MERCK MILLIPORE

Sterile filtration
you can trust.



Merck Millipore is a division of MERCK

Merck Millipore – the name you trust for sterile filtration

Merck Millipore is the brand of choice for sterile filters for everything from media preparation for your cell culture to sterilization of critical drug compounds.

Selection

From 1 mL to 20 liters, we offer an array of both vacuum and pressure-driven devices that incorporate our long-trusted membrane technology.

Expertise

With over 50 years of expertise in the sterile filtration business, we set the industry standard for high performance membrane technology and application in sterile filtration.

Innovation

We continue to raise that standard with functional testing in sensitive applications like stem cell culture and its related media and cultureware.

Get the sterile filtration performance you need every day from Merck Millipore.

To learn more, please visit:
www.millipore.com/sterilefiltration

Membrane Technology

Sterile filtration performance is based on the quality of the membranes used. Our Millipore Express® PLUS, Durapore®, MF-Millipore™ and Fluoropore™ brand membranes set the industry standard for their respective properties.

To learn more visit: **www.millipore.com/membranes**

Millipore Express® and Millipore Express® PLUS (PES) Membranes

- Fast flow and low protein binding Mixed Cellulose Esters (MCE)
- General purpose; binds trace proteins Durapore® (PVDF) Membrane
- Ultra-low protein binding Millipore® LCR Membrane
- Broad chemical compatibility

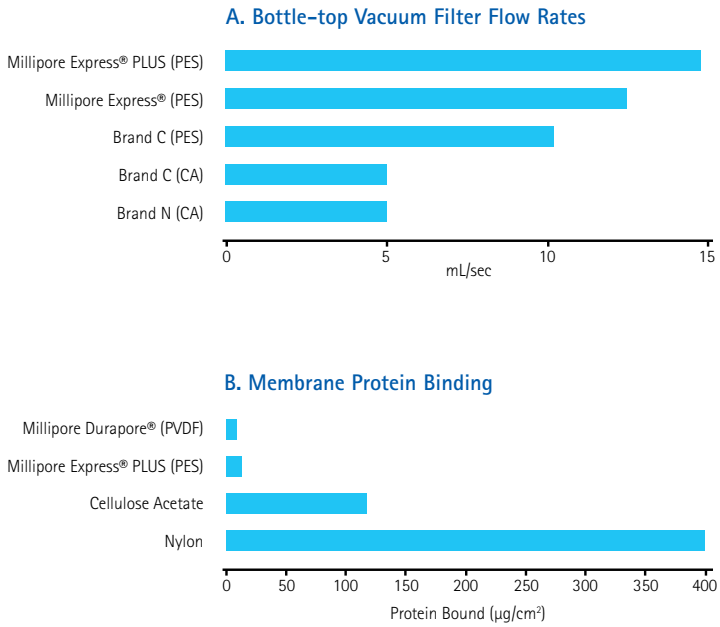
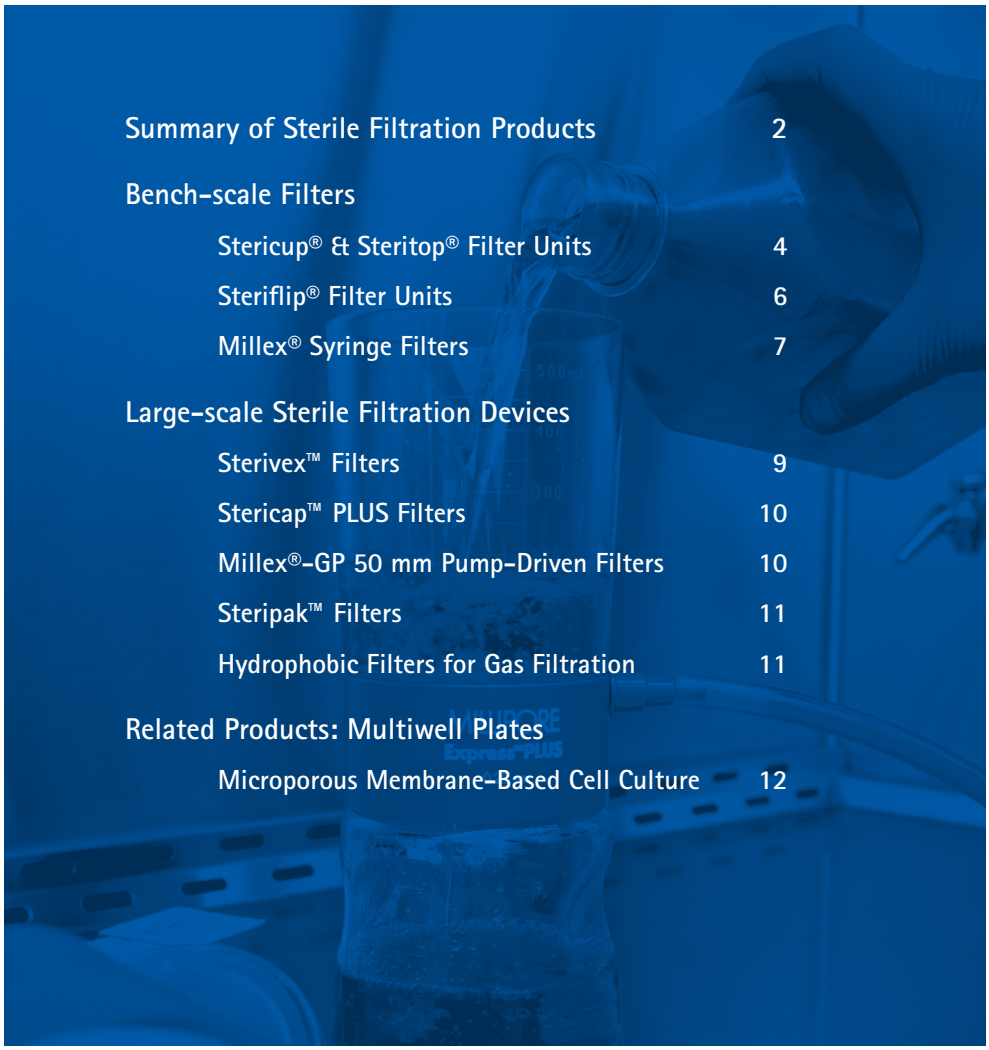


Figure 1.

A. Faster flow with Millipore Express® PLUS membrane. 500 mL of DMEM with 10% FBS was filtered through various vacuum-driven cup devices.

B. Lowest protein binding with Durapore® PVDF membrane. Membrane disks with a 0.22 µm pore size were offered a 1 mg/mL solution of ^{125}I labeled IgG. The chart shows protein binding after incubation (normalized to membrane surface area).

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What people are saying...

"For over 40 years we've trusted [Merck Millipore] to provide the quality filtration tools we need."

James T. Voss, NRRPT, CHP Fellow, Health Physics Society, President of Voss Associates.

"Trusted partners like [Merck Millipore] are rare but central to our success"

Dr. Michael West, CEO, BioTime, Inc., Renowned thought leader in stem cell therapeutics

SUMMARY OF STERILE FILTRATION PRODUCTS

Vacuum filtration devices for cell culture media preparation

Description	Pore Size (µm)	Membrane	Maximum Process Volume	
Stericup® Filtration and Storage Units	0.1 0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF)	150 mL 250 mL 500 mL 1000 mL	
Steritop® Bottle-top Filtration Units	0.22	Millipore Express® PLUS (PES), Durapore® (PVDF)	150 mL 250 mL 500 mL 1000 mL	
Steriflip® Filtration Units	0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF), Nylon Net	50 mL	

Syringe filters for cell culture media preparation and small volume filtration

Description	Pore Size (µm)	Membrane Maximum	Process Volume	
Millex® Syringe Filters (4, 13, 25 mm)	0.2 0.22 0.45 0.5	Millipore Express® (PES), Durapore® (PVDF), MCE	1 – 100 mL	
Millex® Syringe Filters (33 mm)	0.1 0.22 0.45 0.8	Millipore Express® PLUS (PES), Durapore® (PVDF), MCE	100 – 200 mL	

Large-scale sterile filtration devices

Description	Pore Size (µm)	Membrane Maximum	Process Volume	
Stericap™ PLUS Vacuum-driven Filters	0.22	Millipore Express® PLUS (PES)	2 – 10 L	
Sterivex™ Pressure-driven Filters	0.22 0.45	Millipore Express® PLUS (PES), Durapore® (PVDF)	Up to 2 Liters	
Millex®-GP 50 mm Pump-driven Filters	0.22	Millipore Express® (PES)	Up to 4 L	
Steripak™ Pump-driven Filters	0.22	Millipore Express® (PES)	10 L 20 L	

Hydrophobic filters for gas filtration

Description	Pore Size (µm)	Inlet-Outlet Fittings	Membrane	
Millex®-FG 25 mm Syringe Filters	0.22	FLL-MLS, FLL-MLL, FLS-MLS, FLL-Spike	Hydrophobic PTFE, Hydrophobic PVDF	
Millex®-FG 50 mm Pump-driven Filters	0.2 0.45 1.0	Stepped Hose Barb with FLS – 1/8" NPTM	Hydrophobic PTFE	

FLL = Female Luer-Lok®
FLS = Female Luer slip
MLL = Male Luer-Lok®
MLS = Male Luer slip

Stericup® & Steritop® Filter Units

Stericup® and Steritop® sterile filtration devices combine superior flow rates and throughput with low non-specific binding and a stable, no-tip design.



Fast flow, low-binding membranes

Membranes with low protein binding ensure that key growth factors and proteins won't be absorbed into the filter. Millipore Express® PLUS membranes feature low protein binding and faster flow than other membranes. For applications that require ultra-low protein binding, use a device with Durapore® PVDF membrane.

Intelligent design

The Stericup® vacuum filtration system can process and store volumes from 150 mL to 1 L. The new, no-tip/easy-grip flask design and compact profile improve stability during filtration and make Stericup® filter units ideal for use in laminar flow hoods. As an added convenience, the bottom of the receiver flask is slightly recessed, enabling capped flasks to be stacked for easy storage.

Applications

- Tissue culture media +/- additives
- Buffers
- Biological solutions

Stericup® Filter Units

Stericup® Filter Units – combine a filter unit with a receiver flask and cap for processing and storage.

Description	Membrane/Application	Pore Size (µm)	Funnel Capacity (mL)	Receiver Bottle (mL)	Qty/Pk	Catalogue No.
Stericup®-VP Filter Units	Millipore Express® (PES) / removal of mycoplasma**	0.1	250	250	12	SCVPU02RE
			1000	1000	12	SCVPU11RE
Stericup®-GP Filter Units *Stem cell research citations of Stericup®-GP	Millipore Express® PLUS (PES) / fast filtration of tissue culture media and buffers	0.22	150	150	12	SCGPU01RE
			250	250	12	SCGPU02RE
			500	500	12	SCGPU05RE
			500	1000	12	SCGPU10RE
			1000	1000	12	SCGPU11RE
Stericup®-GV Filter Units	Durapore® (PVDF) / filtration of high value biomolecules, lowest protein binding	0.22	150	150	12	SCGVU01RE
			250	250	12	SCGVU02RE
			500	500	12	SCGVU05RE
			500	1000	12	SCGVU10RE
			1000	1000	12	SCGVU11RE
Stericup®-HV Filter Units	Durapore® (PVDF) / filtration of high value biomolecules, lowest protein binding	0.45	150	150	12	SCHVU01RE
			250	250	12	SCHVU02RE
			500	500	12	SCHVU05RE
			1000	1000	12	SCHVU11RE

Steritop® Filter Units

Steritop® bottle-top filter units can be used on bottles with 33 mm or 45 mm openings.

Description	Membrane/Application	Pore Size (µm)	Funnel Capacity (mL)	Receiver Bottle (mL)	Qty/Pk	Catalogue No.
Steritop®-GP Filter Units *Stem cell research citations of Steritop®-GP	Millipore Express® PLUS (PES) / filtration of high value biomolecules, lowest protein binding	0.22	150	33	12	SCGPS01RE
				45	12	SCGPT01RE
			250	33	12	SCGPS02RE
				45	12	SCGPT02RE
			500	33	12	SCGPS05RE
				45	12	SCGPT05RE
			1000	45	12	SCGPT10RE
Steritop®-GV Filter Units	Durapore® (PVDF) / filtration of high value biomolecules, lowest protein binding	0.22	500	45	12	SCGVT05RE
Receiver Bottles and Caps			250	45	12	SC00B02RE
			500	45	12	SC00B05RE
			1000	45	12	SC00B10RE

*Selected stem cell research publications citing Stericup® or Steritop® device for sterile filtration of medium:

1. Feeder independent culture of human embryonic stem cells. Teneille E. Ludwig et al. Nature Methods Vol. 3 No. 8 August 2006 637-646.
2. Roelandt P et al. Differentiation of rat multipotent adult progenitor cells to functional hepatocyte-like cells by mimicking embryonic liver development. Nat Protoc. 2010 Jul;5(7):1324-36.
3. Hu BY et al. Differentiation of human oligodendrocytes from pluripotent stem cells. Nat Protoc. 2009;4(11):1614-22. Epub 2009 Oct 15.
4. Hu BY, Zhang SC. Differentiation of spinal motor neurons from pluripotent human stem cells. Nat Protoc. 2009;4(9):1295-304.
5. Bigdeli N et al. Adaptation of human embryonic stem cells to feeder-free and matrix-free culture conditions directly on plastic surfaces.J Biotechnol. 2008 Jan 1;133(1):146-53.
6. Dravid G et al. Culture of human embryonic stem cells on human and mouse feeder cells. Methods Mol Biol. 2006;331:91-104.

**0.10 µm pore size is designed to enhance maximum filtration of tissue culture media but it is not a guarantee of complete mycoplasma removal.

Steriflip® Filter Units

For filtering 10 mL to 50 mL volumes without sample transfer steps.

Filter up to 50 mL directly into a centrifuge tube

- Attach the device to a standard 50 mL centrifuge tube containing your sample, flip it over, and apply vacuum
- Filtrate collects in the attached 50 mL tube
- Available with optional funnel accessory



Description	Membrane	Pore Size (µm)	Qty/Pk	Catalogue No.
Steriflip®-GP Filter Unit	Millipore Express® PLUS (PES)	0.22	25	SCGP00525
Steriflip®-GV Filter Unit	Durapore® (PVDF)	0.22	25	SE1M179M6
Steriflip®-HV Filter Unit	Durapore® (PVDF)	0.45	25	SE1M003M00
Steriflip® Steri-Strainer	Nylon Net	100	25	SCNY00100
		60	25	SCNY00060
		40	25	SCNY00040
		20	25	SCNY00020
Accessory				
Steriflip® Funnel Attachment			25	SC50FL025

Millex® Syringe Filters

Millex® syringe filters provide convenient sterilization of small volumes and are ideal for solutions such as antibiotics and tissue culture additives. Their unsurpassed quality and consistency of results has led to the development of many sample preparation methods that specify Millex® filters.

Manufactured for reliable performance

Manufacturing occurs in a controlled environment using an automated process. Sterile devices are provided with a certificate of quality.

Faster flow rate

33 mm Millex® filters have 20% more filter surface than 25 mm filters for significantly higher flow rate and throughput.

Higher operating pressure

With a maximum housing pressure of 150 psig (10 bar), solutions can be filtered faster.

Low extractables, low binding

A variety of membranes and housings ensure chemical compatibility with a range of samples and solvents.



Millex® Syringe Filters

Sterilized and individually packaged.

Description	Pore Size (µm)	Type	Process Volume	Hold-up Volume (after air purge)	Sterilization Method†	Qty/Pk	Catalogue No.
4 mm Diameter							
Durapore® (PVDF) Membrane	0.22	GV	1 mL	< 10 µL	EO	100	SLGV004SL
	0.45	HV	1 mL	< 10 µL	EO	100	SLHV004SL
13 mm Diameter							
Hydrophilic PTFE Membrane	0.2	LG	10 mL	< 25 µL	EO	100	SLLG013SL
Durapore® (PVDF) Membrane	0.22	GV	10 mL	< 25 µL	EO	100	SLGV013SL
	0.45	HV	10 mL	< 25 µL	EO	100	SLHV013SL
25 mm Diameter							
Durapore® (PVDF) Membrane	5	SV	100 mL	< 100 µL	EO	50	SLSV025LS
Millipore Express® (PES) Membrane	0.22	GP	100 mL	< 100 µL	EO	50	SLMP025SS
Millipore Express® (PES) Membrane with male Luer-Lok™ outlet	0.22	GP	100 mL	< 100 µL	EO	50	SLMPL25SS
Mixed Cellulose Esters (MCE) Membrane with male Luer-Lok outlet	0.22	OR	100 mL	< 100 µL	EO	50	SLGL0250S
Mixed Cellulose Esters (MCE) Membrane with vented inlet	0.22	GS	100 mL	< 100 µL	EO	50	SLGSV255F
Mixed Cellulose Esters (MCE)	0.8	AA	100 mL	<100 µL	EO	50	SLAAV255F
Hydrophilic PTFE Membrane	0.2	LG	100 mL	< 100 µL	EO	50	SLLG025SS
Glass Filter for Prefiltration	NA	AP	100 mL	<100 µL	Autoclavable	50	SLAP02550
33 mm Diameter							
Millipore Express® PLUS (PES) Membrane **Fast flow and low binding for cell culture media preparation**	0.22	GP	200 mL	< 100 µL	RS	50	SLGP033RS
						250	SLGP033RB
						1000	SLGP033RK
	0.45	GP	200 mL	< 100 µL	RS	50	SLHP033RS
						250	SLHP033RB
Durapore® (PVDF) Membrane **Lowest binding membrane for protein rich solutions**	0.1	VV	100 mL	< 100 µL	RS	50	SLVV033RS
	0.22	GV	100 mL	< 100 µL	RS	50	SLGV033RS
						250	SLGV033RB
						1000	SLGV033RK
	0.45	HV	100 mL	< 100 µL	RS	50	SLHV033RS
						250	SLHV033RB
						1000	SLHV033RK
Mixed Cellulose Esters (MCE) Membrane **Most referenced general purpose membrane**	0.22	GS	100 mL	< 100 µL	EO	50	SLGS033SS
						250	SLGS033SB
	0.45	HA	100 mL	< 100 µL	EO	50	SLHA033SS
						250	SLHA033SB
	0.8	AA	100 mL	< 100 µL	EO	50	SLAA033SS
						250	SLAA033SB

†EO = ethylene oxide; RS = radiosterilized

Sterivex™ Filters

Pressure-driven devices for filtering up to 2 L

Sterivex™ filter units work with syringes, peristaltic pumps, or pressure vessels.

Sterivex™ units are designed to dispense into any storage container.



Description	Process Volume	Membrane	Pore Size (µm)	Fitting Outlet	Qty/Pk	Catalogue No.
Sterivex™-GP Filter Units						
Sterivex™-GP Filter Unit	2000 mL	Millipore Express® PLUS (PES)	0.22	Filling Bell	10	SVGPB1010
				Male Luer-Lok	15	SVGPL10RC
				Male Nipple	15	SVGP01015
					50	SVGP01050
Sterivex™-GV Filter Units						
Sterivex™-GV Filter Unit	1000 mL	Durapore® (PVDF)	0.22	Filling Bell	10	SVGVB1010
				Male Luer-Lok	15	SVGVL10RC
				Male Nipple	15	SVGV01015
					50	SVGV010RS
Sterivex™-HV Filter Units						
Sterivex™-HV Filter Unit	1000 mL	Durapore® (PVDF)	0.45	Filling Bell	10	SVHVB1010
				Male Luer-Lok	15	SVHVL10RC
				Male Nipple	15	SVHV01015
					50	SVHV010RS

†EO = ethylene oxide; RS = radiosterilized

LARGE-SCALE STERILE FILTRATION DEVICES

Stericap™ PLUS Filters



Universal bottle-top devices for filtering 2 to 10 L

- Fits on any vacuum-rated bottle, 20 to 67 mm in diameter
- Vented to help prevent filter air lock
- Features fast-flowing, low protein binding Millipore Express® PLUS membrane
- Ideal for fast sterilization of tissue culture media, serum, buffers, or other biological solutions

Description	Membrane	Pore Size (µm)	Qty/Pk	Catalogue No.
Stericap™ PLUS Filter	Millipore Express® PLUS (PES)	0.22	10	SCGPCAPRE

Millex®-GP 50 mm Pump-Driven Filters

Sterilized and individually packed

Description	Pore Size (µm)	Type	Process Volume	Hold-up Volume (after air purge)	Sterilization Method†	Qty/Pk	Catalogue No.
50 mm Diameter							
Millipore Express® (PES) Membrane	0.22	GP50	4000 mL	< 1 mL	RS	10	SLGP05010
		GP50 with filling bell				10	SLGPB5010
Glass Filter for Prefiltration	NA	AP	4000 mL	<1 mL	Autoclavable	10	SLAP05010

†EO = ethylene oxide

Steripak™ Filters

Pump-driven filters for volumes up to 20 L



Steripak™ filters are designed for larger scale pressure-driven filtration of tissue culture media with or without serum. The units are single-use and come in two volume sizes. They are supplied sterile and ready to connect to a pump or pressure vessel.

Description	Membrane	Pore Size (µm)	Filter area, cm^2	Qty/Pk	Catalogue No.
Steripak™-GP_{10} Filter	Millipore Express® (PES)	0.22	100	3	SPGPM10RJ
Steripak™-GP_{20} Filter	Millipore Express® (PES)	0.22	200	3	SPGPM20RJ

Hydrophobic Filters for Gas Filtration

Description	Application	Pore Size (µm)	Sterility	Inlet-Outlet Fitting	Qty/Pk	Catalogue No.
25 mm Diameter Filters						
Hydrophobic PTFE	Vacuum line protection and gas filtration	0.2	Ethylene oxide	FLL-MLS	50	SLFG025LS
				FLL-MLL	50	SLFGL25BS
			Non-Sterile	FLL-MLS	50	SLFG02550
Hydrophobic PVDF	Transducer protector	0.22	Ethylene oxide	FLL-MLS	50	SLGVS25PS
				FLL-MLL	50	SLGVS25US
				FLL-MLL	50	SLGVS25XS
				FLL-Spike	50	SLGVS25LS
Pump-driven Millex®-FG_{50} 50 mm Diameter Filters						
Hydrophobic PTFE	Vacuum line protection and gas filtration	0.2	Non-Sterile	Stepped Hose Barb with FLS	10	SLFG05010
					100	SLFG05000
				Stepped Hose Barb with FLS – 1/8" NPTM	10	SLFG55010
					100	SLFG65000
				1/8" NPTM - 1/8" NPTM	10	SLFG75010
					100	SLFG75000
		0.45	Non-Sterile	Stepped Hose Barb with FLS	10	SLFH05010
					100	SLFH05000
		1.0	Non-Sterile	Stepped Hose Barb with FLS	100	SLFA05000

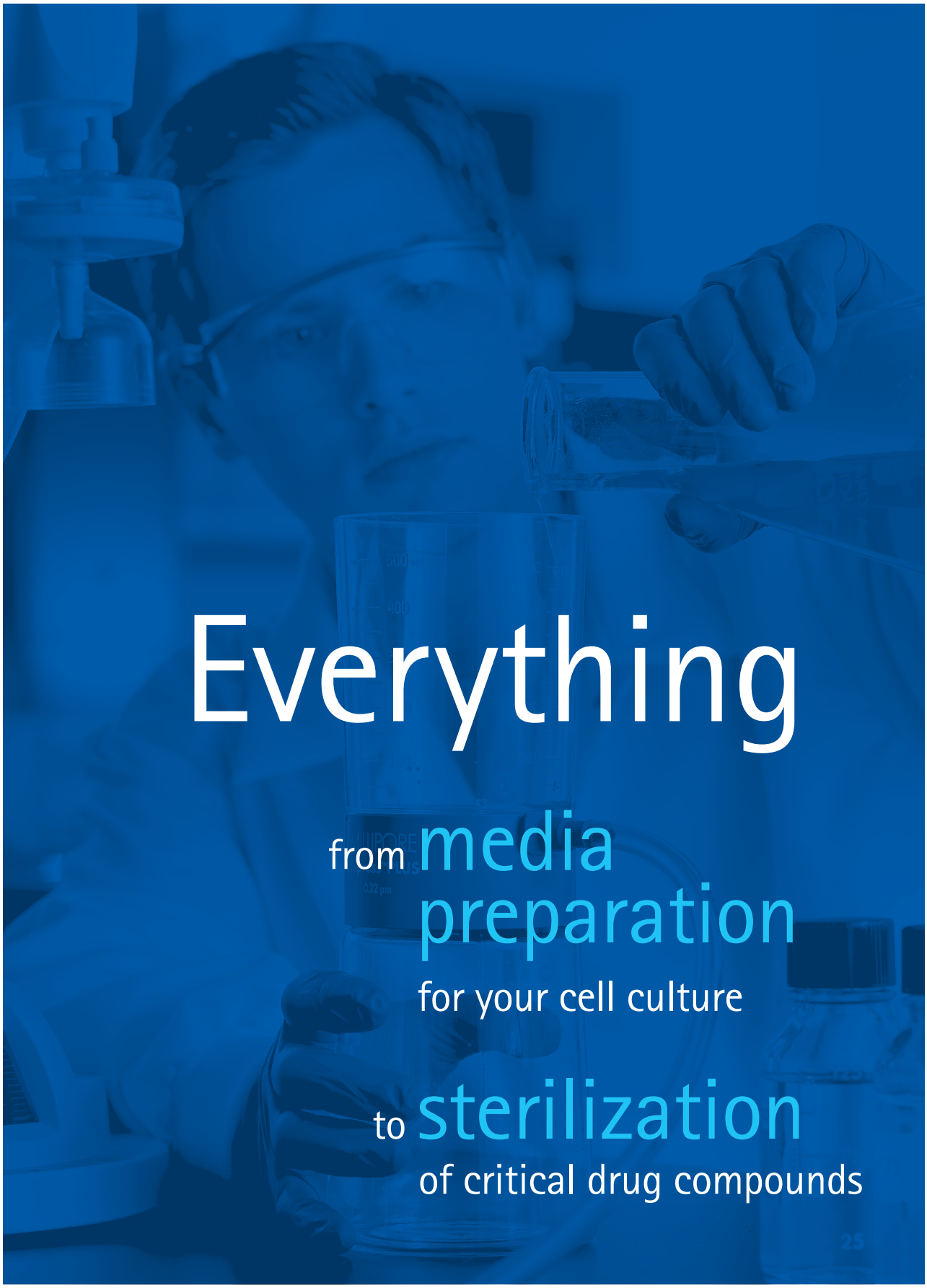
FLL = Female Luer-Lok®
FLS = Female Luer slip
MLL = Male Luer-Lok®
MLS = Male Luer slip

Microporous Membrane-Based Cell Culture



Millicell® products promote natural cell growth and incorporate unique design features to improve flexibility in today's laboratories. Unlike cells grown on plastic plates, membrane-supported cell cultures are able to access media from both their apical and basolateral sides, resulting in cell morphology that mimics cells grown *in vivo*.

Description	Membrane	Pore Size (µm)	Device Size	Qty/Pk	Catalogue No.
Millicell® 24-Well Cell Culture Plate Assemblies	PCF	0.4	24-well cell culture plate, single-well feeder tray, 24-well receiver tray, and lid	1	PSHT010R1
	PET	1			PSRP010R1
	PCF	3			PSST010R1
	PCF	5			PSMT010R1
	PCF	8			PSET010R1
	PCF	3	24-well cell culture plate, 24-well receiver tray, and lid	5	PSST010R5
	PCF	5			PSMT010R5
	PCF	8			PSET010R5
	PCF	0.4	24-well cell culture plate, single-well feeder tray, and lid	5	PSHT010R5
	PET	1			PSRP010R5
Millicell® 96-Well Cell Culture Plate Assemblies	PCF	0.4	96-well cell culture plate, single-well feeder tray, 96-well receiver tray, and lid	1	PSHT004R1
	PET	1			PSRP004R1
	PCF	0.4	96-well cell culture plate, 96-well receiver tray, and lid	5	PSHT004S5
	PCF	0.4	96-well cell culture plate, single-well feeder tray, and lid	5	PSHT004R5
	PET	1			PSRP004R5
Accessories					
24-Well Receiver Trays with Lids				5	PSMW010R5
Single-Well Receiver Trays with Lids				5	PSSW010R5
96-Well Receiver Trays with Lids				5	MACAC0RS5
Millicell® ERS-2 Voltohmmeter				1	MERS00002
Replacement Electrodes				1 pair	MERSSTX01



Everything

from media preparation

for your cell culture

to sterilization

of critical drug compounds

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