

# Protein G / Agarose

## IgG binding protein

Catalog # gel-agg-2  
gel-agg- 5

For research use only

Version #11F22-MM

### PRODUCT INFORMATION

#### Content:

Protein G / Agarose is available in two quantities:

- 2 ml Protein G / Agarose provided as a 50% v/v gel slurry in 20% v/v ethanol (total volume 4 ml): gel-agg-2
- 5 ml Protein G / Agarose provided as a 50% v/v gel slurry in 20% v/v ethanol (total volume 10 ml): gel-agg-5

#### Storage and stability:

- Protein G / Agarose is shipped at room temperature. Store at 4°C. DO NOT FREEZE.
- Protein G / Agarose is stable at least 12 months when properly stored.

### DESCRIPTION

Protein G is an immunoglobulin-binding protein expressed in group C and G Streptococcal bacteria. It is a 65-kDa (G148 protein G) and a 58 kDa (C40 protein G) cell surface protein that has found application in purifying antibodies through its binding to the Fc region<sup>1</sup>. Protein G binds to most mammalian IgGs through the Fc region, but some binding also occurs through the Fab region.

Native protein G also binds albumin, however, because serum albumin is a major contaminant of antibody sources, the albumin binding site has been removed from recombinant forms of Protein G<sup>2</sup>. Protein G / Agarose from InvivoGen uses the recombinant form of protein G lacking the albumin-binding region.

In Protein G / Agarose, the recombinant protein G is coupled to beads using a leak-resistant chemistry that provides a support with minimal non-specific binding.

Binding capacity of Protein G:

- 20 mg of human IgG per ml of gel
- 15 mg of rabbit IgG per ml of gel
- 6 mg of mouse IgG per ml of gel

1. Sjobring U. *et al.*, 1991. Streptococcal Protein G. Gene structure and protein binding properties. *J Biol Chem.* 140:1194-1197.
2. Goward CR. *et al.*, 1990. Expression and purification of truncated recombinant streptococcal Protein G. *Biochem J.* 267:171-177.

### ANTIBODY

### PROTEIN G BINDING

Human Total IgG	++++
Human IgG1	++++
Human IgG2	++++
Human IgG3	++++
Human IgG4	++++
Human IgA	-
Human IgM	-
Human IgD	-
Human Fab	+
Human ScFv	-
Mouse Total IgG	++++
Mouse IgG1	+++
Mouse IgG2a	++++
Mouse IgG2b	++++
Mouse IgG3	++++
Mouse IgM	-
Rat Total IgG	+++
Rat IgG1	+++
Rat IgG2a	++++
Rat IgG2b	+
Rat IgG2c	++++
Cow Total IgG	++++
Cow IgG1	++++
Cow IgG2	++++
Goat Total IgG	++++
Goat IgG1	++++
Goat IgG2	++++
Sheep Total IgG	++++
Sheep IgG1	++++
Sheep IgG2	++++
Horse Total IgG	++++
Horse IgG(ab)	-
Horse IgG(c)	-
Horse IgG(T)	++++
Rabbit Total IgG	++++
Guinea Pig TotalIgG	+
Pig Total IgG	+
Dog Total IgG	+
Cat Total IgG	+
Chicken Total IgY	-

### TECHNICAL SUPPORT

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## METHOD

### **Buffers**

- Equilibration and Wash Buffer: 10 mM sodium phosphate, 150 mM sodium chloride, pH 7.2
- Elution Buffer: 0.1 M glycine, pH 2-3
- Neutralization Buffer: 1 M phosphate or 1 M TRIS, pH 7.5-9
- Regeneration Buffer: 20% (v/v) ethanol in phosphate buffered saline

### **Immunoglobulin Purification Procedure using immobilized Protein G / Agarose**

1. Pack 1 ml of immobilized Protein G / Agarose into a suitable column.
2. Perform all chromatography steps at a flow rate of 0.5-1 ml/min, or under gravity flow.
3. Equilibrate the column with 5 ml of Equilibration and Wash Buffer.
4. Dialyze sample against 100 volumes of Equilibration and Wash Buffer.
5. Filter the dialyzed sample using a 0.2 µm filter.
6. Load the sample onto the column.
7. Wash the column with 20 ml of Equilibration and Wash Buffer.
8. Elute the column with 10 ml of Elution Buffer.
9. Immediately adjust the eluate to pH 7.5 by adding Neutralization Buffer.
9. Wash the column with 10 ml of Regeneration Buffer and store at 4°C.

*Note: The procedure outlined above can be scaled up or down as desired.*

## RELATED PRODUCTS

Product	Catalog code
pfUSE-CHlg-hG1	pfuse-hchg1
pfUSE-CHlg-hG2	pfuse-hchg2
pfUSE-CHlg-hG3	pfuse-hchg3
pfUSE-CHlg-hG4	pfuse-hchg4
pfUSE-CHlg-mG1	pfuse-mchg1
pfUSE-CHlg-mG2a	pfuse-mchg2a
pfUSE-CHlg-mG2b	pfuse-mchg2b
pfUSE-CHlg-mG3	pfuse-mchg3
Peptide M / Agarose	gel-pdm-2
SSL7 / Agarose	gel-ssl-2
Jacalin / Agarose	gel-jac-2
Protein L / Agarose	gel-protl-2

### TECHNICAL SUPPORT

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