Product Data Sheet **Seplife® LXMS 30QN**

1. Description

Seplife® LXMS 30QN is an anion exchange chromatography resin independently developed by Sunresin. It is based on highly cross-linked porous polystyrene/divinylbenzene (PS/DVB) uniform-particle-sized microspheres matrix, uniformly coated by a hydrophilic layer with high chemical stability.

Seplife® LXMS 30QN has the characteristics of highly uniform particle size for high resolution and capacity, high flow rate, good mechanical strength, good biocompatibility and physical and chemical stability in all aqueous buffers used in IEX chromatography purification, and in CIP conditions up to 1M NaOH. Seplife® LXMS 30QN significantly improves the efficiency, resolution and recovery rate for the downstream purification process, and is widely used in the polishing purification of biomolecules such as antibodies, nanobodies, proteins, peptides, and nucleic acids as well as in the purification of other small molecules.

2. Properties

Product	Seplife® LXMS 30QN
Appearance	White to light yellow spherical beads
Type	Strong anion exchange resin
Matrix	Polystyrene/DVB
Ligand	Quaternary Amine
Particle size (μm)	30±3
Pressure flow rate (cm/h)*	≥500 (0.5Mpa)
Pore size(nm)	55±10
pH stability	2-12 (operational), 1-14 (CIP)
Chemical stability	All common ion exchange buffers CIP up to 1M NaOH
Ion exchange capacity (mmol/ml)	0.07-0.10
Dynamic capacity (mg/ml, BSA)**	≥40
Maximum Pressure resistance	3.0 MPa / 30 Bar
Shipped as	20% ethanol slurry

*Testing conditions: chromatography column 26mm×200mm; Column bed height 10cm;

** Testing conditions：Column: I.D. 8mm×100mm 5ml，Binding buffer: 20mM Tris-HCl, pH7.0，Elution buffer: 20mM Tris-HCl, 1M NaCl, pH7.0，Sample: BSA 5mg/ml, 300cm/h

3. Instructions

3.1 Generic column packing instructions

The Seplife® LXMS 30Q 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 but, 0-20% ethanol solution can also be suitable. The recommended slurry concentration for column packing is 50-60% (v/v).

- 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 loading 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 7-25 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.

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 ≥ 8000/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

If the sample is in solid form, it can be prepared by dissolving in the equilibration buffer; a low-concentration sample solution should be concentrated in advance as much as possible; a high concentration sample solutions should be diluted with equilibration buffer. 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 30QN, 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 30QN	PS30333X(30)1-1	25ml
	PS30333X(30)1-2	100ml
	PS30333X(30)1-3	500ml
	PS30333X(30)1-4	1L
	PS30333X(30)1-5	5L
	PS30333X(30)1-6	10L

Production date: See label

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

Manufacturer: Sunresin New Materials Co. Ltd.

Address: No. 135, Jinye Rd, Xi'an Hi-tech Industrial Development Zone, Shaanxi, 710076, China

www.sunresinlifesciences.com