



# UHPLC HPLC PREP

**Universal** Column Protection



 **phenomenex**<sup>®</sup>  
*...breaking with tradition<sup>SM</sup>*



# Less frequent UHPLC / HPLC / PREP column replacement Save Time and Money

It's a fact! Chemical contaminants and particulates are a natural part of any chromatographic analysis.

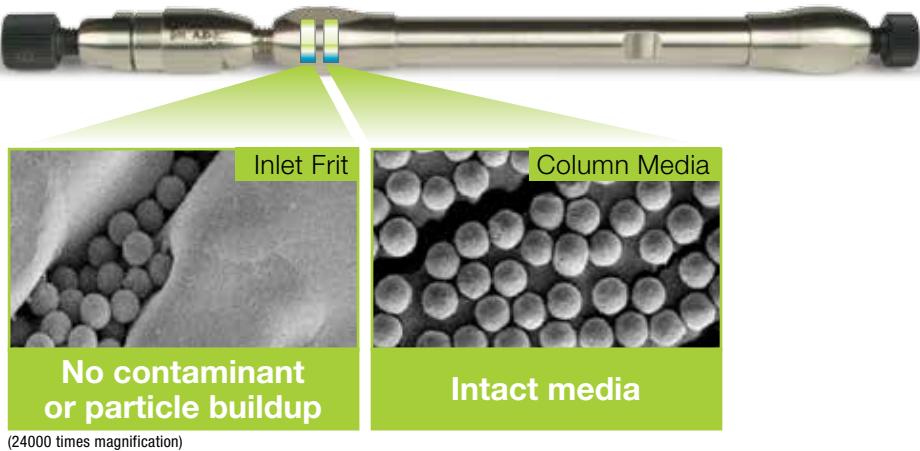
The easiest way to extend column performance is to remove these contaminants and particulates with the SecurityGuard™ Cartridge System before they reach your column and degrade your chromatography.

## SecurityGuard:

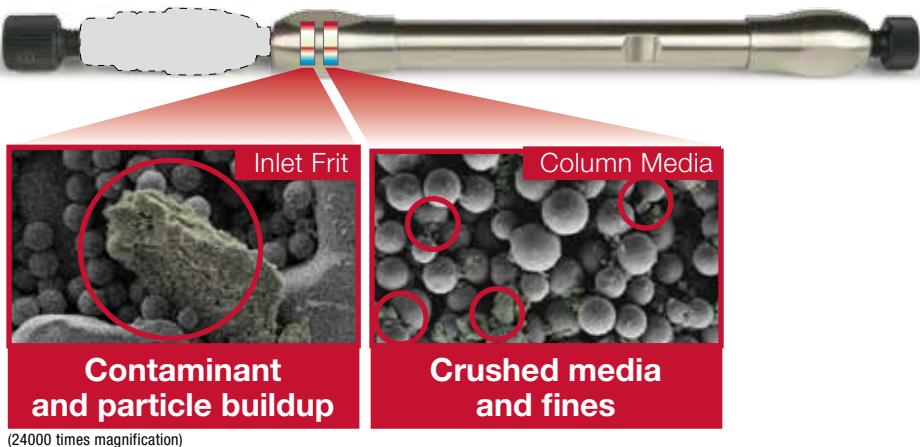
- Protects and extends UHPLC, HPLC and PREP column lifetime
- Virtually no change in chromatography
- Simple to use

## Scanning electron microscopy of column inlet frit

### With SecurityGuard ULTRA



### Without SecurityGuard ULTRA



# Choose Your Column Protection

No matter which type of column you're using, SecurityGuard™ offers the column protection you need

## UHPLC

Ultra-High Performance Liquid Chromatography



### SecurityGuard ULTRA

All core-shell and/or < 3 µm particle columns (< 20,000 psi / 1,378 bar)

**pp. 4 - 9**

## HPLC

High Performance Liquid Chromatography



### SecurityGuard Standard

All non core-shell and ≥ 3 µm particle columns (< 3,500 psi / 241 bar)

**pp. 10 - 15**

## PREP

Preparative HPLC



### SecurityGuard PREP

For Prep HPLC columns with 9.0 to 49.0 mm internal diameter (ID)

**pp. 16 - 18**

Removes harmful contaminants and particulates  
**Longer Column Lifetime**

**UHPLC Column Protection:**

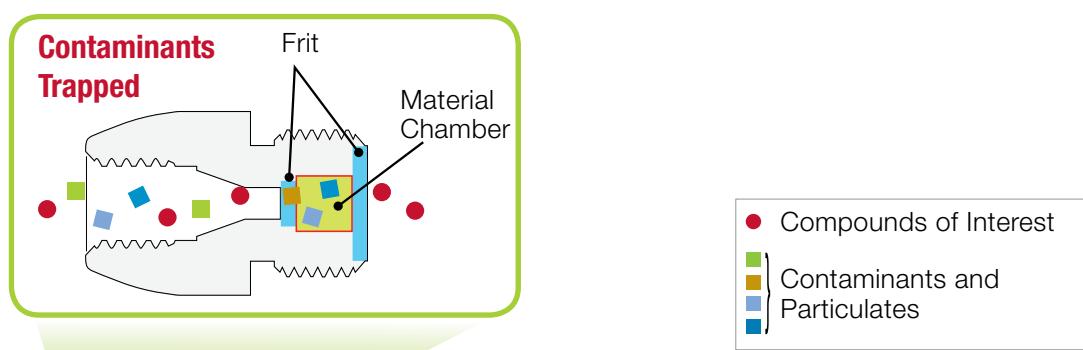
- Extends UHPLC, core-shell, and/or < 3 µm column lifetime
- Fits virtually all manufacturers' columns 2.1 to 4.6 mm ID
- Pressure rated to 20,000 psi (1,378 bar)
- Simple to use

The SecurityGuard ULTRA cartridge traps contaminants and particulates. Once the cartridge is exhausted, simply replace it instead of your expensive column investment.

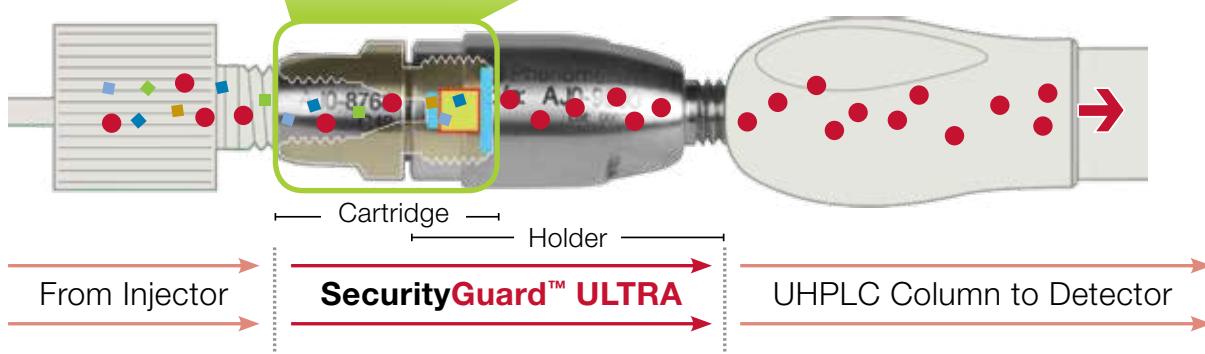
The universal holder provides a leak-free connection to virtually any UHPLC column.

**You will experience:**

- Increased column lifetime
- Higher column performance
- More reproducible chromatography
- Fewer wasted columns



\* Cartridge schematic not drawn to scale



Specifically for UHPLC columns and methods

# Easy to Use, Innovative Design

The SecurityGuard ULTRA column protection system is designed to extend the lifetime of < 3 µm and/or core-shell columns, while maintaining the ultra-high performance results they generate.



Pressure rated to 20,000 psi

**Conveniently Labeled**  
to ensure guard-to-column phase compatibility

**Disposable Cartridge**  
for quick and easy removal and replacement

**Packed with Media**  
for maximum column protection

— Cartridge —

— Holder —



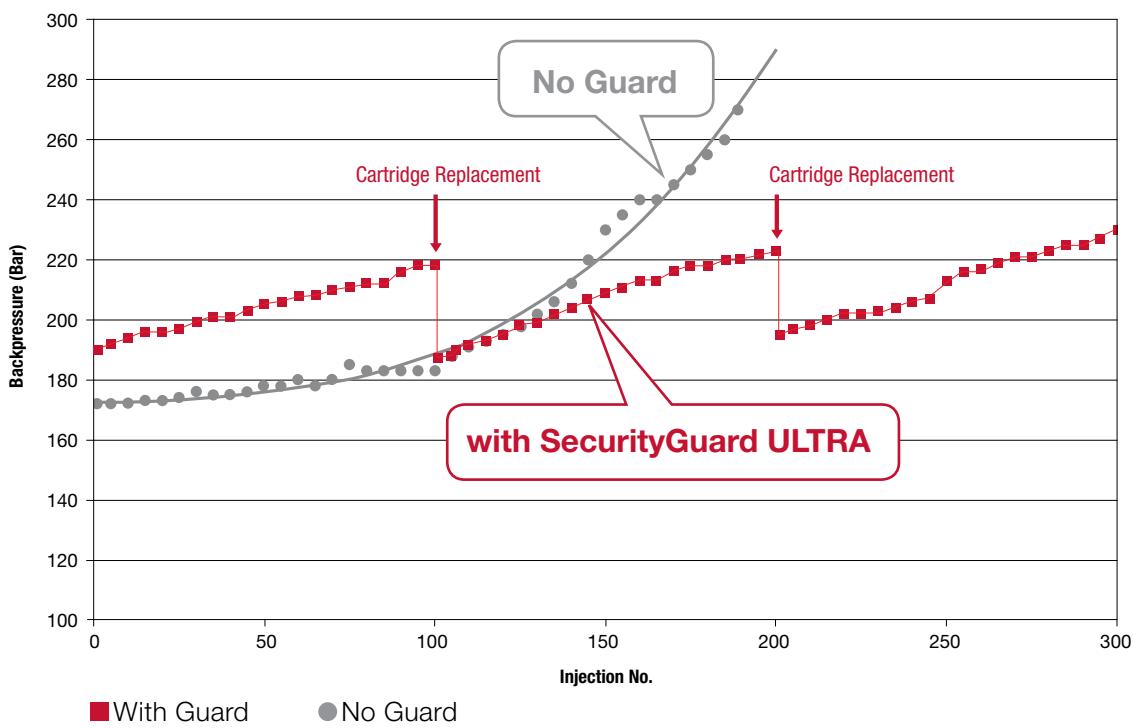
# Keeps UHPLC columns performing at their best One Easy Step

When contaminates and particulates build up at the head of the column or on the guard cartridges, system pressures dramatically increase.

By simply replacing the SecurityGuard ULTRA cartridge instead of your < 3 µm and/or core-shell UHPLC column, you are able to regain normal operating conditions and reclaim original column performance.

## SecurityGuard ULTRA Performance

Accelerated lifetime test using endogenous biological matrix on Kinetex® 2.6 µm C18 50 x 4.6 mm ID



In this accelerated column lifetime test, the UHPLC column lasts substantially longer with SecurityGuard ULTRA guard cartridge system.



Watch how easy it is to replace your cartridge

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

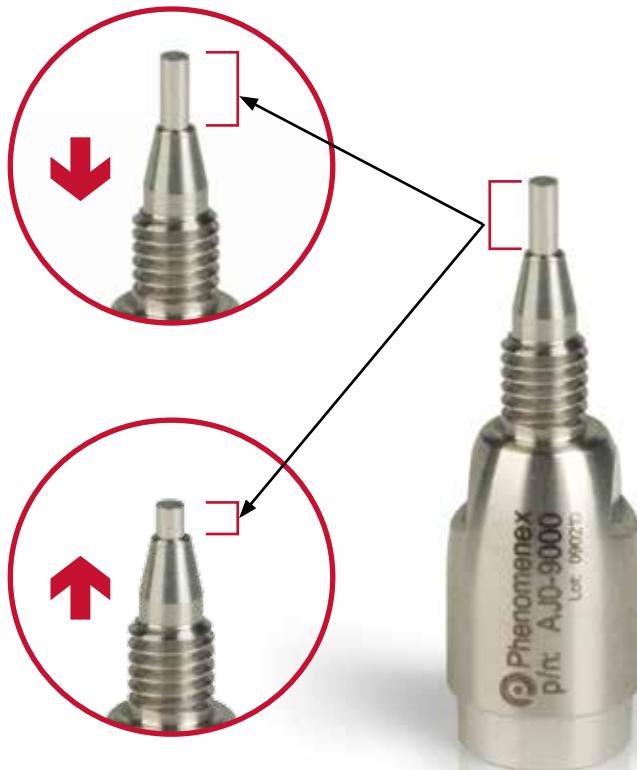
Universal connector

# Protect Any UHPLC Column

Installing the SecurityGuard ULTRA protection system into your favorite UHPLC column is straightforward and easy.

The floating outlet from the SecurityGuard ULTRA universal holder automatically adjusts to the precise depth of virtually every manufacturer's analytical UHPLC column. This ensures a low dead-volume, leak-free connection, without the use of unions or adapters, no matter which manufacturer's < 3 µm and/or core-shell UHPLC column you are using.

## Compatible UHPLC Fittings



*Tip adjusts to fit any  
UHPLC column*

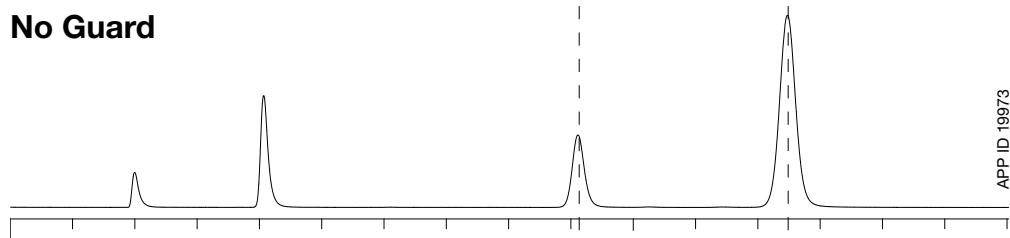


# Virtually no change in chromatography Maintain UHPLC Performance!

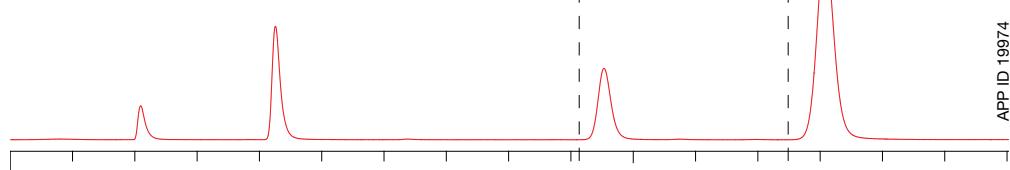
SecurityGuard ULTRA maintains UHPLC column performance without altering your chromatographic results. The extremely low dead-volume ( $<0.3 \mu\text{L}$ ) of this unique guard design minimizes sample peak dispersion ensuring that ultra-high efficiency chromatography is maintained.

## SecurityGuard ULTRA outperforms the competition

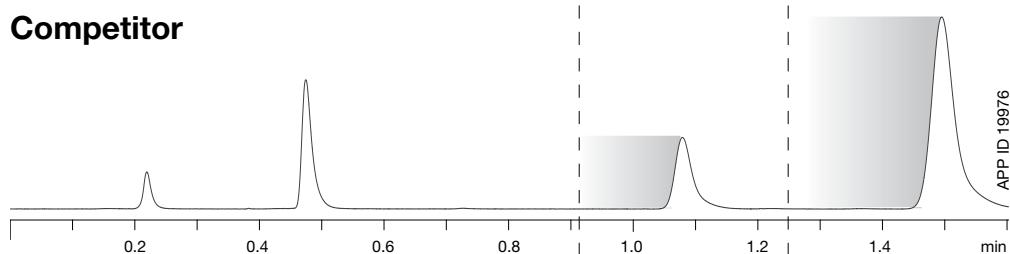
### No Guard



### SecurityGuard ULTRA



### Competitor



**Conditions same for all applications:**  
**Column:** Kinetex® 1.7  $\mu\text{m}$  XB-C18  
**Dimensions:** 50 x 2.1 mm  
**Mobile Phase:** Acetonitrile / Water (50:50)  
**Injection Volume:** 1  $\mu\text{L}$   
**Flow Rate:** 1 mL/min  
**Temperature:** 22 °C  
**Detection:** UV @ 270 nm  
**Sample:**  
 1. Acetophenone  
 2. Benzene  
 3. Toluene  
 4. Naphthalene

	No Guard	SecurityGuard ULTRA	Competitor
<b>Efficiency (p/m)</b>	11,795	11,390	8,591
<b>Symmetry</b>	0.92	0.86	0.69
<b>Selectivity</b>	1.47	1.46	1.46
<b>Backpressure (bar)</b>	354	384	384

Values based on naphthalene peak.

### Unlike competitors' UHPLC guard systems

SecurityGuard ULTRA has virtually no effect on efficiency, retention time, or backpressure. This leads to longer column lifetime with no loss in column performance.

Comparative separations may not be representative of all applications.

# SecurityGuard ULTRA Ordering Information



## SecurityGuard ULTRA Cartridges

Material	Description	pH Stability	Column ID (mm)		
			2.1	3.0	4.6
<b>Cartridges for General Purpose/ Pharmaceutical</b>					
EVO C18	(ODS, Octadecyl)	1.0 – 12.0	AJ0-9298	AJ0-9297	AJ0-9296
C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-8782	AJ0-8775	AJ0-8768
C8	(MOS, Octyl)	1.5 – 8.5*	AJ0-8784	AJ0-8777	AJ0-8770
PFP	(Pentafluorophenyl)	1.5 – 8.5	AJ0-8787	AJ0-8780	AJ0-8773
F5	(Pentafluorophenyl)	1.5 – 8.5	AJ0-9322	AJ0-9321	AJ0-9320
Biphenyl	(Biphenyl)	1.5 – 8.5*	AJ0-9209	AJ0-9208	AJ0-9207
HILIC	HILIC	2.0 – 7.5	AJ0-8786	AJ0-8779	AJ0-8772
Phenyl	(Phenylhexyl)	1.5 – 8.5*	AJ0-8788	AJ0-8781	AJ0-8774
<b>Cartridges for General Purpose/ Pharmaceutical (Fully Porous Columns)</b>					
For fully porous columns like Luna® Omega (Phenomenex)					
C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-9502	–	–
Polar C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-9505	–	–
<b>Cartridges for Protein and Peptide Reversed Phase</b>					
For use with columns like Aeris™ (Phenomenex)					
Widepore C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-8783	–	AJ0-8769
Widepore C8	(MOS, Octyl)	1.5 – 8.5*	AJ0-8785	–	AJ0-8771
Widepore C4	(Butyl)	1.5 – 8.5*	AJ0-8899	–	AJ0-8901
Peptide C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-8948	AJ0-8947	AJ0-8946
<b>Cartridges for Synthetic DNA / RNA Analysis</b>					
For use with columns like Clarity® (Phenomenex)					
Oligo-MS C18	(ODS, Octadecyl)	1.5 – 8.5*	AJ0-9068	–	AJ0-9066
Oligo-XT	(ODS, Octadecyl)	1.0 – 12.0	AJ0-9515	–	AJ0-9514
<b>Cartridges for Silica GFC (Gel Filtration Chromatography)</b>					
(Aqueous SEC) For use with silica GFC columns such as Yarra™ (Phenomenex)					
X150	–	2.0 – 7.5	–	–	AJ0-9512
X300	–	2.0 – 7.5	–	–	AJ0-9513

\* pH stable 1.5 – 8.5 under gradient conditions. pH stable 1.5 – 10 under isocratic conditions.

## SecurityGuard ULTRA Holder



Part No.	Description	Unit	Price
AJ0-9000	SecurityGuard ULTRA Cartridge Holder	ea	

AJ0-9000 is the universal holder designed for use with 2.1 mm, 3.0 mm and 4.6 mm ID cartridges.



See it in action:  
[www.phenomenex.com/SecurityGuardULTRA](http://www.phenomenex.com/SecurityGuardULTRA)



Designed for all core-shell and/or < 3 µm particle columns (< 20,000 psi / 1,378 bar)

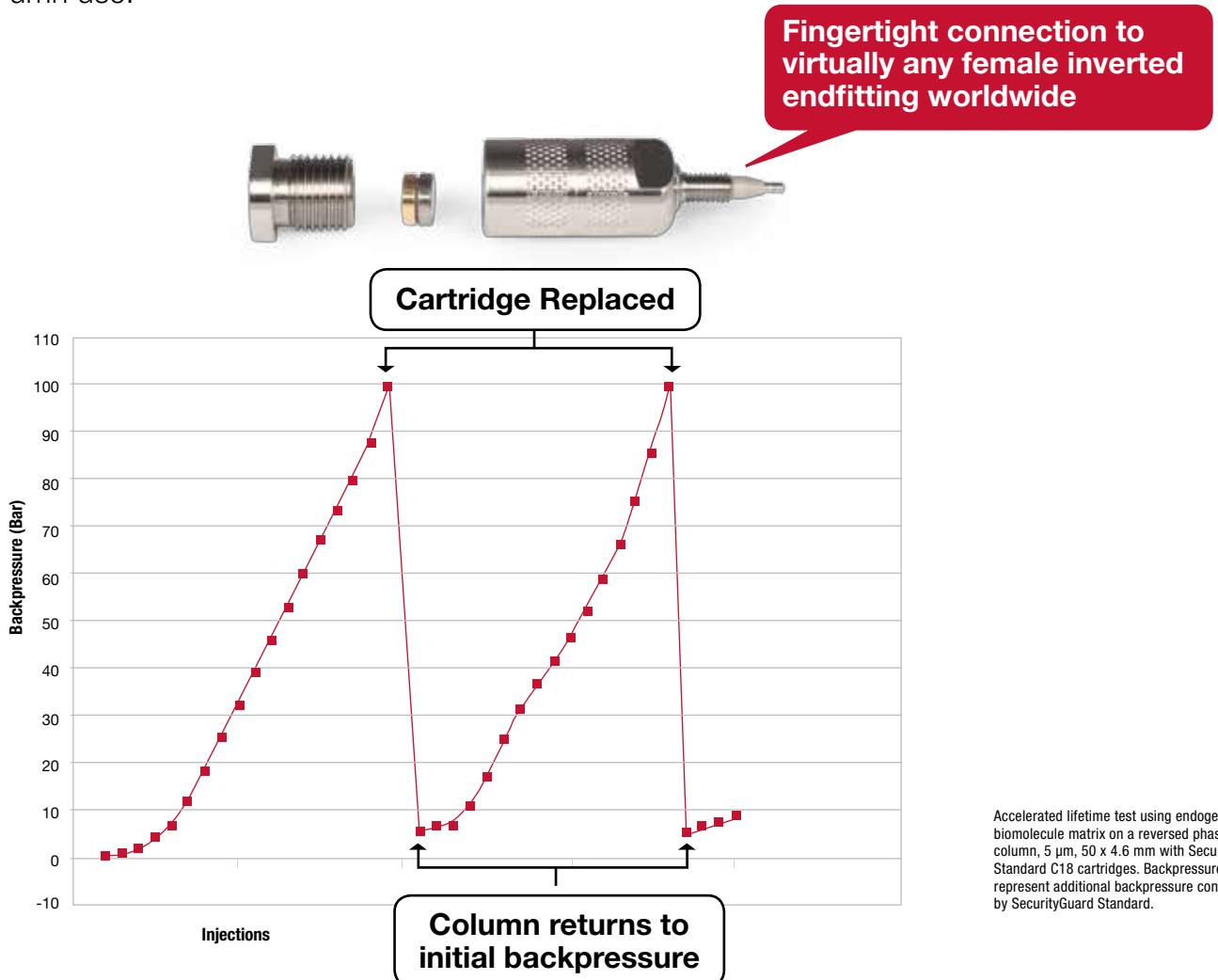
HPLC column protection

# SecurityGuard Standard

- Extends non core-shell and  $\geq 3 \mu\text{m}$  particle HPLC column lifetime
- Won't alter chromatography
- Compatible with virtually all HPLC columns
- Easy to determine when to change cartridge
- Easy to use

## Increases HPLC Column Lifetime, Guaranteed!

Simply replace SecurityGuard Standard cartridges instead of your expensive HPLC columns. In this graph, once the expired SecurityGuard Standard cartridge was replaced, the pressure immediately dropped and the column performance was restored allowing for extended column use.



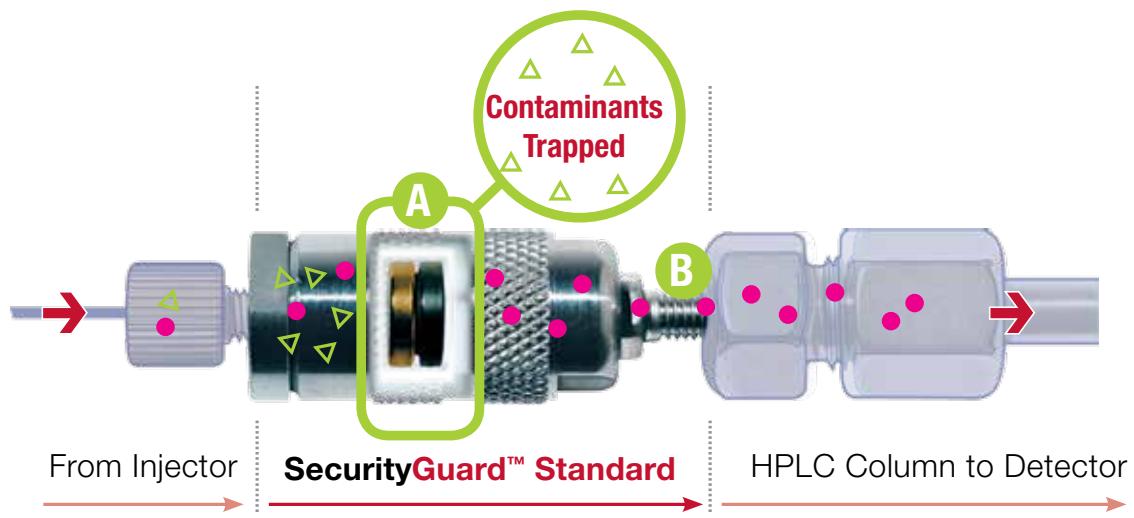
Accelerated lifetime test using endogenous biomolecule matrix on a reversed phase C18 column, 5  $\mu\text{m}$ , 50 x 4.6 mm with SecurityGuard Standard C18 cartridges. Backpressure values represent additional backpressure contributed by SecurityGuard Standard.

# Protect your columns from contaminants How Does It Work?

The SecurityGuard Standard analytical cartridge holder (patented) directly fingertightens into virtually any manufacturer's column with a female/inverted endfitting. Contaminants are retained by an inexpensive disposable cartridge instead of damaging your valuable fully porous HPLC column investment.

**“We used to have to change out our columns every 2 to 3 months and ever since we started using the SecurityGuard cartridges we can do at least 6 months before changing a column out.”**

**T. Serviss**



**A** Cutaway view showing cartridge — can be easily inspected for contaminants

**B** Universal Fingertight connection to HPLC column — no wrenches required

- ▲ Contaminants
- Compounds of interest



SecurityGuard Standard

# Will It Work With My HPLC Column?

## SecurityGuard Standard is a universal direct-connect holder.

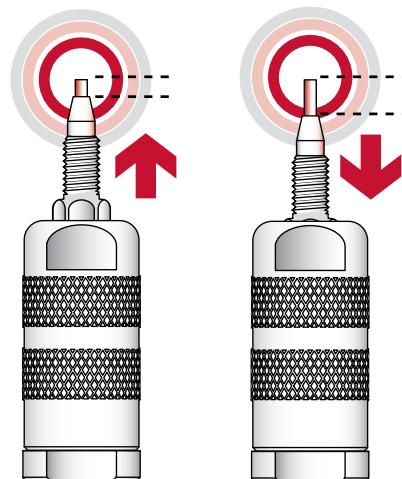
The floating outlet of the analytical SecurityGuard Standard holder fits virtually ANY manufacturer's column endfitting, making it a truly universal guard system.

## Fits virtually all your fully porous HPLC columns!

Gemini® NX-C18  
Jupiter®  
Luna®  
SphereClone™  
BioSep™  
HYPERSIL®  
Spherisorb®  
Inertsil®  
Lux®  
LiChrospher®  
LiChrosorb®  
Prodigy™  
Gemini®  
Vydac®  
ZORBAX®  
SunFire®  
Ultrasphere®  
Bondclone™  
XBridge®

Capcell Pak®  
Symmetry®  
Rezex™  
Nucleosil®  
Synergi™  
Partisil®  
XTerra®  
Develosil®  
PartiSphere®  
Bio-Sil®  
CHIRALCEL® OD-H®  
PolymerX™  
SynChropak®  
Sugar-Pak™  
Aminex®  
Kromasil®  
Yarra™  
and many more...

The floating outlet automatically adjusts to the precise port depth of virtually any analytical HPLC column. This ensures a low-dead volume, leak-free connection, without the use of unions or adapters.



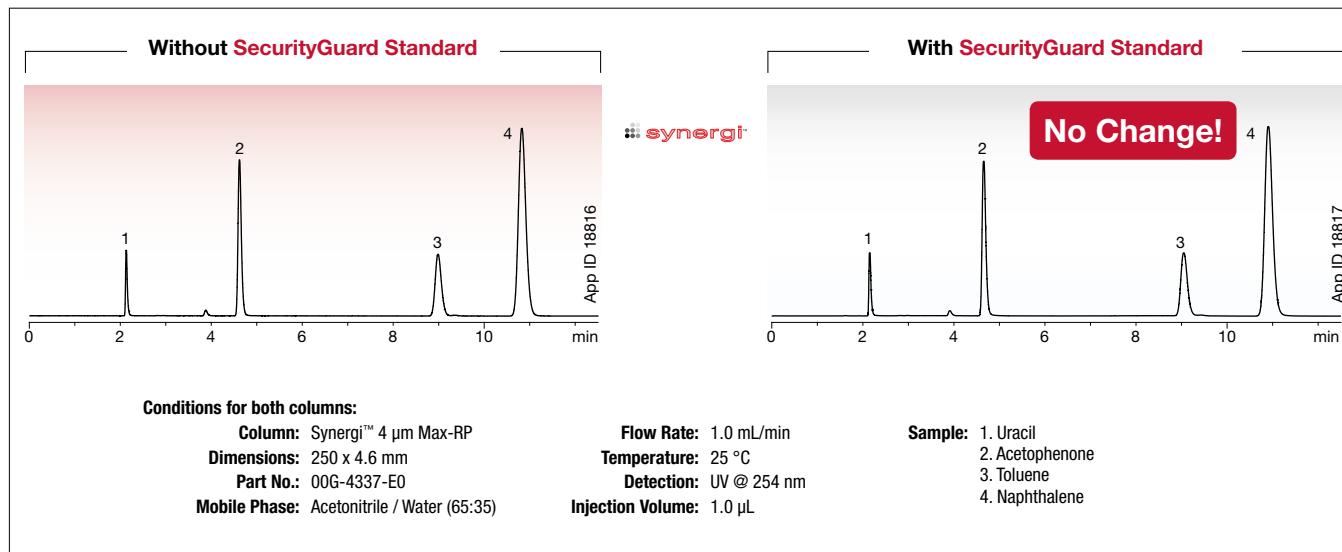
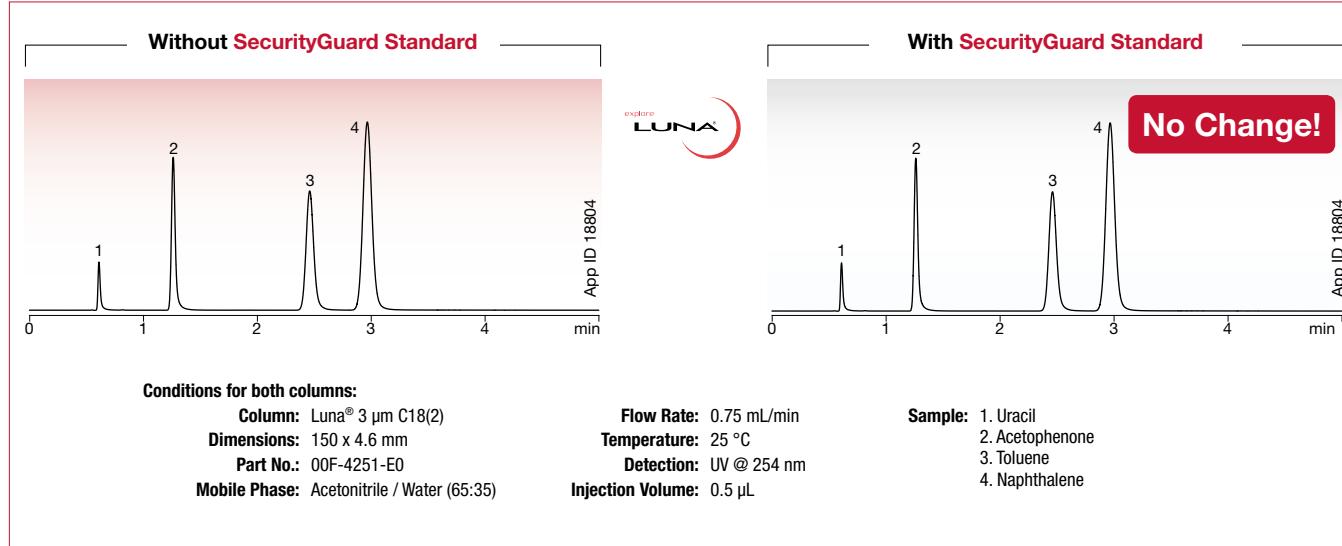
See it in action:

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

SecurityGuard Standard

# Will It Alter My Chromatography?

SecurityGuard Standard will protect your valuable fully porous HPLC columns, without altering your chromatographic results. The short 4 mm analytical cartridges have virtually no effect on efficiency, retention time, or backpressure.



**“ We didn’t see any change in peaks. SecurityGuard has increased the life of the column. ”**

**B. Dietz**

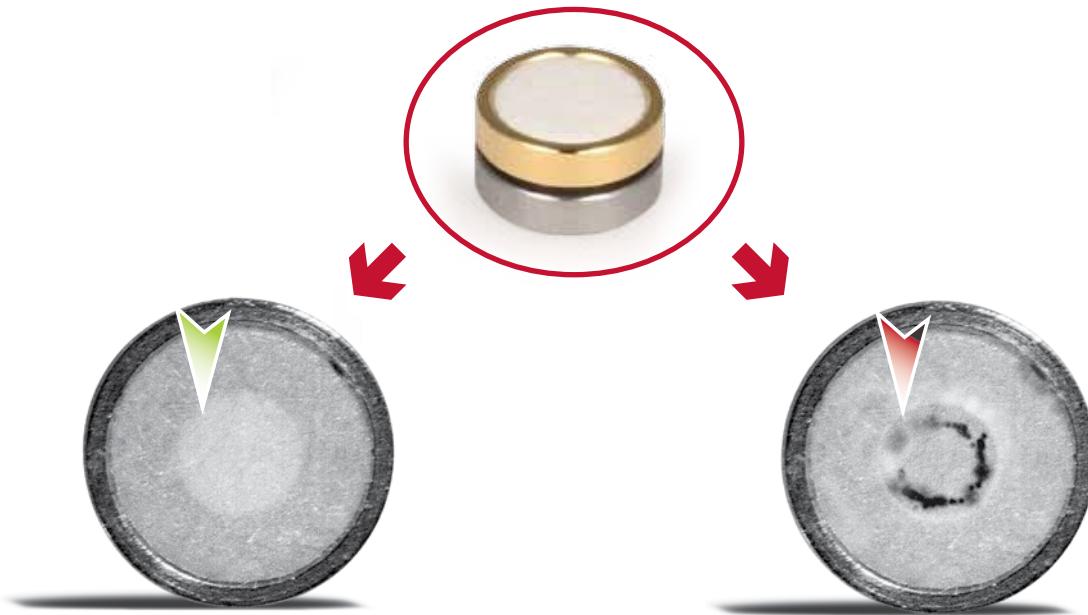
SecurityGuard Standard

# When Do I Replace My Cartridges?

The “see your dirt” feature lets you know exactly when it’s time to replace your cartridge.

Visually inspect the surface of the cartridge’s packing material any time, without disturbing the packing bed. Now you can easily monitor visual contaminant build-up, and change your guard cartridge before it’s too late!

If your contaminants are colorless, replace the cartridge as often as needed to maintain chromatographic performance.



## Clean

If it looks clean, the cartridge may be reinserted for further use.

## Dirty

If either discoloration or particle build-up is observed, it's time to replace the cartridge.

“When replacing a cartridge it is visibly obvious that the extraneous material is captured by the cartridge and prevents contamination of the analytical column...”

F. Shakir

# SecurityGuard Standard Ordering Information

guarantee

If SecurityGuard Standard cartridge protection system does not perform as well or better than your current guard cartridge system of similar phase and dimensions, return the product with comparative data within 45 days for a FULL REFUND.



SecurityGuard Standard 10/pk



If your operating pressure is over 3500 psi (241 bar) use SecurityGuard ULTRA.

Analytical				
If your HPLC Column ID (mm) is:				
2.0-3.0		3.2-8.0		
Use Cartridges (mm):				
Material	Description	pH Stability	4.0 x 2.0 /10 pk	4.0 x 3.0 /10 pk
<b>Cartridges for General Purpose/Pharmaceutical</b>				
C18	(ODS, Octadecyl)	1.5 - 10	AJ0-4286	AJ0-4287
C12	(Dodecyl)	1.5 - 10	AJ0-6073	AJ0-6074
C8	(MOS, Octyl)	1.5 - 10	AJ0-4289	AJ0-4290
C5	(Pentyl)	1.5 - 10	AJ0-4292	AJ0-4293
C1	(TMS)	2 - 9	AJ0-4298	AJ0-4299
Silica	—	—	AJ0-4347	AJ0-4348
HILIC	HILIC	1.5 - 8	AJ0-8328	AJ0-8329
NH <sub>2</sub>	(Amino, Aminopropyl)	1.5 - 11	AJ0-4301	AJ0-4302
CN	(Cyano, Cyanopropyl)	2 - 7.5	AJ0-4304	AJ0-4305
Phenyl	(Phenylhexyl)	1.5 - 10	AJ0-4350	AJ0-4351
PFP(2)	(Pentafluorophenylpropyl)	1.5 - 8	AJ0-8326	AJ0-8327
SCX	(SA, Strong Cation Exchanger)	2.5 - 7.5	AJ0-4307	AJ0-4308
SAX	(SB, Strong Anion Exchanger)	2.5 - 7.5	—	AJ0-4311
RP-1	(Reversed Phase - Polymer)	0 - 14	AJ0-5808	AJ0-5809
Polar-RP	(Ether-linked Phenyl)	1.5 - 7	AJ0-6075	AJ0-6076
Fusion-RP	(C18 Polar Embedded)	1.5 - 10	AJ0-7556	AJ0-7557
AQ C18	(Polar Endcapped C18)	1.5 - 7.5	AJ0-7510	AJ0-7511
Gemini® NX-C18	(C18 TWIN-NX™ Technology)	1 - 12	AJ0-8367	AJ0-8368
Gemini C18	(C18 TWIN™ Technology)	1 - 12	AJ0-7596	AJ0-7597
Gemini C6-Phenyl	(C6-Phenyl TWIN Technology)	1 - 12	AJ0-7914	AJ0-7915
<b>Cartridges for Protein and Polypeptide Reversed Phase</b>			/10 pk	/10 pk
For use with silica columns for separation of proteins & peptides, such as Jupiter® (Phenomenex); Vydac® 218TP, 214TP (Alltech Associates, Inc.); SynChropak® 300 C18, C4 (Eprogen, Inc.); Nucleosil® 300 Å C18, C4 (Macherey-Nagel); Hypersil® 300 Å (Thermo Hypersil-Keystone), and other widebore or 300 Å brands.				
Widebore C18	(ODS, Octadecyl)	1.5 - 10	AJ0-4320	AJ0-4321
Widebore C5	(Pentyl)	1.5 - 10	AJ0-4326	AJ0-4327
Widebore C4	(Butyl)	1.5 - 10	AJ0-4329	AJ0-4330
<b>Cartridges for Synthetic DNA / RNA Analysis</b>			/10 pk	/10 pk
For use with columns like Clarity® (Phenomenex)				
Oligo-RP™	(C18 TWIN Technology)	1 - 12	AJ0-8134	AJ0-8135
Oligo-WAX™	(WA, Weak Anion Exchanger)	1.5 - 11	—	AJ0-8324
<b>Cartridges for Silica GFC</b>			/10 pk	
(Aqueous SEC) For use with silica GFC columns, such as BioSep™ and Yarra™ (Phenomenex); ZORBAX® GF-Series (Agilent Technologies); Bio-Sil® (Bio-Rad®).				
GFC-2000	—	2 - 7.5	—	AJ0-4487
GFC-3000	—	2 - 7.5	—	AJ0-4488
GFC-4000	—	2 - 7.5	—	AJ0-4489
<b>Cartridges for Polymer GPC</b>			/3 pk	
(Organic GPC) For use with polymer GPC columns, such as Phenogel™ (Phenomenex); PLgel™ (Agilent®); SDV® (PSS); Styragel® (Waters®); GPC Series (Shodex®); TSKgel® (Tosoh Bioscience™)				
GPC	—	0 - 14	—	AJ0-9292**
<b>Cartridges for Chiral</b>			/10 pk	/10 pk
For use with chiral columns, such as Lux® Cellulose-1, -2, -3, -4 & Amylose-1,-2 (Phenomenex); CHIRALCEL® OD-H® & CHIRALCEL® OJ-H®, & CHIRALPAK® AD®-H (DAICEL Corporation).				
Lux Cellulose-1	Cellulose tris(3,5-dimethylphenylcarbamate)	2 - 9	AJ0-8402	AJ0-8403
Lux Cellulose-2	Cellulose tris(3-chloro-4-methylphenylcarbamate)	2 - 9	AJ0-8398	AJ0-8366
Lux Cellulose-3	Cellulose tris(4-methylbenzoate)	2 - 9	AJ0-8621	AJ0-8622
Lux Cellulose-4	Cellulose tris(4-chloro-3-methylphenylcarbamate)	2 - 9	AJ0-8626	AJ0-8627
Lux Amylose-1	Amylose tris (3,5-dimethylphenylcarbamate)	2 - 9	—	AJ0-9336
Lux Amylose-2	Amylose tris(5-chloro-2-methylphenylcarbamate)	2 - 9	AJ0-8471	AJ0-8470
<b>Cartridges for Carbohydrate/Organic Acid</b>			/10 pk	
For organic acid and carbohydrate analysis, such as Rezex™ (Phenomenex); Aminex® (Bio-Rad); Sugar-Pak™ (Waters).				
Carbo-H <sup>+</sup>	—	1 - 8	—	AJ0-4490
Carbo-Ag <sup>**</sup>	—	Neutral	—	AJ0-4491
Carbo-Pb <sup>+2</sup>	—	Neutral	—	AJ0-4492
Carbo-Ca <sup>+2</sup>	—	Neutral	—	AJ0-4493
<b>Guard Cartridge Holder</b>			/kit	
(reusable holder)			KJ0-4282	

\*\* Not compatible with HFIP solvent.

Designed for fully porous HPLC columns and not intended for use with Kinetex, Aeris or other core-shell and/or <3 µm columns. Pressure rated to 3500 psi (241 bar).



SecurityGuard PREP

# PREP HPLC Column Protection

- Extends preparative column lifetime by as much as 5 times
- Protects column from samples that precipitate out of solution
- Protects column from contaminants
- Stable and leak-free up to 60 mL/min within specified pressure ratings

The SecurityGuard PREP system was designed to effectively and inexpensively protect your valuable prep columns from the damaging effects of mobile phase and sample chemical contaminants and particulates, without altering your chromatographic results.



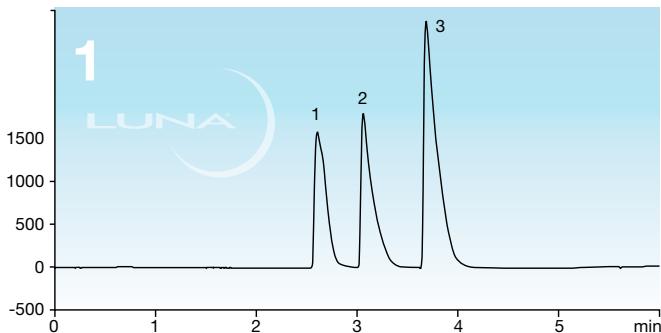
SecurityGuard PREP

# Lowering Your Cost Per Injection!

SecurityGuard isn't only about column protection, it's about lowering your cost per injection! When you increase the number of injections from a single preparative column you're lowering your overall cost per injection. With SecurityGuard PREP, the inexpensive cartridge was ruined while the integrity of the prep column was maintained and its performance restored.

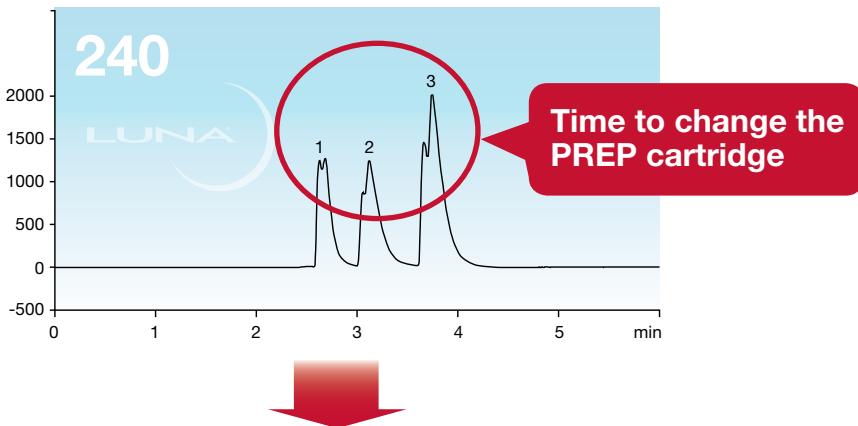
## Forced Degradation Study

Injection 1: Axia™ Packed column with SecurityGuard PREP cartridge

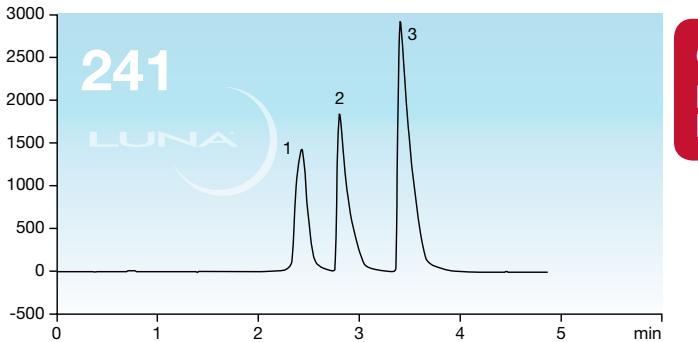


**Column:** Luna® 10 µm C18(2) Axia Packed  
**Dimension:** 50 x 21.2 mm  
**Part No.:** 00B-4253-P0-AX  
**Mobile Phase:** A: 0.1% TFA in Water  
 B: 0.1% TFA in Water / Acetonitrile (25:75)  
**Gradient:** Linear 93:7 (A/B) to 100 % B over 5 minutes  
**Injection Volume:** 420 µL  
**Flow Rate:** 60 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 270 nm  
**Sample:** 1. Nadolol  
 2. Metoprolol  
 3. Propranolol

Injection 240: Axia Packed column with SecurityGuard PREP cartridge



Injection 241: Axia Packed column after removing SecurityGuard column protection system



# SecurityGuard PREP Ordering Information

**guarantee**

If SecurityGuard PREP cartridge protection system does not perform as well or better than your current guard cartridge system of similar phase and dimensions, return the product with the comparative data within 45 days for a FULL REFUND.

Semi-Prep	Preparative (HPLC or SFC)	
If your Column ID (mm) is:		
	9.0-16.0	 18.0-29.0
	30.0-49.0	
		Use Cartridges (mm):
	10.0 x 10.0	 15.0 x 21.2
	15.0 x 30.0	

Material	Description	pH Stability	10.0 x 10.0	15.0 x 21.2	15.0 x 30.0
<b>Cartridges for General Purpose/Pharmaceutical</b>					
C18	(ODS, Octadecyl)	1.5 - 10	AJ0-7221	AJ0-7839	AJ0-8301
C12	(Dodecyl)	1.5 - 10	AJ0-7275	AJ0-7842	AJ0-8304
C8	(MOS, Octyl)	1.5 - 10	AJ0-7222	AJ0-7840	AJ0-8302
C5	(Pentyl)	1.5 - 10	AJ0-7372	—	—
Silica	—	—	AJ0-7223	AJ0-7229	AJ0-8312
HILIC	HILIC	1.5 - 8	AJ0-8902	—	—
NH2	(Amino, Aminopropyl)	1.5 - 11	AJ0-7364	AJ0-8162	AJ0-8309
CN	(Cyano, Cyanopropyl)	2 - 7.5	AJ0-7313	AJ0-8220	AJ0-8311
Phenyl	(Phenylhexyl)	1.5 - 10	AJ0-7314	AJ0-7841	AJ0-8303
PFP(2)	(Pentafluorophenylpropyl)	1.5 - 8	AJ0-8376	AJ0-8377	AJ0-8378
SCX	(SA, Strong Cation Exchanger)	2.5 - 7.5	—	AJ0-8595	AJ0-8596
SAX	(SB, Strong Anion Exchanger)	2.5 - 7.5	AJ0-7370	—	—
RP-1	(Reversed Phase - Polymer)	0 - 14	AJ0-7368	AJ0-8358	—
Polar-RP	(Ether-linked Phenyl)	1.5 - 7	AJ0-7276	AJ0-7845	AJ0-8307
Fusion-RP	(C18 Polar Embedded)	1.5 - 10	AJ0-7558	AJ0-7844	AJ0-8306
AQ C18	(Polar Endcapped C18)	1.5 - 7.5	AJ0-7512	AJ0-7843	AJ0-8305
Gemini® NX-C18	(C18 TWIN-NX™ Technology)	1 - 12	AJ0-8369	AJ0-8370	AJ0-8371
Gemini C18	(C18 TWIN™ Technology)	1 - 12	AJ0-7598	AJ0-7846	AJ0-8308
Gemini C6-Phenyl	(C6-Phenyl TWIN Technology)	1 - 12	AJ0-9156	AJ0-9157	AJ0-9158
<b>Cartridges for Core-Shell PREP Columns</b>					
For core-shell media columns, such as Kinetex® and Aeris™ (Phenomenex).					
EVO C18	(ODS, Octadecyl)	1 - 12	AJ0-9306	AJ0-9304	AJ0-9305
C18	(ODS, Octadecyl)	1.5 - 8.5	AJ0-9278	AJ0-9145	AJ0-9204
C8	(MOS, Octyl)	1.5 - 8.5	—	AJ0-9205	AJ0-9217
PFP	(Pentafluorophenyl)	1.5 - 9	—	AJ0-9146	AJ0-9299
Phenylhexyl	(Phenylhexyl)	1.5 - 8.5	—	AJ0-9147	AJ0-9216
Biphenyl	(Biphenyl)	1.5 - 8.5	AJ0-9280	AJ0-9272	AJ0-9273
HILIC	(HILIC)	2 - 7.5	—	AJ0-9277	—
C18-Peptide	(ODS, Octadecyl)	1.5 - 9	AJ0-9317	AJ0-9318	AJ0-9319
<b>Cartridges for Protein and Polypeptide Reversed Phase</b>					
For use with silica columns for separation of proteins & peptides, such as Jupiter® (Phenomenex); Vyda® 218TP, 214TP (Alltech Associates, Inc.); SynChropak® 300 C18, C4 (Eprogen, Inc.); Nucleosil® 300 Å C18, C4 (Macherey-Nagel); Hypersil® 300 Å (Thermo Hypersil-Keystone), and other widebore or 300 Å brands.					
Widepore C18	(ODS, Octadecyl)	1.5 - 10	AJ0-7224	AJ0-7230	AJ0-8313
Widepore C5	(Pentyl)	1.5 - 10	AJ0-7371	—	—
Widepore C4	(Butyl)	1.5 - 10	AJ0-7225	AJ0-7231	AJ0-8314
<b>Cartridges for Synthetic DNA / RNA Analysis</b>					
For use with columns like Clarity® (Phenomenex)					
Oligo-RP™	(C18 TWIN Technology)	1 - 12	AJ0-8136	AJ0-8210	—
Oligo-WAX™	(WA, Weak Anion Exchanger)	1.5 - 11	AJ0-8325	AJ0-8639	—
Oligo-XT	(ODS, Octadecyl)	1 - 12	AJ0-9516	AJ0-9517	AJ0-9518
<b>Cartridges for Silica GFC</b>					
(Aqueous SEC) For use with silica GFC columns, such as Yarra™ and BioSep™ (Phenomenex); ZORBAX® GF-Series (Agilent Technologies); Bio-Sil® (Bio-Rad®).					
GFC-2000	—	2 - 7.5	—	AJ0-8588	—
GFC-3000	—	2 - 7.5	—	AJ0-8589	—
GFC-4000	—	2 - 7.5	—	AJ0-8590	—
<b>Cartridges for Chiral</b>					
For use with chiral columns, such as Lux® Cellulose-1, -2, -3, -4 & Amylose-1, -2 (Phenomenex); CHIRALCEL® OD-H® & CHIRALCEL® OJ-H®, and CHIRALPAK® AD®-H (DAICEL Corporation).					
Lux Cellulose-1	Cellulose tris(3,5-dimethylphenylcarbamate)	2 - 9	AJ0-8404	AJ0-8405	AJ0-8406
Lux Cellulose-2	Cellulose tris(3-chloro-4-methylphenylcarbamate)	2 - 9	AJ0-8399	AJ0-8400	AJ0-8401
Lux Cellulose-3	Cellulose tris(4-methylbenzoate)	2 - 9	AJ0-8623	AJ0-8624	AJ0-8625
Lux Cellulose-4	Cellulose tris(4-chloro-3-methylphenylcarbamate)	2 - 9	AJ0-8628	AJ0-8629	AJ0-8630
Lux Amylose-1	Amylose tris(3,5-dimethylphenylcarbamate)	2 - 9	AJ0-9344	AJ0-9338	AJ0-9339
Lux Amylose-2	Amylose tris(5-chloro-2-methylphenylcarbamate)	2 - 9	AJ0-8472	AJ0-8473	AJ0-8474
<b>HPLC Guard Cartridge Holders*</b>					
Reuseable Holder			AJ0-9281	AJ0-8223	AJ0-8277
					
<b>SFC Guard Cartridge Holders*</b>					
Reuseable Holder			—	/ kit	/ kit
					

\* Includes column coupler

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