Elarex

November 2021



Nothing in healthcare has saved more lives than vaccines.

But they are not stable and must be refrigerated from factory to patient.

In developed economies

the cold chain required by today's vaccines... costs \$20B annually

For manufacturers

cold chain failures... cost the industry **\$35B annually**

In the developing world

90% of cold chain infrastructure... is **aged**, **broken or absent**

For children

cold chain failures.... leave the most **vulnerable patients unprotected**

In our livestock and pets

Herd vaccination is essential to protect... our **animals**, our **food**, and **ourselves**

For outbreaks

cold chain limitations in agriculture.... leave **everyone exposed**.

9

Our Mission: Enable biologic drugs & vaccines to escape the cold chain

The Company

Our Mission

Enable biologic drugs & vaccines escape the cold chain

Founded December 2019...*before* the pandemic

McMaster University Spin-out

Focused on commercializing vaccine stabilization technology

Capital Raised \$2M invested, supported by \$1.5M non-dilutive funding

Our Vision

Drugs & vaccines of the future won't need refrigeration

First Customer

Actively developing three thermostable formulations for products in development by a top tier vaccine manufacturer

Deep customer engagement

Laser focused on what will matter most in the future market

Reacted Swiftly

Invested in innovation to stabilize mRNA-LNPs as COVID vaccines came online with their extreme dependency on cold chain

Our Role

Partner with drug & vaccine leaders to help improve products

As featured in





Our Solutions

Elarex[™] PT120 Technology





Areas of Impact

Provisional patent filed

Viruses Vaccines &

Viral Vectors

Customer proprietary Phage Influenza Herpes Simplex VSV Adenovirus



Proteins \$250B Vaccines & Biopharmaceuticals

Customer proprietary Protein subunit vaccines mAbs Protein Therapeutics



mRNA-LNPs \$20B Vaccines & Genomic Medicine

Customer proprietary Model systems

BILL& MELINDA GATES foundation



ACS Biomaterials SCIENCE & ENGINEERING

Angewandte International Edition Chemie

CHEMBIOCHEM

nature



3 issued patents + divisionals, continuations

\$50B

Breakthroughs



Executive Team



Robert DeWitte, PhD Co-Founder & CEO



Vicki Ringelberg, CPA CFO



Jody Beecher, PhD VP R&D



Geoff Lumby, BSc Manager, Industry Engagement



Brent Lefebvre, BSc Director, Partnerships & Product Strategy



80+ years experience developing & commercializing life sciences technology



Our Investors & Board









\$2M equity financing raised

Board of Directors



Robert DeWitte, PhD Co-founder & CEO



Carlos Filipe, PhD Co-founder & Principal Scientific Advisor



Brad Badeau

Former President & CEO, Trimark SVP & CFO, Burgundy Asset Management Top 40 under 40, 1996







Business Model

Partner with leading companies to help them improve their products



Explore

Collaborative project to assess PT120 feasibility & impact.



Co-develop Integrate PT120 into customer's product design and manufacturing process.



Support

Optimization and assistance during customer's regulatory and launch



Commercialize Partner manufactures and sells their product

Growth

Add more development partnerships across multiple market segments

Cash

Service revenues and fees fuel growth and value creation

Value

Accumulate high value royalty streams



Competitive Landscape

Category	Company	Business Model	Limitations vis-à-vis Elarex
Vaccine Producers	Pfizer Sanofi Moderna AstraZeneca Takeda	Internal R&D projects aiming to improve stability	 Large organizations are cautious and move slowly Technology is often licensed from external sources
Mid-Size Competitors	Micron Biomedical Vaxess Technologies Vaxart VBI Vaccines Altimmune Inovio	Focused on releasing their own temperature stable vaccine	 Not GRAS excipients Proprietary delivery devices (eg: patches) Focused on internal vaccine projects
Start-ups	TFF Pharmaceuticals VitriVax Stablepharma Jurata Thin Film Ziccum Rapid Dose Technologies Nanoly Bioscience Oravax	Small, new companies, trying to commercialize a method of vaccine stabilization	 Not GRAS excipients Complex, expensive process



Stage	Foundation	Strength	Scale	Exit
When	2020	2021-2022	2023-2025	2025-2030
Objective	Successful foundation projects	Secure a strong beach- head in target markets	Build pipeline of high- value partnerships	Conclude acquisition by strategic buyer
Commercial	First customer secured	Product-Market Fit	Global BD operation	Enhance exit valuation
Operational	Virtual	Labs at McMaster	Autonomous	Acquisition ready
Capital	Pre-Seed \$2M Complete	Seed: \$10M 2022	Series A: \$20M 2023	Target exit valuation \$300-500M
Use of Funds	Build teamStrengthen IP estateInnovate mRNA/LNP	Advance technologyDeliver for customersIdentify singular focus	Adapt business modelFocus & scale operationPrepare for exit	



Milestones achieved

Stage	Establishing a Foundation	Building Strength
When	2020	2021-2022 (to date)
Customers	• First customer secured (viral vaccine, protein subunit vaccine, mRNA-LNP vaccine)	 Breakthrough delivered to customer (protein subunit vaccine) Technical engagement with majority of top-tier players Product-market fit exercise complete with clear priorities Actively exploring additional partnerships
Team	Technical team establishedBusiness Development leader on board	 Complete Leadership team on-board Brad Badeau added to the Board Technical team expanded Scientific Advisory team established
Technology	Process simplified	 3 patents issued 5 continuations, divisionals filed 1 new breakthrough invention (mRNA-LNP) 1 new provisional filed (mRNA-LNP)
Company	 Angel investment secured (\$0.2M) NSCERC I2I grant secured (\$0.2M) First revenue 	 \$2M investment including OCI MR125 IRAP grant to support protein-based applications SOPHIE grant to support virus-based applications BMGF grant to support mRNA-LNP breakthrough



Use of funds

Seeking \$10M Seed Investment

Customers	Establish and execute customer-driven programsDrive tech transfer into customer organizations
Team	Expand Business Development teamExpand Technical Team
Technology	 Drive further advances in technology Strengthen product-market fit Establish preclinical safety profile of formulations Strengthen IP estate globally Automate and streamline customer-driven projects Scale up manufacturing process
Company	Establish quality systemPrepare for exit



Summary

Merits

Customer engagement reduces risk

Rapid learning cycles and tight alignment with customer needs.

Capital efficient

Early revenue streams fuel the longterm strategic position

Multiple lines of business

Opportunities to pivot, double-down and/or partner to accelerate

Impact investment

Humanitarian, public health, environmental and economic payback

Recap

Opportunity

Serve a rapidly growing \$250B+ market by stabilizing biologicals, especially human therapeutics

Solution

Elarex PT120[™] Formulation Technology

Value

Targeting \$750M+ in annual royalties. >\$2B value.

The Ask \$10M Seed round of equity financing.

