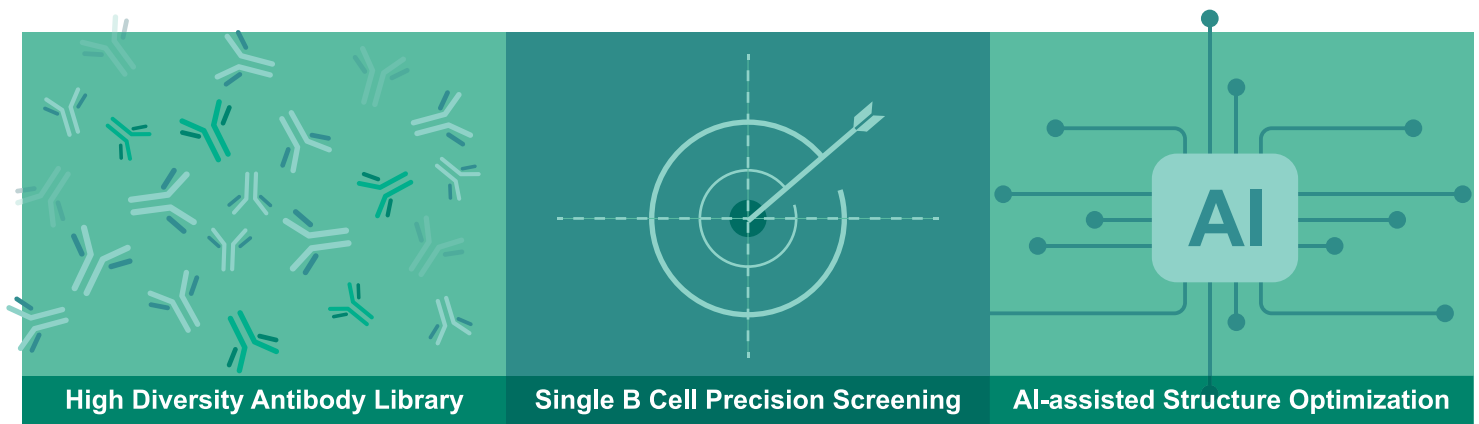


# AI POWERED SYNBIO ANTIBODY DISCOVERY SERVICE

As a cornerstone of antibody science, antibody discovery services offer vital technical support for drug development, disease diagnosis, and basic scientific research. These services drive ongoing innovation and the expansion of antibody applications. In the 21st century, antibody discovery technology has entered an era characterized by high-throughput single-cell techniques and AI-driven advancements. As a leader in AI-powered synthetic biology, Synbio Technologies offers comprehensive, high-quality AI-driven antibody discovery solutions.



## Why Choose Us?

- ✦ **Fast:** 6 weeks from antigen to lead molecule.
- ✦ **Accurate:** AI prediction + single-cell sequencing, exceeding industry standards.
- ✦ **Cost-effective:** 60% cost reduction with integrated platform.

# Challenges and solutions

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## Challenge 1: Precision in Epitope Recognition

### The Issue:

Conventional screening techniques like immunization and directed evolution still struggle to accurately pinpoint the most effective or specific epitopes on target antigens, which limits downstream antibody performance.



### Our Solution:

Leveraging advanced AI-powered antibody design tools, we accurately forecast antigen-binding sites. This enables rapid and reliable identification of optimal epitopes, streamlining the early stages of antibody discovery and enhancing targeting precision.

## Challenge 2: Feasibility in Development

### The Issue:

Initial antibody candidates often suffer from poor developability—such as instability or low expression—leading to elevated failure rates during downstream development stages.



### Our Solution:

We combine deep learning with molecular dynamics simulations to refine antibody structures and predict key properties. This integrated approach guides structural redesigns, improves manufacturability, and significantly reduces development attrition.

## Challenge 3: Structural Insight Bottlenecks

### The Issue:

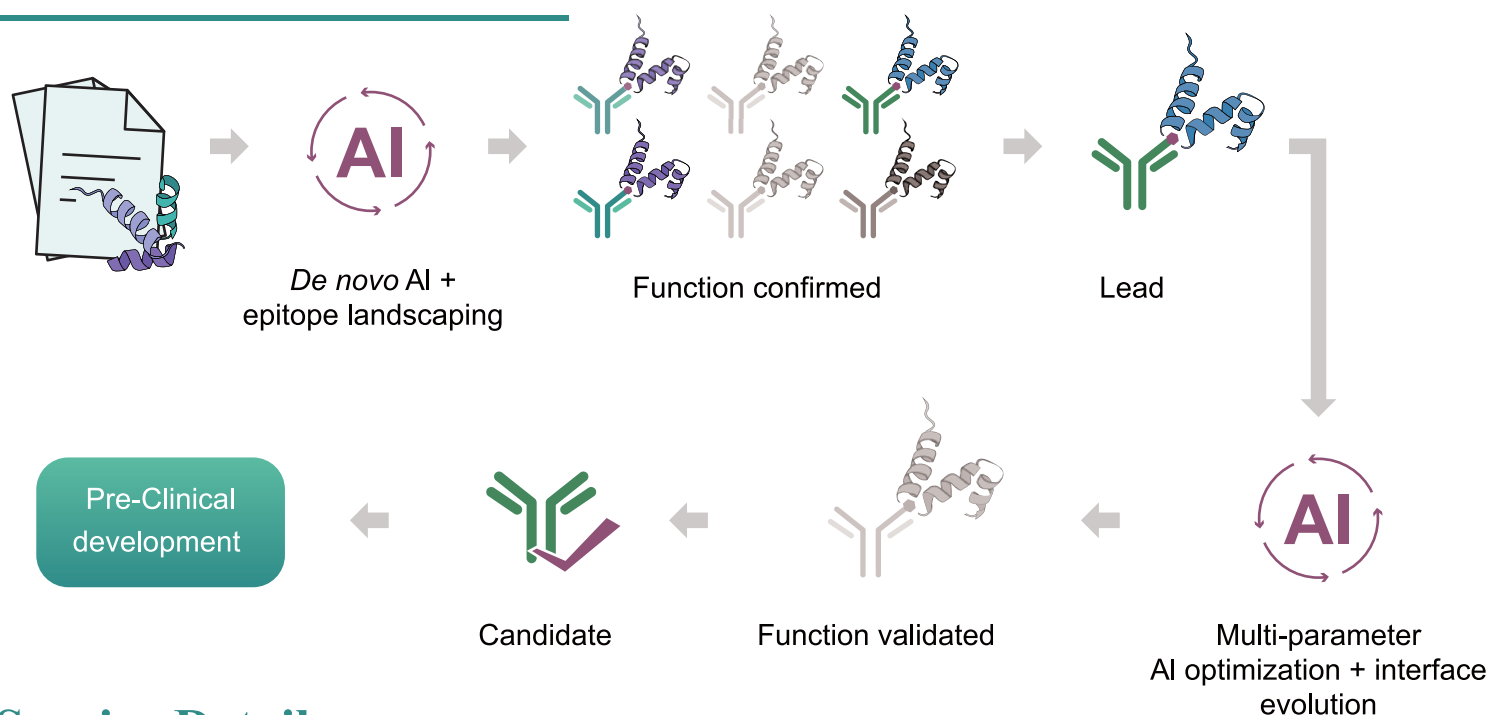
Traditional approaches like X-ray crystallography and NMR spectroscopy are time-intensive and low-throughput, creating hurdles in protein engineering workflows.



### Our Solution:

By fusing machine learning with dynamic structural modeling, we offer an accelerated path to protein structure prediction and analysis. This empowers biologics development with enhanced accuracy, higher efficiency, and scalable insights for rational drug design.

## Workflow



## Service Details

Service	Deliverables	TAT
Antigen Synthesis (For B cell enrichment and mAb discovery)	<ul style="list-style-type: none"> <li>&gt;2 mg recombinant antigen for screening.</li> <li>&gt;0.1 mg of biotinylated recombinant antigen.</li> </ul>	4-6 Weeks
Monoclonal antibody discovery preliminary analysis against both recombinant and natural antigen	<ul style="list-style-type: none"> <li>Report on ELISA results and purification process.</li> <li>Recombinant antigen-purified polyclonal antibody.</li> </ul>	2-3 Weeks
Monoclonal Antibody Discovery	<ul style="list-style-type: none"> <li>Full interactive report of repertoire including B-cell sequencing and serum proteome information.</li> <li>At least 10 candidates selected by data analysis with native chain pairing.</li> </ul>	8-10 Weeks



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