

# Pioneer Antibody Discovery Platform

Advancing Therapeutic Antibody Discovery



# The Pioneer Antibody Discovery Platform

The Pioneer Antibody Discovery Platform is a new state-of-the-art therapeutic antibody generation service. With decades of phage display and antibody engineering experience, Bio-Rad™ provides cutting-edge tools for lead generation discovery and optimization to bring you the best-in-class biologic candidates. By tailoring our services to your specific needs, our team of specialists accelerates and simplifies your journey to identify functional biologics for your target of interest.



The Pioneer Antibody Discovery Platform supports the antibody discovery and optimization phases of biotherapeutic lead generation.

## Antibody Discovery Benefits

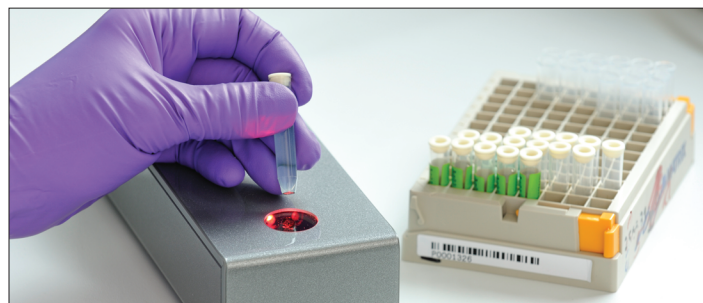
- Identify fully human functional hits using the exceptionally large Pioneer Antibody Library
- Proprietary phage display selection technology quickly delivers high-quality antibodies
- In-depth antibody characterization via customized assays
- No animal immunization needed

## Antibody Optimization Benefits

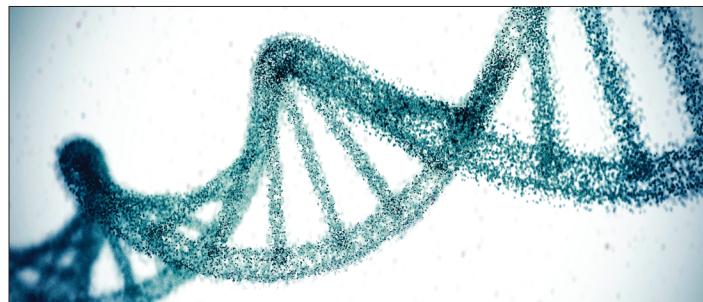
- Bespoke antibody engineering
- Affinity maturation to achieve improved performance
- Tailored functional testing

## Your Target, Your Biologic

- A dedicated team of experienced scientists and technical specialists is assigned to each project, delivering a customized service designed to every client's specifications and success criteria
- From establishing project-specific functional assays, carrying out library screening, and performing detailed characterization of clones, our scientists keep clients informed of progress and involved in decision-making
- Intellectual property (IP) transfer of Pioneer Library-derived biologics from Bio-Rad to clients is based on a fee-for-service model
- No requirement for royalties on successful candidates



The final antibodies are fully mammalian-expressed IgGs, and include a complete data package with functional characterization and sequence.



Clients will receive exclusive ownership of the sequences of the antibody deliverables.

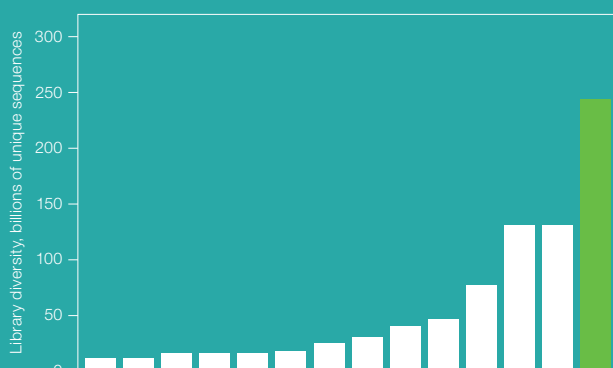
# Accelerating Biotherapeutic Antibody Discovery

At the heart of the Pioneer Antibody Discovery Platform is the Pioneer Antibody Library — one of the largest functional phage display libraries ever created. The Pioneer Antibody Library has been validated for:



## DIVERSITY

- Exceptional size — more than 200 billion unique antibody sequences
- High and diverse number of unique hits from standard selection
- Affinities in the sub-nanomolar range directly from the library

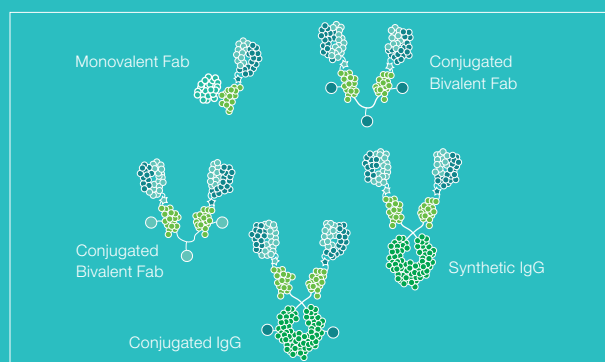


Diversity of the Pioneer Antibody Library (■) in comparison to other commercial libraries (■).



## DEVELOPABILITY

- Antibodies use germline sequences with proven performance
- Reduced motifs that cause developability concerns
- 96% of sequences encode functional light and heavy chains
- Excellent flexibility for scalable, tailored formats

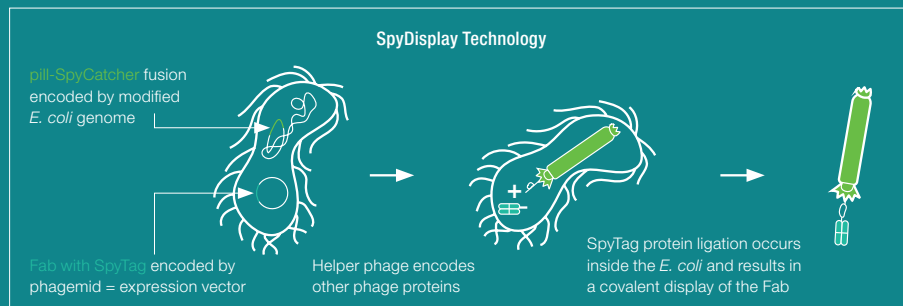


Antibodies use a modular design, enabling fast, simple production of multiple formats for rapid prototyping.



## SPEED

- Engineered with SpyDisplay technology for accelerated assay development and candidate selection
- No subcloning step is required, reducing the potential for error
- SpyDisplay technology reduces misfolding of Fab
- Rapid affinity maturation process for ultra-high affinity selections
- Innovative, versatile selection platform



SpyDisplay technology utilizes a single vector for both selection during phage display and expression of individual clones after screening. This vector encodes the Fab antibody with a SpyTag peptide fused at the C-terminus of the Fab heavy chain. A pIII-SpyCatcher fusion protein is encoded in the genome of the *E. coli* selection strain used for phage propagation. All other phage proteins are encoded by the helper phage. Within the *E. coli* selection strain, the SpyTag-Fab fusion protein will spontaneously and covalently bind the pIII-SpyCatcher fusion protein during phage assembly.



Our antibody discovery scientists are based in our new, state-of-the-art laboratories in Neuried, Germany.

All client projects we undertake are designed to exhaustively screen the Pioneer Antibody Library to identify the maximum number of binders to specific client targets. We then further characterize the clones to identify the best binders in terms of specificity, function, affinity, and developability, according to each client’s exact requirements.

Our team of dedicated technical specialists is available to introduce the platform, arrange discussions on specific projects, and discuss any business development–related questions you may have.

Visit [bio-rad-antibodies.com/Pioneer](https://bio-rad-antibodies.com/Pioneer) to learn more about the Pioneer Antibody Discovery Platform.

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**Website** [bio-rad.com](https://bio-rad.com) **USA** 1 800 424 6723 **Australia** 61 2 9914 2800 **Austria** 00 800 00 24 67 23 **Belgium** 00 800 00 24 67 23 **Brazil** 4003 0399  
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