Seplife® LXMS 10QN

1. Description

Seplife® LXMS 10QN is a polymeric resin for ion exchange chromatography characterized by strong chemical stability and high rigidity for use in polishing steps with or without organic solvents and at high flow rates

- Highly uniform particle size for high resolution
- Strong anion exchange resin based on a hydrophilic coated styrene/divinylbenzene backbone functionalized with quaternary ammonium (Q)
- Suitable for ion exchange chromatography in the separation of proteins, peptides, oligonucleotides and other small and medium size biomolecules
- High stability to CIP, organic solvents and pH
- Regulatory Support File (RSF) is available for Seplife® LXMS 10QN

Seplife® LXMS 10QN is polymeric resin for ion exchange chromatography based on styrene/divinylbenzene functionalized with quaternary ammonium (Q) with a highly uniform particle size (10 micron).

2. Properties

Product	Seplife® LXMS 10QN
Appearance	White to light yellow spherical beads
Type	Strong anion exchange resin
Matrix	Polystyrene/divinylbenzene
Ligand	Quaternary Amine
Ion exchange capacity (mmol/ml)	0.17-0.23
Particle size range (μm)	10±1
Typical pore size (Å)	55±10
pH stability	2-12 (operation), 1-14 (CIP)
Chemical stability	Stable in commonly used aqueous ion exchange buffers
Flow rate* (cm/h)	≥360 (2.0 Mpa)
Dynamic binding capacity** (mg/ml)	≥55
Maximum Pressure resistance	5.0 MPa / 50 Bar

Shipped as	Slurry in 20% ethanol solution

*Testing conditions: chromatography column 10mm×200mm; Column bed height 10cm;

** Testing conditions：Column: I.D. 10mm×100mm，Binding buffer: 20mM Tris-HCl, pH7.0，Elution buffer: 20mM Tris-HCl, 1M NaCl, pH7.0，Sample: BSA 5mg/ml, Retention time 4min.

3. Instructions

3.1 Generic column packing instructions

The Seplife® LXMS 10QN resin is supplied as a 50-60 % （v/v） slurry in 20% ethanol solution. The use of a high ion strength mobile phase for resin packing into the chromatographic column (including cleaning and disinfection) is preferred; it is recommended to use 0.4-0.5 M NaCl, 0-20% ethanol solution can also be suitable. The recommended slurry concentration for column packing is 50-60%.

- Gently mix the resins to form a homogeneous slurry and transfer the desired mass or volume to the buffer exchange vessel. A volume of resin of approx. 1.2 times more than the desired column packed volume should be used.
- Before packing the column, adjust the homogenate concentration to 50-60 % with 0.4-0.5 M NaCl or 0-20% ethanol solution; pour the entire homogenate volume into the chromatography column at one time.
- Load the distribution plate and adjust the height, then start the pump and stabilize the column bed with 1.5 to 2 times the working flow rate or gradually increase the flow rate to reach a final pressure of 20-35 bar.
- Mark the bed height after the column bed is stabilized and adjust the height so that the compression coefficient is 1.05-1.10.
- Efficiency and symmetry determinations are performed according to SOP and must meet predetermined criteria.

3.2 Column Efficiency Evaluation

Equilibrate the chromatographic column with mobile phase of 0.4M NaCl solution at a flow rate of 60cm/h for 5-10CV. Test the column efficiency using a mobile phase of 0.4M NaCl solution and injecting 0.5-1% column volume of 0.8M NaCl solution at 60cm/h flow rate. Using the conductivity detector, record the chromatogram and calculate the peak asymmetry and the theoretical plate number. Typically, the number of plates ≥ 12000/m, and the asymmetry factor is 0.8-1.5.

3.3 Rinsing

The packed columns should be rinsed with a minimum 5 CV of buffer.

3.4 Equilibration

After packing the column, equilibrate with the mobile phase first, with 5-10 column volumes, and control the flow rate at 120-300cm/h until the conductivity and pH of the flow-through remain unchanged before feeding the sample.

3.5 Sample loading

The solid sample can be prepared by dissolving in the equilibrium solution; the low-concentration sample solutions should be concentrated in advance as much as possible; the high concentration sample solutions can be diluted by the equilibrium solution. To avoid clogging of the column, samples should be processed by centrifugation or membrane filtration. The feed amount is calculated according to the capacity of the resin and the content of the target molecule in the feed solution. Before loading, make sure that the sample buffer should be as consistent as possible with the equilibration solution.

3.6 Elution

After loading the sample, continue rinsing with equilibration buffer until the baseline is stable. According to the actual situation, elute the samples adsorbed on the resin sequentially by increasing the salt concentration or changing the pH of the mobile phase.

3.7 Regeneration and CIP

Regular Cleaning-In-Place (CIP) can prevent column fouling, and help to maintain the capacity and resolution of the chromatographic media. Specific CIP methods and the frequency of CIP need to be designed for each process according to the type of contamination. The recommended regeneration and CIP method is as follows: Rinse the column up-flow with 5 CV of 1-2 M NaCl followed by 5 CV of 0.5-1 M NaOH.

4. Storage

Chromatography resins in bulk that are not for immediate use should be stored in 20% ethanol at 4-30 °C. The column packed with Seplife® LXMS 10QN , after regeneration, CIP and sanitization should be stored in a buffer solution containing 20% ethanol preferable at neutral pH.

5. Transportation

Avoid sunlight, rain, and high-pressure during transportation. Do not transport together with toxic and hazardous materials.

6. Ordering information

Product Name	References	Pack Size
Seplife® LXMS 10QN	PS40323X(10)1-1	25ml
	PS40323X(10)1-2	100ml
	PS40323X(10)1-3	500ml
	PS40323X(10)1-4	1L
	PS40323X(10)1-5	5L
	PS40323X(10)1-6	10L

Production date: See label

Expiry date: 5 years from manufacture, under proper storage conditions

Manufacturer: Sunresin New Materials Co. Ltd.
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