

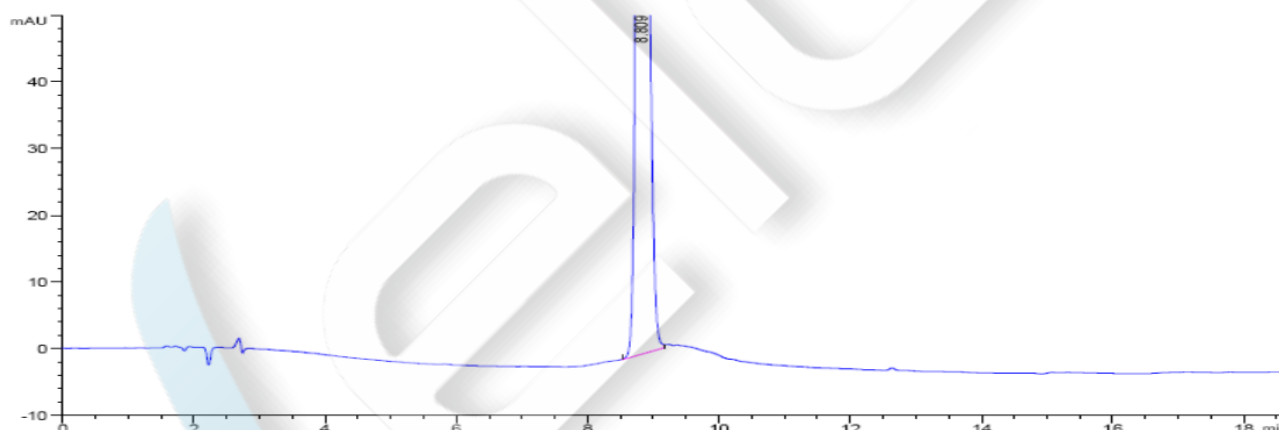
### 6-APA(6-Aminopenicillanic Acid)

**Method:**

Column	Ultisil ALK C18, 5µm, 4.6×150mm (P/N 00253-31041)
Mobile Phase	Gradient: buffer solution; acetonitrile
Detection	220nm
Temperature	30°C
Flow Rate	1.0ml/min
Injection Volume	10ul
Note	/

**Chromatogram and Data:**

Ultisil AQ-C18, 5µm, 4.6×150mm, Sample: high-ratio impurity reference

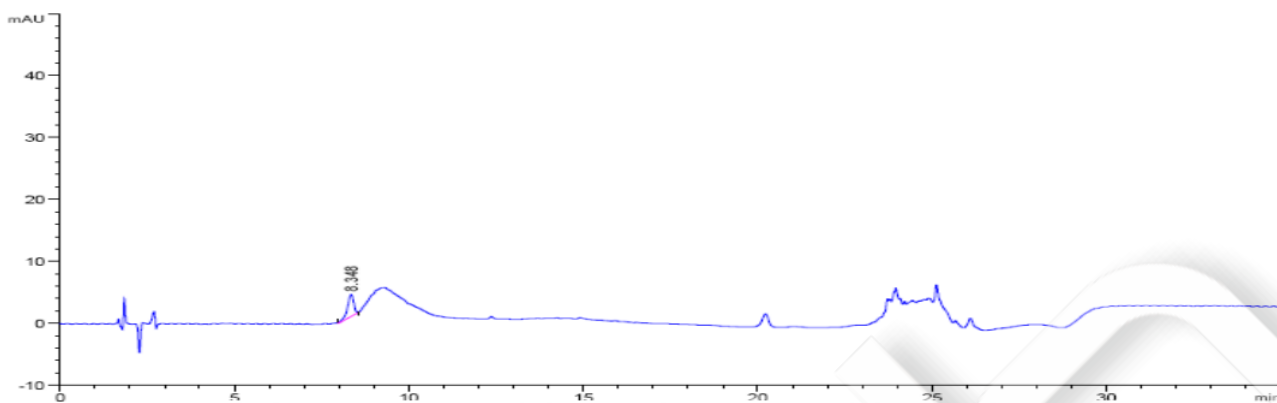


#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	8.809	MM R	0.1816	1948.25049	178.84999	100.0000

Ultisil LP-C18, 5µm, 4.6×150mm

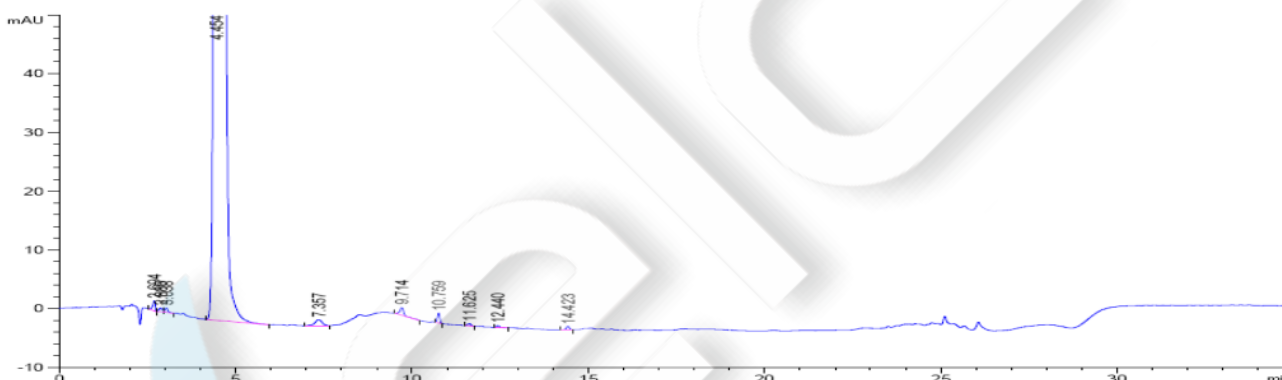
Reference

Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.



#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	8.348	MM R	0.2061	44.17947	3.57312	100.0000

Sample Solution



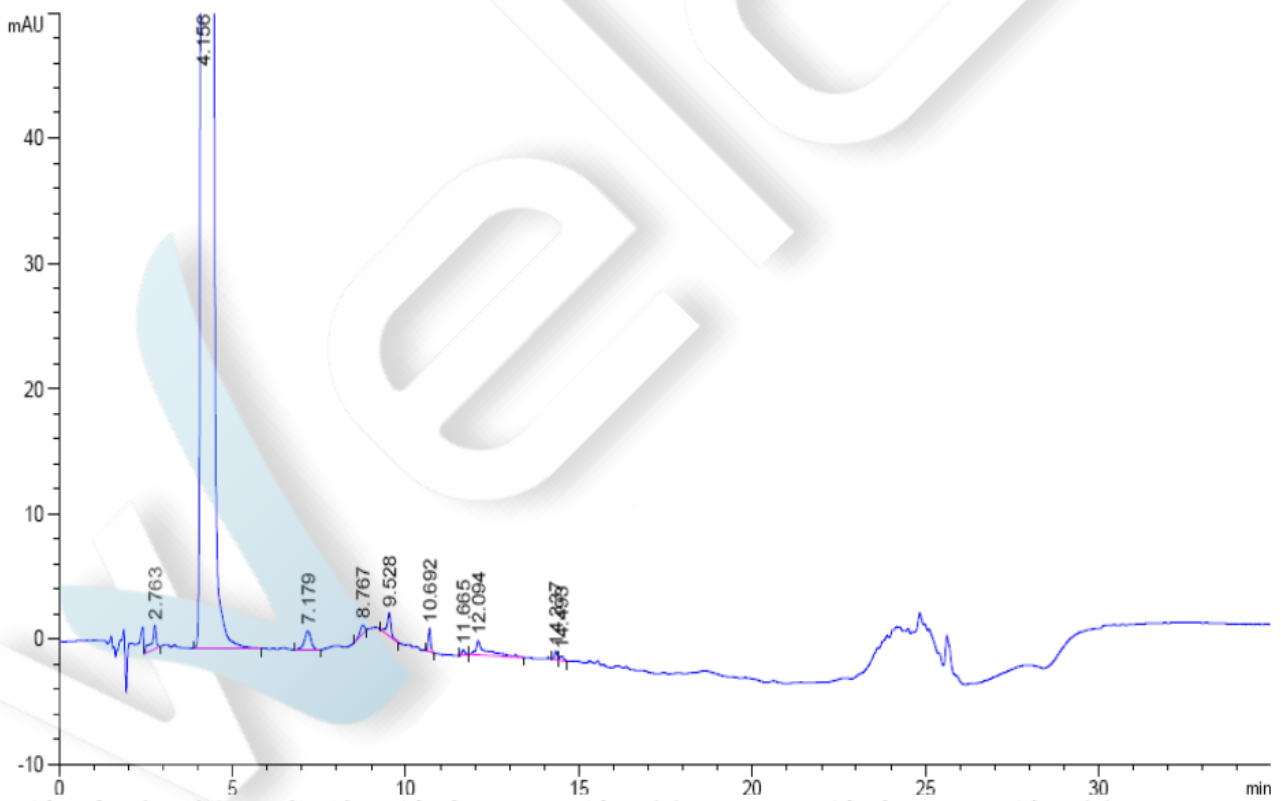
#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
	5.0684					
	5.1684					
	4.95					
	7.057					
	9.0714					
	10.759					
	11.625					
	12.440					
	14.423					

Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.

1	2.694	BB	0.0768	8.45373	1.67827	0.0658
2	2.880	BV	0.1083	5.16420	6.98397e-1	0.0402
3	3.038	VB	0.0873	4.80819	8.09827e-1	0.0374
4	4.454	BB	0.1659	1.27861e4	1113.83972	99.5358
5	7.357	BB	0.2146	14.44460	1.03612	0.1124
6	9.714	BB	0.1200	10.32551	1.30881	0.0804
7	10.759	BB	0.0754	8.04726	1.69391	0.0626
8	11.625	BB	0.0982	2.49020	3.91629e-1	0.0194
9	12.440	BB	0.0963	2.29853	3.60799e-1	0.0179
10	14.423	BB	0.0982	3.59495	5.65263e-1	0.0280

Xtimate C18, 5µm, 4.6×150mm

Sample Solution



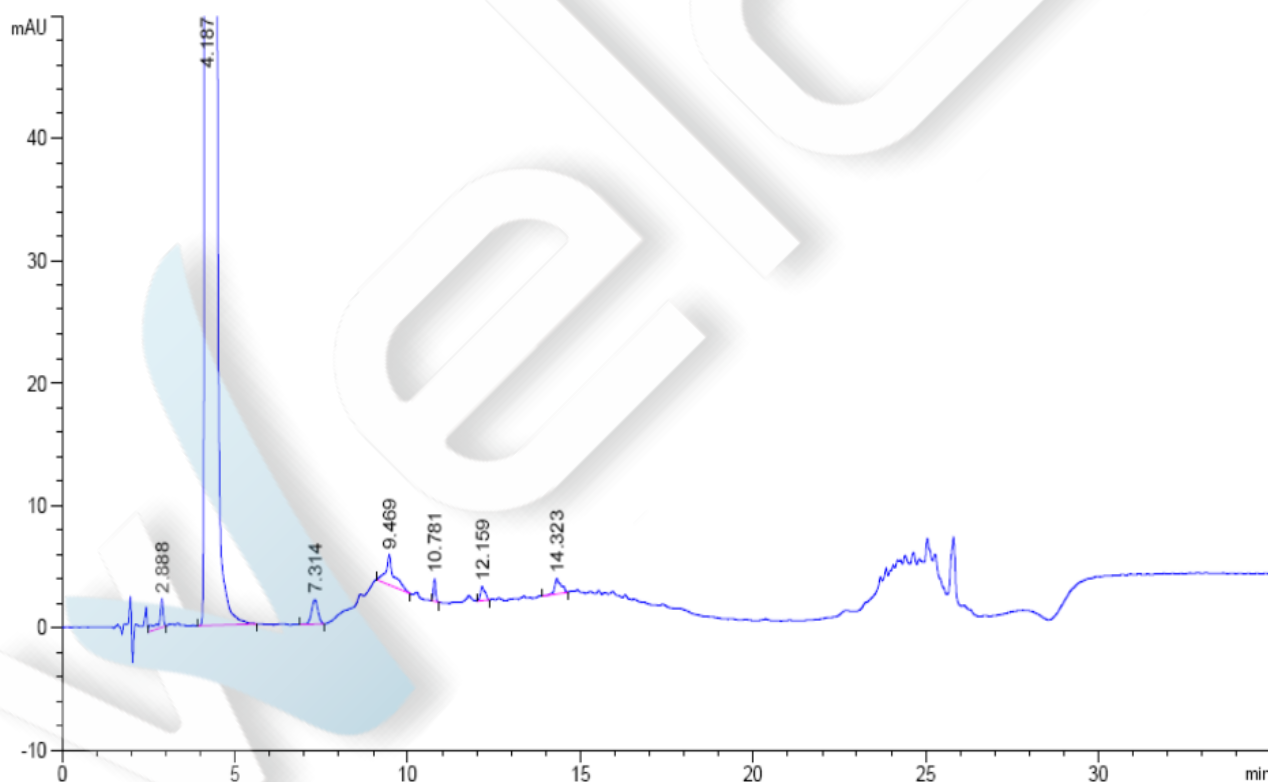
#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
---	----------	------	-------------	--------------	--------------	--------

Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.

1	2.763	BB	0.1234	16.65124	1.87897	0.1232
2	4.156	BB	0.1715	1.34151e4	1105.91138	99.2633
3	7.179	BB	0.2071	20.24129	1.50357	0.1498
4	8.767	BB	0.1475	6.50835	6.93690e-1	0.0482
5	9.528	BB	0.1140	14.21269	1.84223	0.1052
6	10.692	BB	0.0739	8.50033	1.84017	0.0629
7	11.665	BB	0.1007	2.66823	4.16533e-1	0.0197
8	12.094	BB	0.2778	24.36690	1.12907	0.1803
9	14.337	BV	0.0834	3.61123	6.85773e-1	0.0267
10	14.493	VB	0.1120	2.80261	3.71685e-1	0.0207

Topsil C18, 5 $\mu$ m, 4.6 $\times$ 150mm

Sample Solution



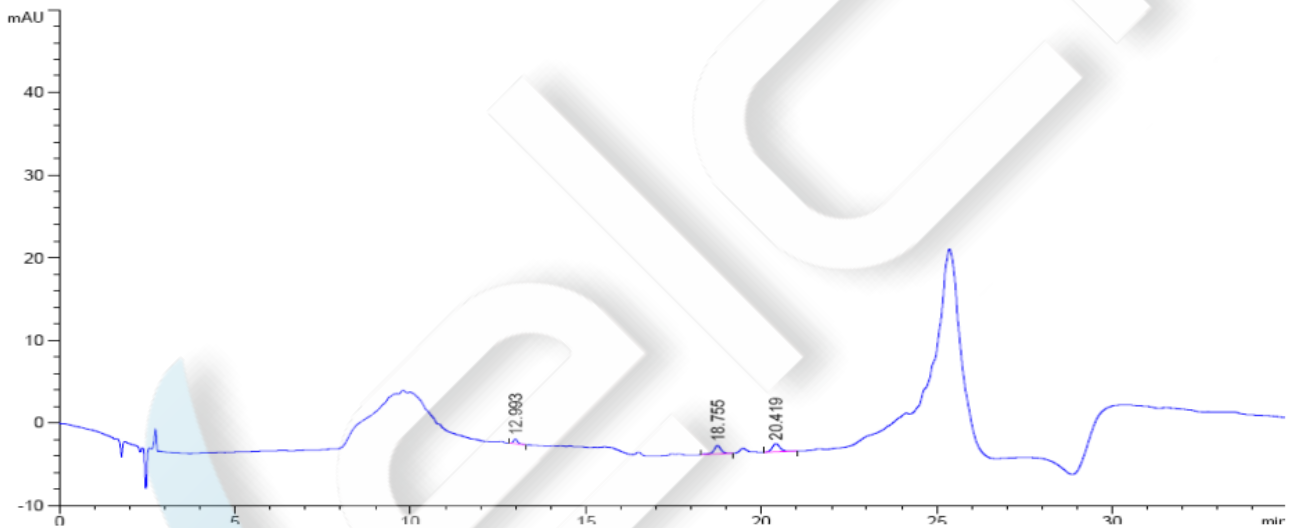
#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
---	----------	------	-------------	--------------	--------------	--------

Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.

1	2.888	BB	0.1211	19.68263	2.31761	0.1454
2	4.187	BB	0.1645	1.34173e4	1163.77515	99.0991
3	7.314	BB	0.2007	26.08513	2.01908	0.1927
4	9.469	BB	0.2244	41.14769	2.41952	0.3039
5	10.781	BB	0.0707	8.39418	1.85886	0.0620
6	12.159	BB	0.1281	10.49981	1.15451	0.0776
7	14.323	BB	0.1726	16.17164	1.25253	0.1194

Ultisil ALK C18, 5µm, 4.6×150mm

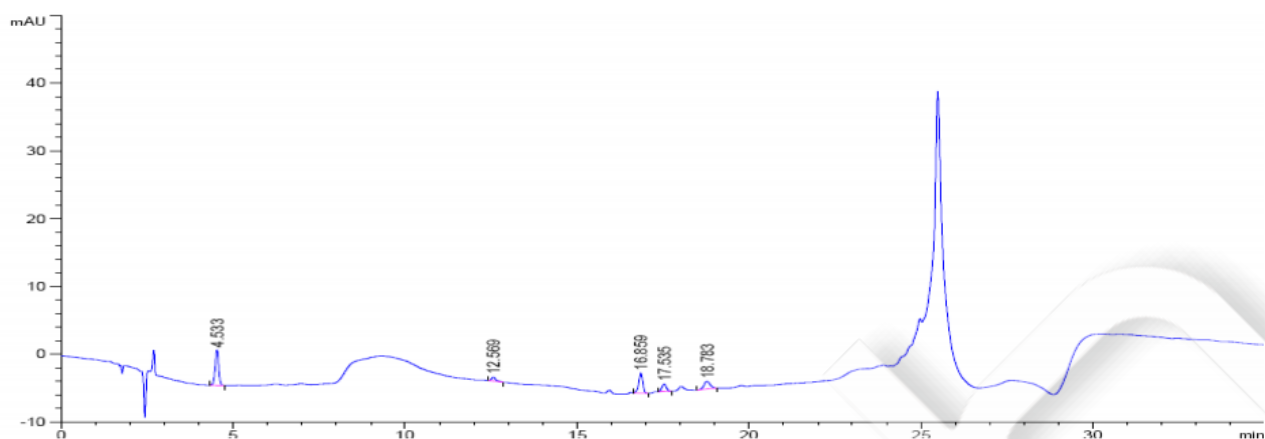
Blank Solution



#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	12.993	BB	0.1254	4.70191	5.63395e-1	13.2411
2	18.755	BB	0.2157	14.93709	1.01517	42.0644
3	20.419	BB	0.2393	15.87102	1.00997	44.6945

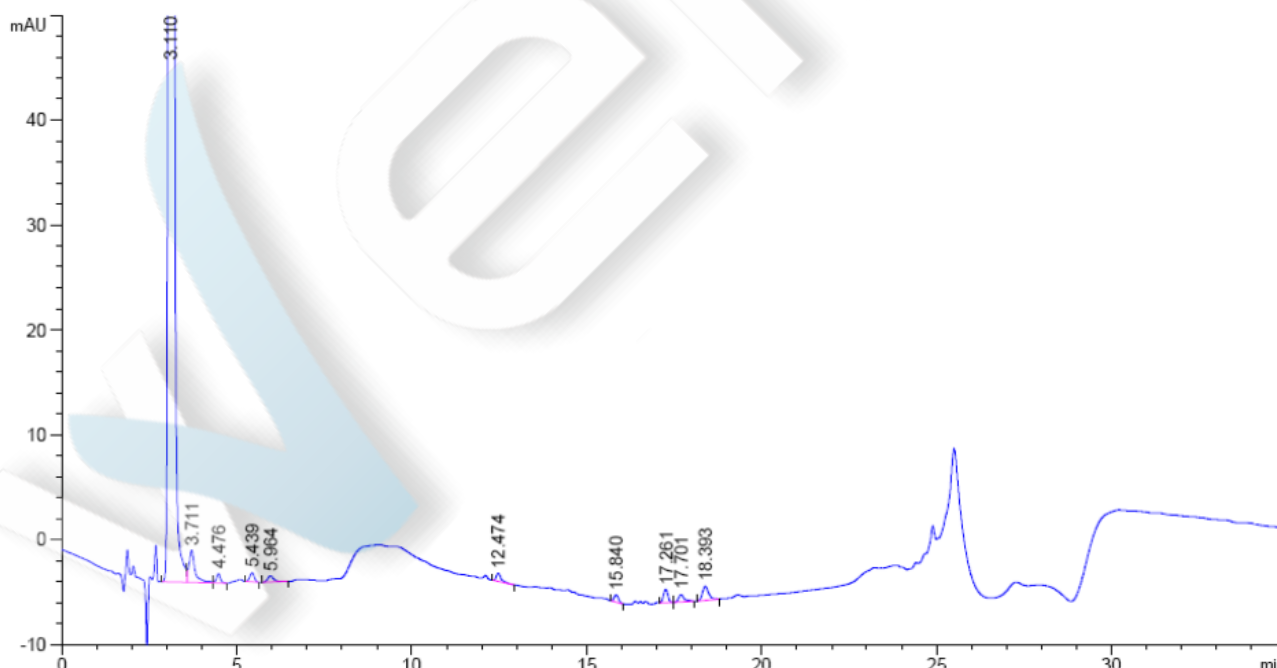
Reference

Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.



#	Rt [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	4.533	BB	0.1102	36.59911	5.19616	40.3339
2	12.569	BB	0.1301	5.15170	5.88403e-1	5.6774
3	16.859	BB	0.1238	24.29683	2.95912	26.7762
4	17.535	BB	0.1446	10.38050	1.11567	11.4398
5	18.783	BB	0.1890	14.31216	1.15144	15.7727

### Sample Solution



Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.

Retention Time [min]	k'	Peak Area [mAU*s]	Peak Height [mAU]	Asymmetry	Width [min]	Plates	Resolution	Selectivity
3.110	-	1.04315e4	1798.32104	0.75	0.0879	6914	-	-
3.711	-	37.43903	3.07889	0.65	0.1567	3107	2.89	1.19
4.476	-	7.11291	8.81934e-1	1.02	0.1133	8644	3.33	1.21
5.439	-	7.71073	8.74454e-1	1.01	0.1344	9070	4.57	1.22
5.964	-	7.72860	5.92069e-1	0.72	0.1783	6195	1.97	1.10
12.474	-	7.56494	8.09172e-1	0.57	0.1217	58228	25.50	2.09
15.840	-	6.27167	7.11239e-1	0.78	0.1367	74421	15.31	1.27
17.261	-	10.96472	1.27690	0.93	0.1333	92835	6.18	1.09
17.701	-	8.39839	7.20707e-1	0.67	0.1511	76009	1.81	1.03
18.393	-	16.45136	1.34182	0.77	0.1800	57848	2.46	1.04

Unless otherwise stated, the results shown in this test report refer only to this sample tested. The report can not be copied without the permission of Welch Materials, Inc.