Smartdex LH-20

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1. Product Description

Smartdex LH-20 is hydroxylated on the hydroxyl group of the glucan gel Smartdex G-25. Due to the hydrophobicity of hydroxypropyl, the gel keeps a certain pore diameter in the mobile phase containing organic solvent, no volume shrinkage occurs, and it continues to have the function of molecular sieve. **Smartdex LH-20** can be used for the separation of organic compounds with different molecular weights.

2. Packing Column

2.1 Preparing the medium suspension

Smartdex LH-20 is supplied as a dry powder and must be swollen before use. During swelling excessive stirring should be avoided as it may break the beads. Do not use magnetic stirrers.

Add enough deionized water for swelling at room temperature for more than 3 hours to make it fully expand.You can choose 20-50% ethanol for swelling. Do not choose pure organic solvent for the first swelling.The column volume of **Smartdex LH-20** sample 1g is 4.0-6.0ml in water and 3.5-4.5ml in pure ethanol.

If the **Smartdex LH-20** needs to remove endotoxin before use, soak it overnight with 0.1M NaOH after swelling and then clean it with deionized water.

Prepare a media slurry in a ratio of 75% settled gel to 25% buffer.

2.2 Packing the column

These instructions are for packing **Smardex LH-20** in the recommended SXK column. Flow rates are given in specific volumetric values, with reference to the linear flow rate.

1) Remove air from the column dead spaces by flushing the end-piece and adapter with packing buffer. Make sure no air has been trapped under the column net.

2) Close the column outlet leaving the net covered with packing buffer.

3) Resuspend the beads and pour the slurry down a glass rod held against the column wall will minimize the introduction of air bubbles. If using a packing reservoir, immediately fill the remainder of the column and reservoir with packing buffer. Mount the adapter or lid of the packing reservoir and connect the column to a pump. Avoid trapping air bubbles under the adapter or in the inlet tubing.

4) Open the bottom outlet of the column and set the pump to run at the desired flow velocity 300cm/h. If the recommended flow velocity can not be obtained, use the maximum flow velocity the pump can deliver. This should also give a reasonable well-packed bed. Do not exceed 75% of the packing flow velocity in subsequent chromatographic procedures.

5) When the bed has stabilized, stop the pump and close the bottom outlet.

If using a packing reservoir, disconnect the reservoir and fit the adapter to the column. If using packing column, remove the packing column and then the connector.

6) Fill the column with packing buffer carefully. Use a syringe to wet the adaptor by drawing packing buffer through it. With the adapter inlet disconnected, push the adapter down at an angle to the top of the gel, while making sure that no air is under the net. Seal the adaptor.

7) Connect the adapter to the pump using drop to drop connection, and make sure there is no air in the system. Open the bottom outlet and continue packing. The bed will be further compressed at this point and a space will be formed between the bed surface and the adapter.

8) Stop the pump and close the bottom outlet. Disconnect the column inlet and lower the adapter approximately 2 mm into the bed. Connect the pump. The column is now ready to use.

3. Operate Procedure

3.1 Equilibration

Equilibrate the column with 2 column volumes of binding buffer. Enlarge the volume if detergent buffer is used.
Buffer composition does not directly influence the resolution which can be obtained in gel filtration chromatography and buffers can be chosen to match the requirements of the sample.
However, an ionic strength equivalent to 0.15 M NaCl or greater is recommended to avoid ionic interactions with the gel matrix.
To ensure long column life, all buffers should be centrifuged or filtered (0.45 µm) before use.

3.2 Samples

The sample volume can be up to 30% of the total bed volume for desalting and buffer exchange. Larger sample volumes can be applied, but resolution will be reduced. To ensure long column life, samples should be centrifuged or filtered (0.45 µm) before use.

3.3 Elution

The recommended flow rate range for an SXK 16 column packed with **Smardex LH-20** is 5ml/min (150 cm/h) .Gel filtration is a non-interactive technique, and all sample substances should elute in a volume equivalent to the volume of the column. Re-equilibration is not needed between runs with the same eluent.

4. Regeneration and Preservation

Smartdex LH-20 can be reused many times after column packing. Regenerate the column with 2-3 column volumes of binding buffer
Storage: Dry **Smartdex LH-20** should be stored at 4 °C to 30 °C.
Packed columns and used gel should be stored in 0.02% NaN_3 at 4 °C.

5. Related Products

Product	Cat. No.	Size
Smartdex LH-20	SEC0161	25 G
	SEC0162	100 G
	SEC0163	1 Kg
	SEC0164	10 Kg