ProteinIso® Protein G Resin

Cat. No. DP401

Version No. Version 2.0

Storage: at 2-8°C (20% ethanol) 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

1. Prepare protein G purification column

(1) Thoroughly resuspend the protein G resin to achieve a homogeneous suspension of the resin in the 20% ethanol storage buffer.

(2) Immediately transfer the resin into a purification column. Ensure that the bottom of the column is plugged with a stopper. Close the valve of the column. Allow the resin to settle.

(3) Equilibrate the column with 5~10 bed volume of equilibration buffer.

2. Prepare samples

To avoid blocking column, samples should be centrifuged and filtrated with 0.45 μm filter before loading.

3. Load samples and wash

Load samples and wash with 5~10 bed volume of equilibration buffer and collect the flow-through in one tube.

4. Elute

Elute antibodies with elution buffer.

Collect the elution containing the target immunoglobulin and immediately neutralize to pH>7.0 with neutralization buffer. The elution conditions are closely related with binding strength and stability of antibody. When necessary, optimize the elution buffer.

5. Regeneration of Protein G Resin

(1) Wash the column/resin with 3~5 bed volume of 0.1 M citric acid or 0.1 M citric acid /20% ethanol and then 5 bed volume of PBS buffer (pH=7.0).

Or

(2) 3~5 bed volume of 0.05 M NaOH/1 M NaCl or 6 M GuHCl, and then 5 bed volume of deionized water.

(3) Store column/resin in 20% ethanol.

Notes

• Samples should be centrifuged and filtrated with 0.45 μm filter before loading.
• 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	IgG1	++++	++++
	IgG2	++++	++++
	IgG3	-	++++
	IgG4	++++	++++
Mouse	IgG1	+	++++
	IgG2a	++++	++++
	IgG2b	+++	+++
	IgG3	++	+++
Rabbit	IgG	++++	+++
Goat	IgG	-	++
Horse	IgG	++	++++
Gog	IgG	++	+
Bovine	IgG	++	++++
Porcine	IgG	+++	+++
Monkey	IgG	++++	++++

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