LYRIC BIO

Complex Human Therapeutics Manufacturing

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LYRIC BIO is building next-generation biomanufacturing with proprietary human tissue engineering technology

Executive Summary

- Several large therapeutic markets are still dependent on human donations: a high-overhead, limited, and unstable supply source.
- Lyric Bio spun out of Prellis Biologics to leverage their proprietary tissue engineering technology to develop high-density, tissue-mimicking bioreactors.
- Lyric's first bioreactors will mimic lymph node tissue, allowing for ultra high-density B cell culture (1-2 B cells/mL).
- These B cells can be stimulated to produce large quantities of diverse antibodies for a cost-efficient Ig product that matches the key characteristics of donor derived Ig therapies, a $15 B market.
- Lyric's process will alleviate dependence on donors ~10,000-fold, increasing supply, reducing costs 10-100x, and improving quality of Ig therapeutics.
- Lyric is raising $7 M to validate manufacturing processes through scale up and pre-IND analytical testing.

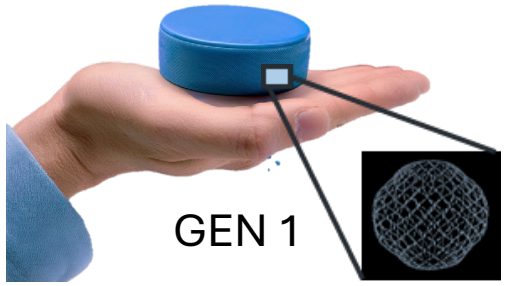
Lyric's Bioreactors Will Produce Donor Derived Therapeutics with Unprecedented Efficiency

By matching human tissue vasculature, we can unlock the efficiency of ultra high-density cell culture for unprecedented biomanufacturing efficiency in established high-value markets.

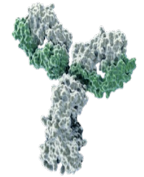
Human Body

3-5 B cells / mL

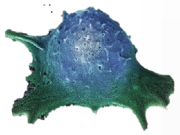
Lyric's Bioreactors



1-2 B cells / mL



Ivlg & Sclg
$15B



Stem Cells
$13B

Blood
$6B

A typical 20,000-liter bioreactor can hold a maximum of about 200 billion cells, at LYRIC BIO we can achieve densities that support 150-300 billion cells in 150 mL

Lyric Will Start By Reversing the Donor to Recipient Paradigm for the $15 B Immunoglobulin Market

~10,000-fold reduction in reliance on donors

Current Process

~7-10 donors for 1 Ivlg dose

LYRIC Process

~1,000 Ivlg doses from 1 donor

One Donor, One Bioreactor, Thousands of Doses

LYRIC BIO

B cells
(one donor)

Grow B cell
populations

Seed and expand
in a high-density
bioreactor

Stimulate B cells
to produce
immunoglobulin

Collect Ig
(est. >1,000 doses)

Est. 10x – 100x Lower Cost

Estimated industry costs for plasma collection vs Ig production excluding purification costs

Stabilize Supply

Est. 5,000 donors necessary to address total current US market

Ig is a $15 B Global Market Limited by Reliance on Plasma

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Reliance on human plasma donations leads to supply instability

High-overhead due to cost of collecting human plasma

High Cost

~$56,327- $277,119 per year per patient

Market Shortages

Market has faced repeated shortages over the last two decades

Quality Control

High variability in current donor derived process

Founding Team

LYRIC BIO

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10 years at large Pharma
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