ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

Bovine serum albumin (BSA) protein (>99%, Protease & IgG-free; Low endotoxin; Diagnostic grade)

□ Cat. # BSA17-N-100	**SIZE**: 100 mg
□ Cat. # BSA17-N-100G	**SIZE**: 100 g
□ Cat. # BSA17-N-10G	**SIZE**: 10 g
□ Cat. # BSA17-N-1G	**SIZE**: 1 g

Albumin (Latin: albus, white) refers generally to any protein with water solubility and heat sensitive or heat coagulation (protein denaturation). Substances containing albumin, such as egg white, are called albuminoids. The most well-known type of albumin is the serum albumin in the blood. Serum albumin is the most abundant blood plasma protein and is produced in the liver and forms a large proportion of all plasma protein. In human, albumin may represent up to 50-60% plasma proteins. All other proteins present in blood plasma are referred to collectively as globulins. Low albumin (hypoalbuminaemia) may be caused by liver disease, nephrotic syndrome, burns, protein-losing enteropathy, malabsorption, malnutrition, late pregnancy, artefact, posture, genetic variations and malignancy. High albumin may be either caused by dehydration or other factors.

Albumin is synthesized in the liver as preproalbumin, which has an N-terminal peptide that is removed before the nascent protein is released from the rough endoplasmic reticulum. The product, proalbumin, is in turn cleaved in the Golgi vesicles to give the secreted protein. Albumin is a globular, non-glycosylated, soluble, monomeric protein (65 kda) which comprises about one-half of the blood serum protein. Albumin functions primarily as a carrier protein for steroids, fatty acids, and thyroid hormones and plays a role in stabilizing extracellular fluid volume. Mutations in the ALB gene on chromosome 4 result in various anomalous proteins.

Albumin is negatively charged. The glomerular basement membrane is also negatively charged; this prevents the filtration of albumin in the urine. In nephrotic syndrome, this property is lost, and there is more albumin loss in the urine. Nephrotic syndrome patients are given albumin to replace the lost albumin. Human serum albumin (HSA) is widely used to stabilize blood volume. HAS is typically obtained from donors. However, there is concern about the transmission of many diseases such as HIV & Hepatitis. The use of recombinant HAS (rHSA) can be produced in vitro (E. coli or mammalian cells) and therefore has no diseases concerns. rHSA is identical to the natural blood. Recombinant Human HSA produced in mammalians is a single, glycosylated, polypeptide chain containing 585 amino acids and having a molecular mass of 66441 Dalton.

Albumin performs many functions including maintaining the "osmotic pressure" that causes fluid to remain within the blood stream instead of leaking out into the tissues. Liver disease, kidney disease, and malnutrition are the major causes of low albumin. A diseased liver produces insufficient albumin. Diseased kidneys sometimes lose large amounts of albumin into the urine faster than the liver can produce it (this is termed nephrotic syndrome). Plasma albumin concentration is an important indicator of nutritional status, and low concentrations pre-surgery increase the risk of post-operative wound dehiscence, seroma formation and infection. Albumin levels are also dependant on the state of hydration of the body. A person that is dehydrated will have an artificially low albumin level. This returns to normal when the dehydration is corrected. Albumin fluctuates so widely because it is very sensitive to changes in hydration of the body.

Albumin is also used as carrier protein for conjugating haptens (peptides, drugs, hormones, proteins etc) to make antibodies. It is also used as a model antigen along with ovalbumin, DNP, KLH etc. Albumin is commonly used as a carrier protein additives, buffer additives, or a general purpose blocking agent in ELISA, Western, and IHC applications.

Source of Antigen

BSA is purified from bovine serum using proprietary methods using USFDA certified animal facilities. ADI's BSA is IgG free and has been treated and purified to remove any proteases that may cleave some protease sensitive proteins during ELISA or Western.

Endotoxin : <2 EU/ mg of protein

Form

BSA (protease-free Biochemical analyses)

Protein	100%
Moisture	1.9%
Ash	0.40%
pH	7.1
Bovine IgG	not detected
Protease	**not detected**
heavy metals	<0.025 ppm

Purified protein is supplied as lyophilized powder. It can be dissolved on appropriate buffers (PBS, TBS, at 1-10% w/v). Sodium azide or merthiolate can be added if desired to prevent bacterial growth in BSA-Stock solutions. Store solutions at 4oC for short term and -20oC in suitable size aliquots.

Recommended Usage

Some of the common application for BSA include:

Peptide or Drug conjugate or carrier protein; Protein or Vaccine formulation, Protein Therapeutics, Cell Storage or Cryopreservation, cell cultures, Infertility treatments, coating for medical drugs or devices, Drug delivery and ELISA, Western or standards.

*This product is for In vitro research use only.

Related material available from ADI

ALB11-A	Anti-Mouse albumin IgG aff pure
ALB11-BTN	Anti-Mouse albumin IgG-FITC Conjugate
ALB11-FITC	Anti-Mouse albumin IgG-FITC Conjugate
ALB12-N-1	Purified Mouse serum albumin protein (>96% pure)
ALBC15-N-1	Chicken Serum Albumin protein purified
ALBC15-S	Anti-Chicken Serum Albumin protein antiserum
ALBH13-A	Anti-Human albumin IgG aff pure
ALBH13-FITC	Anti-Human albumin IgG-FITC Conjugate
ALBH16-R-10	Anti-Human albumin IgG aff pure
ALBR12-A	Anti-rat albumin IgG aff pure
ALBR12-BTN	Anti-rat albumin IgG, biotinylated
ALBR12-N-1	Purified rat albumin protein (>98% pure)
1190	**Human Serum Albumin ELISA Kit, 96 tests,**
1200	**Human Albumin ELISA Kit, 96 tests, Quantitative**

BSA17-N-1 150309P

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