SARTORIUS

Product Datasheet

Vivapure®

Rapid, Scalable Ion Exchange Purification

Benefits

- Reproducible purification with ready-to-use devices
- Fast, effortless processing of multiple samples in parallel
- Simplify your workflow by avoiding dilute eluent samples
- Reduced reagent consumption thanks to lower buffer requirements
- Convenient scale-up to Sartobind® devices

Product Overview

Vivapure® Ion Exchange (IEX) devices, incorporate Sartobind® membrane adsorber technology as the chromatography matrix. The ready-to-use spin column format makes protein purification as simple as filtration. With no risk of running dry, Vivapure® replaces time consuming and expensive resin-based chromatography in many protein purification workflows.

The convenient bind-wash-elute protocol is especially ideal in screening applications, where multiple samples or purification conditions can be conveniently processed in parallel.

Product Information

Vivapure® ion exchange devices enable fast, reproducible and scalable protein purification. They feature the unique Sartobind® IEX membrane adsorbers, which are based on stabilized regenerated cellulose. The microporous structure of these membranes has a pore size > 3 µm, which is orders of magnitude larger than conventional chromatography resins. This allows molecules to be transported to the ligands immobilized on the membrane adsorber by convective flow, overcoming the diffusion limitations of chromatography resins, and leading to very high flow rates. The large pore sizes also prevent gel filtration effects and minimize non-specific binding.

With Vivapure®, there is no need for column packing, saving time and ensuring reproducibility. Furthermore, Sartobind® membrane adsorber technology is available in process scale formats, making Vivapure® an indispensible tool for process development prior to purification scale-up.

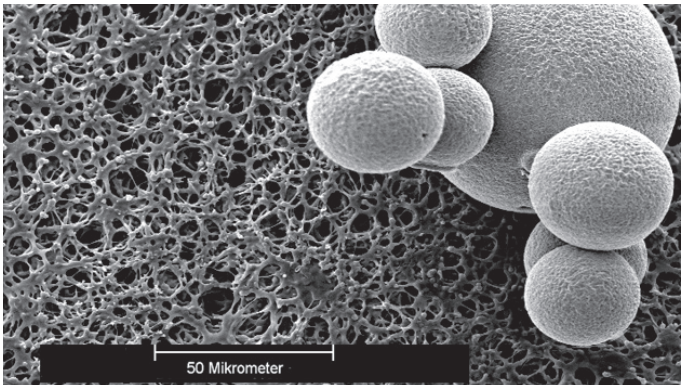
Vivapure® Mini H spin columns accommodate sample volumes of up to 0.4 mL. They are ideal for protein fractionation, scouting purification conditions and small-scale purification.

Vivapure® Maxi H spin columns have a sample capacity of up to 19 mL. These enable convenient scale-up from Vivapure® Mini H devices whilst maintaining the same mode of operation in research and development laboratories. They are also recommended for one-step pu rification of samples with larger initial volumes.

Applications

Vivapure® devices lend themselves to a broad range of purification applications in a convenient spin column format.

- Fractionation of protein mixtures prior to 1D or 2D-PAGE
- Scouting purification conditions for new protein targets
- Removal of endotoxins from monoclonal antibodies
- Preparation of heme moiety from heme containing protein prior to functional analysis
- General protein purification and polishing
- Detergent removal from protein solutions
- Purification of antibodies from serum, ascites or cell culture supernatant
- Intermediate sample purification prior to further HPLC | FPLC
- Purification of membrane-bound proteins



SEM showing chromatography resin beads on top of a Sartobind® membrane adsorber. The membrane adsorber pore size is over 50 times larger than that of the bead pores.

Vivapure® Mini H
For purification of sample volumes up to 0.4 mL

Vivapure® Maxi H
For purification of sample volumes up to 19 mL

Technical Specifications

Capacities and Dimensions	Vivapure® Mini H	Vivapure® Maxi H	
Max. sample volume, swing bucket	-	19 mL	
Max. sample volume, fixed angle	0.4 mL	10.5 mL	
Binding capacity*	4 mg	60 - 80 mg	
Membrane area	7.48 cm^2	84.4 cm^2	
Bed volume	0.24 mL	2.7 mL	

Membrane Adsorber			
Nominal pore size	3 - 5 µm		
Thickness	230 - 320 µm		
Ligand density	145 - 218 µEq/mL		
Ligand	S	Q	D
Type	Strong acidic cation exchanger	Strong basic anion exchanger	Weak basic anion exchanger
Functional group	Sulphonic acid ($R-CH^2-SO_{3-}$)	Quarternary ammonium ($R-CH_2-N^+-(CH_3)_3$)	Diethylamine ($R-CH_2-N^+-(C_2H_5)_2$)
Working pH	2 - 12	2 - 12	4 - 10
Approximate pKa	1	11	9.5

Materials of Construction	
Housing	Polypropylene
Membrane matrix	Stabilized regenerated cellulose

* Binding capacities established using 1 mg/mL BSA in 25 mM Tris-HCl (pH 8) for Vivapure® Q and D devices, or 1 mg/mL cytochrome c in 25 mM sodium acetate buffer (pH 5.5) for Vivapure® S devices. Actual capacities depend on the target molecule and selected buffer conditions.

Process scale-up is possible using Sartobind® capsules and cassettes. For further information, please speak with your Sartorius Application Specialist.

Ordering Information

Order No.	Vivapure® Mini H	Spin Columns	Centrifuge Tubes
VS-IX01SQ16	Vivapure® Mini H Starter Kit (8 of each S and Q ion exchangers)	16	32
VS-IX01DH24	Vivapure® D Mini H	24	48
VS-IX01QH24	Vivapure® Q Mini H	24	48
VS-IX01SH24	Vivapure® S Mini H	24	48

Order No.	Vivapure® Maxi H	Spin Columns	Centrifuge Tubes
VS-IX20QH08	Vivapure® Q Maxi H	8	16
VS-IX20SH08	Vivapure® S Maxi H	8	16

Germany
Sartorius Lab Instruments GmbH & Co. KG
Otto-Brenner-Strasse 20
37079 Goettingen
Phone +49 551 308 0

USA
Sartorius Corporation
565 Johnson Avenue
Bohemia, NY 11716
Phone +1 631 254 4249
Toll-free +1 800 635 2906

For further contacts, visit
www.sartorius.com