

NanoSyrinx

*A novel platform technology
for targeted intracellular
drug delivery*

Non-confidential Corporate Information Deck – Q2 2025

www.nanosyrinx.com



NanoSyrinx *today*

An **award-winning** spin-out company from the University of Warwick (UK), with significant recognition as pioneers in synthetic biology/drug delivery by **developing novel therapeutics** based on our novel Nanosyringe delivery platform.

As a discovery/pre-clinical stage company established in 2020, we have **raised ~£17M** to date (most recently £10M in Summer '24) and are aiming to progress molecules to the clinic in the coming few years.

Leadership Team



Joe Healey
Founder & CEO



James Lapworth
CBO



Marie McAvoy
CSO



Chris Poole
CFO



Summary

NanoSyrinx is a synthetic biology company developing a platform for the targeted intracellular delivery of protein payloads. The company's system is based on naturally occurring nanosyringes which are genetically modified to deliver therapeutic proteins or peptides directly to the cytosol of targeted cells. The company believes its approach will unlock a broad array of intracellular therapeutic targets which are currently considered 'undruggable'.

Breakthrough science

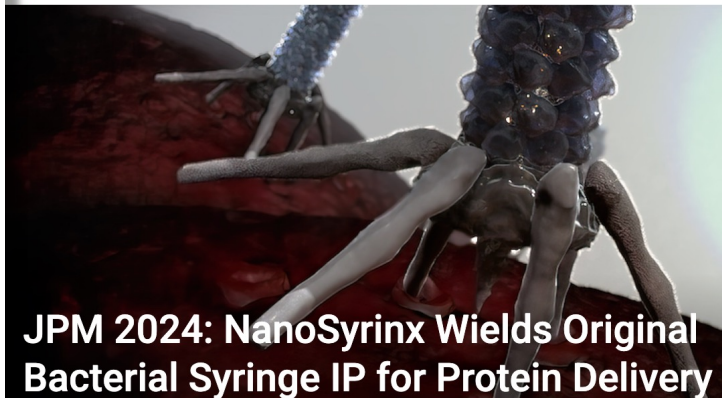
Biological therapeutics have revolutionised medicine, but delivering biological molecules to targets inside the cell remains an unsolved challenge, leaving many therapeutic targets



**AbbVie
Golden Ticket**



GENEDGE



JPM 2024: NanoSyrinx Wields Original Bacterial Syringe IP for Protein Delivery

CEO and founder Joseph Healey and CBO James Lapworth have been working on turning nanosyringes into drug delivery devices for years before "groundbreaking" research from MIT in 2023

By Jonathan D. Grinstein, PhD January 12, 2024

Company board & investors



NanoSyrinx is privileged to be supported by a stellar Board and excellent investor syndicate with deep biotechnology and therapeutics experience.

Non-Executive Directors



Edwin Moses
Non-exec Chair



Jane Dancer
NED



Tony Johnson, MD
NED



Bauke Anninga
Investment Director



Hitesh Sanganee
Venture Partner



Lucy Edwardes-Jones
Investor



Our investors

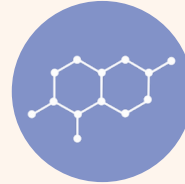


The “undruggable cell” problem

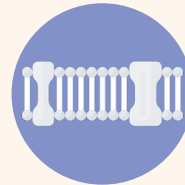


85%

of proteins considered
“undruggable” using existing
therapeutic approaches



Small molecules are unable to
address many classes of target



Larger, more complex molecules
fail to traverse the cell membrane



Lack of selectivity limits therapeutic
index & risks toxicity



*Targeted, intracellular, drug
delivery is an unsolved
problem, and our
Nanosyringe technology is
the potential solution.*

Our Vision

*Our vision at NanoSyrinx is to **unlock the interior of the cell** and the myriad therapeutic opportunities within that are currently difficult (or impossible) to drug, **by enabling targeted, intracellular delivery** of protein therapeutics.*

'Delivering the future of intracellular medicine'

Introducing the **Nanosyringe**

NanoSyrinx

Cell-selective

Nanosyringes are naturally evolved to specifically manipulate cells in the environment.

Through genetic engineering, we can create targeted Nanosyringes with specificity rivalling that of an antibody.

Broad payload compatibility

Nanosyringes load, multiple copies of their protein payload, which can vary significantly in size, charge, structure and function.

Payload loading is a tightly controlled process, and captured by NanoSyrinx core IP.

An elegant molecular machine

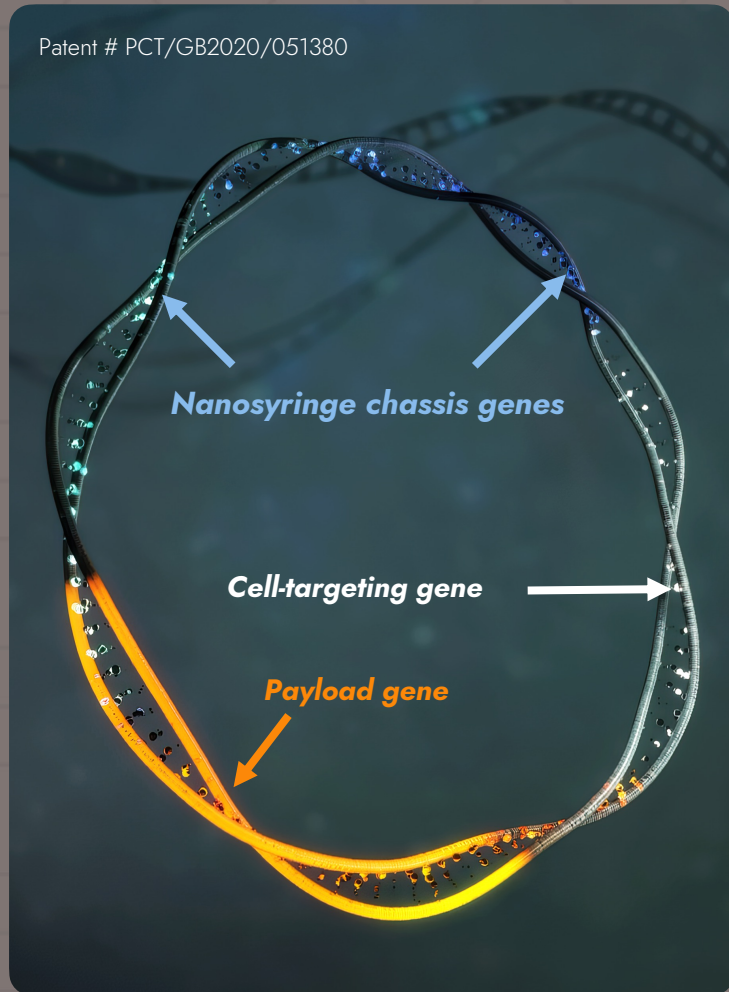
Payloads are protected from the body (and *vice versa*) inside the Nanosyringe until they are 'injected' across the membrane into the cytosol.

The entire Nanosyringe vehicle can be scaled in microbial fermentation.

[Click Here to Watch Our Explainer Video](#)

A synthetic biology-inspired, fully customisable, genetic platform...

NanoSyrinx



1. System built from a fully genetic construct.



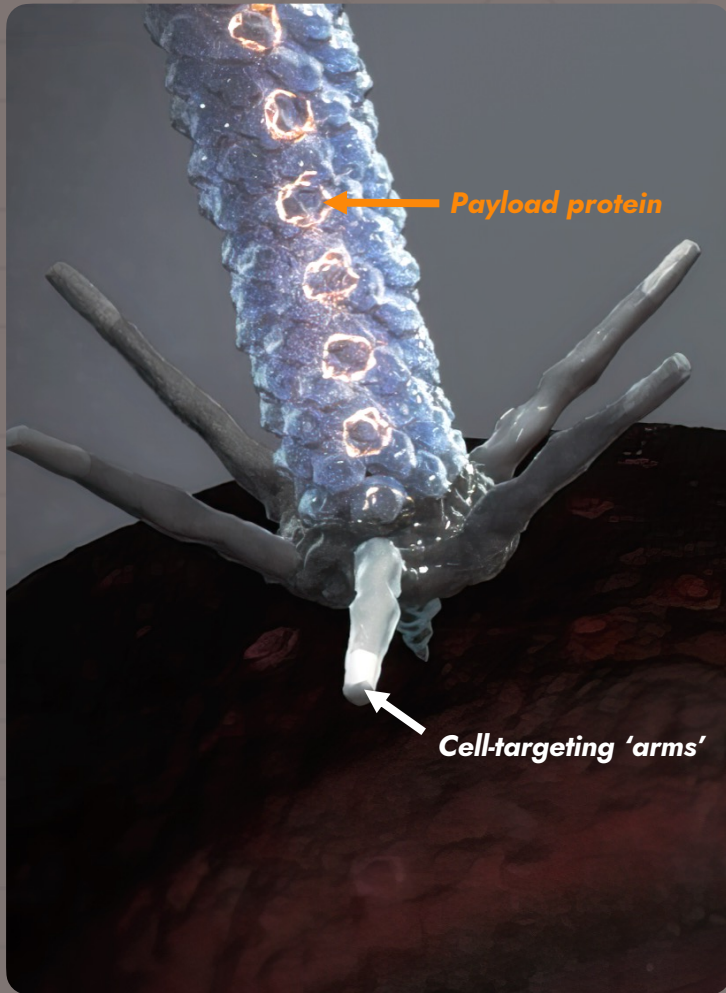
2. 'Single step' loading and assembly in *E. coli*



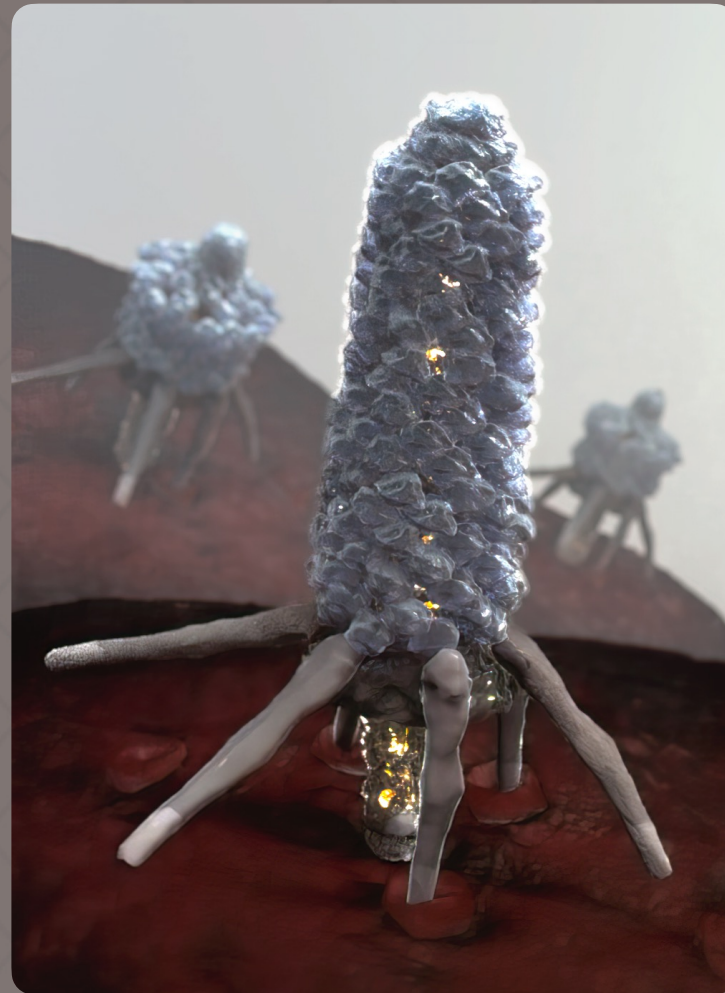
3. Nanosyrinx complexes purified, loaded, ready for use

...with a completely novel mode of action

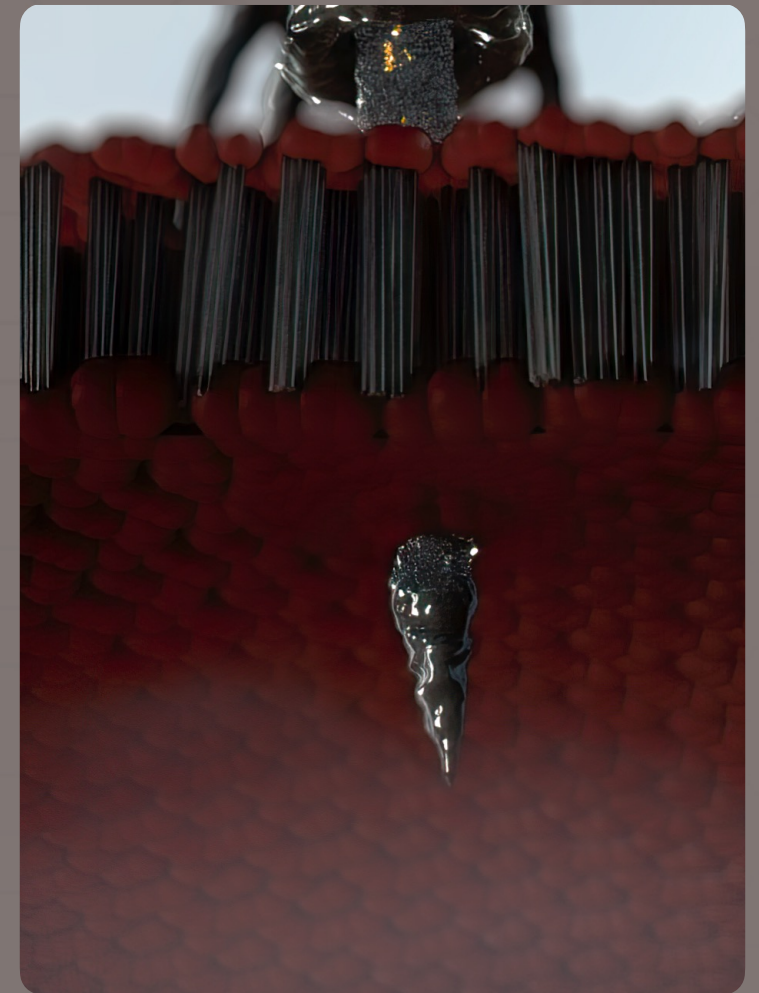
NanoSyrinx



1. Loaded Nanosyringes produced by our bacterial expression system



2. Cell-targeting 'arms' selectively bind Nanosyringe to cell surface

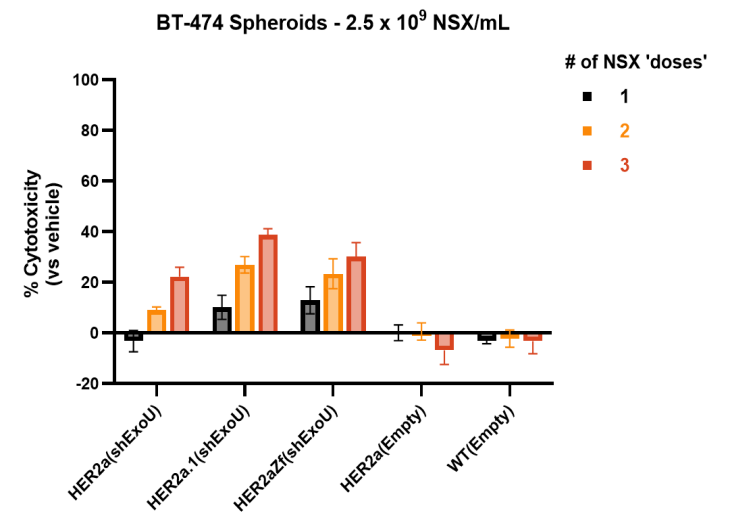
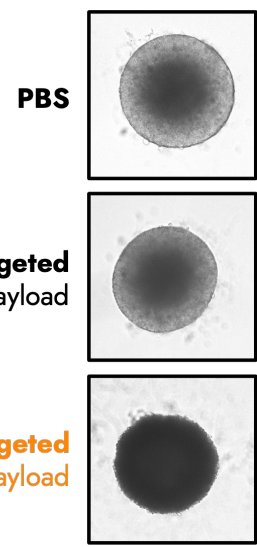
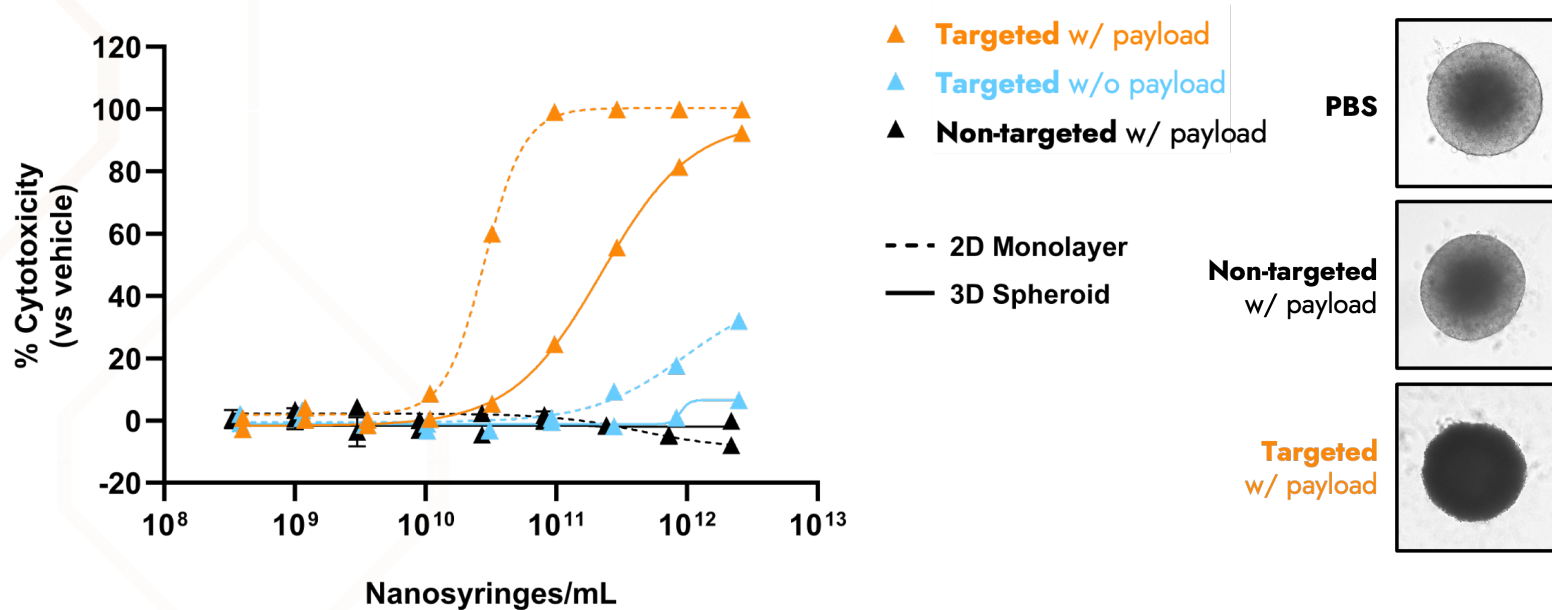


3. Nanosyringes actively pierce the membrane deliver the payload

Nanosyringe potential and current development: In vitro validation with an oncology PoC



Demonstrated therapeutic proof-of-concept with a **potent** (nM), **fast-acting** (~24h), and **highly targeted** **Nanosyringe** delivering an intracellular (protein) cytotoxin supported by strong 2D and 3D *in vitro* data

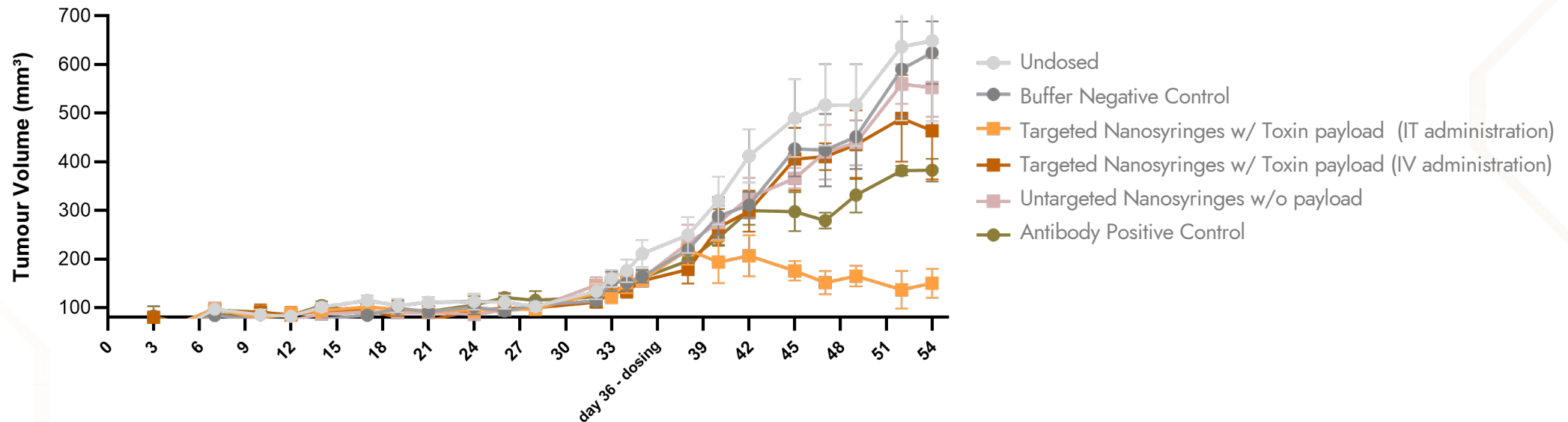


Sub-lethal doses of toxin-loaded Nanosyringes (2.5x10⁹ Nanosyringes/ml) applied daily demonstrate an accumulated cytotoxic effect in spheroid models

Nanosyringe potential and current development: *In vivo validation with an oncology PoC*



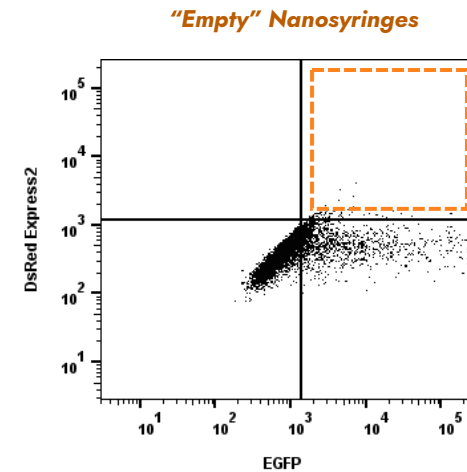
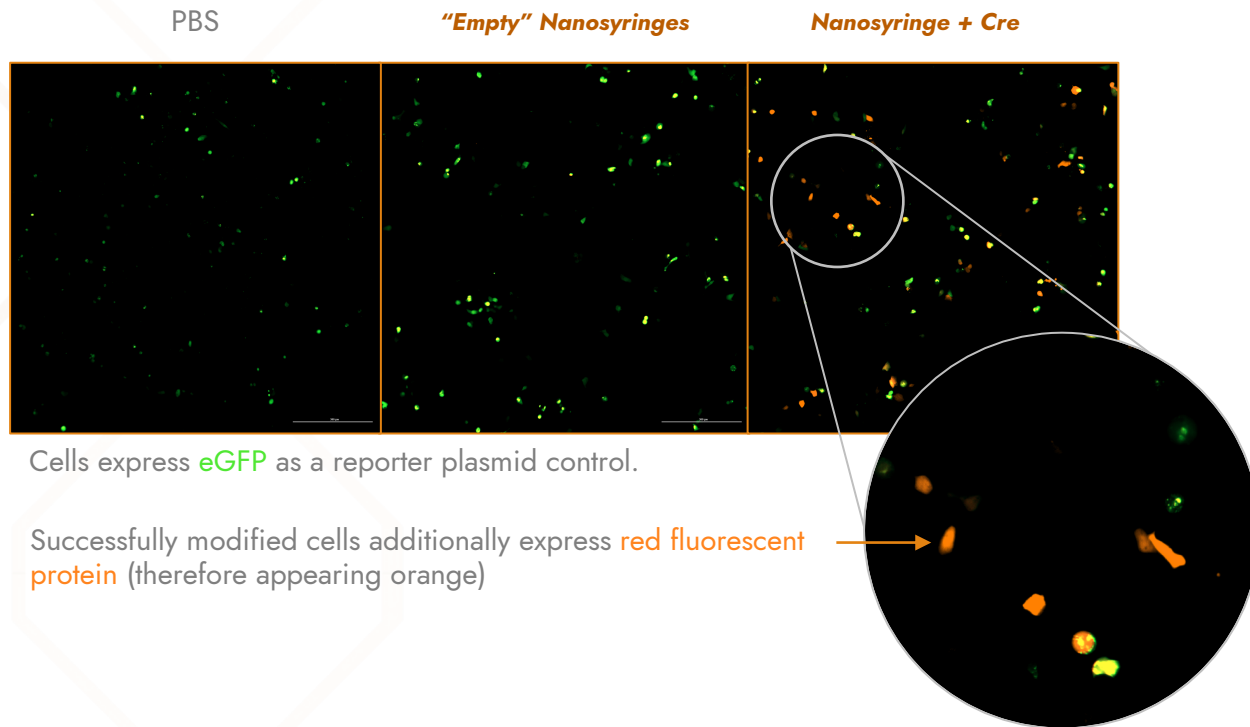
The same PoC molecule displays good tolerability efficacy in a rodent xenograft model.



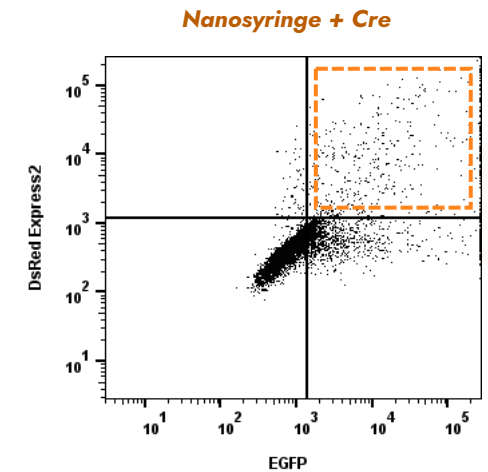
NanoSyrinx is now building on this early data to demonstrate proof-of-concept in other models and in additional RoAs etc.

A versatile delivery platform: Delivery of gene editing payloads

Proof of concept for targeted delivery of payloads capable of reaching intracellular compartments (nucleus) and modifying DNA, opens up the possibility of (non-viral) gene therapy and similar approaches.



<0.5% cells fluorescent
without recombination

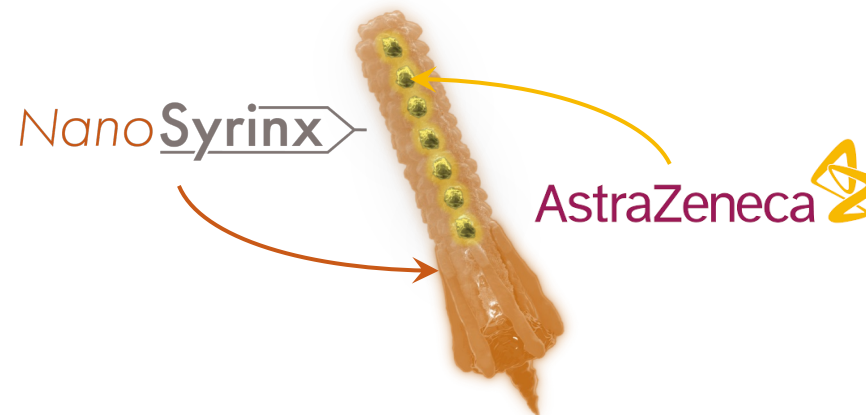


<25.9% cells fluorescent
with recombination

With further examples of DNA editing approaches demonstrated and appearing in the literature, including Cas9 and Zn-finger containing proteins.

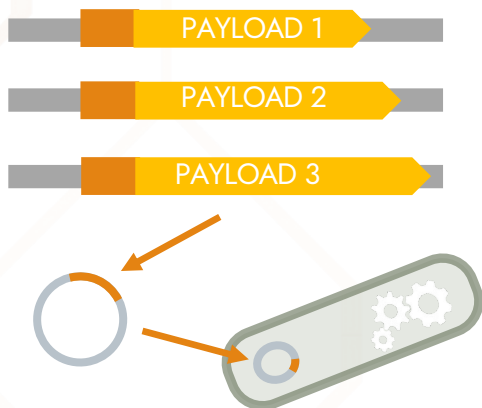
Delivering a **partner's payloads** against "undruggable" targets

We have successfully delivered a proof-of-concept collaboration with AstraZeneca demonstrating that we can incorporate and deliver their payloads.

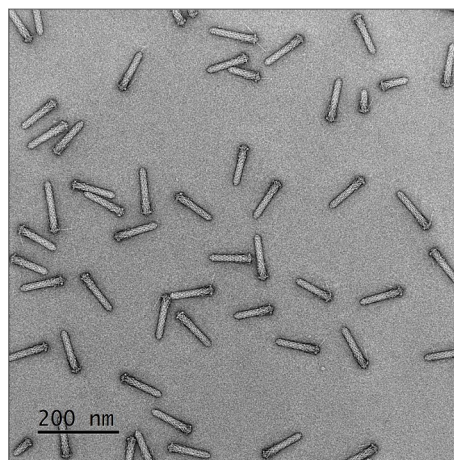


Example workflow:

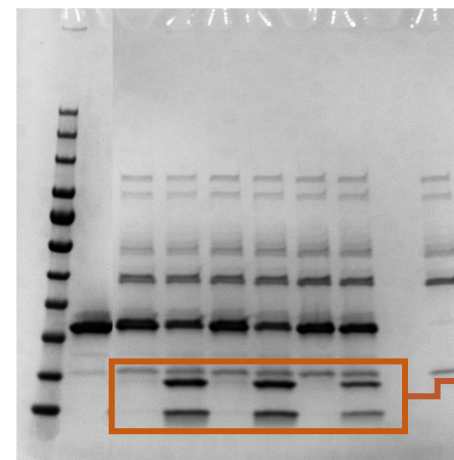
1. Clone partner payload into proprietary genetic platform



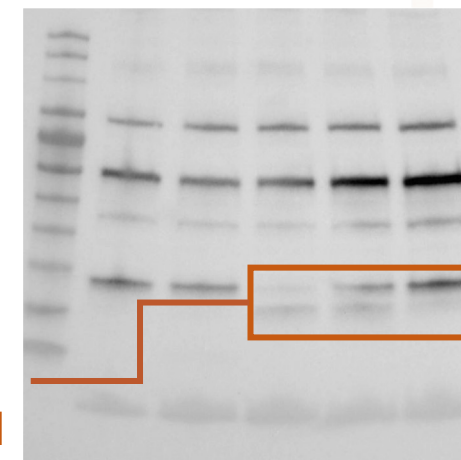
2. Confirm expression/loading/assembly



3. Confirm packaged payload is functional



4. Confirm delivery of active payload in cells



Delivery of a functional **enzyme degrader** of an "undruggable" **intracellular oncology target** produces a **measurable knockdown** in protein abundance (and downstream signalling).

Multiple options for **value creation**

NanoSyrinx is pursuing a **hybrid model**:

- develop **in-house programs** for currently undruggable targets
- **collaborative discovery and development** on partner's targets

Partner's Targets

In-house Targets

NanoSyrinx platform applied to targets



Leveraging partnerships with CDMOs for scale-up

Progress since last round



Corporate Development

- Edwin Moses joins as Chairman
- BGF and Eli Lilly join the investor syndicate
- Company headcount expands, including senior Process Dev and Translational Biology roles



Process Development & Manufacturing

- Filed IP on manufacturing methods
- Established partnership with a CDMO partner to progress to GMP
- Improved batch yields & shortened production from months to weeks



Platform Development

- Identified multiple new payloads and cell-surface targets of interest
- Built/matured our “discovery engine” capable of screening ~50 Nanosyringe molecules in parallel (addressing the above)



In vivo proof-of-concept

- Identified/iterated improved ‘lead’ PoC molecule in <2 months
- Established *in vivo* models and commenced studies for lead PoC molecule
- De-risked tolerability and immunogenicity

Opportunity to **accelerate**

NanoSyrinx is at an exciting phase of its evolution. We have identified potential areas to **accelerate and expand** over the next ~18 months; thus there is now a special opportunity to invest at a time when the company is poised to significantly grow value as our pipeline develops in the near term and build on recent successes.

We are now seeking **£5M** to build on this momentum, which will provide/deliver:

- Added capacity to invest further in CMC both internally and with our CDMO partner
- 2-3 potential assets progressed in parallel through pre-clinical models
- Add capacity and capability to our platform development including new informatics support
- Expand quantity and breadth of safety/immuno/tox studies in a 'pharma grade' suite of work

This will establish a strong platform, demonstrated by an emerging pipeline, and position the company for an ambitious **Series A process (2026)**.

NanoSyrinx

www.nanosyrinx.com

Want to learn more?



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