

# APPLICATION

## 100% Aqueous Stability of Kinetex<sup>®</sup> EVO C18 Core-Shell LC Columns

Simon Lomas, Lawrence Loo, Jeff Layne  
Phenomenex, Inc., 411 Madrid Ave., Torrance, CA 90501 USA

### Overview

An example of the 100 % aqueous stability of Kinetex EVO C18 core-shell columns is shown below. This particular benefit can be very advantageous in aiding the retention and resolution of problematic polar compounds that typically have poor retention under reversed phase conditions. Traditional alkyl chain stationary phases collapse with the use of 100% aqueous conditions. However the unique, patented organo-silica grafting process used within the manufacturing of the new Kinetex EVO C18 promotes both pH and aqueous stability. Incorporated uniform stabilizing ethane cross-linking provides resistance to high pH attack and maintains mechanical strength of the Kinetex core-shell particle. Likewise the deposition of a slight positive charge on the surface of the particle further improves basic compound peak shape with repulsion interactions and promotes aqueous stability in the same manner as seen with traditional polar endcapping. With excellent efficiency levels assured in aqueous or pH 1-12 conditions by the ruggedness and morphology of Kinetex EVO C18 core-shell columns, the opportunity to change the dynamic of traditional method development is within reach.

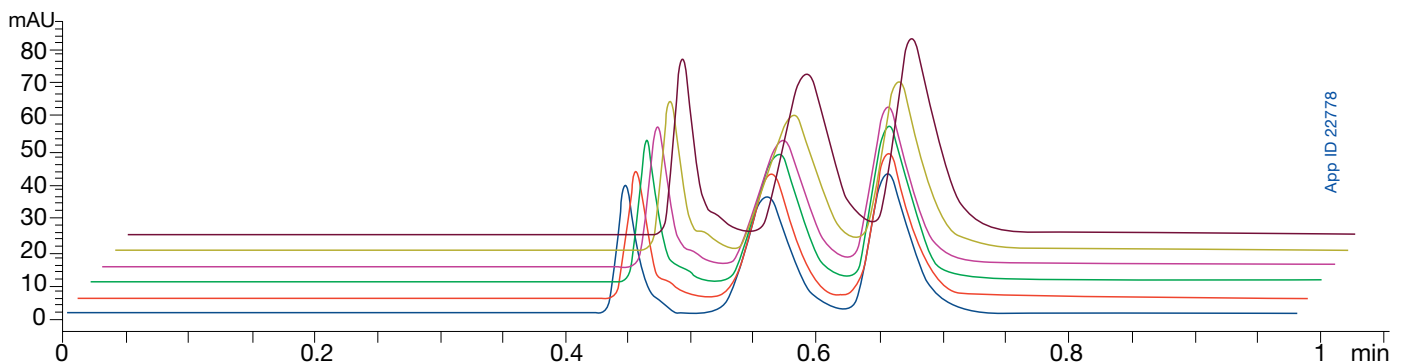


### Injection Nos.:



### HPLC Conditions

**Column:** Kinetex 5 µm EVO C18  
**Dimensions:** 50 x 4.6 mm  
**Part No.:** 00B-4633-E0  
**Mobile Phase:** 20 mM Sodium phosphate pH 2.5  
**Flow Rate:** 1 mL/min  
**Temperature:** 30 °C  
**Detection:** UV @ 270 nm  
**Sample:** 1. Norepinephrine  
 2. Epinephrine  
 3. Dopamine



App ID 22778

# APPLICATION

## Kinetex Ordering Information

5 µm Minibore Columns (mm)				SecurityGuard™ ULTRA Cartridges <sup>†</sup>
Phase	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
EVO C18	00B-4633-AN	00D-4633-AN	00F-4633-AN	AJ0-9298 for 2.1 mm ID

5 µm MidBore™ Columns (mm)				SecurityGuard™ ULTRA Cartridges <sup>†</sup>
Phase	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 <sup>†</sup>
Phase	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*
Phase	50 x 21.2	100 x 21.2	150 x 21.2	250 x 21.2	15 x 21.2
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

\* SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000  
\* PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8223

### Australia

t: 02-9428-6444  
f: 02-9428-6445  
auinfo@phenomenex.com

### Austria

t: 01-319-1301  
f: 01-319-1300  
anfrage@phenomenex.com

### Belgium

t: 02 503 4015 (French)  
t: 02 511 8666 (Dutch)  
f: +31 (0)30-2383749  
beinfo@phenomenex.com

### Canada

t: (800) 543-3681  
f: (310) 328-7768  
info@phenomenex.com

### Denmark

t: 4824 8048  
f: +45 4810 6265  
nordicinfo@phenomenex.com

### Finland

t: 09 4789 0063  
f: +45 4810 6265  
nordicinfo@phenomenex.com

### France

t: 01 30 09 21 10  
f: 01 30 09 21 11  
franceinfo@phenomenex.com

### Germany

t: 06021-58830-0  
f: 06021-58830-11  
anfrage@phenomenex.com

### India

t: 040-3012 2400  
f: 040-3012 2411  
indiainfo@phenomenex.com

### Ireland

t: 01 247 5405  
f: +44 1625-501796  
eireinfo@phenomenex.com

### Italy

t: 051 6327511  
f: 051 6327555  
italiainfo@phenomenex.com

### Luxembourg

t: +31 (0)30-2418700  
f: +31 (0)30-2383749  
nlinfo@phenomenex.com

### Mexico

t: 001-800-844-5226  
f: 001-310-328-7768  
tecnicomx@phenomenex.com

### The Netherlands

t: 030-2418700  
f: 030-2383749  
nlinfo@phenomenex.com

### New Zealand

t: 09-4780951  
f: 09-4780952  
nzinfo@phenomenex.com

### Norway

t: 810 02 005  
f: +45 4810 6265  
nordicinfo@phenomenex.com

### Puerto Rico

t: (800) 541-HPLC  
f: (310) 328-7768  
info@phenomenex.com

### Sweden

t: 08 611 6950  
f: +45 4810 6265  
nordicinfo@phenomenex.com

### United Kingdom

t: 01625-501367  
f: 01625-501796  
ukinfo@phenomenex.com

### United States

t: (310) 212-0555  
f: (310) 328-7768  
info@phenomenex.com

### All other countries: Corporate Office USA

t: (310) 212-0555  
f: (310) 328-7768  
info@phenomenex.com

Find more information on Kinetex core-shell HPLC and UHPLC columns at:

[www.phenomenex.com/kinetex](http://www.phenomenex.com/kinetex)



If Phenomenex products in this technical note do not provide at least an equivalent separation as compared to other products of the same phase and dimensions, return the product with comparative data within 45 days for a FULL REFUND.

#### Terms and Conditions

Subject to Phenomenex Standard Terms and Conditions which may be viewed at [www.phenomenex.com/TermsAndConditions](http://www.phenomenex.com/TermsAndConditions).

#### Trademarks

Kinetex is a registered trademark and Axia, SecurityGuard and MidBore are trademarks of Phenomenex.

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 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.

© 2014 Phenomenex, Inc. All rights reserved.