

ExCulture

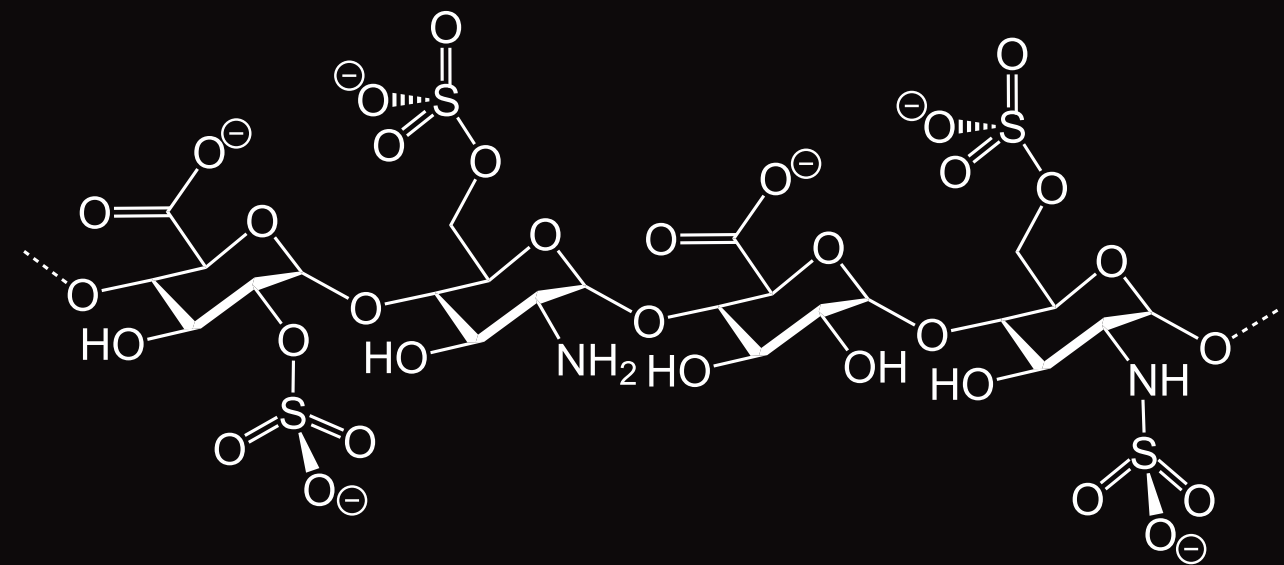
**Animal-free, bio-based,
alternative heparin**



Aisling Foley
Co-founder (CEO)

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Heparin - the world's most common blood thinner



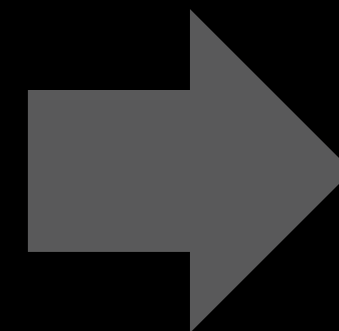
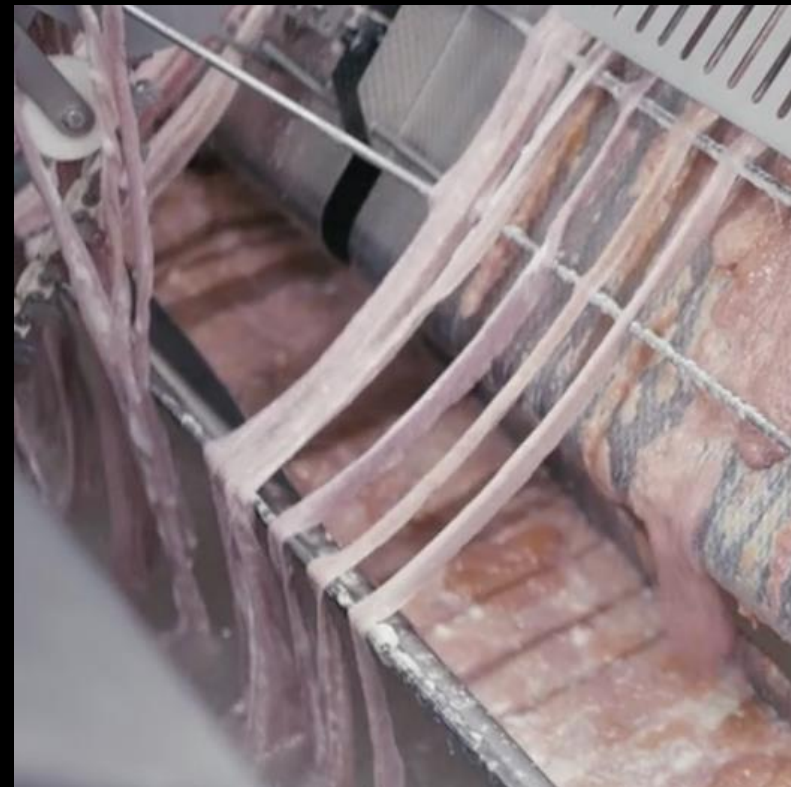
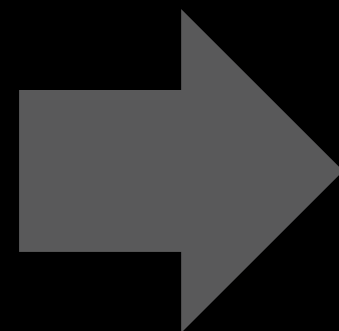
- Heparin is used by approximately **140 million patients/year (1)** for:

- Cardiovascular disease
- Surgery
- Hemodialysis

(1) [1/3 of global yearly hospitalised patients, WHO](#)

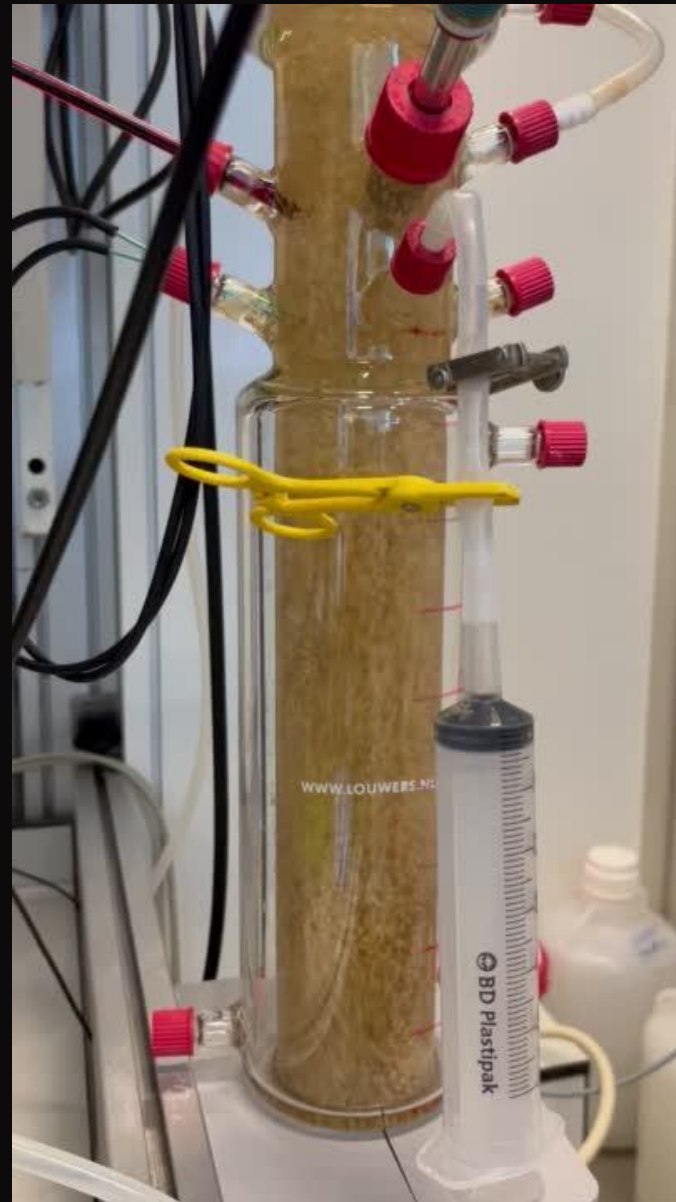
Current heparin supply

- Global shortage since 2017
- Reliance on animal sources:
 - 1 billion pigs/year
 - 60 % global dependency on China
- Epidemics e.g. African Swine Fever
- '07/'08 contamination crisis



Our fermentation bioprocess

Fermenter



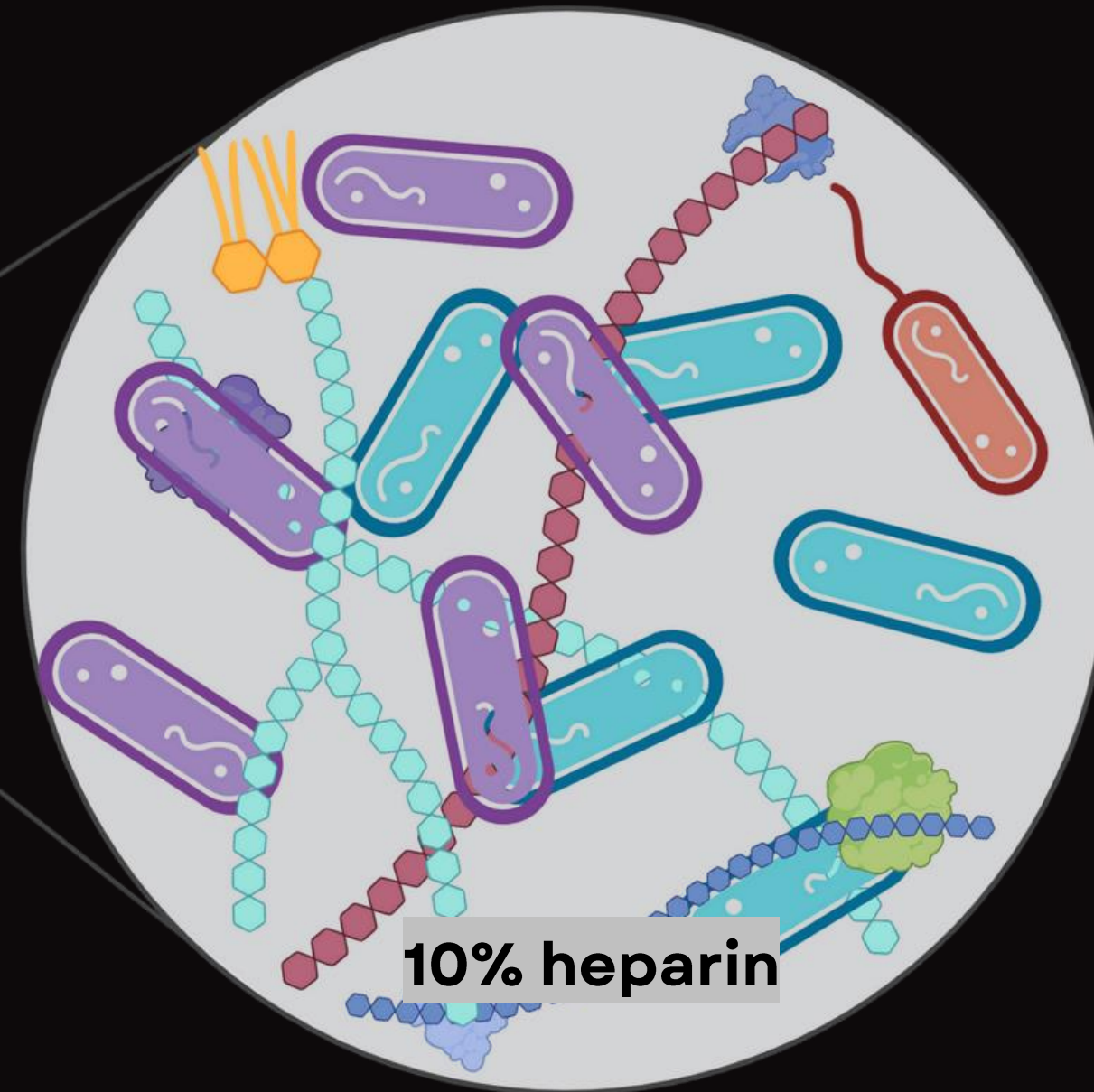
Why is ExCulture's solution revolutionary?

- **Patented innovation:** [WO2020085903](#)
- **Controlled process:** precise, animal-free manufacturing
- **10x greater purified yield:** Significant efficiency increase over porcine heparin production

Our fermentation bioprocess




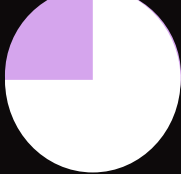
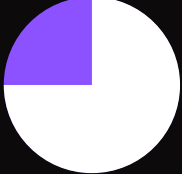



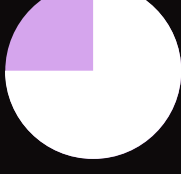




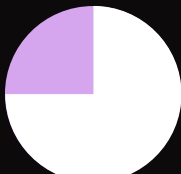




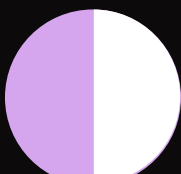
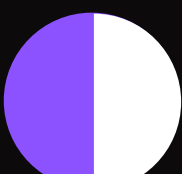
Microorganisms/Glycoconjugates

- Aerobic granules containing microorganisms
- Fed with nutrients to select for strains that produce glycoconjugates like heparin.
- The current purity is 50% - ongoing development of a purification process

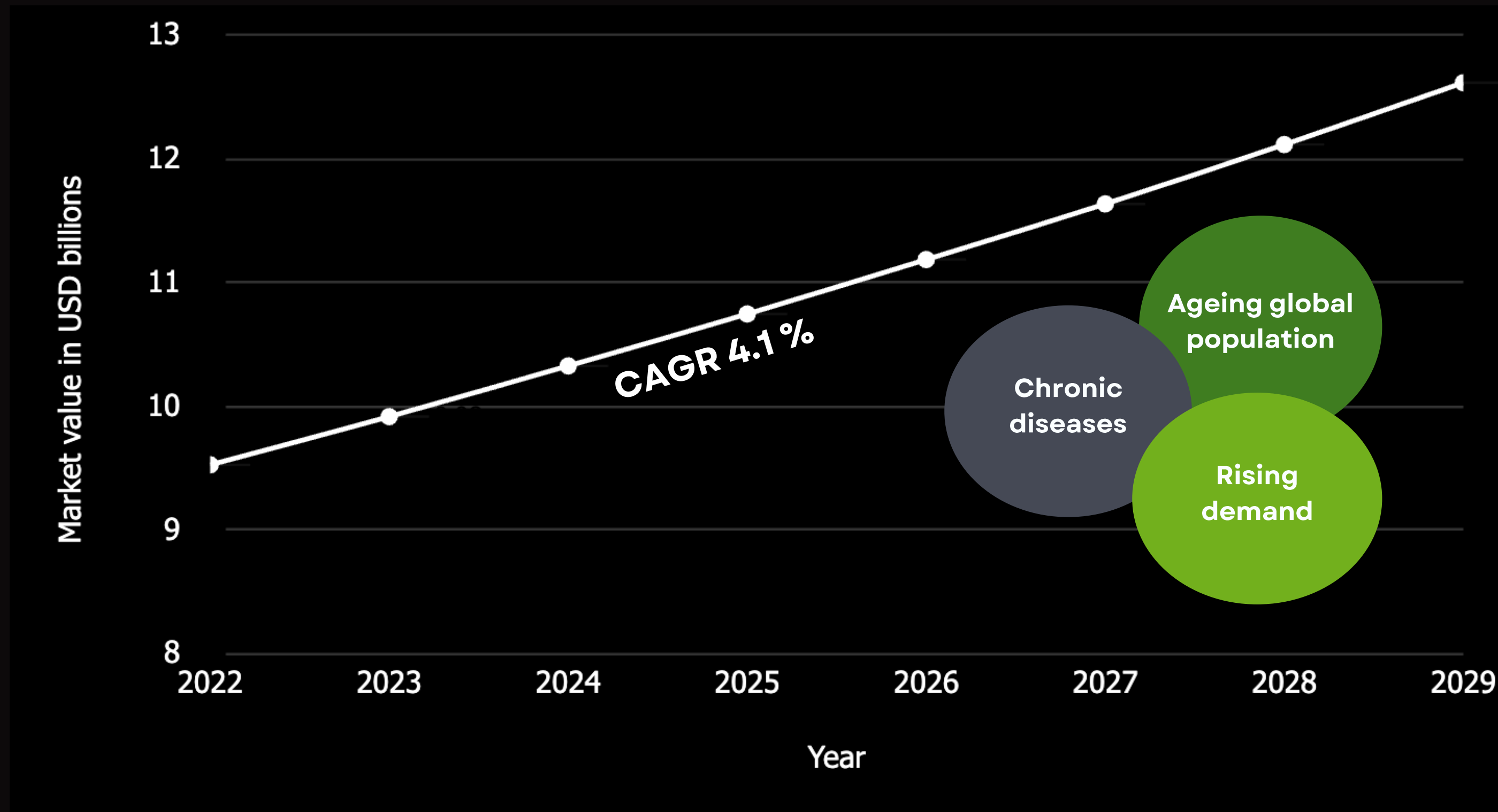


Competition

Chemo-enzymatic

Selection criteria	ExCulture	Pig heparin	Optimvia	GLYCAN THERAPEUTICS	Bovine heparin
Security of supply					
Scalability					
Cost-effectiveness					
Simplicity of production/processing					

Global heparin market already totals \$10 billion



Our team



Aisling Foley
Co-founder (CEO)
MSc Chemistry & Business



Ilaria Poledri
Co-founder (CSO)
MSc Biotechnology & Business



Jisk van der Meer
Fermentation Scientist
MSc Life Science & Technology



Guus Scheefhals
Management Advisor
MSc Pharmacy

Our Advisors



Professor Irwin Reiss
Medical Advisor
Erasmus MC



Associate Professor Yuemei Lin
Scientific Advisor
TU Delft



Professor Mark van Loosdrecht
Scientific Advisor
TU Delft



Jan-Willem Eleveld
Commercial Mentor
Founder Norman Health



Ronald Eimers
CMC Consultant
Former CMC Director Microos

2022

2023



Venture Challenge



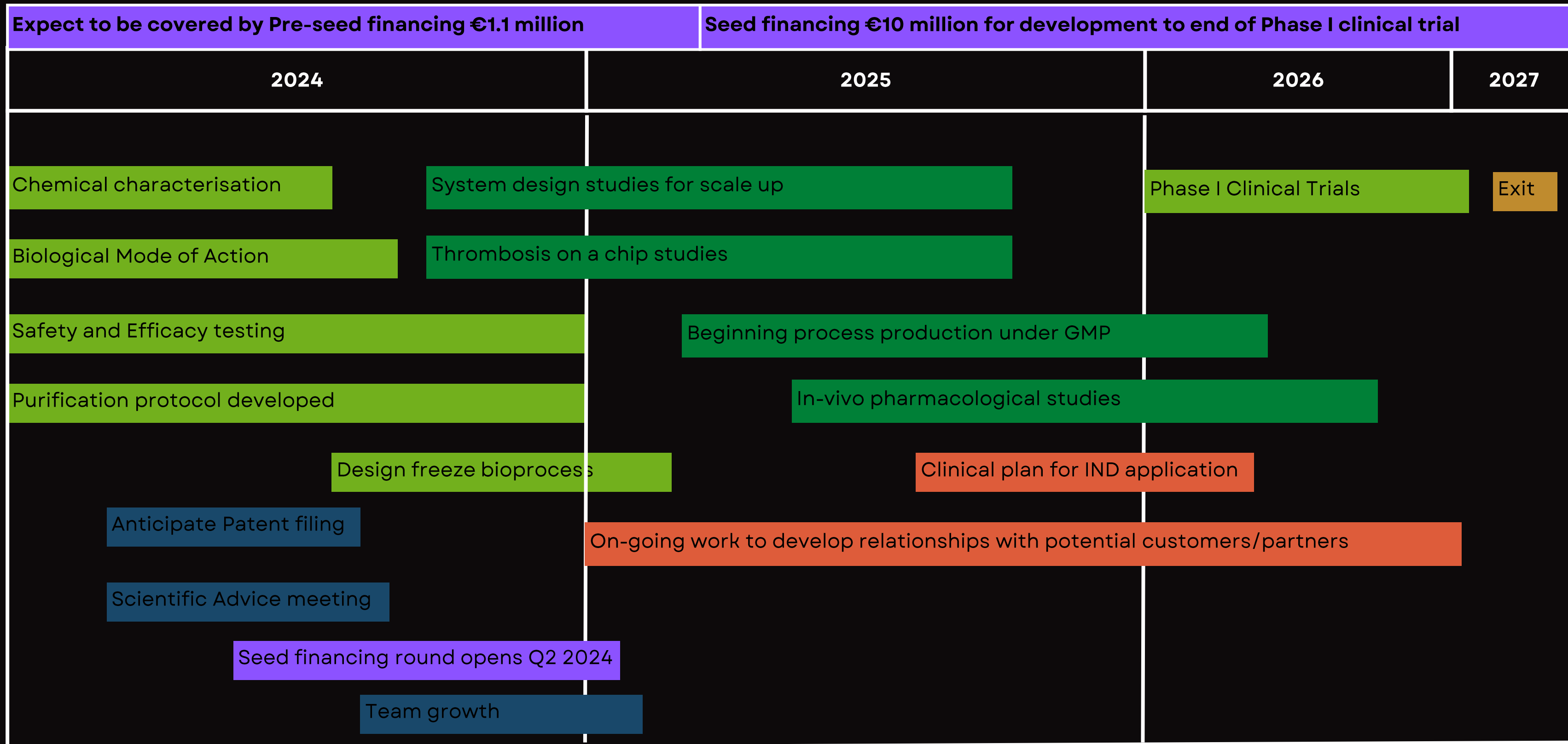
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Business plan roadmap



ExCulture

Animal-free, bio-based alternative heparin



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