WHEATON®

CELLine™ Bioreactors

Multiuse Membrane Culture Flasks for Antibody and Protein Production

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CELLine™ Bioreactors

Less Work. Less Purification. More Titer.

WHEATON®

CELLine™ Bioreactors
Advanced Cell Cultivation Devices



In an effort to push science forward, WHEATON is manufacturing a new line of membrane driven flasks for high density cell culture. The flasks are designed to enhance small scale bio-production for antibody and protein generation. Conventional in vivo or in vitro cell culture methods can be laborious, may have low cell density and require significant purification. CELLine flasks address these three areas of limitation observed in static tissue culture flasks.

Handling Requirements — CELLine flasks reduce the handling requirement by requiring less consumable items and allowing longer run times due to their unique metabolite regulating upper membrane. This membrane allows for bulk media storage during operation to ensure constant and regulated nutrient access for the cells.

Cell Densities — CELLine flasks ensure maximum gas exchange by placing the gas permeable lower membrane directly next to the cells. This allows for optimal oxygen and carbon dioxide transfer for metabolizing cells.

Purification — The upper and lower membranes form an optimized compartment for cell proliferation. This allows for the reduced use of growth factors and hormones and concentrates the antibody and proteins of interest.

Benefits of CELLine Flask

- Multiuse flask
- High cell density and high product concentration
- Reduces operation time
- Decreases use of consumables
- Cost-efficient, space saving, and stackable
- No additional equipment required for operation

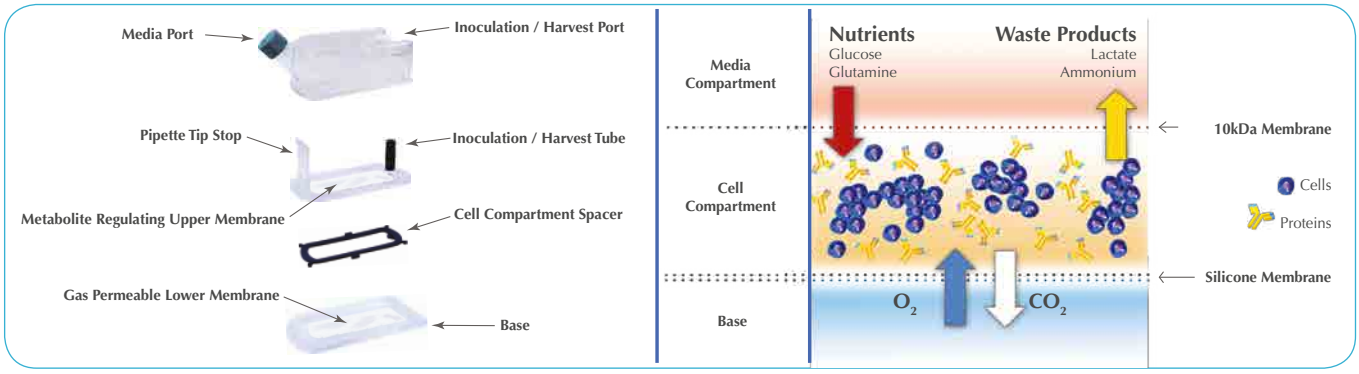
How does the CELLine Flask Work?

Media Compartment — The media compartment allows for bulk storage of cell culture growth medium. This reduces the media refreshing requirement significantly as the media compartment is fifty times the size of the cell compartment.

Metabolite Regulating Upper Membrane — The upper dialysis membrane has a 10 kDa cut off limit. This regulates the flow of metabolites to and from the cell compartment and retains all proteins in the cell compartment.

Cell Compartment — The cell compartment provides the ideal area to inoculate and achieve high density cultures. The compartment concentrates cells, their products, and limits the requirement for any exogenous growth factors.

Gas Permeable Lower Membrane — With static cultures, gas transfer rates can be the limiting factor in high density cultures. The CELLine flask places the cells directly against the gas permeable membrane to achieve optimal levels of oxygen and carbon dioxide.



Exploded view of device; unit is packaged fully assembled

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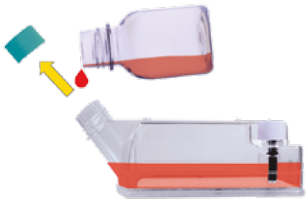
Basic Process Description



1. Warm nutrient medium and prepare upper membrane by adding a small amount of media to the media compartment.



2. Inoculate the cell compartment of the device.



3. Fill the media compartment.







4. Incubate in a CO_2 incubator for approximately 3-7 days depending on the optimum harvesting schedule.



5. Change media from the media compartment and/or harvest the cells from the cell compartment.

   a. The higher the cell density, the more protein production. Higher cell densities will require more frequent media changes.

   b. Recommended 3, 5 and 7 day feeding schedules are available. Schedules can be tailored to meet your production and timing requirements.



6. Incubate flask and repeat the media change/harvesting cycle until desired amount of protein is generated.

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Ordering Information

Cat. No.	Flask Type	Culture Type	Media (mL) Compartment Size	Cell (mL) Compartment Size	Qty/ Case
WCL1000-1	CELLine 1000	Suspension	1000	15	1
WCL1000-3	CELLine 1000	Suspension	1000	15	3
WCL1000AD-1	CELLine 1000-AD	Adherent	1000	15	1
WCL1000AD-3	CELLine 1000-AD	Adherent	1000	15	3
WCL0350-1	CELLine 350	Suspension	350	5	1
WCL0350-5	CELLine 350	Suspension	350	5	5

Additional Information

Seeding And Harvesting Densities	CELLine 350	CELLine 1000
Preculture (Viable Cells)	7.5×10^6	22.5×10^6
Inoculation Volume (mL)	5	15
Inoculation Concentration (Viable Cells/mL)	1.5×10^6	1.5×10^6
Harvesting Concentration (Viable Cells/mL)	$20\text{-}40 \times 10^6$	$20\text{-}40 \times 10^6$
Titer (mg/mL)	1 - 10	1 - 10
Antibody Yield per Month (mg)	20-200	60-600

DURAN GROUP
magic of precision

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