

Sartoclear Dynamics® Lab for Improved Efficiency of Cell Culture Clarification

For customers harvesting biomolecules from cell culture media, Sartoclear Dynamics® Lab provides a rapid alternative to conventional clarification. Utilizing a filter aid, customers can achieve complete cell removal and sterile filtration in a single step. By eliminating lengthy centrifugation and high consumable requirements, this allows them to enjoy significant time and cost reductions, without impacting quality or yield.

Challenges

- Limited throughput due to time consuming, multi-step process
- Risk of contamination due to pseudo-sterile filtration
- Lab space constraints and high plastic waste generation

Provided Solution

- Introduced single-step, centrifuge-free clarification process
- Efficient cell removal and true sterile filtration with Sartoclear Dynamics® Lab
- Demonstrated increased throughput with Sartolab® Multistation
- Reduced investment and operation costs for centrifuges, lab space and single use plastic waste

Case Profile

Company Type:

Mid-sized biotech company engineering biomolecules for diagnostics and research.

Related Molecule:

Recombinant antibodies.

Related Application:

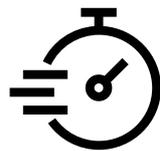
Harvest of antibodies from mammalian cell cultures with dynamic body feed filtration.



Before

Centrifugation and particle removal

- Batch Volume: 1,000 mL
- Centrifugation: 45 min
- Filtration: 3 x 0.45 µm
- Total process time: 1 hour



After

Sterile, dynamic body feed filtration

- Batch Volume: 1,000 mL
- Centrifugation: none
- Filtration: 1 x 0.22 µm + DE
- Total process time: 10 min

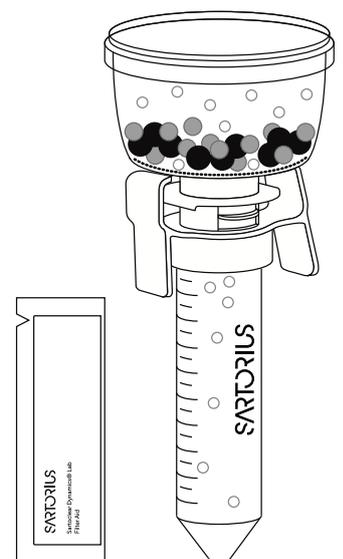
64% Savings

on annual costs, including instruments, consumables, lab space and labor

>4-Fold Increase
in throughput with Sartolab®
Multistation

80% Reduction
in number of single-use
consumables

Easy Integration
with no significant invest-
ments needed to implement
Sartoclear Dynamics® Lab



Total Cost of Ownership (TCO) Analysis

Application: Harvest of antibodies from mammalian cell cultures with dynamic body feed filtration.
Scale: Annual production volume of 3,000 × 1,000 mL cell cultures.
Sartorius: Cell culture clarification and sterile filtration with Sartoclear Dynamics® Lab kits and Sartolab® Multistation.

	Sartorius	Conventional	Savings
Total Material Cost per Year	€95,670.00	€209,440.00	€113,770.00
▪ Hardware	€740.00	€2,600.00	€1,860.00
▪ Servicing	€0.00	€1,000.00	€1,000.00
▪ Lab space	€430.00	€1,720.00	€1,290.00
▪ Consumables	€94,500.00	€204,120.00	€109,620.00
Total Labor Cost per Year	€5,000.00	€73,750.00	€68,750.00
Waste Disposal Costs per Year	€2,200.00	€4,400.00	€2,200.00
TCO per Year	€102,870.00	€287,590.00	€184,720.00
TCO per Batch	€34.29	€95.86	€61.57

Cost Benefits

- Saving two centrifuges valued at €20,000 each, assuming 10 years of use; and €500 annual service costs.
- Saving 2 m² of lab space usually used for centrifuges. Based on actual rental costs of €430 per m² per year.
- Saving consumables spending through a reduction from 3 to 1 filtration devices per batch and no ongoing requirement for centrifuge bottles. Based on actual consumable list prices.
- Saving on labor costs with no need for 750 × 45 min centrifugation runs per year and a 4 min filtration time saving per batch. Based on assumed labor costs of €100 per hour.
- Saving on waste disposal costs due to 80% reduction in the number of single use consumables needed.

Germany

Sartorius Lab Instruments GmbH & Co. KG
Otto-Brenner-Strasse 20
37079 Goettingen
Phone +49 551 308 0

USA

Sartorius Corporation
565 Johnson Avenue
Bohemia, NY 11716
Phone +1 631 254 4249
Toll-free +1 800 635 2906

 **For further information, visit**
www.sartorius.com