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LUNA<sup>®</sup>

The world's most popular media gets even better.

NEW

High Performance Preparative Luna(3) Media  
for Process Scale Liquid Chromatography

- **Increased Performance**  
with high surface area
- **Lower Backpressure**  
with narrower particle size distribution
- **Added Versatility**  
with excellent chemical stability
- **Long Column Lifetimes**  
with superior mechanical strength



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



NEW

# Luna 100Å C18(3), C8(3) and Silica(3) Preparative Media

For over 15 years, purification chemists have chosen Luna as their media of choice. Luna high surface area silica media provide optimized properties designed for the purification of a wide array of compounds using dynamic axial compression (DAC) columns.

The latest Luna (3) media has narrower particle size distribution providing superior performance with lower backpressure. This new media offers a more uniform, stable, and reproducible chromatography bed, which results in longer lifetime and increased productivity.

In addition, Phenomenex's quality management system is ISO 9001:2008 certified. This certification validates that all our processes are fully established, functional, and meet international standards for predictable performance.

## Optimized loading parameters include:

- High-surface area for increased loading
- Silica smoothness for stable packed beds
- Optimum particle and pore size/distribution provide outstanding performance
- High pore volume offers increased surface area
- Fine tuned bonding density for excellent reproducibility

## Product Characteristics

<b>Particle Size:</b>	10 µm
<b>Surface Area:</b>	400 m <sup>2</sup> /g
<b>Pore Volume:</b>	1 mL/g
<b>Pore Size:</b>	100 Å
<b>Particle Size Distribution:</b>	$dp_{90}/dp_{10} \leq 1.6$
<b>Chemical Purity:</b>	Total Metal Content $\leq$ 20 ppm
<b>Coverage:</b>	C8(3) 13% C, 4 µmol/m <sup>2</sup> C18(3) 17% C, 3 µmol/m <sup>2</sup>
<b>Packing Density:</b>	
<b>Silica(3)</b>	0.47 g/mL
<b>C8(3)</b>	0.58 g/mL
<b>C18(3)</b>	0.60 g/mL
<b>Chemical Stability:</b>	Luna bonded phases are stable between pH 1.5 and 10*
<b>Mechanical Stability:</b>	Allows repeated packing up to 140 Bar (2000 psi effective piston pressure)

\*pH range under isocratic conditions. pH range is 1.5-9 under gradient conditions.

Key: ● Best Suited ○ Very Good	Applications			Type of Compounds				Loading Available Surface Area
	Insulin	Peptides	Small Molecules	Acids	Polar	Hydrophobic	Bases	
<b>Packing Material</b>								
Luna C18(3)	●	●	●	○		●	○	●
Luna C8(3)	●	●	●	○		●	○	●
Luna Silica(3)			●	○	○		○	●

## Increased Performance with high surface area

The advanced silica technology behind Luna media yields a particle that is extremely uniform in its sphericity, surface smoothness, and overall physical properties.

### Luna(3) Media Provides:

- **High-surface area** for increased loading
- **Silica smoothness** for stable packed beds
- **Optimum particle and pore size distribution** provide outstanding performance
- **High pore volume** offers increased surface area
- **Fine tuned bonding density** for excellent reproducibility

We carefully control pore size and volume by porosimetry for maximum column performance and loading capacity. Consistent quality is ensured by tightly controlled pore size distribution and total pore volume.

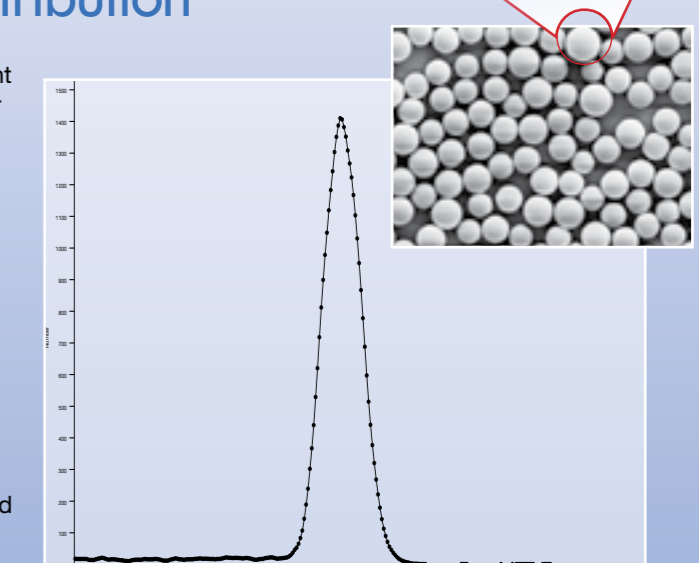
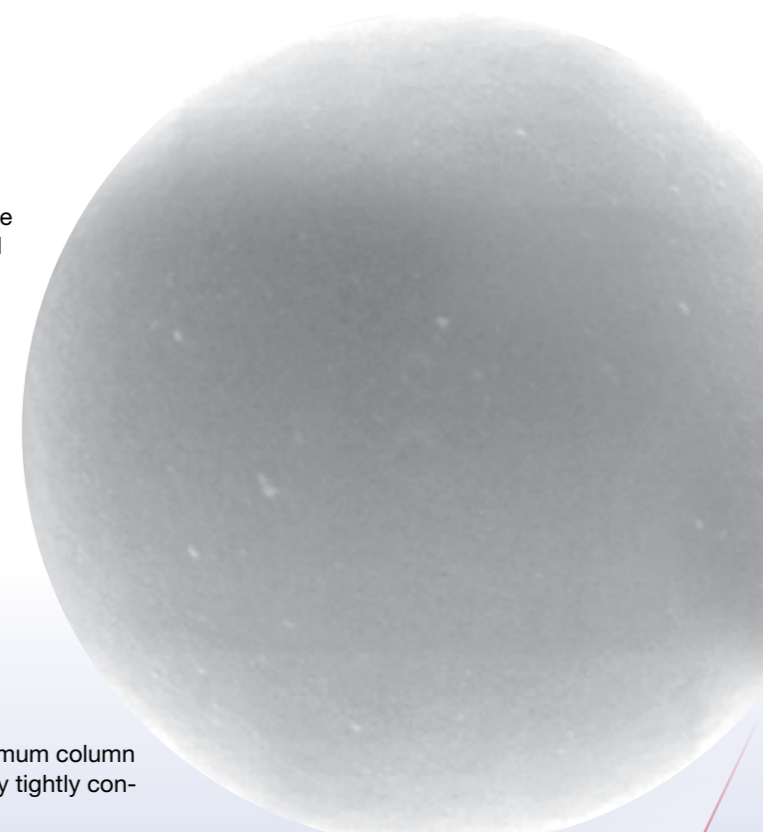
## Lower Backpressure with narrower particle size distribution

One of the distinguishing characteristics of the new Luna(3) sorbent is the unusually narrow particle size distribution compared to other purification media.

### Luna(3) Media Provides:

- **Increased column efficiency** with more uniform particles
- **Increased performance** with more uniform packed media beds
- **Lower backpressure** with improved fluid dynamics

The size of the particles influences critical column characteristics and is a valuable indicator of quality and performance. The size and shape of media particles influence packed column bed uniformity and flow rates. Uniform and more spherical particles like Luna(3) will typically pack more easily than particles that vary in size and produce packed beds with improved flow characteristics.



“ We have been very satisfied with the bulk media performance and the support we have received from Phenomenex. We trust Phenomenex as one of our key suppliers for GMP purification media. ”

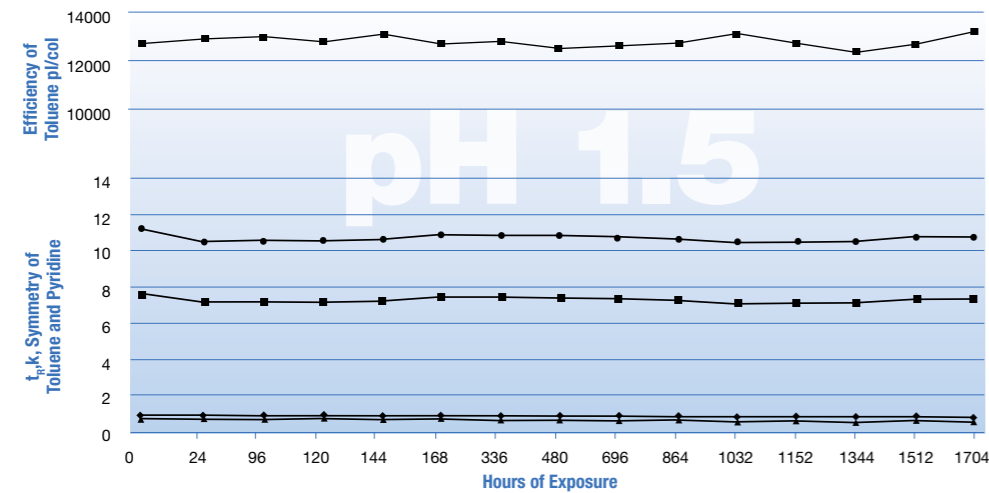
Bachem  
U.S.A.

## Added Versatility with excellent chemical stability

Luna C18(3) media features an extended pH range of stability of 1.5 to 10.0\* due to our proprietary bonding technology resulting in a high ligand surface density. The advantages of using chemically stable silica-based materials are the following:

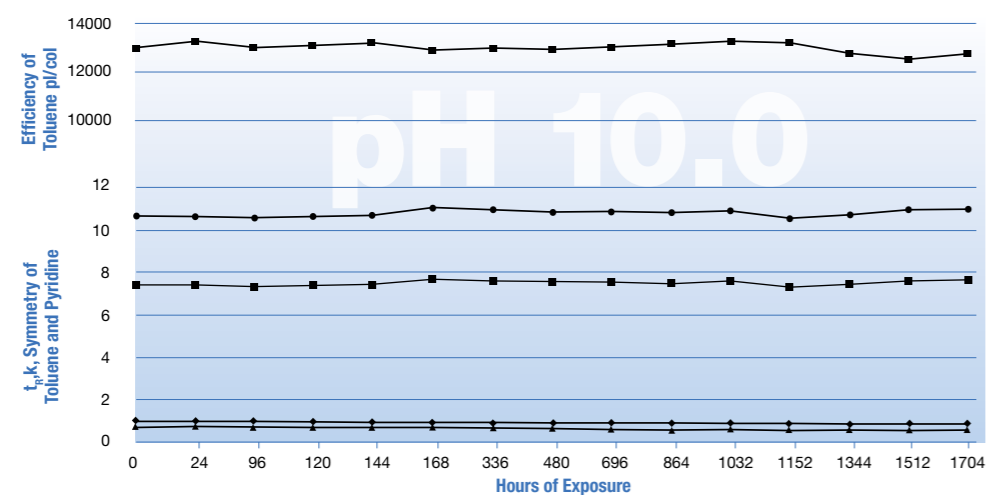
- Loading under various pH conditions
- Optimization of sample solubility
- Wide range of mobile phase (buffer) options
- Optimal column regeneration
- Longer lifetime for better total economy

### High Chemical Stability at pH 1.5 over 1000 hours



Test Conditions: Column stability tested under highly acidic conditions. Continuous flush in 0.1% TFA (pH 1.5) in Water/Acetonitrile, 50:50.

### High Chemical Stability at pH 10 over 1000 hours



Test Conditions: Column stability tested under highly basic conditions. Continuous flush in 20 mM Na<sub>2</sub>HPO<sub>4</sub> (pH 10.0) in Water/Acetonitrile, 50:50.

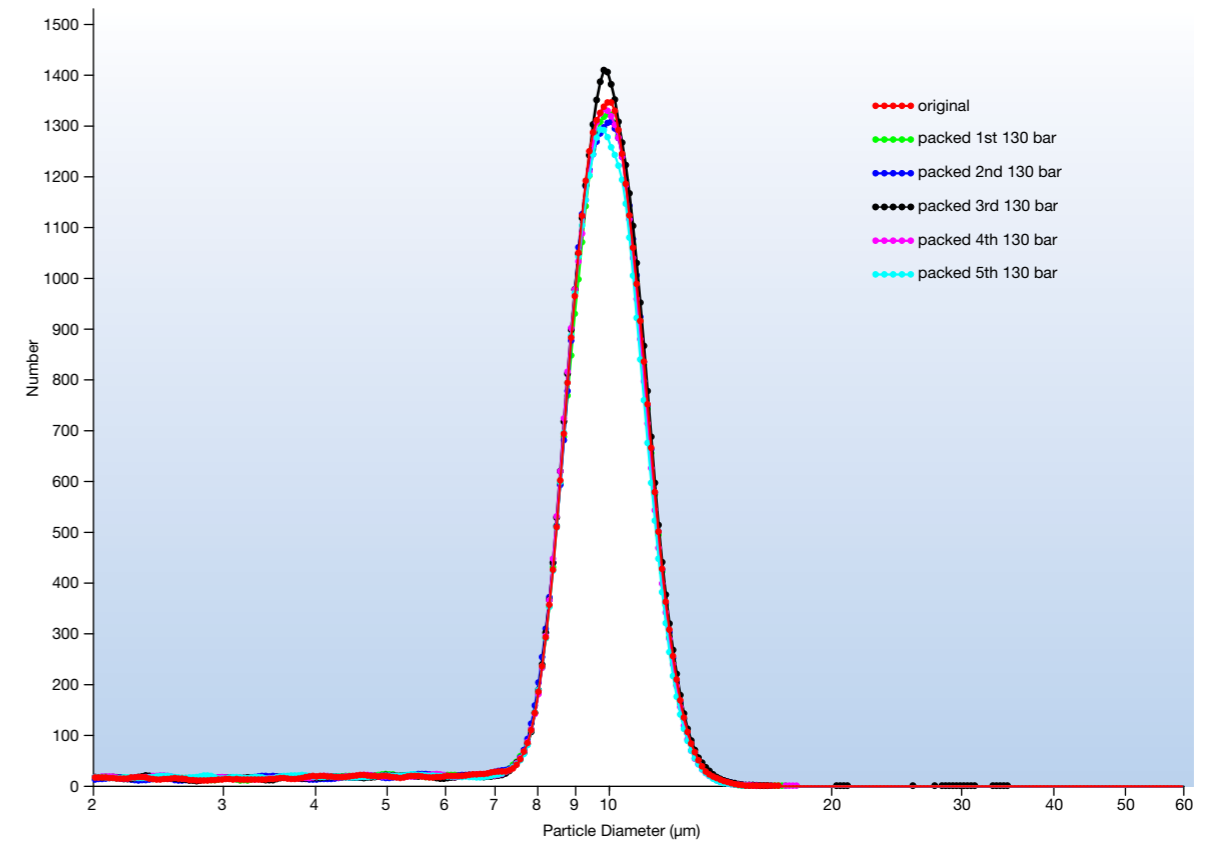
**KEY:**  
 ■ Efficiency, Plates for Toluene  
 ◆ Symmetry of Toluene  
 ● t<sub>r</sub> of Toluene (min)  
 ▲ Symmetry of Pyridine  
 ■ k of Toluene

## Long Column Lifetimes with superior mechanical strength

The mechanical stability of Luna HPLC media is crucial for successful large-scale purifications using dynamic axial compression (DAC) equipment. Luna media provides superior mechanical stability which allows its reuse for repeated packing and ensures extended lifetime in DAC HPLC systems.

Mechanically weak particles will break during column packing and generate fragments (fines) that will clog frits and create abnormally high backpressures. To verify the structural integrity of the Luna C18(3) sorbent, it was repeatedly packed at 130 bars in a 5 cm ID DAC system. There were no significant amounts of fines detected after each packing operation demonstrating excellent mechanical stability under repeated DAC packing for improved economy. In large DAC systems (>5 cm) the pressure available to be applied to the silica is generally 70 bars or less allowing extended media lifetimes. (For additional information, request the recommended Luna(3) packing recipe and handling instructions).

### Mechanical Stability Demonstrated by Repeated Packing



Overlay of particle size distributions of Luna C18(3) repeatedly packed at 130 bars in a 5 cm ID DAC system."



The bulk media products and product support services provided by Phenomenex are of consistently high quality. We use Phenomenex media in the cGMP manufacture of complex peptides for our customers.



Almac  
United Kingdom

\*pH range under isocratic conditions. pH range is 1.5-9.0 under gradient conditions.

# Certificates

The development, production, and marketing of Luna C18(3), C8(3), and Silica(3) follow ISO 9001 guidelines.

## Product Quality



## ISO 9001



## BSE/TSE Certificate



# Delivery

Luna is delivered in polyethylene bottles or in polyethylene bags packed in drums.

# Service

PhenoLogix, our in-house application support lab, screens multiple stationary and mobile phase combinations in order to optimize any new purification method for improved economy.



## Method Optimization Services

- Fast Turnaround
- Easy Method Transfer
- Continued Support
- Overloading Studies

## Preparative and Process Scale-Up

- Media Screening
- Small Scale Purification
- On-site DAC Packing Service

# Trust, Reliability, Performance

## We are ready to partner with you

Technology advances through the synergy of customer experience, feedback and vendor action. Through our close relationships in the marketplace, we are well placed to handle your immediate needs today while leading innovation to meet your needs tomorrow.

If you would like to place an order, try a scout column, have questions on media selection, or would like to improve your purification work, please contact us anytime. Our dedicated Prep team is willing and able to support your purchase and offer purification yields like nothing you've seen before.



# Luna Ordering Information

Luna 10 µm- <i>PREP</i>	Columns	Bulk Media				
		1 kg	5 kg	10 kg	50 kg	100 kg
<b>C18(3)</b>	00G-4616-E0	04K-4616	04L-4616	04M-4616	04N-4616	04P-4616
<b>C8(3)</b>	00G-4623-E0	04K-4623	04L-4623	04M-4623	04N-4623	04P-4623
<b>Silica(3)</b>	00G-4617-E0	04K-4617	04L-4617	04M-4617	04N-4617	04P-4617

“ Our scientists at American Peptide have taken advantage of Phenomenex’s column packing services, application development, and project-specific consultation services for some of our most challenging separations. ”

American Peptide Company  
USA

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LUNA®

NEW

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

Phenomenex products are available worldwide. For the distributor in your country, contact Phenomenex USA, International Department at [international@phenomenex.com](mailto:international@phenomenex.com)

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