Dextran Desalting Columns

Catalog Numbers 43230 and 43233

Doc. Part No. 2160111 Pub. No. MAN0011173 Rev. B

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

Contents and storage

Table 1 Kit contents for Dextran Desalting Columns (Cat. No. 43230 (5 x 5 mL) and Cat. No. 43233 (5 x 10 mL).

Component	Amount	Storage
Dextran Desalting Columns	5 x 5 mL (Cat. No. 43230)	Store at 4°C or room temperature.
	5 x 10 mL (Cat. No. 43233)	
Column extenders	5 each	
Porous discs	6 each	
Porous disc insertion tool	1 tool	

Product description

The Thermo Scientific™ Dextran Desalting Columns are ready-to-use, gravity-flow columns for separating molecules greater than 5,000 Da from smaller molecules. These columns are also effective for performing a buffer exchange by first equilibrating a column with the desired buffer and then applying the sample.

The dextran resin is stable, easy to use, and provides excellent sample recoveries. The resin can withstand water, salt solutions, organic solvents and alkaline and weakly acidic solutions and can be autoclaved dry or heated at 120°C in a neutral pH solution for 30 minutes without affecting its chromatographic properties. The flow rates obtained with these columns are at least 3 times greater than those obtained with other commercially available desalting resins. The 5 mL column has a flow rate of approximately 60 mL/hour, enabling the desalting process or buffer exchange to be performed in less than one hour. Additional characteristics of the Dextran Desalting Columns are listed in Table 2.

Table 2 Characteristics of the Dextran Desalting Columns.

	5 mL column	10 mL column
Recommended sample size	Up to 1.5 mL	Up to 3 mL
Column volume (volume of the gel bed)	5 mL	10 mL
Void volume (approx. 1/3 column volume)	1.75 mL	3.5 mL
Exclusion limit (for globular proteins)	5,000 Da	5,000 Da
Wet bead diameter	50–150 µm	50–150 µm

Exchange or desalt buffer

1. Invert the column several times to resuspend the dextran resin, then position the column upright in a test tube or clamp and allow the resin to settle for several minutes.

2. Remove the top cap from the column and carefully pipette the storage solution (contains 0.02% sodium azide) until 5-10 mm of solution remains above the resin bed.

3. *(Optional)* Using the open end of the supplied porous disc insertion tool, insert and slide a porous disc to within 1 mm of the resin bed. A top porous disc provides a stop-flow function that prevents disturbance and drying of the resin bed during use.

4. Twist off the column bottom closure. (Save the column bottom to the cap column in step 11 if choosing to regenerate the column.)

5. Equilibrate the column by adding five resin-bed volumes of buffer to the column and allowing it to drain through.

   Equilibrate the column using the buffer into which you plan to exchange the sample.

6. Place the column in or over a new collection tube and add the sample. For best results, use a sample volume ≤10% of the column resin-bed volume (for example, 0.5 mL for a 5 mL column). Sample sizes up to 25% of the column volume may be appropriate in some cases, although the separation may not be optimal.

7. Allow the sample to enter into the resin bed. A volume of equilibration buffer equal to the sample volume will drip from the column tip.

8. Place the column over a new collection tube and add a volume of buffer equal to the fraction volume you wish to collect (for example, 0.5-1 mL).

9. Allow the buffer to enter the resin bed and collect the buffer that emerges from the column.

10. Repeat step 8 and step 9 until the protein has emerged from the column.

    Note: Sample emergence can be monitored by measuring the absorbance of each fraction at 280 nm. Generally, the first absorbance peak will emerge upon addition of one void volume of buffer after the sample. This peak is the protein. Molecules smaller than the exclusion limit of the resin (for example, buffer salts) will emerge from the column in subsequent fractions. These fractions can be discarded after confirming that all fractions containing protein have been collected.

    Note: The void volume is approximately 1/3 the resin-bed volume (see Table 2).

11. Desalting columns can be regenerated by washing with 10 column volumes of buffer. For storage, wash the column with five resin-bed volumes of ultrapure water containing 0.02% sodium azide, then cap the bottom and top when approximately 3 mL of solution remains above the resin bed. Store the column at 4°C.

Related products

Product	Cat. No.
Polyacrylamide Desalting Columns, 1.8K MWCO, 5 x 5 mL	43426
Polyacrylamide Desalting Columns, 6K MWCO, 5 x 5 mL	43240
Excellulose™ Desalting Columns, 5K MWCO, 5 x 2 mL	20439
Excellulose™ Desalting Columns, 5K MWCO, 5 x 5 mL	20449
SnakeSkin™ Dialysis Tubing, 7K MWCO, 2 mm dry I.D. x 35 feet	68700

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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

Revision history: Pub. No. MAN0011173 B

Revision	Date	Description
B	13 May 2024	Removing bottom caps to correspond with product change.
A.0	17 October 2015	New document for Dextran Desalting Columns.