Gibco sera—committed to quality and innovation since 1962

For performance and consistency essential to successful cell culture
Delivering reliable cell culture products for over 60 years

A history of innovation

In 1962, Leonard Hayflick made the important discovery that there is a finite capacity for normal human cells to replicate in culture. This finding overturned a long-held belief about the potential immortality of cultured cells and has had far-reaching implications in life science research. That same year, Bob and Earline Ferguson, two biologists working from their garage in Grand Island, New York, recognized the business potential of supplying animal sera for research use. From this humble beginning, Gibco™ sera rose to the forefront of products supporting global life science research. Gibco™ cell culture products are now an important part of Thermo Fisher Scientific.

How did we become a world leader for sera, media, and reagents? The key to the success of Gibco products has always been the consistent delivery of quality, which helps reduce the number of unknowns that scientists may experience in their work. Across the global life science community, Gibco products have a reputation for reliability—allowing scientists to focus on more important things than troubleshooting cell culture problems. In addition to supporting innovators in life science research, Thermo Fisher Scientific is a leading supplier to the global biopharmaceutical industry. Part of our success is due to our strong commitment to both small and large laboratories, ranging from the research bench to production-scale facilities.

The original manufacturing site located in Grand Island, New York, is now just one of many manufacturing facilities worldwide that produce Gibco cell culture products. Through our commitment to quality, we continue to provide scientists with the consistent reliability, service, value, and innovation that have made Gibco products a global market leader for over 50 years.
The right sera for all your cell culture needs

We provide a simplified three-tiered offering—Gibco™ Value FBS, Premium FBS, and Specialty FBS—where each category is clearly delineated by relevant performance markers and testing levels to help ensure you can confidently select the right serum for your research.

Choose the right sera for your specific needs, from basic research to specialty assays. Whether you need sera with the least viral risk, the lowest endotoxin levels, or sera qualified for specialty applications and assays, Gibco products offer you superior value and the clearest choice.

Value FBS

Gibco Value FBS is ideal for standard research applications with up to 50 quality specification tests that include 9 CFR virus testing, as well as testing for endotoxins and performance. Our Value FBS is manufactured using triple 0.1 µm filtration.

<table>
<thead>
<tr>
<th>Product specifications</th>
<th>Value Plus FBS—United States</th>
<th>New Value FBS</th>
<th>Value FBS—Mexico/Central America</th>
<th>Value FBS—Canada</th>
<th>Value FBS—Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endotoxin</td>
<td>≤10 EU/mL (typically ≤5 EU/mL)</td>
<td>≤20 EU/mL (typically ≤10 EU/mL)</td>
<td>≤50 EU/mL (typically ≤10 EU/mL)</td>
<td>≤50 EU/mL (typically ≤10 EU/mL)</td>
<td>≤50 EU/mL (typically ≤10 EU/mL)</td>
</tr>
<tr>
<td>Performance (growth)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9 CFR virus testing</td>
<td>✓</td>
<td>✓ †</td>
<td>✓</td>
<td>✓</td>
<td>✓ †</td>
</tr>
<tr>
<td>Filtration</td>
<td>Sterile filtered (triple 0.1 µm filtration)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓ **</td>
</tr>
<tr>
<td>Total protein</td>
<td>3.0–5.0 g/dL</td>
<td>3.0–5.5 g/dL</td>
<td>3.0–5.0 g/dL</td>
<td>3.0–5.0 g/dL</td>
<td>3.5–5.5 g/dL</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>≤25 mg/dL</td>
<td>≤25 mg/dL</td>
<td>≤25 mg/dL</td>
<td>≤25 mg/dL</td>
<td>≤30 mg/dL</td>
</tr>
<tr>
<td>Mycoplasma testing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pH</td>
<td>6.9–7.8</td>
<td>7.0–8.0</td>
<td>6.9–7.8</td>
<td>6.9–7.8</td>
<td>6.9–7.8</td>
</tr>
<tr>
<td>Osmolality</td>
<td>280–340 mOsm/kg H₂O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Origin</td>
<td>United States</td>
<td>Refer to CoA for specific origin</td>
<td>Mexico/ Central America</td>
<td>Canada</td>
<td>Brazil</td>
</tr>
<tr>
<td>Base Cat. Nos.</td>
<td>26140, 16140, A31605, A38401</td>
<td>A5209, A5256</td>
<td>10437, 10438, A31606, A38402</td>
<td>12483, 12484, A31607, A38403</td>
<td>10270, 10500, A31608, A38404</td>
</tr>
</tbody>
</table>

* Modified virus testing; see CoA for virus testing.
** FBS manufactured in Brazil for Brazil is subjected to double 0.1 µm filtration, not triple (Cat. Nos. 12657011 and 12657029).
† If manufactured in the United Kingdom (UK), FBS receives Title 9 of the Code of Federal Regulations (9 CFR) testing, excluding rabies virus and bluetongue virus, which are tested via European Medicines Agency (EMA).
**Premium FBS**

Choose Gibco Premium FBS for the lowest risk of bovine spongiform encephalopathy (BSE) and lower viral risk. Our Premium FBS meets USP/EP guidelines with up to 96 harmonized quality specification tests, including European Medicines Agency (EMA) virus testing (selected lots), USP/EP mycoplasma, endotoxin, performance, biochemical/hormonal profiling, and Oritain™ fingerprinting technology. The serum is manufactured using triple 0.1 µm filtration.

<table>
<thead>
<tr>
<th>Product specifications</th>
<th>Premium Plus FBS</th>
<th>Premium FBS Australia</th>
<th>Premium FBS New Zealand</th>
<th>Premium FBS United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endotoxin</td>
<td>≤1 EU/mL</td>
<td>≤5 EU/mL</td>
<td>≤5 EU/mL</td>
<td>≤5 EU/mL</td>
</tr>
<tr>
<td>Performance (growth)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9 CFR virus testing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>EMA virus testing</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Selected lots only</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Biochemical hormonal profiling</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Filtration</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sterile filtered (triple 0.1 µm filtration)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Total protein</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>30–45 mg/mL</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>≤15 mg/dL</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mycoplasma testing</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pH</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7.0–8.0</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
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<td></td>
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<td>✓</td>
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<td>280–340 mOsm/kg H₂O</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Biochemical hormonal profiling</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Fingerprinting technology (origin confirmation)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Quality tests per batch</td>
<td>96</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Origin</td>
<td>United States, Australia, or New Zealand (refer to CoA for specific origin)</td>
<td>Australia</td>
<td>New Zealand</td>
<td>United States</td>
</tr>
<tr>
<td>Base Cat. Nos.</td>
<td>A4766</td>
<td>10099, 10100</td>
<td>10091, 10093</td>
<td>16000, 10082, A31604, A38400</td>
</tr>
</tbody>
</table>

✔️ Testing is performed.

- Heat-inactivated Premium FBS is available in most formats/sizes.
- Gamma-irradiated Premium FBS is available upon request.

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**Other animal sera**

Although FBS is the most commonly used serum product, many other products are sold as lower-cost alternatives. These include bovine serum, horse serum, newborn calf serum, goat serum, rabbit serum, lamb serum, porcine serum, and chicken serum.

Learn if these products are right for your research at [thermofisher.com/otheranimalsera](http://thermofisher.com/otheranimalsera)

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**Did you know?**

**9 CFR virus testing**: Virus panel testing according to Code of Federal Regulations, (CFR), Title 9, Part 113.53(c) [113.46, 113.47]. Detected by fluorescent antibody.

**Biochemical hormonal profiling**: Quantification of biochemical and hormonal (estradiol, insulin, progesterone, testosterone, and thyroxine) profiling that may have an impact on cell culture.

**EMA virus testing**: Virus panel testing according to EMA/CHMP/BWP/457920/2012 Part 7.3.1 and 7.3.2 and EMEA/CVMP/743/00 Part 4.3.3. Detected by fluorescent antibody.

**Fingerprinting technology (origin confirmation)**: A proprietary technology for Gibco sera, to confirm FBS origin and eliminate the potential for counterfeit product.
# Specialty FBS

These sera are designed for specialty applications and sensitive cell culture, including stem cell research, cancer research, reporter assays, immunoassays, and more.

<table>
<thead>
<tr>
<th>Specialty sera</th>
<th>Description</th>
<th>Ideal for studying these research areas*</th>
</tr>
</thead>
</table>
| Charcoal Stripped FBS                 | • Reduced lot-to-lot variability on hormone levels, which helps eliminate some of the influences steroids and other components have on cells  
• Growth assay using Vero cells      | • Hormones or hormone receptors (androgens, estrogens, progesterone)  
• Cytotoxic drug response  
• Cellular signaling and reporter assays  
• Tumor cells                        |
| Ultra-low IgG FBS                     | • IgG levels are less than 5 µg/mL; BVD antibody titer is low and not detectable | • Antibodies  
• Viruses and viral response  
• Cell-surface epitopes              |
| Dialyzed FBS                          | • Dialyzed by tangential flow filtration utilizing 10,000 MW cutoff filters  
• Performance tested for cloning and plating efficiency | • Proteomics  
• Isotope labeling  
• Cellular signaling and reporter assays |
| ES Cell–Qualified FBS                 | • Specially tested for the ability to sustain undifferentiated ES cells while maintaining karyotype integrity, LIF responsiveness, and pluripotency markers  
• New improved screening with germline-competent PRX129/X1 mESC line using a predictive assay that measures plating efficiency and pluripotency maintenance  
• High consistency between lots, with proven applications in iPSC generation and PSC culture | • Induced pluripotent stem cells (iPSCs)  
• Cellular reprogramming  
• Embryonic stem cells (ESCs)  
• Embryonic development             |
| MSC-Qualified FBS                     | • Performance-tested using standard 14-day MSC CFU-F assay  
• Each lot is tested against an in-house FBS reference standard using cells from a master cell bank of MSCs from normal bone marrow donors, which helps ensure lot-to-lot consistency | • Mesenchymal stem cells (MSCs)  
• Mesenchymal stromal cells  
• Osteogenesis  
• Chondrogenesis and cartilage  
• Collagen and other extracellular matrix (ECM)  
• Adipose tissue and adipogenesis   |
| Exosome-Depleted FBS                  | • ≥90% of exosomes depleted  
• Complex manufacturing process that retains the nutrients your cells need  
• Full quality testing for sterility, mycoplasmas, performance, and endotoxins | • Exosomes and extracellular vesicles  
• MicroRNA  
• Cell–cell communication           |
| Tet-System Approved FBS               | • Functionally tested to provide researchers with optimal control over their gene expression systems, thus minimizing challenges that can be posed by this type of reagent  
• Delivers quick workflow, reduced background noise, and more control and consistency | • Neuroscience  
• Cancer  
• Drug screening  
• Vaccine development  
• Gene editing                      |

* These results are based on a review of approximately 10,000 publications using the six Specialty FBS products that Thermo Fisher Scientific offers. These terms were given by the MeSH taxonomy based on the full text of the paper.
Scientists worldwide recommend Gibco sera more than any other sera
Delivering the performance and consistency you demand

Gibco sera have been part of important breakthroughs for >50 years

1960
GIBCO SERA ARE THE FIRST IN THE WORLD TO BE MANUFACTURED FOR SCIENTIFIC RESEARCH

1970
HEK293 cell line
Frank L. Graham generated an immortalized cell line now used extensively as an expression tool [1].

1980
Mouse embryonic stem cells
Gail R. Martin extracted stem cells from mouse embryos, and coined the term “embryonic stem cell” [2].

1990
Dolly the sheep
Dolly, the first mammal cloned from an adult somatic cell, ignited the embryonic stem cell research field [3].

2000
CRISPR-Cas9 editing of the human genome
Prashant Mali and George Church showed that RNA-guided editing could be used to engineer the genome of human cells [4].

GIBCO PRODUCTS ARE BACKED BY:

SUPERIOR QUALITY

Up to 96 quality tests per batch
>200 customer audits yearly
Awarded the International Serum Industry Association (ISIA) traceability certification in February 2014
GIBCO SERA ARE THE MOST CITED SERA IN GLOBAL SCIENTIFIC JOURNALS

Our sera account for 45% of all FBS citations**

>107,000 citations and counting

Across the globe, Gibco sera account for the highest percentage of citations compared to all other serum brands**

IT’S ALSO THE MOST TRUSTED SERUM

Used by 14 of the top 15 pharma companies

A COMMITMENT TO INNOVATION

The right design
Ergonomic bottle makes pipetting easier

The right tools
Gibco™ iMATCH™ Sera Lot Matching Tool: Find our most consistent, highest-performing serum lot available, without having to test

The right size
50 mL Gibco™ One Shot™ FBS† is ideal for ease of use and convenience

** From 2006 to 2015.
† One Shot FBS is not available in all regions.
Unlike most FBS suppliers, we invest in our own collectors, who obtain the majority of our supply (a by-product of the beef industry) straight from government-approved facilities with clinically examined healthy animals under veterinary supervision, using only the strictest aseptic collection techniques.

At our processing facilities we conduct numerous quality checks, such as testing for hemoglobin levels, to verify that the integrity of the product is maintained.

FBS is transferred to a clean room in specially designed stainless steel pipes where it undergoes 0.1 μm triple filtration to minimize biological contaminants.

Sterile-filtered serum is immediately and aseptically bottled and undergoes virus/quality testing before clearing QC.

OFFERS THE HIGHEST LEVEL OF TRACEABILITY AND QUALITY

MINIMIZED RISK OF CONTAMINATION OF FINAL PRODUCT
7 reasons to buy Gibco FBS right now

- Global, vertically integrated supply chain for continuity of supply and risk mitigation
- Certified for traceability by the ISIA since 2014
- cGMP–ISO 13485 and/or ISO 9001 facilities
- Differentiated workflow solutions, from specialty serum to innovative packaging like the aliquot-free One Shot FBS 50 mL bottle
- FBS “fingerprinting” technology—first FBS supplier to develop origin reassurance
- iMATCH technology—multiparametric matching tool minimizes lot variation and reduces the need for testing
- Better together—maximize reproducibility by pairing Gibco FBS and media with Thermo Scientific™ Nunc™ plastics

References