

Proteus NoEndo™

Endotoxin Removal from Proteins



Proteus NoEndo™ spin columns provide fast convenient affinity-based removal of endotoxins from antibodies and other proteins. These devices combine quality separations found in gravity columns with the speed of centrifugal separators. Using the unique FlowGo™ design, about 99% of endotoxins can be removed in a single pass through the agarose resin with protein recoveries of 85% or greater. High Capacity (HC) columns are available for recombinant proteins expressed from bacteria such as *E. coli* and Standard (S) columns are offered for purification of monoclonal antibodies from mammalian cells. NoEndo™ resin is available separately for larger sample volumes. NoEndo™ Mini kits are available with loose resin vials for samples up to 20 ml in volume. NoEndo™ Micro kits are also supplied with loose resin for small sample sizes.

Specifications

NoEndo™
HC, S & M

NoEndo™
Micro

Sample Capacity (by rotor type):

Swinging bucket	20 ml	Not Usable
Fixed angle (25°)	12 ml	0.6 ml

Dimensions:

Length	118 mm	48 mm
Width	29 mm	11 mm
Hold-up volume	10 µl	2-3 µl

Materials of Construction:

Outer tube	Polyprop.	Polyprop.
Inner tube	Polyethyl.	Polyprop.
Resin sintered plug	Polyethyl.	N/A
NoEndo™ resin	Agarose	Agarose

Centrifuge Required:

Rotor cavity	To fit 50 ml conical bottom tubes	To fit 2.2 ml centrifuge tubes
--------------	-----------------------------------	--------------------------------

Maximum speed (Slower speeds may be more effective for endotoxin removal and protein recovery.)	1,500 x g	13,000 x g
--	-----------	------------

Features	Benefits
NoEndo™ affinity resin	High endotoxin removal with low protein binding
Pre-packed columns	Convenient with fast reproducible results
High Capacity column option	Bind up to 1,000,000 EU of endotoxin per column
FlowGo™ column design	Purify samples in about 30 minutes

Technical Specifications

	S Column	HC Column
Typical <i>in situ</i> binding capacity	30,000 EU	500,000-1,000,000 EU
Typical binding capacity per ml resin	1,500 EU/ml	30,000 EU/ml
Typical endotoxin removal after 1 pass	3 log reduction	3 log reduction
Typical endotoxin removal after 2 passes	4 log reduction	4 log reduction
Minimum endotoxin tested after removal	<0.05 EU/ml	<0.05 EU/ml
Maximum sample load volume per pass	20 ml	20 ml
Bed volume	1 ml pre-packed	1.7 ml pre-packed
Bead size range	100 µm	100 µm
Recommended working pH	4-8	4-8

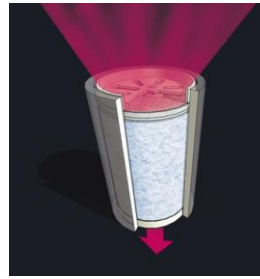
	Mini Kit	Micro Kit
Typical <i>in situ</i> binding capacity	3,000 EU	300-500 EU
Typical binding capacity per ml resin	300 EU/ml	500-800 EU/ml
Typical endotoxin removal (1 hr. incubation)	2 log reduction	3 log reduction
Typical endotoxin removal (3 hr. incubation)	3 log reduction	4 log reduction
Minimum endotoxin tested after removal	<0.03 EU/ml	<0.03 EU/ml
Maximum sample load volume per pass	20 ml	0.6 ml
Bed volume	0.25 ml loose	0.01-0.1 ml loose
Bead size range	100 µm	100 µm
Recommended working pH	4-8	4-8

Chemical Compatibility

Compatible with:	Incompatible with:
Sodium Hydroxide (0.5M)	Oxidising agents
PBS buffers	Strong acids
Detergents, Urea, Guanidinium Chloride	All Tris buffers
Water miscible solvents (e.g. 20% ethanol) *	All Glycine buffers
EDTA (10 mM)	Most buffers with amine groups
Stable between pH 3-13	
Stable to 2 – 40 °C, recommended storage is 2-8 °C	

* **Note:** Water miscible organic solvents such as ethanol should be introduced at incremental concentrations up to the desired concentration otherwise bed movement in packed columns may occur. The same is true when exchanging from an aqueous organic solvent to an aqueous solution.

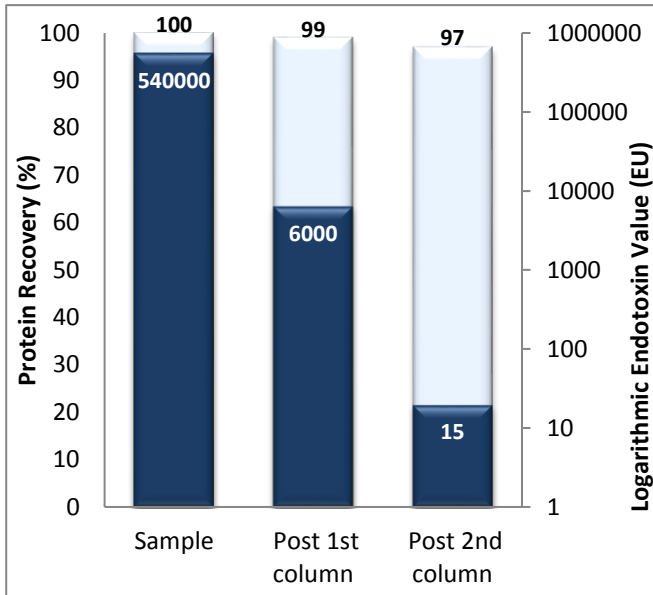
The proprietary FlowGo™ technology regulates the flow rate of the sample through the selective affinity resin matrix, increasing endotoxin removal without compromising protein recovery during centrifugation. The flow rate is controlled for optimal endotoxin removal in a centrifuge.



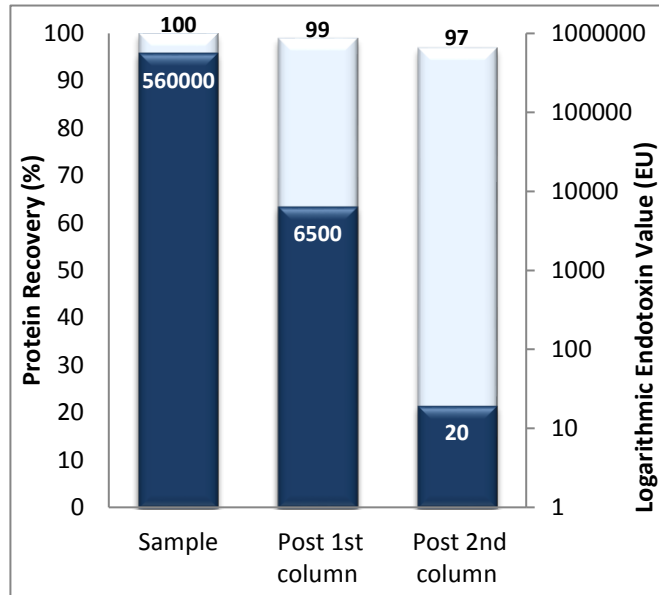
Test Results

Proteus NoEndo™ HC spin columns were pre-equilibrated with PBS (pH 7.5) and 20 ml protein (1 mg/ml BSA and 1 mg/ml Rabbit IgG) samples spiked with control standard endotoxin (Charles River Laboratories, Wilmington, MA, USA). Columns were loaded and centrifuged at 100 g for 30 minutes. Filtrates were then loaded on to second columns and centrifuged at 100 g for a further 30 minutes. Endotoxin data was generated using the kinetic chromogenic LAL assay (Charles River Endosafe® plate reader). The resulting protein samples showed about 99% removal after the first column step and over 99.99% reduction in endotoxin cumulative for both purification steps.

Rabbit IgG Results

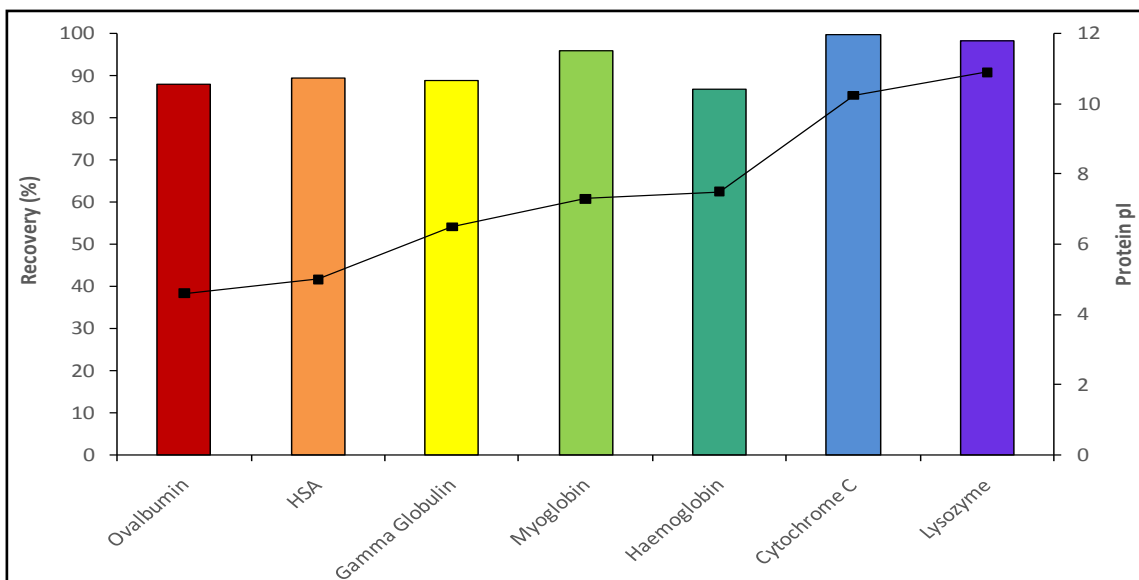


Bovine Serum Albumin Results



Proteus

NoEndo™ spin columns also exhibit low binding for proteins with a variety of iso-electric points. The below figure shows over 85% recovery for model proteins spanning the pI spectrum.



Ordering Information

Description	Product Code	Quantity
<u>Standard & High Capacity Kits (2 Pre-Packed Columns)</u>		
Contents – 2 spin columns, 2 centrifuge tubes, 2 resin cartridges, 1 insertion tool		
Proteus NoEndo Standard 2 column kit	GEN-NoE2S	2 S spin columns
Proteus NoEndo High Capacity 2 column kit	GEN-NoE2HC	2 HC spin columns
<u>Standard & High Capacity Kits (12 Pre-Packed Columns)</u>		
Contents – 12 spin columns, 12 centrifuge tubes, 12 resin cartridges, 1 insertion tool		
Proteus NoEndo Standard 12 column kit	GEN-NoE12S	12 S spin columns
Proteus NoEndo High Capacity 12 column kit	GEN-NoE12HC	12 HC spin columns
<u>Standard & High Capacity Kits (48 Pre-Packed Columns)</u>		
Contents – 48 spin columns, 48 resin cartridges, 1 insertion tool <i>(no centrifuge tubes)</i>		
Proteus NoEndo Standard 48 column kit	GEN-NoE48S	48 S spin columns
Proteus NoEndo High Capacity 48 column kit	GEN-NoE48HC	48 HC spin columns
<u>Mini Kits (Supplied with Loose Resin):</u>		
Contents – Vials of resin (0.25 ml ea.) with a number of spin column barrels, centrifuge tubes and incubation caps		
Proteus NoEndo Mini 2 column kit	GEN-NoE2M	2 Vials of resin and 2 barrels, tubes & caps
Proteus NoEndo Mini 12 column kit	GEN-NoE12M	12 Vials of resin and 12 barrels, tubes & caps
<u>Micro Kits (Supplied with Loose Resin):</u>		
Contents – One vial of resin with a number of spin columns and centrifuge tubes (2/column)		
Proteus NoEndo Micro 2 column kit	GEN-NoE2Micro	0.2 ml resin and 2 spin columns & 4 tubes
Proteus NoEndo Micro 24 column kit	GEN-NoE24Micro	2.4 ml resin and 24 spin columns & 48 tubes
<u>Loose Resin</u>		
Contents – NoEndo resin suspended in 20% ethanol		
Proteus NoEndo High Capacity Resin (100 ml)	GEN-NoE100ML	100 mL HC resin

Disclaimer: This product is for research use only and is not intended for use in clinical diagnosis.

Manufactured by: Protein Ark, The Innovation Centre, 217 Portobello, Sheffield, S1 4DP, UK.

Web: www.proteinark.com Phone: +44 (0)3333 4420 25 Fax: +44 (0)3333 4420 25

North American Distributors:



Vivaproducts Inc. • 521 Great Road Littleton MA 01460 • www.vivaproducts.com

p 800.456.4633 • 978.952.6868 • f 877.289.8482 • 978.952.6143

We also sell a full line of ultrafiltration concentrators for laboratory use.

Check our website for details and ordering information.