

# Technical Data Sheet

## GENERAL INFORMATION

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRODUCT     | Recombinant Bovine Albumin, expressed in yeast. Glycerol-free.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Cat. No.    | MT01G-G1RBSAHB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| QUANTITY    | 1 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| DESCRIPTION | <p>Recombinant Bovine Serum Albumin (rBSA) is a non-animal albumin, equivalent to the common Bovine Serum Albumin (BSA), although heterologously expressed in yeast cells. rBSA is not only animal-free, but also free from <i>Escherichia coli</i> DNA contaminants. Due to its higher consistency and homogeneity than its bovine homologous, its superior performance effectively blocks non-specific binding, ensuring precise and reliable results in assays.</p> <p>This product is supplied in a glycerol-free buffer solution.</p> |

## PRODUCTS PROVIDED

| Component    | Amount                                                       |
|--------------|--------------------------------------------------------------|
| 01G-G1RBSAHB | Recombinant Bovine Albumin. Glycerol-free.<br>1 vial x 10 mL |

## DELIVERY CONDITIONS

|              |                                                                         |
|--------------|-------------------------------------------------------------------------|
| 01G-G1RBSAHB | 1 g of rBSA at 100 mg/mL in 20 mM Tris pH 7.5, 100 mM KCl, 0.1 mM EDTA. |
|--------------|-------------------------------------------------------------------------|

|                     |                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------|
| SHIPPING CONDITIONS | This product requires cold shipment conditions. Store the protein from -20 °C to -80 °C upon arrival. |
|---------------------|-------------------------------------------------------------------------------------------------------|

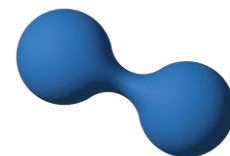
|                    |                                                                                                                                                                                          |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STORAGE CONDITIONS | Store at a temperature range from -20 °C to -80 °C for medium and long term. Storage at 4 °C is possible for short term. Avoid multiple freeze/thaw cycles by storing multiple aliquots. |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## ADDITIONAL INFORMATION

### rBSA USAGE IN IMMUNOASSAYS

Levprot's rBSA can replace animal-origin BSA in immunoassays, considering that rBSA performs between 20 and 100 times more efficiently than animal-origin BSA. For this reason, it is recommended to dilute rBSA 1:20-1:100 to obtain similar results compared with animal-origin BSA. Please, check the section below for more information.

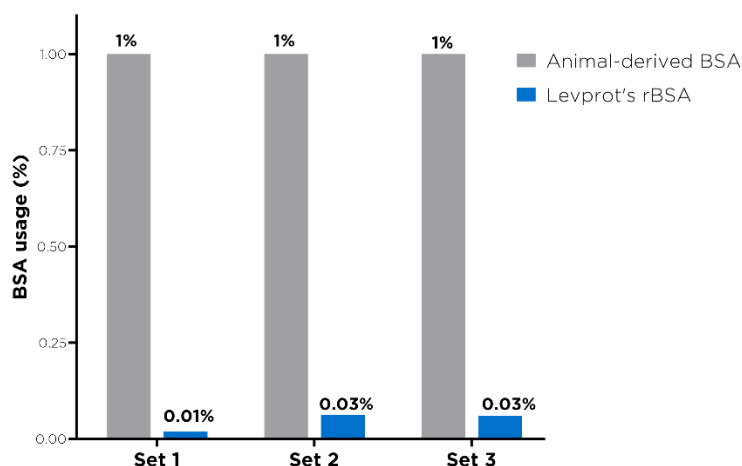




## PERFORMANCE OF rBSA AS BLOCKING AGENT

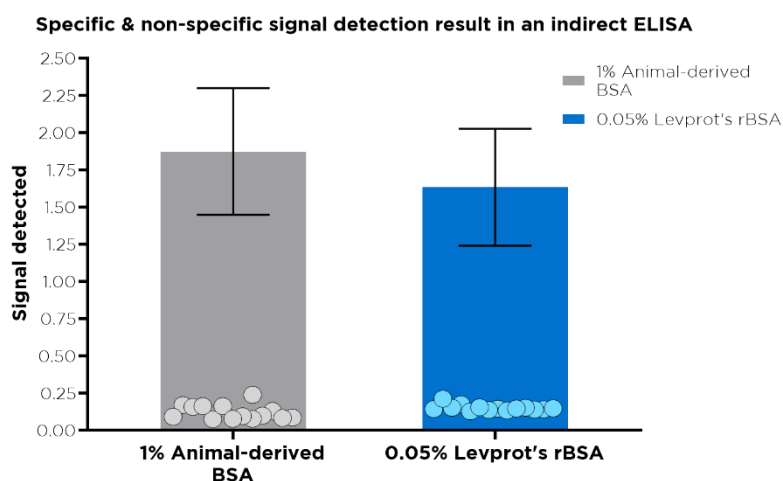
BSA is a common protein used in immunoassays as a blocking agent. Since Levprot's rBSA is produced in yeast, performance of rBSA has been tested compared in several ELISAs with other animal-origin BSAs. As shown in the figure, to obtain a similar result between non-animal-derived rBSA and animal-origin BSAs, rBSA should be diluted between 20 and 100 times, to have a final concentration between 0.05 and 0.01%.

### Blocking agent concentration needed to obtain similar signal



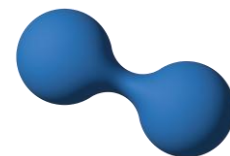
**Figure.** Illustration of percentage of animal-derived BSA and Levprot's rBSA necessary to obtain a similar signal in 3 different ELISAs. Ser 1 corresponds to a sandwich ELISA, set 2 and 3 correspond to indirect ELISAs.

Since Levprot's rBSA performs higher than animal-derived BSA, non-specific signal is also evaluated at a recommended dilution. As shown in the figure below, when Levprot's rBSA is used at lower concentrations, the non-specific signal remains stable. Therefore, lower rBSA concentrations can be used while maintaining comparable levels of specific and non-specific signals in immunoassays such as ELISA.



**Image.** Specific signal at a fixed concentration of antigen (bars) and non-specific signal detection without any antigen presence (dots). Grey bars and dots represent the values obtained with 1% of animal-derived BSA; while blue bars and dots represent the signal obtained with 0.05% of Levprot's rBSA.





## QUALITY CONTROL

### PROTEIN CONCENTRATION

Concentration of rBSA is determined by UV absorption at 280 nm using the extinction coefficient of 42925 and the molecular weight of 67205 daltons.

### PROTEIN PURITY

Purity is determined by the ratio of absorbance at 260 and 280 nm and by SDS-PAGE. A 260/280 ratio below 1.7 is accepted and indicates low DNA contamination compared to the protein concentration. SDS-PAGE allows verification of protein band purity, with a purity level of >90% being acceptable.

### *E. coli* DNA CONTAMINATION

20 µg of rBSA is screened for the presence of the specific gene *ybbW* from *Escherichia coli*. A  $C_q$  value higher than 35 is accepted.

<sup>1</sup>Walker, David L., *et al.* "A highly specific *Escherichia coli* qPCR and its comparison with existing methods for environmental waters." *Water research* 126 (2017): 101-110.

## TECHNICAL SUPPORT

If you have any questions, feel free to contact us at  
[support@levprot.com](mailto:support@levprot.com)

Consult the Safety Data Sheet for information regarding hazards and safe handling practises.

**THIS PRODUCT IS INTENDED FOR RESEARCH USE ONLY.**

DATE 06/05/2025

REV. TDS\_MT01G-G1RBSAHB rev.04

