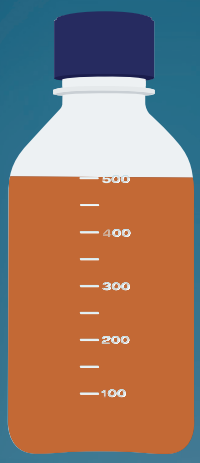
gibco

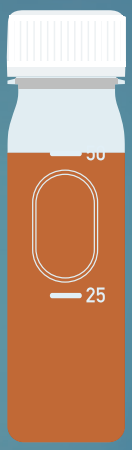
Gibco glass bottle
1962–1986



Gibco square plastics
1987–1996

Gibco round plastics
1996–2007

Gibco boxy bottle
2008–present



Gibco One Shot 50 mL bottle
2016–present

Gibco sera—committed to quality and innovation since 1962

For performance and consistency essential to successful cell culture

ThermoFisher SCIENTIFIC

Gibco sera—unassailable quality*

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 the 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 Gibco 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 unwavering 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.

* According to a 2015 Percepta study.

The right sera for all your cell culture needs

Introducing a simplified three-tiered offering—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

For standard research applications with up to 50 quality specification tests that includes 9 CFR virus testing, endotoxin, and performance. Manufactured using triple 0.1 µm filtration.

Product specifications	Value Plus FBS— United States	Value FBS— Mexico/Central America	Value FBS— Canada	Value FBS— Brazil
Endotoxin	≤10 EU/mL (typically ≤5 EU/mL)	≤50 EU/mL (typically ≤10 EU/mL)	≤50 EU/mL (typically ≤10 EU/mL)	≤50 EU/mL (typically ≤10 EU/mL)
Performance (growth)	✓	✓	✓	✓
9 CFR virus testing	✓	✓	✓	✓*
Filtration Sterile filtered (triple 0.1 µm filtration)	✓	✓	✓	✓**
Total protein	3–5 g/dL	3–5 g/dL	3–5 g/dL	3.5–5.5 g/dL
Hemoglobin	≤25 mg/dL	≤25 mg/dL	≤25 mg/dL	≤30 mg/dL
Mycoplasma	✓	✓	✓	✓
pH 6.9–7.8	✓	✓	✓	✓
Osmolality 280–340 mOsm/kg H_2O	✓	✓	✓	✓
Origin	United States	Mexico/ Central America	Canada	Brazil
Base Cat. Nos.	26140, 16140, A31605, A38401	10437, 10438, A31606, A38402	12483, 12484, A31607, A38403	10270, 10500, A31608, A38404

✓ Testing is performed * Modified virus testing; see CoA for virus testing

** FBS manufactured in Brazil is subjected to double 0.1 µm filtration, not triple (Cat. Nos. 12657011 and 12657029)

Please note: If you require biochemical hormonal profiling and/or fingerprinting technology (origin confirmation), both are available in our Premium FBS category.

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

Premium FBS

The lowest risk of bovine spongiform encephalopathy (BSE) and lower viral risk. Meets USP/EP guidelines with up to 90 harmonized quality specification tests, including European Medicine Agency (EMA) virus testing (selected lots), USP/EP mycoplasma, endotoxin, performance, biochemical/hormonal profiling, and Oritain™ fingerprinting technology. Manufactured using triple 0.1 µm filtration.

Product specifications	Premium FBS— Australia	Premium FBS— New Zealand	Premium FBS— United States
Endotoxin ≤5 EU/mL	✓	✓	✓
Performance (growth)	✓	✓	✓
9 CFR virus testing	✓	✓	✓
EMA virus testing Selected lots only	✓	✓	✓
Biochemical hormonal profiling	✓	✓	✓
Filtration Sterile filtered (triple 0.1 µm filtration)	✓	✓	✓
Total protein 30–45 mg/mL	✓	✓	✓
Hemoglobin	≤30 mg/dL	≤30 mg/dL	≤15 mg/dL
Mycoplasma	✓	✓	✓
pH 7.0–8.0	✓	✓	✓
Osmolality 280–340 mOsm/kg H_2O	✓	✓	✓
Fingerprinting technology (origin confirmation)	✓	✓	✓
Origin	Australia	New Zealand	United States
Base Cat. Nos.	10099, 10100	10091, 10093	16000, 10082, A31604, A38400

✓ Testing is performed

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

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**

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

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

Specialty sera	Description	Ideal for studying these research areas*
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

* 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

1960

1st

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

1970

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

HEK 293 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]

THE GIBCO BRAND IS BACKED BY:

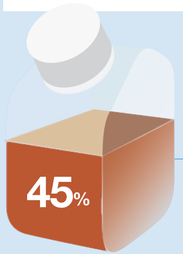
SUPERIOR QUALITY

Up to 90 quality tests per batch

>100 customer audits yearly

Awarded the International Serum Industry Association (ISIA) traceability certification in February 2014

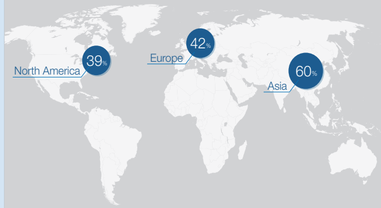
GIBCO SERA ARE THE MOST CITED SERA IN GLOBAL SCIENTIFIC JOURNALS



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 BRAND

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

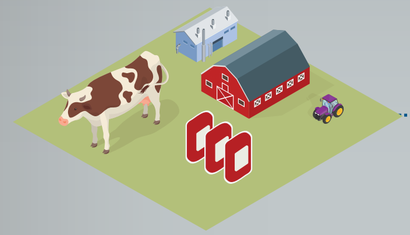
50 mL Gibco™ One Shot™ FBS† is ideal for ease of use and convenience

** From 2006 to 2015.

† One Shot FBS is not available in all regions.

Vertically integrated finish-at-source manufacturing process

Blood collection



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.

Raw serum conversion

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.

Sterile filtration and processing

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

Dispensing

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

Gibco FBS

Key benefits

OFFERS THE HIGHEST LEVEL OF **TRACEABILITY AND QUALITY**

MINIMIZED RISK OF CONTAMINATION OF FINAL PRODUCT

gibco

7 reasons to buy Gibco FBS right now

Global, vertically integrated supply chain for continuity of supply and risk mitigation

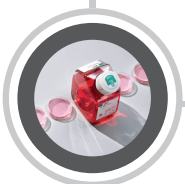
Certified for traceability by the International Serum Industry Association (ISIA) since 2014

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 like no other

iMATCH technology—multi-parametric matching tool minimizes lot variation and eliminates need for testing



Better together—maximize reproducibility by pairing our FBS with Gibco media and our Thermo Scientific™ Nunc™ plastics

References

1. Graham FL et al. (1977) Characteristics of a human cell line transformed by DNA from human adenovirus type 5. *J Gen Virol* 36(1):59–74.
2. Martin G (1981) Isolation of a pluripotent cell line from early mouse embryos cultured in medium conditioned by teratocarcinoma stem cells. *Proc Natl Acad Sci USA* 78(12):7634–7638.
3. Wilmut I et al. (1997) Viable offspring derived from fetal and adult mammalian cells. *Nature* 385(6619):810–813.
4. Mali P et al. (2013) RNA-guided human genome engineering via Cas9. *Science* 339(6121):823–826.

Find out more at **thermofisher.com/fbs**

ThermoFisher SCIENTIFIC

All products may not be available in all regions due to importation regulations. Contact your local sales representative regarding product availability in your country.