

**Supporting Information for**

**Identification and Structure-Activity Relationships of a Novel Series of Estrogen Receptor  
Ligands Based on 7-Thiabicyclo[2.2.1]hept-2-ene-7-oxide**

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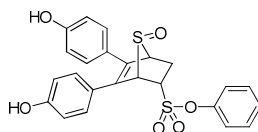
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## Part 1. Summary of HPLC results

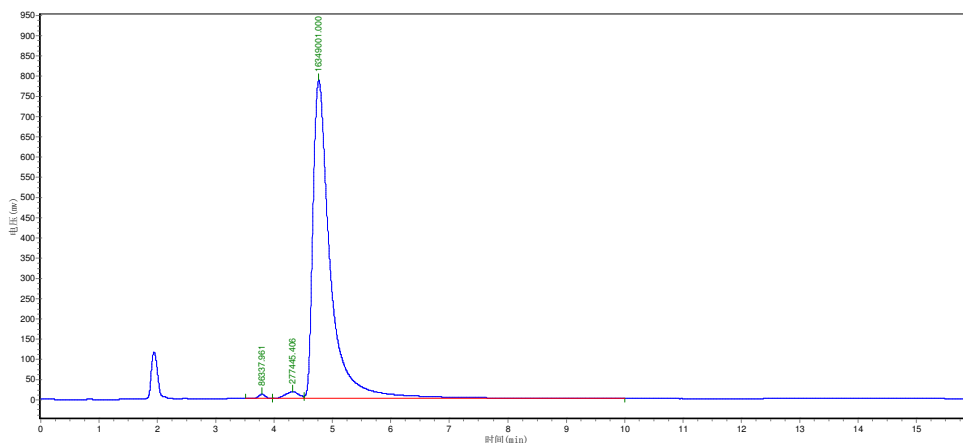
Cmpd	Normal Phase	Ret. Time	%Purity	Reverse Phase	Ret. Time	%Purity
<b>10a</b>	50:50 EtOAc:Hex	4.763	97.8233	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	3.425	99.0600
<b>10b</b>	50:50 EtOAc:Hex	5.377	97.2888	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.298	100.0000
<b>10c</b>	50:50 EtOAc:Hex	4.733	96.3716	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	5.082	98.3858
<b>10d</b>	50:50 EtOAc:Hex	3.153	97.2462	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	2.912	100.0000
<b>10e</b>	50:50 EtOAc:Hex	6.220	95.4558	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.538	97.9138
<b>11a</b>	50:50 EtOAc:Hex	5.842	96.3689	65:35 CH <sub>3</sub> CN:H <sub>2</sub> O	3.172	95.2213
<b>11b</b>	50:50 EtOAc:Hex	7.012	96.9868	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	4.298	100.0000
<b>11c</b>	50:50 EtOAc:Hex	3.670	96.1392	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.055	96.4430
<b>11d</b>	50:50 EtOAc:Hex	5.700	96.1551	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.743	99.1352
<b>11e</b>	55:45 EtOAc:Hex	5.090	97.1570	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.697	96.4690
<b>11f</b>	50:50 EtOAc:Hex	5.767	97.5783	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.863	97.6714
<b>11g</b>	50:50 EtOAc:Hex	5.395	99.0275	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.377	100.0000
<b>11h</b>	50:50 EtOAc:Hex	5.912	97.6497	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.133	99.3376
<b>11i</b>	60:40 EtOAc:Hex	5.090	95.1145	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	3.400	100.0000
<b>11j</b>	60:40 EtOAc:Hex	7.700	97.0893	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.838	98.2647
<b>11k</b>	50:50 EtOAc:Hex	7.012	97.7604	65:35 CH <sub>3</sub> CN:H <sub>2</sub> O	3.055	96.5202
<b>11l</b>	50:50 EtOAc:Hex	3.613	100.0000	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.102	98.9936
<b>12a</b>	50:50 EtOAc:Hex	4.898	97.4603	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.220	96.0623
<b>12b</b>	40:60 EtOAc:Hex	4.927	98.1406	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.398	99.5508
<b>12c</b>	50:50 EtOAc:Hex	6.262	96.6904	65:35 CH <sub>3</sub> CN:H <sub>2</sub> O	3.270	98.2904
<b>12d</b>	50:50 EtOAc:Hex	5.837	98.7216	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.515	98.6482
<b>12e</b>	50:50 EtOAc:Hex	7.080	98.2181	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.352	98.7656
<b>12f</b>	50:50 EtOAc:Hex	4.972	99.4138	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	4.932	98.6335
<b>12g</b>	50:50 EtOAc:Hex	6.187	96.7846	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.672	99.2117
<b>12h</b>	50:50 EtOAc:Hex	3.748	96.8128	70:30 CH <sub>3</sub> CN:H <sub>2</sub> O	3.683	96.8229
<b>12i</b>	50:50 EtOAc:Hex	5.140	100.0000	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.677	98.7842
<b>13</b>	50:50 EtOAc:Hex	3.763	100.0000	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.402	99.4081
<b>14</b>	50:50 EtOAc:Hex	4.112	98.1149	60:40 CH <sub>3</sub> CN:H <sub>2</sub> O	3.328	97.9905

**PART II. HPLC CHROMATOGRAMS**



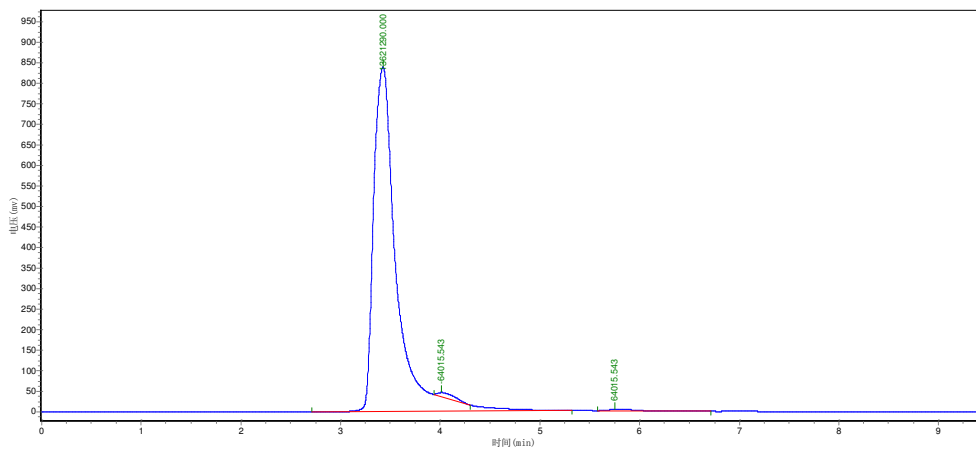
**10a**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0 mL/min)

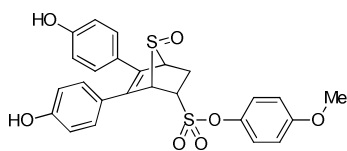


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.790	10583.900	86337.961	0.5166
2	4.317	17393.021	277445.406	1.6601
3	4.763	787540.313	16349001.000	97.8233
Totals		815517.234	16712784.367	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

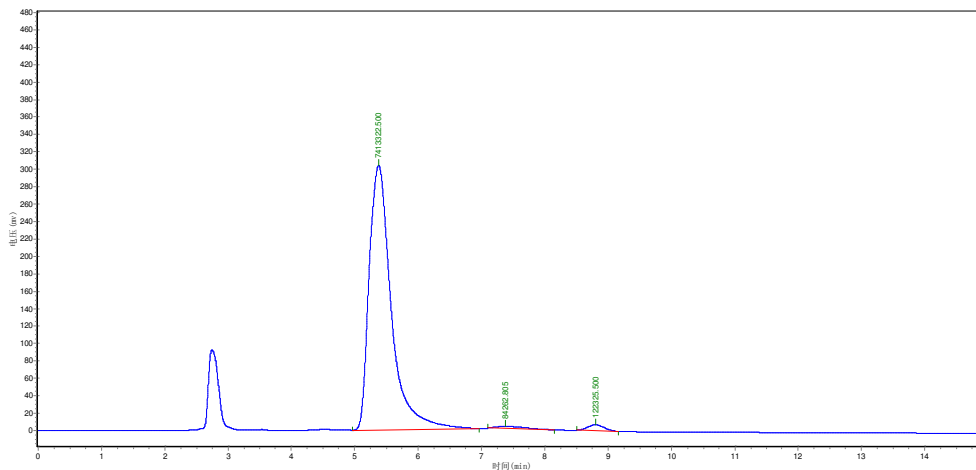


Peak	Ret. Time (min)	Height(mAu)	Area (Mau *s)	Area Percent (%)
1	3.425	838745.875	13621290.000	99.0600
2	4.015	9809.156	64015.543	0.4700
3	5.753	2986.313	64015.543	0.4700
Totals		851541.344	13749321.086	100.0000



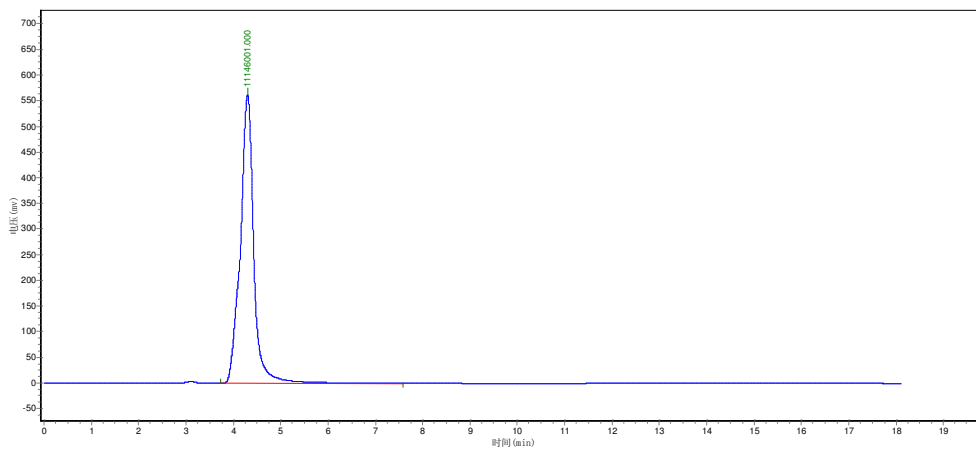
**10b**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

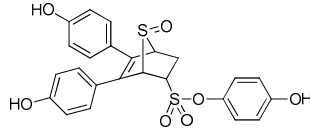


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	5.377	304018.844	7413322.500	97.2888
2	7.380	2629.073	84262.805	1.1058
3	8.802	6727.541	122325.500	1.6053
Totals		312915.458	7619910.805	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

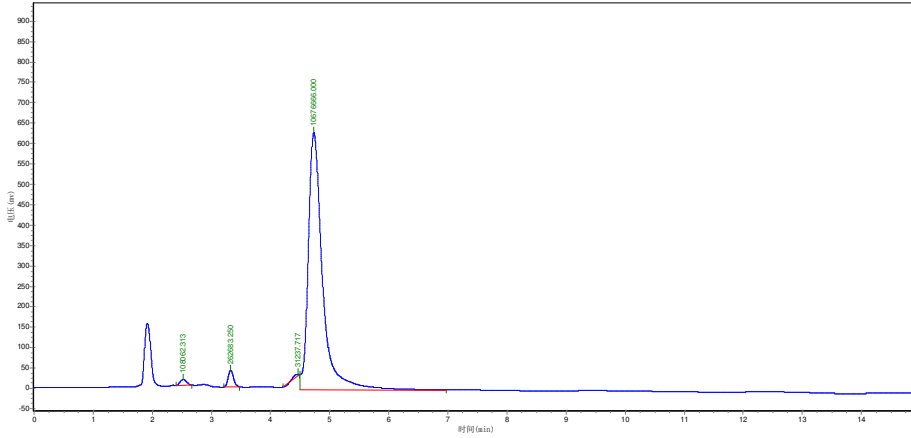


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.298	562206.375	11146001.000	100.0000
Totals		562206.375	11146001.000	100.0000



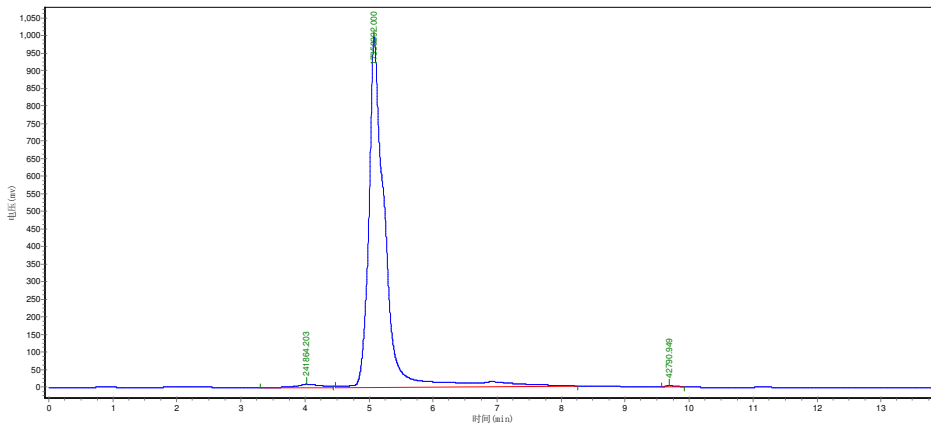
**10c**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0 mL/min)

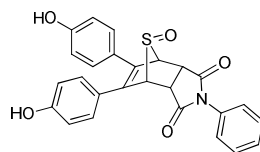


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	2.527	14046.031	108062.313	0.9754
2	3.327	40709.262	262683.250	2.3711
3	4.462	4075.249	31237.717	0.2820
4	4.733	630389.063	10676666.000	96.3716
Totals		689219.605	11078649.280	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7 mL/min)

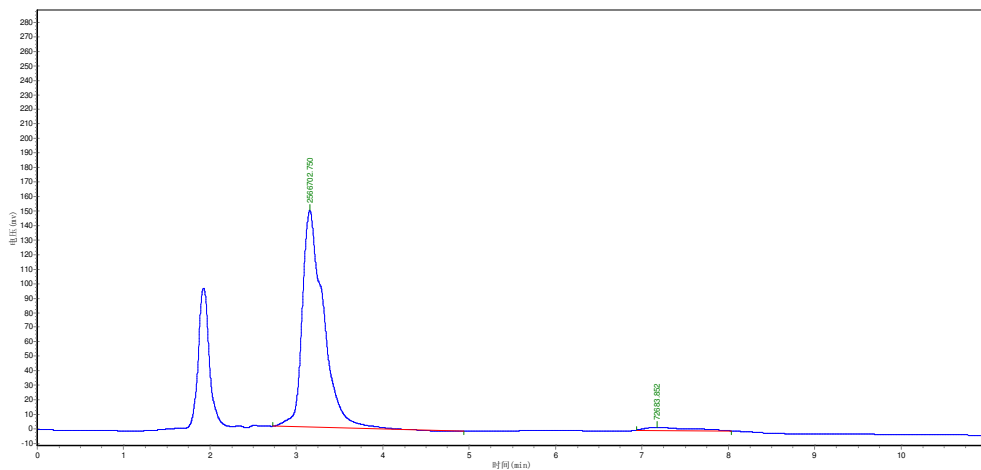


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.025	9228.323	241864.203	1.3715
2	5.082	994293.188	17350292.000	98.3858
3	9.693	4641.698	42790.949	0.2426
Totals		1008163.208	17634947.152	100.0000



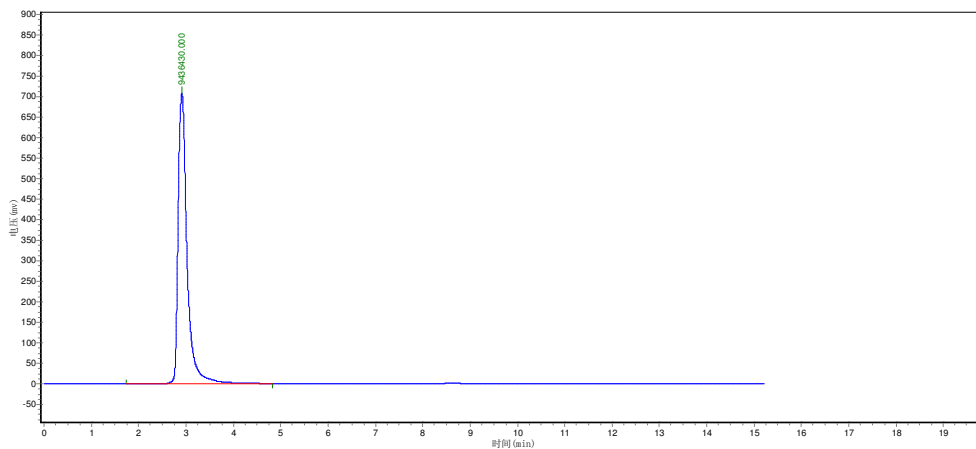
**10d**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0mL/min)

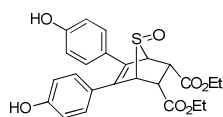


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.153	149212.703	2566702.750	97.2462
2	7.177	2111.507	72683.852	2.7538
Totals		151324.210	2639386.602	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

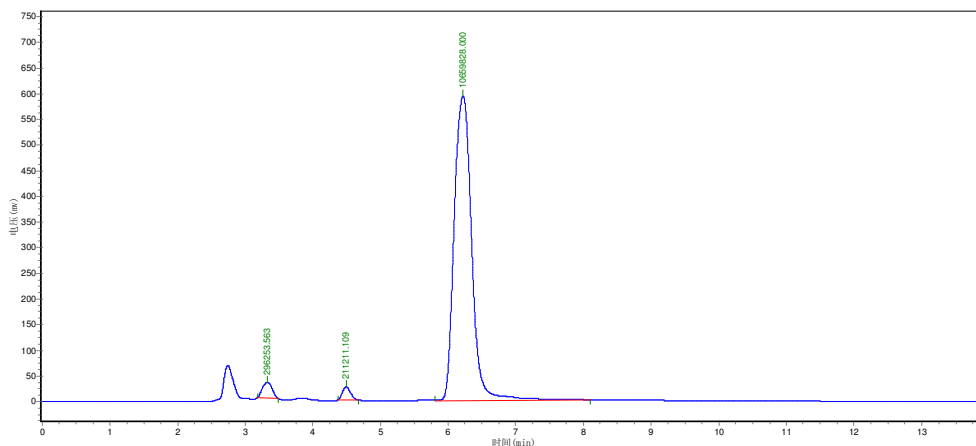


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	2.912	707755.375	9436430.000	100.0000
Totals		707755.375	9436430.000	100.0000



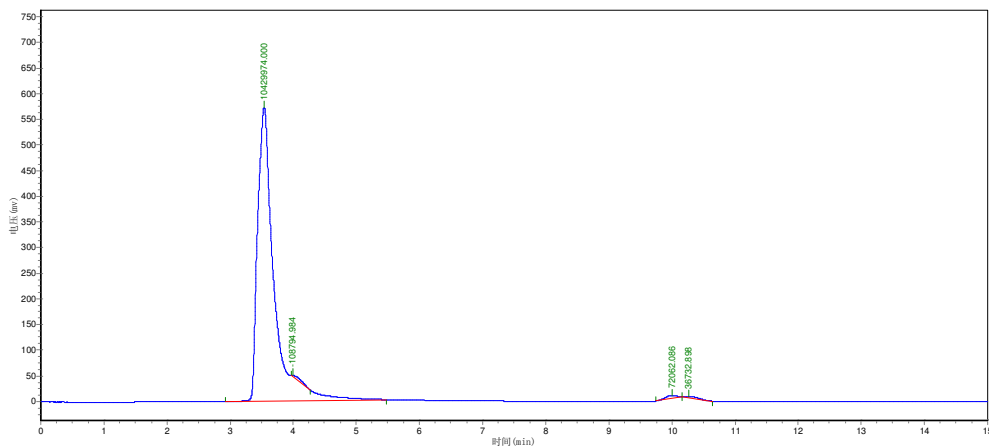
**10e**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

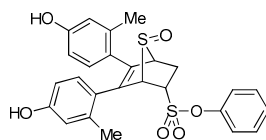


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.328	29694.607	296253.563	2.6529
2	4.492	25298.492	211211.109	1.8913
3	6.220	593967.563	10659828.000	95.4558
Totals		648960.662	11167292.672	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

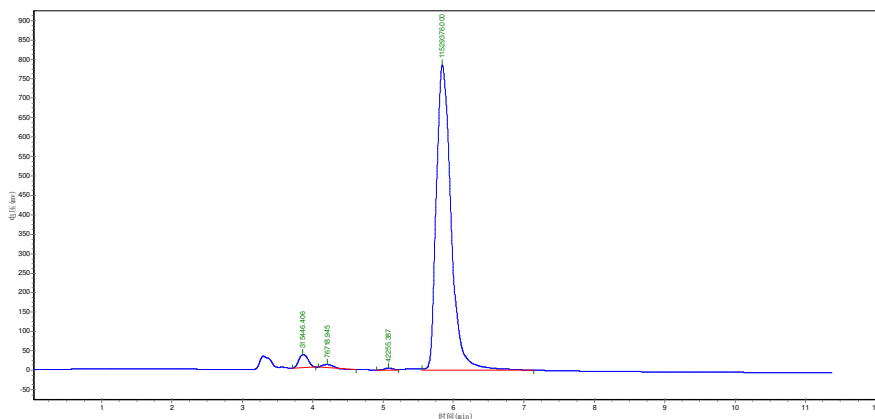


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.538	573014.063	10429974.000	97.9138
2	4.000	2668.095	108794.984	1.0431
3	10.005	5640.492	72062.086	0.6909
4	10.268	2597.481	36732.898	0.3522
Totals		583920.130	10647563.968	100.0000



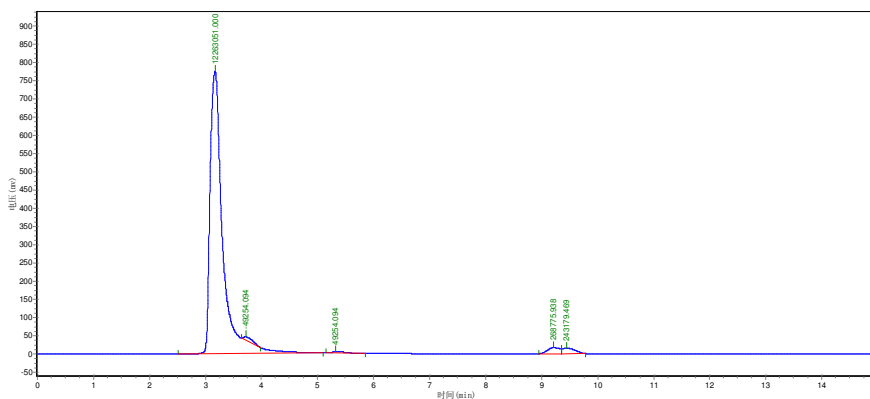
**11a**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)



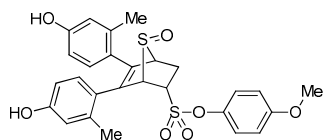
Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.863	34158.789	315446.406	2.6367
2	4.207	8517.787	76718.945	0.6413
3	5.075	4636.987	42255.387	0.3532
4	5.842	785950.000	11529376.000	96.3689
Totals		833263.563	11963796.738	100.0000

Reverse Phase (Method 65:35 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)



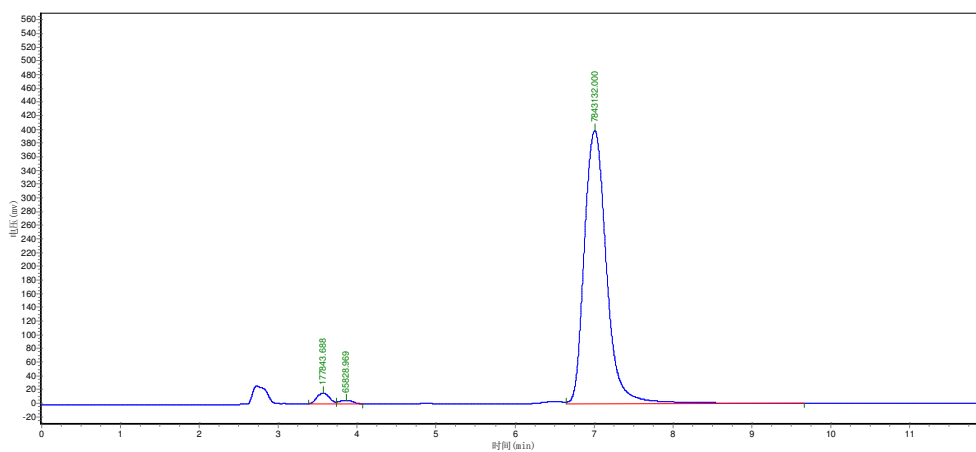
Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.172	776359.625	12263051.000	95.2213
2	3.715	9322.489	49254.094	0.3856
3	5.322	2810.720	49254.094	0.3856
4	9.213	17497.393	268775.938	2.1039
5	9.450	15377.485	243179.469	1.9036
Totals		821367.712	12873514.594	100.0000





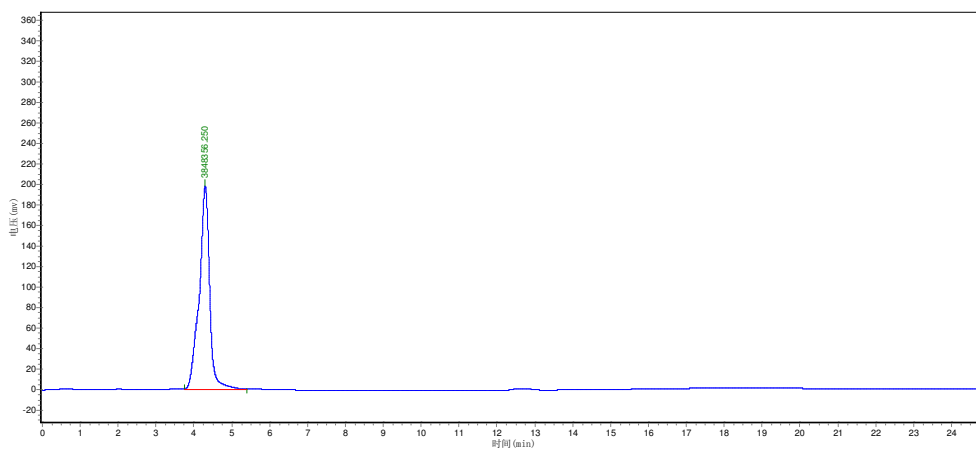
**11b**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

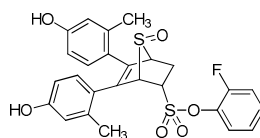


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.572	15734.467	177843.688	2.1992
2	3.862	5132.794	65828.969	0.8140
3	7.012	399461.625	7843132.000	96.9868
Totals		420328.886	8086804.656	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

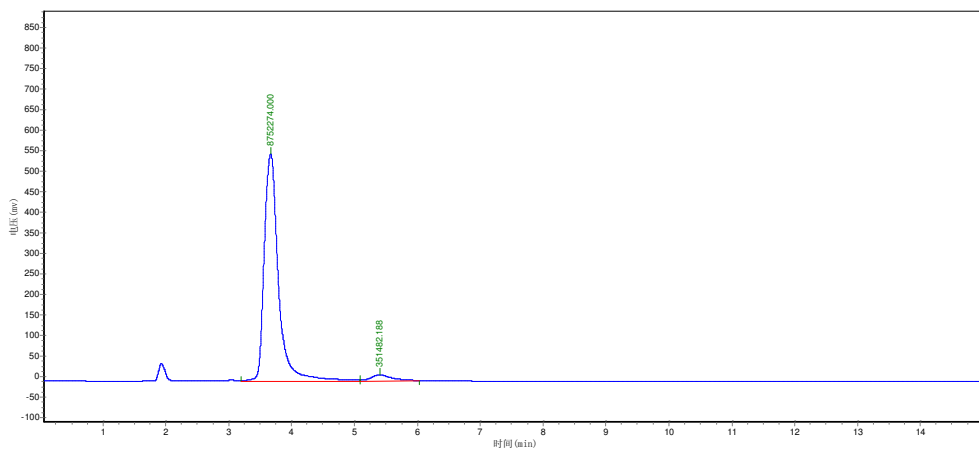


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.298	198462.484	3848356.250	100.0000
Totals		198462.484	3848356.250	100.0000



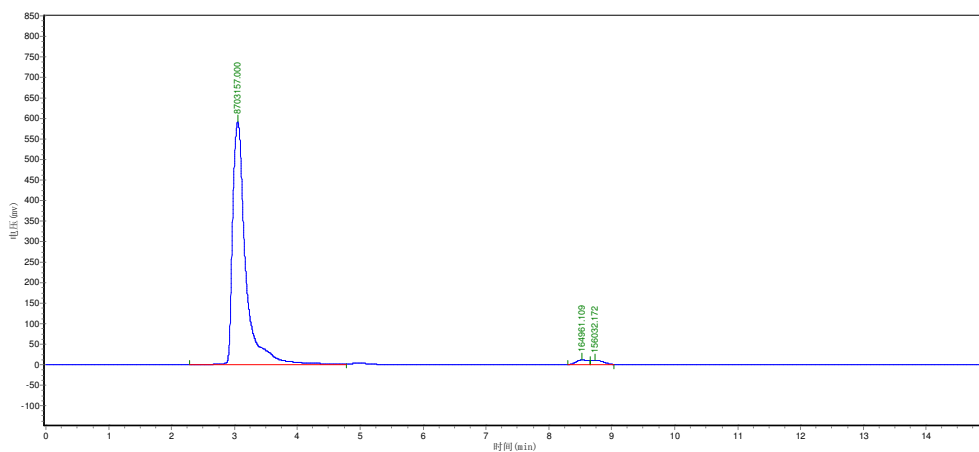
**11c**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0 mL/min)

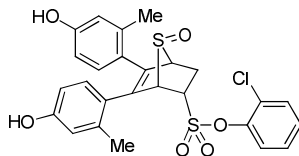


Peak	Ret. Time (min)	Height (mAu)	Area (Mau *s)	Area Percent (%)
1	3.670	554015.125	8752274.000	96.1392
2	5.402	15181.188	351482.188	3.8608
Totals		569196.313	9103756.188	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

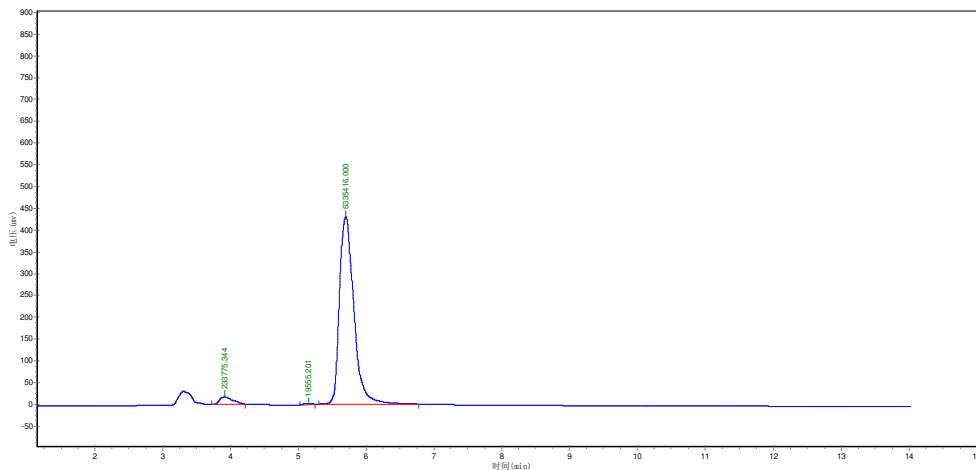


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.055	591818.125	8703157.000	96.4430
2	8.530	11778.706	164961.109	1.8280
3	8.738	10944.895	156032.172	1.7291
Totals		614541.726	9024150.281	100.0000



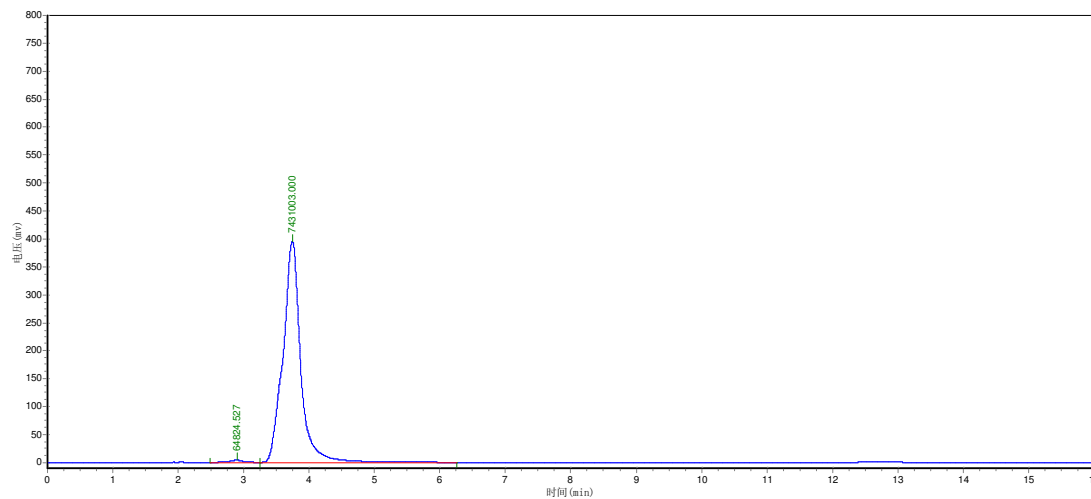
**11d**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

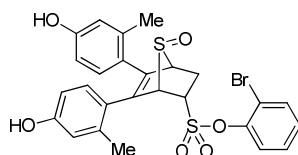


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.913	17497.559	233775.344	3.5481
2	5.152	2668.775	19555.201	0.2968
3	5.700	430385.375	6335416.000	96.1551
Totals		450551.709	6588746.545	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

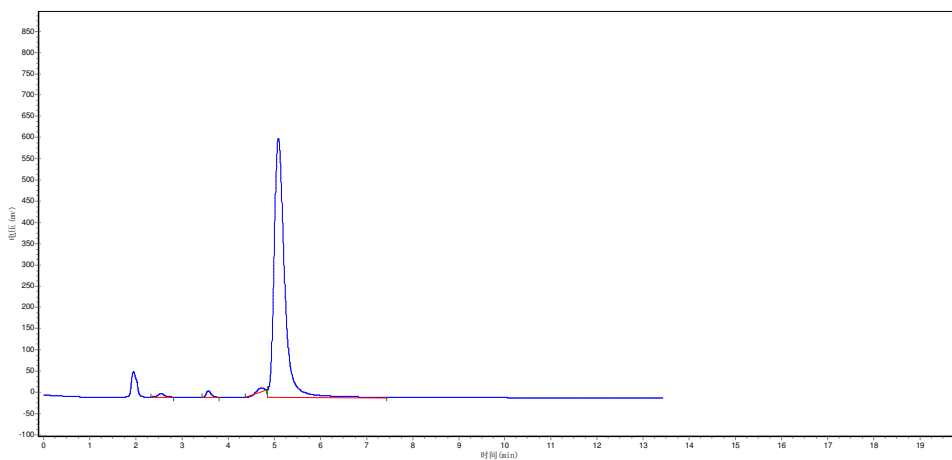


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	2.897	4179.611	64824.527	0.8648
2	3.743	395186.625	7431003.000	99.1352
Totals		399366.236	7495827.527	100.0000



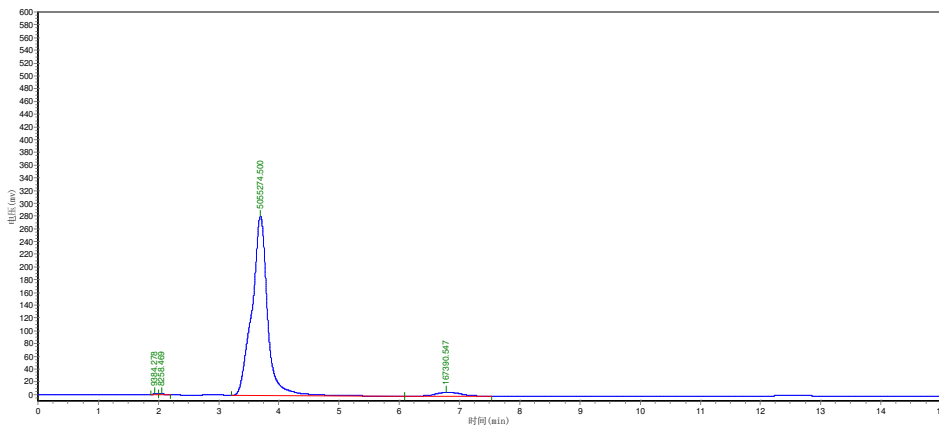
**11e**

Normal Phase (Method 55:45 EtOAc:Hex, Flow rate 1.0mL/min)

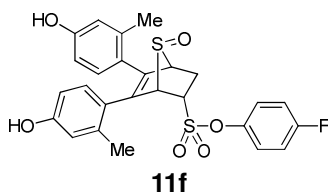


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	2.547	8740.408	85644.305	0.8642
2	3.575	15680.849	115524.320	1.1657
3	4.725	8794.325	80579.898	0.8131
4	5.090	609059.375	9628617.000	97.1570
Totals		642274.957	9910365.523	100.0000

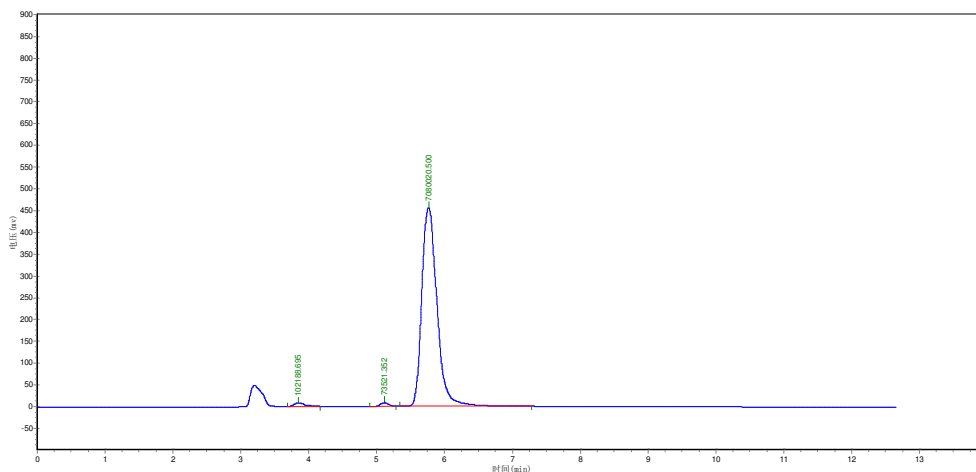
Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)



Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	1.943	1769.980	9384.278	0.1791
2	2.053	1431.911	8258.469	0.1576
3	3.697	280972.094	5055274.500	96.4690
4	6.777	5768.661	167390.547	3.1943
Totals		289942.646	5240307.794	100.0000

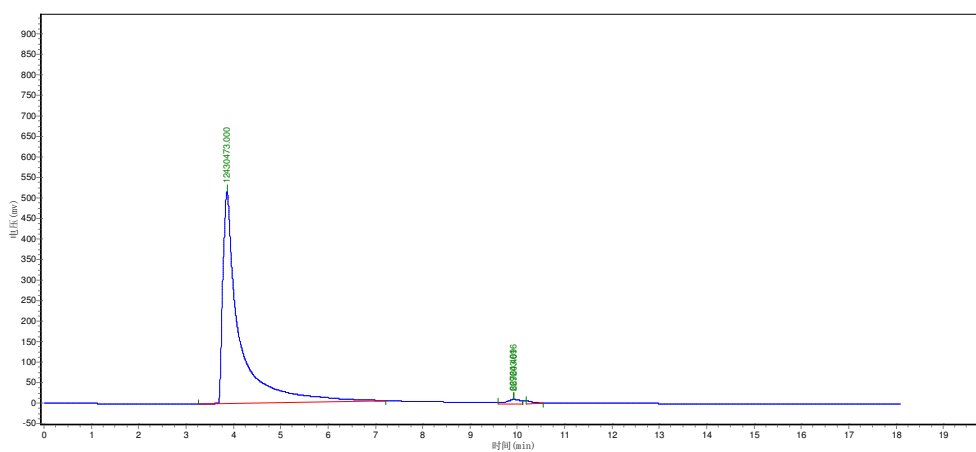


Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

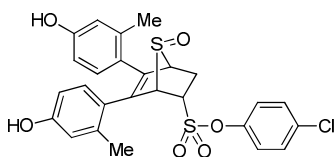


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.850	8503.345	102188.695	1.4084
2	5.117	8744.025	73521.352	1.0133
3	5.767	455840.344	7080020.500	97.5783
Totals		473087.714	7255730.547	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

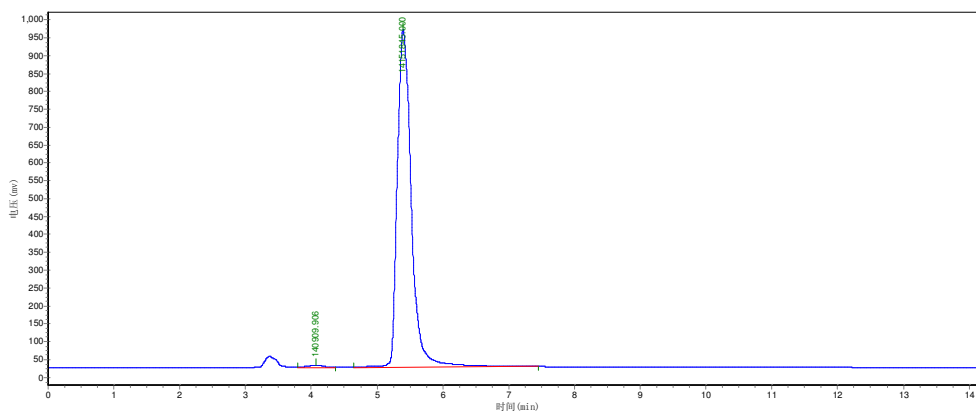


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.863	515951.469	12430473.000	97.6714
2	9.928	11352.054	229643.016	1.8044
3	9.928	9671.539	66720.469	0.5243
Totals		536975.062	12726836.484	100.0000



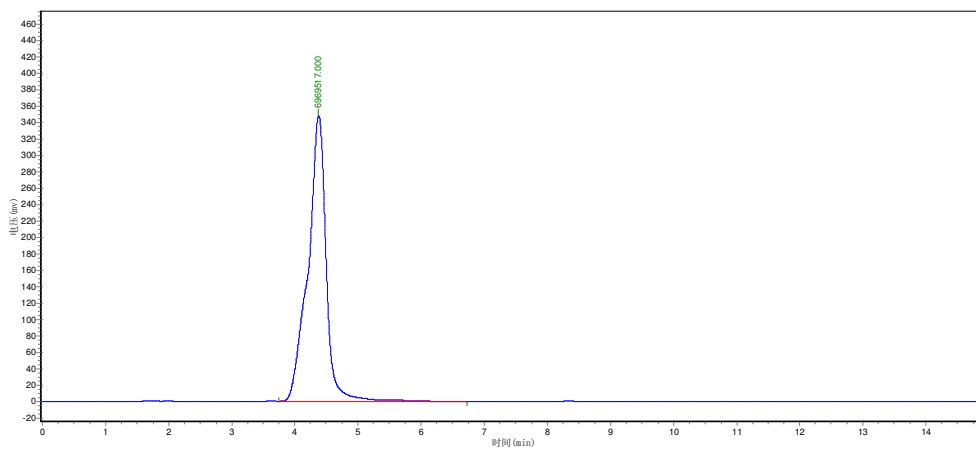
**11g**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

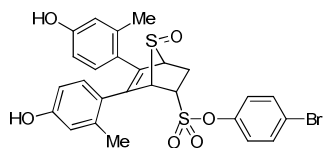


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.067	6637.253	140909.906	0.9725
2	5.395	946908.500	14348390.000	99.0275
Totals		953545.753	14489299.906	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

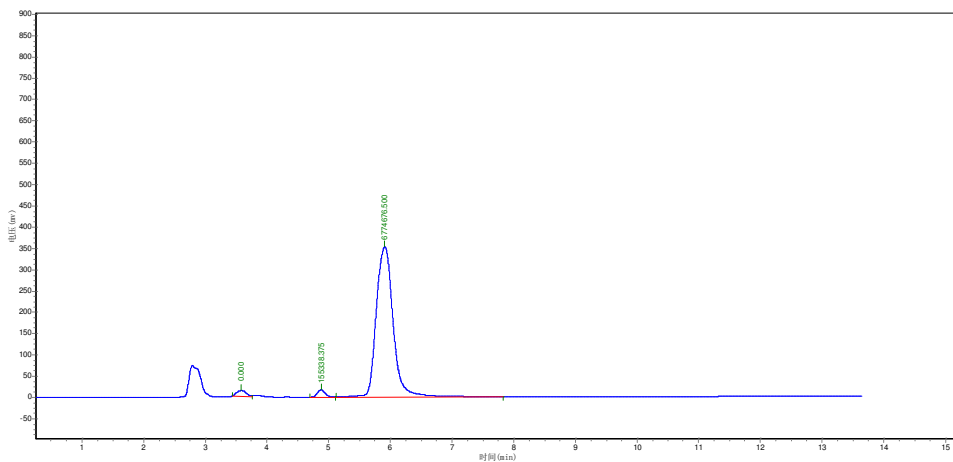


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.377	347950.750	6969517.000	100.0000
Totals		347950.750	6969517.000	100.0000



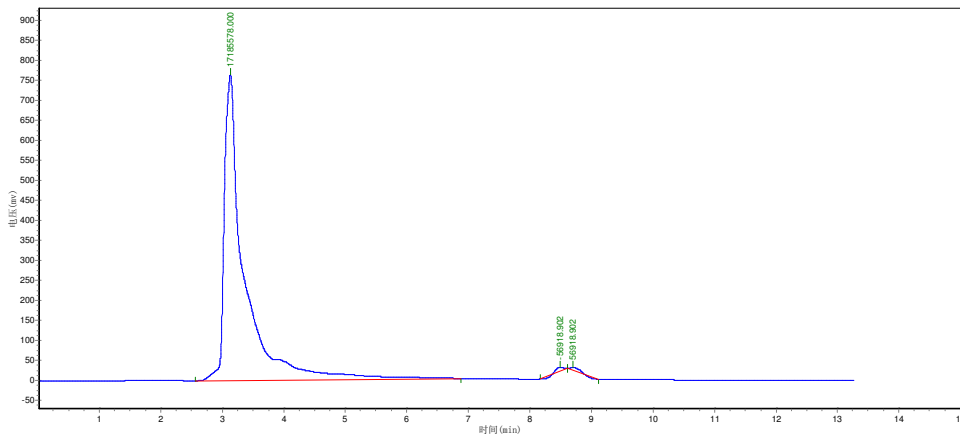
**11h**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7 mL/min)

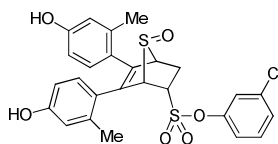


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.587	13225.173	3772.897	0.0544
2	3.833	915.414	3772.897	0.0544
3	4.878	17200.463	155338.375	2.2415
4	5.912	353087.750	6774676.500	97.6497
Totals		384428.800	6937560.669	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0 mL/min)

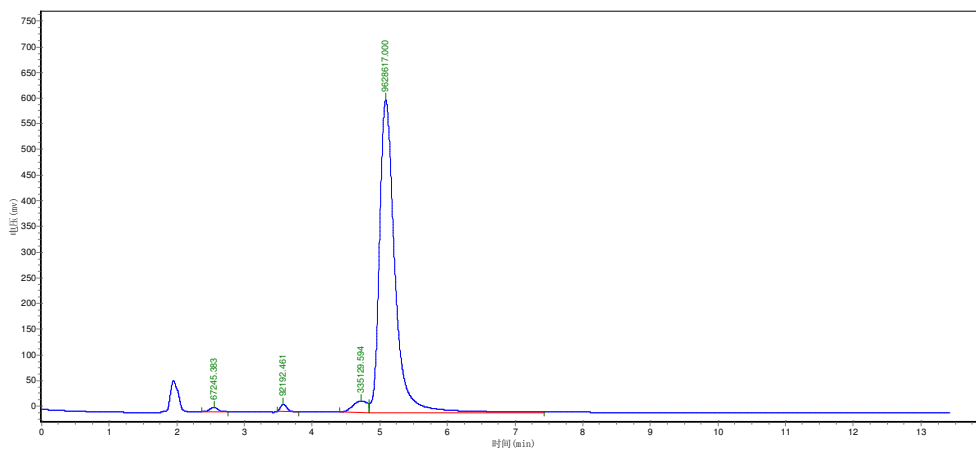


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.133	764344.813	17185578.000	99.3376
2	8.498	10527.901	56918.902	0.3312
3	8.705	7292.046	56918.902	0.3312
Totals		782164.760	17299415.804	100.0000



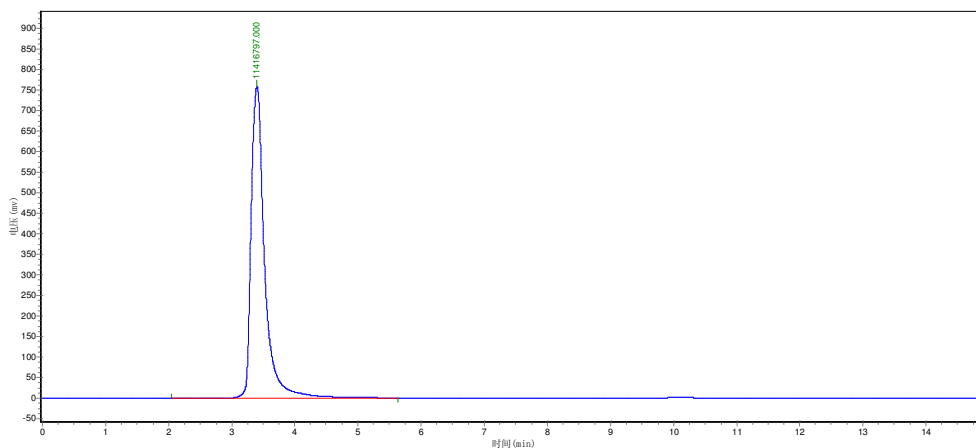
**11i**

Normal Phase (Method 60:40 EtOAc:Hex, Flow rate 1.0mL/min)



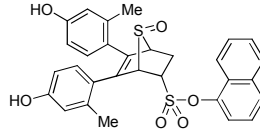
Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	2.547	8046.525	67245.383	0.6643
2	3.575	14099.784	92192.461	0.9107
3	4.725	22076.152	335129.594	3.3105
4	5.090	609059.375	9628617.000	95.1145
Totals		653281.836	10123184.438	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)



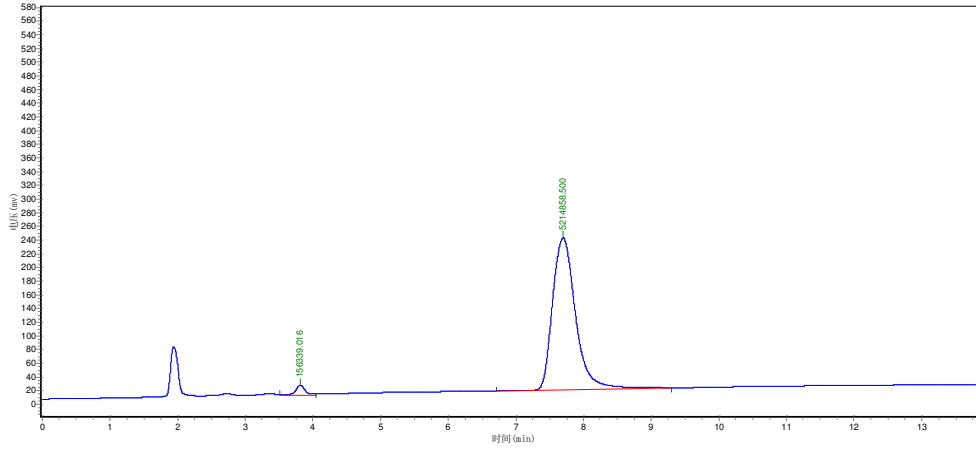
Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.400	759487.313	11416797.000	100.0000
Totals		759487.313	11416797.000	100.0000





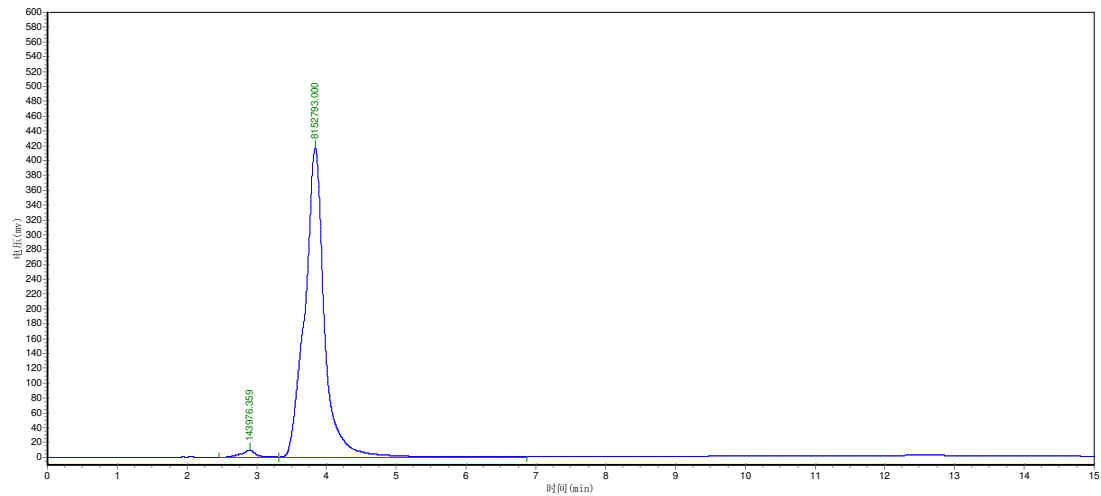
**11j**

Normal Phase (Method 60:40 EtOAc:Hex, Flow rate 1.0mL/min)

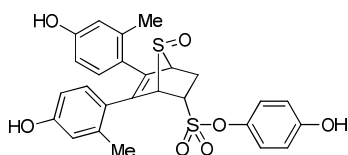


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.813	14316.037	156339.016	2.9107
2	7.700	221563.219	5214858.500	97.0893
Totals		235879.256	5371197.516	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

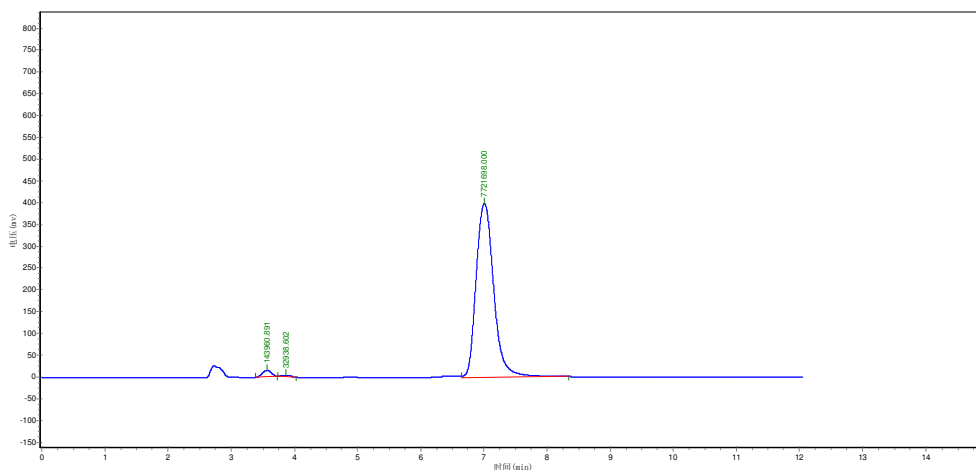


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	2.895	9926.755	143976.359	1.7353
2	3.838	417120.344	8152793.000	98.2647
Totals		294626.981	8234641.879	100.0000



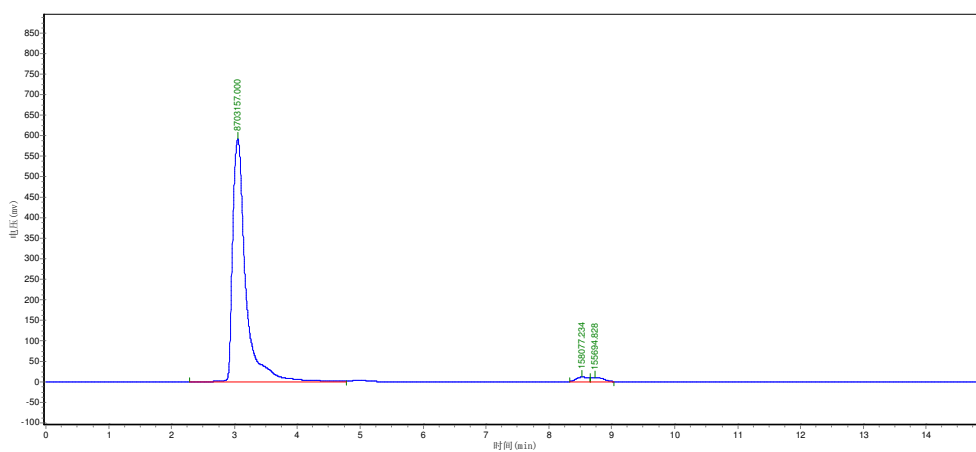
**11k**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

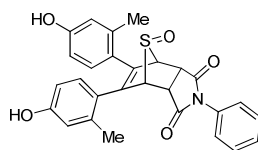


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.572	13999.131	143960.891	1.8226
2	3.862	3143.747	32938.602	0.4170
3	7.012	399141.750	7721698.000	97.7604
Totals		416284.628	7898597.493	100.0000

Reverse Phase (Method 65:35 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

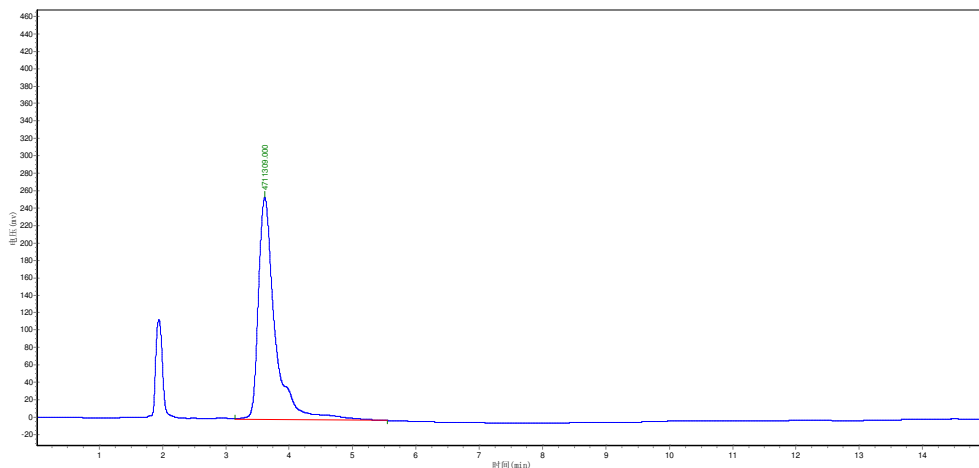


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.055	591818.125	8703157.000	96.5202
2	8.530	11524.939	158077.234	1.7531
3	8.738	10938.483	155694.828	1.7267
Totals		614281.548	9016929.063	100.0000



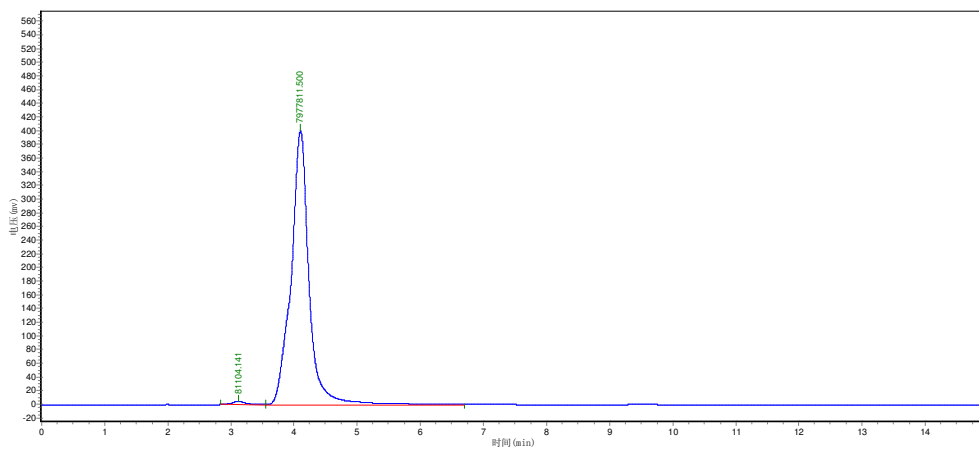
**111**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0mL/min)

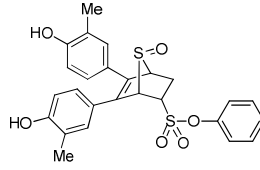


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.613	255048.875	4711309.000	100.0000
Totals		255048.875	4711309.000	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

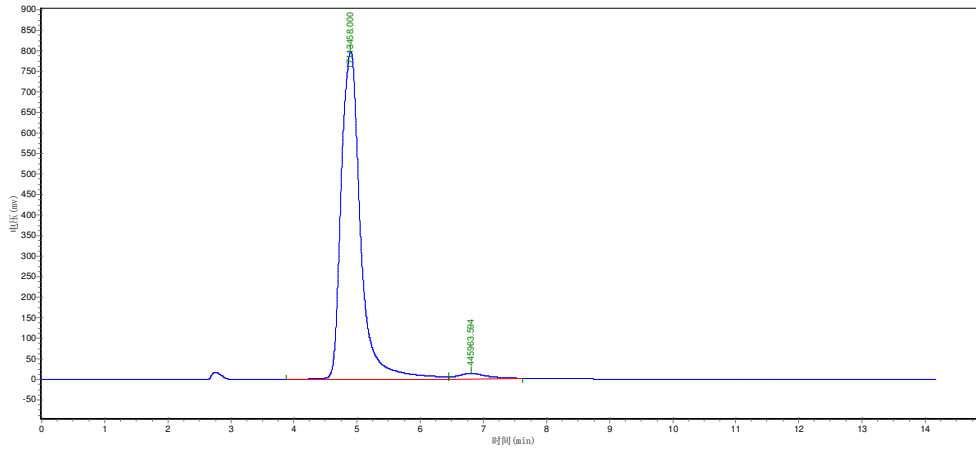


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.117	4689.180	81104.141	1.0064
2	4.102	400563.563	7977811.500	98.9936
Totals		405252.742	8058915.641	100.0000



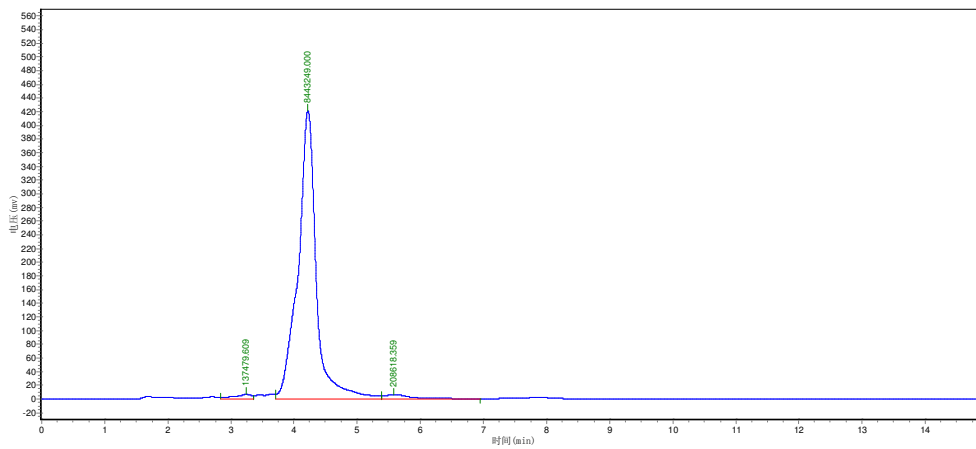
**12a**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

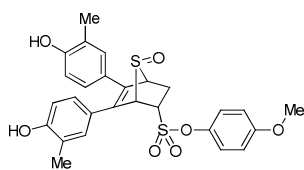


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.898	798737.875	17113458.000	97.4603
2	6.810	13776.256	445963.594	2.5397
Totals		812514.131	17559421.594	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

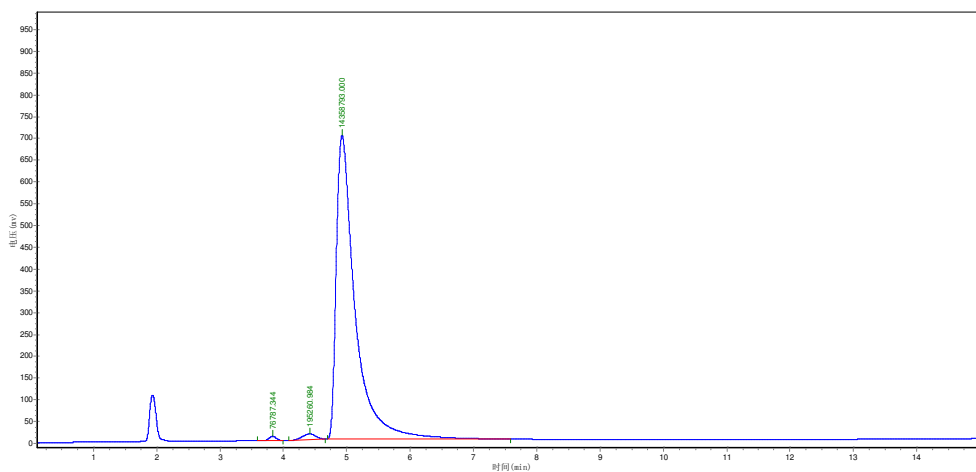


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.235	6891.063	137479.609	1.5642
2	4.220	421406.906	8443249.000	96.0623
3	5.577	5857.371	208618.359	2.3735
Totals		434155.339	8789346.969	100.0000



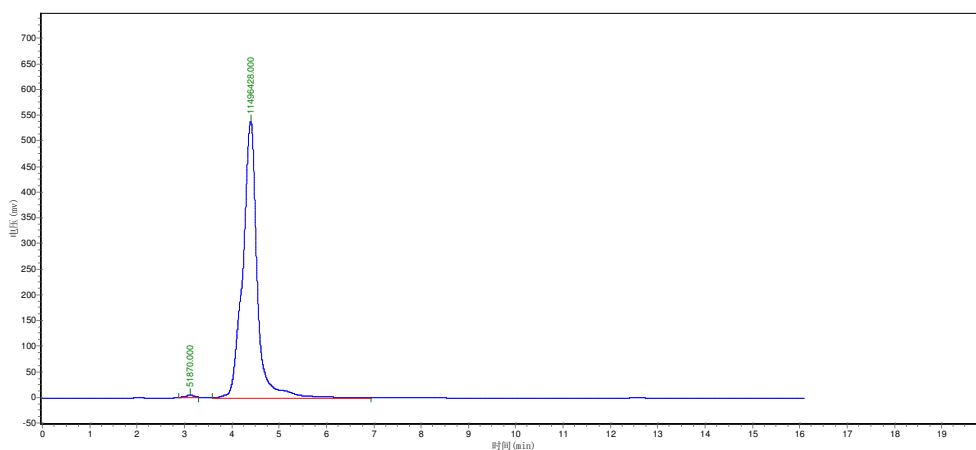
**12b**

Normal Phase (Method 40:60 EtOAc:Hex, Flow rate 1.0mL/min)

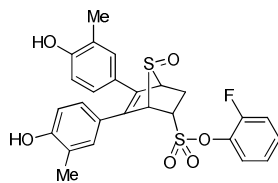


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.828	9588.650	76787.344	0.5248
2	4.415	13315.942	195260.984	1.3346
3	4.927	696633.438	14358793.000	98.1406
Totals		719538.030	14630841.328	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

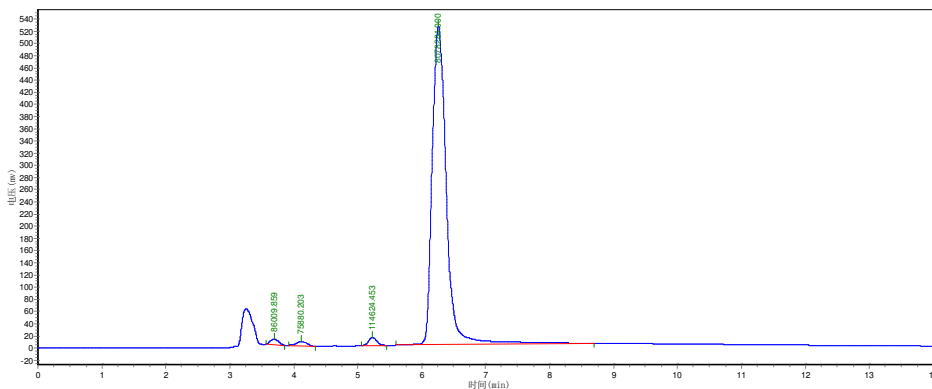


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.120	4602.833	51870.000	0.4492
2	4.398	538291.938	11496428.000	99.5508
Totals		542894.771	11548296.000	100.0000



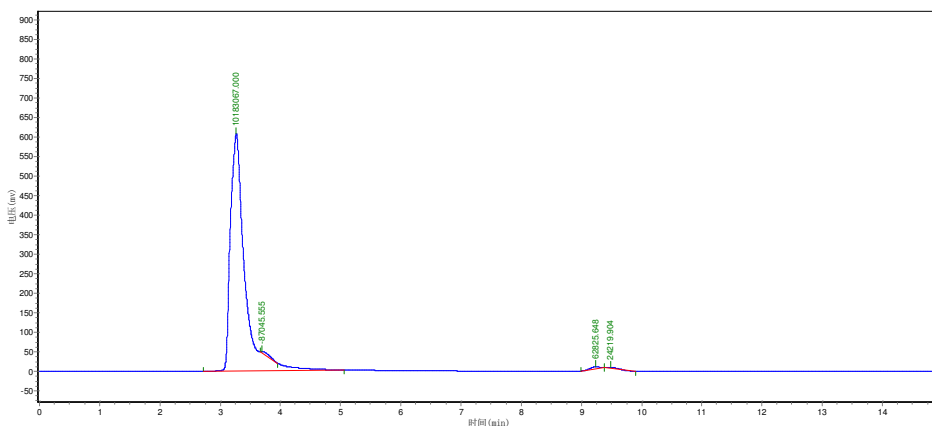
**12c**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

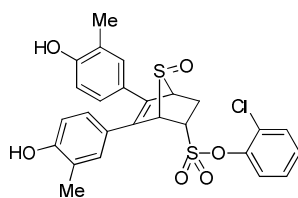


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.697	9460.989	86009.859	1.0295
2	4.117	6714.487	75880.203	0.9082
3	5.233	12825.291	114624.453	1.3720
4	6.262	523905.344	8078284.000	96.6904
Totals		552906.111	8354798.516	100.0000

Reverse Phase (Method 65:35 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

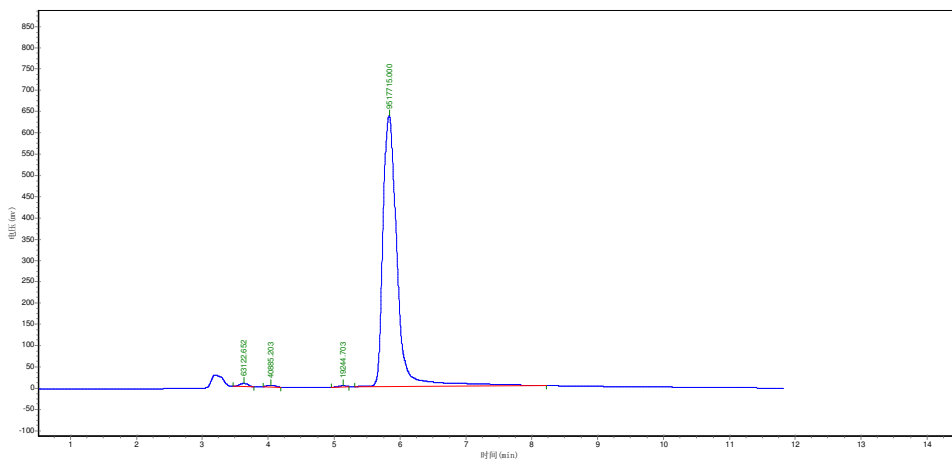


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.270	607873.125	10183067.000	98.2904
2	3.698	3729.721	87045.555	0.8548
3	9.242	5457.319	62825.648	0.6170
4	9.482	2474.740	24219.904	0.2378
Totals		619354.906	10357158.108	100.0000



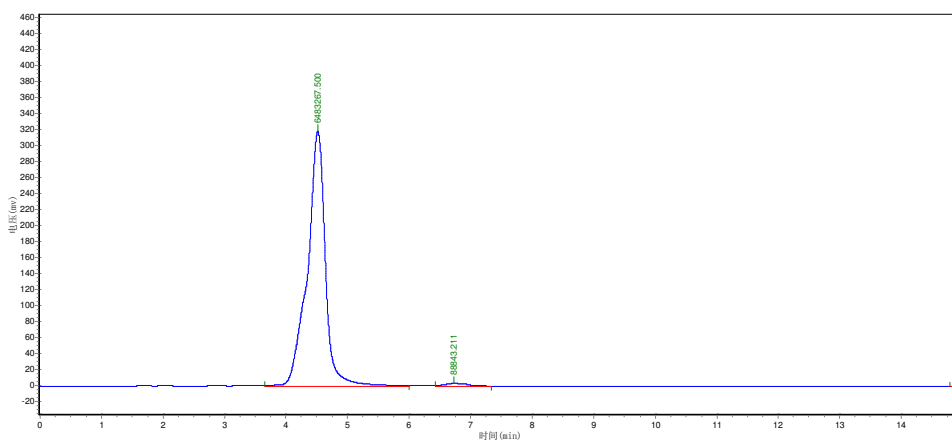
**12d**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

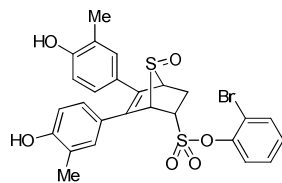


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.628	6923.989	63122.652	0.6547
2	4.037	4315.198	40885.203	0.4241
3	5.142	2632.998	19244.703	0.1996
4	5.837	636269.813	9517715.000	98.7216
Totals		650141.998	9640967.558	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

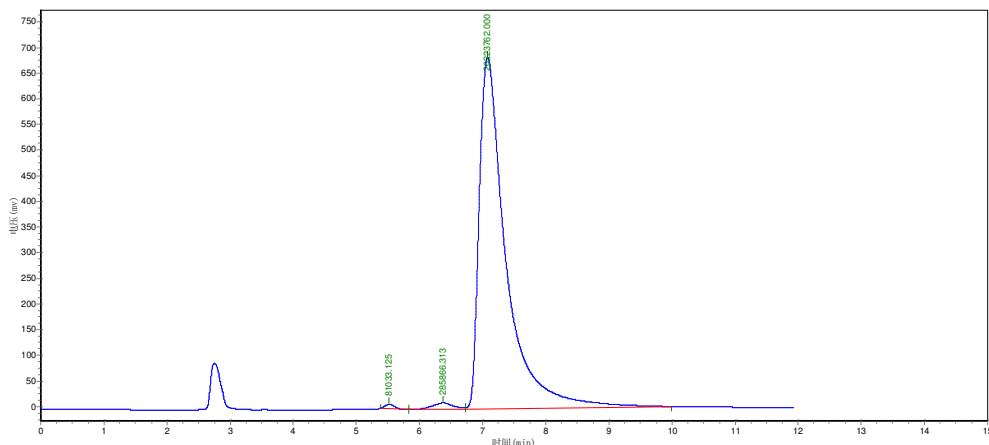


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.515	318515.125	6483267.500	98.6482
2	6.732	3481.786	88843.211	1.3518
Totals		321996.911	6572110.711	100.0000



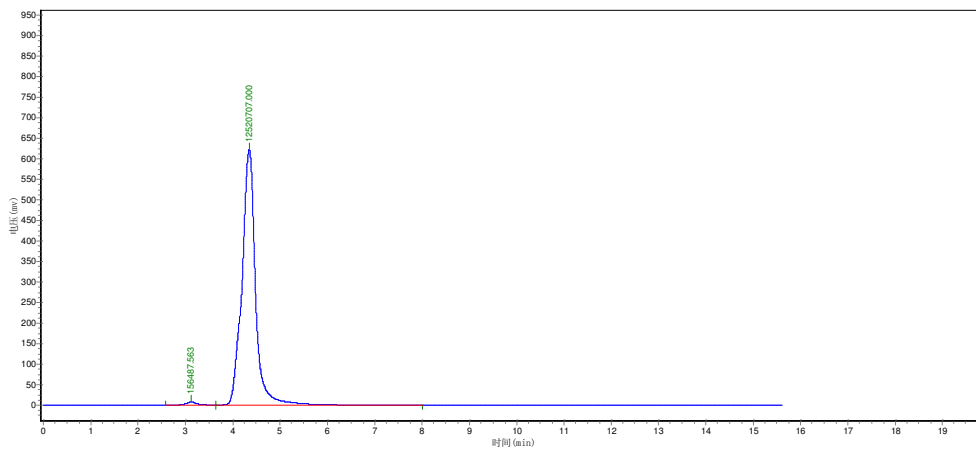
**12e**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)



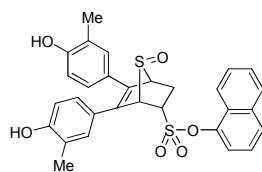
Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	5.520	8123.751	81033.125	0.3935
2	6.375	12316.578	285866.313	1.3883
3	7.080	683750.938	20223762.000	98.2181
Totals		704191.267	20590661.438	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)



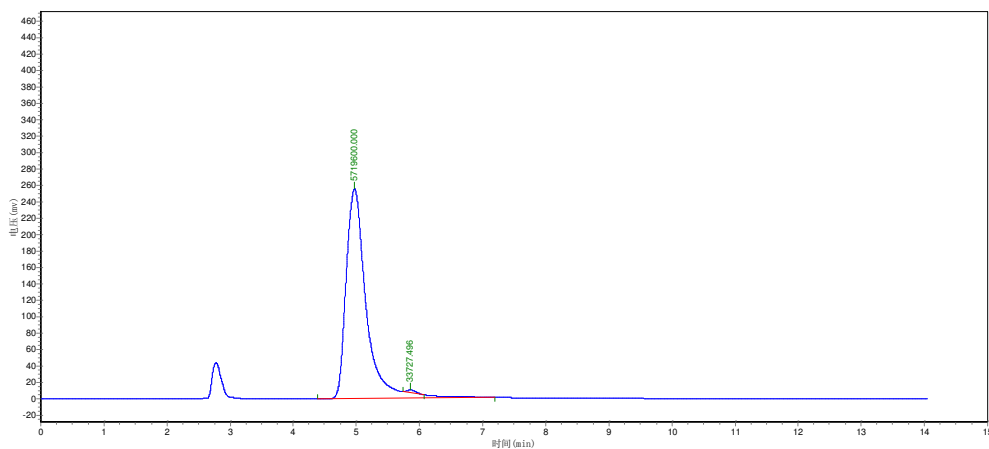
Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.125	8604.837	156487.563	1.2344
2	4.352	623065.313	12520707.000	98.7656
Totals		631670.149	12677194.563	100.0000





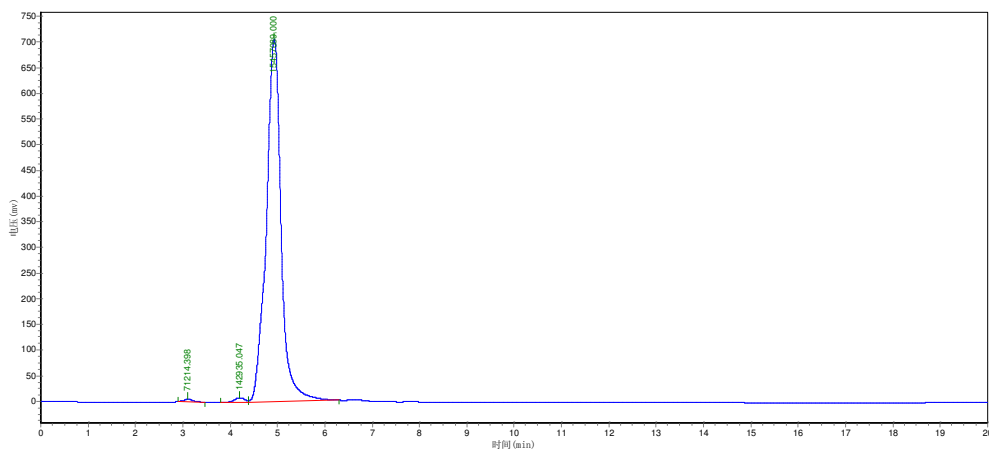
**12f**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

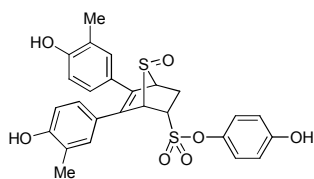


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	4.972	255511.906	5719600.000	99.4138
2	5.858	3350.983	33727.496	0.5862
Totals		258862.889	5753327.496	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7mL/min)

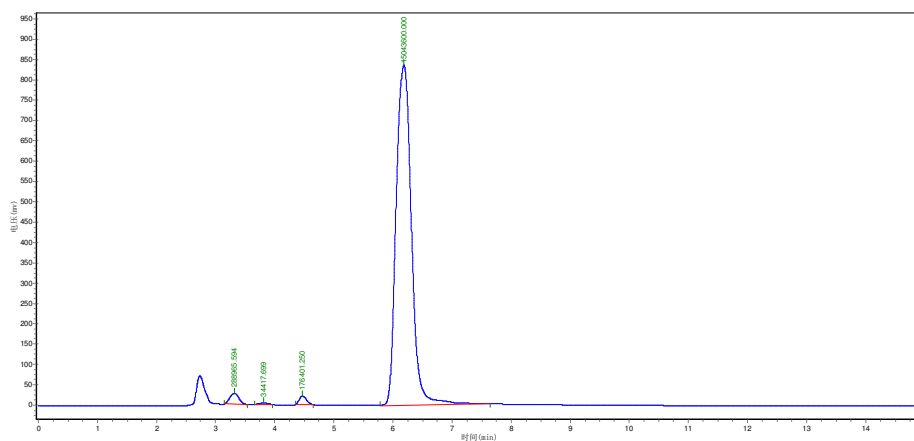


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.110	5670.439	71214.398	0.4544
2	4.205	8825.743	142935.047	0.9121
3	4.932	706738.875	15457089.000	98.6335
Totals		721235.057	15671238.445	100.0000



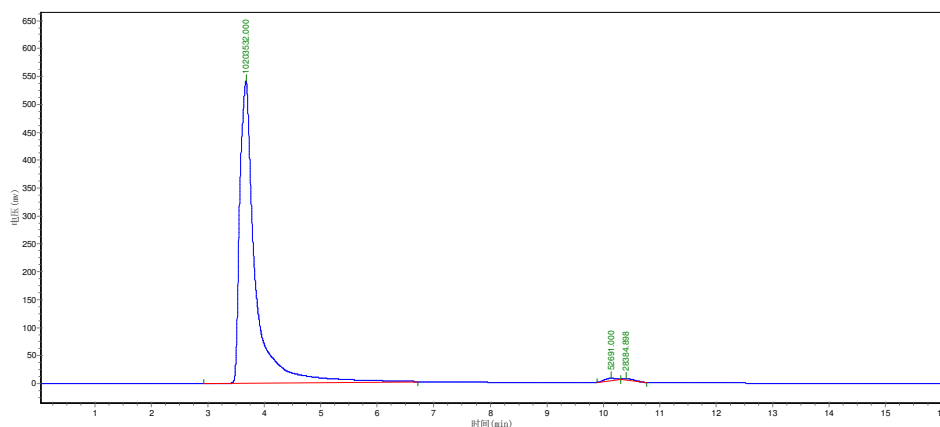
**12g**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7mL/min)

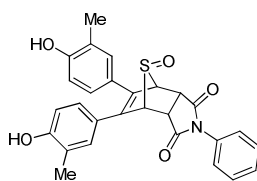


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.320	27025.043	288965.594	1.8591
2	3.813	3056.824	34417.699	0.2214
3	4.473	21144.994	176401.250	1.1349
4	6.187	837201.688	15043600.000	96.7846
Totals		888428.549	15543384.543	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0mL/min)

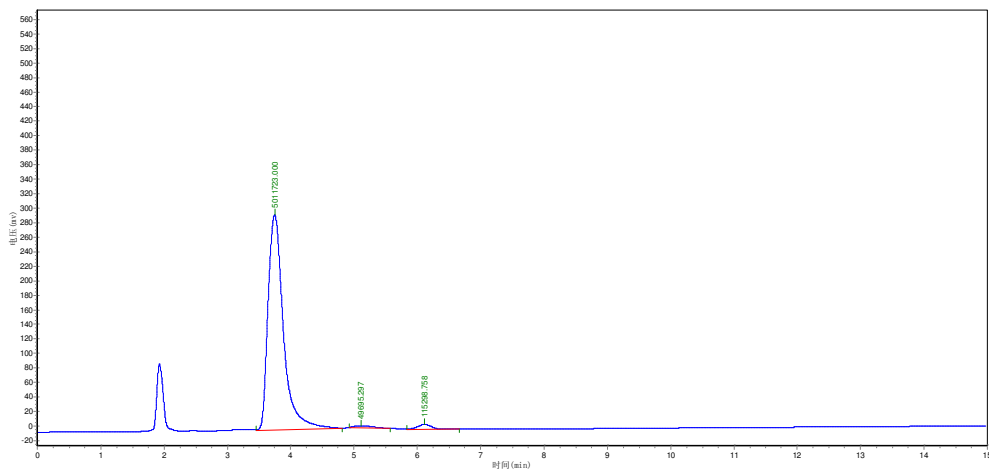


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.672	541909.625	10203532.000	99.2117
2	10.140	4117.536	52691.000	0.5123
3	10.412	1916.236	28384.898	0.2760
Totals		547943.397	10284607.898	100.0000



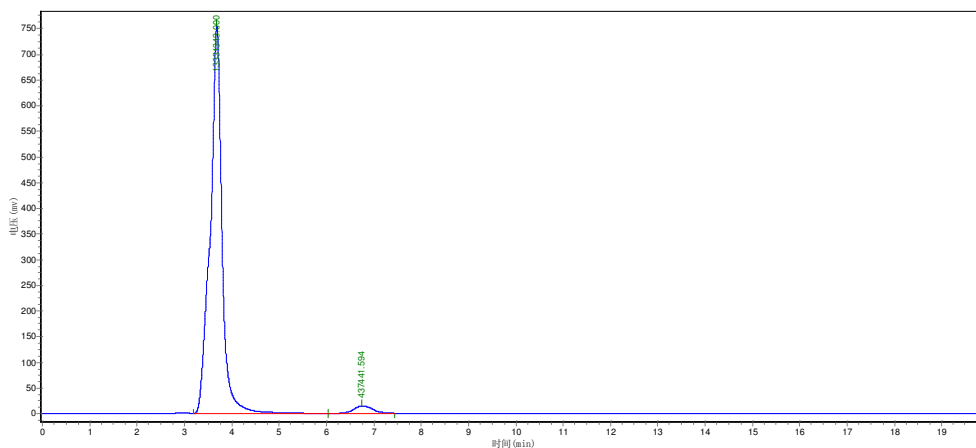
**12h**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0 mL/min)

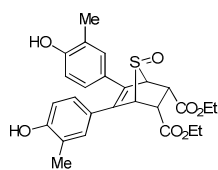


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.748	296715.875	5011723.000	96.8128
2	5.108	2479.886	49695.297	0.9600
3	6.117	6976.034	115298.758	2.2273
Totals		306171.795	5176717.055	100.0000

Reverse Phase (Method 70:30 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 0.7 mL/min)

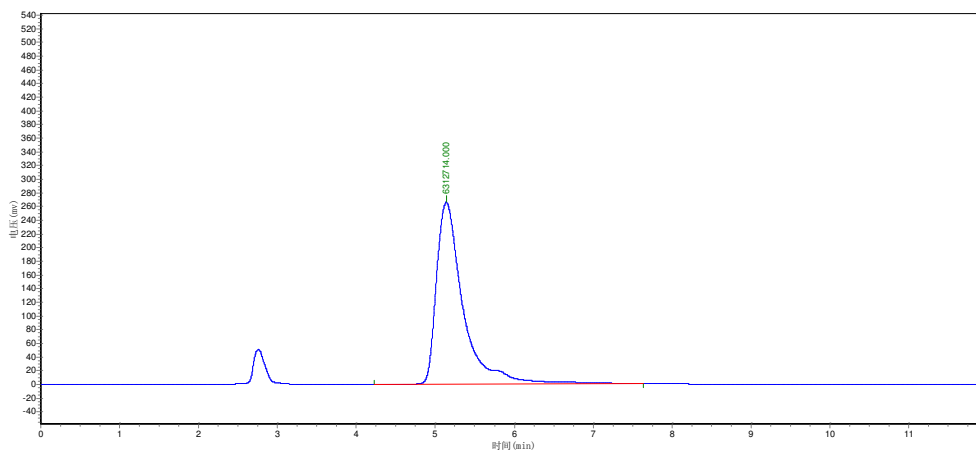


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.683	755397.813	13331343.000	96.8229
2	6.747	14299.833	437441.594	3.1771
Totals		769697.646	13768784.594	100.0000



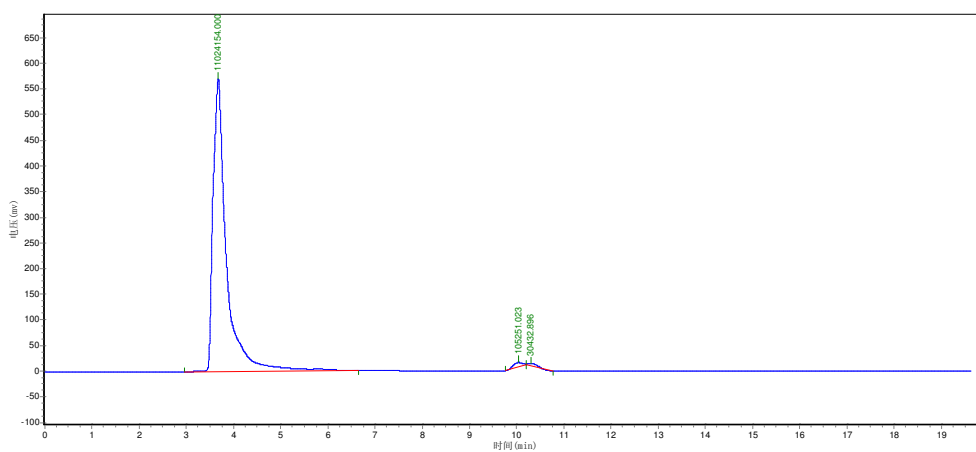
**12i**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 0.7 mL/min)

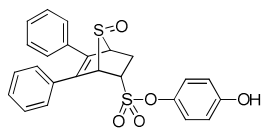


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	5.140	266199.063	6312714.000	100.0000
Totals		266199.063	6312714.000	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0 mL/min)

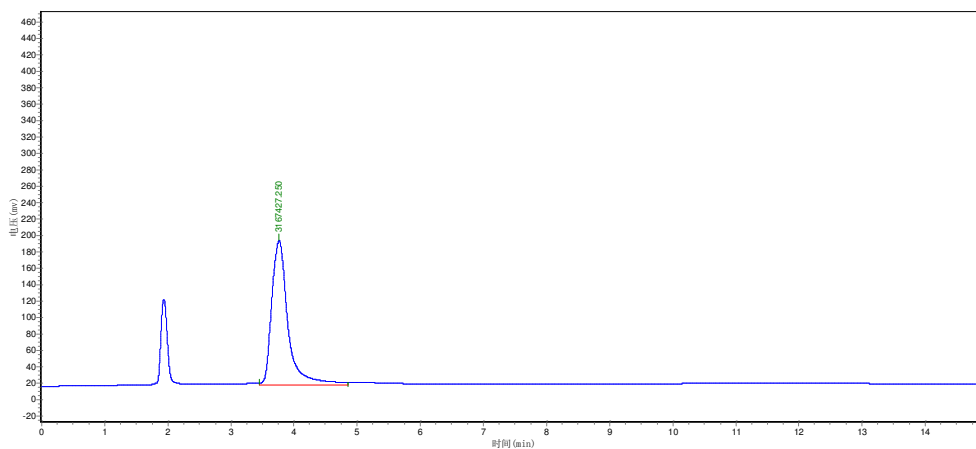


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.677	569771.688	11024154.000	98.7842
2	10.043	8281.521	105251.023	0.9431
3	10.312	3528.286	30432.896	0.2727
Totals		581581.495	11159837.920	100.0000



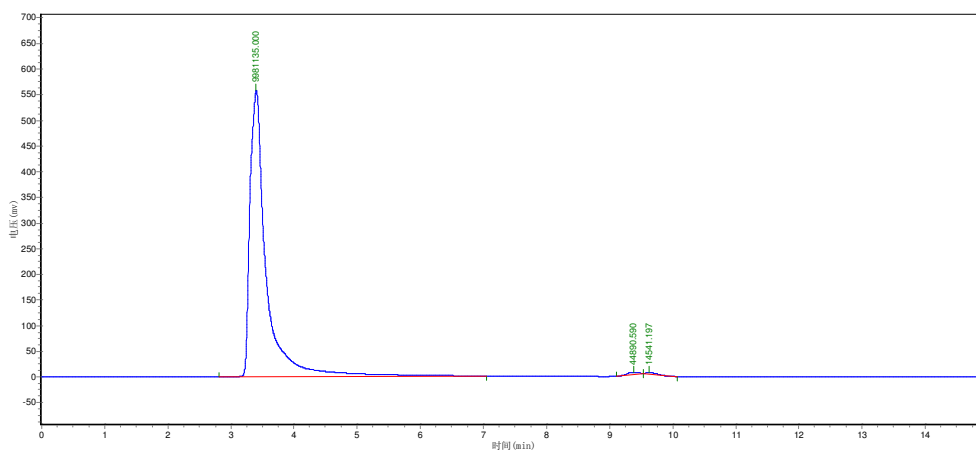
**13**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0 mL/min)

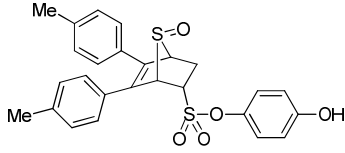


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.763	175996.281	3167427.250	100.0000
Totals		175996.281	3167427.250	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0 mL/min)

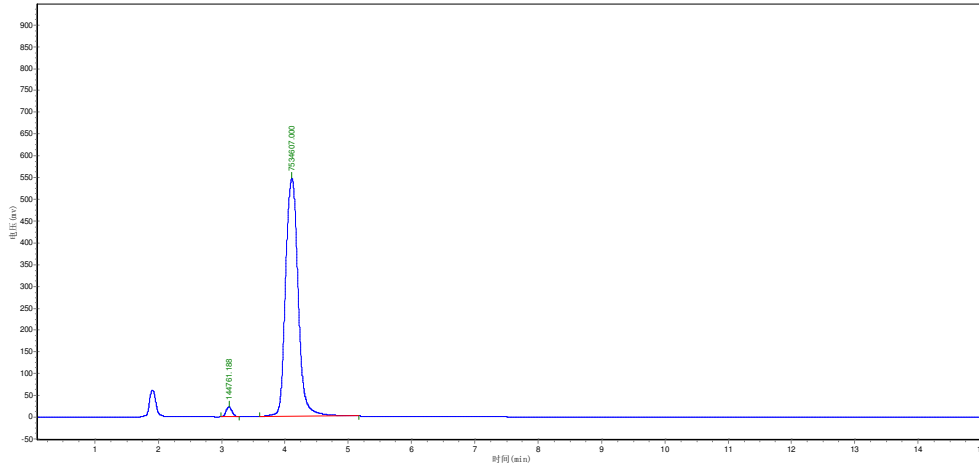


Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.402	557744.313	9981135.000	99.4081
2	9.378	3853.167	44890.590	0.4471
3	9.633	1775.909	14541.197	0.1448
Totals		563373.389	10040566.787	100.0000



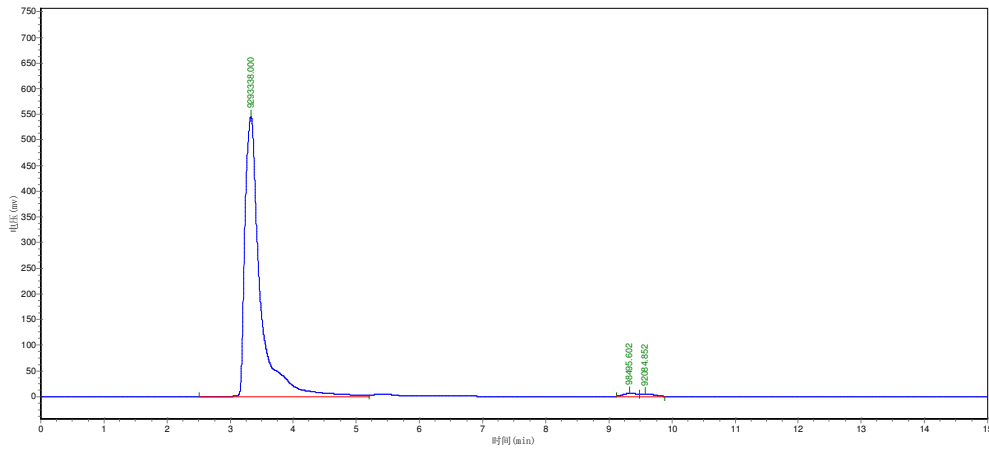
**14**

Normal Phase (Method 50:50 EtOAc:Hex, Flow rate 1.0 mL/min)



Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.115	22387.133	144761.188	1.8851
2	4.112	545852.000	7534607.000	98.1149
Totals		568239.133	7679368.188	100.0000

Reverse Phase (Method 60:40 CH<sub>3</sub>CN:H<sub>2</sub>O, Flow rate 1.0 mL/min)



Peak	Ret. Time (min)	Height (mAu)	Area (Mau*s)	Area Percent (%)
1	3.328	545421.375	9293338.000	97.9905
2	9.333	6518.988	98495.602	1.0386
3	9.580	5856.431	92084.852	0.9710
Totals		557796.793	9483918.453	100.0000