CELL CULTURE COMPANY

AcuSyst-Xcellerator™

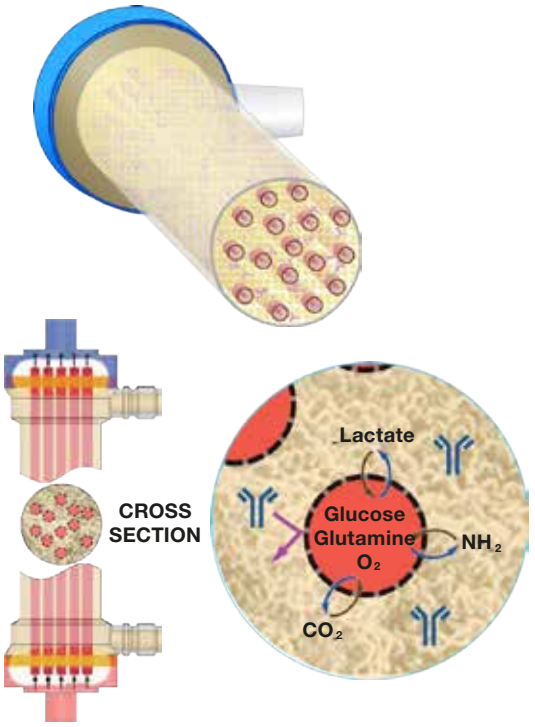
Flexible, pilot/production bioreactor:

- 500L fed-batch bioreactor equivalent, up to ...
- 1650L fed-batch bioreactor equivalent
- Various sizes of disposables provide flexibility
- Linear scale-up from C3's benchtop systems
- Used to produce an FDA-licensed injectable
- Diagnostic and therapeutic uses
- Produce mAbs, recombinant proteins or virus
- Culture suspension or adherent cell lines
- Simultaneously produce 1 or 2 products

Single-Use:

- Supplied sterile and ready to use
- No cleaning validation or expense
- Fast turnaround time

Fast acquisition cycle … <4 months from PO to completion of IQ/OQ and operator training



Hollow Fiber Advantages

Mother Nature knows this already: Capillaries efficiently perfuse dense tissues. Hollow fiber capillaries are semipermeable membranes (<60KDa MWCO). Nutrients and wastes freely exchange. Cells, growth supplements and products are retained. Products are simultaneously produced and concentrated. Growth supplements are needed in very small amounts to save $$$ and create purer supernatant than in other culture methods.

Protein Production and Concentration in the Bioreactor!

AcuSyst-Xcellerator™

Additional Features

Xcellerator automatically controls:

- pH
- Incubator temperature
- Refrigerator temperature
- EC cycling (tissue perfusion rate)
- Continuous or batch harvesting

Xcellator produces concentrated and optionally clarified supernatant. Go directly from bioreactor to purification.

Save Time & Money

Xcellerator uses two feed media:

- e.g., DMEM:F12 (no supplement)
- e.g., DMEM:F12 with 5% FBS or various commercial serum-free media

Use very little growth supplement!

	Maximizer	1,650L Fed Batch Reactor
Facility	Compact & rolls 100% CO_2, Standard electricity	Large skid, multiple gases, CIP, SIP, etc. Complexity
Seed Train	4L Inoculum Simple static culture methods	80L Inoculum Complex, expensive, Time-consuming
Media Costs Example	$66/gm mAb produced	$300/gm mAb produced
Downstream Process	260L of supernatant Supernatant is ready for purification	1600L of Supernatant Concentration, Clarification … Expense and time
Turnaround Expense	Runs last months Maximizes uptime Disposable = Rapid turnaround	10-day runs Frequent cleaning and startup costs Lower productivity

Hollow Fiber Means High Cell Density!

~$4x10^{12}$ viable cells uniformly distributed throughout the bioreactor

Specifications & Requirements

- 418 kg
- 18–26°C ambient
- 100° CO_2, 14–16 psi
- 134 cm W x 85 cm D x 203 cm H
- 100–230 VAC, 50/60 Hz, ~3000 watts
- Single phase

Support

You focus on the science. We'll focus on providing robust, easy-to-operate and low-maintenance bioreactors. Our bioreactors are successfully operated by technicians with routine cell culture experience, not chemical engineers. Our technical support assists customers with achieving their success. C3 provides training, IQ/OQ, field service and preventive maintenance for its bioreactors.

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