



Solutions across the spectrum of antibody drug discovery

Q² Solutions provides innovative antibody drug discovery services. Our science-led, collaborative approach facilitates faster decision-making, allowing you to advance to IND-enabling studies sooner and with more confidence.



Candidate identification and lead selection
Antibody libraries that generate drug-like candidates

Target and antibody production
Protein expression, purification and characterization

Lead characterization and optimization
Affinity, epitope binning, developability and candidate immunogenicity

*Turning Hope
Into Help™*



Candidate identification and lead selection

Specifica's Generation 3 library platform delivers highly diverse, drug-like antibodies from an *in vitro* platform. We also provide full platform transfers of exclusive libraries, with ten transfers completed to date. Our libraries deliver:

High Affinity

- 60% of antibodies have affinities better than 10nM, and 20% are sub-nanomolar
- 75% of all campaigns yield at least one sub-nanomolar antibody (excluding peptide MHC)
- Reduces the need for affinity maturation

High Diversity

- Using AI, antibodies are grouped into 10 to 1,000 distinct clusters
- Broad diversity improves the potential for antibodies with biological activity

Developability

- Sequence liabilities are purged from all CDRs (except HCDR3)
- Reduces the need for additional engineering/lead optimization

Efficient Lead Development

- Semi-synthetic *in vitro* antibodies do not require humanization
- High affinity and developability shorten the development time

Antibody Characterization

- Affinity determination
- Epitope binning
- Developability assessments

Customer-oriented library platform transfers

- Exclusive antibody libraries eliminate concerns about duplicate leads from a competitor
- Client HCDR3 diversity retained in-house for future library needs, such as new formats
- No royalties or milestone-based fees



Generation 3 phage display libraries deliver antibodies with maximum diversity

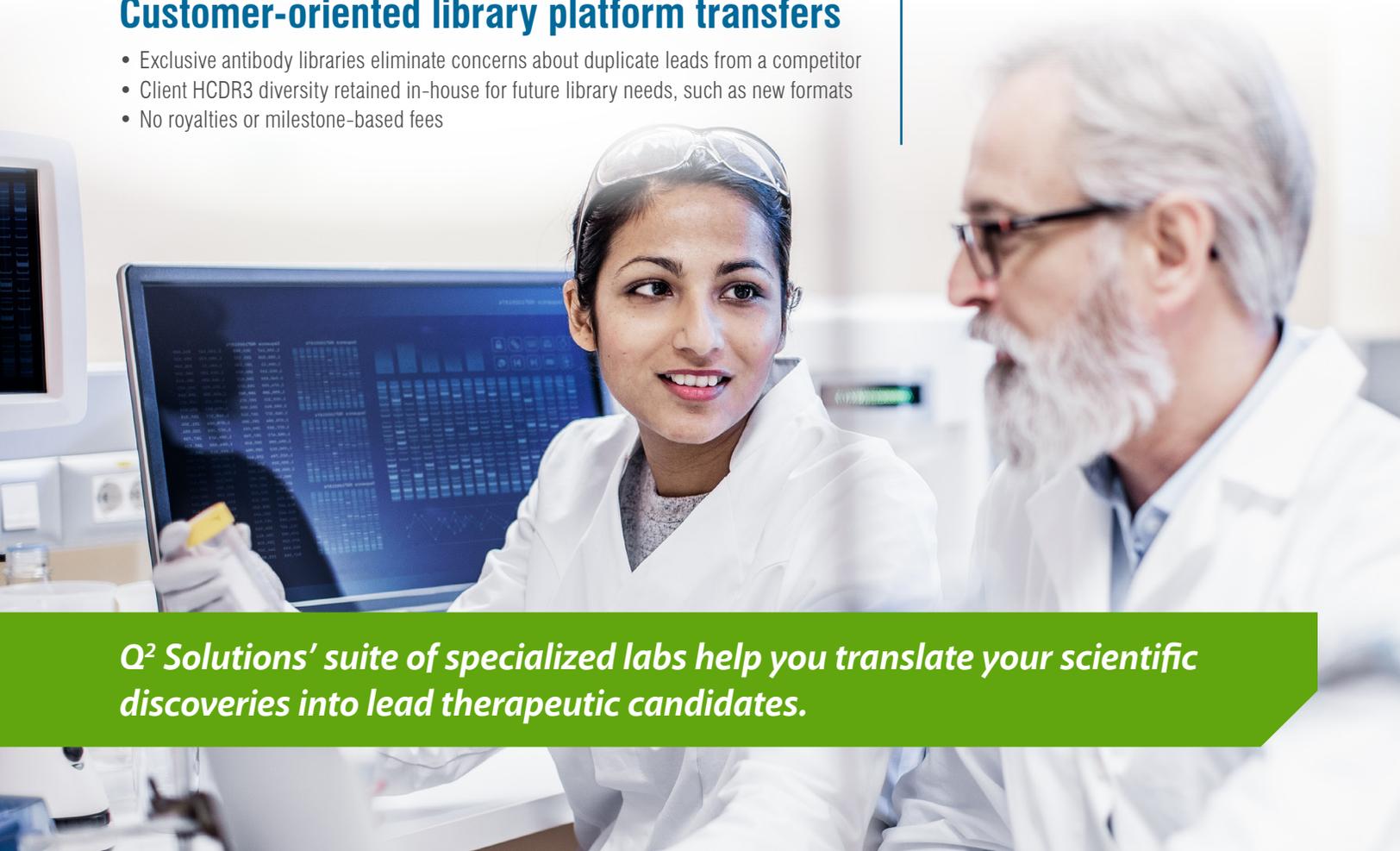


Yeast display narrows the pool to high-affinity binding candidates



Outputs evaluated by next-generation sequencing and grouped into distinct clusters

Q² Solutions' suite of specialized labs help you translate your scientific discoveries into lead therapeutic candidates.





Target and antibody production



Protein Sciences provides optimized recombinant protein for tailored, well-characterized, quality products.

Molecular biology

- Comprehensive services, including cloning and modification

Protein expression

- Production of recombinant proteins in multiple different expression systems

Protein purification

- Product-specific purification strategies to reach desired purity and key parameters

Protein characterization

- Customized approach to provide an orthogonal evaluation of related key parameters such as:
 - Size in solution
 - Folding
 - Sequence integrity

Experience with Prokaryotic and Eukaryotic Recombinant Proteins

- Viral, bacterial and human proteins
- Polyclonal, monoclonal and recombinant antibodies
- Hetero-oligomers or specific conformers
- Lipoproteins and integral membrane proteins
- Particle-forming proteins (virus-like proteins [VLPs], pseudo-particles)

Custom Support for Drug and Vaccine Development

- Antigen optimization to improve immunoassay robustness and reproducibility
- Antigen throughput customization using innovative technologies
- Antigen quality and robustness assured through orthogonal evaluation of key parameters
- Expert support available to consult and study immune response, antigen modifications or truncations



Lead characterization and optimization



ImmunXperts' immunogenicity testing allows you to optimize candidates for improved efficacy and reduced adverse events.

In silico methods for low-cost, high-throughput assessment

- Computer-based assessment of T-cell epitopes for HLA-binding risk
- Useful for deimmunization (lowering unwanted immunogenicity)

In vitro early/innate assays

- Monocyte activation assay
- Dendritic cell (DC) activation/maturation assay
- Reporter cell line assay
- Cytokine release assay (up to 60 cytokines)

In vitro T-cell assays

- CD8-depleted PMBC assay
- DC/T-cell assay
- Peptide assay (up to four cytokines)

MHC-associated peptide proteomics (MAPPS Assay)

Anti-drug antibody (ADA) assay

Immuno-Oncology

- Mixed Lymphocyte Reaction Assay
- Macrophage polarization and suppression assay
- Treg suppression assay
- Exhausted T-cell assays
- ADCC and ADCP assays
- Killing assays
- NK assays
- Neutrophil assays

Inflammation/Autoimmunity

- Antigen-specific T-cell activation assays
- Macrophage activation assays
- DC activation assays

Cell and Gene Therapy

- Potency assays
- Direct ex vivo and enriched Fluorospot assays
- Cytokine Release Assays

Additional Specialty Testing

Our Discovery Sciences team is well connected to Q² Solutions' other services, enabling you to take optimized leads through our bioanalytical services, including high-throughput ADME, pharmacokinetics (PK) and pharmacodynamics (PD). We also offer preclinical and clinical vaccines lab services, and our Translational Science and Innovation Lab (TSAIL) performs fit-for-purpose validation across a variety of methodologies, including anatomic and digital pathology, flow cytometry, immunoassays and genomics.



Why Q² Solutions?

The Q² Solutions suite of specialty labs provides unmatched expertise in drug discovery. Our built-in optimization processes help you reduce the risk of early abandonment and avoid costly and lengthy add-on services.



Personalized Discovery

- Fit-for-purpose labs with expertise in antibody engineering, immunogenicity and protein sciences
- High-quality results reduce extra steps and enable faster decision-making, expediting candidate selection



Flexible Solutions

- Competitive service-based pricing delivers exceptional value
- Choose the services that complement your internal efforts
- Maximize your resource allocation and reduce development time



Scientific Leadership

- Access to MD and PhD scientists who are recognized experts in their fields
- Thoughtful engagement from initiation and throughout execution
- Our experts will help design strategies to obtain the leads you need



Adaptable, Integrated Network

- Highly specialized labs with experience supporting unique discovery needs
- Systems to expedite the path from target to optimized lead candidate
- Dedicated project manager to serve as your primary point of contact throughout the project

Contact us

Email: discoverysciences@q2labsolutions.com

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