



Industry: Blood Typing

Management:

Romain Desprat, PhD, CEO

Eric Bouhassira, Ph.D.,

Founder and President

Seeking to fill additional roles:

Chief Technology Officer

Chief Medical Officer

VP of Finance

VP of Sales

Board:

Seeking members

Scientific Advisory Board:

Seeking members

Number of Employees: 2

Finance:

Funding to CellPharmer, LLC:

Founder: \$10,000

Funding to Bouhassira lab

to produce lab-grown RBCs:

DoD \$3.5 million

NIH \$3.5 million

Financing Sought:

\$2 million to \$4 million through

SBIR/STTR grants or VC

IP:

Technology protected by 2

patents owned by A. Einstein

College of Medicine

Legal: TBD

Business Description / Company Background:

CellPharmer is a startup company focused on the commercialization of lab-grown red blood cells (RBCs) founded by Dr. Eric Bouhassira at the Albert Einstein College of Medicine, Bronx NY. The mission of the company is to produce RBCs for diagnostic and transfusion support that are universal or perfectly matched, and always available.

Market Opportunity / Unmet Need:

The \$1 billion reagent global reagent red blood cell (RRBC) market presents the most immediate commercial opportunity, particularly for rare phenotypes currently impractical for donor-based production. Existing RRBC panels suffer from genetic variability between batches due to donor diversity, leading to inconsistent antigen expression, increased operational costs, and testing delays.

Products / Services – Launched & Pipeline:

Our first product will be a specialized panel of four RRBCs **designed to prevent transfusion reactions** by resolving over 95% of complex transfusion cases, significantly enhancing antibody identification and compatibility matching for safer transfusions. This panel will complement existing offerings, providing added diagnostic precision addressing sickle cell disease and multiple myeloma patients. Our second product will be a 10-cell panel of genetically consistent, lab-grown RRBCs. This panel is designed to support comprehensive antibody identification in all allo-immunized patients. It **will improve reproducibility, decrease labor costs and facilitate automation** by resolving problems of reproducibility, antigenic coverage, and reliability of traditional donor-based RRBCs.

Commercial / Technical Milestones:

Backed by over \$7 million in NIH and DoD funding, our next steps toward FDA clearance include preparing and de-risking cGMP-compliant production, licensing required CRISPR technology, and securing regulatory approval. With a 6-week long 510(k) clinical trial planned for 2027, our technology is poised to revolutionize the RRBC market by delivering a scalable, standardized alternative to donor-derived RRBCs.

Competition / Competitive Advantages / Customer Benefits:

The global market for RRBCs is valued at approximately \$1 billion and is currently dominated by a handful of large multinational companies, including Bio-Rad, QuidelOrtho, Grifols, and Werfen/Immucor. CellPharmer's competitive edge lies in our ability to produce lab-grown RRBCs that are unattainable with current donor-based technologies. Unlike traditional methods, our platform enables the generation of cells with highly consistent antigenic profiles, optimized genotype selection, and indefinite batch-to-batch reproducibility. The ability to culture rare RBCs and create genotypically homogeneous cell panels represents a major breakthrough in reagent cell manufacturing and positions CellPharmer as a transformative player in this space.

Financial Forecast (Unaudited):

CellPharmer employs a two-step go-to-market strategy. First, we will introduce our specialized 4-cell panel of reagent red blood cells to reference blood banks and large hospitals. Once we've established a foothold in this high-value segment, we will expand our offering by launching our comprehensive 10-cell, genetically consistent panel to serve the broader blood typing community.

	2027	2028	2029	2030	2031
Revenue (in millions)	\$0.5	\$1.0	\$4.0	\$8.0	\$16.0
Growth Rate		2.0x	4.0x	2.0x	2.0x
Gross Profit	\$0.3	\$0.8	\$3.2	\$6.4	\$12.8
Gross Margin	66%	80%	80%	80%	80%