



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**‘. Further purification of the albumin solutions is performed by crystallisation or charcoal filtration, followed by lyophilisation in order to gain a stable, storable version.

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.

In the case of **Heatshock** Albumins the purification of BSA is realized using an extensive heat shock/diafiltration method, 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.

Molar extinction coefficient: $44.020 \cdot \text{M}^{-1} \cdot \text{cm}^{-1}$
(acc. to $0.667 \times \text{cm}^{-1}$ for a 0.1 % solution).



Well advised with Roth.

Technical Info

Albumins of EUROPEAN Origin

ALBUMIN FRAKTION V, EUROPE (ORD. NO. 1ETA)

Very suitable for all standard applications where a high quality albumin is to be used that does not meet any special requirements. Suitable for immunoassays, as blocking reagent, for stabilising enzymes and antibodies, for industrial applications on a large scale and much more.

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

ALBUMIN FRACTION V, pH 5.2, EUROPE (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, PROTEASE-FREE, EUROPE (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. Tested for the absence of detectable protease activity.

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, EUROPE (ORD. NO. 0052)

Suitable for all immunoassays, for stabilising proteins, enzymes and antibodies and as a blocking-reagent during hybridisation. Tested for very low fatty acid concentration.

Manufactured from fresh beef plasma by fractionating in accordance with Cohn and subsequent crystallisation at low temperatures from the alcohol solution. Available in large bulk format on request.

Albumins of USA origin

Albumins of 'US-origin' are particularly recommended if the use of albumin with certified US-origin is dictated by process regulations.

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.

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.





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Technical Info

ALBUMIN, pH 5.2, US-ORIGIN (ORD. NO. 1ET8)

The Albumin, pH 5.2, US-Origin is very well suited for all applications where Albumin is used as a stabilising reagent, for blocking or as a carrier, e.g. for stabilisation of enzymes and antibodies, or as hapten carrier in immunoassays. The pH value of albumin pH 5.2 US-Origin 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.

Available in large bulk format on request. For purification of this Albumin 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 takes place in a closed system.

ALBUMIN, PROTEASE-FREE, US-ORIGIN (ORD. NO. 1ET5)

High purity albumin with origin from the USA with very low protease content. Excellent in sensitive immunoassays, as a stabilising reagent for proteins, enzymes and antibodies and also suitable as a blocking reagent in hybridisation techniques. Tested for the absence of detectable protease activity.

For purification of this albumin 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 takes place in a closed system.

ALBUMIN, IgG-FREE, US-ORIGIN (ORD. NO. 1ET9)

Albumin, highly purified and tested for the presence of immunoglobulins (IgGs). The Albumin, IgG-free, US-Origin is especially recommended to stabilise antibody solutions and as blocking reagent in all assays working with antibodies. Due to its particularly low protease content, it is also well suited for use in all other protein assays that could be interfered with by protease presence. Tested for the absence of detectable IgG.

For purification of this Albumin 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 takes place in a closed system.

ALBUMIN, FATTY-ACID-FREE, US-ORIGIN (ORD. NO. 9638)

Highly pure albumin, prepared from blood of cattle certified for US origin. Albumin, fatty acid-free, US-Origin, 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. Albumin, fatty acid-free, US-Origin, shows exceedingly low content of endotoxins and IgGs, making it a useful reagent for cell biology also. Tested for very low fatty acid concentration.

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 takes place in a closed system. Available in large bulk format on request.

ALBUMIN, VERY LOW ENDOTOXIN, US-ORIGIN (ORD. NO. 1ET6)

Albumin, very low endotoxin, US-Origin 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. Tested for very low endotoxin content.

For purification of this Albumin 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 takes place in a closed system.





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Technical Info

Albumins of New Zealand/Australian Origin

Albumins of 'NZ-origin' are particularly recommended if the use of albumin with certified New Zealand or Australian origin is dictated by process regulations.

ALBUMIN FRACTION V, NZ-ORIGIN (ORD. NO. 8076)

Very suitable for all standard applications where a high quality albumin is to be used that does not meet any special requirements. Suitable for immunoassays, as blocking reagent, for stabilising enzymes and antibodies, for industrial applications on a large scale and much more. 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, SULFHYDRYL BLOCKED, NZ-ORIGIN (ORD. NO. 1ET3)

High quality albumin originating from Australia or New Zealand. By blocking the thiol groups, the polymerisation of the albumin molecules is very efficiently prevented, which can occur during the storage of powder and solution and change the properties of the albumin. The albumin remains stable over time as a monomer and can, therefore, be used very well for reproducible laboratory assays. Due to its low IgG and protease content, the albumin is excellent for all immunoassays such as WESTERN or ELISA and as a stabilising reagent for proteins, antibodies etc. Furthermore, the Albumin, sulfhydryl-blocked, NZ-origin is recommended for all thiol or sulfur sensitive assays. Tested for the absence of detectable free sulfhydryl groups.

For purification of this Albumin 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 takes place in a closed system.

ALBUMIN FRACTION V, BIOTIN-FREE, NZ-ORIGIN (ORD. NO. 0163)

Tried and tested albumin preparation with origin from Australia or New Zealand, 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, PROTEASE-FREE, NZ-ORIGIN (ORD. NO. 1ET7)

High purity albumin with origin from Australia or New Zealand with very low protease content. Excellent in sensitive immunoassays, as a stabilising reagent for proteins, enzymes and antibodies and also suitable as a blocking reagent in hybridisation techniques. Tested for the absence of detectable protease activity.

For purification of this Albumin 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 takes place in a closed system.

ALBUMIN, IgG-FREE, NZ-ORIGIN (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. Tested for the absence of detectable IgG.

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 takes place in a closed system.





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Technical Info

ALBUMIN, FATTY ACID-FREE, NZ-ORIGIN (ORD. NO. 1ETC)

Highly pure albumin, prepared from blood of cattle certified for origin from Australia or New Zealand. Albumin, fatty acid-free, NZ-Origin, 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. Albumin, fatty acid-free, NZ-Origin, shows exceedingly low content of endotoxins and IgGs, making it a useful reagent for cell biology also. Tested for very low fatty acid concentration.

For purification of this Albumin 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. Available in large bulk format on request.

ALBUMIN, VERY LOW ENDOTOXIN, NZ-ORIGIN (ORD. NO. 1ET4)

Albumin, very low endotoxin, NZ-Origin 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. Tested for very low endotoxin content.

For purification of this Albumin 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 takes place in a closed system.



Technical Info

Recommendations for use

Albumin	Art. No.	Recommended Application
Fraction V, Europe	1ETA	Stabilisation of proteins and blocking reagent in protein biochemical detection systems. Basically suitable for all assays unless specific requirements apply.
Fraction V, US-Origin	3854	Stabilisation of proteins and blocking reagent in all standard biochemical detection systems. Basically suitable for all assays unless specific requirements apply. Recommended if albumin with certified origin USA has to be used.
Fraction V, NZ-Origin	8076	Stabilisation of proteins and blocking reagent in protein biochemical detection systems. Basically suitable for all assays unless specific requirements apply. Recommended if albumin with certified origin New Zealand or Australia has to be used.
Fraction V, pH 5.2, Europe	2834	Stabilisation of proteins and blocking reagent. Particularly recommended for Western-Blotting and ELISAs.
pH 5.2, US-Origin (heat shock)	1ET8	Stabilisation of proteins and blocking reagent. Particularly recommended for Western-Blotting and ELISAs. Recommended if albumin with certified origin USA has to be used.
sulfhydryl-blocked, NZ-Origin (heat shock)	1ET3	Particularly sensitive assays where monomeric albumin is guaranteed to be used or where reproducibility is particularly important. Can be stored as monomers over a longer period of time. Recommended if albumin with certified origin New Zealand or Australia has to be used.
Fraction V, biotin-free, NZ-Origin	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). Recommended if albumin with certified origin New Zealand or Australia has to be used.
Fraction V, protease-free, Europe	T844	Stabilisation of proteins in general, antibodies in particular, and blocking reagent in sensitive enzymatic detection systems, activity tests or protein/protein-interaction assays.
protease-free, US-Origin (heat shock)	1ET5	Stabilisation of proteins in general, antibodies in particular, and blocking reagent in sensitive enzymatic detection systems, activity tests or protein/protein-interaction assays. Recommended if albumin with certified origin USA has to be used.
protease-free, NZ-Origin (heat shock)	1ET7	Stabilisation of proteins in general, antibodies in particular, and blocking reagent in sensitive enzymatic detection systems, activity tests or protein/protein-interaction assays. Recommended if albumin with certified origin New Zealand or Australia has to be used.
IgG-free, US-Origin (heat shock)	1ET9	Stabilisation of antibodies. Blocking reagent in all antibody-mediated detection systems and Radio-Immuno Assays (RIAs). Reduces false-positive signals. Recommended if albumin with certified origin USA has to be used.
IgG-free, NZ-Origin (heat shock)	3737	Stabilisation of antibodies. Blocking reagent in all antibody-mediated detection systems and Radio-Immuno Assays (RIAs). Reduces false-positive signals. Recommended if albumin with certified origin New Zealand or Australia has to be used.
Fraction V, fatty acid-free, Europe	0052	Stabilisation of proteins and blocking reagent in detection systems. Particularly recommended for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins.
fatty acid-free, US-Origin, (heat shock)	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.
fatty acid-free, NZ-Origin (heat shock)	1ETC	Stabilisation of proteins and blocking reagent in detection systems. Particularly for experiments on metabolism proteins, membrane-associated proteins and cell surface proteins. Recommended if albumin with certified origin New Zealand or Australia has to be used.
very low endotoxin, US-Origin (heat shock)	1ET6	Cell culture of all cell lines, primary cells, stem cells. Cloning and 3D-cultures or cell-stressing assays like transfections, <i>in vitro</i> infections, cell fusion. Recommended if albumin with certified origin USA has to be used.
very low endotoxin, NZ-Origin (heat shock)	1ET4	Cell culture of all cell lines, primary cells, stem cells. Cloning and 3D-cultures or cell-stressing assays like transfections, <i>in vitro</i> infections, cell fusion. Recommended if albumin with certified origin New Zealand or Australia has to be used..

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