



# PRODUCT CATALOG

BOVINE SERUM ALBUMIN  
ANIMAL EXTRACTS  
PURIFIED PROTEINS

# PROLIANT BIOLOGICALS

## ABOUT US

Proliant Biologicals, founded in 1981, is part of the Lauridsen group of companies, leading manufacturers of protein ingredients for the food, health, nutrition and biologicals industries.

With 7 operating companies and 60 manufacturing locations worldwide, the Lauridsen Group serves human, veterinary and industrial applications with high quality, natural source proteins. Proliant Biologicals manufactures and markets high purity plasma fractions and animal extracts for use in the diagnostic, veterinary, biopharmaceutical, nutraceutical and life science research industries.

## PROLIANT ACQUIRES BOVAL BIOSOLUTIONS

As of September 3rd 2019, Proliant acquired Boval BioSolutions. Boval possesses proprietary technologies that align well with Proliant's core strengths. This acquisition further strengthens Proliant's position as the industry leader in protein fractionation and albumin manufacturing. With nearly four decades of protein fractionation expertise and unmatched, state-of-the-art manufacturing facilities in two hemispheres, Proliant is in a unique position to supply Bovals' customers with high quality BSA.

## RESOURCES

### THE LAB

The Lauridsen Advancement Building (L.A.B) is a 21,000 square foot, multi-functional facility. The L.A.B. includes our cell culture lab, research and development laboratories, a fully equipped pilot plant and a research library, located at our Headquarters in Ankeny, Iowa.

Using the facility, scientists and application research experts are responsible for developing and providing innovative solutions for all sectors of pharmaceutical, biopharmaceutical, vaccine, IVD, and other specialty research markets.



# MANUFACTURING

## CLOSED LOOP

Proliant's "Closed Loop" manufacturing process means that from the time the raw material enters our tankers to the moment it is loaded into the dryers, it is never exposed to the external environment.

In addition, Proliant only collects plasma from exclusive abattoirs with our own USDA approved proprietary collection system.

The material undergoes ante- and post-mortem inspections to ensure it is the highest quality edible grade before it is loaded directly into Proliant-owned equipment.

Once the raw material reaches our cGMP plant, the material is manufactured through a series of closed tanks, lines, filters, and separation equipment. There are no exposed filter presses or open tanks, nor is any food grade or noxious solvent material introduced into the process.

QUALITY  
ASSURANCE  
BUILT IN



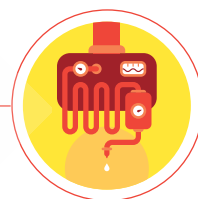
### COLLECTION

Manufacturing begins with the collection of "edible grade" raw material that is USDA/MPI certified by using Proliant's proprietary collection system



### TRANSPORT

Raw material is immediately transferred into Proliant-owned equipment and transported directly to the manufacturing facility



### MANUFACTURING

The raw material is transferred into the facility via direct lines, which ensure minimal environmental exposure

## ISIA CERTIFIED

Proliant has been awarded an International Serum Industry Association (ISIA) Traceability Certification. The certification is only given to companies and manufacturers who are able to follow an unbroken paper-chain through every stage of production of a product from its origin to the end user. This process is enshrined in law and GMP SOPs and is a core component of the ISIA ethos.



# MANUFACTURING LOCATIONS

Proliant is the world's largest collector and processor of bovine blood and its derivatives, with unparalleled access to documented sources. Our proprietary, Proliant-owned collection system and our modern, efficient manufacturing process ensures the highest level of control and availability.

## BOONE, IOWA

Proliant's state-of-the-art production facility is centrally located in the United States. The facility spans 50,000 square feet, including a 10,000 square foot lyophilization suite, which allows for extensive production capacity. To ensure there is no environmental exposure, the facility utilizes a closed membrane and centrifuge system. It is also computer-assisted process control with 100% stainless steel tanks, piping, and is fully Clean In Place (CIP).

With the system that is in place, Proliant Boone manufactures according to FDA cGMPs and is USDA/APHIS approved as a Technical Blood Facility according to EU Regulations (EC) 1069/2009 and 142/2011.



## FEILDING, NEW ZEALAND

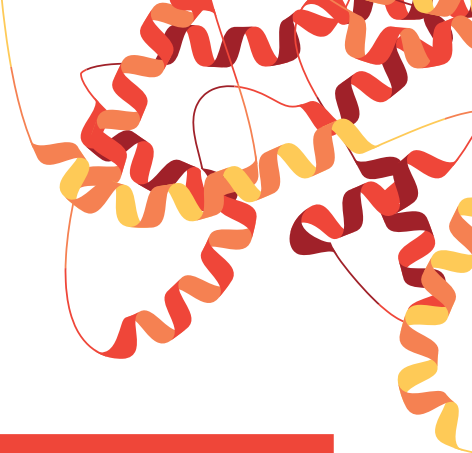
Identical to the facility in Boone in terms of manufacturing processes and capacity, Proliant opened its second manufacturing location in 2016.

The facility processes only New Zealand sourced material and enables Proliant to supply the world with New Zealand BSA.



# BSA APPLICATIONS

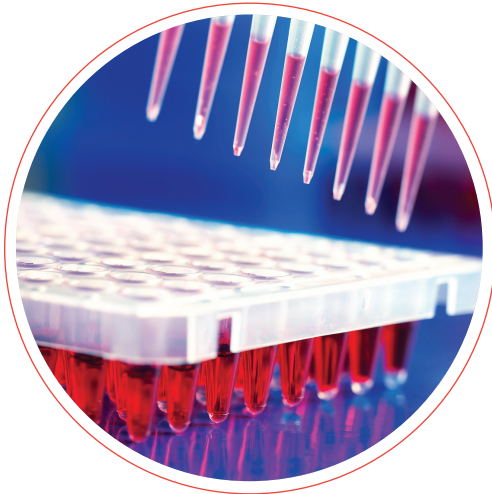
With over 15 years of experience and the highest quality facilities in the world, we are proud to offer BSA products that serve the microbiological, diagnostic, life science, biopharmaceutical, and veterinary vaccine industries around the world.



## Product Description & Production Code

	Standard Grade, pH 7.0	Standard Grade, pH 5.2	Reagent-Grade (Fatty-Acid Free)	Cohn Analog™ Grade	Precision Grade
Immunoassay Application	68100 (US) 69100 (NZ)	68500	68700 (US) 69700 (NZ)	68300	69750
ELISA & RIA (Blocks Non-Specific Binding)	●	●	●		●
Western Blot, IHC, IP	●	●	●		●
Protein, Enzyme & Conjugate Stabilizer	●		●		●
Chemiluminescent & Flow Cytometry			●		●
Carrier Protein for Conjugates			●		●
Immunoassay Application	68100 (US) 69100 (NZ)	68500	68700 (US) 69700 (NZ)	68300	69750
Primary & Stem Cell Culture			●	●	●
Vaccine Production	●		●	●	●

// Traceability and unparalleled attention to excellence in Good Manufacturing Practices ensures that our BSA products meet the exacting standards demanded by diagnostic, biopharmaceutical, and research customers worldwide.





# BSA PRODUCTS

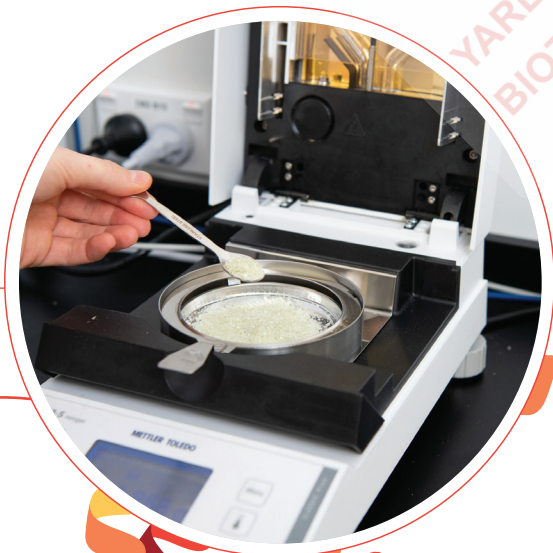
## BSA PRODUCTION

The serum is initially fractionated using a proprietary heat-shock method and is further isolated from other plasma proteins and lipids by extensive membrane dialysis and filtration. All lots have undetectable protease, IgG, and are virtually free of contaminating enzymes, salts, heavy metals, and low molecular-weight contaminants that can result in low background interference.

Typical Analysis

	Standard Grade, pH 7.0	Reagent-Grade (Fatty-Acid Free)	Cohn Analog	Standard Grade, pH 5.2	Precision Grade
Protein (Dry Basis)	≥ 98%	≥ 98%	≥ 96%	≥ 96%	≥ 96%
Purity (Albumin)	≥ 98%	≥ 98%	≥ 96%	≥ 96%	≥ 98%
Moisture	≤ 5.0%	≤ 5.0%	≤ 5.0%	≤ 5.0%	≤ 5%
pH (10% water)	6.5 - 7.5	6.5 - 7.5	6.5 - 7.5	5.0 - 5.6	6.5 - 7.5
Ash	< 2%	< 2%	< 3%	< 3%	< 2%
Protease	≤ 0.005 units/mg	≤ 0.005 units/mg	N/A	N/A	≤0.005 units/mg
NEFA	N/A	<0.01%	N/A	N/A	N/A
IgG	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Endotoxin	≤ 3 EU/mg	≤ 3 EU/mg	N/A	N/A	≤3 EU/mg

Mycoplasma and virus testing by USDA 9CFR 113.53(c) [113.46, 113.47] can be performed upon request.



YAREWELL  
BIOTECHNOLOGY

# BSA PRODUCTS

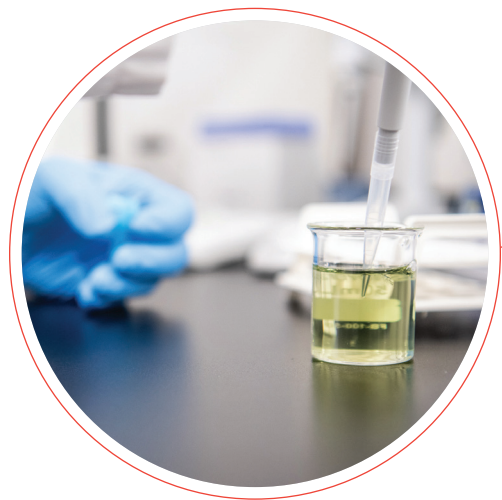
As a result of the manufacturing process, our BSA continues to meet and exceed the exacting standards demanded by diagnostic, biopharmaceutical, and research customers worldwide.

## FEATURES & BENEFITS

- High Purity, Low Interference
- Low Background
- Virtually No Detectable IgG, Endotoxin, Enzyme, or Protease Activity
- Closed Loop Manufacturing – Minimizes Contamination and Maximizes Reproducibility
- Manufactured from USDA/MPI-inspected Bovine Plasma
- Validated for Clearance of TSE agents

## PRECISION GRADE BSA

Proliant's Precision Grade BSA has been developed to provide the Diagnostic Industry the highest quality Bovine Serum Albumin. In response to the IVD Industry's need for lot-to-lot consistency, enhanced assay sensitivity and earlier analyte detection, Proliant has developed a manufacturing process that provides a necessary combination of high BSA monomer purity and ultra-low fatty acid content, all while maintaining our unmatched quality. As the newest addition to Proliant's IgG-free and protease-free BSA product offerings, Precision Grade BSA provides researchers and manufacturers with a cost-effective, high monomer BSA.



# BSA SOLUTIONS

## ULTRA-HIGH MONOMER BSA SOLUTIONS

Ultra-High Monomer BSA solutions are specifically designed to improve the performance of BSA in critical research and manufacturing reagents. Proliant's Ultra-High-Monomer Solutions reduce the presence of BSA oligomers that may interfere with antibody accessibility and lead to signal interference. These solutions lead to improved blocking uniformity, increased sensitivity and consistent assay performance.



### Scientific Analysis

Ultra High Monomer Reagent Grade 30% Solution, Salt Adjusted

Description	Source	Protein (g/dl)	pH	NaCl (g/dl)	IgG (g/dl)	Azide	Protease units/ml	Microbial Content (cfu/ml)
Azide	Liquid	28-31	6.8-7.3	0.6-0.7	ND*	<0.1	≤0.005	N/A
No Azide	Liquid	28-31	6.8-7.3	0.6-0.7	ND*	N/A	≤0.005	<1

Ultra High Monomer Standard Grade 30% Solution

Description	Source	Protein (g/dl)	pH	NaCl (g/dl)	IgG (g/dl)	Azide	Protease units/ml	Microbial Content (cfu/ml)
Azide	Liquid	28-31	6.8-7.3	0.0-0.5	ND*	<0.1	≤0.005	N/A
No Azide	Liquid	28-31	6.8-7.3	0.0-0.5	ND*	N/A	≤0.005	<1

Standard Grade 30% Solution

Description	Source	Protein (g/dl)	pH	NaCl (g/dl)	IgG (g/dl)	Azide	Protease units/ml	Microbial Content (cfu/ml)
Azide	Powder	28-31	6.8-7.3	0.0-0.5	ND*	<0.1	≤0.005	N/A
No Azide	Powder	28-31	6.8-7.3	0.0-0.5	ND*	N/A	≤0.005	<1

\*Not Detected



# BSA SOLUTIONS

AlbuRich BSA Solutions are designed for a wide variety of cell culture applications. These include defined media supplementation, FBS reduction strategies, vaccine & mammalian cell culture production.

Lipids are important metabolic substrates for energy production and are involved in cellular signaling processes. Synthesis of new lipid structures are preferentially synthesized from exogenous lipid sources. However, *in vitro* cell culture applications are challenged with delivering hydrophobic fatty acids in an aqueous environment. AlbuRich tackles fatty acid delivery and bioavailability challenges in bioprocessing media through specific fatty acid conjugation to BSA. The line of AlbuRich products are effective vehicles to deliver free-fatty acids (FFAs) at physiological concentrations and ratios necessitated by individual media formula.

Proliant's BSA contains the industry's lowest level of contaminants that can interfere with FFA binding and delivery for *in vitro* systems. Knowing the variety of proprietary media formulations in the cell culture market, the foundation of Proliant's AlbuRich product line is to offer a range of products that work with customers current media formulations. The AlbuRich product line offers a variety of options depending on fatty acid and cholesterol content required for various applications. By utilizing the AlbuRich sample pack, customers have the ability to focus on research and easily identify the optimal BSA for specific cell culture applications.

AlbuRich PG	AlbuRich RG	AlbuRich P140	AlbuRich R140	AlbuRich PRP	AlbuRich RRP
AlbuRich PG provides high monomer, ultra-low fatty acid BSA as an additive for the further enrichment of cell culture media.	AlbuRich RG provides fatty acid free BSA as an additive for the further enrichment of cell culture media.	AlbuRich P140 utilizes ultra-low fatty acid BSA with pre-analyzed polysorbates to bring specific fatty acids to consistent levels.	AlbuRich R140 utilizes fatty acid free BSA with pre-analyzed polysorbates to bring specific fatty acids to consistent levels.	AlbuRich PRP contains ultra-low fatty acid BSA, polysorbates, cholesterol and micronutrients, added at predetermined levels.	AlbuRich RRP contains fatty acid free BSA, polysorbates, cholesterol and micronutrients, added at predetermined levels.



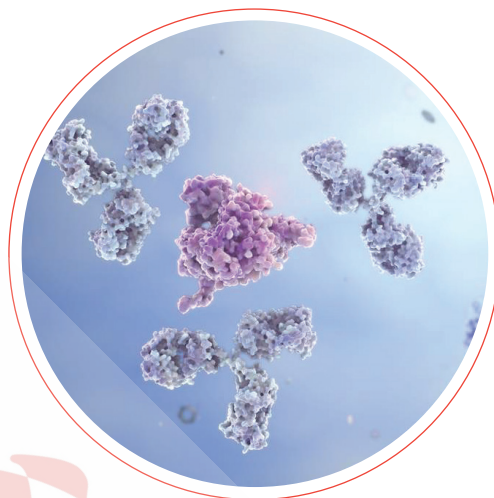
# PURIFIED PROTEINS

## NZ BOVINE IgG

A key step to assay optimization is preventing non-specific binding of antigens and antibodies to one another and the assay support structures, such as plastic reaction wells.

Proliant's Bovine Gamma Globulin aids in the prevention of non-specific binding. To achieve the best results, Bovine Gamma Globulin blocking conditions should be optimized for maximal signal-to-noise ratio and should be tested against appropriate controls.

Bovine Gamma Globulins may be used in many assay formats, either as the sole blocking agent or combined with other common blocking agents.



## FEATURES & BENEFITS

- High Purity
- Origin Traceability to Facilitate Regulatory Approval
- Closed Loop Manufacturing – Minimizes Contamination and Maximizes Reproducibility

## ADULT BOVINE SERUM

The same quality, safety and reliability you've come to expect from Proliant BSA is now available in Proliant's New Zealand origin Adult Bovine Serum (ABS-NZ). Collected and sterile filtered to minimize endotoxin levels, Proliant ABS-NZ is fully traceable and eligible for global export. Commonly used in vaccine production, as a cell culture media additive and/or diagnostic assay reagent.

Packaging	1 liter
Hemoglobin	< 50 mg/dl
Osmolality	240-320 mOsmol/kg
pH	6.5-9.0
APC	No growth
Endotoxin	≤ 10 EU/mg

# EXTRACTS

## PROLIANT EXTRACT POWDERS

Proliant extract powders are derived from the infusion of animal protein and serve as a strong source of nutrients for use in microbiological culture media. The extracts are a mixture of peptides, amino acids, organic acids, nucleotide fractions, minerals and vitamins. Proliant products are not exposed to protein hydrolysis, a damaging treatment, allowing our products to provide a number of the nutrients typically eliminated during peptone manufacture. Our products are relied upon for a number of applications.

## FEATURES & BENEFITS

- High Solubility
- Readily Available
- Consistent Protein Concentration
- High Stability
- Responsive Customer / Technical Services
- Bacterial & Viral Reduction
- Highly Cost Effective
- USDA Inspected

## EXTRACTS — PRODUCT LISTING

	Species	SKU	Packaging
B1302 Spray-Dried Powder	Bovine	51229	25 kg bags
B1304 Spray-Dried Beef Powder, Spinal Column Free	Bovine	12662	22.68 kg bags
P1302 Spray-Dried Pork Powder	Porcine	52562	22.68 kg bags
C1301 Spray-Dried Chicken Powder	Chicken	51215	22.68 kg bags





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