

DOMINIQUE DUTSCHER SAS

Simplifying Progress

Sartoclear Dynamics® Lab

For Convenient Mammalian Cell Culture Harvesting

SARTORIUS

Sartoclear Dynamics® Lab

70% Faster Clarification and Sterile Filtration of up to 1,000 mL Mammalian Cell Cultures

Sartoclear Dynamics® Lab is a new, one-step method for harvesting mammalian cell cultures with high cell densities. Consistent results, ease of use and exceptional speed are the key characteristics of this technology.

Inspired by the plasma industry, Sartoclear Dynamics® Lab is based on the principles of body feed filtration. The ready-to-use clarification kits enable convenient and fast processing of up to 1,000 mL. As a result, these one-step kits eliminate the lengthy centrifugation step.



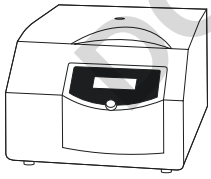
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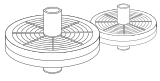
Your Current Clarification Challenge

In the past decade, the productivity of fed-batch mammalian cell cultures has risen significantly. Driven by optimized strains and culture media, titers have increased from 1 – 3 g/L to 7 – 10 g/L.

Today, the common procedure of cell removal is to centrifuge broth to partly remove cells and cell debris first, then to pass the sample through a sterile filter unit. High cell density prolongs the time required for centrifugation. Even after centrifugation, subsequent sterile filtration normally cannot be performed using just one filter as it rapidly becomes clogged.

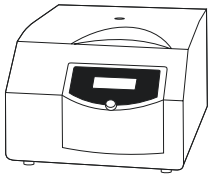
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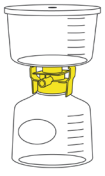




Centrifuge + Syringe Filters

15 – 20 min., 15 mL





Centrifuge + Filtration Units

45 min. – 2 h, 50 – 1,000 mL

With Sartoclear Dynamics® Lab kits, you can now clarify and sterile-filter your mammalian cell culture of up to 1,000 mL quickly and easily in a single step.

Sartoclear Dynamics® Lab P15

Cell Harvesting of up to 15 mL Mammalian Cell Cultures in One Step

This ready-to-use kit combines a 20 mL syringe pre-filled with 0.5 g of filter aid for clarification and a syringe filter for sterile filtration. The filter aid facilitates filtration through the sterile filter while allowing complete protein recovery.

Sterile Filtration

The sterile filter is a 0.2 µm polyethersulfone membrane and the prefilter is made of 100% high-purity quartz: The choice of these materials, along with the large surface area of the filters, enables high flow rates.

Clarification

A 20 mL syringe pre-filled with 0.5 g filter aid for clarification of cell culture samples of any cell density. The filter aid is made of highly pure diatomaceous earth (DE), an optimized grade for cell culture harvests, which is inert and insoluble.



Easy Transfer

A convenient filling tube for easy recovery of samples from 50 mL Falcon tubes or Ambr® 15 bioreactors.

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Clarification and sterile filtration of mammalian cell cultures are performed in a single pressure filtration step.

1. Fill the syringe with cell culture broth.



2. Shake the syringe to mix the broth with the filter aid.



3. Connect the sterile filter to the syringe and filter.



4. One minute later, the clarified cell culture liquid is available for subsequent downstream processing steps, such as protein purification and concentration.



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Sartoclear Dynamics® Lab V

Cell Harvesting of 50 mL to 1,000 mL Mammalian Cell Cultures in One Step

The ready-to-use Sartoclear® Dynamics Lab V kits combine pouches of filter aid for clarification and vacuum filtration units for sterile filtration. The filter aid facilitates filtration through the sterile filter while allowing complete protein recovery.

Clarification

Pouches filled with pre-wetted, highly pure diatomaceous earth (DE) for dust-free transfer

- Optimized grade for cell culture harvests
- Inert and insoluble
- Sizes: Pouches with 1 g, 5 g, 10 g and 20 g of sterile and endotoxin-free DE



Sterile Filtration

Sterile vacuum filtration units in capacities ranging from 50 mL to 1,000 mL including conical tube for the 50 mL version and receiver flasks for the larger versions

- 0.22 µm polyethersulfone membrane
- The fastest flow rates
- Low protein binding and low extractables



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Clarification and sterile filtration are performed in a single step, which enables cell cultures to be efficiently clarified and sterilized in minutes.

1. Attach the Sartolab® RF unit to a vacuum source. Pour the filter aid into your cell culture.



2. Mix to homogenize. Pour the cell culture and filter aid mixture into the Sartolab® RF first, ...



3. ... then filter by simply using the pump.



4. After 5 – 15 min., the sample will be available for subsequent downstream processing steps, such as protein purification and concentration.





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Sartolab® Multistation

For Hands-Free Parallel Filtration of up to Six Samples

Install your Sartolab® RF vacuum filtration units in the Multistation for quick and easy filtration of samples without the need for installation of extra connectors and time-consuming stabilization.

Bracket for Hands-Free Filtration

With one click, connect the filtration unit to the device, assuring perfect filter stability. With a second click, engage the vacuum automatically and begin filtering.

360° Rotating Head

Easily manipulate your samples with the rotating, multi-directional head.



Numbered Brackets

Easily keep track of your samples during filtration with the numbered brackets.

One Vacuum Source Connection

The Multistation is permanently connected to your vacuum source.

Sartoclear Dynamics® Lab V

Each kit is comprised of pouches of filter aid and vacuum filtration units.



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Hands-free parallel clarification and sterile filtration of cell cultures in just a few seconds

1. Attach the Sartolab® RF filtration unit to the Multistation on hold position (first click).



2. Pour the cell culture and filter aid mixture into the Sartolab® RF filtration unit.



3. Push the Sartolab® filtration unit to apply vacuum to the unit and to start the filtration (second click).



4. Rotate the head of the Multistation and filter the next samples or remove the filtration unit after filtration.





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The Reality Check

Example with a 500 mL Cell Culture Sample

Cell Culture Sample
- 500 mL
- Chinese Hamster Ovary (CHO) line
- 10 million cells/mL
- 81% viability

Standard Method

1. Transfer the cell culture to centrifugation bottles, label bottles and tare
2. Centrifuge
3. Sterile-filter the supernatant

5 minutes | 45 minutes | 15 minutes

Total time: 65 minutes

Sartoclear Dynamics® Lab

1. Connect the vacuum filtration unit to a vacuum source and label the bottle
2. Add filter aid to the cell culture and mix to homogenize
3. Sterile-filter

5 minutes | 5 minutes | 5 minutes

Total time: 15 minutes

Filtration Results
- Final turbidity: < 25 NTU
- Recovery: > 90%

Time Saved: 50 minutes

Sartoclear Dynamics® Lab V, 500 mL, 20 g
- Sterile filtration: Sartolab® RF 500
- Clarification: 1 pouch of 20 g DE Filter Aid

Order number:
SDLV-0500-20E0-E

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Which Filtration Kit Do I Need?

Each Sartoclear Dynamics® Lab V kit is comprised of pouches of filter aid and vacuum filtration units that match your needs. Find the right kit in just two easy steps:

1. Determine the volume range of your sample to be filtered.
2. Then reference the range to the cell density of your cell culture.

Volume	Cell density*		
	< 5 million cells/mL	5 – 10 million cells/mL	10 – 20 million cells/mL
15 – 50 mL	SDLV-0050-01E0-2	SDLV-0050-02E0-2	SDLV-0050-02E0-2
50 – 150 mL	SDLV-0150-02E0-E	SDLV-0150-05E0-2	SDLV-0150-05E0-2
150 – 250 mL	SDLV-0250-05E0-2	SDLV-0250-10E0-2	SDLV-0250-10E0-2
250 – 500 mL	SDLV-0500-05E0-2	SDLV-0500-10E0-2	SDLV-0500-20E0-E
500 – 1,000 mL	SDLV-1000-10E0-2	SDLV-1000-20E0-E	SDLV-1000-40E0-E

* Tested with CHO cell lines with a cell viability of approx. 85%

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Ordering Information

1 Kit for Filtration of 15 mL Cell Cultures of Any Density

Sartoclear Dynamics® Lab P15

Description	Quantity of Units	Order No.
6 × 20 mL syringes, pre-filled with 0.5 g of DE, including caps and filling tubes, 6 × sterile filters	6	SDLP--0015-----C

12 Kits for Filtration of up to 1,000 mL Cell Cultures

Filtration of 15 mL to 50 mL mammalian cell cultures

Description	Quantity of Units	Order No.
Sartoclear Dynamics® Lab V, 50 mL, 1 g Filtration of up to 50 mL with 1 g of DE per unit Contents: 1 × 180E01---------2 (24 × Sartolab® RF 50; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-01.0------2 (24 × pouches of filter aid, 1 g)	24	SDLV-0050-01E0-2
Sartoclear Dynamics® Lab V, 50 mL, 2 g Filtration of up to 50 mL with 2 g of DE per unit Contents: 1 × 180E01---------2 (24 × Sartolab® RF 50; 0.22 µm; PES; single-packaged; sterile) 2 × SDLKG-01.0------2 (48 × pouches of filter aid, 1 g)	24	SDLV-0050-02E0-2

Filtration of 50 mL to 150 mL mammalian cell cultures

Description	Quantity of Units	Order No.
Sartoclear Dynamics® Lab V, 150 mL, 2 g Filtration of up to 150 mL with 2 g of DE per unit Contents: 1 × 180E02---------E (12 × Sartolab® RF 150; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-01.0------2 (24 × pouches of filter aid, 1 g)	12	SDLV-0150-02E0-E
Sartoclear Dynamics® Lab V, 150 mL, 5 g Filtration of up to 150 mL with 5 g of DE per unit Contents: 2 × 180E02---------E (24 × Sartolab® RF 150; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-05.0------2 (24 × pouches of filter aid, 5 g)	24	SDLV-0150-05E0-2

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Filtration of 150 mL to 250 mL mammalian cell cultures

Description	Quantity of Units	Order No.
Sartoclear Dynamics® Lab V, 250 mL, 5 g Filtration of up to 250 mL with 5 g of DE per unit Contents: 2 × 180E03---------E (24 × Sartolab® RF 250; 0.22 µm; PES, single-packaged; sterile) 1 × SDLKG-05.0------2 (24 × pouches of filter aid, 5 g)	24	SDLV-0250-05E0-2
Sartoclear Dynamics® Lab V, 250 mL, 10 g Filtration of up to 250 mL with 10 g of DE per unit Contents: 2 × 180E03---------E (24 × Sartolab® RF 250; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-10.0------2 (24 × pouches of filter aid, 10 g)	24	SDLV-0250-10E0-2

Filtration of 250 mL to 500 mL mammalian cell cultures

Description	Quantity of Units	Order No.
Sartoclear Dynamics® Lab V, 500 mL, 5 g Filtration of up to 500 mL with 5 g of DE per unit Contents: 2 × 180E04---------E (24 × Sartolab® RF 500; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-05.0------2 (24 × pouches of filter aid, 5 g)	24	SDLV-0500-05E0-2
Sartoclear Dynamics® Lab V, 500 mL, 10 g Filtration of up to 500 mL with 10 g of DE per unit Contents: 2 × 180E04---------E (24 × Sartolab® RF 500; 0.22 µm; PES, single-packaged; sterile) 1 × SDLKG-10.0------2 (24 × pouches of filter aid, 10 g)	24	SDLV-0500-10E0-2
Sartoclear Dynamics® Lab V, 500 mL, 20 g Filtration of up to 500 mL with 20 g of DE per unit Contents: 1 × 180E04---------E (12 × Sartolab® RF 500; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-20.0-----E (12 × pouches of filter aid, 20 g)	12	SDLV-0500-20E0-E

Filtration of 500 mL to 1,000 mL mammalian cell cultures

Description	Quantity of Units	Order No.
Sartoclear Dynamics® Lab V, 1,000 mL, 10 g Filtration of up to 1,000 mL with 10 g of DE per unit Contents: 2 × 180E05---------E (24 × Sartolab® RF 1000; 0.22 µm: PES; single-packaged; sterile) 1 × SDLKG-10.0-----2 (24 × pouches of filter aid, 10 g)	24	SDLV-1000-10E0-2
Sartoclear Dynamics® Lab V, 1,000 mL, 20 g Filtration of up to 1,000 mL with 20 g of DE per unit Contents: 1 × 180E05---------E (12 × Sartolab® RF 1000; 0.22 µm; PES; single-packaged; sterile) 1 × SDLKG-20.0-----E (12 × pouches of filter aid, 20 g)	12	SDLV-1000-20E0-E
Sartoclear Dynamics® Lab V, 1,000 mL, 40 g Filtration of up to 1,000 mL with 40 g of DE per unit Contents: 1 × 180E05---------E (12 × Sartolab® RF 1000; 0.22 µm; PES; single-packaged; sterile) 2 × SDLKG-20.0-----E (24 × pouches of filter aid, 20 g)	12	SDLV-1000-40E0-E

Accessory for All Sartoclear Dynamics® Lab V Kits

Filtration of 15 mL to 1,000 mL mammalian cell cultures

Description	Quantity of Units	Order No.
Sartolab® Multistation For hands-free parallel filtration of up to six samples	1	SDLC01

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Find out more
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