

# Products for Antibody Purification

## High Dynamic Binding Capacity, Low Leaching Rate

### Protein A Affinity Resin **NEW**

PrimeGene® now offers Protein A resin—Protein A Sepharose CL-4B! It is designed to significantly reduce the cost of the Protein A capture step, offer a standardized platform for bioprocessing applications and meet the industry's demands for quality and supply expectations.

#### Reliable Performance:

- High dynamic binding capacity, and low protein A leaching
- Reduction in protein A resin cost
- An animal free fermentation process
- Manufacturing process that meets ISO9001:2008 quality system standards
- Security supply chain

#### Performance Specifications:

- Ligand: Recombinant Staphylococcus Protein A (rSPA) expressed in E. coli, which contains all five immunoglobulin binding domains (E,D,A,B,C).
- Bead structure: 4% cross-linked sepharose
- Particle size: 45–165 µm
- Mean bead size: 90 µm
- Ligand density: ~5 mg protein A/ml medium
- Available capacity: >30 mg human IgG/ml medium
- Protein A leaching: <10 ng/mg IgG
- Caustic Stability: 100 cycles with 0.1M NaOH
- Recommended Flow Velocity: 20-150 cm/h
- Recommended pH: Long term: 3–9, Short term: 2–10

### Protein A Affinity Bottled Resin **NEW**

Cat. #	Product Name	Size A	Size B	Size C	Size D
110107A	Protein A ResinCL-4B	5ml	25ml	200ml	1000ml

### Pre-Packed Protein A Columns **NEW**

Cat. #	Product Name	Size
120107A1B	Protein A Sepharose CL-4B Column, 1ml, 2 columns	2x1ml
120107A1E	Protein A Sepharose CL-4B Column, 1ml, 5 columns	5x1ml
120107A5A	Protein A Sepharose CL-4B Column, 5ml, 1 column	1x5ml
120107A5E	Protein A Sepharose CL-4B Column, 5ml, 5 columns	5x5ml



## Purification Ligands for Bioprocessing

---Protein A, Protein G, Protein L, Protein A/G, Protein A/G/L

### Key Advantages

- Broad Product Series
- High purity: >97%
- High Lot to Lot consistency and low endotoxin (<0.1 EU/µg)
- An animal free fermentation process
- Manufacturing process that meets ISO ISO9001:2015
- Security supply chain

### Protein A

Recombinant Protein A is produced in E.Coli and functions essentially the same as native Protein A. It consists of 5 IgG-binding domains E-D-A-B-C aligned in series. It binds the heavy chain within the Fc region of most immunoglobulins. It is ideal for purification of polyclonal or monoclonal IgG antibodies.

Cat. #	Product Name	Description	Size A	Size B	Size C	Special Order
1001-01	Protein A, His	Protein A with His-tag at C-terminus	10mg	100mg	1g	Inquiry
1001-02	Protein A-Cys, His	Protein A with His-tag and Cys residue at C-terminus	10mg	100mg	1g	Inquiry
1001-04	Protein A-Cys	Protein A with Cys residue at C-terminus	10mg	100mg	1g	Inquiry
1001-05	Protein A	5 IgG-binding domains	10mg	100mg	1g	Inquiry
1001-07	Protein A, Long Form	5 IgG-binding domains and cell membrane binding region, similar to native Protein A	10mg	100mg	1g	Inquiry
1001-09	Protein A-Cys, Long Form	5 IgG-binding domains and cell membrane binding region, similar to native Protein A, Cys residue at C-terminus	10mg	100mg	1g	Inquiry

### Protein G

Protein G is a bacterial protein derived from the cell wall of certain strains of b-hemolytic Streptococci. It binds with high affinity to the Fc portion of various classes and subclasses of immunoglobulins from a variety of species. The recombinant Protein G is a genetically engineered protein containing 3 immunoglobulin-binding regions of protein G. Protein G binds to all IgG subclasses from human, mouse and rat species. It also binds to total IgG from guinea pig, rabbit, goat, cow, sheep, and horse. Protein G binds preferentially to the Fc portion of IgG, but can also bind to the Fab region, making it useful for purification of F(ab') fragments of IgG.

Cat. #	Product Name	Description	Size A	Size B	Size C	Special Order
1002-01	Protein G, His	Contains 3 immunoglobulin-binding regions with His-tag at C-terminus	1mg	10mg	1g	Inquiry
1002-03	Protein G	Contains 3 immunoglobulin-binding regions	1mg	10mg	1g	Inquiry
1002-04	Cys-Protein G	Contains 3 immunoglobulin-binding regions with Cys residus at N-terminus	1mg	10mg	1g	Inquiry

## ■ Protein A/G

The recombinant Protein A/G is a genetically engineered protein containing 5 immunoglobulin-binding regions of protein A and 2 of protein G. The binding capacity of Protein A/G is broader than either Protein A or Protein G alone. The extended Fc-binding properties of Protein A/G make it popular tool in the purification of immunoglobulins. Protein A/G binds to all human IgG subclasses, IgA, IgE, IgM and to a lesser extent IgD.

Cat. #	Product Name	Description	Size A	Size B	Size C	Special Order
1003-01	Protein A/G, His	Contains 8 immunoglobulin-binding regions with His-tag at C-terminus	1mg	5mg	1g	Inquiry
1003-02	Protein A/G	Contains 7 immunoglobulin-binding regions	1mg	5mg	1g	Inquiry
1003-03	Cys-Protein A/G	Contains 7 immunoglobulin-binding regions with Cys residus at N-terminus	1mg	5mg	1g	Inquiry
1003-04	Protein A/G-Cys	Contains 7 immunoglobulin-binding regions with Cys residus at C-terminus	1mg	5mg	1g	Inquiry

## ■ Protein L

Recombinant Protein L contains 5 kappa-binding domain. Protein L has the unique ability to bind through kappa light chain interactions without interfering with the antibody's antigen-binding site. This gives Protein L the ability to bind a wider range of Ig classes and subclasses than other antibody-binding proteins.

Cat. #	Product Name	Description	Size A	Size B	Size C	Special Order
1004-01	Protein L, His	Contains 5 immunoglobulin-binding regions with His-tag at N-terminus	1mg	10mg	1g	Inquiry
1004-02	Protein L-Cys, His	Contains 5 immunoglobulin-binding regions with His-tag at N-terminus and Cys residus at C-terminus	1mg	10mg	1g	Inquiry
1004-03	Protein L-Cys	Contains 5 immunoglobulin-binding regions with Cys residus at C-terminus	1mg	10mg	1g	Inquiry
1004-04	Protein L	Contains 5 immunoglobulin-binding regions	1mg	10mg	1g	Inquiry
1004-05	Cys-Protein L	Contains 5 immunoglobulin-binding regions with Cys residus at N-terminus	1mg	10mg	1g	Inquiry

## ■ Protein A/G/L

Recombinant fusion protein A/G/L contains five Ig-binding regions of protein L, five IgG binding domains from Protein A, and two Ig-binding region of protein G. Protein A/G/L binds to all human IgG subclasses, IgA, IgE, IgM and IgD.

Cat. #	Product Name	Description	Size A	Size B	Size C	Special Order
1006-01	Protein A/G/L	Contains 12 immunoglobulin-binding regions	1mg	5mg	1g	Inquiry
1006-02	Protein A/G/L-Cys	Contains 12 immunoglobulin-binding regions with Cys residus at C-terminus	1mg	5mg	1g	Inquiry
1006-03	Cys-Protein A/G/L	Contains 12 immunoglobulin-binding regions with Cys residus at N-terminus	1mg	5mg	1g	Inquiry

## Table of Binding Capability

		Protein A	Protein G	Protein L	Protein A/G	Protein A/G/L
Human	IgG	+++	+++	+++	+++	+++
	IgG1	++++	++++	++++	++++	++++
	IgG2	++++	++++	++++	++++	++++
	IgG3		+++	+++	+++	+++
	IgG4	++++	++++	++++	++++	++++
	IgA	+		+++	+	+++
	IgA1	+		+++	+	+++
	IgA2	+		+++	+	+++
	IgD			+++		+++
	IgE	++		+++	++	+++
	IgM	+		+++	+	+++
	Fab	+	+	+++	+	+++
	ScFv	+		+++	+	+++
	Mouse	IgG	++	++	+++	+++
IgG1		+	++++	+++	+++	++++
IgG2a		++++	++++	+++	++++	++++
IgG2b		+++	+++	+++	+++	+++
IgG3		++	+++	+++	+++	+++
IgM				+++		+++
Rat	IgG	+	++	+++	++	+++
	IgG1		+	+++	++	+++
	IgG2a		++++	+++	+++	++++
	IgG2b		++	+++	+	+++
	IgG2c	++	++	+++	+++	+++
	IgG3	+	++	?	++	++

+: binding strength, ?: not tested

		Protein A	Protein G	Protein L	Protein A/G	Protein A/G/L
Horse	IgG	++	++++	?	++++	++++
	IgG(ab)	+		?	+	+
	IgG(c)	+		?	+	+
	IgG(T)		+++	?	+++	+++
Goat	IgG	+	++		+++	+++
	IgG1	+	+++		+++	+++
Guinea-pig	IgG	+++	+	?	+++	+++
	IgG1	++	+	?	++	++
Sheep	IgG	+	++		+++	+++
	IgG1	+	++		+++	+++
Cow	IgG	+	+++		+++	+++
	IgG1	+	+++		+++	+++
Rabbit	IgG	+++	+++	+	+++	+++
Cat	IgG	+++	+	?	+	+++
Dog	IgG	++	+	?	+++	+++
Pig	IgG	+++	++	+++	+++	+++
Chicken	IgY					
Monkey	IgG	++++	++++	?	++++	++++
Hamster	IgG	+	++	+++	++	++
Koala	IgG		+	?	+	+
Llama	IgG		+	?	+	+
Donkey	IgG	++	+++	?	+++	+++