



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.

The first known fractionation method for obtaining BSA from blood was *Cohn fractionation*, named after the American chemist Erwin J. Cohn (1892-1953). It is a procedure for the gentle separation of plasma proteins by precipitation with ethanol at low temperatures (0-10 °C). The plasma proteins are separated by ethanol at different concentrations, as well as by the specific choice of pH, ionic strength and temperature into several fractions, each of which is suitable for certain diagnostic and therapeutic purposes.

In fact, however, recovery methods have been significantly optimized since Cohn, so that many serum albumins are now obtained by modified ethanol fractionation methods, heat shock, or preparative chromatography.

All Carl Roth bovine serum albumins are produced using an extensive **heat shock/diafiltration method**. The process is taking place in a closed system and has been shown to bring more highly purified products than the standard process acc. to Cohn.

'**Fraction V**' as a synonym for BSA:

Regardless of the recovery/fractionation method, serum albumin is found in fraction V. For this reason, the term 'Fraction V' has become established over the years, whereby this designation is nowadays a synonym for BSA and does not imply any specific purification method.

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

BSA FRACTION V, EUROPE (ORD. NO. 1ETA)

Suitable for all standard applications where a high quality albumin is to be used that does not meet specific requirements. Suitable for immunoassays, as a blocking reagent, for stabilization of enzymes and antibodies, for large scale industrial applications and much more.

BSA FRACTION V, pH 5.2, EUROPE (ORD. NO. 2834)

Suitable for all standard applications, e.g. for stabilization of enzymes and antibodies or also as hapten carrier in immuno applications. Albumin pH 5.2 is close to its isoelectric point and has a low charge. It is therefore particularly recommended for use in ELSAs and Western blotting, as it can facilitate particularly low-background assays.

BSA FRACTION V, PROTEASE-FREE, EUROPE (ORD. NO. T844)

Suitable in sensitive immunoassays, as a stabilizing reagent for proteins, enzymes and antibodies and as a blocking reagent in hybridization techniques. Tested for the absence of detectable protease activity.

BSA FRACTION V, FATTY-ACID-FREE, EUROPE (ORD. NO. 0052)

Suitable for all immunoassays, for stabilization of proteins, enzymes and antibodies and as a blocking reagent in hybridizations. Tested for very low fatty acid concentration.
Available in bulk 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.

BSA FRACTION V, US-ORIGIN (ORD. NO. 3854)

Suitable for all common assays in which blocking is performed using BSA and as a stabilizing reagent for antibodies or enzymes. Many batches are characterized by very low levels of protease and IgGs.
Available in bulk on request.

BSA FRACTION V, pH 5.2, US-ORIGIN (ORD. NO. 1ET8)

Suitable for all applications in which albumin is used as a stabilizing reagent, for blocking or as a carrier, e.g. for stabilizing enzymes and antibodies or as a hapten carrier in immunoapplications. Albumin pH 5.2, US-Origin is close to its isoelectric point in pH and has a low charge. It is therefore especially recommended for use in ELISAs and Western blotting, as it can facilitate particularly low background assays.
Available in bulk on request.

BSA FRACTION V, PROTEASE-FREE, US-ORIGIN (ORD. NO. 1ET5)

Suitable in sensitive immunoassays, as a stabilizing reagent for proteins, enzymes and antibodies and as a blocking reagent in hybridization techniques. Tested for the absence of detectable protease activity.

BSA FRACTION V, IgG-FREE, US-ORIGIN (ORD. NO. 1ET9)

Especially recommended to stabilize antibody solutions and as a blocking reagent in all assays that work with antibodies. Due to the particularly low protease content, it is also well suited for use in all other protein assays that may be interfered with by protease presence. Tested for the absence of detectable IgG.





Well advised with Roth.

Technical Info

BSA FRACTION V, FATTY-ACID-FREE, US-ORIGIN (ORD. NO. 9638)

Suitable for blocking all assays on membrane proteins or other approaches involving fatty acid-associated proteins. It can be used very well as a stabilizing reagent for antibodies, enzymes or fatty acids. Albumin, fatty acid free, US origin, is also characterized by a very low content of endotoxins and IgGs and can therefore also be used for cell biology. Tested for very low fatty acid concentration.

Available in bulk on request.

BSA FRACTION V, VERY LOW ENDOTOXIN, US-ORIGIN (ORD. NO. 1ET6)

Especially recommended for use in the cultivation of eukaryotic cells and in cell culture assays. The high-purity quality with restrictive testing for lowest endotoxin content guarantees trouble-free cell culture assays and best results, even with primary cells or stem cells. Bovine serum albumin is fundamentally suitable for stabilizing enzymes and antibodies and as a blocking reagent in hybridization and immunoassays. Tested for very low endotoxin content.

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.

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

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 a blocking reagent, for stabilization of enzymes and antibodies, for large scale industrial applications and much more.

Available in bulk upon request.

BSA FRACTION V, SULFHYDRYL BLOCKED, NZ-ORIGIN (ORD. NO. 1ET3)

By blocking the thiol groups, the polymerization of the albumin molecules is very efficiently prevented, which can occur during storage of powder and solution and can change the properties of the albumin. The albumin remains stable over time as a monomer and can thus be used very well for reproducible laboratory assays. Due to the low IgG and protease content, the albumin can be used excellently for all immunoassays such as WESTERN or ELISA and as a stabilization 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.

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

Suitable for all immunoassays, for stabilization of proteins, enzymes and antibodies and as Blocking reagent in hybridizations. Tested for the absence of biotin.

BSA FRACTION V, PROTEASE-FREE, NZ-ORIGIN (ORD. NO. 1ET7)

Suitable in sensitive immunoassays, as a stabilizing reagent for proteins, enzymes and antibodies, and as a blocking reagent in hybridization techniques. Tested for the absence of detectable protease activity.

BSA FRACTION V, IgG-FREE, NZ-ORIGIN (ORD. NO. 3737)

Tested for the presence of immunoglobulins (IgGs), proteases, RNase and DNase. The Albumin, IgG-free is particularly recommended to stabilize antibody solutions and as a blocking reagent in all assays that use antibodies. Also well suited as stabilization in antibody-mediated hot-start PCRs or as blocking in antibody-detected hybridizations. Tested for the absence of detectable IgG.





Well advised with Roth.

Technical Info

BSA FRACTION V, FATTY ACID-FREE, NZ-ORIGIN (ORD. NO. 1ETC)

Suitable for blocking all assays on membrane proteins or other approaches involving fatty acid-associated proteins. It can be used very well as a stabilizing reagent for antibodies, enzymes or fatty acids. Albumin, fatty acid free, NZ-Origin, is also characterized by a very low content of endotoxins and IgGs and can therefore also be used for cell biology. Tested for very low fatty acid concentration.

Available in bulk on request.

BSA FRACTION V, VERY LOW ENDOTOXIN, NZ-ORIGIN (ORD. NO. 1ET4)

Especially recommended for use in the cultivation of eukaryotic cells and in cell culture assays. The high-purity quality with restrictive testing for lowest endotoxin content guarantees trouble-free cell culture assays and best results, even with primary cells or stem cells. Bovine serum albumin is fundamentally suitable for stabilizing enzymes and antibodies and as a blocking reagent in hybridization and immunoassays. Tested for very low endotoxin content.



Technical Info

Recommendations for use

BSA	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.
Fraction V, pH 5.2, US-Origin	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.
Fraction V, 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.
Fraction V, protease-free, US-Origin	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.
Fraction V, protease-free, NZ-Origin	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.
Fraction V, IgG-free, US-Origin	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.
Fraction V, IgG-free, NZ-Origin	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.
Fraction V, 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.
Fraction V, fatty acid-free, NZ-Origin	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.
Fraction V, very low endotoxin, US-Origin	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.
Fraction V, very low endotoxin, NZ-Origin	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..

LH 04/2023

