KINETEX®
Core-Shell Technology

Pssst!
Waters® XBridge®
and **BEH™** user,
now you can…

Triumph

with
- Improved Peak Shape for Bases
- Shorter Run Times
- Core-Shell Performance from pH 1-12

Kinetex EVO C18

Core-Shell UHPLC/HPLC Columns

phenomenex®
. . . breaking with tradition℠

The Past

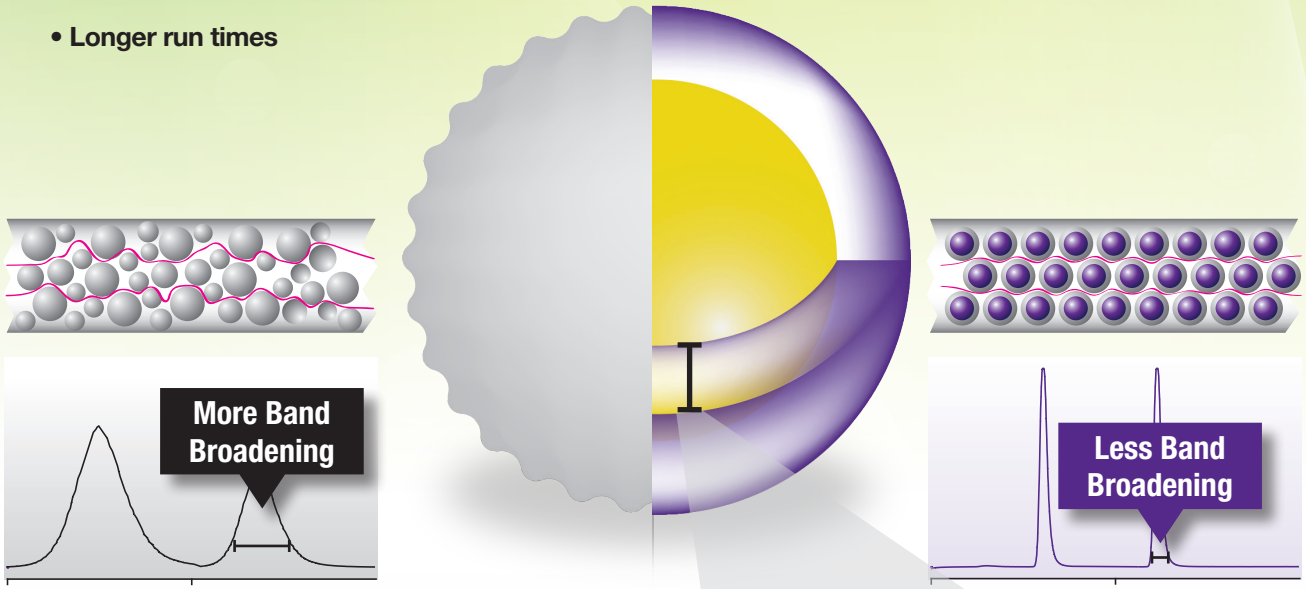
Traditional fully porous hybrid

- More band broadening
- Lower sensitivities
- Longer run times

The Present

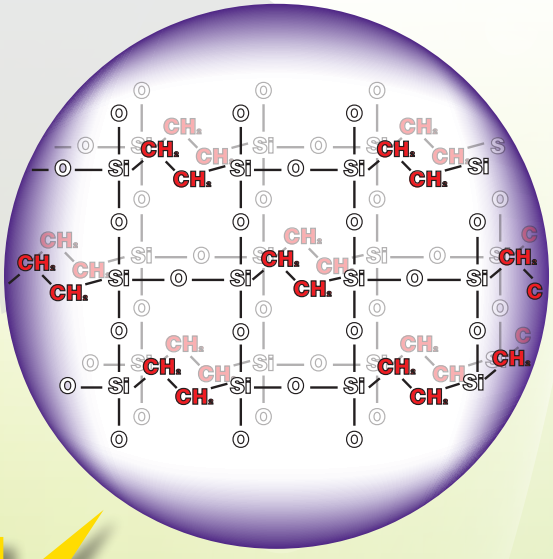
Kinetex® Core-Shell EVO C18

- Sharper peaks
- Higher efficiencies
- Increased sensitivity
- Shorter run times



Introducing Kinetex EVO C18

The Kinetex core-shell EVO C18 provides much greater LC performance than fully porous products, giving you the freedom to **get improved results, cost savings, and overall higher productivity**. The patented surface technology of the Kinetex EVO C18 also provides you with the ruggedness to take on 100% aqueous conditions and reversed phase methods from pH 1-12.



Kinetex EVO C18 uses a patented organo-silica grafting process which incorporates uniform stabilizing ethane cross-linking to provide resistance to high pH attack while maintaining mechanical strength of the core-shell particle.

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

How Does Kinetex EVO C18 Perform?

SelectScience® TRUSTED REVIEWS

"With our vast range of clients, our quality control lab receives all kind of sample to analyse. This column is often used to analyse a large range of samples. The low cost combined with the great range of pH in which this column can be used saves us a lot of trouble and gives us a great price/utility ratio."

Pierre-Alexandre Paquette
Solartech Laboratories, Inc.

"This column works better than any column I have used for method development."

Jenn Jazikoff
Dynamic Pharmaceuticals

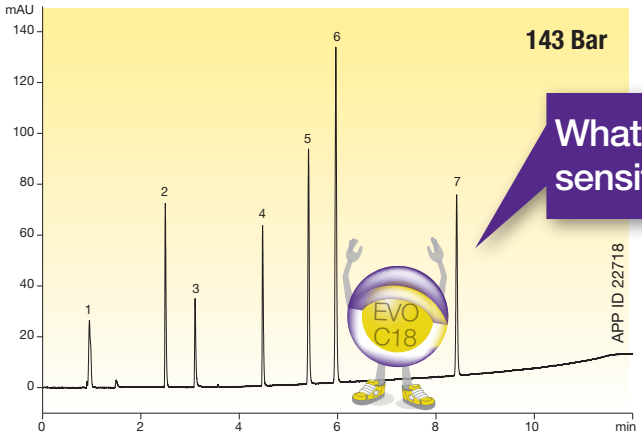
Upgrade from XBridge and BEH C18 columns:

XBridge® and BEH™ C18		Kinetex EVO C18	Page(s)
3.5 µm	vs	5 µm	4
5 µm	vs	5 µm	4-5
1.7 µm	vs	2.6 µm	6-7
1.7 µm	vs	1.7 µm	8-9
5 µm OBD™	vs	5 µm AXIA™	10
Ordering Information			11

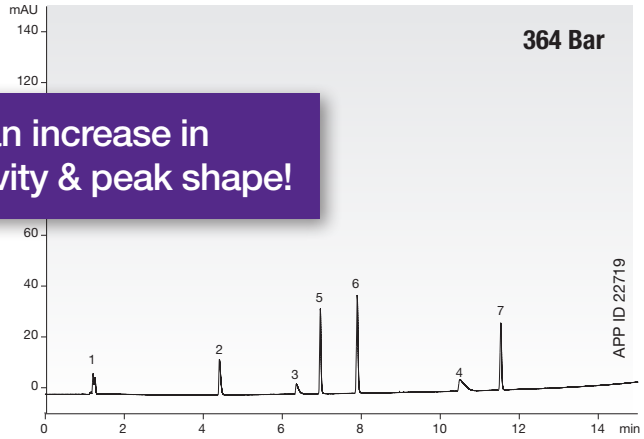
Upgrade Your HPLC Methods for
Greater Sensitivity

With the combination of 100% aqueous stability, pH ruggedness from 1-12, and the core-shell performance advantage, you can easily replace old hybrid silica columns and gain immediate method improvements without increasing backpressure.

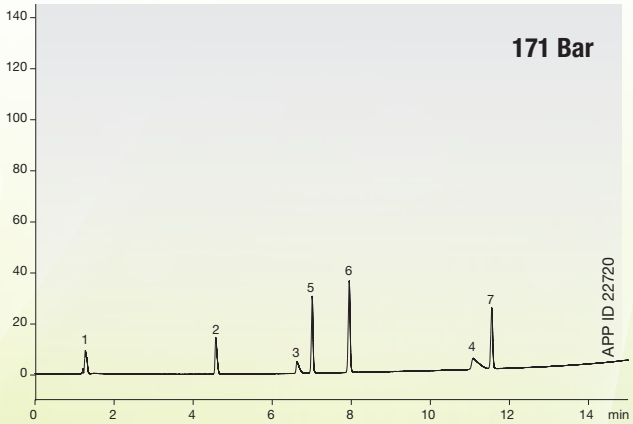
Kinetex® 5 µm EVO C18 150 x 4.6 mm



Waters® XBridge® 3.5 µm C18 150 x 4.6 mm



Waters XBridge 5 µm C18 150 x 4.6 mm



Conditions for all columns:

Column: Kinetex 5 µm EVO C18
XBridge 5 µm C18
XBridge 3.5 µm C18

Dimensions: 150 x 4.6 mm

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

Gradient: 5 % to 95 % B over 10 minutes

Flow Rate: 1.5 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

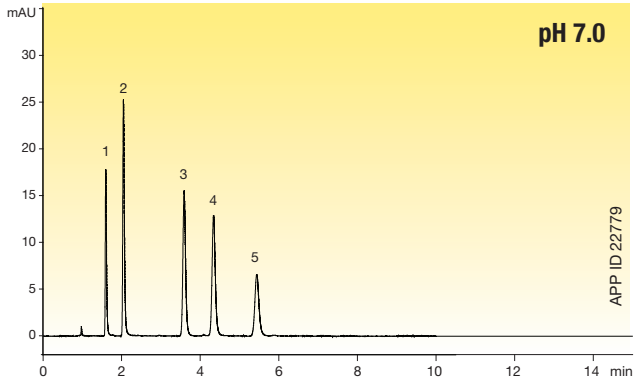
Comparative separations may not be representative of all applications.

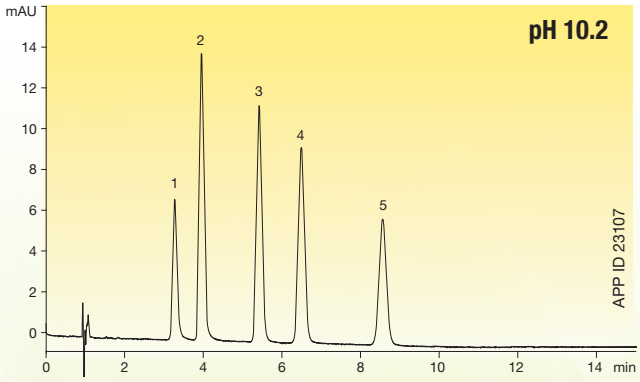
KINETEX
Core-Shell Technology

Advance pH 1-12 Methods Ahead with Better Peak Shape

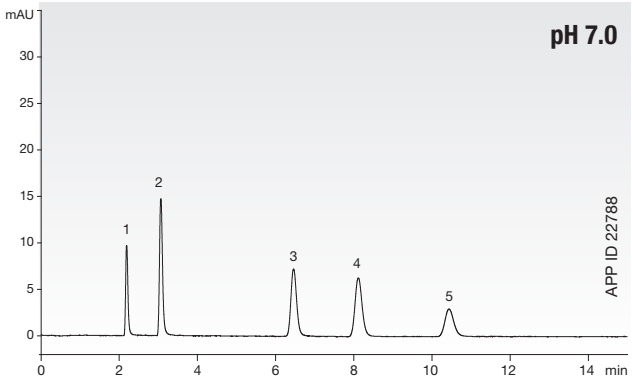
Easy improvements in resolution, productivity, and sensitivity are just a column away. By upgrading your methods from traditional fully porous hybrid materials to Kinetex 5 µm EVO C18 Core-Shell Technology you can expect excellent performance and pH durability at low HPLC backpressures!

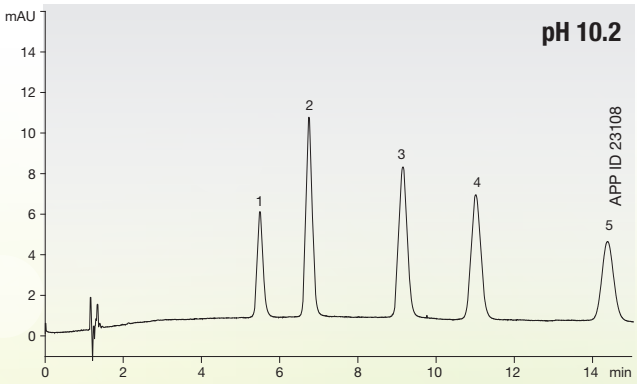
Kinetex 5 µm EVO C18 150 x 4.6 mm





Waters® XBridge® 5 µm C18 150 x 4.6 mm





Conditions for all columns:

Column: Kinetex 5 µm EVO C18
XBridge 5 µm C18

Dimensions: 150 x 4.6 mm

Mobile Phase: A: 20 mM Sodium Phosphate (pH 7.0 or pH 10.2)
B: Methanol/Acetonitrile (50:50)

Isocratic: A/B (30:70)

Flow Rate: 1.25 mL/min

Temperature: 30 °C

Detection: UV @ 254 nm

Sample: 1. Protriptyline
2. Nortriptyline
3. Imipramine
4. Amitriptyline
5. Clomipramine

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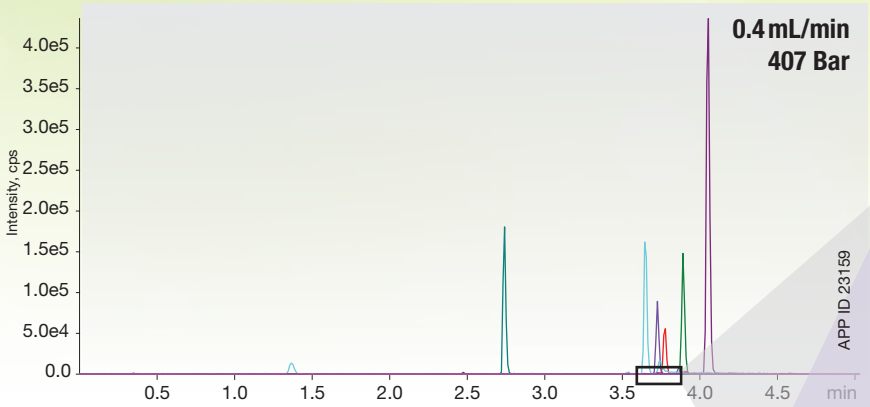
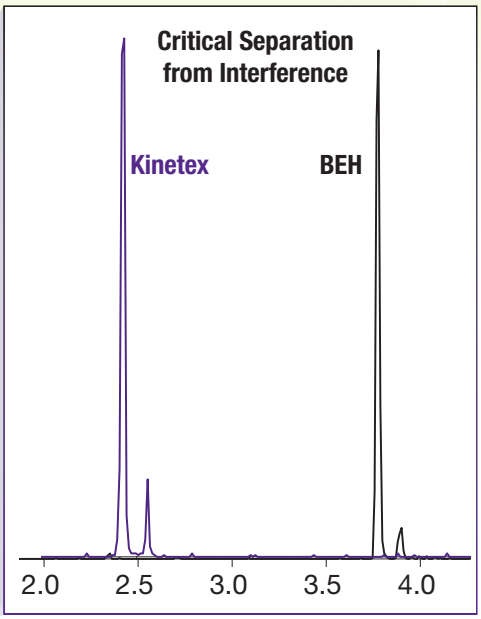
Replace Fully Porous Sub-2 µm Columns for Greater Productivity

Utilize Kinetex® 2.6 µm core-shell columns to take full advantage of the flow rates that are available on your UHPLC system. Since Kinetex 2.6 µm core-shell columns display similar or better performance at a lower pressure than fully porous sub-2 µm columns, you can increase your flow rate with the Kinetex 2.6 µm column and achieve some very useful time savings and productivity gains, while holding onto the necessary performance parameters.

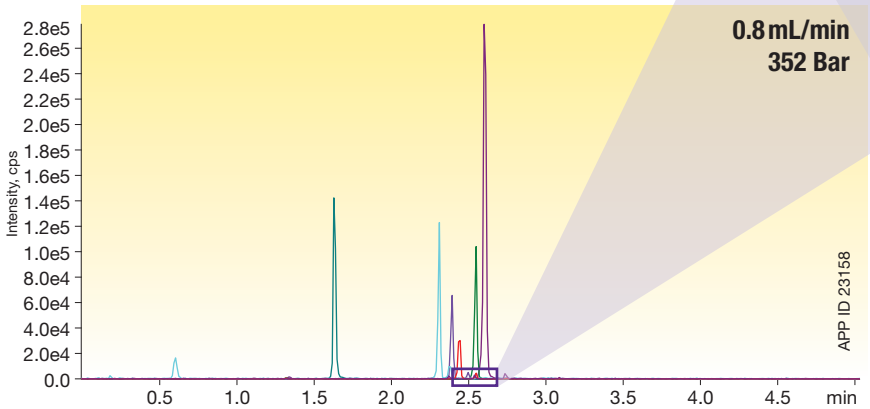
Waters® ACQUITY® BEH™ 1.7 µm C18





35% Faster Analysis

Kinetex 2.6 µm EVO C18



Conditions for all columns unless otherwise noted:

Columns: Kinetex 2.6 µm EVO C18
ACQUITY BEH 1.7 µm C18

Dimensions: 50 x 2.1 mm

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

Gradient:

Time (min)	%B
0	5
5	95

Flow Rate: 0.8 mL/min (Kinetex)
0.4 mL/min (BEH)

Temperature: 30 °C

Detection: MS/MS

Sample: Proprietary Drug Formulation

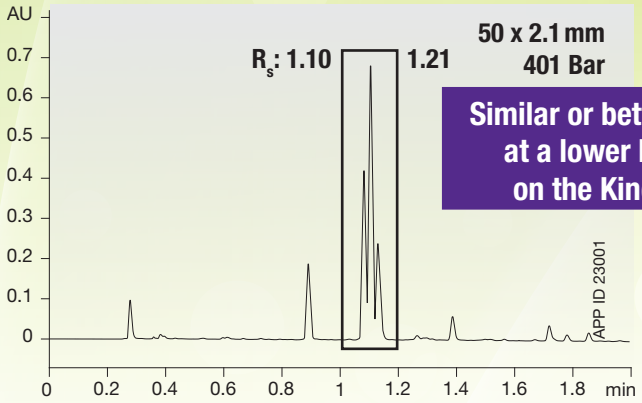
Comparative separations may not be representative of all applications.

KINETEX®
Core-Shell Technology

Replace Fully Porous Sub-2 µm Columns for Increased Resolution

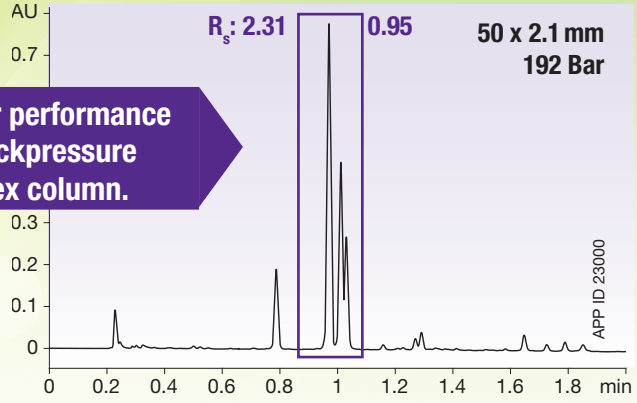
Start Run a Kinetex 2.6 µm column in the same dimension as your sub-2 µm fully porous column.

Waters® ACQUITY® BEH™ 1.7 µm C18



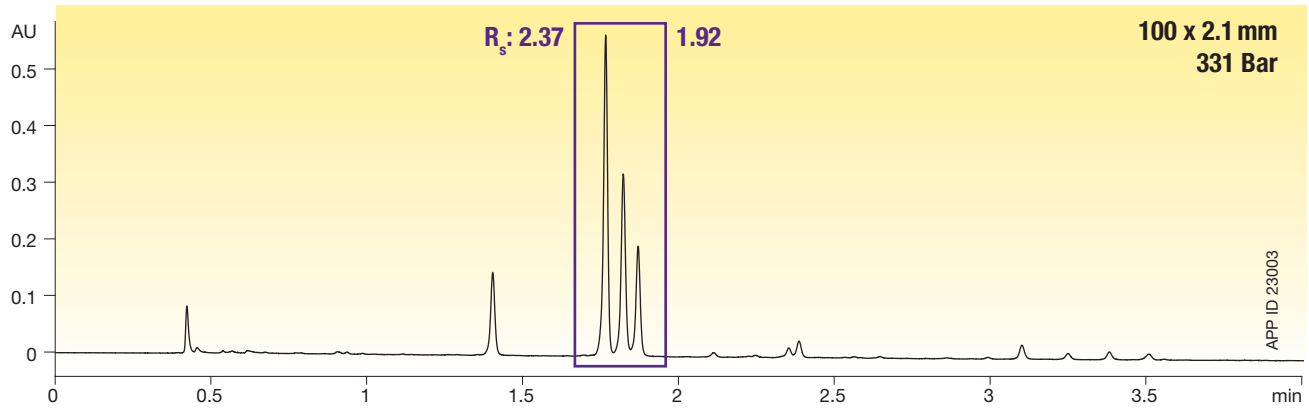
Similar or better performance at a lower backpressure on the Kinetex column.

Kinetex 2.6 µm EVO C18



What's Next? Utilize a longer Kinetex column to further increase resolution

Kinetex 2.6 µm EVO C18



Conditions for all columns unless otherwise noted:

Column: Kinetex 2.6 µm EVO C18
ACQUITY BEH 1.7 µm C18

Dimensions: 50 x 2.1 mm

Mobile Phase: A: 20 mM Potassium phosphate (pH 2.5)
B: Acetonitrile

Gradient:

Time (min)	% B
0	5
5	70
6	70
6.5	5
10	5

Flow Rate: 0.4 mL/min

Temperature: 22 °C

Detection: UV @ 210 nm

Sample: 1. Green Coffee Extract (Chlorogenic Acid and Antioxidants)

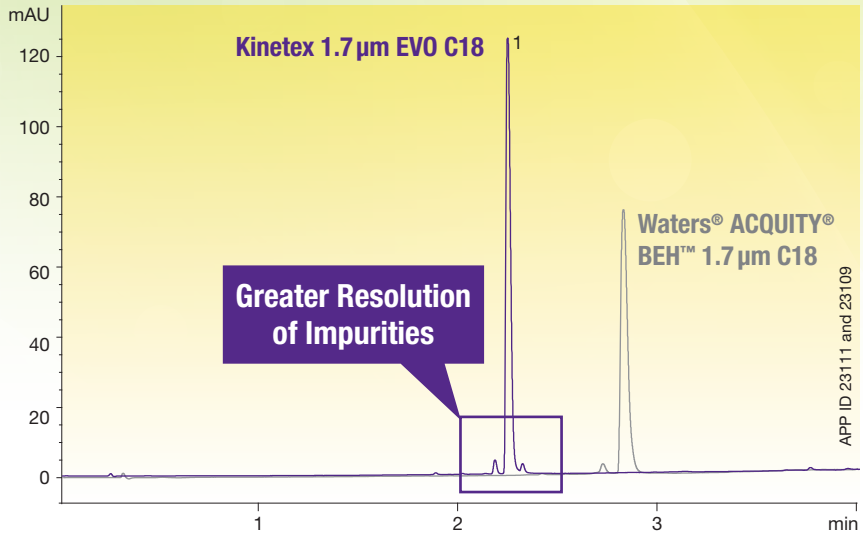
Comparative separations may not be representative of all applications.

Improve Your UHPLC Analyses with

Faster Results and Better Sensitivity

By upgrading from fully porous hybrid UHPLC columns to the Kinetex® 1.7 µm EVO C18, you can keep the pH stability but gain much greater performance. With the core-shell advantage at your disposal your new methods will be faster and more sensitive, leaving room for greater productivity.

Berberine Standard



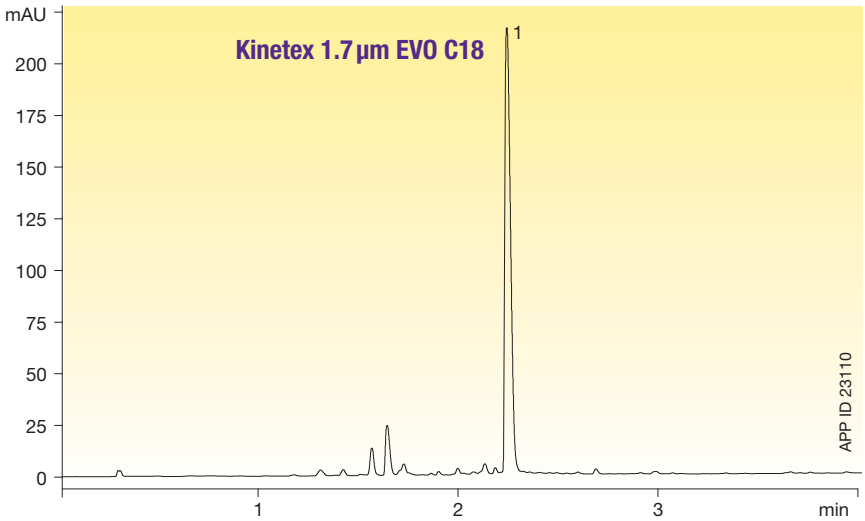
57 % Increase in Peak Height Response

Conditions for both columns:

Column:	Kinetex 1.7 µm EVO C18 ACQUITY BEH 1.7 µm C18
Dimensions:	50 x 2.1 mm
Mobile Phase:	A: 0.1 % Formic Acid in Water B: 0.1 % Formic Acid in Methanol
Gradient:	**Time (min) / % B** 0 / 2 5 / 95
Flow Rate:	0.5 mL/min
Temperature:	30 °C
Detection:	UV @ 254 nm
Sample:	1. Berberine

After enjoying the greater sensitivity, resolution, and peak shape given by the Kinetex EVO C18 for this isolated standard, the same performance benefits can easily be realized for the more complex extracted sample.

Goldenseal Extract (Containing Berberine)



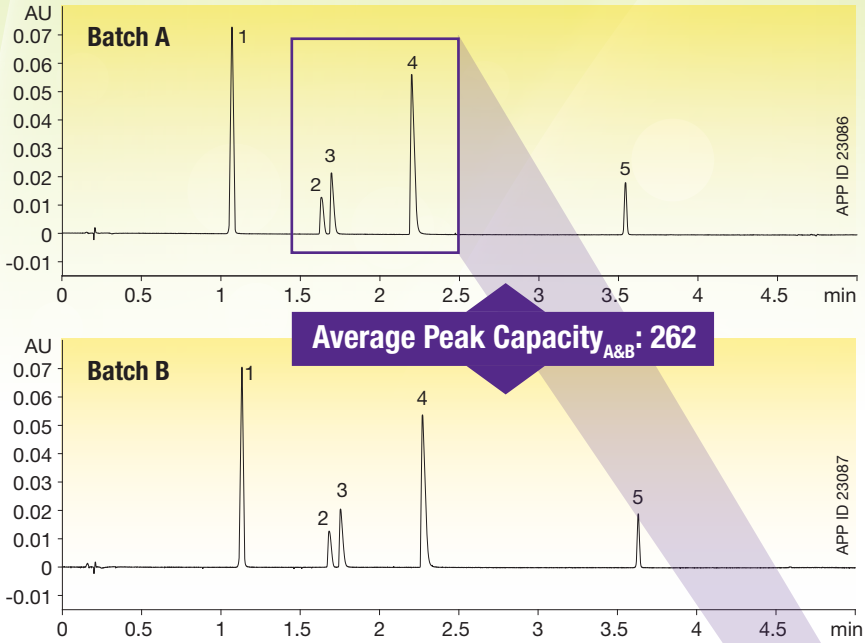
Comparative separations may not be representative of all applications.

KINETEX®
Core-Shell Technology

More Performance, Excelling Quality

Here's an illustration of just how powerful a tool the Kinetex® 1.7 µm EVO C18 is. In comparison with multiple batches of a common hybrid sub-2 µm column line, Kinetex EVO C18 columns show consistently greater performance and better peak shape for basic compounds. This level of quality is what we strive to give you every day with every batch, every column, and even every phone call.

Kinetex 1.7 µm EVO C18



Average Peak Capacity$_{A\&B}$: 262

Conditions for both columns:

Column: Kinetex 1.7 µm EVO C18
ACQUITY BEH 1.7 µm C18

Dimensions: 150 x 2.1 mm

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

Gradient:

Time (min)	% B
0	5
5	95
6	95
6.5	5
10	5

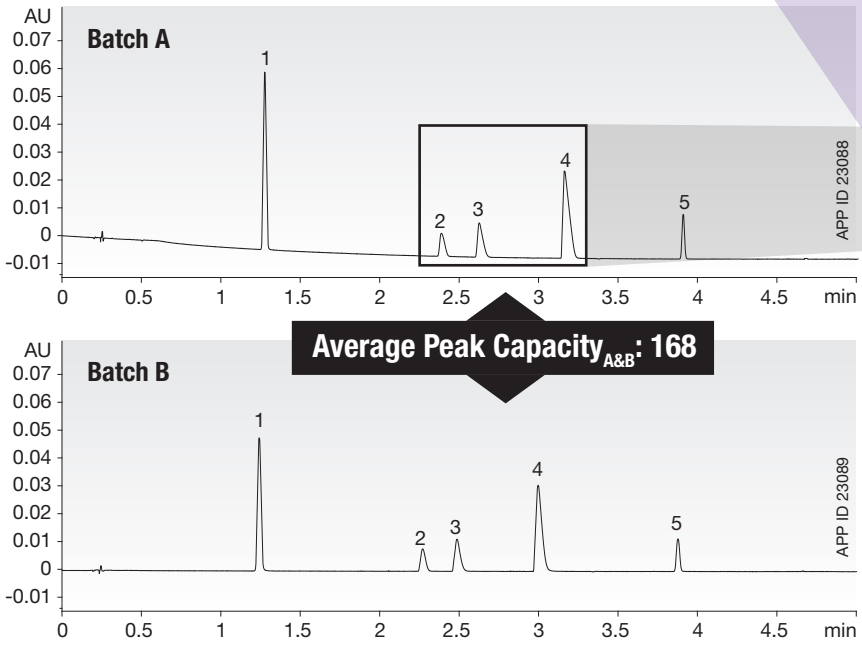
Flow Rate: 0.5 mL/min

Temperature: 22 °C

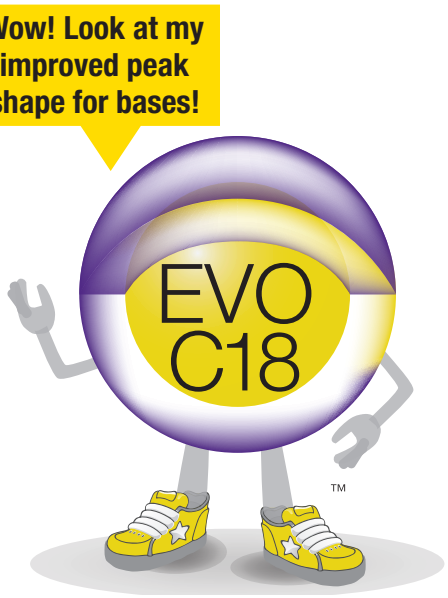
Detection: UV @ 254 nm

Sample: 1. 4-Hydroxybenzoic Acid
2. Labetol
3. Propanolol
4. Protriptyline
5. Ibuprofen

Waters® ACQUITY® BEH™ 1.7 µm C18



Average Peak Capacity$_{A\&B}$: 168

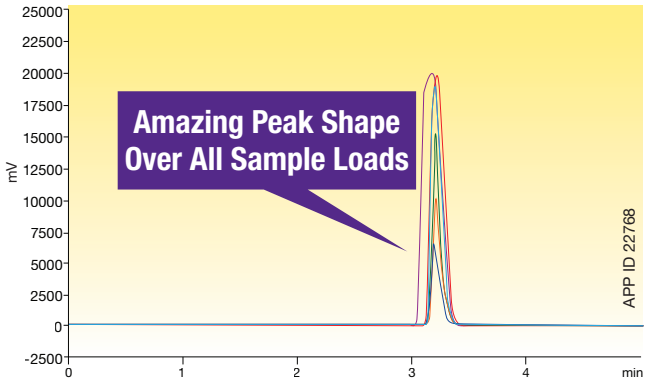


Comparative separations may not be representative of all applications.

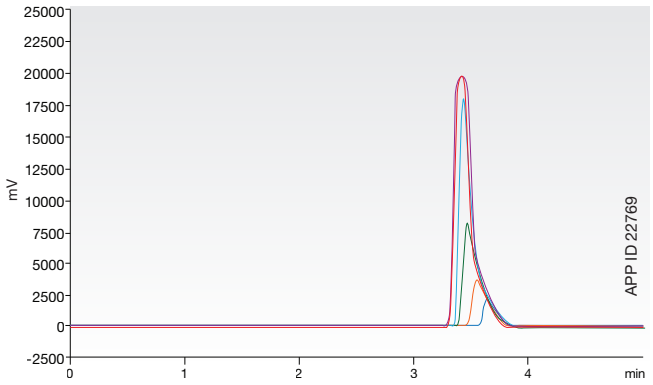
Enhance Purification and Isolation Levels

Kinetex® EVO C18 will easily pave the way to enhanced purification and isolation levels with its incredible pH durability and core-shell performance gains. Get ready for a future of high yields and chromatographic improvements over traditional fully porous and hybrid materials.

Kinetex 5 µm EVO C18 150 x 21.2 mm AXIA™



Waters® XBridge® 5 µm C18 150 x 19 mm Prep OBD™



Conditions for all columns:

Column: Kinetex 5 µm EVO C18 Axia packed
XBridge 5 µm C18 Prep OBD

Dimensions: 150 x 21.2 mm (Kinetex)
150 x 19 mm (XBridge)

Mobile Phase: A: 0.1 % TFA in Water
B: 0.1 % TFA in Acetonitrile

Gradient: 5-95 % B in 4 min.
Hold for 1 min.
Re-equilibrate for 2 min.

Flow Rate: 25 mL/min

Temperature: Ambient

Detection: UV @ 254 nm

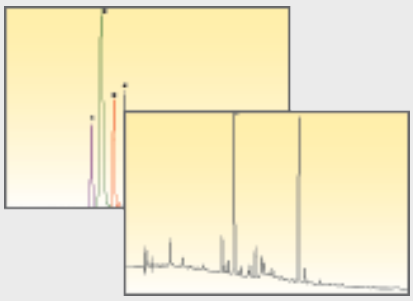
Sample: Amitriptyline

Sample Load:
- 2 mg
- 4 mg
- 10 mg
- 20 mg
- 40 mg
- 80 mg

Learn more online about how Kinetex EVO C18 can enhance your HPLC methods!

www.phenomenex.com/KinetexEVO

www.phenomenex.com/KinetexApps



Comparative separations may not be representative of all applications.

KINETEX
Core-Shell Technology

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
EVO C18	00A-4633-AN	00B-4633-AN	00D-4633-AN	00F-4633-AN	AJ0-9298 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
EVO C18	00B-4633-Y0	00D-4633-Y0	00F-4633-Y0	AJ0-9297 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
EVO C18	00B-4633-E0	00D-4633-E0	00F-4633-E0	00G-4633-E0	AJ0-9296 for 4.6 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 /ea
EVO C18	00B-4633-P0-AX	00D-4633-P0-AX	00F-4633-P0-AX	00G-4633-P0-AX	AJ0-9304 for 21.2 mm ID

5 µm Axia Packed Preparative Columns (mm)				SecurityGuard PREP Cartridges**
Phases	50 x 30	100 x 30	250 x 30	15 x 30 /ea
EVO C18	00B-4633-U0-AX	00D-4633-U0-AX	00G-4633-U0-AX	AJ0-9305 for 30 mm ID

2.6 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
EVO C18	00A-4725-AN	00B-4725-AN	00D-4725-AN	00F-4725-AN	AJ0-9298 for 2.1 mm ID

2.6 µm MidBore™ Columns (mm)				SecurityGuard ULTRA Cartridges‡
Phases	50 x 3.0	100 x 3.0	150 x 3.0	3/pk
EVO C18	00B-4725-Y0	00D-4725-Y0	00F-4725-Y0	AJ0-9297 for 3.0 mm ID

2.6 µm Analytical Columns (mm)				SecurityGuard ULTRA Cartridges‡
Phases	50 x 4.6	100 x 4.6	150 x 4.6	3/pk
EVO C18	00B-4725-E0	00D-4725-E0	00F-4725-E0	AJ0-9296 for 4.6 mm ID

1.7 µm Minibore Columns (mm)				SecurityGuard ULTRA Cartridges‡
Phases	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
EVO C18	00B-4726-AN	00D-4726-AN	00F-4726-AN	AJ0-9298 for 2.1 mm ID

‡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

guarantee

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

KINETEX®
Core-Shell Technology

Triumph with

- Improved Peak Shape for Bases
- Shorter Run Times
- Core-Shell Performance from pH 1-12

Kinetex EVO C18 Core-Shell UHPLC/HPLC Columns

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