1. Description

Seplife® 4AG/90 is a size exclusion chromatography resin designed for industrial processing at high flow rate.

- Industrial-scale fractionation of large biomolecules and virus particles.
- Hydrophilic base matrix ensures very low levels of non-specific adsorption and high recovery rate.
- Designed to fractionate proteins of 4×10^4 – 3×10^7 Da.
- High alkaline stability for efficient cleaning and sanitization using up to 1.0 M NaOH.
- Regulatory Support File (RSF) is available for Seplife® 4AG/90.

Seplife® 4AG/90 is size exclusion chromatographic resin based on 4% cross-linked agarose with a large particle size (45-165 micron).

2. Properties

Product	Seplife® 4AG/90
Appearance	White spherical beads
Type	Size exclusion agarose
Matrix	4% crossed linked agarose
Particle size range (μm)	45-165
Selectivity: Kav IgG 150000MW	0.66-0.76
pH stability	3-13 (operational), 2-14 (CIP)
Chemical Stability	Stable in all common aqueous buffers; 1M sodium hydroxide; 8M urea; 6M guanidine hydrochloride; 70% ethanol.
Flow rate* (cm/h)	max 420cm/h
Shipped as	20% ethanol slurry

*Testing conditions: Chromatography column 16mm×400mm; column bed height 25cm; temperature 25° C; mobile phase water.

3. Instructions

3.1 Column packing

Column loading should be performed in accordance with standard operating procedures. It is important to ensure that each material is at its working temperature, and the media may need to be degassed before column packing.

3.2 Equilibration

Equilibrate the column with an appropriate 2-5 column volume buffer. Ensure the conductivity and pH of the effluent are the same as the equilibration buffer.

3.3 Sample feeding

1. Samples are prepared in buffer, and cloudy samples need to be centrifuged and filtered before loading. Samples with too high salt content and too low concentration should be processed first before loading.

2.The separation of components in the sample by the media is carried out according to the molecular size of the components. The ones with the larger molecular size flow out first.

3. The sample loading volume is about 1-2% of the column volume. The smaller the loading volume, the better the separation.

3.4 Elution

Elute with buffer, keep the flow rate and buffer composition unchanged during elution.

3.5 Regeneration

Generally, wash with buffer solution to balance and the media can be used again. Inactivated proteins or lipids that cannot be washed out during regeneration, can be removed by Cleaning-In-Place (CIP).

3.6 Cleaning-In-Place (CIP)

1. For proteins bound by ionic bonds, 0.5~1 BV of 2M NaCl can be used to remove them.

2. For precipitated proteins, hydrophobically bound proteins or lipids, wash with 1 BV of 0.1M NaOH.

3. For proteins and lipids with strong hydrophobic binding, wash with 4-10 BV of 70% ethanol or 30% isopropanol.

4. The concentration of the organic solvent should gradually increase to avoid bubbles.

After cleaning, equilibrate the column with equilibration buffer solution at least 3 times the volume of the column bed until the pH and conductivity remain unchanged.

4. Storage

Sealed and stored at 4~30°C (preservation solution is 20% ethanol), in a ventilated, dry and clean place, do not freeze.

5. Transportation

Avoid sunlight, rain, and heavy pressure during transportation. It is strictly forbidden to transport with toxic and hazardous materials.

6. Precautions

6.1 Concentrate the sample volume as much as possible before using gel filtration.

6.2 Samples must be clear of particles.

6.3 In order to obtain the highest resolution, the sample volume should not exceed 5% of the column bed volume.

6.4 The sample and chromatography media must be thoroughly equilibrated with equilibration buffer before column chromatography can be performed.

6.5 The loaded column bed must have a flat surface, with no channel flow or air bubbles, otherwise it should be reloaded.

6.6 In order to protect the stability and activity of the protein, it is necessary to choose a buffer to purify the protein.

6.7 In order to avoid non-specific ionic interaction between protein and medium, a maximum of 0.15mol/L NaCl can be added to the buffer.

6.8 According to the molecular size of the target protein, select a media with the median value in the separation range closest to the molecular size of the target protein.

6.9 During the elution process, the flow rate should be strictly controlled.

6.10 During sample loading and the entire elution process, prevent the column surface from drying out.

6.11 This product should avoid contact with oxidants and avoid long exposure to air.

7. Ordering information

Product Name	References	Pack Size
Seplife®4AG /90	A1003102	25ml
	A1003103	100ml
	A1003104	500ml
	A1003105	1L
	A1003106	5L
	A1003107	10L

Production date: See label

Expiry date: 5 years, under proper storage conditions

Manufacturer: Sunresin New Materials Co. Ltd.

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