


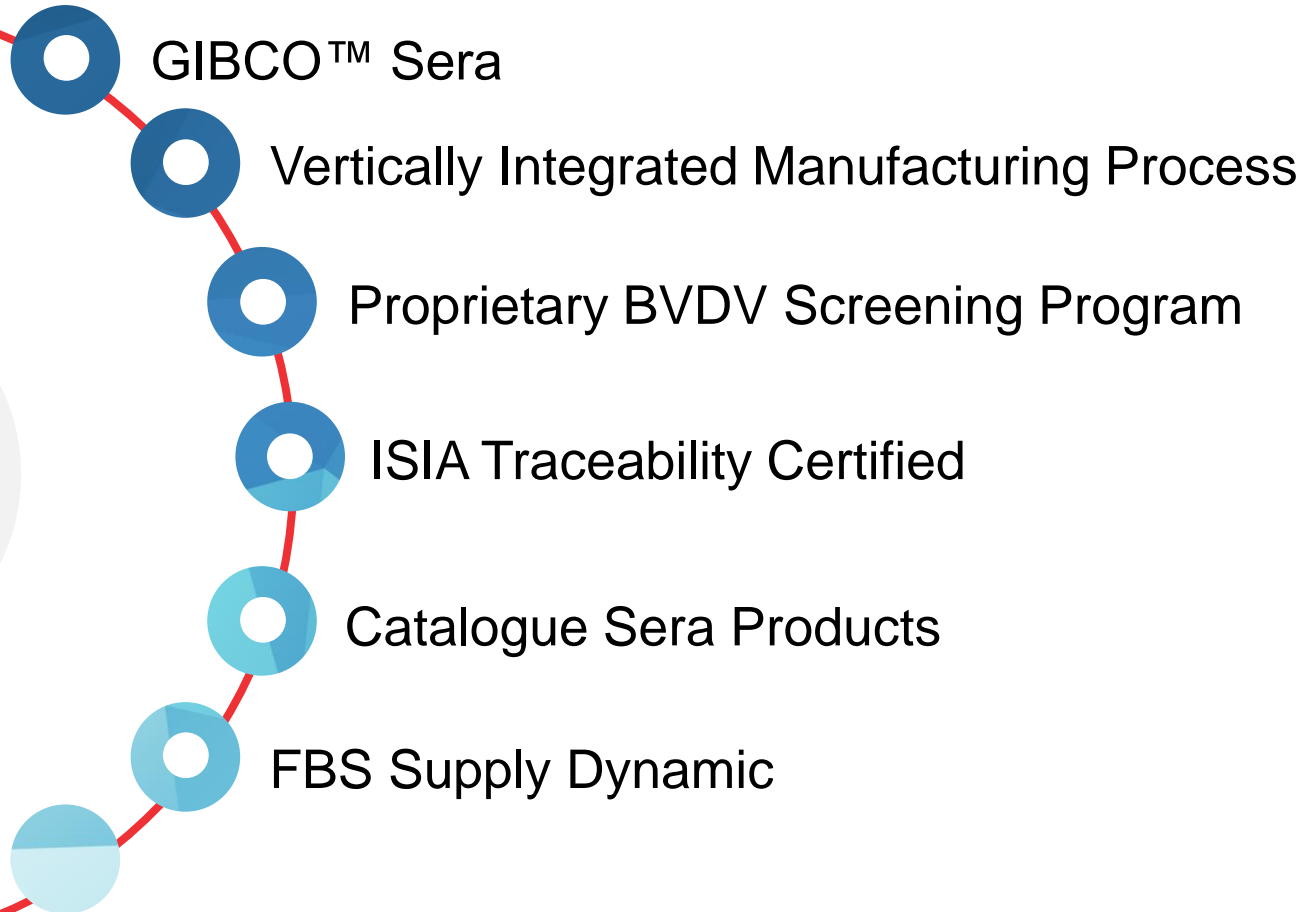


Gibco™ Sera



The world leader in serving science

Topics



Our Global Manufacturing Sites



Overview

- 6 manufacturing sites
- Serving research & bioproduction markets
- Manufacture & distribute cell culture, serum & serum related products
- 589 operations employees

Serum supplier with highest quality & consistent performance

- Vertically integrated manufacturing process to ensure highest level of traceability & quality
- International Serum Industry Association (ISIA) traceability certified
- Product customization and best in class technical & analytical support
- Exclusive screening for BVDV in AUS & NZ to help ensure lowest viral risk



Vertically integrated “finish at source” manufacturing process



Blood Collection

Blood collected from Abattoirs



Raw Serum Conversion

Blood will be centrifuged and converted into raw serum



Sterile Filtration & Processing

Raw serum is thawed, pooled and sterile filtered



Dispensing

Sterile Filtered Serum is aseptically dispensed in ISO 7 clean rooms / ISO 5 cabinets



GIBCO FBS



Traceability

offers highest level of traceability & quality

Key benefits to customers

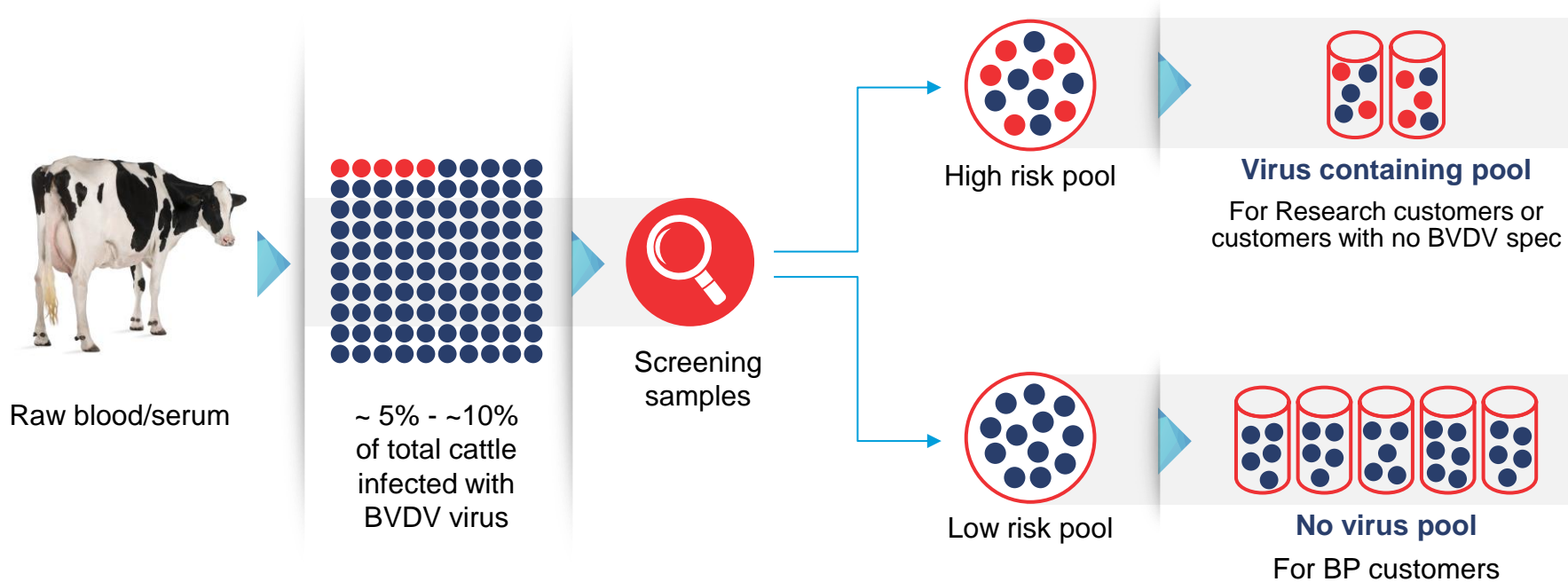


Minimized Risk

of contamination with adventitious agents

Low risk of viral contamination- Proprietary BVDV Screening Process for AUS/NZ FBS

Proprietary screening method to remove BVD Virus



GIBCO® Sera is ISIA traceability Certified

GIBCO® sera have gone through a rigorous process to obtain International Serum Industry Association (ISIA) traceability certification

What does traceability certification mean?

- 1** We maintain records of traceability from origin throughout the supply chain for all serum batches
- 2** We maintain the history for both quality and quantity of material, from the point of collection through the inspection and auditing processes
- 3** Documentation is retained to support all stages of processing and transportation



Catalogue Fetal Bovine Sera Offered By Thermo Fisher Scientific

Recommended for most BioProduction applications

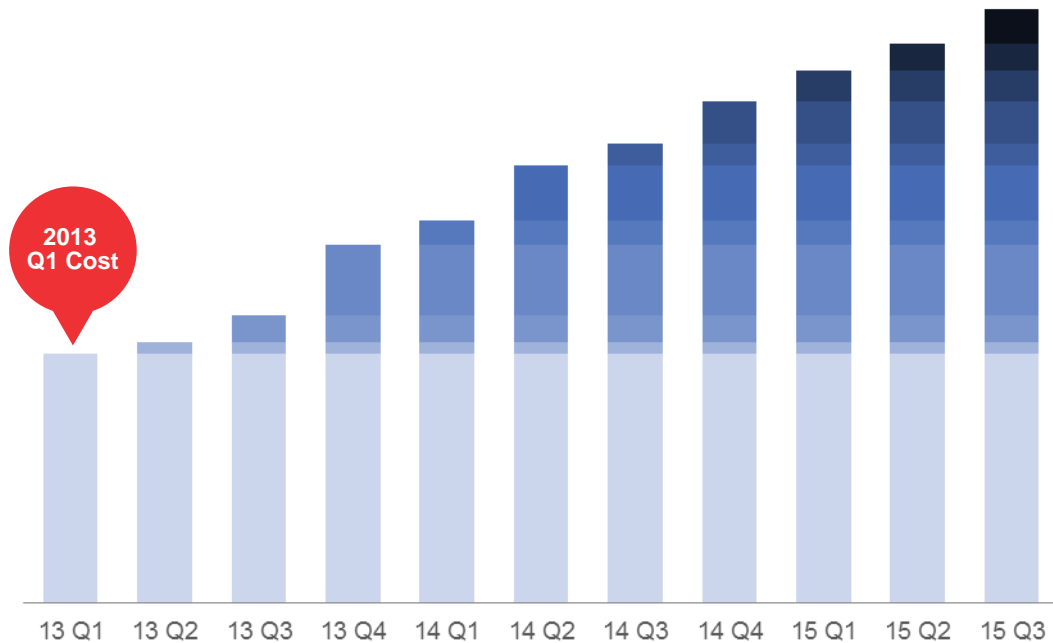
	Standard	Performance	Performance +	Secure FBS
	Sera for cell culture with robust cell lines. Good value for basic research	Low endotoxin sera for general cell culture with common cell lines	Lowest endotoxin for a broad range of cell types, especially sensitive cell lines	Sera for cell culture with the least viral risk, preferred for BioProduction requiring low BVDV
Product	FBS Qualified (USDA approved, Canada, South America origin)	FBS Qualified (US origin)	FBS Certified (US origin)	FBS Qualified (AUS origin) FBS Qualified (NZ origin)
Endotoxin Specification	≤50 EU/mL	≤10 EU/mL	≤5 EU/mL	≤10 EU/mL
Quality / Performance Testing (Gamma irradiated upon request)	Performance, Mycoplasma, Virus, and Endotoxin tested	Performance, Mycoplasma, Virus, and Endotoxin tested	Performance, Mycoplasma, Virus, and Endotoxin tested	Performance, Mycoplasma, Virus, and Endotoxin tested plus exclusive screening for BVDV at collection
Recommended Catalogue Number	10437- FBS Qualified (USDA approved regions)	26140 - FBS Qualified (US Origin)	16000 - FBS Certified (US Origin)	10099 - FBS Qualified (AUS Origin) 10091 - FBS Qualified (NZ Origin)

Catalogue Other Animal Sera offered By Thermo Fisher Scientific

Products can be customized to meet individual customer needs

	FBS Alternatives	Vaccine Production	Diagnostic Reagents
Application	Other Animal serum, which may be suitable as a low- cost alternative to FBS	Other Animal serum, used in the production of vaccines or other processes	High protein sera products suitable for use as base reagents in diagnostic kits
Products	<ul style="list-style-type: none"> • Donor Bovine Serum (DBS) • Donor Bovine Serum with Iron • New Born Calf Serum (NBCS) • Adult Bovine Serum • Horse Serum 	<ul style="list-style-type: none"> • Adult Bovine Serum • Horse Serum • Porcine Serum 	<ul style="list-style-type: none"> • Horse Serum • Porcine Serum • Goat Serum • Lamb Serum • Chicken Serum
Recommended Catalogue Number	16030 – Donor Bovine Serum 10371 – Donor Bovine Serum with Iron 16010 – New Born Calf Serum 16170 – Adult Bovine Serum 16050 – Horse Serum	16170 – Adult Bovine Serum 16050 – Horse Serum 26250 – Porcine Serum	16050 – Horse Serum 26250 – Porcine Serum 16210 – Goat Serum 16070 – Lamb Serum 16110 – Chicken Serum

FBS Supply Dynamic



Note: FBS Cost Index based on Thermo Fisher Scientific FBS costs



Reduced supply and increased demand is increasing overall costs

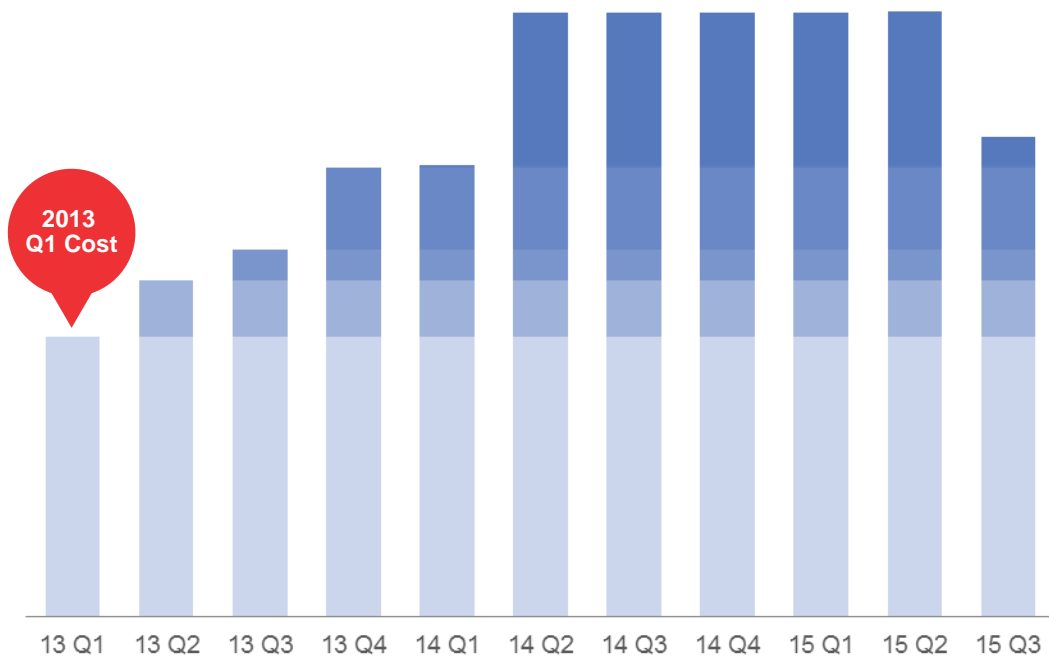
Increase In Costs Driven By

Low Availability

- After 7 years of herd contraction, farmers focused in herd rebuilding leading to reduced cow kill
- Herd rebuilding expected to continue next 2-3 years

Increased Demand

- BSE status upgrade of US FBS & increased AUS FBS costs lead customers to switch
- Aggressive competitor pressure to acquire supply



Note: FBS Cost Index based on Thermo Fisher Scientific FBS costs



Stable market condition lead to reduction in costs

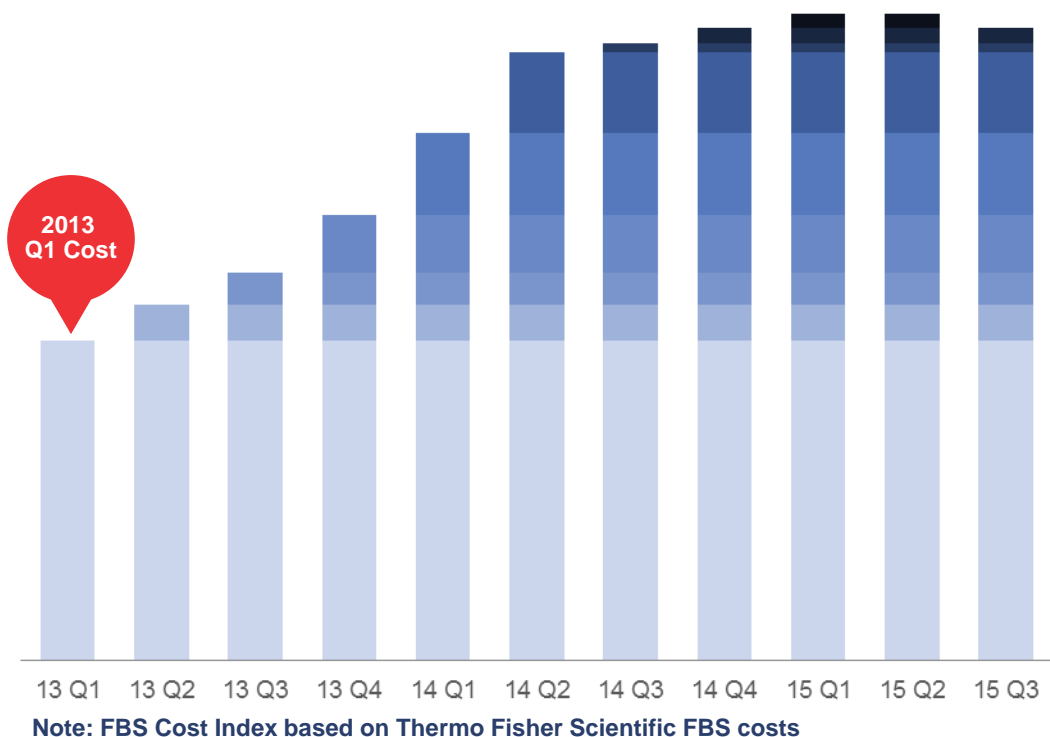
Cost Dynamics

Supply Availability

- Increased global demand combined with several years of low supply caused supply shortage last 2 years
- Improved supply position since last few months
- Cow kill expected to reduce starting 2016 Q2

Global Demand

- Customers steadily switching back to AUS FBS with improved supply conditions



Stable market condition lead to reduction in costs

Cost Dynamics

Supply Availability

- Drought in 2013/14 reduced the overall availability
- Market moving back to normalcy since 2015 Q2
- Historically availability of NZ FBS is lower than AUS FBS

Global Demand

- AUS FBS and NZ FBS cost markets are closely linked
- Perceived to be of higher quality compared to other origins due to NZ Biosecurity regulations

Results Matter



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