

CAPTIVATE BIO

Fetal Bovine Serum Frequently Asked Questions

What is the difference between Captivate Bio standard and premium FBS?

The serum is from the same source, collected and processed in the same way. The differences are in the testing performed on the serum and the specifications for release. Premium serum undergoes extensive virus testing with typically lower concentrations of endotoxin. Standard FBS undergoes standard testing with typically higher results and is an excellent value at an extremely affordable price.

What is the Origin?

Captivate Bio's FBS is a finished product manufactured under processes that meet USDA requirements for animal products. In collaboration with our suppliers, all of our FBS is traceable back to the date and location of collection (or the origin). Each CofA will list country origins from collection to final fill.

What is the difference between US origin and USDA origin FBS?

USDA origin FBS is collected in countries which have been approved by the USDA for bovine serum importation into the United States. US origin FBS comes from USDA licensed abattoirs located entirely within the continental U.S. Certificates of Analysis are available with all FBS purchases. Supplementary Certificates of Origin are also available upon request.

Does FBS origin impact its quality?

The serum's origin has no influence on cell growth. One batch of FBS may work well for one specific cell line, but not for another. "Serum quality" is specific for each cell line. That is why testing of FBS is widely used when dealing with sensitive cell lines. Captivate Bio's serum undergoes extensive analysis of biochemical parameters and testing on cell lines results are recorded on the Certificates of Analysis.

How do I heat-inactivate serum?

Heat the FBS bottles at 56°C in a water bath for 30 minutes and swirl the bottle every 10 minutes or so. For accuracy, use a second bottle of similar size as a control and add an equivalent volume of water to the control bottle. Place a thermometer in the control bottle to see when 56°C is reached. Set a timer for 30 minutes.

Why would I heat-inactivate serum?

Heat-inactivating serum destroys complement proteins and other heat-labile enzymes that could interfere with experiments, especially in cell culture and immunoassays. Active complement can participate in cytolytic events, contract smooth muscle, release histamine from mast cells and platelets, and activate lymphocytic and macrophage cells. Applications where heat-inactivated serum is recommended include immunological studies and culturing of embryonic stem cells (ESCs), insect cells, and smooth muscle cells.

Can I get custom serum products for my specific research requirements?

Yes, we offer a wide range of custom options. Please contact our team to discuss your application and research needs. We will work with you to supply sera that is specially sourced, processed, and tested to meet your individual requirements. Some examples of our custom capabilities are heat inactivation, exosome-depletion, and testing for tetracycline residues.

What is the shelf life of FBS?

Most FBS products that are unopened and stored in a freezer have a 5-year shelf life. You can refer to the expiration date on the bottle and the Certificate of Analysis for the expiration date.

What are the storage conditions of FBS?

We recommend that serum be stored frozen (-10°C to -40°C) and protected from light.

Why are there material precipitates in FBS when stored in the refrigerator?

When FBS is stored at 2–8°C various growth factors and proteins in the serum may aggregate and form visible material or turbidity; however, this should not affect serum performance. We recommend that you always store FBS at -20°C and avoid repeated freeze-thaw cycles. We do not recommend filtering or centrifuging the serum.

Is serum sterile?

Fetal bovine serum is triple-filtered through 0.1 µm filters. Bovine serum is filtered through 0.2 µm filters.

How is dialyzed FBS processed?

FBS is dialyzed by tangential flow filtration against 0.15 M NaCl using a 10,000 molecular weight cutoff membrane until the glucose level is less than 5 mg/dL. Because this is not exhaustive dialysis, low molecular weight dialyzable components such as amino acids may not be completely removed. Exhaustive dialysis is not performed because it can result in precipitation and inactivation of serum peptides.

Is serum tetracycline-free (TET-free)?

FBS Tet-Free uses an in vitro induction testing method. This method involves incubating sensitive reporter cells that have been engineered to express firefly luciferase in response to tetracycline for 24 hours. Batches that exhibit luciferase activity at or below baseline levels are confirmed to be devoid to detectable tetracycline or its derivatives. By using this functional testing approach, researchers can be confident that the chosen TET-Free FBS batches will provide optimal control over their tetracycline-inducible gene expression systems and minimize potential background noise or unintended expression.

How should serum be thawed?

FBS and other animal sera should be thawed overnight at 2–8°C. Thawed serum should be gently swirled before adding to any cell culture medium. Serum should be used within 2–4 weeks.

If my FBS arrives thawed, can I still use it?

FBS is shipped frozen and packaged in dry ice, so it should arrive frozen. You can still confidently use FBS that is partially thawed, if at least two-thirds of it is frozen.

Can I aliquot and refreeze serum?

Yes, after the overnight thaw at 2–8°C, you can aliquot the serum into smaller, single-use aliquots, and refreeze it.

How can I minimize lot-to-lot variability?

You can test each new lot to be sure that it works for your specific cell type or application. Alternatively, our team can help provide quality testing results that meet your known specifications (low endotoxin, protein, hemoglobin etc). Refer to the certificate of analysis for comparing specific results.

What sizes of packaging are available?

Captivate Bio FBS is available in 50 mL and 500 mL. Custom bottle sizes are also available.

How can I sample FBS or set up a reserve?

Contact Captivate Bio's customer service team at orders@captivatebio.com to request a sample for validation. Samples are available in 50 mL aliquots. Lot reservations are available and are held for 14 days before being released.

How does pricing compare to other suppliers?

Captivate Bio offers extremely competitive pricing by partnering directly with leading serum suppliers, securing high-quality lots, and by omitting extra margins built into many of the competition's pricing. You can save up to 50% list price by choosing Captivate Bio serum solutions over other suppliers. All our FBS and animal sera is manufactured under cGMP in ISO-certified facilities with full traceability, and 9CFR COA with customizable testing options. Documentation includes COA, COO, SDS, and tech data sheets where applicable.

Learn more at [captivatebio.com](https://www.captivatebio.com)

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