



# Recombinant Protein G

## 1. Product Description

### 1.1 Product description

Natural Protein G is a cell wall protein isolated from G Streptococci that has two IgG binding regions, albumin, and cell surface binding sites. Recombinant protein G was expressed by Escherichia coli with a molecular weight of about 30 kDa(SDS-PAGE), which removed the binding site of albumin and cell surface and reduced the non-specific adsorption. Protein G has an optimal binding pH of 5.0, but is also good at pH 7.0-7.2. Compared with Protein A, Protein G has a stronger IgG binding force on most mammals, and it can also bind rats IgG2a, human IgG3 and mouse IgG1 that cannot bind well with Protein A. Protein G does not bind to human IgM, IgD and IgA. The difference in binding characteristics between Protein A and Protein G may be caused by the difference in the composition of IgG binding sites of the two proteins.

### 1.2 Storage Solution

5 mg/ml dissolved in 1×PBS

### 1.3 Storage Temperature

Store at 2-8℃ for one month and -20℃ for one year

### 1.4 Combining Capacity

Protein A and protein G have different binding ability to different sources and subclasses of immunoglobulins.

Table1. Relative binding strengths of antibodies from various species to protein G and protein A as measured in a competitive ELISA test.

| Species        | Subclass       | Protein A binding | Protein G binding |
|----------------|----------------|-------------------|-------------------|
| Human          | IgA            | variable          | —                 |
|                | IgD            | —                 | —                 |
|                | IgE            | —                 | —                 |
|                | IgG1           | ++++              | ++++              |
|                | IgG2           | ++++              | ++++              |
|                | IgG3           | —                 | ++++              |
|                | IgG4           | ++++              | ++++              |
|                | IgGM           | variable          | —                 |
| Avian egg yolk | IgY            | —                 | —                 |
| Cow            |                | ++                | ++++              |
| Dog            |                | ++                | +                 |
| Goat           |                | —                 | ++                |
| Guinea pig     | IgG1           | ++++              | ++                |
|                | IgG2           | ++++              | ++                |
| Hamster        |                | +                 | ++                |
| Horse          |                | ++                | ++++              |
| Koala          |                | —                 | +                 |
| Llama          |                | —                 | +                 |
| Monkey(rhesus) |                | ++++              | ++++              |
| Mouse          | IgG1           | +                 | ++++              |
|                | IgG2a          | ++++              | ++++              |
|                | IgG2b          | +++               | +++               |
|                | IgG3           | ++                | +++               |
|                | IgM            | variable          | —                 |
| Pig            |                | +++               | +++               |
| Rabbit         | no distinction | ++++              | +++               |





|       |       |     |      |
|-------|-------|-----|------|
| Rat   | IgG1  | —   | +    |
|       | IgG2a | —   | ++++ |
|       | IgG2b | —   | ++   |
|       | IgG3  | +   | ++   |
| Sheep |       | +/- | ++   |

## 2. Product application

- 1) As a ligand coupling to prepare antibody affinity medium, for antibody purification or immunoprecipitation and immunocoprecipitation, and also for chromatin immunocoprecipitation.
- 2) After labeled with fluorescein such as HRP, Biotin or FITC, or directly used for ELISA and WesternBlot detection. Should only be used with single antibody detection systems, otherwise false positives may be produced.
- 3) As an antigen, immunize animals.

## 3. Related Products

| Product               | Cat. No. | Size  |
|-----------------------|----------|-------|
| Recombinant Protein A | SLP00301 | 5 mg  |
|                       | SLP00302 | 50 mg |
|                       | SLP00303 | 1 g   |
| Recombinant Protein G | SLP00201 | 5 mg  |
|                       | SLP00202 | 50 mg |
|                       | SLP00203 | 1 g   |
| Recombinant Protein L | SLP01301 | 5 mg  |
|                       | SLP01302 | 50 mg |
|                       | SLP01303 | 1 g   |

