

**Lithium Enolates in the Enantioselective Construction of Tetrasubstituted Carbon Centers
with Chiral Lithium Amides as Non-Covalent Stereodirecting Auxiliaries**

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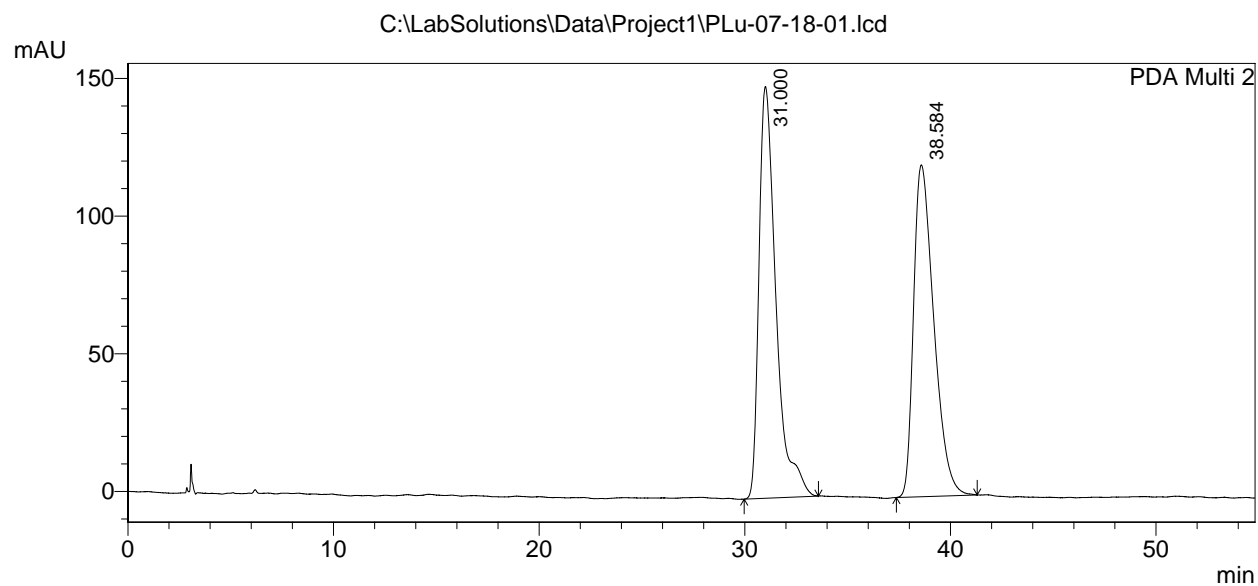
Supplementary Information

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-18-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-18
 Sample ID : PLu-07-18
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-18-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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<Chromatogram>

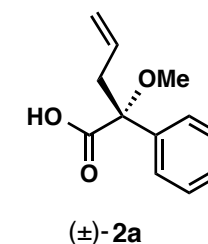


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	31.000	8592912	149575	51.050	55.382
2	38.584	8239575	120503	48.950	44.618
Total		16832487	270079	100.000	100.000

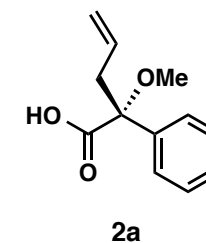
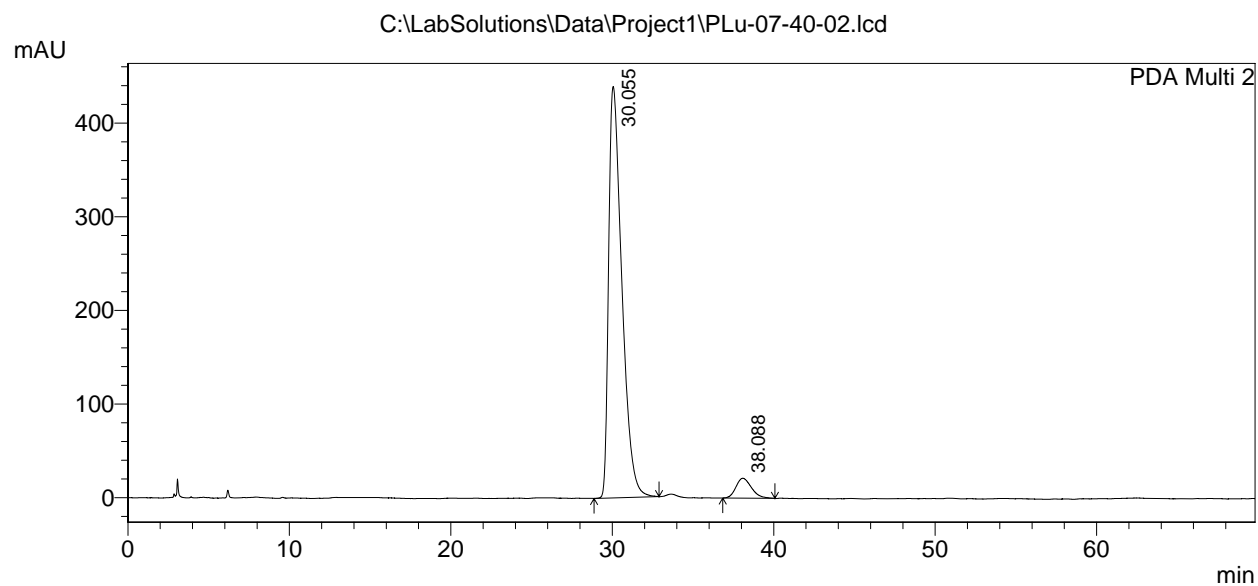


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-40-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-40
 Sample ID : PLu-07-40
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-40-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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PeakTable

PDA Ch2 215nm 4nm

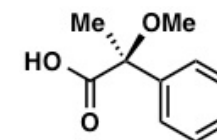
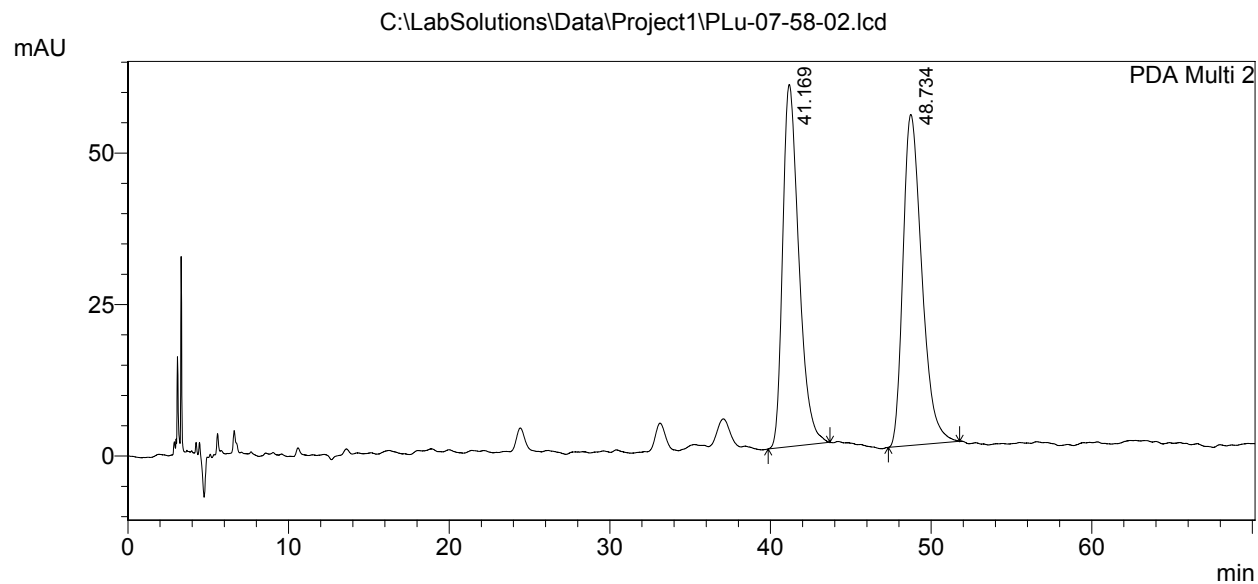
Peak#	Ret. Time	Area	Height	Area %	Height %
1	30.055	24969062	439271	94.582	95.369
2	38.088	1430349	21329	5.418	4.631
Total		26399411	460599	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-58-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-58
 Sample ID : PLu-07-58
 Vial # :
 Injection Volume : 10 μ L
 Data File Name : PLu-07-58-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 10/13/2015 7:14:19 PM
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<Chromatogram>



(±)- 2b

PeakTable

PDA Ch2 215nm 4nm

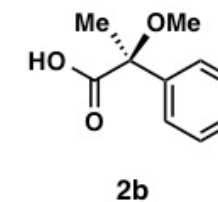
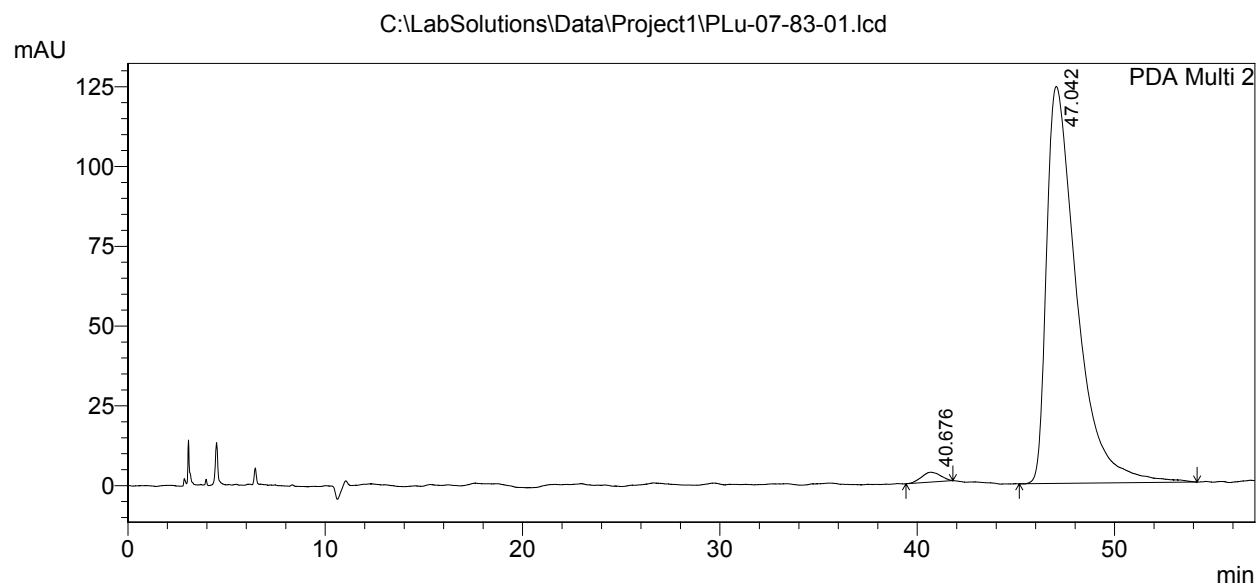
Peak#	Ret. Time	Area	Height	Area %	Height %
1	41.169	4183492	59793	48.494	52.259
2	48.734	4443247	54624	51.506	47.741
Total		8626738	114417	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-83-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-83
 Sample ID : PLu-07-83
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-83-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
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PeakTable

PDA Ch2 215nm 4nm

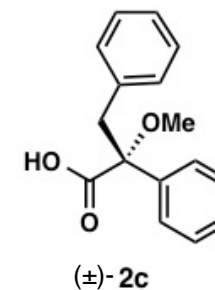
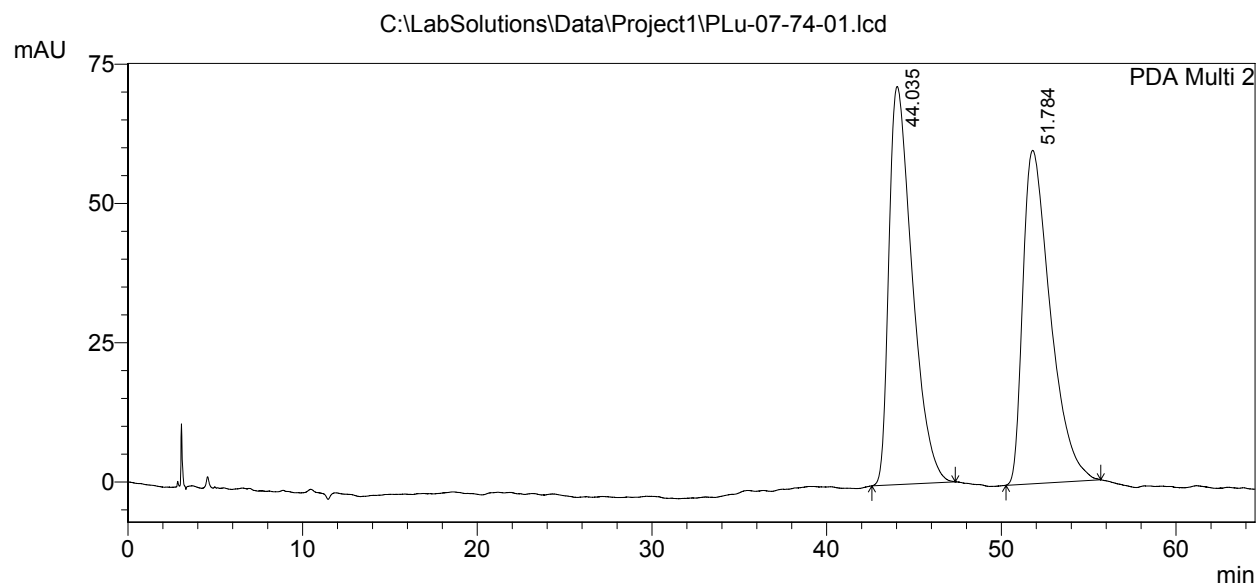
Peak#	Ret. Time	Area	Height	Area %	Height %
1	40.676	206733	3102	1.544	2.433
2	47.042	13182615	124403	98.456	97.567
Total		13389348	127505	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-74-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-74
 Sample ID : PLu-07-74
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-74-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

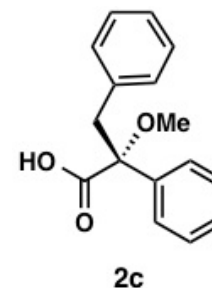
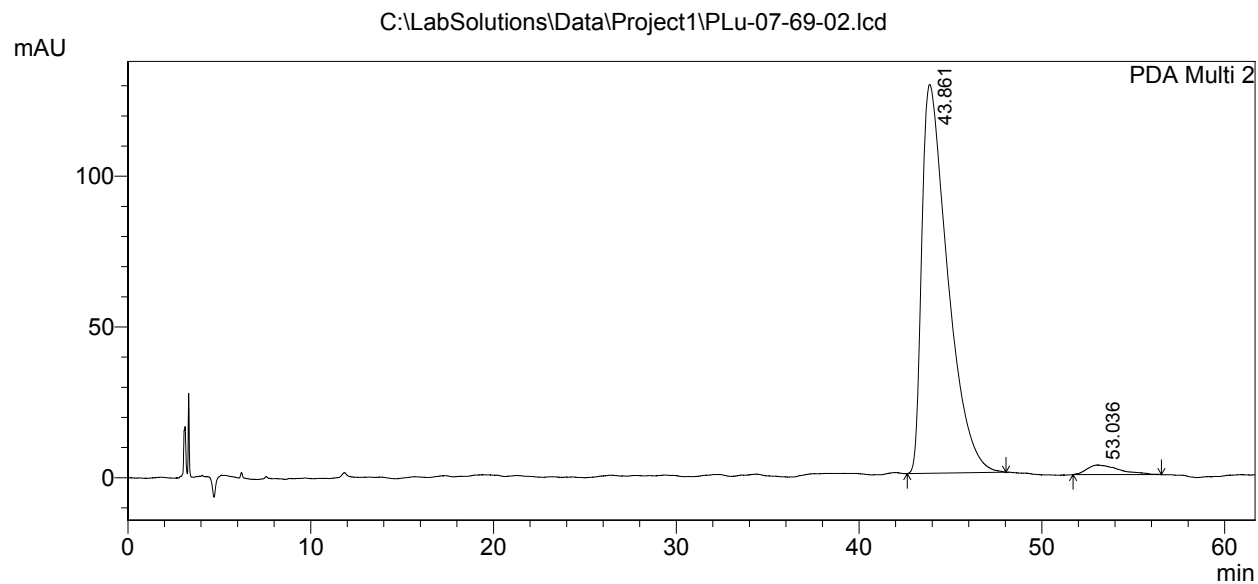
Peak#	Ret. Time	Area	Height	Area %	Height %
1	44.035	6639093	71483	50.314	54.425
2	51.784	6556167	59859	49.686	45.575
Total		13195259	131342	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-69-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-69
 Sample ID : PLu-07-69
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-69-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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PeakTable

PDA Ch2 215nm 4nm

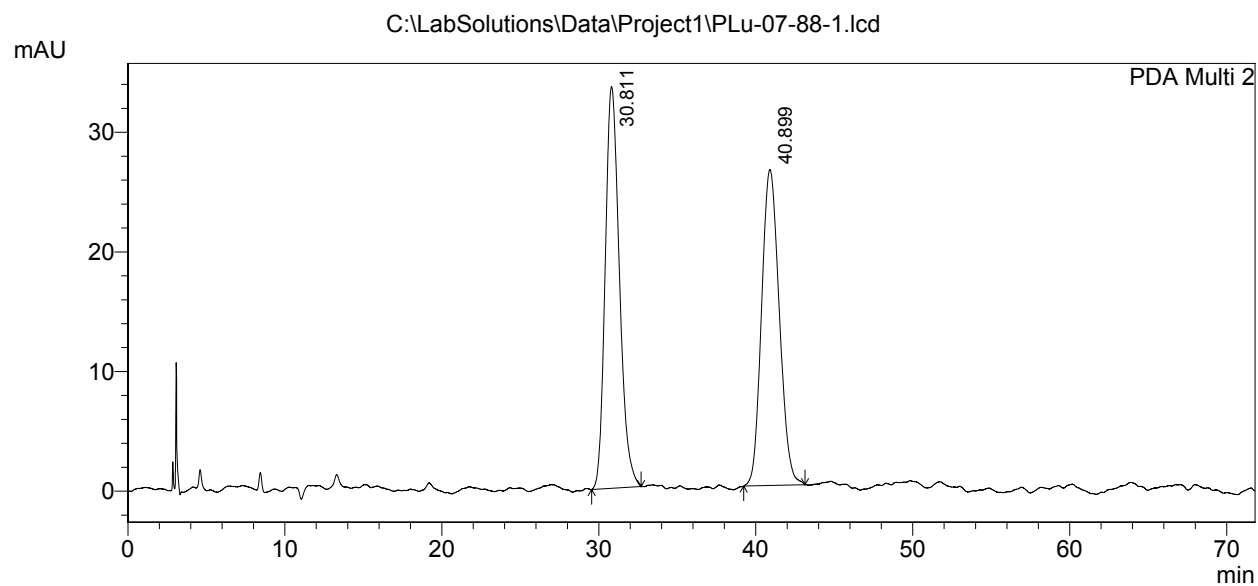
Peak#	Ret. Time	Area	Height	Area %	Height %
1	43.861	12671356	128974	97.054	97.609
2	53.036	384659	3159	2.946	2.391
Total		13056016	132133	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-88-1.lcd

Acquired by : Admin
 Sample Name : PLu-07-88
 Sample ID : PLu-07-88
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-88-1.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
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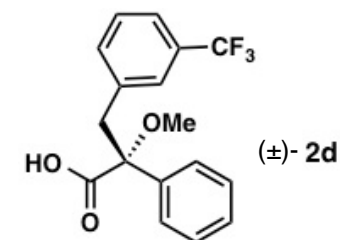


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	30.811	2113215	33592	50.501	55.971
2	40.899	2071290	26425	49.499	44.029
Total		4184506	60018	100.000	100.000

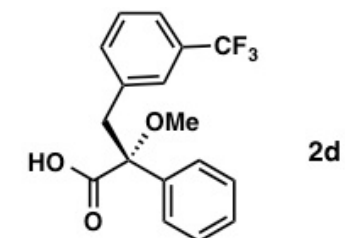
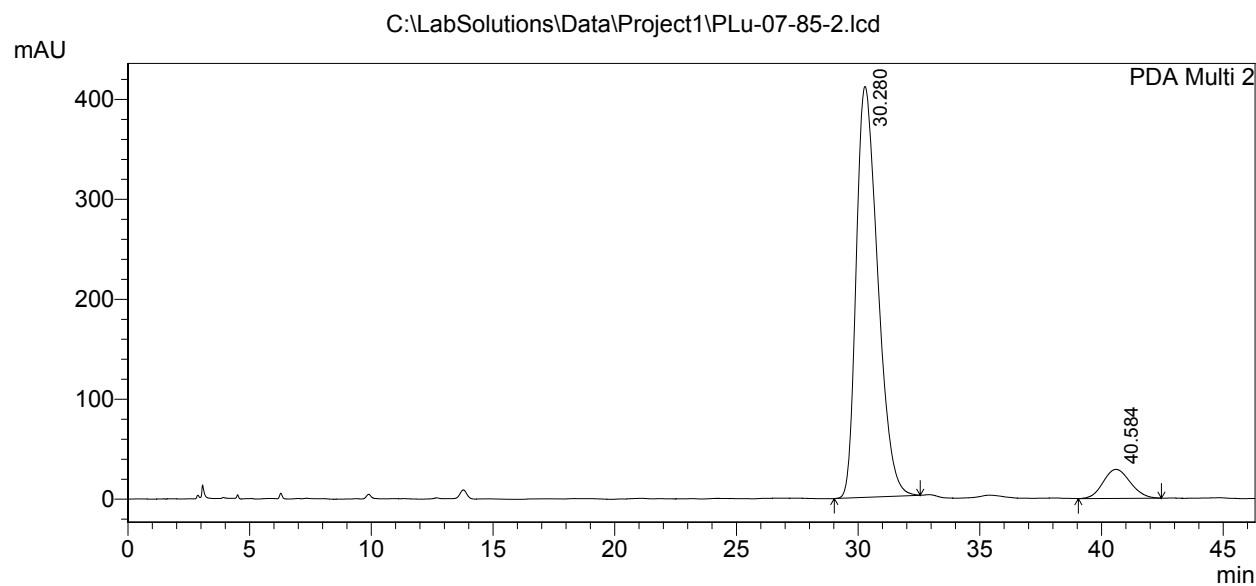


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-85-2.lcd

Acquired by : Admin
 Sample Name : PLu-07-85
 Sample ID : PLu-07-85
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-85-2.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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 Data Processed : 11/4/2015 8:10:33 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

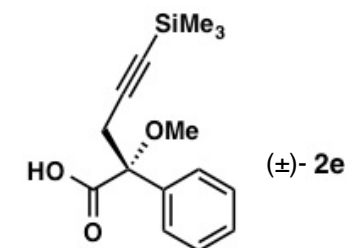
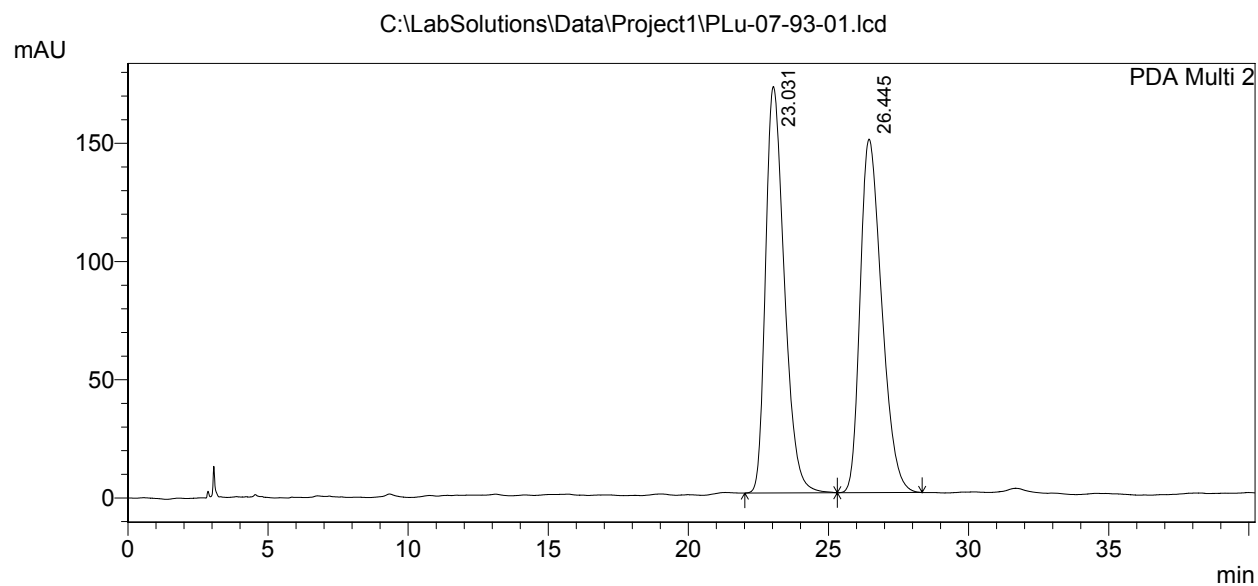
Peak#	Ret. Time	Area	Height	Area %	Height %
1	30.280	25320746	411164	91.855	93.409
2	40.584	2245289	29013	8.145	6.591
Total		27566035	440178	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-93-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-93
 Sample ID : PLu-07-93
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-93-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

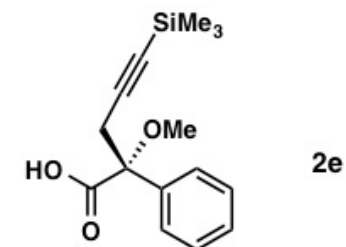
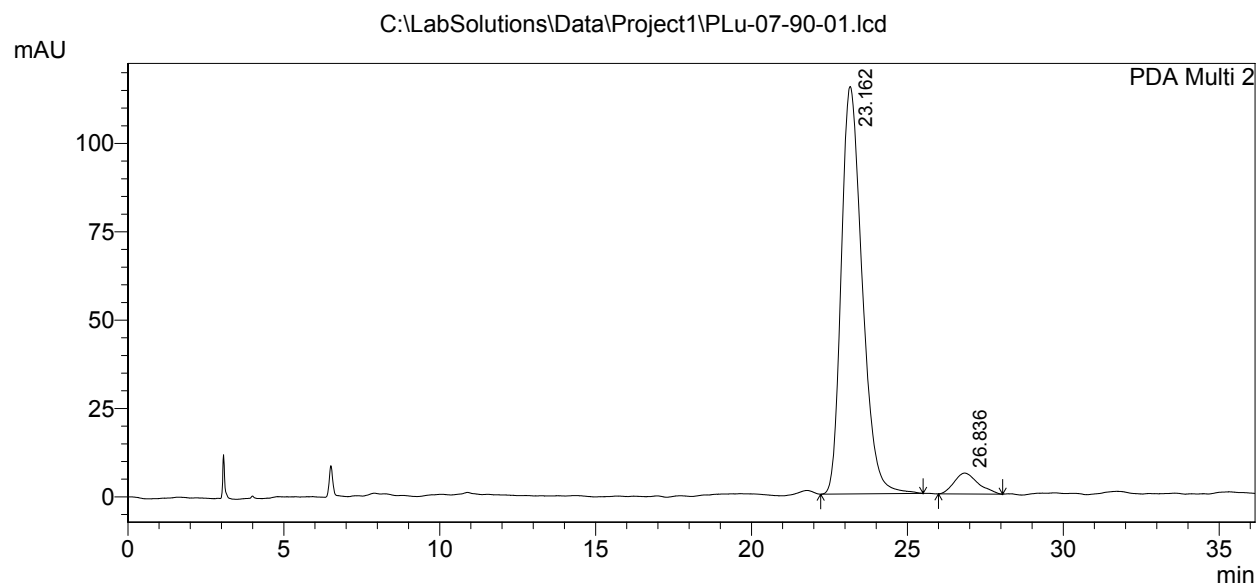
Peak#	Ret. Time	Area	Height	Area %	Height %
1	23.031	7994951	171971	49.989	53.486
2	26.445	7998519	149555	50.011	46.514
Total		15993470	321526	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-90-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-90
 Sample ID : PLu-07-90
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-90-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

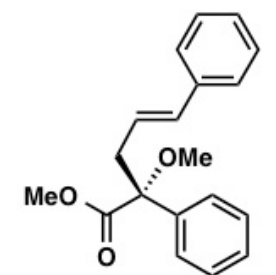
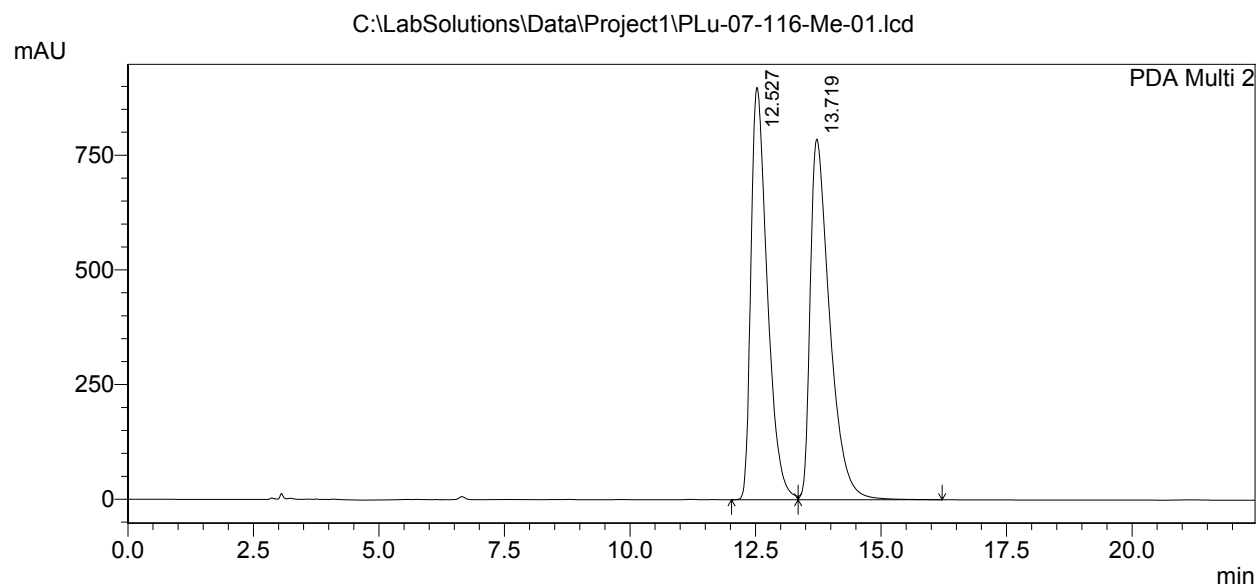
Peak#	Ret. Time	Area	Height	Area %	Height %
1	23.162	5373822	115301	94.412	95.112
2	26.836	318039	5925	5.588	4.888
Total		5691861	121226	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-116-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-116-Me
 Sample ID : PLu-07-116-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-116-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/16/2015 5:21:49 PM
 Data Processed : 12/16/2015 5:44:18 PM

<Chromatogram>



(±)-2f methyl ester

PeakTable

PDA Ch2 215nm 4nm

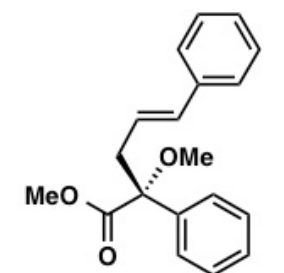
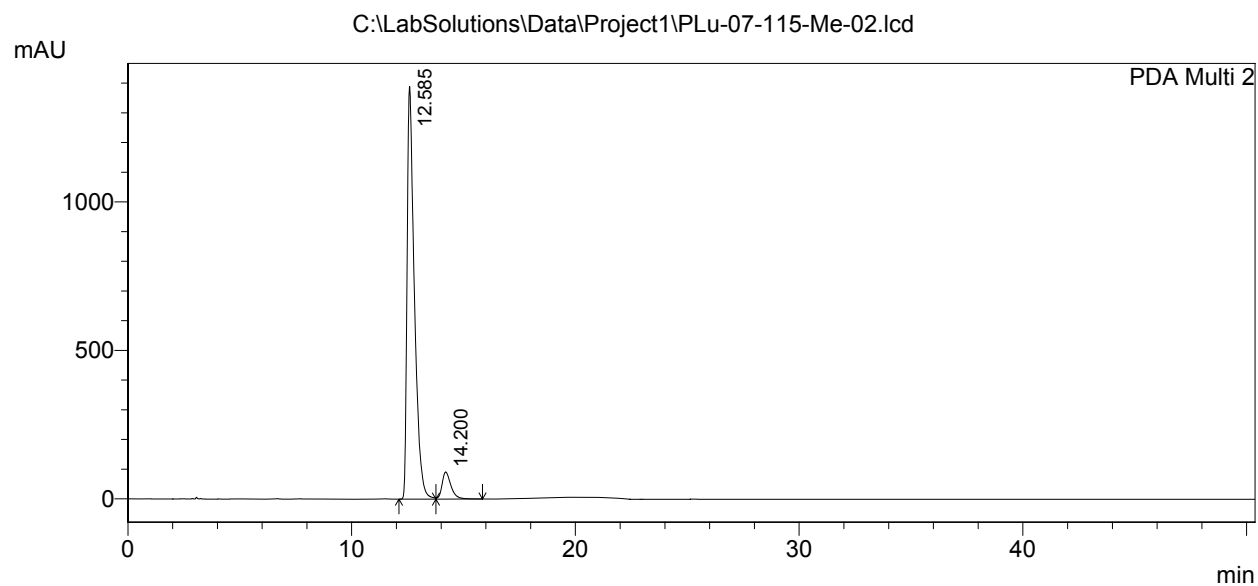
Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.527	20365492	899091	48.953	53.345
2	13.719	21236768	786324	51.047	46.655
Total		41602259	1685416	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-115-Me-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-115-Me
 Sample ID : PLu-07-115-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-115-Me-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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 Data Processed : 12/17/2015 5:43:04 PM

<Chromatogram>



2f methyl ester

PeakTable

PDA Ch2 215nm 4nm

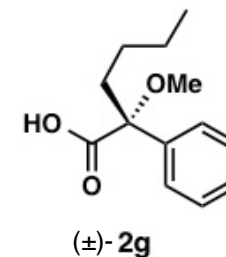
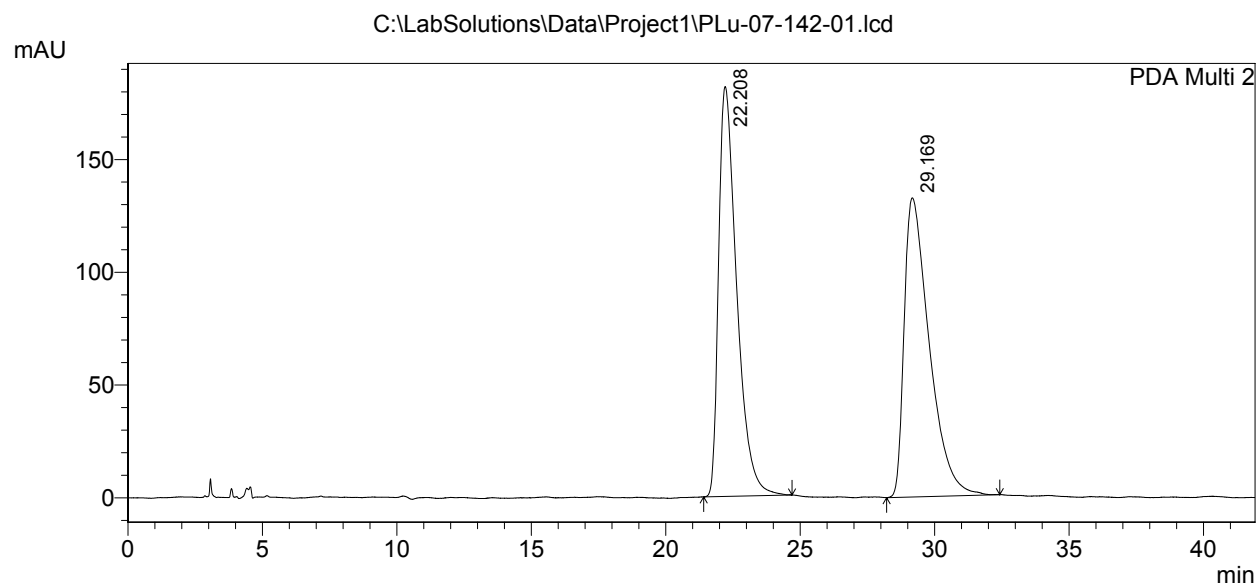
Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.585	31413348	1389795	92.591	93.846
2	14.200	2513539	91136	7.409	6.154
Total		33926888	1480931	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-142-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-142
 Sample ID : PLu-07-142
 Vial # :
 Injection Volume : 10 μ L
 Data File Name : PLu-07-142-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
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1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

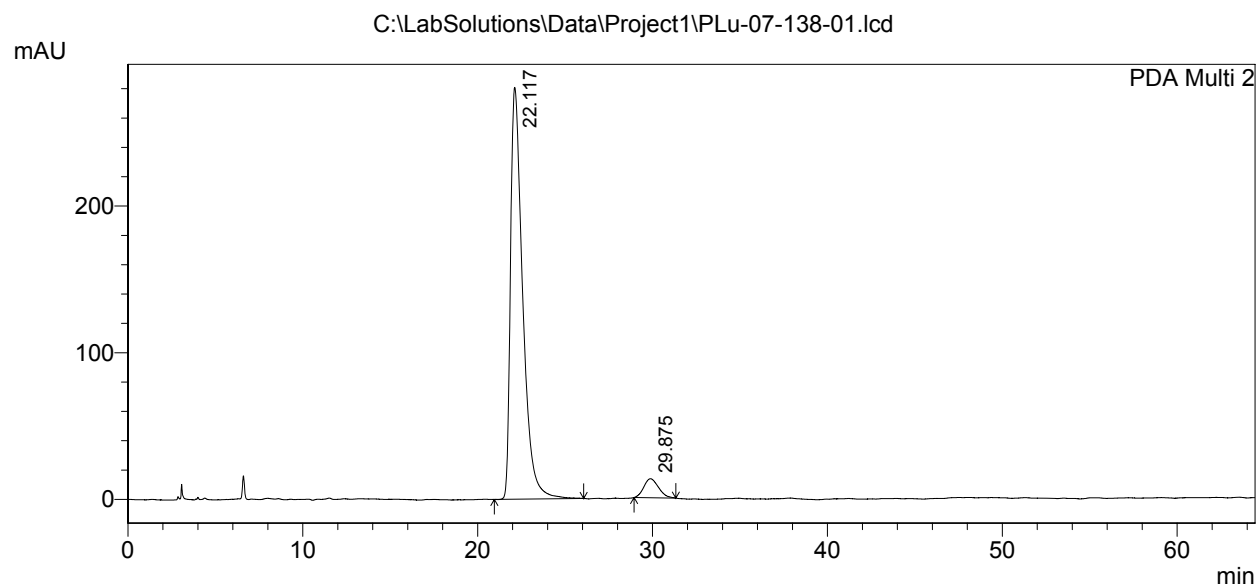
Peak#	Ret. Time	Area	Height	Area %	Height %
1	22.208	8500998	181783	49.703	57.812
2	29.169	8602648	132657	50.297	42.188
Total		17103646	314440	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-138-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-138P
 Sample ID : PLu-07-138P
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-138-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/14/2016 3:43:26 PM
 Data Processed : 1/14/2016 4:47:55 PM

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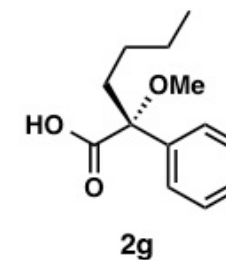


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	22.117	13604724	280778	94.721	95.583
2	29.875	758270	12975	5.279	4.417
Total		14362994	293754	100.000	100.000

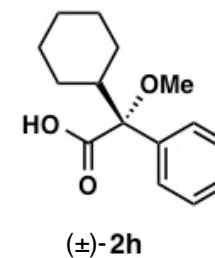
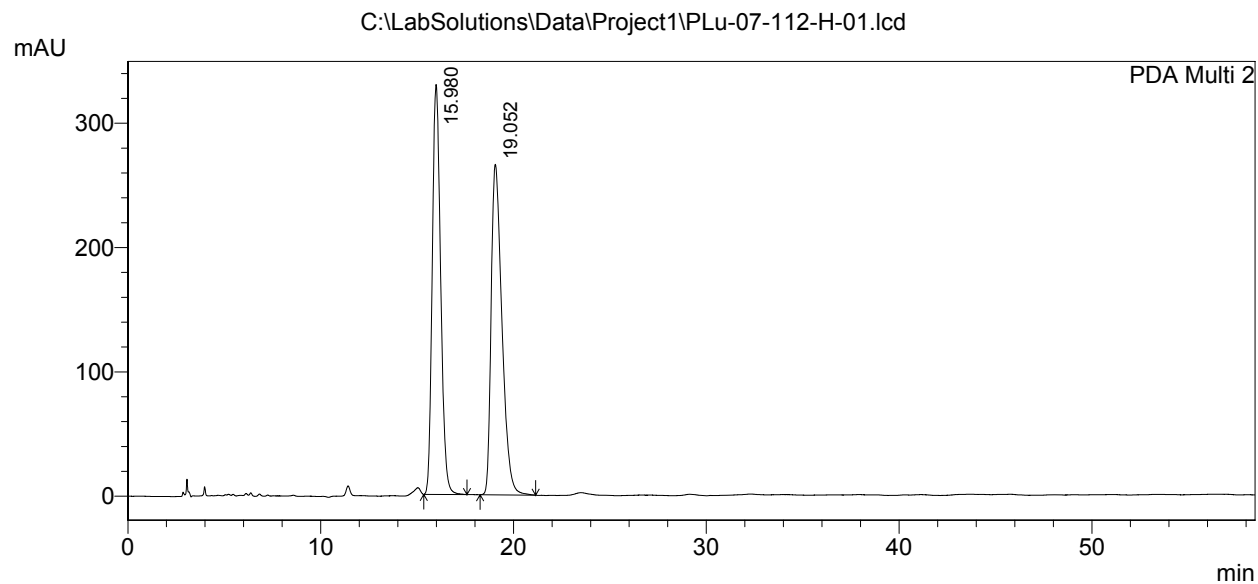


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-112-H-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-112-H
 Sample ID : PLu-07-112-H
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-112-H-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
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 Data Processed : 12/12/2015 4:18:00 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

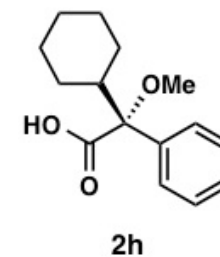
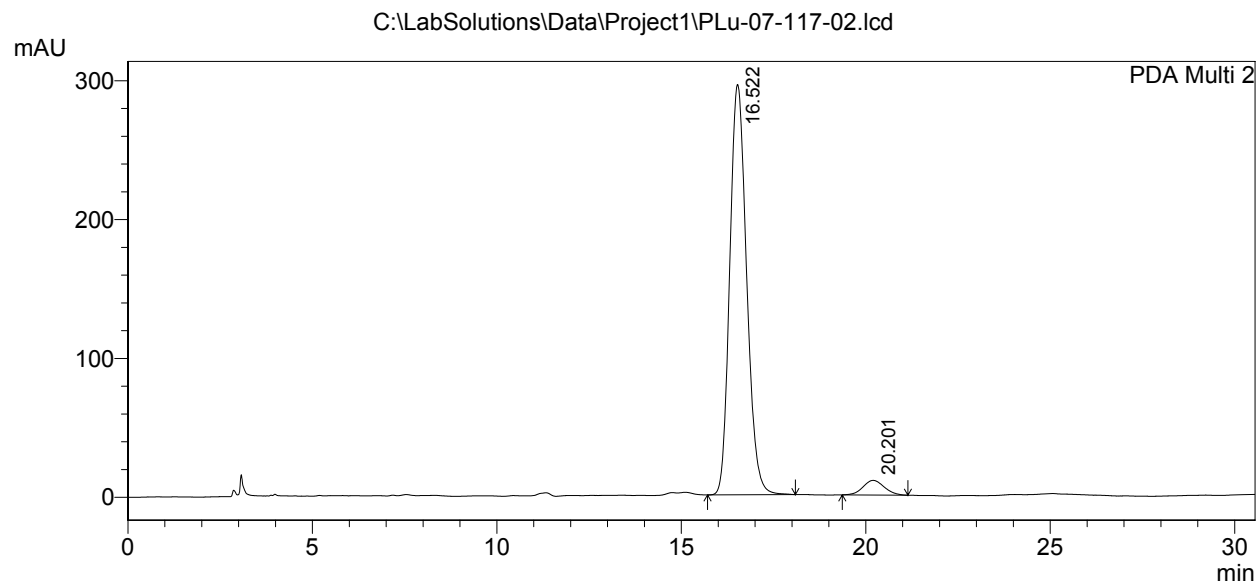
Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.980	9963893	329856	49.103	55.376
2	19.052	10327857	265807	50.897	44.624
Total		20291750	595663	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-117-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-117
 Sample ID : PLu-07-117
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-117-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/16/2015 3:08:21 PM
 Data Processed : 12/16/2015 3:38:55 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

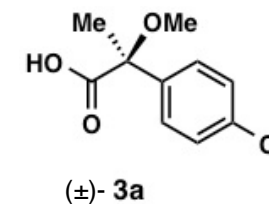
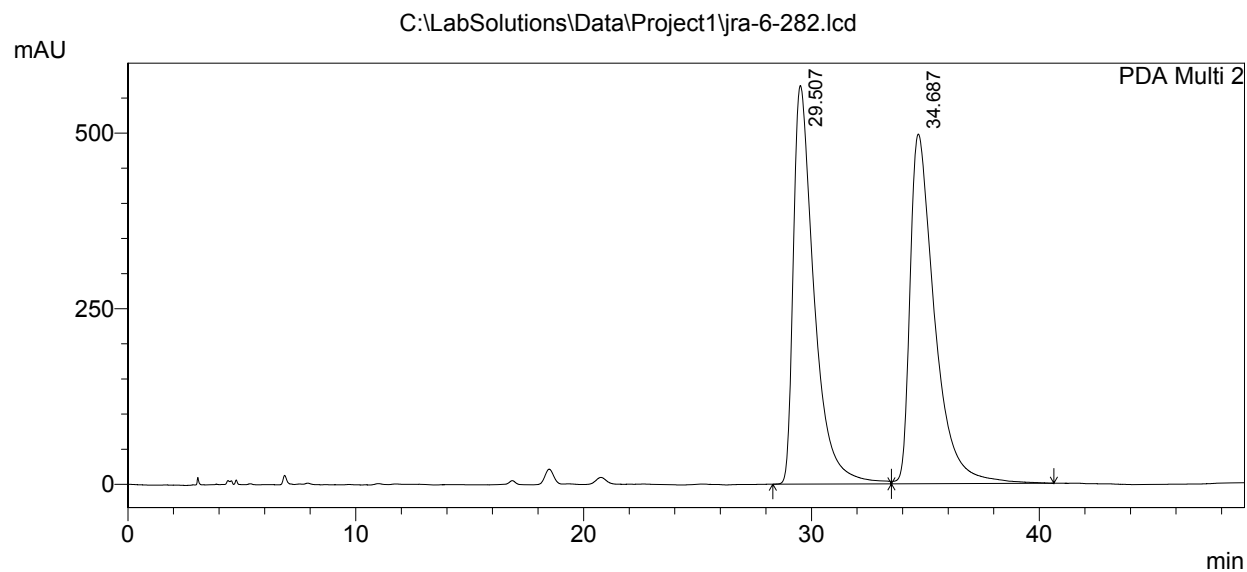
Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.522	9385348	295558	95.681	96.549
2	20.201	423638	10564	4.319	3.451
Total		9808986	306122	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-6-282.lcd

Acquired by : Admin
 Sample Name : jra-6-282
 Sample ID : jra-6-282
 Vial # :
 Injection Volume : 20 uL
 Data File Name : jra-6-282.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/26/2016 5:13:20 PM
 Data Processed : 4/26/2016 6:06:57 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

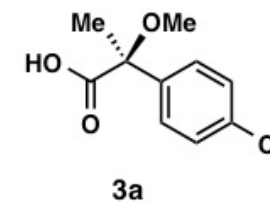
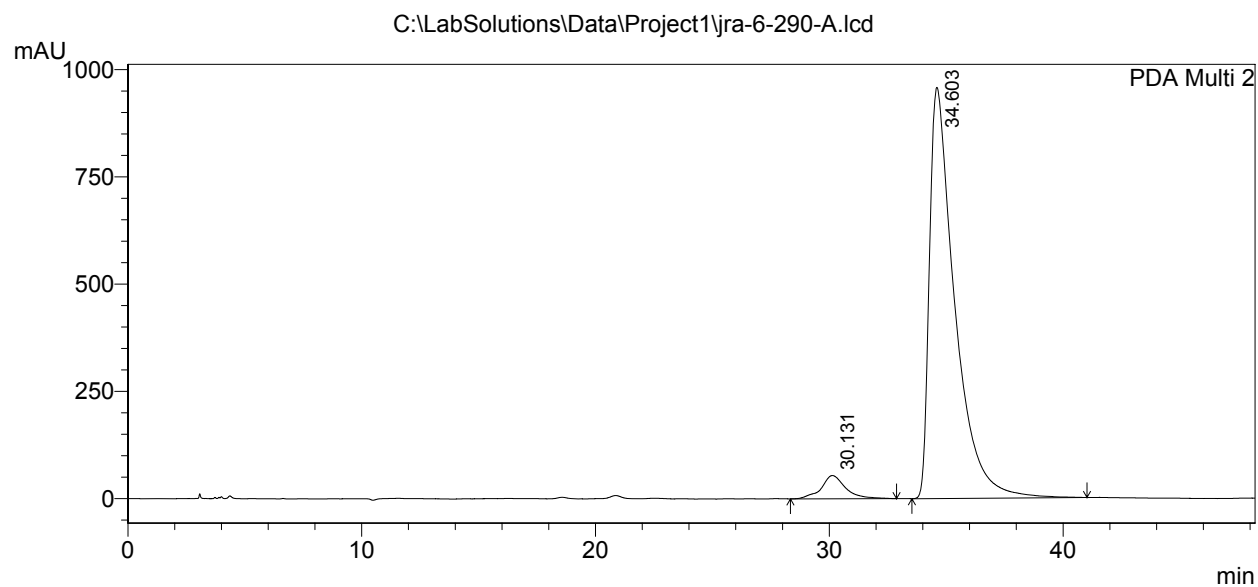
Peak#	Ret. Time	Area	Height	Area %	Height %
1	29.507	35951488	567505	49.117	53.273
2	34.687	37244171	497775	50.883	46.727
Total		73195658	1065281	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-6-290-A.lcd

Acquired by : Admin
 Sample Name : jra-6-290-A
 Sample ID : jra-6-290-A
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-6-290-A.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/14/2016 8:36:09 PM
 Data Processed : 1/14/2016 9:24:22 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

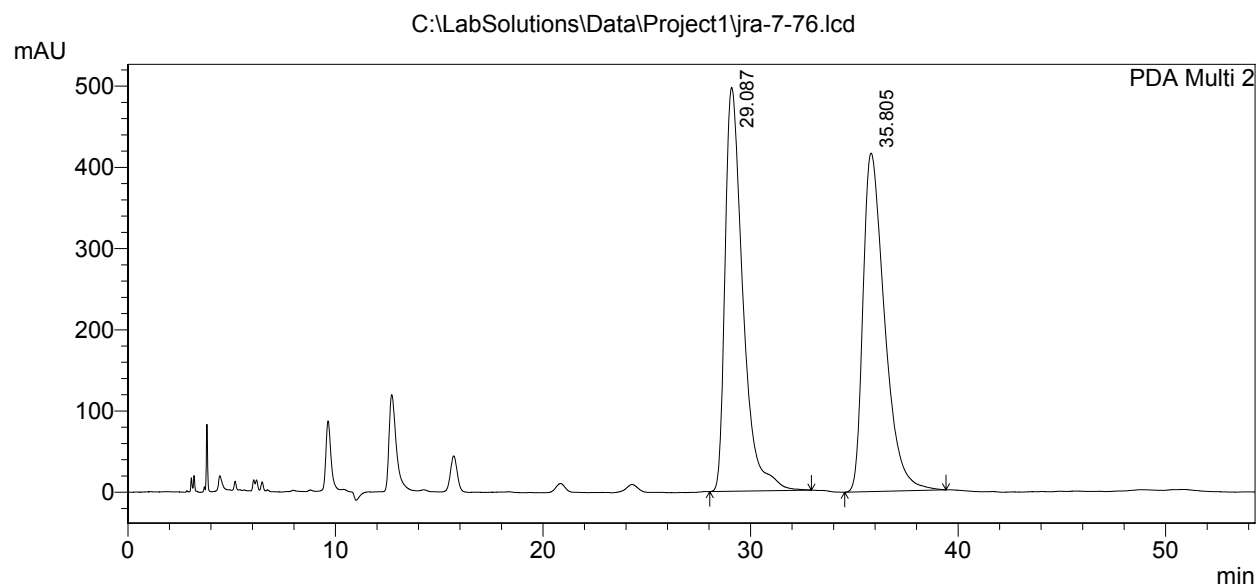
Peak#	Ret. Time	Area	Height	Area %	Height %
1	30.131	3925538	54124	5.160	5.345
2	34.603	72149475	958507	94.840	94.655
Total		76075013	1012631	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-7-76.lcd

Acquired by : Admin
 Sample Name : jra-7-76
 Sample ID : jra-7-76
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-7-76.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/29/2016 6:31:30 PM
 Data Processed : 4/29/2016 7:25:51 PM

<Chromatogram>

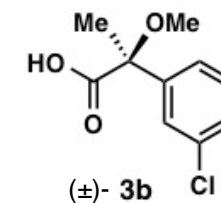


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	29.087	29576204	497280	49.559	54.400
2	35.805	30102702	416836	50.441	45.600
Total		59678906	914116	100.000	100.000

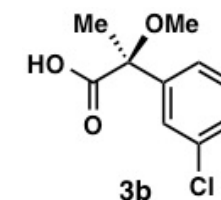
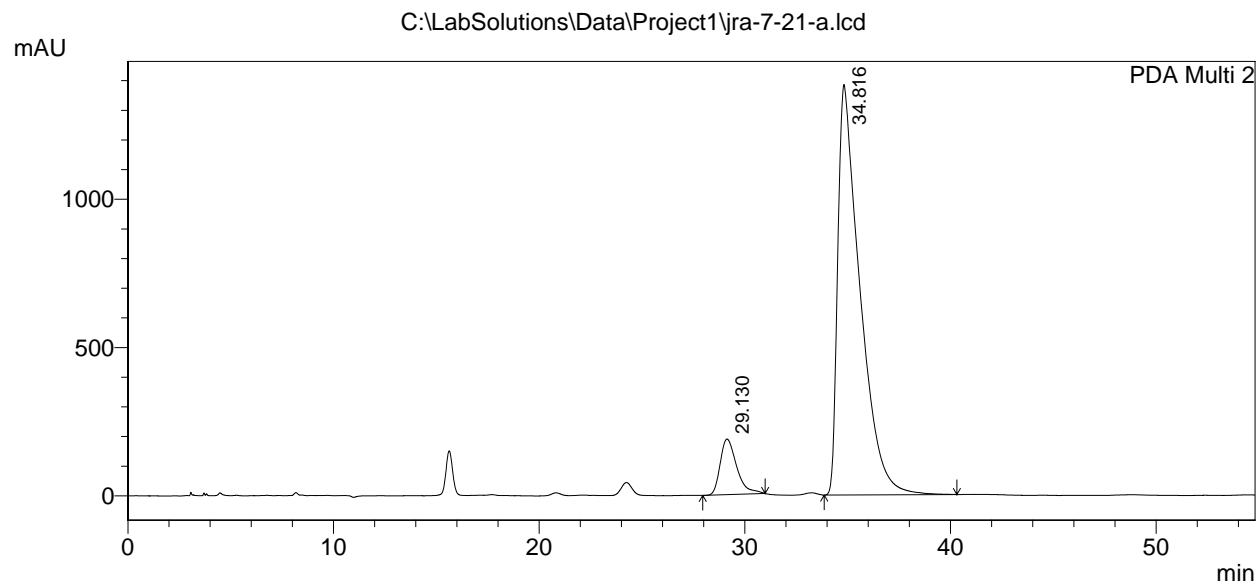


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-7-21-a.lcd

Acquired by : Admin
 Sample Name : jra-7-21-a
 Sample ID : jra-7-21-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-7-21-a.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/29/2016 5:33:11 PM
 Data Processed : 4/29/2016 6:28:02 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

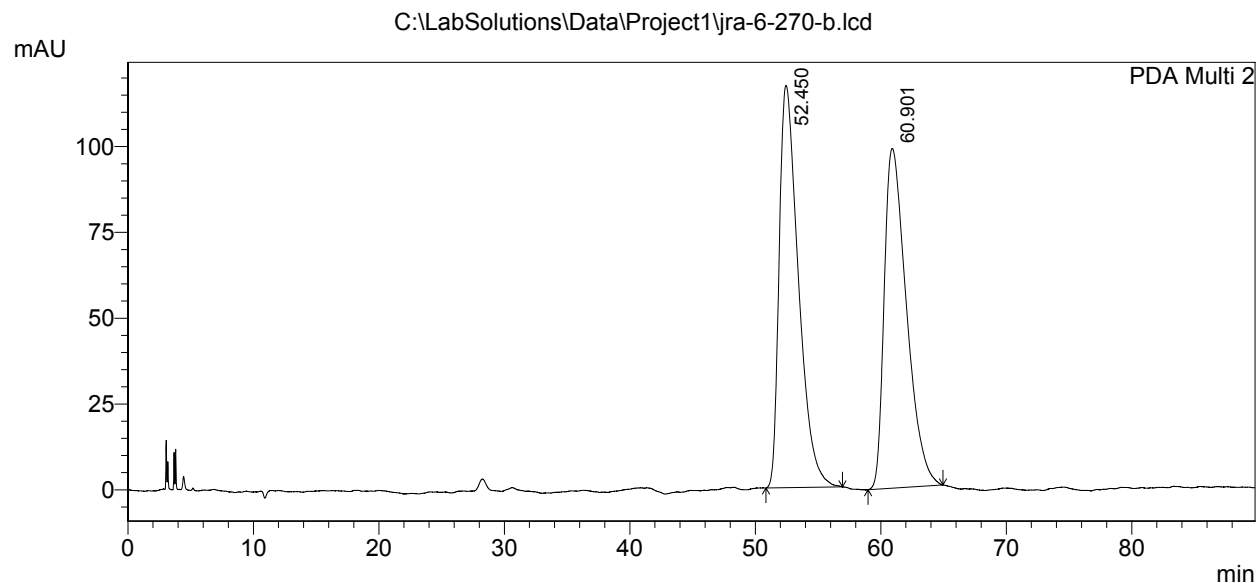
Peak#	Ret. Time	Area	Height	Area %	Height %
1	29.130	10480189	187582	9.181	11.934
2	34.816	103675150	1384264	90.819	88.066
Total		114155339	1571846	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-6-270-b.lcd

Acquired by : Admin
 Sample Name : jra-6-270-b
 Sample ID : jra-6-270-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-6-270-b.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/28/2016 2:25:02 PM
 Data Processed : 4/28/2016 3:54:54 PM

<Chromatogram>

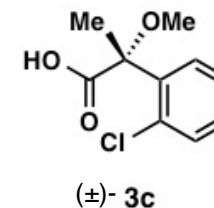


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	52.450	12506088	117214	50.583	54.212
2	60.901	12217837	99002	49.417	45.788
Total		24723924	216216	100.000	100.000



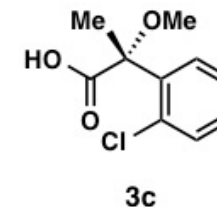
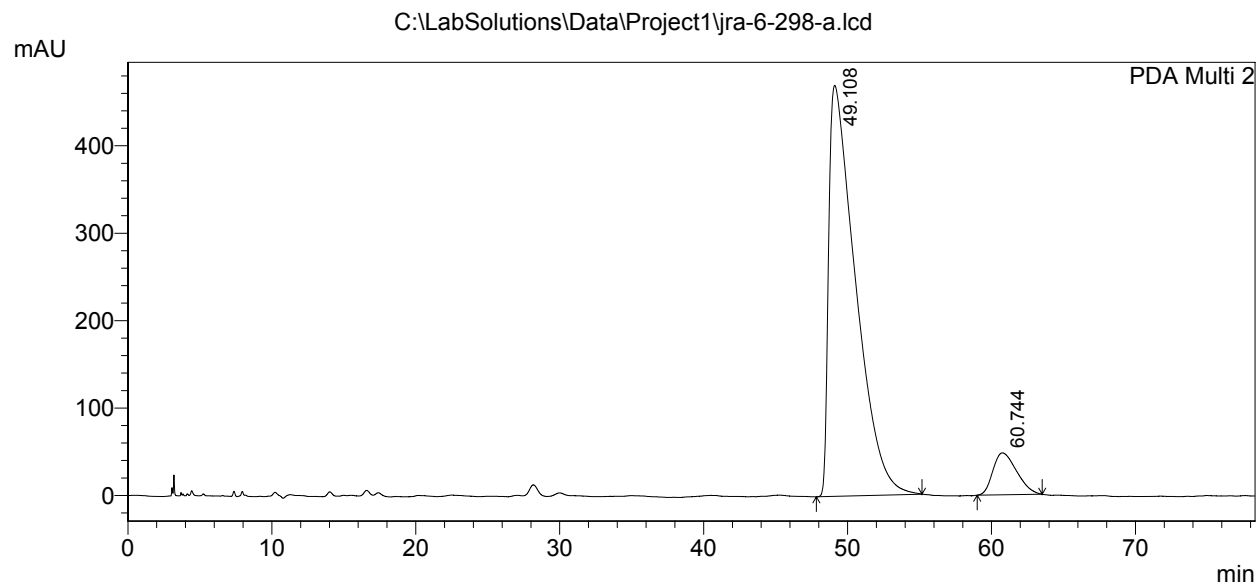
(±)- 3c

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-6-298-a.lcd

Acquired by : Admin
 Sample Name : jra-6-298-a
 Sample ID : jra-6-298-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-6-298-a.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/27/2016 5:34:29 PM
 Data Processed : 4/27/2016 6:52:50 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

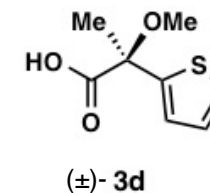
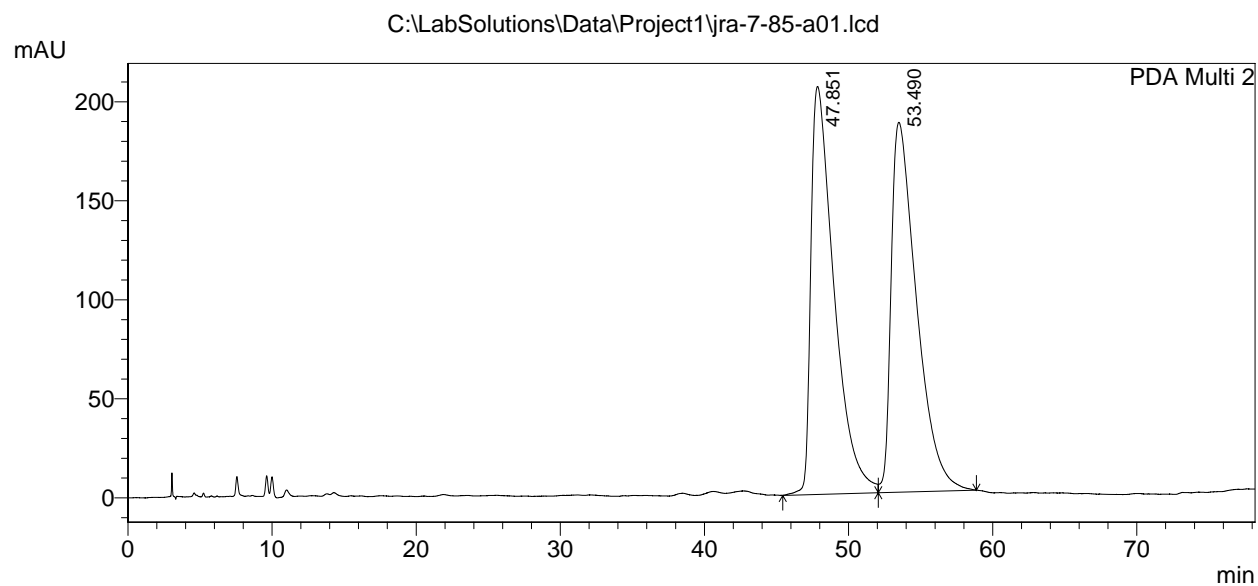
Peak#	Ret. Time	Area	Height	Area %	Height %
1	49.108	60873794	470149	91.711	90.739
2	60.744	5502010	47985	8.289	9.261
Total		66375804	518134	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-7-85-a01.lcd

Acquired by : Admin
 Sample Name : jra-7-85-a
 Sample ID : jra-7-85-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-7-85-a01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/10/2016 6:03:27 PM
 Data Processed : 5/10/2016 7:21:41 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

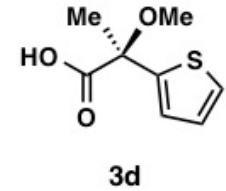
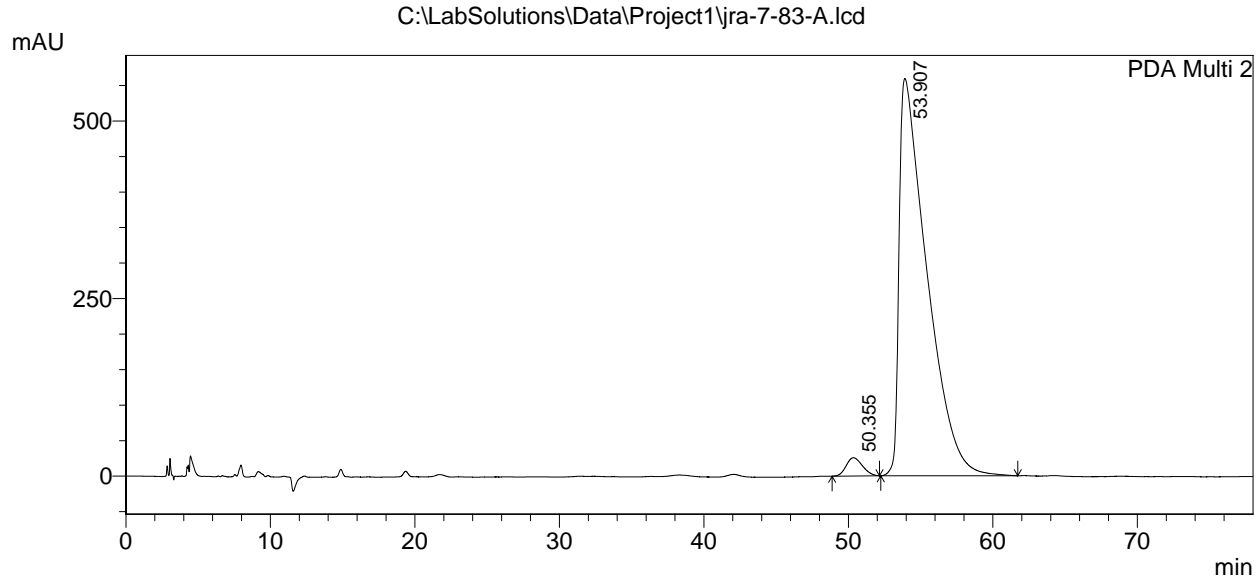
Peak#	Ret. Time	Area	Height	Area %	Height %
1	47.851	23012820	206011	50.148	52.449
2	53.490	22877264	186771	49.852	47.551
Total		45890084	392781	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jra-7-83-A.lcd

Acquired by : Admin
 Sample Name : jra-7-83-A
 Sample ID : jra-7-83-A
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jra-7-83-A.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/9/2016 5:16:42 PM
 Data Processed : 5/9/2016 6:36:21 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

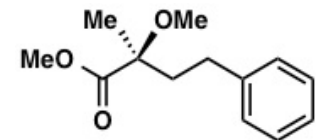
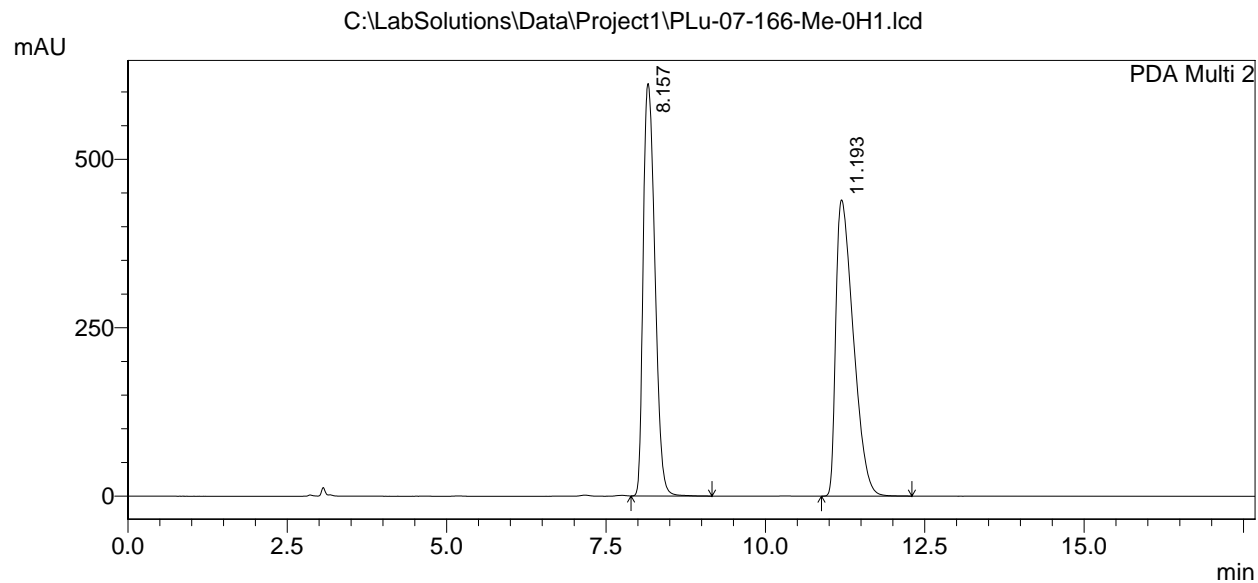
Peak#	Ret. Time	Area	Height	Area %	Height %
1	50.355	2019022	25758	2.633	4.402
2	53.907	74669417	559397	97.367	95.598
Total		76688439	585155	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-166-Me-0H1.lcd

Acquired by : Admin
 Sample Name : PLu-07-166-MeH
 Sample ID : PLu-07-166-MeH
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-166-Me-0H1.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/6/2016 4:39:44 PM
 Data Processed : 5/6/2016 4:57:26 PM

<Chromatogram>



(±)- 3e methyl ester

1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

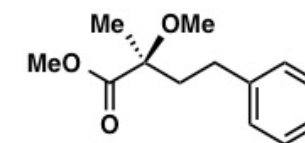
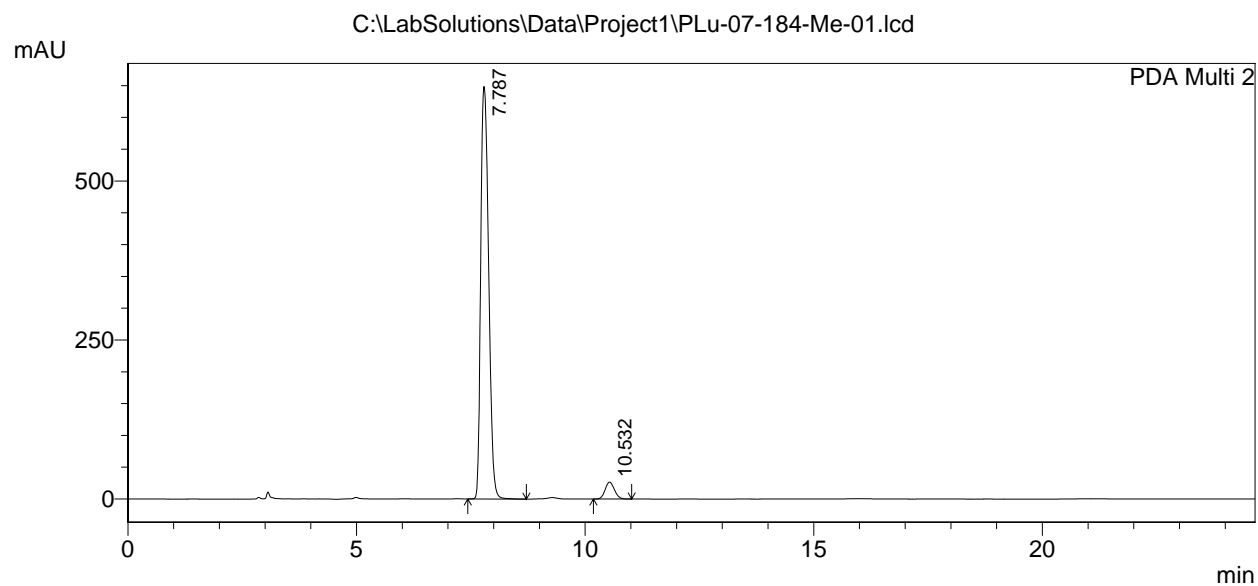
Peak#	Ret. Time	Area	Height	Area %	Height %
1	8.157	7838192	612452	48.299	58.203
2	11.193	8390389	439817	51.701	41.797
Total		16228581	1052269	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-184-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-184-Me
 Sample ID : PLu-07-184-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-184-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2/27/2016 4:54:34 PM
 Data Processed : 2/27/2016 5:19:14 PM

<Chromatogram>



3e methyl ester

PeakTable

PDA Ch2 215nm 4nm

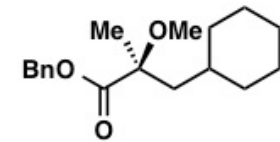
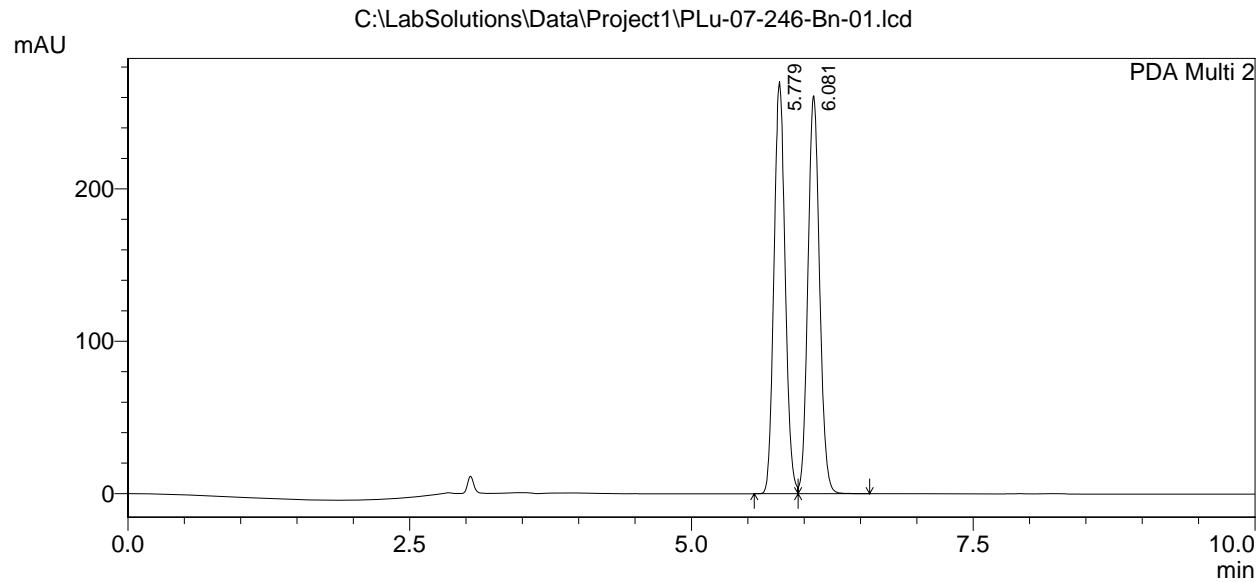
Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.787	7805310	648789	95.380	96.054
2	10.532	378114	26655	4.620	3.946
Total		8183424	675444	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-246-Bn-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-246-Bn
 Sample ID : PLu-07-246-Bn
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-246-Bn-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/4/2016 3:05:11 PM
 Data Processed : 5/4/2016 3:30:49 PM

<Chromatogram>



(±)-3f benzyl ester

PeakTable

PDA Ch2 215nm 4nm

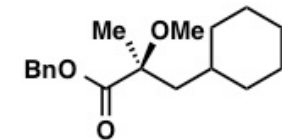
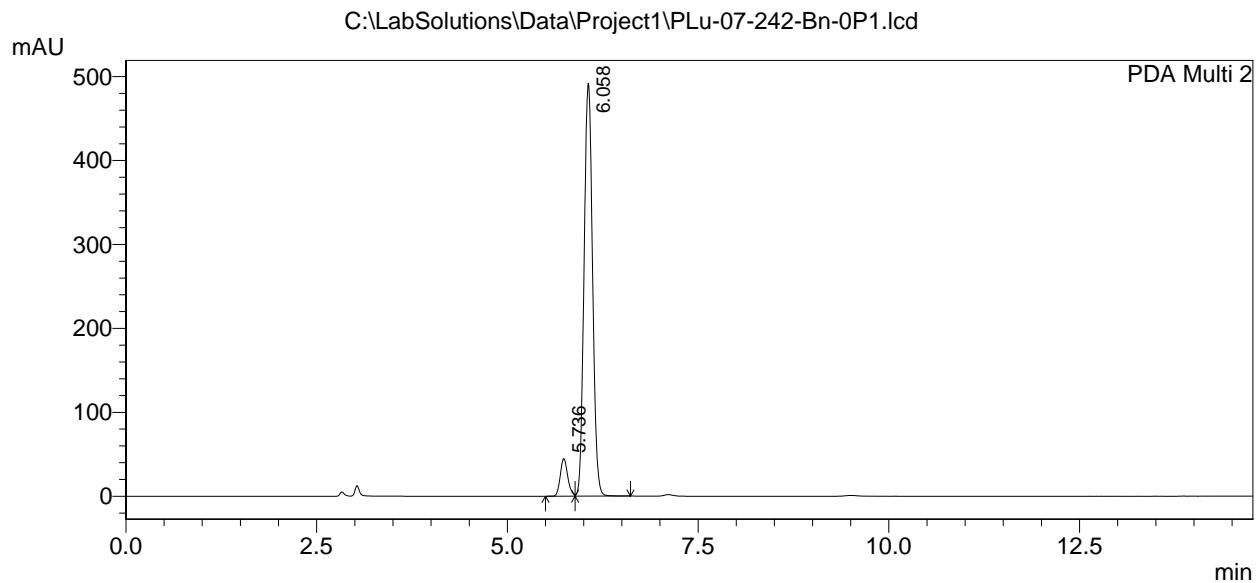
Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.779	1865111	270579	49.805	50.878
2	6.081	1879750	261245	50.195	49.122
Total		3744861	531823	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-242-Bn-0P1.lcd

Acquired by : Admin
 Sample Name : PLu-07-242-BnP
 Sample ID : PLu-07-242-BnP
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-242-Bn-0P1.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/29/2016 11:32:42 AM
 Data Processed : 4/29/2016 11:47:30 AM

<Chromatogram>



3f benzyl ester

1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

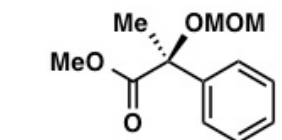
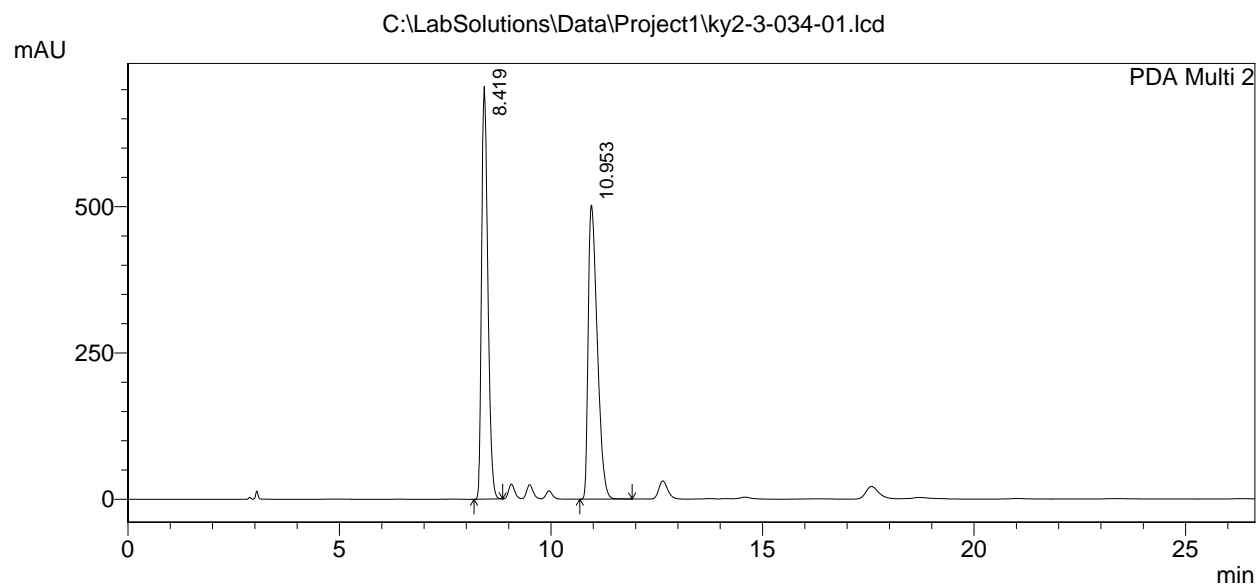
Peak#	Ret. Time	Area	Height	Area %	Height %
1	5.736	303614	44817	7.386	8.354
2	6.058	3807126	491680	92.614	91.646
Total		4110740	536497	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-3-034-01.lcd

Acquired by : Admin
 Sample Name : ky2-3-034
 Sample ID : ky2-3-034
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-3-034-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/13/2016 9:44:16 AM
 Data Processed : 5/13/2016 10:10:57 AM

<Chromatogram>



(±)- 3g methyl ester

PeakTable

PDA Ch2 215nm 4nm

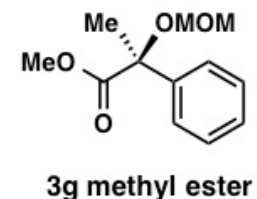
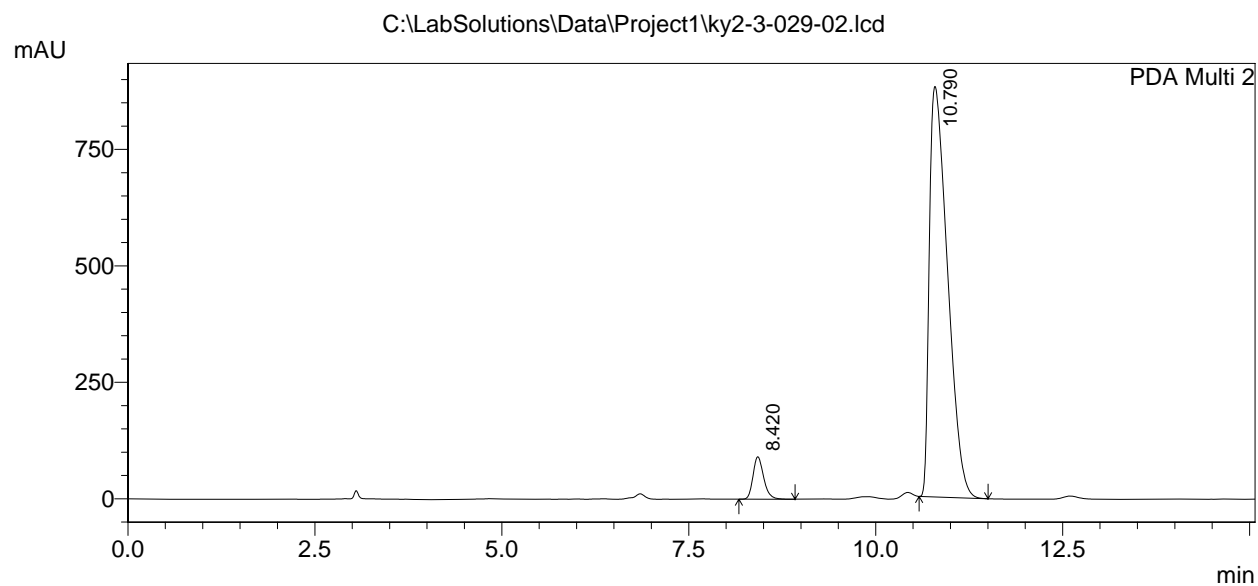
Peak#	Ret. Time	Area	Height	Area %	Height %
1	8.419	7278073	705107	49.269	58.392
2	10.953	7493902	502426	50.731	41.608
Total		14771975	1207533	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-3-029-02.lcd

Acquired by : Admin
 Sample Name : ky2-3-029
 Sample ID : ky2-3-029
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-3-029-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/13/2016 10:30:52 AM
 Data Processed : 5/13/2016 10:45:55 AM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

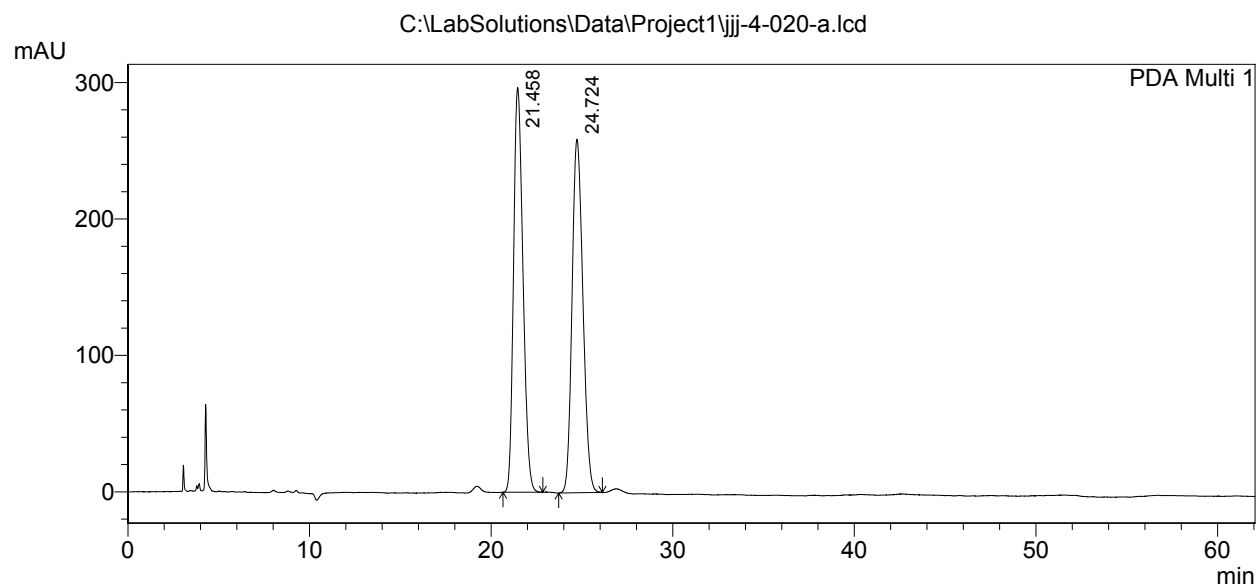
Peak#	Ret. Time	Area	Height	Area %	Height %
1	8.420	901213	91083	5.685	9.366
2	10.790	14950598	881395	94.315	90.634
Total		15851811	972477	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jjj-4-020-a.lcd

Acquired by : Admin
 Sample Name : jjj-4-020-a
 Sample ID : jjj-4-020-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jjj-4-020-a.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/6/2016 11:20:43 AM
 Data Processed : 4/6/2016 12:22:48 PM

<Chromatogram>

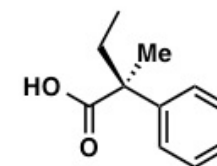


1 PDA Multi 1/210nm 4nm

PeakTable

PDA Ch1 210nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	21.458	10689748	296791	49.845	53.392
2	24.724	10756050	259078	50.155	46.608
Total		21445797	555869	100.000	100.000



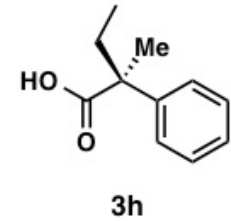
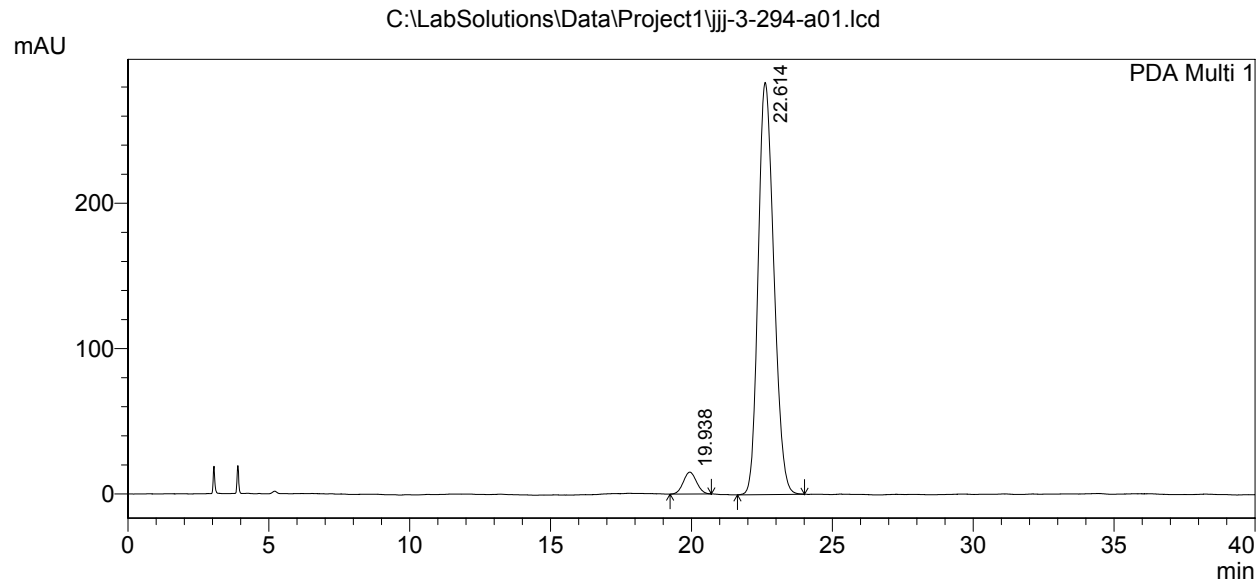
(±)- 3h

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jjj-3-294-a01.lcd

Acquired by : Admin
 Sample Name : jjj-3-294-a
 Sample ID : jjj-3-294-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jjj-3-294-a01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/4/2016 9:23:39 AM
 Data Processed : 4/4/2016 11:09:54 AM

<Chromatogram>



PeakTable

PDA Ch1 210nm 4nm

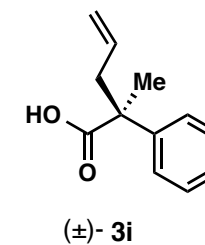
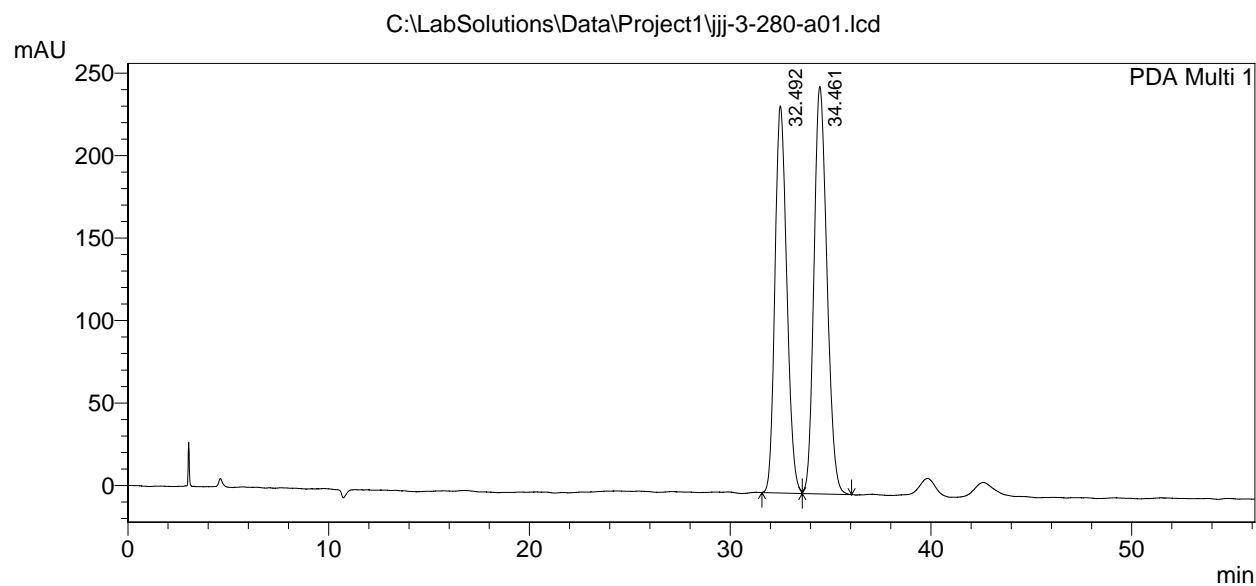
Peak#	Ret. Time	Area	Height	Area %	Height %
1	19.938	490267	15048	4.284	5.038
2	22.614	10955179	283650	95.716	94.962
Total		11445445	298698	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jji-3-280-a01.lcd

Acquired by : Admin
 Sample Name : jji-3-280-a
 Sample ID : jji-3-280-a
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jji-3-280-a01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/6/2016 2:53:56 PM
 Data Processed : 4/6/2016 3:50:07 PM

<Chromatogram>



PeakTable

PDA Ch1 210nm 4nm

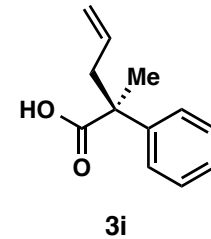
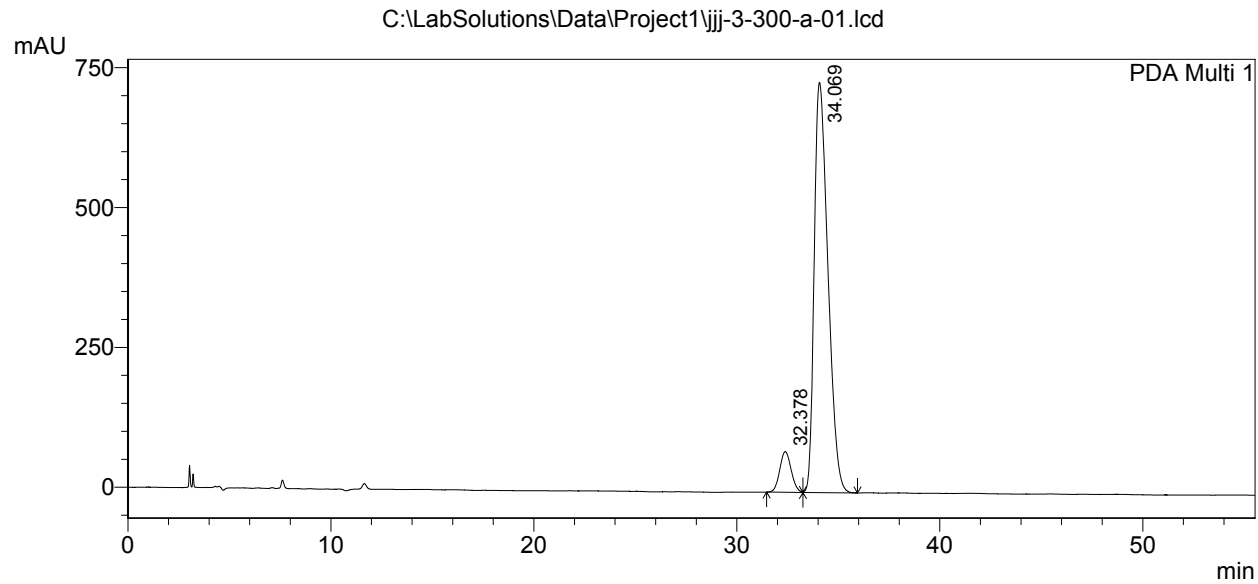
Peak#	Ret. Time	Area	Height	Area %	Height %
1	32.492	9631995	234655	46.482	48.720
2	34.461	11089781	246987	53.518	51.280
Total		20721777	481641	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\jjj-3-300-a-01.lcd

Acquired by : Admin
 Sample Name : jjj-3-300-a-
 Sample ID : jjj-3-300-a-
 Vial # :
 Injection Volume : 10 uL
 Data File Name : jjj-3-300-a-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 4/6/2016 1:57:34 PM
 Data Processed : 4/6/2016 2:53:08 PM

<Chromatogram>



PeakTable

PDA Ch1 210nm 4nm

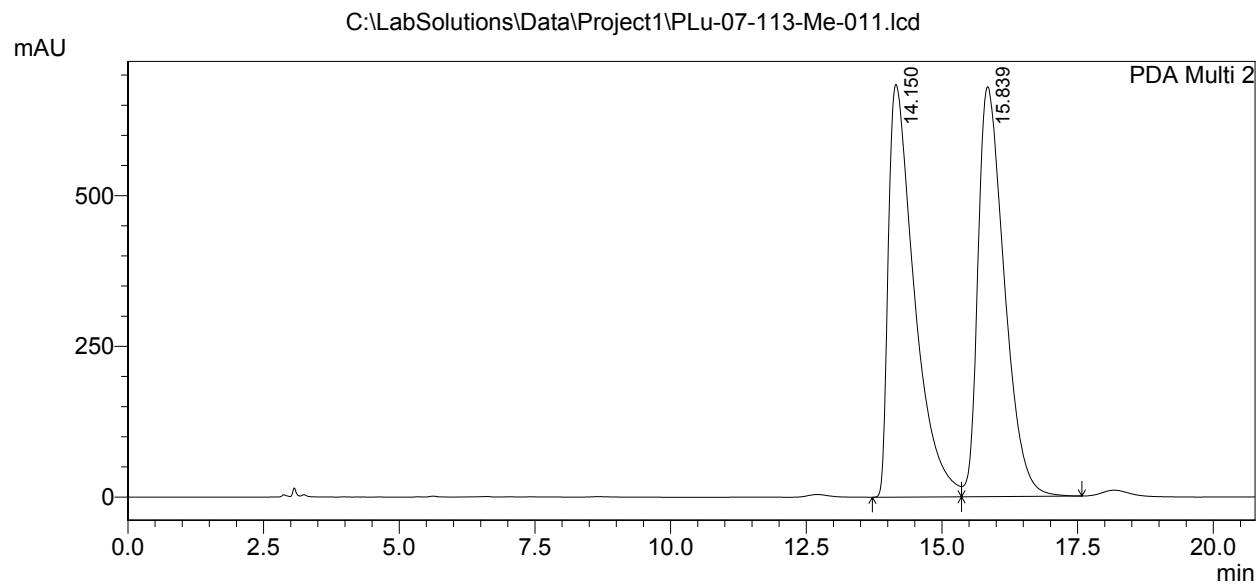
Peak#	Ret. Time	Area	Height	Area %	Height %
1	32.378	2844624	72743	7.633	9.023
2	34.069	34425231	733411	92.367	90.977
Total		37269855	806155	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-113-Me-011.lcd

Acquired by : Admin
 Sample Name : PLu-07-113-Me
 Sample ID : PLu-07-113-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-113-Me-011.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/16/2015 4:46:10 PM
 Data Processed : 12/16/2015 5:06:57 PM

<Chromatogram>

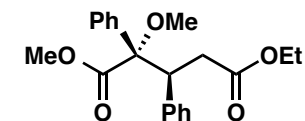


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	14.150	22774043	684563	49.756	50.171
2	15.839	22997110	679903	50.244	49.829
Total		45771153	1364465	100.000	100.000



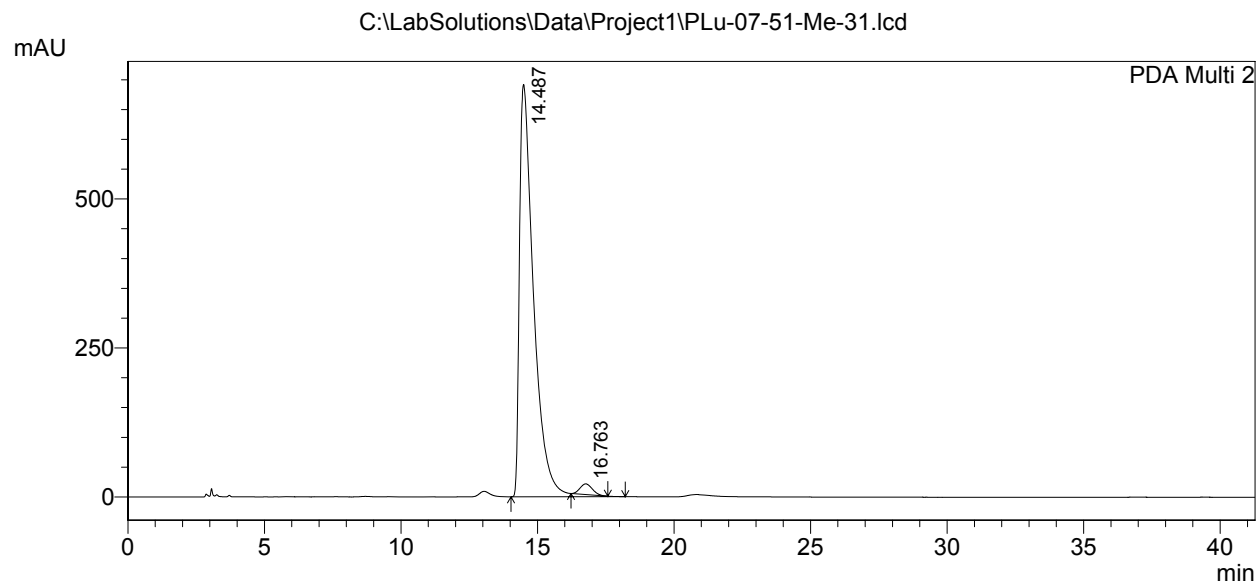
(±)- 4a methyl ester

==== Shimadzu LCsolution Analysis Report ====

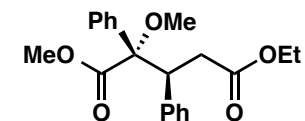
C:\LabSolutions\Data\Project1\PLu-07-51-Me-31.lcd

Acquired by : Admin
 Sample Name : PLu-07-51-Me
 Sample ID : PLu-07-51-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-51-Me-31.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/14/2015 3:51:55 PM
 Data Processed : 12/14/2015 4:33:13 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm



4a methyl ester

PeakTable

PDA Ch2 215nm 4nm

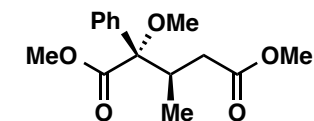
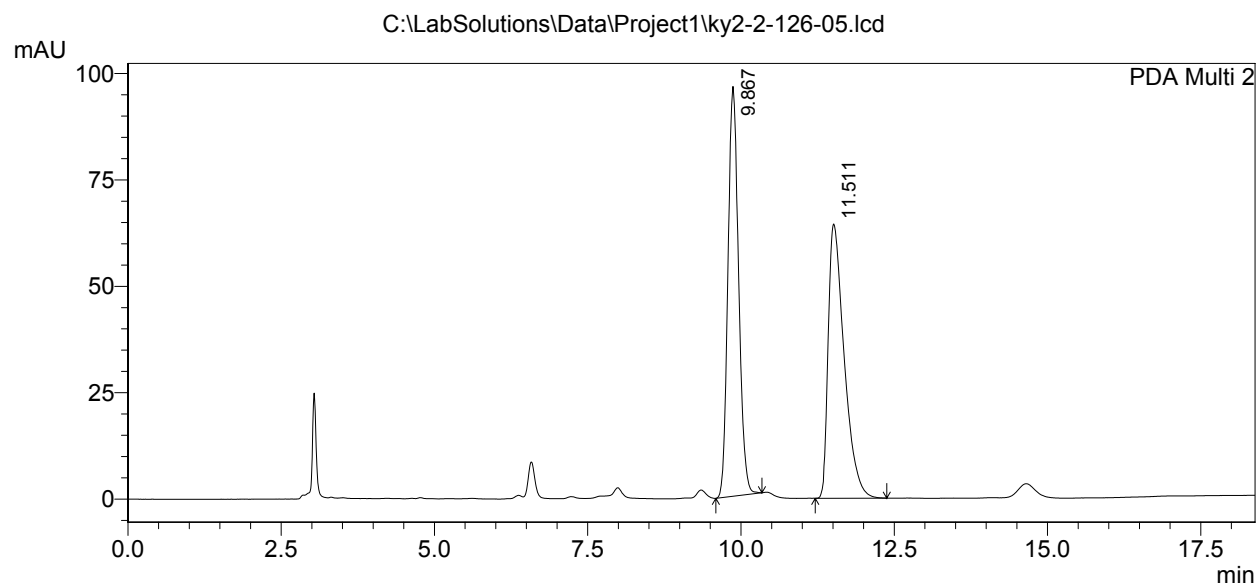
Peak#	Ret. Time	Area	Height	Area %	Height %
1	14.487	24915980	691938	97.807	97.482
2	16.763	558665	17872	2.193	2.518
Total		25474645	709810	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-126-05.lcd

Acquired by : Admin
 Sample Name : ky2-2-126
 Sample ID : ky2-2-126
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-126-05.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/14/2015 7:26:25 PM
 Data Processed : 12/14/2015 7:44:49 PM

<Chromatogram>



(±)- 4b methyl ester

PeakTable

PDA Ch2 215nm 4nm

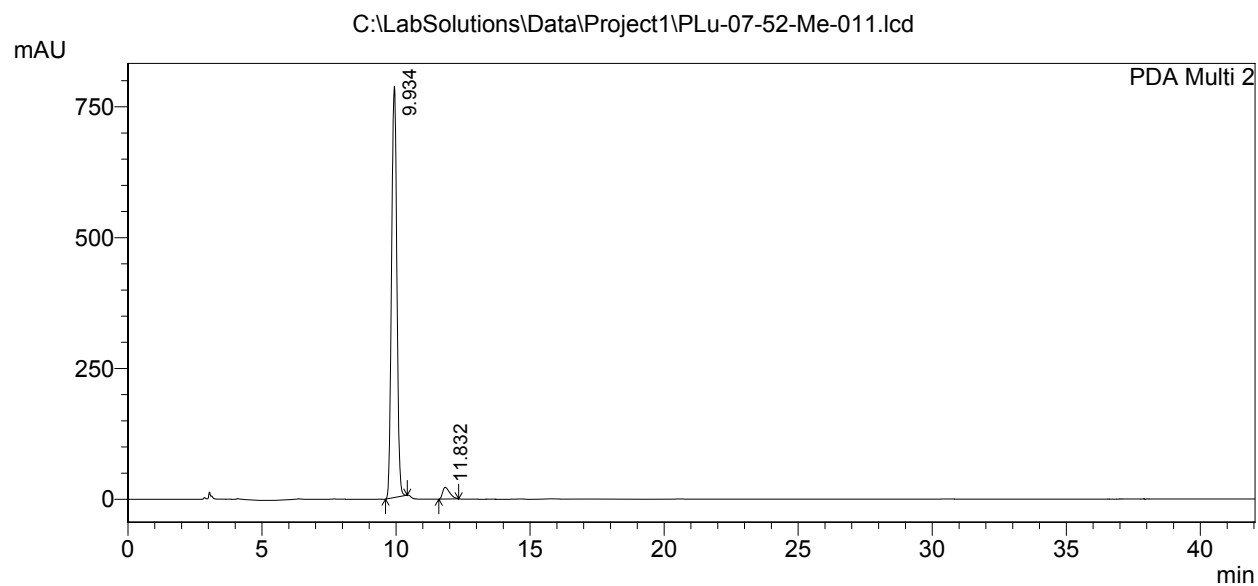
Peak#	Ret. Time	Area	Height	Area %	Height %
1	9.867	1164171	96272	49.959	59.901
2	11.511	1166073	64446	50.041	40.099
Total		2330244	160718	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-52-Me-011.lcd

Acquired by : Admin
 Sample Name : PLu-07-52-Me
 Sample ID : PLu-07-52-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-52-Me-011.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/14/2015 8:06:18 PM
 Data Processed : 12/14/2015 8:48:21 PM

<Chromatogram>

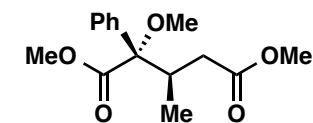


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	9.934	10761249	785549	96.344	97.242
2	11.832	408361	22279	3.656	2.758
Total		11169610	807828	100.000	100.000



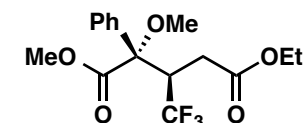
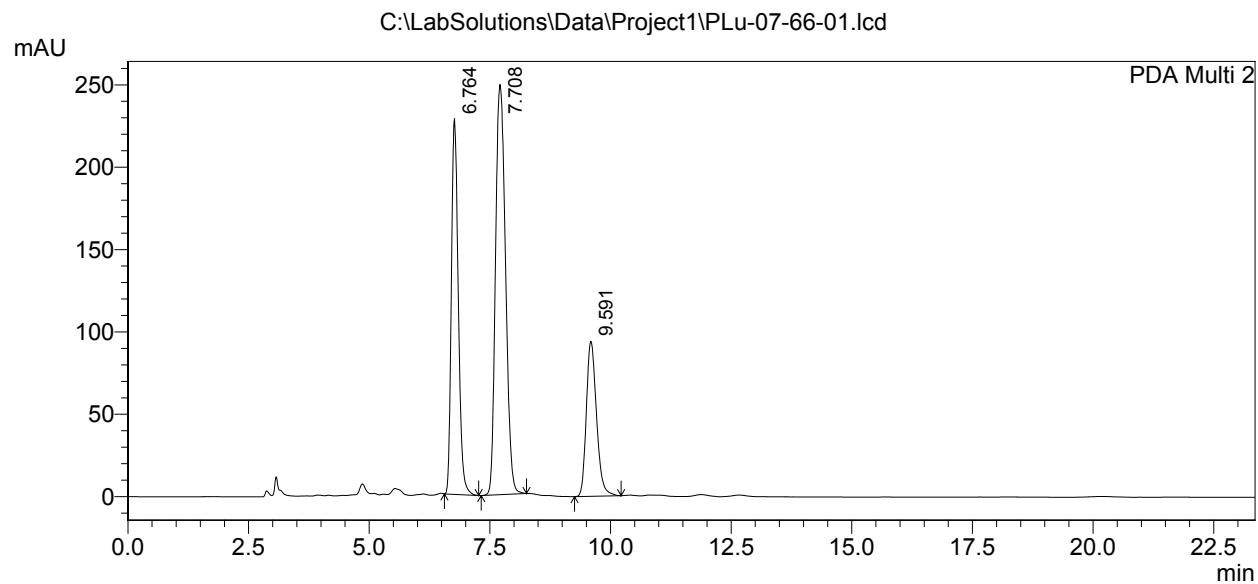
4b methyl ester

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-66-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-66-Me
 Sample ID : PLu-07-66-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-66-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
 Data Acquired : 10/23/2015 8:19:55 PM
 Data Processed : 10/23/2015 8:43:47 PM

<Chromatogram>



(±)- 4c methyl ester

dr 1.6:1

PeakTable

PDA Ch2 215nm 4nm

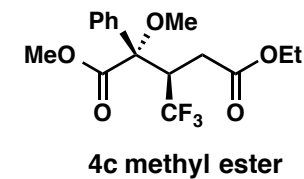
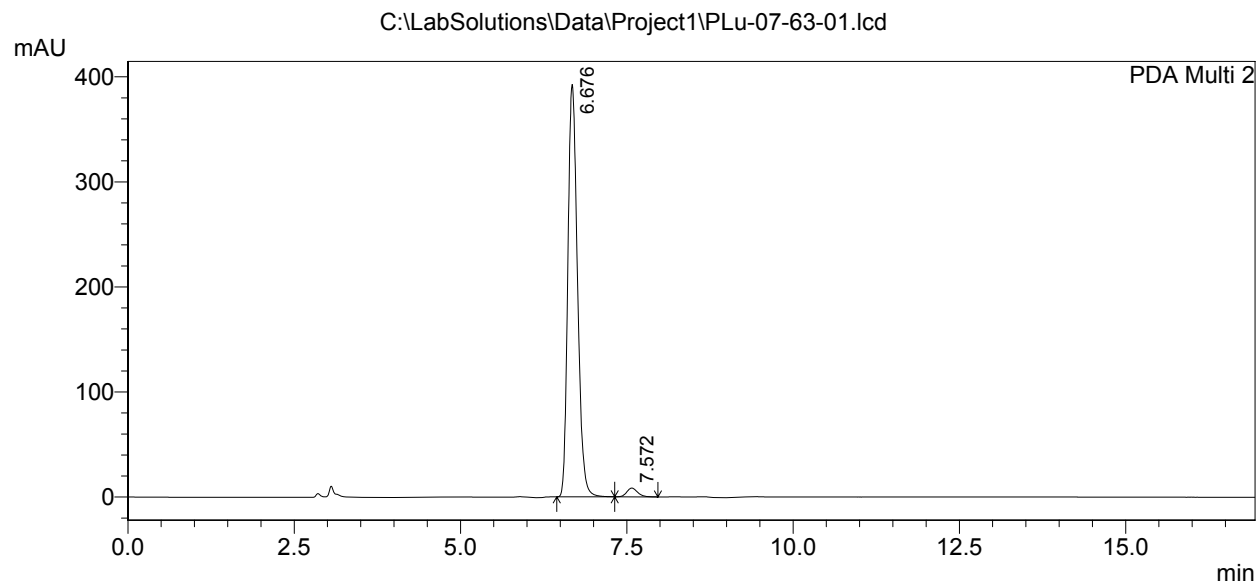
Peak#	Ret. Time	Area	Height	Area %	Height %
1	6.764	2277241	228082	31.452	39.918
2	7.708	3586161	249103	49.531	43.597
3	9.591	1376900	94196	19.017	16.486
Total		7240303	571381	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-63-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-63-Me
 Sample ID : PLu-07-63-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-63-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 10/23/2015 8:48:13 PM
 Data Processed : 10/23/2015 9:05:10 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

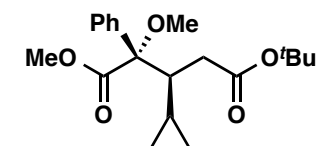
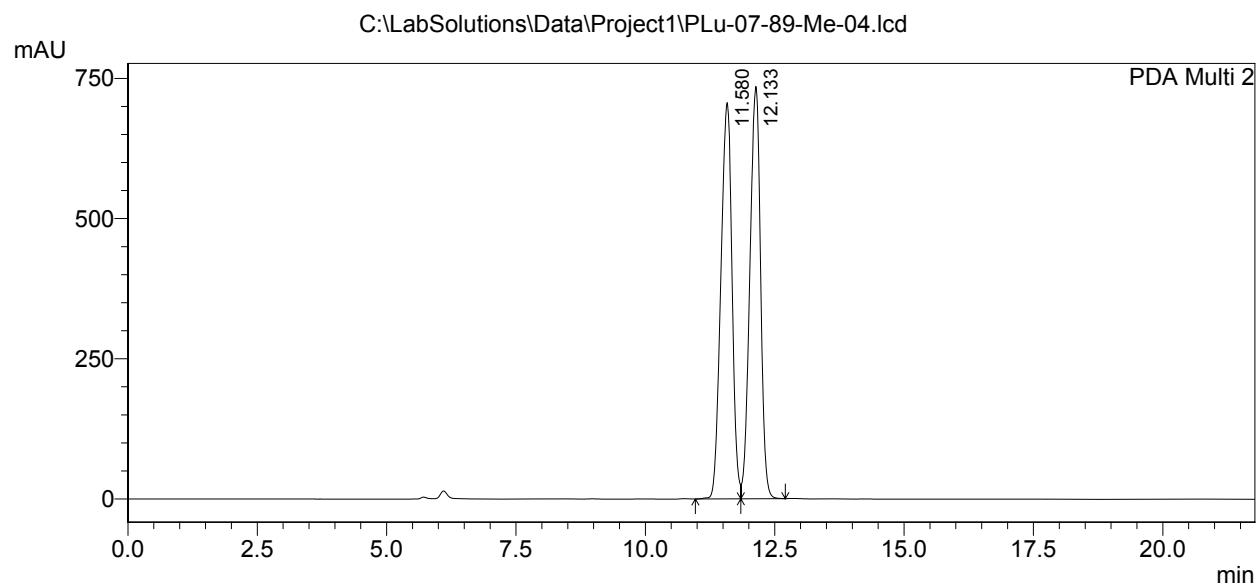
Peak#	Ret. Time	Area	Height	Area %	Height %
1	6.676	3940350	392601	97.633	97.905
2	7.572	95512	8400	2.367	2.095
Total		4035862	401001	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-89-Me-04.lcd

Acquired by : Admin
 Sample Name : PLu-07-89-Me
 Sample ID : PLu-07-89-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-89-Me-04.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 11/5/2015 9:22:53 PM
 Data Processed : 11/5/2015 9:44:42 PM

<Chromatogram>



(±)- 4d methyl ester

PeakTable

PDA Ch2 215nm 4nm

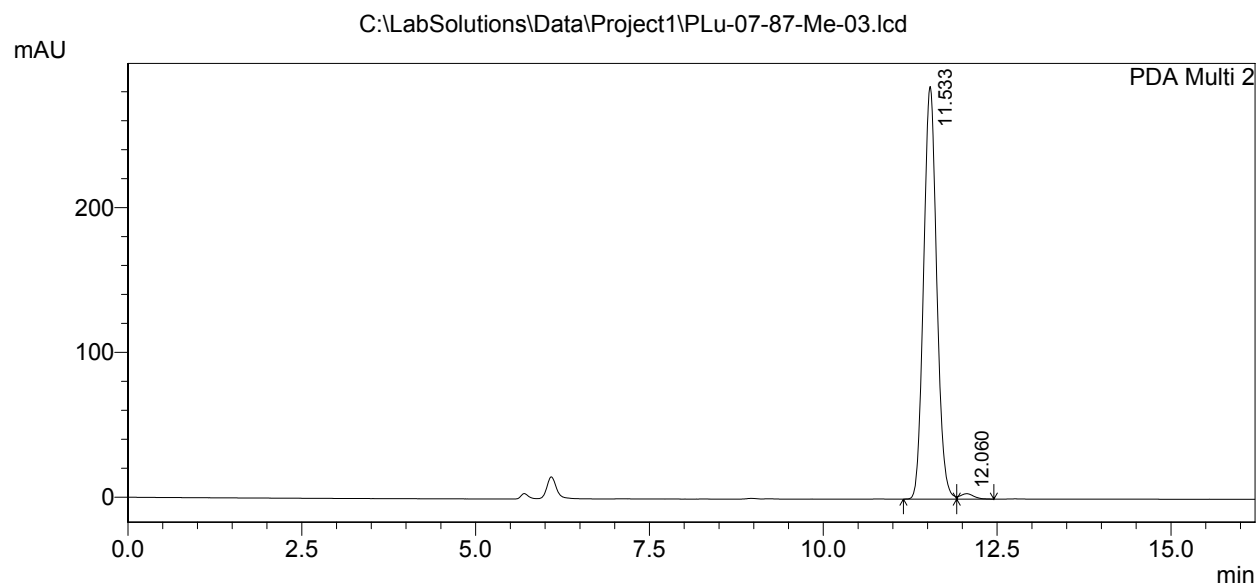
Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.580	10624114	706602	50.187	49.008
2	12.133	10544915	735219	49.813	50.992
Total		21169029	1441821	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-87-Me-03.lcd

Acquired by : Admin
 Sample Name : PLu-07-87-Me
 Sample ID : PLu-07-87-Me
 Vail # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-87-Me-03.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
 Data Acquired : 11/5/2015 8:21:09 PM
 Data Processed : 11/5/2015 8:37:30 PM

<Chromatogram>

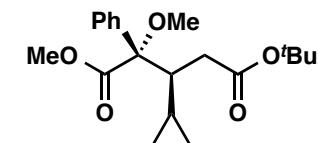


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.533	3726117	284906	98.673	98.709
2	12.060	50118	3728	1.327	1.291
Total		3776234	288633	100.000	100.000



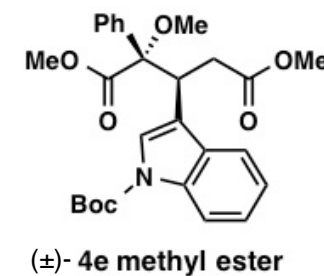
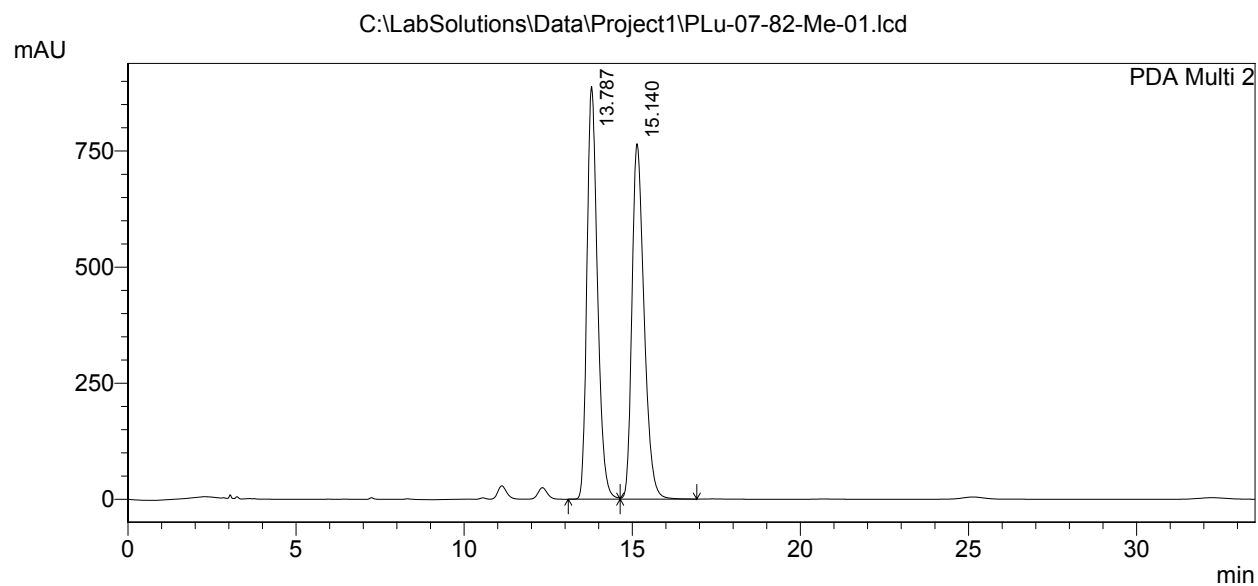
4d methyl ester

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-82-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-82-Me
 Sample ID : PLu-07-82-Me
 Vail # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-82-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 11/3/2015 2:57:35 PM
 Data Processed : 11/3/2015 3:31:07 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

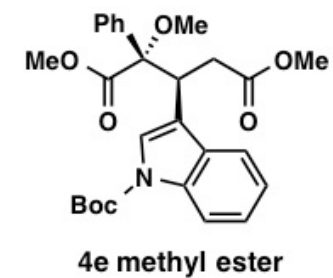
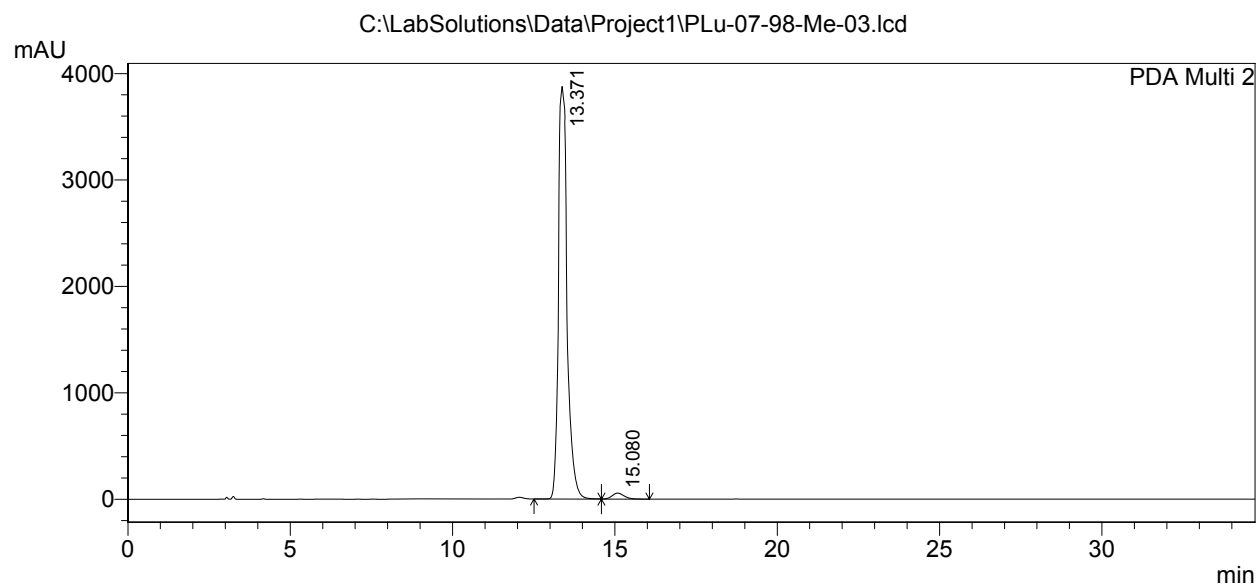
Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.787	19320675	888885	50.177	53.731
2	15.140	19184624	765444	49.823	46.269
Total		38505299	1654329	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-98-Me-03.lcd

Acquired by : Admin
 Sample Name : PLu-07-98-Me
 Sample ID : PLu-07-98-Me
 Vail # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-98-Me-03.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
 Data Acquired : 11/12/2015 2:07:17 PM
 Data Processed : 11/12/2015 2:42:22 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

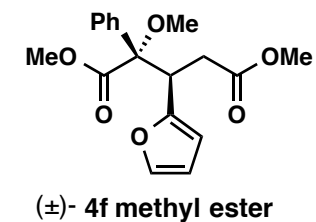
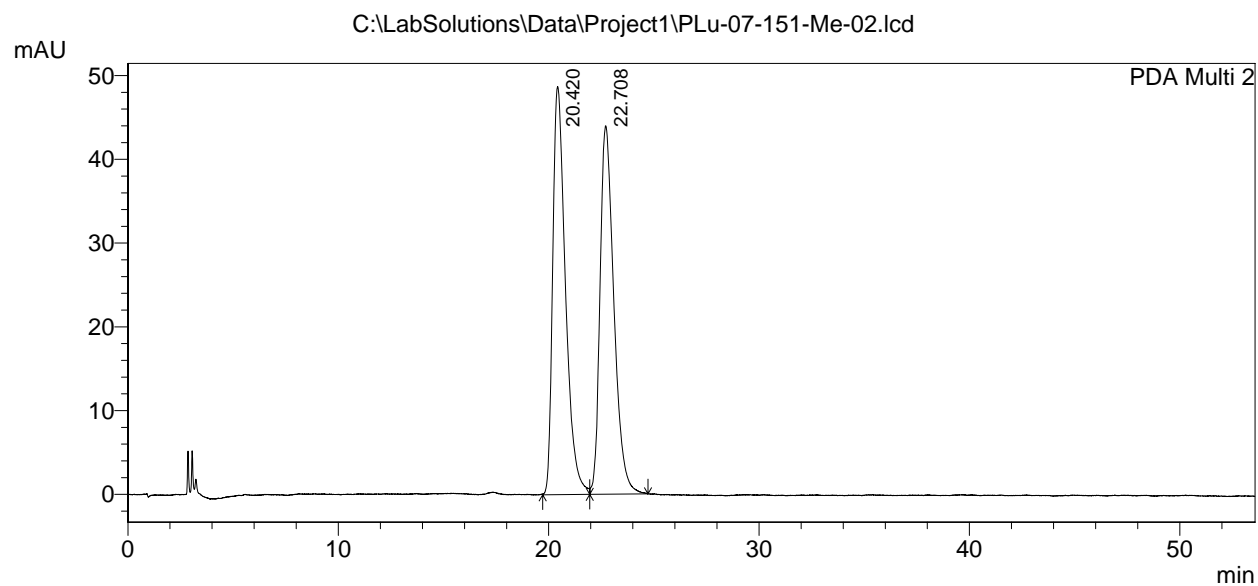
Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.371	72133320	3877439	98.007	98.565
2	15.080	1466964	56435	1.993	1.435
Total		73600284	3933874	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-151-Me-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-151-Me
 Sample ID : PLu-07-151-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-151-Me-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/25/2016 11:33:50 AM
 Data Processed : 1/25/2016 12:27:27 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

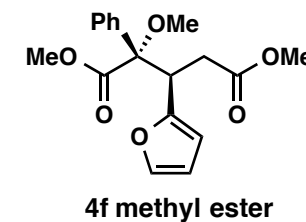
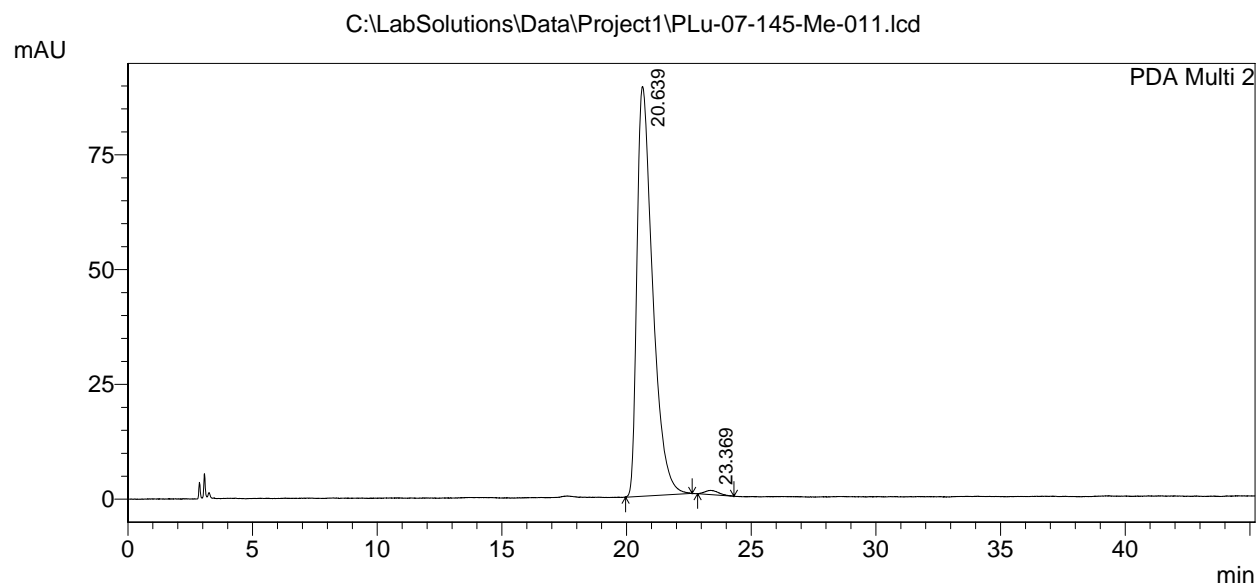
Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.420	2051544	48741	50.434	52.566
2	22.708	2016249	43982	49.566	47.434
Total		4067793	92723	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-145-Me-011.lcd

Acquired by : Admin
 Sample Name : PLu-07-145-Me
 Sample ID : PLu-07-145-Me
 Vail # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-145-Me-011.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/25/2016 10:45:31 AM
 Data Processed : 1/25/2016 11:30:46 AM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

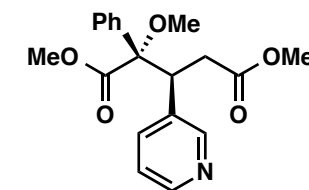
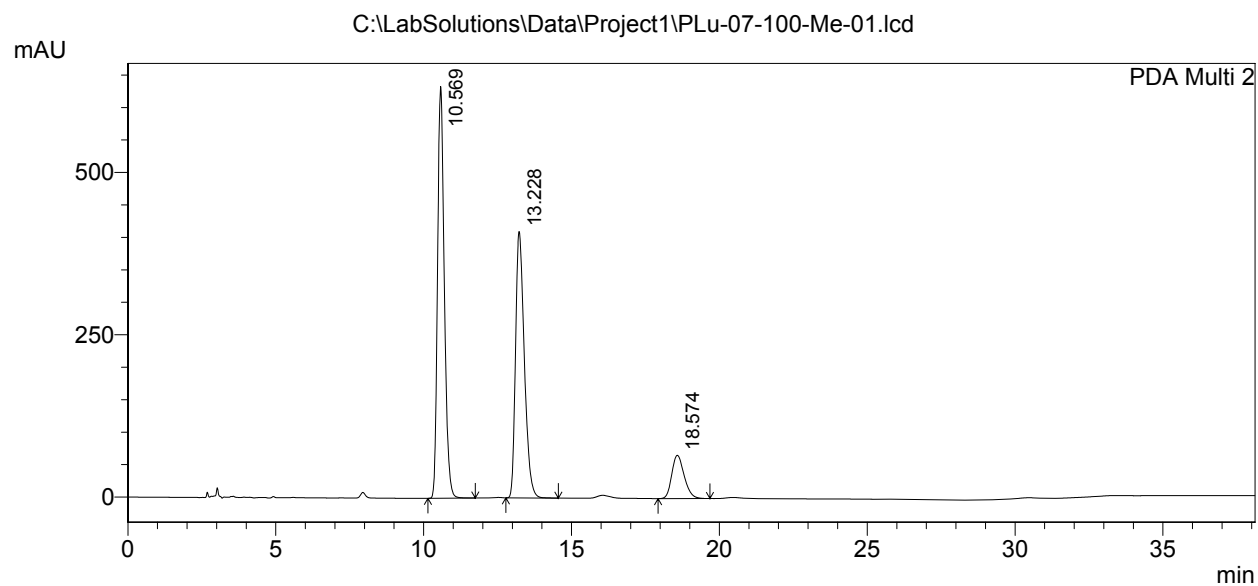
Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.639	3896410	89270	99.080	98.953
2	23.369	36161	944	0.920	1.047
Total		3932572	90214	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-100-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-100-Me
 Sample ID : PLu-07-100-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-100-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/1/2015 3:47:23 PM
 Data Processed : 12/1/2015 4:25:31 PM

<Chromatogram>



(±)- 4g methyl ester

dr 4.4:1

PeakTable

PDA Ch2 215nm 4nm

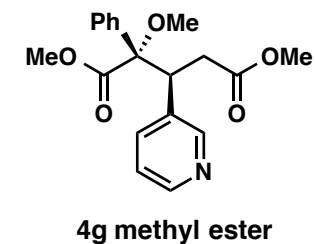
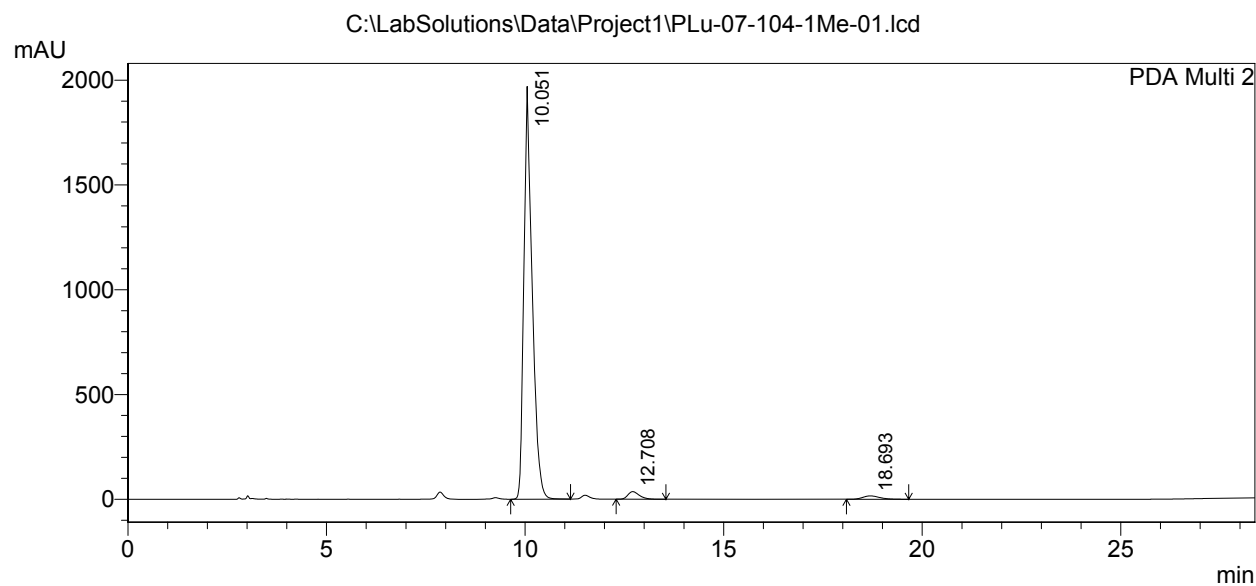
Peak#	Ret. Time	Area	Height	Area %	Height %
1	10.569	10113748	634249	49.227	57.075
2	13.228	8490045	410404	41.324	36.931
3	18.574	1941124	66607	9.448	5.994
Total		20544917	1111260	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-104-1Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-104-1Me
 Sample ID : PLu-07-104-1Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-104-1Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/4/2015 10:52:37 AM
 Data Processed : 12/4/2015 11:21:02 AM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

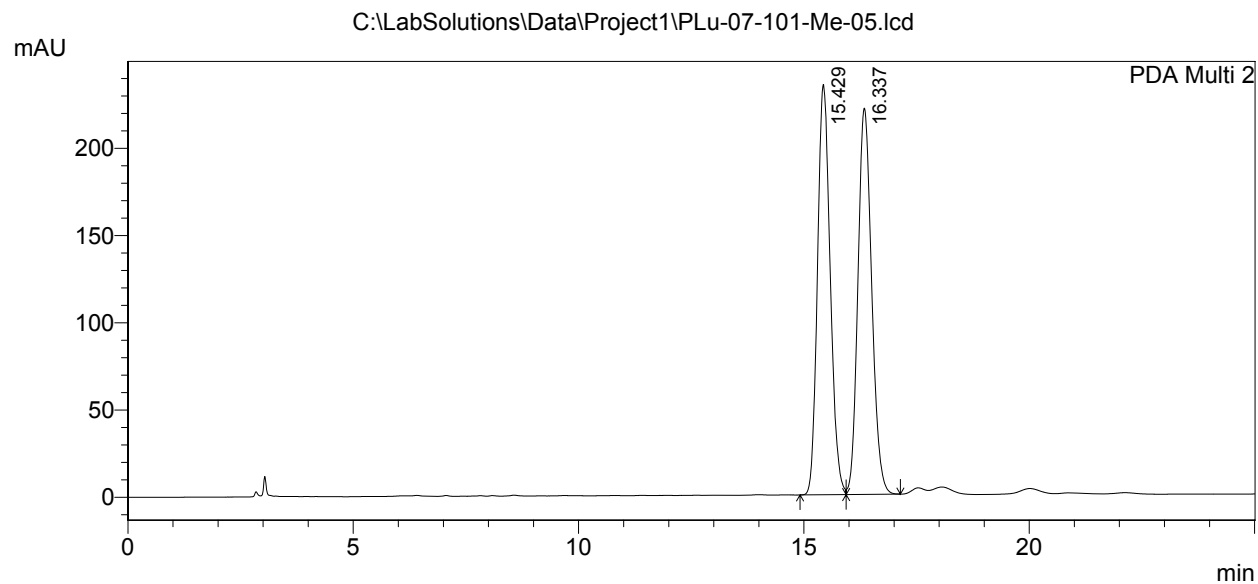
Peak#	Ret. Time	Area	Height	Area %	Height %
1	10.051	28529415	1969508	95.953	97.413
2	12.708	727477	36135	2.447	1.787
3	18.693	475937	16163	1.601	0.799
Total		29732829	2021807	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-101-Me-05.lcd

Acquired by : Admin
 Sample Name : PLu-07-101-Me
 Sample ID : PLu-07-101-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-101-Me-05.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 11/12/2015 4:18:06 PM
 Data Processed : 11/12/2015 4:43:08 PM

<Chromatogram>

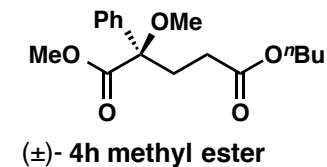


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.429	4621101	235182	49.570	51.509
2	16.337	4701346	221405	50.430	48.491
Total		9322448	456588	100.000	100.000

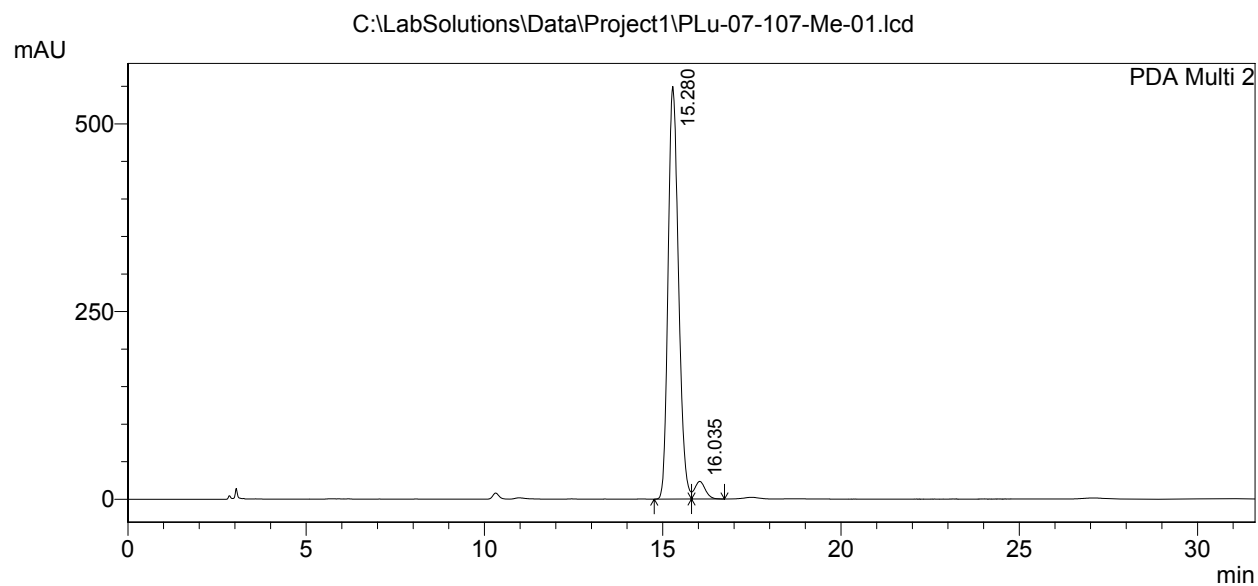


==== Shimadzu LCsolution Analysis Report ====

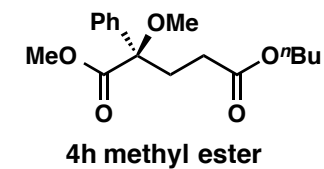
C:\LabSolutions\Data\Project1\PLu-07-107-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-107-Me
 Sample ID : PLu-07-107-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-107-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/3/2015 7:46:43 PM
 Data Processed : 12/3/2015 8:18:20 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm



PeakTable

PDA Ch2 215nm 4nm

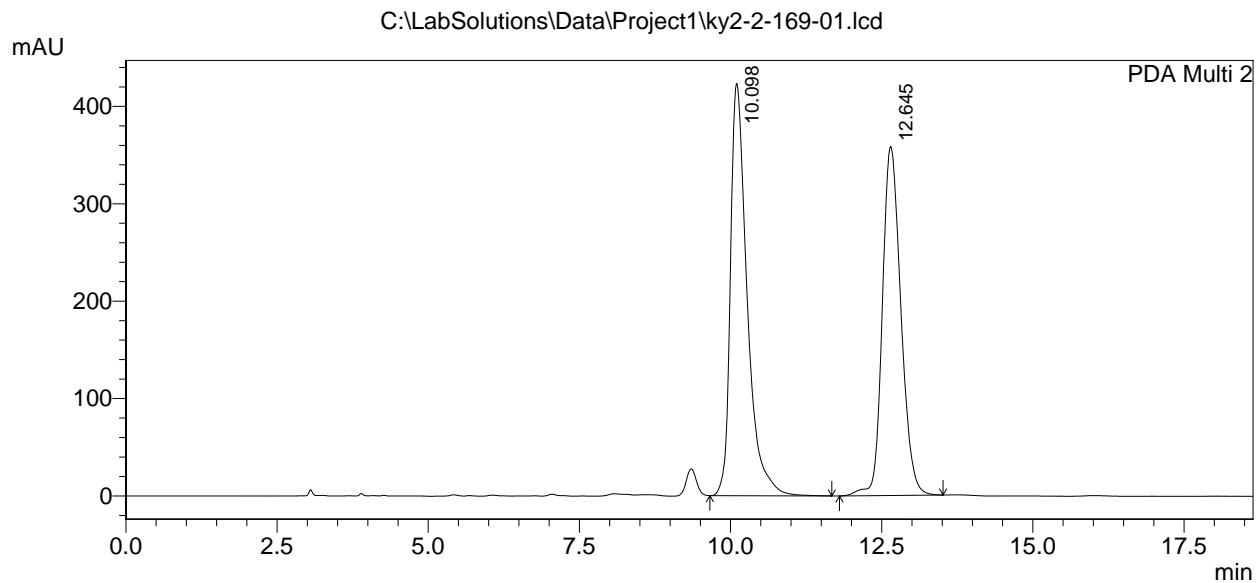
Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.280	11133910	549576	95.805	95.904
2	16.035	487516	23474	4.195	4.096
Total		11621426	573050	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-169-01.lcd

Acquired by : Admin
 Sample Name : ky2-2-169
 Sample ID : ky2-2-169
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-169-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/18/2016 12:45:56 PM
 Data Processed : 1/18/2016 1:04:35 PM

<Chromatogram>

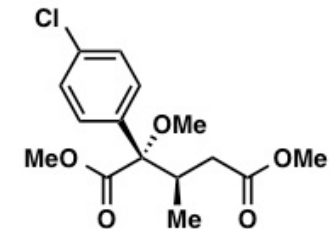


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	10.098	8127906	423328	51.477	54.146
2	12.645	7661345	358494	48.523	45.854
Total		15789250	781821	100.000	100.000



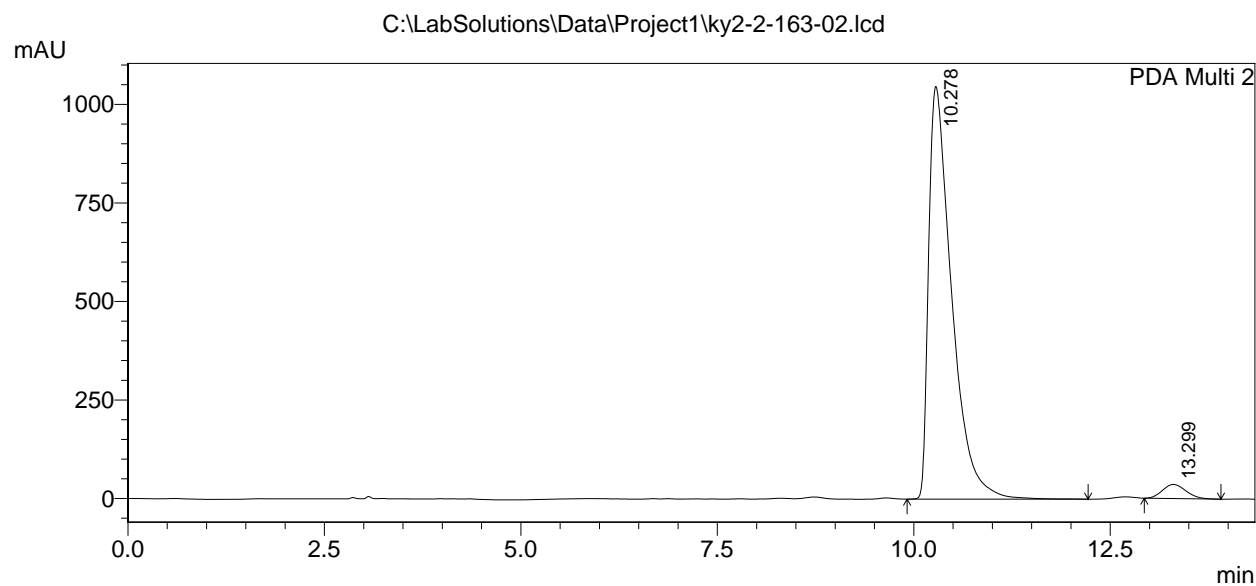
(±)-5a methyl ester

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-163-02.lcd

Acquired by : Admin
 Sample Name : ky2-2-163
 Sample ID : ky2-2-163
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-163-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/14/2016 9:00:18 PM
 Data Processed : 1/14/2016 9:14:41 PM

<Chromatogram>

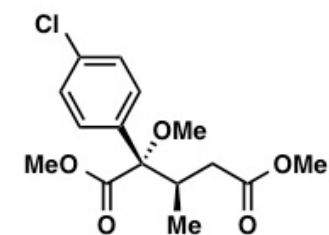


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	10.278	21289374	1047129	96.609	96.690
2	13.299	747199	35844	3.391	3.310
Total		22036573	1082973	100.000	100.000



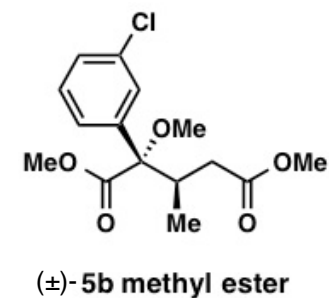
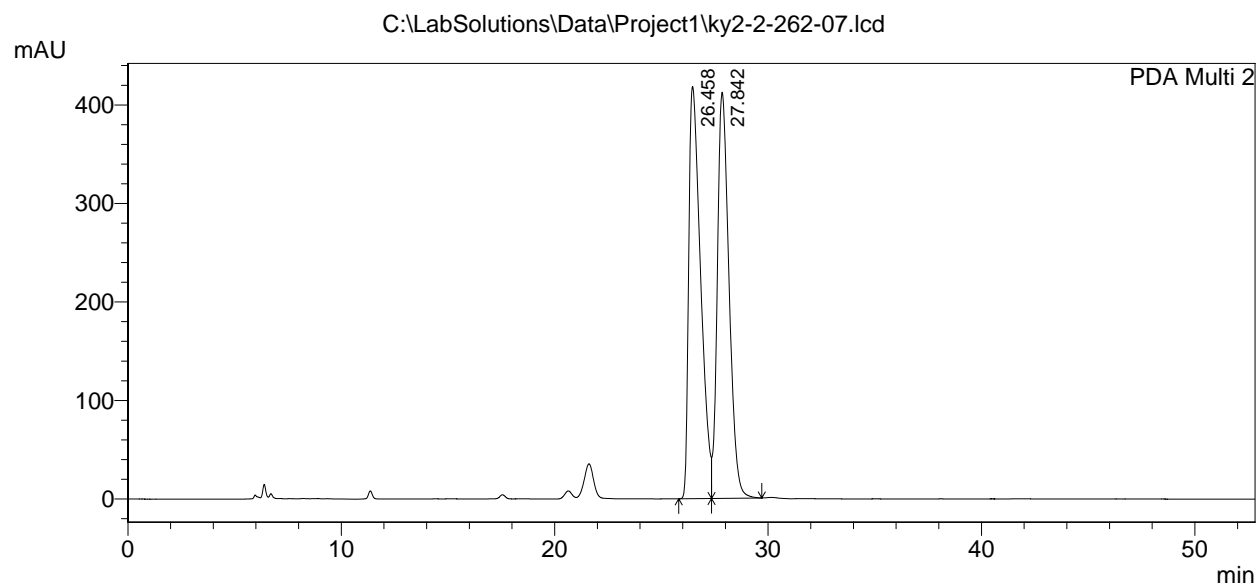
5a methyl ester

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-262-07.lcd

Acquired by : Admin
 Sample Name : ky2-2-262
 Sample ID : ky2-2-262
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-262-07.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/14/2016 1:12:22 PM
 Data Processed : 5/14/2016 2:05:12 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

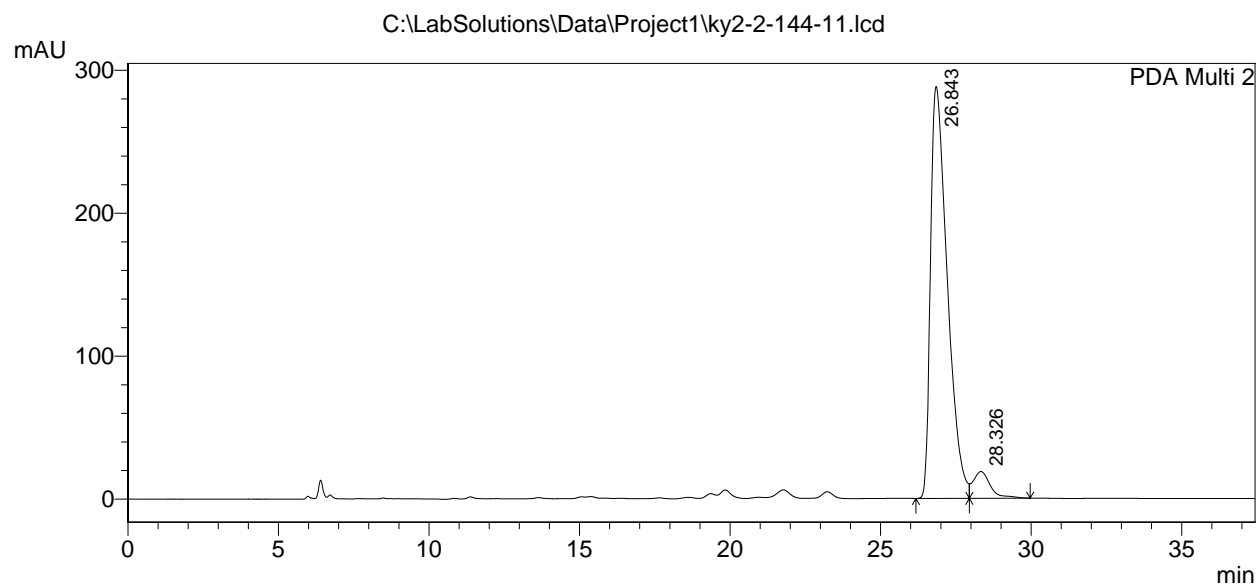
Peak#	Ret. Time	Area	Height	Area %	Height %
1	26.458	16181961	418490	50.812	50.373
2	27.842	15665006	412288	49.188	49.627
Total		31846967	830778	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

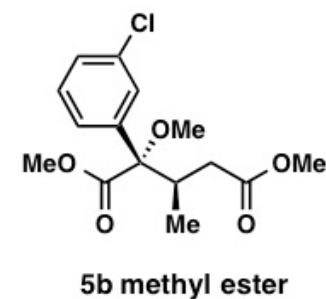
C:\LabSolutions\Data\Project1\ky2-2-144-11.lcd

OD-H, 1% iPrOH in Hexanes
 0.5 mL/min, 1 mg/mL, 10 uL, Acquired by : Admin
 Sample Name : ky2-2-144
 Sample ID : ky2-2-144
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-144-11.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
 Data Acquired : 5/14/2016 10:22:04 AM
 Data Processed : 5/14/2016 11:00:29 AM

<Chromatogram>



1 PDA Multi 2/215nm 4nm



PeakTable

PDA Ch2 215nm 4nm

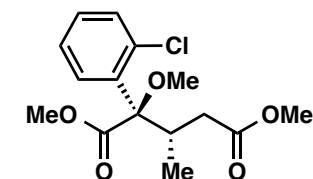
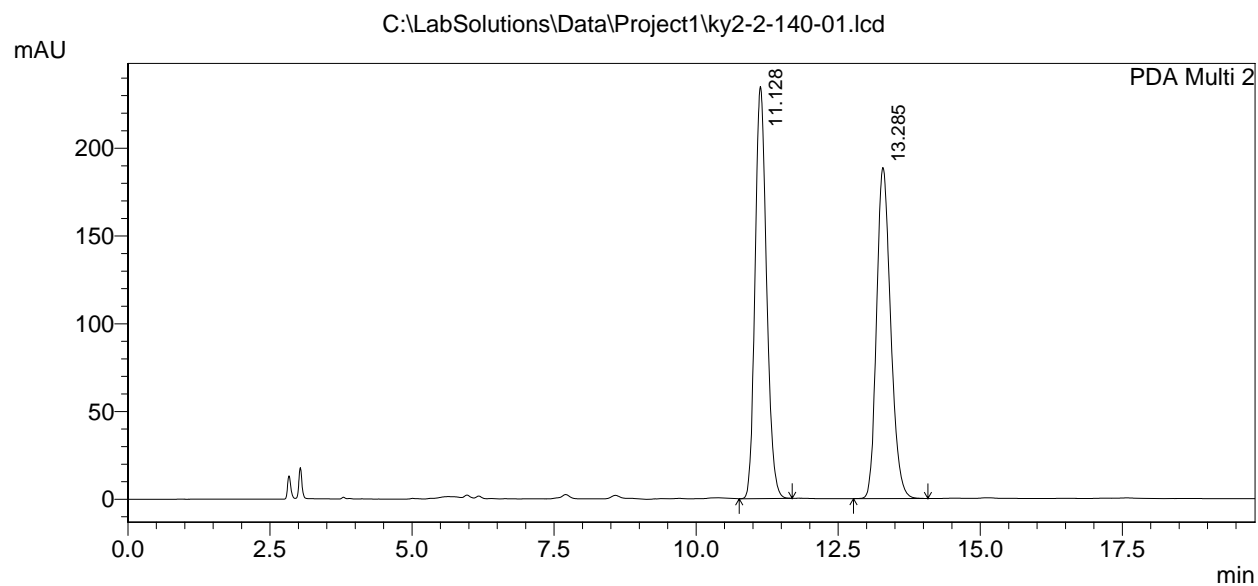
Peak#	Ret. Time	Area	Height	Area %	Height %
1	26.843	11176808	288208	93.705	93.893
2	28.326	750805	18744	6.295	6.107
Total		11927613	306952	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-140-01.lcd

Acquired by : Admin
 Sample Name : ky2-2-140
 Sample ID : ky2-2-140
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-140-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/24/2015 3:31:02 PM
 Data Processed : 12/24/2015 3:50:54 PM

<Chromatogram>



(±)- 5c methyl ester

PeakTable

PDA Ch2 215nm 4nm

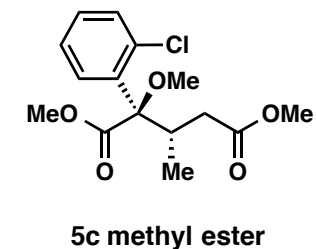
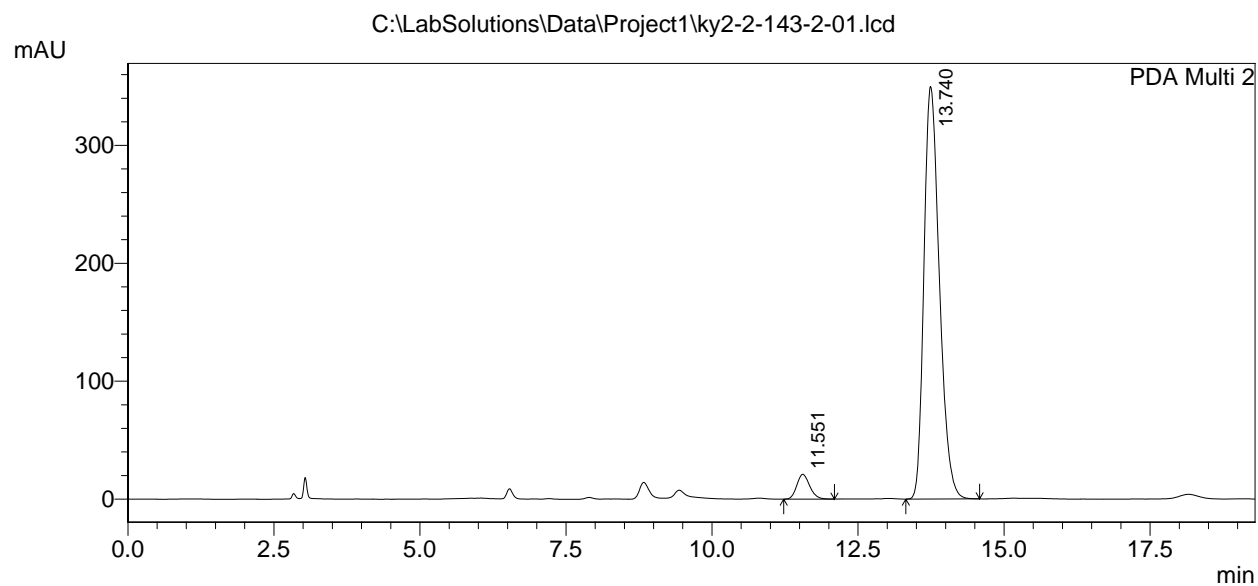
Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.128	3295159	234836	50.363	55.454
2	13.285	3247659	188644	49.637	44.546
Total		6542818	423480	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-143-2-01.lcd

Acquired by : Admin
 Sample Name : ky2-2-143-2
 Sample ID : ky2-2-143-2
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-143-2-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/29/2015 7:03:22 PM
 Data Processed : 12/29/2015 7:22:41 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

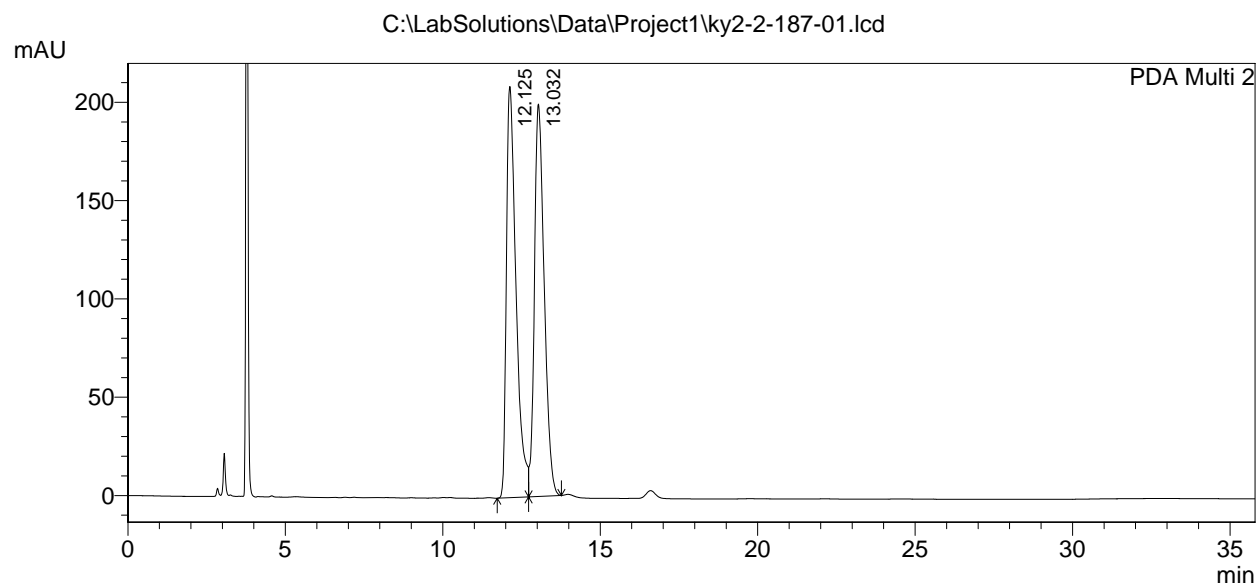
Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.551	322636	21020	4.777	5.667
2	13.740	6431657	349909	95.223	94.333
Total		6754293	370929	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-187-01.lcd

Acquired by : Admin
 Sample Name : ky2-2-187
 Sample ID : ky2-2-187
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-187-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/27/2016 3:35:18 PM
 Data Processed : 1/27/2016 4:11:08 PM

<Chromatogram>

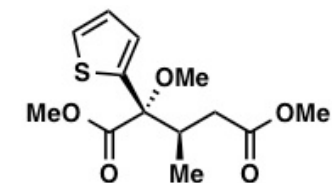


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.125	4444051	209136	50.646	51.174
2	13.032	4330649	199542	49.354	48.826
Total		8774700	408679	100.000	100.000



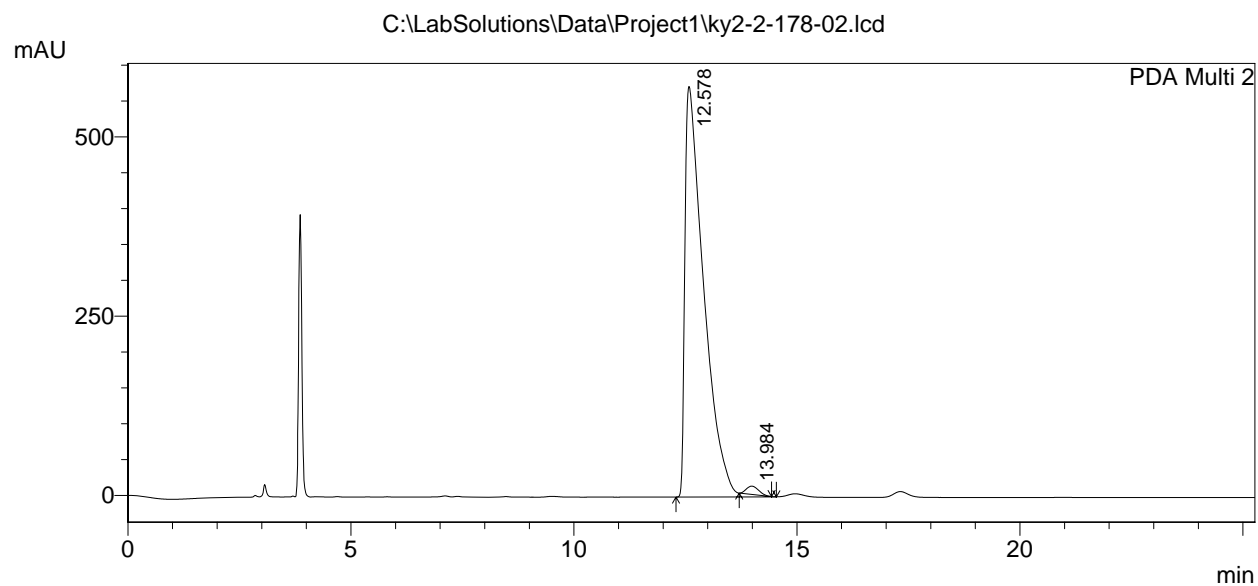
(±)- 5d methyl ester

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-2-178-02.lcd

Acquired by : Admin
 Sample Name : ky2-2-178
 Sample ID : ky2-2-178
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-2-178-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 1/27/2016 4:21:22 PM
 Data Processed : 1/27/2016 4:46:40 PM

<Chromatogram>

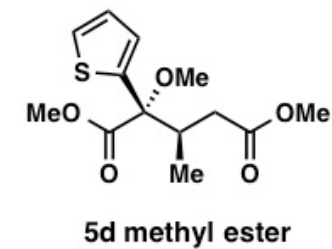


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.578	16797629	572443	98.694	98.011
2	13.984	222242	11614	1.306	1.989
Total		17019870	584057	100.000	100.000

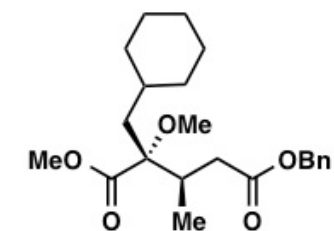
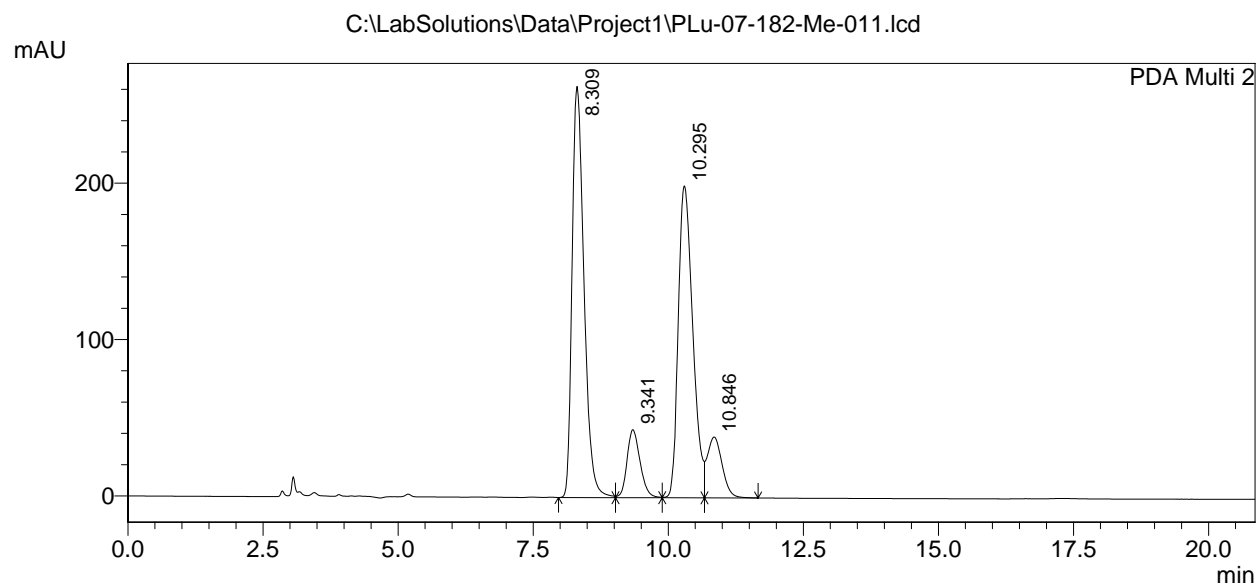


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-182-Me-011.lcd

Acquired by : Admin
 Sample Name : PLu-07-182-Me
 Sample ID : PLu-07-182-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-182-Me-011.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2/25/2016 5:29:07 PM
 Data Processed : 2/25/2016 5:49:59 PM

<Chromatogram>



(±)- 5e methyl ester
 dr 5.5:1

PeakTable

PDA Ch2 215nm 4nm

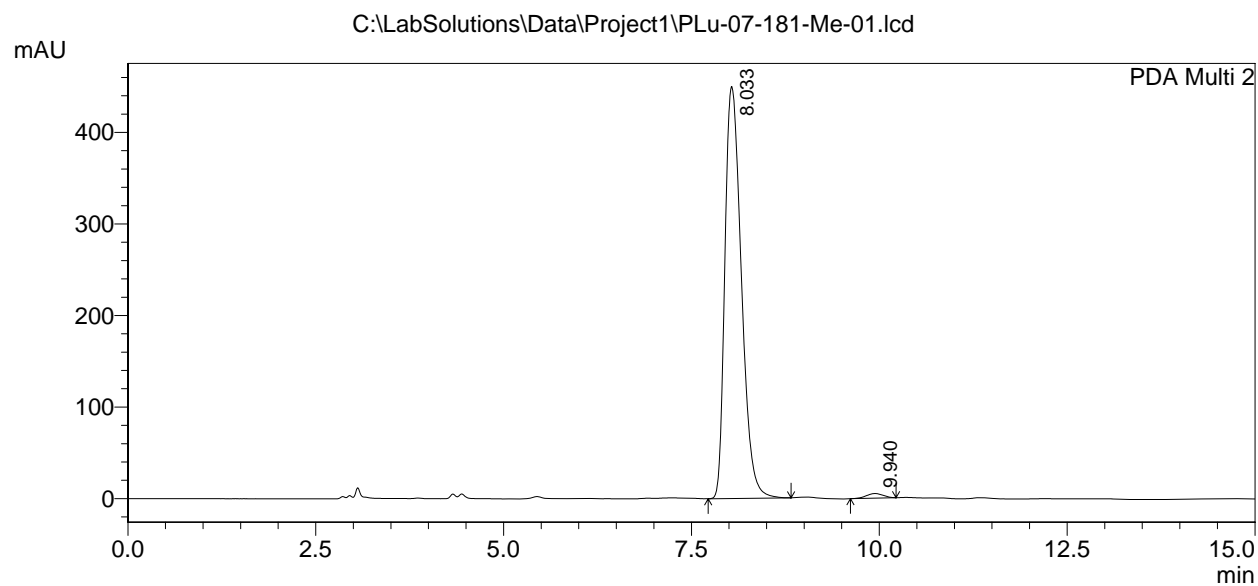
Peak#	Ret. Time	Area	Height	Area %	Height %
1	8.309	4022807	262920	43.616	48.259
2	9.341	728693	43459	7.901	7.977
3	10.295	3729985	199503	40.441	36.619
4	10.846	741793	38928	8.043	7.145
Total		9223277	544810	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-181-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-181-Me
 Sample ID : PLu-07-181-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-181-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2/19/2016 3:32:26 PM
 Data Processed : 2/19/2016 4:03:45 PM

<Chromatogram>

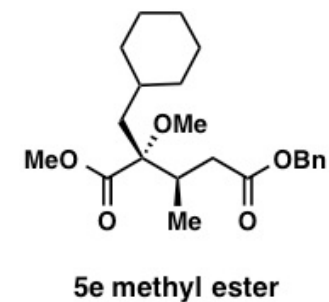


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	8.033	6872753	450108	98.884	98.893
2	9.940	77586	5040	1.116	1.107
Total		6950339	455148	100.000	100.000

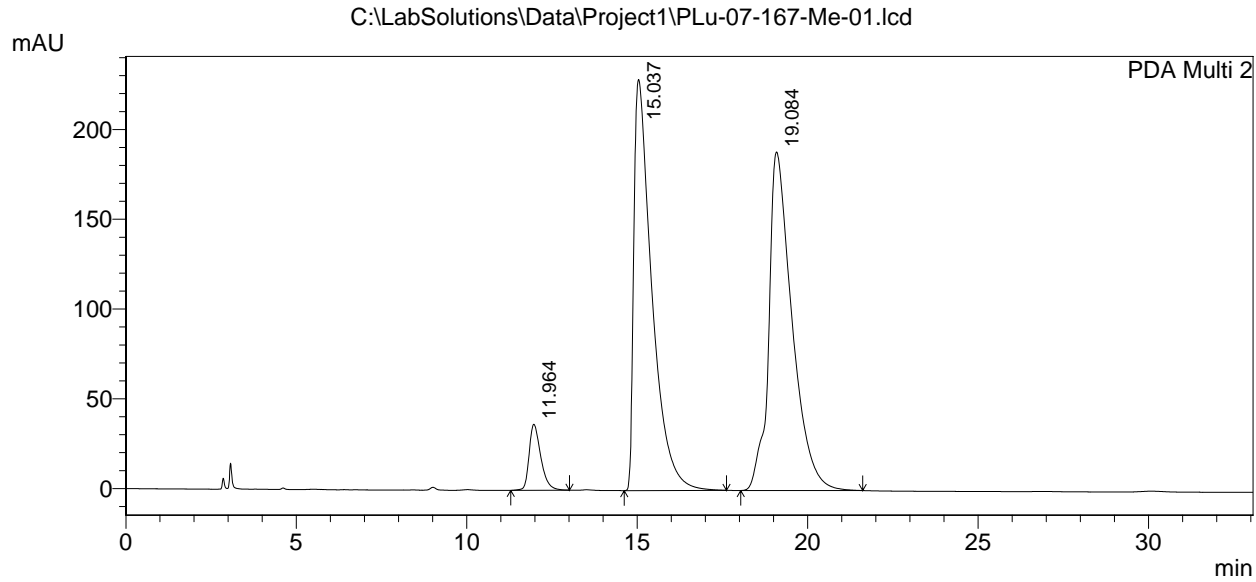


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-167-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-167-Me
 Sample ID : PLu-07-167-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-167-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
 Data Acquired : 2/5/2016 9:46:14 AM
 Data Processed : 2/5/2016 10:19:38 AM

<Chromatogram>

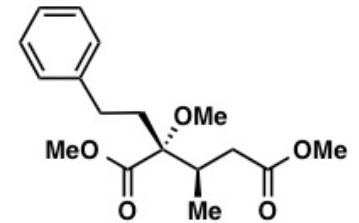


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.964	877726	36765	4.797	8.091
2	15.037	8431323	229021	46.084	50.401
3	19.084	8986573	188610	49.119	41.508
Total		18295621	454397	100.000	100.000



(±)-5f methyl ester

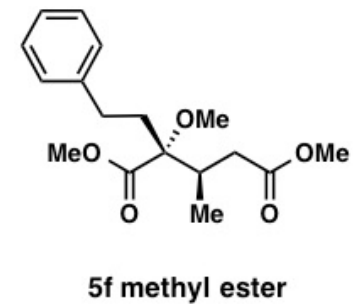
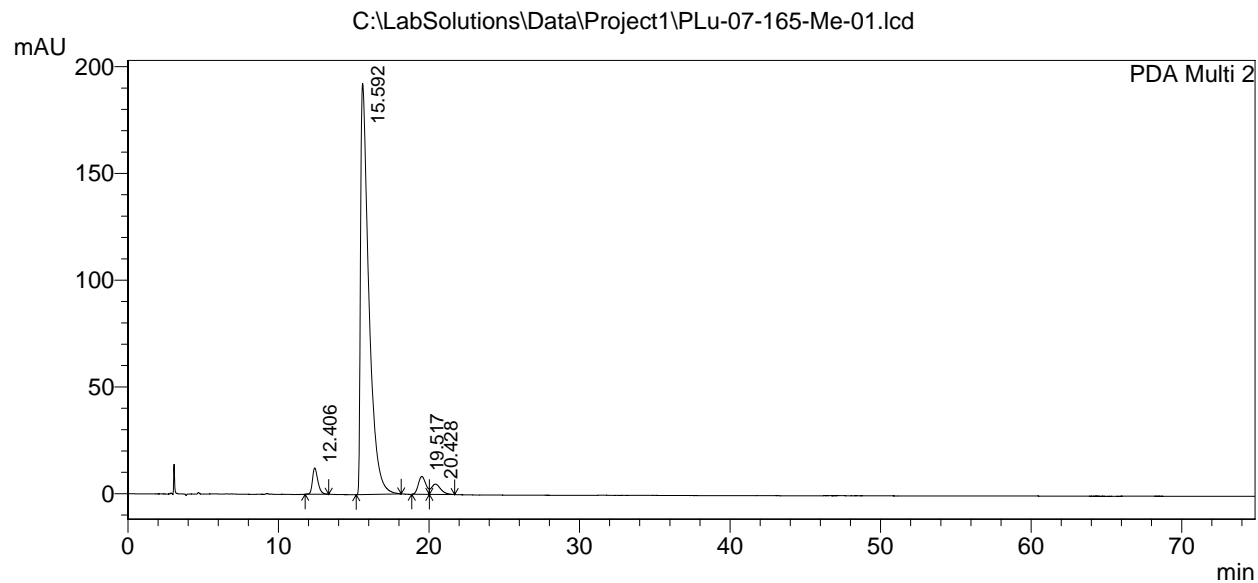
dr 9.6:1

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-165-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-165-Me
 Sample ID : PLu-07-165-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-165-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 2/5/2016 10:38:30 AM
 Data Processed : 2/5/2016 11:53:23 AM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

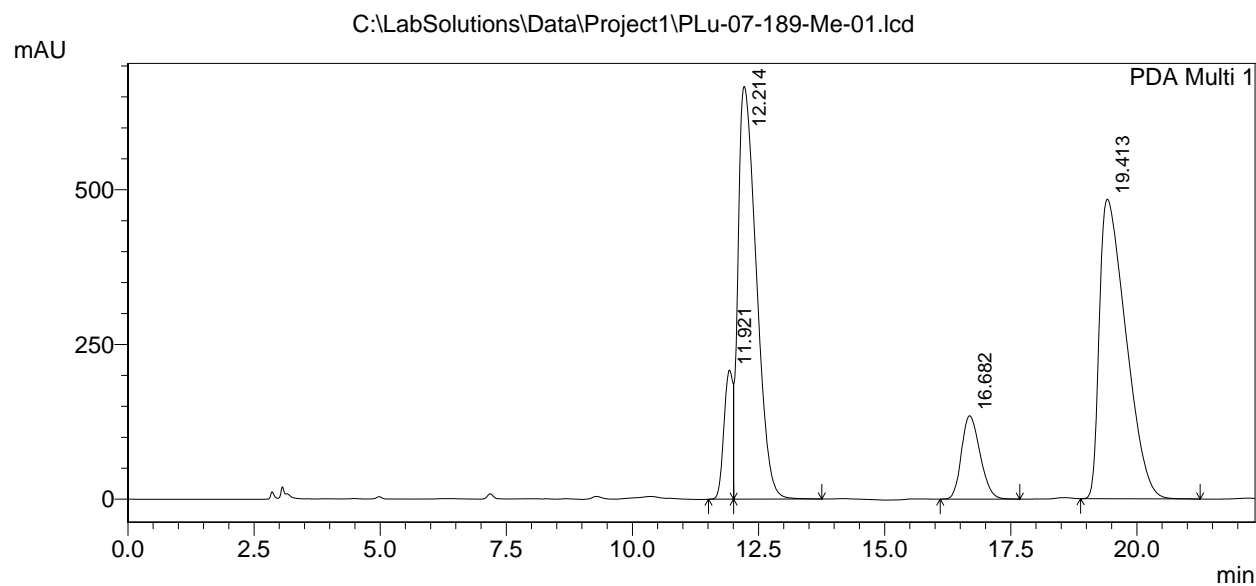
Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.406	307415	12298	3.740	5.639
2	15.592	7410995	192571	90.164	88.300
3	19.517	291792	8365	3.550	3.835
4	20.428	209258	4853	2.546	2.225
Total		8219461	218087	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-189-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-189-Me
 Sample ID : PLu-07-189-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-189-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name :
 Data Acquired : 3/2/2016 3:30:43 PM
 Data Processed : 3/2/2016 3:56:06 PM

<Chromatogram>

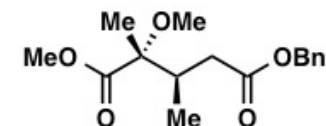


1 PDA Multi 1/210nm 4nm

PeakTable

PDA Ch1 210nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.921	2558904	208583	6.314	13.959
2	12.214	16807058	666830	41.474	44.627
3	16.682	3448470	134679	8.510	9.013
4	19.413	17710186	484141	43.702	32.401
Total		40524618	1494233	100.000	100.000



(±)- 5g methyl ester

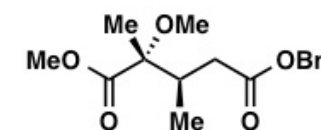
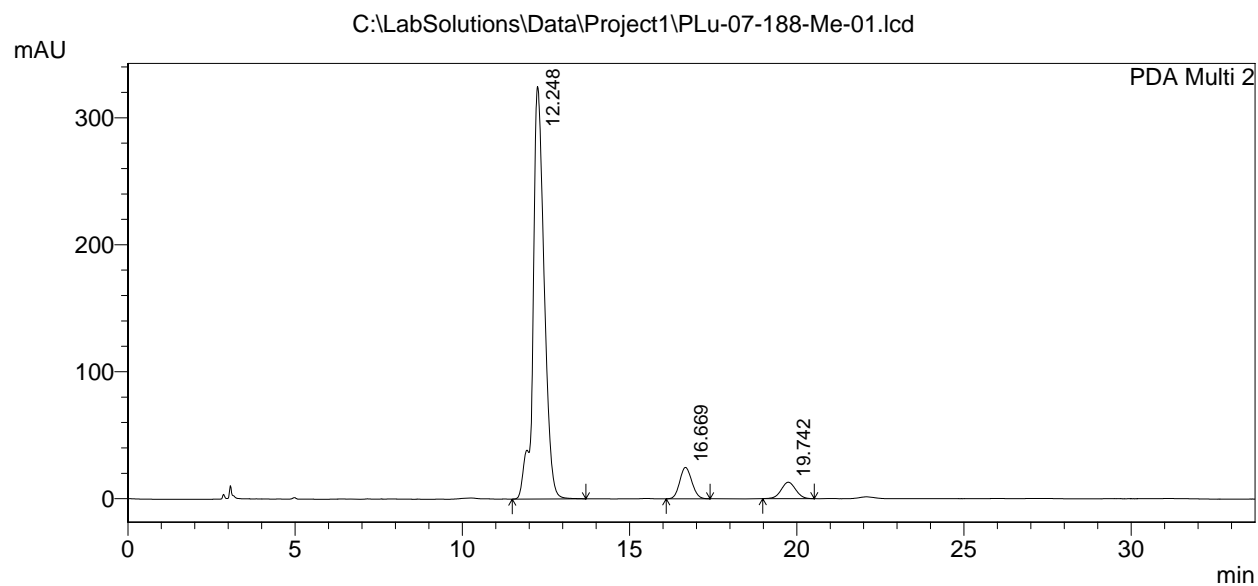
dr 5.1:1

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-188-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-188-Me
 Sample ID : PLu-07-188-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-188-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 3/2/2016 4:02:59 PM
 Data Processed : 3/2/2016 4:36:43 PM

<Chromatogram>



5g methyl ester

PeakTable

PDA Ch2 215nm 4nm

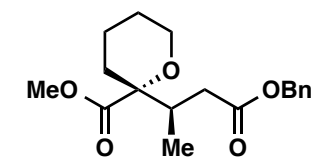
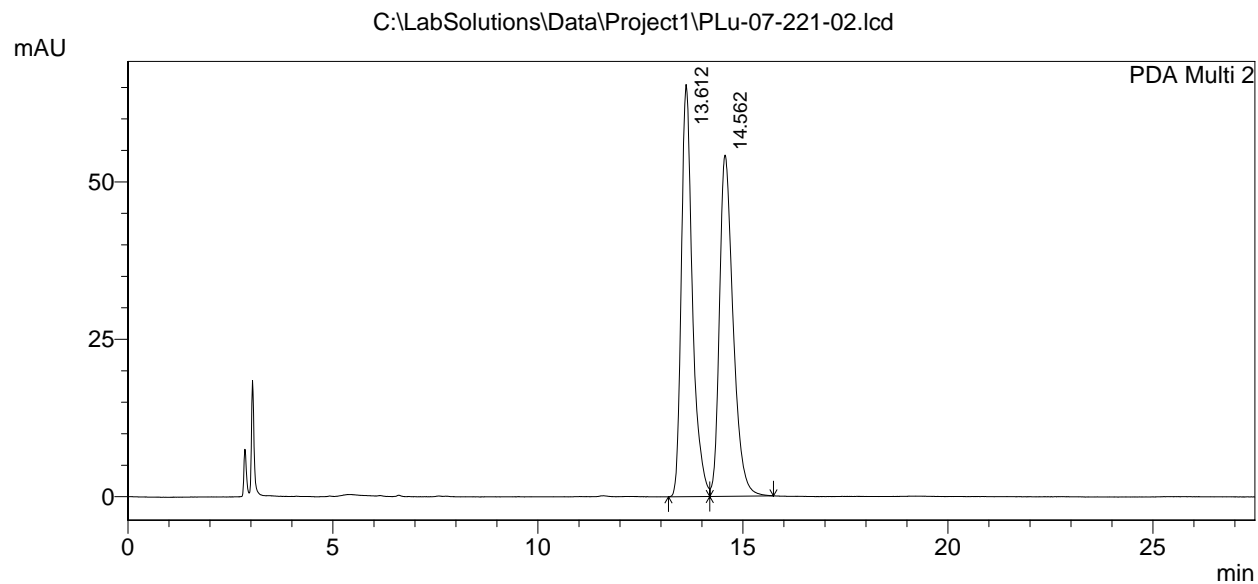
Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.248	7513278	324889	88.082	89.607
2	16.669	625774	24745	7.336	6.825
3	19.742	390824	12936	4.582	3.568
Total		8529877	362570	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-221-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-221
 Sample ID : PLu-07-221
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-221-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 3/30/2016 12:26:34 PM
 Data Processed : 3/30/2016 12:54:05 PM

<Chromatogram>



(±)- 5h methyl ester

PeakTable

PDA Ch2 210nm 4nm

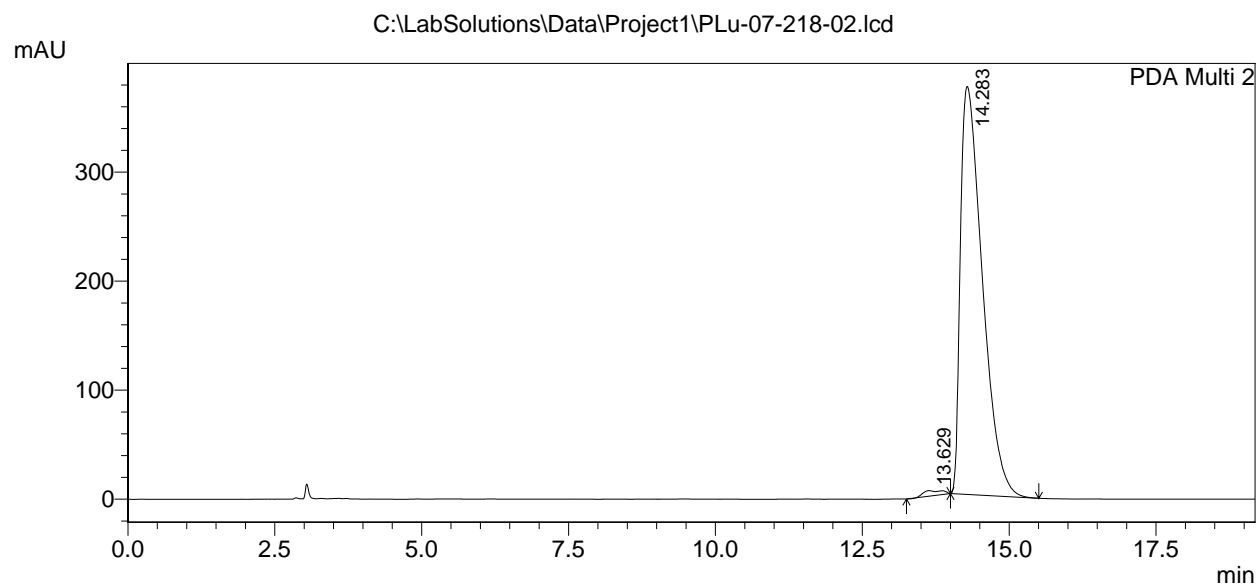
Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.612	1231310	65469	49.490	54.711
2	14.562	1256665	54194	50.510	45.289
Total		2487975	119663	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-218-02.lcd

Acquired by : Admin
 Sample Name : PLu-07-218
 Sample ID : PLu-07-218
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-218-02.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 3/30/2016 12:55:18 PM
 Data Processed : 3/30/2016 1:14:30 PM

<Chromatogram>

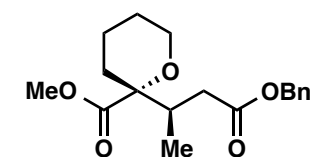


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.629	106232	5127	1.083	1.351
2	14.283	9705486	374339	98.917	98.649
Total		9811718	379466	100.000	100.000



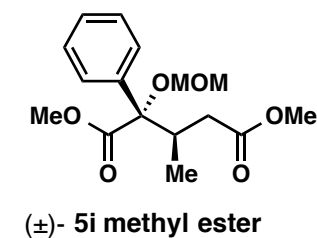
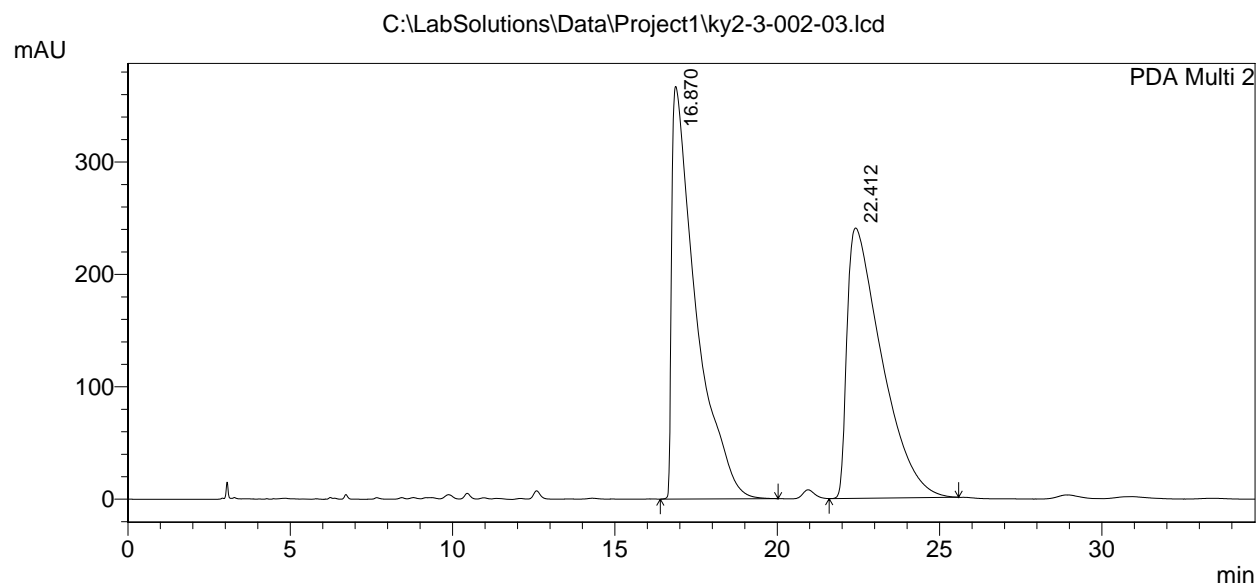
5h methyl ester

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-3-002-03.lcd

Acquired by : Admin
 Sample Name : ky2-3-002
 Sample ID : ky2-3-002
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-3-002-03.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/13/2016 12:11:10 PM
 Data Processed : 5/13/2016 12:45:54 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

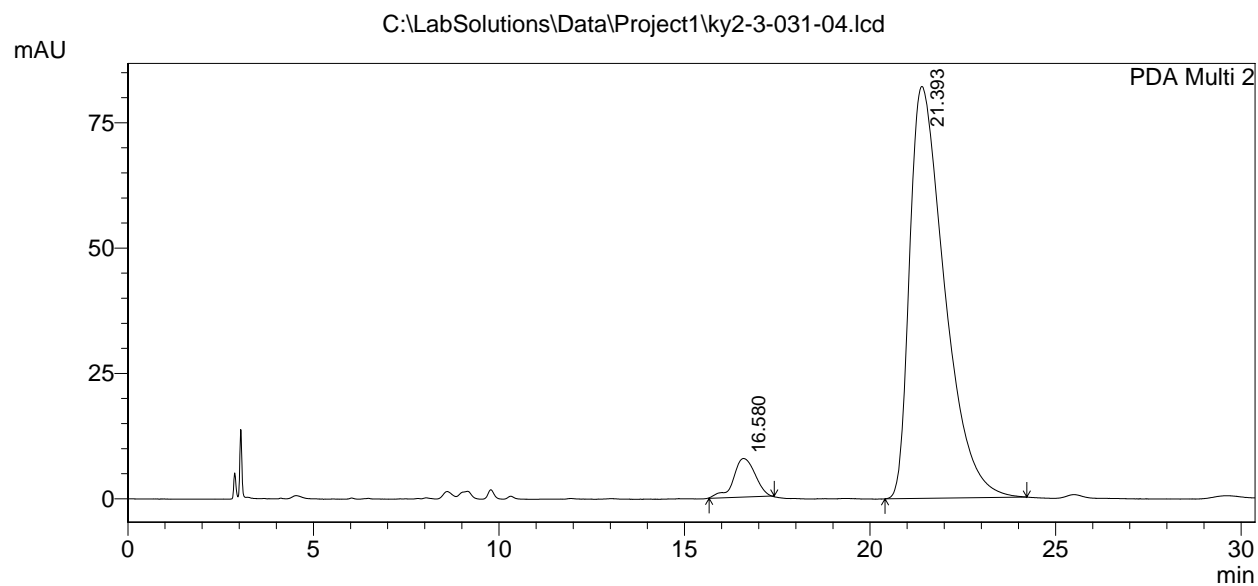
Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.870	18907713	367113	51.368	60.412
2	22.412	17900457	240566	48.632	39.588
Total		36808170	607679	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\ky2-3-031-04.lcd

Acquired by : Admin
 Sample Name : ky2-3-031
 Sample ID : ky2-3-031
 Vial # :
 Injection Volume : 10 uL
 Data File Name : ky2-3-031-04.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 5/11/2016 9:35:29 AM
 Data Processed : 5/11/2016 10:05:52 AM

<Chromatogram>

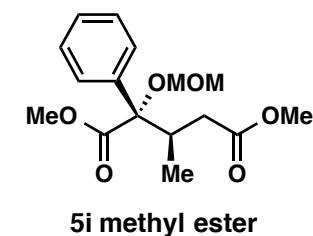


1 PDA Multi 2/215nm 4nm

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	16.580	314753	7689	5.526	8.557
2	21.393	5381396	82171	94.474	91.443
Total		5696150	89860	100.000	100.000

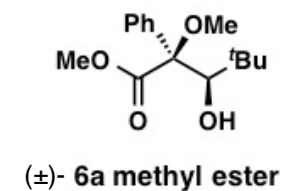
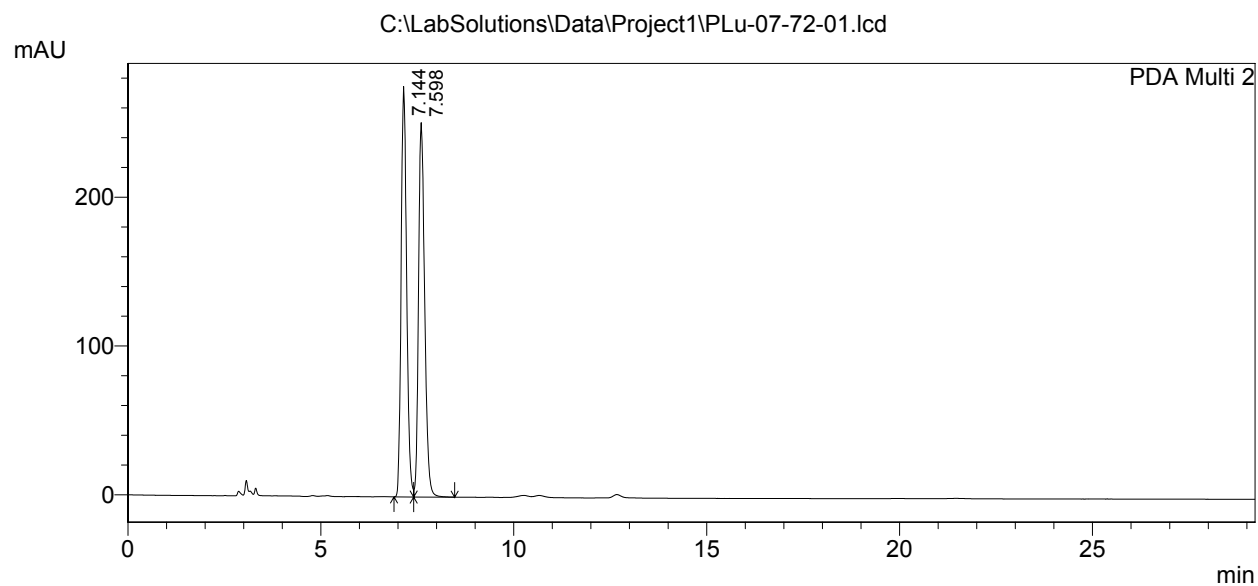


==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-72-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-72-Me
 Sample ID : PLu-07-72-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-72-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 10/23/2015 7:20:25 PM
 Data Processed : 10/23/2015 7:49:38 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

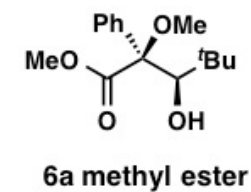
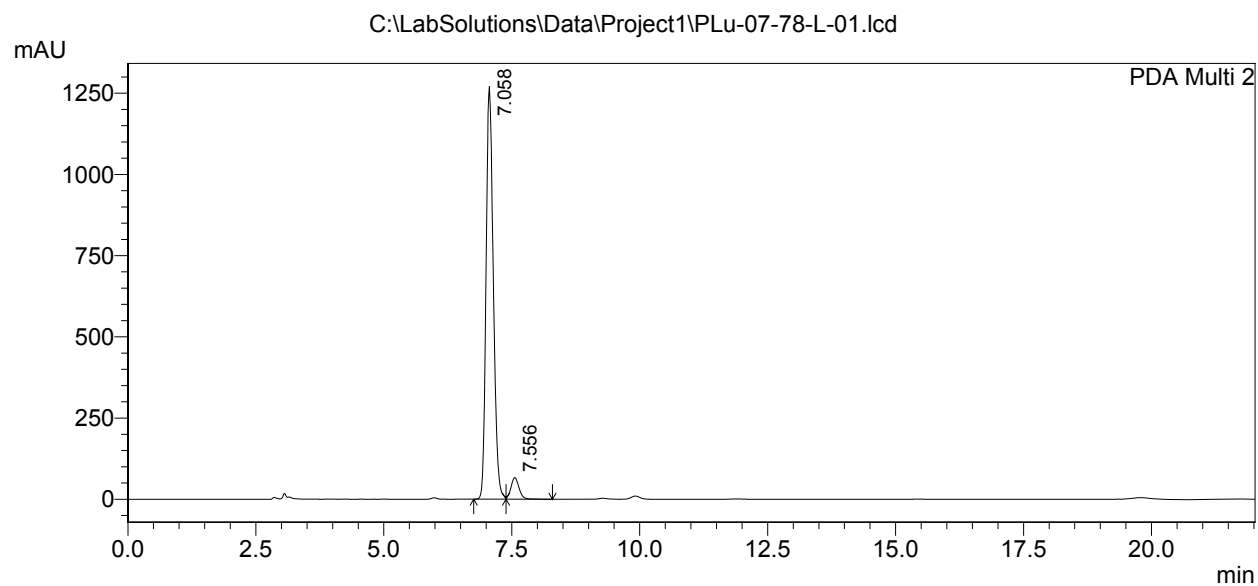
Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.144	2742781	275860	49.562	52.304
2	7.598	2791258	251558	50.438	47.696
Total		5534039	527418	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-78-L-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-78-L
 Sample ID : PLu-07-78-L
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-78-L-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 10/30/2015 10:16:53 AM
 Data Processed : 10/30/2015 10:38:55 AM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

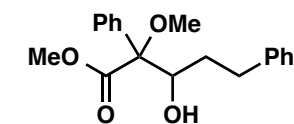
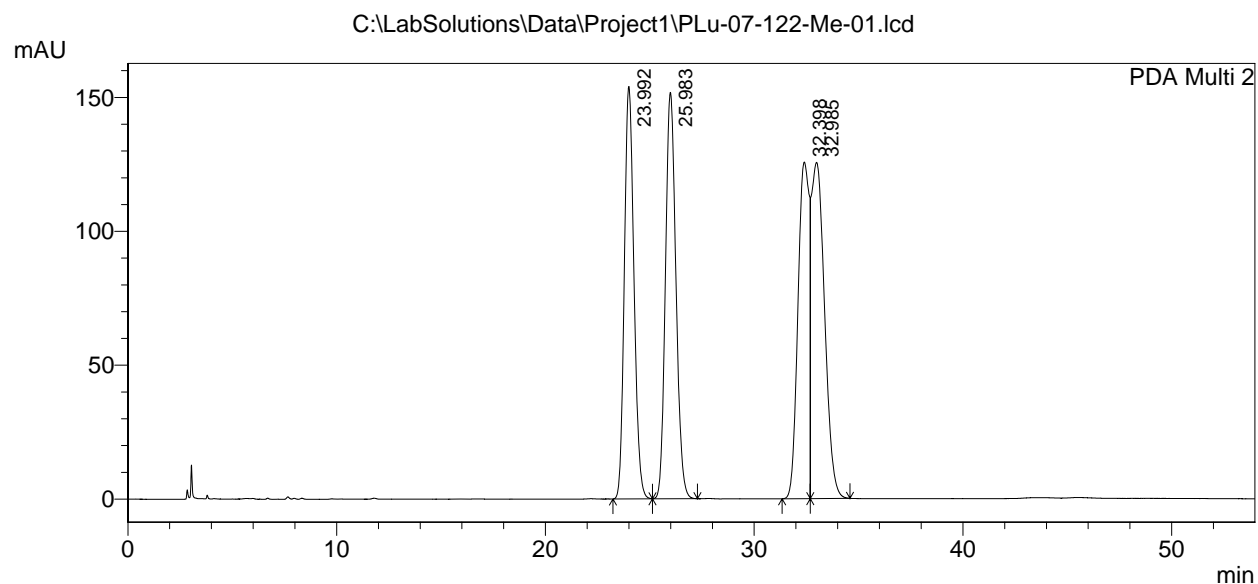
Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.058	12483103	1270792	94.406	95.023
2	7.556	739667	66566	5.594	4.977
Total		13222770	1337358	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-122-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-122-Me
 Sample ID : PLu-07-122-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-122-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/23/2015 3:25:17 PM
 Data Processed : 12/23/2015 4:19:19 PM

<Chromatogram>



(±)- **6b methyl ester-1**

(±)- **6b methyl ester-2**

PeakTable

PDA Ch2 215nm 4nm

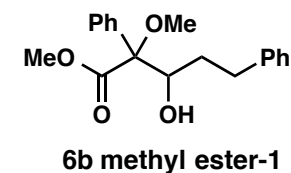
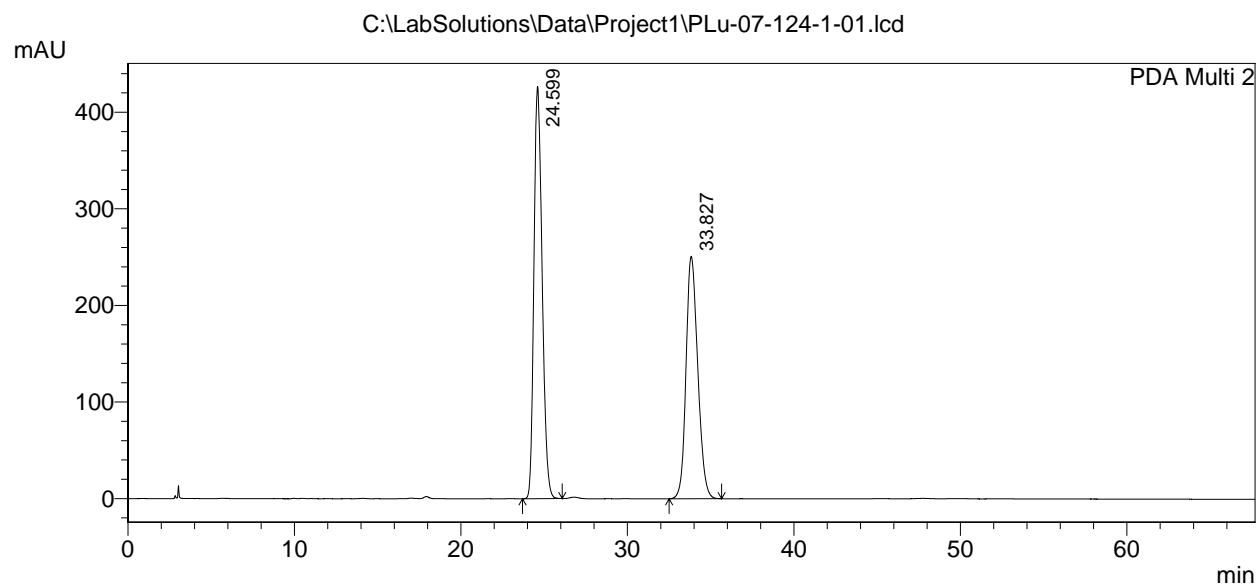
Peak#	Ret. Time	Area	Height	Area %	Height %
1	23.992	4914979	154041	24.011	27.650
2	25.983	5286324	151800	25.825	27.247
3	32.398	4704662	125716	22.983	22.565
4	32.985	5563880	125562	27.181	22.538
Total		20469845	557119	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-124-1-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-124-1
 Sample ID : PLu-07-124-1
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-124-1-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 12/28/2015 12:54:34 PM
 Data Processed : 12/28/2015 2:02:18 PM

<Chromatogram>



PeakTable

PDA Ch2 215nm 4nm

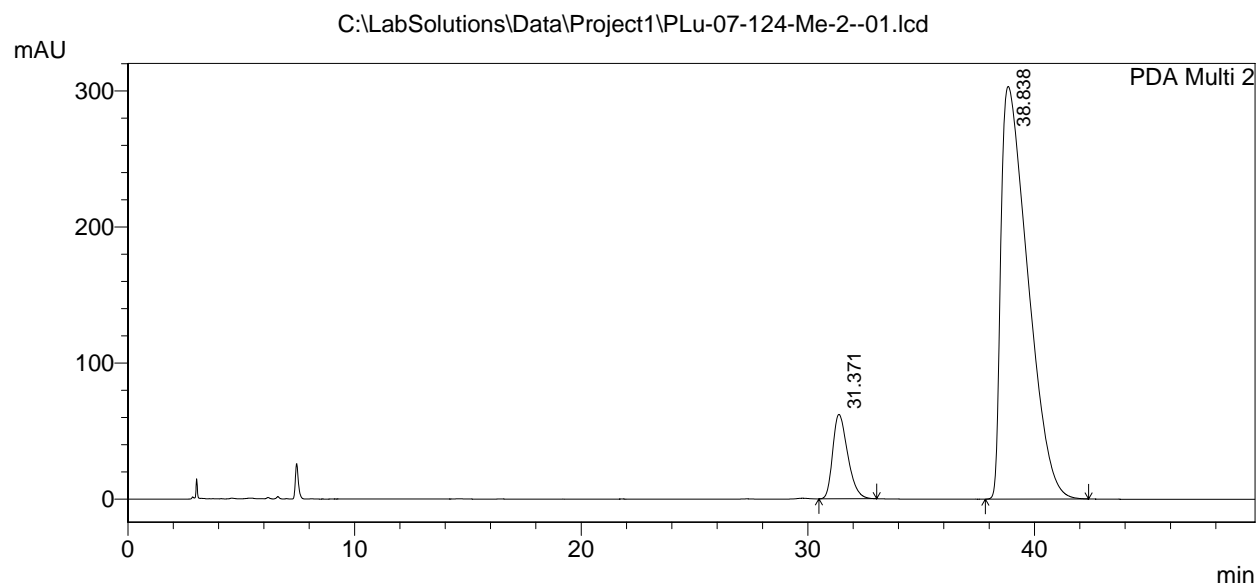
Peak#	Ret. Time	Area	Height	Area %	Height %
1	24.599	14692093	426802	54.478	62.961
2	33.827	12276831	251077	45.522	37.039
Total		26968924	677879	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

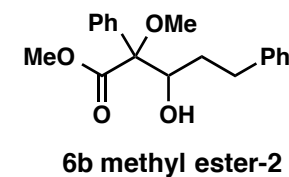
C:\LabSolutions\Data\Project1\PLu-07-124-Me-2--01.lcd

Acquired by : Admin
 Sample Name : PLu-07-124-Me-2
 Sample ID : PLu-07-124-Me-2
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-124-Me-2--01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 3/31/2016 5:23:34 PM
 Data Processed : 3/31/2016 6:13:19 PM

<Chromatogram>



1 PDA Multi 2/215nm 4nm



PeakTable

PDA Ch2 215nm 4nm

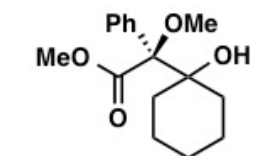
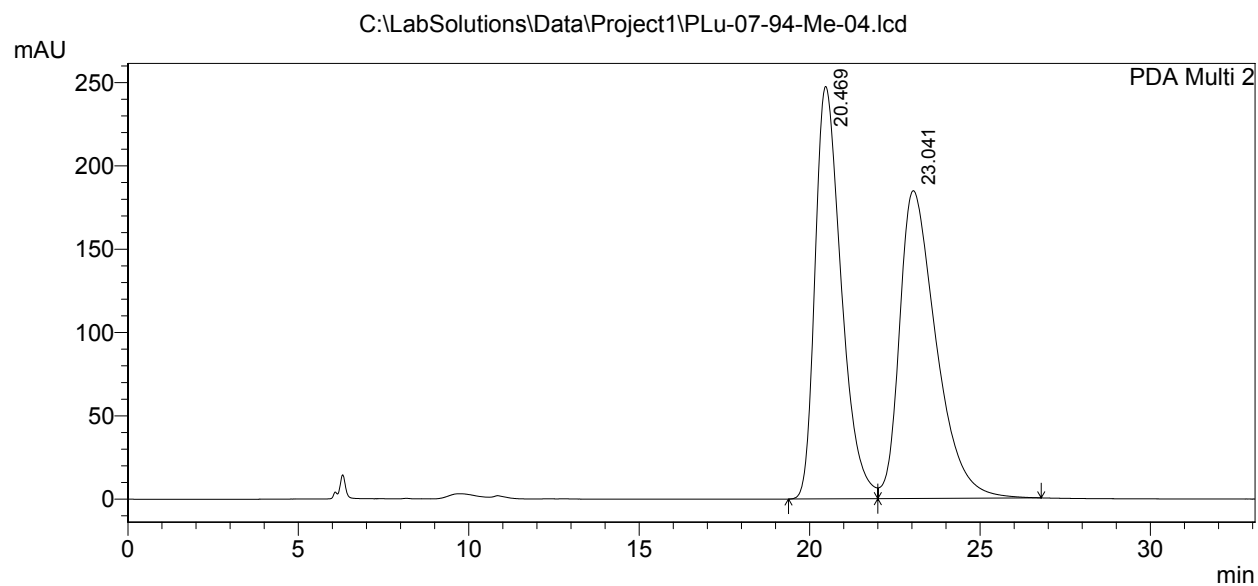
Peak#	Ret. Time	Area	Height	Area %	Height %
1	31.371	2851131	62084	10.241	16.987
2	38.838	24989650	303393	89.759	83.013
Total		27840781	365476	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-94-Me-04.lcd

Acquired by : Admin
 Sample Name : PLu-07-94-Me
 Sample ID : PLu-07-94-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-94-Me-04.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 11/9/2015 2:09:41 PM
 Data Processed : 11/9/2015 2:42:47 PM

<Chromatogram>



(±)- 6c methyl ester

PeakTable

PDA Ch2 215nm 4nm

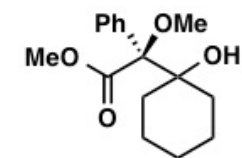
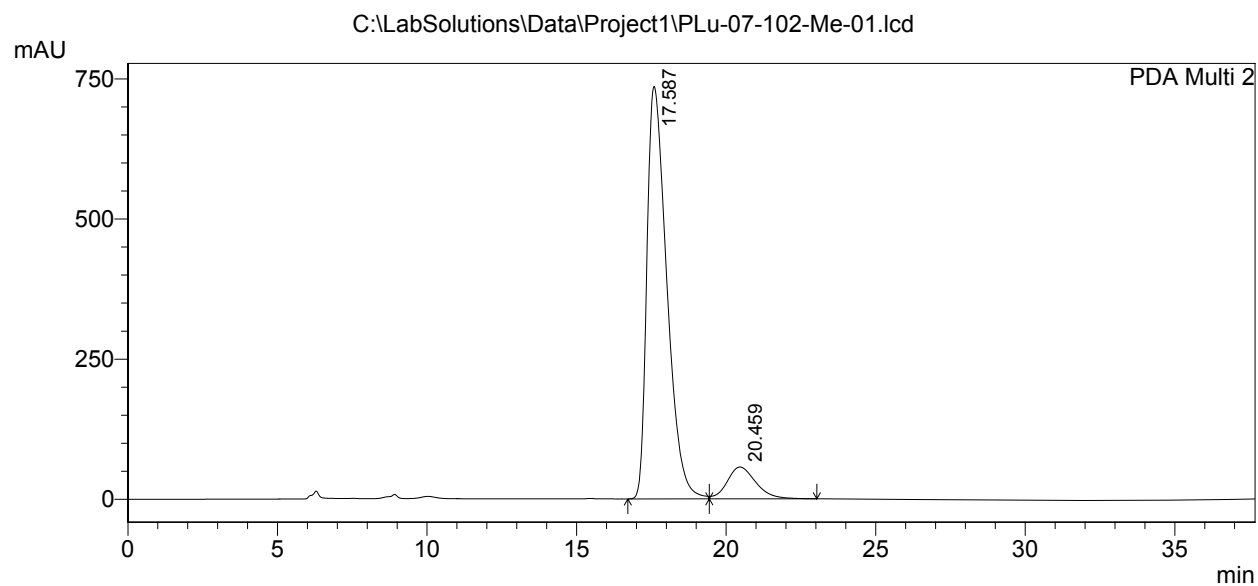
Peak#	Ret. Time	Area	Height	Area %	Height %
1	20.469	13221769	247526	48.981	57.263
2	23.041	13771991	184737	51.019	42.737
Total		26993760	432263	100.000	100.000

==== Shimadzu LCsolution Analysis Report ====

C:\LabSolutions\Data\Project1\PLu-07-102-Me-01.lcd

Acquired by : Admin
 Sample Name : PLu-07-102-Me
 Sample ID : PLu-07-102-Me
 Vial # :
 Injection Volume : 10 uL
 Data File Name : PLu-07-102-Me-01.lcd
 Method File Name : ATH-OD-J-analytical-hplc.lcm
 Batch File Name :
 Report File Name : Default.lcr
 Data Acquired : 11/13/2015 11:12:40 AM
 Data Processed : 11/13/2015 11:50:21 AM

<Chromatogram>



6c methyl ester

PeakTable

PDA Ch2 215nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	17.587	34061027	735778	90.036	92.839
2	20.459	3769257	56756	9.964	7.161
Total		37830285	792533	100.000	100.000