

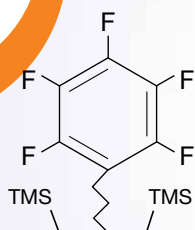


KINETEX
Core-Shell Technology

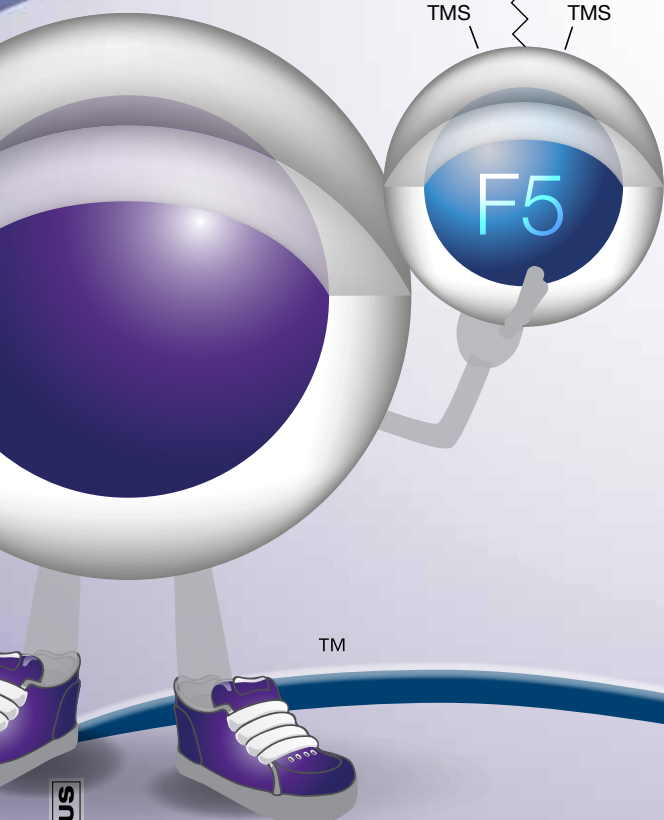
NEW Kinetex F5

HPLC/UHPLC Core-Shell Columns

Whoa! I can
even separate
structural
isomers!



- Reduce Method Development Time by Days
- Greater Reproducibility than other **PFPs**
- 5 Glorious Interaction Mechanisms
- 5 Valuable LC Separation Modes



TM

phenomenex
...breaking with traditionSM

How I Work

With the astonishing combination of core-shell performance and 5 interaction mechanisms, Kinetex® F5 columns will effortlessly drive your orthogonal HPLC/UHPLC development!



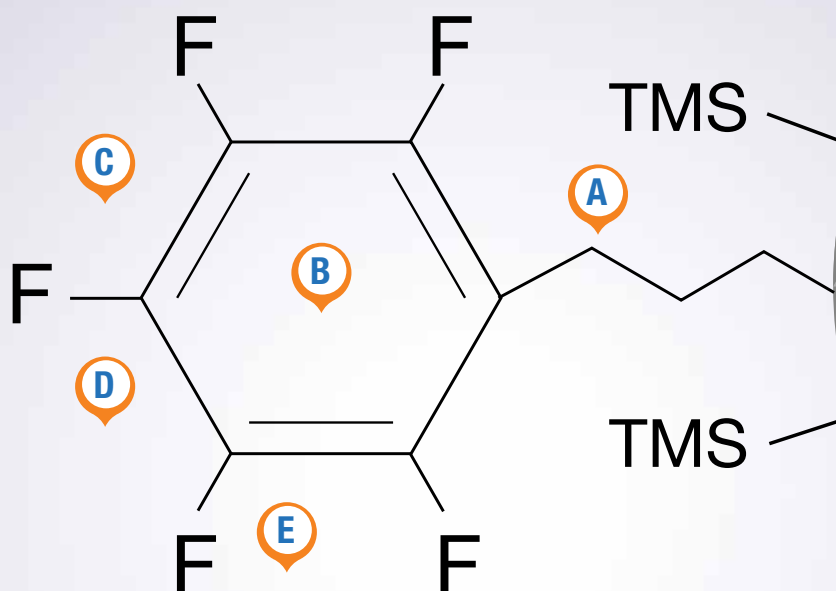
Hydrophobic

Carbon skeleton of linker and ring encourage neutral/hydrophobic retention



Aromatic

In non-acetonitrile mobile phases, π - π electrons of the carbon ring interact with analyte π - π electrons and result in positive retention increase



Electrostatic

High electronegativity of the fluorine groups create dipole moments, aiding in polar compound retention. Induced dipole moments can also aid neutral compound retention.



Steric/Planar

Shape selectivity allows for isomeric separations that are otherwise impossible on traditional alkyl phases.



Hydrogen Bonding

Extremely effective retention mechanism caused as polar functional groups of analyte interact with the electron greedy fluorine.

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Why I'm Better

While older pentafluorophenyl phases (PFP, PFPP, F5, etc.) are based on existing bonding techniques and technologies that promote irreproducibility, the Kinetex F5 was meticulously designed by Phenomenex R&D and its customers, to provide consistently accurate and high performance results.

Learn how the new Kinetex F5 will get you the results you deserve time and time again!



Core-Shell Advantage	p. 4
Method Development Versatility	p. 5
Unmatched Reproducibility	pp. 6-7
100% Aqueous Stability	p. 8
Isomeric Separations	p. 9
Vitamin D3 Epimers	p. 10
Multi Component Screening	p. 11
Methanol vs. Acetonitrile	p. 12
Trace Impurity Detection	p. 13
UHPLC Consistency and Performance	pp. 14-15
Kinetex Column Selection	pp. 16-17
Ordering Information	pp. 18-19



If you are not completely satisfied with Kinetex core-shell columns, send in your comparative data to a similar product within 45 days and keep the column for FREE.

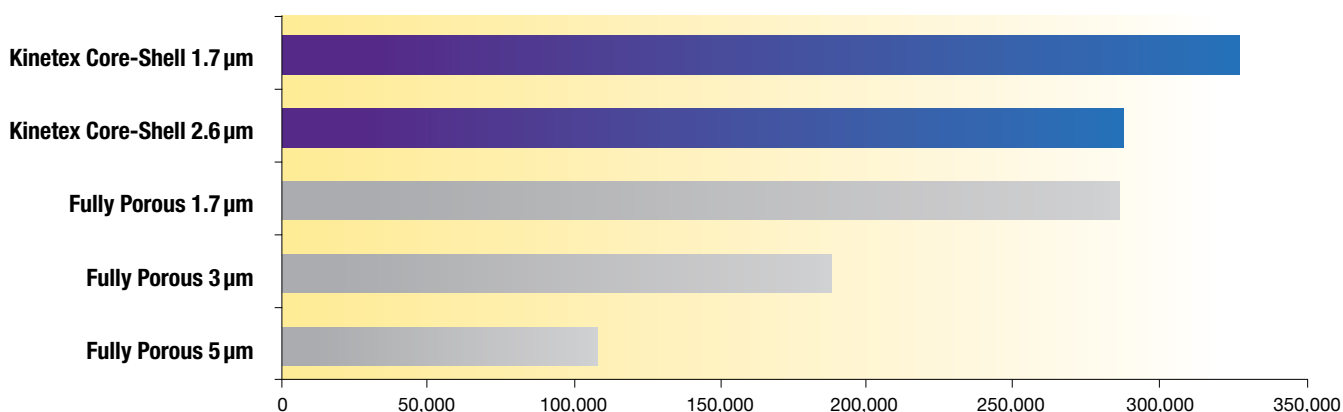


Why Wait?

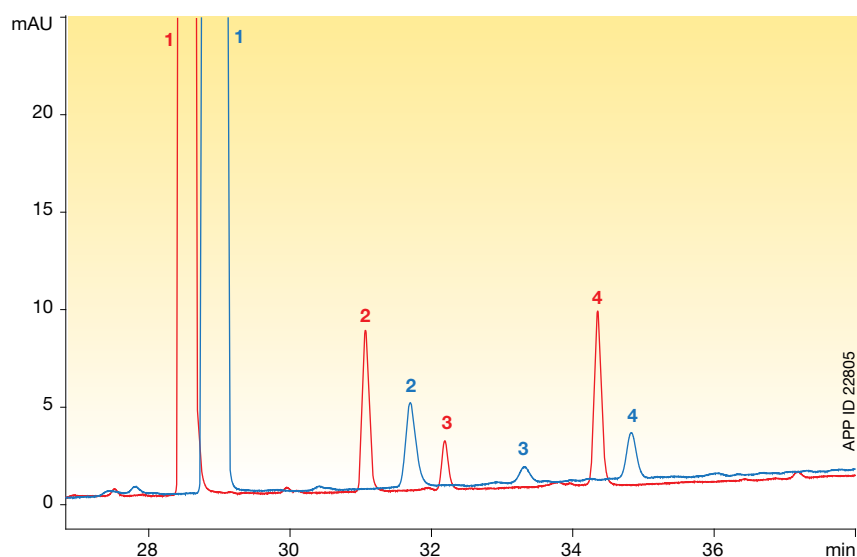
You Can Get Improvements Today!

The band broadening (wide peaks) and lengthy retention times of traditional fully porous products can be limiting your results. Now you can use the incredible efficiency levels of Kinetex® Core-Shell Technology to achieve shorter run times, higher levels of sensitivity, and overall better HPLC/UHPLC results.

Core-Shell vs. Fully Porous Efficiency Levels (plates/m)



Core-Shell Performance Gains



■ Kinetex Core-Shell
■ Fully Porous

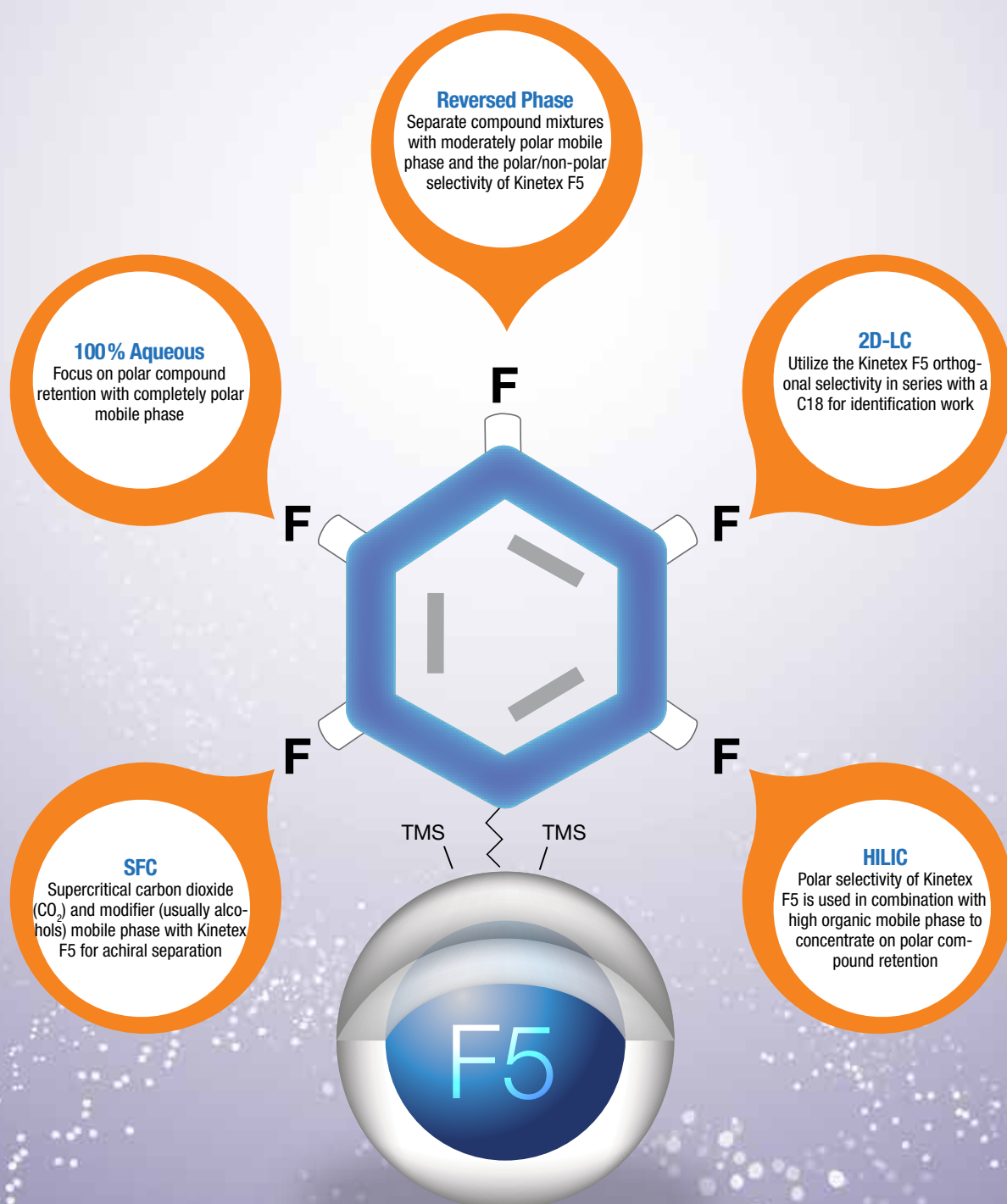
Get faster,
better results
with me!



Method Development

Versatility

Combine core-shell performance, multiple retention mechanisms and the Kinetex F5 column's ability to be run in a variety of separation modes and you now have an impeccable method development tool at your disposal.

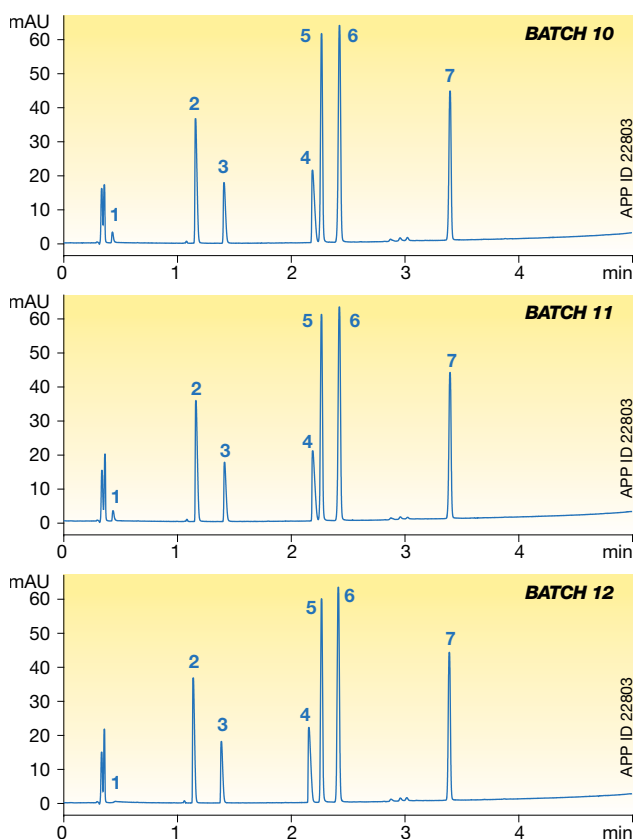


Dependability

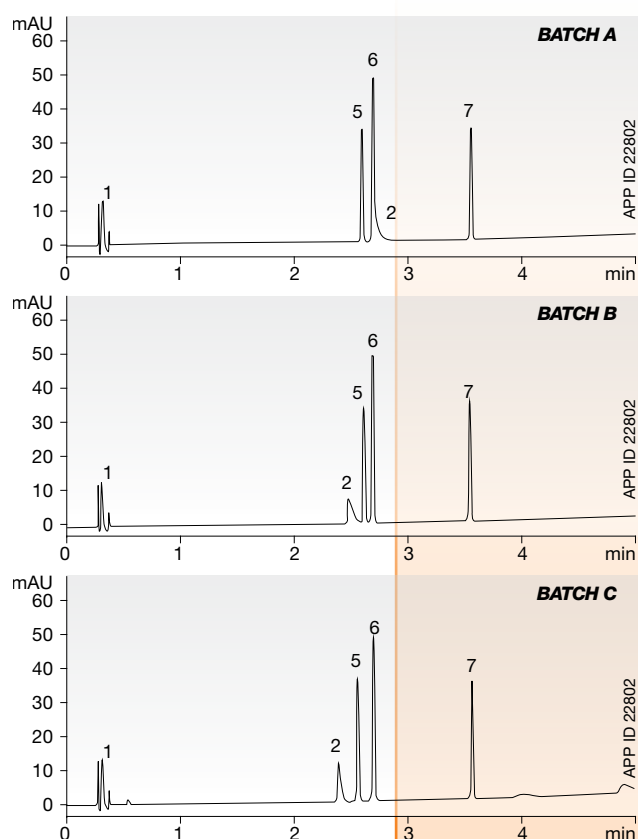
Batch-to-Batch, Column-to-Column

Conventional fully porous and core-shell PFP/F5 columns fail to reach the level of repeatability that you deserve. Inconsistencies in their base silica have led to data inaccuracies that waste your time and money. Kinetex® F5 columns were specifically designed to avoid these past problems and provide you with the highest degree of reproducibility.

Kinetex 2.6µm F5



Supelco® Ascentis® Express 2.7µm F5



Conditions for all columns:

Column: Kinetex 2.6µm F5
Discovery 3µm HS F5
Ascentis Express 2.7µm F5
Hypersil GOLD 3µm PFP
Accucore 2.6µm PFP

Dimensions: 50 x 4.6mm

Mobile Phase: A: 0.1 % Formic acid in Water
B: 0.1 % Formic acid in Acetonitrile
Gradient: 5-95 % B over 5 minutes

Flow Rate: 1.85 mL/min

Temperature: Ambient

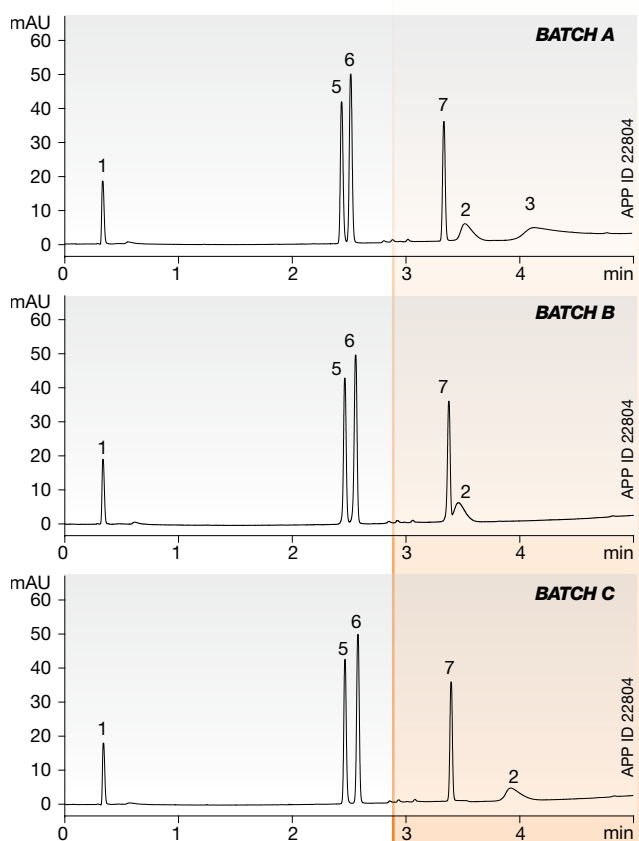
Detection: UV @ 254 nm

Sample: 1. Uracil
2. Pindolol
3. Chlorpheniramine
4. Nortriptyline
5. 3-Methyl-4-Nitrobenzoic acid
6. 5-Methyl Salicyl Aldehyde
7. Hexaphenone

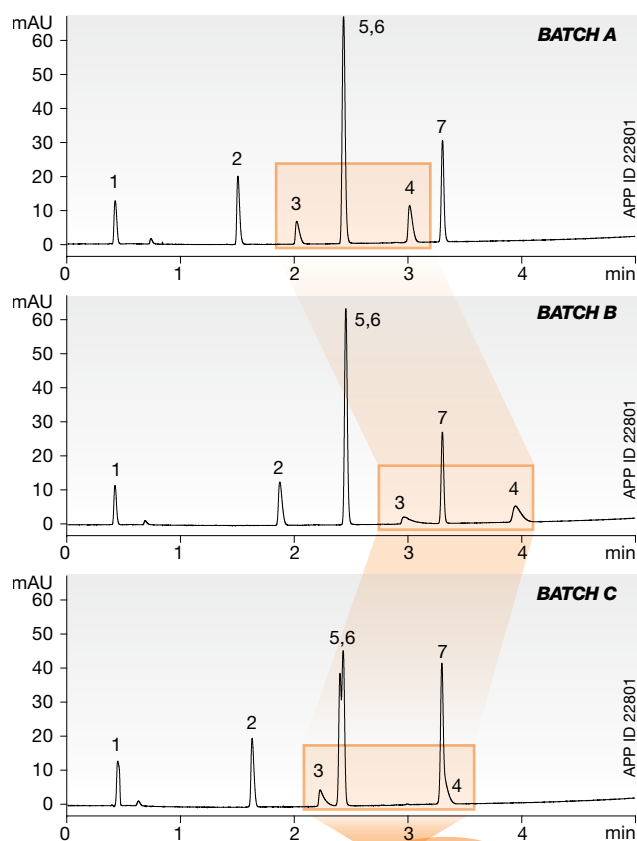
What happened
to peaks 3 and 4?

Accucore is a trademark and Hypersil GOLD is registered trademark of Thermo Hypersil-Keystone. Ascentis, Discovery and Supelco are registered trademarks of Sigma-Aldrich Co. LLC. Phenomenex is not affiliated with any of the above companies. Comparative separations may not be representative of all applications.

Supelco® Discovery® 3µm HS F5



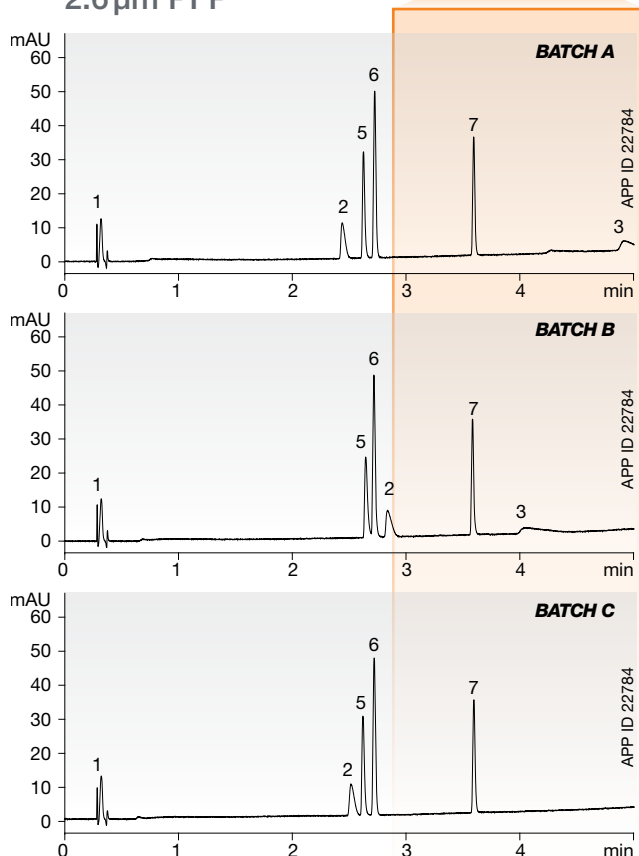
Thermo Hypersil GOLD® 3µm PFP



**Adsorption of
Peaks 3 and 4!**

**Retention Time
Shifting**

Thermo Accucore™ 2.6µm PFP



Conditions for all columns:

Column: Kinetex 2.6µm F5
 Discovery 3µm HS F5
 Ascentis Express 2.7µm F5
 Hypersil GOLD 3µm PFP
 Accucore 2.6µm PFP

Dimensions: 50 x 4.6 mm

Mobile Phase: A: 0.1 % Formic acid in Water
 B: 0.1 % Formic acid in Acetonitrile

Gradient: 5-95 % B over 5 minutes

Flow Rate: 1.85 mL/min

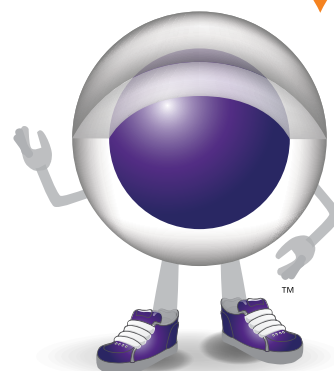
Temperature: Ambient

Detection: UV @ 254 nm

Sample: 1. Uracil
 2. Pindolol
 3. Chlorpheniramine
 4. Nortriptyline
 5. 3-Methyl-4-Nitrobenzoic acid
 6. 5-Methyl Salicyl Aldehyde
 7. Hexaphenone

**Are you
okay with peak
adsorptions and
retention time
shifts?**

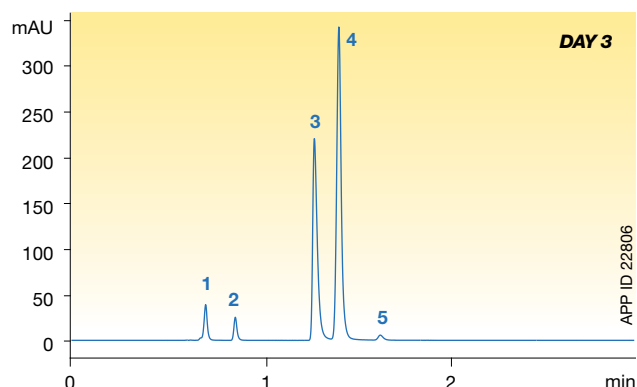
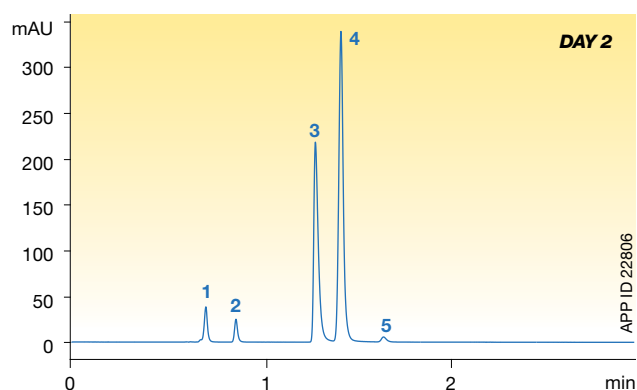
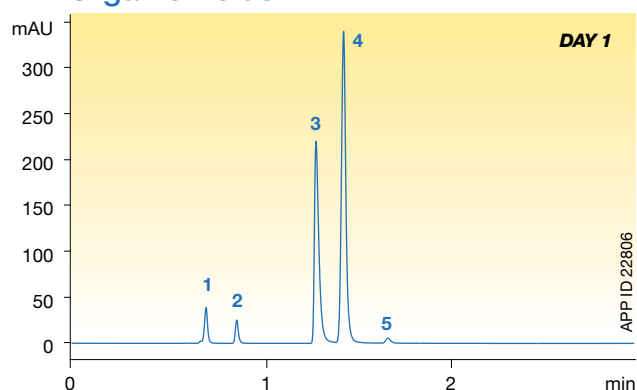
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Extra Polar Retention and 100% Aqueous Stability

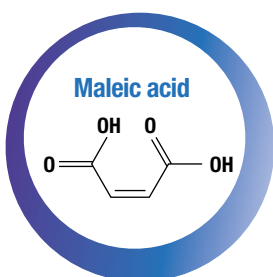
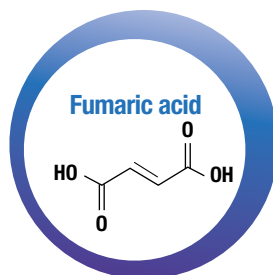
Unlike traditional alkyl stationary phases, the polar functional group of the Kinetex® F5 makes it stable in 100 % aqueous mobile phase conditions. This can be especially beneficial for methods that require the retention and resolution of problematic polar compounds that typically have poor retention under reversed phase conditions.

Organic Acids



Each successive day, column was equilibrated, run and stored in the 100 % aqueous conditions mentioned above.

Column: Kinetex 2.6µm F5
Dimensions: 100 x 4.6mm
Part No.: 00D-4723-E0
Mobile Phase: 20 mM Sodium phosphate pH 2.5
Flow Rate: 1.5 mL/min
Temperature: Ambient
Detection: UV @ 210 nm
Sample: 1. Tartaric Acid
2. Malic Acid
3. Maleic Acid
4. Fumaric Acid
5. Succinic Acid



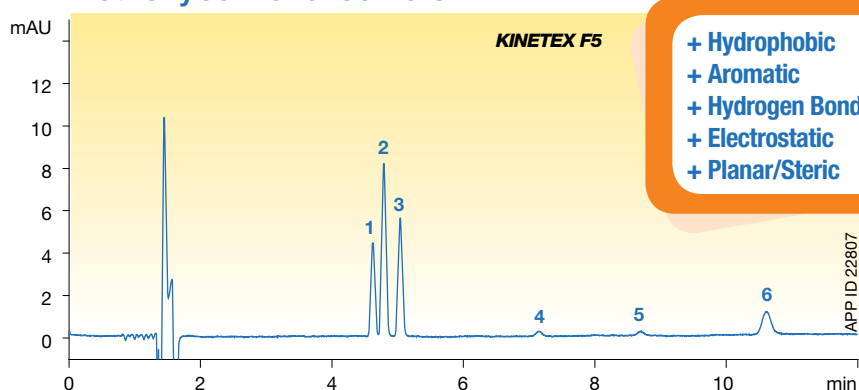
INCREDIBLE!
Even the isomers
Maleic acid and
Fumaric acid
are
separated!



Novel Selectivity For Isomeric Separations

While a C18 can differentiate between the small addition of a single methyl group between two similar compounds, it cannot separate compounds with only structural differences, like positional isomers. This is where the electrostatic and planar interactions of the Kinetex F5 give focused attention to the resolution you need.

Methoxybenzene Isomers



Conditions for all columns:

Column: Kinetex 2.6µm F5

Kinetex 2.6µm C18

Kinetex 2.6µm Biphenyl

Dimensions: 150 x 4.6 mm

Mobile Phase: A: 0.1% TFA in Water

B: Acetonitrile

Isocratic: A/B (65:35)

Flow Rate: 1 mL/min

Temperature: Ambient

Detection: UV @ 254 nm

Sample: 1. 1,2,3-Trimethoxybenzene

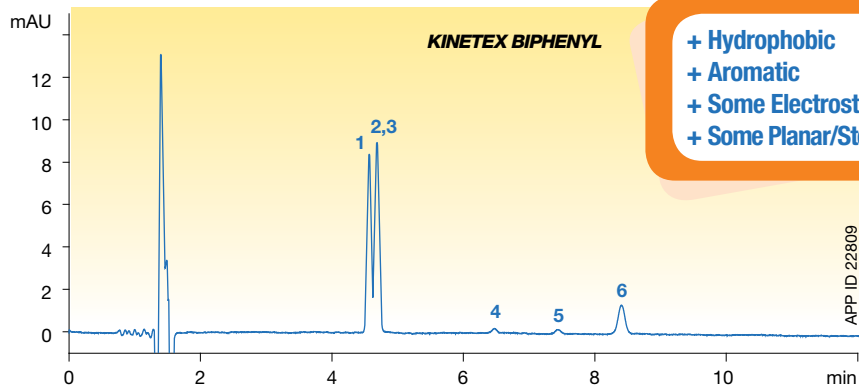
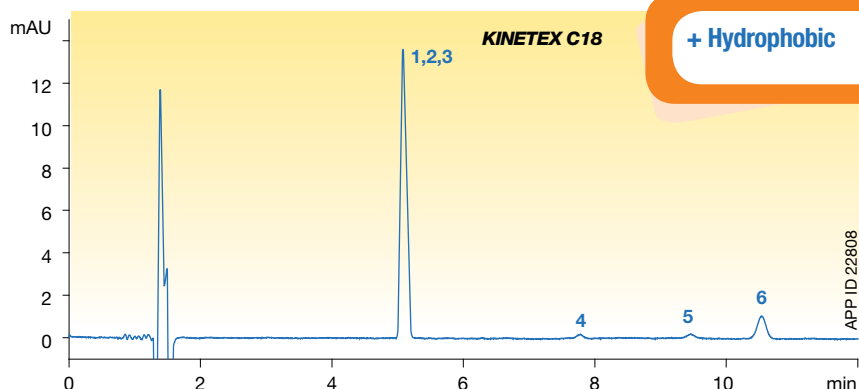
2. 1,2-Dimethoxybenzene

3. 1,2,4-Trimethoxybenzene

4. 1,4-Dimethoxybenzene

5. Methoxybenzene

6. 1,3-Dimethoxybenzene

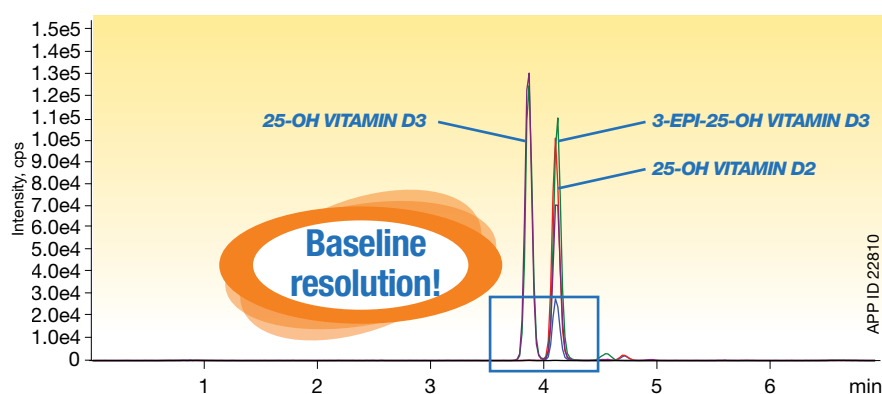


Clinical Research

Vitamin D3 Epimers

Even tandem mass spectrometry (LC/MS/MS) analysis has need to utilize the wonderful cross functionality of Kinetex® F5. With the same fragment ions coming from the Vitamin D3 epimers, reproducible chromatographic separation is a must. The unique combination of polar/non-polar selectivity of Kinetex F5 easily performs this necessary separation in a highly sensitive and short analysis window.

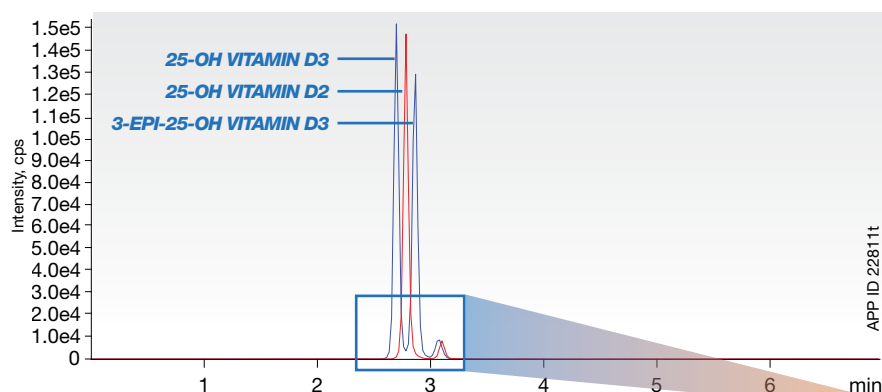
Kinetex 2.6 µm F5



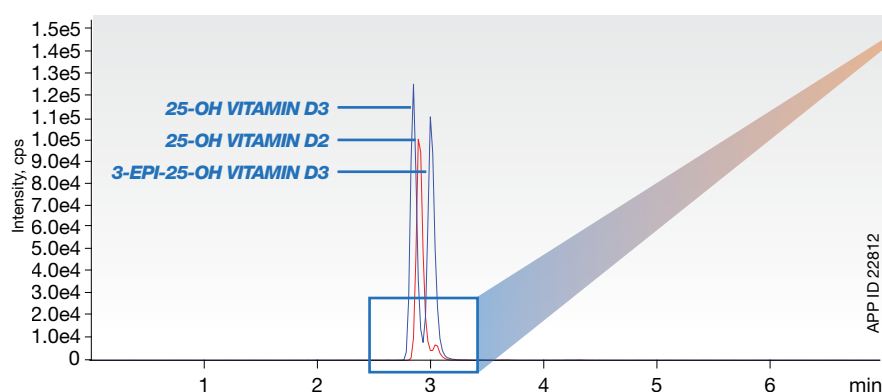
Conditions for all columns:

- Column:** Kinetex 2.6 µm F5
HALO 2.7 µm PFP
XSelect HSS 2.5 µm PFP
- Dimensions:** 100 x 4.6 mm
- Mobile Phase:** A: 0.1% Formic acid in Water
B: 0.1% Formic acid in Methanol
- Isocratic:** A/B (15:85)
- Flow Rate:** 0.75 mL/min
- Temperature:** Ambient
- Detection:** MS/MS (AB SCIEX API 4000™)
- Sample:** 1. 25-OH Vitamin D3
2. 25-OH Vitamin D2
3. 3-epi-25-OH Vitamin D3

Advanced Material Technology HALO® 2.7 µm PFP



Waters® XSelect® HSS 2.5 µm PFP



Vitamin D3 epimers are not fully separated

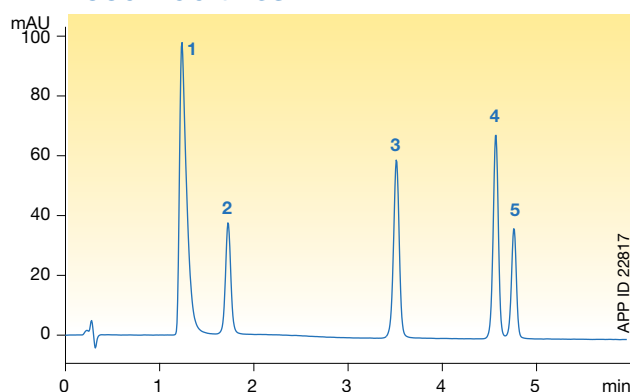
HALO is a registered trademark of Advanced Materials Technology, Inc. Waters and XSelect are registered trademarks of Waters Corporation. Phenomenex is not affiliated with any of the above companies. Comparative separations may not be representative of all applications.

Food Testing

Multi Component Analysis

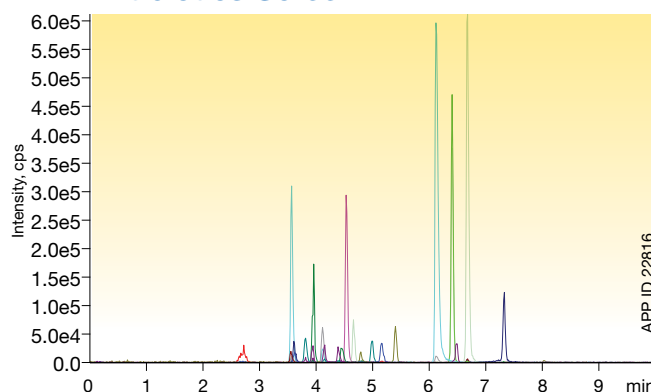
The versatility of Kinetex F5 core-shell columns matches marvelously with ingredient quantification and contaminant identification. Acidic food additives may tail and lack retention on a C18 column, but the Kinetex F5 offers superb polar retention and performance. Meanwhile, large multi component contaminant screens and their mixtures of acids, bases, neutrals and structurally similar compounds, can easily utilize the combination of polar, non-polar and geometric interaction mechanisms of the Kinetex F5 to get excellent separation and sensitivity.

Food Additives



Column: Kinetex 2.6 μ m F5
Dimensions: 150 x 2.1 mm
Part No.: 00F-4723-AN
Mobile Phase: A: 0.1% Phosphoric acid in Water
 B: Acetonitrile
Gradient: 5-35% A in 6 min. Hold for 4 min.
Flow Rate: 0.6 mL/min
Temperature: 30 °C
Detection: UV @ 240 nm
Sample: 1. Saccharin
 2. p-Hydroxybenzoic acid
 3. Sorbic acid
 4. Dehydroacetic acid
 5. Methyl paraben

Antibiotics Screen



Column: Kinetex 2.6 μ m F5
Dimensions: 50 x 2.1 mm
Part No.: 00B-4723-AN
Mobile Phase: A: 0.1% Formic acid in Water
 B: 0.1% Formic acid in Methanol

Gradient	Time (min)	% B
	0	0
	0.08	0
	1.08	100
	8.08	100
	11.08	0
	11.58	0

Flow Rate: 0.5 mL/min
Temperature: 30 °C
Detection: MS/MS (AB SCIEX API 4000™)
Sample: 1. Amoxicillin 13. Sulfamethazine
 2. Cefalexin 14. Sulfamethoxazole
 3. Cefazolin 15. Sulfapyridine
 4. Cefoperazone 16. Sulfamethoxazole
 5. Cefapirin 17. Sulfathiazole
 6. Cloxacillin 18. Neosporin
 7. Dicloxacillin 19. Doxycycline
 8. Ciprofloxacin 20. Tiamulin
 9. Difloxacin 21. Valnemulin
 10. Marbofloxacin 22. Rifaximin
 11. Sulfadiazine 23. Lincomycin
 12. Sulfamerazine 24. Nafcillin

Find more Kinetex F5
 applications at
www.phenomenex.com/KinetexF5Apps

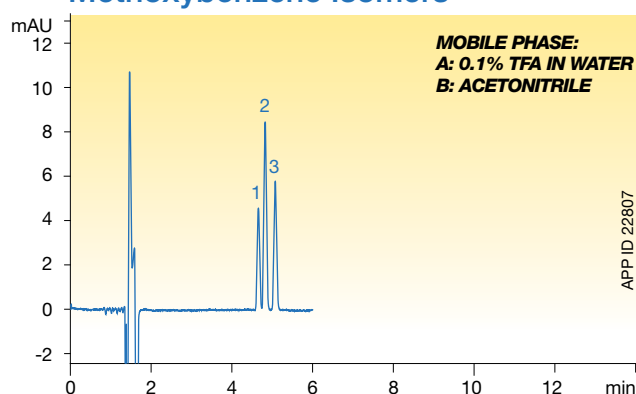


Methanol vs. Acetonitrile

A Phenyl Story

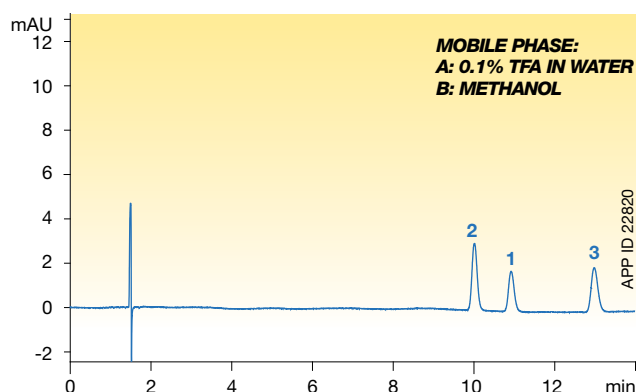
While mobile phase modifiers can help adjust retention, with the use of the Kinetex® F5, the major mobile phase constituent can also be used to manipulate elution order and retention properties. Acetonitrile can be used to disrupt pi-pi interactions between compounds and phenyl phases, while switching to the weaker solvent Methanol will encourage aromatic interactions.

Methoxybenzene Isomers



Conditions for all columns:

Column: Kinetex 2.6µm F5
Dimensions: 150 x 4.6 mm
Part No.: 00F-4723-E0
Mobile Phase: as noted
Isocratic: A/B (65:35)
Flow Rate: 1 mL/min
Temperature: Ambient
Detection: UV @ 254 nm
Sample: 1. 1,2,3-Trimethoxybenzene
2. 1,2-Dimethoxybenzene
3. 1,2,4-Trimethoxybenzene

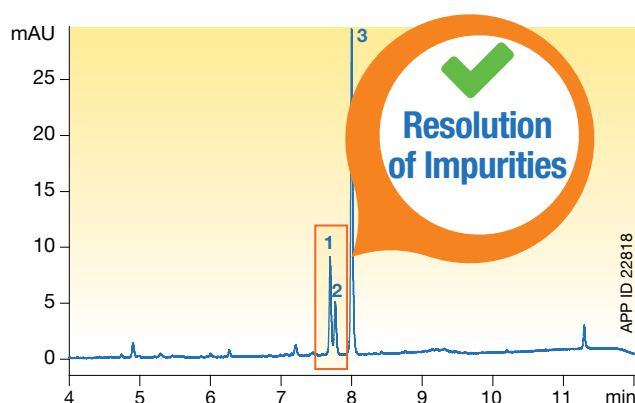


Impact selectivity and retention with solvent adjustment!

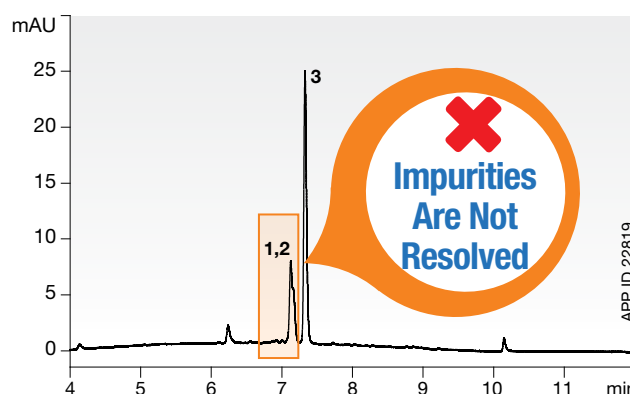
Trace Pharmaceutical Impurity Detection

Trace impurities of active pharmaceutical ingredients are incredibly important to identify and quantify. With the rapid performance value of core-shell technology combined with the versatility of a pentafluorophenyl, the Kinetex F5 is the precise alternative to other reversed phase columns that you need. Easily utilize the Kinetex F5 to get greater sensitivity, better resolution and all in shorter analysis times.

Kinetex 1.7 μ m F5



Waters® ACQUITY® CSH™ 1.7 μ m Fluoro-Phenyl



Conditions for all columns:

Column: Kinetex 1.7 μ m F5
 ACQUITY CSH 1.7 μ m Fluoro-Phenyl

Dimensions: 50 x 2.1 mm

Mobile Phase: A: 20mM Potassium phosphate pH 2.3
 B: Methanol

Gradient:	Time (min)	% B
	0	5
	10	95
	10.01	5

Flow Rate: 0.3 mL/min

Temperature: Ambient

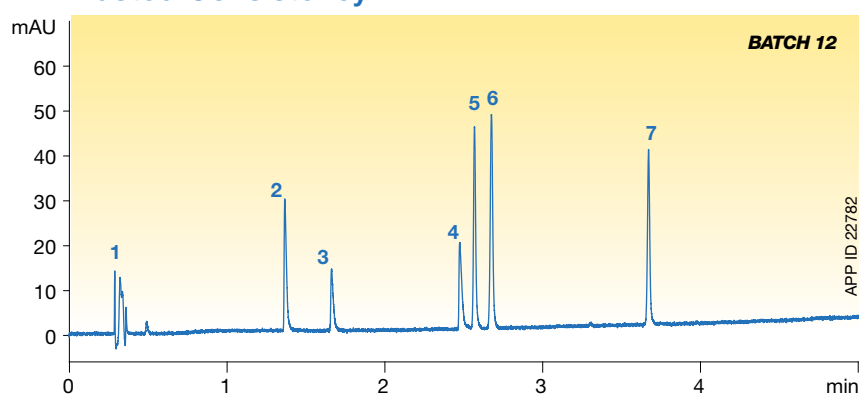
Detection: UV @ 254 nm

Sample: 1. Impurity 1
 2. Impurity 2
 3. Proprietary Active Pharmaceutical Ingredient

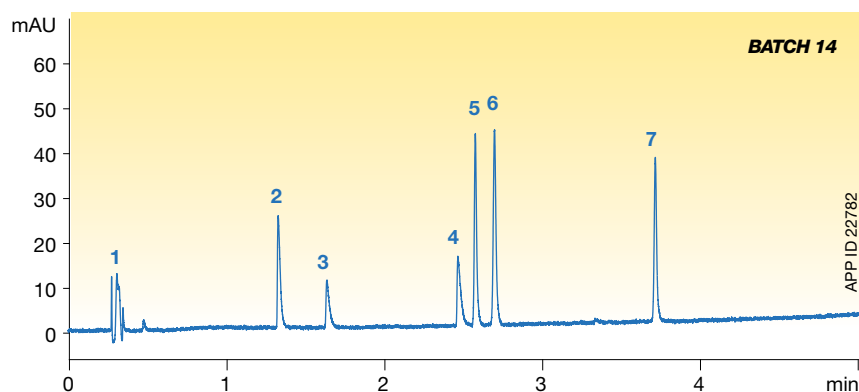
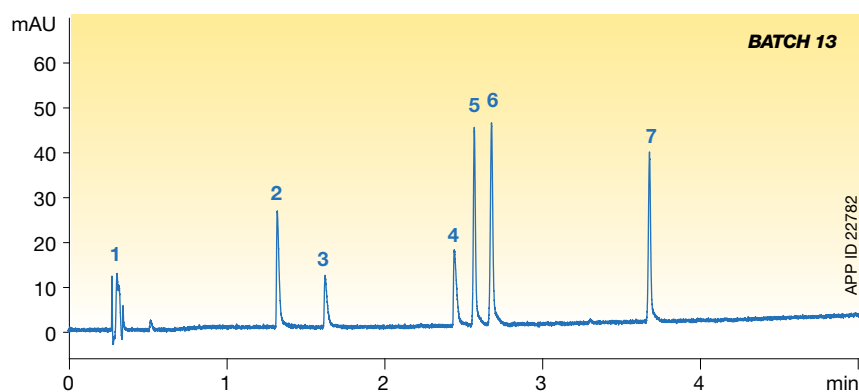
Incredible UHPLC Reproducibility

Highly sensitive UHPLC separations are dependent upon consistent quantitation and consistent results. With the reliability of the Kinetex® F5, you no longer have to settle for the inconsistent results of PFP products that currently exist on the market. Our highest standards of quality will ensure that you are fully satisfied with each and every Kinetex F5 column!

Trusted Consistency



Column: Kinetex 1.7 μ m F5
Dimensions: 50 x 4.6 mm
Mobile Phase: A: 0.1 % Formic in Water
 B: 0.1 % Formic in Acetonitrile
Gradient: 5-95 % B over 5 min.
Flow Rate: 1.85 mL/min
Temperature: Ambient
Detection: UV @ 254 nm
Sample: 1. Uracil
 2. Pindolol
 3. Chlorpheniramine
 4. Nortriptyline
 5. 3-Methyl-4-Nitrobenzoic acid
 6. 5-Methyl Salicyl Aldehyde
 7. Hexaphenone

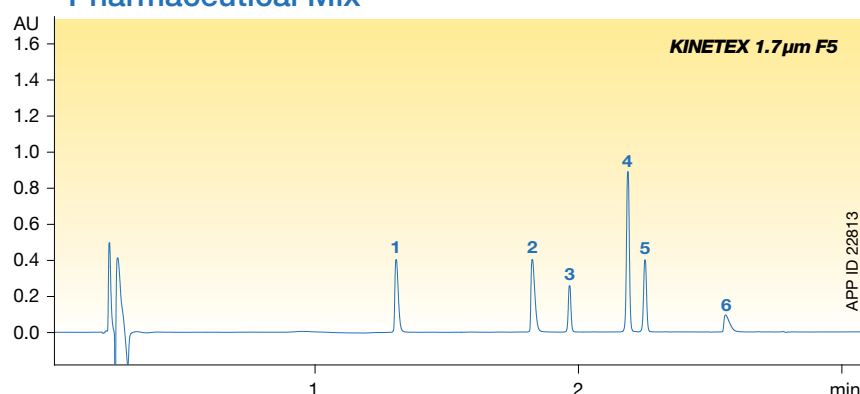


A Better PFP

Selectivity for UHPLC

Kinetex 1.7 μ m core-shell technology produces increased efficiencies over traditional sub-2 μ m columns on the market, yielding remarkable chromatographic resolution, higher peak capacities, and greater sensitivity. Add these performance gains alongside the novel selectivity and excellent reproducibility of the Kinetex F5 and you now have an incredible UHPLC solution at your fingertips.

Pharmaceutical Mix



Conditions for all columns:

Column: Kinetex 1.7 μ m F5
 ACQUITY CSH 1.7 μ m Fluoro-Phenyl
 ACQUITY HSS 1.8 μ m PFP

Dimensions: 50 x 2.1 mm

Mobile Phase: A: 10 mM Ammonium acetate pH 3.2
 B: Acetonitrile

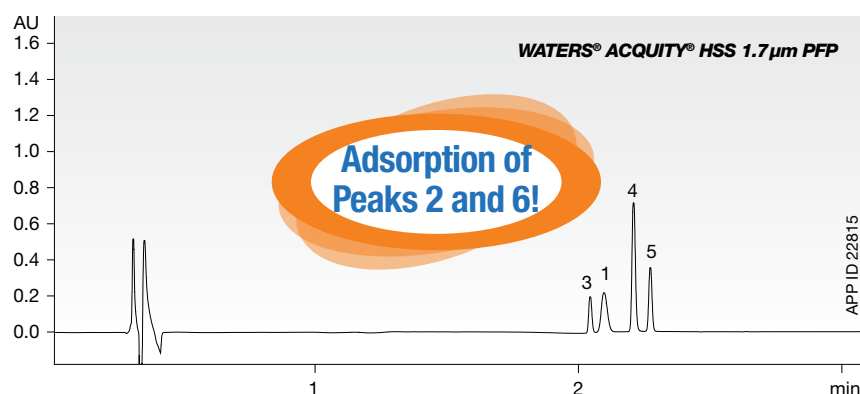
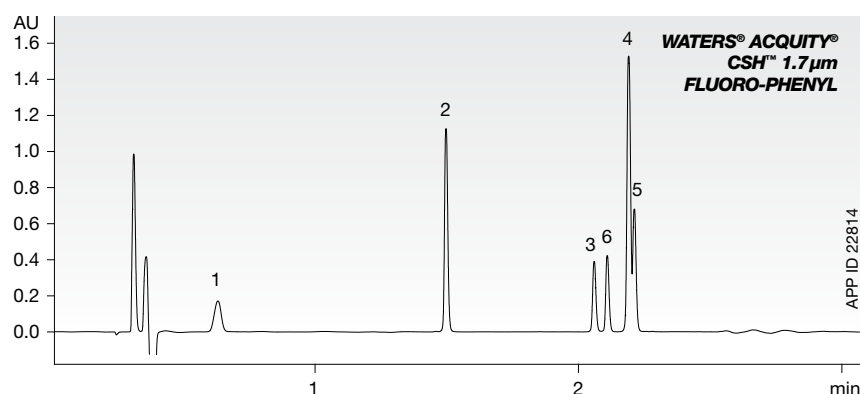
Gradient	Time (min)	% B
	90	10
	90	10
	5	95
	5	95
	90	10
	90	10

Flow Rate: 0.4 mL/min

Temperature: Ambient

Detection: UV @ 220 nm

Sample:
 1. Pindolol
 2. Propanolol
 3. Indoprofen
 4. Naproxen
 5. Warfarin
 6. Terfenadine



MEOW!!
Kinetex F5
is amazing!



Terrellasaurus – first discovered in Torrance, CA.

Get Method Development Flexibility For Your Small Molecule Analysis

Recommended Selectivities If You're Working With:

Acids

- Kinetex® C18
- Kinetex F5
- Kinetex Phenyl-Hexyl

Bases

- Kinetex EVO C18
- Kinetex XB-C18
- Kinetex Biphenyl

Neutrals

- Kinetex C18
- Kinetex C8
- Kinetex Biphenyl

Aromatics

- Kinetex Biphenyl
- Kinetex Phenyl-Hexyl
- Kinetex F5

Acids, Bases, and Neutrals

- Kinetex C18
- Kinetex Biphenyl
- Kinetex EVO C18
- Kinetex F5

Highly Polar Compounds

- Kinetex EVO C18
- Kinetex F5
- Kinetex Biphenyl
- Kinetex HILIC

High pH

- Kinetex EVO C18

Isomers

- Kinetex F5

Upgrading Your Fully Porous Methods:

Fully Porous 3 μ m or 5 μ m

- **Kinetex 5 μ m** – Drop-in for easy performance improvements with no backpressure increase
- **Kinetex 2.6 μ m** – Dramatically improve results with efficiency/peak capacity gains

Fully Porous sub-2 μ m

- **Kinetex 2.6 μ m** – Get similar efficiencies at lower backpressure allowing for greater productivity gains
- **Kinetex 1.7 μ m** – Up to 20% greater efficiencies resulting in drop-in improvements
- **Kinetex 1.3 μ m** – Incredible efficiency gains on high end UHPLC systems

Fully Porous Preparative LC

- **Kinetex 5 μ m** – Drop-in for easy performance improvement with no backpressure increase

Choosing The Best Core-Shell Platform For You is Easy!

For Small Molecules

	5 μ m	3.6 μ m	2.6 μ m	1.7 μ m	1.3 μ m
UHPLC					
HPLC					
PREP LC					

Phase	Best Use	pH Stability	Available Particle Size(s)		
F5	Highly reproducible pentafluorophenyl propyl phase that offers a unique combination of polar, hydrophobic, aromatic, and shape selectivity	1.5 - 8.5*		2.6 μ m	1.7 μ m
EVO C18	Robust reversed phase methods even in alkaline conditions with improved peak shape for polar basic compounds	1 - 12	5 μ m		
C18	All purpose phase that offers the hydrophobic retention and methylene selectivity chromatographers expect from a C18 column	1.5 - 8.5*	5 μ m	2.6 μ m	1.7 μ m
XB-C18	C18 phase with protective butyl side chains for improved peak shape for basic compounds under neutral and acidic conditions	1.5 - 8.5*	5 μ m	2.6 μ m	1.7 μ m
C8	USP L7 phase that provides less hydrophobic and methylene selectivity than a C18	1.5 - 8.5*	5 μ m	2.6 μ m	1.7 μ m
Biphenyl	100% aqueous stable and allows for excellent reversed phase retention and enhanced polar and aromatic selectivity	1.5 - 8.5*	5 μ m	2.6 μ m	1.7 μ m
Phenyl-Hexyl	Reversed phase chemistry that allows for greater retention and separation of aromatic hydrocarbons	1.5 - 8.5*	5 μ m	2.6 μ m	1.7 μ m
HILIC	Unbonded silica phase for HILIC conditions to provide selectivity for polar compounds	2.0 - 7.5	5 μ m	2.6 μ m	1.7 μ m

Phenomenex Application Specific Core-Shell Products

Material	Phase	Best Use	pH Stability	Available Particle Size(s)			
For Peptides (≤ 10,000 Da)							
Aeris® PEPTIDE	XB-C18	Excellent hydrophobicity and methylene selectivity for peptide and peptide mapping separations	1.5 - 9.0	5 μm	3.6 μm	2.6 μm	1.7 μm
For Proteins (> 10,000 Da)							
Aeris WIDEPORE	XB-C18	Maximum hydrophobicity and high temp stability for hydrophilic and PEGylated proteins	1.5 - 9.0		3.6 μm		
	XB-C8	Medium hydrophobicity and high temp stability for moderately hydrophobic proteins and glycosylated proteins	1.5 - 9.0		3.6 μm		
	C4	Lowest hydrophobicity for very large or very hydrophobic proteins	1.5 - 9.0		3.6 μm		
For Synthetic Oligonucleotides (DNA/RNA)							
Clarity® Oligo-MS™	C18	Rapid, high efficiency reversed phase LC/MS analysis for QC and characterization	1.5 - 8.5*			2.6 μm	1.7 μm

*pH stability under gradient conditions. pH stability is 1.5-10 under isocratic conditions.

Ordering Information

5 µm Minibore Columns (mm)					SecurityGuard™ ULTRA Cartridges†
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
	\$ 470	\$ 495	\$ 600	\$ 700	\$ 410
EVO C18	00A-4633-AN	00B-4633-AN	00D-4633-AN	00F-4633-AN	AJ0-9298
	\$ 430	\$ 450	\$ 565	\$ 645	\$ 410
Biphenyl	00A-4627-AN	00B-4627-AN	00D-4627-AN	—	AJ0-9209
XB-C18	00A-4605-AN	00B-4605-AN	00D-4605-AN	—	AJ0-8782
C18	00A-4601-AN	00B-4601-AN	00D-4601-AN	00F-4601-AN	AJ0-8782
C8	—	00B-4608-AN	00D-4608-AN	—	AJ0-8784
Phenyl-Hexyl	—	00B-4603-AN	00D-4603-AN	—	AJ0-8788

for 2.1 mm ID

5 µm MidBore™ Columns (mm)					SecurityGuard ULTRA Cartridges‡
Phases	50 x 3.0	100 x 3.0	150 x 3.0		3/pk
	\$ 495	\$ 600	\$ 700		\$ 410
EVO C18	00B-4633-Y0	00D-4633-Y0	00F-4633-Y0		AJ0-9297
	\$ 450	\$ 565	\$ 645		\$ 410
Biphenyl	00B-4627-Y0	00D-4627-Y0	00F-4627-Y0		AJ0-9208
XB-C18	00B-4605-Y0	00D-4605-Y0	00F-4605-Y0		AJ0-8775
C18	00B-4601-Y0	00D-4601-Y0	00F-4601-Y0		AJ0-8775
C8	00B-4608-Y0	00D-4608-Y0	—		AJ0-8777
Phenyl-Hexyl	00B-4603-Y0	00D-4603-Y0	—		AJ0-8781

for 3.0 mm ID

5 µm Analytical Columns (mm)					SecurityGuard ULTRA Cartridges‡
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
	\$ 495	\$ 600	\$ 700	\$ 735	\$ 410
EVO C18	00B-4633-E0	00D-4633-E0	00F-4633-E0	00G-4633-E0	AJ0-9296
	\$ 450	\$ 565	\$ 645	\$ 675	\$ 410
Biphenyl	00B-4627-E0	00D-4627-E0	00F-4627-E0	00G-4627-E0	AJ0-9207
XB-C18	00B-4605-E0	00D-4605-E0	00F-4605-E0	00G-4605-E0	AJ0-8768
C18	00B-4601-E0	00D-4601-E0	00F-4601-E0	00G-4601-E0	AJ0-8768
C8	00B-4608-E0	00D-4608-E0	00F-4608-E0	00G-4608-E0	AJ0-8770
Phenyl-Hexyl	00B-4603-E0	00D-4603-E0	00F-4603-E0	00G-4603-E0	AJ0-8774

for 4.6 mm ID

5 µm Semi-Preparative Columns (mm)				SecurityGuard SemiPrep Cartridges***
Phases	150 x 10	250 x 10	10 x 10	
	\$ 1,499	\$ 1,799	\$ 505 /3pk	
C18	00F-4601-N0	00G-4601-N0	AJ0-9278	
Biphenyl	00F-4627-N0	00G-4627-N0	AJ0-9280	

for 10 mm ID

5 µm Axia™ Packed Preparative Columns (mm)					SecurityGuard PREP Cartridges*
Phases	50 x 21.2	100 x 21.2	150 x 21.2	250 x 21.2	15 x 21.2
	\$ 1,829	\$ 2,765	\$ 3,165	\$ 3,765	\$ 365/ea
EVO C18	00B-4633-P0-AX	00D-4633-P0-AX	00F-4633-P0-AX	00G-4633-P0-AX	AJ0-9304
	\$ 1,749	\$ 2,549	\$ 2,939	\$ 3,489	\$ 365/ea
Biphenyl	00B-4627-P0-AX	00D-4627-P0-AX	00F-4627-P0-AX	00G-4627-P0-AX	AJ0-9272
XB-C18	00B-4605-P0-AX	00D-4605-P0-AX	00F-4605-P0-AX	00G-4605-P0-AX	AJ0-9145
C18	00B-4601-P0-AX	00D-4601-P0-AX	00F-4601-P0-AX	00G-4601-P0-AX	AJ0-9145
C8	00B-4608-P0-AX	00D-4608-P0-AX	00F-4608-P0-AX	00G-4608-P0-AX	AJ0-9205
Phenyl-Hexyl	00B-4603-P0-AX	00D-4603-P0-AX	00F-4603-P0-AX	00G-4603-P0-AX	AJ0-9147
HILIC	—	00D-4606-P0-AX	00F-4606-P0-AX	00G-4606-P0-AX	AJ0-9277

for 21.2 mm ID

5 µm Axia Packed Preparative Columns (mm)					SecurityGuard PREP Cartridges**
Phases	50 x 30	100 x 30	150 x 30	250 x 30	15 x 30
	—	Inquire	Inquire	Inquire	\$ 385/ea
EVO C18	—	00D-4633-U0-AX	00F-4633-U0-AX	00G-4633-U0-AX	AJ0-9305
	\$ 3,315	\$ 4,709	Inquire	Inquire	\$ 385/ea
Biphenyl	—	—	00F-4627-U0-AX	—	AJ0-9273
XB-C18	00B-4605-U0-AX	00D-4605-U0-AX	00F-4605-U0-AX	00G-4605-U0-AX	AJ0-9204
C18	00B-4601-U0-AX	00D-4601-U0-AX	00F-4601-U0-AX	00G-4601-U0-AX	AJ0-9204
C8	00B-4608-U0-AX	00D-4608-U0-AX	00F-4608-U0-AX	00G-4608-U0-AX	AJ0-9217
Phenyl-Hexyl	00B-4603-U0-AX	00D-4603-U0-AX	00F-4603-U0-AX	00G-4603-U0-AX	AJ0-9216

for 30 mm ID

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* SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000

* PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8223

** PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8277

*** SemiPrep SecurityGuard Cartridges require holder, Part No.: AJ0-9281

Ordering Information

NEW

2.6 µm Minibore Columns (mm)						SecurityGuard™ ULTRA Cartridges [‡]
Phases	30 x 2.1	50 x 2.1	75 x 2.1	100 x 2.1	150 x 2.1	3/pk
	\$ 600	\$ 660	\$ 700	\$ 725	\$ 775	\$ 410
F5	—	00B-4723-AN	—	00D-4723-AN	00F-4723-AN	AJO-9322
Biphenyl	00A-4622-AN	00B-4622-AN	—	00D-4622-AN	00F-4622-AN	AJO-9209
XB-C18	00A-4496-AN	00B-4496-AN	00C-4496-AN	00D-4496-AN	00F-4496-AN	AJO-8782
C18	00A-4462-AN	00B-4462-AN	00C-4462-AN	00D-4462-AN	00F-4462-AN	AJO-8782
C8	00A-4497-AN	00B-4497-AN	00C-4497-AN	00D-4497-AN	00F-4497-AN	AJO-8784
HILIC	00A-4461-AN	00B-4461-AN	00C-4461-AN	00D-4461-AN	00F-4461-AN	AJO-8786
Phenyl-Hexyl	00A-4495-AN	00B-4495-AN	00C-4495-AN	00D-4495-AN	00F-4495-AN	AJO-8788

for 2.1 mm ID

NEW

2.6 µm MidBore™ Columns (mm)						SecurityGuard™ ULTRA Cartridges [‡]
Phases	30 x 3.0	50 x 3.0	75 x 3.0	100 x 3.0	150 x 3.0	3/pk
	\$ 600	\$ 660	\$ 700	\$ 725	\$ 775	\$ 410
F5	—	00B-4723-YO	—	00D-4723-YO	00F-4723-YO	AJO-9321
Biphenyl	—	00B-4622-YO	—	00D-4622-YO	00F-4622-YO	AJO-9208
XB-C18	00A-4496-YO	00B-4496-YO	00C-4496-YO	00D-4496-YO	00F-4496-YO	AJO-8775
C18	00A-4462-YO	00B-4462-YO	00C-4462-YO	00D-4462-YO	00F-4462-YO	AJO-8775
C8	00A-4497-YO	00B-4497-YO	00C-4497-YO	00D-4497-YO	00F-4497-YO	AJO-8777
HILIC	00A-4461-YO	—	—	—	00F-4461-YO	AJO-8779
Phenyl-Hexyl	—	00B-4495-YO	—	00D-4495-YO	00F-4495-YO	AJO-8781

for 3.0 mm ID

NEW

2.6 µm Analytical Columns (mm)						SecurityGuard™ ULTRA Cartridges [‡]
Phases	30 x 4.6	50 x 4.6	75 x 4.6	100 x 4.6	150 x 4.6	3/pk
	\$ 600	\$ 660	\$ 700	\$ 725	\$ 775	\$ 410
F5	—	00B-4723-E0	—	00D-4723-E0	00F-4723-E0	AJO-9320
Biphenyl	—	00B-4622-E0	—	00D-4622-E0	00F-4622-E0	AJO-9207
XB-C18	—	00B-4496-E0	00C-4496-E0	00D-4496-E0	00F-4496-E0	AJO-8768
C18	00A-4462-E0	00B-4462-E0	00C-4462-E0	00D-4462-E0	00F-4462-E0	AJO-8768
C8	—	00B-4497-E0	00C-4497-E0	00D-4497-E0	00F-4497-E0	AJO-8770
HILIC	—	00B-4461-E0	00C-4461-E0	00D-4461-E0	00F-4461-E0	AJO-8772
Phenyl-Hexyl	—	00B-4495-E0	00C-4495-E0	00D-4495-E0	00F-4495-E0	AJO-8774

for 4.6 mm ID

NEW

1.7 µm Minibore Columns (mm)					SecurityGuard™ ULTRA Cartridges [‡]
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
	\$ 725	\$ 735	\$ 755	\$ 805	\$ 410
F5	—	00B-4722-AN	00D-4722-AN	00F-4722-AN	AJO-9322
Biphenyl	—	00B-4628-AN	00D-4628-AN	00F-4628-AN	AJO-9209
XB-C18	00A-4498-AN	00B-4498-AN	00D-4498-AN	00F-4498-AN	AJO-8782
C18	00A-4475-AN	00B-4475-AN	00D-4475-AN	00F-4475-AN	AJO-8782
C8	00A-4499-AN	00B-4499-AN	00D-4499-AN	00F-4499-AN	AJO-8784
HILIC	00A-4474-AN	00B-4474-AN	00D-4474-AN	—	AJO-8786
Phenyl-Hexyl	—	00B-4500-AN	00D-4500-AN	00F-4500-AN	AJO-8788

for 2.1 mm ID

1.7 µm MidBore Columns (mm)				SecurityGuard™ ULTRA Cartridges [‡]
Phases	30 x 3.0	50 x 3.0	100 x 3.0	3/pk
	\$ 725	\$ 735	\$ 755	\$ 410
XB-C18	00A-4498-YO	00B-4498-YO	00D-4498-YO	AJO-8775
C18	—	00B-4475-YO	00D-4475-YO	AJO-8775
C8	00A-4499-YO	00B-4499-YO	00D-4499-YO	AJO-8777
HILIC	—	00B-4474-YO	—	AJO-8779

for 3.0 mm ID

1.3 µm Minibore Columns (mm)		
Phases	30 x 2.1	50 x 2.1
	\$ 755	\$ 769
C18	00A-4515-AN	00B-4515-AN

[‡] SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

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Comparative separations may not be representative of all applications.

SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362.

CAUTION: this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP or ULTRA holders, or to any cartridges.

Axia column and packing technology is patented by Phenomenex. U.S. Patent No. 7,674,383

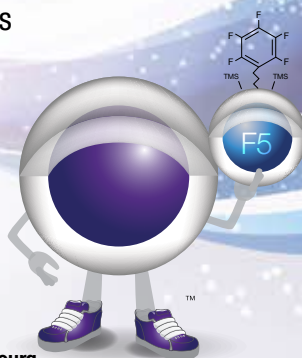
Kinetex EVO is patented by Phenomenex. U.S. Patent Nos. 7,563,367 and 8,658,038 and foreign counterparts.

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