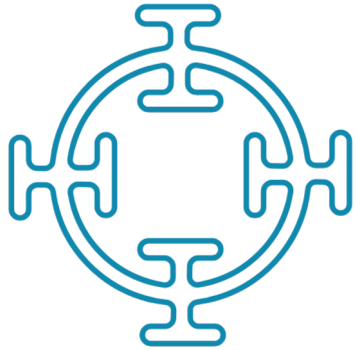
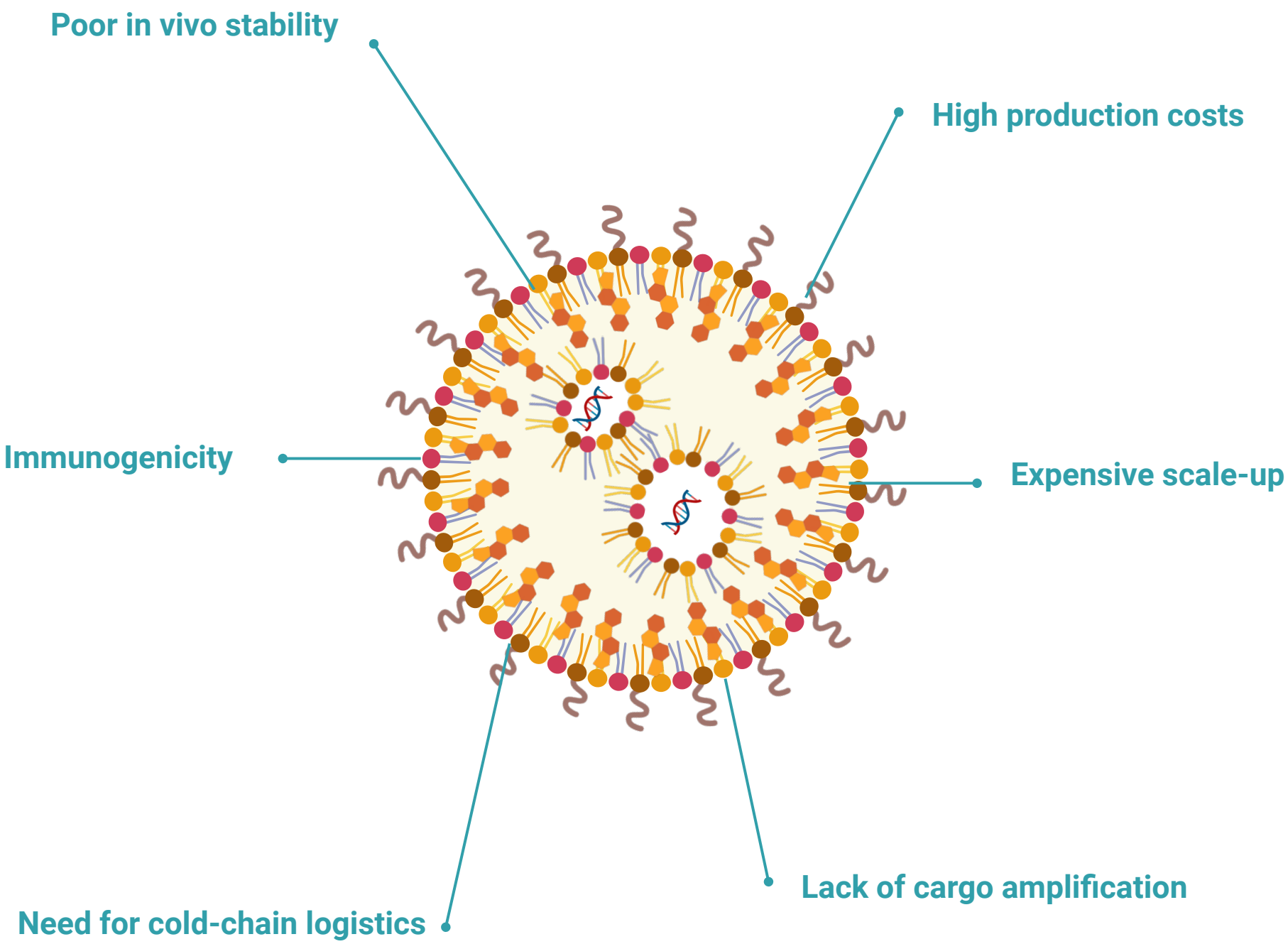


Amplicon Therapeutics

Novel platform for enhanced mRNA delivery.

The problem

Current limitations of therapeutic mRNA technology



After pandemic, therapeutic mRNA market has grown exponentially. However, serious limitations of delivery systems employed by the key players create a business opportunity to develop a new solution addressing the demands of this rapidly expanding market. We aim to disrupt the market with cheaper and more stable mRNA delivery vector tailored to address the limitations of currently employed systems.

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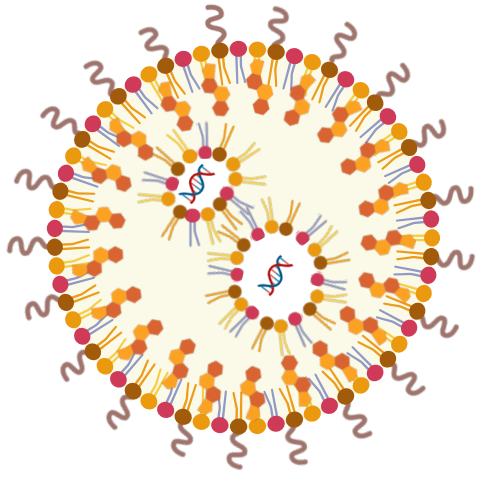
Solution

Phage platform for precise delivery of the therapeutic mRNA



LNPs

Phage vectors

Thermostability	Poor	High
***In vivo* stability**	Poor	High
Delivered mRNA amplification	None	Replication of the delivered mRNA within the capsid
Manufacturing cost	Medium	Low
Scale-up complexity	Demanding scale-up	Simple to scale-up

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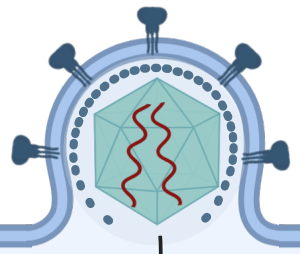
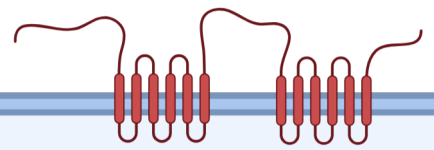
Product

Hybrid phage vector as novel platform for mRNA delivery

We utilise in-house designed hybrid phage vectors modified with cell membrane fusion and endosomal escape mechanisms to enhance their transduction efficiency. Direct mRNA export to the cytoplasm, proceeded by its amplification, eliminates the need for nuclear import mechanisms. Our phages can export three different mRNA molecules simultaneously.





Transmembrane localisation
-suitable for vaccines development.

1

2

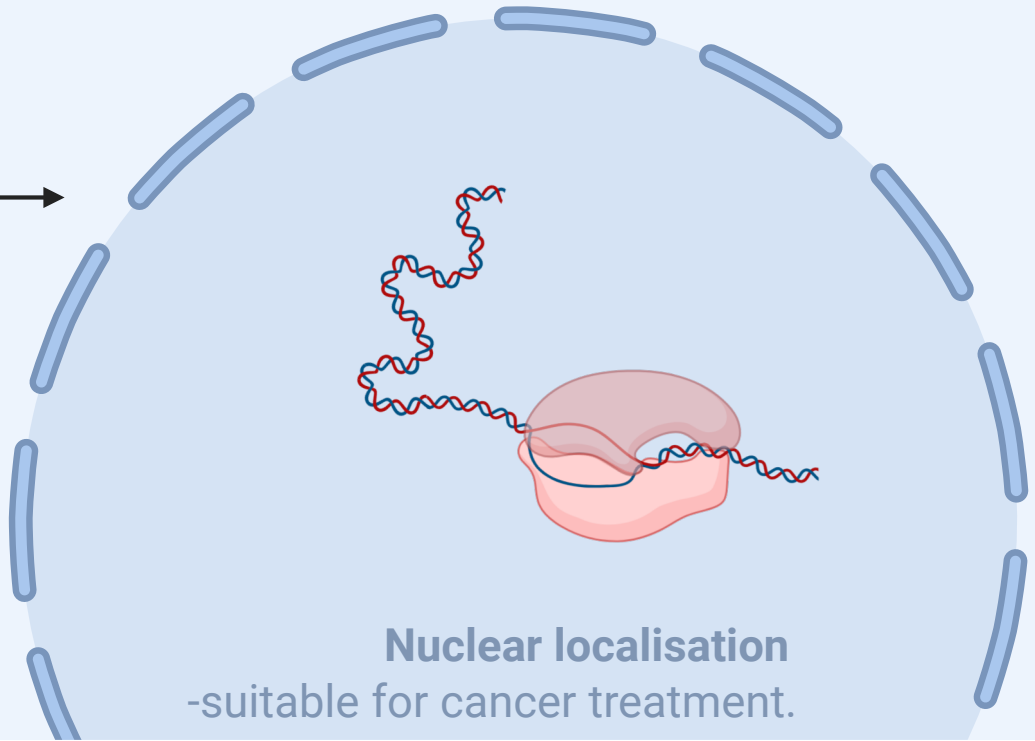
3

mRNA

Cytoplasmic localisation

-suitable for rare and infectious diseases treatment.

4



1

Amplification and export of the delivered mRNA.

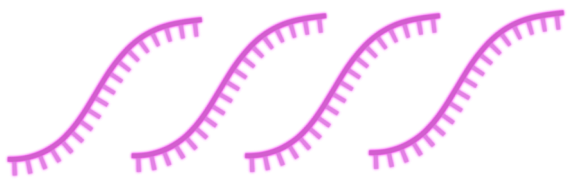
2 3 4

Designed to deliver 3 different mRNA molecules, phage particle allows several different cellular localisations of the therapeutic proteins.

Value proposition

Enhanced mRNA delivery and amplification.

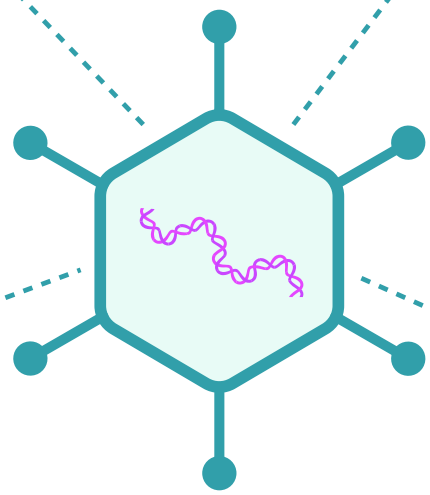
Delivered mRNA amplification



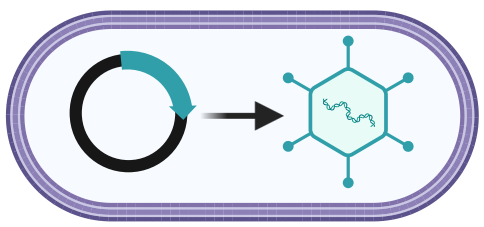
allows dose-reduction.

Improved stability

elimination of cold chain logistics costs.

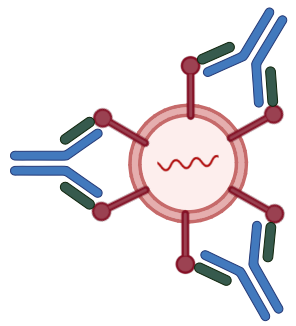


Cost effective manufacturing platform



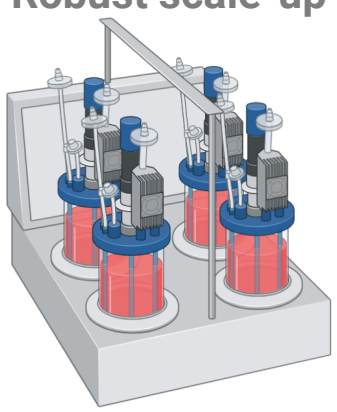
reduces the initial investment.

Decreased immunogenicity



reduces the risk of adverse effects.

Robust scale-up



reduces the operational costs during expansion.

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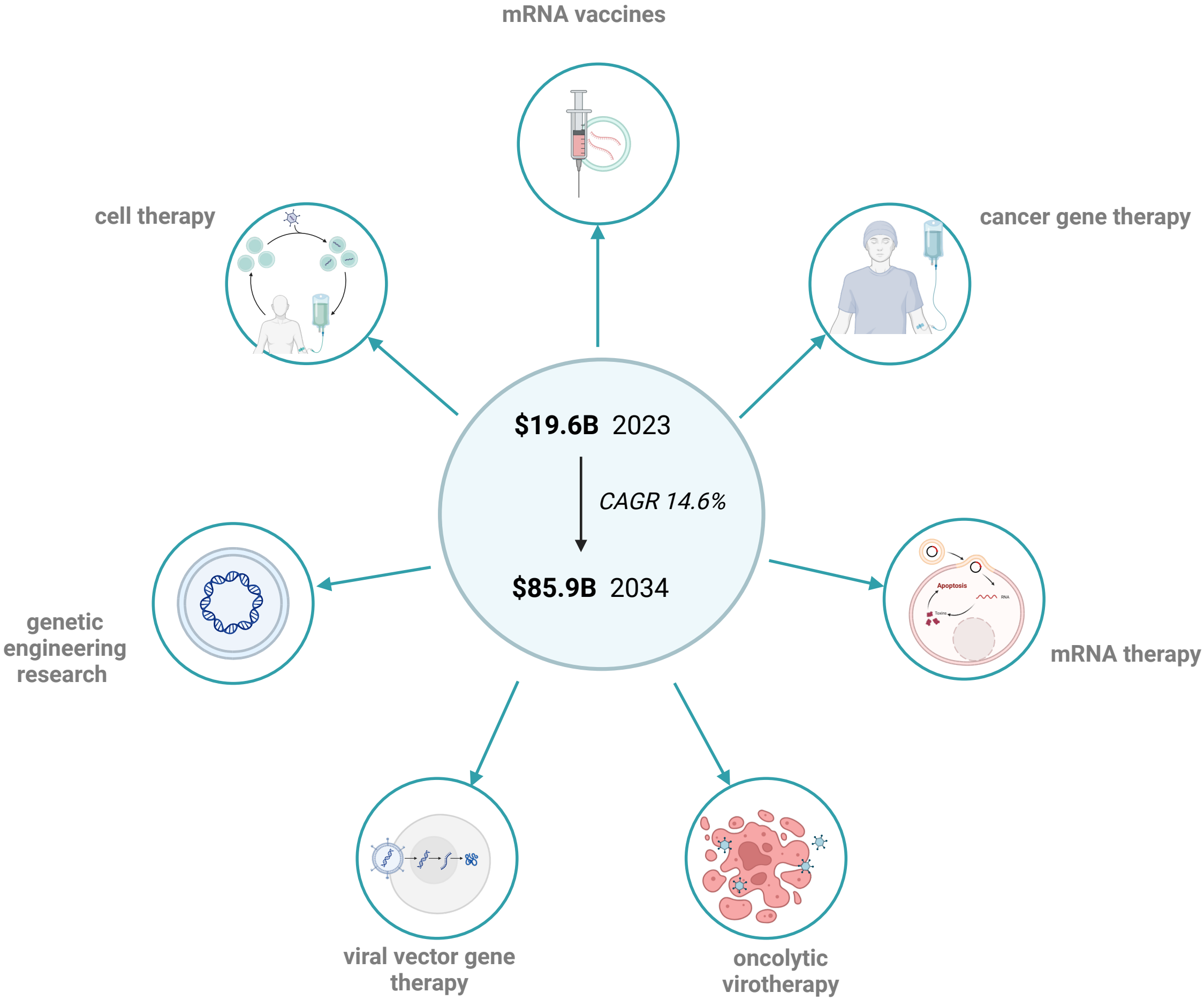
Market

Expotenial growth of the therapeutic mRNA market



Based on: *mRNA Vaccines and Therapeutics Market (mRNA Type: Nucleoside-modified mRNA, Unmodified mRNA, and Self-amplifying mRNA; and Type: Prophylactic and Therapeutic) - Global Industry Analysis, Size, Share, Growth, Trends, and Forecast 2024-2034*

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Competition

Competitive advantage via enhanced delivery platform

moderna — proprietary lipid nanoparticles

RNA-lipoplex formulation — BIONTECH

CUREVAC (the RNA people®) — Customized 5' and 3' mRNA UTRs

lipid-mediated delivery system - LUNAR® — ARCTURUS therapeutics

exploRNA THERAPEUTICS — 5' CAP modifications

Currently developed innovations focus on chemical modifications of LNPs and mRNA. Thus, they typically don't address the need for more targeted delivery and lower production costs. Our delivery vector is designed to be cheaper to produce and more stable than systems available on the market. Moreover, bacterial manufacturing platforms—like ours—are relatively easy to scale up and commercialize. Another advantage of the designed platform is amplification of the delivered mRNA.

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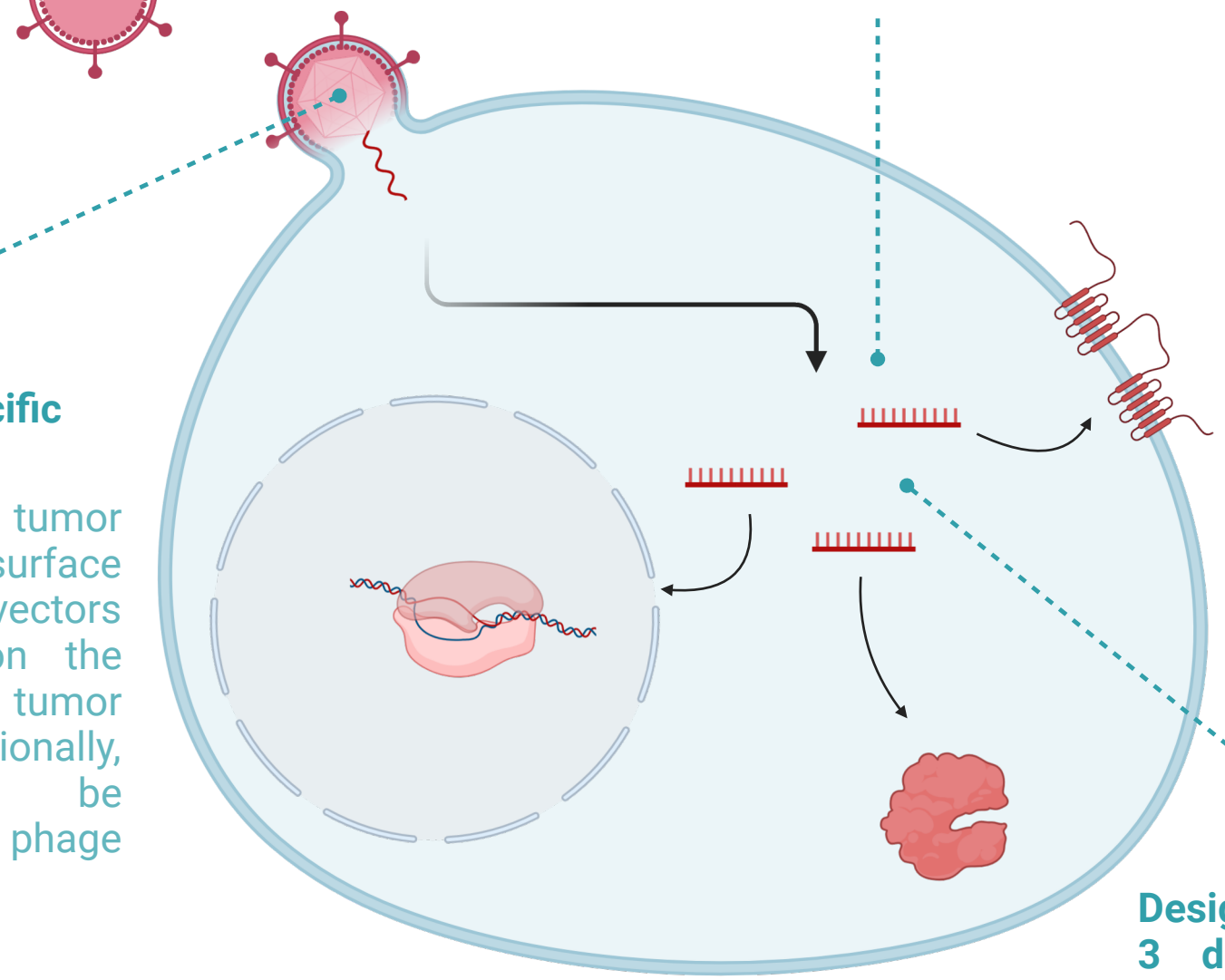
Application no. 1

Hybrid phage vector as cancer mRNA therapy platform

More stable and cheaper to produce compared to LNPs

Neoantigen and TME specific tropism

pseudotyped against tumor specific antigens, surface proteins of our phage vectors are activated only upon the contact with tumor microenvironment, additionally, our platform can be personalized using phage display technology



Amplification and export of the deliverd mRNA

allows for therapeutic effect enhancement and dose reduction

Designed to deliver 3 different mRNA molecules

phage particle allows several different cellular localisations of the therapeutic proteins

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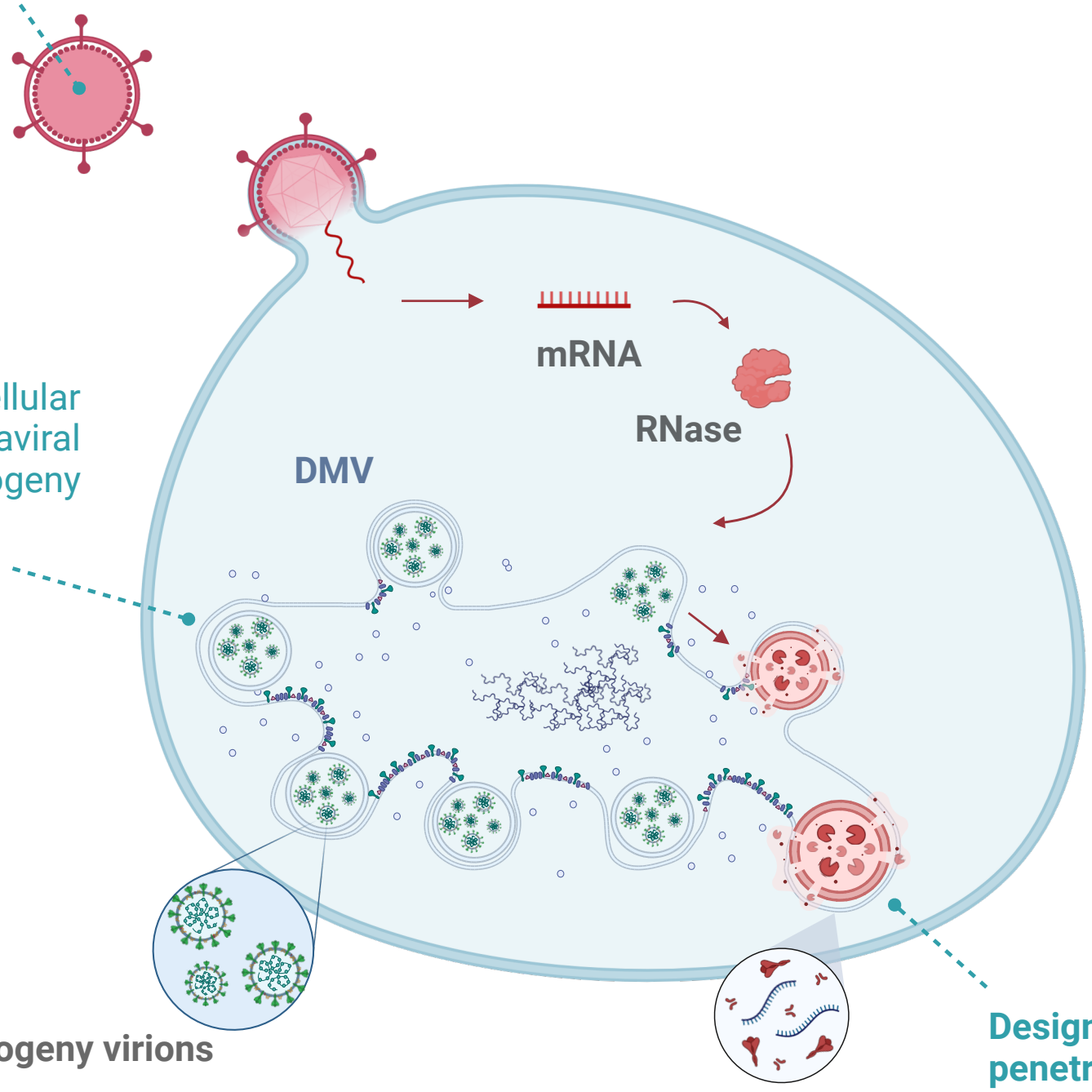
Application no. 2

Hybrid phage vector as SARS-CoV2 infection treatment

ACE2 - TMPRSS2 specific hybrid vector



DMVs form intracellular factories crucial for coronaviral replication and progeny formation

Designed to penetrate DMVs therapeutic RNase mediates viral progeny factories' degradation and

Please note that our recombinant dsRNA-specific RNase requires viral protease for activation making it harmless for non-infected cells that don't contain dsRNA in physiological conditions.

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Ask

Fundraising details

100k € — **scientific validation, proof of concept experiments**

technological validation (*in vitro* and *in vivo* studies) — **100-500k €**

500k+ € — **scale-up, commercialisation**

We seek three different types of investments, dependent on risk tolerated by the investor. Please feel free to contact us with questions regarding the project or a detailed investment proposal.

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R&D collaboration

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