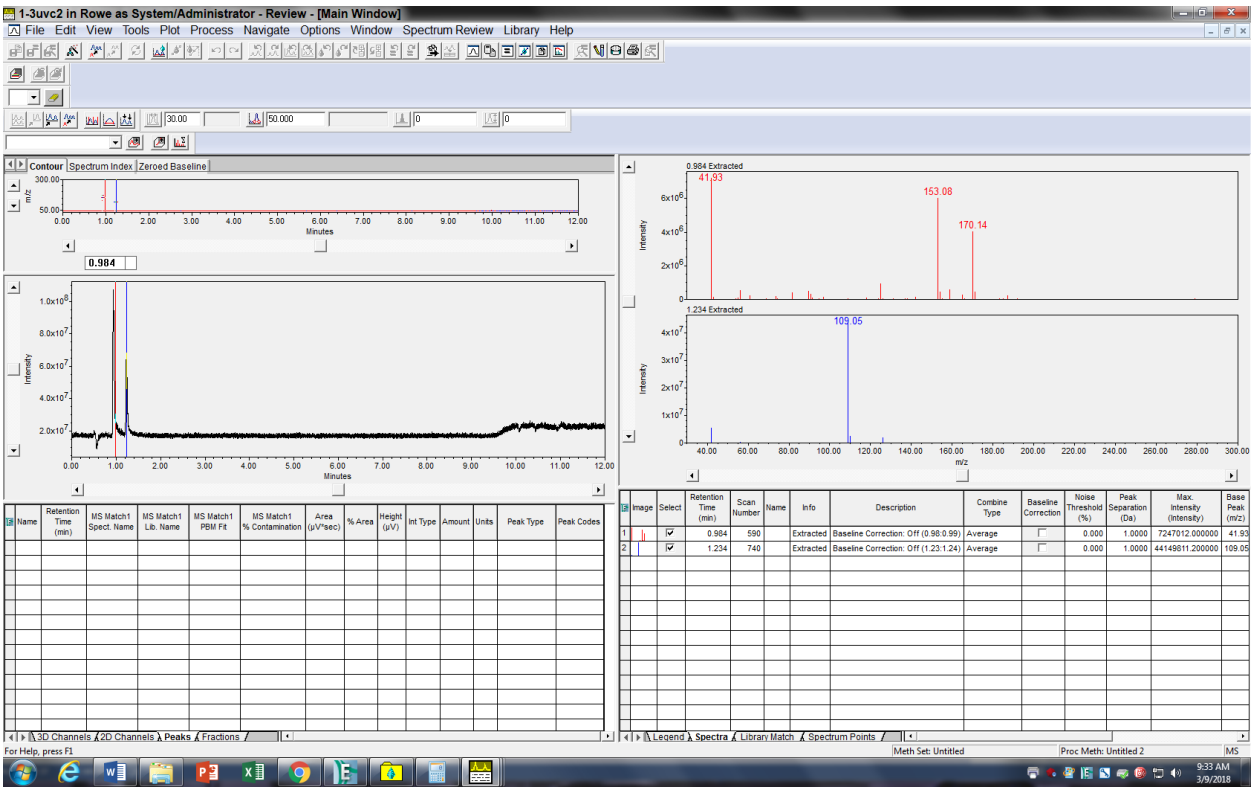


1-3 UV-C LC PDA Detector Data with Integrated Peak

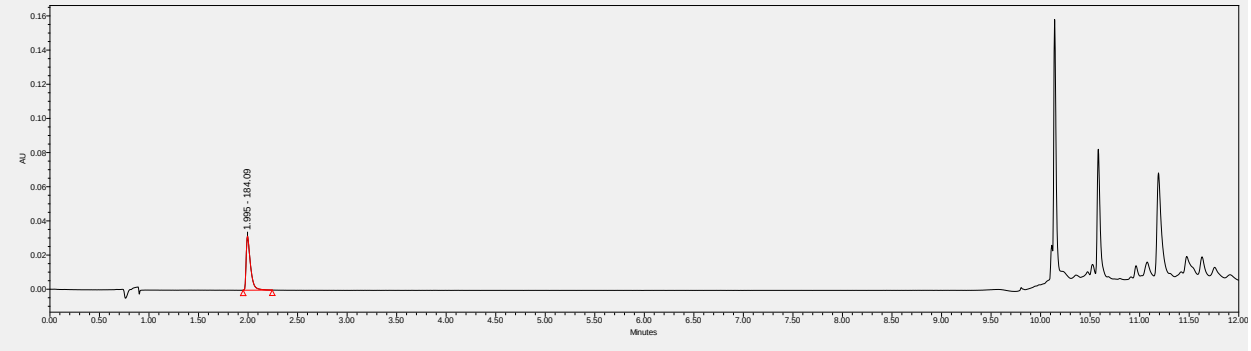


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.923	34905	100.00	26968	bb			Unknown

1-3 UVC Mass Spectrum

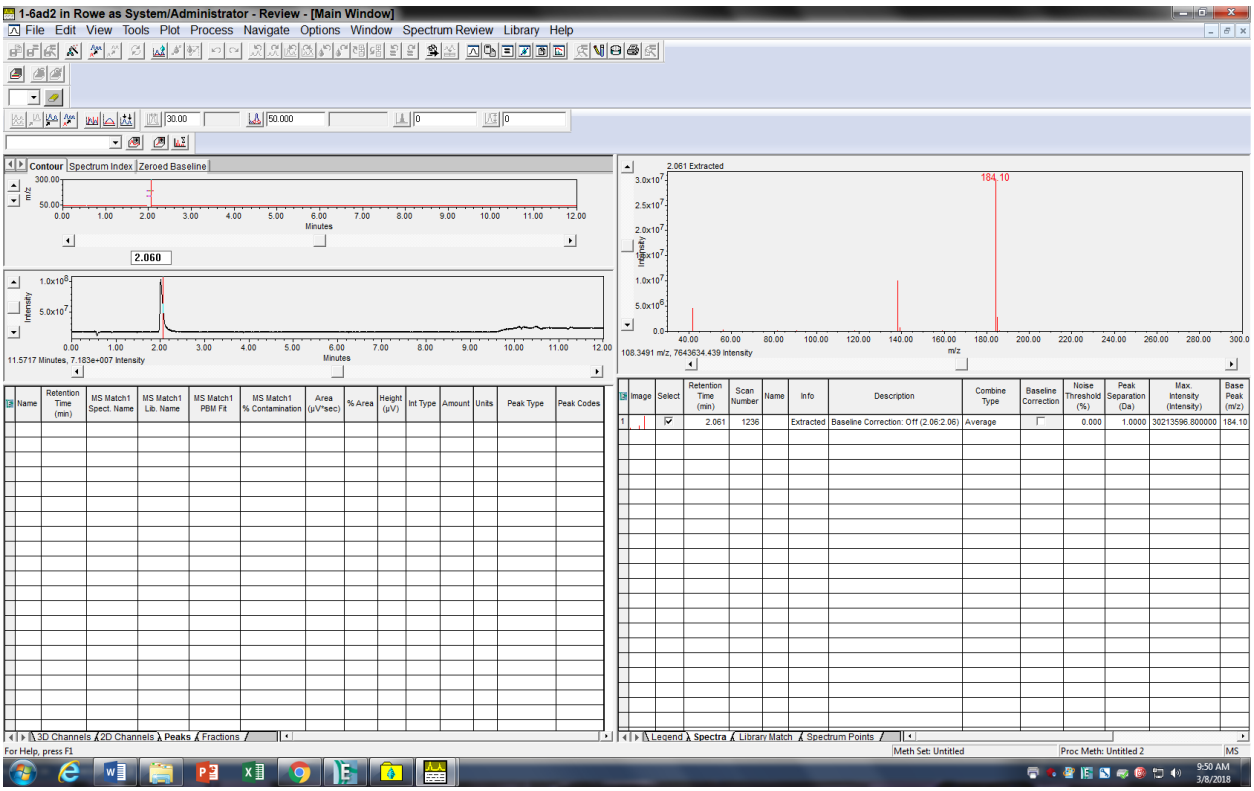


1-6 LC PDA Detector Data with Integrated Peak

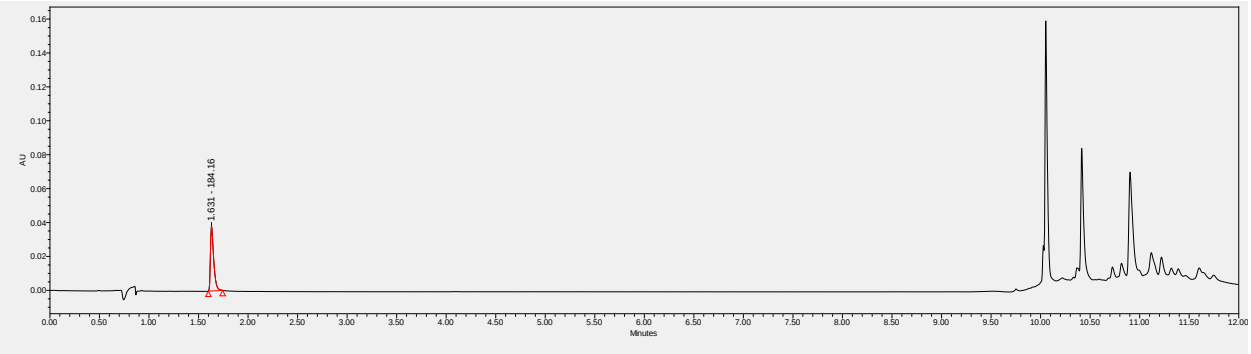


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.995	95629	100.00	31613	bb			Unknown	

1-6 Mass Spectrum

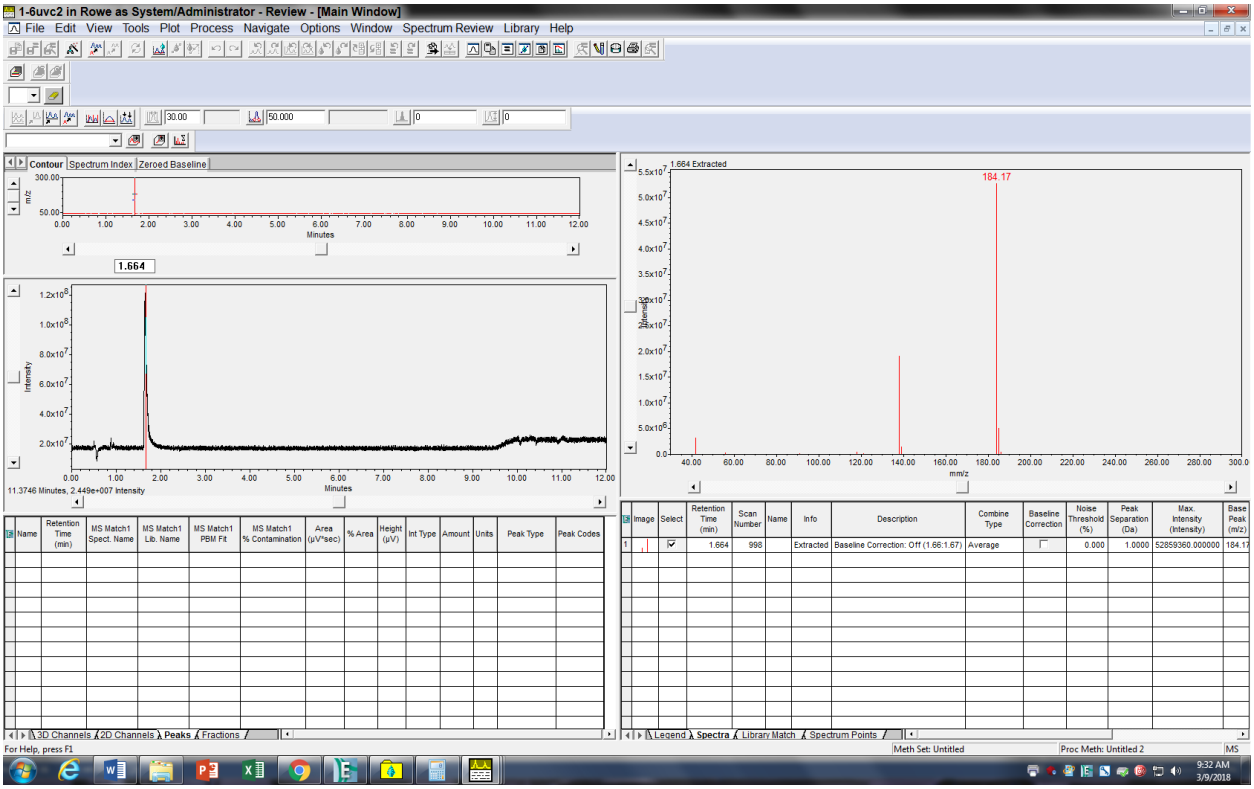


1-6 UV-C LC PDA Detector Data with Integrated Peak

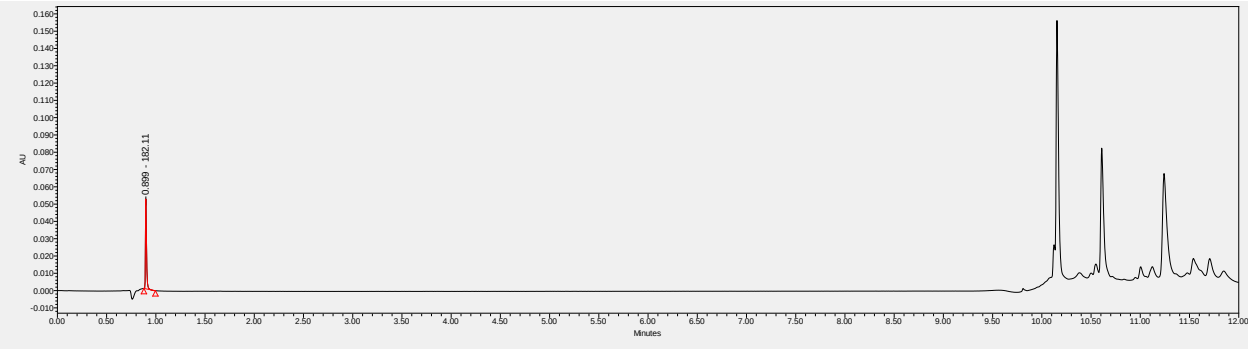


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.631	87632	100.00	38137	bb			Unknown

1-6 UVC Mass Spectrum

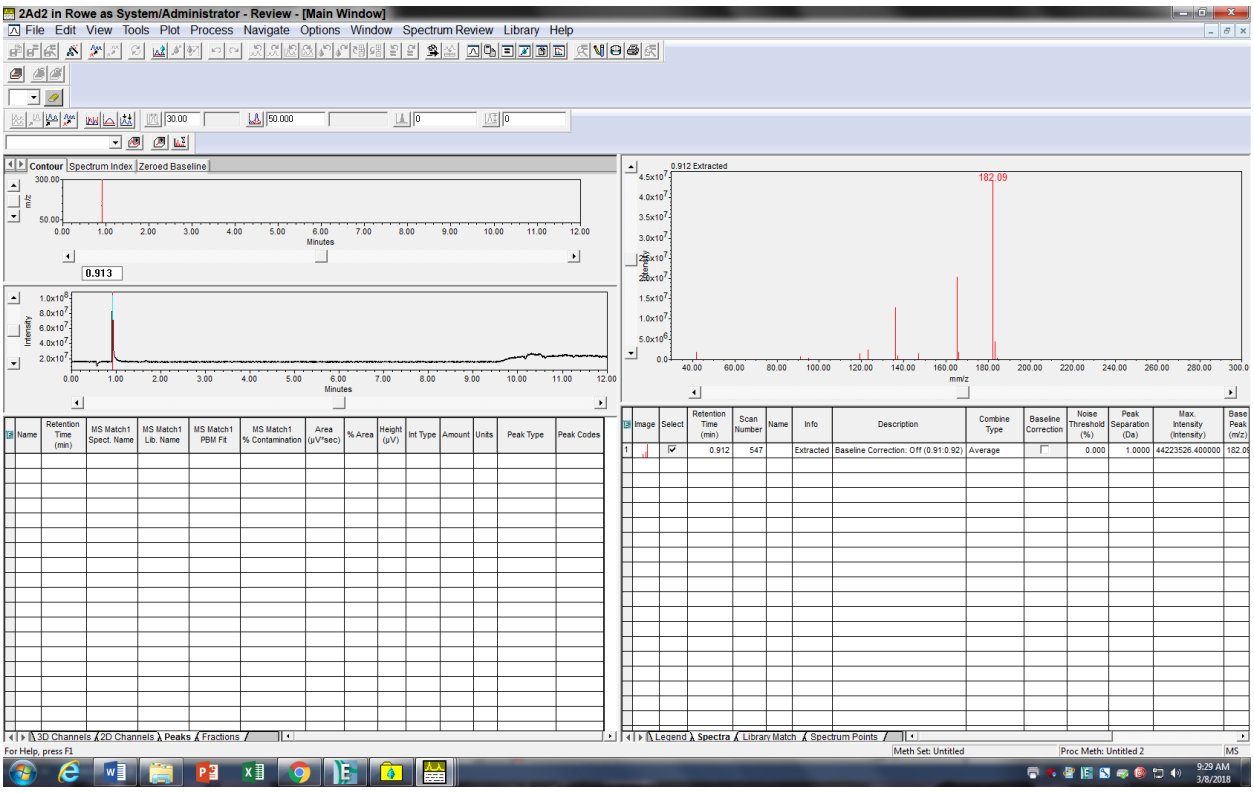


2 LC PDA Detector Data with Integrated Peak

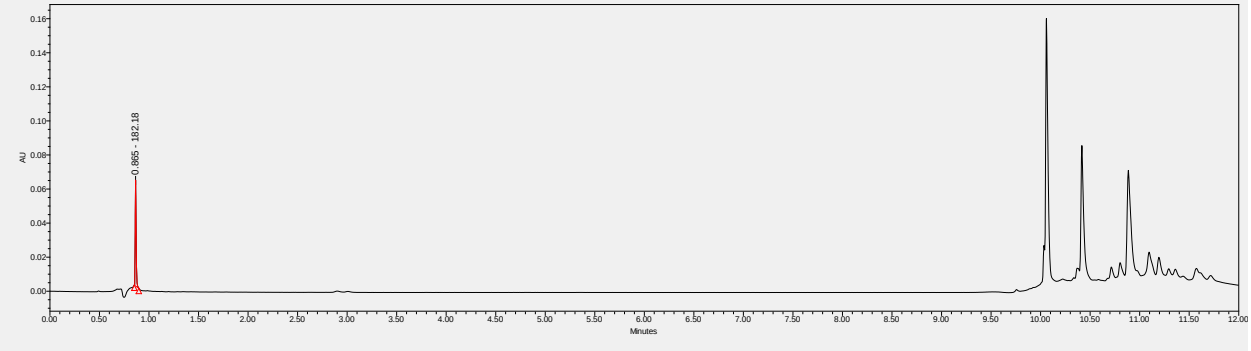


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.899	39379	100.00	52026	bb			Unknown

2 Mass Spectrum

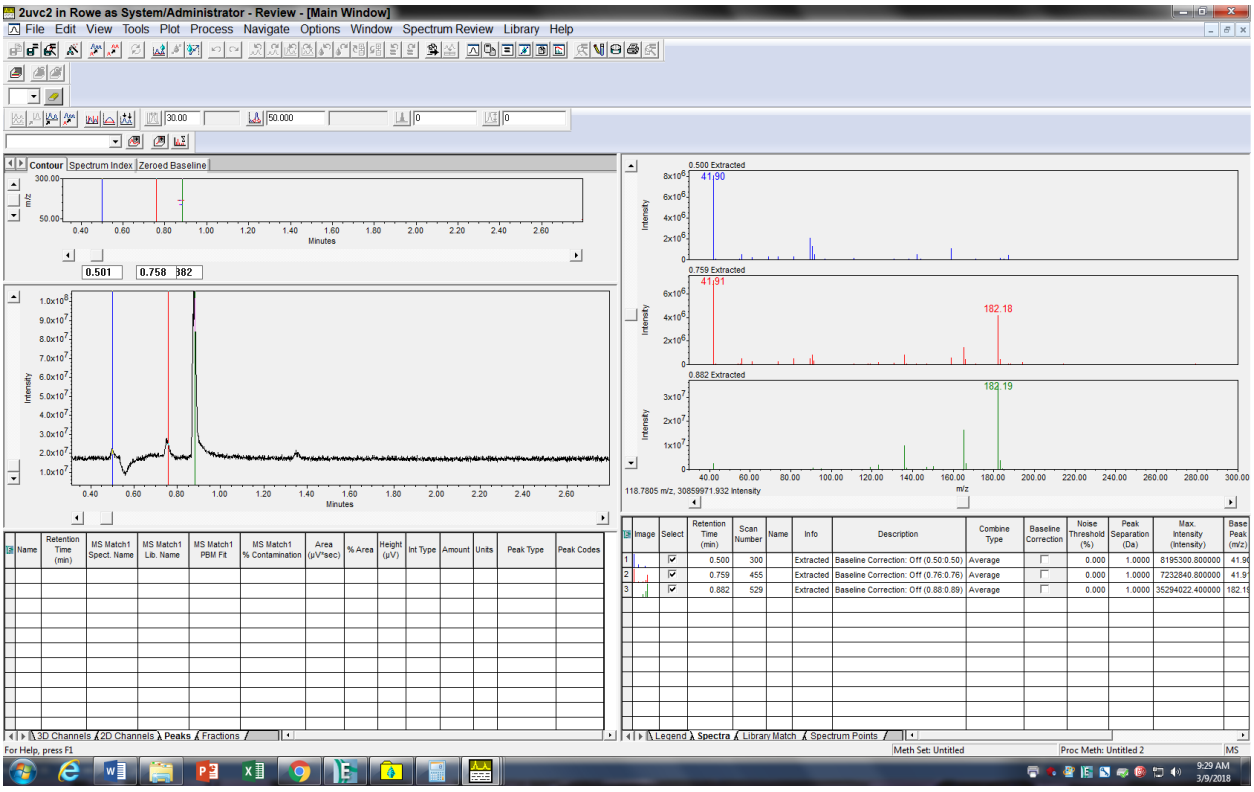


2 UV-C LC PDA Detector Data with Integrated Peak

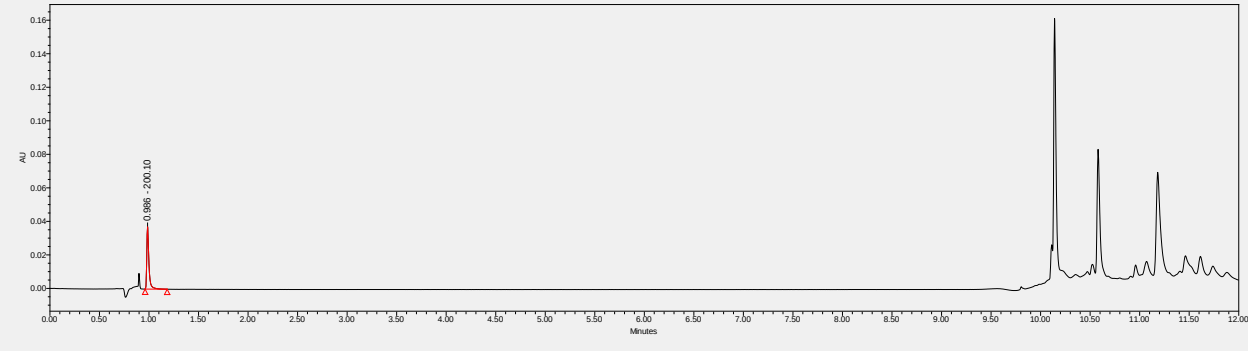


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.865	39576	100.00	62193	bb			Unknown

2 UVC Mass Spectrum

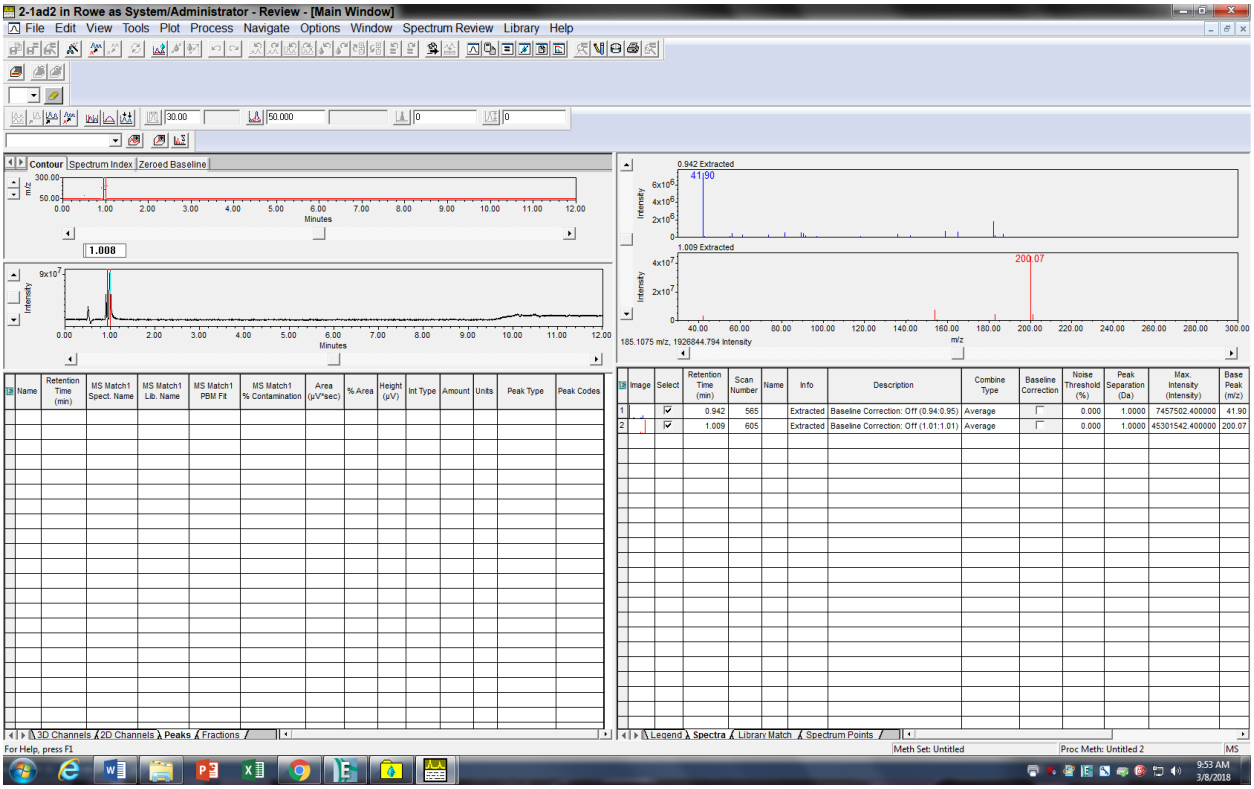


2-1 LC PDA Detector Data with Integrated Peak

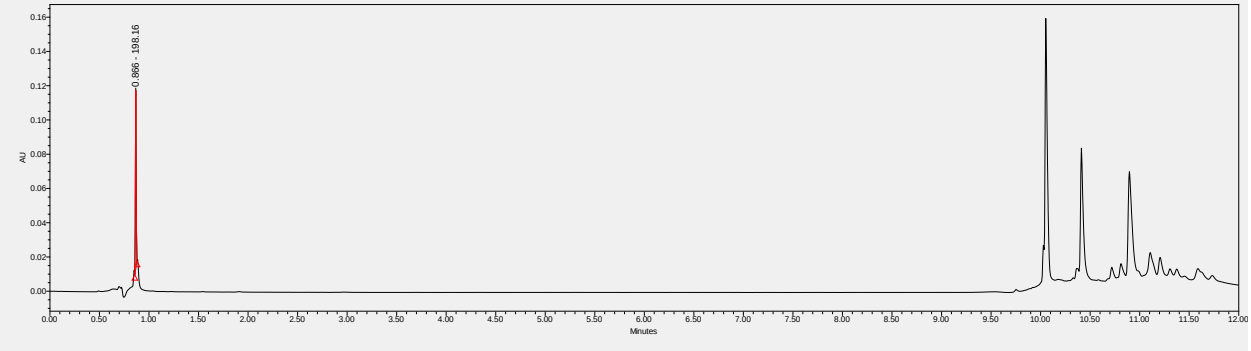


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.986	55681	100.00	37139	bb			Unknown	

2-1 Mass Spectrum

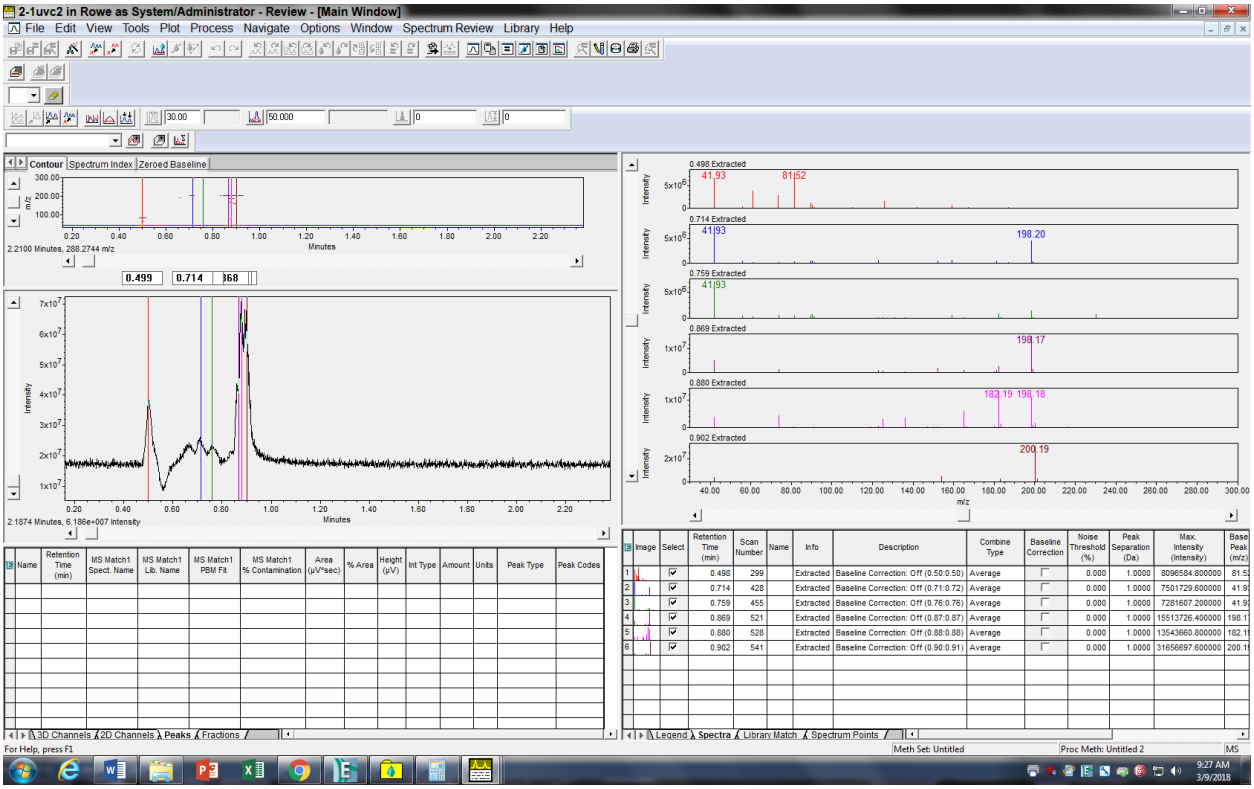


2-1 UV-C LC PDA Detector Data with Integrated Peak

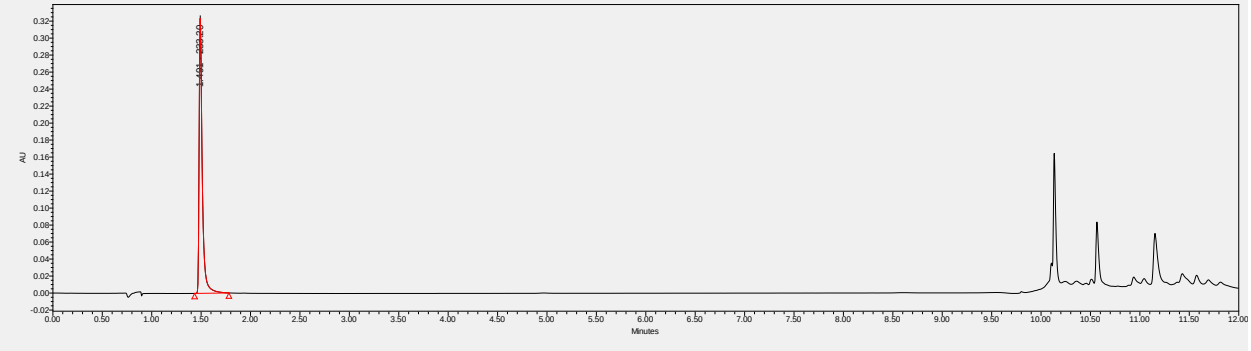


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.866	59089	100.00	105079	bb			Unknown

2-1 UVC Mass Spectrum

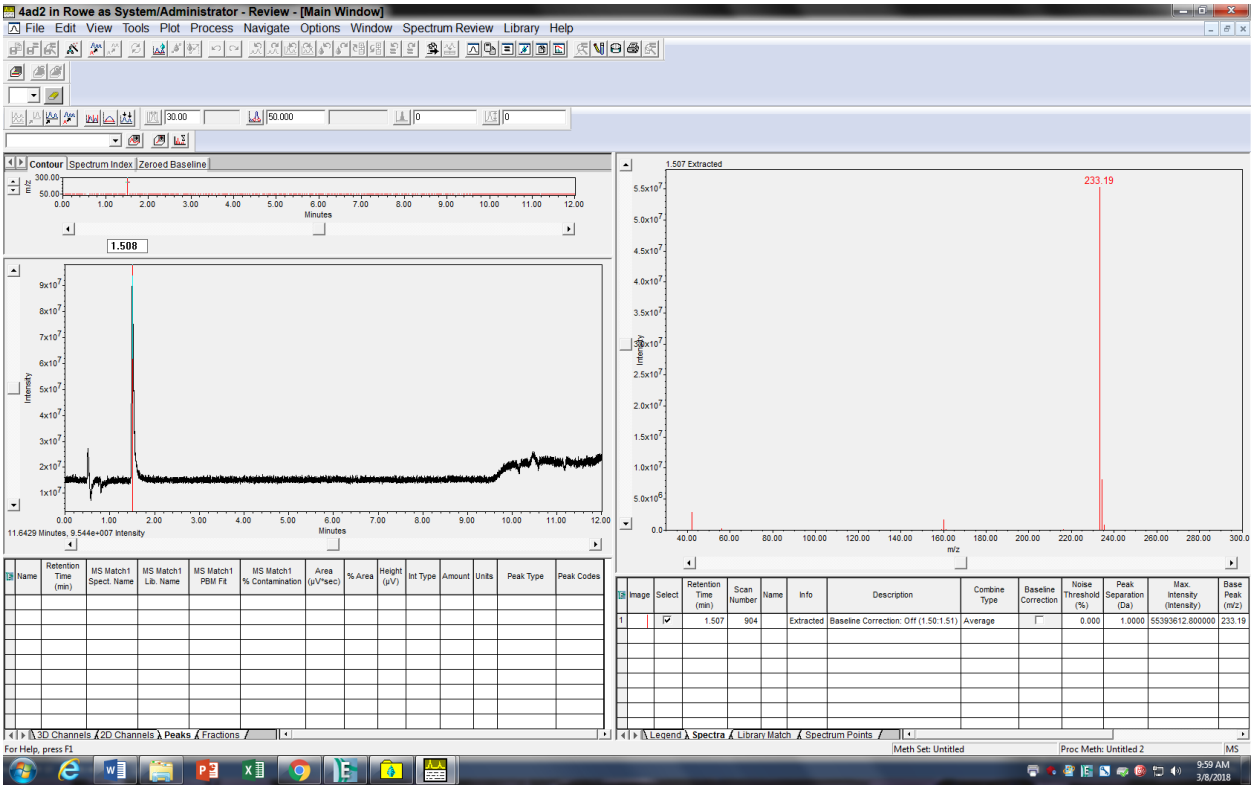


4 LC PDA Detector Data with Integrated Peak

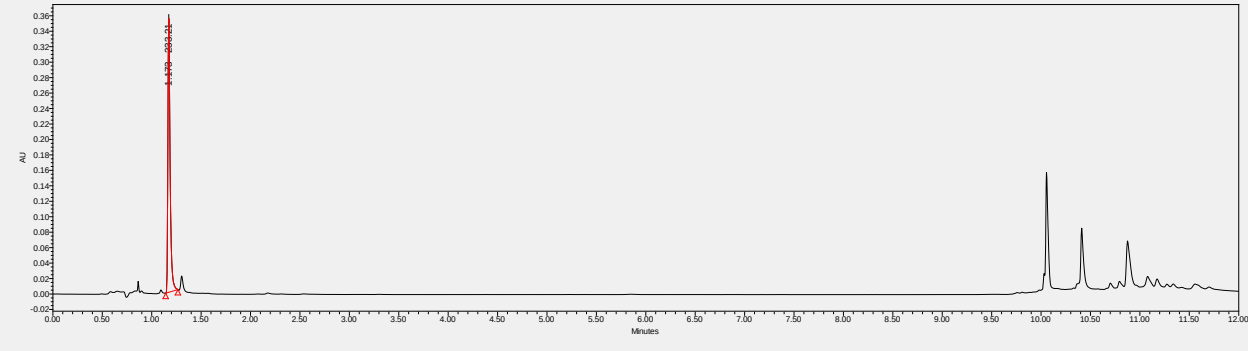


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.491	716988	100.00	323502	bb			Unknown

4 Mass Spectrum

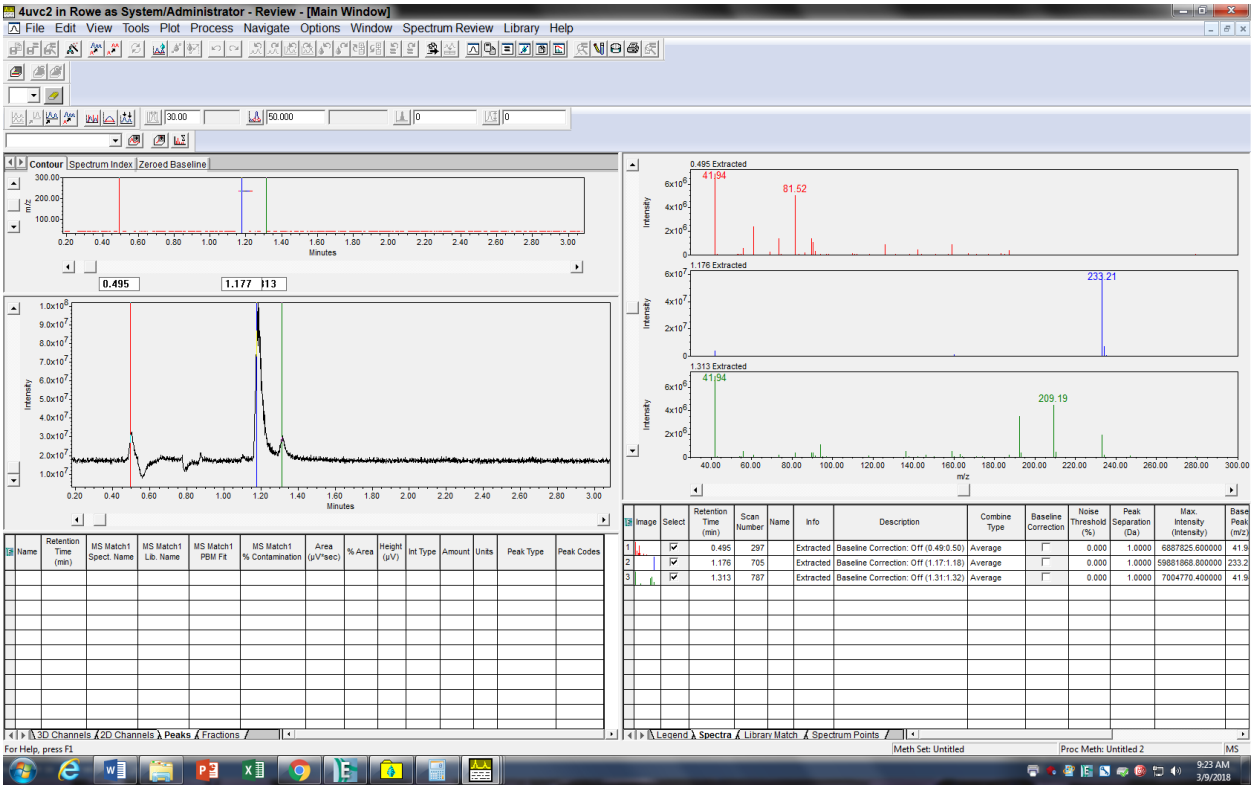


4 UV-C LC PDA Detector Data with Integrated Peak

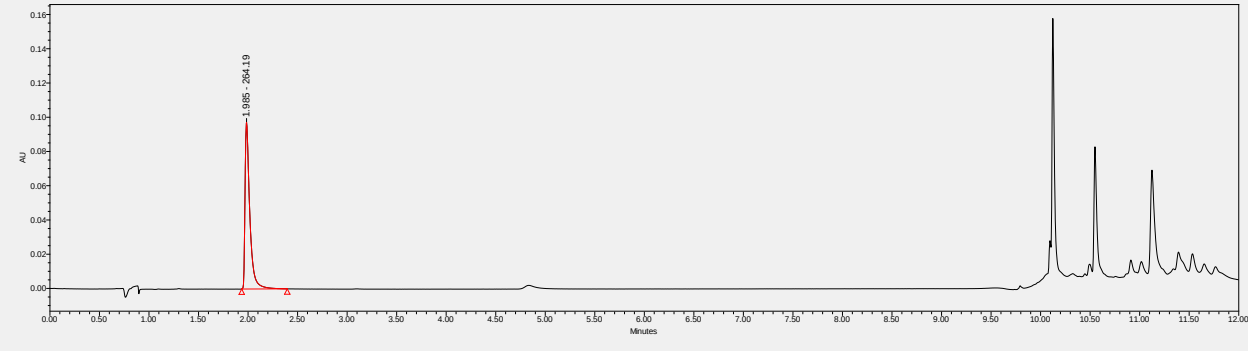


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.173	555588	100.00	354331	bb			Unknown

4 UVC Mass Spectrum

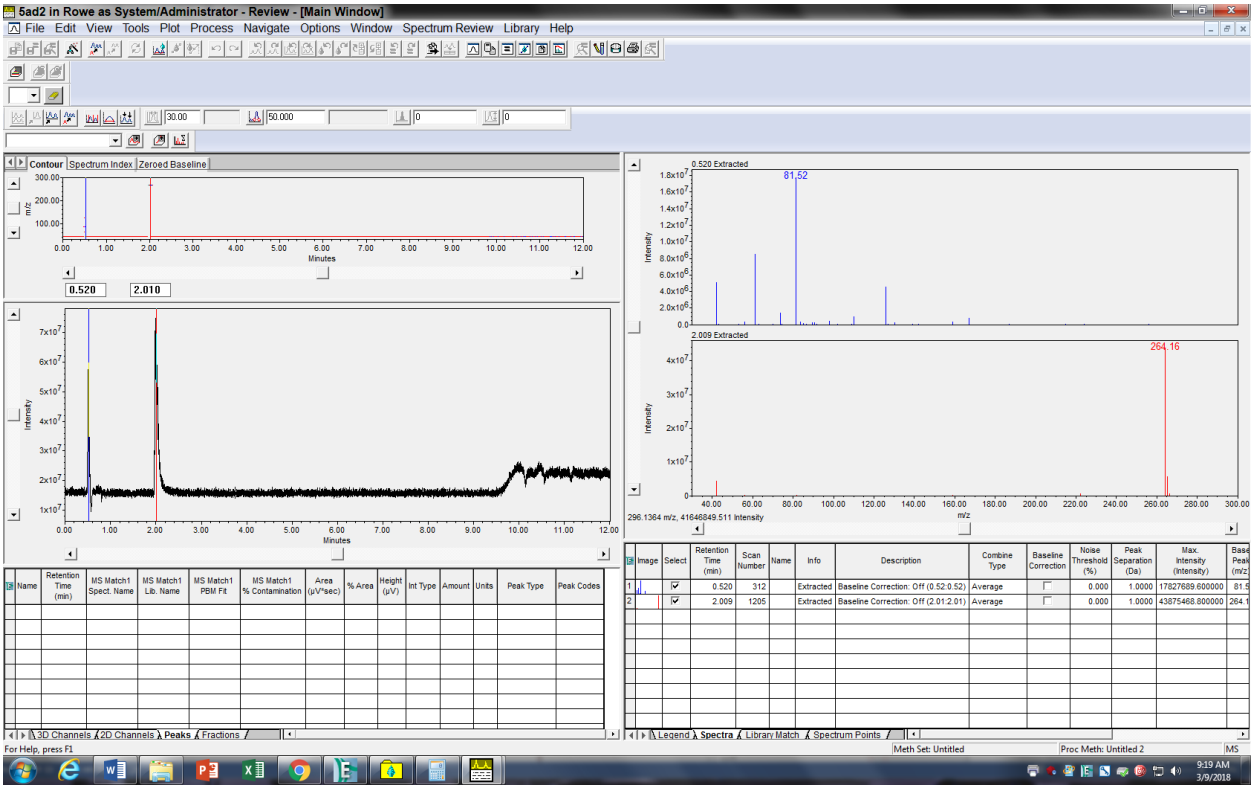


5 LC PDA Detector Data with Integrated Peak

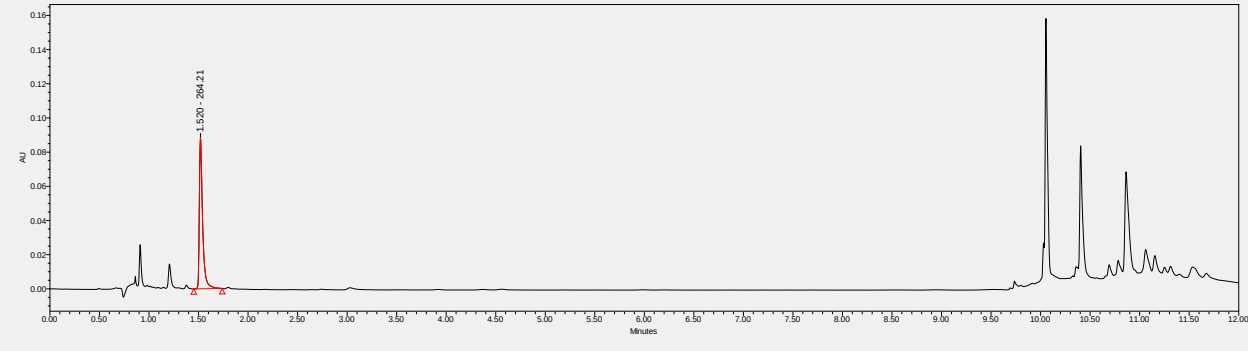


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.985	327286	100.00	97203	bb			Unknown

5 Mass Spectrum

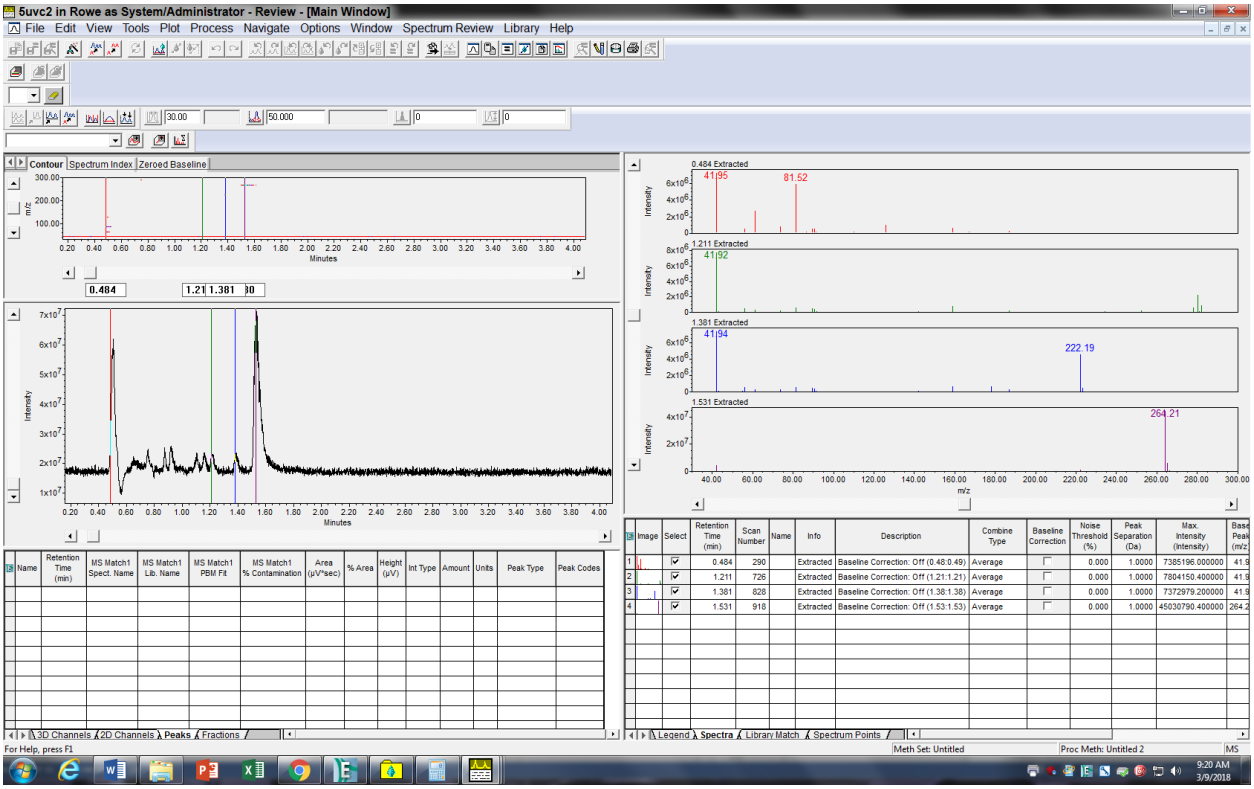


5 UV-C LC PDA Detector Data with Integrated Peak

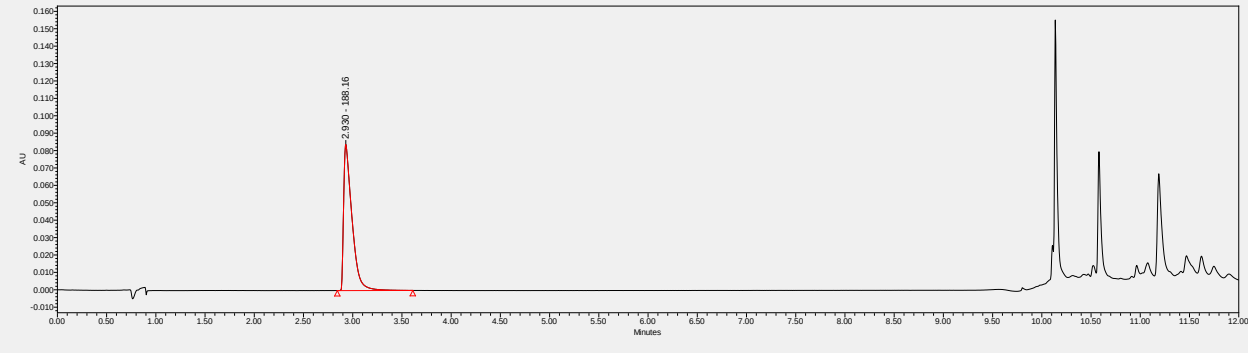


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.520	203226	100.00	88505	bb			Unknown

5 UVC Mass Spectrum

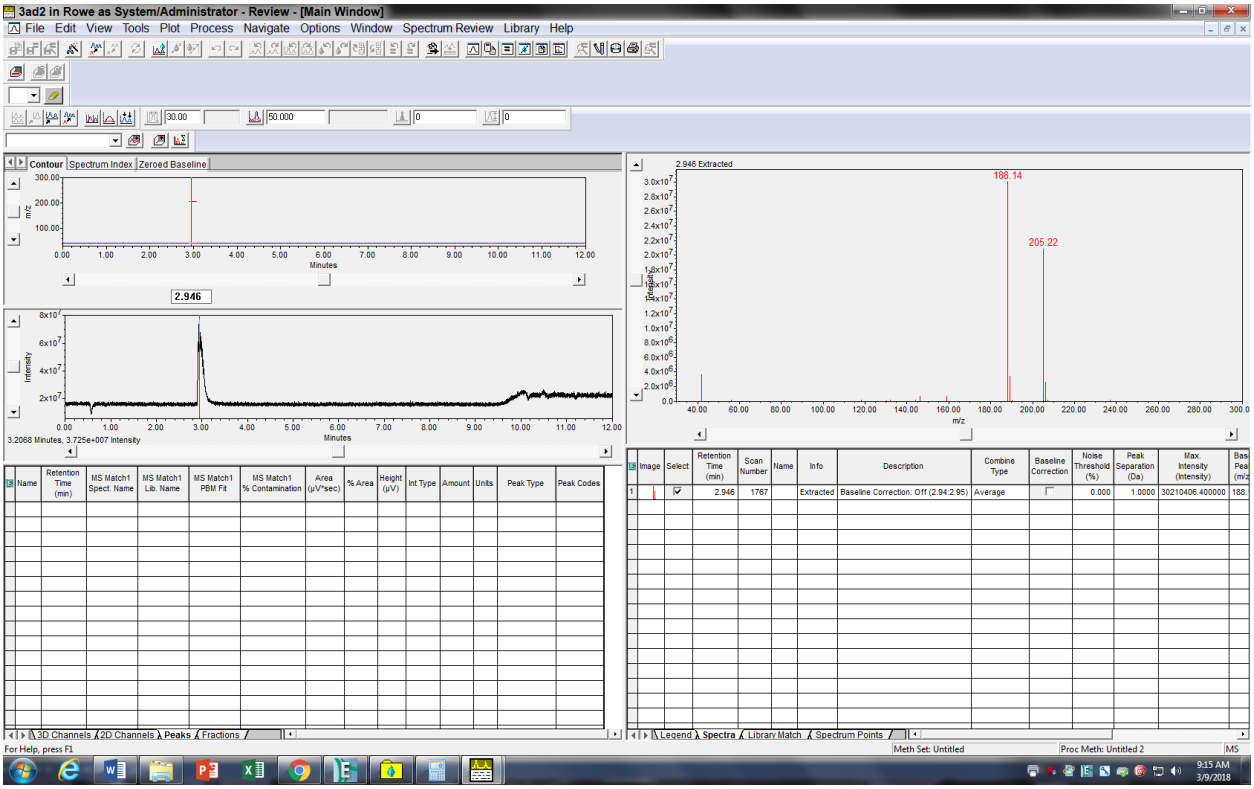


3 LC PDA Detector Data with Integrated Peak

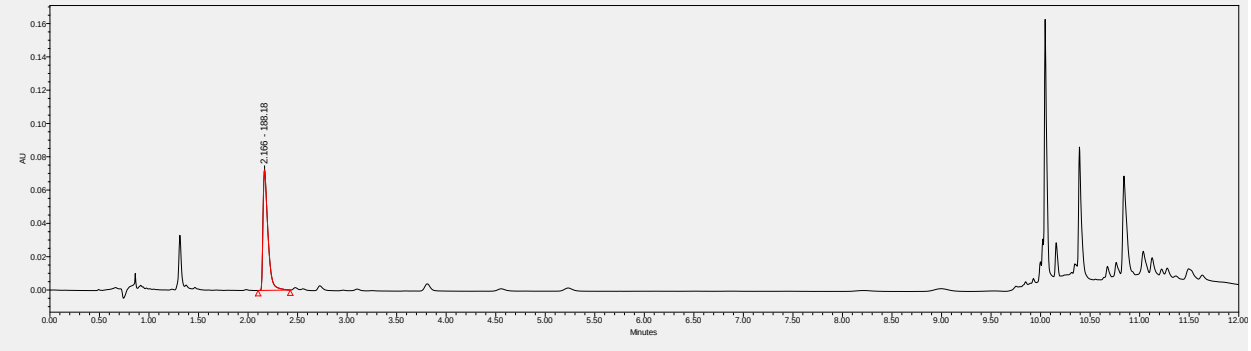


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		2.930	495936	100.00	83955	bb			Unknown	

3 Mass Spectrum

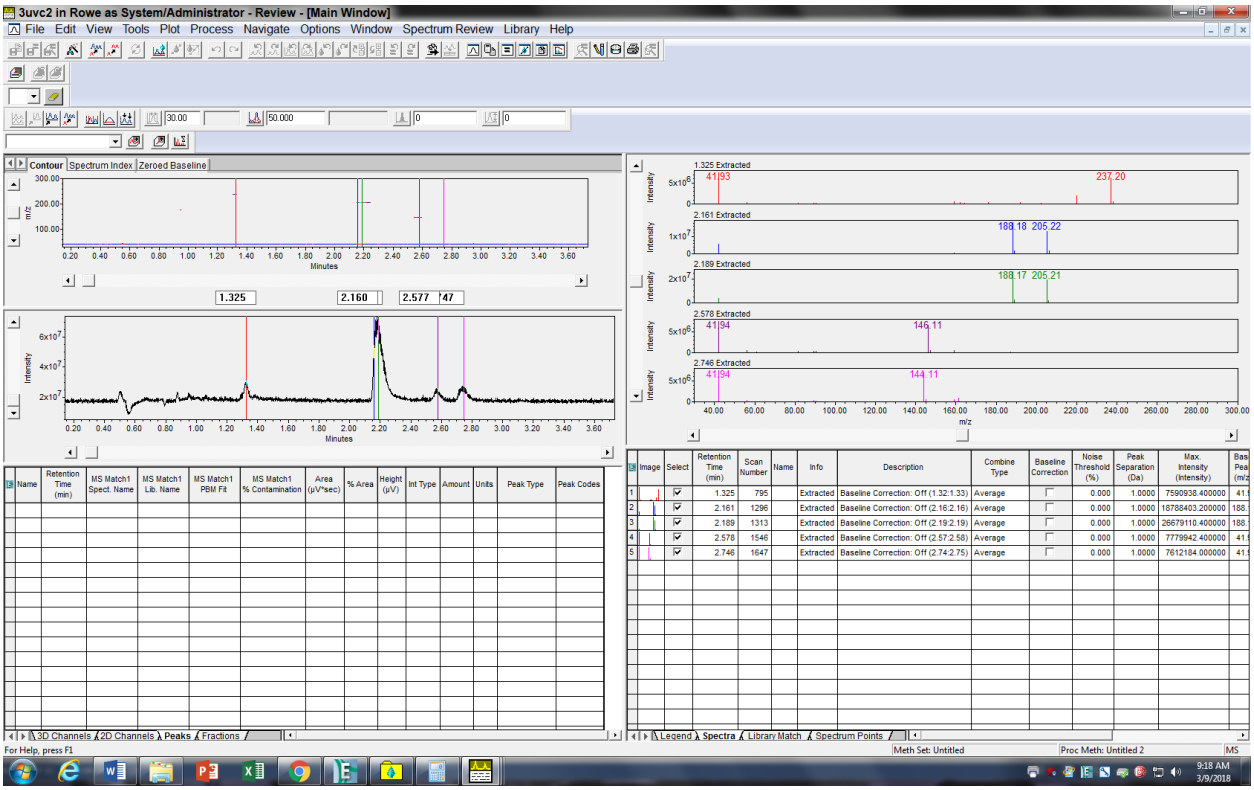


3 UV-C LC PDA Detector Data with Integrated Peak

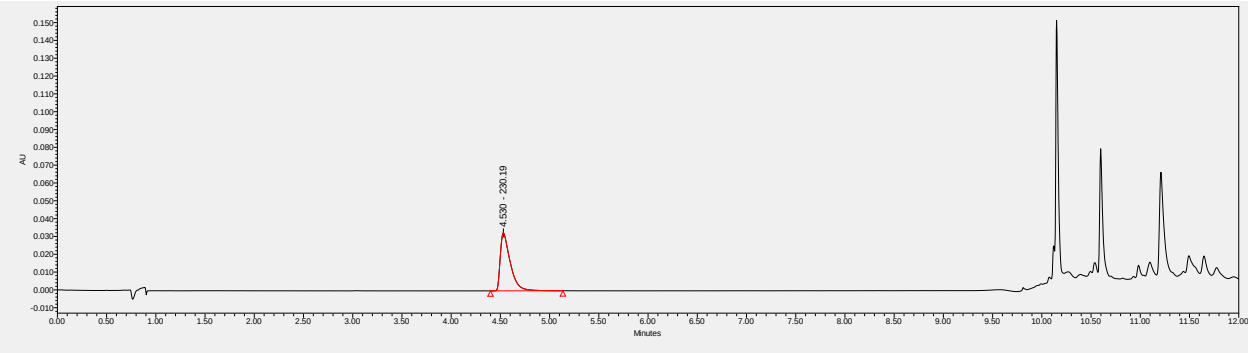


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		2.930	495936	100.00	83955	bb			Unknown	

3 UVC Mass Spectrum

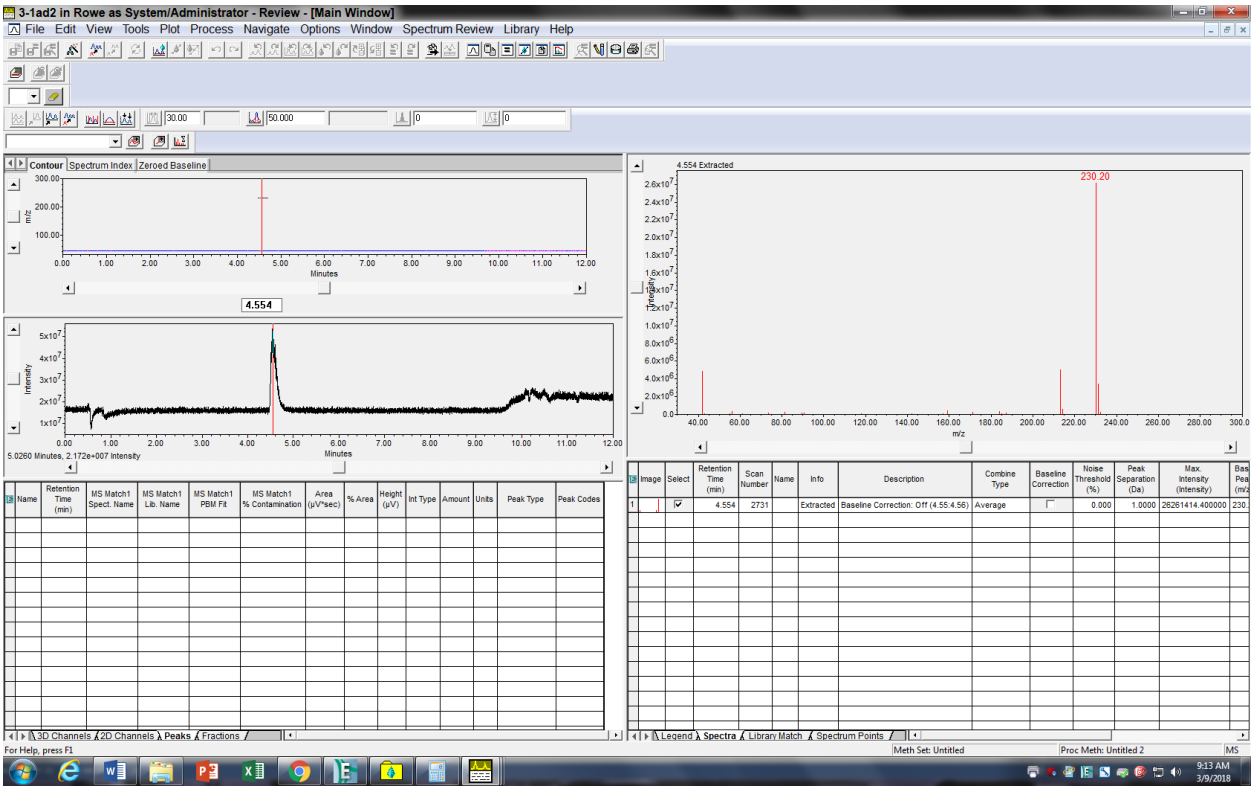


3-1 LC PDA Detector Data with Integrated Peak

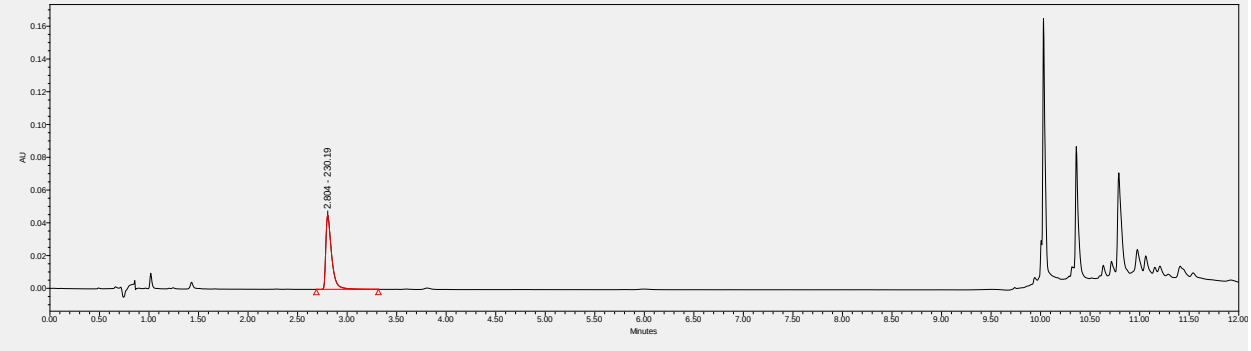


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		4.530	228635	100.00	32514	bb			Unknown	

3-1 Mass Spectrum

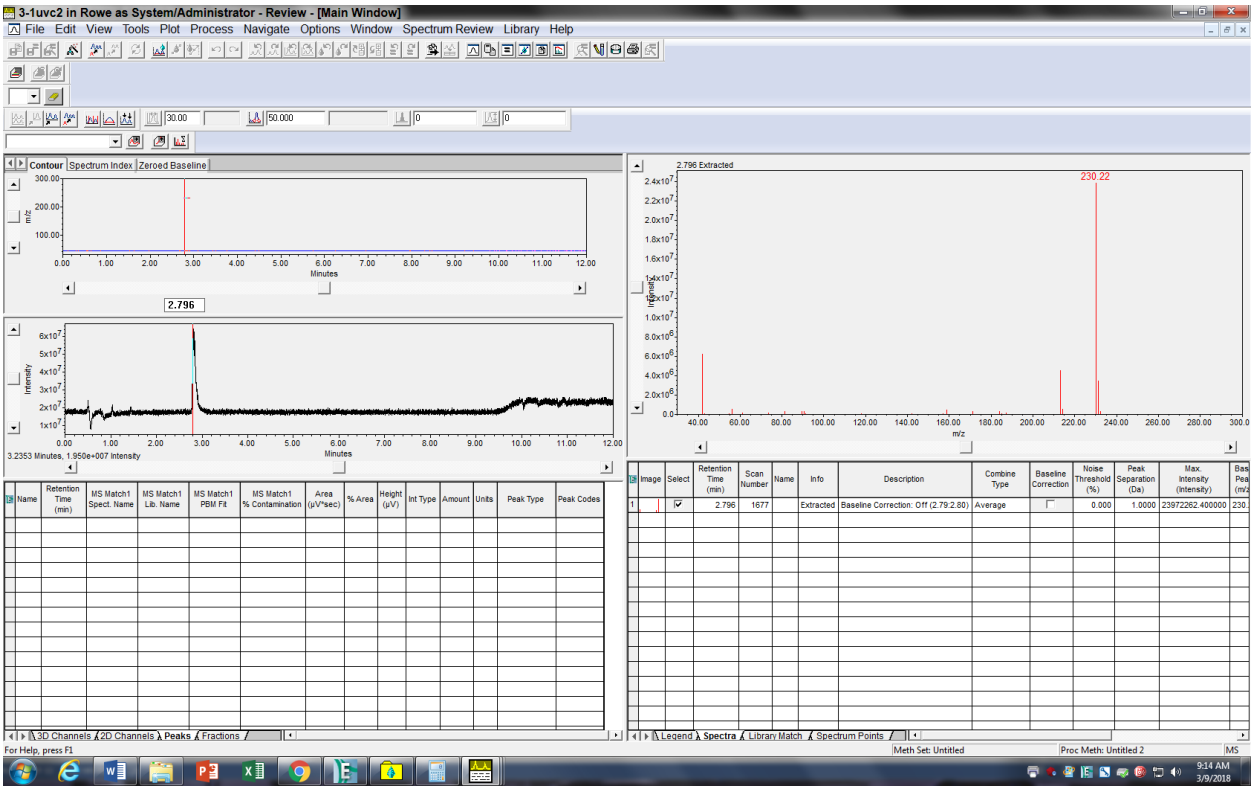


3-1 UV-C LC PDA Detector Data with Integrated Peak



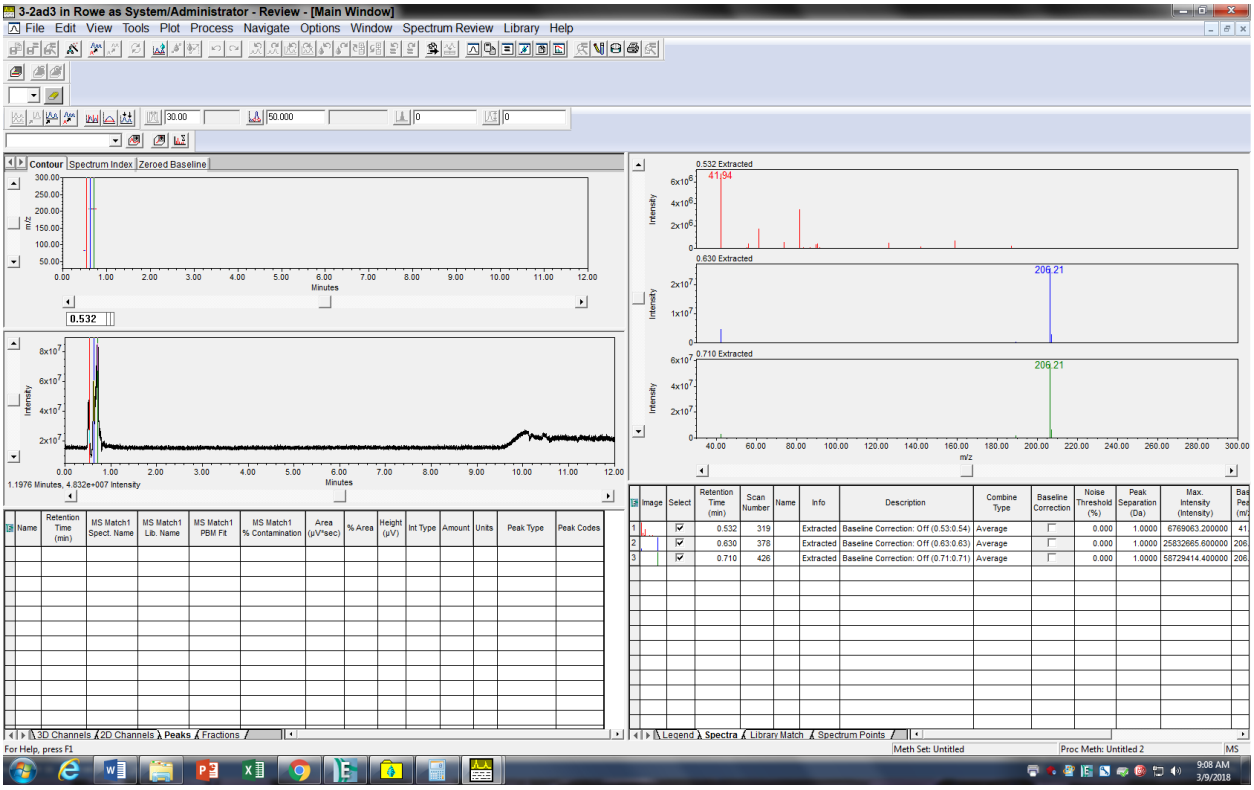
	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.804	184039	100.00	45311	bb			Unknown

3-1 UVC Mass Spectrum

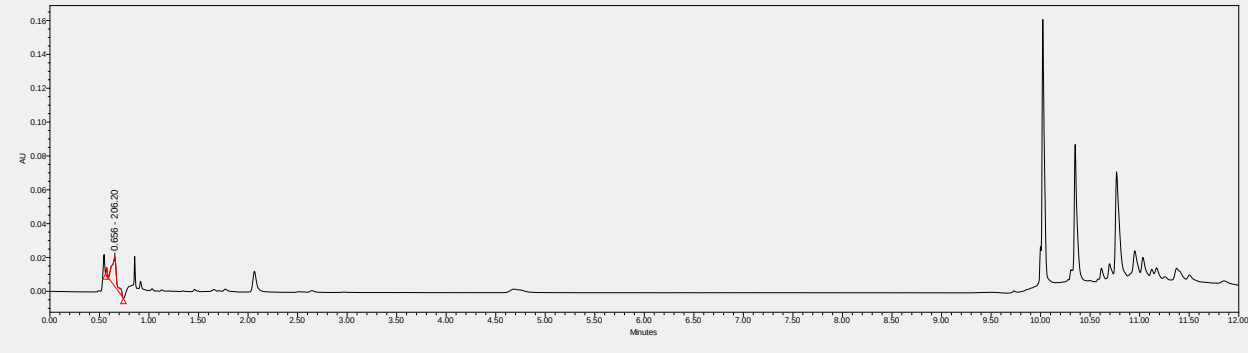


3-2 LC PDA Detector Data with Integrated Peak

3-2 Mass Spectrum

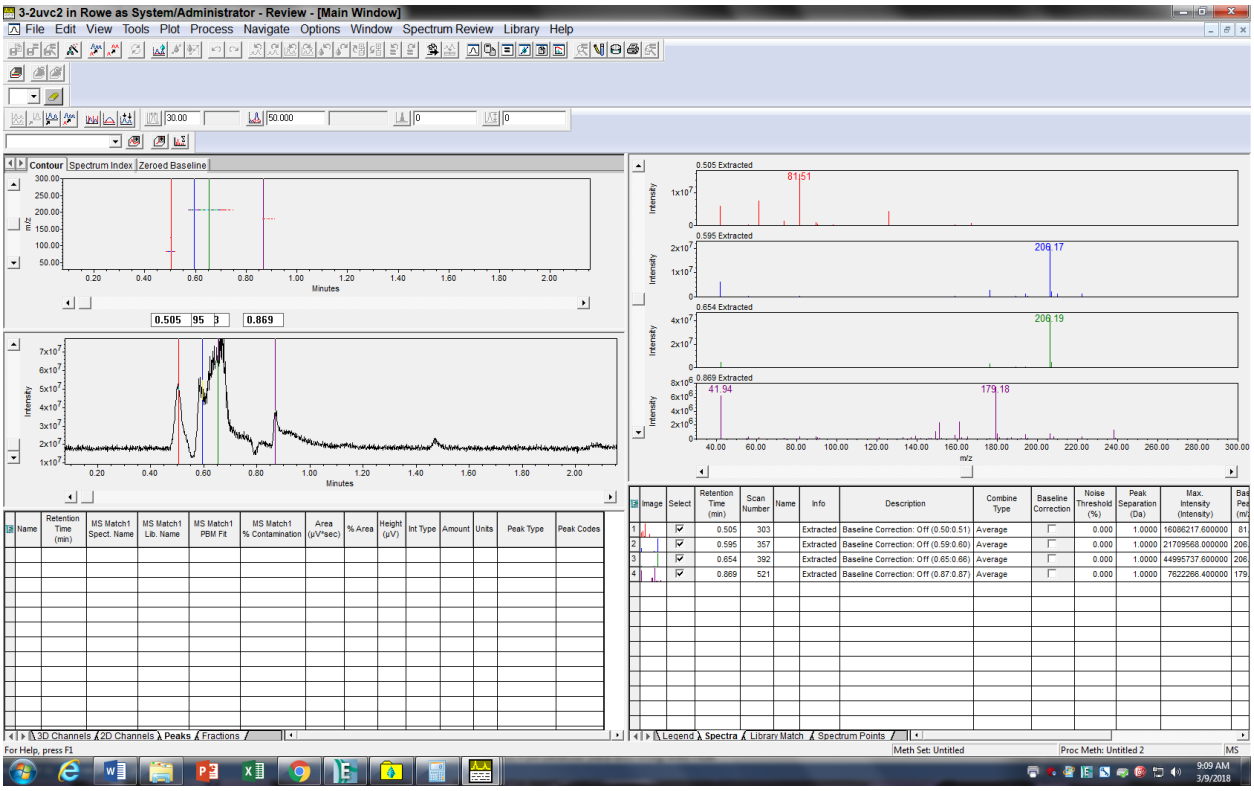


3-2 UV-C LC PDA Detector Data with Integrated Peak

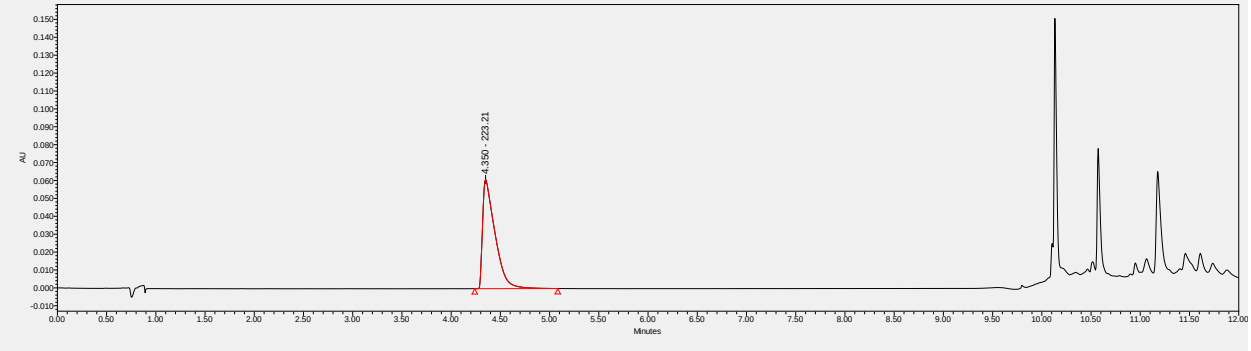


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.656	62342	100.00	17492	bb			Unknown

3-2 UVC Mass Spectrum

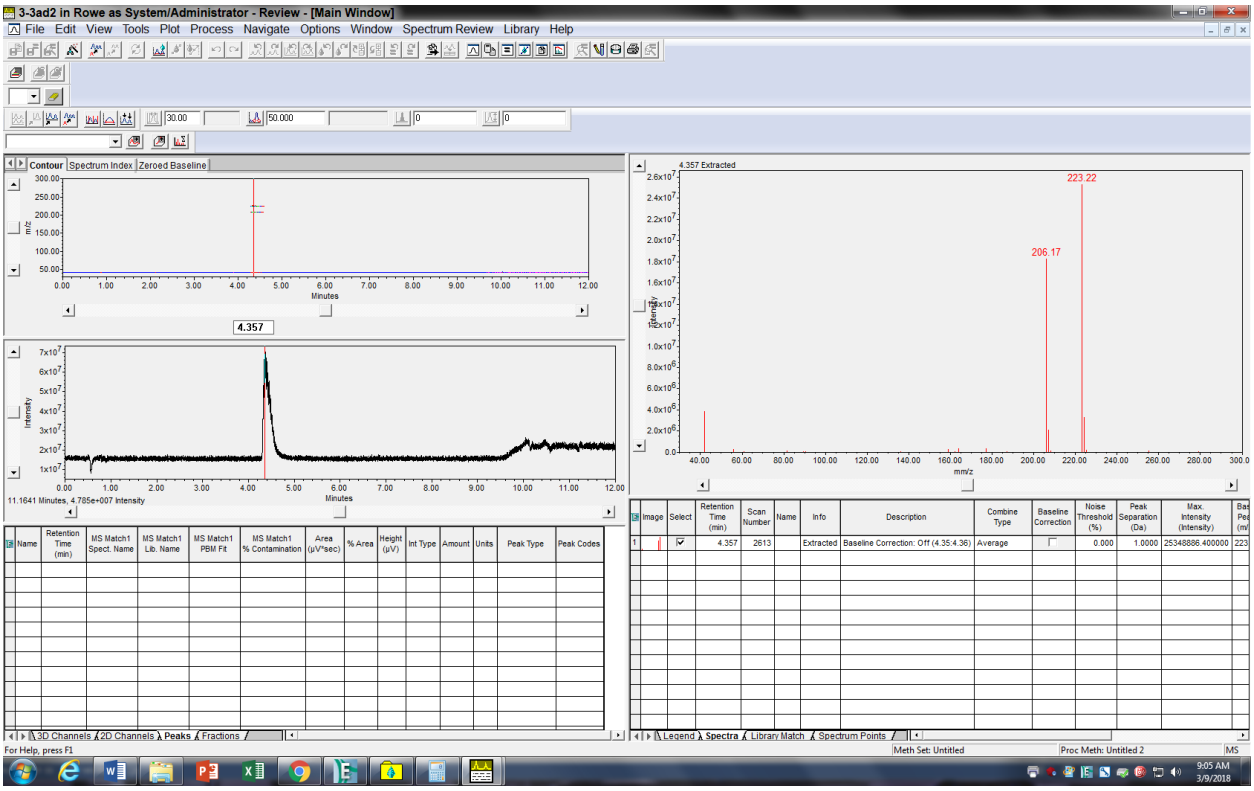


3-3 LC PDA Detector Data with Integrated Peak

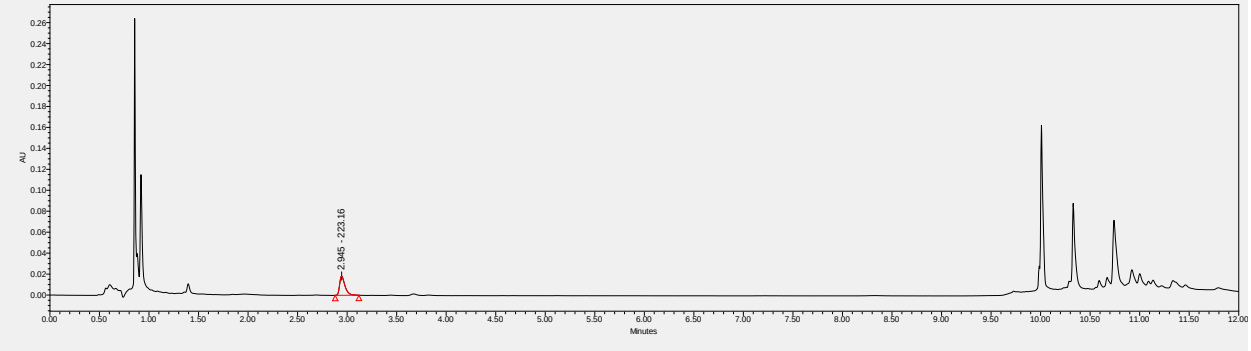


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.350	533792	100.00	61024	bb			Unknown

3-3 Mass Spectrum

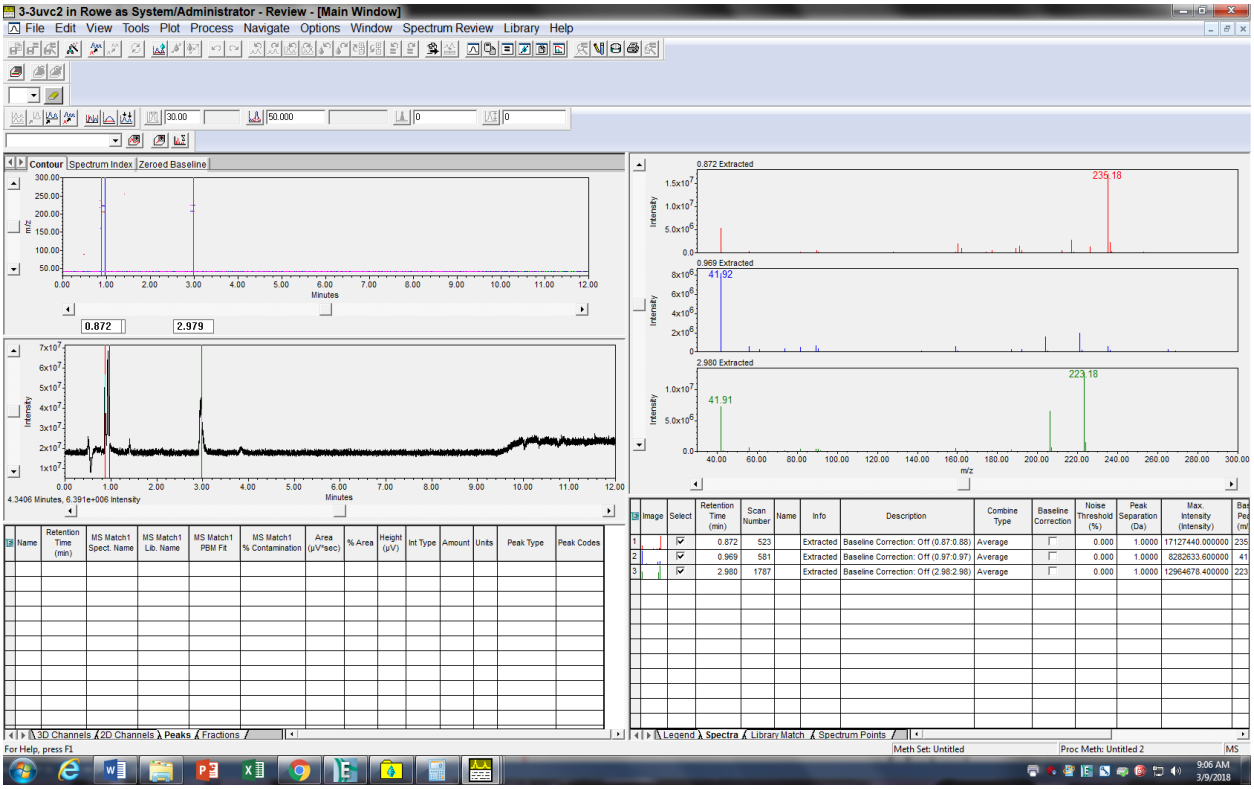


3-3 UV-C LC PDA Detector Data with Integrated Peak

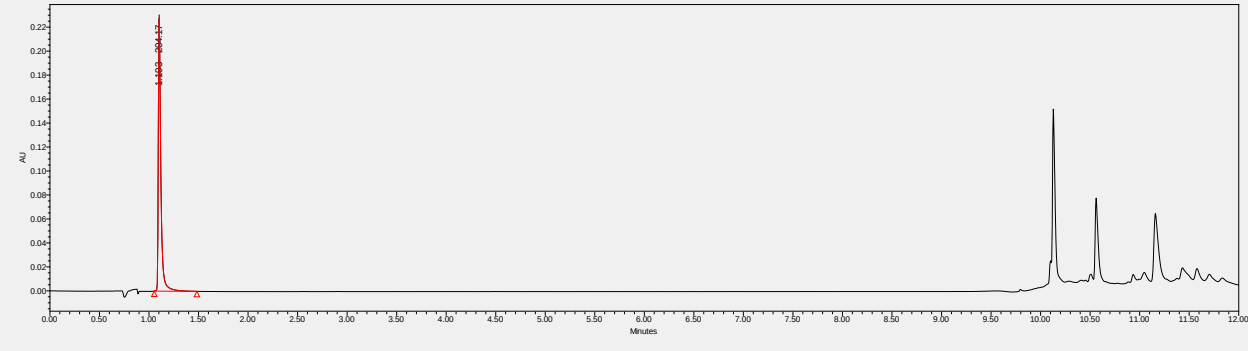


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.945	68888	100.00	18426	bb			Unknown

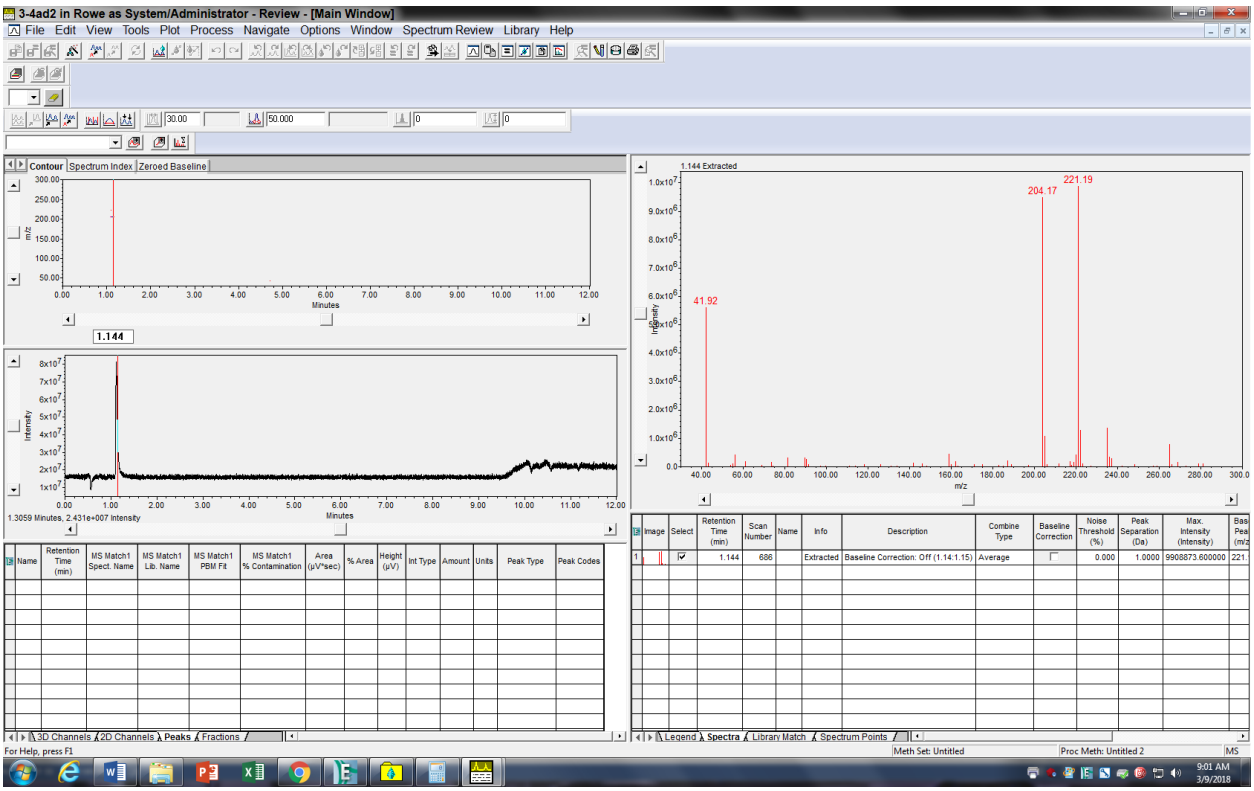
3-3 UVC Mass Spectrum



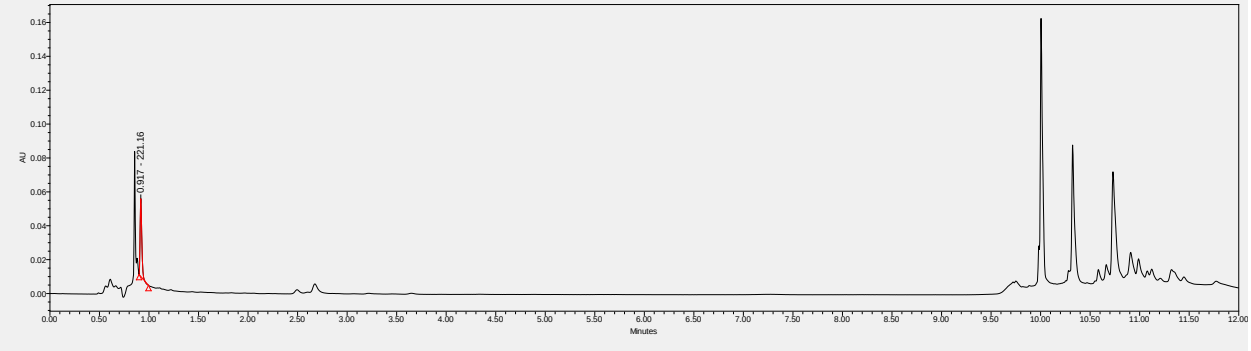
3-4 LC PDA Detector Data with Integrated Peak



3-4 Mass Spectrum

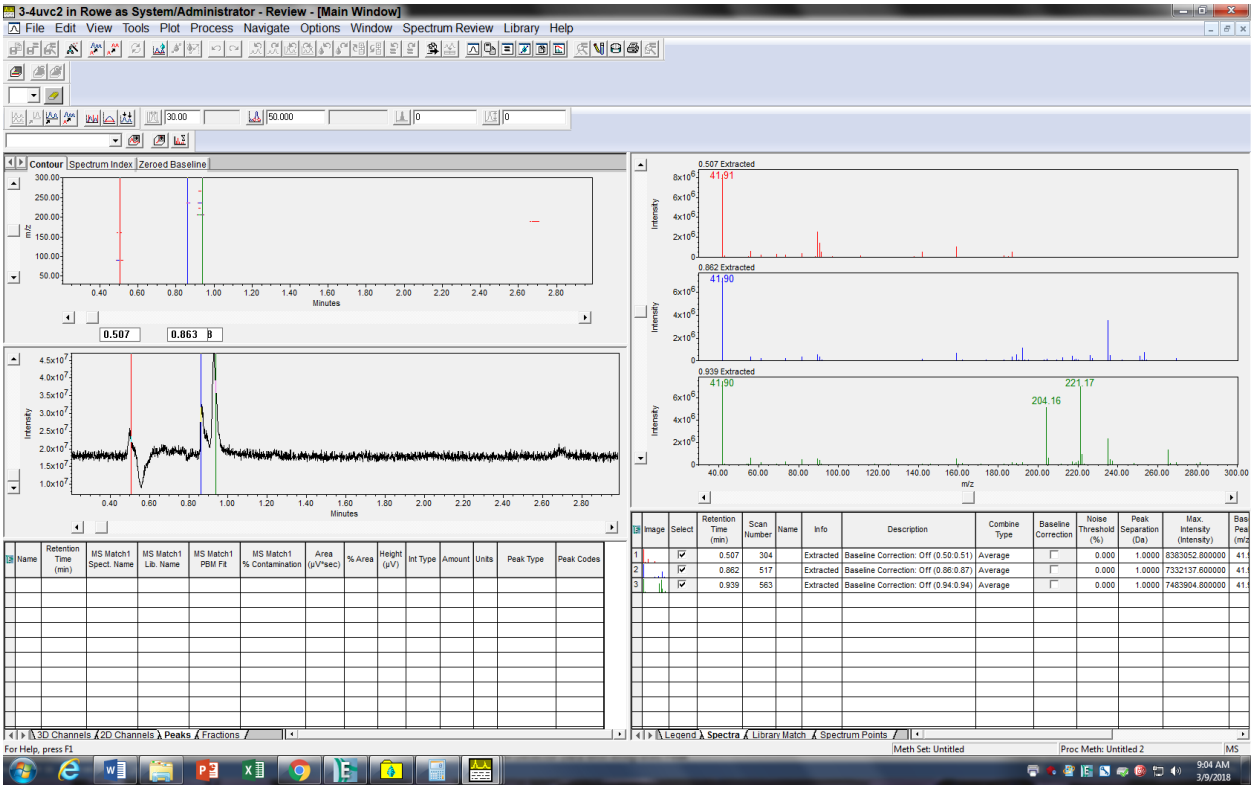


3-4 UV-C LC PDA Detector Data with Integrated Peak

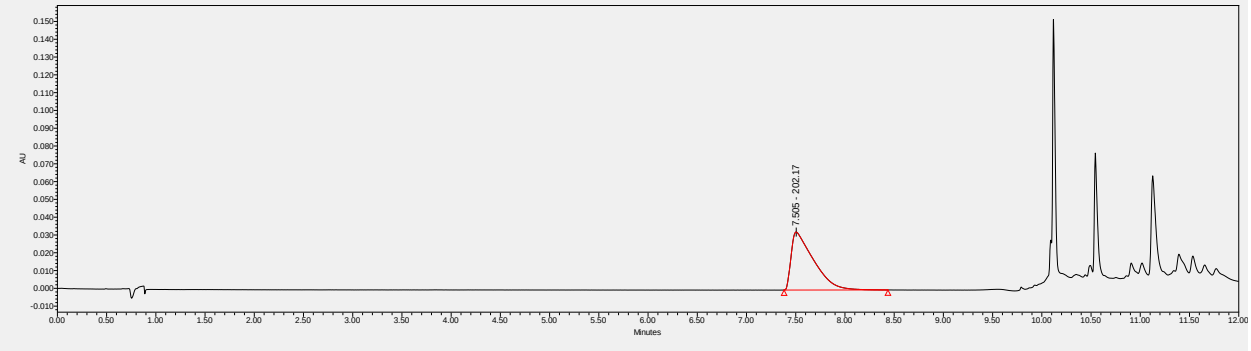


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		0.917	54423	100.00	45847	bb			Unknown	

3-4 UVC Mass Spectrum

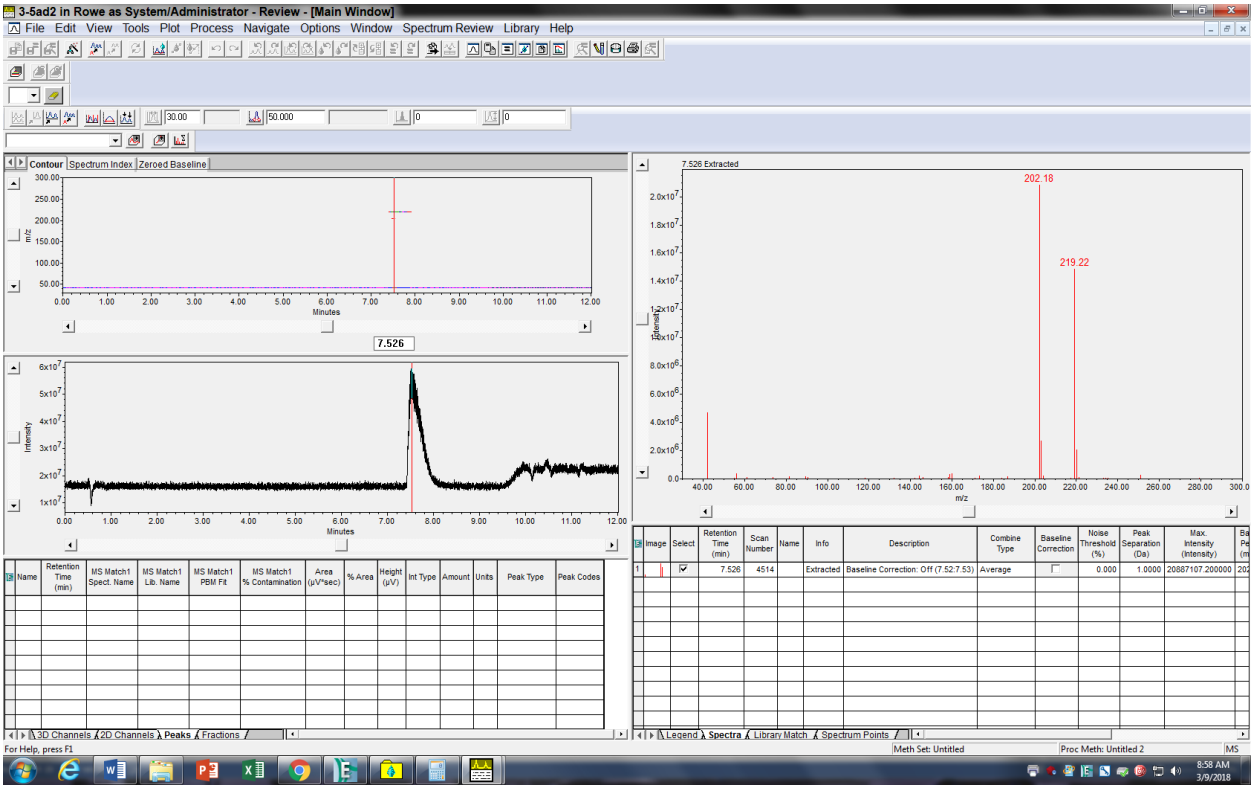


3-5 LC PDA Detector Data with Integrated Peak

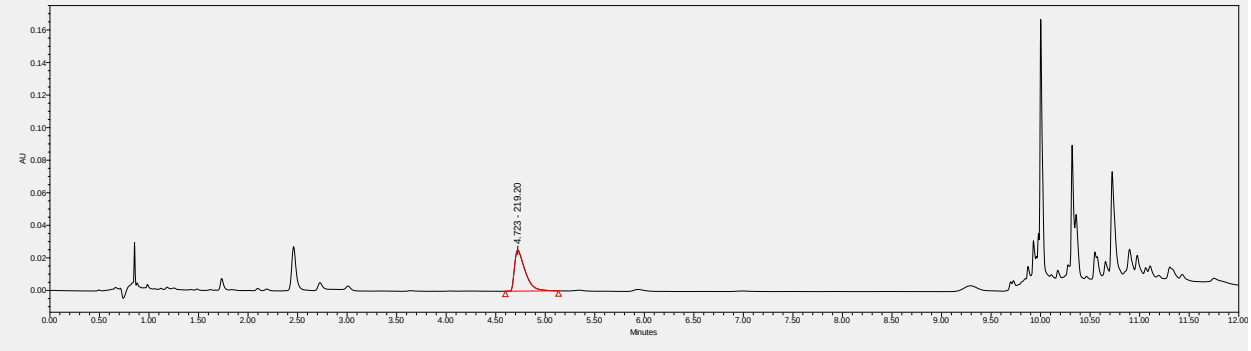


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		7.505	513514	100.00	32606	bb			Unknown	

3-5 Mass Spectrum

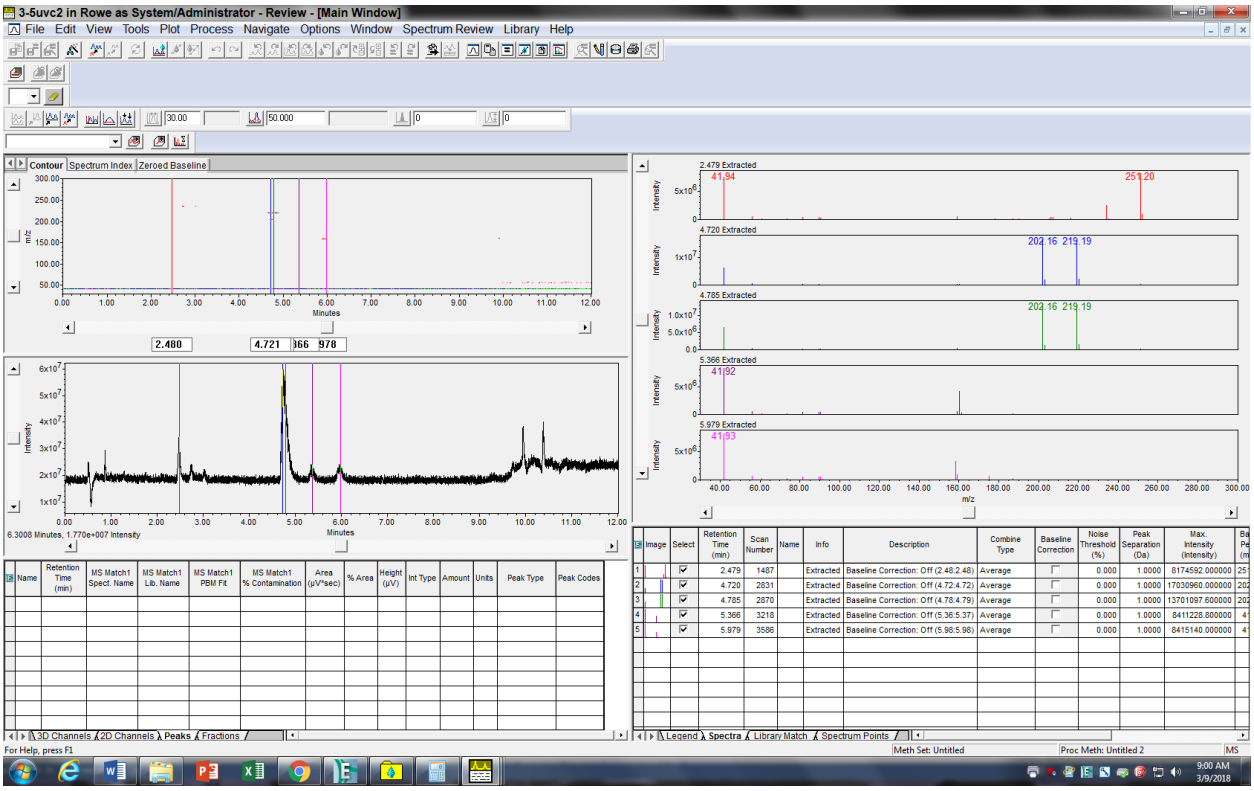


3-5 UV-C LC PDA Detector Data with Integrated Peak

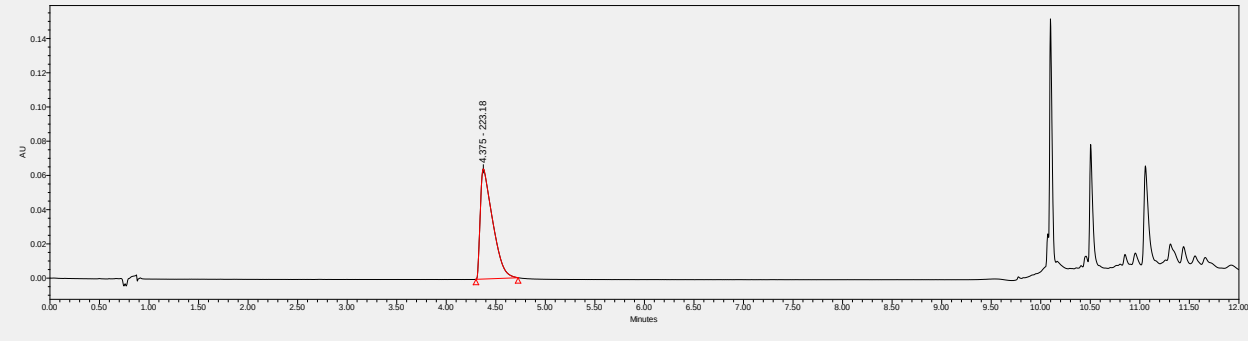


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.723	186241	100.00	25162	bb			Unknown

3-5 UVC Mass Spectrum

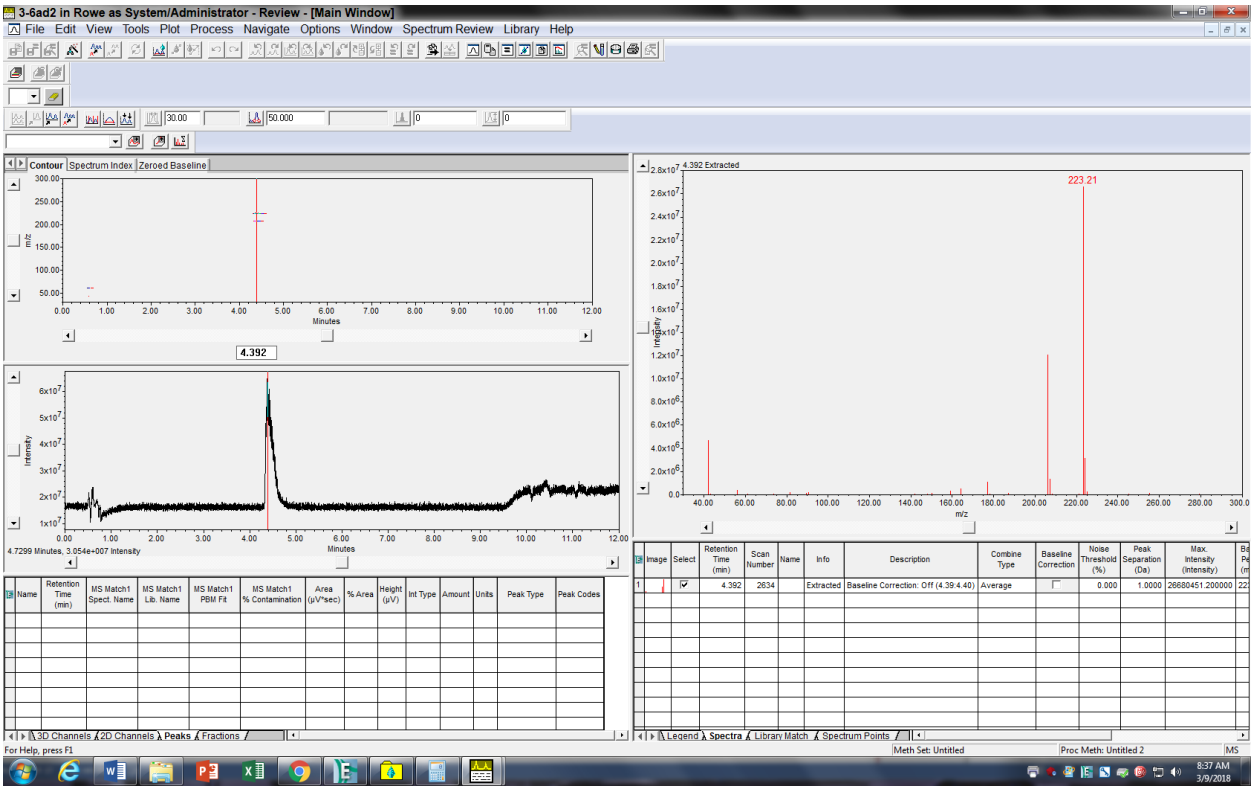


3-6 LC PDA Detector Data with Integrated Peak

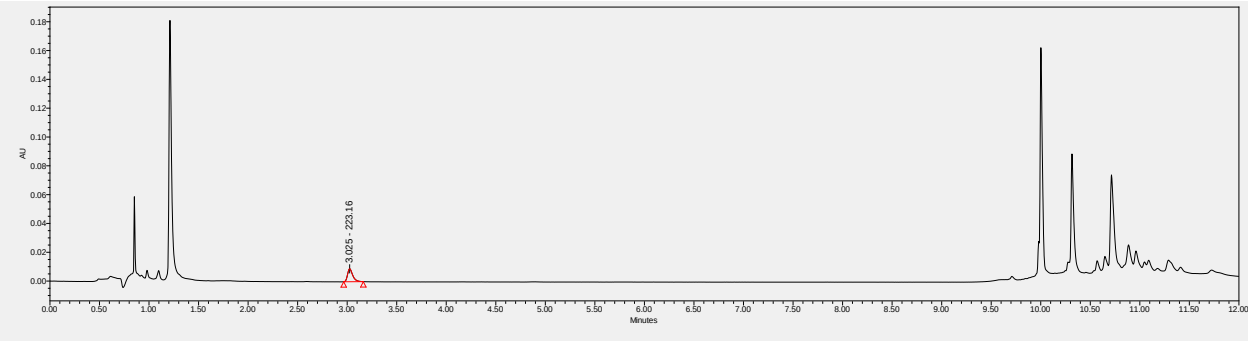


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		4.375	558204	100.00	64428	bb			Unknown	

3-6 Mass Spectrum

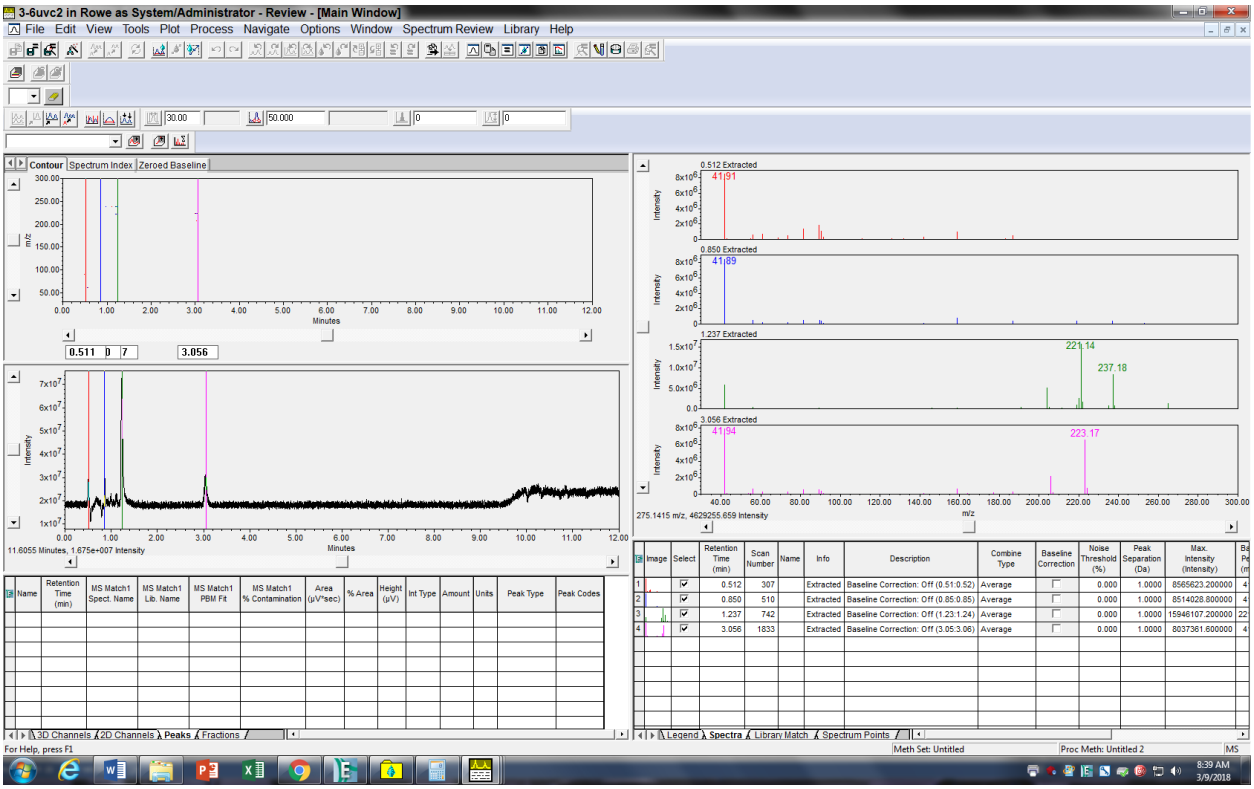


3-6 UV-C LC PDA Detector Data with Integrated Peak

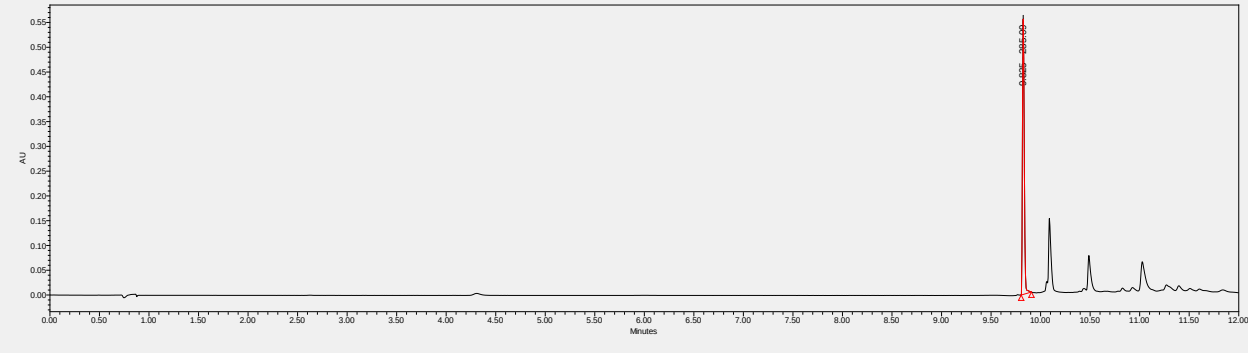


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		3.025	32696	100.00	8990	bb			Unknown	

3-6 UVC Mass Spectrum

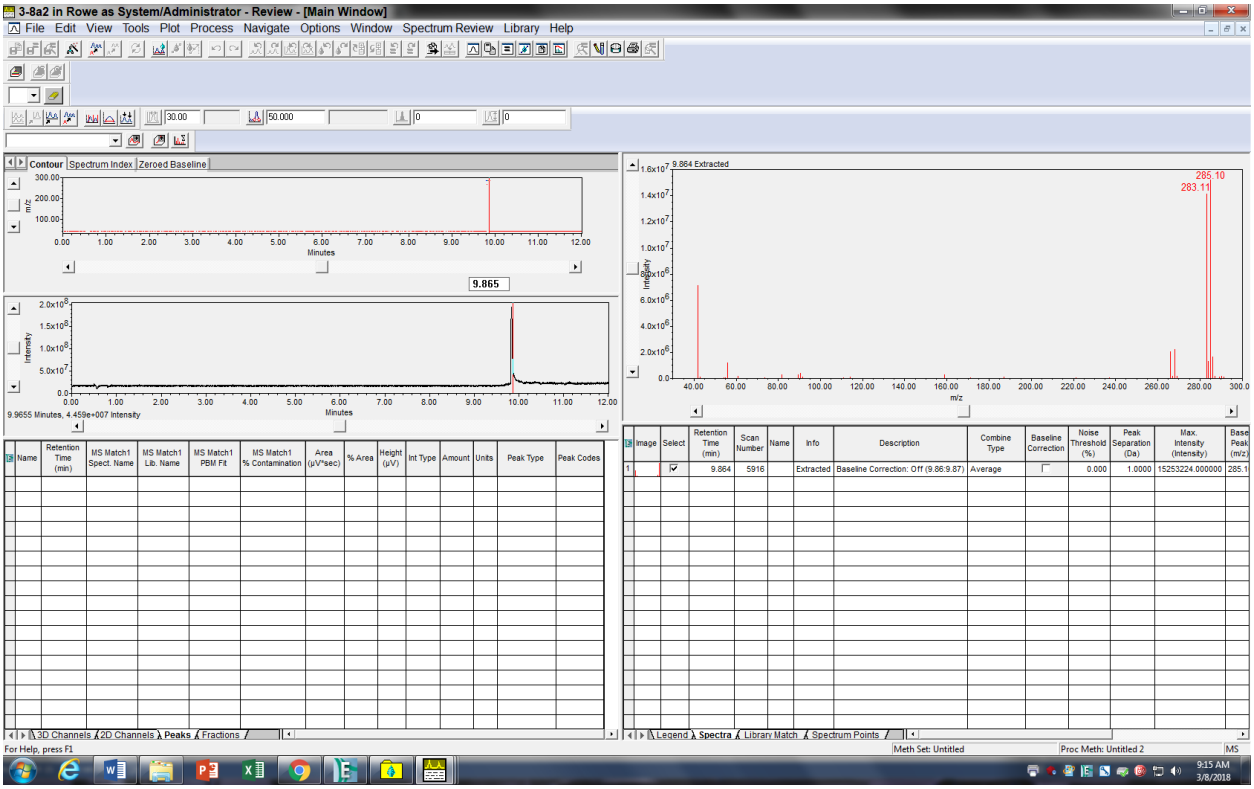


3-8 LC PDA Detector Data with Integrated Peak

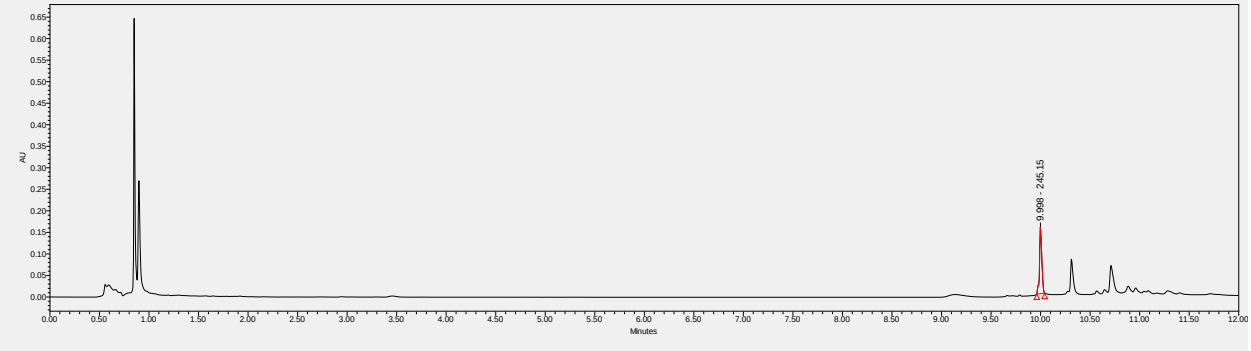


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.825	712780	100.00	556087	bb			Unknown

3-8 Mass Spectrum

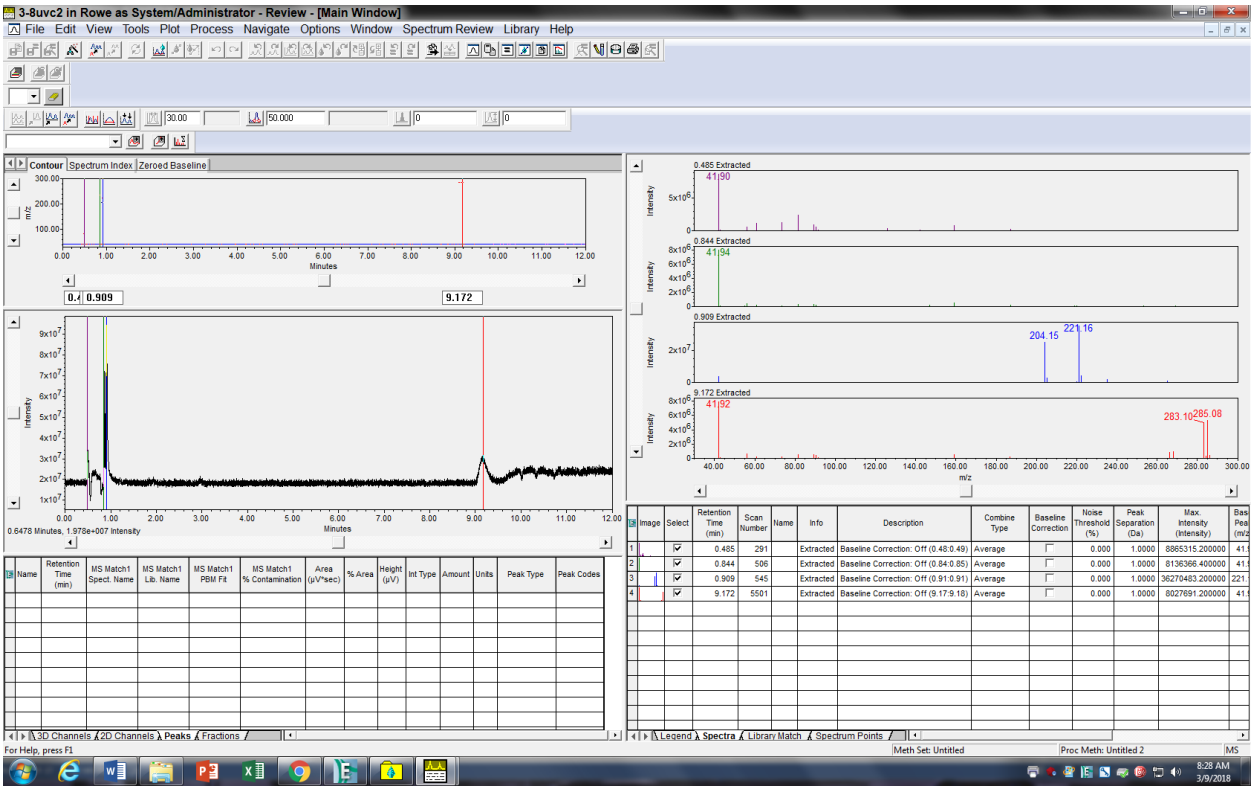


3-8 UV-C LC PDA Detector Data with Integrated Peak



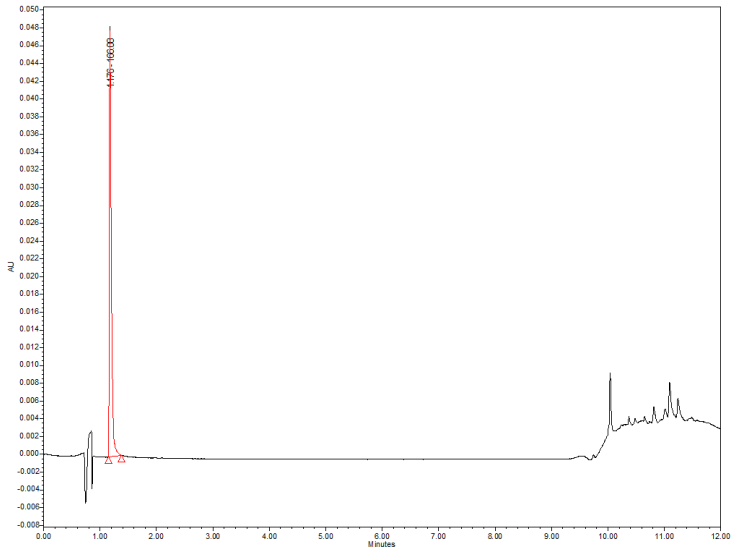
	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		9.998	247473	100.00	154777	bb			Unknown

3-8 UVC Mass Spectrum



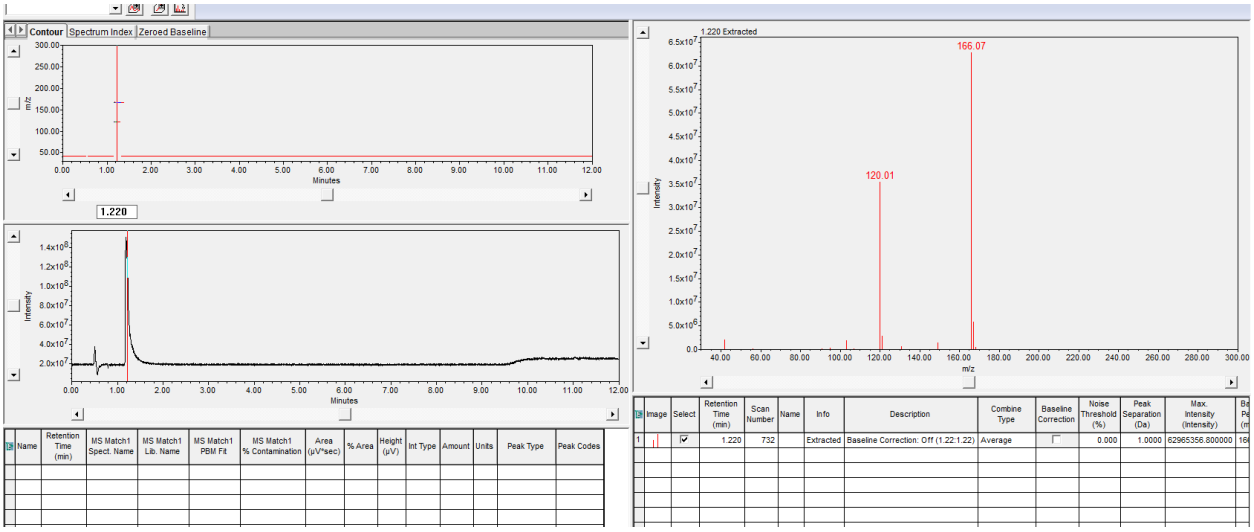
Gamma Exposure data (pg. 118-149) of LC absorbance at 254 nm, with integrated area, and corresponding extracted mass spectrum. One sample chromatogram of each control of all 3.99 krad (low) gamma irradiated samples are shown. Graphs in paper were produced by averaging the results of triplicate measurements. Amino acid identified with number in Tables 1 and 2, 1 for example, is Phe.

1 LC PDA Detector Data with Integrated Peak

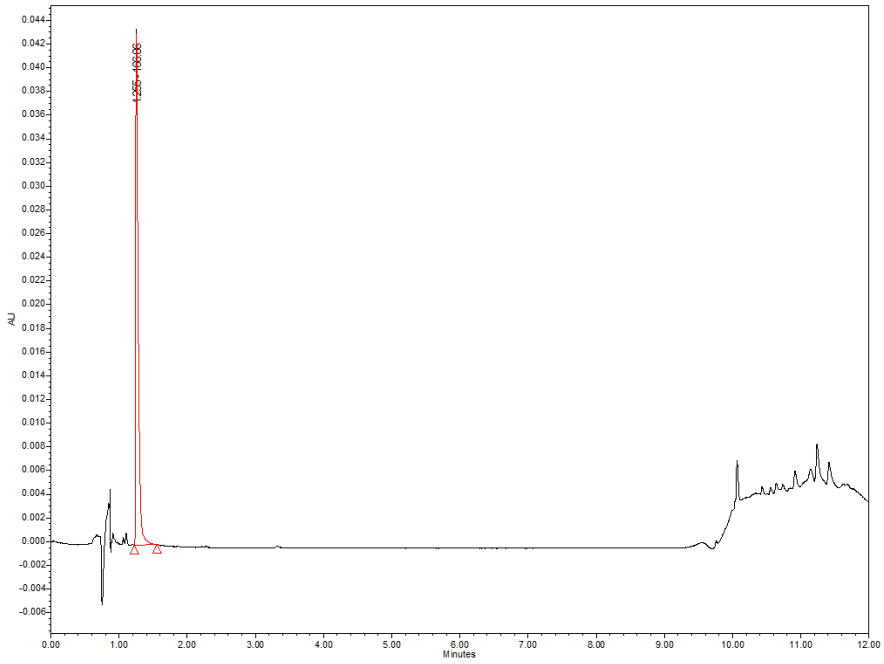


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.176	112039	100.00	48008	bb			Unknown	

1 Mass Spectrum

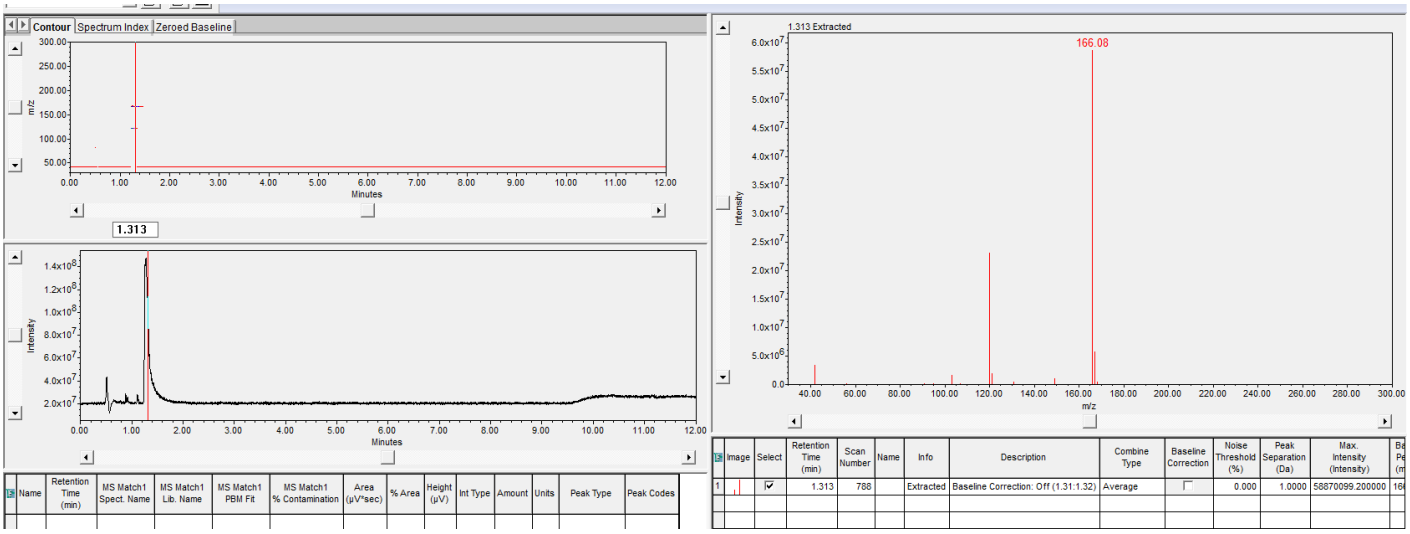


1 low gamma LC PDA Detector Data with Integrated Peak

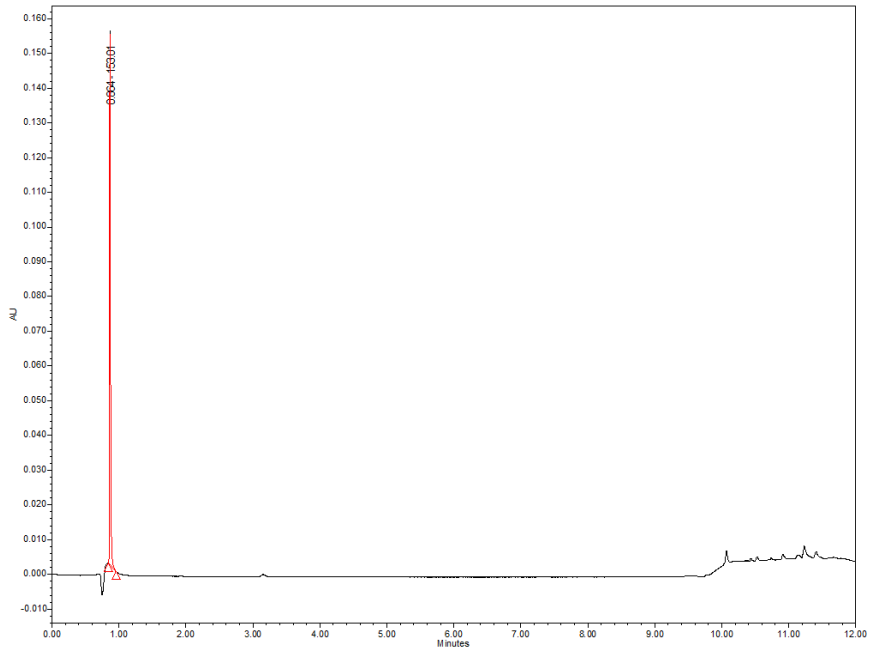


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		1.255	108865	100.00	43177	bb			Unknown	

1 low gamma Mass Spectrum

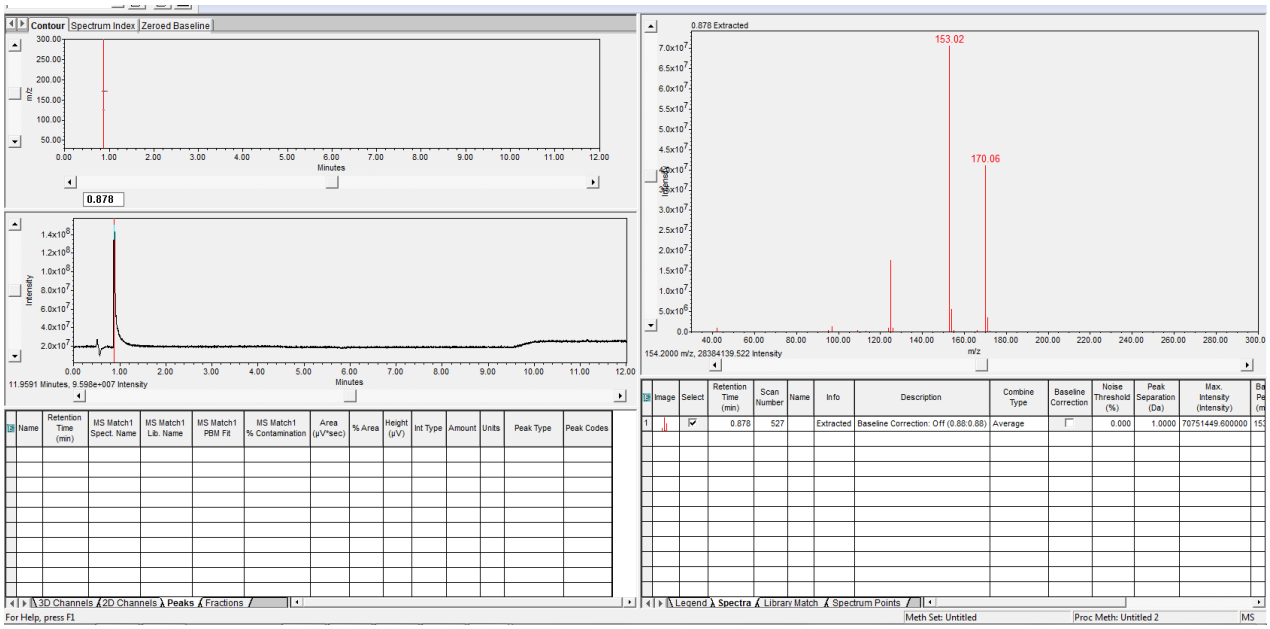


1-3 LC PDA Detector Data with Integrated Peak

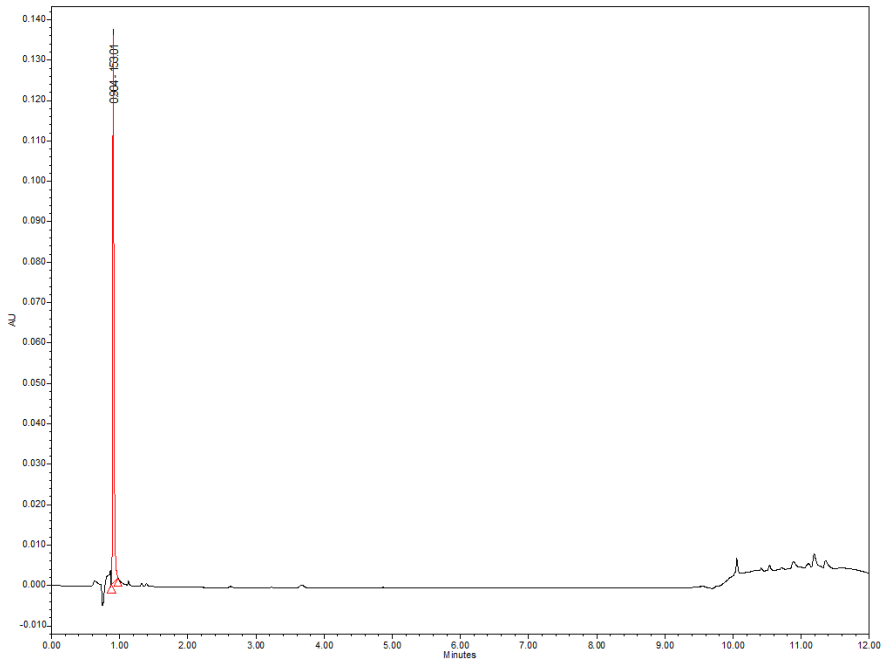


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.864	164670	100.00	152834	bb			Unknown

1-3 Mass Spectrum

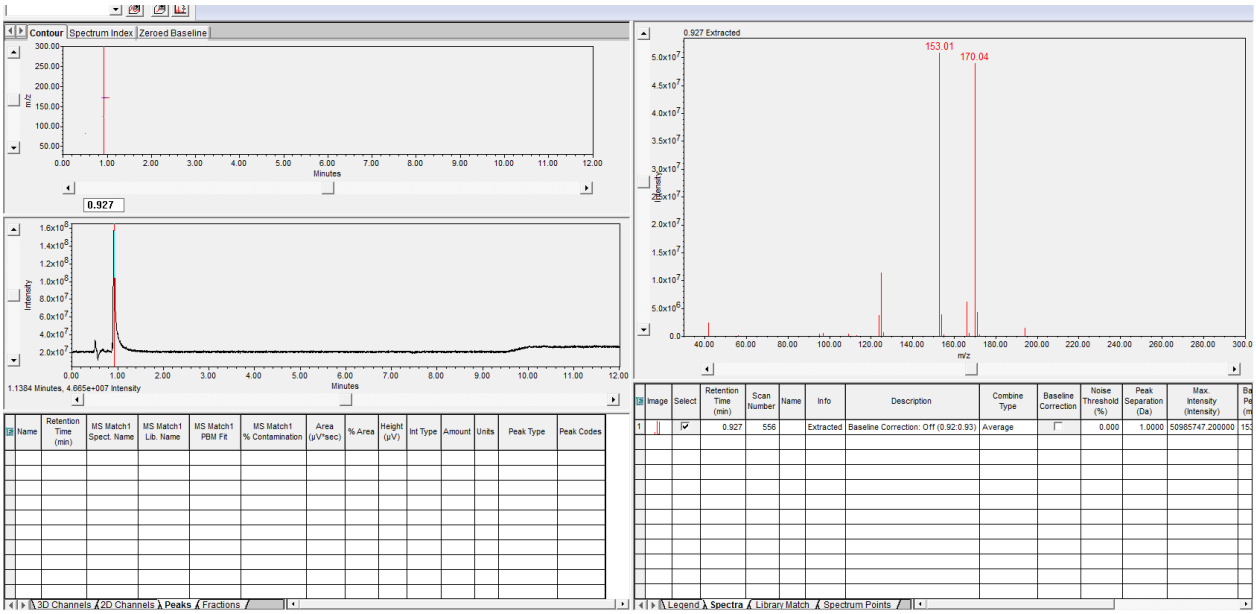


1-3 low gamma LC PDA Detector Data with Integrated Peak

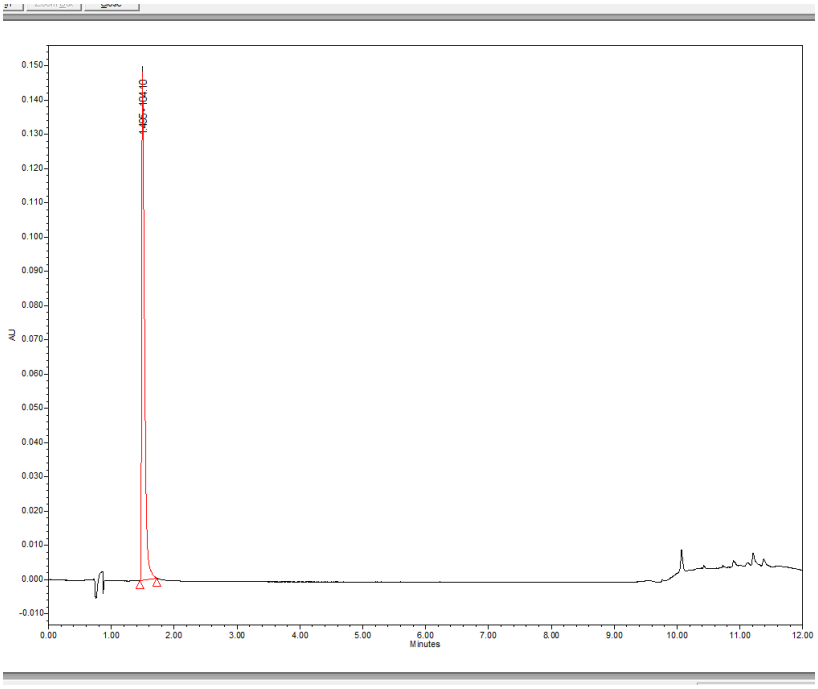


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.904	169674	100.00	135599	bb			Unknown

1-3 low gamma Mass Spectrum

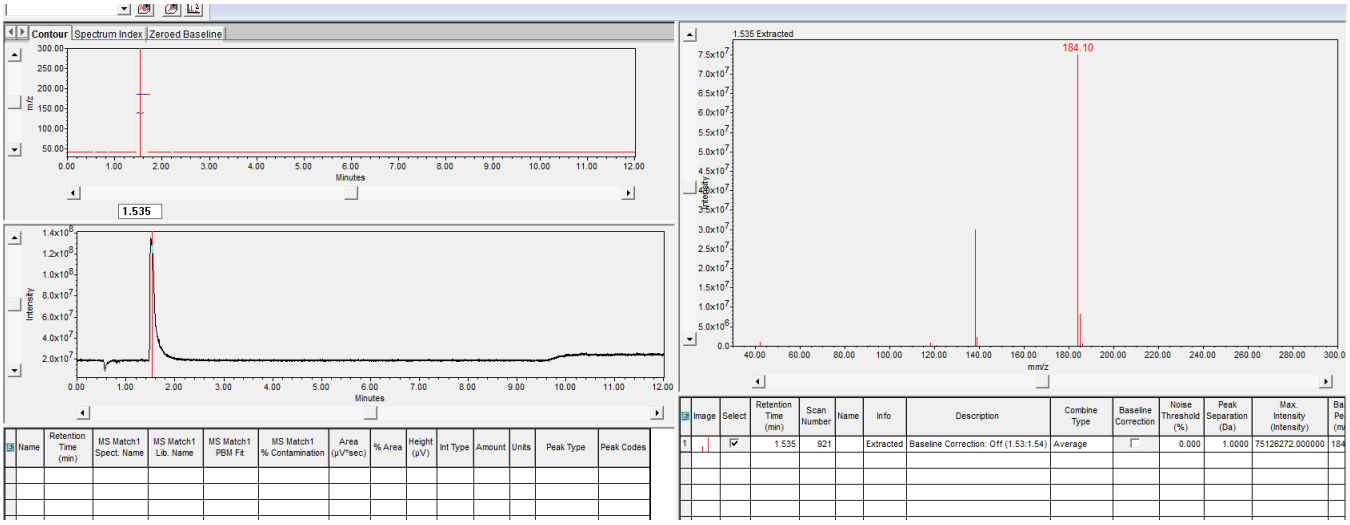


1-6 LC PDA Detector Data with Integrated Peak

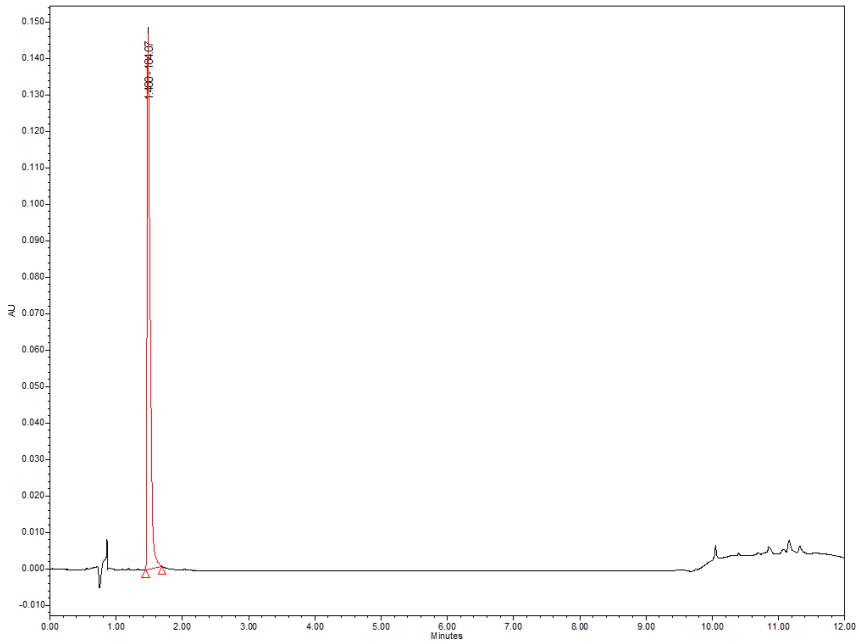


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.495	454464	100.00	148569	bb			Unknown

1-6 Mass Spectrum

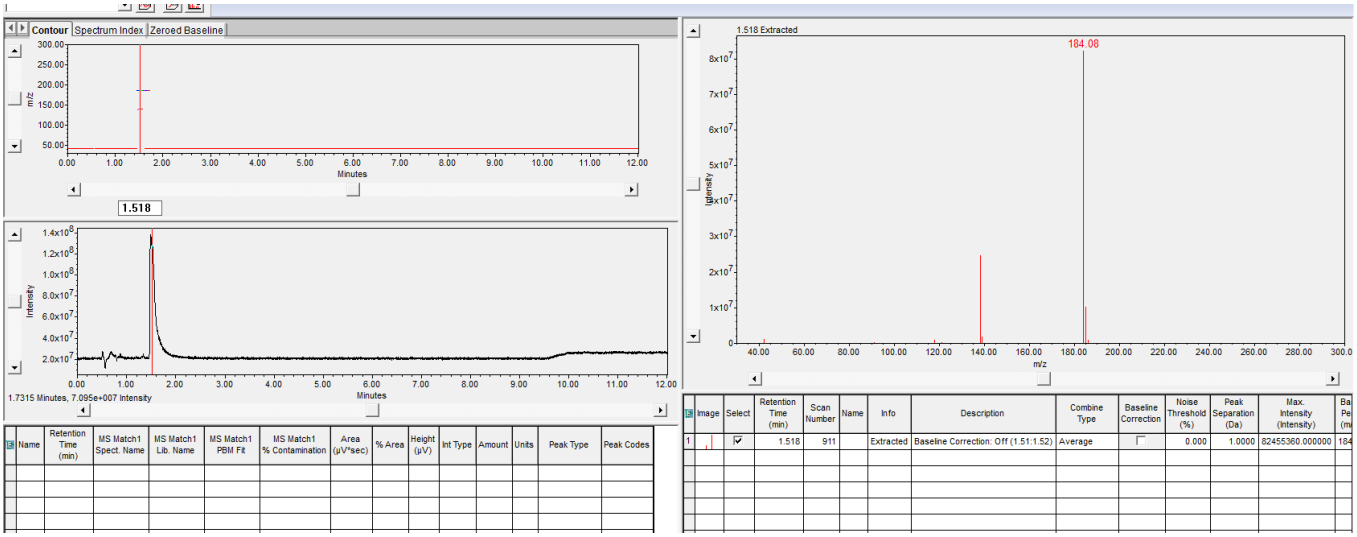


1-6 low gamma LC PDA Detector Data with Integrated Peak

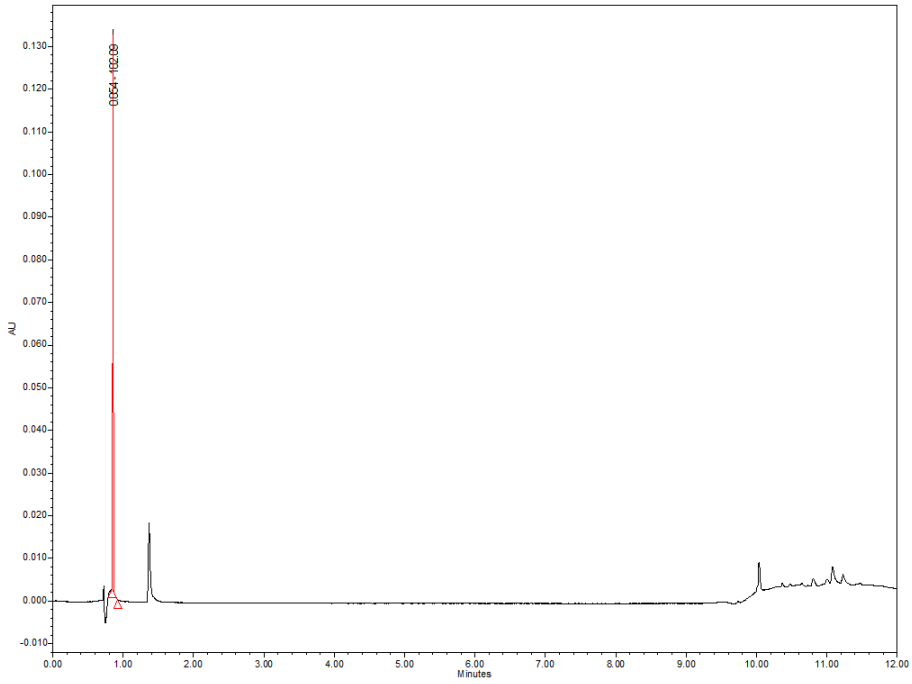


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.480	442237	100.00	146932	bb			Unknown

1-6 low gamma Mass Spectrum

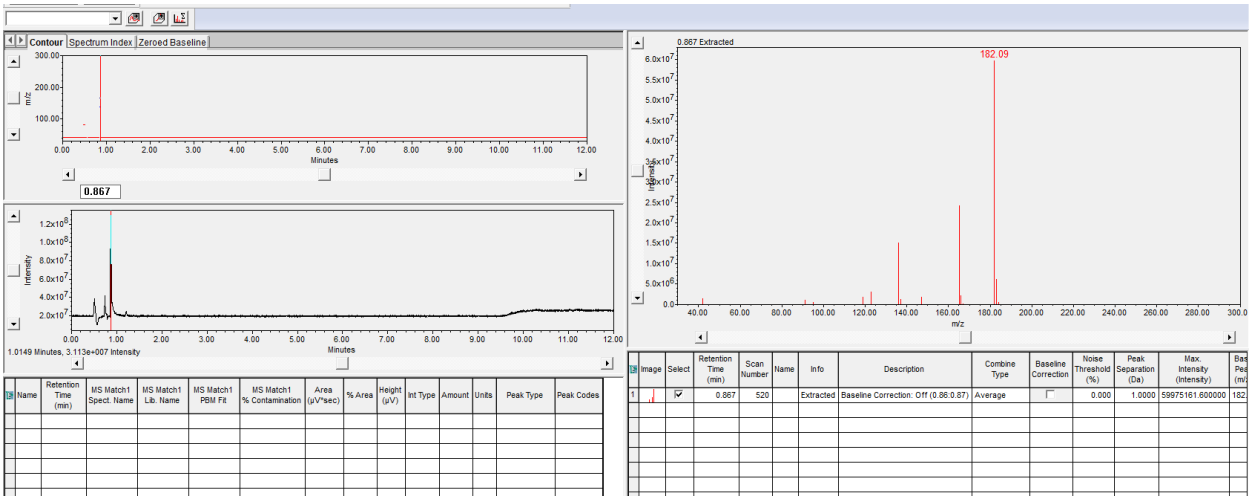


2 LC PDA Detector Data with Integrated Peak

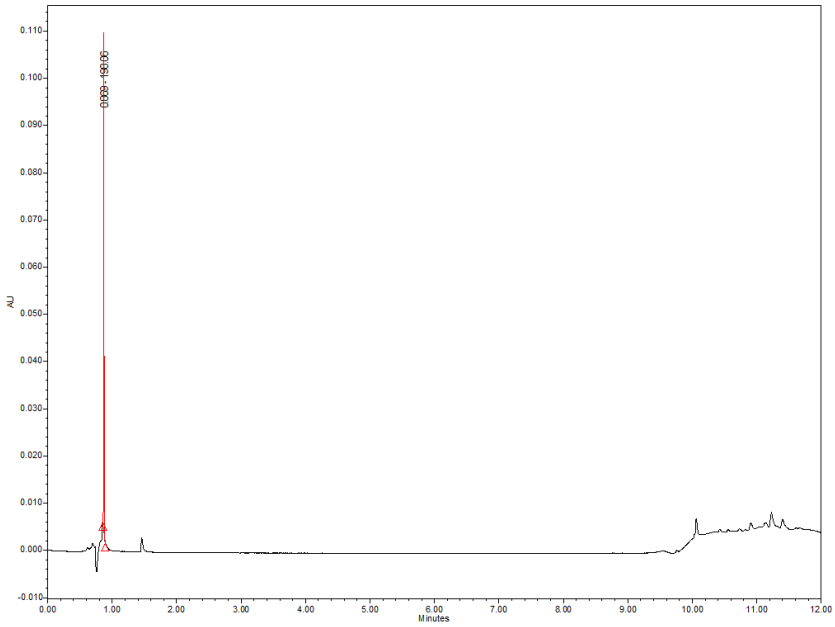


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.854	79210	100.00	130402	bb			Unknown

2 Mass Spectrum

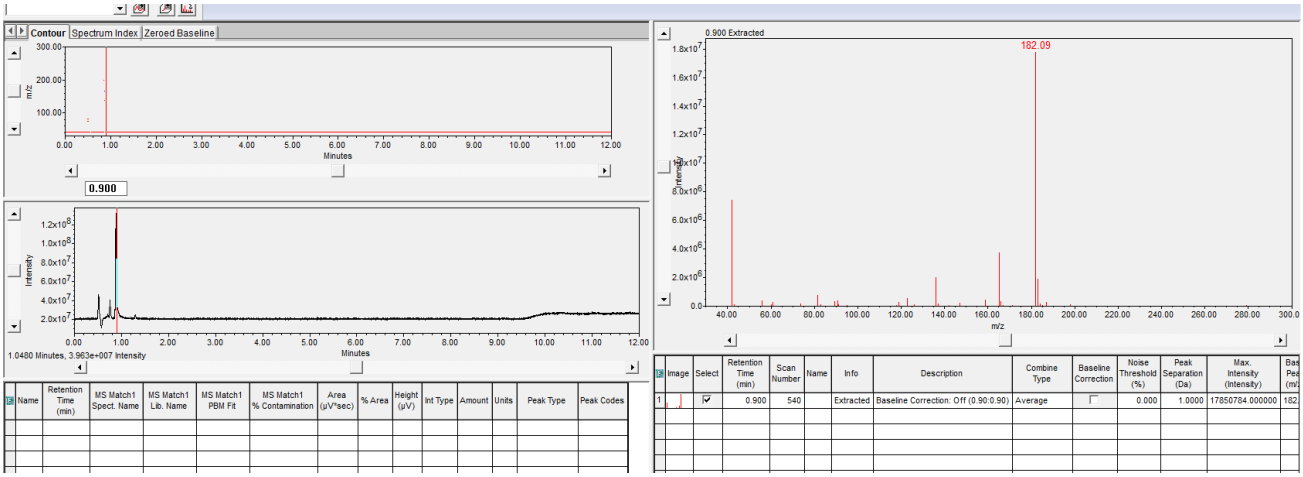


2 low gamma LC PDA Detector Data with Integrated Peak

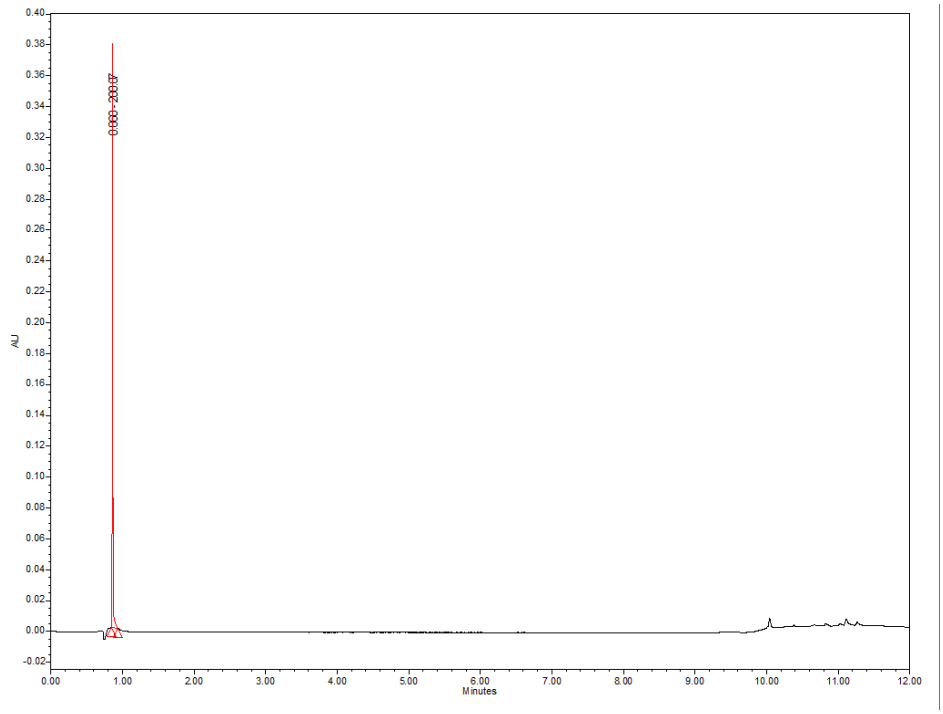


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.869	64135	100.00	105623	bb			Unknown

2 low gamma Mass Spectrum

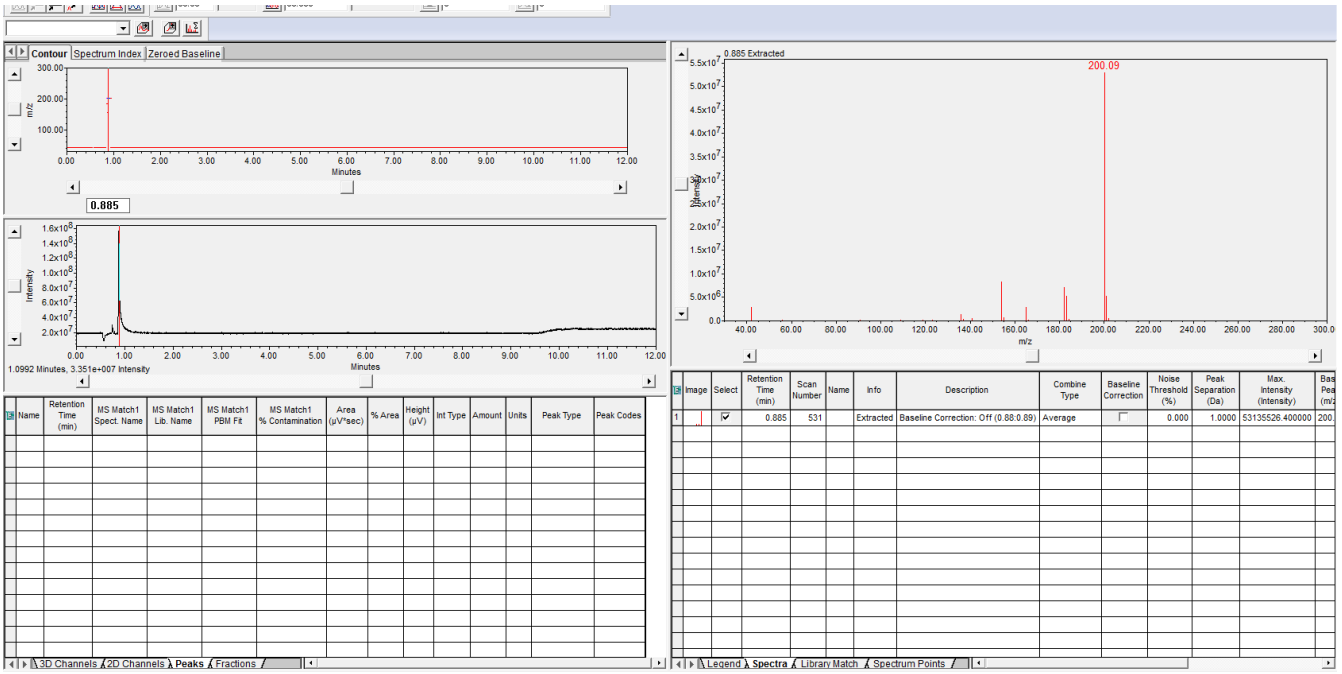


2-1 LC PDA Detector Data with Integrated Peak

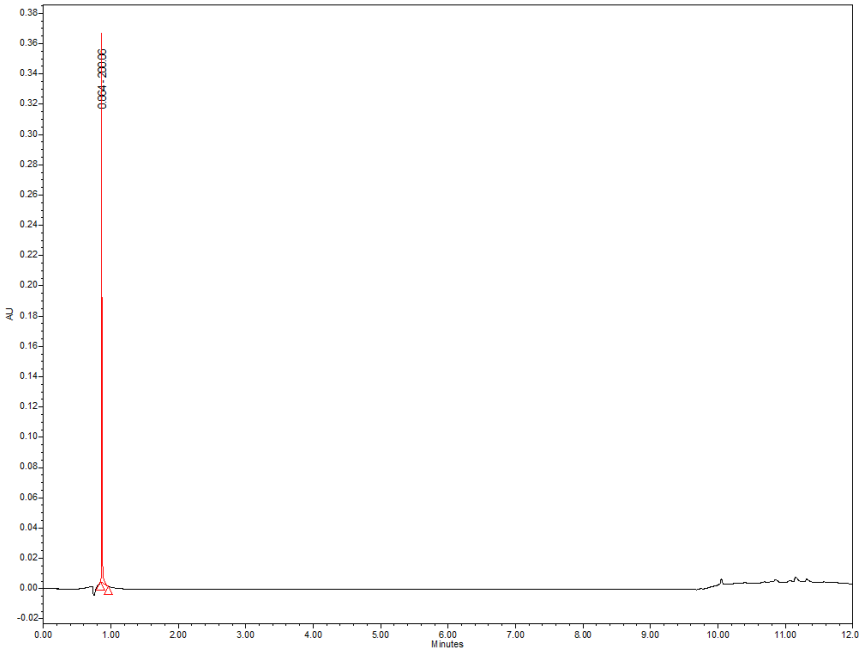


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.860	259974	100.00	379612	bb			Unknown

2-1 Mass Spectrum

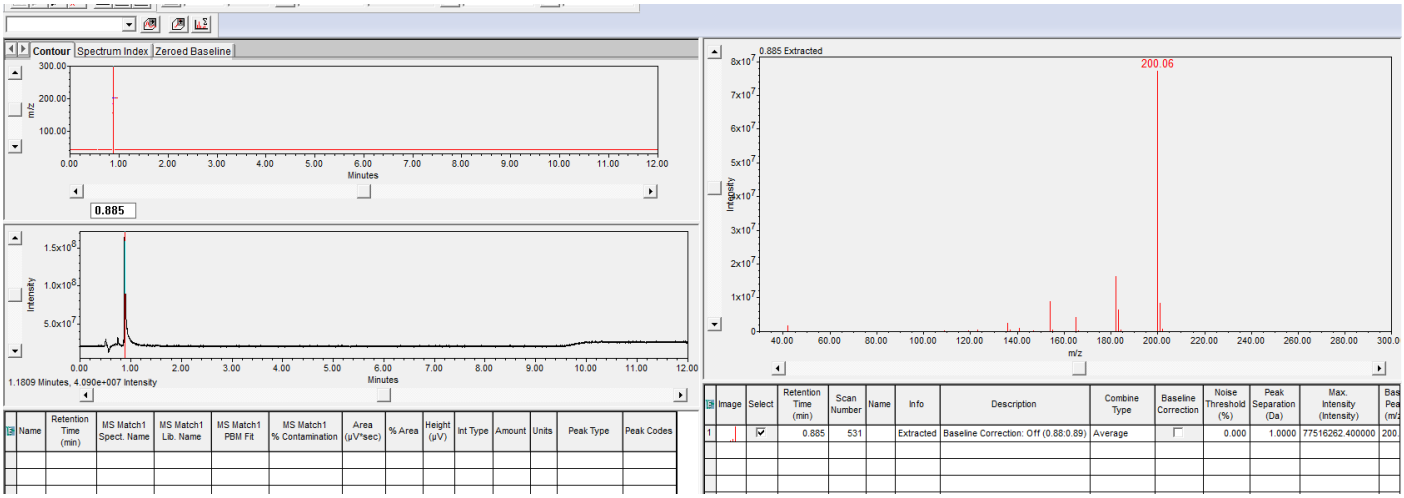


2-1 low gamma LC PDA Detector Data with Integrated Peak

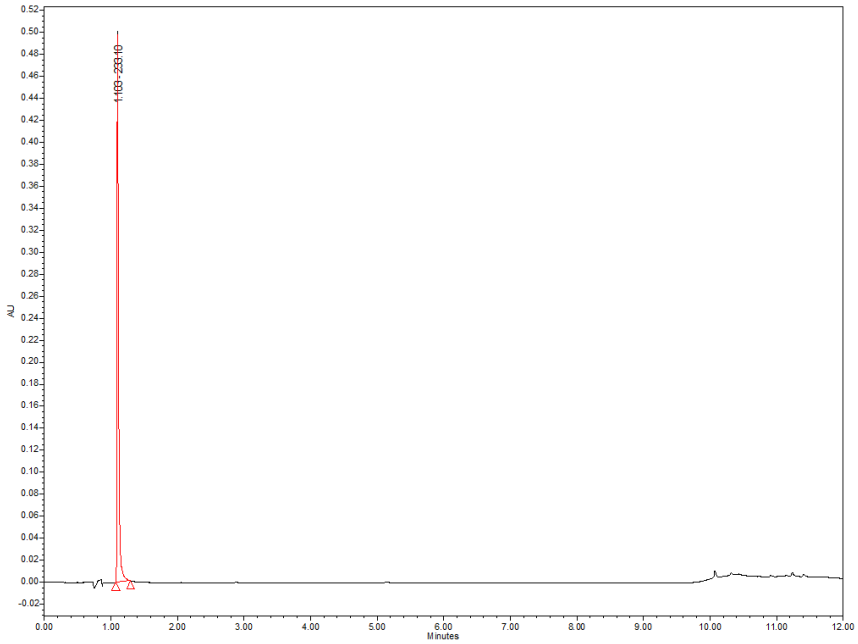


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.864	249960	100.00	363262	bb			Unknown

2-1 low gamma Mass Spectrum

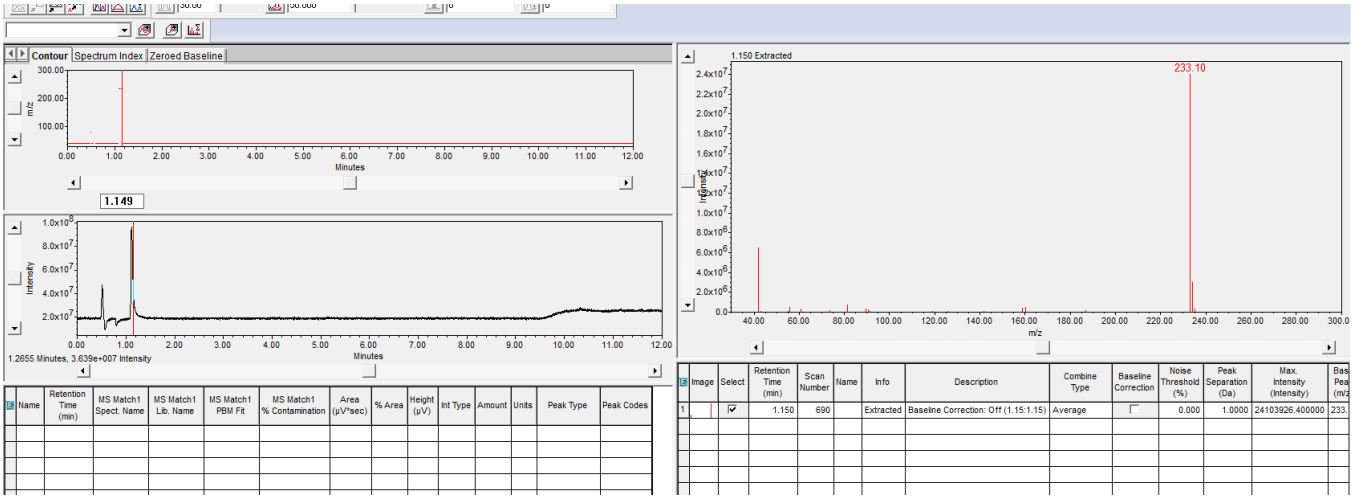


4 LC PDA Detector Data with Integrated Peak

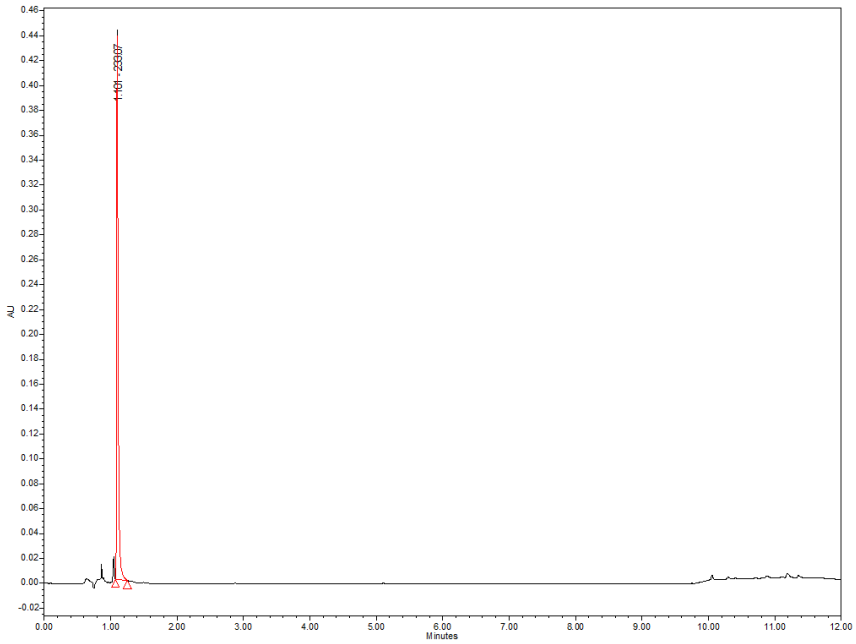


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.103	802920	100.00	498268	bb			Unknown

4 Mass Spectrum

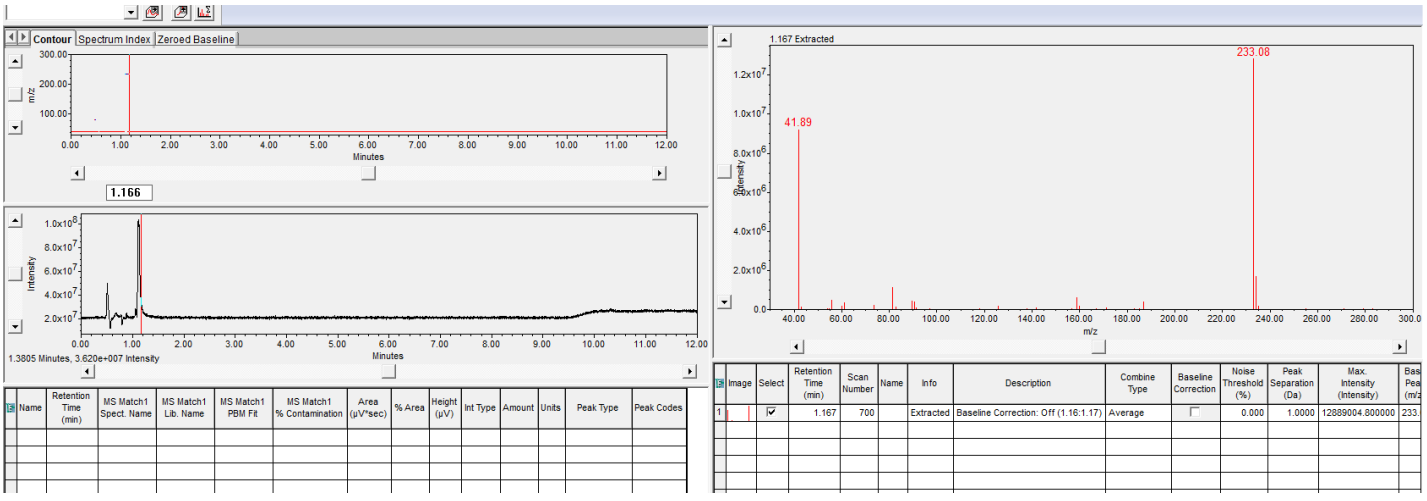


4 low gamma LC PDA Detector Data with Integrated Peak

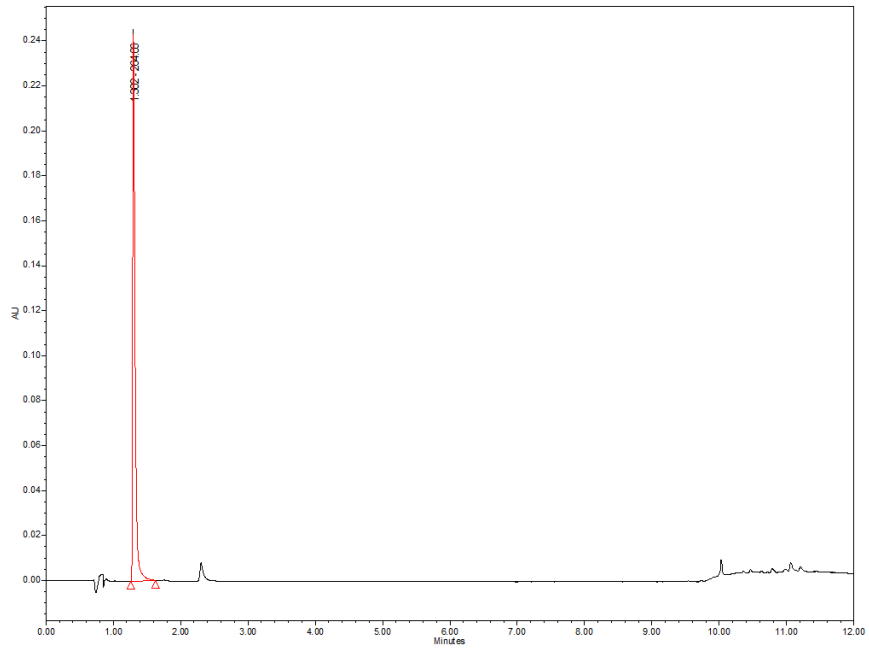


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.101	691384	100.00	437144	bb			Unknown

4 low gamma Mass Spectrum

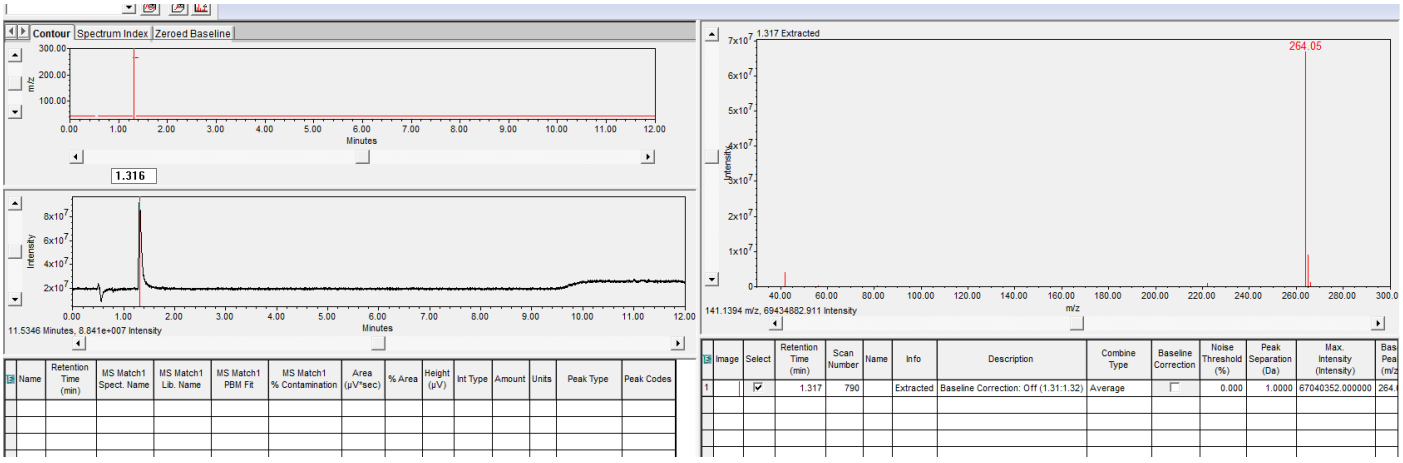


5 LC PDA Detector Data with Integrated Peak

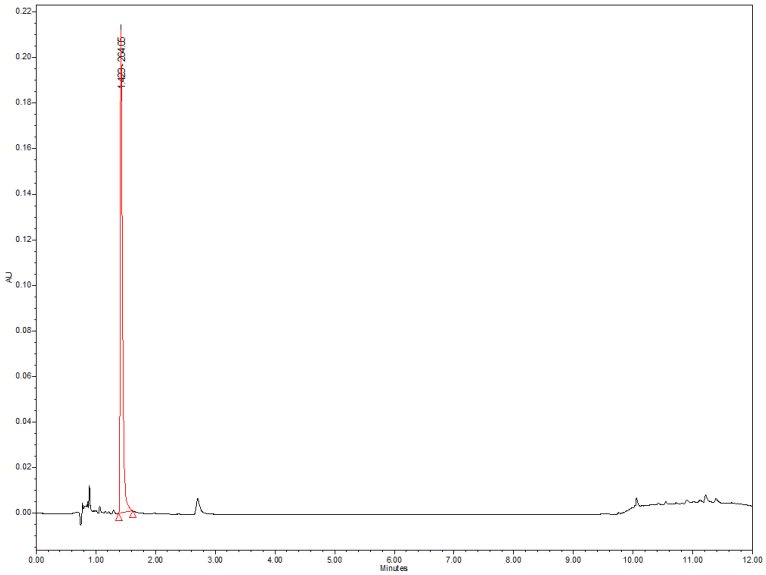


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.302	571180	100.00	243263	bb			Unknown

5 Mass Spectrum

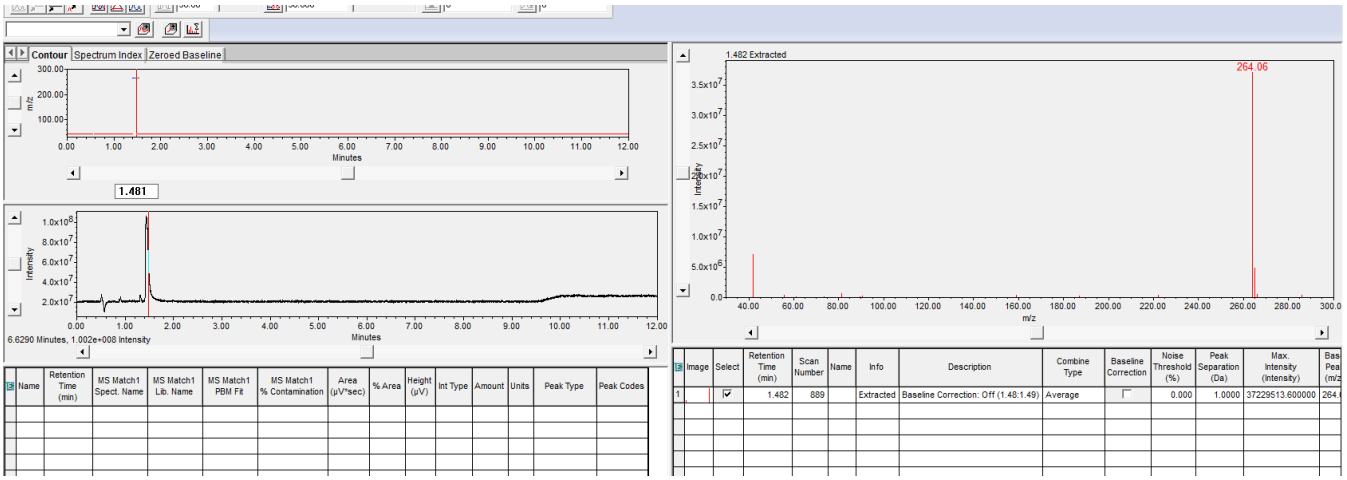


5 low gamma LC PDA Detector Data with Integrated Peak

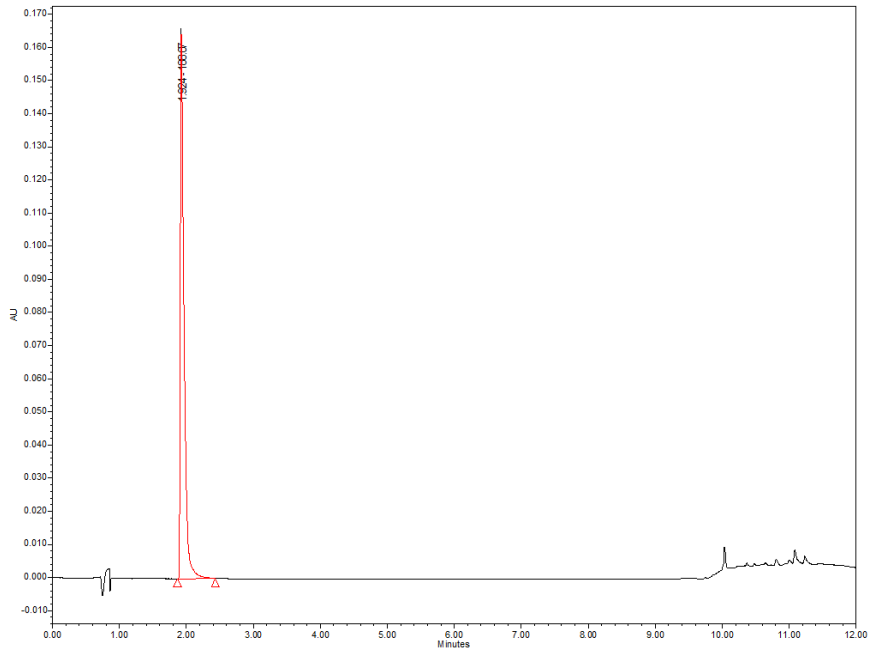


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.423	524622	100.00	212003	bb			Unknown

5 low gamma Mass Spectrum

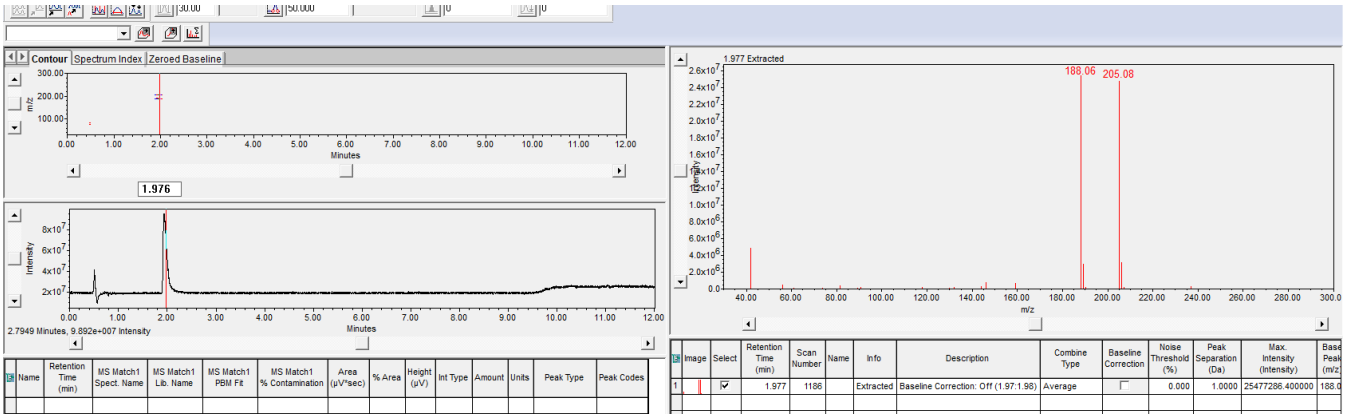


3 LC PDA Detector Data with Integrated Peak

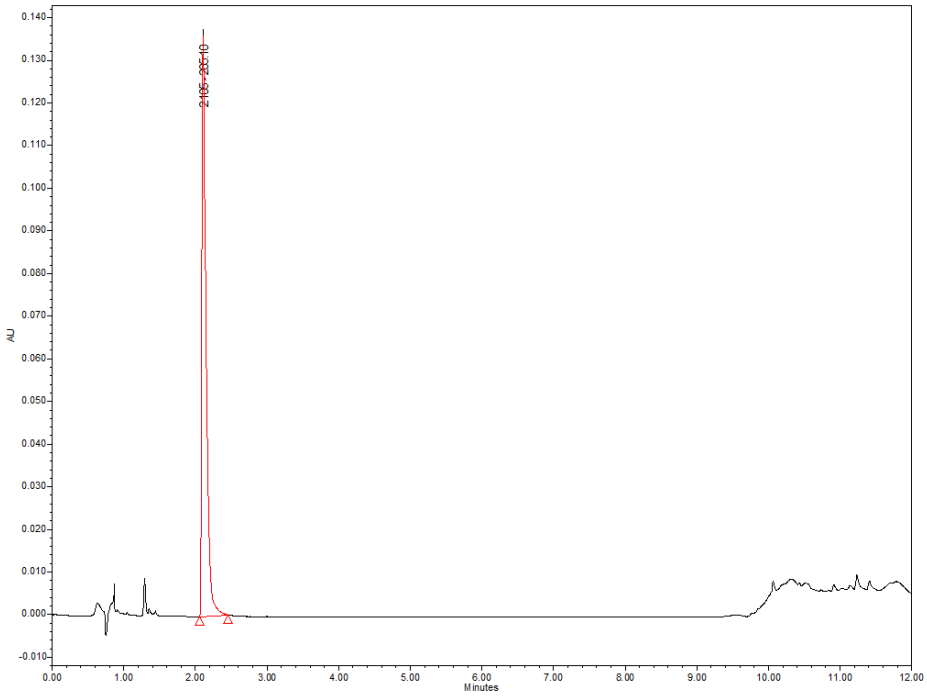


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		1.924	648318	100.00	164333	bb			Unknown

3 Mass Spectrum

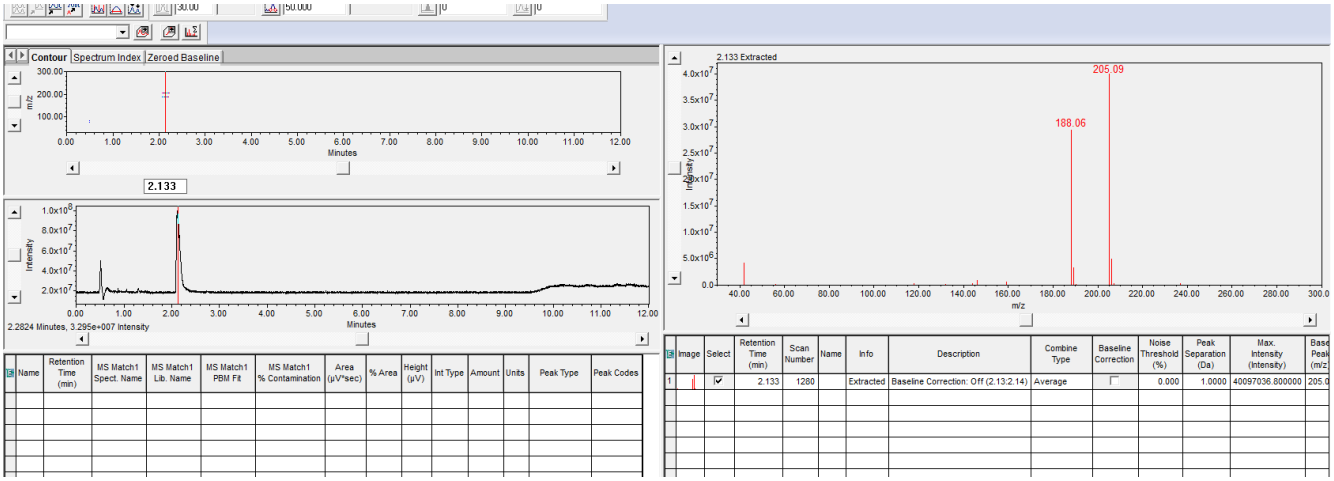


3 low gamma LC PDA Detector Data with Integrated Peak

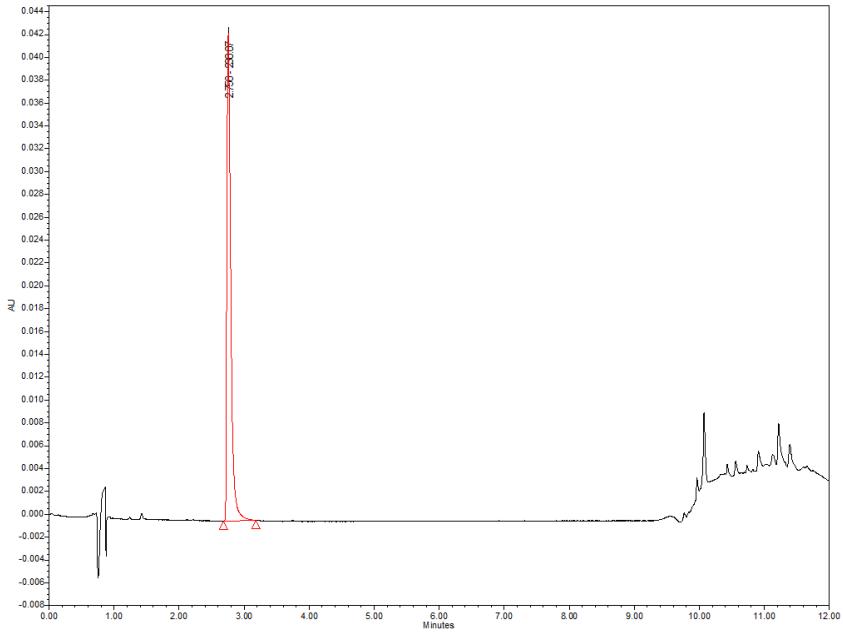


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.105	570125	100.00	136210	bb			Unknown

3 low gamma Mass Spectrum

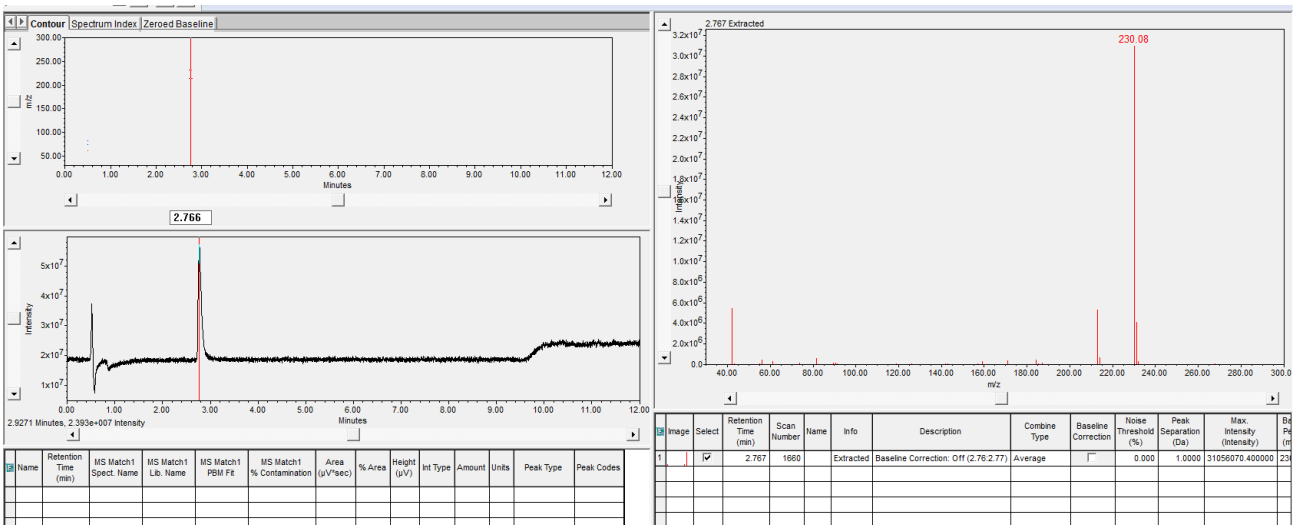


3-1 LC PDA Detector Data with Integrated Peak

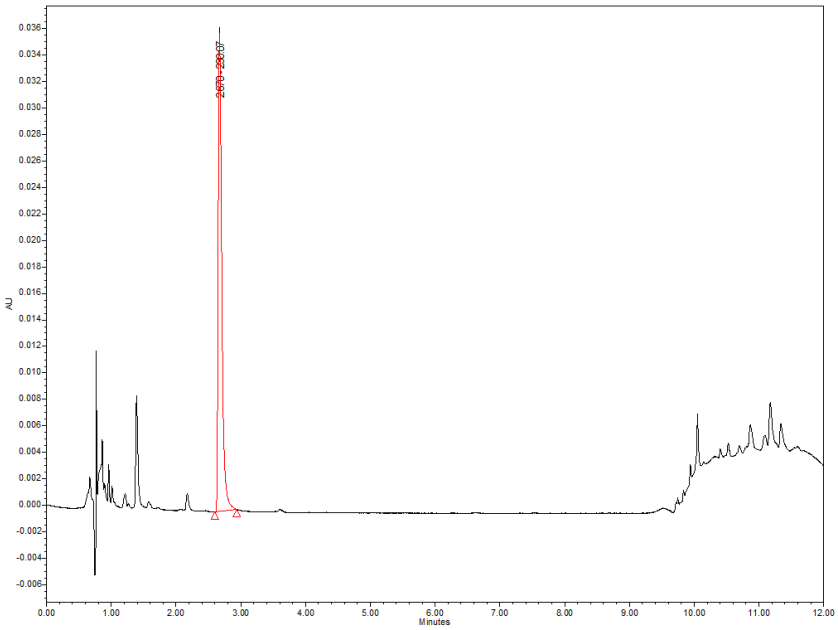


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		2.756	176427	100.00	42742	bb			Unknown	

3-1 Mass Spectrum

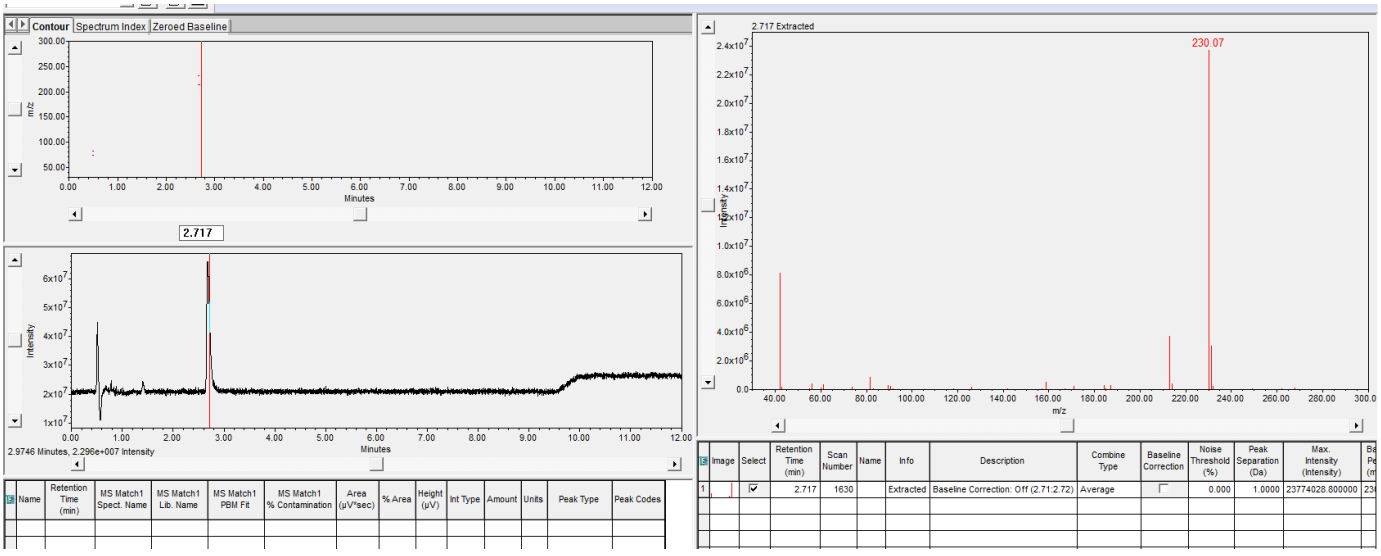


3-1 low gamma LC PDA Detector Data with Integrated Peak

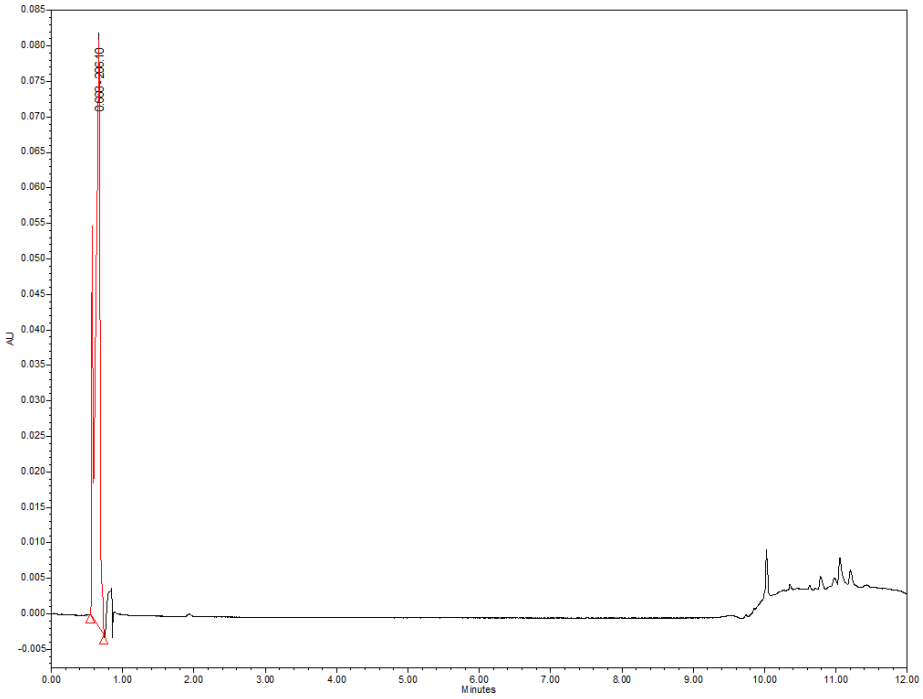


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.670	136579	100.00	36106	bb			Unknown

3-1 low gamma Mass Spectrum

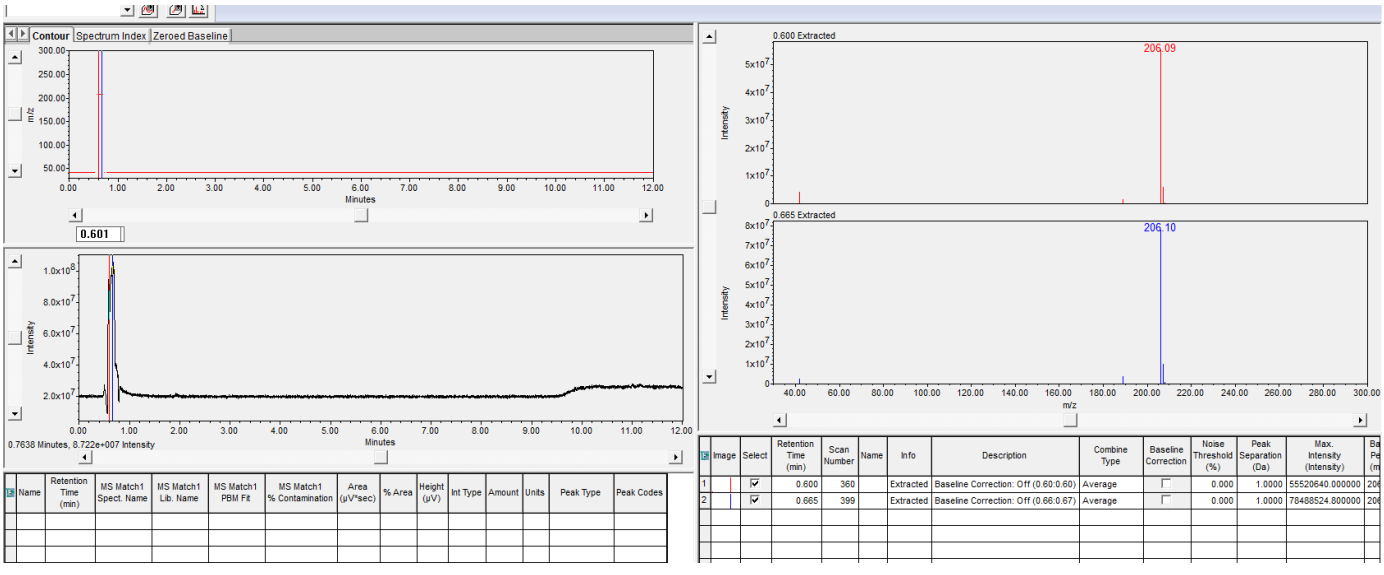


3-2 LC PDA Detector Data with Integrated Peak



	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.668	395712	100.00	82797	bb			Unknown

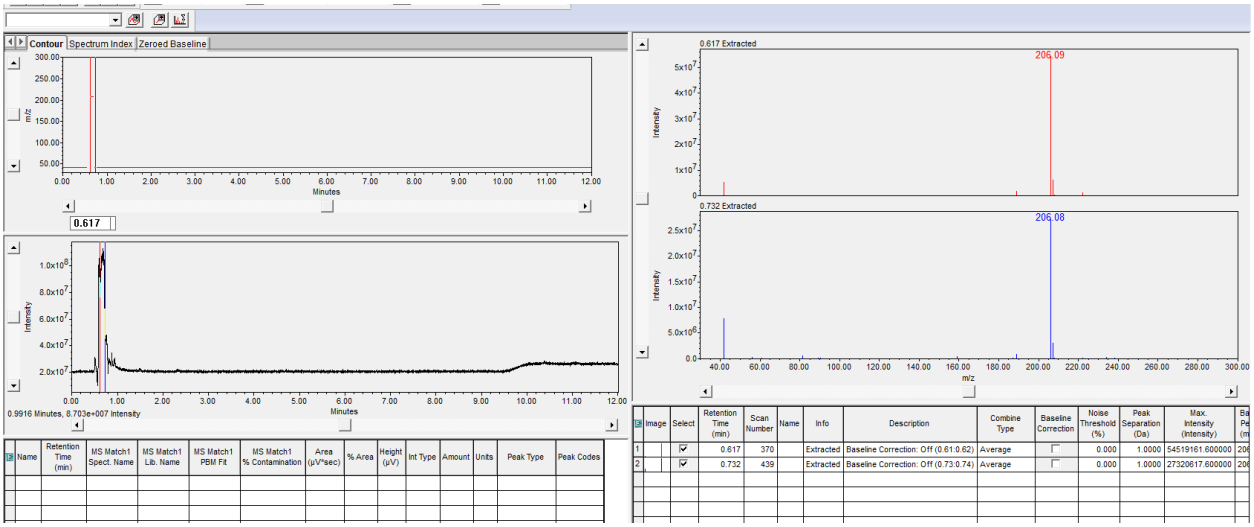
3-2 Mass Spectrum



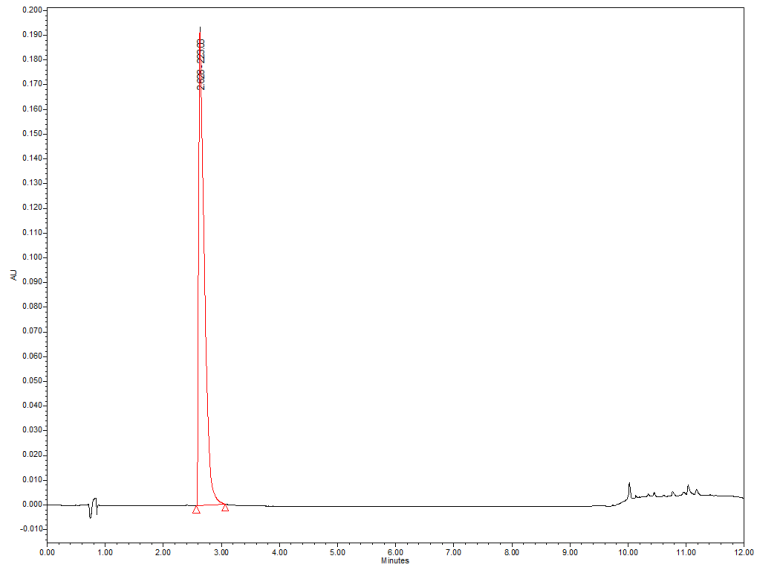
3-2 low gamma LC PDA Detector Data with Integrated Peak

	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.681	389689	100.00	79592	bb			Unknown

3-2 low gamma Mass Spectrum

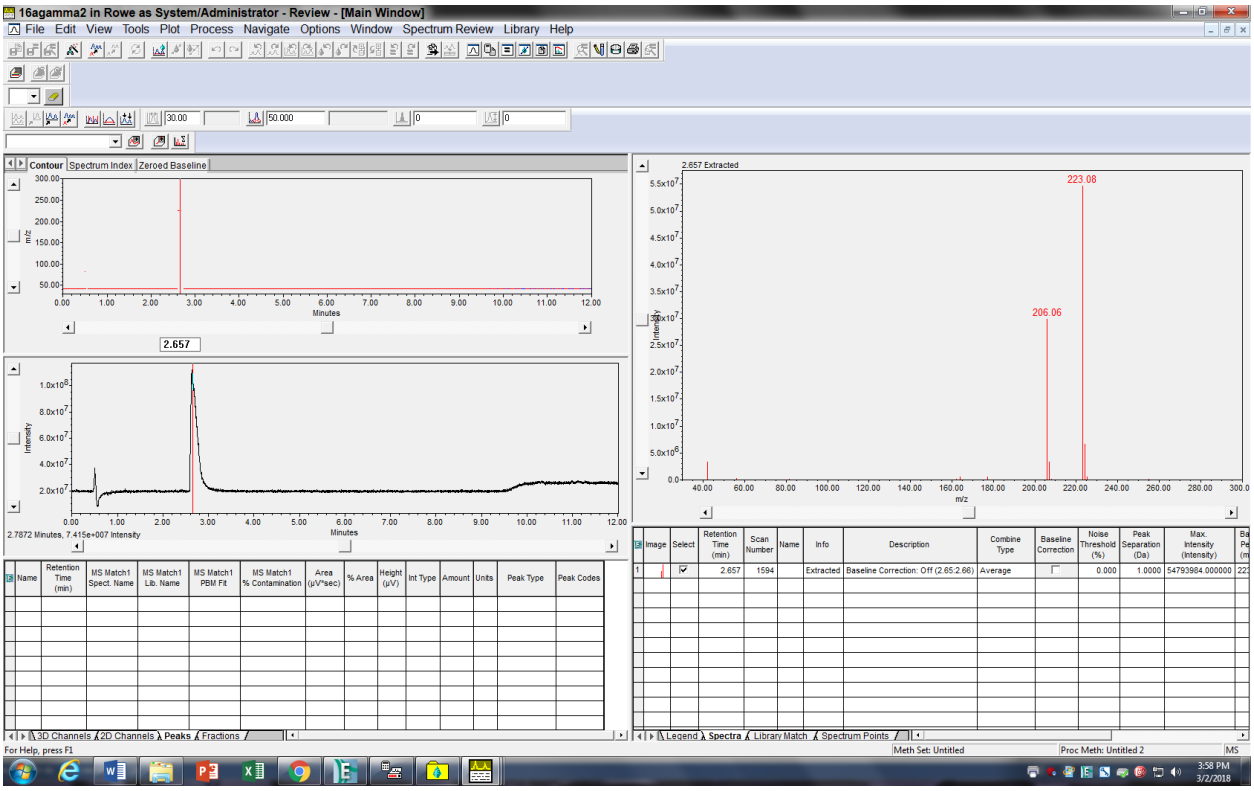


3-3 LC PDA Detector Data with Integrated Peak

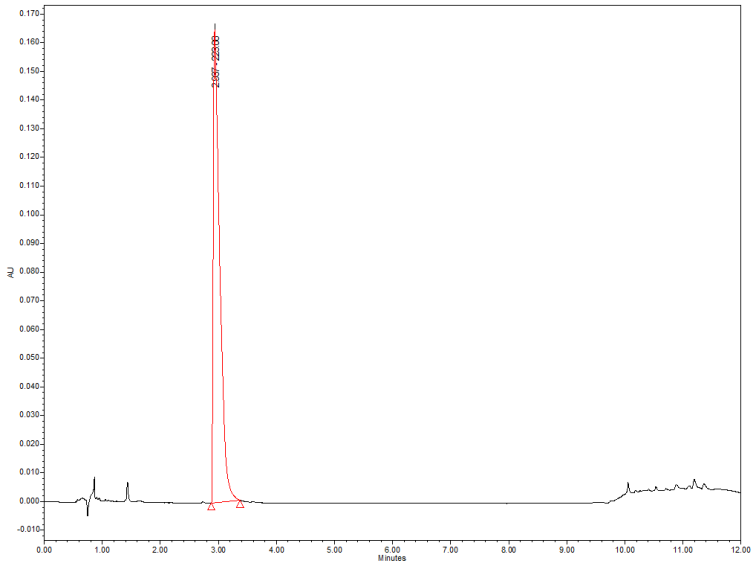


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.628	1325332	100.00	191636	bb			Unknown

3-3 Mass Spectrum

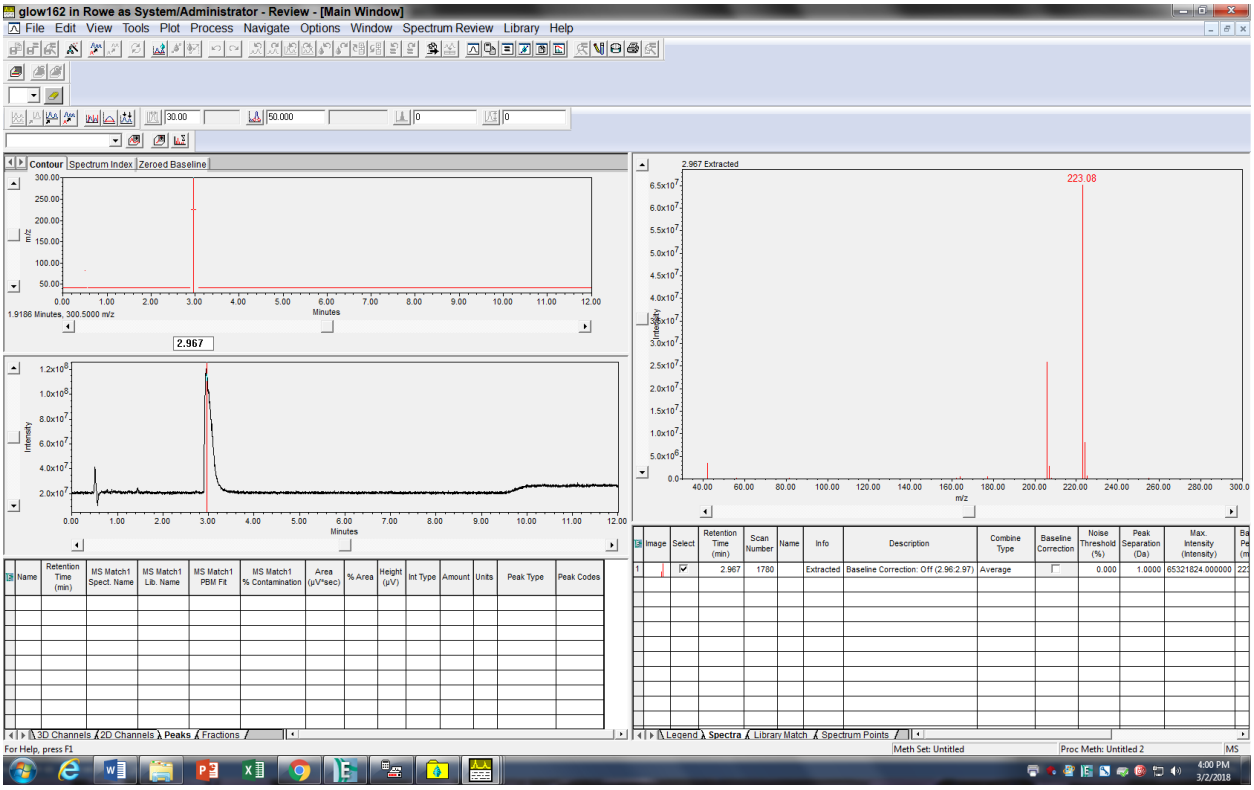


3-3 low gamma LC PDA Detector Data with Integrated Peak

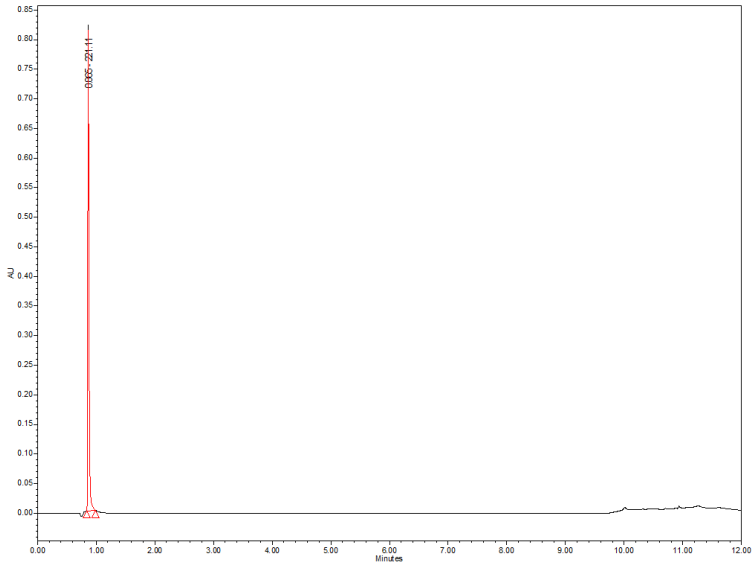


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.937	1273530	100.00	164956	bb			Unknown

3-3 low gamma Mass Spectrum

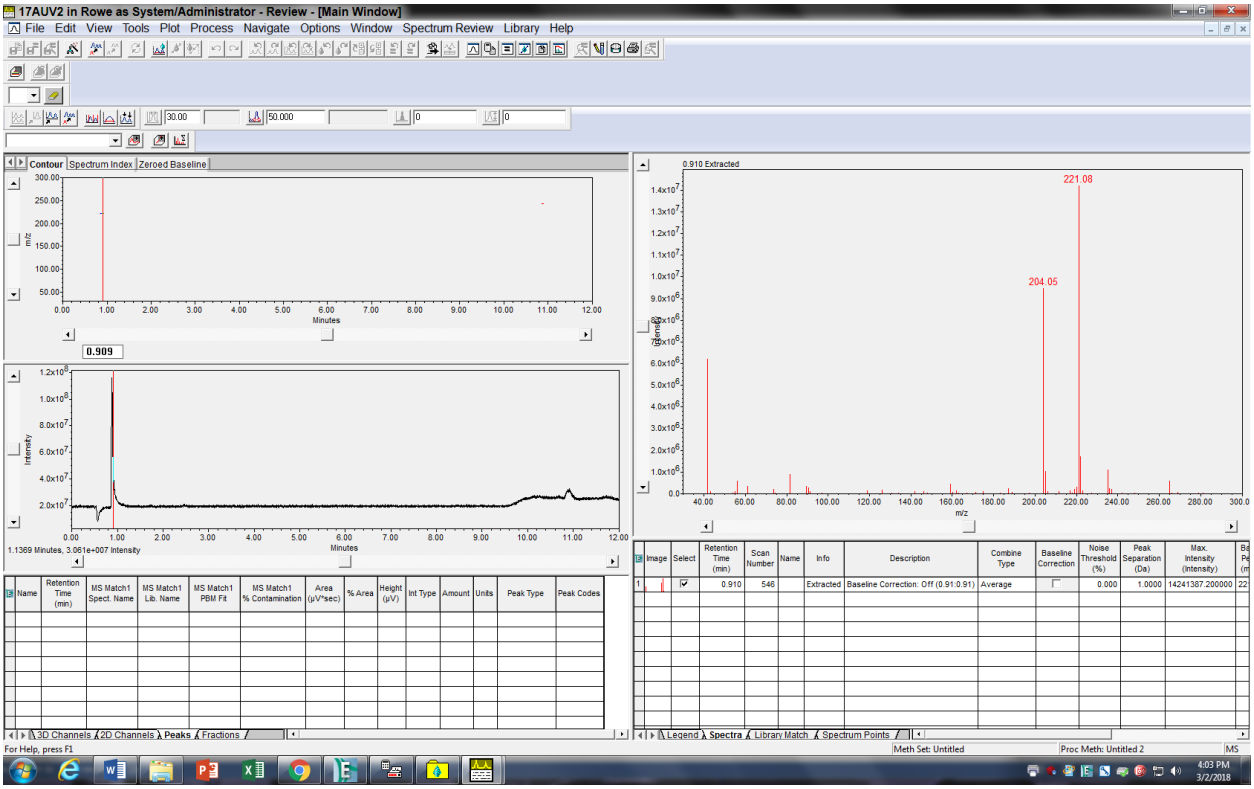


3-4 LC PDA Detector Data with Integrated Peak

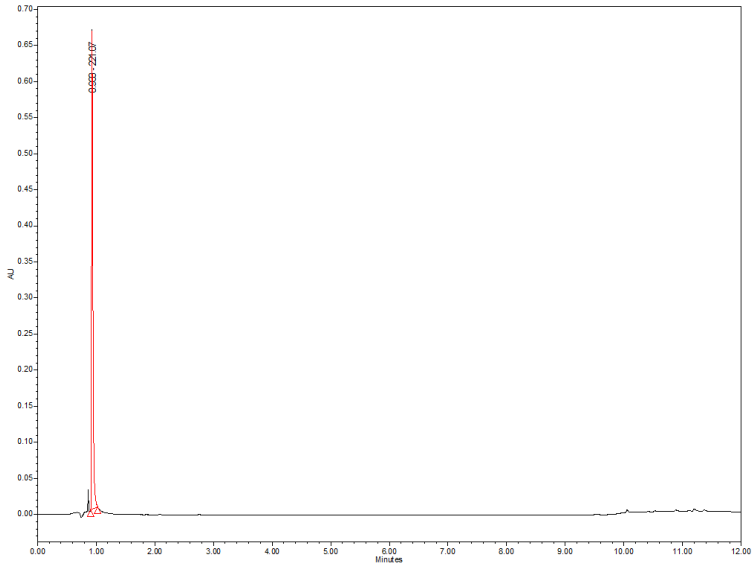


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.865	1082123	100.00	812293	bb			Unknown

3-4 Mass Spectrum

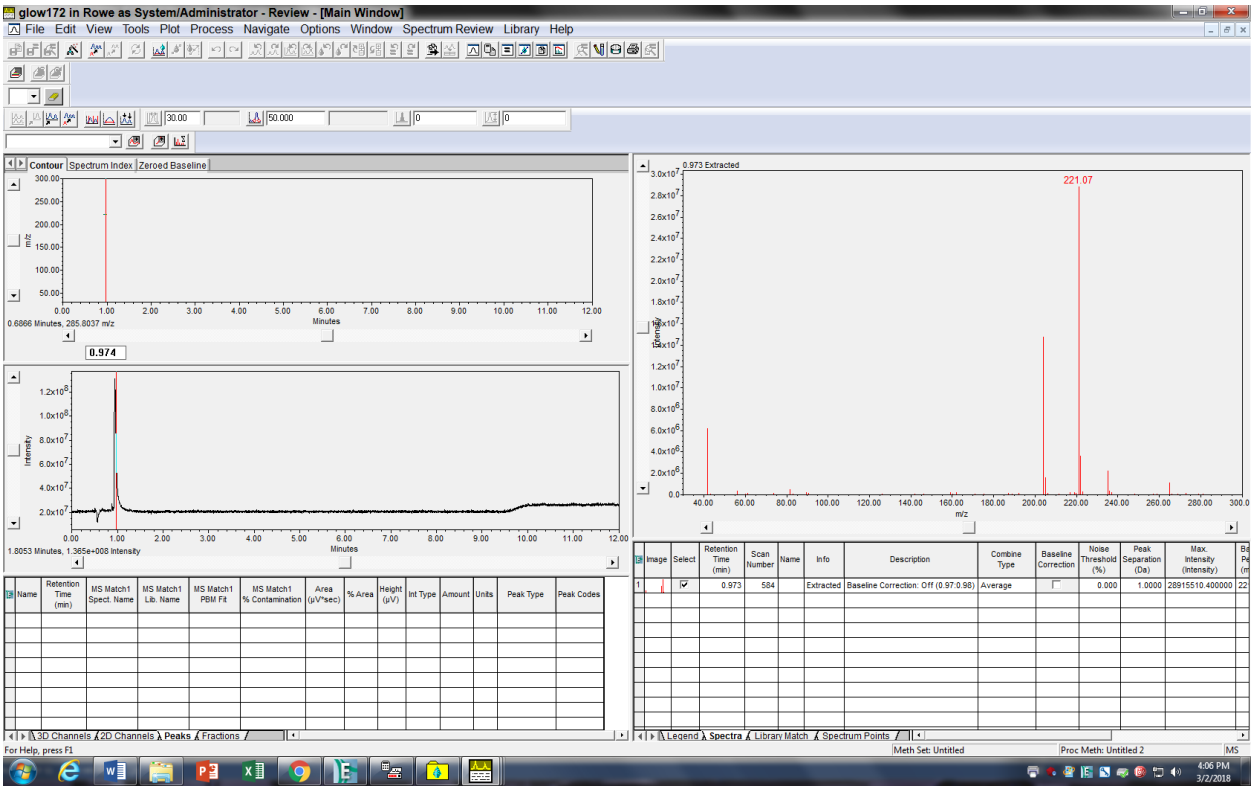


3-4 low gamma LC PDA Detector Data with Integrated Peak

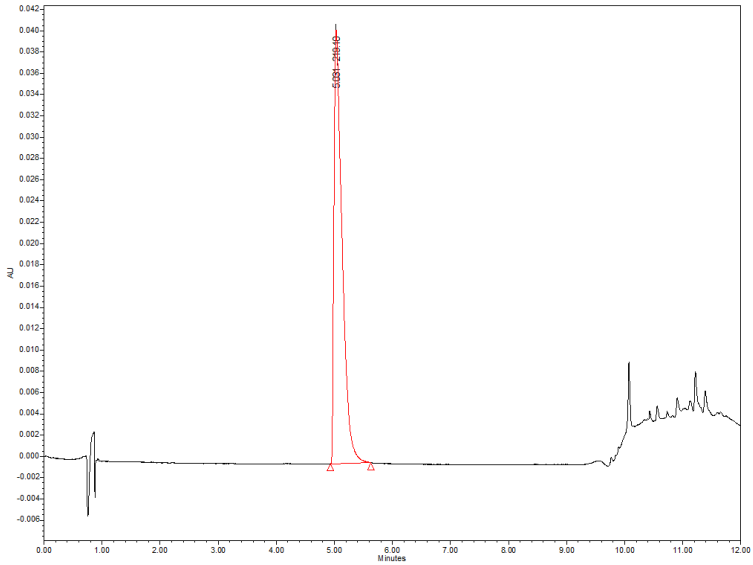


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		0.933	1002079	100.00	662981	bb			Unknown

3-4 low gamma Mass Spectrum

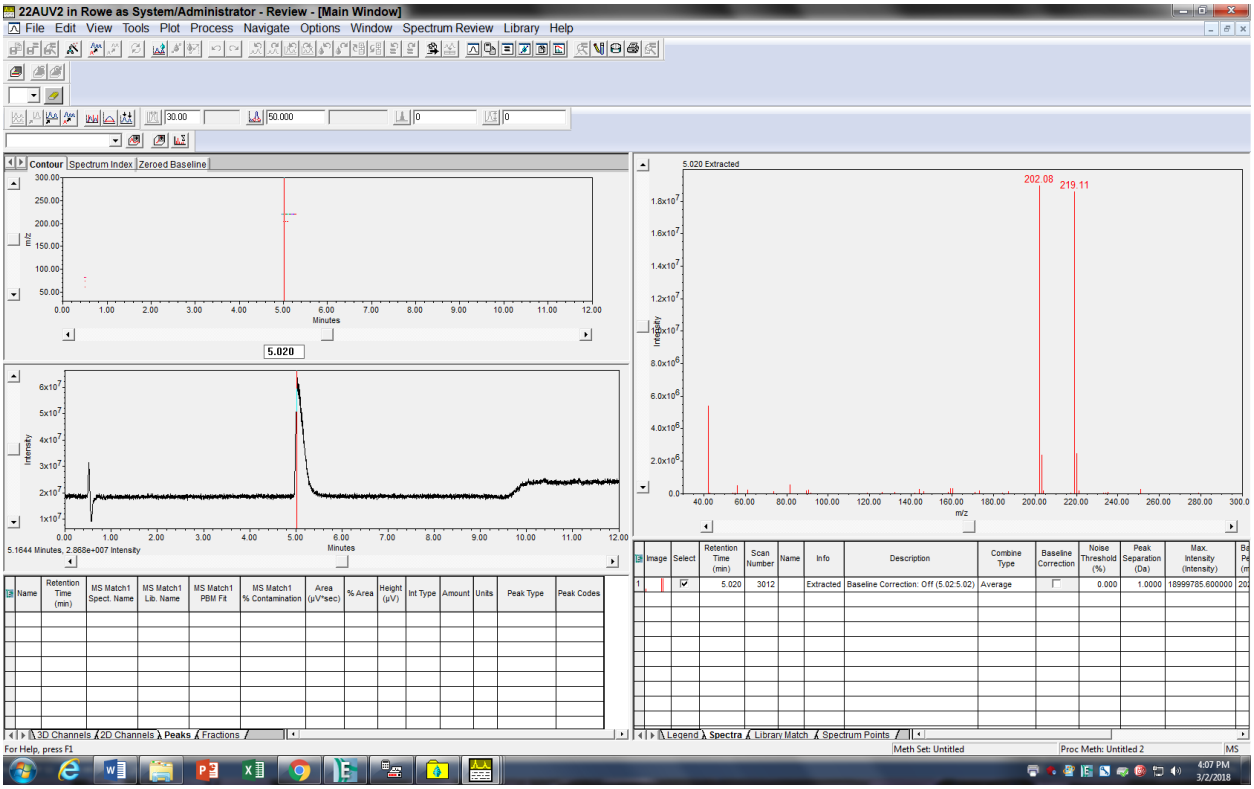


3-5 LC PDA Detector Data with Integrated Peak

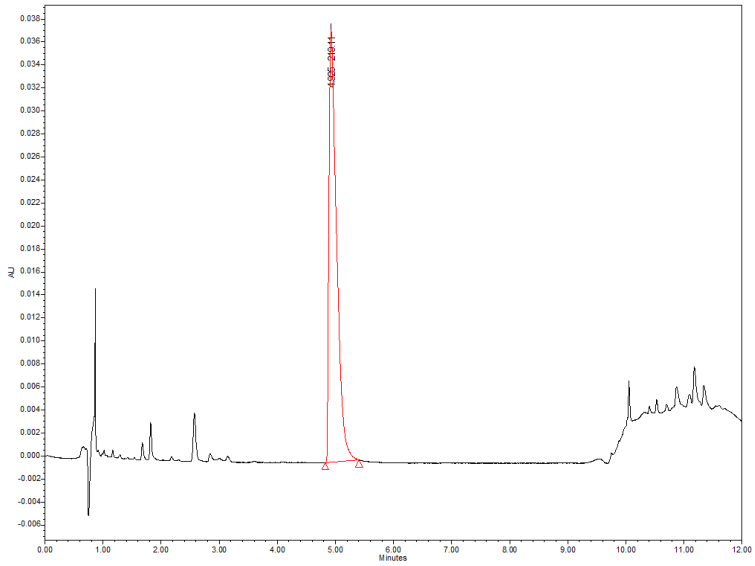


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		5.031	396392	100.00	40761	bb			Unknown	

3-5 Mass Spectrum

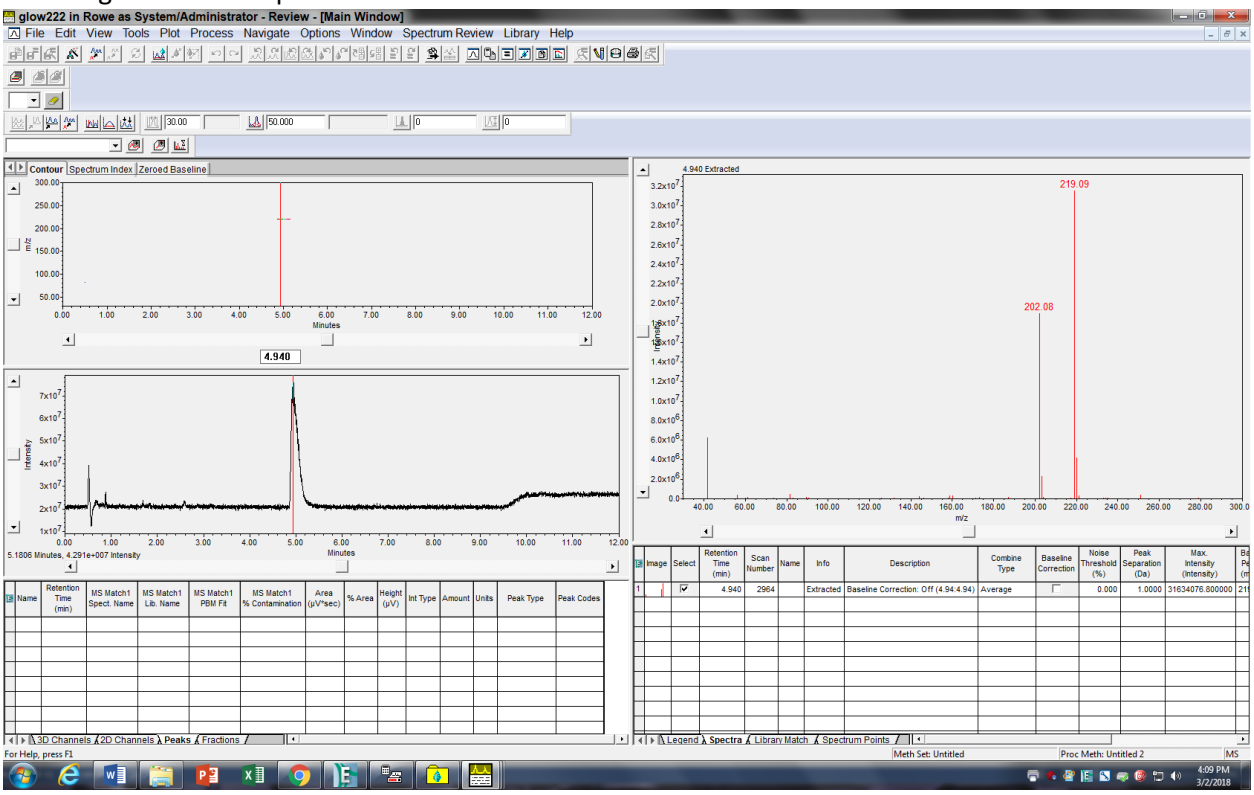


3-5 low gamma LC PDA Detector Data with Integrated Peak

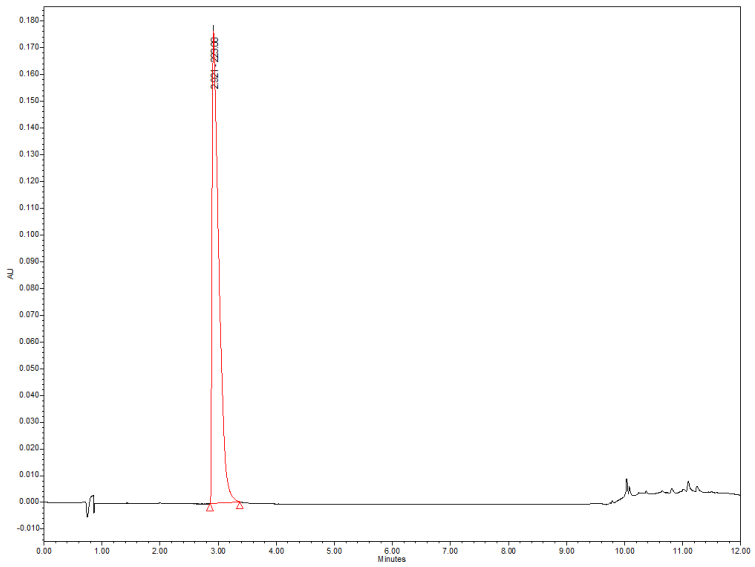


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		4.925	343380	100.00	37621	bb			Unknown

3-5 low gamma Mass Spectrum

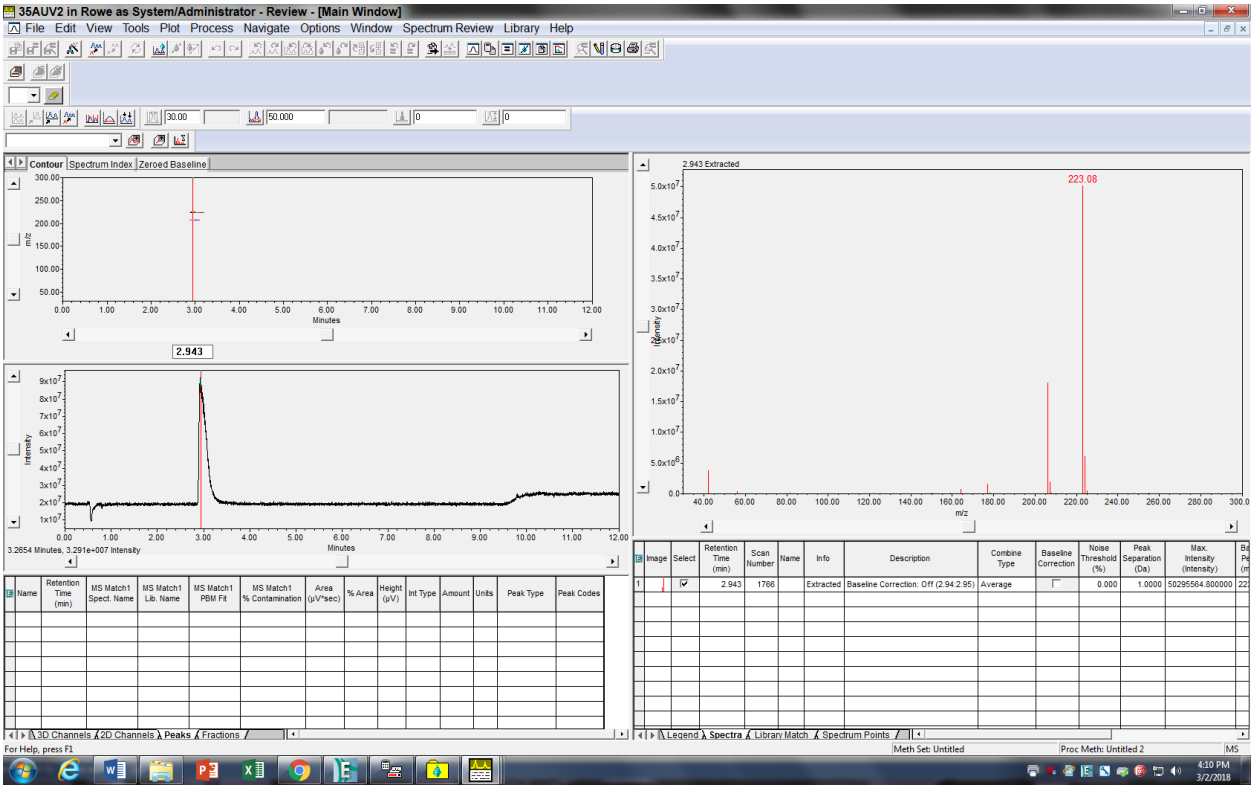


3-6 LC PDA Detector Data with Integrated Peak

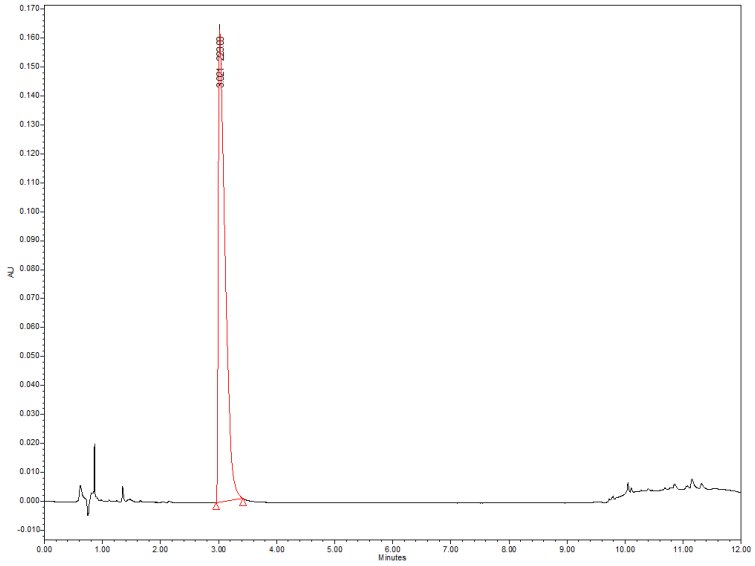


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		2.921	1435309	100.00	176766	bb			Unknown

3-6 Mass Spectrum

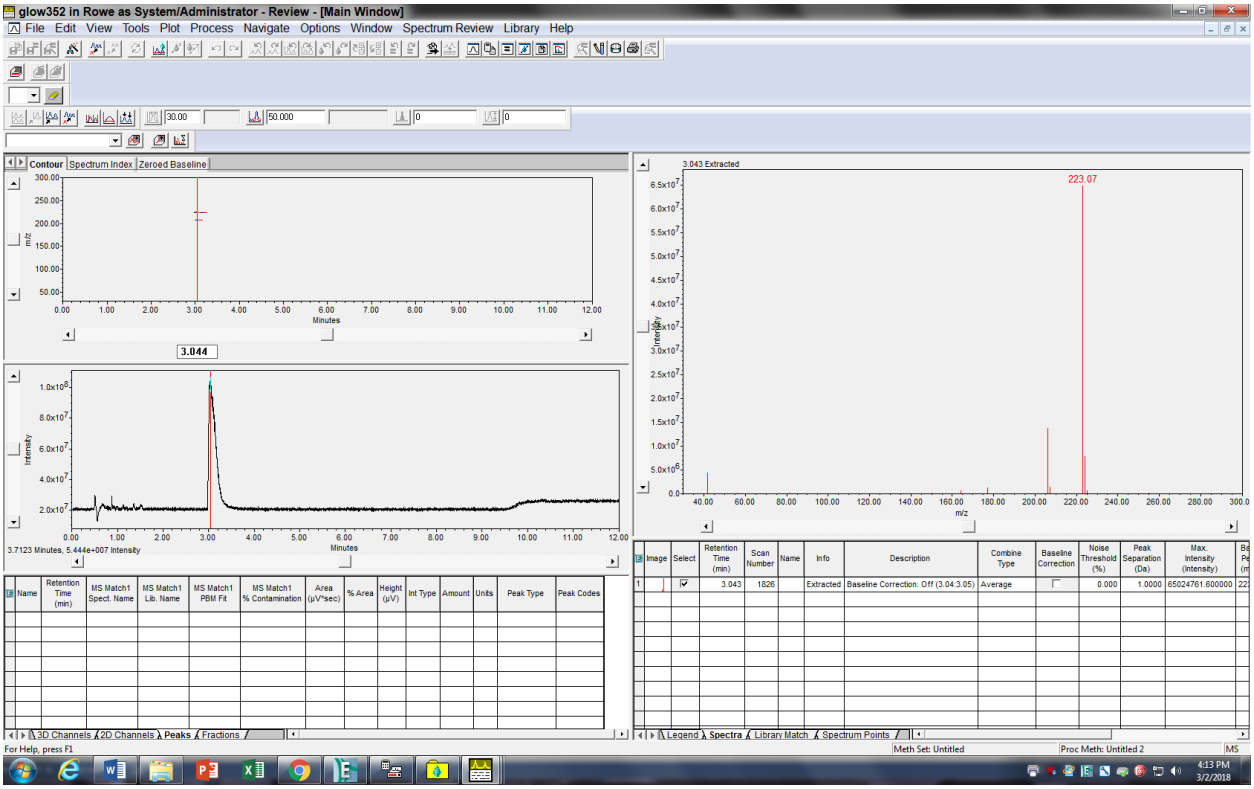


3-6 low gamma LC PDA Detector Data with Integrated Peak

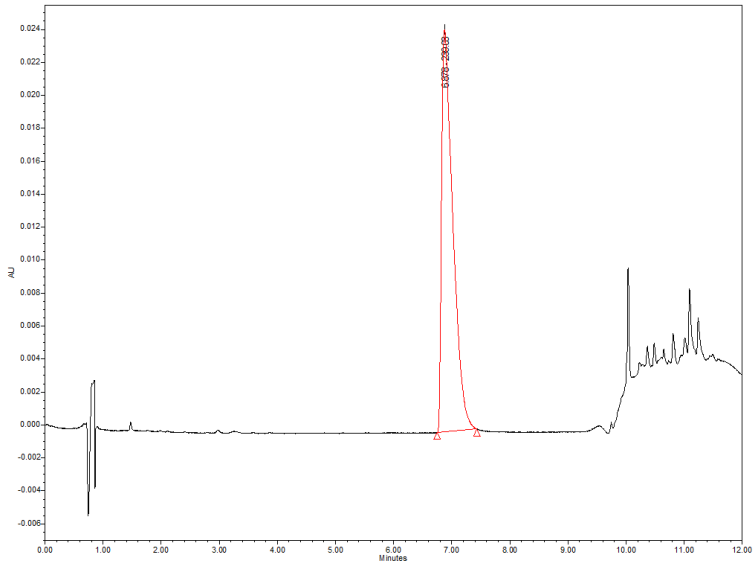


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		3.021	1327610	100.00	163161	bb			Unknown

3-6 low gamma Mass Spectrum

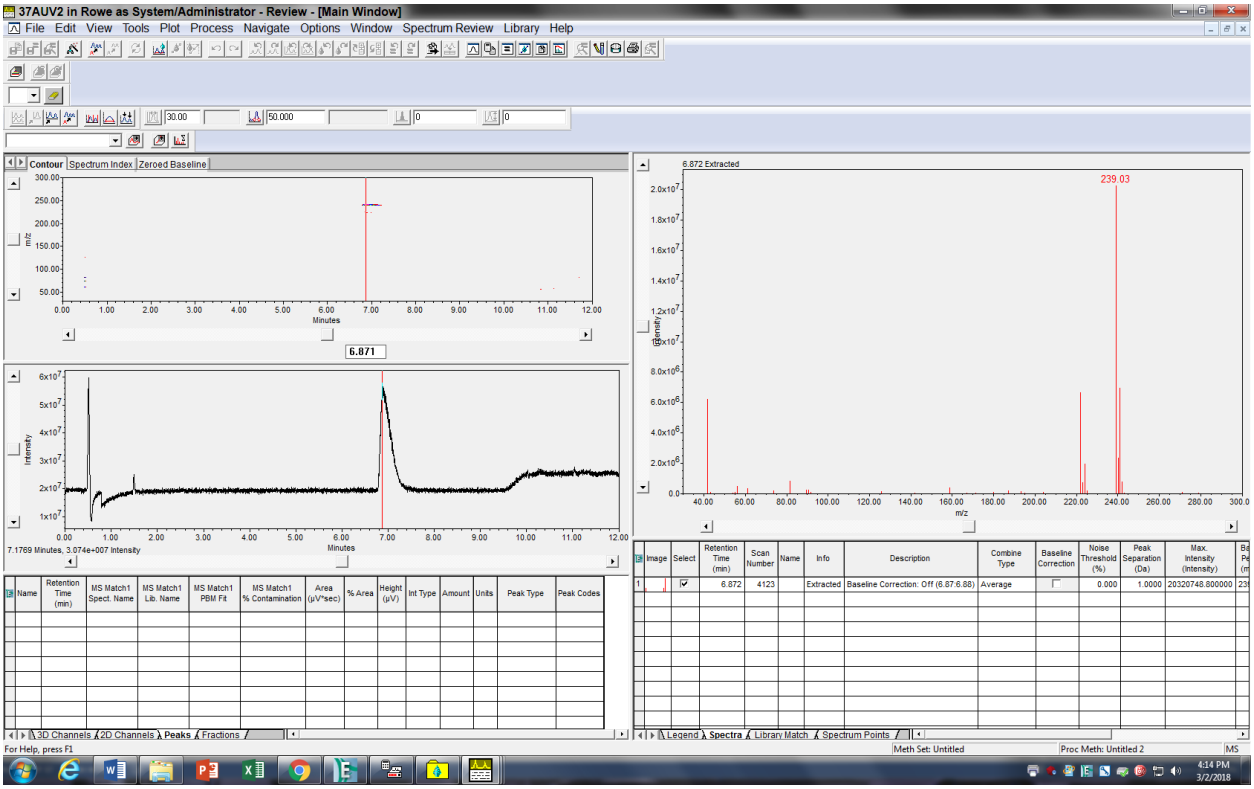


3-7 LC PDA Detector Data with Integrated Peak

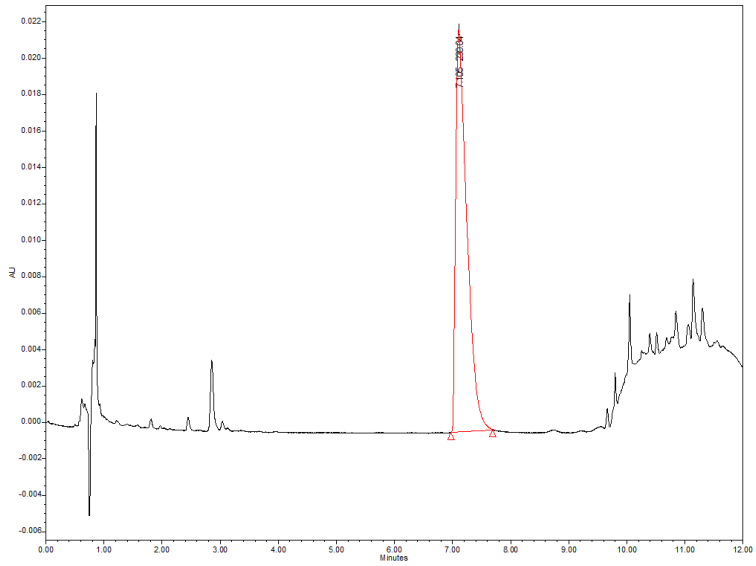


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		6.878	327011	100.00	24411	bb			Unknown

3-7 Mass Spectrum

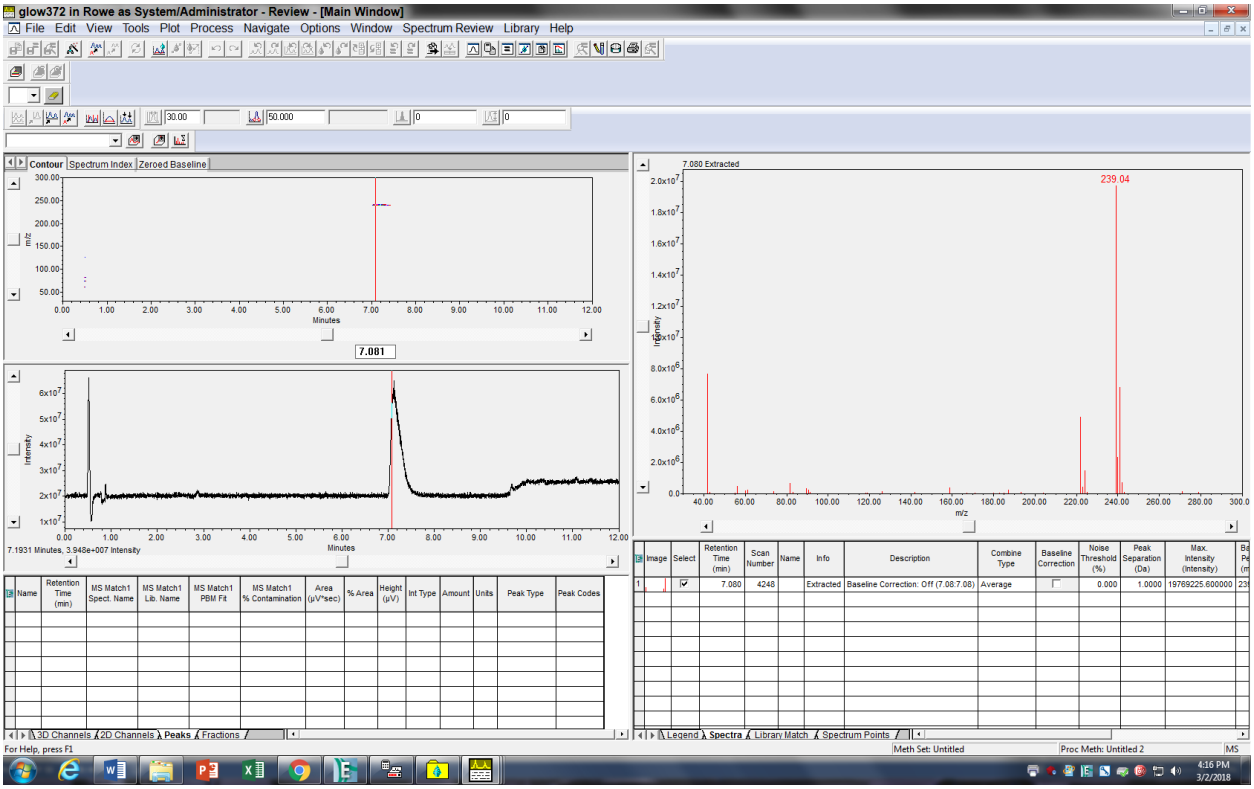


3-7 low gamma LC PDA Detector Data with Integrated Peak

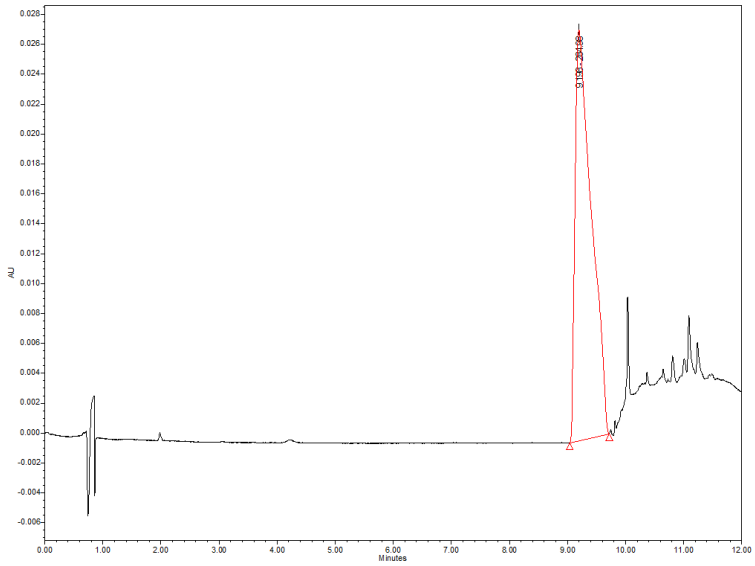


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type
1		7.105	294309	100.00	22091	bb			Unknown

3-7 low gamma Mass Spectrum

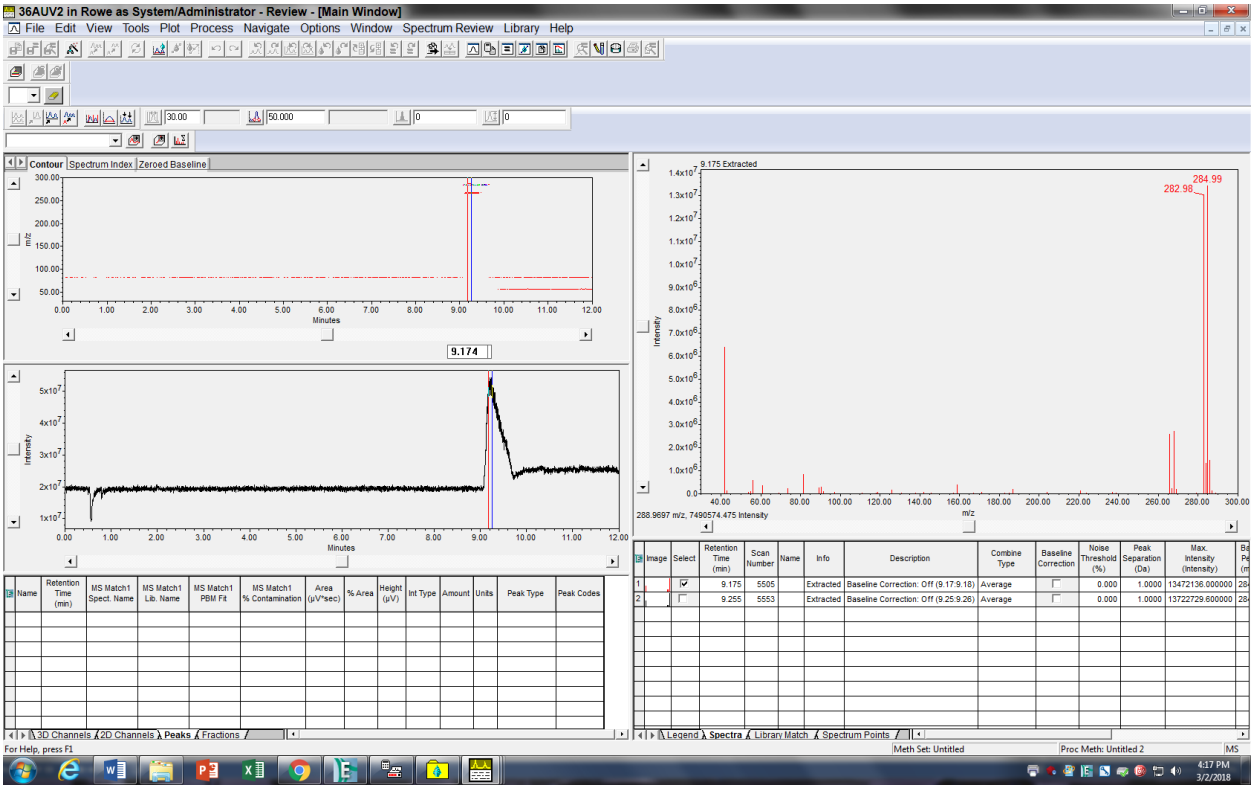


3-8 LC PDA Detector Data with Integrated Peak

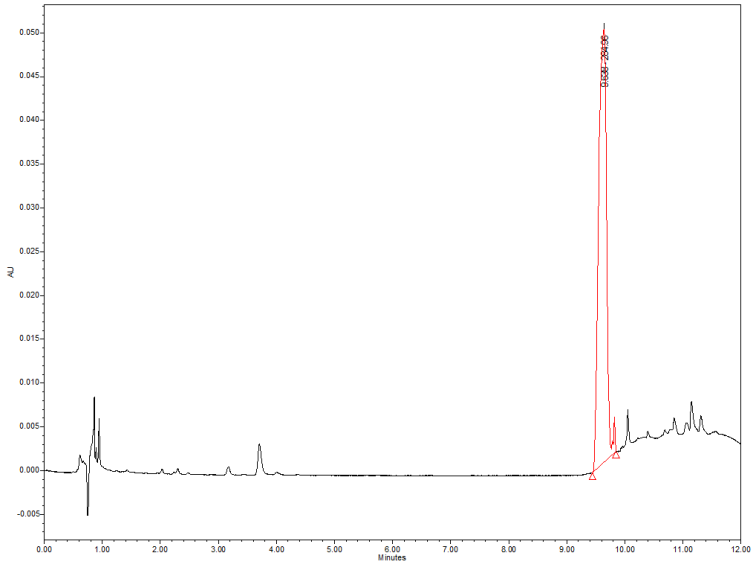


	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		9.198	538110	100.00	27486	bb			Unknown	

3-8 Mass Spectrum

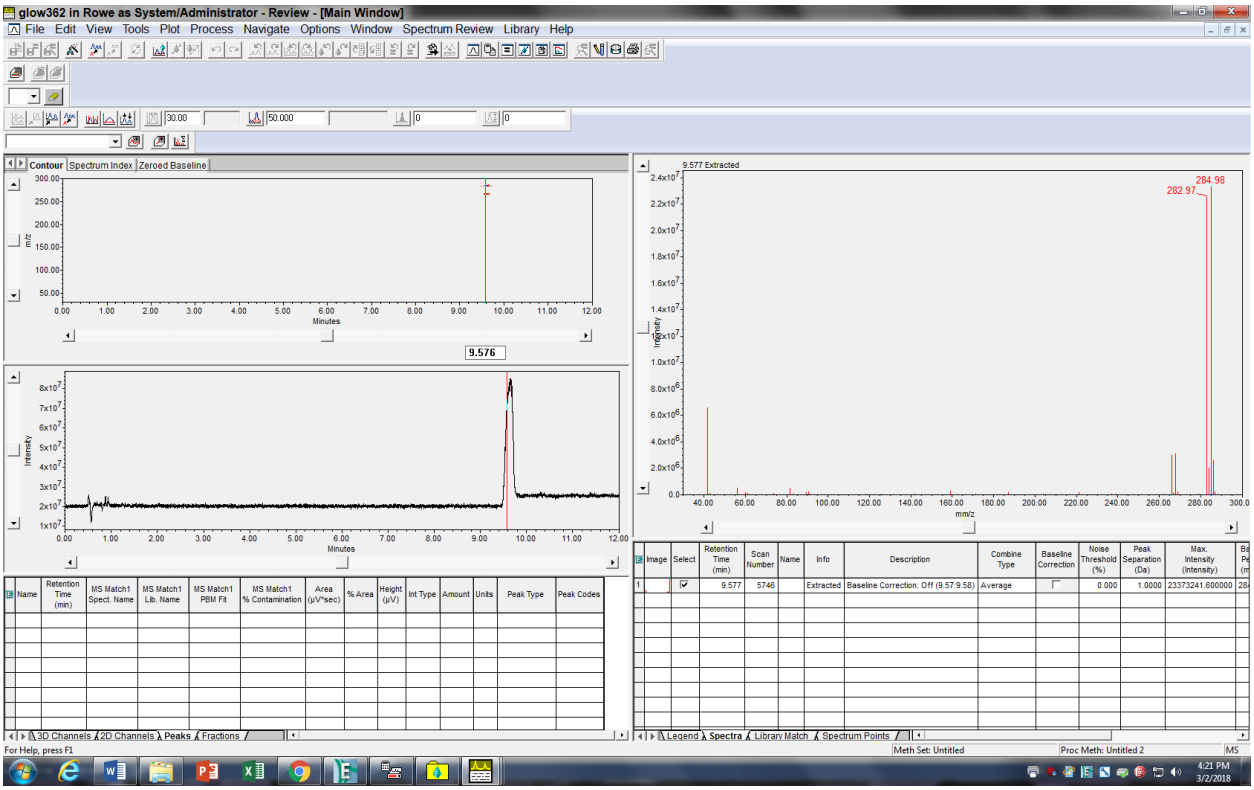


3-8 low gamma LC PDA Detector Data with Integrated Peak



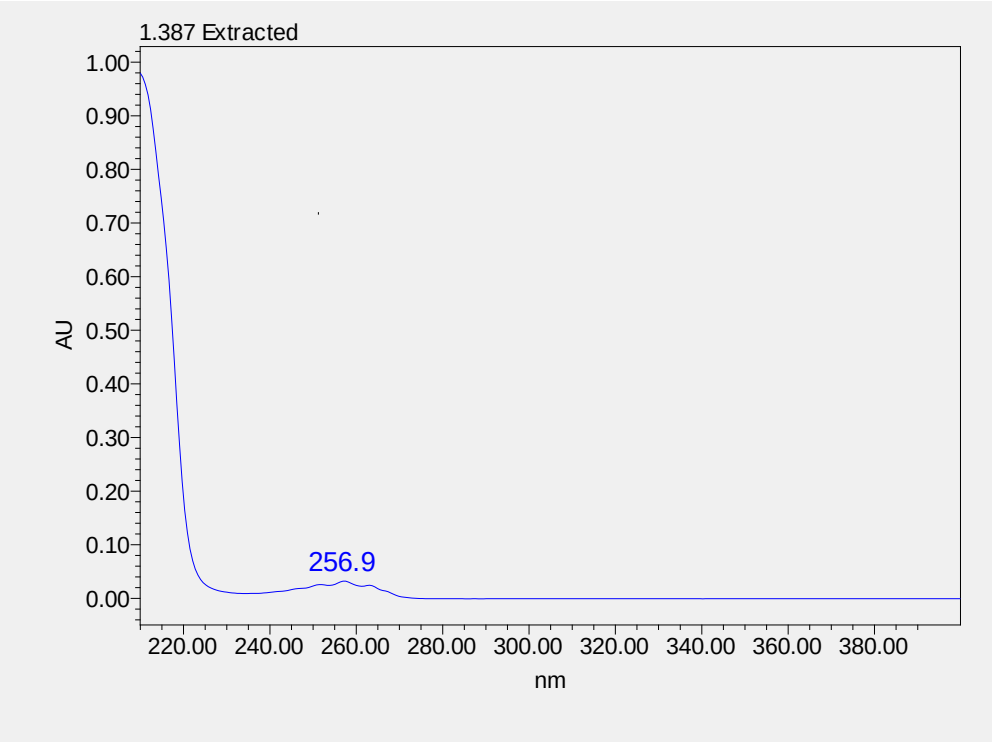
	Name	Retention Time	Area	% Area	Height	Int Type	Amount	Units	Peak Type	
1		9.638	472479	100.00	49496	bb			Unknown	

3-8 low gamma Mass Spectrum

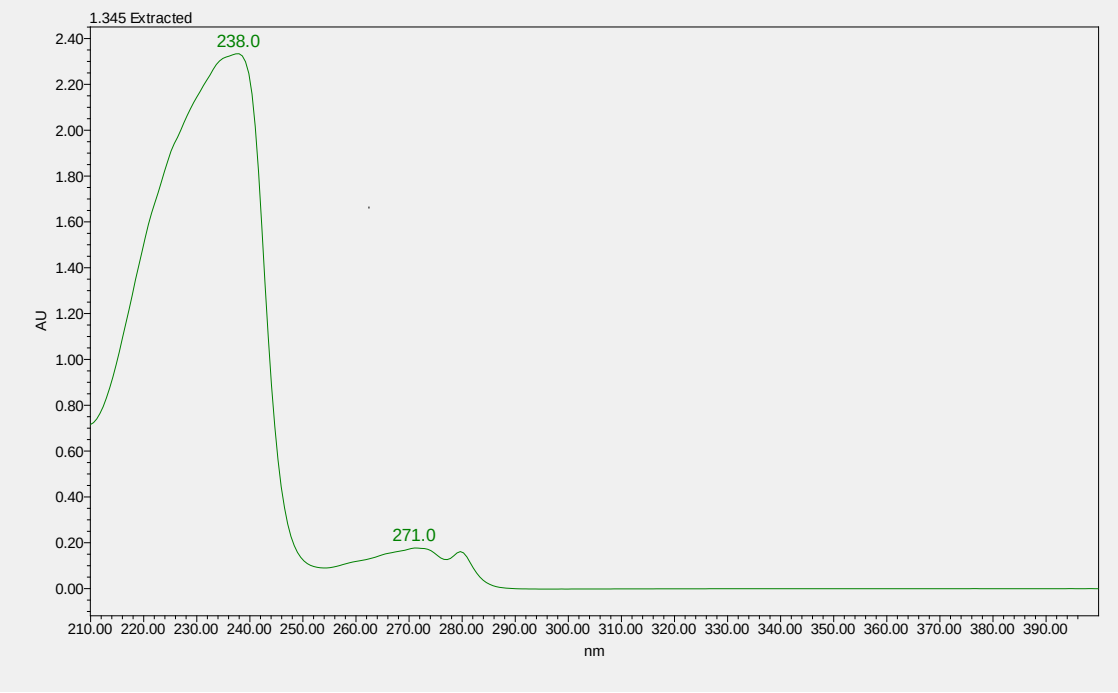


Absorbance Spectrum of Amino Acids Absorbance Spectrum of amino acids, resolution = 0.6 nm, range = 209.9nm - 399.9 nm

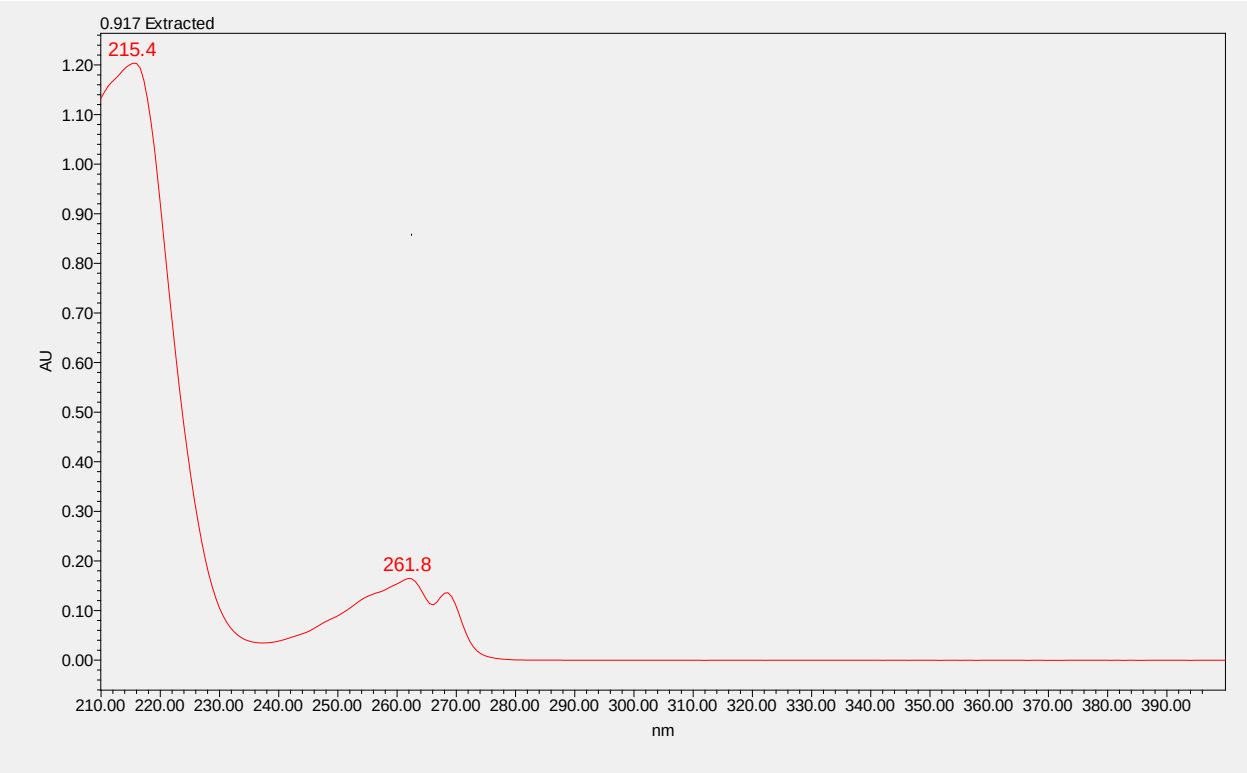
Amino Acid #1



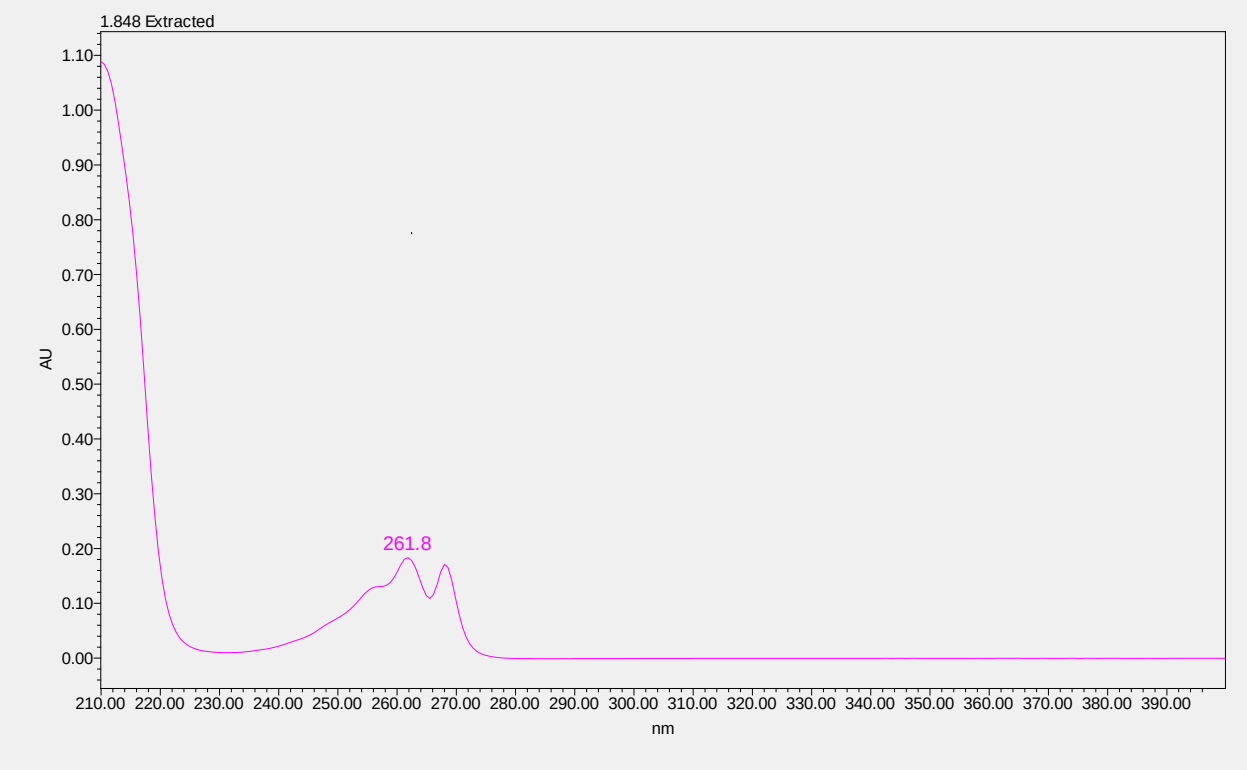
Amino Acid #1-1



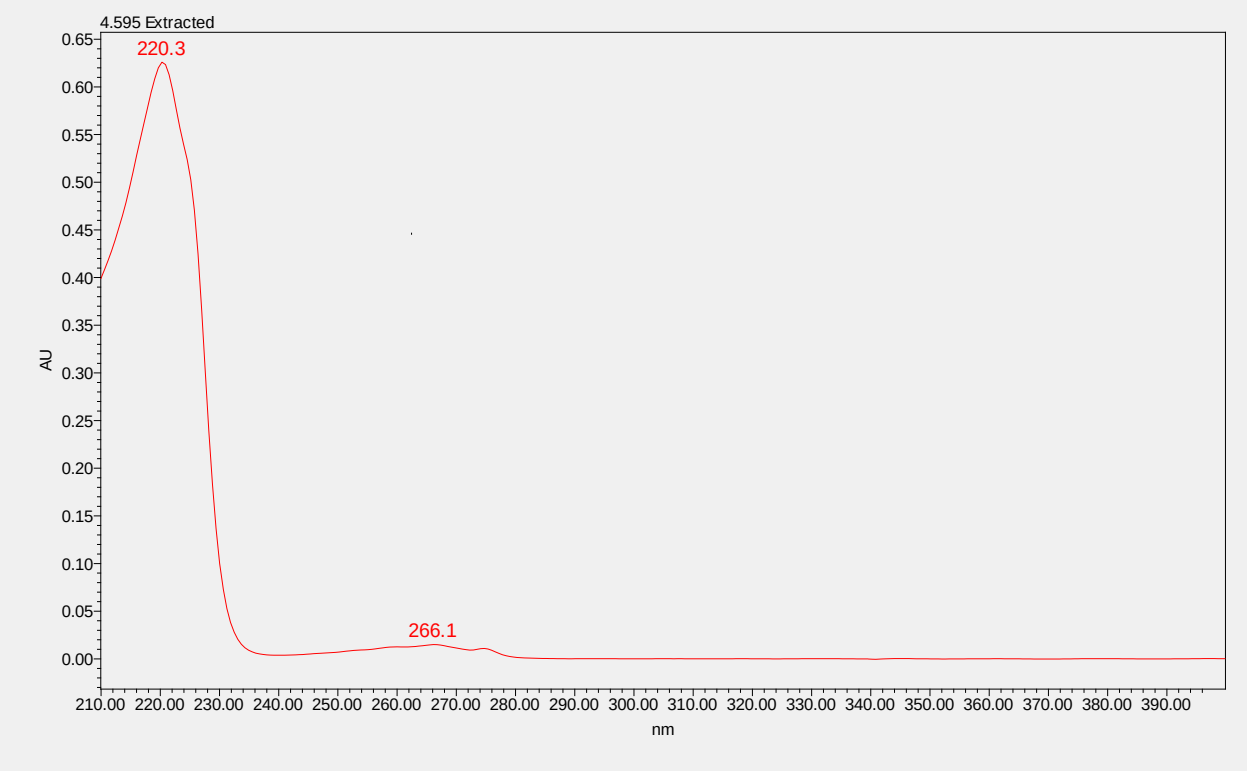
Amino Acid #1-3



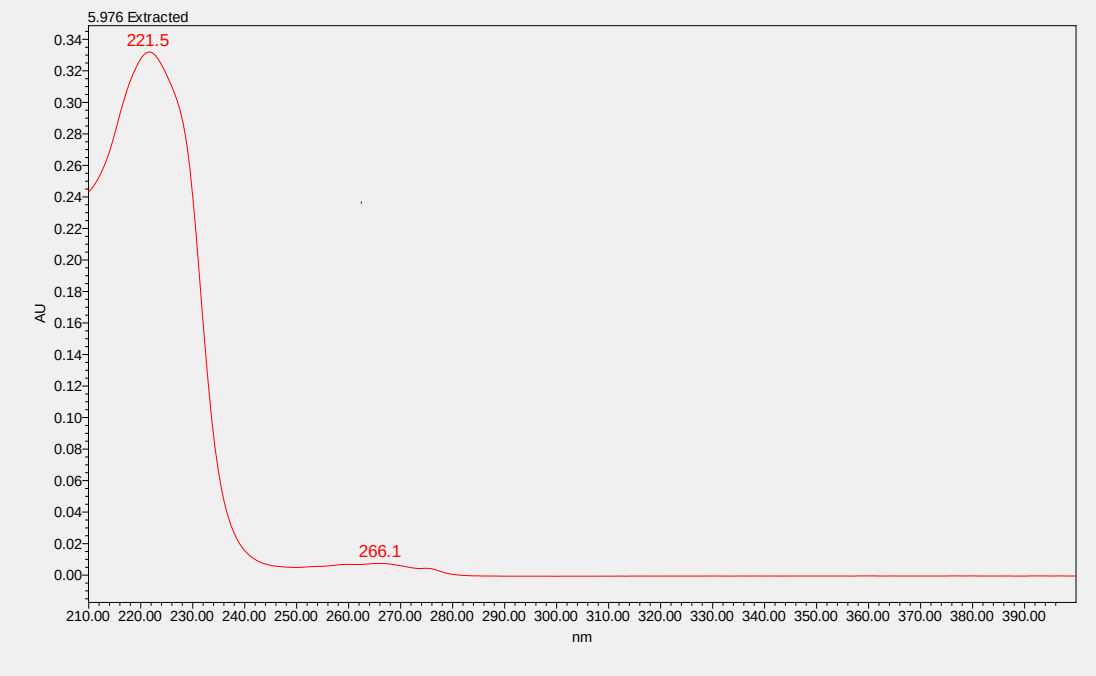
Amino Acid #1-6



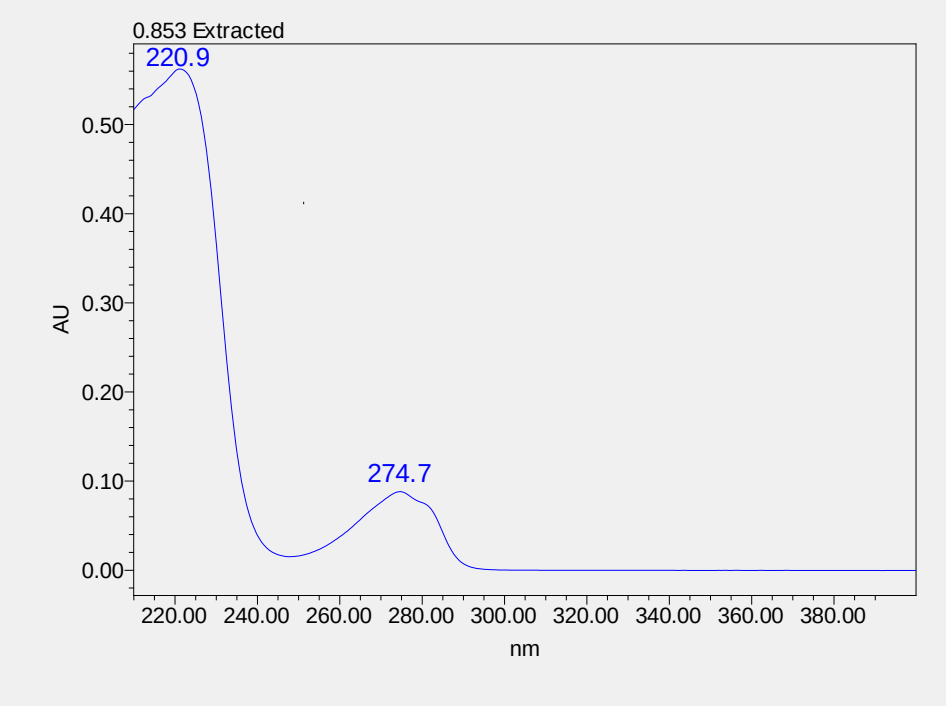
Amino Acid #1-7



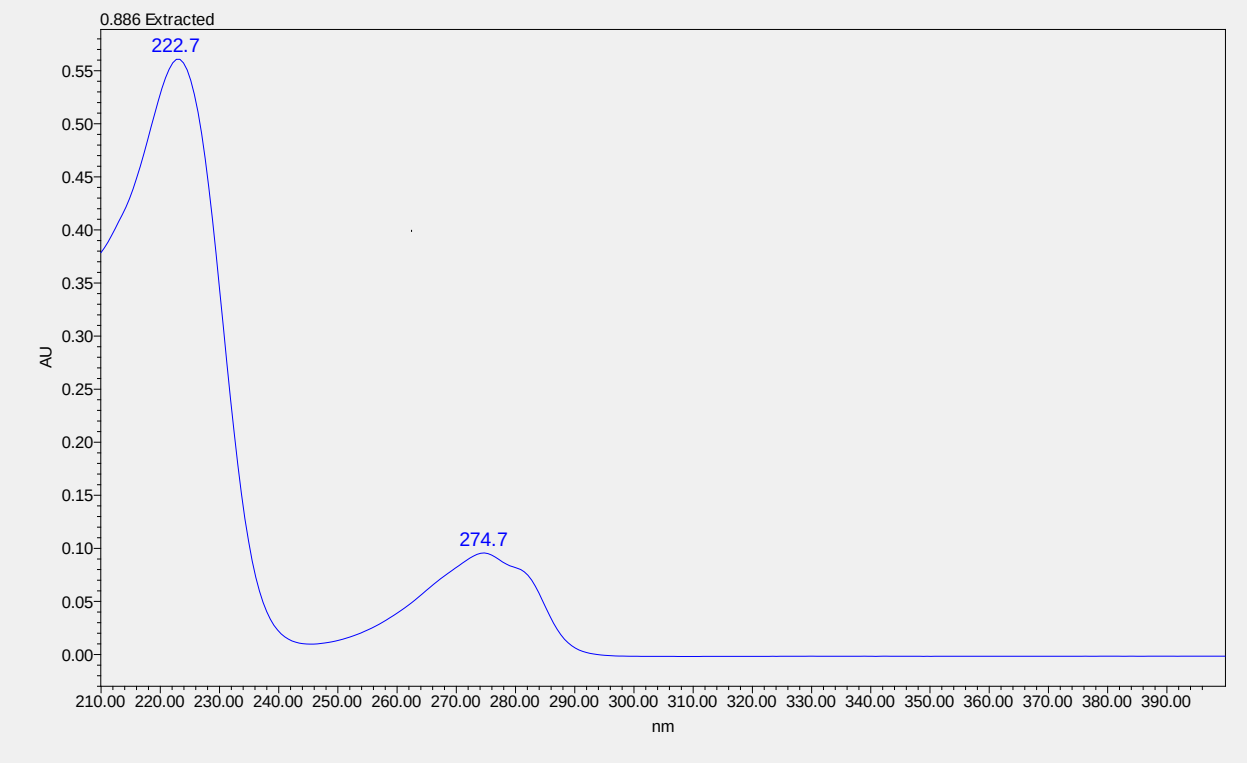
Amino Acid 1-8



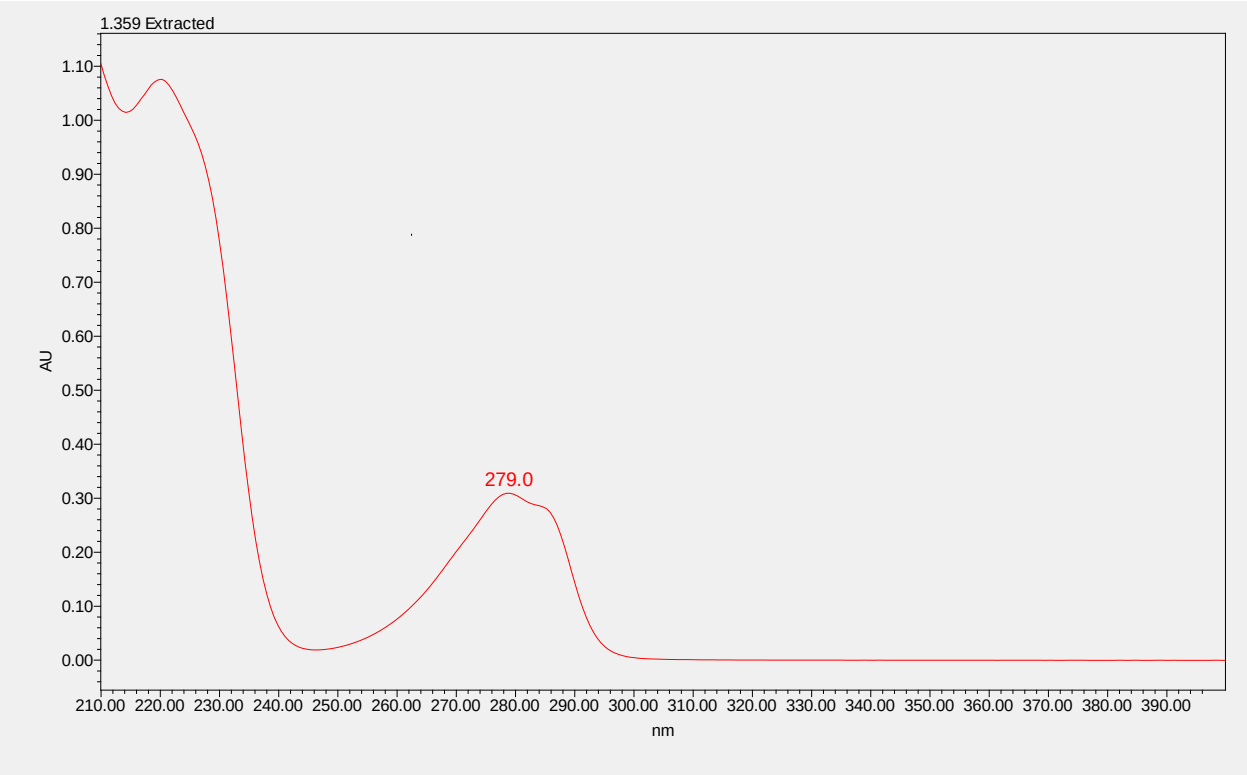
Amino Acid 2



Amino Acid 2-1

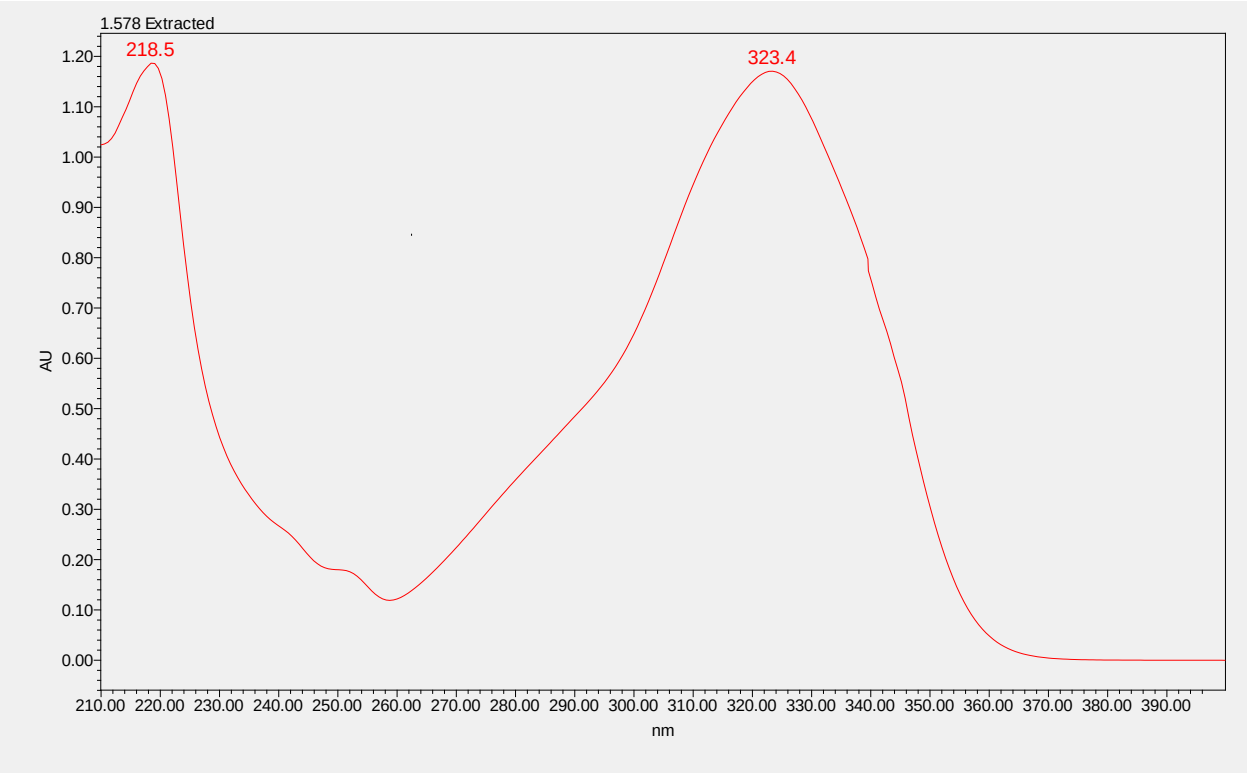


Amino Acid 2-7

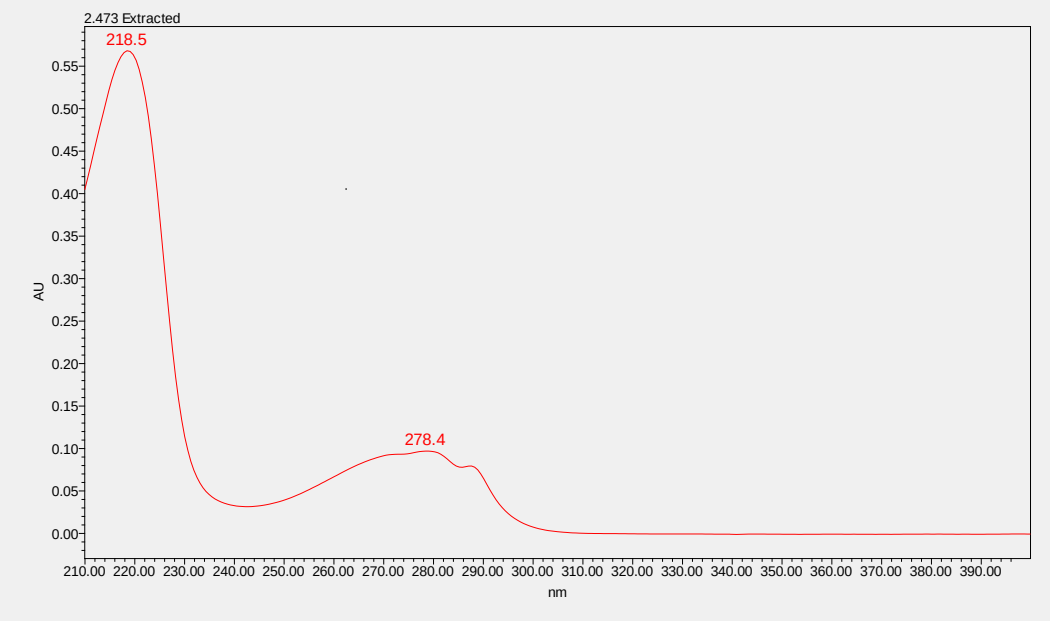


Amino Acid 4

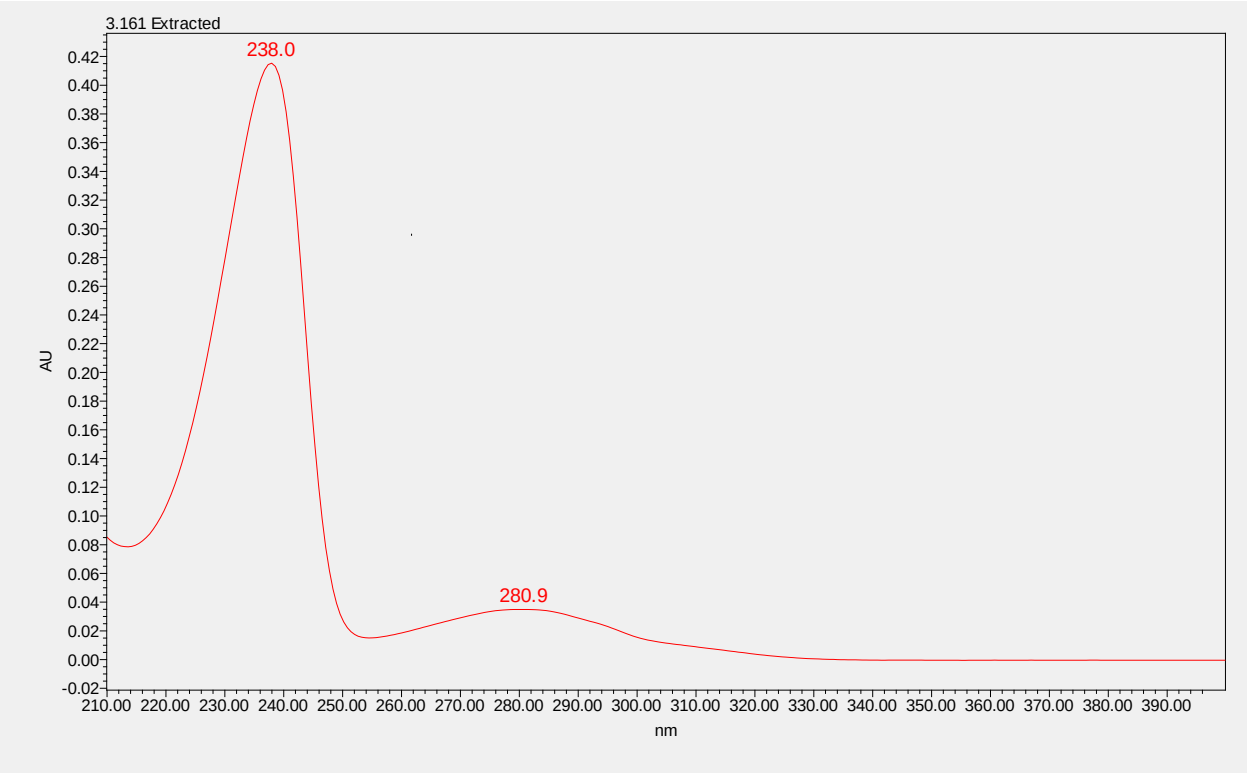
Amino Acid 5



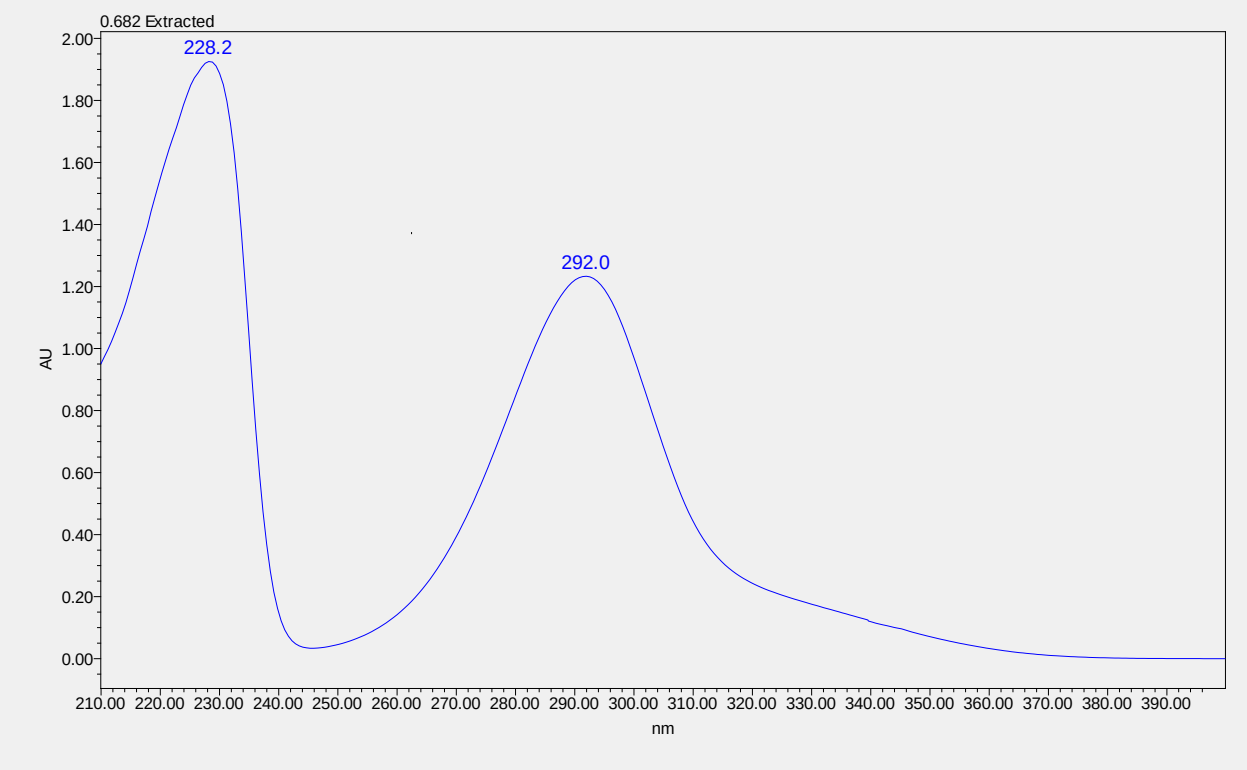
Amino Acid #3



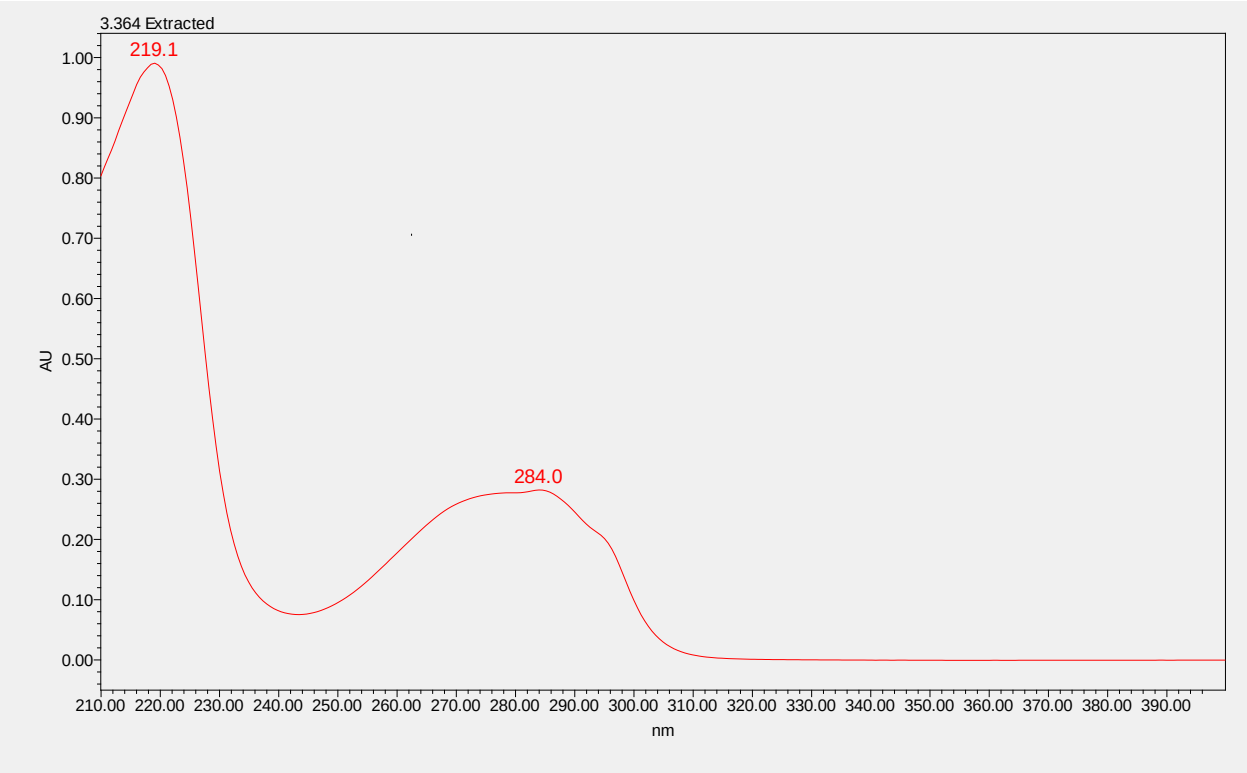
Amino Acid 3-1



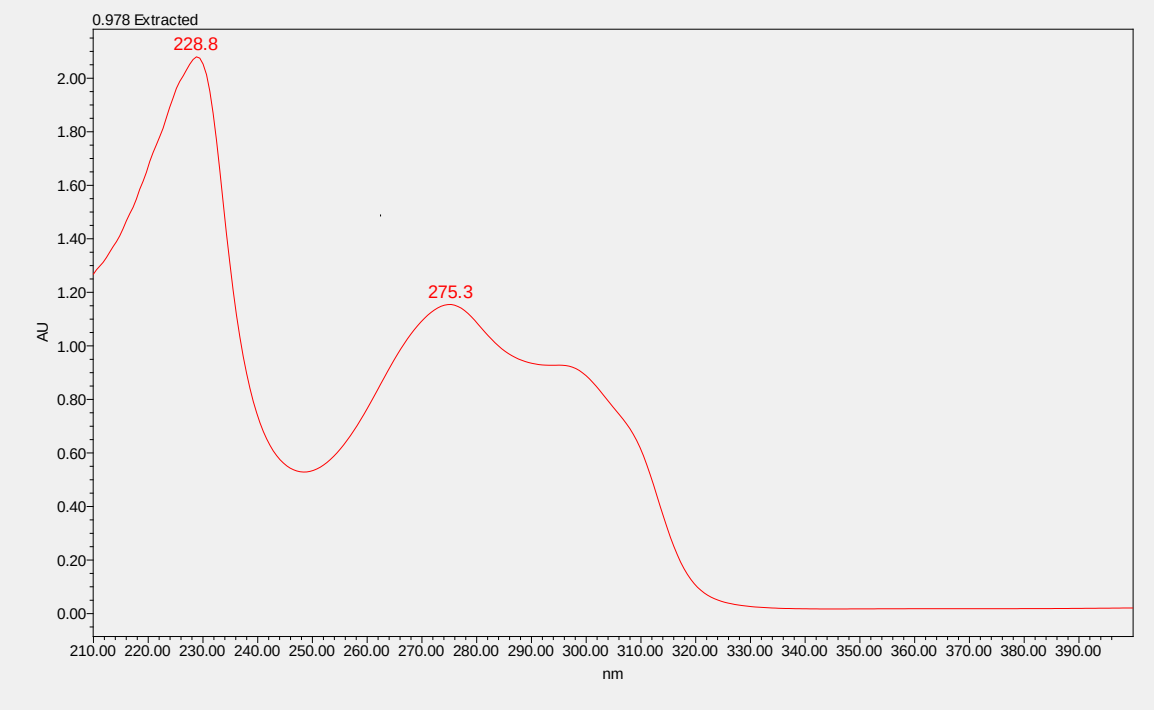
Amino Acid 3-2



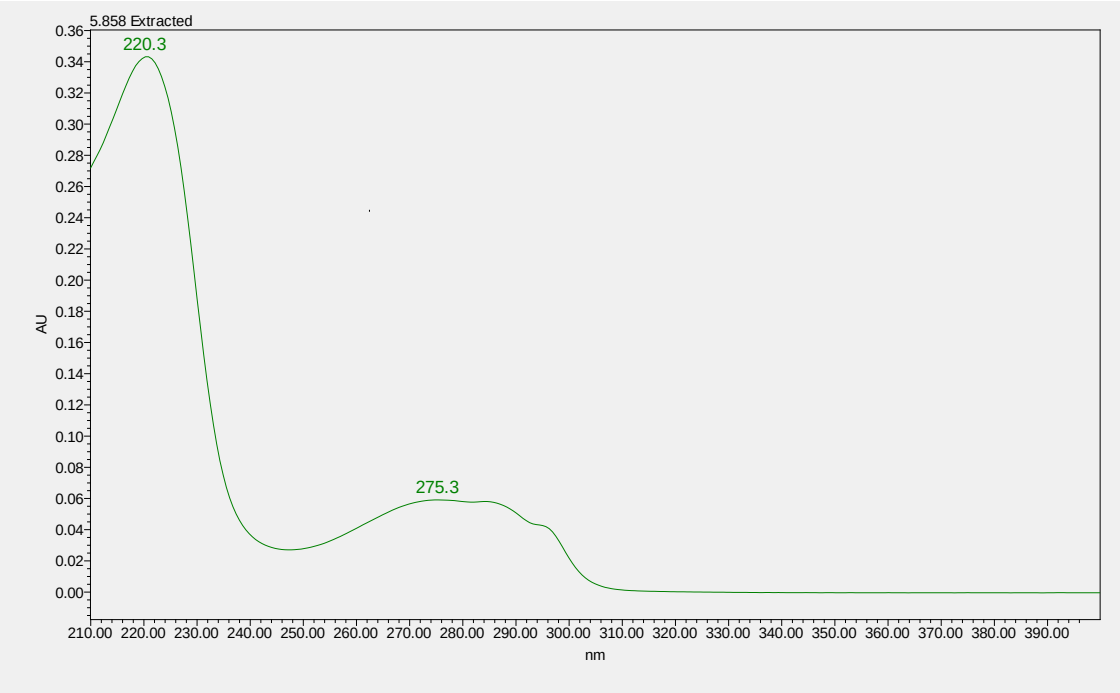
Amino Acid 3-3



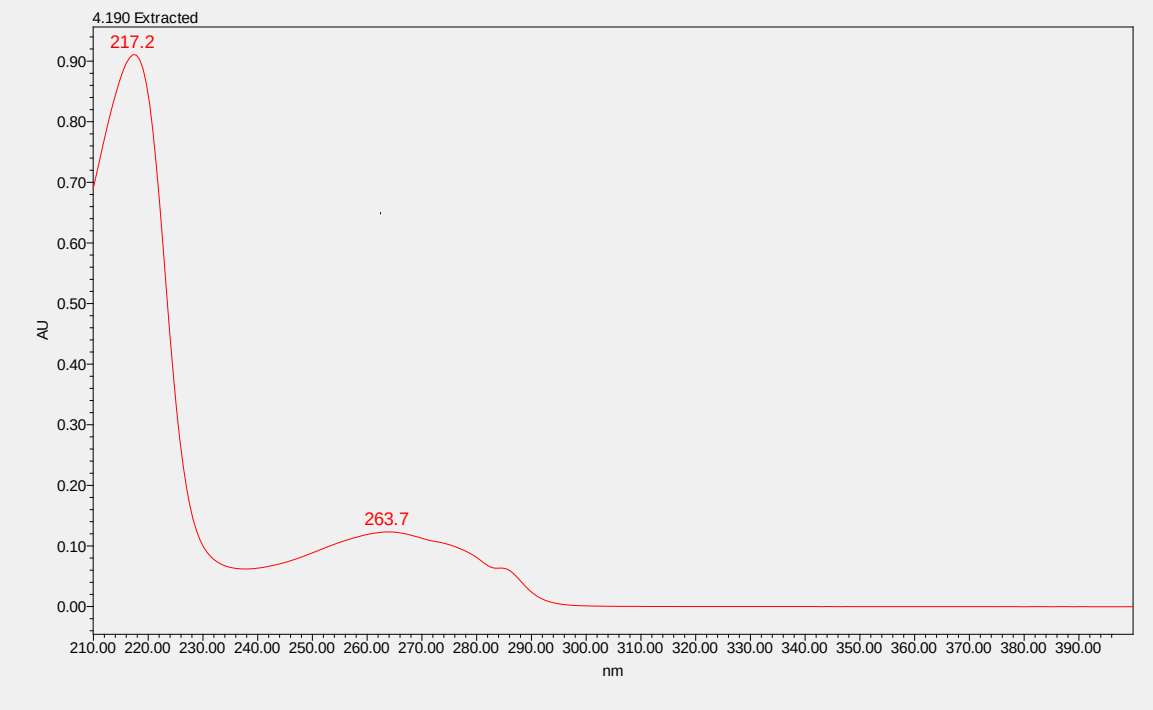
Amino Acid 3-4



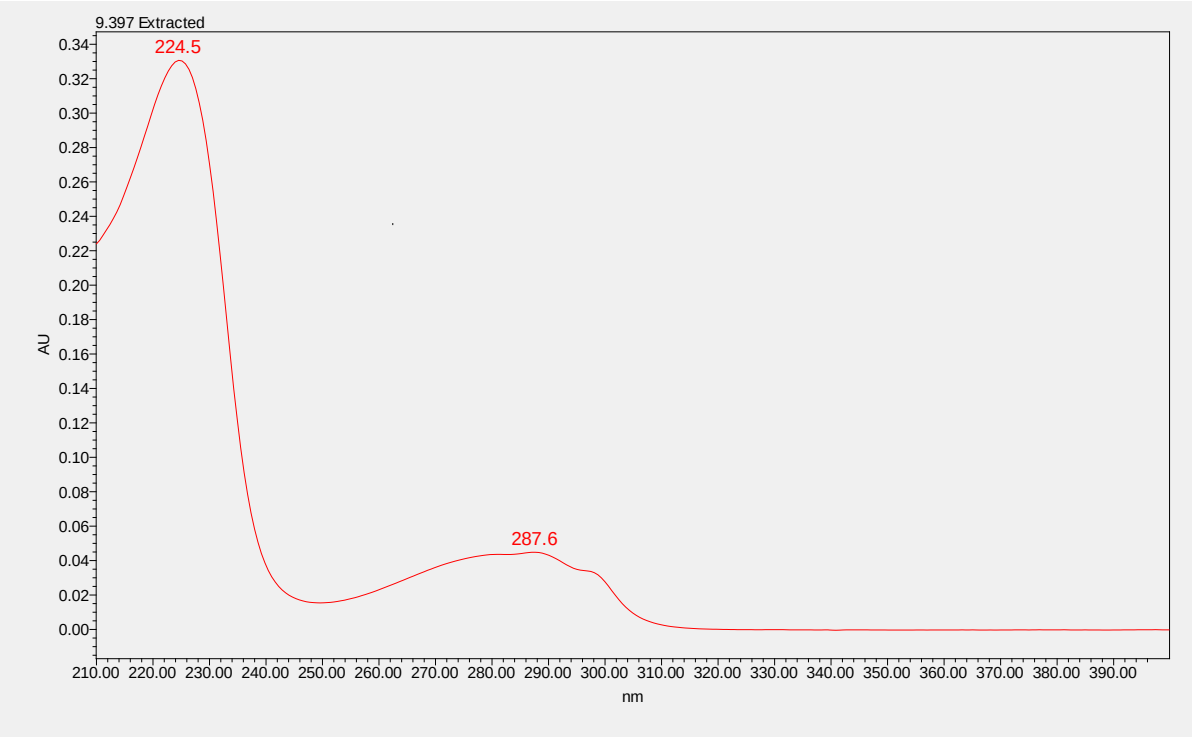
Amino Acid 3-5



Amino Acid #3-6



Amino Acid #3-7



Amino Acid #3-8