



Acrodisc® Units with Mustang® Q and S Membranes

Description

Disposable Chromatography Units with High Binding Capacities and Fast Flow Rates

- ▶ Fast flow rates. Recommended flow rates of 1 to 4 mL/minute do not affect recovery rates.
- ▶ Mustang Q membrane is a strong anion exchanger that effectively binds plasmid DNA, negatively-charged proteins, and viral particles.
- ▶ Mustang S membrane is a strong cation exchanger that effectively binds positively-charged proteins and viral particles.
- ▶ Disposable 25 mm units are designed for single laboratory use only.
- ▶ Direct scale up to capsules with Mustang Q and S membranes for larger-volume applications.



Application

Mustang Q Membrane

- ▶ Provides contaminant removal such as DNA viral particle, host cell proteins, or endotoxin
- ▶ Ideal for isolation via capture and release of plasmid DNA, virus, or target protein from a complex mixture
- ▶ Offers protein polishing for negatively charged proteins
- ▶ Purifies virus and oligonucleotides

Mustang S Membrane

- ▶ Purifies and concentrates positively-charged proteins and viral particles
- ▶ Ideal for evaluation, process development, and validation

Specifications

Materials of Construction

- ▶ Filter Media: Mustang Q and Mustang S membranes
- ▶ Housing: Polypropylene

Pore Size

- ▶ 0.8 μm

Membrane Bed Volume

- ▶ 0.18 mL

Inlet/Outlet Connections

- ▶ Female luer lock inlet, male slip luer outlet

Maximum Operating Pressure

- ▶ 5.5 bar (550 kPa, 80 psi) at ambient temperature 21 - 24 °C (70 - 75 °F)

Biological Safety

- ▶ Passes United States Pharmacopeia (USP) Biological Reactivity Test, *In Vivo* <88>. Mustang Q membrane testing performed at 72 °C (161 °F) and Mustang S membrane at 50 °C (122 °F) after preconditioning.

Typical Operating Temperature

- ▶ 21 - 24 °C (70 - 75 °F)

Recommended Flow Rate

► 1 - 4 mL/min; flow rate will vary with type of solutions, concentration of proteins, and other components.

Typical Mean Dynamic Binding Capacity¹

► Mustang Q Membrane

- DNA: 3.6 mg/Acrodisc unit or 30 mg/mL membrane volume (mv)
- BSA: 10 mg/Acrodisc unit or 70 mg/mL membrane volume (mv)

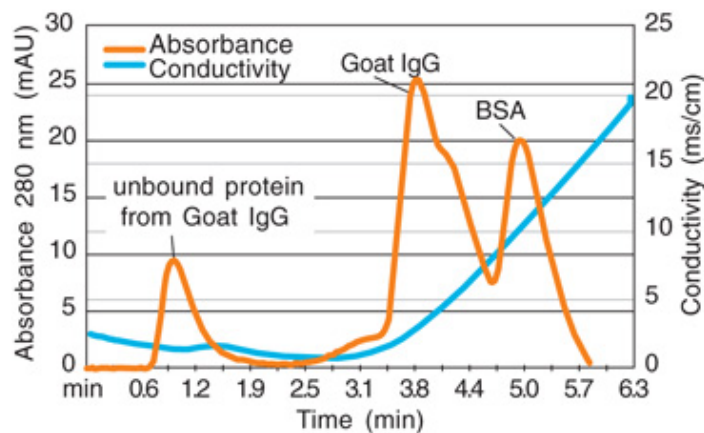
► Mustang S Membrane

- Lysozyme: 8 mg per Acrodisc unit or 47 mg/mL membrane volume (mv)
- Human IgG: 11 mg per Acrodisc unit or 60 mg/mL membrane volume (mv)

¹Note on optimization: The yield is contingent on type of DNA, size and copy number of plasmid, concentration of protein, ionic strength, and pH of buffer.

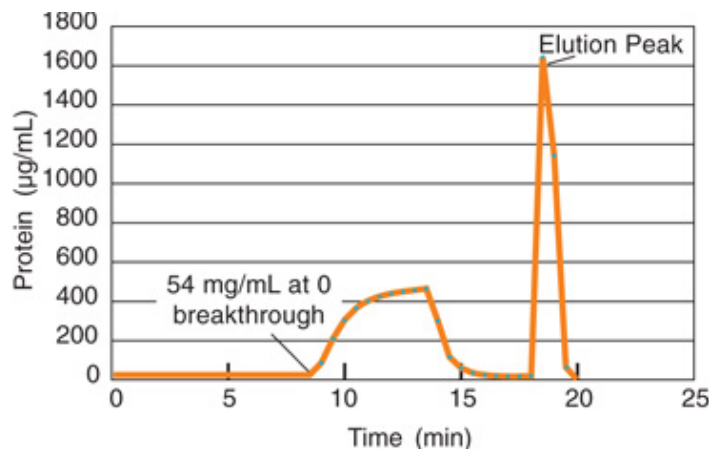
Performance

Acrodisc Unit with Mustang Q Membrane: Resolution with BSA and Goat IgG



The conditions used to generate data for the resolution graph above include buffer: 25mM Tris pH 8.0; salt: 1M NaCl in 25mM Tris pH 8.0; gradient: 0 to 0.5M NaCl in 50 column volume (CV); flow rate: 2.3 mL/min (13 cv/min); sample loading: 4% of total binding capacity.

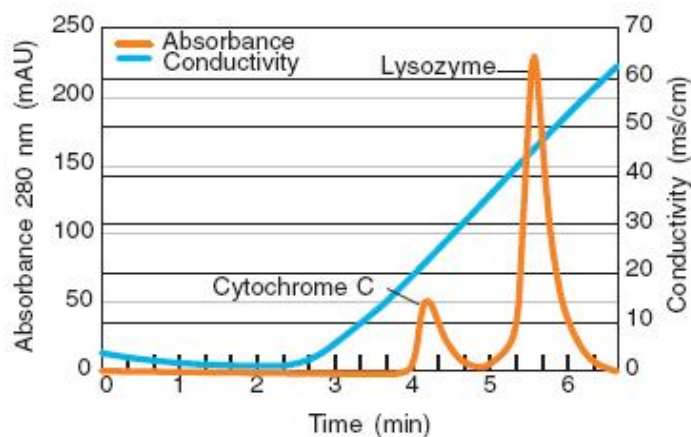
Acrodisc Unit with Mustang Q Membrane: Dynamic Binding with BSA



A solution of 0.524 mg/mL BSA was pumped through the Acrodisc unit at 2.3 mL/min. Breakthrough occurred at 8.1 minutes and was calculated as 54 mg/mL using:

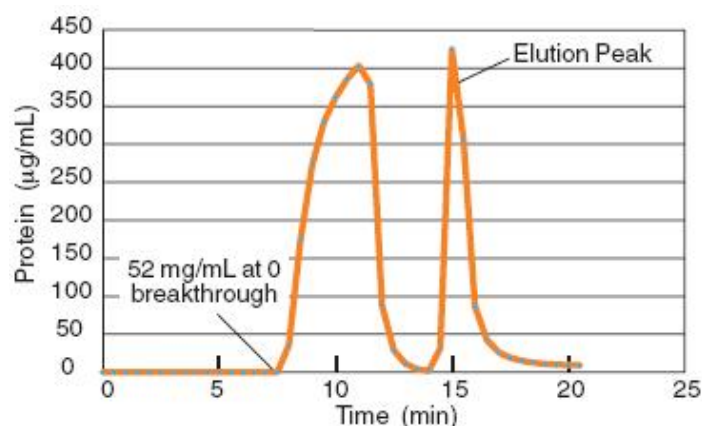
$\text{flow rate (2.3 mL/min)} \times \text{initial protein BSA concentration (0.524 mg/mL)} \times \text{time (8.1 min)}$
membrane bed volume of Mustang Q membrane in 25 mm Acrodisc unit (0.18 mL)

Acrodisc Unit with Mustang S Membrane: Resolution with Cytochrome C and Lysozyme



The conditions used to generate data for the graph above include buffer: 10mM MES pH 5.5; salt: 1M NaCl in 10mM MES pH 5.5; gradient: 0 to 1M NaCl in 50 CV; flow rate: 2.3 mL/min (13 cv/min).

Acrodisc Unit with Mustang S Membrane: Dynamic Binding with Lysozyme



A solution of 0.512 mg/mL Lysozyme was pumped through the Acrodisc unit at 2.3 mL/min. Breakthrough occurred at 8.0 minutes and was calculated as 52 mg/mL using:

$$\text{flow rate (2.3 mL/min)} \times \text{initial protein Lysozyme concentration (0.512 mg/mL)} \times \text{time (8.0 min)}$$
 membrane bed volume of Mustang S membrane in 25 mm Acrodisc unit (0.18 mL)

Related Products

- ▶ [AcroPrep™ Advance 96-Well Filter Plates for Protein Purification](#)

Ordering Information

Part Number	Description	Pkg	Price	Qty
Acrodisc® Unit with Mustang® Q Membrane				
MSTG25Q6	Acrodisc unit with Mustang Q membrane, 0.8 µm, 25 mm, non-sterile	10/pkg (blister packs)	NA	<input type="text" value="0"/>
Acrodisc® Unit with Mustang® S Membrane				
MSTG25S6	Acrodisc unit with Mustang S membrane, 0.8 µm, 25 mm, non-sterile	10/pkg (blister packs)	NA	<input type="text" value="0"/>
Acrodisc Units with Mustang Membranes Kit				
MSTG25KIT	Kit includes: (4) Acrodisc units with Mustang Q membrane (non-sterile); (4) Acrodisc units with Mustang S membrane (non-sterile); (2) Acrodisc units with Mustang E membrane (sterile)	10/pkg	NA	<input type="text" value="0"/>

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