R&D SYSTEMS
a bio-techne brand

Iron-Supplemented Calf Serum

Standard and Heat-inactivated

	Catalog Number:	Size:
Iron-Supplemented Calf Serum	S11950	500 mL
	S11910	100 mL
	S11995	50 mL
Iron-Supplemented Calf Serum, Heat Inactivated	S11950H	500 mL
	S11910H	100 mL
	S11995H	50 mL

PRODUCT DESCRIPTION

Iron-Supplemented Calf Serum is supplemented with ferric salt, enabling this serum to bind from three to four times the iron of Fetal Bovine Serum (FBS). Iron-Supplemented Calf Serum is produced from US-origin serum of 2 weeks to 12 months old formula fed calves and is supplemented with iron. Formula fed calf serum has exceptionally high levels of transferrin, and therefore the capacity to bind higher levels of iron. After supplementation with a ferric salt, Iron-Supplemented Calf Serum contains up to four times as much available iron and transferrin as FBS. It can produce growth curves comparable to that of FBS in many cell culture systems. Proliferating cells require iron for bioenergetics and oxidation-reduction catalysis, including activation of oxygen, nitrogen and hydrogen. Iron-Supplemented Calf Serum supports long-term growth of many cell types such as fibroblast-like, epithelial-like and lymphoid cell populations. Iron-Supplemented Calf Serum is manufactured in our ISO 9001:2015 certified facility.

STORAGE AND HANDLING

Iron-Supplemented Calf Serum is supplied in gamma irradiated PETG or PETE bottles. It is recommended that the serum be stored frozen at a temperature of -5 °C to -20 °C. Multiple freeze-thaw cycles of the serum should be avoided as this may lead to deterioration of the product. If intermittent usage of the product is anticipated, either the smaller package sizes should be purchased or the serum should be divided into smaller aliquots suitable for single use. Always use aseptic techniques when handling the serum and aliquot into sterile containers.

PRECAUTION

When handling bio-hazardous materials such as human cells, safe laboratory procedures should be followed, and personal protective equipment should be worn.

LIMITATIONS

- FOR LABORATORY RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
- The safety and efficacy of this product in diagnostic or other clinical uses has not been established.
- Results may vary due to variations among tissue/cells derived from different donors or sources.

FILTRATION

Approved lots of raw serum are thawed under controlled conditions and sterile filtered by an in-line process that uses a series of filters in descending pore size, utilizing 0.2 µm filters for the final filtration step. Filling takes place in a laminar flow hood certified to maintain Class 100 conditions, in a filling room maintained under positive pressure with HEPA-filtered air. The serum is aseptically dispensed into gamma irradiated PETG or PETE bottles. Filled containers are immediately labeled and frozen, and then maintained at temperatures less than -5 °C to preserve the product quality.

bio-techne®
Global bio-techne.com info@bio-techne.com TEL +1 612 379 2956 **USA** TEL 800 343 7475 **Canada** TEL 855 668 8722
Europe | Middle East | Africa TEL +44 (0)1235 529449 **China** TEL +86 (21) 52380373

QUALITY CONTROL TESTING

Each individual lot of serum manufactured is subjected to a series of quality control testing procedures and must comply with set specifications and acceptance criteria before release for distribution. Key quality assessment criteria and results are documented in a certificate of analysis specific to the serum lot tested.

PHYSICAL AND CHEMICAL ANALYSIS

pH - The pH is measured on an instrument that is calibrated daily using reference solutions that are traceable to National Institute of Standards and Technology Reference Materials. Each lot of serum is tested and must show a pH value within the physiological range.

Osmolality - Osmolality is measured by vapor pressure using instruments which are calibrated using reference solutions that are traceable to the National Bureau of Standards. Each lot is tested and values must fall within the physiological range.

Hemoglobin - The hemoglobin content of each serum lot is measured spectrophotometrically. Hemoglobin levels are reported in mg/dL.

Endotoxin - The Limulus Amoebocyte Lysate (LAL) gel clot assay is used to quantify endotoxin. The endotoxin content in each serum lot is reported in Endotoxin Units (EU/mL).

BIOCHEMICAL PROFILE:

Concentrations of many biochemical constituents are measured and reported. The Certificate of Analysis of every serum lot lists the specific serum components tested.

MICROBIOLOGICAL TESTING:

Each lot of serum is tested to confirm the absence of bacterial or fungal contamination using modified methods referenced in the U.S. Pharmacopeia.

Each lot of serum is tested to confirm the absence of mycoplasma contamination to the limit of detection with the methods used. The large-volume method of Barile and Kern is used to detect mycoplasma that can be cultivated in media. Three different media are inoculated with the serum sample and grown under both aerobic and anaerobic conditions. Non-cultivatable mycoplasma are detected by passage of the sample on an indicator cell line and staining with a DNA-fluorochrome.

VIRUS TESTING

Serum is tested for adventitious agents using modified procedures adapted from the Code of Federal Regulations, Title 9, Section 113.53, "Requirements for Ingredients of Animal Origin". Virus susceptible cell cultures previously shown to be free of viral contamination are cultured in medium containing the test serum. During this period, cultures are examined microscopically for evidence of virus-induced morphological changes or cytopathogenic effects. After multiple passages and a minimum of 21 days, the cultures are tested for the presence of specific viral agents (see Table 1) by fluorescent antibody staining, for cytopathogenic viral agents such as Infectious Bovine Rhinotracheitis virus (IBRV) by geimsa staining and for hemadsorbing viral agents such as Parainfluenza-3 virus (PI-3V).

HEAT-INACTIVATION

Iron-Supplemented Calf Serum is available in a heat-inactivated format. The most common objective of heat inactivation is to destroy heat-labile components such as complement that may adversely affect the growth performance of some cell cultures. Serum is inactivated by raising the temperature to 56 °C for 30 minutes under controlled conditions. Researchers should evaluate the applicability of heat inactivation as it pertains to their cell culture requirements.