LT BIOTECH UAB
Mokslininkų g. 6A,
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www.ltbiotech.lt

SP-dex PG

1. Basic product information

SP-dex PG is a series of gel filtration chromatography resins on a cross-linked agarose matrix that separate different molecules by their molecular weight differences. The series consists of three chromatography resins suitable for different separation ranges. This series of chromatography resins can be used successfully for the separation and purification of various biomolecules such as polypeptides, polysaccharides, recombinant proteins, nucleic acids and viruses.
SP-dex PG series chromatography resins have excellent scale-up production capacity:
(1) The improved SP-dex base frame is more rigid, thus enabling higher process flow rates at lower back pressures, increasing process efficiency.
(2) The modified SP-dex base has better chemical resistance and is compatible with a wide range of buffer environments.
(3) It has a fine particle size design to improve resolution.

2. Chromatography resin parameters

Item	SP-dex 30 PG	SP-dex 75 PG	SP-dex 200 PG
Type	Gel filtration		
Matrix	High cross-linking degree agarose		
Separation range	1~10 kDa	3~70 kDa	10~600 kDa
Particle size range*	22~44 μm		
Recommended flow rate	10~50 cm/h		
Maximum flow rate	100 cm/h		
Maximum working pressure	3 bar		
Working temperature	4–30°C		

** Percentage within range ≥ 80%*

3. Chemical resistance

pH stability*	1–14
Chemical stability	All commonly used aqueous buffers, 30% isopropanol**, 75% ethanol**, 1M NaOH, 1M acetic acid, 6M guanidine hydrochloride, 8M urea

** The physical and chemical properties and functions of the chromatography resin have no obvious changes after being placed in an environment of 40°C and pH 1–14 for 7 days.*

***.v/v, volume ratio*

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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 100 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.

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%–5% 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 2, such as 1M NaAc solution.
• Removal of strongly hydrophobic proteins and precipitated proteins: first wash with 5 CV of 0,5M 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 cm/h during CIP; reverse cleaning can be used when the clogging is severe.

To reduce the microbial load, it is recommended that 0.5M NaOH solution is used to treat the chromatography resin; treatment time is 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.

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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.

8. Packing method

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

9. Ordering information

Product name: SP-dex 30 PG

Product Cat. No	Package
791-00100	100 ml
705-00500	500 ml
791-01000	1 L
791-05000	5 L
791-10000	10 L

Product name: SP-dex 75 PG

Product Cat. No	Package
792-00100	100 ml
792-00500	500 ml
792-01000	1 L
792-05000	5 L
792-10000	10 L

Product name: SP-dex 200 PG

Product Cat. No	Package
793-00100	100 ml
793-00500	500 ml
793-01000	1 L
793-05000	5 L
793-10000	10 L