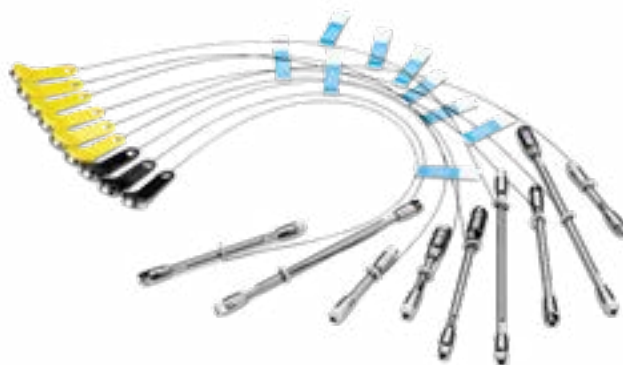


Sub-2 μm UPLC Columns

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Sub-2- μm UPLC Columns



UltraPerformance Liquid Chromatography


UltraPerformance Liquid Chromatography (UPLC) combines innovations in both instrumentation and column technology, providing maximum separation efficiency.

Column efficiency can be increased in two ways: by reducing the size of stationary-phase particles and by utilizing solid-core particle technology. The result is significant improvements in the resolution, speed, and sensitivity of separations. Efficiency gains are maximized when UPLC Columns are used in conjunction with low-dispersive ACQUITY UPLC Systems. A momentous advance in LC technology, the ACQUITY UPLC System maximizes column efficiency by maintaining ultra-low system dispersion. Narrow-bore columns packed with small particles, 1.6–1.8 μm particle sizes, can achieve maximum performance while operating at pressures as high as 1240 bar (12,400 pK_a; 18,000 psi).

Our sub-2- μm UPLC Columns continues to evolve. Among its offerings are solid-core and fully porous particle substrates (CORTECS, BEH 95 Å, BEH 125 Å, 130 Å, 200 Å, 300 Å, and 450 Å; HSS; and CSH) scalable between HPLC, UHPLC, and UPLC particle sizes. Additionally, we offer application-directed UPLC chemistries for SEC, amino acid analysis, proteins, peptides, oligonucleotides, and glycan analysis. Our vast range of selectivity choices, for both small-molecule and biopharmaceutical applications, ensures that there is a UPLC Column for your specific application.

DID YOU KNOW...

A select group of ACQUITY UPLC Columns are also available in Waters MaxPeak High Performance Surface hardware.

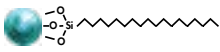
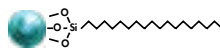

 A complete list of the MaxPeak Premier Columns can be found on [page 99](#).



CORTECS UPLC Columns

CORTECS UPLC 1.6 μm Solid-Core Particle Columns are the performance standard. The sub-2- μm , solid-core particle technology provides the highest column efficiencies when used with low-dispersive UPLC instrumentation. There are seven unique CORTECS chemistries to choose from, available in either reversed-phase or HILIC, that provide flexibility to rapidly separate a wide array of compounds. CORTECS UPLC 1.6 μm Solid-Core Columns produce sharper, narrower peaks when compared with fully porous particles of similar size. They are the best column choice for increased resolution, speed, and sensitivity.

Column Characteristics

	C₁₈⁺, 90 Å UPLC: 1.6 μm	C₁₈, 90 Å UPLC: 1.6 μm	Shield RP18, 90 Å UPLC: 1.6 μm
Particle/Ligand			
Ligand Density*	2.4 $\mu\text{mol}/\text{m}^2$	2.7 $\mu\text{mol}/\text{m}^2$	3.2 $\mu\text{mol}/\text{m}^2$
Carbon Load*	5.7%	6.6%	6.4%
Endcapped	Yes	Yes	Yes
USP Class No.	L1	L1	L1
pH Range	2–8	2–8	2–8
Temperature Limits	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C
Surface Area*	100 m^2/g	100 m^2/g	100 m^2/g
Performance Standards	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360
Application Standards	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363

*Expected or approximate value.

DID YOU KNOW...

We offer CORTECS Columns packed with 2.7 μm particles to use with HPLC and UHPLC systems.



For more information, see [page 132](#).



T3, 120 Å	C ₈ , 90 Å	Phenyl, 90 Å	HILIC, 90 Å
UPLC: 1.6 μm	UPLC: 1.6 μm	UPLC: 1.6 μm	UPLC: 1.6 μm
1.6 μmol/m ²	3.4 μmol/m ²	3.2 μmol/m ²	N/A
4.7%	4.5%	5.9%	Unbonded
Yes	Yes	Yes	N/A
L1	L7	L11	L3
2–8	2–8	2–8	1–5
Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C
100 m ² /g	100 m ² /g	100 m ² /g	100 m ² /g
Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	HILIC QC Reference Material p/n: 186007226
Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	—



APPLICATION AREA: Compounds Related to Oak Maturation of Spirits

"The CORTECS range are now the go to columns for UPLC application in our lab. Improved resolution and sensitivity over anything we have seen so far. Robust as well making for value for money."

REVIEWER: Peter Cockburn

ORGANIZATION: The Scotch Whisky Research Institute

Ordering Information

CORTECS UPLC Columns

	Particle Size: 1.6 μm			Particle Size: 2.7 μm		
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	P/N (3/pk)
C₁₈+	2.1 × 30 mm	186007113	176003166	2.1 × 30 mm	186007394	176003289
	2.1 × 50 mm	186007114	176003167	2.1 × 50 mm	186007395	176003290
	2.1 × 75 mm	186007115	176003168	2.1 × 75 mm	186007396	176003291
	2.1 × 100 mm	186007116	176003169	2.1 × 100 mm	186007397	176003292
	2.1 × 150 mm	186007117	176003170	2.1 × 150 mm	186007398	176003293
	3.0 × 30 mm	186007118	176003171	3.0 × 30 mm	186007399	176003294
	3.0 × 50 mm	186007119	176003172	3.0 × 50 mm	186007400	176003295
	3.0 × 75 mm	186007120	176003173	3.0 × 75 mm	186007401	176003296
	3.0 × 100 mm	186007121	176003174	3.0 × 100 mm	186007402	176003297
	3.0 × 150 mm	186007122	176003175	3.0 × 150 mm	186007403	176003298
				4.6 × 30 mm	186007404	176003322
				4.6 × 50 mm	186007405	176003323
				4.6 × 75 mm	186007406	176003324
				4.6 × 100 mm	186007407	176003325
				4.6 × 150 mm	186007408	176003326
C₁₈	2.1 × 30 mm	186007092	176003146	2.1 × 30 mm	186007364	176003269
	2.1 × 50 mm	186007093	176003147	2.1 × 50 mm	186007365	176003270
	2.1 × 75 mm	186007094	176003148	2.1 × 75 mm	186007366	176003271
	2.1 × 100 mm	186007095	176003149	2.1 × 100 mm	186007367	176003272
	2.1 × 150 mm	186007096	176003150	2.1 × 150 mm	186007368	176003273
	3.0 × 30 mm	186007097	176003151	3.0 × 30 mm	186007369	176003274
	3.0 × 50 mm	186007098	176003152	3.0 × 50 mm	186007370	176003275
	3.0 × 75 mm	186007099	176003153	3.0 × 75 mm	186007371	176003276
	3.0 × 100 mm	186007100	176003154	3.0 × 100 mm	186007372	176003277
	3.0 × 150 mm	186007102	176003155	3.0 × 150 mm	186007373	176003278
				4.6 × 30 mm	186007374	176003312
				4.6 × 50 mm	186007375	176003313
			4.6 × 75 mm	186007376	176003314	
			4.6 × 100 mm	186007377	176003315	
			4.6 × 150 mm	186007378	176003316	



APPLICATION AREA: Analysis of Glycosphingolipids

"This (CORTECS) column provides excellent and reproducible LC-MS chromatogram for my glycosphingolipids analysis. In addition, I am getting very narrow peaks which increases my peak capacity. This could be due to the very small particles (1.6 μm) and core-shell type silica particles it has."

REVIEWER: Rodell Barrientos

ORGANIZATION: The University of North Carolina Greensboro

CORTECS UPLC Columns *Continued*

	Particle Size: 1.6 μ m			Particle Size: 2.7 μ m		
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	P/N (3/pk)
Shield RP18	2.1 \times 30 mm	186008691	176003927	2.1 \times 30 mm	186008661	176003912
	2.1 \times 50 mm	186008692	176003928	2.1 \times 50 mm	186008662	176003913
	2.1 \times 75 mm	186008693	176003929	2.1 \times 75 mm	186008663	176003914
	2.1 \times 100 mm	186008694	176003930	2.1 \times 100 mm	186008664	176003915
	2.1 \times 150 mm	186008695	176003931	2.1 \times 150 mm	186008665	176003916
	3.0 \times 30 mm	186008701	176003932	3.0 \times 30 mm	186008671	176003917
	3.0 \times 50 mm	186008702	176003933	3.0 \times 50 mm	186008672	176003918
	3.0 \times 75 mm	186008703	176003934	3.0 \times 75 mm	186008673	176003919
	3.0 \times 100 mm	186008704	176003935	3.0 \times 100 mm	186008674	176003920
	3.0 \times 150 mm	186008705	176003936	3.0 \times 150 mm	186008675	176003921
				4.6 \times 30 mm	186008681	176003922
				4.6 \times 50 mm	186008682	176003923
				4.6 \times 75 mm	186008683	176003924
				4.6 \times 100 mm	186008684	176003925
				4.6 \times 150 mm	186008685	176003926
T3	2.1 \times 30 mm	186008496	176003891	2.1 \times 30 mm	186008481	176003876
	2.1 \times 50 mm	186008497	176003892	2.1 \times 50 mm	186008482	176003877
	2.1 \times 75 mm	186008498	176003893	2.1 \times 75 mm	186008483	176003878
	2.1 \times 100 mm	186008499	176003894	2.1 \times 100 mm	186008484	176003879
	2.1 \times 150 mm	186008500	176003895	2.1 \times 150 mm	186008485	176003880
	3.0 \times 30 mm	186008501	176003896	3.0 \times 30 mm	186008486	176003881
	3.0 \times 50 mm	186008502	176003897	3.0 \times 50 mm	186008487	176003882
	3.0 \times 75 mm	186008503	176003898	3.0 \times 75 mm	186008488	176003883
	3.0 \times 100 mm	186008504	176003899	3.0 \times 100 mm	186008489	176003884
	3.0 \times 150 mm	186008505	176003900	3.0 \times 150 mm	186008490	176003885
				4.6 \times 30 mm	186008491	176003886
				4.6 \times 50 mm	186008492	176003887
				4.6 \times 75 mm	186008493	176003888
				4.6 \times 100 mm	186008494	176003889
				4.6 \times 150 mm	186008495	176003890
C ₈	2.1 \times 30 mm	186008398	176003829	2.1 \times 30 mm	186008348	176003804
	2.1 \times 50 mm	186008399	176003830	2.1 \times 50 mm	186008349	176003805
	2.1 \times 75 mm	186008400	176003831	2.1 \times 75 mm	186008350	176003806
	2.1 \times 100 mm	186008401	176003832	2.1 \times 100 mm	186008351	176003807
	2.1 \times 150 mm	186008402	176003833	2.1 \times 150 mm	186008352	176003808
	3.0 \times 30 mm	186008408	176003834	3.0 \times 30 mm	186008358	176003809
	3.0 \times 50 mm	186008409	176003835	3.0 \times 50 mm	186008359	176003810
	3.0 \times 75 mm	186008410	176003836	3.0 \times 75 mm	186008360	176003811
	3.0 \times 100 mm	186008411	176003837	3.0 \times 100 mm	186008361	176003812
	3.0 \times 150 mm	186008412	176003838	3.0 \times 150 mm	186008362	176003813
				4.6 \times 30 mm	186008368	176003814
				4.6 \times 50 mm	186008369	176003815
				4.6 \times 75 mm	186008370	176003816
				4.6 \times 100 mm	186008371	176003817
				4.6 \times 150 mm	186008372	176003818

CORTECS UPLC Columns *Continued*

	Particle Size: 1.6 μm			Particle Size: 2.7 μm		
	Dimension	P/N (1/pk)	P/N (3/pk)	Dimension	P/N (1/pk)	P/N (3/pk)
Phenyl	2.1 \times 30 mm	186008378	176003819	2.1 \times 30 mm	186008318	176003789
	2.1 \times 50 mm	186008379	176003820	2.1 \times 50 mm	186008319	176003790
	2.1 \times 75 mm	186008380	176003821	2.1 \times 75 mm	186008320	176003791
	2.1 \times 100 mm	186008381	176003822	2.1 \times 100 mm	186008321	176003792
	2.1 \times 150 mm	186008382	176003823	2.1 \times 150 mm	186008322	176003793
	3.0 \times 30 mm	186008388	176003824	3.0 \times 30 mm	186008328	176003794
	3.0 \times 50 mm	186008389	176003825	3.0 \times 50 mm	186008329	176003795
	3.0 \times 75 mm	186008390	176003826	3.0 \times 75 mm	186008330	176003796
	3.0 \times 100 mm	186008391	176003827	3.0 \times 100 mm	186008331	176003797
	3.0 \times 150 mm	186008392	176003828	3.0 \times 150 mm	186008332	176003798
				4.6 \times 30 mm	186008338	176003799
				4.6 \times 50 mm	186008339	176003800
				4.6 \times 75 mm	186008340	176003801
			4.6 \times 100 mm	186008341	176003802	
			4.6 \times 150 mm	186008342	176003803	
HILIC	2.1 \times 30 mm	186007103	176003156	2.1 \times 30 mm	186007379	176003279
	2.1 \times 50 mm	186007104	176003157	2.1 \times 50 mm	186007380	176003280
	2.1 \times 75 mm	186007105	176003158	2.1 \times 75 mm	186007381	176003281
	2.1 \times 100 mm	186007106	176003159	2.1 \times 100 mm	186007382	176003282
	2.1 \times 150 mm	186007107	176003160	2.1 \times 150 mm	186007383	176003283
	3.0 \times 30 mm	186007108	176003161	3.0 \times 30 mm	186007384	176003284
	3.0 \times 50 mm	186007109	176003162	3.0 \times 50 mm	186007385	176003285
	3.0 \times 75 mm	186007110	176003163	3.0 \times 75 mm	186007386	176003286
	3.0 \times 100 mm	186007111	176003164	3.0 \times 100 mm	186007387	176003287
	3.0 \times 150 mm	186007112	176003165	3.0 \times 150 mm	186007388	176003288
				4.6 \times 30 mm	186007389	176003317
				4.6 \times 50 mm	186007390	176003318
				4.6 \times 75 mm	186007391	176003319
			4.6 \times 100 mm	186007392	176003320	
			4.6 \times 150 mm	186007393	176003321	

CORTECS UPLC VanGuard Pre-columns (Guard Columns)

	Particle Size: 1.6 μm		Particle Size: 1.6 μm		
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)	
C₁₈+	2.1 \times 5 mm	186007125	C₈	2.1 \times 5 mm	186008423
C₁₈	2.1 \times 5 mm	186007123	Phenyl	2.1 \times 5 mm	186008420
Shield RP18	2.1 \times 5 mm	186008713	HILIC	2.1 \times 5 mm	186007124
T3	2.1 \times 5 mm	186008508			

Quality Control Reference Materials

Description	P/N
Neutrals QC Reference Material	186006360
Reversed-Phase QC Reference Material	186006363
HILIC QC Reference Material	186007226

ACQUITY UPLC Columns In-line Filter Unit

Description	P/N
In-line filter holder and six, 0.2 μm stainless steel replacement filters	205000343
0.2 μm stainless steel replacement filters (\times 5), with end nuts - for use with p/n: 205000343	700002775

ACQUITY UPLC Columns

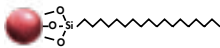
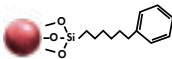
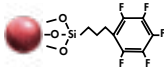
ACQUITY UPLC Columns are designed to work seamlessly with ACQUITY UPLC Systems. The sub-2- μm , fully porous particles technologies (BEH, CSH, and HSS) provide high efficiencies along with the widest sub-2- μm selectivity space. Rugged, base-particle technologies provide best-in-class column stability and ultimate flexibility for high-throughput method development.



ACQUITY UPLC CHARGED SURFACE HYBRID (CSH) COLUMNS

Reversed-phase bonded phases typically have poor peak shape for basic compounds when using formic acid, even at analytical mass loads; but, ACQUITY UPLC CSH Columns are the exception. When used with formic acid or other low-ionic-strength, acidic mobile phases, these rugged columns provide superior peak shape for basic analytes. The controlled, low-level, positive surface charge bonded to the ethylene-bridged hybrid (BEH) particles provides excellent peak shape for bases—without the need for the use of ion-pairing reagents.

Column Characteristics

	CSH C₁₈, 130 Å	CSH Phenyl-Hexyl, 130 Å	CSH Fluoro-Phenyl, 130 Å
	UPLC: 1.7 μm	UPLC: 1.7 μm	UPLC: 1.7 μm
Particle/Ligand			
Ligand Density*	2.3 $\mu\text{mol}/\text{m}^2$	2.3 $\mu\text{mol}/\text{m}^2$	2.3 $\mu\text{mol}/\text{m}^2$
Carbon Load*	15%	14%	10%
Endcapped	Yes	Yes	No
USP Class No.	L1	L11	L43
pH Range	1-11	1-11	1-8
Temperature Limits	Low pH = 80 °C, High pH = 45 °C	Low pH = 80 °C, High pH = 45 °C	Low pH = 60 °C, High pH = 45 °C
Surface Area*	185 m^2/g	185 m^2/g	185 m^2/g
Performance Standards	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360
Application Standards	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363

*Expected or approximate value.

Ordering Information

ACQUITY UPLC CSH Columns

	Particle Size: 1.7 μ m		Particle Size: 1.7 μ m	
	Dimension	P/N (1/pk)	Dimension	P/N (3/pk)
CSH C ₁₈	1.0 \times 50 mm	186005292	1.0 \times 50 mm	176002136
	1.0 \times 100 mm	186005293	1.0 \times 100 mm	176002137
	1.0 \times 150 mm	186005294	1.0 \times 150 mm	176002138
	2.1 \times 30 mm	186005295	2.1 \times 30 mm	176002139
	2.1 \times 50 mm	186005296	2.1 \times 50 mm	176002140
	2.1 \times 75 mm	186005620	2.1 \times 100 mm	176002141
	2.1 \times 100 mm	186005297	2.1 \times 150 mm	176002142
	2.1 \times 150 mm	186005298	3.0 \times 30 mm	176002143
	3.0 \times 30 mm	186005299	3.0 \times 50 mm	176002144
	3.0 \times 50 mm	186005300	3.0 \times 100 mm	176002145
	3.0 \times 75 mm	186005623	3.0 \times 150 mm	176002146
	3.0 \times 100 mm	186005301		
	3.0 \times 150 mm	186005302		
	CSH Phenyl-Hexyl	1.0 \times 50 mm	186005404	1.0 \times 50 mm
1.0 \times 100 mm		186005402	1.0 \times 100 mm	176002159
1.0 \times 150 mm		186005403	1.0 \times 150 mm	176002160
2.1 \times 30 mm		186005405	2.1 \times 30 mm	176002162
2.1 \times 50 mm		186005406	2.1 \times 50 mm	176002163
2.1 \times 75 mm		186005621	2.1 \times 100 mm	176002164
2.1 \times 100 mm		186005407	2.1 \times 150 mm	176002165
2.1 \times 150 mm		186005408	3.0 \times 30 mm	176002166
3.0 \times 30 mm		186005409	3.0 \times 50 mm	176002167
3.0 \times 50 mm		186005410	3.0 \times 100 mm	176002168
3.0 \times 75 mm		186005624	3.0 \times 150 mm	176002169
3.0 \times 100 mm		186005411		
3.0 \times 150 mm		186005412		
CSH Fluoro-Phenyl		1.0 \times 50 mm	186005349	1.0 \times 50 mm
	1.0 \times 100 mm	186005347	1.0 \times 100 mm	176002148
	1.0 \times 150 mm	186005348	1.0 \times 150 mm	176002149
	2.1 \times 30 mm	186005350	2.1 \times 30 mm	176002151
	2.1 \times 50 mm	186005351	2.1 \times 50 mm	176002152
	2.1 \times 75 mm	186005622	2.1 \times 100 mm	176002153
	2.1 \times 100 mm	186005352	2.1 \times 150 mm	176002154
	2.1 \times 150 mm	186005353	3.0 \times 30 mm	176002155
	3.0 \times 30 mm	186005354	3.0 \times 50 mm	176002156
	3.0 \times 50 mm	186005355	3.0 \times 100 mm	176002157
	3.0 \times 75 mm	186005625	3.0 \times 150 mm	176002158
	3.0 \times 100 mm	186005356		
	3.0 \times 150 mm	186005357		

ACQUITY UPLC CSH Columns *Continued*

Particle Size: 1.7 µm		
	Dimension	P/N (1/pk)
Peptide CSH C ₁₈ , 130 Å	1.0 × 50 mm	186006933
	1.0 × 100 mm	186006934
	1.0 × 150 mm	186006935
	2.1 × 50 mm	186006936
	2.1 × 100 mm	186006937
	2.1 × 150 mm	186006938

ACQUITY UPLC CSH VanGuard Pre-columns (Guard Columns)

Particle Size: 1.7 µm		
	Dimension	P/N (3/pk)
CSH C ₁₈	2.1 × 5 mm	186005303
CSH Phenyl-Hexyl	2.1 × 5 mm	186005413
CSH Fluoro-Phenyl	2.1 × 5 mm	186005358
Peptide CSH C ₁₈	2.1 × 5 mm	186006939
	2.1 × 5 mm	176003067 ²

²Kit includes column and one vial of Cytochrome c Digestion Standard, p/n: [186006371](#).

ACQUITY UPLC Peptide CSH C₁₈ VanGuard Columns

Particle Size: 1.7 µm		
	Dimension	P/N (3/pk)
CSH C ₁₈	2.1 × 5 mm	186006939
	2.1 × 5 mm	176003067 ²

²Kit includes column and one vial of Cytochrome c Digestion Standard, p/n: [186006371](#).



ACQUITY UPLC Columns In-line Filter Unit

Description	P/N
In-line filter holder and six 0.2 µm stainless steel replacement filters	205000343
0.2 µm stainless steel replacement filters (x5), with end nuts - for use with p/n: 205000343	700002775

Quality Control Reference Materials

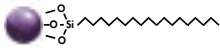
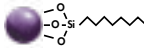

Description	P/N
Neutrals QC Reference Material	186006360
Reversed-Phase QC Reference Material	186006363

i For more information on Peptide Columns, [refer to page 385](#); for ACQUITY UPLC Peptide Column Ordering Information, [refer to page 392](#).

ACQUITY UPLC ETHYLENE BRIDGED HYBRID (BEH) COLUMNS

ACQUITY UPLC BEH Columns provide unprecedented levels of peak asymmetry, efficiency, and chemical stability. Available in both reversed-phase and HILIC, with chemistries that provide selectivity for many small-molecule compounds, these robust columns can operate at conditions of extreme pH. With the ruggedness to operate under extreme pH conditions, ACQUITY UPLC BEH Columns enable the ability to utilize a wide pH range to influence retention, selectivity, and sensitivity of ionizable compounds.

Column Characteristics

	BEH C ₁₈ , 130 Å	BEH C ₈ , 130 Å	BEH Shield RP18, 130 Å
	UPLC: 1.7 μm		
Particle/Ligand			
Ligand Density	3.1 μmol/m ²	3.2 μmol/m ²	3.3 μmol/m ²
Carbon Load	18%	13%	17%
Endcapped	Yes	Yes	Yes
USP Class No.	L1	L7	L1
pH Range	1-12	1-12	2-11
Temperature Limits	Low pH = 80 °C, High pH = 60 °C	Low pH = 60 °C, High pH = 60 °C	Low pH = 50 °C, High pH = 45 °C
Surface Area	185 m ² /g	185 m ² /g	185 m ² /g
Performance Standards	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360
Application Standards	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363

*Expected or approximate value.

 BEH Technology is also available in HPLC particle sizes (XBridge HPLC BEH), please [refer to pages 181 and 184](#).



BEH Phenyl, 130 Å	BEH HILIC, 130 Å	BEH Amide, 130 Å
UPLC: 1.7 µm	UPLC: 1.7 µm	UPLC: 1.7 µm
3.0 µmol/m ²	N/A	7.5 µmol/m ²
15%	Unbonded	12%
Yes	N/A	N/A
L11	L3	L68
1-12	1-9	2-11
Low pH = 80 °C, High pH = 60 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 90 °C, High pH = 90 °C
185 m ² /g	185 m ² /g	185 m ² /g
Neutrals QC Reference Material p/n: 186006360	HILIC QC Reference Material p/n: 186007226	HILIC QC Reference Material p/n: 186007226
Reversed-Phase QC Reference Material p/n: 186006363	–	–



APPLICATION AREA: Targeted Metabolomics

"BEH columns are the best – great separation – even for isomers, long column life and peak shapes. I develop all my methods with use of BEH columns."

REVIEWER: Kamil Kuś

ORGANIZATION: Jagiellonian Center for Experimental Therapeutics

Ordering Information

ACQUITY UPLC BEH Columns

	Particle Size: 1.7 μm	
	Dimension	P/N (1/pk)
BEH C ₁₈	1.0 × 50 mm	186002344
	1.0 × 100 mm	186002346
	1.0 × 150 mm	186002347
	2.1 × 30 mm	186002349
	2.1 × 50 mm	186002350
	2.1 × 75 mm	186005604
	2.1 × 100 mm	186002352
	2.1 × 150 mm	186002353
	3.0 × 30 mm	186004659
	3.0 × 50 mm	186004660
	3.0 × 75 mm	186005609
	3.0 × 100 mm	186004661
	3.0 × 150 mm	186004690

BEH Shield RP18	1.0 × 50 mm	186002851
	1.0 × 100 mm	186002852
	1.0 × 150 mm	186003373
	2.1 × 30 mm	186003909
	2.1 × 50 mm	186002853
	2.1 × 75 mm	186005605
	2.1 × 100 mm	186002854
	2.1 × 150 mm	186003376
	3.0 × 30 mm	186004667
	3.0 × 50 mm	186004668
	3.0 × 75 mm	186005610
	3.0 × 100 mm	186004669
	3.0 × 150 mm	186004670

BEH C ₈	1.0 × 50 mm	186002875
	1.0 × 100 mm	186002876
	1.0 × 150 mm	186003374
	2.1 × 30 mm	186003910
	2.1 × 50 mm	186002877
	2.1 × 75 mm	186005606
	2.1 × 100 mm	186002878
	2.1 × 150 mm	186003377
	3.0 × 30 mm	186004663
	3.0 × 50 mm	186004664
	3.0 × 75 mm	186005611
	3.0 × 100 mm	186004665
	3.0 × 150 mm	186004666

	Particle Size: 1.7 μm	
	Dimension	P/N (1/pk)
BEH Phenyl	1.0 × 50 mm	186002882
	1.0 × 100 mm	186002883
	1.0 × 150 mm	186003375
	2.1 × 30 mm	186003911
	2.1 × 50 mm	186002884
	2.1 × 75 mm	186005607
	2.1 × 100 mm	186002885
	2.1 × 150 mm	186003378
	3.0 × 30 mm	186004671
	3.0 × 50 mm	186004672
	3.0 × 75 mm	186005612
	3.0 × 100 mm	186004673
	3.0 × 150 mm	186004674

BEH HILIC	1.0 × 50 mm	186003457
	1.0 × 100 mm	186003458
	1.0 × 150 mm	186003459
	2.1 × 50 mm	186003460
	2.1 × 75 mm	186005608
	2.1 × 100 mm	186003461
	2.1 × 150 mm	186003462
	3.0 × 50 mm	186004675
	3.0 × 75 mm	186005613
	3.0 × 100 mm	186004676
	3.0 × 150 mm	186004677

BEH Amide	1.0 × 50 mm	186004848
	1.0 × 100 mm	186004849
	1.0 × 150 mm	186004850
	2.1 × 30 mm	186004839
	2.1 × 50 mm	186004800
	2.1 × 75 mm	186005657
	2.1 × 100 mm	186004801
	2.1 × 150 mm	186004802
	3.0 × 30 mm	186004803
	3.0 × 50 mm	186004804
	3.0 × 75 mm	186005658
	3.0 × 100 mm	186004805
	3.0 × 150 mm	186004806

ACQUITY UPLC BEH Columns *Continued*

Particle Size: 1.7 µm		
	Dimension	P/N (1/pk)
Glycan BEH Amide, 130 Å	2.1 × 50 mm	186004740
	2.1 × 100 mm	186004741
	2.1 × 150 mm	186004742
Peptide BEH C ₁₈ , 130 Å	2.1 × 50 mm	186003554
	2.1 × 100 mm	186003555
	2.1 × 150 mm	186003556
	2.1 × 300 mm	186005792
Peptide BEH C ₁₈ , 300 Å	1.0 × 50 mm	186005592
	1.0 × 100 mm	186005593
	1.0 × 150 mm	186005594
	2.1 × 50 mm	186003685
	2.1 × 100 mm	186003686
	2.1 × 150 mm	186003687
Protein BEH SEC, 125 Å	4.6 × 30 mm, Guard Column	186006504
	4.6 × 150 mm, Column	186006505
	4.6 × 150 mm, Column and Standard ²	176003906
	4.6 × 300 mm, Column	186006506
	4.6 × 300 mm, Column and Standard ²	176003907
Protein BEH SEC, 200 Å	2.1 × 150 mm, Column	186008471
	4.6 × 30 mm, Guard Column	186005793
	4.6 × 150 mm, Column	186005225
	4.6 × 150 mm, Column and Standard ¹	176003904
	4.6 × 300 mm, Column	186005226
	4.6 × 300 mm, Column and Standard ¹	176003905

¹Includes one BEH200 SEC standard.

²Includes one BEH125 SEC standard.

ACQUITY UPLC BEH VanGuard Pre-columns (Guard Columns)

Particle Size: 1.7 µm		
	Dimension	P/N (3/pk)
BEH C ₁₈	2.1 × 5 mm	186003975
BEH Shield RP18	2.1 × 5 mm	186003977
BEH C ₈	2.1 × 5 mm	186003978
BEH Phenyl	2.1 × 5 mm	186003979
BEH HILIC	2.1 × 5 mm	186003980
BEH Amide	2.1 × 5 mm	186004799
Glycan BEH Amide, 130 Å	2.1 × 5 mm	186004739
Peptide BEH C ₁₈ , 130 Å	2.1 × 5 mm	186003975

Quality Control Reference Materials

Description	P/N
Neutrals QC Reference Materials	186006360
Reversed-Phase QC Reference Materials	186006363
HILIC QC Reference Materials	186007226

ACQUITY UPLC Protein BEH SEC Column Accessories

Description	P/N
ELSD Outlet Tubing (0.004" I.D. × 6" length)	430001562
SEC UPLC Connection Tubing (0.005" I.D. × 1.75" length), 2/pk	186006613

ACQUITY UPLC Columns In-line Filter Unit

Description	P/N
In-line filter holder and six 0.2 µm stainless steel replacement filters	205000343
0.2 µm stainless steel replacement filters (×5), with end nuts - for p/n: 205000343	700002775

ACQUITY UPLC HIGH STRENGTH SILICA (HSS) COLUMNS

ACQUITY UPLC HSS Columns provide increased retention for both polar and non-polar analytes when compared to CORTECS, CSH, and BEH particles. The thermally treated silica particle provides mechanical strength and stability when operating under UPLC system pressures. Available in five bonded phases, this robust particle technology maximizes the selectivity space. The ample array of bonded phases associated with ACQUITY UPLC HSS Columns enable traditional hydrophobic, reversed-phase interactions as well as dipole-dipole, aromatic, and hydrogen-bonding interactions.



Column Characteristics

	HSS C ₁₈ , 100 Å	HSS C ₁₈ SB, 100 Å	HSS T3, 100 Å	HSS PFP, 100 Å	HSS CN, 100 Å
	UPLC: 1.8 µm	UPLC: 1.8 µm	UPLC: 1.8 µm	UPLC: 1.8 µm	UPLC: 1.8 µm
Particle/Ligand					
Ligand Density	3.2 µmol/m ²	1.6 µmol/m ²	1.6 µmol/m ²	3.2 µmol/m ²	2.0 µmol/m ²
Carbon Load	15%	8%	11%	7%	5%
Endcapped	Yes	N/A	Yes	N/A	N/A
USP Class No.	L1	L1	L1	L43	L10
pH Range	1-8	2-8	2-8	2-8	2-8
Temperature Limits	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C	Low pH = 45 °C, High pH = 45 °C
Surface Area	230 m ² /g	230 m ² /g	230 m ² /g	230 m ² /g	230 m ² /g
Performance Standards	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360	Neutrals QC Reference Material p/n: 186006360
Application Standards	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	Reversed-Phase QC Reference Material p/n: 186006363	—

*Expected or approximate value.

Ordering Information

ACQUITY UPLC HSS Columns

	Particle Size: 1.8 μ m		Particle Size: 1.8 μ m	
	Dimension	P/N (1/pk)	Dimension	P/N (3/pk)
HSS T3	1.0 \times 50 mm	186003535	1.0 \times 50 mm	176001127
	1.0 \times 100 mm	186003536	1.0 \times 100 mm	176001129
	1.0 \times 150 mm	186003537	1.0 \times 150 mm	176001130
	2.1 \times 30 mm	186003944	2.1 \times 30 mm	176001375
	2.1 \times 50 mm	186003538	2.1 \times 50 mm	176001131
	2.1 \times 75 mm	186005614	2.1 \times 100 mm	176001132
	2.1 \times 100 mm	186003539	2.1 \times 150 mm	176001133
	2.1 \times 150 mm	186003540	3.0 \times 30 mm	176001813
	3.0 \times 30 mm	186004678	3.0 \times 50 mm	176001814
	3.0 \times 50 mm	186004679	3.0 \times 100 mm	176001815
	3.0 \times 75 mm	186005617	3.0 \times 150 mm	176001816
	3.0 \times 100 mm	186004680		
	3.0 \times 150 mm	186004681		
	HSS C₁₈	1.0 \times 50 mm	186003529	1.0 \times 50 mm
1.0 \times 100 mm		186003530	1.0 \times 100 mm	176001122
1.0 \times 150 mm		186003531	1.0 \times 150 mm	176001123
2.1 \times 30 mm		186003987	2.1 \times 30 mm	176001398
2.1 \times 50 mm		186003532	2.1 \times 50 mm	176001124
2.1 \times 75 mm		186005615	2.1 \times 100 mm	176001125
2.1 \times 100 mm		186003533	2.1 \times 150 mm	176001126
2.1 \times 150 mm		186003534	3.0 \times 30 mm	176001817
3.0 \times 30 mm		186004682	3.0 \times 50 mm	176001818
3.0 \times 50 mm		186004683	3.0 \times 100 mm	176001819
3.0 \times 75 mm		186005618	3.0 \times 150 mm	176001820
3.0 \times 100 mm		186004684		
3.0 \times 150 mm		186004685		
HSS C₁₈ SB		1.0 \times 50 mm	186004114	1.0 \times 50 mm
	1.0 \times 100 mm	186004115	1.0 \times 100 mm	176001557
	1.0 \times 150 mm	186004116	1.0 \times 150 mm	176001558
	2.1 \times 30 mm	186004117	2.1 \times 30 mm	176001559
	2.1 \times 50 mm	186004118	2.1 \times 50 mm	176001560
	2.1 \times 75 mm	186005616	2.1 \times 100 mm	176001561
	2.1 \times 100 mm	186004119	2.1 \times 150 mm	176001562
	2.1 \times 150 mm	186004120	3.0 \times 30 mm	176001821
	3.0 \times 30 mm	186004686	3.0 \times 50 mm	176001822
	3.0 \times 50 mm	186004687	3.0 \times 100 mm	176001823
	3.0 \times 75 mm	186005619	3.0 \times 150 mm	176001824
	3.0 \times 100 mm	186004826		
	3.0 \times 150 mm	186004689		



For more information on Peptide HSS Columns, [refer to page 390](#); for Ordering Information, refer to [page 392](#).

ACQUITY UPLC HSS Columns *Continued*

	Particle Size: 1.8 µm		Particle Size: 1.8 µm	
	Dimension	P/N (1/pk)	Dimension	P/N (3/pk)
HSS Cyano	1.0 × 50 mm	186005982	1.0 × 50 mm	176002703
	1.0 × 100 mm	186005983	1.0 × 100 mm	176002704
	1.0 × 150 mm	186005984	1.0 × 150 mm	176002705
	2.1 × 30 mm	186005985	2.1 × 30 mm	176002706
	2.1 × 50 mm	186005986	2.1 × 50 mm	176002707
	2.1 × 75 mm	186005987	2.1 × 75 mm	176002708
	2.1 × 100 mm	186005988	2.1 × 100 mm	176002709
	2.1 × 150 mm	186005989	2.1 × 150 mm	176002710
	3.0 × 30 mm	186005990	3.0 × 30 mm	176002711
	3.0 × 50 mm	186005991	3.0 × 50 mm	176002712
	3.0 × 75 mm	186005992	3.0 × 75 mm	176002713
	3.0 × 100 mm	186005993	3.0 × 100 mm	176002714
	3.0 × 150 mm	186005994	3.0 × 150 mm	176002715
	HSS PFP	1.0 × 50 mm	186005961	1.0 × 50 mm
1.0 × 100 mm		186005962	1.0 × 100 mm	176002691
1.0 × 150 mm		186005963	1.0 × 150 mm	176002692
2.1 × 30 mm		186005964	2.1 × 30 mm	176002693
2.1 × 50 mm		186005965	2.1 × 50 mm	176002694
2.1 × 75 mm		186005966	2.1 × 75 mm	176002695
2.1 × 100 mm		186005967	2.1 × 100 mm	176002696
2.1 × 150 mm		186005968	2.1 × 150 mm	176002697
3.0 × 30 mm		186005969	3.0 × 30 mm	176002698
3.0 × 50 mm		186005970	3.0 × 50 mm	176002699
3.0 × 75 mm		186005971	3.0 × 75 mm	176002700
3.0 × 100 mm		186005972	3.0 × 100 mm	176002701
3.0 × 150 mm		186005973	3.0 × 150 mm	176002702

ACQUITY UPLC HSS VanGuard Pre-columns (Guard Columns)

Particle Size: 1.8 µm		Particle Size: 1.8 µm	
Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
HSS C₈	2.1 × 5 mm	186003981	HSS PFP
HSS C₁₈ SB	2.1 × 5 mm	186004136	HSS Cyano
HSS T3	2.1 × 5 mm	186003976	2.1 × 5 mm

Quality Control Reference Materials

Description	P/N
Neutrals QC Reference Materials	186006360
Reversed-Phase QC Reference Materials	186006363

ACQUITY UPLC Columns In-line Filter Unit

Description	P/N
In-line filter holder and six 0.2 µm stainless steel replacement filters	205000343
0.2 µm stainless steel replacement filters (×5), with end nuts - for use with p/n: 205000343	700002775

ACQUITY UPLC and CORTECS 1.6 μm Method Validation Kits

The reproducibility of a chromatographic column's performance significantly affects the long-term reliability and robustness of an analytical method. Reproducibility, however, is beyond the direct control of analysts. Yet all isn't lost. Our long-established, highly controlled particle- and column-manufacturing processes ensure batch-to-batch and column-to-column reproducibility that provide confidence in the continued use of your methods. ACQUITY UPLC Method Validation Kits include three batches of chromatographic media (derived from different base particles) to evaluate the quality, reliability, and consistency of your method.

Ordering Information

CORTECS UPLC Columns Method Validation Kits (MVK)*

	Particle Size: 1.6 μm		Particle Size: 2.7 μm	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
C₈	2.1 × 30 mm	186008403	2.1 × 30 mm	186008353
	2.1 × 50 mm	186008404	2.1 × 50 mm	186008354
	2.1 × 75 mm	186008405	2.1 × 75 mm	186008355
	2.1 × 100 mm	186008406	2.1 × 100 mm	186008356
	2.1 × 150 mm	186008407	2.1 × 150 mm	186008357
	3.0 × 30 mm	186008413	3.0 × 30 mm	186008363
	3.0 × 50 mm	186008414	3.0 × 50 mm	186008364
	3.0 × 75 mm	186008415	3.0 × 75 mm	186008365
	3.0 × 100 mm	186008416	3.0 × 100 mm	186008366
	3.0 × 150 mm	186008417	3.0 × 150 mm	186008367
			4.6 × 30 mm	186008373
			4.6 × 50 mm	186008374
			4.6 × 75 mm	186008375
			4.6 × 100 mm	186008376
			4.6 × 150 mm	186008377
C₁₈+	2.1 × 30 mm	186007176	2.1 × 30 mm	186007439
	2.1 × 50 mm	186007177	2.1 × 50 mm	186007440
	2.1 × 75 mm	186007178	2.1 × 75 mm	186007441
	2.1 × 100 mm	186007179	2.1 × 100 mm	186007442
	2.1 × 150 mm	186007180	2.1 × 150 mm	186007443
	3.0 × 30 mm	186007181	3.0 × 30 mm	186007444
	3.0 × 50 mm	186007182	3.0 × 50 mm	186007445
	3.0 × 75 mm	186007183	3.0 × 75 mm	186007446
	3.0 × 100 mm	186007184	3.0 × 100 mm	186007447
	3.0 × 150 mm	186007185	3.0 × 150 mm	186007448
			4.6 × 30 mm	186007449
			4.6 × 50 mm	186007450
			4.6 × 75 mm	186007451
			4.6 × 100 mm	186007452
			4.6 × 150 mm	186007453

*Each kit contains three columns from three batches of material.

CORTECS UPLC Columns Method Validation Kits (MVK)* *Continued*

	Particle Size: 1.6 μ m		Particle Size: 2.7 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
C₁₈	2.1 × 30 mm	186007156	2.1 × 30 mm	186007409
	2.1 × 50 mm	186007157	2.1 × 50 mm	186007410
	2.1 × 75 mm	186007158	2.1 × 75 mm	186007411
	2.1 × 100 mm	186007159	2.1 × 100 mm	186007412
	2.1 × 150 mm	186007160	2.1 × 150 mm	186007413
	3.0 × 30 mm	186007161	3.0 × 30 mm	186007414
	3.0 × 50 mm	186007162	3.0 × 50 mm	186007415
	3.0 × 75 mm	186007163	3.0 × 75 mm	186007416
	3.0 × 100 mm	186007164	3.0 × 100 mm	186007417
	3.0 × 150 mm	186007165	3.0 × 150 mm	186007418
			4.6 × 30 mm	186007419
			4.6 × 50 mm	186007420
			4.6 × 75 mm	186007421
			4.6 × 100 mm	186007422
			4.6 × 150 mm	186007423
	HILIC	2.1 × 30 mm	186007166	2.1 × 30 mm
2.1 × 50 mm		186007167	2.1 × 50 mm	186007425
2.1 × 75 mm		186007168	2.1 × 75 mm	186007426
2.1 × 100 mm		186007169	2.1 × 100 mm	186007427
2.1 × 150 mm		186007170	2.1 × 150 mm	186007428
3.0 × 30 mm		186007171	3.0 × 30 mm	186007429
3.0 × 50 mm		186007172	3.0 × 50 mm	186007430
3.0 × 75 mm		186007173	3.0 × 75 mm	186007431
3.0 × 100 mm		186007174	3.0 × 100 mm	186007432
3.0 × 150 mm		186007175	3.0 × 150 mm	186007433
			4.6 × 30 mm	186007434
			4.6 × 50 mm	186007435
			4.6 × 75 mm	186007436
			4.6 × 100 mm	186007437
			4.6 × 150 mm	186007438
Phenyl		2.1 × 30 mm	186008383	2.1 × 30 mm
	2.1 × 50 mm	186008384	2.1 × 50 mm	186008324
	2.1 × 75 mm	186008405	2.1 × 75 mm	186008325
	2.1 × 100 mm	186008386	2.1 × 100 mm	186008326
	2.1 × 150 mm	186008387	2.1 × 150 mm	186008327
	3.0 × 30 mm	186008393	3.0 × 30 mm	186008333
	3.0 × 50 mm	186008394	3.0 × 50 mm	186008334
	3.0 × 75 mm	186008395	3.0 × 75 mm	186008335
	3.0 × 100 mm	186008396	3.0 × 100 mm	186008336
	3.0 × 150 mm	186008397	3.0 × 150 mm	186008337
			4.6 × 30 mm	186008343
			4.6 × 50 mm	186008344
			4.6 × 75 mm	186008345
			4.6 × 100 mm	186008346
			4.6 × 150 mm	186008347

*Each kit contains three columns from three batches of material.

CORTECS UPLC Columns Method Validation Kits (MVK)* *Continued*

	Particle Size: 1.6 μ m		Particle Size: 2.7 μ m	
	Dimension	P/N (3/pk)	Dimension	P/N (3/pk)
T3	2.1 \times 30 mm	186008529	2.1 \times 30 mm	186008509
	2.1 \times 50 mm	186008530	2.1 \times 50 mm	186008510
	2.1 \times 75 mm	186008531	2.1 \times 75 mm	186008516
	2.1 \times 100 mm	186008536	2.1 \times 100 mm	186008517
	2.1 \times 150 mm	186008537	2.1 \times 150 mm	186008518
	3.0 \times 30 mm	186008538	3.0 \times 30 mm	186008519
	3.0 \times 50 mm	186008539	3.0 \times 50 mm	186008520
	3.0 \times 75 mm	186008540	3.0 \times 75 mm	186008521
	3.0 \times 100 mm	186008541	3.0 \times 100 mm	186008522
	3.0 \times 150 mm	186008542	3.0 \times 150 mm	186008523
			4.6 \times 30 mm	186008524
			4.6 \times 50 mm	186008525
			4.6 \times 75 mm	186008526
			4.6 \times 100 mm	186008527
			4.6 \times 150 mm	186008528
	Shield RP18	2.1 \times 30 mm	186008696	2.1 \times 30 mm
2.1 \times 50 mm		186008697	2.1 \times 50 mm	186008667
2.1 \times 75 mm		186008698	2.1 \times 75 mm	186008668
2.1 \times 100 mm		186008699	2.1 \times 100 mm	186008669
2.1 \times 150 mm		186008700	2.1 \times 150 mm	186008670
3.0 \times 30 mm		186008706	3.0 \times 30 mm	186008676
3.0 \times 50 mm		186008707	3.0 \times 50 mm	186008677
3.0 \times 75 mm		186008708	3.0 \times 75 mm	186008678
3.0 \times 100 mm		186008709	3.0 \times 100 mm	186008679
3.0 \times 150 mm		186008710	3.0 \times 150 mm	186008680
			4.6 \times 30 mm	186008686
			4.6 \times 50 mm	186008687
			4.6 \times 75 mm	186008688
			4.6 \times 100 mm	186008689
			4.6 \times 150 mm	186008690

*Each kit contains three columns from three batches of material.

ACQUITY UPLC Method Validation Kits* *Continued*

Particle Size: 1.7 μ m		
	Dimension	P/N (3/pk)
CSH C ₁₈	2.1 \times 50 mm	186005571
	2.1 \times 100 mm	186005572
	2.1 \times 150 mm	186006016
	3.0 \times 50 mm	186005573
	3.0 \times 100 mm	186005574
CSH Phenyl-Hexyl	2.1 \times 50 mm	186005579
	2.1 \times 100 mm	186005580
	2.1 \times 150 mm	186006017
	3.0 \times 50 mm	186005581
	3.0 \times 100 mm	186005582
CSH Fluoro-Phenyl	2.1 \times 50 mm	186005575
	2.1 \times 100 mm	186005576
	2.1 \times 150 mm	186006018
	3.0 \times 50 mm	186005577
	3.0 \times 100 mm	186005578
BEH C ₁₈	2.1 \times 50 mm	186004044
	2.1 \times 100 mm	186004045
	2.1 \times 150 mm	186006019
	3.0 \times 50 mm	186004691
	3.0 \times 100 mm	186004692
BEH C ₈	2.1 \times 50 mm	186004046
	2.1 \times 100 mm	186004047
	2.1 \times 150 mm	186006020
	3.0 \times 50 mm	186004693
	3.0 \times 100 mm	186004694
BEH Shield RP18	2.1 \times 50 mm	186004048
	2.1 \times 100 mm	186004049
	2.1 \times 150 mm	186006021
	3.0 \times 50 mm	186004695
	3.0 \times 100 mm	186004696
BEH Phenyl	2.1 \times 50 mm	186004050
	2.1 \times 100 mm	186004052
	2.1 \times 150 mm	186006022
	3.0 \times 50 mm	186004697
	3.0 \times 100 mm	186004698
BEH HILIC	2.1 \times 50 mm	186004053
	2.1 \times 100 mm	186004054
	2.1 \times 150 mm	186006023
	3.0 \times 50 mm	186004699
	3.0 \times 100 mm	186004700

Particle Size: 1.7 μ m		
	Dimension	P/N (3/pk)
BEH Amide	2.1 \times 50 mm	186004807
	2.1 \times 100 mm	186004808
	2.1 \times 150 mm	186006024
	3.0 \times 50 mm	186004809
	3.0 \times 100 mm	186004810
Glycan BEH Amide, 130 \AA	2.1 \times 100 mm	186004907
Peptide BEH C ₁₈ , 130 \AA	2.1 \times 100 mm	186004896
	2.1 \times 150 mm	186006517
Peptide CSH C ₁₈ , 130 \AA	1.0 \times 50 mm	176003061¹
	1.0 \times 100 mm	176003062¹
	1.0 \times 150 mm	176003063¹
	2.1 \times 50 mm	176003064¹
	2.1 \times 100 mm	176003065¹
	2.1 \times 150 mm	186006940
	2.1 \times 150 mm	176003068¹

Particle Size: 1.8 μ m		
	Dimension	P/N (3/pk)
HSS T3	2.1 \times 50 mm	186004055
	2.1 \times 100 mm	186004056
	2.1 \times 150 mm	186006025
	3.0 \times 50 mm	186004701
	3.0 \times 100 mm	186004702
HSS C ₁₈	2.1 \times 50 mm	186004057
	2.1 \times 100 mm	186004058
	2.1 \times 150 mm	186006026
	3.0 \times 50 mm	186004703
	3.0 \times 100 mm	186004704
HSS C ₁₈ SB	2.1 \times 50 mm	186004137
	2.1 \times 100 mm	186004138
	2.1 \times 150 mm	186006027
	3.0 \times 50 mm	186004705
	3.0 \times 100 mm	186004709
HSS Cyano	2.1 \times 50 mm	186005996
	2.1 \times 100 mm	186005997
	3.0 \times 50 mm	186005998
	3.0 \times 100 mm	186005999
HSS PFP	2.1 \times 50 mm	186005975
	2.1 \times 100 mm	186005976
	3.0 \times 50 mm	186005977
	3.0 \times 100 mm	186005978

* Each kit contains three columns from three batches of material.

¹ Kit includes column and one vial of Cytochrome c Digestion Standard, p/n: [186006371](#).

ACQUITY UPLC Method Development Kits

With a seemingly endless number of method parameters to try, developing a new chromatographic method can be an overwhelming, time-consuming experience. Finding a column that reliably and robustly delivers the desired separation results is essential to any method development strategy. The UPLC Columns in our Method Development Kits cover a broad range of selectivity, facilitating all method-development approaches.

Description	Chemistries	Method Development Strategy
Maximum Selectivity UPLC Method Development Kit	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, HSS C ₁₈ SB	The widest selectivity offering for method development at low and high pH. Best choice for low ionic strength additives (i.e., formic acid).
High and Low pH, Widest Selectivities UPLC Columns Kit	BEH C ₁₈ , BEH C ₈ , BEH Shield RP18, BEH Phenyl	Maximize separation selectivity by exploring low and high mobile-phase pH.
UPLC Method Development Kit	BEH C ₁₈ , BEH Shield RP18, BEH Phenyl, HSS T3	Maximize separation selectivity by exploring low and high mobile phase pH (BEH columns) and accommodate for the retention of polar compounds (HSS T3 columns).
L1 UPLC Columns Kit	BEH C ₁₈ , BEH Shield RP18, HSS C ₁₈ , HSS T3	C ₁₈ columns that differ in silanol activity and hydrophobicity within the US Pharmacopeia L1 classification.
Mass Spec UPLC Columns Kit	BEH C ₁₈ , HSS C ₁₈ , HSS T3, HSS C ₁₈ SB	Straight-chain-alkyl C ₁₈ columns that differ in silanol activity, shape, selectivity, and hydrophobicity; and exhibit no MS bleed.
Low pH, Widest Selectivities UPLC Columns Kit	BEH Shield RP18, BEH Phenyl, HSS C ₁₈ , HSS C ₁₈ SB	A diverse grouping of column selectivities for the development of a reversed-phase method in low-pH mobile phases.
Maximum Selectivity RP and HILIC UPLC Method Development Kit	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, BEH Amide	Offers the widest separation selectivity by combining CSH reversed-phase and HILIC stationary phases to retain analytes encompassing a broad range of polarity.
UPLC RP and HILIC Method Development Kit	BEH C ₁₈ , BEH Shield RP18, BEH Amide, HSS C ₁₈ SB	A novel approach that maximizes separation selectivity by combining distinct RP and HILIC stationary phases to retain analytes encompassing a broad range of polarity.
UPLC HILIC Method Development Kit	BEH Amide, BEH HILIC	Effortlessly develop HILIC methods at low pH (bases) or high pH (acids) for polar and/or ionizable compounds.

Ordering Information

ACQUITY UPLC Method Development Kits

Description	Qty.	Chemistries	Particle Size(s)	Dimension	P/N
Maximum Selectivity UPLC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, HSS C ₁₈ SB	CSH: 1.7 µm; HSS: 1.8 µm	2.1 × 50 mm	176002123
Maximum Selectivity UPLC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, HSS C ₁₈ SB	CSH: 1.7 µm; HSS: 1.8 µm	2.1 × 100 mm	176002124
Maximum Selectivity UPLC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, HSS C ₁₈ SB	CSH: 1.7 µm; HSS: 1.8 µm	3.0 × 50 mm	176002125
Maximum Selectivity UPLC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, HSS C ₁₈ SB	CSH: 1.7 µm; HSS: 1.8 µm	3.0 × 100 mm	176002126
High and Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH C ₈ , BEH Shield RP18, BEH Phenyl	BEH: 1.7 µm	2.1 × 50 mm	176001042
High and Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH C ₈ , BEH Shield RP18, BEH Phenyl	BEH: 1.7 µm	2.1 × 100 mm	176001043
High and Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH C ₈ , BEH Shield RP18, BEH Phenyl	BEH: 1.7 µm	3.0 × 50 mm	176001881
High and Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH C ₈ , BEH Shield RP18, BEH Phenyl	BEH: 1.7 µm	3.0 × 100 mm	176001882
UPLC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Phenyl, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 50 mm	176001603
UPLC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Phenyl, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 100 mm	176001604
UPLC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Phenyl, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 50 mm	176001883
UPLC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Phenyl, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 100 mm	176001884
L1 UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH Shield RP18, HSS C ₁₈ , HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 50 mm	176001605
L1 UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH Shield RP18, HSS C ₁₈ , HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 100 mm	176001606
L1 UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH Shield RP18, HSS C ₁₈ , HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 50 mm	176001885
L1 UPLC Columns Kit	4/pk	BEH C ₁₈ , BEH Shield RP18, HSS C ₁₈ , HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 100 mm	176001886
Mass Spec UPLC Columns Kit	4/pk	BEH C ₁₈ , HSS C ₁₈ , HSS C ₁₈ SB, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 50 mm	176001607
Mass Spec UPLC Columns Kit	4/pk	BEH C ₁₈ , HSS C ₁₈ , HSS C ₁₈ SB, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 100 mm	176001608
Mass Spec UPLC Columns Kit	4/pk	BEH C ₁₈ , HSS C ₁₈ , HSS C ₁₈ SB, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 50 mm	176001887
Mass Spec UPLC Columns Kit	4/pk	BEH C ₁₈ , HSS C ₁₈ , HSS C ₁₈ SB, HSS T3	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 100 mm	176001888
Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH Shield RP18, BEH Phenyl, HSS C ₁₈ , HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 50 mm	176001609
Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH Shield RP18, BEH Phenyl, HSS C ₁₈ , HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 100 mm	176001610
Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH Shield RP18, BEH Phenyl, HSS C ₁₈ , HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 50 mm	176001889
Low pH, Widest Selectivities UPLC Columns Kit	4/pk	BEH Shield RP18, BEH Phenyl, HSS C ₁₈ , HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 100 mm	176001890
Maximum Selectivity RP and HILIC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, BEH Amide	CSH: 1.7 µm; BEH: 1.7 µm	2.1 × 50 mm	176002127
Maximum Selectivity RP and HILIC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, BEH Amide	CSH: 1.7 µm; BEH: 1.7 µm	2.1 × 100 mm	176002128
Maximum Selectivity RP and HILIC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, BEH Amide	CSH: 1.7 µm; BEH: 1.7 µm	3.0 × 50 mm	176002129
Maximum Selectivity RP and HILIC	4/pk	CSH C ₁₈ , CSH Phenyl-Hexyl, CSH Fluoro-Phenyl, BEH Amide	CSH: 1.7 µm; BEH: 1.7 µm	3.0 × 100 mm	176002130
UPLC RP and HILIC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Amide, HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 50 mm	176001959
UPLC RP and HILIC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Amide, HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	2.1 × 100 mm	176001960
UPLC RP and HILIC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Amide, HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 50 mm	176001961
UPLC RP and HILIC	4/pk	BEH C ₁₈ , BEH Shield RP18, BEH Amide, HSS C ₁₈ SB	BEH: 1.7 µm; HSS: 1.8 µm	3.0 × 100 mm	176001962
UPLC HILIC	2/pk	BEH Amide, BEH HILIC	BEH: 1.7 µm	2.1 × 50 mm	176001963
UPLC HILIC	2/pk	BEH Amide, BEH HILIC	BEH: 1.7 µm	2.1 × 100 mm	176001964
UPLC HILIC	2/pk	BEH Amide, BEH HILIC	BEH: 1.7 µm	3.0 × 50 mm	176001965
UPLC HILIC	2/pk	BEH Amide, BEH HILIC	BEH: 1.7 µm	3.0 × 100 mm	176001966