

Affordable, Ultra-High Resolution Size Exclusion Chromatography for HPLC/UHPLC Systems

- Save money with extremely affordable prices
- Achieve better results through larger exclusion ranges and higher efficiencies
- Enhance recovery using more inert Yarra particles
- Gain time with faster, more productive HPLC/UHPLC runs
- Feel at ease knowing you have an unmatched product guarantee

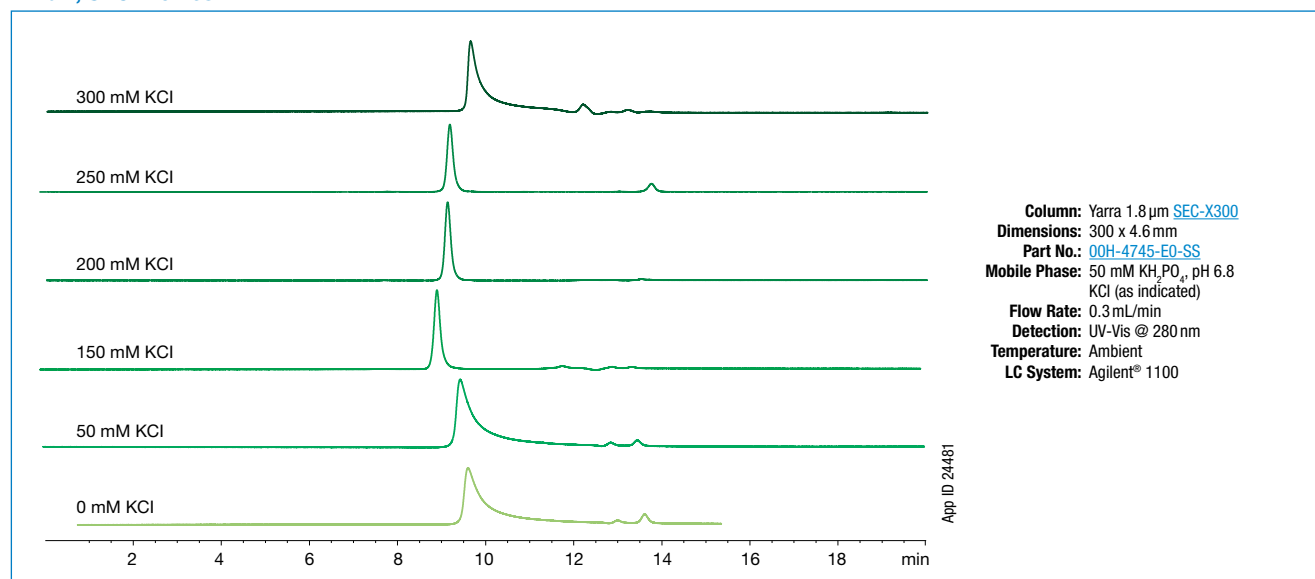
Yarra vs. Waters® BEH SEC

Yarra 1.8 µm 150 x 4.6 mm		vs.	Waters 1.7 µm 150 x 4.6 mm	
			BEH125 SEC	BEH200 SEC
1.8	1.8	Particle Size (µm)	1.7	1.7
150	300	Pore Size (Å)	125	200
1 k - 450 k	10 k-700 k	MW Range in native conditions (Da)	1 k - 80 k	10 k - 450 k
>30,000	>30,000	Efficiency (plates/column)	>30,000	>30,000

*Waters specifications taken from Waters website.

Buffer Optimization for mAb Aggregate Analysis

mAb 1, SEC Profiles



Ordering Information

Yarra 1.8 µm SEC Stainless Steel Columns (mm)			SecurityGuard ULTRA Cartridges***
Phases	150 x 4.6	300 x 4.6	3/pk
Yarra 1.8 µm SEC-X150	00F-4631-E0-SS	00H-4631-E0-SS	AJ0-9512
Yarra 1.8 µm SEC-X300	00F-4743-E0-SS	00H-4743-E0-SS	AJ0-9513

***SecurityGuard ULTRA cartridges require holder, Part No.: [AJ0-9000](#)

High Resolution Size Exclusion for Biomolecules

- Extremely high efficiency 3 μm particle
- Huge cost savings
- Extreme surface inertness

Starting with 3 μm ultra-pure silica, Yarra particles are densely bonded with a proprietary hydrophilic surface chemistry. Coupled with tight particle and pore size distribution as well as strict packing and QC specifications, Yarra columns allow for very high efficiency and resolution.

Higher Efficiency, Much Lower Price Compared to TSKgel® — GUARANTEED!

Yarra

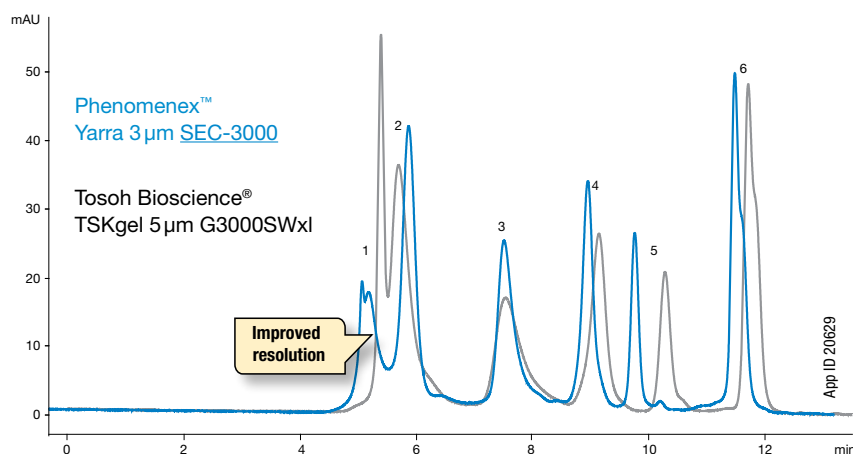
VS.

TSKgel*†

				G2000SWxl	G3000SWxl	G4000SWxl
3	3	3	Particle Size (μm)	5	5	8
145	290	500	Pore Size (Å)	125	250	450
1 k - 300 k	5 k - 700 k	15 k - 1,500 k	MW Range in native conditions (Da)	5 k - 150 k	10 k - 500 k	20 k - 7,000 k
2.5 - 7.5	2.5 - 7.5	2.5 - 7.5	pH Stability	2.5 - 7.5	2.5 - 7.5	2.5 - 7.5
3000	3000	1700	Maximum Backpressure (psi)	1015	1015	508
50	50	50	Maximum Temperature (°C)	30	30	30
1.5	1.5	1.2	Maximum Flow Rate (mL/min)	1.2	1.2	1.2
48,000	48,000	38,000	Efficiency (minimum theoretical plates)	20,000	20,000	16,000

*Also guaranteed against other aqueous GFC columns 3 μm or above.

Compare Yarra's Resolving Power to TSKgel's



Conditions for both columns:

Columns: Yarra 3 μm SEC-3000

TSKgel 5 μm G3000SWxl

Dimensions: 300 x 7.8 mm

Mobile Phase: 50 mM Sodium Phosphate pH 6.8
/ 0.3 M Sodium Chloride

Flow Rate: 1 mL/min

Backpressure: 99 bar

Temperature: Ambient

Detection: UV @ 220 nm

Sample:
1. IgM
2. Thyroglobulin (669 kDa)
3. Beta Amylase
4. Ovalbumin (44 kDa)
5. Myoglobin (17 kDa)
6. Uridine

Comparative separations may not be representative of all applications.

†All TSKgel specifications were taken from Tosoh Bioscience 2004-5 Laboratory Products Catalog

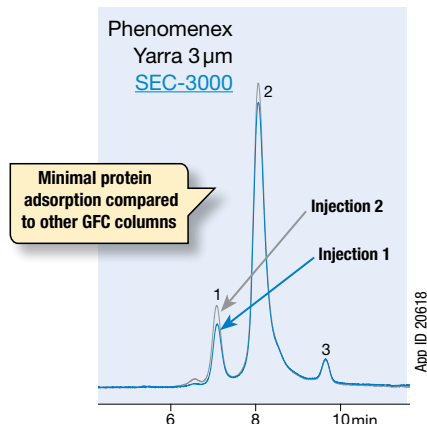
Yarra™ 3µm Aqueous GFC/SEC Columns

Extreme Surface Inertness for Accurate and Confident Recoveries

Phenomenex's proprietary surface chemistry provides an inertness hard to match by other GFC columns. The result is minimal

adsorption of proteins and other protein aggregates leading to more accurate quantitation.

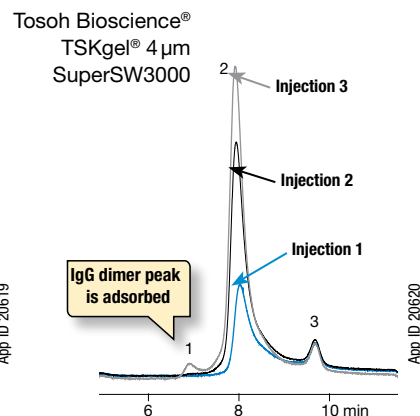
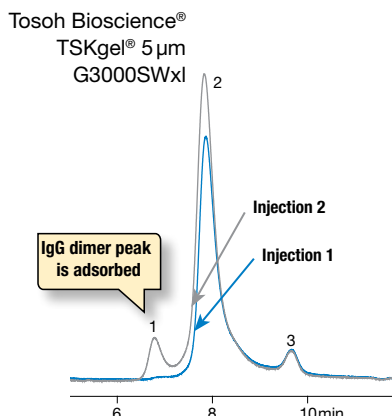
Minimal "Priming Effect" with Yarra Columns



Conditions for all columns (except where noted):

Columns: Yarra 3µm SEC-3000
TSKgel 5µm G3000SWxl
TSKgel 4µm SuperSW3000

Dimensions: 300 x 7.8 mm



Mobile Phase: 50 mM Sodium Phosphate pH 5.0/
0.1 M Sodium Sulfate

Flow Rate: 1 mL/min
0.35 mL/min (SuperSW3000)

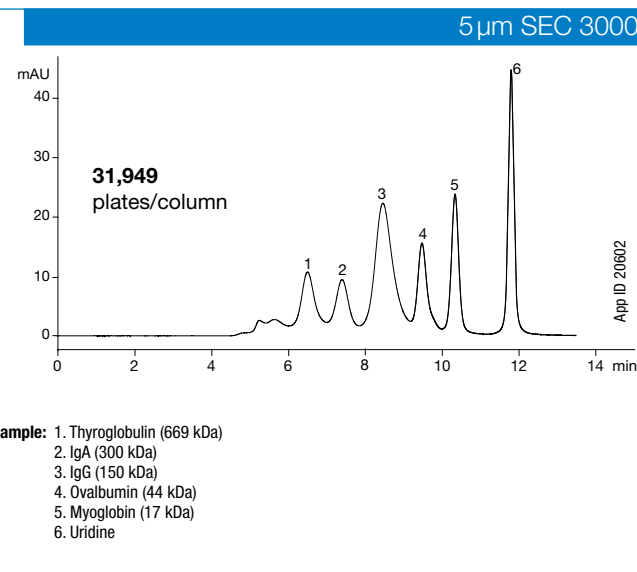
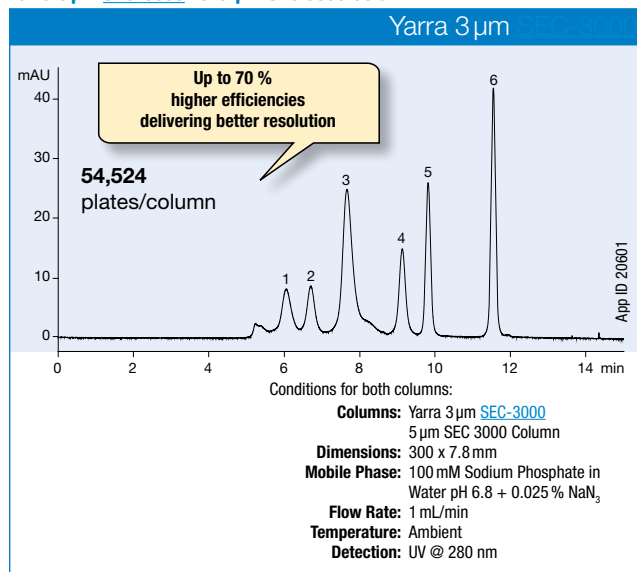
Temperature: Ambient

Detection: UV @ 280 nm

Sample: 1. IgG Dimer
2. IgG Monomer
3. Albumin

Ultra-High Resolution Size Exclusion for Biomolecules

Yarra 3µm SEC-3000 vs. 5µm SEC 3000 Column



Comparative separations may not be representative of all applications.

Ordering Information

Yarra 3µm SEC Columns (mm)	Narrow Bore	Analytical	Analytical	SecurityGuard™ Cartridges (mm)
Phases	300 x 4.6	150 x 7.8	300 x 7.8	4 x 3.0*
Yarra 3µm SEC-2000	00H-4512-E0	00F-4512-K0	00H-4512-K0	AJ0-4487
Yarra 3µm SEC-3000	00H-4513-E0	00F-4513-K0	00H-4513-K0	AJ0-4488
Yarra 3µm SEC-4000	00H-4514-E0	—	00H-4514-K0	AJ0-4489

*SecurityGuard™ Analytical Cartridges require holder, Part No.: KJ0-4282

for ID: 4.6 - 7.8 mm



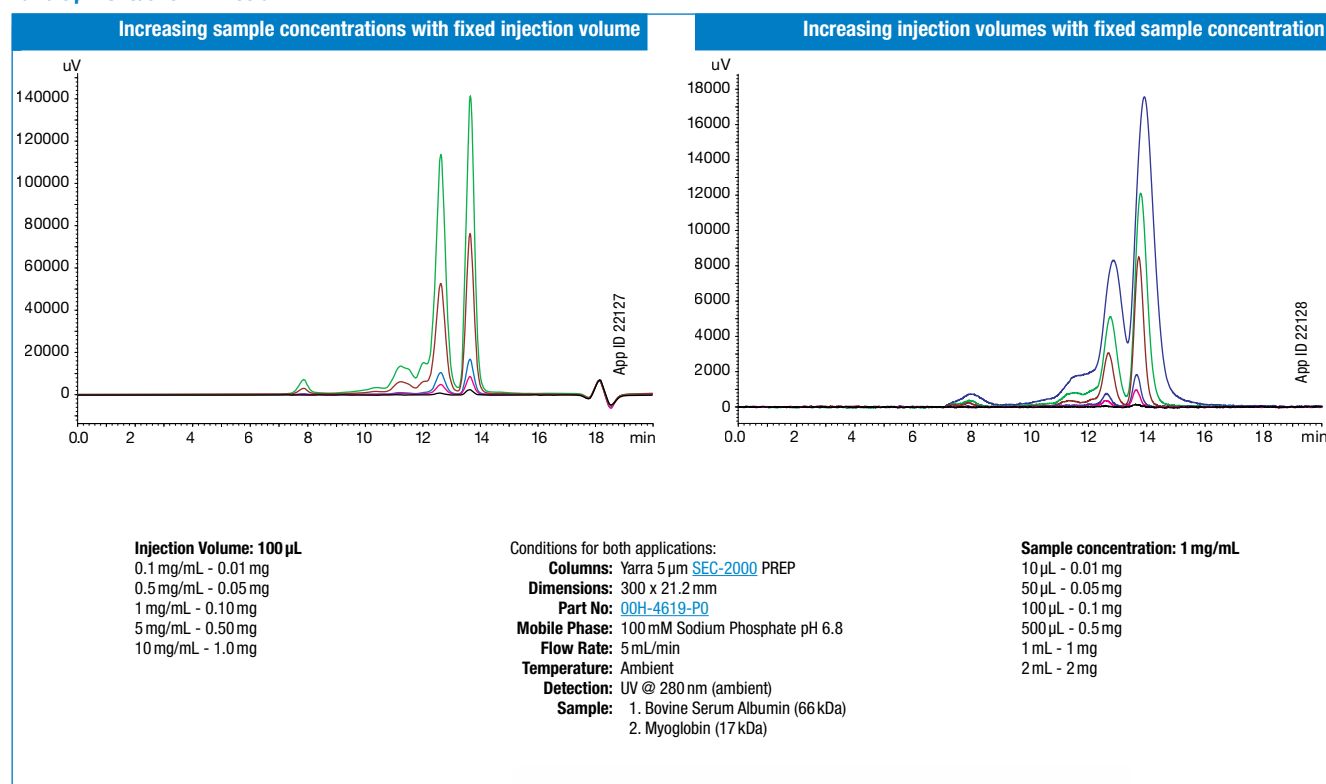
For information on SecurityGuard column protection, see p. 330

Yarra™ 5 µm PREP Aqueous GFC/SEC Columns

Higher Performance for Preparative BioSeparations at a Lower Price

Enjoy the same selectivity and ultra-high efficiency of Yarra 3 µm for your preparative gel filtration applications. Yarra SEC PREP features a 5 µm particle size version of the original Yarra 3 µm particle with the same chemistry on a 21.2 mm ID column for preparative purification, desalting, and characterization of biomolecules. Yarra 5 µm PREP is available at an affordable price while maintaining the high performance given with the analytical columns.

Yarra 5 µm SEC/GFC PREP Column



Yarra 5 µm PREP SEC Columns (mm)	Preparative	SecurityGuard™ Cartridges (mm)
Phases	300 x 21.2	15 x 21.2**
		/ea
Yarra 5 µm SEC-2000 PREP	00H-4619-PQ	AJO-8588
Yarra 5 µm SEC-3000 PREP	00H-4620-PQ	AJO-8589
Yarra 5 µm SEC-4000 PREP	00H-4621-PQ	AJO-8590

**PREP SecurityGuard™ Cartridges require holder, Part No.: AJO-8223 for ID: 18 - 29 mm

