Cellastra

Pioneering Targeted Scar Prevention at Wound Sites

Pulmonary Fibrosis | Burn Injuries | Surgery

cellastra.com

Our Mission

Novel gene vector treatments that produce anti-scarring peptides at sites of tissue injury after burns, surgery and respiratory infections

Our Focus

- Expression of human lactoferrin-related peptides, part of the human innate immune system
- Primary peptide is a 25-amino acid subpeptide (ensereptide)
- The vector contains the gene sequence for ensereptide linked to a human FC IgG tag to prolong its half-life

Cellastra - key success factors

Proven executives with long industry track records

Proven efficacy of peptide on root causes of tissue damage and scarring

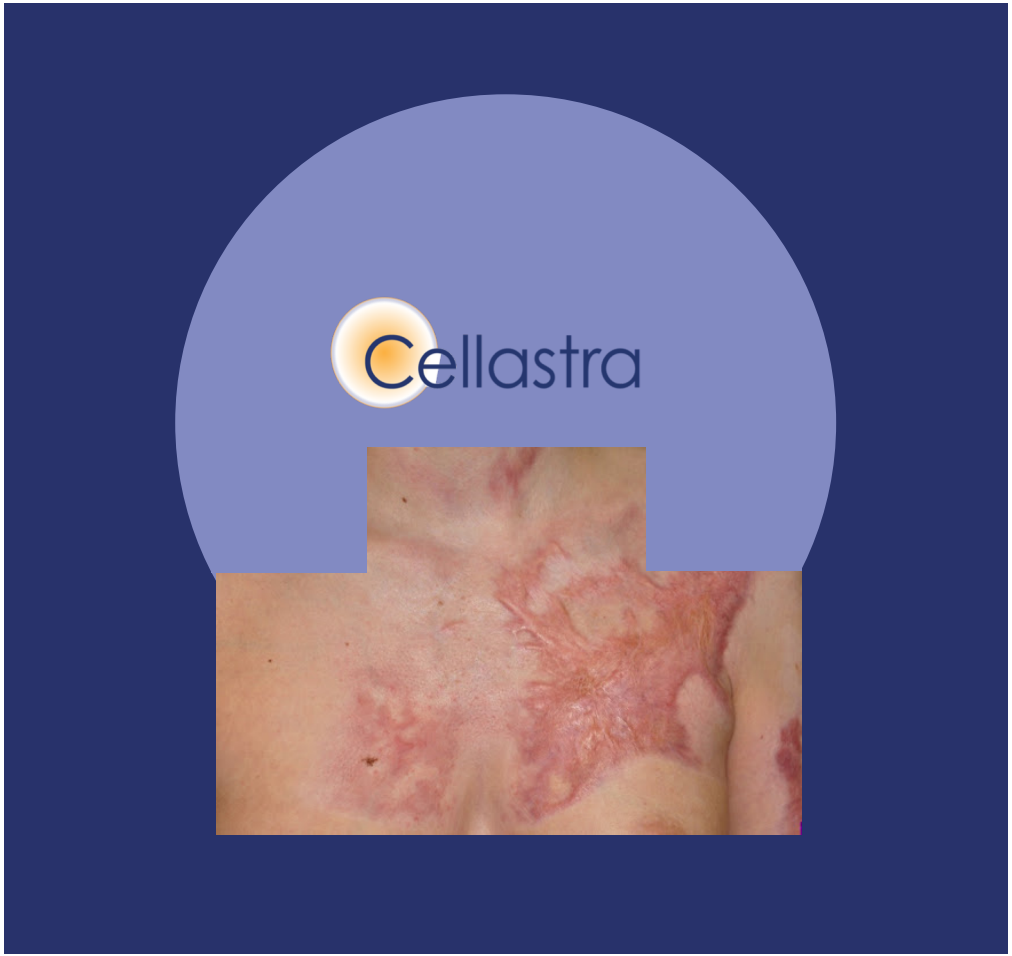
Promising prospects - near-term and long-term

Profoundly unmet medical needs in tissue injuries

Proven concept: transfection with gene vector leads to peptide expression in vivo for months

Proprietary gene vectors and peptides

Proven safety of lactoferrin subpeptides and viral gene vector



Scar prevention: Global unmet needs

PULMONARY FIBROSIS

- After Respiratory Infections
  - COVID 19
  - RSV
  - Influenza
  - Other pneumonia

DERMAL SCARRING

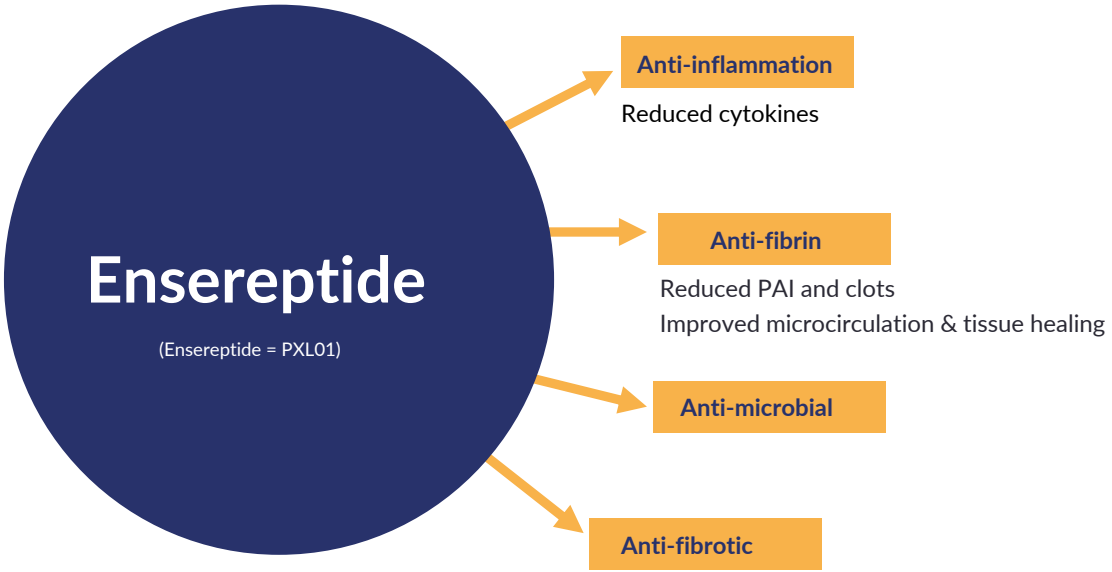
- After Burn Injuries
- Post-Surgery

BURNS

- 400,000 fire or burn injuries annually in the US, with 30,000 hospitalizations and 10,000 requiring surgery

NO EFFECTIVE DRUGS ON THE MARKET!

Ensereptide targets root causes of tissue injury & scarring



Nilsson E et al, Ann Surg 2009;250(6):1021-8

Basis for Cellastra development program

Anti-adhesion efficacy of ensereptide in hyaluronic acid

- Rat model of intestinal abrasions (Nilsson et al., 2009)
- Rabbit digit model (Hakansson et al., 2012)
- Human hand surgery (Wiig et al., 2014)

AAV6.2FF Gene Vector compared with natural AAV6

- Lower immunogenicity
- Higher transgenic expression in muscle (>100-fold) and lung (49-fold) at 24 hours

(van Lieshout et al., 2018)

- Robust long-term expression of AAV6.2FF-ensereptide-Fc in mice following single intramuscular administration

(Kulmala et al., 2020)

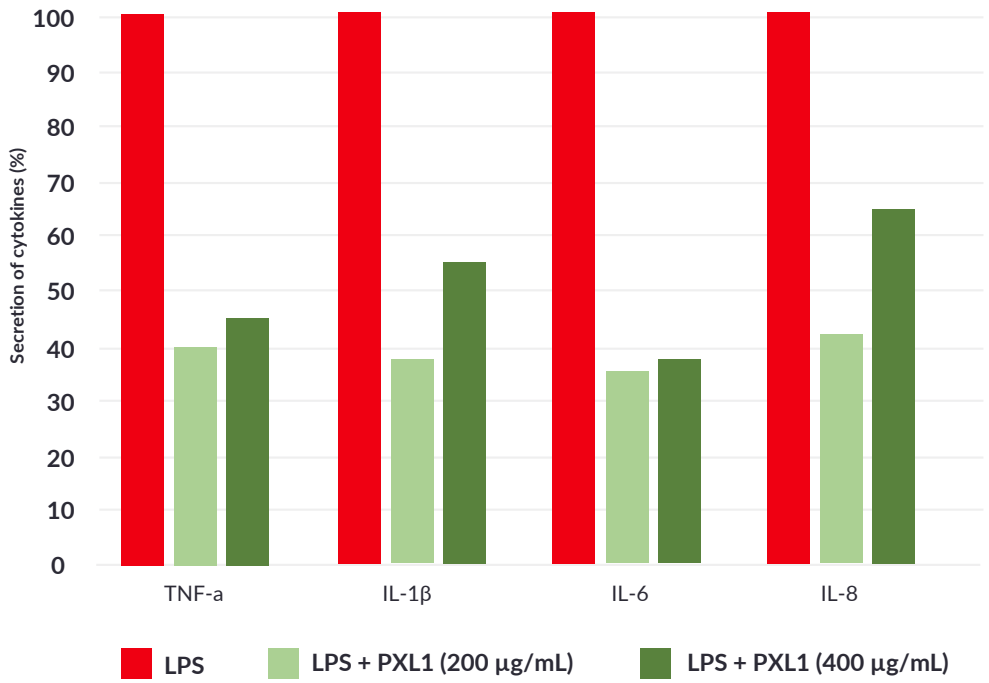
- Acute toxicity (mice, sheep) and chronic pharmacology studies (sheep) support safety of AAV6.2FF capsid

(Rghei et al., 2021)

AAV = adeno-associated virus; number refers to serotype (e.g., 6)

Ensereptide mitigates inflammation in vitro

40–60% reduction of cytokines

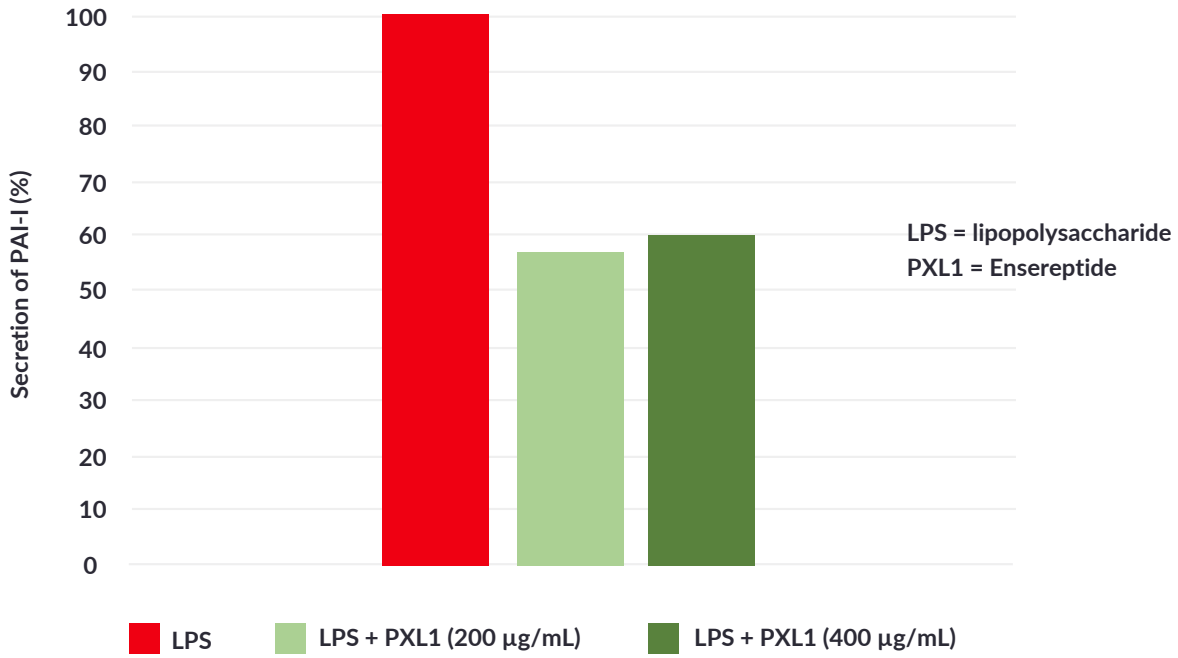


LPS = lipopolysaccharide
PXL1 = Ensereptide

Nilsson E et al., Ann Surg. 2009;250(6):1021-8

Ensereptide mitigates fibrin formation in vitro

40% Reduction of Plasminogen Activator Inhibitor (PAI)



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Ensereptide has antimicrobial effects in vitro

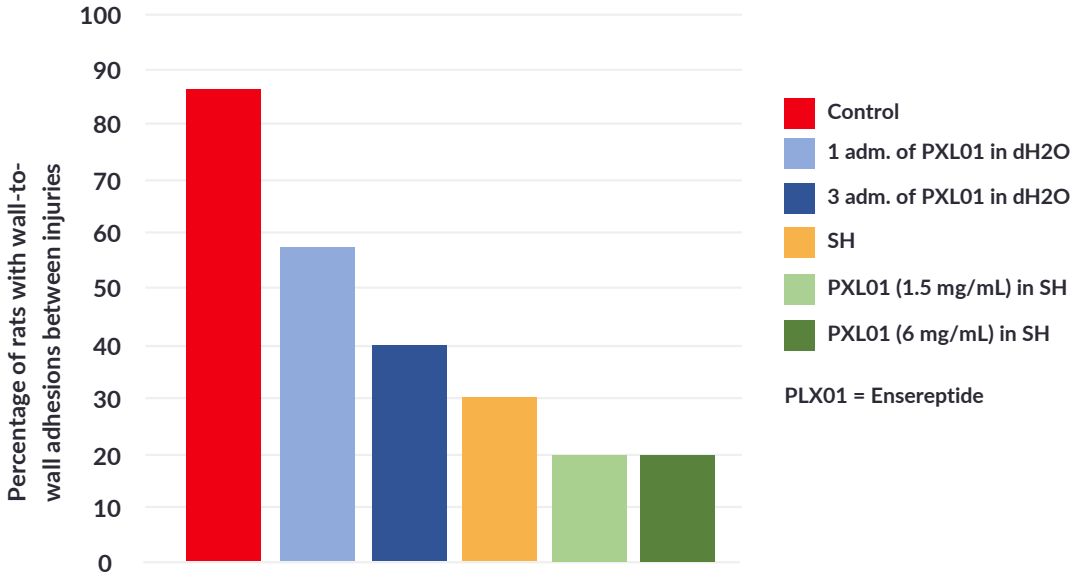
Ensereptide (PXL01) is 40-80 X more potent antibacterial than lactoferrin in vitro

	Escherichia coli MMC 99%; µg/mL	*Staphylococcus aureus MMC 99%; µg/mL*	*Pseudomonas aeruginosa MMC 99%; µg/mL*
PXL01	12.5	12.5	25
Lactoferrin	>1000	>1000	>1000

(Nilsson E et al., Ann Surg. 2009,250(6):1021-8.)

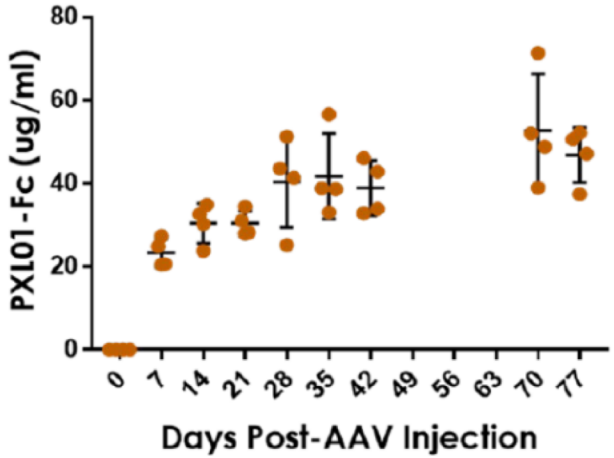
Ensereptide anti-scar/adhesion effect (rat)

- >75% reduction of # rats with extensive adhesions
- Sustained peptide levels for 48 hrs. with SH (= sodium hyaluronate formulation) compared to distilled water (dH2O)
- No safety concerns



Robust expression of Ensereptide (in mouse)

- Robust expression in mouse plasma until sacrifice on Day 77
- Intramuscular admin. of encoded vector for ensereptide (PXL01)
- Fc (human IgG constant domain) tag added to the gene construct
  - Enables quantification expression
  - Prolongs half-life in plasma



Balb/c mice were intramuscularly administered 1x10^10 vector genomes of AAV6.2FF expressing PXL01 fused to the Fc domain of human IgG1 (PXL01-Fc). Plasma levels of PXL01-Fc were measured over time until the **experiment was terminated at 77 days post AAV-administration.**

New patents
+ freedom to operate

Oct 20, 2020 (Univ. of Guelph)

A: US patent 10,806,802 B2

- Also allowed in Canada
- Licensed from U. of Guelph

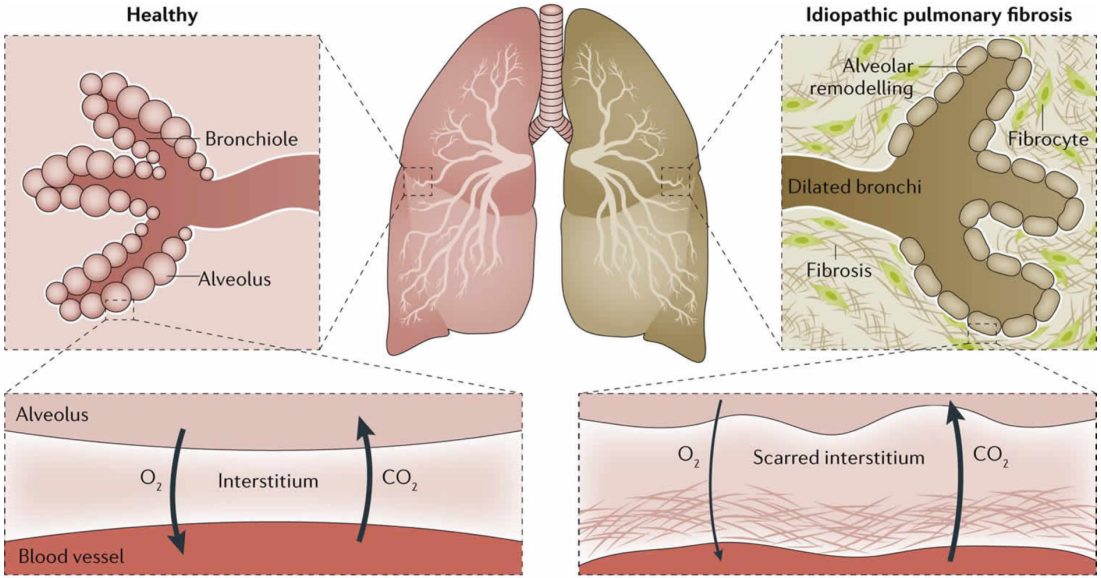
Feb 6, 2024 (assigned to Cellastra)

B: US Patent 11,891,429 B2

A+B combined cover

- Composition of matter
- Broad range of recombinant vectors expressing lactoferrin and subpeptides
- Multiple uses and routes of administration
- Freedom to operate

Fibrexa for mitigation of respiratory infections



FIBREXA is a formulation for inhalation by high-risk patients e.g. elderly or other patients with risk factors for developing long-term complications with fibrosis after respiratory infections (eg. Influenza, RSV and COVID-19).

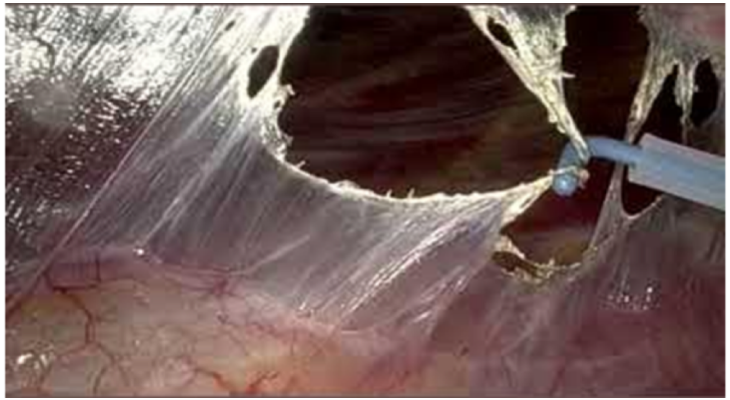
Scarlexa to prevent scarring or adhesions after surgery

For prevention of scarring or adhesions after surgery, Scarlexa is applied before wound closure or injected subcutaneously into the wound area.

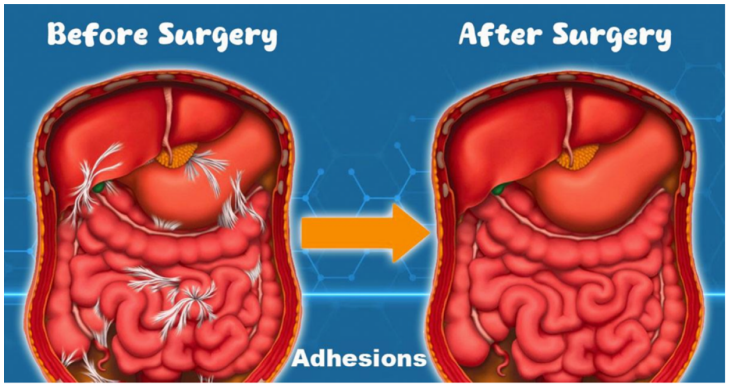
Shown is adhesions of the lung (a).

Surgery is often used to remove adhesions (b).

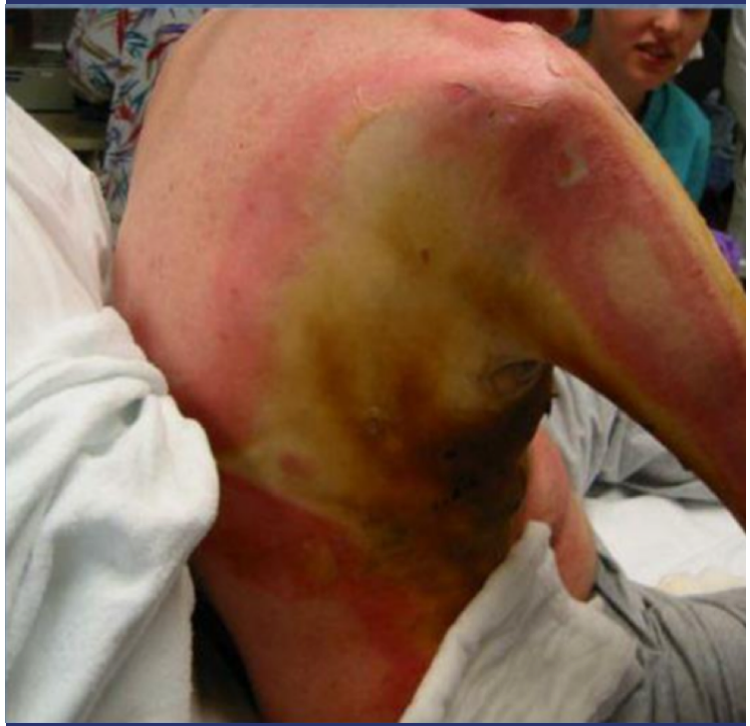
Treatment with Scarlexa prevents the return of adhesions.



a



b



Scarlexa for burn injuries

- Burn Injury Indication would be explored by a Swedish Consortium
- In vitro treatment of keratinocytes (and other skin cells) after collection from burn patient and expansion in cell culture
- Production of ensereptide-linker-Fc by transplanted keratinocytes would decrease scarring in treated burn wounds
- Clinical studies may be funded by government (US, Sweden, EU/EC)
- Great humanitarian & military interest
- Cost of burn care >$18 B/year in US alone

Core Team & Advisors

Karl Mettinger, MD, PhD

Chairman & CEO

- 35+ yrs. biotech exp
- Kabi Pharmacia,IVAX Supergen, Oncolytics, Pharmacyclics
- 3 multi-BN$ exits
- Karolinska Institute
- Co-Founder/President Swedish Stroke Society

Sven Andreasson, MSc

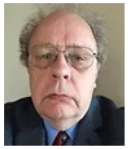
Vice Chairman

- 40 yrs. exp. incl leadership positions Kabi, Pharmacia
- Active Biotech, Isconova, Novavax,

Vinod Kumar, MD

CMO, EVP

- 30 years exp from U. Illinois, U Miami, Lilly,
- Novartis, Section Head/Global Program Medical Director



Henrik Kulmala, PhD

EVP Product Dev/Regulatory

- 35+ yrs. exp
- Marion Merrell Dow, Fujisawa, Genix
- 75 drugs (INDs,NDAs, BLAs)

Brad Thompson, PhD

CTO, Chair SAB

- 35+ yrs. , incl BIOTECanada
- CEO Oncolytics, Wyvern, Kickshaw Ventures
- Inventor of several gene therapy patents

Daniel Quintero, Esq

General Counsel, Secretary

- 20+ yrs. incl Founding Partner Prometheus Partners LLP
- Sony Optiarch / Electronics

Bruce Phillips CPA

CFO

- 30+ yrs. exp incl Arthur Young, HPC, Xero, Aprio

Kent Persson, PhD

Co-Founder, Advisor

- 25+ yrs. exp. incl UCSF, Bio-Rad
- Octapharma
- AstraZeneca

Emma Ye, MD Cand

Scientific Advisor, Comms

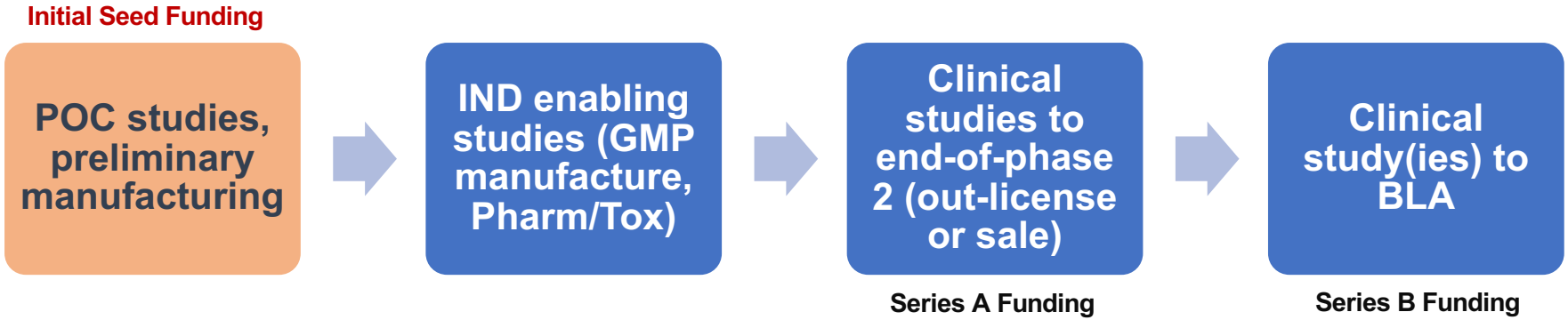
- Vanderbilt University
- UC Berkeley

Prof Christopher Evans, PhD

Advisor, SAB

- Prof of Orthopedics at Mayo Clinic
- Head of the Musculoskeletal Gene Therapy Research Laboratory

Cellastra Funding – 4 stages



POC = Proof of Concept; **IND** = Investigational New Drug exemption **GMP;** = Good Manufacturing Practice; **BLA**= Biologics License Application

Cellastra Priorities

Step 1 - POC

- Secure initial funding for proof of concept (POC) studies **$1 million**
  Q3 2025
- Conduct POC in vivo and in vitro studies to define mechanism of action
- Define indication(s) to be pursued initially and later

Step 2 – to IND

- Secure funding to complete an IND submission **$4.8 million**
  Q4 2025
- Start preliminary GMP manufacturing and GLP Pharm/Tox
- Submit an IND for initial indication
- Manufacture a Phase 1 GMP batch

Step 3 – IND Opened

- Initiate first-in-humans study **$1.3 million Q1**
  2026

Operational and indirect costs not included

Budget to IND

Univ. Of Guelph manufacturing and testing	**$100,000**
Manufacturing engineering batch	**$350,000**
Nonclinical POC studies	**$203,000**
Material characterization	**$ 85,000**
POC SARS-CoV-2 in vivo study	**$115,000**
Potency and gene product assays	**$150,000**
GMP Manufacturing of vector:	**$3.5 million**
20 L to 50 L initial batch	
Formulation and delivery system development:	**$300,000**
Pharm/Tox studies:	**$1 million**

Cellastra
Value Proposition

- Proven management team
- Potentially revolutionizing new treatment paradigm:
  Encoding scarless healing at injury sites
- First-in-class proprietary gene vector, shown to be
  safe and active in pharmacology-toxicology studies
- Proof-of-Concept established for peptide in animals and clinical
  Phase 2, double-blind, placebo-controlled, study (n=138)
- Near-term exit opportunity

Forward Looking Statement

- Certain information set forth in this presentation contains “forward-looking information”, including “future oriented financial information” and “financial outlook”, under applicable securities laws (collectively referred to herein as forward-looking statements). Except for statements of historical fact, information contained herein constitutes forward-looking statements and includes, but is not limited to, the (I) projected financial performance of the Company; (ii) completion of, and the use of proceeds from, the sale of the shares being offered hereunder; (iii) the expected development of the Company’s business, projects and joint ventures; (iv) execution of the Company’s vision and growth strategy, including with respect to future M&A activity and global growth; (v) sources and availability of third-party financing for the Company’s projects; (vi) completion of the Company’s projects that are currently underway, in development or otherwise under consideration; (vi) renewal of the Company’s current customer, supplier and other material agreements; and (vii) future liquidity, working capital, and capital requirements. Forward-looking statements are provided to allow potential investors the opportunity to understand management’s beliefs and opinions in respect of the future so that they may use such beliefs and opinions as one factor in evaluating an investment.
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