



# Twist provides integrated biologic solutions in Amazon Bio Discovery, AWS's AI-driven drug discovery application

## Amazon Bio Discovery × Twist Bioscience

The future of medicine is being written in code, but it must be validated in biology. Twist Bioscience is proud to be an integrated wet-lab partner for Amazon Bio Discovery, a new AI-powered application from AWS. This partnership provides a seamless, end-to-end “lab-in-the-loop” workflow that unifies *in silico* sequence design with high-throughput *in vitro* characterization.

Amazon Bio Discovery provides AI-powered computational design. Twist Bioscience provides essential wet lab validation, creating an integrated Design → Build → Test → Learn cycle for rapid therapeutic discovery.

*“AI agents make powerful scientific capabilities accessible to all drug researchers, not just those with computational expertise. With integrated wet lab partners like Twist Bioscience, scientists can go from AI-driven molecular design to real-world validation in a single workflow, accelerating antibody discovery in ways that weren't possible before.”*

**Dan Sheeran | AWS**

VP and General Manager, Healthcare & Life Sciences

## The Lab-in-the-Loop Discovery Workflow

### Design

Dry lab | AWS



Users access Amazon Bio Discovery's catalog of AI biology models and AI agents to design and generate novel protein sequences and variants in a secure, cloud-based environment. Once *in silico* designs are ready, users submit the sequences directly to Twist through an integrated API.

### Build

Wet lab | Twist



For all submitted designs, Twist writes the biology by manufacturing the actual genes and expressing the antibody proteins from those digital sequences.

### Test

Wet lab | Twist



Twist then runs full characterization on these physical proteins using over 10 different assays (such as binding, developability, and functional assays with data delivered to you in as few as 15 days.)

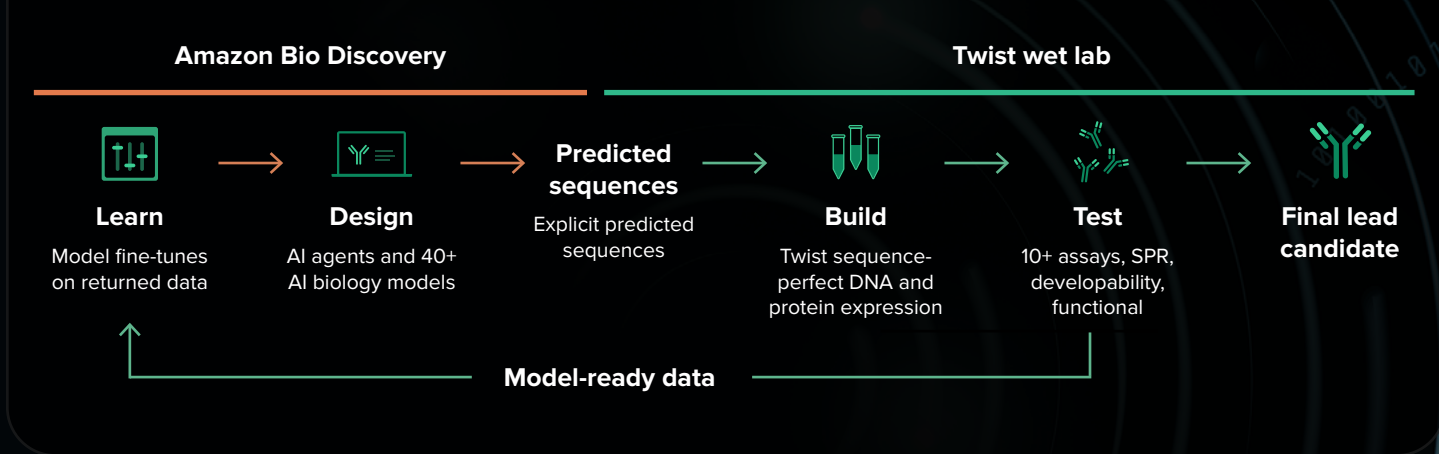
### Learn

Dry lab | AWS



The physical validation data generated by Twist returns to Amazon Bio Discovery to train the AI models. This data helps the models learn the difference between a digital prediction and physical reality, refining the next round of designs.

# The Integrated Lab-in-the-Loop Workflow for Antibody Discovery



## See it in action: Memorial Sloan Kettering Cancer Center (MSK) case study

Using the integrated model-and-lab workflow, MSK designed nearly 300,000 novel antibody candidates targeting a pediatric cancer target, then sent the top 500 out for synthesis and testing. What typically takes up to a year using traditional design methods took Memorial Sloan Kettering weeks.

From a broad antibody landscape, high-confidence leads are validated and advanced

nearly  
**300,000**

Sequences identified across 12 conditions

**~500**

Individual clones selected experimentally

**46 out of 116**

Candidates tested showed measureable binding affinity

**µM to pM**

Binders detected across µM to pM affinity range

## The Scale of Twist's Impact: A Legacy of Innovation

**130,000+**

Antibodies assayed

**200,000+**

Proteins expressed

**7 million**

Data points generated for AI training

**15 days**

AI-ready data

**6,000+**

IgGs per week

**445+**

Partner organizations

## Let's talk about your platform

Whether you are just starting your AI journey or scaling up production, our scientific team is here to consult on your discovery needs. Contact us to learn how Twist can power your AI strategy.