




Product Sheet


# Fetal Bovine Serum (FBS) (ATCC® 30-2021™)

Please read this **FIRST**

Storage Temp.  
**Store fetal bovine serum at -20°C or colder. Do not store frozen fetal bovine serum at temperatures above -20°C for any length of time. Avoid repeated freeze-thaws by dispensing and storing fetal bovine serum in aliquots. Fetal bovine serum is supplied in PETG plastic bottles.**




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Biosafety Level  
\*

## Description

**Product Description:** Triple filtered through 0.1 µm filters. Each lot of fetal bovine serum is tested for sterility and for the ability to support the growth of several different cell lines using both sequential growth curves and plating efficiencies. Fetal bovine serum is manufactured from fetal bovine blood collected in USDA-inspected abattoirs located in the United States.

**Volume:** 100 mL

## Directions for Use

### Thawing

Remove serum from frozen storage and place the bottle(s) overnight in a refrigerator at 2°C to 8°C. Gently agitate the bottle(s) from time-to-time in order to mix the solutes that tend to concentrate at the bottom of the bottle. Do not keep serum at 37°C any longer than necessary for it to thaw completely. Alternatively, serum bottles may be placed in a 37°C water bath directly from frozen storage. Do not thaw serum at temperatures above 37°C. Bottles should be agitated by a gentle swirling motion to enhance mixing and thawing.

If you are not using all of your thawed serum at once, it is recommended to dispense it into single-use aliquots and store these at -20°C or colder. Temporary storage of thawed serum at 2°C to 8°C may be acceptable, depending on the customer application. This should be validated by the customer prior to implementation.

### Serum Precipitates

Turbidity and flocculent material may be present after thawing. ATCC's experience indicates that neither of these changes affects the performance of serum. If the presence of flocculent material or turbidity is a concern, they can be removed by aseptic filtration through a sterile 0.45 µm filter.

### Heat-Inactivation of Serum

**CAUTION:** Heat-inactivation of serum is usually unnecessary and can be detrimental to the growth of some cells. We strongly recommend that you heat-inactivate serum only if it is required for a particular cell line.

1. Thaw serum following the directions above.
2. Preheat a water bath to 56°C with sufficient water to rise above the level of the serum in the bottle.
3. Mix thawed serum by gently swirling the bottle and then place the bottle in the 56°C water bath. (The temperature of the water bath will decrease.)
4. When the temperature of the water bath reaches 56°C again, heat the serum for an additional 30 minutes. Mix gently every five minutes to insure uniform heating.
5. At the end of 30 minutes, remove serum from the water bath, cool, and store at -20°C or colder.

### Quality Control Specifications

Sterility tests are performed on each lot of fetal bovine serum using current USP and EP methods. Specific tests for contaminants are listed below in the Specification Certificate. ATCC also checks each lot for its ability to support the growth of several different cell lines. Additionally, this lot of serum is tested for its ability to support the growth and differentiation of embryonic stem (ES) cells. Plating efficiency, colony morphology, and the expression of at least five markers of differentiation are determined for undifferentiated cells and cells induced to form embryoid bodies (EB) through full differentiation. The results are compared with cells grown with a control lot of serum.

### Origin

This fetal bovine serum is manufactured from fetal bovine blood collected in USDA-inspected abattoirs located in the United States.

Test*	Specification
<b>Sterility Testing (Current USP)</b>	No growth
Bacteria and Fungi	
<b>Virus Testing (9 CFR 113.53)</b>	Not detected
Fluorescent antibody	
Bluetongue	
Bovine Adenovirus	
Bovine Parvovirus	
Bovine Respiratory Syncytial Virus	
Bovine Diarrhea Virus	
Rabies	
Reovirus	
Cytopathogenic Agents (e.g. IBR)	

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Hemadsorbing Agents (e.g., PI3)

**Mycoplasma Testing** Pass

Large volume, direct culture  
Hoechst DNA stain

**Endotoxin (Limulus Amebocyte Lysate -Gel Clot)** ≤ 10 EU/mL

**Hemoglobin (Spectrophotometric)** Report result

**Growth Promotion** Pass

\*Please consult the Certificate of Analysis for lot-specific test results.

### ATCC Warranty

The viability of ATCC® products is warranted for 30 days from the date of shipment, and is valid only if the product is stored and cultured according to the information included on this product information sheet. ATCC lists the media formulation that has been found to be effective for this strain. While other, unspecified media may also produce satisfactory results, a change in media or the absence of an additive from the ATCC recommended media may affect recovery, growth and/or function of this strain. If an alternative medium formulation is used, the ATCC warranty for viability is no longer valid.

### Disclaimers

This product is intended for laboratory research purposes only. It is not intended for use in humans.

While ATCC uses reasonable efforts to include accurate and up-to-date information on this product sheet, ATCC makes no warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. ATCC does not warrant that such information has been confirmed to be accurate.

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Please see the enclosed Material Transfer Agreement (MTA) for further details regarding the use of this product. The MTA is also available on our Web site at [www.atcc.org](http://www.atcc.org)

Additional information on this culture is available on the ATCC web site at [www.atcc.org](http://www.atcc.org).

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