

# Technical Data Sheet

Fetal Bovine Serum-TET System Approved



## Product Description

TET-System Approved Fetal Bovine Serum is tested to confirm that it does not activate tetracycline-regulated gene expression systems. To verify this, highly sensitive reporter cell lines engineered to express firefly luciferase in response to tetracycline are incubated with the serum for 24 hours. Only serum batches that demonstrate baseline or lower luciferase activity in the absence of tetracycline, and support full induction in its presence, are approved. This ensures the serum does not contain any trace amounts of tetracycline that could unintentionally activate the TET system.

## Intended Use

- For in vitro research or further manufacturing use only.
- **Not for human or animal consumption.**
- **Not for use as an Active Pharmaceutical Ingredient (API).**
- TET-System Approved FBS is ideal for applications requiring strict control of tetracycline-inducible gene expression, minimizing the risk of background activation.

## Country of Origin & Catalog Information

Peak Serum sources FBS from multiple countries that follow rigorous animal health and safety protocols. Full traceability and CoA are provided for every batch.

Catalog	Description
PS-FB5	Fetal Bovine Serum TET System Approved

## Collecting & Processing

- **Source:** Whole clotted blood collected via cardiac puncture from bovine fetuses.
- **Collection Method:** Aseptic, USDA-compliant protocols.
- **Traceability:** Full vertical integration from collection through final packaging.
- **Filtration:** Final filtration is performed through triple 0.1 µm filters to ensure sterility.

## Quality Control & Testing

- pH: standard pH measurement
- Osmolality: determined by the lowering of the freezing point and calibrated against standard solutions
- Endotoxin: Tested using USP <85> Photometric Quantitative Techniques.
- Hemoglobin: measured by spectrophotometry.
- Total Protein: determined using a colorimetric assay.
- Mycoplasma: tested via culture-based methods or PCR (Polymerase Chain Reaction), depending on customer requirements.

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- **Sterility Testing:** tested for the absence of aerobic and anaerobic bacteria, fungi, and yeast in compliance with 9CFR regulations.
- **Virus Testing:** Each batch undergoes virus testing following the 9CFR 113.53c, 113.46, and 113.47 requirements: Bovine adenovirus, Bovine parvovirus, Bovine Respiratory Syncytial Virus (BRSV), Bovine Viral Diarrhea (BVD), Bluetongue virus, Infectious Bovine Rhinotracheitis (IBR)/ BHV-1, Parainfluenza Type 3 (PI3), Reovirus and Rabies virus.
- **Tetracycline:** tested via TET ON *in vitro* induction.
- **Custom Testing:** Additional or application-specific testing is available upon request.

### Optional Treatment-Heat Inactivation

Heat Inactivation is available upon request. The process involves heating the serum to 56°C for 30 minutes to inactivate complement proteins and other components that may interfere with certain cell lines.

- **Color Change:** A visible change in serum color (yellow to opaque) is normal and does not impact quality.
- **Suitability:** Users should confirm suitability for their specific applications prior to ordering.
- **Quality Assurance:** Heat-inactivated FBS meets the same quality standards as non-treated FBS.

### Handling & Storage Conditions

- **Storage Conditions:** Store at  $\leq -10^{\circ}\text{C}$ , protected from light.
- **Shelf life:** 5 years from the date of manufacture when stored properly.
- **Thawing & Use:** Thaw in a refrigerator ( $2^{\circ}\text{C}$  to  $8^{\circ}\text{C}$ ) or at room temperature. Avoid rapid thawing to prevent protein degradation.
- **Aliquoting & Short-Term Storage:** Aliquot under aseptic conditions immediately after thawing. After thawing, store at  $+2^{\circ}\text{C}$  to  $+8^{\circ}\text{C}$  for up to 26 weeks (maintaining sterility).
- **Avoid Repeated Freeze-Thaw Cycles:** Use aliquots to avoid compromising serum quality.

### Safety & Regulatory Compliance

- **For Research Use Only:** Not intended for human or veterinary use
- **Protective Equipment:** Always wear appropriate PPE, such as gloves, lab coats, and face protection, when handling the serum.
- **Aseptic Handling:** Handle under sterile conditions (e.g., laminar flow hood) to prevent contamination.
- **Regulatory Information:** This product complies with USDA and applicable international regulations governing the sourcing, processing, and use of animal-derived materials.

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## Disposal Instructions

Dispose of unused serum and packaging in accordance with local, state, or federal regulations for biological or hazardous materials.

## Certificate of Analysis

A Certificate of Analysis is provided with every batch and contains detailed specifications, including test results for sterility, endotoxin levels, and other quality control parameters.

## Disclaimer

This product is for research or further manufacturing use only. It is not approved for diagnostic, therapeutic, food, or veterinary applications, and is not classified as an Active Pharmaceutical Ingredient (API). Refer to the CoA for detailed product specifications and ensure compatibility with your intended use.

***For further information or inquiries, please contact Peak Serum Customer Service.***