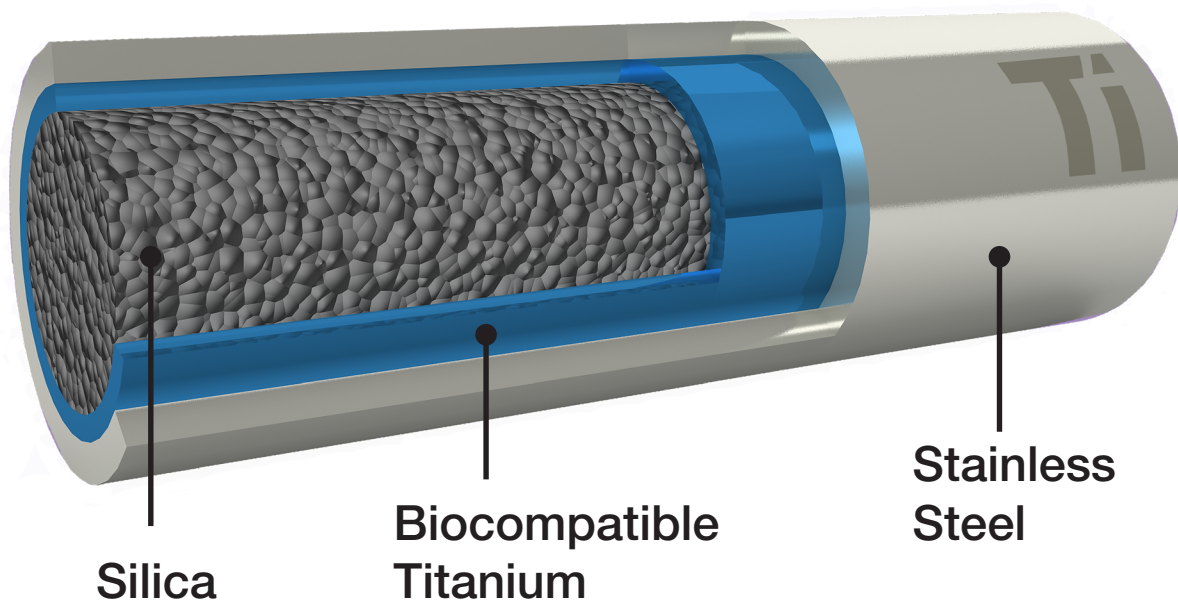


UNPARALLELED UHPLC/HPLC INERTNESS FOR BIOLOGICS



 **phenomenex**[®]
...breaking with traditionSM



www.phenomenex.com/bioTi

Biocompatible Hardware “Primed” to Help You!

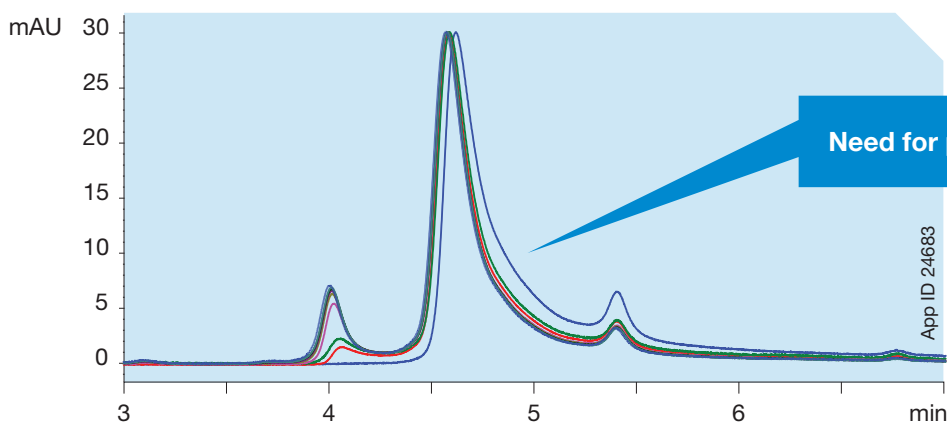
We've minimized the need for priming with a new titanium infused biocompatible hardware and frit that doesn't interfere with protein or peptide integrity!

BioTi™ HPLC/UHPLC hardware is designed to curtail:

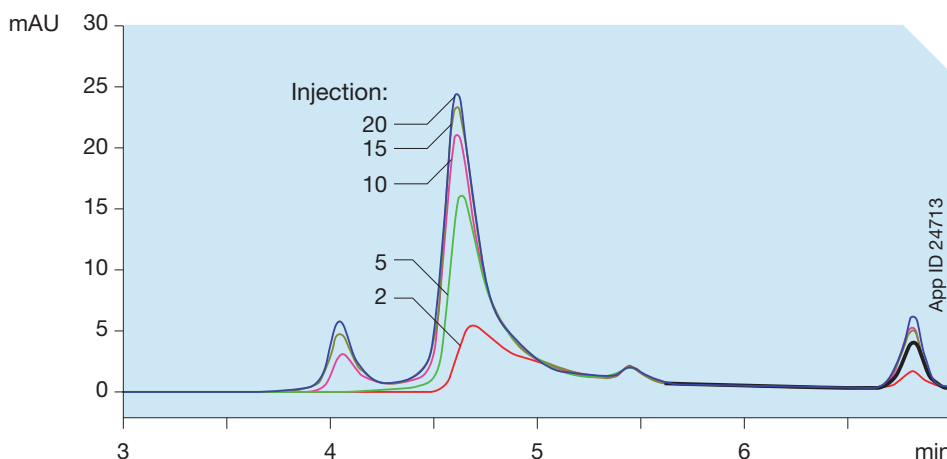
- UNWANTED SECONDARY INTERACTIONS
- PROBLEMATIC CARRYOVER
- RECOVERY ISSUES BETWEEN INJECTION TO DETECTION

Overlaid Successive Injections – Protein Priming Comparison

bioZen™ Titanium BioTi Hardware



Traditional Stainless Steel



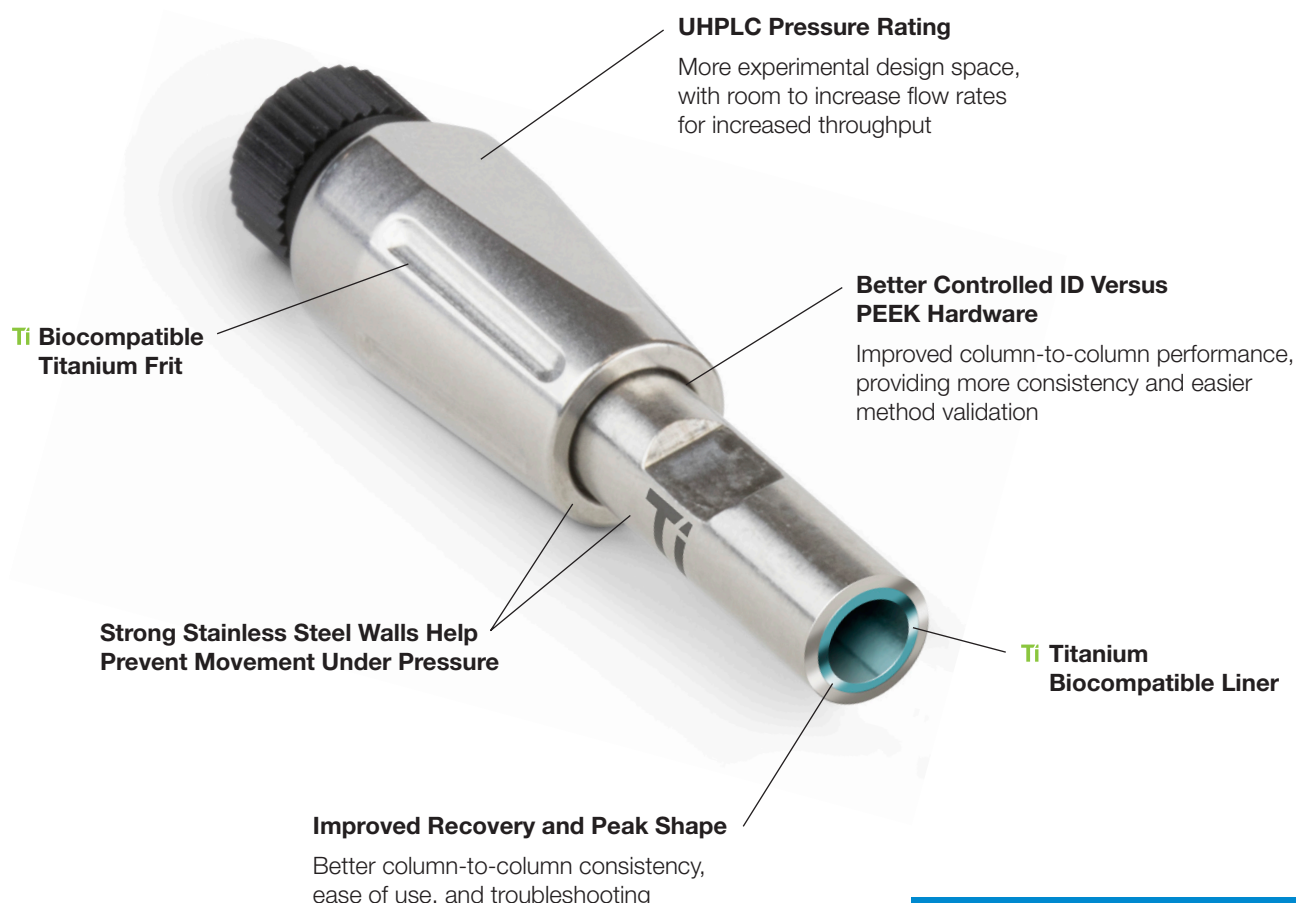
Conditions for both columns:

Dimension: 150 x 4.6 mm
Mobile Phase: 100 mM Sodium Phosphate Buffer (pH 6.8)
Flow Rate: 0.3 mL/min
Temperature: Ambient
Detection: UV @ 280 nm
Sample: 1. γ -Globulin
2. Ovalbumin

BioTi™ Hardware Product Features!

A biocompatible HPLC/UHPLC hardware affords scientists with a bioinert pathway between injection and detection.

Inside bioZen™ Biocompatible Hardware:



BioTi Questions

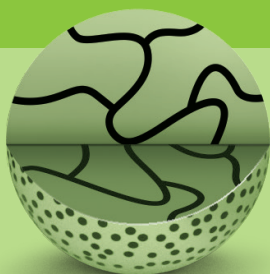
Ask a ZenMaster:

www.phenomenex.com/bioZenChat

bioZen™ Columns Available in Biocompatible Hardware

With a single innovative product line, bioZen separation products provide enhanced characterization over an incredibly wide range of techniques.

Two Particle Platforms



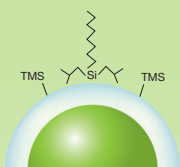
Thermally Modified Fully Porous

High Efficiency
Excellent Inertness
Increased Sensitivity
Exceptional Quality and Robustness



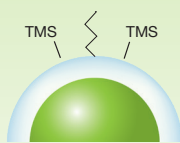
Core-Shell Technology

Intact



bioZen Intact XB-C8
3.6 μm

Large pore core-shell particle for fast intact biologic entry. C8 provides highly useful moderate hydrophobic selectivity.



bioZen Intact C4
3.6 μm

Large pore core-shell particle for fast intact biologic entry. C4 stationary phase provides highly sought after low hydrophobic retention, especially important for highly retentive biologics.

Size Exclusion (SEC)



bioZen SEC-2
1.8 μm

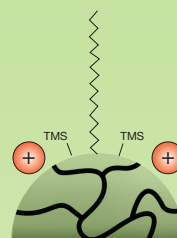
Extremely inert, high density fully porous particle with high efficiency and low molecular weight (LMW) separation range of 1K–450 kDa.



bioZen SEC-3
1.8 μm

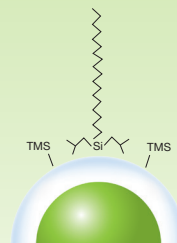
Extremely inert, high density fully porous particle with high efficiency and high molecular weight (HMW) separation range of 10K–700 kDa.

Peptide



bioZen Peptide PS-C18
1.6 μm and 3 μm

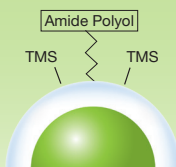
Excellent retention by combined positively charged surface ligand and C18 ligand.



bioZen Peptide XB-C18
1.7 μm and 2.6 μm

Overall retention of both acidic and basic peptides through C18 stationary phase with di-isobutyl side chains.

Glycan



bioZen Glycan
2.6 μm

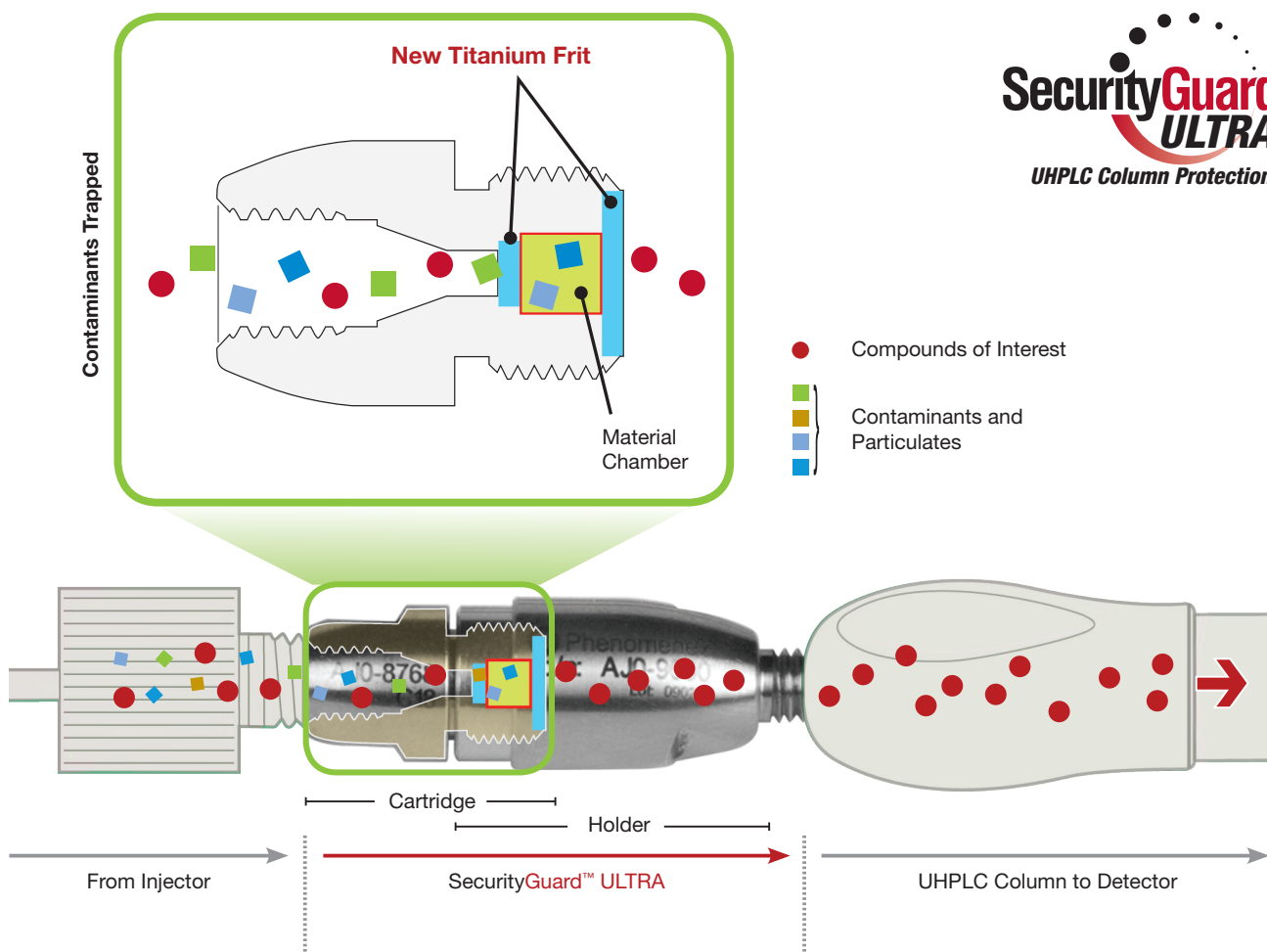
Provides optimal combination of high efficiency and selectivity for released glycans.

Biocompatible Column Protection System

Extend column performance and minimize costly system and detector upkeep by preventing contaminants and particulates from getting into your column with a guard system.



SecurityGuard™ ULTRA Guard Cartridge System with Titanium



* Cartridge schematic not drawn to scale

Biocompatible Vials, Filters, and Syringes

Large molecules such as proteins and peptides are easily adsorbed onto even the most inert positively or negatively charged sites on the surfaces therefore biocompatible accessories are a must!

Accessories You Can Trust



Plastic Disposable Syringes:

- Use for all syringe filter applications
- Luer-lock outlet easy connection
- 3 to 20 mL capacities
- Ultra-clean, high-purity plastic



Syringe Filters Reduce:

- Extraneous peaks
- False quantitation
- Sample co-elution
- Instrument damage



Plastic Vials Provide:

- Inert and free from clarifiers and antioxidants
- 100 % virgin medical grade polypropylene
- No contribution to adsorption, pH change, or baseline noise



Contaminants and Particulates Trapped



Polyethersulfone (PES) Membrane:

- Hydrophilic membrane
- Fast flow
- High-throughput characteristics
- Ultra-low protein binding

Contaminants and Particulates-Free Sample

Product Ordering Information

bioZen™ Products - Powered by Biocompatible Hardware

| bioZen Columns (mm) | | | | | | Biocompatible Guard Cartridges | | |
|------------------------------|-------------|-------------|-------------|-------------|-------------|--------------------------------|------------|----------|
| | 100 x 2.1 | 150 x 2.1 | | | | for 2.1 mm | Holder | |
| bioZen 2.6 µm Glycan | 00D-4773-AN | 00F-4773-AN | | | | AJO-9800 | AJO-9000 | |
| | 50 x 2.1 | 150 x 2.1 | | | | for 2.1 mm | Holder | |
| bioZen 1.6 µm Peptide PS-C18 | 00B-4770-AN | 00F-4770-AN | | | | AJO-9803 | AJO-9000 | |
| | 50 x 4.6 | 150 x 4.6 | | | | for 4.6 mm | Holder | |
| bioZen 3 µm Peptide PS-C18 | 00B-4771-E0 | 00F-4771-E0 | | | | | AJO-7606 | KJO-4282 |
| | 50 x 2.1 | 150 x 2.1 | | | | for 2.1 mm | Holder | |
| bioZen 1.7 µm Peptide XB-C18 | 00B-4774-AN | 00F-4774-AN | | | | AJO-9806 | AJO-9000 | |
| | 50 x 2.1 | 150 x 2.1 | 250 x 2.1 | 50 x 4.6 | 150 x 4.6 | for 2.1 mm | for 4.6 mm | Holder |
| bioZen 2.6 µm Peptide XB-C18 | 00B-4768-AN | 00F-4768-AN | 00G-4768-AN | 00B-4768-E0 | 00F-4768-E0 | AJO-9806 | AJO-9808 | AJO-9000 |
| | 50 x 2.1 | 150 x 2.1 | 50 x 4.6 | 150 x 4.6 | | for 2.1 mm | for 4.6 mm | Holder |
| bioZen 3.6 µm Intact C4 | 00B-4767-AN | 00F-4767-AN | 00B-4767-E0 | 00F-4767-E0 | | AJO-9809 | AJO-9811 | AJO-9000 |
| bioZen 3.6 µm Intact XB-C8 | 00B-4766-AN | 00F-4766-AN | 00B-4766-E0 | 00F-4766-E0 | | AJO-9812 | AJO-9814 | AJO-9000 |
| | 150 x 4.6 | 300 x 4.6 | | | | | for 4.6 mm | Holder |
| bioZen 1.8 µm SEC-2 | 00F-4769-E0 | 00H-4769-E0 | | | | | AJO-9850 | AJO-9000 |
| bioZen 1.8 µm SEC-3 | 00F-4772-E0 | 00H-4772-E0 | | | | | AJO-9851 | AJO-9000 |

Verex™ Biocompatible Vials



| Screw Top Vials | | | | | | | |
|-----------------|---------------|-------------------|--------------|-----------------|------------------------|--------------------|---------------------|
| Type | Material | Finish | Total Volume | Residual Volume | Caps (Included) | Part Number 100/pk | Part Number 1000/pk |
| Plastic Vial | Polypropylene | 9 mm Screw Thread | 700 µL | <5 µL | PTFE/Silicone | ARO-9993-12-C | ARO-9993-13-C |
| Plastic Vial | Polypropylene | 9 mm Screw Thread | 700 µL | <5 µL | PTFE/Silicone, preSlit | ARO-9994-12-C | ARO-9994-13-C |
| Plastic Vial | Polypropylene | 9 mm Screw Thread | 300 µL | <2 µL | PTFE/Silicone | ARO-9991-12 | ARO-9991-13 |
| Plastic Vial | Polypropylene | 9 mm Screw Thread | 300 µL | <2 µL | PTFE/Silicone, preSlit | ARO-9992-12 | ARO-9992-13 |



| Snap Top Vials | | | | | | | |
|----------------|---------------|----------------|--------------|-----------------|------------------------|--------------------|---------------------|
| Type | Material | Finish | Total Volume | Residual Volume | Caps (Included) | Part Number 100/pk | Part Number 1000/pk |
| Plastic Vial | Polypropylene | 11 mm Snap Top | 300 µL | <2 µL | PTFE/Silicone | ARO-9691-12-C | ARO-9691-13-C |
| Plastic Vial | Polypropylene | 11 mm Snap Top | 300 µL | <2 µL | PTFE/Silicone, preSlit | ARO-9692-12-C | ARO-9692-13-C |

Phenex™ Biocompatible Syringe Filters

| Membrane Type/Size | 28 mm Diameter for 10 - 100 mL sample volumes | |
|-------------------------|---|--------|
| | Part No. | Unit |
| 0.45 µm | | |
| Phenex-PES ¹ | AF0-8108-12 | 100/pk |
| (Polyethersulfone) | AF0-8108-52 | 500/pk |
| 0.20 µm | | |
| Phenex-PES ¹ | AF0-8208-12 | 100/pk |
| (Polyethersulfone) | AF0-8208-52 | 500/pk |

1. Housing material is methacrylate butadiene styrene (MBS) polymerisate. Also known as Cyrolite®.



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

Plastic Disposable Syringes

| Disposable Syringes | | | |
|---------------------|--|----------------|--------|
| Part No. | Description | Capacity (mL)* | Unit |
| AS0-8408 | Plastic Disposable Syringes, Luer-lock | 3 | 100/pk |
| AS0-8409 | Plastic Disposable Syringes, Luer-lock | 5 | 100/pk |
| AS0-8410 | Plastic Disposable Syringes, Luer-lock | 10 | 100/pk |
| AS0-8411 | Plastic Disposable Syringes, Luer-lock | 20 | 100/pk |

*Choose larger volume syringe to reduce force on syringe filter membrane. 10mL syringe is recommended.

UNPARALLELED UHPLC/HPLC INERTNESS FOR BIOLOGICS

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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.

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