






PurKine™ Endotoxin Removal Resin

Cat #: BMR2140

Size: 5 mL/25 mL

	PurKine™ Endotoxin Removal Resin		
	Catalog Number: BMR2140		Lot Number: Refer to product label
	Capacity: 2,000,000 EU/mL		Bead size: 45-165 µm
	Tolerance: 0.1 MPa, 1 bar		Buffer: Regeneration Buffer
	Storage: Stable for one year at 4°C from date of shipment		Note: Use endotoxin-free plasticware and water

Assay Principle

PurKine™ Endotoxin Removal Resin is a resin used to remove endotoxins from biologically derived protein products, including peptides, antibodies, polysaccharides and so on. The principle is to specifically remove endotoxins by attaching the modified polymyxin B to 4% agarose microspheres, which can be purified to reduce the endotoxin in the sample to 0.1 EU/mL and sample recovery is high.

Reagent Preparation

Water, buffer and consumables are to be pyrogen-free.

Equilibration buffer: 20 mM phosphate buffer, 150 mM NaCl, pH 7.4

Regeneration buffer: 1% Triton X-114

Note: Equilibration buffer may be changed depending on sample properties and NaCl, pH 7-8 around 150mM -500mM is recommended.

Sample Preparation

The sample should be centrifuged and/or filtered through a 0.22 µm or 0.45 µm filter before it is applied to the medium to prevent clogging the column. It is recommended the pH of sample is pH 7-8, because the best pH for endotoxin binding to the column is pH 6-9. Keep the sample in appropriate ionic concentration to reduce nonspecific adsorption, such as 150-500 mM NaCl.

Procedure for Sample Purification

Note: Regenerate the resin before the first use and after each subsequent use. Equilibrate all solutions and the resin to room temperature before use.

1. Place the column upright in the stand. Remove the top cap first to prevent bubbles from being drawn into the gel. Allow storage solution drain completely from the column, but do not allow the column bed to dry.
2. Wash the column by adding 5 resin-bed volumes of cold Regeneration Buffer (Do not warm it up, otherwise it will become cloudy) and let the buffer drain completely. Set the flow rate at 0.25 mL/min or at most 10 drops per minute by adjusting the flow speed. Repeat the wash step two more times to make this system endotoxin-free. It is important to rinse the wall of the

column from top to bottom using Regeneration Buffer.

3. Equilibrate the column by adding 5 resin-bed volumes of Equilibration Buffer and let the buffer drain completely at a speed of 0.5 mL/min. Also, the column wall should be rinsed completely during this process. Repeat the equilibration step two more times.

4. Close the flow-speed control after column equilibration. Add sample to the column. Set the flow rate at 0.25 ml/min or at most 10 drops per minute by adjusting the flow-speed. Start collecting the sample eluate with endotoxin-free tube until the volume of eluate is up to 1.5 ml. In order to reduce the loss of sample, it's recommended rinsing again with 2 resin-bed volumes of equilibration buffer after all the sample completely gets in the column. Repeat one more time. Pool the fractions containing protein sample and detect the endotoxin in it.

5. Reloading of the Sample. If the final endotoxin level is above the desired endotoxin level. Repeat the endotoxin removal procedure by reloading the sample to the regenerated column.

Storage of the Column

For storage of the column, wash the column with 5 resin-bed volumes of equilibration buffer and allow the column to drain completely. Add 1 resin-bed volume of regeneration buffer. Store at 2-8°C. Do not freeze.

Troubleshooting

Problem	Cause	Solution
Low endotoxin removal efficiency	Sample pH was not within endotoxin binding range	Adjust sample to pH 7-8
	Incubation time was not sufficient	Reduce flow speed
	The removal or detection system was contaminated by extrinsic LPS	Use pyrogen/endotoxin-free ware and water
	Endotoxin was bound to the target protein	Recycle the sample through the column several times
Sample contamination	Different samples were purified by the same resin	Avoid purifying different samples using same resin
Low protein/sample recovery	Target protein aggregated with endotoxin and was removed	Increase NaCl concentration in the sample to 500mM
	Nonspecific binding of sample to the resin	

Recommended Products

Catalog No.	Product Name
KTP2140	PurKine™ Endotoxin Removal Kit (Polymyxin B)
KTP2001	PurKine™ His-Tag Protein Purification Kit (Ni-NTA)
KTP2010	PurKine™ GST-Tag Protein Purification Kit (Glutathione)
KTP2020	PurKine™ MBP-Tag Protein Purification Kit (Dextrin)
KTP2030	PurKine™ Biotin-Tag Protein Purification Kit (Streptavidin)
KTP2070	PurKine™ Antibody Purification Kit (Protein A/G)

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.