



# SEPRAFLO<sup>®</sup> ION-EXCHANGE RESINS

## Fast, Low-Cost Ion-Exchangers for Protein Capture



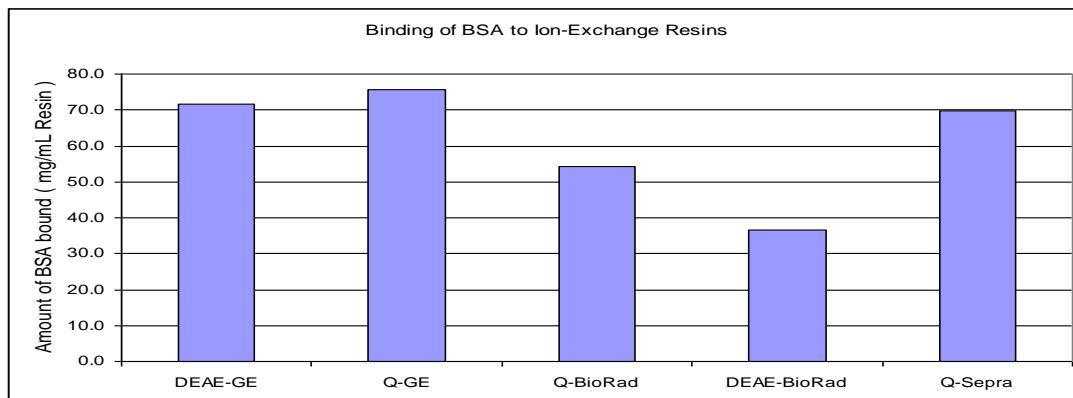
- *50% Higher Flow than “Fast Flow” media*
- *Costs 60% less*
- *Excellent Binding capacity*
- *Non-compressible*
- *Cleanable in 1M NaOH*
- *1000 cycles*

### Overview and Advantages

Sepragen’s Septra<sup>®</sup> Resins are designed for process scale separation of biological molecules. They can be run at very high flow rates, typically up to 50% higher than commonly used resins from other suppliers without causing compression like agarose or cellulosic beads or fracture or breakage like silica or macroporous PSDVB based beads. They have large nominal pore size, up to 700 Å, that facilitates rapid mass transfer of large macromolecules and provides for high static and dynamic binding capacity. They are cleanable with 1N sodium hydroxide.

Septra<sup>®</sup> resins consist of macroporous beads with nominal 50 micron size. They are rigid and can withstand pressures in excess of 500 psi. They can be supplied by Sepragen in batches of 100 liters on up. The resins are made of a hydrophilic copolymer of glycidyl methacrylate which is used predominantly in making contact lenses. The Septra<sup>®</sup> resins are priced at a fraction of the price of competitive resins.

### Ion-Exchange Binding Capacity of Septra<sup>®</sup>

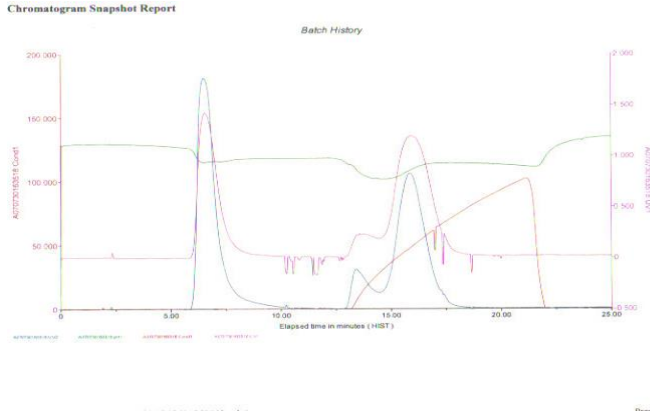


The data above shows the binding capacity of Septra<sup>®</sup> resins when compared with other commercially available resins. The resins show comparable binding with a model protein BSA. Binding capacities will vary for different proteins based on their charge, size and molecular weight, PI, tertiary structure, and the pH and ionic strength of the solution and the competitive binding effect of other counterions in solution.



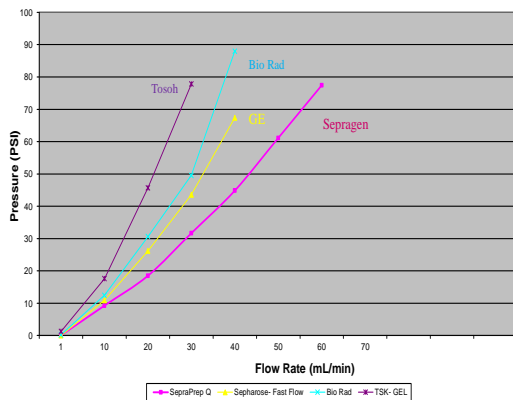
## Application: Antibody Separation on Sepraflo® S Resin

The graph below shows an antibody separation on a Sepraflo® cation exchange resin. Elution is done with a salt gradient.



## Flow Rate vs. Pressure Performance

The data below shows a comparison of the flow rates that can be achieved with various resins at varying pressures. Sepraflo® resins consistently show higher flow rates than all other resins.



## Sepragen Has What It Takes

Sepragen's pioneering spirit of innovation brings to you the Sepraflo® Resins. You can now use these high performance resins to enable rapid, cost-effective purifications of antibodies and other proteins. Call 510-475-0650 to discuss your needs today!

## Certificate of Analysis

DATE	December 9, 2016
PRODUCT	SEPRAFLO® S RESIN
LOT NUMBER	BGSS120901
QUANTITY	75 LITERS

PARAMETERS	SPECIFICATIONS	RESULTS	REFERENCE
Appearance	White Spherical Beads (Wet)	White Spherical Beads (Wet)	Visual Inspection
Total Exchange Capacity, Meq/ml (in H <sup>+</sup> form)	220-300 Meq/ml	282	QA/FPR/09
Moisture Content, % (in H <sup>+</sup> form)	62 - 70%	64.09	QA/FPR-05
Static Protein Capacity, mg/ml	65 - 85 mg/ml	78.90	QA/FPR-131
Particle Size Distribution: US Mesh			
+ 140 MESH	5% Maximum	4.70	QA/FPR-02
+ 270 MESH	85% Minimum	93.10	
- 270 MESH	10% Maximum	2.20	
Microscopic Analysis: Whole Beads	95% Minimum	99.00%	QA/FPR-06
Broken Beads	3% Maximum	1.00%	
Organic Leachability Analysis: DM Water Leachability, µg/ml	1 Maximum	Nil	FDA Publication 21 CFR 173.25
15% Ethanol Leachability, µg/ml	1 Maximum	0.40	
5% Acetic Acid Leachability, mg/ml	1 Maximum	0.82	

## Specifications:

Matrix: Glycidyl Methacrylate Copolymer

Functional Groups: Quaternary Amine and Sulphopropyl

Pore Size: ~700 angstrom

Particle Size: 20-100 microns (average 50 microns)

Binding Capacity BSA : 70 mg/ml



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