

ProteinIso[®] Protein G Resin

Please read the manual carefully before use

Cat. No. DP401

Version No. Version 2.1

Storage: at 2°C-8°C for two years

Description

ProteinIso[®] Protein G Resin is an affinity chromatography resin with high binding capacity for IgG. The recombinant protein G ligand is coupled to highly cross-linked agarose. *ProteinIso*[®] Protein G Resin is suitable for purification of monoclonal antibody, polyclonal antibody.

Resin Specifications

Resin	Cross-linked 4% agarose
Ligand	r-Protein G
Shape	Sphere
Pore size	90 μm (45-165)
Support density	3 mg Protein G/ml wet gel
Binding capacity	20-25 mg h-IgG /ml wet gel
Maximum flow rate (25°C)	300 cm/h
Recommended flow rate	<150 cm/h
Highest resistance of atmospheric pressure	0.3 Mpa
pH stability	3~10

Procedures

Procedures of antibody purification

The procedures typically include: column packing, equilibration, sample loading, washing, elution, and regeneration.

1. Column packing: Resuspend the resin and add an appropriate amount to the chromatography column based on the quantity of protein to be purified. Allow the resin to settle.
2. Equilibration: Equilibrate the resin with 5-10 CV of equilibration buffer (20 mM PB, 0.15 M KCl, pH 7.0) until the conductivity and pH of the flow-through remain constant (matching those of the equilibration buffer).
3. Sample loading: The sample buffer should be as consistent as possible with the equilibration buffer. To prevent column clogging, the sample should be centrifuged or filtered through a 0.45 μm filter prior to loading.
4. Washing: After sample loading, wash the resin with 5-10 CV of equilibration buffer and collect the flow-through.
5. Elution: Elute with elution buffer (20 mM citric acid, pH 3.0-4.0; or 0.1 M glycine, pH 3.0; or 20 mM sodium acetate, pH 3.0-4.0), and collect the effluent. The specific elution conditions are closely related to the binding strength and stability of the antibody, and the elution buffer should be optimized if necessary. After elution, neutralize the collected antibodies with an alkaline buffer (e.g. 1 M Tris-HCl, pH 9.0) immediately.
6. Regeneration: After several uses (the number of uses depends on the type and source of the raw material and the experimental requirements), the binding capacity of the resin may decrease, and regeneration is required.
 - (1) Wash with 3-5 CV of 0.1 M acetic acid or 0.1 M acetic acid/20% ethanol, then immediately equilibrated to neutrality with 5 CV of neutral PBS buffer.
 - (2) Or wash with 3-5 CV of 70% ethanol or 6 M GuHCl, wash with 3-5 CV of pure water, then immediately equilibrated to neutrality with 5 CV of neutral PBS buffer.
7. If the regenerated resin is not to be used for an extended period, it is recommended to add 20% ethanol and store it at 2-8°C.



Notes

- To prevent column clogging, samples (especially bacterial lysates) should be filtrated with 0.45 μ m filter before loading.
- After repeated use of the resin, the change of its binding ability is related to the purified sample. To avoid cross-contamination, it is not recommended to use the same resin to purify different antibodies.
- Equilibration Buffer
20 mM PB, 150 mM KCl pH 7.0
- Elution Buffer
20 mM citric acid pH 3.0-4.0; or 100 mM glycine pH 3.0; or 20 mM sodium acetate pH 3.0-4.0.
- Neutralization Buffer
1 M Tris-HCl pH 9.0.

Affinity of Protein A/G for IgG Types

Agarose affinity medium immobilized with Protein A and G can both be used in antibody purification.

The affinity of Protein A and protein G for immunoglobulins varies with different sources and subclasses. The following table compares the IgG binding capacities of protein A and G for reference.

It should be noted that the strength of antibody binding ability does not directly reflect the quality of antibody purification effect.

Sources	IgG Subtype	Affinity for Protein A	Affinity for Protein G
Human	IgG ₁	++++	++++
	IgG ₂	++++	++++
	IgG ₃	-	++++
	IgG ₄	++++	++++
Mouse	IgG ₁	+	++++
	IgG _{2a}	++++	++++
	IgG _{2b}	+++	+++
	IgG ₃	++	+++
Rabbit	IgG	++++	+++
Goat	IgG	-	++
Horse	IgG	++	++++
Gog	IgG	++	+
Bovine	IgG	++	++++
Porcine	IgG	+++	+++
Monkey	IgG	++++	++++

For research use only, not for clinical diagnosis.

Version number: V2.1-202602

Service telephone +86-10-57815020

Service email custserv@transgenbiotech.com

