



OUR PREMIER SERVICES

We are Boston's antibody enthusiasts working globally to accelerate discovery research

Nabveris

OUR SERVICES



OUR Approach

Our premier antibody discovery service capitalizes on cutting-edge science and exceptional people.

We've combined a series of exciting platform technologies and talented scientists to provide unrivaled contract research services.

ABVERIS

OUR MISSION I At Abveris, we believe high-quality science is the most valuable deliverable to industry and academia. Therefore, we strive to provide exceptional antibody discovery services across the board, from early project design and communication to final product delivery.

OUR NAME I The name "Abveris" is meant to serve as a daily reminder that excellence in science necessitates a commitment to scientific understanding. Inspired by the Harvard motto "veritas," or "truth," our name reaffirms the fact that discovery science is a constant quest for truth, and that "good data" is data with integrity.

OUR LOGO I The Greater Boston community is a global beacon of scientific excellence. Our logo is inspired by the Zakim bridge, a modern, iconic landmark that erupts boldly from the Boston skyline. While the construction of the Zakim bridge is technologically advanced, it still pays homage to Boston's historical revolutionary roots. Likewise, we strive to be a company that innovates boldly and probes boundaries while paying respect to the science and scientists whose achievements comprise our bedrock.







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PROJECT DESIGN

IN-DEPTH TARGET REVIEW

WE DEVELOP STRATEGIES FOR YOUR MOST CHALLENGING TARGETS AND TIMELINES.

HIGHLIGHTED EXPERTISE

multi-pass transmembrane proteins high-homology targets anti-idiotype antibodies point mutations & neoepitopes small molecules & glycans Our premier process for antibody discovery starts with careful project planning and design. Our experienced team of industry experts understands that optimal campaign strategy will vary with target biology. Instead of forcing a project into a process, we design a process to suit the target.

Our team recognizes that your antibody discovery project is a significant investment in both time and resources. We strive to maximize your return on investment by delivering the highest quality services. Our experienced team of discovery scientists works with you to identify the best possible strategy for your project needs, and is available every step of the way to provide guidance as needed.



A successful antibody discovery campaign starts with high quality antigen reagents. In situations where our clients do not have a reliable or affordable antigen source available, our team can step in to help. Our available services include the production of custom recombinant proteins, engineered cell lines, and plasmid DNA to help support immunizations and screening.

Our approach to antigen generation starts with an understanding of the appropriate format for your target. If, for example, a recombinant protein strategy is amenable to your target biology, our team will outline the necessary path forward to achieve efficient production in our mammalian expression platform.

With certain targets, like GPCRs or other multi-pass transmembrane proteins, cellbased or DNA-based immunizations are recommended to ensure maintenance of the appropriate target native structure for antibody generation. Our team will work with you to generate a suite of cell lines and/or vectors to present your target appropriately and efficiently during immunization and screening. Certain instances warrant the generation of haptens for immunization. Our team can design and generate small moleculeand peptide-haptens with our valued Massachusetts-based production partner to support antibody discovery against linear peptides or small molecules.

Whether you're an expert on your target's biology or you're looking to validate a target that is relatively unexplored, you can rely on our experienced team of discovery scientists to work with you and identify the best possible strategies for antibody discovery.

CRITICAL FOR SUCCESS

HIGH QUALITY ANTIGEN PRODUCTION

Nabveris

ADVANCED IMMUNIZATION STRATEGIES

MAGIC IN THE METHOD

OPTIMIZED IN VIVO SYSTEMS

DIVERSE ANTIGEN FORMATS

PROPRIETARY IMMUNIZATION METHODS



DiversimAb™ IMMUNE RESPONSE



PLATFORM SPOTLIGHT: DiversimAb[™] Technology

IgG TITERS AT — DiversimAb™ DAY 18 BALB/c (INDIRECT ELISA) ∞∞∞∞∞∞∞ Naive

DiversimAb[™] is a strain of hyperimmune, autoimmune mice with broken immune tolerance and the capacity to rapidly generate IgG titer. In just 18 days. DiversimAb[™] mice develop robust immune response to targets with up to 100% homology to murine homologs.



PROTOCOL SPOTLIGHT: Subtractive Immunizations

Subtractive immunizations are enabled by the generation of isogenic cell lines with one carrying your target of interest (target cell line) and the other carrying an irrelevant target (subtractive cell line). Mice are (1) immunized with the subtractive cell line and (2) a drug-induced tolerization step is performed to obliterate the immune response to the cell line. Subsequent immunizations are performed (3) with the cell line of interest to (4) generate an enriched response to the target without a significant response to the other cell line components.



ENGINEERED IN VIVO SYSTEMS

Abveris applies various engineered mouse technologies to reliably generate a robust immune response against diverse target types. Our proprietary hyperimmune DiversimAb[™] mouse produces a highly diverse antibody response enriched for species cross-reactive binders. DiversimAb[™] mice are amenable to rapid immunization (only three weeks), enabling rapid project timelines. We apply the DiversimAb[™] technology for therapeutics development programs due to the expanded diversity of antibodies we can achieve.

ENGINEERED MODELS

proprietary diversimAb™ mouse humanized mouse strains knockout mouse strains WT/inbred strains

transfer an appropriate strain into our facility (call for additional information)

Humanized mice have become a popular strategy for antibody discovery teams. Abveris scientists have access to-and experience with-multiple humanized mouse antibody discovery technologies.

PROPRIETARY IMMUNIZATION METHODS

SPECIALIZED STRATEGIES rapid immunization subtractive immunization proprietary adjuvants DNA electroporation

Abveris has developed a series of strategies to generate a strong immune response to a variety of antigen formats. For many targets, we're able to perform rapid immunizations in our DiversimAb[™] platform and elicit a strong response in three weeks. We use proprietary adjuvant formulations to improve the immune response against tough antigens.

For cell-based immunizations, we apply a special subtractive immunization protocol to suppress the antibody response against irrelevant antigens present on the membrane surface and enrich target-specific antibody production.

Our platform for DNA-based immunizations relies on intradermal electroporation technology to elicit robust expression of your target in vivo. We couple this technology with a suite of proprietary immunization vectors to generate a potent response against tough antigens.

DIVERSE ANTIGEN FORMATS

We take on diverse antibody discovery challenges, which requires flexibility in format. Recombinant proteins are useful reagents for antibody discovery research, but many tough targets (like multi-pass transmembrane proteins) require the use of cell-based or DNA based immunization.

OPTIMIZED PROTOCOLS FOR protein

cell line plasmid DNA peptides small molecule (hapten) lipoparticles

1:100 1:300 1:300 1:2700 1:2700 1:2700 1:2700 1:218700 1:218700



ANALYZING TITER AGAINST HIGH-HOMOLOGY TARGET

target ID: cell surface target homology: 99% homology to mouse platform: DiversimAb[™] mouse strategy: DNA immunization timeline: 5 week immunization



With challenging targets, identifying your antibody of interest can be like searching for a needle in a haystack. Thankfully, we provide advanced technological solutions to help. Abveris leverages a synergistic combination of automation and advanced high-throughput screening methods to interrogate and subsequently triage thousands of antibodies daily. Series of automated liquid handling stations enable the execution of large assays involving hundreds of plates. High-throughput flow cytometry, enabled by the Intellcyt iQue, is frequently applied to screen a 96-well plate in minutes. On-cell functional screening and affinity ranking is supported by the iQue as well. Octet BLI and Carterra SPR technologies are applied for affinity ranking, neutralization analysis, and epitope binning. Additionally, our talented team of antibody enthusiasts are available to troubleshoot and optimize high-throughput project-specific assays as needed.



FEATURED SCREENS

affinity ranking epitope binning ligand neutralization by Octet® BLI & Carterra® SPR



on-cell binding on-cell affinity functional screening by iQue® flow cytometry

intellicyt

diverse ELISA formats sensitive FRET screens by the 10,000s

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CASE STUDY: SCREENING FOR SPECIES CROSS-REACTIVITY

OBJECTIVE I Identify a panel of fully human antibodies against a cell surface target with human, cyno, murine cross-reactivity.

METHOD I Immunize a panel of humanized mice with a recombinant target ECD and a proprietary adjuvant cocktail.

SPECIFICITY SCREEN I Screen 100+ plates of hybridoma clones by high-throughput ELISA to identify antibodies with cross reactivity to human, mouse, and cyno target homologs.

AFFINITY RANKING I Screen hundreds of antibodies for single point kinetics ranking by assessing binding to monovalent human, cyno, and murine target recombinant ECD.





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CATERED DELIVERABLES

YOUR FAVORITE FORMAT

AS A CRO, WE STRIVE TO SUPPLEMENT YOUR WORKFLOW. WE WORK WITH DIFFERENT GROUPS HARBORING A VARIETY OF INTERNAL CAPABILITIES, SO WE OFFER DIVERSE DELIVERABLES TO SUIT YOUR NEEDS.

We work with some groups that have strong hybridoma teams, robust recombinant expression platforms, and/or high-throughput sequencing cores. We work with some virtual companies that have no lab at all. We consult with you to make sure we select an appropriate endpoint for the project that makes sense for your team.



hybridoma scale-up recombinant antibody production 100 micrograms to 100 milligrams validated in your application

Starting with hybridoma cell lines or antibody sequences, Abveris berforms antibody production and purification services at scales that make sense for research scientists. Hybridoma scale-up and recombinant antibody production services are supported by internal olatforms designed for speedy, efficient production.

Our platform supports concurrent small-scale production for hundreds of antibodies to support your internal validation screening. During the process, we'll learn key information regarding the production efficiency of your individual antibody clones so we can make educated decisions for larger scale production rounds.

ANTIBODY PRODUCTION

ANTIBODY SEQUENCING

105

IUMBER OF CLONES

005

MGs

SCALE

Ge

A NEXT GEN APPROACH

There are many distinct benefits to sequencing your lead antibodies. Antibody sequencing gives you the information you need to patent your antibody, humanize an antibody with therapeutic potential, and recombinantly express your antibody clone in diverse formats.

Abveris offers a high-throughput, reliable hybridoma sequencing service enabled by next generation sequencing (NGS) to consistently deliver VH and VL sequencing data for your clones of interest.

high-throughput capabilities estimated timeline: <3 weeks NGS-based hybridoma sequencing

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OUR Services

Antigen Production

Recombinant Protein Production Mammalian HEK/CHO Expression Plasmid Design & Production Cell Line Production Bulk Transient HEK/CHO Bulk Transient Custom Cell Line Peptide Design & Production* KLH/BSA/OVA Conjugation Small Molecule Hapten* KLH/BSA/OVA Conjugation

Immunization Hosts

DiversimAb Proprietary Mice Humanized Mice Knockout Mice WT/Inbred Mice

Immunization Schedules

Rapid Immunization (18-day) Extended Immunization (5-8 week) Subtractive Immunization Custom Schedules

Immunization Formats

Protein/Peptide Cell/Cell Lysate DNA (Electroporation) Small Molecule Hapten Lipoparticle/VLP Custom/Combinatorial Formats

Adjuvants

Proprietary Blends CFA/IFA RIBI (SAS) Alum Saponins CpGs Titermax Gold Custom

Cell Line Culture & Development

Hybridoma Electrofusion Hybridoma Cell Line Development Custom Cell Culture Services Cell Culture Mycoplasma Testing Cell Line Banking (Cryostorage)

High-Throughput Screening

ELISA (High-Throughput) Indirect Capture Bridging Neutralization Custom Formats Flow Cytometry (High-Throughput) Binding Analysis On-Cell Affinity Functional Screens Custom Formats

High-Throughput Analysis

Carterra® SPR (384) Affinity Epitope Binning Ligand Neutralization Octet® BLI (Red96e) Affinity Ligand Neutralization Epitope Binning/Pairing IgG Quantitation Custom Formats Isotype Determination (LFA assay)

Hybridoma Sequencing

NGS VH/VL Sequencing

Antibody Production

Recombinant Antibody Production 1mg to 100mg Hybridoma Scale-Up 5mL to 1L 100ug to 100mg yield Custom Vector Formatting

Miscellaneous

Fab Preparation Conjugations Biotinylation KLH/BSA/OVA Fluorophore HRP

OUR TEAM

We're always on the hunt for exceptional people to join our team. We look for kind, cooperative, passionate individuals with the confidence to assert their knowledge and ask for help when it's needed.

We're excited to come to work every day to accelerate your discovery. Come join us!









SCHEDULE A DISCUSSION TODAY

Scan the barcode below to schedule a discussion.



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