Monoclonal Antibody Development

Solution for Small Molecules and Challenging Targets

DIANA BIOTECHNOLOGIES

Monoclonal Antibody Development

We combine our proprietary DIANA-Ab single-cell technology for antibody screening and characterization with unique know-how in immunogen preparation to advance monoclonal antibody (mAb) development towards unprecedented affinity and selectivity against the most challenging targets, including **small molecules**.

Finding the best clone produced by immune system

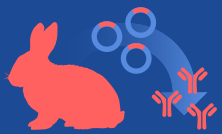
Delivering pre-specified affinity and cross-reactivity requirements

Suitable for both diagnostics and research use

Highly customizable service with dedicated support

Mouse hybridoma monoclonal antibodies

Rabbit recombinant monoclonal antibodies



Phage display monoclonal antibodies

Rabbit polyclonal antibodies

WHY RECOMBINANT ANTIBODIES?

- Recommended for IVDR compliant immunoassays
- Excellent scalability and lot-to-lot consistency
- Simple species and isotype switching
- Genetically stable - no drift (unlike hybridomas)

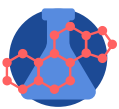
WHY RABBIT ANTIBODIES?

- High affinity and specificity for sensitive assays
- High solubility and high thermal stability
- Target a wider range of epitopes, including small molecules

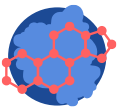
Expertise in mAbs against Small Molecules

Antigen	Proteins	Peptides	Small molecules
Immunogenicity	Strong immunogenicity	Mild immunogenicity	Weak immunogenicity
Cross-reactivity	Low cross-reactivity	Medium cross-reactivity	High cross-reactivity

We achieve superior expertise in monoclonal antibodies against small-molecule antigens thanks to:



In-house hapten synthesis



Proprietary bio-conjugation know-how

DIANA-Ab single-cell screening

OPTIONAL OTHER SERVICES

ANTIBODY CONJUGATION

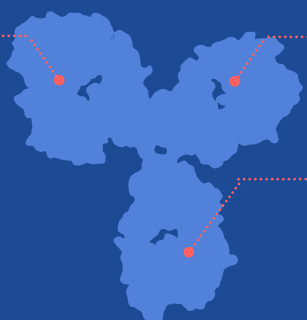
Fluorescent dyes (including our panel of AF dyes)

DNA and RNA oligos (in-house oligo synthesis)

Biotin and other tags

Nanoparticles

Proteins



ANTIBODY PRODUCTION

Small-to-mid scale recombinant production

ANTIBODY ENGINEERING

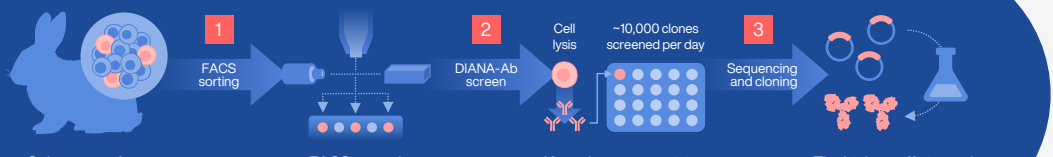
Species switching (including humanization)

Isotype and format switching (Fab, scFv and more)

DIANA-Ab Technology: How Does It Work?

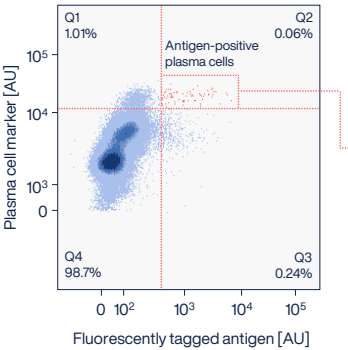
We utilize DIANA-Ab high-throughput screening (HTS) technology to search through the entire rabbit spleen clone repertoire (~10^9 cells) and identify the best clones with superior affinity against your particular target.

DIANA-Ab PIPELINE



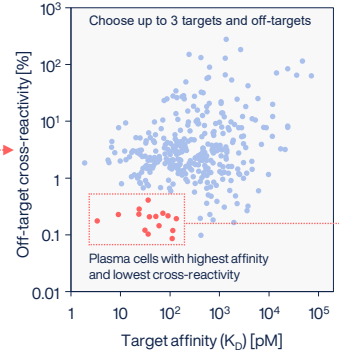
01 PLASMA CELL FACS SORTING

We use our proprietary secretion assay and FACS sorting to identify a small fraction of antigen-positive plasma cells: terminally differentiated B cells.



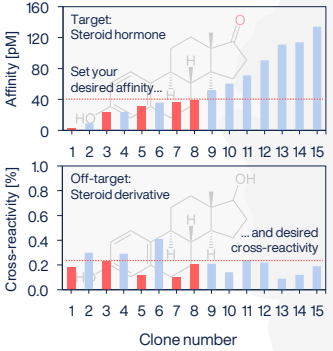
02 SINGLE-CELL DIANA-Ab SCREEN

With our ultra-sensitive DIANA-Ab HTS platform, both affinity (K_D) and cross-reactivity are quantified from a single cell (without any cultivation).



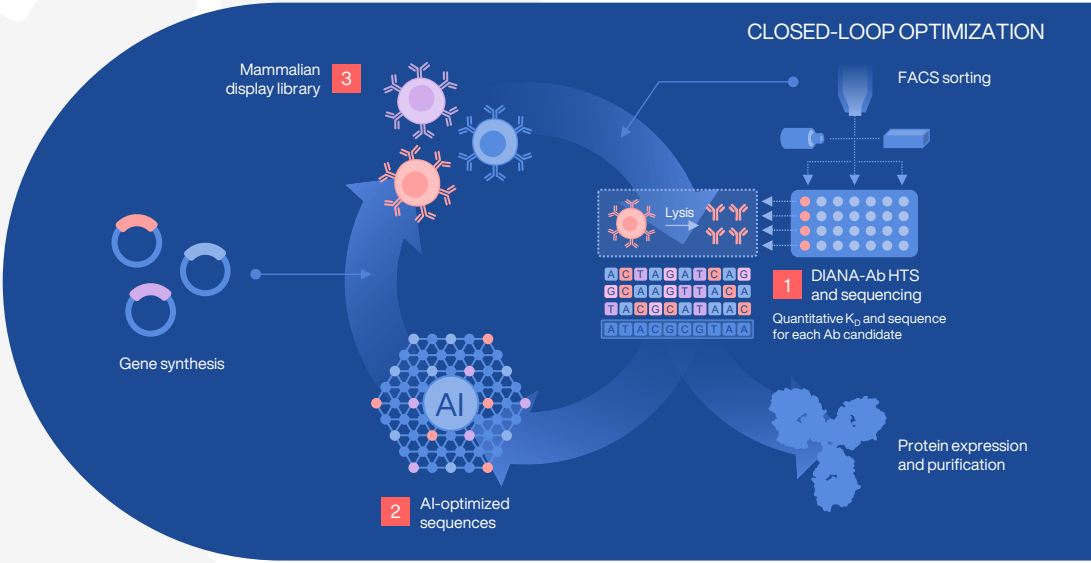
03 BEST CLONE SELECTION

Only the best clones are sequenced, cloned and expressed in HEK293 cells. Purified clones are further verified and ranked based on their properties and sequence diversity.



DIANA-Ab: Empowering AI with Wet-lab Data

We combine Mammalian cell display, AI tools and DIANA-Ab HTS technology for protein *de novo* engineering and maturation.



01 SINGLE-CELL DIANA-Ab SCREEN

- High-throughput screening of 5,000 – 10,000 cells per day
- Antibody-antigen K_D quantification
- K_D for up to 3 targets and off-targets
- Maintains genotype/phenotype linkage

02 AI-DRIVEN ANTIBODY PREDICTION

- DIANA-Ab quantitative data improves AI model
- Substantially lowers time and cost burdens of wet-lab screening
- Shortens development cycle

03 MAMMALIAN DISPLAY LIBRARY

- Contains solely AI generated clone sequences
- 1 gene per HEK293 or CHO cell
- Final Ab format in production cell type
- FACS for optional clone pre-selection based on affinity, cross-reactivity and developability

DIANA BIOTECHNOLOGIES

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DIANA Biotechnologies is a Czech biotech company that advances research and development. Powered by a team of top scientists in molecular biology, chemistry, pharmacology, and automation, we provide R&D services and products for academic labs, biotech companies, and pharmaceutical partners. Our offerings include the development of monoclonal antibodies, engineered PCR enzymes and drug discovery services.