Gibco®

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life technologies
A Thermo Fisher Scientific Brand

*According to a 2013 Percepta study.
†All products may not be available in all regions due to importation regulations. Contact your local sales representative regarding product availability in your country.

Gibco® sera—recognized leader in quality*

Gibco®

For performance and consistency essential to successful cell culture

life technologies

Contents

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, Grand Island Biological Company (Gibco®) has risen to the forefront of companies supporting global life science research, and is now an important part of Thermo Fisher Scientific.

How did the Gibco® brand become the world leader for sera, media, and reagents? Our company understood then, and still does, that the key to success is consistent delivery of quality products that reduce the number of unknowns scientists may experience in their work. Throughout the global life sciences 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 leading-edge 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 make 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.

Delivering quality in every bottle

Serum collection and processing methods can affect the quality of the final product

For over 50 years, Gibco® cell culture products have set the global standard for quality and performance.* As the world's leading supplier of sera, we add value to each product through all stages of collection, processing, filtration, testing, and delivery, using stringent process controls and the highest quality standards.

Processed lots of Gibco® fetal bovine serum (FBS) are:

- Never blended with FBS from other countries or origins
- Manufactured in the country of origin, where applicable, to ensure product integrity and to avoid the risk of cross-contamination
- Processed and tested according to cGMP requirements

We maintain rigorous control of every step in the production of Gibco® FBS and other sera. Complete vertical integration, from collection to final product, minimizes the risk of contamination with adventitious agents, improves lot-to-lot consistency, and results in superior performance.

We manufacture in compliance with the Food and Drug Administration's (FDA's) Quality System Regulation (cGMP) at our ISO 13485 facility in the US and our ISO 9001 facilities in Australia and New Zealand. Comprehensive documentation provides traceability and control of our processes. Also, Gibco® sera have recently undergone a rigorous process to obtain International Serum Industry Association (ISIA) traceability certification (Figure 1). This certification provides you with peace of mind and the confidence that Gibco® sera are manufactured under the highest traceability standards, offering quality and performance for your research.

What does traceability certification mean?

- We maintain records of traceability from origin throughout the supply chain for all serum batches.
- We maintain the history for both quality and quantity of material, from point of collection through final processing.
- We retain documentation to support all stages of processing, transportation, and commercial transactions.

Using aseptic cardiac puncture procedures, we collect fetal bovine blood in single-use bags specifically designed to improve clotting efficiency and serum yield. We then quickly refrigerate the raw material, separating, evaluating, and filtering it according to our stringent specifications. A typical FBS batch size is 1,000–1,600 L; some sources permit batch sizes up to 2,000 L, depending on the manufacturing site. Following final filtration (to triple 0.1 micron), which removes bacteria without removing critical serum components, we aseptically dispense the serum into sterile bottles. We then label and freeze the final product and place it on quarantined status until all quality control tests have been completed. Our Process Engineering department fully validates procedures and processes to ensure quality and reproducibility. Our Quality Systems department can trace the raw serum back to the donor farm or abattoir where it was collected. Only serum that meets all of our particular manufacturing and finished-product specifications is approved for sale.

Figure 1. Effective February 12, 2014, our sera products are ISIA Traceability Certified.

See why Gibco® sera are recommended most by scientists worldwide*

1960

1st

GIBCO WAS THE FIRST GLOBAL MANUFACTURER OF SERA

1970

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

1980

HEK 293 cell line

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

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

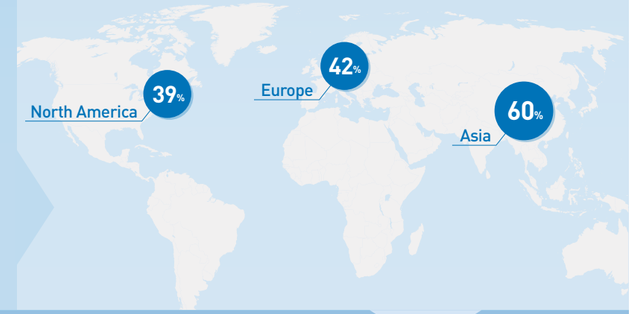
Dolly, the first mammal cloned from an adult somatic cell, ignited the embryonic stem cell research field.[3]

GIBCO® SERA ARE THE MOST CITED SERA IN GLOBAL SCIENTIFIC JOURNALS

accounting 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 any other serum brand**



IT'S ALSO THE MOST TRUSTED SERUM BRAND

Used by 14 of the top 15 pharma companies

THE GIBCO® BRAND IS BACKED BY...

SUPERIOR QUALITY

Up to 65 quality tests per batch

>100 customer audits yearly

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

Total control from collection to manufacturing

EXCELLENT CUSTOMER SERVICE

>70,000 customers supported by dedicated FBS specialists in North America and Europe

Award-winning technical and customer service teams

A COMMITMENT TO INNOVATION

The right design

Ergonomic bottle
makes pipetting easier

The right tools

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

The right size

50 mL OneShot™ FBS†
is ideal for ease of use and convenience

If you want proven quality, performance, and consistency, go with Gibco® sera.

References:
1. Graham FL, Smiley J, Russell WC, Nairn R (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): 7634-8. 3. Wilmut I, Schnieke AE, McWhir J, Kind AJ, Campbell KH (1997) Viable offspring derived from fetal and adult mammalian cells. *Nature* 385 (6619): 810-3. *According to a 2013 Percepta study. **From 2006-2013. †OneShot™ FBS is not available in all regions.

The right sera for all your cell culture needs

Gibco® sera help meet your research needs and budget requirements, offering the best value for basic cell culture, specialty research, and specific assays

Gibco® is the most cited serum brand in global scientific journals

Gibco® serum category*	Standard	Performance	Performance Plus	Secure**	Specialty
	Sera for cell culture with robust cell lines—excellent value for basic research	Low-endotoxin sera for general cell culture with common cell lines	Lowest-endotoxin and most highly characterized sera. Good for broad range of cell types, especially sensitive cell lines	Sera sourced from BSE-negligible regions for preclinical, industrial, and academic research applications requiring low risk	Sera qualified for specialty research and specific assays, including stem cell research, immunoassays, antibodies, and others
Recommended products	FBS Qualified, USDA-approved origins, South America, Canada	FBS Qualified, US	FBS Certified, US	FBS Qualified, Australia FBS Qualified, New Zealand DBS, New Zealand	FBS and other sera for specialty research and assays
Endotoxin specification/standard	Typically ≤50 EU/mL	≤10 EU/mL	≤5 EU/mL	≤10 EU/mL for FBS, donor bovine sera	Per Certificate of Analysis
Quality and performance testing (including standard tests: growth, cloning, plating)	Standard testing	Standard testing, plus exclusive BVDV screening of raw material (FBS)	Standard testing, plus analytical tests for hormone and biochemical profiles and exclusive BVDV screening of raw material (FBS)	Standard testing, plus exclusive BVDV screening of raw material (FBS) or donor animals (DBS)	Standard testing, plus exclusive BVDV screening of raw materials (FBS) or donor animals (DBS) prior to final manufacturing
Popular catalog numbers/standard	10437028 FBS Qualified, USDA-approved origins 10270106 FBS Qualified, South America	26140079 FBS Qualified, US 16140071 FBS Qualified, heat inactivated, US	16000044 FBS Certified, US 10082147 FBS Certified, heat inactivated, US origin	10099141 FBS Qualified, Australia 10100147 FBS Qualified, heat inactivated, Australia 10091148 FBS Qualified, New Zealand	16141079 FBS ES Cell Qualified, US 12676029 FBS, Charcoal Stripped, USDA-approved origins

*All products may not be available in all regions due to importation regulations. Contact your local sales representative regarding product availability in your country.
**All Secure sera can be gamma irradiated upon request to comply with EU and US regulations and guidelines.

Gain more control over your research with our specialty products. We have sera qualified for specialty research and specific assays, including stem cell research, immunoassays, antibodies, and more.

Product	Description/usage guidelines
Dialyzed FBS	• Dialyzed by tangential flow filtration utilizing 10,000 MW cutoff filters • Performance tested for cloning and plating efficiency • Ideal for metabolic assays
Ultra-Low IgG FBS	• IgG levels are less than 5 µg/mL, and the BVD antibody titer is low or not detectable • Suitable for antibody production and veterinary applications
ES Cell Qualified FBS	• Specially tested for the ability to sustain undifferentiated cellular morphology of embryonic stem cells • Crucial for the successful maintenance of embryonic stem cells
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. This helps ensure lot-to-lot performance consistency
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 • Ideal for customers performing cell culture assays on hormone- and lipid-related research

Quality control tests

We perform these quality control tests on each production lot, depending on the use of sera

Up to 65 quality tests per batch

Table 1. FBS quality control tests.

	Standard		Performance		Performance Plus		Secure		Specialty				
Test	Qualified 12483, 10437, 10270, 10106	Qualified Heat-Inactivated 12484, 10438, 10500, 10108	Qualified 26140	Qualified Heat-Inactivated 16140	Certified 16000	Certified Heat-Inactivated 10082	Qualified 10099, 10091	Qualified Heat-Inactivated 10100, 10093	Dialyzed 26400	Ultra-Low IgG 16250, 192-1005	Charcoal Stripped 12676	ES Cell-Qualified 16141, 10439	MSC Qualified 12662, 12664, 12665, 12673
Bacteriophage tested					●	●	●[1]	●[1]					●[1]
Biochemical profile	●[6]	●[6]			●	●	●[1]	●[1]					●[1]
Bovine IgG (<5 µg/mL)										●			
Determination of % oxy Hb (>70%)					●	●	●[1]	●[1]					●[1]
Electrophoretic pattern	●	●	●	●	●	●	●	●	●	●	●	●	●
Endotoxin (EU/mL)	●	●	●	●	●	●	●	●	●	●	●	●	●
ES cell performance assays												●	
MSC CFU-f assay													●
Glucose (<5 µg/mL)									●				
Hemoglobin (mg/dL)	●	●	●	●	●	●	●	●	●	●		●	●
Hormone profile	●[6]	●[6]			●	●	●[1]	●[1]			●[5]		●[1]
Mycoplasmas	●	●	●	●	●	●	●	●	●	●	●	●	●
Osmolality	●	●	●	●	●	●	●	●	●	●	●	●	●
Performance tested	●	●	●	●	●	●	●	●	●	●	●	●	●
pH	●	●	●	●	●	●	●	●	●	●	●	●	●
Sf9 cell assay	●[2]	●[2]	●[2]	●[2]	●	●	●[2]	●[2]					●[1]
Sterility testing (bacteria/fungi)	●	●	●	●	●	●	●	●	●	●	●	●	●
Tetracycline*	●[3]	●[3]	●[3]	●[3]									
Total protein	●	●	●	●	●	●	●	●	●	●	●	●	●
Viral testing													
Akabane virus							●[1]	●[1]					●[1]
Bluetongue virus	●[4]	●[4]	●	●	●	●	●	●	●	●	●	●	●
Bovine adenovirus FA	●[4]	●[4]	●	●	●	●	●	●	●	●	●	●	●
Bovine parvovirus FA	●[4]	●[4]	●	●	●	●	●	●	●	●	●	●	●
Bovine respiratory syncytial virus FA	●[4]	●[4]	●	●	●	●	●	●	●	●	●	●	●
Bovine viral diarrhea virus FA	●	●	●	●	●	●	●	●	●	●	●	●	●
Bovine viral diarrhea neutralization assay										●			
Cytopathic agents (e.g., IBR)	●	●	●	●	●	●	●	●	●	●	●	●	●
Hemadsorbing agents (e.g., PI3)	●	●	●	●	●	●	●	●	●	●	●	●	●
Reovirus FA	●[4]	●[4]	●	●	●	●	●	●	●	●	●	●	●
Rabies virus FA	●[4]	●[4]	●	●	●	●	●	●	●	●	●	●	●

1. Indicates test performed and passed on Australian sourced product (10099, 10100, 12664) sold in the US.
2. Sf9 testing performed on selected lots of 26140, 16140, 10437, 10438, 10099, 10100.
3. Indicates testing done on US and USDA-approved (26140, 10437) sources only.
4. Excludes South American origins.
5. Estradiol testing only.
6. Indicates test performed on Canadian-sourced product (12483, 12484).

* Test was added in January 2006.

Sera from other animals

Includes horse and goat sera and many others predominantly sourced from New Zealand

Table 2. Other serum quality control tests.

Test	Newborn Calf Serum 16010	Newborn Calf Serum Heat-Inactivated 26010	Bovine Serum 16170	Bovine Serum Heat-Inactivated 26170	Donor Bovine Serum 16030	Donor Bovine Serum with Iron 10371	Horse Serum 16050	Horse Serum Heat-Inactivated 26050	Chicken Serum 16110	Goat Serum 16210	Lamb Serum 16070	Porcine Serum 26250	Rabbit Serum 16120
Cytotoxicity assay									●		●	●	
Electrophoretic pattern	●	●	●	●	●	●	●	●	●	●	●	●	●
Endotoxin (EU/mL)	●	●	●	●	●	●	●	●					
Hemoglobin (mg/dL)	●	●	●	●	●	●	●	●	●	●	●	●	●
Mycoplasmas	●	●	●	●	●	●	●	●	●	●	●	●	●
Osmolality	●	●	●	●	●	●	●	●	●		●	●	
pH	●	●	●	●	●	●	●	●	●		●	●	
Sp2 performance assay							●	●					
Sterility testing (bacteria/fungi)	●	●	●	●	●	●	●	●	●	●	●	●	●
Total protein	●	●	●	●	●	●	●	●	●	●	●	●	●
Vero performance assay	●	●	●	●	●	●							
Viral testing													
Bluetongue virus	●	●	●	●	●	●							
Bovine adenovirus FA	●	●	●	●	●	●							
Bovine parvovirus FA	●	●	●	●	●	●							
Bovine respiratory syncytial virus FA	●	●	●	●	●	●							
Bovine viral diarrhea virus FA	●	●	●	●	●	●	●	●				●	
Cytopathic agents	●	●	●	●	●	●	●	●				●	
EIA Coggins							●	●					
Equine herpes virus							●	●					
Equine viral arteritis							●	●					
Hemadsorbing agents	●	●	●	●	●	●	●	●				●	
Porcine adenovirus												●	
Porcine hemagglutinating encephalitis												●	
Porcine parvovirus												●	
Rabies FA	●	●	●	●	●	●	●	●				●	
Reovirus FA	●	●	●	●	●	●	●	●				●	
Transmissible gastroenteritis virus												●	

Ordering information†

Secure	Gibco® sera sourced exclusively from BSE-free regions, with low endotoxin, for cell culture requiring lowest viral risk			
	Origin	Cat. No.	Size	Additional offering
Fetal Bovine Serum, Qualified	Australia	10099133	100 mL	
		10099141	500 mL	
		10099158	1,000 mL	
		10100139	100 mL	Heat inactivated
		10100147	500 mL	Heat inactivated
		10100154	1,000 mL	Heat inactivated
	New Zealand	10091130	100 mL	
		10091148	500 mL	
		10091155	1,000 mL	
		10093136	100 mL	Heat inactivated
		10093177	500 mL	Heat inactivated
		10093151	1,000 mL	Heat inactivated
Newborn Calf Serum	New Zealand	16010167	100 mL	
		16010159	500 mL	
		16010142	1,000 mL	
		26010066	100 mL	Heat inactivated
		26010074	500 mL	Heat inactivated
Bovine Serum		16170086	100 mL	
		16170078	500 mL	
		16170060	1,000 mL	
		26170035	100 mL	Heat inactivated
		26170043	500 mL	Heat inactivated
Donor Bovine Serum w/Iron		10371029	500 mL	
Donor Bovine Serum		16030074	500 mL	
		16030108	1,000 mL	

Ordering information†

Specialty	Gibco® sera qualified for cell culture for specialty research and specific assays			
	Origin	Cat. No.	Size	Additional qualifications
Fetal Bovine Serum, Embryonic Stem Cell Qualified	USDA-approved regions	10439001*	50 mL	
		10439016*	100 mL	
		10439024*	500 mL	
	United States	16141002*	50 mL	
		16141061*	100 mL	
		16141079*	500 mL	
	New Zealand	30044184*	100 mL	
		30044333*	500 mL	
Fetal Bovine Serum, Mesenchymal Stem Cell Qualified	USDA-approved regions	12662002	50 mL	
		12662011	100 mL	
		12662029	500 mL	
	New Zealand	12665014	100 mL	
		12665022	500 mL	
	Australia	12664017	100 mL	
		12664025	500 mL	
Fetal Bovine Serum, Charcoal Stripped	USDA-approved regions	12676011*	50 mL	
		12676029*	500 mL	
Fetal Bovine Serum, Dialyzed	United States	26400036	100 mL	
		26400044	500 mL	
	New Zealand	30067185	100 mL	
		30067334	500 mL	
Fetal Bovine Serum, Ultra-Low IgG	United States	16250086	100 mL	
		16250078	500 mL	
	New Zealand	1921005PG	100 mL	
		1921005PJ	500 mL	
Horse Serum	New Zealand	16050130	100 mL	
		16050122	500 mL	
		16050114	1,000 mL	
		26050070	100 mL	Heat inactivated
		26050088	500 mL	Heat inactivated
Lamb Serum		16070096	500 mL	
Chicken Serum		16110082	500 mL	
Goat Serum		16210064	100 mL	
		16210072	500 mL	
Porcine Serum		26250084	500 mL	
Rabbit Serum	United States	16120099	100 mL	
		16120107	500 mL	

*For Research Use Only. Not for use in diagnostic procedures.

Ordering information†

Standard	Gibco® sera for cell culture with robust cell lines			
	Origin	Cat. No.	Size	Additional offering
Fetal Bovine Serum, Qualified	USDA-approved regions	10437010	100 mL	
		10437028	500 mL	
		10437036	1,000 mL	
		10437077	50 mL	One Shot™
		10437085	40 x 50 mL	One Shot™
		10438018	100 mL	Heat inactivated
		10438026	500 mL	Heat inactivated
		10438034	1,000 mL	Heat inactivated
	South America	10270098	100 mL	
		10270106	500 mL	
		10499036	100 mL	Gamma irradiated
		10499044	500 mL	Gamma irradiated
		10500056	100 mL	Heat inactivated
		10500064	500 mL	Heat inactivated
		12657011*	100 mL	
		12657029*	500 mL	
	Canada	12483012*	100 mL	
		12483020*	500 mL	
		12484010*	100 mL	Heat inactivated
		12484028*	500 mL	Heat inactivated
Performance	**Gibco® low-endotoxin sera for general cell culture with common cell lines**			
	Origin	Cat. No.	Size	Additional offering
Fetal Bovine Serum, Qualified	United States	26140087	100 mL	
		26140079	500 mL	
		26140095	1,000 mL	
		26140111	50 mL	One Shot™
		26140129	40 x 50 mL	One Shot™
		16140063	100 mL	Heat inactivated
		16140071	500 mL	Heat inactivated
		16140089	1,000 mL	Heat inactivated
Performance Plus	**Gibco® lowest-endotoxin sera with hormone and biochemical profiles. For a broad range of cell types, including sensitive cell lines**			
	Origin	Cat. No.	Size	Additional offering
Fetal Bovine Serum, Certified	United States	16000036	100 mL	
		16000044	500 mL	
		16000069	1,000 mL	
		16000077	50 mL	One Shot™
		16000085	40 x 50 mL	One Shot™
		10082139	100 mL	Heat inactivated
		10082147	500 mL	Heat inactivated

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