LT BIOTECH UAB
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Persedex LH-20

1. Basic product information

Persedex LH-20 is a series of cross-linked dextran-based gel filtration chromatography resins that utilise the molecular weight difference of different molecules to separate them. This series of chromatographic resins is suitable for aqueous and organic phases, and has good chemical stability. It is suitable for the separation of substances with small differences such as natural products.
Persedex LH-20 has excellent scale-up capabilities:
(1) It has a hydroxypropylated cross-linked dextran base frame with reliable rigidity.
(2) A variety of packaging specifications are provided to meet the processing needs of samples of different volumes, and it is easy to scale up linearly.

2. Chromatography resin parameters

Resin type	Gel filtration
Functional group	Hydroxypropylated dextran
Particle size range distribution*	20~120 μm
Separation range	4~5 kDa
Recommended flow rate	60~500 cm/h
Maximum flow rate	700 cm/h
Maximum working pressure	0.3 MPa
Swelling coefficient	1.9–2.3 ml/g
Working temperature	4–30° C

** Measured in dry powder state, the percentage distributed within the range ≥ 80%*

3. Chemical resistance

pH stability*	2–13
Tolerant	All commonly used aqueous buffers and organic eluent systems
Avoid	Solvents, oxidising agents with pH less than 2

** The physical and chemical properties and functions of the chromatographic resin have no obvious changes after being placed in an environment of 40°C and pH2–13 for 7 days.*

4. Method of use

4.1 Chromatographic conditions

(1) Buffer selection: the stability of the sample in the buffer should be considered; to avoid possible non-specific adsorption, it is advisable to use a salt-containing buffer instead of ultra pure or pure water.
(2) Flow rate: according to the height of the column bed, a linear flow rate not higher than 700 cm/h is generally selected.
(3) Sample pretreatment: to prevent the sample from clogging the column, it needs to be filtered with a 0.45 μm microporous membrane before loading.

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4.2 Chromatography steps

(1) Equilibration: use the buffer to fully equilibrate the chromatography column until the pH and conductivity are stable and basically the same as the equilibration buffer. This step usually requires 1–2 column bed volumes (CV).
(2) Sample loading: the usual loading volume is 1%–2% of the column volume, and the sample concentration should not be too high, to avoid overpressure or affecting the resolution.
(3) Elution: use buffer elution to collect peaks at different positions, usually 1~1.5 CV.
(4) Regeneration: rinse the column with a buffer containing high salt (such as 1M NaCl).
(5) Re-equilibration: re-equilibrate the column with buffer.

5. Cleaning and regeneration

Contaminants (e.g. lipids, endotoxins and proteins) accumulate on the column as the number of uses of the chromatography resin increases. Regular cleaning-in-place (CIP) is essential to keep the column in a stable working condition. Determine the frequency of CIP according to the degree of contamination of the chromatography resin (if the contamination is considerable, CIP is recommended after each use to ensure repeatability of results and to prolong the working life of the chromatography resin).
For different types of impurities and contaminants, the recommended cleaning conditions are as follows:
• Removal of strongly binding proteins: wash with 5 CV of 2M NaCl solution, or use a high salt buffer not lower than pH 3, such as 1M NaAc solution.
• Removal of strongly hydrophobic proteins and precipitated proteins: first wash with 5 CV of 0,2M NaOH solution, then wash the lye with 5–10 CV of ultra pure or pure water.
• Removal of lipoproteins and lipids: first wash with 5 CV of 70% ethanol or 30% isopropanol, then rinse with 5–10 CV of ultra pure or pure water.
Note: 70% ethanol or 30% isopropanol should be degassed before use; the flow rate should be no more then 30-60 cm/h during CIP; reverse cleaning can be used when the clogging is severe.

To reduce the microbial load, it is recommended that 0.1M NaOH solution is used to treat the chromatography resin for 30–60 minutes.

6. Storage

Keep the unopened chromatography resin in the original container and store at 4~30°C in a well-ventilated, dry and clean place. Do not freeze. Wash the used column with 2–3 CV of 20% ethanol solution and store at 2~8°C.

7. Destruction and recycling

Since chromatography resin is difficult to degrade in nature, it is recommended that the discarded chromatography resin is incinerated to protect the environment. For chromatography resin that has been in contact with biologically active samples such as viruses and blood, follow the local biosafety requirements before destroying or disposing of it.

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8. Packing method

Detailed information on resin packaging is available on request. Please contact your local distributor.

9. Ordering information

Product name: Persedex LH-20

Product Cat. No	Package
578-00100	100 ml
578-00500	500 ml
578-01000	1 L
578-05000	5 L