

## SERA

Although the precise role of serum in cell culture medium remains a mystery, it continues to be widely used. The quality of serum varies from animal to animal depending on the age, gender, nutritional state and overall health. Additionally, collection and processing methods influence the quality of serum. Because of these variables, paying careful attention to detail during the collection of sera is vital for creating a final product of superior performance. Likewise, extra care in the handling of the raw product to minimize cell lysis and other detrimental factors is essential. Cell lysis leads to exposing such intracellular contents as lysozyme and hemoglobin which can adversely affect the performance of FBS and other sera. By obtaining raw material from a USDA regulated facility located in the U.S.A., the health of the animal, hence, the quality of serum, is assured.

At ICN, every effort is extended to provide the highest quality serum available. All sera from ICN are processed in the U.S.A. (except where noted in the Certificate of Analysis). With some exceptions, sera are supplied to ICN's worldwide customer base from the U.S.A. A Certificate of Analysis is available upon request for each lot of serum produced. Please inquire with your local sales office or distributor for further details and for bulk quantity discounts.

## Specifications

**Source:** Sera are obtained from whole blood or plasma from donor sources or certified abattoirs.

**Collection Method:** Sera are harvested via cardiac puncture.

**Filtration:** All routinely produced sera, with the exception of Newborn Bovine Sera, are sterilized by filtration through a 0.1  $\mu\text{m}$  membrane filter. ICN CELLect™ Gold and Silver FBS are filtered through a combination of filters which include a 0.2  $\mu\text{m}$  pre-filter and a 0.1  $\mu\text{m}$  cartridge final filter.

**Sterility Testing:** Each lot of sera is tested using a large volume filtration test following USP guidelines. In addition, sera are directly inoculated in Blood Agar, which is then incubated at 37°C for 2 to 3 days. Plates are then analyzed for the presence or absence of microorganisms.

**Mycoplasma:** Samples of each lot are inoculated into Mycoplasma Test Broth (without serum) and incubated at 37°C. At day 7 and day 14, the broth is subcultured onto 3T6 cell monolayers and Mycoplasma Test Agar plates. The 3T6 cell cultures are incubated for 4-5 days at 37°C, then fixed, stained by the Hoechst fluorochrome technique, and examined. The Mycoplasma Test Agar plates are incubated anaerobically for 14 days at 37°C. Both positive and negative controls are included in the test.

**Virus Testing:** All fetal bovine sera, newborn bovine sera, and donor calf sera are routinely tested for the presence of Bovine Viral Diarrhea (BVD) and for viruses resulting in cytopathic and hemadsorbing effects such as Infectious Bovine Rhinotracheitis, Parainfluenza Type III, Bovine Respiratory Syncytial Virus and Reovirus Types I-IV. Human sera are unreactive when tested for Hepatitis B Surface Antigen (HBsAG), HIV and Hepatitis C Virus.

**Bacteriophage:** All fetal bovine sera, donor calf sera, and donor horse sera undergo testing for bacteriophage.

**Endotoxin:** Endotoxin levels are measured on all lots of fetal bovine sera by the Limulus Amoebocyte Lysate (LAL) Chromogenic Assay. Results are standardized against USP Reference Endotoxin Standard EC-5.

**Hemoglobin:** Hemoglobin content of ICN sera is measured by direct spectroscopy using the Fleming Technique.

**Total Protein:** Protein content is determined by the Biuret method. BSA (bovine serum albumin) is used as the standard.

**Physical Analysis:** The osmolality is measured by freezing point depression analysis. All finished lots of sera are pH tested.

**Immunological Analysis:** Specificity of constituent antibodies and total gamma globulin concentration are determined by radial immunodiffusion (RID) and gel electrophoresis.

**Growth Promotion Testing:** All sera are tested for their ability to support active proliferation of selected cell lines. The test involves the incorporation of the serum into a basal medium and comparison of its growth promoting properties with those of a control serum. The lines are carefully selected to represent a broad spectrum of cell types and are propagated through a minimum of 3 passages. Following each passage, the cells are examined microscopically for morphology, CPE and confluency. Harvest to plant ratios are determined. In addition, cloning (C.E.) values are calculated for all hybridoma lines used for cell growth testing of Fetal Bovine Sera.

**Heat Inactivation:** Heat inactivated sera undergo thorough heating in a 56°C water bath for 30 minutes.

**$\gamma$ -Irradiation:**  $\gamma$ -Irradiated sera undergo exposure to 2-3 mRads of radiation from a  $^{60}\text{Co}$  source.

## Treated Sera

All sera products are available as Heat-Inactivated,  $\gamma$ -Irradiated, or BPL treated upon request. There is an additional charge for this treatment. Please allow a minimum of three weeks for special processing. For any Heat-Inactivated treated sera other than CELLect™ Gold FBS, there is a 10 bottle minimum order requirement. Please contact ICN Customer or Technical Service for lot reservations, special processing orders, or for bulk quantity discounts.

# Animal Sera

## Lot Reservation Policy

ICN recognizes the importance of using the same lot of serum throughout a series of experiments. To reserve a specific quantity of a given lot, ICN requires the following:

1. The anticipated six month requirement.
2. The customer must test aliquots from a specified lot. At the time of shipment of these test aliquots, ICN will reserve sufficient material for the customer's requirements based on item 1 above.
3. If the lot has not been validated by the customer after four weeks, the stock reservation will be automatically canceled.
4. Once ICN receives the customer's validation, the reservation on the appropriate lot(s) will be confirmed. The six month reservation period will commence from the date of receipt of this decision.
5. Once ICN receive's validation, the customer must then provide in writing the commitment to purchase the specified lot and indicated quantity within six months. This can be done by submitting an approved Purchase Order or a prepayment by credit card or check. Invoices of shipments made against this reserve will reflect remaining balance of the reserved lot.
6. Shipments will be made at prices in effect at the time the sample aliquot was requested and validation was confirmed and effective for the entire reserved lot.
7. At the conclusion of the six month reservation period, any unshipped balance will automatically be shipped and invoiced to the customer unless ICN receives prior notification from the customer. Extensions may be subject to an additional storage and handling surcharge.

## Shipping and Storage

Serum products are routinely shipped with dry ice and stored at -20°C.

## Fetal Bovine Serum - CELLECT™ Gold FBS

*Sterile  
Mycoplasma and virus-free  
Lowest endotoxin - <1 ng/ml per LAL chromogenic assay  
Certified U.S. origin  
FDA qualified for IVD applications*

Product	Catalog No.	Quantity
FBS Gold	2916749	100 ml
	2916754	500 ml
FBS Gold (for European customers; may not be U.S. origin)	2910149	100 ml
	2910154	500 ml
FBS Gold, heat inactivated	2916849	100 ml
	2916854	500 ml
FBS Gold, γ-irradiated	2916949	100 ml
	2916954	500 ml

## Fetal Bovine Serum - CELLECT™ Silver FBS

*Sterile  
Mycoplasma and virus-free  
Endotoxin - slightly greater than 1 ng/ml  
Certified U.S. origin  
FDA qualified for IVD applications*

Product	Catalog No.	Quantity
FBS Silver	2916149	100 ml
	2916154	500 ml
FBS Silver, heat inactivated	2916249	100 ml
	2916254	500 ml
FBS Silver, γ-irradiated	2916449	100 ml
	2916454	500 ml

## Bovine Newborn Calf Serum (NCS)

*Sterile filtered  
Screened for endotoxin, mycoplasma and infectious agents (BVD)  
Processed from blood collected from newborn calves between 1-14 days of age  
Certified origin  
Intended for research and IVD applications*

Product	Catalog No.	Quantity
NCS	2912149	100 ml
	2912154	500 ml
NCS, heat inactivated	2912249	100 ml
	2912254	500 ml
NCS, γ-irradiated	2912449	100 ml
	2912454	500 ml

## Bovine Calf Serum (BCS)

*Sterile filtered  
Screened for endotoxin, mycoplasma and infectious agents (BVD)  
Processed from blood collected from calves up to 6 months of age  
Certified origin  
Intended for research and IVD applications*

Product	Catalog No.	Quantity
BCS	2913149	100 ml
	2913154	500 ml
BCS, heat inactivated	2913249	100 ml
	2913254	500 ml
BCS, γ-irradiated	2913449	100 ml
	2913454	500 ml

## Bovine Donor Calf Serum (dBCS)

*Sterile filtered  
Screened for endotoxin, mycoplasma and infectious agents (BVD)  
Processed from blood collected from calves up to 24 months of age  
Animals are maintained on a controlled diet and routinely bled  
Certified origin  
Intended for research and IVD applications*

Product	Catalog No.	Quantity
dBCS	2914149	100 ml
	2914154	500 ml
dBCS, heat inactivated	2914249	100 ml
	2914254	500 ml
dBCS, γ-irradiated	2914449	100 ml
	2914454	500 ml

## Iron-supplemented Bovine Calf Serum

Processed from blood collected from milk-fed calves  
Offers fetal-like performance due to elevated transferrin levels  
Sterile filtered through a 0.1 µm filter  
Screened for endotoxin, mycoplasma and infectious agents (BVD)  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Iron-supplemented BCS	2918149	100 ml
	2918154	500 ml

## Chicken Serum

Sterile filtered  
Screened for endotoxin, mycoplasma and infectious agents  
Processed from the blood of healthy young adult chickens  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Chicken Serum	2950149	100 ml
Chicken Serum, heat inactivated	2980149	100 ml

## Goat Serum

Sterile filtered  
Screened for endotoxin, mycoplasma and infectious agents  
Processed from the blood of healthy young adult animals  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Goat Serum	2939149	100 ml
Goat Serum, heat inactivated	2939249	100 ml

## Donor Horse Serum

Processed from blood collected from a U.S.D.A. monitored herd  
Animals are routinely screened for infectious agents (equine infectious anemia)  
Contains no problematic viruses, endotoxin or hemoglobin  
Screened for mycoplasma and sterile filtered  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Donor Horse Serum	2921149	100 ml
	2921154	500 ml
Donor Horse Serum, heat inactivated	2921249	100 ml
	2921254	500 ml
Donor Horse Serum, γ-irradiated	2921449	100 ml
	2921454	500 ml

## Fetal Equine Serum (FES)

Offers comparable growth rates as FBS  
Processed from blood regulated and collected by U.S.D.A. technicians  
Animals are routinely screened for infectious agents (Equine Infectious Anemia)  
Contains no problematic viruses, endotoxin or hemoglobin  
Screened for mycoplasma and sterile filtered  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
FES	2922154	500 ml

## CELLect™ Polymune TC Equine Plasma

Processed from blood collected from an isolated U.S.D.A. licensed donor herd  
Contains no problematic viruses, endotoxin or hemoglobin  
Stimulates similar growth rates as traditional sera  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Polymune TC	2921849	100 ml
	2921854	500 ml

## Human Serum

Processed from pooled normal human blood  
Screened for HIV and HBsAg  
Sterile filtered  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Human Serum	2930149	100 ml
Human Serum, screened for HCV	2931149	100 ml
Human Serum, heat inactivated	2930249	100 ml
Human Serum, γ-irradiated	2930449	100 ml

## Human Serum Type AB

Processed from pooled type AB human blood  
Screened for HIV and HBsAg  
Sterile filtered  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Human Serum AB	2930949	100 ml
Human Serum AB, screened for HCV	2931949	100 ml
Human Serum AB, heat inactivated	2938249	100 ml
Human Serum, ex-vivo (off clot)	823181	5 ml
	823182	20 ml
	823183	100 ml
Human Serum, MLC (for mixed lymphocytes cultures)	823191	5 ml
	823192	20 ml
	823193	100 ml

# Animal Sera

ICN

Animal Sera

## Lamb Serum

Processed from blood collected from healthy young animals  
Screened for mycoplasma and sterile filtered  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Lamb Serum	2935149	100 ml
	2935154	500 ml

## Mongoose Serum

A rare animal sera ideal for neuroscience research on eukaryotic cells  
Processed from blood collected from healthy adult marsh mongoose

Product	Catalog No.	Quantity
Mongoose Serum	2943000	1 ml

## Opossum Serum

A rare animal sera ideal for neuroscience research on eukaryotic cells  
Processed from blood collected from healthy adult *Didelphis virginia* opossum.

Product	Catalog No.	Quantity
Opossum Serum	2943000	1 ml

## Porcine Serum

Processed from blood collected from healthy animals  
Screened for mycoplasma and sterile filtered  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Porcine Serum	2924149	100 ml
Porcine Serum, heat inactivated	2924249	100 ml

## Rabbit Serum

Processed from blood collected from healthy animals  
Screened for mycoplasma and sterile filtered  
Certified origin  
Intended for research and IVD applications  
NOTE: Rabbit serum should not be used as a complement source

Product	Catalog No.	Quantity
Rabbit Serum	2941149	100 ml
Rabbit Serum, heat inactivated	2941249	100 ml

## Sheep Serum

Processed from blood collected from healthy animals  
Screened for mycoplasma and sterile filtered  
Certified origin  
Intended for research and IVD applications

Product	Catalog No.	Quantity
Sheep Serum	2936149	100 ml

## Other Available Sera

Product	Quantity
<b>SERUM, Bovine Normal Pool</b> Sterile	100 ml
831501	1 liter
831503	

Product	Quantity
<b>SERUM, Goat Normal pool</b> Lyophilized, sterile filtered	50 ml
642921	
0-5°C	

Product	Quantity
<b>SERUM, Goat</b> Sterile filtered through 0.2 µm membrane filter. pH: 6.5-8.0 Total Protein: 6.0-8.0 gm/dl	100 ml 1 liter
191356	
-20°C	

Product	Quantity
<b>SERUM, Guinea Pig</b> Sterile filtered	15 ml
831111	
-20°C	

Product	Quantity
<b>SERUM, Human Normal Pool</b>	100 ml
823201	
-20°C	

Product	Quantity
<b>SERUM, Mouse</b> Sterile-filtered. Prepared from Swiss mouse serum. Trace hemolyzed. Sterile-filtered through 0.2 micron filter	1 ml 5 ml
152282	
-20-0°C	

Product	Quantity
<b>SERUM, Mouse Normal Pool</b> Lyophilized	10 ml
642931	
0-5°C	

Product	Quantity
<b>SERUM, Porcine</b> Sterile filtered through 0.2 µm membrane filter. pH 6.5-8.0 Total Protein: 6.5-8.5 g/dl	100 ml 10X100 ml
191353	
0°C	

Product	Quantity
<b>SERUM, Rabbit Normal Pool</b> Lyophilized, filtered	50 ml
642911	
0-5°C	

Product	Quantity
<b>SERUM, Rat Normal Pool</b> Lyophilized	10 ml
642941	
0-5°C	

Product	Quantity
<b>SERUM, Sheep Normal Pool</b> Lyophilized	50 ml 100 ml
642951	
642952	