The Optimer Discovery Platform

aptamer GROUP

High performance custom oligonucleotide binders to enable your pipeline.

Whether you need increased specificity, an ethically compliant reagent, or are investigating a completely new target, the Optimer platform can break down scientific barriers to fast track your project for success.

1 platform. 3 parallel discovery processes. Unlimited solutions with Optimer.

Optimer oligonucleotide library

Target feasibility assessment

Small molecules

- Target free in solution
- Discovery in end-use buffer/ matrix
- Inclusion of +ve and –ve targets for specificity

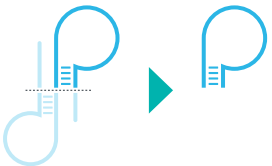
Proteins and peptides

- Immobilised target with multiple chemistries
- Discovery in end-use buffer/ matrix
- Inclusion of +ve and –ve targets for specificity

Cells, virions, tissues

- Compatible with fixed and live sample targets
- Discovery in end-use buffer/ matrix
- Inclusion of +ve and –ve targets for specificity
- Hypothesis-free discovery to unknown cell phenotype biomarkers

Discovery processes can be used in isolation for specific target types or sequentially for increased performance validation



Optimer trimming = ↓ size ↑ manufacturability ↑ specificity

In-house validation

Final Optimer binder

Limitless science with Optimer

The Optimer platform delivers next-generation aptamers, enabling researchers across the spectrum of the life sciences to power their pipelines with new targets, applications and treatments.

Therapeutics

Therapeutic inhibitors & modulators

Targeted delivery vehicles

Bioprocessing

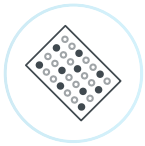
Affinity purification ligands

Quality control reagents

Assays & diagnostics

Biosensor recognition elements

IHC/ICC reagents



ELISA reagents

Lateral flow test reagents

Single reagent Optimer beacons

Flow cytometry reagents

How does Optimer compare?

The Optimer platform and the generated oligonucleotide Optimer binders offer several key benefits over alternative affinity technologies.

	Optimer	Recombinant antibodies	Traditional antibodies
Animal free discovery and production	•		
Tuneable kinetics	•		
Discovery performed in end-use matrix for assured performance	•		
Infectious agents, toxic and low immunogenic targets	•		
Simple conjugation to tags, labels or payloads	•	•	•
Storage as sequence for security of supply	•	•	
No requirement for cold chain logistics	•		
Small size for improved tissue penetration	•		
High affinity and specificity	•	•	•
Consistent batch production for reproducible results	•	•	

Complete control over your Optimer design

We will partner with you to complement and extend your team's capabilities, by tailoring each phase of discovery and development to remove all hurdles on your path to the clinic.

Optimer discovery and development are performed entirely in vitro, with manufacture via established synthetic processes.

In this way, Optimer brings you complete control over your affinity binder design, performance and supply.

Your Optimer programme is tailored to your specific target and end-use application.

Customising the Optimer library

Rather than use a one-size-fits-all approach we tailor our libraries to meet your needs so that you start with the best chance of success.

- Selection of DNA or RNA libraries
- Development of unique conjugate libraries utilising your specific payload of interest
- Incorporation of 2'fluoro pyrimidine modifications for increased nuclease resistance

Customising the Optimer discovery process

Tailored discovery processes ensure only fully functional binders are captured by our discovery process.

- Utilisation of small molecules, peptides, proteins, virions, live and fixed cells and tissues
- Selection of the single best or combination of discovery processes, (eg protein and cell discovery processes)
- Incorporation of multiple selection rounds with positive and negative targets
- Discovery in matrix of your choice
- Integration of specific functional assays, eg IHC, into the discovery process and clones selected according to application performance
- Binding kinetics can be tuned to allow target capture and release in specified conditions

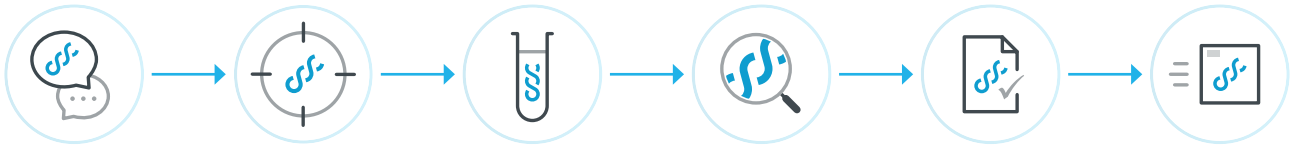
Customising the Optimer development process

Post-discovery, we optimise your binder for stability, manufacturability and with flexible functionalisation for full platform compatibility.

- Truncation to the minimal Optimer fragment to increase affinity, stability, manufacturability, and decrease production costs for commercial scale-up
- Functionalisation with your specified payload as delivery vehicles or conjugation to a diverse range of labels, tags and chemical groups
- Incorporation of 2'OMe pyrimidine modifications for increased nuclease resistance
- Addition of PEG moieties to tune *in vivo* half-life

The Optimer workflow

Our data-driven workflow is flexible and follows an established, standardized approach. From understanding your goals to working towards clear milestones, we offer full-cycle support and expertise from discovery and validation to generating commercial products.



Consultation & project design | Target feasibility study | In vitro discovery | Clonal characterisation & optimisation | Functional validation | Supply

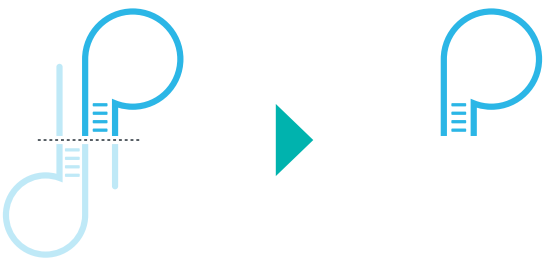
Clear milestones are incorporated into our workflow to help mitigate risk. We work in a data-driven fashion offering the flexibility to direct and adapt the custom antibody discovery process to achieve the optimal solution for each project.

Our experienced team have developed Optimer-based solutions for diverse platforms and applications. They bring a wealth of assay and application-specific capabilities to ensure that the binders we deliver work as you need them to, the first time.

Cut your Optimer to increase performance & manufacturability

Following discovery our standard Optimer development process involves truncation of the selected binder to the minimal fragment that exhibits the required characteristics.

This process results in a smaller size of the final binder offering a number of performance and manufacturing benefits.



29 kDa 5 - 18 kDa

Optimer Key Benefits
Increased stability
Increased affinity
Increased tissue penetration
Increased access to target epitopes
Improved manufacturing yields
Increased cost-efficiency in production

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