Technical Info

Well advised with Roth.

TSE-/BSE-free

Bovine Serum Albumins (BSA)

Bovine Serum Albumins (BSA) are proteins yielded from blood, which function as binding and transport proteins in blood circulation. Depending on the preparation process, the albumins contain different quality and quantities of metabolic products, enzymes, peptides, fatty acids, vitamins, etc. and are suitable for different applications.

Cohn Method of Fractionation (a.k.a. *Cohn Method of Plasma Fractionation*) describes a process designated according to the American chemist Erwin J. Cohn (1892–1953), who invented a method for gentle fractionation of plasma proteins using ethanol and low temperatures (0-10 °C). Based on diverse ethanol concentrations in combination with purposeful choice of pH values, ion strength, and temperature, plasma proteins are partitioned into several fractions, each useful for particular diagnostic and therapeutic uses. ‚Cohn fraction I', for instance, is essentially composed of fibrinogen and factor VIII, which makes this fraction most useful for therapeutic stanching of blood. ‚Cohn fraction II' primarily consists of γ-globulins and is mostly used for diagnostic purposes like detection of the rheumatoid factor.

Serum albumin is found in ‚Cohn fraction V', leading to the fact that nowadays the term ‚fraction V' is frequently – and imprecisely – used for isolated serum albumin in general, independently of the preparation method used in fact. Since Cohn, the methods used for the recovery of serum albumins have been altered and refined. In fact, a lot of albumins used now in biochemistry are retrieved by modified ethanol fractionation, heat shock methods, or preparative chromatography. Further purification of the albumin solutions is performed by crystallisation or charcoal filtration, followed by lyophilisation in order to gain a stable, storable version.

Molar extinction coefficient: 44.020 · M^{-1} · cm^{-1} (acc. to 0.667 x cm^{-1} for a 0.1 % solution).

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Our Albumins

Albumin Fraction V (Ord. No. 8076)

BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.

Albumin Fraction V, US-Origin (Ord. No. 3854)

Highly pure albumin of Cohn's Fraction, prepared from blood of cattle certified for US-origin. Albumin Fraction V, US-Origin may well be used for all standard assays where blocking with BSA is necessary, as well as for stabilisation of antibodies or enzymes. Many lots show exceedingly low content of protease and IgGs.

BSA, US-Origin is particularly recommended if the use of albumin with certified US-Origin is dictated by process regulations. Available in large bulk format on request.

BSA made of fresh bovine plasma by fractionation (Cohn method) and subsequent crystallisation from alcohol solution at a low temperature.

Albumin, nuclease-free (Ord. No. 8895)

Manufactured from heat-treated, unfractionised Albumin. Product has been acetylated to inactivate nucleases and proteases. In molecular biology, bovine serum albumin (BSA) is one of the most frequently used stabilisers in incubation and storage buffers.

Albumin, nuclease-free, has been acetylated and may thus hinder polymerases used in PCR.

Albumin Fraction V, pH 5.2 (Ord. No. 2834)

Albumin Fraction V, pH 5.2 is basically suitable for all applications using albumin of Cohn-fraction V, e.g. for stabilisation of enzymes and antibodies, or as hapten carrier in immunoassays. The pH value of albumin pH 5.2 is close to its pI and the protein is only weakly charged. It is, therefore, particularly recommended for use in ELISA and Western blotting, since it may help in further reducing background signals.

Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

Albumin Fraction V, biotin-free (Ord. No. 0163)

Tried and tested albumin preparation, suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent in hybridisation. Tested for its absence of biotin.

Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Albumin, IgG-free (Ord. No. 3737)

Albumin, highly purified and tested for presence of immunoglobulins (IgGs), proteases, RNAse, and DNAse. Albumin, IgG-free is particularly recommended for use as stabilising reagent in antibody solutions, and as blocking reagent in all assays using detection systems via antibodies. Also very well suited for stabilising of hot-start-PCRs mediated by antibodies, or as blocking reagent in antibody detected hybridisations.

For purification of Albumin, IgG-free, an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

Albumin Fraction V, protease-free (Ord. No. T844)

Excellent in sensitive immunoassays, as a stabilising reagent for proteins, enzymes and antibodies and also suitable as a blocking reagent in hybridisation techniques. BSA produced from fresh beef plasma by fractionating in acc. with Cohn and subsequent crystallisation at low temperatures from the alcoholic solution.

Albumin Fraction V, fatty-acid-free (Ord. No. 0052)

Suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent during hybridisation. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Albumin, fatty-acid-free, US-Origin (Ord. No. 9638)

Highly pure albumin, prepared from blood of cattle certified for US-origin. Particularly recommended if the use of albumin with certified US-Origin is dictated by process regulations. May well be used for blocking of all assays regarding membrane proteins, or other approaches aiming for fatty acid-associated proteins. It is also well suited for stabilisation of antibodies, enzymes or fatty acids. Exceedingly low content of endotoxins and IgGs, making it a useful reagent for cell biology also.

Manufactured via an extensive heat-shock/diafiltration method is used, which has been shown to bring more highly purified products than the standard process acc. to Cohn. The process is taking place in a closed system.

Albumin Fraction V, endotoxin tested (Ord. No. CP84)

Albumin Fraction V, low endotoxin is recommended for use during culturing of eukaryotic cells.

Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Albumin Fraction V, very low endotoxin (Ord. No. CP77)

Albumin Fraction V, very low endotoxin is particularly recommended for use during culturing of eukaryotic cells and in cell culture assays. This albumin of superior quality is thoroughly tested for its very low endotoxin content, therefore providing trouble-free cell culture assays and reliable results even when handling primary cells or stem cells.

Bovine serum albumin is basically suitable for stabilisation of all enzymes and antibodies, as well as for blocking of hybridisations and immunoassays. Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution.

Recommendations for use

Albumin	Art. No.	Recommended Application
Fraction V	8076	Stabilisation of proteins and blocking reagent in protein biochemical detection systems. Basically suitable for all assays unless specific requirements apply (see below-listed albumins).
Fraction V, US-Origin	3854	Stabilisation of proteins and blocking reagent in all standard biochemical detection systems. Recommended if albumin with certified origin USA has to be used.
Fraction V, pH 5.2	2834	Stabilisation of proteins and blocking reagent. Particularly recommended for Western-Blotting and ELISAs
Fraction V, protease-free	T844	Stabilisation of proteins and blocking reagent in sensitive enzymatic detection systems, activity tests or protein/protein-interaction assays. Also recommended for stabilisation of antibodies.
Fraction V, biotin-free	0163	Stabilisation of proteins and blocking reagent in all biotin / streptavidin-mediated detection systems (membrane-bound- or coating-plate-assays, as well as soluble assays).
Fraction V, fatty acid-free	0052	Stabilisation of proteins and blocking reagent in detection systems. Particularly recommended for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins.
Albumin, fatty acid-free, US-Origin	9638	Particularly for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins. Also well suited for cell biology and all antibody-mediated detection systems. Recommended if albumin with certified origin USA has to be used.
Albumin, nuclease-free	8895	Stabilisation of nucleic acids and proteins for nucleic acid modification or nucleic acid/protein-interaction, e.g. endonucleases, RNPs, transcription factors and so on. Also recommended as blocking reagent in nucleic acid/protein-interaction assays.
Albumin, IgG-free	3737	Stabilisation of antibodies. Blocking reagent in all antibody-mediated detection systems and Radio-Immuno Assays (RIAs). Reduces false-positive signals.
Fraction V, endotoxin-tested	CP84	Cell culture, standard cell lineages, cell sorting, short-term assays.
Fraction V, very low endotoxin	CP77	Cell culture. Superior quality and purity, suitable for sensitive cells like primary cells, stem cells, cloning and 3D-cultures. Also recommended for cell stressing assays like transfections, *in vitro* infections, or cell fusion.
Lactalbumin	7597	Cell culture, fermentation procedures, tissue culture.

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