

nucleic acid purification

Bio-Spin® 30 Tris Columns

Introduction

Bio-Spin chromatography columns are ready to use for rapid and efficient cleanup and purification of nucleic acids and proteins using a swinging bucket centrifuge.

Bio-Spin 30 Columns

- Remove dye terminators
- Remove unincorporated nucleotides

The columns are packed with a special grade of Bio-Gel® P-6 or P-30 polyacrylamide gel matrix manufactured specifically for Bio-Rad spin columns. This unique gel produces very efficient, noninteractive size separations. We recommend Bio-Spin 30 Tris columns for maximum removal of unincorporated nucleotides. Bio-Spin columns are suitable for use with 2.0 ml microcentrifuge tubes or 12 x 75 test tubes and are completely autoclavable.

Technical Information

Gel Matrix

Bio-Gel P-30 specially sized polyacrylamide gel suspended in 1.0 ml of buffer.

Buffer

Tris buffer (10 mM Tris-HCl, pH 7.4) with 0.02% sodium azide.

Sample Application Volumes

Nucleic acids, proteins, and peptides, 20–100 µl.

Exclusion Limits

Bio-Gel P-30 gel: 20 base pairs (nucleic acids) or molecular weight of 40,000 (proteins, peptides).

Expected Retention and Recovery

99% retention of unincorporated nucleotides.

95% recovery of applied DNA.

Centrifuge Type

Swinging bucket centrifuge with a centrifugal force of 1,000 x g.

Autoclavability

Bio-Spin columns, Bio-Gel P gel, and collection tubes are completely autoclavable at 121°C for 30 min at pH 6.0–8.0.

Chemical Stability

pH 2–10, common aqueous buffers, formamide, dilute organic acids, alcohol, 20% (v/v) other chaotropic agents, detergents.

Storage

Store at 4°C. Do not freeze.

Instructions for Use

- 1 Invert the column sharply several times to resuspend the settled gel and remove any bubbles. Snap off the tip and place column in a 2.0 ml microcentrifuge tube (included). Remove cap.
- 2 Centrifuge for 2 min in a swinging bucket centrifuge at 1,000 x g (see Centrifugation Notes section) to remove the packing buffer. Discard the buffer.
- 3 Place the column in a clean 2.0 ml microcentrifuge tube or 12 x 75 mm test tube. Carefully apply the sample (20–100 µl) directly to the center of the column. Application of more or less than the recommended sample volume may decrease column performance.
- 4 After loading sample, centrifuge the column for 4 min at 1,000 x g.
- 5 Following centrifugation, the purified sample is now in Tris buffer. Molecules smaller than the column's exclusion limit will be retained.
- 6 Properly dispose of the used column.

Buffer Exchange

The gel in the Bio-Spin columns is suspended in Tris buffer, pH 7.4. The gel matrix is compatible with most aqueous buffers. Buffer exchange can be achieved using the following procedure.

- 1 Follow steps 1 and 2 in the Instructions for Use section.
- 2 Apply the new buffer in 500 µl aliquots. After each application of new buffer, let the buffer drain out by gravity, or centrifuge the column for 1 min to remove the buffer. Discard buffer from collection tube. Repeat as required. Three washes result in >99% of the buffer being exchanged. Four washes result in >99.9% of buffer exchanged.
- 3 Sample can now be applied to the column as directed in steps 3 through 6 in the Instructions for Use section.



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Centrifugation Notes

Bio-Spin columns fit 2.0 ml microcentrifuge tubes or 12 x 75 mm test tubes for sample collection during centrifugation. Use the 2.0 ml microtubes provided with the columns for the initial column equilibration step.

Swinging bucket centrifuges capable of generating a minimum force of 1,000 x g are suitable for Bio-Spin column use. The gravitational force created at a particular revolution speed is a function of the radius of the microcentrifuge rotor. Consult the swinging bucket centrifuge instruction manual for conversion information from revolutions per minute (RPM) to centrifugal or g-force. Alternatively, to calculate the speed in RPM required to reach a gravitational force of 1,000 x g, use the following equation:

$$\text{RCF (x g)} = (1.12 \times 10^{-5}) \times (\text{RPM}) \times 2 \times r$$

where RCF is the relative centrifugal force, r is the radius in centimeters measured from the center of the rotor to the middle of the Bio-Spin column, and RPM is the speed of the rotor.

Sterilization

If a sterile Bio-Spin column is required, autoclave the column at 121°C for 20–30 min. If exchanging buffers, the buffer pH in the column should be in the range of 6.0 to 8.0 prior to autoclaving.

Ordering Information

<i>Catalog #</i>	<i>Product Description</i>
Bio-Spin Columns with Bio-Gel P-6 in Tris Buffer	
732-6227	Bio-Spin 6 Tris Columns, 25
732-6228	Bio-Spin 6 Tris Columns, 100
732-6229	Bio-Spin 6 Tris Columns, 1,000
Bio-Spin Columns with Bio-Gel P-30 in Tris Buffer	
732-6231	Bio-Spin 30 Tris Columns, 25
732-6232	Bio-Spin 30 Tris Columns, 100
732-6233	Bio-Spin 30 Tris Columns, 1,000
Bio-Spin Columns with Bio-Gel P-6 in SSC Buffer	
732-6002	Bio-Spin 6 SSC Columns, 25
Bio-Spin Columns with Bio-Gel P-30 in SSC Buffer	
732-6006	Bio-Spin 30 SSC Columns, 25
Micro Bio-Spin Columns with Bio-Gel P-6 in Tris Buffer	
732-6221	Micro Bio-Spin 6 Tris Columns, 25
732-6222	Micro Bio-Spin 6 Tris Columns, 100
732-6225	Micro Bio-Spin 6 Tris Columns, 1,000
Micro Bio-Spin Columns with Bio-Gel P-30 in Tris Buffer	
732-6223	Micro Bio-Spin 30 Tris Columns, 25
732-6224	Micro Bio-Spin 30 Tris Columns, 100
732-6226	Micro Bio-Spin 30 Tris Columns, 1,000
Micro Bio-Spin Columns with Bio-Gel P-6 in SSC Buffer	
732-6200	Micro Bio-Spin 6 SSC Columns, 25
732-6201	Micro Bio-Spin 6 SSC Columns, 100
Micro Bio-Spin Columns with Bio-Gel P-30 in SSC Buffer	
732-6202	Micro Bio-Spin 30 SSC Columns, 25
732-6203	Micro Bio-Spin 30 SSC Columns, 100
RNase-Free Micro Bio-Spin Columns with Bio-Gel P-30 in Tris Buffer	
732-6250	Micro Bio-Spin 30 Tris Columns, RNase free, 25
732-6251	Micro Bio-Spin 30 Tris Columns, RNase free, 100
Empty Columns	
732-6008	Empty Bio-Spin Columns, 100
732-6204	Empty Micro Bio-Spin Columns, 100
PCR Reaction Mixture Purification	
732-6300	PCR Kleen Spin Columns, 25
732-6301	PCR Kleen Spin Columns, 100
DNA Recovery from Agarose Gels	
732-6165	Freeze-N-Squeeze Spin Columns, 25
732-6166	Freeze-N-Squeeze Spin Columns, 100
732-6160	Quantum Prep Gel Slice Kit
SEQueaky Kleen Dye Terminator Removal Kit	
732-6260	SEQueaky Kleen, 2 x 96
732-6261	SEQueaky Kleen, 10 x 96

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