MixQ400 Virus Purification Resin

Product Manual

1. Product Introduction

MixQ400 virus purification resin is a mixed mode chromatography resin specially designed for the purification of viruses or virus-like particles (VLPs). This product has a core + shell structure. The core is polymethacrylate microspheres with a rigid structure. The surface of the shell is bonded with hydrophilic molecules without any adsorption function. Virus with a molecular weight greater than 400 KD are subject to size exclusion and cannot pass through the shell layer, and molecules with a molecular weight less than 400 KD pass through the shell layer and are adsorbed in the core pores through ion exchange/hydrophobic interaction, thus ultimately achieving the separation of virus molecules and impurities.

2. Product Properties

Parameter	Technical Specification			
Average particle size	MixQ400L	120±30 μm	MixQ400S	65±35 μm
Matrix beads	Polymethacrylate			
Function Group	Octylamine			
Exclusion size	400 KD			
Pressure upper limit	1 MPa			
Storage	4~30 ℃ (20% ethanol or 10 mM NaOH)			

3. Operation Steps

MixQ virus purification resin is designed for the separation and purification of virus. Operation steps usually include equilibration, loading, washing, washing and regeneration. The detailed operation methods are as follows:

Equilibration: Use 5 - 10 CV of equilibrium buffer (Buffer A, such as 20 mM PB + 0.1-0.5 M NaCl, pH7.0, the actual buffer used should be screened and optimized based on the stability of the virus sample) to equilibrate the chromatography column, until the conductivity and pH of the effluent remain stable (consistent with the equilibrium solution).

Loading: The buffer of the sample should be as consistent as possible with the equilibration solution. Solid samples can be prepared by dissolving them in an equilibration solution; low-concentration sample solutions can be dialyzed with equilibration solution or adding salt with required amount; high-concentration sample solutions can be diluted with equilibration solution. To avoid clogging the column, samples should be centrifuged or micro filtrated (0.45 μm). The loading amount is calculated based on the content of impurities in the feed and collect the flow-through liquid (containing the target virus/vaccine antigen, to ensure the removal rate of impurities, it is recommended that the flow rate be maintained at 60-120 cm/h).

Regeneration: After collecting the target flow-through fluid, use 0.1 M NaOH solution + 30% isopropyl alcohol solution to clean the adsorbed impurities to regenerate the chromatography resin. Then equilibrate with equilibration buffer.

Storage: Store in 20% ethanol at 4-30 ℃, or in 5-10 mM NaOH solution.

Other precautions: When using and storing the column, avoid the column from drying out or being loosely sealed to prevent air bubbles from entering the column.

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