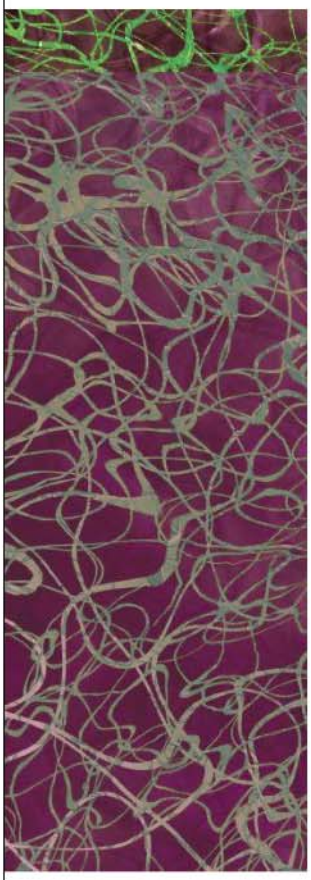
cell culture | 90-191

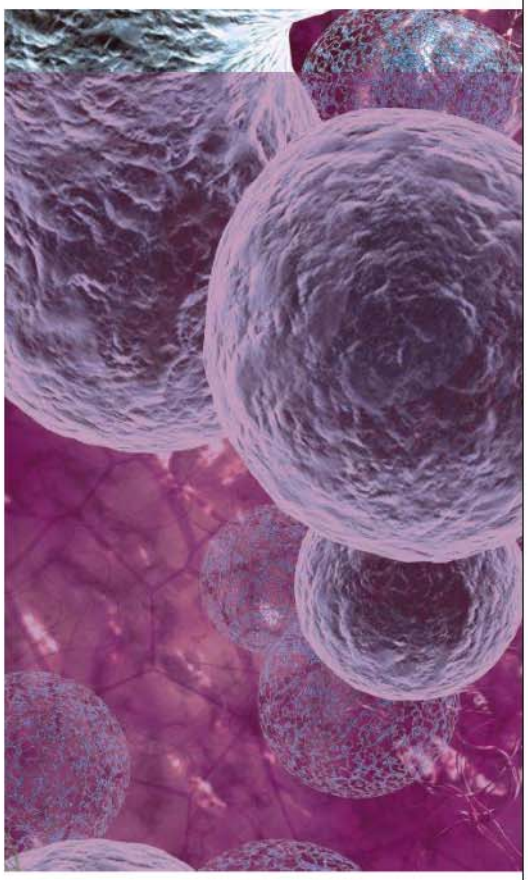
Elevating quality and performance in cell culture.



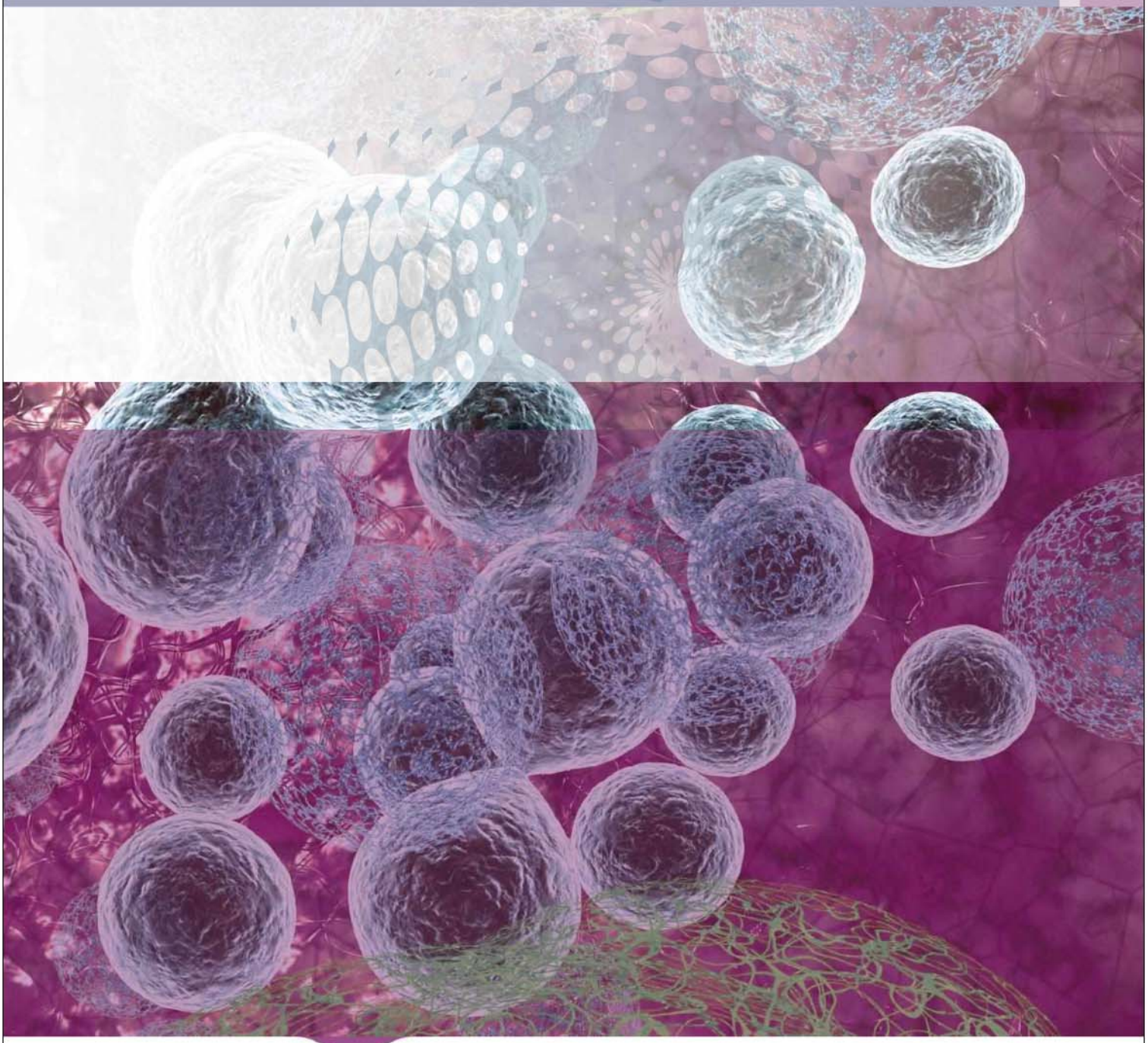
Distinction is our legacy. For more than 50 years, Thermo Scientific cell culture products have been a cornerstone of quality and dependability among researchers and scientists worldwide.

Today, our cell culture portfolio is built on a framework of innovative surface technologies and formats that achieve optimal consistency and growth across a variety of cell types – representing traditional as well as stem cell lines and IVF applications. Our portfolio also includes filtration products, with relevant membrane offerings to collectively optimize sterility and safety in your process. Our products are further enhanced by offerings that assist in the rigorous requirements of fluid transfer – a challenge met by the precision of our serological pipettes and conical tubes.

To serve the expanding needs of cell culture research, Thermo Scientific HyClone sera and media set the standard for quality, purity and lot-to-lot consistency. Our manufacturing processes are validated to ensure compliance with cGMP, ISO 9001:2000, ISO 13485:2003 and our own stringent quality standards.



▶ **For more information about Thermo Scientific cell culture solutions visit:**
www.thermoscientific.com/cellculture



consistent growth

Cell Culture Table of Contents

Optimizing Your Results Across Every Stage of Cell Culture

Cell culture research is becoming more challenging everyday, making the requirement for superior product quality and performance across each stage of cell culture more critical than ever.

Thermo Fisher Scientific offers a complete portfolio of cell culture products and solutions that lead the industry worldwide in quality, choice and innovation – so researchers can advance their work with complete confidence.

Surface Selection Guide

To help ensure the most flexible, reproducible and reliable results across every stage of cell culture, Thermo Scientific Nunc™ offers an extensive range of products spanning a variety of formats, sizes and surfaces. The following charts will help guide product selection, with specific cell types and desired cell culture ranges in mind.

Select Your Surface

	Thermo Scientific Cell Culture Surfaces		Nunclon Delta	Nunclon Vita	Collagen I	Poly-D-Lysine	Low Cell Binding	HydroCell	UpCell	Untreated Surface
Cell Types	**Hepatocytes**		•	•	•				•	
	Endothelial Cells		•		•				•	
	Neuronal Cells	Neuronal Cells	•			•			•	
		Neurosphere					•	•		
	Epithelial Cells		•	•	•				•	
	Tumor Cells		•	•	•	•			•	
	Blood Cells	Macrophages, Dendritic Cells, Neutrophils	•						•	
		Lymphocytes	•				•	•		•
		Platelet	•		•				•	
	Stem Cells	MSC	•	•					•	
		HSC	•							
		ESC	•*	•**						
		EB					•	•		

** Requires matrix coating.*

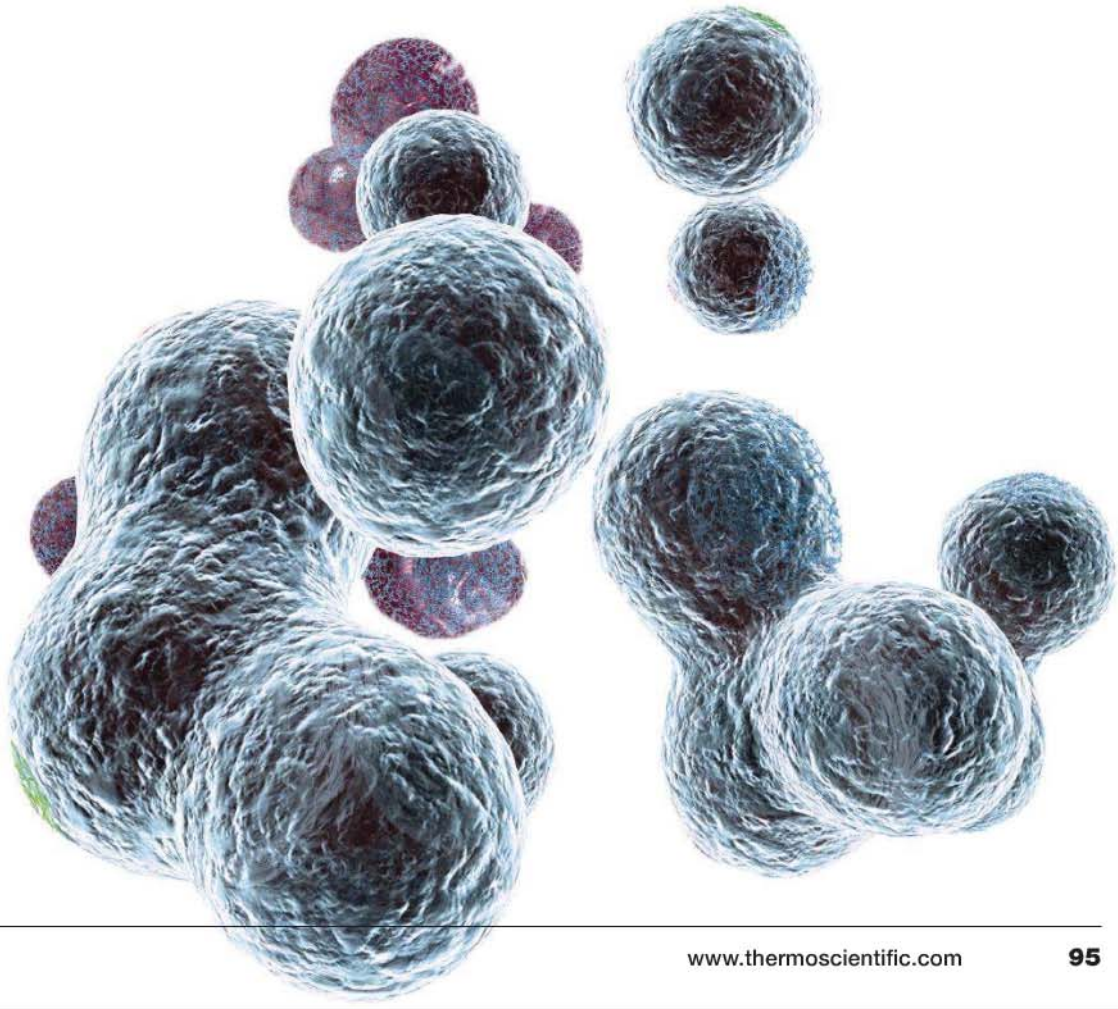
*** Requires conditioned media from feeder cells and ROCK inhibitor.*

Select Your Format

	Thermo Scientific Cell Culture Surfaces			Nunclon Delta	Nunclon Vita	Collagen I	Poly-D-Lysine	Low Cell Binding	HydroCell	UpCell	Untreated Surface
Format Types	**Flasks**	25 - 500 Culture Area Range (cm^2)	Standard T25-T175	•							•
			EasYFlask T25-T225	•		•	•				•
			Triple Flask T500	•							•
	Dishes (Cell Culture Treated & Petri)	8.8 -150 Culture Area Range (cm^2)	35 mm	•					•	•	•
			60 mm	•				•	•	•	
			90 mm					•			
			100 mm	•					•	•	
			150 mm	•							
			OmniTray	•							
	Multidishes	1.9 - 1.1 /well Culture Area Range (cm^2)	4-well	•							•
			6-well	•	•	•	•	•	•	•	•
			12-well	•				•	•	•	•
			24-well	•				•	•	•	•
			48-well	•					•	•	•
			96-well	•					•	•	•

Mechanism of Action

- **Energy treatment:** The energetic surface oxidation improves polystyrene surface hydrophilicity and results in generation of both hydroxyl and carboxyl functional groups. The presence of these hydrophilic groups facilitates the protein unfolding needed for cell attachment.
- **Extracellular matrix (ECM) coating:** Passive adsorption of biological materials such as ECM facilitates the adhesion of finicky cells by mimicking the action of basal lamina substrates on cell culture surfaces.
- **Polymer graft:** Covalent binding of polymers to polystyrene enables special functions to the cell culture surface (e.g. super-hydrophilic polymer prevents cells from adhering to Low Cell Binding and HydroCell surfaces; thermoresponsive polymer enables enzyme-free detachment of cells by reducing the external culture temperature).
- **Untreated polystyrene:** The smooth and hydrophobic polystyrene surface allows non-adherent cell culture at low cost.



Thermo Scientific Nunc EasYFlasks with Filter or Vent/Close Caps

cell culture treated

Filter caps for continuous venting:

The caps are fitted with a hydrophobic filter to ensure consistent gas exchange.

"Y" mark indicating "vent" or "closed"

Any of the legs pointing vertically upwards indicates that the cap is in vent position.

Any of the legs pointing vertically downwards indicates that the flask is closed.

Nunc™ EasYFlasks™ are Nunclon™ Delta treated, a proprietary cell culture surface treatment that offers maximum adhesion for a broad range of cell types.

The ergonomic design with angled neck and wide opening allows easy access to the cell growth surface by pipets or cell scrapers. The slightly angled side walls allow complete viewing under a microscope.

Nunc EasYFlasks with Nunclon Delta treated surface are designed for enhanced cell attachment, growth and differentiation.

details

- Ergonomic design with a 1/3 turn to open, close or vent
- Low profile maximizes incubator space
- Volume graduations printed and molded on both sides, provides increased visibility when filling flasks for consistency, flask to flask
- Wide, angled neck design facilitates pipette and cell scraper access
- Slightly angled side walls allows complete viewing under a microscope
- Sterilized by gamma irradiation and certified to be non-pyrogenic

Vent/close Caps

- Vent/close caps feature a "Y" mark that allows visual verification of vent position
- Vent position easily distinguished even when flasks are stacked in incubators

Filter Caps

- Filter membrane provides effective barrier against microorganisms
- Well-defined, hydrophobic filter membrane offers continuous venting with consistent gas exchange and no lot-to-lot variation
- Chemically robust membrane meets USP class VI standards and is produced without animal-derived substances

Includes: Caps

Accessories: Loose Caps for Nunc EasyFlasks Nunclon Delta Sterile

Cat. No.	Closure	Use for flask size, cm	Units per Pack/ Case
158892	Vent/close	25	1/100
158523	Filter	25	1/100
158240	Vent/close	75	1/100
157527	Filter	75	1/100
133001	Vent/close	175/225	1/100
933002	Filter	175/225	1/100

Nunc EasYFlasks with Filter or Vent/Close Caps

Cat. No.	Surface	Closure	Culture Area, cm^2	Working Vol., mL	No. per Pack	No. per Case
156367	Nunclon Delta-treated	Filter	25	7	10	200
156499	Nunclon Delta-treated	Filter	75	25	5	100
159910	Nunclon Delta-treated	Filter	175	55	5	30
159934	Nunclon Delta-treated	Filter	225	70	5	30
156340	Nunclon Delta-treated	Vent/Close	25	7	10	200
156472	Nunclon Delta-treated	Vent/Close	75	25	5	100
159920	Nunclon Delta-treated	Vent/Close	175	55	5	30
159933	Nunclon Delta-treated	Vent/Close	225	70	5	30

Thermo Scientific Nunc Flasks with Filter or Vent/Close Caps

cell culture treated

Nunc™ Cell Culture Flasks are Nunclon Delta treated, a proprietary cell culture surface treatment that offers maximum adhesion for a broad range of cell types.

These flasks are individually leak tested and offer growth areas from 25-175 cm^2. The filter caps allow constant airflow and minimize chance of contamination.

Nunc Flasks with Nunclon Delta treated surface are designed for enhanced cell attachment, growth and differentiation. Unique hydrophobic 0.22 µm filter cap utilizes a three-dimensional matrix of nonwettable polyethylene fibers that prevent penetration of microorganisms.

details

- Short, wide necks allow for easy access
- Sterilized by gamma irradiation and certified to be non-pyrogenic
- Barcoded 175 cm^2 flasks with large Code 128 are compatible with automation

Includes: Caps.

Nunc Flasks with Filter and Vent/Close Caps

Cat. No.	Neck Style	Culture Area, cm^2	Working Vol., mL	Bar Code	Closure	No. per Pack	No. per Case
136196	Angled	25	7	----	Filter	20	160
178905	Straight	80	30	----	Filter	5	50
178883	Straight	175	68	----	Filter	1	32
178885	Straight	175	68		Filter	4	32
178983	Straight	175	68	Large Code 128	Filter	1	32
178985	Straight	175	68	Large Code 128	Filter	4	32
163371	Angled	25	7		Vent/Close	20	160
153732	Straight	80	30		Vent/Close	5	50
156502	Straight	175	68		Vent/Close	4	32
156505	Straight	175	68		Vent/Close	4	32

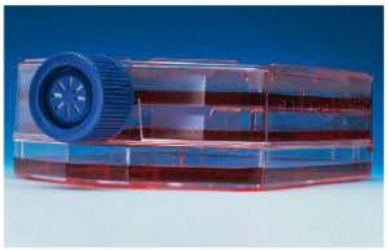
Thermo Scientific Caps for Flasks Nunclon Delta

Caps for Flasks Nunclon Delta

Cat. No.	Closure	Color	For Flasks	Units per Pack	No. per Case
151209	Filter	Blue	25 cm^2	1	100
151152	Vent/Close	Blue	25 cm^2	1	100
144652	Filter	Blue	80 cm^2	1	100
144458	Vent/Close	Blue	80 cm^2	1	100
147104	Filter	Blue	175 cm^2	1	100
147074	Vent/Close	Blue	175 cm^2	1	100

Thermo Scientific Nunc TripleFlasks

cell culture treated



Nunc™ TripleFlasks offer maximum surface area within the foot print of a standard flask.

Provides a total culture area of 500 cm^2 by way of three parallel layers and a straight neck design that works effectively within automation systems. The Nunc TripleFlask utilizes the Nunclon™ Delta treatment, a proprietary cell culture surface treatment that offers maximum adhesion for a broad range of cell types.

Three layers of growth surfaces provide a total culture area of 500 cm^2 in the same footprint as a standard 175 cm^2 flask.

details

- Recommended working volume is 200 mL
- Promotes conventional, flat, monolayer culturing
- Ideal for large cell mass applications such as drug screening and scale up
- External dimensions of 175 cm^2
- Also offered barcoded with large Code 128
- Available in two packaging configurations: single- and four-pack

Nunc TripleFlasks

Cat. No.	Description	Culture Area cm^2	No. per Pack	No. per Case
132867	Vent/Close, Without Barcode	500	1	32
132913	Filter Closure, Without Barcode	500	1	32
132920	Filter Closure, With Barcode	500	1	32
132865	Vent/Close, Without Barcode	500	4	32
132935	Filter Closure, Without Barcode	500	4	32
132925	Filter Closure, With Barcode	500	4	32

Caps for Flasks Nunclon Delta

Cat. No.	Closure	Color	For Flasks	Units per Pack	No. per Case
146003	Filter	White	175/185/500 cm^2	1	100
147074	Vent/Close	Blue	175/185/500 cm^2	1	100
147104	Filter	Blue	175/185/500 cm^2	1	100

Thermo Scientific Nunc Dishes

cell culture treated

Nunc™ Dishes are designed for optimal performance and offer a broad range of sizes and styles to suit a variety of experimental needs.

The cell culture dishes receive the Nunclon™ Delta surface treatment, a proprietary surface modification that promotes maximum adhesion for a broad range of cell types. The Petri dishes are made from high-quality and optically-clear polystyrene.

Nunc culture dishes with a variety of sizes and designs are made from high-quality, optically-clear polystyrene.

details

- Nunclon Delta treated dishes are optimized for cell attachment
- Top and bottom stacking rings for easier handling and more stable stacking
- Sterilized by gamma irradiation
- Come with or without air vents for gas exchange
- The culture dishes with 2 x 2 mm grid are ideal for cloning experiments and determination of plating efficiency; 174926 and 169558 feature 2 mm grids
- Cat. Nos. 171099 and 150340 for suspension culture – (not Nunclon)

Ordering Information: For dish dimensions, see product specifications.

Certifications: Offered with certificate of traceability and quality (one certificate per case).

Nunc Dishes

Cat. No.	Style	Culture Area, cm^2	Culture Surface	Working Vol., mL	O.D. x H, mm	Grid Size	Vented	No. per Pack	No. per Case
150318	With lid, without airvent	8.8	Nunclon Delta treated	3	35 x 10	NA	No	10	500
153066	With lid, airvent	8.8	Nunclon Delta treated	3	35 x 10	NA	Yes	10	500
174926	With lid, airvent	8.8	Nunclon Delta treated	3	35 x 10	2 x 2 mm	Yes	20	500
171099	With lid, airvent	8.8	–	3	35 x 10	NA	Yes	20	500
174888	With lid, airvent	21.5	Nunclon Delta treated	5	60 x 15	NA	Yes	20	500
150326	With lid, without airvent	21.5	Nunclon Delta treated	5	60 x 15	NA	No	10	400
150288	With lid, airvent	21.5	Nunclon Delta treated	5	60 x 15	NA	Yes	10	400
150340	With lid, airvent	21.5	–	3	60 x 15	NA	Yes	10	400
169558	With lid, airvent	21.5	Nunclon Delta treated	5	60 x 15	2 x 2 mm	Yes	10	400
150350*	With lid, airvent	56.7	Nunclon Delta treated	12.5	100 x 15	NA	Yes	10	150
150679**	With lid, airvent	56.7	Nunclon Delta treated	12.5	100 x 15	NA	Yes	10	450
172958	With lid, airvent	56.7	Nunclon Delta treated	12.5	100 x 20	NA	Yes	10	480
168381	With lid, airvent	145	Nunclon Delta treated	35	150 x 20	NA	Yes	10	80
157150	With lid, airvent	150	Nunclon Delta treated	35	150 x 20	NA	Yes	10	120
166508	With lid, without airvent	500	Nunclon Delta treated	135	245 x 245 x 25	NA	No	4	15

** Not available in North America*

***Not available in Europe*

Thermo Scientific Nunc Multidishes

cell culture treated

Nunc™ Cell Culture Multidishes are Nunclon™ Delta treated.

This proprietary surface modification promotes maximum adhesion for a broad range of cell types and ensures optimum performance. Nunclon Delta surface treatment ensures optimum performance for cell adhesion.

details

- Flat well bottom and stackable
- Raised well rims lower risk of cross contamination
- Sterilized by gamma irradiation and certified to be non-pyrogenic
- Excellent optical quality
- Alphanumeric codes for well identification

Round Well Styles

- Feature vented lids for gas exchange
- Recessed areas around wells act as a water reservoir to reduce evaporation from wells
- Lids with notched corners for easy orientation

Rectangular Well Styles

- Large culture area
- Accepts standard glass cover slips: 24 × 60 mm for 4-well plate; and 22 × 22 mm for 8-well plate

Ordering Information: 24-well plates are 17 mm deep; 4-well plate is 10 mm deep.

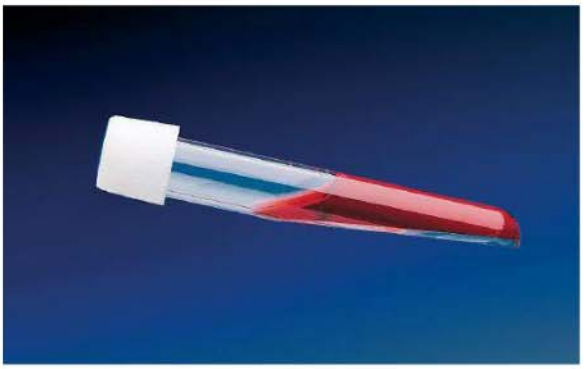
Certifications: Offered with certificate of traceability and quality (one certificate per case).

Nunc Multidishes

Cat. No.	Surface Culture	No of Wells	O.D., mm	Well Shape	Culture Area, cm^2	Working Vol., mL	No. per Pack	No. per Case
176740	Nunclon Delta	4	66 x 66	Round	1.9	1	4	500
167063	Nunclon Delta	4	128 x 86	Rectangular	21.8	5	10	500
140675	Nunclon Delta	6	128 x 86	Round	9.6	3	1	500
140685	Nunclon Delta	6	128 x 86	Round	9.6	3	5	500
167064	Nunclon Delta	8	128 x 86	Rectangular	10.5	3	10	500
150628	Nunclon Delta	12	128 x 86	Round	3.5	2	1	400
142475	Nunclon Delta	24	128 x 86	Round	1.8	1	1	400
142485	Nunclon Delta	24	128 x 86	Round	1.8	1	5	400
150687	Nunclon Delta	48	128 x 86	Round	1.1	0.5	1	400
152640	Nunclon Delta	48	128 x 86	Round	1.1	0.5	5	150

Thermo Scientific Nunc Tubes

cell culture treated



Nunc™ Tubes receive the Nunclon™ Delta treatment, a proprietary cell culture surface treatment that offers maximum performance for a broad range of cell types and applications.

details

- Round-bottom version with screw or push-on cap
- Flat-sided tube for culture of adherent cells
- Flat side allows easy microscopy, a coverslip can be used in the tube
- Medium retained in the flat-sided tube in horizontal position
- Excellent optical quality
- Nunclon Delta certified

Nunc Tubes

Cat. No.	Shape	L x W, mm	Culture Area, cm²	Working Vol., mL	Cap Type	No. per Pack	No. per Case
145470	Round	100 x 13	–	7	Screw cap	100	600
146183	Round	100 x 14	–	7	Push-on cap	100	600
156758	Flat-sided tube	110 x 16	5.5	3	Screw cap	75	450

Thermo Scientific Nunc OmniTray

cell culture treated

Nunc™ OmniTray™ is a versatile tool ideal for screening libraries and DNA hybridization, as well as standard cell culture applications.

details

Flat bottom, single-well tray with high optical clarity makes it easy to see colonies. Available as standard version with notched corners and rectangular version optimized for computerized imaging and splitting.

- Nunclon™ Delta cell culture treated surface is a hydrophilic surface that promotes cell attachment and growth
- Optical clarity makes colonies easy to see
- Can be frozen at -20°C
- Stackable with high, sturdy walls
- Sterile polystyrene
- Same external footprint as a 96 MicroWell™ Plate
- Includes matching lid

Nunc OmniTray acts as:

- Holder for membrane when dot blotting
- Container for denaturation, hybridization and washing steps
- Storage container for membranes

Cat. No. 140156

- Features an enhanced rectangular shape ideal for automatic picking and viewing systems

Recommended for: Dot blotting, denaturation/hybridization/washing, bacterial growth, membrane storage.

Compliance: All microplates manufactured by Nunc meet the recommendation of American National Standards (ANSI) (ANSI/SBS 1-2004).

Nunc OmniTray

Cat. No.	Surface	Well Design	Color	Total Vol., µL	Culture Area, cm^2	Sterile	With Lid	No. per Pack	No. per Case
165218	Nunclon Delta	1 Rectangular	Clear	90	84	Yes	Yes	10	60
140156	Nunclon Delta	1 Rectangular	Clear	90	84	Yes	Yes	10	90

Thermo Scientific BioLite Cell Culture Products

BioLite Cell Culture Products: economical performance for your general cell culture procedures.

BioLite Cell Culture products are designed for your general cell culture research, ideal when an economical, quality choice matters. This product line includes a limited range of sterile flasks covering surface areas from 25 cm^2 to 175 cm^2; dishes from 35 mm to 150 mm, and 6- to 96-well dishes. BioLite products offer a cell-adherent surface and are non-pyrogenic and non-cytotoxic.

details

- Cell culture treated
- Sterile
- Non-pyrogenic
- USP Class VI and non-cytotoxic

Biolite Flasks

Cat. No.	Culture Area, cm^2	Cap Type	Suggested Working Vol., mL	No. per Pack	No. per Case
130189	25	Vent	7	5	200
130192	25	Plug Seal	7	5	200
130190	75	Vent	25	5	100
130193	75	Plug Seal	25	5	100
130191	175	Vent	50	5	40
130194	175	Plug Seal	50	5	40

Biolite Dishes

Cat. No.	H x O.D., mm	I.H. x Dia., mm	Culture Area, cm^2	Suggested Working Vol., mL	No. per Pack	No. per Case
130180	10 x 35	9.3 x 34.3	9.4	3	10	500
130181	15 x 60	12.6 x 52.7	21.5	5	10	500
130182	20 x 100	16 x 88	60.8	12.5	10	200
130183	20 x 150	15.4 x 138.5	148	35	10	120

Biolite Multidishes and Microwell Plate

Cat. No.	Well Design	Well Dim., mm	Outer L x W, mm	Color	Culture Area, cm^2	Suggested Working Vol., mL	Lid	Sterile	No. per Pack	No. per Case
130184	6F	35	127.6 x 85.4	Clear	9.6	3	Yes	Yes	1	50
130185	12	22.1	127.6 x 85.4	Clear	3.8	2	Yes	Yes	1	50
130186	24	15.6	127.6 x 85.4	Clear	1.9	1	Yes	Yes	1	50
130187	48	9.75	127.6 x 85.4	Clear	0.75	0.5	Yes	Yes	1	50
130188	96F	6.4	127.6 x 85.4	Clear	0.32	0.2	Yes	Yes	1	50

Thermo Scientific Products –
meeting the challenges of science and industry

CO_2 incubators

Your cultures are valuable – often irreplaceable.

Surround them with an environment you can trust.

More scientists worldwide rely on Thermo Scientific CO_2 incubators than a any other brand. They deliver precisely what you need to achieve your cell culturing goals, worry-free – in a choice of products based on direct heat and water-jacket chamber construction:

- Optimal growth conditions, through advanced design features
- Proven contamination prevention using 100% copper surfaces and HEPA filtration
- A wide range of volume capacities, ranging from 1.4 cu. ft. to 29 cu. ft.
- Ease of operation and maintenance

For more product information, go to:
www.thermoscientific.com/co2

Thermo Scientific Nunc EasYFlasks

Poly-D-Lysine or Collagen I coated

Nunc™ EasYFlasks™ with extracellular matrix coating enhances cell attachment to the culture surface.

Poly-D-Lysine or Collagen I coating encourages cell attachment of finicky cells to the culture surface.

details

- Wide opening and angled neck allows easy access to the culture area
- Ergonomic closure, open or close in 1/3 turn
- Ideal for culturing cells that do not bind to regular cell culture treated surface
- Poly-D-Lysine is a chemically synthesized, animal-free coating material
- Sterile and non-pyrogenic

Filter Caps

- Filter membrane provides effective barrier against microorganisms
- Well-defined, hydrophobic filter membrane offers continuous venting with consistent gas exchange and no lot-to-lot variation
- Chemically robust membrane meets USP class VI standards and is produced without animal-derived substances

Recommended for: Cell culture.

Includes: Filter Caps.

Nunc EasYFlasks

Cat. No.	Surface	Closure	Culture Area, cm^2	Working Vol., mL	No. per Pack	No. per Case
132703	Poly-D-Lysine coated	Filter	25	7	10	60
132704	Poly-D-Lysine coated	Filter	75	25	5	30
132705	Poly-D-Lysine coated	Filter	175	55	5	30
132706	Collagen I coated	Filter	25	7	10	60
132707	Collagen I coated	Filter	75	25	5	30
132708	Collagen I coated	Filter	175	55	5	30

Thermo Scientific Nunc Multidishes

Poly-D-Lysine or Collagen I Coated

Nunc™ Multidishes with extracellular matrix coating enhance cell attachment to the culture surface. Ideal for culturing finicky cells.

details

- Ideal for culturing finicky cells that do not attach to regular cell culture treated surface
- Poly-D-Lysine is a chemically synthesized animal-free coating material
- Sterile and non-pyrogenic

Nunc Multidishes

Cat. No.	Surface Coating	Working Vol., mL	Culture Area, cm^2	No. of Wells	No. per Pack	No. per Case
152035	Poly-D-Lysine coated	3	9.6	6	5	20
152034	Collegan I, rat tail	3	9.6	6	5	20

Thermo Scientific Nunc Multidish 6

Nunclon™ Vita

Nunc™ Nunclon Vita is a unique energy-treated polystyrene surface that enables growth of stem cells and other temperamental cells directly on the surface without matrix coatings or feeder layers.

When combined with conditioned media, supplemented with a ROCK inhibitor, Nunclon Vita surface supports attachment and expansion of human pluripotent stem cells.

Nunclon Vita Surface supports attachment and growth of finicky cells (e.g. HEK 293, MSC) in the absence of feeder layers and matrix coatings. In conditioned media, supplemented with ROCK inhibitor, human ESC can be cultured directly on the Nunclon Vita Surface for more than 10 passages while maintaining normal karyotype and pluripotency.

details

- Animal component-free surface
- Consistent performance from lot to lot
- Supports attachment and growth of temperamental cells (e.g. HEK 293, MSC)
- Supports attachment and expansion of human pluripotent stem cells in conditioned media containing ROCK inhibitor
- Allows non-enzymatic dissociation of human pluripotent stem cells with removal of ROCK inhibitor

Nunc Multidish 6

Cat. No.	Description	Working Vol., mL	Culture Area, cm^2	No. of Wells	Bottom Shape	Sterile	No. per Pack	No. per Case
145380	Nunclon Vita Multidish 6	3	9.6 cm^2/well	6	Flat	Yes	1	4

Thermo Scientific Nunc Dishes

HydroCell Surface

Nunc™ Dishes with HydroCell Surface feature super-low cell binding capacity with premium quality to inhibit the attachment of adherent cells and enable the formation of cell clusters such as embryoid bodies and neurospheres. The HydroCell Surface is designed to prevent cell attachment.

A covalently-immobilized, super hydrophilic polymer forms a thin, even layer on cultureware, resulting in minimal cell adhesion and protein adsorption. Depending on cell type, cells can be grown as a suspension of single cells or cell clusters.

details

- Minimal cell adhesion for high yield of cells; eliminates unwanted adhesion-induced differentiation
- Ideal for culturing embryroid bodies, neurospheres, or other anchorage-independent cell clusters
- Minimal protein adsorption – high yield of cell-secreted proteins
- Sterile and non-pyrogenic

Nunc Dishes

Cat. No.	Style, mm	L x W, mm	Working Vol., mL	No. per Pack	No. per Case
174913	35	40 x 12	3	5	30
174912	60	60 x 15	5	5	30
174911	100	92 x 17	12.5	1	6

Thermo Scientific Nunc Multidishes

HydroCell Surface

Nunc™ Multidishes with HydroCell Surface feature super-low cell binding capacity with premium quality to inhibit the attachment of adherent cells and enable the formation of cell clusters such as embryoid bodies and neurospheres. The HydroCell surface is designed to prevent cell attachment.

A covalently immobilized super hydrophilic polymer forms a thin, even layer on cultureware, resulting in minimal cell adhesion and protein adsorption. Depending on cell type, cells can be grown as a suspension of single cells or as a suspension of cell clusters.

details

- Minimal cell adhesion – high yield of cells and eliminate unwanted adhesion-induced differentiation
- Minimal protein adsorption – high yield of cell-secreted proteins
- Ideal for culturing embryoid bodies, neurospheres, or other anchorage-independent cell clusters
- Individually wrapped with lid
- Sterile and non-pyrogenic

Nunc Multidishes

Cat. No.	Surface	Well Design	Color	Culture Area, cm^2	Sterile	Lid	No. per Pack	No. per Case
174919	HydroCell	6 F	Clear	9.6	Yes	Yes	1	6
174909	HydroCell	24 F	Clear	1.9	Yes	Yes	1	6
174910	HydroCell	12 F	Clear	0.35	Yes	Yes	1	6
174908	HydroCell	96 U	Clear	0.36	Yes	Yes	1	8
174907	HydroCell	96 F	Clear	0.33	Yes	Yes	1	8

Thermo Scientific Nunc Dishes and Multidishes

low cell binding surface

Nunc™ Low Cell Binding surface prevents attachment of adherent cells to the surface, therefore allowing formation of anchorage-independent cell colonies such as embryoid bodies and neurospheres.

details

- Prevents attachment of adherent cells to the surface
- Ideal for culturing embryroid bodies, neurospheres, or other anchorage-independent cell clusters
- Sterilized by gamma-irradiation and certified to be non-pyrogenic

Includes: Lid

Nunc Dishes and Multidishes

Cat. No.	Description	Working Vol., mL	No. per Pack	No. per Case
145389	60 mm Tissue Culture Dish	5	10	20
145401	90 mm Tissue Culture Dish	10	10	20
145383	6 well Multidish	3	1	7
145385	12 well Multidish	2	1	7
145387	24 well Multidish	1	1	7

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Thermo Scientific Nunc Dishes and Multidishes

UpCell Surface

Nunc™ Multidishes with UpCell Surface feature a temperature-responsive surface that supports non-enzymatic harvesting of adherent cells for preservation of cell viability and surface proteins.

Simply transfer the culture to room temperature and cells can be collected in suspension or in the form of a "cell sheet".

Traditional cell harvesting by enzymatic and mechanical methods often compromise the integrity of surface proteins and the viability of harvested cells. By contrast, the UpCell Surface allows cell harvesting by simply reducing the temperature of the cell culture to below 32°C without the need of enzymes, resulting in highly viable cells with intact cell surface proteins.

details

- No trypsinization – preserve cell surface proteins
- No physical force – get high cell viability
- Perfect for culture passaging, single-cell analyses and cell transplantation research
- 6-well multidish comes with supportive membranes that enable harvesting of cell sheets and creations of 3-D tissue models
- Minimal hands-on time

Recommended for: Culture passaging, single-cell analyses, cell transplantation research, 3D tissue models.

Nunc Dishes

Cat. No.	Style, mm	Culture Area, cm^2	Grid, mm	L x W, mm (in.)	Supportive Membrane (for harvesting "cell sheet")	Working Vol., mL	No. per Pack	No. per Case
174905	100	56.7	3 x 3	92 x 17 (3.6 x 0.6)	Not included	12.5	1	6
174902	100	56.7	No	92 x 17 (3.6 x 0.6)	Not included	12.5	1	6
174903	60	21.5	No	60 x 15 (2.3 x 0.5)	Not included	5	5	30
174906	60	21.5	3 x 3	60 x 15 (2.3 x 0.5)	Not included	5	5	30
174904	35	8.8	No	40 x 12 (1.5 x 0.4)	Included	3	5	30

Nunc Multidishes

Cat. No.	Well Design	Supportive membrane (for harvesting "cell sheet")	Color	Membrane	Culture Area, cm^2	Suggested Working Vol., mL	Sterile	Lid	No. per Pack	No. per Case
174901	6 F	Included	Clear	Yes	9.6	3	Yes	Yes	1	6
174900	12 F	Not Included	Clear	No	3.5	2	Yes	Yes	1	6
174899	24 F	Not Included	Clear	No	1.9	1	Yes	Yes	1	6
174898	48 F	Not Included	Clear	No	1.1	0.5	Yes	Yes	1	6
174897	96 F	Not Included	Clear	No	0.33	0.2	Yes	Yes	1	8

UpCell Membrane Supports

Cat. No.	Fits dish size, mm	No. per Pack
174924	60 mm	20
174923	100 mm	20
174922	12 wells	12
174921	24 wells	24
174920	48 wells	48

Thermo Scientific Nunc OptiCell Cell Culture System

Nunc™ OptiCell™ Culture Systems are sterile systems created from two parallel, gas-permeable, cell culture-treated polystyrene membranes unique for growing, monitoring and transporting cells.

All-in-one unique cell culture vessel features sterile fluid paths, stable pH, consistent oxygen and carbon dioxide levels and uses significantly less incubator space.

Innovative solution for growth, storage, transport and imaging. All in one cell culture vessel.

details

- Gas permeable polystyrene membrane provides a stable growth environment
- Eliminate contamination risk with a sterile fluid path
- Transport live cells using IATA requirements for the shipment of biological substances or category B specimens
- Maximize incubator space and reduce medium consumption
- Easily track samples with barcoded chambers

Includes:

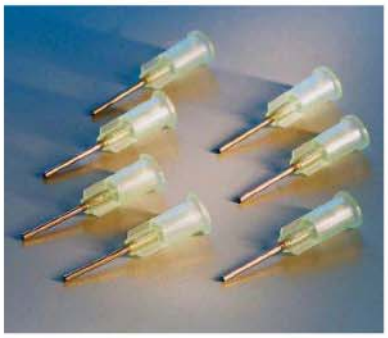
- **OptiCell 1100 Starter Kit:** 20 each of OptiCell 1100, rack, knife, 50 tips, optical shield, manual, mini-CD
- **OptiCell MAX 2100 Starter Kit:** 5 each of OptiCell MAX, rack, 50 tips, Hybridoma production protocol, manual

Recommended for: Production of monoclonal antibodies, cytokines, and other secreted molecules.

Nunc OptiCell Cell Culture System

Cat. No.	Description	No. per Case
155330	OptiCell 1100 Starter Kit	OptiCell 1100 Starter Kit, Contains: 20 OptiCell 1100 chambers, 1 rack, 1 knife, 50 tips, 2 caps, 1 optical shield, manual and mini-CD
155331	OptiCell 1100 Cartridges only, Case of 20	20
155332	OptiCell 1100 Cartridges only, Case of 100	100
155333	OptiCell 1100 Cartridges only, Case of 500	500
155334	OptiCell MAX 2100 Starter Kit	OptiCell MAX 2100 Starter Kit, Contains: 50 OptiCell MAX 2100 chambers, 1 rack, 50 tips and hybridoma Ab production protocol manual
155335	OptiCell MAX 2100 Cartridges only, Cs. of 20	20
155336	OptiCell MAX 2100 Cartridges only, Cs. of 100	100

Thermo Scientific Nunc OptiCell Accessories and Replacement Parts



Nunc™ OptiCell™ Accessories and Replacement Parts are designed to work with the OptiCell Cell Culture systems.

details

Accesories for OptiCell, an innovative solution for growth, storage, transport and imaging of cells.

- **OptiMag Cell Separation Kit:** 5 each of OptiCell 1100, rack, 50 tips, magnet, cell separation protocol, manual
- **OptiCell Mailer:** 5 each OptiCell 1100, five mailers, 50 tips, manual, shipping protocol
- **OptiCell Rack** holds 20 OptiCell or 10 OptiCell MAX chambers; multiple racks can be connected together
- **OptiCell Syringe Tips** are stainless steel 18 gauge blunt tip, sterile and nonpyrogenic; fit standard syringes, for one use only
- **OptiCell Knife** can be used to remove growth membranes from the frame for sectioning and are supplied individually wrapped, sterile; may be autoclaved up to three times

Nunc OptiCell Accessories and Replacement Parts

Cat. No.	Description	No. per Pack	No. per Case
155342	OptiCell Rack	1	1
155344	OptiCell Knife	1	3
155343	OptiCell Syringe Tips	1	100
155337	OptiMag Cell Separation Kit: 5 each of OptiCell MAX, rack, 50 tips, magnet, Cell Separation protocol, manual	1	3
155338	OptiMag Magnet		1
155339	OptiCell Mailer Starter Kit: 5 each OptiCell 1100, five mailers, 50 tips, manual, shipping protocol		
155340	Mailers only		10

Thermo Scientific Nunc Flasks
non-treated

Nunc™ Flasks are non-treated, sterile flasks that are designed for culturing suspension cells.

Nunc non-treated cell culture flasks are made of high-quality, optically-clear polystyrene for suspension cell culture.

details

- White caps for easy identification
- Angled neck for easy access to full growth area
- Ergonomic filter cap allows constant airflow and minimizes chance of contamination
- TripleFlask with three parallel layers and footprint of a standard 175 cm^2 flask with same external dimensions
- Sterilized by gamma irradiation and certified to be non-pyrogenic

Includes: Flask with cap.

Nunc Flasks

Cat. No.	Working Vol., mL	Culture Area, cm^2	No. per Pack	No. per Case
169900	7	25	10	200
156800	30	75	5	100
159926	55	175	5	30
132903	200	500	4	32

Thermo Scientific Nunc Sterile Flask Replacement Filter Caps
filter and vented, untreated

Nunc™ Flask Replacement Filter Caps are individually packed.

Allows constant airflow and minimizes chance of contamination. Nunc sterile filter caps are made with HDPE and GORE™ dPTFE membrane.

details

- Filter membrane provides effective barrier against microorganisms
- Chemically robust membrane meets USP class VI standards and is produced without animal-derived substances
- Well-defined, hydrophobic filter membrane offers continuous venting with consistent gas exchange and no lot-to-lot variation
- Individually wrapped to ensure sterility

Nunc Sterile Flask Replacement Filter Caps

Cat. No.	Closure	Color (Cap)	For Flasks	No. per Pack	No. per Case
178802	Filter	White	Nunc EasYFlasks™ 25 cm^2	1	100
156753	Filter	White	Nunc EasYFlasks 75 cm^2	1	100
146003	Filter	White	175/185/500 cm^2	1	100

Thermo Scientific Nunc Multidishes
non-treated

Nunc™ Multidishes are non-treated and sterile for suspension of cell cultures and have excellent optical properties.

details

- Non-treated, sterile polystyrene multidishes for suspension cell culture
- Flat-bottom round wells, with lid
- Raised-well rims lower the risk of cross-contamination
- Lid with notched corners for good fit and easy orientation
- Non-pyrogenic

Includes: Lids

Nunc Multidishes

Cat. No.	No. of Wells	Culture Area cm²	Working Vol., mL	O.D., L x W, mm	No. per Pack	No. per Case
179820	4	1.9	1	66 x 66	4	120
150239	6	9.6	3	128 x 86	1	75
150200	12	3.5	2	128 x 86	1	75
144530	24	1.9	1	128 x 86	1	75
150787	48	1.1	0.5	128 x 86	1	75

Thermo Scientific Nunc Polycarbonate Membrane Inserts in Multidishes

Nunc™ Polycarbonate Membrane Inserts in Multidishes are easy to use for cultivation of most cell types, without matrix coating.

Use for a variety of applications, including transport studies, toxicity studies, chemotaxis studies and electron microscopy.

details

- Easy cultivation of most cell types without matrix coating
- Perfect for transport studies, toxicity tests, chemotaxis studies and electron microscopy
- Nunclon™ Delta treated and tested for cell attachment
- Tabs provide better grip and easy handling
- Nontoxic
- Packed in sterile Nunclon Delta treated multidishes
- Nonpyrogenic

Ordering Information: Packed in resealable bags.

Application Examples	Pore Size, µm
Transport Studies: Molecules including hormones and growth factors Drug transport across epithelial (Caco-2) and endothelial barriers Drug transport across brain microvasular endothelial cells	0.4 or 3.0
Chemotaxis studies: Migration of cells including eosinophils, neutrophils and macrophages	3.0 or 8.0
Invasion studies: Tumor invasion and metastasis models Invasion inhibitors Extra cellular matrix effects	3.0 or 8.0
Co-cultivation studies: Cell-cell interaction Cell-matrix interaction Cell-substrate interaction	0.4 or 3.0
Tissue engineering: Angiogenesis Dermal/epidermal and epithelial tissue models	0.4 or 3.0

Nunc Polycarbonate Membrane Inserts in Multidishes

Cat. No.	For use with	Vol., mL	Culture Area, cm^2	Pore size, µm	Pore density, pores/cm^2	No. inserts/ Multidishes	No. Multidishes per Case
140620	Multidish 24	0.5	0.47	0.4	$<0.85*10^8$	12	4
140627	Multidish 24	0.5	0.47	3.0	$<1.7*10^6$	12	4
140629	Multidish 24	0.5	0.47	8.0	$<0.85*10^5$	12	4
140652	Multidish 12	1.1	1.13	0.4	$<0.85*10^8$	12	4
140654	Multidish 12	1.1	1.13	3.0	$<1.7*10^6$	12	4
140656	Multidish 12	1.1	1.13	8.0	$<0.85*10^5$	12	4
140640	Multidish 6	1.5	3.14	0.4	$<0.85*10^8$	6	4
140642	Multidish 6	1.5	3.14	3.0	$<1.7*10^6$	6	4
140644	Multidish 6	1.5	3.14	8.0	$<0.85*10^5$	6	4
140660	Multidish 6	1.75	4.1	0.4	$<0.85*10^8$	6	4
140663	Multidish 6	1.75	4.1	3.0	$<1.7*10^6$	6	4
140668	Multidish 6	1.75	4.1	8.0	$<0.85*10^5$	6	4

** Suggested working volume, mL = in addition to normal well working volume*

Carrier Plates for Cell Culture Inserts

The Carrier Plate is designed for versatility in your research. The system for manipulating multiple inserts can be used for individual compartment cultures or batch cultures with shared media. Use with up to 12 or 24 inserts at a time and adjust the hanging height, for example, to accommodate the use of more media under cultures at the air-media interface.

The carriers come in two formats corresponding to Multidish 12 or Multidish 24 for polycarbonate inserts having 0.4, 3.0 or 8.0 µm pore sizes. Allows simultaneous handling of multiple inserts or use inserts individually. Adjustable vertical position of inserts.

details

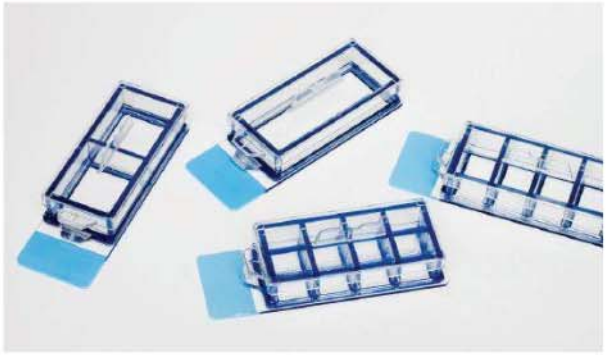
- Available in multi-dish 12 or 24; pre-loaded with polycarbonate inserts
- Carrier plate also fits OmniTray
- Includes lid

Carrier Plates

Cat. No.	Description	Pore size, µm	Pore Density, pores/cm²	Culure area, cm²	Suggested working volume, mL*	No. Inserts/ carrier plate	No. carrier plates/case
Carrier Plate System for Multidish 24: Non-pyrogenic, USP Class VI, Sterile, SBS compliant, Alphanumeric identification							
141008	Carrier MD24 (no inserts)	–				0	4
141002	Carrier MD24	0.4	<0.85 x 108	1.13	2.3	24	4
141004	Carrier MD24	3	<1.7 x 106	1.13	2.3	24	4
141006	Carrier MD24	8	<0.85 x 105	1.13	2.3	24	4
Carrier Plate System for Multidish 12: Non-pyrogenic, USP Class VI, Sterile, SBS compliant, Alphanumeric identification							
141086	Carrier MD12 (no inserts)	–				0	4
141078	Carrier MD12	0.4	<0.85 x 108	0.47	1.1	12	4
141080	Carrier MD12	3	<1.7 x 106	0.47	1.1	12	4
141082	Carrier MD12	8	<0.85 x 105	0.47	1.1	12	4

** All Nunc Cell Culture Inserts: Suggested working volume, mL is in addition to normal working volume in multi-dish wells*

Thermo Scientific Nunc Lab-Tek Chamber Slide System



Nunc™ Lab-Tek™ Chamber Slide System includes a unique removable chamber that enables growth of anchorage dependent cells right on the microscope slide.

Use the same slide later for staining and microscopic examination.

details

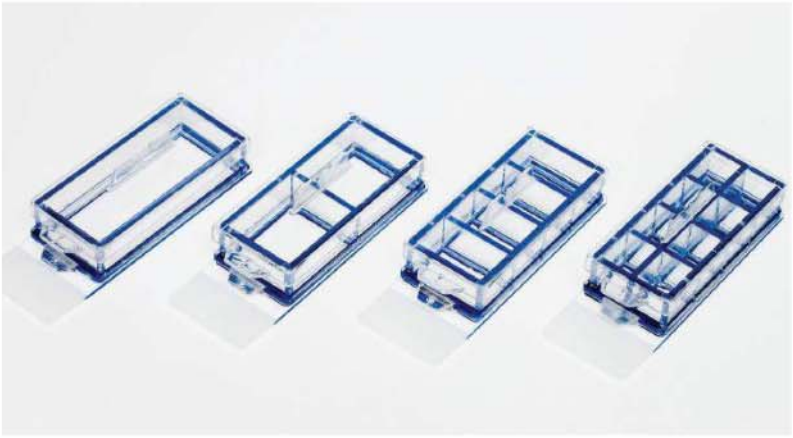
- Broad range of formats and well numbers to meet your application needs
- Available with a Permanox solvent-resistant plastic slide for adherent cell culture
- Writing surface provides easy identification of samples
- Save time and reagents by growing cells directly on microscope slide
- In 1-, 2-, 4-, 8- and 16-well configurations; all measure 25 × 75 mm
- Medical-grade silicone sealing gasket can be removed for cover slipping
- No cell transfer needed prior to visualization/staining
- Useful for viral and mycoplasma testing, chromosome studies, toxicity tests and immunocytology
- Suitable for use with fluorescent labels
- Sterile

Certifications: CE marked.

Nunc Lab-Tek Chamber Slide System

Cat. No.	Material	No. of Wells	Culture Area, cm^2	Working Vol., mL	No. per Tray	No. per Carton	No. per Case
177372	Glass Chamber Slide System	1	9.4	2.5 - 4.5	8	16	96
177380	Glass Chamber Slide System	2	4.2	1.2 - 2.0	8	16	96
177399	Glass Chamber Slide System	4	1.8	0.5 - 0.9	8	16	96
177402	Glass Chamber Slide System	8	0.8	0.2 - 0.4	8	16	96
178599	Glass Chamber Slide System	16	0.4	0.1 - 0.2	8	16	96
177410	Permanox Plastic Chamber Slide System	1	9.4	2.5 - 4.5	8	16	96
177429	Permanox Plastic Chamber Slide System	2	4.2	1.2 - 2.0	8	16	96
177437	Permanox Plastic Chamber Slide System	4	1.8	0.5 - 0.9	8	16	96
177445	Permanox Plastic Chamber Slide System	8	0.8	0.2 - 0.4	8	16	96
171080	Coverglass for 16 well slide	–	–	–	–	–	55

Thermo Scientific Nunc Lab-Tek II Chamber Slide System



Nunc™ Lab-Tek™ II Chamber Slide™ System consists of a removable, polystyrene media chamber attached to a specially treated standard glass microscope slide.

Use the same slide later for staining and microscopic examination.

Consists of a removable media chamber attached to a standard glass microscope slide (25 × 75 mm) – grow cells directly on slides. Slides are specially treated with a unique RS wash to ensure a consistent growth surface.

details

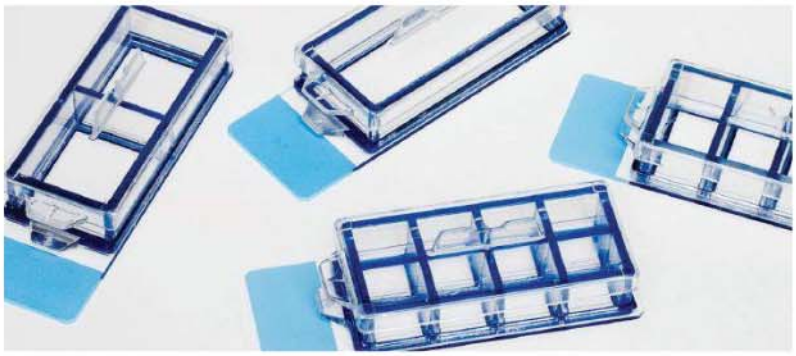
- Completely sterile and available in 1-, 2-, 4- or 8-well configurations
- Tabbed cover fits on top of the chamber to allow gas exchange while minimizing evaporation
- Removal tool (included) makes it easy to separate the chamber from slide
- Superfrost™ marking area facilitates labeling
- Non-fluorescent microscope slide, glass with rounded corners
- Biocompatible adhesive
- Inert hydrophobic well border printed on slide
- Treated for excellent attachment and growth of cells
- Slide separator included in each pack
- CE marked

Includes: Removal tool.

Nunc Lab-Tek II Chamber Slide System

Cat. No.	No. of Wells	Culture Area, cm^2	Suggested Working Vol., mL	No. per Tray	No. per Carton	No. per Case
154453	1	8.6	2.0 - 4.5	8	16	96
154461	2	4	1.0 - 2.0	8	16	96
154526	4	1.7	0.5 - 1.0	8	16	96
154534	8	0.7	0.2 - 0.5	8	16	96

Thermo Scientific Nunc Lab-Tek II CC2 Chamber Slide System



Nunc™ Lab-Tek™ II CC2™ Chamber Slide™ System is an enhanced version of the Nunc Lab-Tek II Chamber Slide System – enabling cell growth directly on a glass microscope slide. The CC2 surface mimics PDL coating.

Chemically modified CC2 growth surface mimics biological coatings like polylysine.

details

- Remains stable and consistent for over one year without refrigeration
- Tabbed cover allows gas exchange while minimizing evaporation
- Sterile
- Removal tool separates chamber from glass
- Provides binding sites optimal for fastidious cells
- Light blue frosted writing area

Includes: Removal tool.

Certifications: CE Marked.

Nunc Lab-Tek II CC2 Chamber Slide System

Cat. No.	No. of Wells	Culture Area, cm^2	Working Vol., mL	No. per Tray	No. per Carton	No. per Case
154739	1	8.6	2.0 - 4.5	8	16	96
154852	2	4.0	1.0 - 2.0	8	16	96
154917	4	1.7	0.5 - 1.0	8	16	96
154941	8	0.7	0.2 - 0.5	8	16	96

Thermo Scientific Nunc Lab-Tek Chambered Coverglass

Nunc™ Lab-Tek™ Chambered Coverglass includes a thin cover glass that provides the optimum optical characteristics required for high-magnification microscopy and confocal image analysis.

details

- Chambered Coverglass is perfect for confocal image analysis
- Optimal for high power inverted microscope viewing
- Non-removable polystyrene media chambers secured to a 1.0 Borosilicate chambered coverglass
- Sterile

Certifications: CE marked.

Nunc Lab-Tek Chambered Coverglass

Cat. No.	No of Wells	Culture Area, cm^2	Working Vol., mL	No. per Tray	No. per Carton	No. per Case
155361	1	9.4	2.5 - 4.5	8	16	96
155380	2	4.2	1.2 - 2.0	8	16	96
155383	4	1.8	0.5 - 0.9	8	16	96
155411	8	0.8	0.2 - 0.4	8	16	96

Thermo Scientific Nunc Lab-Tek II Chambered Coverglass

Nunc™ Lab-Tek™ II Chambered Coverglass includes a thin cover glass that provides the optimum optical characteristics required for high-magnification microscopy and confocal image analysis.

details

- Non-removable media chamber securely mounted to extra-thin (No. 1.5) borosilicate coverglass for optimum high-power inverted microscopic viewing
- Gas exchange achieved with minimal evaporation through tabbed polystyrene cover
- For culturing and viewing living cells
- Sterile

Certifications: CE marked.

Nunc Lab-Tek II Chambered Coverglass

Cat. No.	No. of Wells	Culture Area, cm^2	Suggested Working Vol., mL	No. per Tray	No. per Carton	No. per Case
155360	1	8.6	2.0 - 4.5	8	16	96
155379	2	4.0	1.0 - 2.0	8	16	96
155382	4	1.7	0.5 - 1.0	8	16	96
155409	8	0.7	0.2 - 0.5	8	16	96

Thermo Scientific Nunc Lab-Tek Flask on Slide

Nunc™ Flask on Slide is ideal for single-cell autoradiography and single-cell immunofluorescence.

The flask on slide format allows cell culture directly on a microscope slide.

details

SlideFlask Chamber (shown with black cap in photo)

- Employs tissue culture-treated polystyrene slide attached to 18 × 50 mm flask structure via ultrasonic weld – allowing for long-term, leak-free incubation
- Upper flask structure snaps away easily after culture – freeing slide for microscopic examination
- Nunclon certified
- Available Coverglass (Cat. No. 171862)

The Flaskette Chamber (shown with white cap)

- Glass slide with a silicone gasket and a 20 × 50 mm upper flask structure
- Can be sealed to exclude air – useful when embedding cells in resin for electron microscopy
- CE marked

Nunc Lab-Tek Flask on Slide

Cat. No.	Description	Culture Area, cm^2	No. per Tray	No. per Case
170920	SlideFlask Chamber with tissue culture treated polystyrene slide	9.0	5	50
177453	Flaskette Chamber with glass microscope slide	10	8	96
171862	Nunc Coverglass for Flask on Side	na	100	1000

Thermo Scientific Nunc Coverglass for Flask on Slide

Nunc™ Coverglass for use with SlideFlask.

details

- Measures 18 × 50 mm

Ordering Information: For use with Flask on Side (Cat. No. 170920)

Nunc Coverglass for Flask on Side

Cat. No.	Description	No. per Pack	No. per Case
171862	Coverglass	100	1000

Thermo Scientific Nunc Microscope Slides

Nunc™ Microscope Slides can be used when cell attachment is not possible on a glass slide.

details

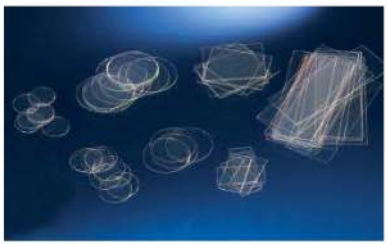
- Corresponds to the surface of most standard tissue culture vessels made of polystyrene
- Surface treatment ensures optimal conditions for cell attachment and growth
- Surface treated to enhance cell attachment and growth
- Sterile

Ordering Information: Size: 3 × 1 in. (75 × 27 mm).

Nunc Microscope Slides

Cat. No.	Material	L x W, mm	No. per Pack	No. per Case
160005	Permanox™ Microscope Slide	75 x 25	20	100
160004	Polystyrene Microscope Slide	75 x 27	20	100

Thermo Scientific Nunc Thermanox Coverslips



Nunc™ Thermanox™ Coverslips feature a surface treatment on one side for optimal cell attachment and growth.

details

- 0.13 mm thickness
- Resistant to commonly used solvents
- Safe and easy to handle
- Autofluorescent in the range 380 to 545 nm
- Surface treatment on one side for optimal cell attachment and growth

Nunc Thermanox Coverslips

Cat. No.	For use with Nunc product	O.D., mm	Sterile	Availability	No. per Pack	No. per Case
150067	---	24 x 30	Yes	Worldwide	50	500
174969	---	15 dia.	Yes	Worldwide	50	500
174977	---	22 dia.	Yes	Worldwide	50	500
174950	24-well Multidish	13 dia.	Yes	Worldwide	50	500
174985	6-well Multidish	25 dia.	Yes	Worldwide	50	500
174942	4-well Multidish	22 x 66	Yes	Worldwide	50	500
174934	8-well Multidish	10.5 x 22 (rectangular)	Yes	Worldwide	50	500

Thermo Scientific Products –
meeting the challenges of science and industry

sera and media

Thermo Scientific HyClone Sera and Media

For more than 40 years, we have been steadfast in our commitment to product innovation, quality and the advancement of science through the support of cell culture across academia, research and bioprocessing. As a leading global manufacturer of sera, media and other cell culture reagents, HyClone™ products enable advancements in cell culture that continually expand knowledge and research advancement worldwide.

For more product information, go to:
www.thermoscientific.com/hyclone

Thermo Scientific Nunc 15 mL & 50 mL Conical Centrifuge Tubes

Nunc™ 15 mL and 50 mL Conical Centrifuge Tubes are premium, high-quality conical tubes that are environmentally friendly and offer maximum cleanliness with a recyclable, plastic rack. They provide increased traceability with the largest writing area on the market.

Nunc conical tubes are constructed of polypropylene and available in a bulk pack or in environmentally-friendly racked configuration.

details

- Environmentally-friendly recyclable plastic rack reduces waste in the lab
- New plastic rack minimizes risk of contamination and particles and is easy to clean
- Tubes are sterile to 10^{-6} SAL
- Large writing area provides more space for sample traceability
- RCF rating enables greater range of applications from low speed to high speed centrifugation
- USP Class VI, non-pyrogenic, non-cytotoxic and RNase/DNase free to ensure the highest performance
- Leakproof to protect samples

Specifications	
Material (Tube)	Polypropylene
Material (Cap)	HDPE
Color (Cap)	Blue
Shape	Conical
Sterile	Yes
Writing Area	Yes

Nunc 15 mL & 50 mL Conical Sterile Polypropylene Centrifuge Tubes

Cat. No.	Capacity, mL	Packaging	Max RCF, xg tested	No. per Pack	No. per Case
339650	15	Bulk	10,500	50	500
339651	15	Racked	10,500	25	500
339652	50	Bulk	17,000	25	500
339653	50	Racked	17,000	25	300

Thermo Scientific Nunc EZFlip Centrifuge Tubes

conical

Nunc™ 15 mL and 50 mL EZ Flip Conical Centrifuge Tubes come in a proprietary hinged-cap tube system with an ergonomic design for one-handed opening and closing.

Integrated leakproof cap prevents cross-contamination and lost closures.

details

- Conical bottom, sterile
- Clarified polypropylene combines chemical resistance and high-speed tolerances
- Leakproof and airtight to prevent cross contamination
- Use 50 mL tubes up to 9500 xg; 15 mL tubes withstand forces up to 8500 xg
- White writing area and flat caps for sample identification
- Printed volume markings and graduations
- Standard dimensions, compatible with many fixed-angle or bucket rotors

Ordering Information: Tubes are sterile and supplied in a bulk pack (sleeve) or a rack.

Nunc EZFlip Centrifuge Tubes

Cat. No.	Capacity, mL	Packaging	Length, mm (in.)	Vol., oz.	No. per Pack	No. per Case
362694	15	Bulk	121 (4.76)	0.50	50	500
362695	15	Racked	121 (4.76)	0.50	50	500
362696	50	Bulk	115 (4.56)	1.69	25	500
362697	50	Racked	115 (4.56)	1.69	25	500

Thermo Scientific Nunc 200 mL Centrifuge Tube

Nunc™ 200 mL Centrifuge Tubes hold 200 mL total volume for larger batches and resist forces to an RCF of 7000.

Thermo Scientific Nunc Labware Products are made from high purity resins, and molded using our state-of-the-art processes. Plastic labware is a safer alternative to glass without sacrificing accuracy.

details

- Tightness tested
- Fits most centrifuges

Compliance: Meet USP Class VI

Notes: RCF tested with adaptor 377585.

Nunc 200 mL Centrifuge Tube

Cat. No.	Features
376813	Sterile, conical-bottom tube fits most 250 and 500 mL swinging-bucket rotors

Thermo Scientific Nunc Centrifuge Bottle Adapters and Cushions

Nunc™ Centrifuge Bottle Adapters and Cushions are tightness-tested, fit most centrifuges, and meet USP Class VI.

Nunc products are high-quality plastics for use in biotechnology, pharmaceutical and research laboratories, as well as in the production of vaccines and diagnostic kits.

details

- Centrifuge Bottle Adapters/Cushions are required when spinning selected centrifuge bottles

Nunc 200 mL Centrifuge Bottle Adapters and Cushions

Cat. No.	Description
377585	Cushion Adapter, Nylon, For 200 mL tubes

Thermo Scientific Nunc Conical Tube Rack

Nunc™ Conical Tube Rack fits most centrifuges and is tightness-tested.

details

- Hold six 200 mL tubes or 20 - 50 mL tubes
- Epoxy/steel or expanded polystyrene foam

Notes: Meet USP Class VI

Nunc 200 mL Conical Tube Rack

Cat. No.	Description	Holds	No. per Pack	No. per Case
374179	Expanded polystyrene	6 tubes	1	1

Thermo Scientific Nunc Serological Pipettes

Nunc™ Serological Pipettes are accurate, disposable plastic pipettes, plugged and sterilized.

Our portfolio of serological pipettes features a full range of size and packaging options -- offering the quality assurance and size variability you need to advance your research with complete confidence.

details

- Sterility assurance level (SAL) of 10^{-6}
- 100% virgin polystyrene for maximum clarity
- Certified non-pyrogenic
- Bold clear graduations with easy-to-read scale markings
- Non-dripping tip for pipette precision
- Color-coded packaging for ease in sorting and selecting the correct size
- Packaging options that accommodate every lab
- Individually wrapped; paper/plastic or plastic film; peel or pop through for easy opening
- Bulk packed for frequent use; reduces packaging waste
- Multiple sizes for use in a wide range of applications

Ordering Information: Supplied sterile, individually-packaged in easy-to-open paper/plastic wrapper.

Nunc Serological Pipettes

Cat No	Pipette size, mL	Packaging	Graduation	Neg. Graduation	No. per Bag	No. per Case
170353	1	Individually wrapped, paper peel packaging, plugged	0.01	0.3	100	1000
170354	2	Individually wrapped, paper peel packaging, plugged	0.01	0.3	100	500
170355	5	Individually wrapped, paper peel packaging, plugged	0.1	2.0	50	200
170356	10	Individually wrapped, paper peel packaging, plugged	0.1	3.0	50	200
170357	25	Individually wrapped, paper peel packaging, plugged	0.2	10.0	50	200
170358	50	Individually wrapped, paper peel packaging, plugged	0.5	10.0	25	100
170364	1	Individually wrapped, plastic film packaging, plugged	0.01	0.3	100	1000
170365	2	Individually wrapped, plastic film packaging, plugged	0.01	0.3	100	500
170366	5	Individually wrapped, plastic film packaging, plugged	0.1	2.0	50	200
170367	10	Individually wrapped, plastic film packaging, plugged	0.1	3.0	50	200
170368	25	Individually wrapped, plastic film packaging, plugged	0.2	10.0	50	200
170369	50	Individually wrapped, plastic film packaging, plugged	0.5	10.0	25	100
170371	1	Bulk packed, plugged	0.01	0.3	50	1000
170372	2	Bulk packed, plugged	0.01	0.3	50	500
170373	5	Bulk packed, plugged	0.1	2.0	25	500
170374	10	Bulk packed, plugged	0.1	3.0	25	500
170375	25	Bulk packed, plugged	0.2	10.0	25	200
170376	50	Bulk packed, plugged	0.5	10.0	25	100

Thermo Scientific Nunc Cell Scrapers

Nunc™ Cell Scrapers are non-pyrogenic and sterile. Blade is adjustable for optimal application flexibility.

Thermo Scientific Nunc Cell Culture products offer solutions for cell growth and analysis and have been used by researchers worldwide since 1953. With a wide range of surface areas and treatments, we have products for all your basic or advanced cell-based research.

details

- Feature flexible polystyrene handles
- Pre-sterilized and individually wrapped
- Blade Length: 0.66 in. (1.7 cm)
- Cat. No. 179707: for use with 75-175 cm^2 flasks
- Cat. No. 179693: for use with 25-80 cm^2 flasks

Nunc Cell Scrapers

Cat. No.	For Use with	Blade, L x W, mm	Handle L, cm (in.)
179707	75-175 cm^2 flasks	1.7 x 17.5	32 (12.5)
179693	25-80 cm^2 flasks	1.7 x 15.5	23 (9)

Caps for Flasks Nunclon Delta

Cat. No.	Closure	Color	For Flasks	Units per Pack	No. per Case
151209	Filter	Blue	25 cm^2	1	100
151152	Vent/Close	Blue	25 cm^2	1	100
144458	Vent/Close	Blue	80 cm^2	1	100
144652	Filter	Blue	80 cm^2	1	100
147074	Vent/Close	Blue	175 cm^2	1	100
147104	Filter	Blue	175 cm^2	1	100

Caps for Flasks Nunclon Delta

Cat. No.	Closure	Color	For Flasks	Units per Pack	No. per Case
146003	Filter	White	175/185/500 cm^2	1	100
147074	Vent/Close	Blue	175/185/500 cm^2	1	100
147104	Filter	Blue	175/185/500 cm^2	1	100

sera

Thermo Scientific HyClone Sera:
A History of Innovation and Quality in Research

For more than 40 years, Thermo Scientific cell culture experts have remained dedicated to the advancement of science through the support of cell culture and a comprehensive commitment to academia and research. During this time, our sera products have continued to set the industry standard for quality, purity and regulatory compliance. Whether you require fetal bovine serum, serum alternatives, process or other animal origin sera products, we can provide you with the very best solution for your application.

Traceability

Our sera operations are located strategically in New Zealand, Australia, the United States, and Central America in order to ensure safety and traceability. By using large batch sizes and true pool technique, we are able to produce lot-to-lot consistency, and lot-specific data to ensure the serum you order today closely matches the biochemical profile of the batch you purchased previously.

Animal Sera Origins

Serum origin refers to the country in which the raw blood was collected, as opposed to the country in which the raw serum was sterile filtered. With HyClone Sera products, the country of origin is always transparent. The documentation you receive will clearly state the country or countries of origin. This information is captured on the Certificate of Analysis and Certificate of Origin.

HyClone Sera Advantage

- Expert technical assistance
- Variety of specialty fetal bovine sera
- State-of-the-art filtration options
- Lot-to-lot consistency
- Sera supply history (lot-specific data)
- Origin stated and certified
- Validated post-filtration processes
- True pooling

HyClone Sera Testing Results

Serum type	Origin	Filtration	Hemoglogin (mg/dL)	Endotoxin (EU/mL)	Sterility testing	Mycoplasma	Viral testing	Electrophoretic Profile	Standard biochemical profile+	Expanded biochemical profile++
Defined	US	40 nm	≤10	≤10	x	x	x	x	x	x
Characterized										
	US	100 nm	≤25*	≤25*	x	x	x	x	x	
	Canada**	100 nm	≤25*	≤25*	x	x	x	x	x	
	USDA approved **	100 nm	≤25*	≤25*	x	x	x	x	x	
Standard	US	100 nm	reported	reported	x	x	x	x	x	

+ Standard biochemical profile includes: proteins, iron, trace metals, osmolality, pH, glucose, BUN and creatinine.
++ Expanded biochemical profile includes: Homones, lipids and vitamin levels and expanded trace metals testing.
* Typical values for endotoxin and hemoglobin are <10 EU/mL and < 10 mg/dL, respectively
** Not available for purchase in all geographies

Thermo Scientific HyClone Defined Fetal Bovine Serum, U.S. Origin

The highest quality serum available – 40 nm filtration eliminates concerns about viral contamination in Fetal Bovine Serum (FBS) without compromising cell culture performance.

Defined serum is produced by filtering the highest quality raw serum through 40 nm (0.04 µm) pore-size rated filters – the most retentive filters used in commercial FBS production. This type of filtration is a practical, cost competitive method of viral load reduction. Data shows that 40 nm filtration will remove as many as eight logs of viral challenge. This is a dramatic improvement over the current industry standard of using filters with mean pore sizes of 100 nm. Studies demonstrate that this filtration regimen has no adverse effect on cell growth. HyClone Defined FBS is rigorously tested and an extensive biochemical profile is included with the certificate of analysis for each lot.

details

- Sterile filtered - Triple 40 nm filtration – most stringent filtration available on fetal bovine serum products
- No detectable viruses or mycoplasma
- Tested for over 50 analytes including proteins, metals, vitamins, hormones and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA inspected abattoirs located in the United States
- Includes a Certificate of Suitability to the European Pharmocopoeia Monograph
- Endotoxin: ≤10 EU/mL; Hemoglobin: ≤10 mg/dL

HyClone Defined Fetal Bovine Serum

Cat. No.	Origin	Size	Processing
SH30070.01	U.S.	50 mL	None
SH30070.02	U.S.	100 mL	None
SH30070.02HI	U.S.	100 mL	Heat Inactivated
SH30070.02IR	U.S.	100 mL	Irradiated
SH30070.02IH	U.S.	100 mL	Irradiated and Heat Inactivated
SH30070.03	U.S.	500 mL	None
SH30070.03HI	U.S.	500 mL	Heat Inactivated
SH30070.03IR	U.S.	500 mL	Irradiated
SH30070.03IH	U.S.	500 mL	Irradiated and Heat Inactivated

Thermo Scientific HyClone Characterized Fetal Bovine Serum

Ensure superior cell culture performance with high quality FBS.

HyClone Characterized FBS is our most popular FBS and is comparable to the highest quality FBS options available from other suppliers. This serum starts with the highest quality raw serum that is triple 100 nm filtered. True pooling ensures that every bottle of each lot is consistent. Our large lot sizes (3000 L) minimize lot-to-lot variation. We test this serum for the most common analytes.

details

- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- No detectable viruses or mycoplasma
- Tested for over 35 analytes including proteins, metals, and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA inspected abattoirs located in the United States and Canada
- Includes a Certificate of Suitability to the European Pharmocopoeia Monograph
- Endotoxin: ≤25 EU/mL; Hemoglobin: ≤25 mg/dL
- Typical lots have endotoxin and hemoglobin levels of < 10EU/mL and 10 mg/dL, respectively

HyClone Characterized Fetal Bovine Serum

Cat. No.	Origin	Size	Processing
SH30071.01	U.S.	50 mL	None
SH30071.01HI	U.S.	50 mL	Heat Inactivated
SH30071.02	U.S.	100 mL	None
SH30071.02HI	U.S.	100 mL	Heat Inactivated
SH30071.02IR	U.S.	100 mL	Irradiated
SH30071.03	U.S.	500 mL	None
SH30071.03HI	U.S.	500 mL	Heat Inactivated
SH30071.03IR	U.S.	500 mL	Irradiated
SH30071.03IH	U.S.	500 mL	Heat Inactivated and Irradiated
SH30396.02	Canada*	100 mL	None
SH30396.02HI	Canada*	100 mL	Heat Inactivated
SH30396.03	Canada*	500 mL	None
SH30396.03HI	Canada*	500 mL	Heat Inactivated
SH30396.03IR	Canada*	500 mL	Irradiated
SH30396.03IH	Canada*	500 mL	Heat Inactivated and Irradiated

* Not available for purchase in all geographies

Thermo Scientific HyClone Standard Fetal Bovine Serum, U.S. Origin

Stay within your cell culture budget without compromising performance.

HyClone Standard FBS is a quality cell culture grade FBS used by price-conscious cell culturists that do not require enhanced biochemical testing. This FBS is produced using the same raw material used in our higher grade sera. Standard FBS is filtered through three sequential 100 nm (0.1µm) pore-size rated filters.

details

- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Tested for viruses and mycoplasma
- Tested for over 20 analytes including proteins, metals, and other biochemical cmponents. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA inspected abattoirs located in the United States
- Endotoxin and Hemoglobin levels are reported on the Certificate of Analysis

HyClone Standard Fetal Bovine Serum

Cat. No.	Origin	Size	Processing
SH30088.02	U.S.	100 mL	None
SH30088.02HI	U.S.	100 mL	Heat Inactivated
SH30088.03	U.S.	500 mL	None
SH30088.03HI	U.S.	500 mL	Heat Inactivated
SH30088.03IR	U.S.	500 mL	Irradiated
SH30088.03IH	U.S.	500 mL	Heat Inactivated and Irradiated

Thermo Scientific HyClone USDA Tested Fetal Bovine Serum

Ensure superior cell culture performance with high-quality FBS.

USDA tested FBS is a cost effective FBS product that is as effective at promoting cell growth as FBS sourced from the United States. This serum is sourced from several Central American countries (Costa Rica, Honduras, Panama, Nicaragua, El Salvador, and Guatemala), which are all recognized as being free of BSE and FMD by the USDA.

details

- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Tested for viruses and mycoplasm
- Tested for over 20 analytes including proteins, metals, and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA approved abattoirs in Central America, filtered at Thermo Scientific in the US.
- Endotoxin: ≤25 EU/mL; Hemoglobin: ≤25 mg/dL
- Typical lots have endotoxin and hemoglobin levels of < 10 EU/mL and < 10 mg/dL, respectively

HyClone UDSA Tested Fetal Bovine Serum

Cat. No.	Origin	Size	Processing
SH30910.02	USDA Approved Countries	100 mL	None
SH30910.02HI	USDA Approved Countries	100 mL	Heat Inactivated
SH30910.03	USDA Approved Countries	500 mL	None
SH30910.03HI	USDA Approved Countries	500 mL	Heat Inactivated
SH30910.03IR	USDA Approved Countries	500 mL	Irradiated
SH30910.03IH	USDA Approved Countries	500 mL	Heat Inactivated and Irradiated

NOTE: Not available in all geographies

Thermo Scientific HyClone Fetal Bovine Serum, South American Origin

Ensure superior cell culture performance with high-quality FBS.

Thermo Scientific HyClone FBS from South America complies with EU regulations and meets the requirements of most Asian countries. The product comes from cattle that was neither raised, shipped through nor slaughtered in countries where BSE is known to exist

details

- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Tested for viruses and mycoplasm
- Tested for over 20 analytes including proteins, metals, and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from EU approved South American countries free of BSE
- Endotoxin: ≤25 EU/mL; Hemoglobin: ≤25 mg/dL

HyClone Fetal Bovine Serum

Cat. No.	Origin	Filtration Location	Size	Processing
SV30087.02	South America	China	100 mL	None
SV30087.03	South America	China	500 mL	None
SV30160.02	South America	EU	100 mL	None
SV30160.02HI	South America	EU	100 mL	Heat Inactivated
SV30160.03	South America	EU	500 mL	None
SV30160.03HI	South America	EU	500 mL	Heat Inactivated
SV30160.03IR	South America	EU	500 mL	Irradiated

NOTE: Not available in all geographies

Thermo Scientific HyClone Charcoal/Dextran Treated Fetal Bovine Serum, U.S. Origin

FBS with reduced hormone levels for receptor studies.

Charcoal/Dextran Treated FBS is designed for researchers that require reduced levels of various hormones. High quality FBS is processed using a proprietary charcoal/dextran treatment that has been shown to reduce the levels of many hormones and growth factors. This serum is assayed for a variety of components before and after treatment, thus assuring the efficacy of the treatment. Charcoal/Dextran FBS has been shown to be effective in receptor studies or estrogen related investigations. Studies also indicate that charcoal/dextran treatments help minimize lot-to-lot serum variability

details

- Charcoal/Dextran treated to remove hormones and growth factors
- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- No detectable viruses or mycoplasma
- Tested for over 35 analytes including proteins, metals, and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA inspected abattoirs located in the United States
- Endotoxin: ≤10 EU/mL; Hemoglobin: ≤20 mg/dL

HyClone Charcoal/Dextran Treated Bovine Serum

Cat. No.	Specialty Serum Type	Origin	Size	Processing
SH30068.01	Charcoal Dextran Screened	U.S.	50 mL	None
SH30068.01HI	Charcoal Dextran Screened	U.S.	50 mL	Heat Inactivated
SH30068.02	Charcoal Dextran Screened	U.S.	100 mL	None
SH30068.02HI	Charcoal Dextran Screened	U.S.	100 mL	Heat Inactivated
SH30068.03	Charcoal Dextran Screened	U.S.	500 mL	None
SH30068.03HI	Charcoal Dextran Screened	U.S.	500 mL	Heat Inactivated
SH30068.03IH	Charcoal Dextran Screened	U.S.	500 mL	Heat Inactivated and Irradiated
SH30068.03IR	Charcoal Dextran Screened	U.S.	500 mL	Irradiated

▶ Thermo Scientific HyClone Dialyzed Fetal Bovine Serum, U.S. Origin

Ideal for applications requiring serum depleted of small molecules (less than 10,000 mw).

Dialyzed FBS is designed for cell culture work testing the effect of small molecules on culture conditions. Dialysis reduces the concentration of low molecular weight components including nucleotides and amino acids necessary for alternative biochemical survival pathways. Thermo Scientific uses a diafiltration process to produce our Dialyzed serum. This process uses hydrostatic pressure to remove small molecules from serum. The process is reproducible and reduces hypoxanthine and thymidine concentrations below detectable limits. During diafiltration, glucose concentrations are carefully monitored to control the process. The glucose concentration, which is representative of the extent of dialysis is reported for each lot of serum.

details

- Processed through diafiltration to remove small molecules
- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- No detectable viruses or mycoplasma
- Tested for over 35 analytes including proteins, metals, glucose and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA inspected abattoirs located in the United States
- Endotoxin: ≤10 EU/mL; Hemoglobin: ≤10 mg/dL

HyClone Dialyzed Fetal Bovine Serum

Cat. No.	Specialty Serum Type	Origin	Size	Processing
SH30079.01	Dialyzed	U.S.	50 mL	None
SH30079.01HI	Dialyzed	U.S.	50 mL	Heat Inactivated
SH30079.02	Dialyzed	U.S.	100 mL	None
SH30079.02HI	Dialyzed	U.S.	100 mL	Heat Inactivated
SH30079.03	Dialyzed	U.S.	500 mL	None
SH30079.03HI	Dialyzed	U.S.	500 mL	Heat Inactivated
SH30079.03IH	Dialyzed	U.S.	500 mL	Heat Inactivated and Irradiated
SH30079.03IR	Dialyzed	U.S.	500 mL	Irradiated

Thermo Scientific HyClone Super Low IgG Fetal Bovine Serum, U.S. Origin

Designed for monoclonal antibody production, viral propagation and immunoassay procedures.

Super Low IgG FBS is processed using protein G chromatography to reduce IgG levels. Naturally occurring serum contains levels of immunoglobulin (IgG) that may be too high for certain cell culture and protein purification applications. Protein G chromatography reduces IgG levels to less than 5 µg/mL while still retaining other serum components that are required for superior cell growth. Comparative levels of IgG in bovine serum products are shown in the table below.

details

- Super Low IgG content - ≤5 µg/mL
- Suitable for applications where low levels of specific antibody are required (e.g. propagation of bovine viruses, monoclonal antibody production)
- Sterile filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- No detectable viruses or mycoplasma
- Tested for over 35 analytes including proteins, metals, and other biochemical components. All results are included on the Certificate of Analysis and the Biochemical Assay
- Sourced from USDA inspected abattoirs located in the United States
- Endotoxin: ≤10 EU/mL; Hemoglobin: ≤10 mg/dL

Product	Average IgG Level
Calf Serum	14.09 mg/mL
"Normal" FBS	0.20 mg/mL
Naturally Low FBS	0.02 mg/mL
Super Low IgG FBS	<0.005 mg/mL

HyClone Super Low IgG Fetal Bovine Serum

Cat. No.	Specialty Serum Type	Origin	Size	Processing
SH30898.02	Super Low IgG	U.S.	100 mL	None
SH30898.02HI	Super Low IgG	U.S.	100 mL	Heat Inactivated
SH30898.02IR	Super Low IgG	U.S.	100 mL	Irradiated
SH30898.03	Super Low IgG	U.S.	500 mL	None
SH30898.03HI	Super Low IgG	U.S.	500 mL	Heat Inactivated
SH30898.03IH	Super Low IgG	U.S.	500 mL	Heat Inactivated
SH30898.03IR	Super Low IgG	U.S.	500 mL	Irradiated and Heat Inactivated

Thermo Scientic HyClone Embryonic Stem Cell (ES) Screened Fetal Bovine Serum, U.S. Origin

Keep your ES cells undifferentiated with prescreened FBS for ES culture.

Embryonic Stem Cell Screened FBS come from the best performing lots of HyClone Defined FBS in prescreens of mouse embryonic stem cells. The screening process includes plating efficiency and colony morphology testing in an assay involving the plating of ES cells at low cell density. Toxicity testing is conducted by growing the cells in 10, 15 and 30% concentrations of FBS. The selected lot demonstrates equal or greater performance when compared with a control lot validated for supporting the growth of undifferentiated ES cells.

details

- Selected from our highest quality Defined FBS lots
- Tested for ES Cell growth according to a protocol adapted from Gene Targeting, A.L. Joyner, 1995
- Screening includes plating efficiency, colony morphology, and toxicity tests
- Filtered through sequential 40nm (0.04µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

HyClone Embryonic Stem Cell (ES) Screened Fetal Bovine Serum

Cat. No.	Screen Type	Origin	Size	Processing
SH30070.02E	ES Screened	U.S.	100 mL	None
SH30070.02EH	ES Screened	U.S.	100 mL	Heat Inactivated
SH30070.03E	ES Screened	U.S.	500 mL	None
SH30070.03EH	ES Screened	U.S.	500 mL	Heat Inactivated
SH30070.03EI	ES Screened	U.S.	500 mL	Irradiated

Testing FBS for sensitive applications requires time-consuming culturing with multiple lots to determine which FBS will work best with your cells. Let us do your testing for you. We test our lots of Defined Serum in common applications to determine which lot will work best for your sensitive cell line. Our screening process takes out the testing time on your end so that you can get to work doing actual research with your cells

Thermo Scientific HyClone Human Mesenchymal Stem Cell Screened Fetal Bovine Serum, U.S. Origin

Ensure optimum performance when culturing undifferentiated human mesenchymal stem cells (hMSC).

Mesenchymal Stem Cell Screened FBS comes from the best performing lots of HyClone Defined FBS in prescreens of human mesenchymal stem cells. The screening process involves growing hMSCs over a minimum of three subculture generations with 10 percent serum. Throughout the screening, Human MSCs are observed for evidence of nutritional deficiency, cytotoxicity, or morphological aberrations. The serum is tested in parallel with a control lot which has been proven to support the growth of hMSCs. The selected lot must demonstrate equal or better doubling times when compared to the control lot.

details

- Selected from our highest quality Defined FBS
- Screened for performance with human mesenchymal stem cells
- Filtered through sequential 40nm (0.04µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

HyClone Human Mesenchymal Stem Cell Screened Fetal Bovine Serum

Cat. No.	Screen Type	Origin	Size	Processing
SH30070.02M	Human Mesenchymal Stem Cell Screened	U.S.	100 mL	None
SH30070.03M	Human Mesenchymal Stem Cell Screened	U.S.	500 mL	None
SH30070.03MH	Human Mesenchymal Stem Cell Screened	U.S.	500 mL	Heat Inactivated
SH30070.03MI	Human Mesenchymal Stem Cell Screened	U.S.	500 mL	Irradiated

Thermo Scientific HyClone Insect Cell Screened Fetal Bovine Serum, U.S. Origin

Ready-to-use and prescreened to identify lots that offer optimal performance with BEVS.

Insect Cell Screened FBS come from lots of HyClone Defined FBS prescreened for optimal performance with baculovirus expression vector systems (BEVS). This screening process involves comparing cell yield and viability using insect cells grown in various test lots for four passages. These test lots are compared to a control lot that has demonstrated the ability to support robust growth of insect cells.

details

- Selected from our highest quality HyClone Defined FBS lots
- Tested for performance with baculovirus expression vector systems (BEVS)
- Filtered through sequential 40nm (0.04µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

HyClone Insect Cell Screened Fetal Bovine Serum

Cat. No.	Screen Type	Origin	Size	Processing
SH30070.03I	Insect Cell Screened	U.S.	500 mL	None

Thermo Scientific HyClone Tetracycline Screened Fetal Bovine Serum, U.S. Origin

Ready-to-use, prescreened serum for researchers using tetracycline-regulated gene expression systems in cultured cells.

Tetracycline Screened FBS is designed for researchers using tetracycline-regulated gene expression systems in cultured cells. These systems rely on the presence or absence of tetracycline in growth media to either turn off or turn on gene expression. The presence of tetracycline in the serum may interfere with such systems. To eliminate the possibility of interference, we measure the tetracycline content of several high quality Defined FBS lots using an ELISA system. Those lots with undetectable tetracycline leveles are selected as Tetracycline Screened FBS.

details

- Selected from our highest quality HyClone Defined FBS lots
- Undetectable tetracycline by ELISA (<300 pg/mL)
- Filtered through sequential 40nm (0.04µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

HyClone Tetracycline Screened Fetal Bovine Serum

Cat. No.	Screen Type	Origin	Size	Processing
SH30070.03T	Tetracycline Screened	U.S.	500 mL	None
SH30070.03TH	Tetracycline Screened	U.S.	500 mL	Heat Inactivated
SH30070.03TIH	Tetracycline Screened	U.S.	500 mL	Irradiated

Thermo Scientific HyClone Bovine Growth Serum, U.S. Origin

Save money while ensuring excellent culture results with this cost-effective alternative to FBS.

Bovine Growth Serum (BGS) was developed for cell culturists who are concerned about the availability of fetal bovine serum and are seeking an affordable and viable alternative. Growth promotion studies demonstrate that BGS is a superior performing FBS replacement. BGS outperforms FBS in many applications. BGS consists of high quality Thermo Scientific HyClone Bovine Calf Serum from U.S. sources, supplemented with chemically defined components including vitamins, amino acids, trace metals, and other small molecules to stimulate cell growth and proliferation.

details

- Bovine Growth Serum is readily available and not affected by FBS shortages
- Performs better than FBS in many applications
- Lower cost than FBS
- Filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

HyClone Bovine Growth Serum

Cat. No.	Product	Origin	Size	Processing
SH30541.02	Bovine Growth Serum	U.S.	100 mL	None
SH30541.02HI	Bovine Growth Serum	U.S.	100 mL	Heat Inactivated
SH30541.03	Bovine Growth Serum	U.S.	500 mL	None
SH30541.03HI	Bovine Growth Serum	U.S.	500 mL	Heat Inactivated
SH30541.03IR	Bovine Growth Serum	U.S.	500 mL	Irradiated

Thermo Scientific HyClone FetalClone I, II and III, U.S. Origin

Conduct more cost-effective research without compromising performance.

Thermo Scientific HyClone FetalClone® products are scientifically formulated FBS replacements, optimized for specific cell types. They are composed of specially processed veal calf serum and supplements that enhance performance with specific cell types. A characteristic of all the FetalClones is very low immunoglobulin content in comparison to calf serum, and high iron, transferrin, and cholesterol levels in comparison to FBS.

details

FetalClone I

- Optimized for the growth of hybridomas
- Successfully used to culture several cell lines
- IgG levels are comparable to those found in FBS
- Filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

FetalClone II

- Optimized for the growth of CHO cells and derivatives
- Same basic formulation as our FetalClone I, plus additional growth factors and supplements
- Requires no adaptation
- Suggested concentrations are the same as those used with FBS
- Filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

FetalClone III

- Most widely applicable of the FetalClone family
- Designed for fibroblast cultures
- Delivers a high culture yield at a reduced cost
- Filtered through three sequential 100 nm (0.1µm) pore-size rated filters
- Endotoxin: ≤10 EU/mL; Hemoglobin ≤10mg/dL

HyClone FetalClone I, II and III

Cat. No.	Product	Origin	Size	Processing
SH30080.02	FetalClone I	U.S.	100 mL	None
SH30080.02HI	FetalClone I	U.S.	100 mL	Heat Inactivated
SH30080.02IR	FetalClone I	U.S.	100 mL	Irradiated
SH30080.03	FetalClone I	U.S.	500 mL	None
SH30080.03HI	FetalClone I	U.S.	500 mL	Heat Inactivated
SH30080.03IR	FetalClone I	U.S.	500 mL	Irradiated
SH30066.02	FetalClone II	U.S.	100 mL	None
SH30066.02HI	FetalClone II	U.S.	100 mL	Heat Inactivated
SH30066.02IR	FetalClone II	U.S.	100 mL	Irradiated
SH30066.03	FetalClone II	U.S.	500 mL	None
SH30066.03HI	FetalClone II	U.S.	500 mL	Heat Inactivated
SH30066.03IR	FetalClone II	U.S.	500 mL	Irradiated
SH30066.03IH	FetalClone II	U.S.	500 mL	Heat Inactivated and Irradiated
SH30109.02	FetalClone III	U.S.	100 mL	None
SH30109.02HI	FetalClone III	U.S.	100 mL	Heat Inactivated
SH30109.02IR	FetalClone III	U.S.	100 mL	Irradiated
SH30109.03	FetalClone III	U.S.	500 mL	None
SH30109.03HI	FetalClone III	U.S.	500 mL	Heat Inactivated
SH30109.03IR	FetalClone III	U.S.	500 mL	Irradiated

Thermo Scientific HyClone AdvanceSTEM Serum Replacement

Designed to maintain murine embryonic stem cells (mESC) in culture.

Providing optimal culture conditions can be one of the greatest challenges in stem cell research, particularly keeping cells in an undifferentiated state or directing differentiation when desired. HyClone AdvanceSTEM Serum replacement is a serum-free FBS substitute that provides murine stem cells with the factors required to stimulate growth without the undefined components of serum that can cause unwanted differentiation.

details

- Serum substitute for murine stem cell culture
- Formulated for use with Thermo Scientific AdvanceSTEM Classical Media for stem cells
- Does not contain serum
- Does not contain leukemia inhibitory factory (LIF); supplementation with LIF is required for mESC culture
- Recommended for use at a final concentration of 15 to 20%
- Not recommended for plating mouse embryonic feeder cells (MEFs)

HyClone AdvanceSTEM Serum Replacement

Cat. No.	Product	Size
SH30874.01	AdvanceSTEM Serum Replacement	50 mL
SH30874.02	AdvanceSTEM Serum Replacement	100 mL
SH30874.03	AdvanceSTEM Serum Replacement	500 mL

classical liquid media

Since our beginning almost 50 years ago, we have demonstrated our commitment to the advancement of science by becoming a premier supplier of products to support cell culture. While we have achieved dramatic growth in the supply of large-scale production volumes of media for industry, our roots are in laboratory research and academia, and we remain committed to providing superior, innovative products for these applications.

Our extensive line of high-quality Classical Media formulations is offered in convenient packaging configurations. All Classical Media are system-tested with Thermo Scientific HyClone sera to ensure product efficacy and homogeneity.

From production to quality control and final product packaging, we deliver the best in high quality media. Our Classical Media products comprise the most commonly-used formulations used in today's research market. Variations of these standard formulations are available on a made-to-order basis.

All of our media manufacturing facilities and state-of-the-art milling, formulating, filtration and aseptic filling processes are validated to ensure compliance with cGMP, ISO 9001:2000, ISO 13485:2003, and our own stringent quality standards. Vertical integration of these manufacturing processes, such as hydration of media using milled formulations and supplier inspection and certification programs helps ensure product efficacy, uniformity and consistency. All products are formulated, milled, and blended into complete powdered media according to written, approved specifications.

These bulk formulations are then either packaged as ready-to-hydrate finished powders, or transferred to the media hydration facility for hydration and sterile filtration into bottles. Other capabilities and value-added features include:

- Hydration using our WFI Quality Water system for unsurpassed quality
- Lot sizes of up to 2,000 L in our standard 500 mL and 1 L bottles
- 0.1 µm filtration for all standard products

Thermo Scientific HyClone Basal Media Eagle (BME) with Earle's Balanced Salt Solution

The simplest media for cell culture.

Basal Media Eagle (BME), originally developed by Harry Eagle for HeLa cells and mouse fibroblasts, was used to discover the minimum requirements for *in vitro* cell growth. BME has since been used for many other mammalian cell types. BME also serves as the base for many other types of classical media including Minimal Essential Medium (MEM) and Dulbecco's Modified Eagle's Medium (DMEM). BME contains eight B vitamins, the ten essential amino acids, plus cystine, tyrosine, and glutamine.

details

- Contains 5.6 mM Glucose, 2.0 mM L-Glutamine and Phenol Red
- Available as a liquid in multiple sizes
- Produced with WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Basal Media Eagle (BME) with Earle's Balanced Salt Solution

Cat. No.	Description	Format	Size
SH30157.01	BME/EBSS	Liquid	500 mL
SH30157.02	BME/EBSS	Liquid	1000 mL

Thermo Scientific HyClone Dulbecco's Modified Eagles Medium (DMEM), High Glucose

Multiple variations of a classical formulation for a wide variety of cell types.

DMEM, High Glucose is a widely used classical media suitable for the culturing of many immortalized cell lines from humans, monkeys, hamsters, rats, mice, chicken and fish. It has also been used to successfully culture primary fibroblasts, neurons, glial cells, HUVECs and smooth muscle cells. DMEM contains four times more amino acids, vitamins and other supplementary components than Basal Medium Eagle (BME), the base media from which DMEM was derived. As DMEM contains no growth-promoting agents or proteins, supplementation with FBS is recommended for optimal performance. DMEM is one of the most widely modified media types.

details

- Contains 25.0 mM Glucose
- Available with or without L-glutamine, Sodium Pyruvate, Phenol Red and HEPES
- Multiple formats available, including a reduced serum version and low osmo for stem cell culture
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Dulbecco's Modified Eagles Medium (DMEM), High Glucose

Cat. No.	Description	L-Glutamine	Sodium Pyruvate	HEPES	Phenol Red	Format	Size
SH30022.01	DMEM High Glucose	4.0 mM			Y	Liquid	500 mL
SH30022.02	DMEM High Glucose	4.0 mM			Y	Liquid	1000 mL
SH30022.FS	DMEM High Glucose	4.0 mM			Y	Liquid	6 X 500 mL
SH30022.LS	DMEM High Glucose	4.0 mM			Y	Liquid	6 X 1000 mL
SH30003.01	DMEM High Glucose	4.0 mM			Y	Powder	10 X 1 L
SH30003.02	DMEM High Glucose	4.0 mM			Y	Powder	2 X 5 L
SH30003.03	DMEM High Glucose	4.0 mM			Y	Powder	1 X 10 L
SH30284.01	DMEM High Glucose	4.0 mM				Liquid	500 mL
SH30284.02	DMEM High Glucose	4.0 mM				Liquid	1000 mL
SH30211.01	DMEM High Glucose	4.0 mM				Powder	1 X 10 L
SH30211.05	DMEM High Glucose	4.0 mM				Powder	2 X 5 L
SH30243.01	DMEM High Glucose	4.0 mM	1.0 mM		Y	Liquid	500 mL
SH30243.02	DMEM High Glucose	4.0 mM	1.0 mM		Y	Liquid	1000 mL
SH30243.FS	DMEM High Glucose	4.0 mM	1.0 mM		Y	Liquid	6 X 500 mL
SH30243.LS	DMEM High Glucose	4.0 mM	1.0 mM		Y	Liquid	6 X 1000 mL
SH30045.02	DMEM High Glucose	4.0 mM	1.0 mM		Y	Powder	2 X 5 L
SH30045.03	DMEM High Glucose	4.0 mM	1.0 mM		Y	Powder	1 X 10 L
SH30287.01	DMEM High Glucose	4.0 mM	1.0 mM			Powder	2 X 5 L
SH30287.02	DMEM High Glucose	4.0 mM	1.0 mM			Powder	1 X 10 L
SH30249.01	DMEM High Glucose	4.0 mM		25.0 mM	Y	Liquid	500 mL
SH30249.02	DMEM High Glucose	4.0 mM		25.0 mM	Y	Liquid	1000 mL

Thermo Scientific HyClone Dulbecco's Modified Eagles Medium (DMEM), High Glucose, continued

Dulbecco's Modified Eagles Medium (DMEM), High Glucose, continued

Cat. No.	Description	L-Glutamine	Sodium Pyruvate	HEPES	Phenol Red	Format	Size
SH30081.01	DMEM High Glucose				Y	Liquid	500 mL
SH30081.02	DMEM High Glucose				Y	Liquid	1000 mL
SH30081.FS	DMEM High Glucose				Y	Liquid	6 X 500 mL
SH30081.LS	DMEM High Glucose				Y	Liquid	6 X 1000 mL
SH30053.02	DMEM High Glucose				Y	Powder	2 X 5 L
SH30053.03	DMEM High Glucose				Y	Powder	1 X 10 L
SH30285.01	DMEM High Glucose		1.0 mM		Y	Liquid	500 mL
SH30285.02	DMEM High Glucose		1.0 mM		Y	Liquid	1000 mL
SH30285.FS	DMEM High Glucose		1.0 mM		Y	Liquid	6 X 500 mL
SH30285.LS	DMEM High Glucose		1.0 mM		Y	Liquid	6 X 1000 mL
SH30563.01	DMEM High Glucose		1.0 mM	25.0 mM	Y	Liquid	500 mL
SH30563.02	DMEM High Glucose		1.0 mM	25.0 mM	Y	Liquid	1000 mL
SH30348.02	DMEM High Glucose, Filter Friendly	4.0 mM			Y	Powder	2 X 5 L
SH30348.03	DMEM High Glucose, Filter Friendly	4.0 mM			Y	Powder	1 X 10 L
SH30262.01	DMEM High Glucose, without Calcium or Magnesium				Y	Liquid	500 mL
SH30262.02	DMEM High Glucose, without Calcium or Magnesium				Y	Liquid	1000 mL
SH30346.01	DMEM High Glucose, without Calcium or Magnesium				Y	Powder	2 X 5 L
SH30346.02	DMEM High Glucose, without Calcium or Magnesium				Y	Powder	1 X 10 L
SH30606.01	DMEM High Glucose, without Methionine, or Cystine		1.0 mM		Y	Liquid	500 mL
SH30606.02	DMEM High Glucose, without Methionine, or Cystine		1.0 mM		Y	Liquid	1000 mL
SH30634.01	DMEM High Glucose, without Phosphate	4.0 mM			Y	Liquid	500 mL
SH30607.01	DMEM High Glucose, without Phosphate		1.0 mM		Y	Liquid	500 mL
SH30604.02	DMEM High Glucose, Modified		1.0 mM			Liquid	1000 mL
SH30604.01	DMEM High Glucose, Modified		1.0 mM			Liquid	500 mL
SH30585.01	DMEM High Glucose, Modified					Liquid	500 mL
SH30585.02	DMEM High Glucose, Modified					Liquid	1000 mL
SH30565.01	DMEM-RS, (Reduced Serum DMEM High Glucose)	4.0 mM		25.0 mM	Y	Liquid	500 mL
SH30565.02	DMEM-RS, (Reduced Serum DMEM High Glucose)	4.0 mM		25.0 mM	Y	Liquid	1000 mL
SH30824.01	AdvanceSTEM DMEM4SC, DMEM High Glucose for stem cells			25.0 mM	Y	Liquid	500 mL
SH30824.02	AdvanceSTEM DMEM4SC, DMEM High Glucose for stem cells			25.0 mM	Y	Liquid	1000 mL
SH30870.01	AdvanceSTEM Low Osmo DMEM		1.0 mM	25.0 mM	Y	Liquid	500 mL
SH30870.02	AdvanceSTEM Low Osmo DMEM		1.0 mM	25.0 mM	Y	Liquid	1000 mL

Easily find the most suitable media and sera for your cell culture applications. Learn more about our new mobile app at: *thermoscientific.com/mediaseraapp*

Thermo Scientific HyClone Dulbecco's Modified Eagles Medium (DMEM), Low Glucose

Low Glucose version of DMEM for suspension cell culture.

DMEM Low Glucose was the original modification of Basal Medium Eagle (BME) used to grow mouse embryonic cells. DMEM, Low Glucose is suitable for the culturing of many immortalized cell lines from humans, monkeys, hamsters, rats, mice, chicken and fish. DMEM contains four times more amino acids, vitamins and other supplementary components than Basal Medium Eagle (BME), the base media from which DMEM was derived. As DMEM contains no growth-promoting agents or proteins, supplementation with FBS is recommended for optimal performance.

details

- Contains 5.6 mM Glucose and 4.0 mM L-Glutamine
- Available with or without Phenol Red
- Available as a liquid or powder in multiple sizes
- Produced with WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Dulbecco's Modified Eagles Medium (DMEM), Low Glucose

Cat. No.	Description	Phenol Red	Format	Size
SH30021.01	DMEM Low Glucose	Y	Liquid	500 mL
SH30021.02	DMEM Low Glucose	Y	Liquid	1000 mL
SH30021.FS	DMEM Low Glucose	Y	Liquid	6 X 500 mL
SH30002.01	DMEM Low Glucose	Y	Powder	10 X 1 L
SH30002.02	DMEM Low Glucose	Y	Powder	2 X 5 L
SH30002.03	DMEM Low Glucose	Y	Powder	1 X 10 L
SH30044.01	DMEM Low Glucose		Powder	10 X 1 L
SH30044.02	DMEM Low Glucose		Powder	2 X 5 L
SH30044.03	DMEM Low Glucose		Powder	1 X 10 L

Thermo Scientific HyClone DMEM / F12 1:1

Combining the best from two popular media.

DMEM / F12 is an equal parts blend of DMEM and Ham's F12 media that is widely used for culturing many different mammalian cells including MDCK, Glial cells, fibroblasts, and endothelial cells. This formulation combines the high concentration of glucose, amino acids and vitamins from DMEM with the wide variety of other components available in Ham's F-12.

details

- Contains 17.5 mM Glucose and 0.5 mM Sodium Pyruvate
- Available with or without L-Glutamine, Phenol Red or HEPES
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

DMEM / F12 1:1

Cat. No.	Description	L-Glutamine	HEPES	Phenol Red	Format	Size
SH30023.01	DMEM/F12	2.5 mM	15.0 mM	Y	Liquid	500 mL
SH30023.02	DMEM/F12	2.5 mM	15.0 mM	Y	Liquid	1000 mL
SH30023.FS	DMEM/F12	2.5 mM	15.0 mM	Y	Liquid	6 X 500 mL
SH30004.01	DMEM/F12	2.5 mM	15.0 mM	Y	Powder	10 X 1 L
SH30004.02	DMEM/F12	2.5 mM	15.0 mM	Y	Powder	2 X 5 L
SH30004.03	DMEM/F12	2.5 mM	15.0 mM	Y	Powder	1 X 10 L
SH30261.01	DMEM/F12	2.5 mM	15.0 mM	Y	Liquid	500 mL
SH30261.02	DMEM/F12	2.5 mM	15.0 mM	Y	Liquid	1000 mL
SH30271.01	DMEM/F12	2.5 mM		Y	Liquid	500 mL
SH30271.02	DMEM/F12	2.5 mM		Y	Liquid	1000 mL
SH30271.FS	DMEM/F12	2.5 mM		Y	Liquid	6 X 500 mL
SH30069.02	DMEM/F12	2.5 mM		Y	Powder	2 X 5 L
SH30069.03	DMEM/F12	2.5 mM		Y	Powder	2 X 5 L
SH30272.01	DMEM/F12	2.5 mM			Liquid	500 mL
SH30272.02	DMEM/F12	2.5 mM			Liquid	1000 mL
SH30126.01	DMEM/F12		15.0 mM	Y	Liquid	500 mL
SH30126.02	DMEM/F12		15.0 mM	Y	Liquid	1000 mL
SH30126.FS	DMEM/F12		15.0 mM	Y	Liquid	6 X 500 mL

▶ Thermo Scientific HyClone Ham's F-10 Basal Media

Serum-free culture of CHO cells.

Ham's F-10 was designed for use with Chinese Hamster Ovary (CHO) cells, and has been shown to support the growth of human diploid cells, white blood cells, and primary explants from rat, rabbit, or chicken tissues. This classical media can be used for serum-free growth of some cell lines including CHO cells. Serum supplementation may or may not be necessary depending on the type of cell being cultured. Ham's F-10 contains a wide variety of components, including zinc, hypoxanthine, and thymidine and is buffered with sodium bicarbonate.

details

- Contains 6.1 mM Glucose, 1.0 mM L-Glutamine, 1.0 mM Sodium Pyruvate and Phenol Red
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Ham's F-10 Basal Media

Cat. No.	Description	Format	Size
SH30025.01	Ham's F10	Liquid	500 mL
SH30025.02	Ham's F10	Liquid	1000 mL
SH30009.01	Ham's F10	Powder	10 X 1 L
SH30009.02	Ham's F10	Powder	2 X 5 L
SH30009.03	Ham's F10	Powder	1 X 10 L

Thermo Scientific HyClone Ham's F-12 Basal Media

Improved formulation for CHO cells.

Ham's F-12 media was originally derived by modifying Hams' F-10 to include increased concentrations of choline, inositol, putrescine, and several amino acids. It was developed specifically for serum free culturing of Chinese Hamster Ovary (CHO) cells and has also been used with supplementation to grow chondrocytes, primary rat hepatocytes, rat prostate epithelial cells, carcinoma cells, rat skeletal myoblasts and rat, rabbit, and chicken embryos.

details

- Contains Phenol Red
- Available with or without L-Glutamine
- Available in multiple sizes and configurations of liquid or powder
- Available with Kaighn's Modification and in a reduced serum version
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Ham's F-12 Basal Media

Cat. No.	Description	Glucose	L-Glutamine	Sodium Pyruvate	Format	Size
SH30026.01	Ham's F12	10.0 mM	1.0 mM	1.0 mM	Liquid	500 mL
SH30026.02	Ham's F12	10.0 mM	1.0 mM	1.0 mM	Liquid	1000 mL
SH30026.FS	Ham's F12	10.0 mM	1.0 mM	1.0 mM	Liquid	6 X 500 mL
SH30010.01	Ham's F12	10.0 mM	1.0 mM	1.0 mM	Powder	10 X 1 L
SH30010.02	Ham's F12	10.0 mM	1.0 mM	1.0 mM	Powder	2 X 5 L
SH30010.03	Ham's F12	10.0 mM	1.0 mM	1.0 mM	Powder	1 X 10 L
SH30056.02	Ham's F12	10.0 mM		1.0 mM	Powder	2 X 5 L
SH30056.03	Ham's F12	10.0 mM		1.0 mM	Powder	1 X 10 L
SH30526.01	Ham's F12, Kaighn's Modification	7.0 mM	2.0 mM	2.0 mM	Liquid	500 mL
SH30526.02	Ham's F12, Kaighn's Modification	7.0 mM	2.0 mM	2.0 mM	Liquid	1000 mL
SH30623.01	Ham's F12-RS (Reduced Serum Media)	10.0 mM	1.0 mM	1.0 mM	Liquid	500 mL
SH30623.02	Ham's F12-RS (Reduced Serum Media)	10.0 mM	1.0 mM	1.0 mM	Liquid	1000 mL

Thermo Scientific HyClone Iscove's Modified Dulbecco's Media (IMDM)

Nutritionally designed for fast growing cells.

IMDM is an enriched modification of Dulbecco's Modified Eagle's Medium (DMEM) that contains selenium, additional amino acids and vitamins, sodium pyruvate, HEPES buffer, and potassium nitrate instead of ferric nitrate. IMDM was designed to support rapidly proliferating cultures with high cell density. Cell lines grown successfully with IMDM include Jurkat, COS-7, and lines derived from murine B lymphocytes, hematopoietic tissue from bone marrow, B cells stimulated with lipopolysaccharide, T lymphocytes, erythrocytes and macrophages and a variety of hybrid cells. IMDM is generally used with serum supplementation. With some cell types, IMDM can be used serum free when supplemented with albumin and transferrin.

details

- Contains 1.0 mM Sodium Pyruvate, 25 mM HEPES and Phenol Red
- Available without Alpha-Thioglycerol
- Stem cell modified option osmotically balanced for stem cell culture
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Iscove's Modified Dulbecco's Media (IMDM)

Cat. No.	Description	Glucose	L-Glutamine	Format	Size
SH30259.01	IMDM	25.0 mM		Liquid	500 mL
SH30259.02	IMDM	25.0 mM		Liquid	1000 mL
SH30380.02	IMDM	25.0 mM		Powder	2 X 5 L
SH30380.03	IMDM	25.0 mM		Powder	1 X 10 L
SH30228.01	IMDM, without Alpha-Thioglycerol	25.0 mM	4.0 mM	Liquid	500 mL
SH30228.02	IMDM, without Alpha-Thioglycerol	25.0 mM	4.0 mM	Liquid	1000 mL
SH30228.FS	IMDM, without Alpha-Thioglycerol	25.0 mM	4.0 mM	Liquid	6 X 500 mL
SH30005.01	IMDM, without Alpha-Thioglycerol	25.0 mM	4.0 mM	Powder	10 X 1 L
SH30005.02	IMDM, without Alpha-Thioglycerol	25.0 mM	4.0 mM	Powder	2 X 5 L
SH30005.03	IMDM, without Alpha-Thioglycerol	25.0 mM	4.0 mM	Powder	1 X 10 L
SH30302.02	IMDM, without Alpha-Thioglycerol, ADCF	25.0 mM	4.0 mM	Powder	2 X 5 L
SH30302.03	IMDM, without Alpha-Thioglycerol, ADCF	25.0 mM	4.0 mM	Powder	1 X 10 L
SH30822.01	AdvanceSTEM IMDM4SC, (IMDM for Stem Cells)	27.74 mM		Liquid	500 mL
SH30822.02	AdvanceSTEM IMDM4SC, (IMDM for Stem Cells)	27.74 mM		Liquid	1000 mL

Thermo Scientific HyClone Leibovitz's L-15

Designed for culture without CO_2 equilibration.

Leibovitz's L-15 medium was originally developed with a phosphate and free base amino acid buffering system for use in environments without carbon dioxide equilibration. Leibovitz L-15 has been used for the propagation of HEp-2, monkey kidney cells and primary explants of embryonic and adult human tissue. Leibovitz's medium is typically supplemented with serum.

details

- Contains 5.0 mM Galactose, 5.0 mM Sodium Pyruvate, 2.1 mM L- Glutamine and Phenol Red
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Leibovitz's L-15

Cat. No.	Description	Format	Size
SH30525.01	Leibovitz L-15	Liquid	500 mL
SH30525.02	Leibovitz L-15	Liquid	1000 mL
SH30048.01	Leibovitz L-15	Powder	10 X 1 L
SH30048.02	Leibovitz L-15	Powder	2 X 5 L
SH30048.03	Leibovitz L-15	Powder	1 X 10 L

Thermo Scientific HyClone Medium 199 (M199)

One of the first media developed and still one of the best.

M199 has broad utility across multiple species and is often used for vaccine production in non-transformed cells. Originally developed for culturing chick embryo fibroblasts, it also supports the growth of primary pancreatic explants, and lens tissue. Medium 199 contains some unique components in comparison with other classical media, including adenine, adenosine, hypoxanthine, thymine, and additional vitamins. Serum supplementation is recommended when using this media for long-term culturing.

details

- Contains 5.6 mM Glucose, and 0.7 mM L- Glutamine
- Available with or without Phenol Red and L-amino acids
- With Earle's salts for use in a CO_2 incubator, or with Hank's salts for use without CO_2
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Medium 199 (M199)

Cat. No.	Description	Phenol Red?	Format	Size
SH30253.01	M199 with Earle's Balanced Salt Solution (EBSS)	Y	Liquid	500 mL
SH30253.02	M199 with Earle's Balanced Salt Solution (EBSS)	Y	Liquid	1000 mL
SH30253.FS	M199 with Earle's Balanced Salt Solution (EBSS)	Y	Liquid	6 X 500 mL
SH30254.01	M199 with Earle's Balanced Salt Solution (EBSS)	N	Powder	2 X 5 L
SH30254.02	M199 with Earle's Balanced Salt Solution (EBSS)	N	Powder	1 X 10 L
SH30351.01	M199 with Earle's Balanced Salt Solution (EBSS) Filter Friendly	Y	Powder	1 X 10 L
SH30297.01	M199 with Earle's Balanced Salt Solution (EBSS), with L-Amino Acids	Y	Powder	10 X 1 L
SH30297.02	M199 with Earle's Balanced Salt Solution (EBSS), with L-Amino Acids	Y	Powder	2 X 5 L
SH30297.03	M199 with Earle's Balanced Salt Solution (EBSS), with L-Amino Acids	Y	Powder	1 X 10 L
SH30233.01	M199 with Hank's Balanced Salt Solution (HBSS)	Y	Liquid	100 mL
SH30233.02	M199 with Hank's Balanced Salt Solution (HBSS)	Y	Liquid	500 mL
SH30233.03	M199 with Hank's Balanced Salt Solution (HBSS)	Y	Liquid	1000 mL
SH30223.04	M199 with Hank's Balanced Salt Solution (HBSS)	Y	Powder	1 X 10 L
SH30330.01	M199 with Hank's Balanced Salt Solution (HBSS), with L-Amino Acids	Y	Liquid	500 mL
SH30330.02	M199 with Hank's Balanced Salt Solution (HBSS), with L-Amino Acids	Y	Liquid	1000 mL

Thermo Scientific HyClone McCoy's 5A

Media with Bacto-peptone as a nitrogen source for growing cells.

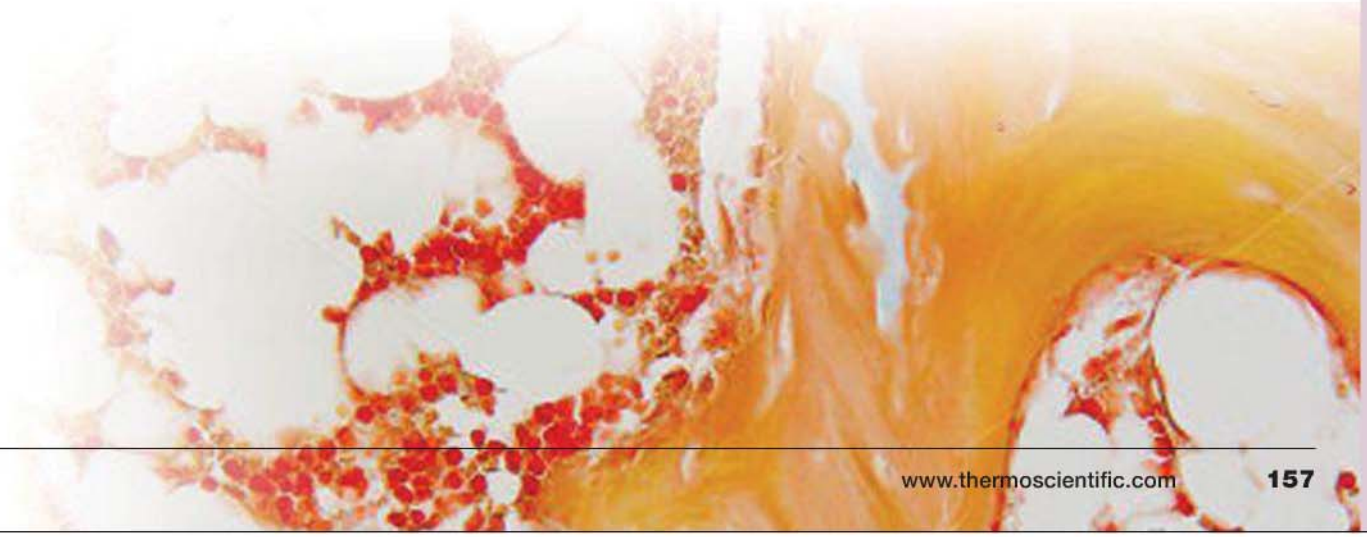
McCoy's 5A was developed by modifying Basal Media Eagle (BME) to include increased levels of inositol and glucose as well as the reducing agent glutathione, and bacto-peptone. This media supports the growth of a wide range of primary cells, established cell lines and tissue explants, including cells derived from bone marrow, skin, spleen, kidney, lung, gingiva, omenta, adrenals and rat embryos. It has also been used for viral production in primary cell cultures, other tissues, and transformed cell lines, including bone marrow.

details

- Contains 16.7 mM Glucose, and 1.5 mM L-Glutamine
- Available with or without HEPES or Phenol Red
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

McCoy's 5A

Cat. No.	Description	HEPES	Phenol Red?	Format	Size
SH30200.01	McCoy's 5A		Y	Liquid	500 mL
SH30200.02	McCoy's 5A		Y	Liquid	1000 mL
SH30200.FS	McCoy's 5A		Y	Liquid	6 X 500 mL
SH30270.01	McCoy's 5A		N	Liquid	500 mL
SH30270.02	McCoy's 5A		N?	Liquid	1000 mL
SH30602.01	McCoy's 5A	25.0 mM	Y	Liquid	500 mL
SH30602.02	McCoy's 5A	25.0 mM	Y	Liquid	1000 mL
SH30602.03	McCoy's 5A	25.0 mM	Y	Liquid	100 mL
SH30049.01	McCoy's 5A		Y	Powder	10 X 1 L
SH30049.02	McCoy's 5A		Y	Powder	2 X 5 L
SH30049.03	McCoy's 5A		Y	Powder	1 X 10 L



Thermo Scientific HyClone Minimal Essential Media (MEM)

Multiple options of a classic formulation.

Minimum Essential Medium (MEM) is one of the earliest modifications of Basal Medium Eagle (BME) containing amino acid concentrations that more closely mimic those found in mammalian cells. MEM has been used with serum supplementation on a broad range of cell types including suspension and adherent mammalian cells, HeLa, BHK-21, HEK-293, HEp-2, HT-1080, MCF-7, fibroblasts and primary rat astrocytes.

Numerous other modifications of MEM have also been developed. MEM α contains non-essential amino acids, sodium pyruvate, lipoic acid, vitamin B_{12}, biotin and ascorbic acid. MEM α has been used for many cell types grown as monolayers.

MEM is available without nucleosides for use as a selection medium for DG44 and other DHFR negative cells. MEM Richter's Modification contains iron, zinc, putrescine, fatty acids, choline and inositol. Suspension modifications replace calcium with magnesium ions to inhibit cell attachment.

details

- Available with or without L-Glutamine, Sodium Pyruvate, or Phenol Red
- Multiple modifications and reduced serum options
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Minimal Essential Media (MEM)

Cat. No.	Description	Glucose	L-Glutamine	Sodium Pyruvate	Phenol Red?	Format	Size
SH30265.01	MEM Alpha Modification, with Ribo- and Deoxyribonucleosides	5.6 mM	2.0 mM	1.0 mM	Y	Liquid	500 mL
SH30265.02	MEM Alpha Modification, with Ribo- and Deoxyribonucleosides	5.6 mM	2.0 mM	1.0 mM	Y	Liquid	1000 mL
SH30265.FS	MEM Alpha Modification, with Ribo- and Deoxyribonucleosides	5.6 mM	2.0 mM	1.0 mM	Y	Liquid	6 X 500 mL
SH30007.01	MEM Alpha Modification, with Ribo- and Deoxyribonucleosides	5.6 mM	2.0 mM	1.0 mM	Y	Powder	10 X 1 L
SH30007.02	MEM Alpha Modification, with Ribo- and Deoxyribonucleosides	5.6 mM	2.0 mM	1.0 mM	Y	Powder	2 X 5 L
SH30007.03	MEM Alpha Modification, with Ribo- and Deoxyribonucleosides	5.6 mM	2.0 mM	1.0 mM	Y	Powder	1 X 10 L
SH30219.01	MEM Alpha Modification, without Ribo- or Deoxyribonucleosides	5.5 mM	2.0 mM	1.0 mM	Y	Powder	1 X 10 L
SH30568.01	MEM Alpha Modification, without Ribo- or Deoxyribonucleosides	5.6 mM		1.0 mM	Y	Liquid	500 mL
SH30568.02	MEM Alpha Modification, without Ribo- or Deoxyribonucleosides	5.6 mM		1.0 mM	Y	Liquid	1000 mL
SH30568.FS	MEM Alpha Modification, without Ribo- or Deoxyribonucleosides	5.6 mM		1.0 mM	Y	Liquid	6 X 500 mL
SH30205.02	MEM Alpha Modification, without Ribo- or Deoxyribonucleosides	5.6 mM		1.0 mM	Y	Powder	2 X 5 L
SH30205.03	MEM Alpha Modification, without Ribo- or Deoxyribonucleosides	5.6 mM		1.0 mM	Y	Powder	1 X 10 L

Thermo Scientific HyClone Minimal Essential Media (MEM), continued

Minimal Essential Media (MEM), continued

Cat. No.	Description	Glucose	L-Glutamine	Sodium Pyruvate	Phenol Red?	Format	Size
SH30024.01	MEM with EBSS	5.6 mM	2.0 mM		Y	Liquid	500 mL
SH30024.02	MEM with EBSS	5.6 mM	2.0 mM		Y	Liquid	1000 mL
SH30024.FS	MEM with EBSS	5.6 mM	2.0 mM		Y	Liquid	6 X 500 mL
SH30024.LS	MEM with EBSS	5.6 mM	2.0 mM		Y	Liquid	6 X 1000 mL
SH30008.01	MEM with EBSS	5.6 mM	2.0 mM		Y	Powder	10 X 1 L
SH30008.02	MEM with EBSS	5.6 mM	2.0 mM		Y	Powder	2 X 5 L
SH30008.03	MEM with EBSS	5.6 mM	2.0 mM		Y	Powder	1 X 10 L
SH30171.01	MEM with EBSS	5.6 mM	2.0 mM		N	Powder	10 X 1 L
SH30171.02	MEM with EBSS	5.6 mM	2.0 mM		N	Powder	2 X 5 L
SH30171.03	MEM with EBSS	5.6 mM	2.0 mM		N	Powder	1 X 10 L
SH30244.01	MEM with EBSS	5.6 mM			Y	Liquid	500 mL
SH30244.02	MEM with EBSS	5.6 mM			Y	Liquid	1000 mL
SH30244.FS	MEM with EBSS	5.6 mM			Y	Liquid	6 X 500 mL
SH30244.LS	MEM with EBSS	5.6 mM			Y	Liquid	6 X 1000 mL
SH30054.01	MEM with EBSS	5.6 mM			Y	Powder	10 X 1 L
SH30054.02	MEM with EBSS	5.6 mM			Y	Powder	2 X 5 L
SH30054.03	MEM with EBSS	5.6 mM			Y	Powder	1 X 10 L
SH30050.01	MEM with EBSS, with Non-Essential Amino Acids	5.6 mM	2.0 mM		Y	Powder	10 X 1 L
SH30050.02	MEM with EBSS, with Non-Essential Amino Acids	5.6 mM	2.0 mM		Y	Powder	2 X 5 L
SH30050.03	MEM with EBSS, with Non-Essential Amino Acids	5.6 mM	2.0 mM		Y	Powder	1 X 10 L
SH30327.01	MEM with EBSS, Autoclavable	5.6 mM			Y	Powder	1 X 10 L
SH30235.01	MEM with EBSS, Suspension Modification	5.6 mM	2.0 mM		Y	Liquid	500 mL
SH30235.02	MEM with EBSS, Suspension Modification	5.6 mM	2.0 mM		Y	Liquid	1000 mL
SH30193.02	MEM with HBSS	5.6 mM	2.0 mM		Y	Powder	2 X 5 L
SH30193.03	MEM with HBSS	5.6 mM	2.0 mM		Y	Powder	1 X 10 L
SH30269.01	MEM Glasgow Modification	25.0 mM	2.0 mM		Y	Powder	1 X 10 L
SH30601.01	MEM Richter's Modification	11.1 mM	2.0 mM	1.0 mM	Y	Liquid	500 mL
SH30601.02	MEM Richter's Modification	11.1 mM	2.0 mM	1.0 mM	Y	Liquid	1000 mL
SH30600.01	MEM Richter's Modification	11.1 mM	2.0 mM	1.0 mM	N	Liquid	500 mL
SH30600.02	MEM Richter's Modification	11.1 mM	2.0 mM	1.0 mM	N	Liquid	1000 mL
SH30603.01	MEM for Suspension Cultures, without Calcium Chloride, or Magnesium	5.6 mM			Y	Liquid	500 mL
SH30603.02	MEM for Suspension Cultures, without Calcium Chloride, or Magnesium	5.6 mM			Y	Liquid	1000 mL

Thermo Scientific HyClone RPMI 1640 Media

A general purpose media for suspension and anchorage dependent culture.

Roswell Park Memorial Institute (RPMI) 1640 media was originally developed as a modification of McCoy's 5A and contains inositol, choline, biotin, vitamin B12 and PABA. Designed for suspension cultures, RPMI 1640 has since demonstrated its utility as a general purpose medium for culturing a broad range of suspension and anchorage dependent cell types including HeLa, Jurkat, MCF-7, PC12, PBMC, myelomas, hybridomas, leukocytes, B and T lymphocytes, astrocytes and carcinomas. Most cell lines require serum supplementation when grown in RPMI 1640.

details

- Contains 11.1 mM Glucose
- Available with or without L-Glutamine, HEPES or Phenol Red
- Multiple modifications of the powdered form
- Available in multiple sizes and configurations of liquid or powder
- All liquid media products are hydrated using WFI quality water
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

Thermo Scientific HyClone HyClone RPMI 1640 Media, continued

RPMI 1640 Media

Cat. No.	Description	L-Glutamine	HEPES	Phenol Red?	Format	Size
SH30027.02	RPMI 1640	2.1 mM		Y	Liquid	1000 mL
SH30027.01	RPMI 1640	2.1 mM		Y	Liquid	500 mL
SH30027.LS	RPMI 1640	2.1 mM		Y	Liquid	6 X 1000 mL
SH30027.FS	RPMI 1640	2.1 mM		Y	Liquid	6 X 500 mL
SH30011.03	RPMI 1640	2.1 mM		Y	Powder	1 X 10 L
SH30011.01	RPMI 1640	2.1 mM		Y	Powder	10 X 1 L
SH30011.02	RPMI 1640	2.1 mM		Y	Powder	2 X 5 L
SH30012.03	RPMI 1640, Bakers X-Tra Soluble	2.1 mM		Y	Powder	1 X 10 L
SH30012.02	RPMI 1640, Bakers X-Tra Soluble	2.1 mM		Y	Powder	2 X 5 L
SH30255.02	RPMI 1640	2.1 mM	25.0 mM	Y	Liquid	1000 mL
SH30255.01	RPMI 1640	2.1 mM	25.0 mM	Y	Liquid	500 mL
SH30255.FS	RPMI 1640	2.1 mM	25.0 mM	Y	Liquid	6 X 500 mL
SH30537.03	RPMI 1640, ADCF	2.1 mM	25.0 mM	Y	Powder	1 X 10 L
SH30537.02	RPMI 1640, ADCF	2.1 mM	25.0 mM	Y	Powder	1 X 5 L
SH30197.03	RPMI 1640	2.1 mM		N	Powder	1 X 10 L
SH30197.01	RPMI 1640	2.1 mM		N	Powder	10 X 1 L
SH30197.02	RPMI 1640	2.1 mM		N	Powder	2 X 5 L
SH30096.02	RPMI 1640			Y	Liquid	1000 mL
SH30096.01	RPMI 1640			Y	Liquid	500 mL
SH30096.LS	RPMI 1640			Y	Liquid	6 X 1000 mL
SH30096.FS	RPMI 1640			Y	Liquid	6 X 500 mL
SH30057.03	RPMI 1640			Y	Powder	1 X 10 L
SH30057.01	RPMI 1640			Y	Powder	10 X 1 L
SH30057.02	RPMI 1640			Y	Powder	2 X 5 L
SH30328.01	RPMI 1640, Autoclavable			Y	Powder	1 X 10 L
SH30203.06	RPMI 1640		25.0 mM	Y	Liquid	1000 mL
SH30203.05	RPMI 1640		25.0 mM	Y	Liquid	500 mL
SH30605.02	RPMI 1640			N	Liquid	1000 mL
SH30605.01	RPMI 1640			N	Liquid	500 mL
SH30376.01	RPMI 1640, ADCF			N	Powder	1 X 10 L

Thermo Scientific HyClone Classical Media for Insect Cell Culture

Multiple options of classical formulations for insect cell culture.

Thermo Scientific offers multiple options of classical media formulations for insect cell culture. These media have successfully been used for basic cell biology research and for the efficient expression of proteins using the Baculovirus Expression Vector System.

details

- Multiple classical media formulations for insect culture
- Liquid media are produced with WFI quality water and are 0.1µm sterile filtered
- Do not contain phenol red
- Manufactured using ISO 9001:2000-certified processes

Grace's Unsupplemented

Grace's Insect Medium was originally designed for the growth of cells from the Australian Emperor Gum Moth, *Antherea eucalypti*. Grace's Unsupplemented Insect Medium is widely used for the growth of *Spodeptera frugiperda* cells, Sf9 and Sf21. Supplementation with 10% serum is recommended.

IPL-41

IPL-41 Insect Medium was originally designed for the growth of *Spodeptera frugiperda* (Sf9) cells. IPL-41 media contains essential ingredients for insect cell culture including malic acid, fumaric acid, and alpha-ketoglutaric acid. IPL-41 is a basal medium frequently used for serum-free media development and optimization.

TNM-FH

TNM-FH is a modification of Grace's media containing yeast extract and lactalbumin designed to grow cells from the cabbage looper, *Tricoplusia ni*. The medium when supplemented with 10% Insect Screened FBS can support the growth of cells derived from a variety of lepidopteran species with minimal adaptation.

HyClone Classical Media for Insect Cell Culture

Cat. No.	Description	L-Glutamine	Sodium Bicarbonate	Format	Size
SH30610.01	Grace's Unsupplemented	4 mM	0.35 g/L	Liquid	500 mL
SH30282.01	IPL-41	7 mM		Powder	1 X 5 L
SH30280.01	TNM-FH	4 mM		Liquid	100 mL
SH30280.02	TNM-FH	4 mM		Liquid	500 mL

Thermo Scientific HyClone HyQ-RS Reduced-Serum Media

Save while using less serum in your culture.

HyQ-RS Reduced Serum Media are nutritionally enhanced versions of classical media requiring a lower concentration of serum supplementation. Using these formulations, researchers can extend the life of a batch of serum and decrease costs.

details

- Maintain cell performance while reducing serum supplementation to 2 - 4% for most cell culture applications
- Reduced serum formulations of DMEM, Hams' F-12 and MEM
- Suitable for a wide variety of cell types normally used with standard classical formulations
- All reduced serum media contain phenol red
- 0.1µm sterile filtered
- Manufactured using ISO 9001:2000-certified processes

HyQ-RS Reduced Serum Media

Cat. No.	Description	Glucose	L-Glutamine	Size
SH30565.01	DMEM-RS	25.0 mM	4.0 mM	500 mL
SH30565.02	DMEM-RS	25.0 mM	4.0 mM	1000 mL
SH30623.01	Ham's F12-RS	10.0 mM	1.0 mM	500 mL
SH30623.02	Ham's F12-RS	10.0 mM	1.0 mM	1000 mL
SH30564.01	MEM-RS	5.5 mM	2.0 mM	500 mL
SH30564.02	MEM-RS	5.5 mM	2.0 mM	1000 mL

Serum-free media for maximum productivity

Applications for serum-free media can be found in many biotechnology fields, including the production of human and animal biopharmaceuticals, and diagnostic reagents. Due to increasing attention to producing biologicals representative of their native form, our serum-free media have been focused on supporting mammalian and invertebrate cell culture platforms. Some of the critical cell culture platforms for biotechnology included Chinese Hamster Ovary (CHO) cells, hybridomas and myelomas, insect cells, cells for the production of gene therapy viral vectors, and cells for the production of viral vaccines.

Our versatile serum-free media products support superior performance in multiple cell culture platforms, including hybridomas, NS0, insect, CHO, PER.C6, HEK293, MDCK, MDBK, COS-7 and Vero cell cultures. Serum-free media provides many time and cost saving advantages including:

- Eliminating the need to pre-screen lots of serum
- Simplifying regulatory documentation
- Reducing downstream purification challenges
- Providing consistent media performance

Our serum-free media products are developed using Metabolic Pathway Design. This approach to media formulation development ensures cell productivity during growth and production phases of cell life. The Metabolic Pathway Design approach balances nutrient supply against metabolic waste accumulation, determines the effective dose of nutrients critical to the production of recombinant proteins, and provides complexed lipids and phospholipids that facilitate delivery through the cell membrane. This work is done to provide a consistent nutrient supply, in a form acceptable to culture cells while promoting cell growth and stimulating productivity.

▶ Thermo Scientific HyClone Serum-Free Media for Protein Production

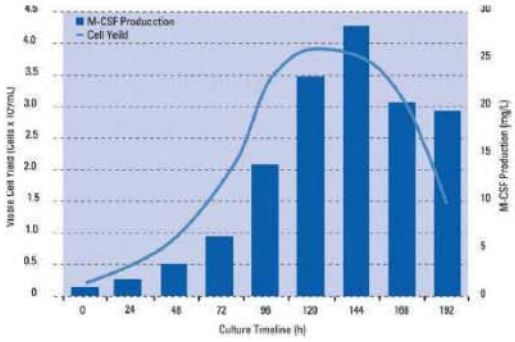
Serum-Free Media for Protein Production with CHO Cells

The biopharmaceutical industry relies heavily on Chinese Hamster Ovary (CHO) cells for protein production in culture.Thermo Scientific HyClone has developed a number of different serum-free media for the unique needs of CHO cells. These media developed through our Metabolic Pathway Design process contain the components needed by CHO cells to maximize production of recombinant proteins.

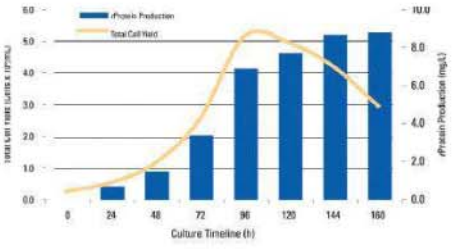
details

- Developed using Metabolic Pathway Design
- Increase the process yields for the recombinant proteins
- Multiple formulations available including the regulatory-friendly, chemically-defined and animal-derived component-free (ADCF) versions
- Some formulations allow for direct or sequential adaptation
- Support growth in multiple cell culture systems including formulations designed for large-scale culture applications, including perfusion and fed-batch strategies
- Manufactured under cGMP with full component traceability

Thermo Scientific HyClone Serum-Free Media for Protein Production, continued



Recombinant Macrophage Colony Stimulating Factor (M-CSF) production using CHO cell line, 5/9ma 3-18 (ATCCe:CRL-10154) cultured in CDM4CHO during a 3 L stirredtank batch bioreactor culture.



Production of M-CSF using a recombinant CHO cell line cultured in SFM4CHO in a 6 L fed-batch bioreactor culture. Beginning at 48 h, concentrated glucose and L-glutamine were fed to the culture to maintain 2 g/L glucose and 2 mM L-glutamine.

Thermo Scientific HyClone HyCell-CHO Media

Thermo Scientific HyClone HyCell CHO Media is a versatile, animal-derived component-free (ADCF) cell culture media designed to support the growth of multiple CHO lines and the production of a variety of recombinant proteins without compromising performance. The versatility of HyCell CHO media allows for quick cell adaptation and supports exceptional growth, leading to high cell density and an increase in productivity that is up to five-fold greater than other comparable media across a broad variety of CHO clones.

Thermo Scientific HyClone CDM4CHO

CDM4CHO is a chemically-defined, protein-free, animal-derived component-free (ADCF) media for therapeutic recombinant protein production without the reliance upon undefined hydrolysates and lipids. CDM4CHO has been successfully tested in a variety of culture systems, including T-flasks, shaker flasks and bioreactors, including fed-batch and perfusion. CDM4CHO contains Pluronic F68 and L-glutamine, and does not contain phenol red. It is available without L-glutamine, to support the GS gene expression system.

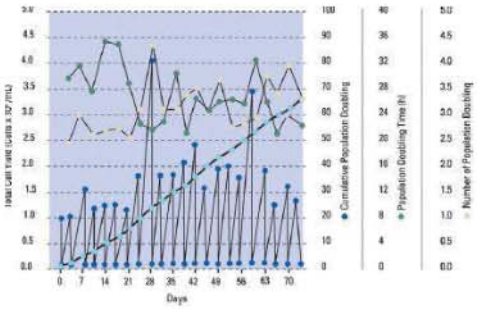
Thermo Scientific HyClone PF-CHO and PF-CHO LS

PF-CHO and PF-CHO LS are versatile protein-free media developed through Metabolic Pathway Design to support the growth of multiple CHO cell clones and production of a variety of recombinant proteins. Both media types are designed for minimal adaptation and to support the DHFR selection/amplification system. They have been successfully tested in a variety of cell culture systems, including T-flasks, spinner flasks and bioreactors. PF-CHO LS is ideally suited for the cost effective manufacture of recombinant proteins for academic and industrial research, genomics and proteomics, in vitro diagnostics, drug target screening and validation, and manufacturing of pre-clinical lots.

Thermo Scientific HyClone SFM4CHO

SFM4CHO is a high performance serum- and protein-free cell culture formulation designed for high performance in a variety of culture vessels, including bioreactors. It is formulated using our proprietary lipid complexing process for enhanced stability and growth promotion of various CHO lines. SFM4CHO contains Pluronic F68 and does not contain phenol red. It has been designed to support the DHFR selection / amplification system and is also available without L-glutamine to support the GS gene expression system. CHO cells can often be directly adapted to SFM4CHO.

Thermo Scientific HyClone Serum-Free Media for Protein Production, continued



Extended passage study of a recombinant CHO cell line cultured in SFM4CHO-Utility in a 50 mL batch spinner flask. Linear regression of cumulative population doubling time yields a doubling time of 22.0 hours over the course of the study.

Thermo Scientific HyClone SFM4CHO-Utility

SFM4CHO-Utility is a versatile protein-free cell culture medium ideally suited for the cost-effective manufacturing of recombinant proteins for academic and industrial research, genomics and proteomics, drug target screening and validation as well as manufacturing of preclinical lots. It is formulated using our proprietary lipid complexing process for enhanced stability and broad spectrum growth promotion. SFM4CHO-Utility contains Pluronic F68 and does not contain phenol red. SFM4CHO-Utility has been successfully tested in a variety of culture systems, including T-flasks, shaker flasks, roller bottles and bioreactors.

Thermo Scientific HyClone CCM5

CCM5 is a serum-free media designed to support the growth of anchorage-dependent CHO cells. This early-generation media has been successfully tested in a variety of applications and accepted in numerous research and biopharmaceutical settings.

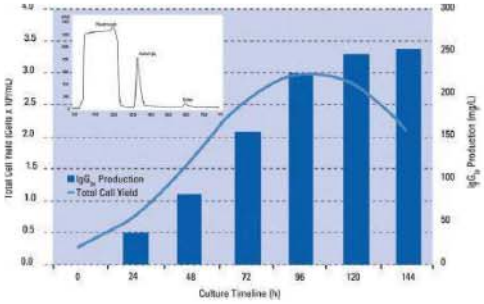
Thermo Scientific HyClone SFX-CHO

Thermo Scientific HyClone SFX-CHO is an early generation, protein-containing media designed for the culture of CHO cells in suspension.

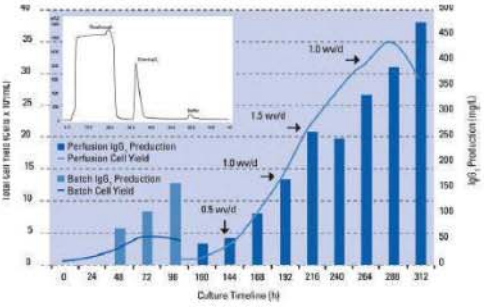
Serum-Free Media for Protein Production

Cat. No.	Media	Type	Application	L-Glutamine	Phenol Red?	HEPES	Sodium Bicarbonate	Format	Size
SH30100.01	CCM5	Serum Free	Adherent CHO	2.4 mM	Y		1.7 g/L	Liquid	100 mL
SH30100.02	CCM5	Serum Free	Adherent CHO	2.4 mM	Y		1.7 g/L	Liquid	500 mL
SH30557.01	CDM4CHO	Chemically Defined, ADCF	Suspension CHO	4.0 mM	N		2.2 g/L	Liquid	500 mL
SH30558.01	CDM4CHO	Chemically Defined, ADCF	Suspension CHO		N		2.2 g/L	Liquid	500 mL
SH30556.01	CDM4CHO	Chemically Defined, ADCF	Suspension CHO		N			Powder	1 X 5 L
SH30933.01	HyCell CHO	Chemically Defined, ADCF	Suspension CHO		N			Powder	1 X 5 L
SH30220.02	PF-CHO	Protien Free	Suspension CHO	2.0 mM	Y		2.0 g/L	Liquid	500 mL
SH30359.01	PF-CHO LS	Protien Free	Suspension CHO	4.0 mM	N		2.2 g/L	Liquid	500 mL
SH30333.01	PF-CHO	Protien Free	Suspension CHO		N			Powder	1 X 5 L
SH30549.01	SFM4CHO	Protein Free	Suspension CHO	4.0 mM	N		2.2 g/L	Liquid	500 mL
SH30518.01	SFM4CHO	Protein Free	Suspension CHO		N			Powder	1 X 5 L
SH30548.01	SFM4CHO	Protein Free	Suspension CHO		N		2.2 g/L	Liquid	500 mL
SH30517.01	SFM4CHO-Utility	Protein Free	Suspension CHO		N			Powder	1 X 5 L
SH30516.01	SFM4CHO-Utility	Protein Free	Suspension CHO	4.0 mM	N		2.2 g/L	Liquid	500 mL
SH30187.01	SFX-CHO	Serum Free	Suspension CHO		Y	1.8 g/L	1.6 g/L	Liquid	500 mL

Thermo Scientific HyClone Serum-Free Media for Antibody Production



Production of IgG2a using a P3-derived hybridoma cultured in SFM4MAb-Utility during a 50 mL batchspinner culture. Insert: IgG2a purification using a prepacked HiTrap rProtein G HP column operated through AKTAfplc(tm)



Production of IgG1 using a proprietary Sp2/0-derived hybridoma cultured in SFM4MAb using a 10 L stirred tank bioreactor. Culture process: batch mode (0-96h); medium exchange (96h); perfusion mode (144-264h); diafiltration (264-312h). Perfusion/diafiltration rates indicated on graph in working volumes per day (ww/d). Insert: IgG1 purification using a pre-packed HiTrap rProtein G HP column operated through AKTAfplcq.

Increase antibody production with serum-free media

The application of serum-free media in the production of monoclonal antibodies from hybridoma and recombinant myeloma cell lines for research and diagnostic purposes is rapidly growing. Typically, serum-containing media are used to culture these cell lines. However, serum contains antibodies that can interfere with the purification of monoclonal antibodies in culture. Using serum-free media removes the contamination potential and ensures that only the antibodies produced by the cells are contained in the final purification.

details

- Developed using Metabolic Pathway Design
- Increase the process yields for the recombinant proteins
- Multiple formulations available including the regulatory friendly chemically defined and animal-derived component-free (ADCF) versions
- Some formulations allow for direct or sequential adaptation
- Support growth in multiple cell culture systems including formulations designed for large-scale culture applications, including perfusion and fed-batch strategies
- Manufactured under cGMP with full component traceability

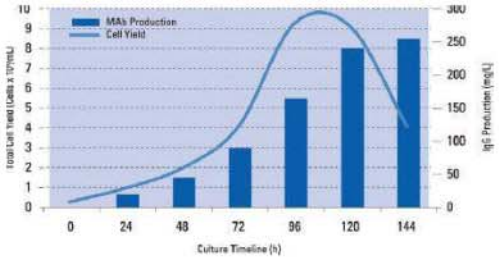
Thermo Scientific HyClone SFM4MAb-Utility Media

SFM4MAb-Utility is a versatile serum-free cell culture media developed through Metabolic Pathway Design to support the growth of multiple hybridoma cell types and production of a variety of immunoglobulins. It enables superior growth of many hybridomas and recombinant myelomas with minimal adaptation. SFM4MAb-Utility is ideally suited for the cost-effective manufacture of monoclonal antibodies for academic and industrial research, genomics and proteomics, in vitro diagnostics, drug target screening and validation, and manufacturing of preclinical lots. It is formulated using a proprietary lipid and phospholipid complexing process for enhanced stability and broad-spectrum growth promotion. SFM4MAb-Utility is ideal for high yields in multiple cell lines and culture environments and allows for either direct or sequential adaptation.

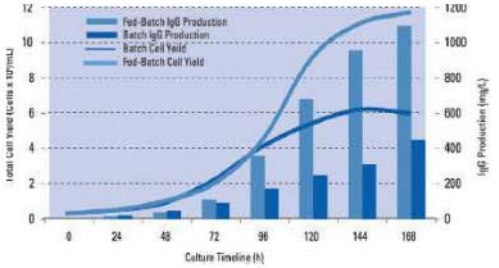
Thermo Scientific HyClone SFM4MAb Media

SFM4MAb is a high-performance cell culture media developed through Metabolic Pathway Design to increase the process yields for the industrial manufacture of human and humanized recombinant antibodies and antibody fragments for therapeutic use in a variety of engineered hybridoma and recombinant myeloma cell lines. SFM4MAb is a low protein formulation designed for use with suspension cultures in high density bioreactors. It is optimized for downstream purification using Protein A, Protein G and other matrices to facilitate product recovery. It is formulated using a proprietary lipid and phospholipid complexing process for enhanced stability and growth promotion of various cell types. SFM4MAb contains Pluronic F68 and does not contain phenol red.

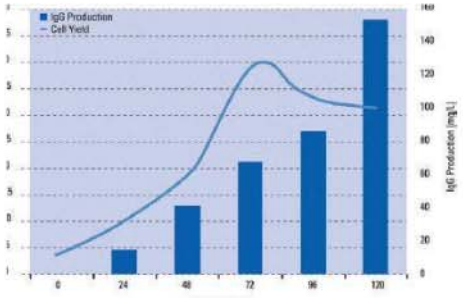
Thermo Scientific HyClone Serum-Free Media for Antibody Production, continued



Production of IgG using an Sp2/0-derived hybridoma cell line cultured in CDM4MAb during a shaker flask culture.



Production of IgG using a propietary GS-NS0 cell line cultured in CDM4NS0 during 100 mL shaker cultures. Fed-Batch culture employed LS1000 (SH30554) and GS Max (SH30586) at 72 hours.



Batch production of IgG in ADCF-MAb using an P3-derived hybridoma cultured in a 100 mL shaker flask.

Thermo Scientific HyClone CDM4MAb Media

Thermo Scientific HyClone CDM4MAb is a regulatory-friendly, chemically-defined and animal-derived component-free media designed to increase the process yields for the manufacture of antibodies and antibody fragments. It is intended for the production of therapeutic antibodies from a variety of engineered hybridoma and myeloma cell lines. CDM4MAb has been successfully tested in a variety of culture systems, including T-flasks, shaker flasks and bioreactors, including fed-batch and perfusion.

Thermo Scientific HyClone CDM4NS0 Media

CDM4NS0 is a chemically-defined, animal-derived component-free media designed to increase process yields in the manufacture of monoclonal antibodies using a variety of NS0 cell clones. CDM4NS0 requires no cholesterol of GS supplementation. It has been successfully tested in a variety of culture systems, including T-flasks, shaker flasks and bioreactors unisg batch and fed-batch strategies. CDM4NS0 contains Pluronic F68 and does not contain L-glutamine and Phenol Red.

Thermo Scientific HyClone ADCF-MAb Media

ADCF-MAb is a regulatory friendly animal-derived component-free media formulation for use in antibody manufacturing. ADCF-MAb was developed through Metabolic Pathway Design to increase the process yields for the manufacture of antibodies and antibody fragments for therapeutic use. ADCF-MAb contains Pluronic F68 and does not contain phenol red. It is available without L-glutamine to support the GS gene expression system.

Thermo Scientific HyClone PF-MAb Media

PF-MAb is a 100X concentrate designed for use with RPMI 1640 and other basal formulations to reduce or eliminate serum dependency in hybridoma and myeloma cell lines.

Thermo Scientific HyClone CCM1 Media

CCM1 is an early generation protein-containing serum-free media for a variety of hybridoma and myeloma lines. It has also been shown to work with a variety of alternative cell lines, including lymphoma and epithelial cells.

Thermo Scientific HyClone SFX-MAb

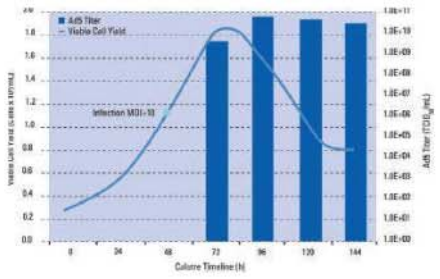
SFX-MAb is an early generation protein-containing serum-free media for a variety of hybridoma and myeloma lines.

Thermo Scientific HyClone Serum-Free Media for Antibody Production, continued

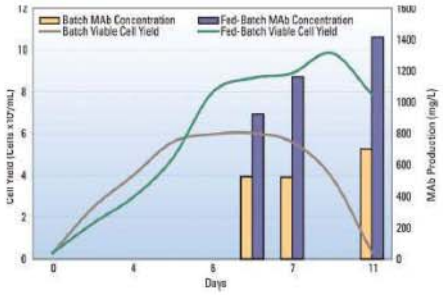
Serum-Free Media for Antibody Production

Cat. No.	Media	Type	L-Glutamine	Phenol Red?	HEPES	Sodium Bicarbonate?	Format	Size
SH30349.01	ADCF MAb	Chemically Defined, ADCF	4.5 mM	N	3.6 g/L	1.6 g/L	Liquid	500 mL
SH30547.01	ADCF Mab	Chemically Defined, ADCF		N	3.6 g/L	1.6 g/L	Liquid	500 mL
SH30635.01	ADCF Mab	Chemically Defined, ADCF		N	3.6 g/L	N	Powder	1 X 5 L
SH30043.02	CCM1	Serum Free	2.5 mM	Y	3.6 g/L	2.0 g/L	Liquid	500 mL
SH30058.01	CCM1	Serum Free	2.5 mM	Y	3.6 g/L	N	Powder	10 X 1 L
SH30058.02	CCM1	Serum Free	2.5 mM	Y	3.6 g/L	N	Powder	2 X 5 L
SH30059.01	CCM1	Serum Free	2.5 mM	N	3.6 g/L	N	Powder	10 X 1 L
SH30059.02	CCM1	Serum Free	2.5 mM	N	3.6 g/L	N	Powder	2 X 5 L
SH30801.01	CDM4MAb	Chemically Defined, ADCF	6.0 mM	N		3.2 g/L	Liquid	500 mL
SH30802.01	CDM4MAb	Chemically Defined, ADCF		N		3.2 g/l	Liquid	500 mL
SH30800.01	CDM4MAb	Chemically Defined, ADCF		N		N	Powder	1 X 5 L
SH30579.01	CDM4NS0	Chemically Defined, ADCF		N		3.2 g/L	Liquid	500 mL
SH30578.01	CDM4NS0	Chemically Defined, ADCF		N		N	Powder	1 X 5 L
SH30138.01	PF-MAb	Protein Free		N		N	Liquid	100 mL
SH30138.05	PF-MAb	Protein Free		N		N	Liquid	500 mL
SH30391.01	SFM4MAb	Serum Free, Ultra-Low Protein		N		3.2 g/L	Liquid	500 mL
SH30535.02	SFM4MAb	Serum Free, Ultra-Low Protein		N		N	Powder	1 X 5 L
SH30513.01	SFM4MAb	Serum Free, Ultra-Low Protein	6.0 mM	N		3.2 g/L	Liquid	500 mL
SH30550.01	SFM4MAb-Utility	Serum Free, Low Protein	6.0 mM	N	3.5 g/L	N	Powder	1 X 5 L
SH30382.01	SFM4MAb-Utility	Serum Free, Low Protein	6.0 mM	N	3.5 g/L	2.3 g/L	Liquid	500 mL
SH30206.03	SFX-MAb	Serum Free		Y	3.6 g/L	1.6 g/L	Liquid	500 mL

Thermo Scientific Serum-Free Media for HEK 293 and PER.C6 Culture



Production of proprietary Ad5 using HEK293 cells cultured in SFM4HEK293 during a 10 L batch bioreactor culture. The culture was infected once the cell density reached >1.0 x 106 cells/mL.



Production of CD45 antibody in PER.C6 cells cultured in CDM4PERMAb (Fed Batch cultures employed on days 4, 6, 8 using Cell Boost 5)

Improve vector yields with serum-free media

As regulatory agencies increasingly demand that biotherapeutics more closely represent their native form, human-derived cells are increasingly important for the production of recombinant proteins, monoclonal antibodies and gene therapy viral vectors. Thermo Scientific HyClone products include high performing serum-free media capable of providing optimal cell culture conditions for HEK 293 and PER.C6 cells in these applications. These media have been designed through the Metabolic Pathway Design approach to ensure that the needs of human-derived cell lines are met to enable the highest levels of productivity.

details

- Developed using Metabolic Pathway Design
- Multiple formulations available including the regulatory-friendly, chemically-defined and animal-derived component-free (ADCF) versions
- Increase the production of Adenovirus gene therapy vectors
- Improved transfection efficiencies
- Some formulations allow for direct or minimal sequential adaptation
- Support growth in multiple cell culture systems, including formulations designed for large-scale culture applications, such as perfusion and fed-batch strategies
- Manufactured under cGMP with full component traceability

Thermo Scientific HyClone SFM4HEK293 Media

SFM4HEK293 is a versatile cell culture media designed to support the growth of human embryonic kidney (HEK) 293 cells and the production of adenoviral vectors and recombinant proteins. SFM4HEK293 is a protein-free and animal-derived component-free media that has been specifically formulated using our proprietary lipid complexing process for enhanced stability and broad-spectrum cell culture applications. It has been successfully tested in a variety of culture systems including T-flasks, shakers, roller bottles and bioreactors.

Thermo Scientific HyClone SFMTransfx-293 Media

SFMTransfx-293 is a serum-free, animal-derived component-free media designed to support the growth of HEK 293 cultures and promote transfection using lipofection or similar methods. SFMTransfx-293 Media is a regulatory-friendly media developed to support high transfection efficiency, productivity and cell density in suspension cultures.

Thermo Scientific HyClone CDM4HEK293 Media

Thermo Scientific HyClone CDM4HEK293 is a chemically-defined, animal-derived component-free media designed to support the growth of HEK 293 cultures, while promoting adenovirus and recombinant protein production. HyClone CDM4HEK293 is a regulatory-friendly media developed to support the extremely high productivity and cell density in suspension cultures.

Thermo Scientific Serum-Free Media for HEK 293 and PER.C6 Culture, continued

Thermo Scientific HyClone CDM4Retino Media

CDM4Retino is a regulatory-friendly media capable of producing superior cell yields in a variety of culture environments and applications, including bioreactor cultures. CDM4Retino is a chemically-defined media containing no proteins, animal-derived components, hydrolysates or other undefined components. This high-performance cell culture media is developed to increase the process yields for the industrial manufacture of adenoviral vectors and proteins using PER.C6 cells. It has been successfully tested in a variety of applications, including perfusion bioreactors.

Thermo Scientific HyClone CDM4PERMAb Media

CDM4PERMAb is a high-performance, animal-derived, component-free cell culture media developed to increase process yields in the production of human antibodies and recombinant proteins using PER.C6 (Crucell NV) technology.

Thermo Scientific HyClone PF-293 and PF-293 MPS

The PF-293 and PF-293 MPS media are early versions of serum-free media designed and optimized to support the growth of HEK293 cultures.

Serum-Free Media for HEK 293 and PER.C6 Culture

Cat. No.	Media	Type	L-Glutamine	Sodium Bicarbonate	Format	Size
SH30858.01	CDM4HEK293	Chemically Defined, ADCF		2.0 g/L	Liquid	500 mL
SH30859.01	CDM4HEK293	Chemically Defined, ADCF			Powder	1 X 5 L
SH30520.01	CDM4Retino	Chemically Defined, ADCF	4.0 mM	2.0 g/L	Liquid	500 mL
SH30519.01	CDM4Retino	Chemically Defined, ADCF			Powder	1 X 5 L
SH30872.01	CDM4PERMAb	Chemically Defined, ADCF			Powder	1 X 5 L
SH30355.06	PF-293 MPS	Protein Free			Powder	1 X 1 L
SH30355.01	PF-293 MPS	Protein Free			Powder	1 X 5 L
SH30356.01	PF-293	Protein Free		2.0 g/L	Liquid	500 mL
SH30521.01	SFM4HEK293	Protein Free, ADCF	4.0 mM	2.0 g/L	Liquid	500 mL
SH30522.01	SFM4HEK293	Protein Free, ADCF			Powder	1 X 5 L
SH30860.01	SFM4Transfx-293	Protein Free, ADCF		2.0 g/L	Liquid	500 mL
SH30861.01	SFM4Transfx-293	Protein Free, ADCF		2.0 g/L	Powder	1 X 5 L

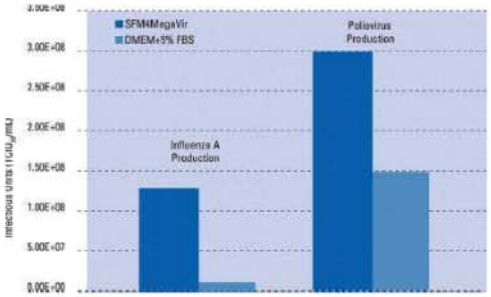
Thermo Scientific Serum-Free Media for Viral Vaccine Production

Improve vector yields with serum-free media

The application of serum-free media in the production of virus vaccines has been largely driven by concerns over serum supply and exogenous contaminants. Key cell lines that have been developed to support the production of viral vaccines are the African green monkey kidney cell (Vero) and canine and bovine kidney epithelial cells (MDCK and MDBK). Thermo Scientific has used the Metabolic Pathway Design process to develop media specifically designed to remove serum from this application, improving process yields and decreasing variability.

details

- Developed using Metabolic Pathway Design
- Support growth in multiple cell culture systems including microcarrier culture
- Applicable to multiple cell types
- Manufactured under cGMP with full component traceability



Influenza A production using MDCK cells (MOI=1 0) and Poliovirus production using Vero cells (MOI=0.1) cultured in SFM4MegaVir and DMEM +5%FBS.

Thermo Scientific HyClone SFM4MegaVir Media

Thermo Scientific HyClone SFM4MegaVir Cell Culture Media is a protein-free media designed to increase process yields in the manufacture of viral vaccines in a variety of cell lines including Vero, MDCK, COS-7 and MDBK. HyClone SFM4MegaVir is a regulatory-friendly medium developed through Metabolic Pathway Design and contains no animal-derived components. It has been successfully tested in a variety of culture systems for cell growth and virus production, including T-flasks and suspension microcarrier cultures. It is suitable for direct adaptation in many applications.

Serum-Free Media for Viral Vaccine Production

Cat. No.	Media	Type	Sodium Bicarbonate	Format	Size
SH30552.01	SFM4MegaVir	Protein Free, ADCF	3.0 g/L	Liquid	500 mL
SH30587.01	SFM4MegaVir	Protein Free, ADCF		Powder	1 X 5 L

Thermo Scientific HyClone Serum-Free Media for Insect Cells

Protein production in insect cells without the inherent variability of serum.

The development of insect cell culture production systems has produced opportunities for the expression of recombinant proteins for research and therapeutic applications in a non-mammalian cell culture environment. Many different insect cell lines have been developed for use with the Baculovirus Expression Vector System (BEVS). Additionally, the development of stable transfected Drosophila and lepidopteran cell lines has offered a non-lytic culture for the production of recombinant proteins from insect cells.Thermo Scientific has developed a number of serum free media for use with insect cells to increase production efficiency while removing the variability associated with the use of serum.

details

- Animal-derived component-free and protein-free formulations available
- Metabolically designed for high cell yield and recombinant protein production
- Supports multiple insect cell lines
- Supports direct adaptation
- High performance growth in multiple culture systems including high density bioreactors
- Manufactured under cGMP in liquid or powdered formats

Thermo Scientific HyClone SFM4Insect

SFM4Insect is a versatile animal-derived component-free cell culture medium developed through Metabolic Pathway Design to support the growth of multiple insect cell lines and production of a variety of recombinant proteins without compromising performance. SFM4Insect provides superior growth of many key insect cell lines, including Sf9, Sf21, High Five (T.ni), and D.mel. Insect cells need only minimal adaptation to SFM4Insect to provide growth performance superior to formulations that contain animal origin components. SFM4Insect has been successfully tested in a variety of culture systems including traditional and disposable bioreactors for the production of recombinant proteins using the Baculovirus Expression Vector System.

Thermo Scientific HyClone SFX-Insect

This versatile protein-free cell culture media is developed through metabolic Pathway Design to support the growth of multiple insect cell lines, including Sf9, Sf21, High Five, and D.mel. SFX-Insect is ideally suited for the cost effective manufacture of recombinant proteins for academic and industrial research, genomics and proteomics, drug target screening and validation and manufacturing for therapeutic applications. SFX-Insect is formulated using our proprietary lipid and phospholipid complexing process for enhanced stability and performance. SFX-Insect contains Pluronic F68 and has shown superior performance in a variety of culture systems ranging from T-flasks, spinners, shaker flasks (including Fernbach) and various bioreactors including hollow fiber.

Thermo Scientific HyClone Serum-Free Media for Insect Cells, continued

Thermo Scientific HyClone CCM3

CCM3 is a first generation serum free media for insect cells, optimized specifically for Sf9 cells.

HyClone Serum-Free Media for Insect Cells

Cat. No.	Media	Type	L-Glutamine	Sodium Bicarbonate	Format	Size
SH30065.01	CCM3	Serum Free	7 mM	0.35 g/L	Liquid	500 mL
SH30061.01	CCM3	Serum Free	7 mM		Powder	10 X 1 L
SH30061.02	CCM3	Serum Free	7 mM		Powder	2 X 5 L
SH30278.01	SFX-Insect	Protein-Free	10 mM		Liquid	500 mL
SH30350.04	SFX-Insect	Protein-Free	10 mM		Powder	1 X 1 L
SH30350.02	SFX-Insect	Protein-Free	10 mM		Powder	1 X 5 L
SH30913.01	SFM4Insect	ADCF	10 mM	0.35 g/L	Liquid	500 mL
SH30912.01	SFM4Insect	ADCF	10 mM		Powder	5 L

Thermo Scientific HyClone AdvanceSTEM Classical Media Variations for Stem Cells

Optimized for growth of embryonic cell cultures.

Providing optimal culture conditions can be one of the greatest challenges in stem cell research, particularly in keeping cells in an undifferentiated state or directing differentiation when desired. HyClone AdvanceSTEM line of stem cell culture products can help you meet those challenges. Thermo Scientific has developed variations of classical media formulations with osmolality optimized to approximate that of embryonic tissue. These formulations specifically support the growth and maintenance of murine embryonic stem cells (ESCs) in culture. Some murine ESC lines have been observed to double more rapidly in AdvanceSTEM formulations than in the classical formulations. These formulations do not contain serum or leukemia inhibitory factor (LIF). Supplementation with 15-20% serum or AdvanceSTEM Serum Replacement is recommended.

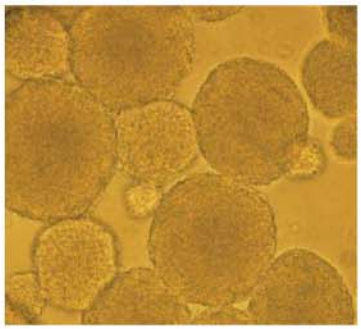
details

- Thermo Scientific AdvanceSTEM Low Osmo DMEM is basal medium developed to support growth and maintenance of ES cells in an undifferentiated state
- Thermo Scientific AdvanceSTEM DMEM4SC is formulated without L-Glutamine or sodium pyruvate and is ideal for use with 129 ESCs
- Thermo Scientific AdvanceSTEM IMDM4SC contains no L-Glutamine and supports excellent growth of B6 EScs
- Formulations do not contain L-Glutamine
- Formulations do not contain serum or LIF. Supplementation of 15-20% serum or AdvanceSTEM Serum Replacement is recommended

HyClone AdvanceSTEM Classical Media Variations for Stem Cells

Cat. No.	Description	Size
SH30824.01	AdvanceSTEM DMEM4SC	500 mL
SH30824.02	AdvanceSTEM DMEM4SC	1000 mL
SH30870.01	AdvanceSTEM Low Osmo DMEM	500 mL
SH30870.02	AdvanceSTEM Low Osmo DMEM	1000 mL
SH30822.01	AdvanceSTEM IMDM4SC	500 mL
SH30822.02	AdvanceSTEM IMDM4SC	1000 mL

Thermo Scientific HyClone AdvanceSTEM Media for Adult Stem Cell Expansion



Efficiently expand and maintain Mesenchymal and Amniotic Epithelial Stem Cells.

Multipotent stem cells, sometimes called adult stem cells (ASCs), have been found to persist in their undifferentiated state in both embryonic and adult tissues. These cells can be derived from most tissues and, depending on their origin, have different properties and capacity for generating a variety of progeny. However, unlike embryonic stem cells, they have a finite life span in culture and are not totipotent. Mesenchymal stem cells are a widely used stem cell type that possess the ability to differentiate into a variety of cell types, including adipocytes, chondrocytes, osteocytes, cardiomyocytes, neurons, and many others. Amniotic Epithielial stem cells also have the ability to differentiate into a variety of cell types. These cells are readily available and easy to acquire. Once obtained, it is of critical importance to maintain them in an undifferentiated state for expansion and later characterization and analysis. Thermo Fisher Scientific has developed specific media products for stem cell expansion and maintenance of these specific cell types. The complete media includes a basal growth media and the AdvanceSTEM Growth supplement, which are provided together in a kit. For convenience, these products can be purchased separately.

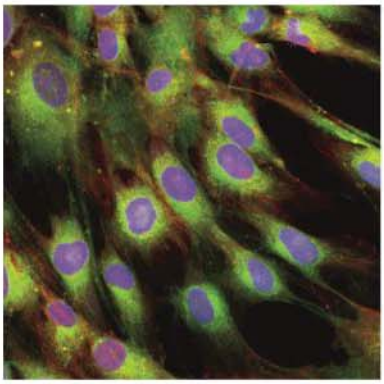
details

- Thermo Scientific HyClone AdvanceSTEM Amniotic Epithelial Expansion Kit includes 450 mL of basal media and 50 mL of AdvanceSTEM growth supplement and enables rapid and consistent expansion of Amniotic Epithelial Stem Cells.
- Thermo Scientific HyClone AdvanceSTEM Mesenchymal Stem Cell Expansion Kit includes 1000 mL of basal media and 100 mL of AdvanceSTEM growth supplement and has been formulated to support expansion and maintenance of undifferentiated hMSCs.
- Supported cells include Human Wharton's Jelly Stem Cells (HWJSCs), Human Adipose-derived Mesenchymal Stem Cells (HAMSCs), Human Placental Mesenchymal Stem Cells (HPMSCs), Multipotent Cord Blood Unrestricted Somatic Stem Cells (MUCBUSSCs) and bone marrow-derived hMSCs.
- Expansion Medium and Growth Supplement should be used together, but are available as separate components.

HyClone AdvanceSTEM Media Variations for Adult Stem Cell Expansion

Cat. No.	Description	Size
Complete Kits – basal media plus growth supplement		
SH30904.KT	AdvanceSTEM Amniotic Epithelial Expansion Kit	1 Kit
SH30875.KT	AdvanceSTEM Mesenchymal Stem Cell Expansion Kit	1 Kit
Basal Medium		
SH30900.02	AdvanceSTEM Amniotic Epithelial Growth Medium	450 mL
SH30879.01	AdvanceSTEM Basal Medium for Undifferentiated Human Mesenchymal Stem Cells	500 mL
SH30879.03	AdvanceSTEM Basal Medium for Undifferentiated Human Mesenchymal Stem Cells	900 mL
SH30879.02	AdvanceSTEM Basal Medium for Undifferentiated Human Mesenchymal Stem Cells	1000 mL
Growth Supplement		
SH30878.02	AdvanceSTEM Stem Cell Growth Supplement	50 mL
SH30878.01	AdvanceSTEM Stem Cell Growth Supplement	100 mL

Thermo Scientific HyClone AdvanceSTEM Human Somatic Stem Differentiation Media



When directionally differentiated, Multipotent stem cells provide researchers with access to cell types that are otherwise difficult to obtain and study.

Thermo Scientific has developed a number of media for directed differentiation of adult stem cells into such cell types as neurons, adipocytes, chondrocytes, and osteocytes. These media are designed to be used after stem cell expansion using the appropriate Thermo Scientific HyClone media for Adult Stem Cell Expansion. Except for the Chondrogenic Differentiation which does not require supplementation, the complete media includes a basal differentation media and the AdvanceSTEM Growth supplement which are provided together in a kit. Kits contain 450 ml of basal media and 50 ml of growth supplement. For convenience, these products can be purchased separately.

details

- Adipogenic Differentiation Medium supports differentiation from human adipose-derived and bone marrow-derived mesenchymal stem cells into adipocytes
- Chondrogenic Differentiation Medium supports differentiation of a variety of hMSCs into chondrocytes.
- Neural Differentiation Kit facilitates the neural differentiation of HAMSC, HBMSC and MCBUSSCs.
- Osteogenic Differentiation Medium supports the differentiation of a variety of human mesenchymal stem cells, including human adipose-derived, Multipotent Cord Blood Unrestricted Somatic Stem Cells and Bone Marrow Derived MSCs
- Tested and qualified to ensure performance
- Developed specifically for applications in stem cell research
- Expansion Medium and Growth Supplement should be used together, but are available as separate components

HyClone AdvanceSTEM Human Somatic Stem Differentiation Media

Cat. No.	Description	Size
Differentiation Kits - basal differentiation media and growth supplements		
SH30876.KT	AdvanceSTEM Adipogenic Differentiation Kit	1 Kit
SH30892.KT	AdvanceSTEM Neural Differentiation Kit	1 Kit
SH30877.KT	AdvanceSTEM Osteogenic Differentiation Kit	1 Kit
Basal Differentiation Media		
SH30886.02	AdvanceSTEM Adipogenic Differentiation Medium	450 mL
SH30889.02	AdvanceSTEM Chondrogenic Differentiation Medium	450 mL
SH30893.02	AdvanceSTEM Neural Differentiation Medium	450 mL
SH30881.02	AdvanceSTEM Osteogenic Differentiation Medium	450 mL
Growth Supplement		
SH30878.02	AdvanceSTEM Stem Cell Growth Supplement	50 mL
SH30878.01	AdvanceSTEM Stem Cell Growth Supplement	100 mL

Thermo Scientific HyClone Water

Start your culture off right with pure water

High quality results depend on high quality reagents. In cell culture, nothing is more important than the primary ingredient in all media and culture solutions – water. Our cGMP ISO 9001 manufacturing facility, located along the Northern Utah Wasatch Range of the Rocky Mountains, is far from the contaminating pollutants and chemicals common to more urbanized regions. This location provides access to pristine water from artesian wells and local municipality sources. With quality from the start, our water products are then further purified and tested to meet the demanding needs of today's biotechnology, biopharmaceutical and research customer. It is this same water that we use to manufacture all of our media, reagents and solutions.

details

- All HyClone water is purified in a seven-step process that includes continuous deionization, reverse osmosis, ultra-violet light treatment, multi-effect distillation, and 0.1µm filtration.
- HyClone Cell Culture Grade Water is endotoxin-free (to the maximum detection limit of <0.005 EU/mL by turbidimetric assay)
- Nuclease-free water is certified to have no detectable contaminating activity in DNase, RNase, and Protease assays and is suitable for DNA/RNA purification, DNA sequencing and libraries, Gene mapping, Recombinant DNA and cloning, Northern Blot, Southern Blot
- WFI Quality Water meets current USP monograph criteria for Water for Injection

HyClone Water

Cat. No.	Grade	Specification	Size
SH30529.01	Cell Culture Grade	Endotoxin free (<0.005 EU/ml)	100 mL
SH30529.02	Cell Culture Grade	Endotoxin free (<0.005 EU/ml)	500 mL
SH30529.03	Cell Culture Grade	Endotoxin free (<0.005 EU/ml)	1000 mL
SH30529.FS	Cell Culture Grade	Endotoxin free (<0.005 EU/ml)	6 X 500 mL
SH30529.LS	Cell Culture Grade	Endotoxin free (<0.005 EU/ml)	6 X 1000 mL
SH30538.01	Molecular Biology Grade	RNAse, DNAse, Protease Free	100 mL
SH30538.02	Molecular Biology Grade	RNAse, DNAse, Protease Free	500 mL
SH30538.03	Molecular Biology Grade	RNAse, DNAse, Protease Free	1000 mL
SH30538.FS	Molecular Biology Grade	RNAse, DNAse, Protease Free	6 X 500 mL
SH30538.LS	Molecular Biology Grade	RNAse, DNAse, Protease Free	6 X 1000 mL
SH30221.10	WFI Quality	Meets current USP monograph criteria for WFI packaged in bulk	1000 mL
SH30221.17	WFI Quality	Meets current USP monograph criteria for WFI packaged in bulk	500 mL
SH30221.18	WFI Quality	Meets current USP monograph criteria for WFI packaged in bulk	100 mL
SH30221.22	WFI Quality	Meets current USP monograph criteria for WFI packaged in bulk	1 L
SH30221.LS	WFI Quality	Meets current USP monograph criteria for WFI packaged in bulk	6 X 1000 mL

Thermo Scientific HyClone Balanced Saline and Buffered Salts Solutions

Wash and irrigate cells with quality solutions.

Our commitment to being a full service supplier to the bioresearch community includes offering the most commonly used buffers and balanced salts for irrigating, washing and diluting cells and for preparing reagents. The Thermo Scientific offering of Buffered Salt Solutions include multiple variations of Phosphate Buffered Saline (PBS), Dulbecco's Phospate Buffered Saline (DPBS), Earles' Balanced Salt Solution (EBSS) and Hank's Balance Salt Solution (HBSS) to fit the needs of your culture conditions. Our products are available in liquid or powders. All formulations incorporate a rigorous specification and approval process that includes a meticulous screening of incoming raw materials and suppliers to ensure conformance to cGMP, ISO 9001:2000, ISO 13485:2003 and our own quality standards.

details

- Complete line of Buffered Salt Solutions – DPBS, PBS, EBSS and HBSS
- DPBS available with or without Calcium and Magnesium
- HBSS available with or without Calcium, Magnesium and Phenol Red
- Manufactured according to cGMP guidelines and with ISO 9001:2000-certified processes
- Full traceability and documented origin of all formula ingredients
- Validated and consistent production processes

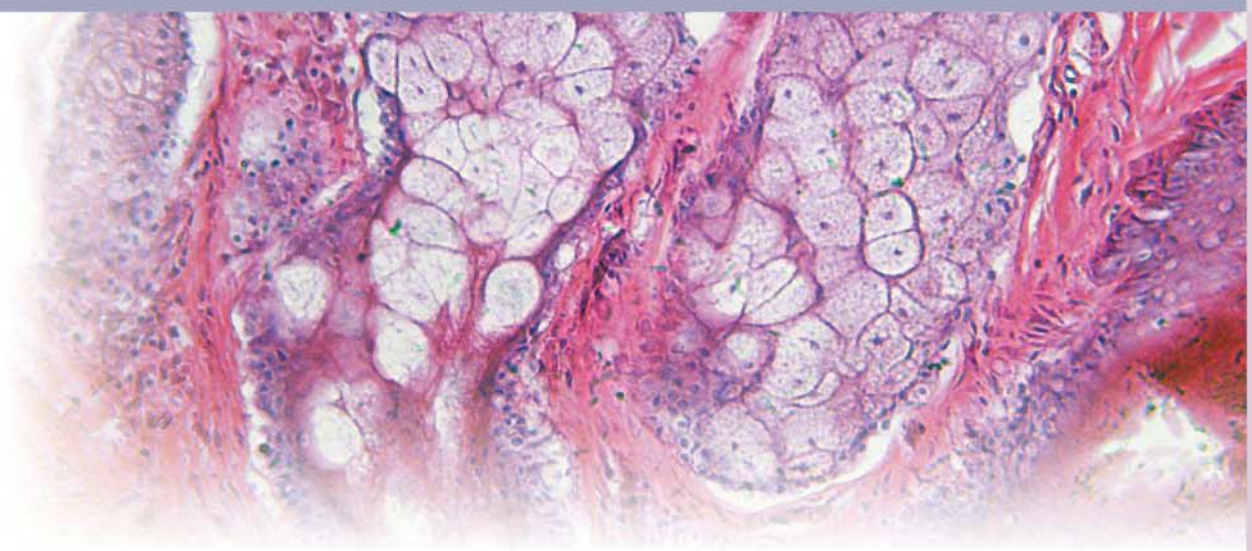
HyClone Balanced Saline and Buffered Salts Solutions

Cat. No.	Description	Format	With Calcium and Magnesium?	With Phenol Red?	Size
Dulbecco's Phosphate Buffered Saline (DPBS)					
SH30264.01	DPBS	1X Liquid	Y	N	500 mL
SH30264.02	DPBS	1X Liquid	Y	N	1000 mL
SH30264.FS	DPBS	1X Liquid	Y	N	6 X 500 mL
SH30597.01	DPBS	10X Liquid	Y	N	500 mL
SH30028.01	DPBS	1X Liquid	N	N	100 mL
SH30028.02	DPBS	1X Liquid	N	N	500 mL
SH30028.03	DPBS	1X Liquid	N	N	1000 mL
SH30028.FS	DPBS	1X Liquid	N	N	6 X 500 mL
SH30028.LS	DPBS	1X Liquid	N	N	6 X 1000 mL
SH30378.01	DPBS	10X Liquid	N	N	100 mL
SH30378.02	DPBS	10X Liquid	N	N	500 mL
SH30378.03	DPBS	10X Liquid	N	N	1000 mL
SH30013.01	DPBS	Powder	N	N	10 X 1 L
SH30013.02	DPBS	Powder	N	N	2 X 5 L
SH30013.03	DPBS	Powder	N	N	1 X 10 L

Thermo Scientific HyClone Balanced Saline and Buffered Salts Solutions, continued

HyClone Balanced Saline and Buffered Salts Solutions, continued

Cat. No.	Description	Format	With Calcium and Magnesium?	With Phenol Red?	Size
Phosphate Buffered Saline (PBS)					
SH30256.01	PBS	1X Liquid	N	N	500 mL
SH30256.02	PBS	1X Liquid	N	N	1000 mL
SH30256.FS	PBS	1X Liquid	N	N	6 X 500 mL
SH30256.LS	PBS	1X Liquid	N	N	6 X 1000 mL
SH30258.01	PBS	10X Liquid	N	N	500 mL
SH30258.02	PBS	10X Liquid	N	N	1000 mL
Earle's Balanced Salt Solution (EBSS)					
SH30029.01	EBSS	1X Liquid	Y	Y	100 mL
SH30029.02	EBSS	1X Liquid	Y	Y	500 mL
SH30029.03	EBSS	1X Liquid	Y	Y	1000 mL
SH30014.02	EBSS	Powder	Y	Y	2 X 5 L
SH30014.03	EBSS	Powder	Y	Y	1 X 10 L
Hank's Balanced Salt Solution (EBSS)					
SH30030.01	HBSS	1X Liquid	Y	Y	100 mL
SH30030.02	HBSS	1X Liquid	Y	Y	500 mL
SH30030.03	HBSS	1X Liquid	Y	Y	1000 mL
SH30015.01	HBSS	Powder	Y	Y	10 X 1 L
SH30015.02	HBSS	Powder	Y	Y	2 X 5 L
SH30015.03	HBSS	Powder	Y	Y	1 X 10 L
SH30268.01	HBSS	1X Liquid	Y	N	500 mL
SH30268.02	HBSS	1X Liquid	Y	N	1000 mL
SH30268.LS	HBSS	1X Liquid	Y	N	6 X 1000 mL
SH30582.02	HBSS	10X Liquid	Y	N	500 mL
SH30582.03	HBSS	10X Liquid	Y	N	1000 mL
SH30031.01	HBSS	1X Liquid	N	Y	100 mL
SH30031.02	HBSS	1X Liquid	N	Y	500 mL
SH30031.03	HBSS	1X Liquid	N	Y	1000 mL
SH30031.FS	HBSS	1X Liquid	N	Y	6 X 500 mL
SH30016.01	HBSS	Powder	N	Y	10 X 1 L
SH30016.02	HBSS	Powder	N	Y	2 X 5 L
SH30016.03	HBSS	Powder	N	Y	1 X 10 L
SH30588.01	HBSS	1X Liquid	N	N	500 mL
SH30588.02	HBSS	1X Liquid	N	N	1000 mL
SH30107.02	HBSS	Powder	N	N	2 X 5 L
SH30107.03	HBSS	Powder	N	N	1 X 10 L



Thermo Scientific HyClone Buffers

Maintain physiological pH with Thermo Scientific cell culture buffers.

Cellular respiration creates waste products like lactic acid and carbon dioxide that can dramatically impact the pH of cell culture media and eventually can cause cell death. Media and other reagents typically contain pH buffers that act to maintain a physiological pH. The two most common of these buffers are Sodium Bicarbonate and HEPES (N-2-Hydroxyethylpiperazine-N-2-Ethane Sulfonic Acid). Thermo Scientific offers these buffers as additional additives for researchers looking to provide extra pH balancing to their cell culture media or for pH balancing reconstituted dry powdered media.

details

- HEPES provides buffering capability despite changes in carbon dioxide concentration and is particularly useful when cultures will be kept outside of a CO_2 incubator for extended periods
- Sodium Bicarbonate used with carbon dioxide concentrations of 4-10%
- Manufactured according to cGMP guidelines and with ISO 9001:2000-certified processes
- Full traceability and documented origin of all formula ingredients
- Validated and consistent production processes

HyClone Buffers

Cat. No.	Description	Concentration	Size
SH30237.01	HEPES Solution	1 M	100 mL
SH30033.01	Sodium Bicarbonate Solution	75.0 g/L	100 mL
SH30033.02	Sodium Bicarbonate Solution	75.0 g/L	1000 mL
SH30033.03	Sodium Bicarbonate Solution	75.0 g/L	500 mL

Thermo Scientific HyClone Antibiotics

Control contamination with high quality antibiotics.

Thermo Scientific HyClone Antibiotics are used to control/destroy destructive microorganisms, such as bacteria and fungi. Thermo Scientific offers a selection of quality antibiotics to control bacterial, yeast, fungi, and mycoplasma contaminations, as well as premium selection antibiotics.

While antibiotics are still routinely added to cell culture media, improving aseptic techniques and limiting antibiotic use is preferred for cell culture. Overuse of antibiotics can encourage the development of antibiotic resistant organisms, hiding the presence of a low level contamination that can become fully operative if 1) the antibiotics are removed, 2) the culture conditions change, or 3) if resistant strains develop. Antibiotics can also have anti-metabolic effects that could cross-react with mammalian cells. We recommend that the use of antibiotics be limited and removed from the culture if possible. When antibiotics are used for long periods of time, parallel cultures should be maintained free of antibiotics.

details

Thermo Scientific HyClone Amphotericin B

- An antibiotic agent that is active against fungi, yeasts and molds
- Interferes with the permeability of the cell membrane of sensitive fungi by binding sterols
- Common working concentration is 2.5 µg/mL, cytotoxic at 30 µg/mL

Thermo Scientific HyClone Antibiotic Antimycotic Solution

- Contains 10,000 units of penicillin, 10,000 µg of streptomycin and 25 µg of Amphotericin B per mL
- Wide spectrum of activity against gram negative and gram positive bacteria as well as activity against fungi and yeast
- Commonly used as an anti-fungal, anti-yeast, anti-mold or antibacterial
- Common working dose is 10 mL/L of 100X solution

Thermo Scientific HyClone G418 Sulfate

- Gentamycin-related aminoglycoside used as a selective agent of transfected mammalian, yeast, plant and bacteria cells
- Interferes with the function of 80S ribosome and protein synthesis in eukaryotic cells. Resistance is conferred by the bacterial gene for aminoglycoside-3'-phosphotransferase that can be expressed in eukaryotic cells
- Common working concentration for G418 is 300 to 1000 µg/mL

Thermo Scientific HyClone Gentamicin Solution

- Broad spectrum cell culture antibiotic that is non-toxic to viruses and mammalian cells at antibacterial levels
- Active against gram positive and gram negative bacteria and Mycoplasma, and is useful for long-term virus and tissue culture studies
- Used as an antibacterial or antimycobacterial
- Interferes with bacterial protein synthesis by binding to L6 protein of 50S ribosomal subunit
- Common working concentration is 5 µg/mL, cytotoxic at >300 µg/mL

Thermo Scientific HyClone Antibiotics, continued

details

Thermo Scientific HyClone Hygromycin B

- Aminoglycosidic antibiotic that kills bacteria, fungi and higher eukaryotic cells by inhibiting protein synthesis
- Used for the selection and maintenance of prokaryotic and eukaryotic cells transfected with the hygromycin resistance gene
- Resistance gene codes for a kinase that inactivates Hygromycin B through phosphorylation
- Cloning of the resistance gene and fusion with eukaryotic promoters has resulted in the development of vectors that permit selection for resistance to Hygromycin B in both prokaryotic and eukaryotic cells
- Useful as an antifungal or antibacterial; inhibits protein synthesis by disrupting translocation and promoting mistranslation of the 80S ribosome
- Working concentration for mammalian cell selection is normally between 50µg/mL and 1mg/mL; for plant cells: 20 to 200 µg/mL, for bacteria: 20 to 200 µg/mL, and for fungi: 200 µg to 1 mg/mL

Thermo Scientific HyClone Penicillin-Streptomycin Solution

- Broad spectrum bacteriostatic with activity against gram negative and gram positive organisms
- Used as an antibacterial or antimycobacterial
- Penicillin interferes with the final stage of synthesis of the bacterial cell wall
- Streptomycin inhibits elongation at transpeptidation step; binds to 30S subunit causing misreading
- Common working concentration for Penicillin is 100 U/mL; for Streptomycin: 100 µg/mL

Thermo Scientific HyClone Pen/Strep/Glutamine Solution

- Like the Penicillin-Streptomycin solution above with L-Glutamine added
- Simplifies media preparation – add two reagents at the same time

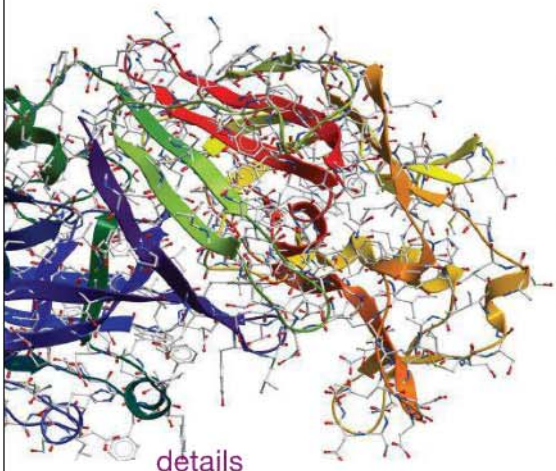
Thermo Scientific HyClone Puromycin 2 HCl

- Antibiotic used to select cells modified by genetic engineering
- Allows the selection and maintenance of cells expressing the puromycin-resistance gene
- Inhibits the growth of a wide range of prokaryotic and eukaryotic cells by interfering with protein synthesis
- Common working concentration is 0.1 to 30 µg/mL

HyClone Antibiotics

Cat. No.	Reagent	Function	Initial Concentration	Working Concentration	Size
SV30078.01	Amphotericin B	Antifungal	250 ug/mL	2.5 ug/ml	50 mL
SV30079.01	Antibiotic Antimycotic Solution	Antibacterial / Antifungal	100 x	1 x	100 mL
SV30068.01	G418	Selection Agent	Powder	300-1000 ug/mL	1 g
SV30068.02	G418	Selection Agent	Powder	300-1000 ug/mL	5 g
SV30069.01	G418	Selection Agent	50 mg/mL	300-1000 ug/mL	20 mL
SV30080.01	Gentamicin	Antibacterial	50 mg/mL	5 ug/ml	10 X 10 mL
SV30070.01	Hygromycin B	Selection Agent	50 mg/mL	50 - 1000 ug/mL	20 mL
SV30010	Pen/Strep	Antibacterial	100 x	1 x	100 mL
SV30082.01	Pen/Strep/Glutamine	Antibacterial	100 x	1 x	100 mL
SV30075.01	Puromycin	Selection Agent	Powder	0.1 - 30 ug/mL	100 mg

Thermo Scientific Hyclone Cellular Energy Sources and Vitamins



details

Supplement your media with extra energy for robust cultures.

Living cells *in vivo* obtain the nutrients they require directly from the blood and biological tissues that surround them. Cell culture media are composed of inorganic salts, sugars (energy sources), vitamins, amino acids and other components which are intended to mimic as nearly as possible these natural biological fluids. Because the needs of each cell type are different, not all media provide the components in the right concentration that the cells need. Thermo Scientific offers a variety of cellular energy sources for researchers to use in supplementing media to obtain the best mix for their cell types.

Thermo Scientific HyClone L-Glutamine Solution

- Significant source of energy for cells in culture – contributes 30-70% of cultured cells energy needs
- Many cells metabolize L-glutamine more efficiently than glucose

Thermo Scientific HyClone SG-200 Solution

- Stable dipeptide of L-Alanyl L-Glutamine
- Can be used as a energy source supplement in the same manner as L-Glutamine
- Provides more consistent concentration of L-Glutamine to cells throughout the length of the culture
- Minimizes toxic build-up of ammonia that forms from spontaneous degradation of L-Glutamine

Thermo Scientific HyClone MEM Vitamin Solution, 100X

- Increases cell growth and viability
- Includes Pantothenate, Choline, Folic Acid, Myo-Inositol, Niacinamide, Pyridoxin, Riboflavin and Thiamine
- 100x use provides media with the same concentration of vitamins found in MEM formulations

Thermo Scientific HyClone Non-Essential Amino Acids, 100X

- Increases cell growth and viability by adding nutrients and reducing the biosynthetic burden on cells in vitro
- Includes the essential amino acids Alanine, Asparagine, Aspartic Acid, Glutamic Acid, Glycine, Proline and Serine
- 100x use provides media with the same concentration of non-essential amino acids found in MEM formulations

Thermo Scientific HyClone MEM Amino Acid Solution, 50X

- Support the growth of cells that have high energy demands and synthesize large amounts of proteins and nucleic acids
- Includes the non-essential amino acids Arginine, Cystine, Histidine, Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Tryptophan, Tyrosine and Valine
- 50x use provides media with the same concentration of non-essential amino acids found in MEM formulations

Thermo Scientific HyClone Sodium Pyruvate Solution, 100mM

- Easily accessible carbohydrate source that may also have protective effects against phototoxicity

HyClone Cellular Energy Sources and Vitamins

Cat. No.	Product	Concentration	Size
SH30034.01	L-Glutamine	200 mM	100 mL
SH30598.01	MEM Amino Acid solution	50x	100 mL
SH30599.01	MEM Vitamin Solution	100x	100 mL
SH30238.01	Non-Essential Amino Acids (NEAA) solution	100 x	100 mL
SH30590.01	SG-200 (Stable dipeptide of L-Alanyl L-Glutamine)	200 mM	100 mL
SH30239.01	Sodium Pyruvate	100 mM	100 mL

Thermo Scientific HyClone HyQTase

Dissociate cells with a gentle non-mammalian alternative.

HyQTase is an ultra-filtered solution of proteolytic and collagenolytic enzymes combined to achieve rapid dissociation, while being gentle to cells. Its non-mammalian formulation makes it ideal for serum-free applications and eliminates the need for neutralizing or enzyme inhibitors. Treatment results in rapid cell detachment, single cell suspension and high cell viability with minimal passage-to-passage variability.

details

- Ultra-filtered, non-mammalian alternative to trypsin that enables gentle, rapid cell detachment of a broad array of adherent cells and tissues for primary cell culture
- Naturally derived complex of proteolytic and collagenolytic enzymes
- Ideal for use in both serum-free and serum-containing cell culture systems with a broad array of cell lines
- Does not require inactivation
- Does not contain Phenol Red

HyClone HyQTase

Cat. No.	Dissociation Reagent	Concentration	EDTA	Size
SV30030.01	HyQTase	1 x	0.2 mM	100 mL

Thermo Scientific HyClone Trypsin

Efficient cell passaging.

Trypsin is used to disaggregate adherent cells from the substrate or surface to which they are attached. Its protease activity makes it ideal for routine cell culture passaging. It is also effective at disassociating tissues for primary cell culture.

details

- Derived from porcine pancreas
- Gamma irradiated prior to hydration and filling
- Formulated without calcium and magnesium
- Contains Phenol Red

HyClone Trypsin

Cat. No.	Dissociation Reagent	Concentration	EDTA	Size
SH30042.01	Trypsin	0.25%	0.2 g/L	100 mL
SH30236.01	Trypsin	0.05%	0.2 g/L	100 mL
SV30031.01	Trypsin	0.25%	0.10%	100 mL
SV30037.01	Trypsin	2.50%	none	100 mL

Thermo Scientific HyClone Cryopreservation Solutions

Store your samples with confidence.

Thermo Fisher Scientific delivers worldwide market-leading cryopreservation solutions. From sample collection, storage and tracking, our portfolio offers best-in-class results for long-term storage of your samples. With Thermo Scientific HyCryo™ and HyCryo-STEM™ cryopreservation media you can store your samples with confidence, knowing that our proven media design advances the recovery, viability and post-thaw growth of your precious cells.

details

Thermo Scientific HyClone HyCryo Cryopreservation Media

- Animal origin-free cryopreservation media for general use
- Increased recovery of viable cells versus standard cryopreservation formulations
- Designed as a 2x cryopreservation media to preserve media conditioning during cryopreservation

Thermo Scientific HyClone HyCryo-STEM Cryopreservation Media

- Serum-free cryopreservation media designed for stem cells
- Validated for embryonic stem cells (ESCs), induced pluripotent stem cells (iPSCs) and neural progenitor cells (mouse and rat cortical stem cells)
- Maintains differentiation potential and minimizes spontaneous differentiation
- Improves recovery of stem cells after cryopreservation
- Designed as a 2x cryopreservation media to preserve cell derived factors in cryopreservation

Thermo Scientific HyClone AdvanceSTEM Cryopreservation Media

- Formulated to support the cryopreservation of a variety of cell types, including Human Mesenchymal Stem Cells, multipotent unrestricted stem cells of Umbilical Cord Blood and Human Amniotic Epithelial Stem Cells.

HyClone Cryopreservation Solutions

Cat. No.	Description	Size
SR30001.02	HyCryo Cryopreservation media	100 mL
SR30002.02	HyCryo-STEM Cryopreservation media	100 mL
SH30894.01	AdvanceSTEM Cryopreservation media	100 mL

Thermo Scientific HyClone Stem Cell Qualified Reagents

Culture stem cells with confidence.

Providing optimal culture conditions can be one of the greatest challenges in stem cell research, particularly in keeping cells in an undifferentiatied state or directing differentiation when desired. The Thermo Scientific HyClone AdvanceSTEM line of stem cell culture products can help you meet those challenges. Together, with our ES screened FBS, our classical media formulations and our AdvanceSTEM serum replacement, our AdvanceSTEM reagents give you the assurance that you are culturing with materials that have been tested and verified for stem cell use.

details

- DPBS, HEPES, L-Glutamine and NEAA's specifically tested and validated for stem cell culture

HyClone Stem Cell Qualified Reagents

Cat. No.	Description	Size
SH30850.01	AdvanceSTEM ES Qualified Dulbecco's Phosphate Buffered Saline (DPBS), without Calcium or Magnesium	100 mL
SH30850.02	AdvanceSTEM ES Qualified Dulbecco's Phosphate Buffered Saline (DPBS), without Calcium or Magnesium	500 mL
SH30850.03	AdvanceSTEM ES Qualified Dulbecco's Phosphate Buffered Saline (DPBS), without Calcium or Magnesium	1000 mL
SH30851.01	AdvanceSTEM ES Qualified HEPES Solution (1M)	100 mL
SH30852.01	AdvanceSTEM ES Qualified L-Glutamine 200 mM Solution	100 mL
SH30853.01	AdvanceSTEM ES Qualified Non-Essential Amino Acids Solution (100X)	100 mL

Thermo Scientific HyClone Hydrogels

Tools for 3-D cell culture.

Providing optimal culture conditions can be one of the greatest challenges in stem cell research. Aside from optimal nutrient requirements, an optimal substrate is also important. There are several key considerations to take into account when choosing the appropriate substrate on which to expand and differentiate these very important cells. Whether your requirements mandate an animal component-free system or your research requires the ability to incorporate growth factors and peptides into your stem cell culture system, there is a HyStem Hydrogel kit to meet your needs. All of our HyStem Hydrogels are animal-free, synthetic products that are customizable before gelation. They offer batch-to-batch consistency and are non-toxic and injectable. They allow for 2-D plating or 3-D encapsulation in cell culture and can incorporate ECM proteins. The stiffness of HyStem Hydrogels can be easily varied and all are easy to set up – just add water and go!

details

Thermo Scientific HyClone HyStem Hydrogel

- Chemically modified hyaluronan crosslinked with PEGDA
- Recommended for applications requiring attachment factor optimization

Thermo Scientific HyClone HyStem-C Hydrogel

- Based on HyStem (listed above) with chemically modified gelatin added
- Starting point for optimizing your own surface or matrix

Thermo Scientific HyClone HyStem-HP Hydrogel

- Like HyStem-C (above) with the addition of chemically modified heparin
- Contains heparin which acts by ionically binding to growth factors
- Heparin provides slow release of growth factors

HyClone Hydrogels

Cat. No.	Description	Characteristics	Size
SV30138.01	HyStem Hydrogel Kit	Chemically modified hyaluronan	2.5 mL
SV30138.02	HyStem Hydrogel Kit	Chemically modified hyaluronan	7.5 mL
SV30139.01	HyStem-C Hydrogel Kit	Chemically modified hyaluronan and gelatin	2.5 mL
SV30139.02	HyStem-C Hydrogel Kit	Chemically modified hyaluronan and gelatin	7.5 mL
SV30140.01	HyStem-HP Hydrogel Kit	Chemically modified hyaluronan and heparin	2.5 mL
SV30140.02	HyStem-HP Hydrogel Kit	Chemically modified hyaluronan and heparin	7.5 mL

Thermo Scientific HyClone Bovine Serum Albumin

Cell culture grade BSA.

details

- Lyophilized powder
- pH 7.0

HyClone Bovine Serum Albumin

Cat. No.	Description	Size
SH30574.01	Bovine Serum Albumin	10 g
SH30574.02	Bovine Serum Albumin	100 g
SH30574.03	Bovine Serum Albumin	500 g

Thermo Scientific HyClone Trypan Blue

Exclusion stain to measure cell viability.

Typan blue stains only non-viable cells in culture. Cell viability is determined quickly and accurately by counting stained and non-stained cells using a hemocytometer or other counting system.

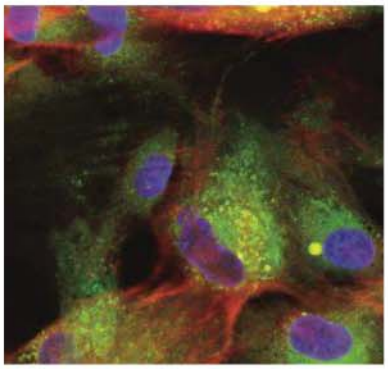
details

- Exclusion stain for measuring cell viability

HyClone Trypan Blue

Cat. No.	Description	Concentration	Size
SV30084.01	Trypan Blue Solution	0.4% in PBS	100 mL

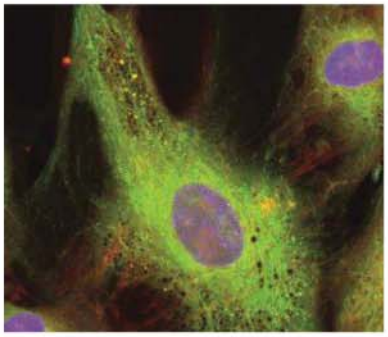
Thermo Scientific CET Mesenchymal Stem Cells



Multipotent stem cells derived from the mesenchymal or other non-marrow tissue.

Mesenchymal stem cells are highly sought after for use as research tools to understand stem cell differentiation. They can be directionally differentiated to provide researchers with populations of cells that are otherwise difficult to obtain. Thermo Scientific has teamed up with Cellular Engineering Technologies (CET) to provide a variety of mesenchymal stem cells to researchers. All of our mesenchymal stem cells are obtained from informed and consenting patients and are characterized and tested with known stromal, stem and hematopoietic markers. They have also tested negative for HIV-1 and 2 and Hepatitis B and C.

details



Thermo Scientific CET Human Adipose-Derived Mesenchymal Stem Cells

- Isolated and expanded from human lipoaspirate using enzymatic treatments.
- Capable of being grown in large numbers.
- Potential for multilineage differentiation and immunomodulatory functions in animal models
- Tissue differentiation applications include conversion into cell types such as neurons and osteocytes

Thermo Scientific CET Human Amniotic Mesenchymal Stem Cells

- Enzymatically isolated from the amniotic membrane of placentas, after epithelial cells are first removed
- Potential for multilineage differentiation and immunomodulatory functions in animal models

Thermo Scientific CET Human Bone Marrow Mesenchymal Stem Cells

- Isolated from human red bone marrow collected during a bone marrow aspiration procedure
- May be differentiated into Adipogenic, Chondrogenic, Osteogenic, Neuron-like cells and other cell types

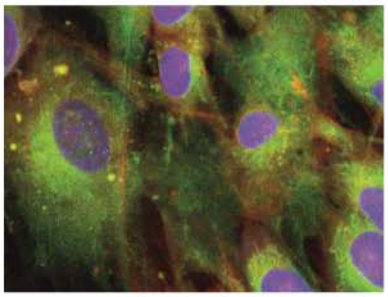
Thermo Scientific CET Human Wharton's Jelly Mesenchymal Stem Cells

- Expanded and isolated from the inner portion of the human umbilical cord
- Potential for multilineage differentiation and immunomodulatory functions in animal models

CET Mesenchymal Stem Cells

Cat. No.	Description	# of Cells	Packaging
SV30102.01	CET Human Adipose-Derived Mesenchymal Stem Cells	≥ 100,000 cells	1 Vial
SV30102.02	CET Human Adipose-Derived Mesenchymal Stem Cells	≥ 500,000 cells	1 Vial
SV30103.01	CET Human Amniotic Mesenchymal Stem Cells	≥ 100,000 cells	1 Vial
SV30103.02	CET Human Amniotic Mesenchymal Stem Cells	≥ 500,000 cells	1 Vial
SV30110.01	CET Human Bone Marrow Mesenchymal Stem Cells	≥ 100,000 cells	1 Vial
SV30110.02	CET Human Bone Marrow Mesenchymal Stem Cells	≥ 500,000 cells	1 Vial
SV30101.01	CET Human Wharton's Jelly Mesenchymal Stem Cells	≥ 100,000 cells	1 Vial
SV30101.02	CET Human Wharton's Jelly Mesenchymal Stem Cells	≥ 500,000 cells	1 Vial

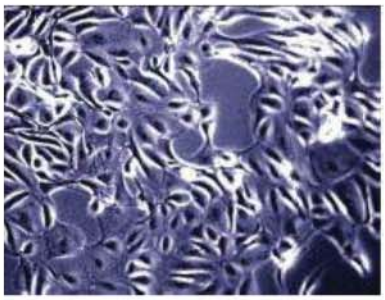
Thermo Scientific CET Somatic Stem Cells



Somatic Stem Cells, also known as adult stem cells, are multipotent stem cells derived from tissue samples.

Somatic stems cells are of great interest to researchers because *in vivo*, they can self-renew indefinitely and can generate all of the cell types of the organ from which they originate. Thermo Scientific has partnered with Cellular Engineering Technologies (CET) to provide a variety of somatic stem cells to researchers. All cells are obtained with informed consent.

details



Thermo Scientific CET Human Amniotic Epithelial Stem Cells

- Isolated from the amniotic membrane of fresh placentas using an enzyme-based treatment
- Cells are differentially plated and isolated using morphology
- Cells retain embryonic stem cell characteristics and are useful for tissue differentiation of all three germ layers, the ectoderm, endoderm and the mesoderm
- Tissue differentiation applications include conversion into pancreatic islet cells, liver hepatocytes, cardiomyocytes and neurons

Thermo Scientific CET Multipotent Cord Blood Unrestricted Somatic Stem Cells

- Isolated from human umbilical cord blood using differential plating techniques and a proprietary media formulation.
- Three passages, using tissue culture plastic adhesion, are conducted to achieve a homogenous population
- May be differentiated into cell types such as neuron-like cells and osteoblasts

CET Multipotent Cord Blood Unrestricted Somatic Stem Cells

Cat. No.	Description	# of Cells	Packaging
SV30104.01	CET Human Amniotic Epithelial Stem Cells	≥ 100,000 cells	1 Vial
SV30104.02	CET Human Amniotic Epithelial Stem Cells	≥ 500,000 cells	1 Vial
SV30105.01	CET Human Multipotent Cord Blood Unrestricted Somatic Stem Cells	≥ 100,000 cells	1 Vial
SV30105.02	CET Human Multipotent Cord Blood Unrestricted Somatic Stem Cells	≥ 500,000 cells	1 Vial