Twist's Antibody Production and Characterization Services

Get to characterization data in a matter of weeks without making a single protein

The Complete Solution for Antibody Development

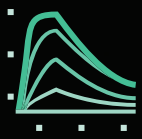
For scientists and teams developing antibodies, Twist's end-to-end, high-throughput antibody production and characterization platform is the solution that combines AI/ML-ready data integration, flexible project design, and trusted manufacturing precision.

Services We Offer



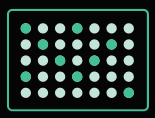
Antibody Production

Small to medium scale purification of antibodies up to ~5 mg.



Binding Assessment

Choose from binding confirmation, binding affinity, kinetics, and epitope binning to identify optimal binders.



Developability

Identify your most promising candidates for manufacturing with 96-well or 384-well format developability assays.



Advanced Characterization

Format your antibody as you need it with intact mass, endotoxin testing, and custom characterization options.

Train Discovery Algorithms Without a Wet Lab

Twist creates high-quality, standardized datasets ready for direct use in AI and machine learning models. Every step happens in house, from gene synthesis to expression to assay readouts, so you can focus on designing the next breakthrough antibody without investing in equipment, lab, space, or specialized staff.

Why Twist

5 Days to Full-Length IgG

Full two-chain IgG in as few as 5 business days. Most fast-turnaround options hand you a proxy, Twist doesn't.

No Format Compromise

Get full two-chain IgG, not a single-chain proxy, in the exact format your program will need at IND, without waiting on mammalian expression timelines.

AI/ML Model and Data Integration

Customizable assay setup, advanced data analysis and delivery in model-ready formats.

Scalable from One to Thousands

Capacity to produce and screen thousands of antibodies in a single day without having to wait in a queue.

No Internal CAPEX Required

Outsource your R&D to conserve precious internal resources.

Scientific Expertise

Collaborate with Twist scientists to design, troubleshoot, and interpret your complex workflows.

One End-to-End Trusted Partner

Rely on Twist for consistent quality from DNA through fully characterized, purified antibodies.

"We're consolidating these tools in one, secure application powered by advanced AI capabilities that doesn't required researchers to manage complex infrastructure or write code, and they can also easily find and work with wet lab partners such as Twist Bioscience."

Rajiv Chopra, Vice President Of Healthcare AI and Life Sciences, Amazon

Antibody production

EXPRESSION SYSTEM	HEK293	CHO	CELL-FREE	DETAILS
TURNAROUND TIME	8–11 BD	11–14 BD	5–7 BD	Add-ons extend turnaround time as noted below.
SCALE ADD-ON	1 mL (Purified / Supernatant) 4 mL (Purified)	8 mL (Purified / Supernatant) 24 mL (Purified)	0.05 mL · 0.10 mL	8 mL: +1 BD · 24 mL: +4 BD Larger scales available upon request.
AVERAGE YIELD	1 mL: 180 µg 8 mL: 860 µg 4 mL: 550 µg 24 mL: 2,580 µg	1 mL: 95 µg 8 mL: 670 µg 4 mL: 486 µg 24 mL: 2,010 µg	0.05 mL: 5–10 µg 0.10 mL: 5–25 µg	For antibody-only orders. Delivered yield is lower for orders that include characterization assays.
AVERAGE PURITY	Most formats: ~95% · Bispecifics: ~85%		Most formats: ~70%	For purified antibodies. Not measured for supernatant.
NORMALIZATION ADD-ON	1 mL: 0.5–1 mg/mL 8 mL: 1–2 mg/mL 4 mL: 1–2 mg/mL 24 mL: 1–3 mg/mL	1 mL: 0.5–1 mg/mL 8 mL: 0.5–2 mg/mL 4 mL: 0.5–1 mg/mL 24 mL: 1–3 mg/mL	—	+1 BD

Production details

PROTEIN & ANTIBODY FORMATS	• Full-length IgG (hIgG1, hIgG4, mIgG2a, rabbit IgG), with or without common Fc mutations • Fab, scFv, VHH, VHH-His, VHH-Fc, B-Body • Bispecifics: KiH, monovalent
PURIFICATION	• None (Supernatant; Fc-tag) • Protein A (Fc-tag) • Nickel (His-tag)
ELUTION BUFFERS	• 83 mM glycine, 167 mM Tris-HCl, pH 6.0 • 43 mM sodium citrate, 147 mM HEPES, pH 6.0 (amine-free) • 10 mM HEPES, 150 mM NaCl, pH 7.0
DELIVERY FORMAT	• 96 Deep Well Block • 1.4 mL Micronics • 4 mL Micronics • 2 mL Tubes • 10 mL Tubes
ANTIBODY FINISHING ADD-ON	• Buffer exchange: DPBS pH 7.4 or PBS pH 6 (+1 BD) • Normalization: see table above (+1 BD) • Sterile filtration: 0.2 µm
ALIQUOTING (mL) ADD-ON	Purified 1 mL 2×100 4 mL 2×400 | 3×300 | 4×200 | 6×100 8 mL 2×400 | 3×300 | 4×200 | 6×150 24 mL 2×800 | 3×500 | 4×400 | 5×300 | 6×250 | 8×200 Supernatant 1 mL 2×400 8 mL 2×3,500 | 4×1,750
SEQUENCES	• Length: 0.3–5.0 kb • Complexity: Low | Medium Based on the presence, frequency, and length of features in a sequence; impacts ease and speed of production. • Codon optimization: Large language model-driven, 100s of target organisms
VECTORS & GLYCEROL STOCKS	• 20+ catalog expression vectors • Unlimited custom vectors: one-time onboarding (10 BD add-on), unlimited use thereafter • Glycerol stocks included with all antibody production orders
QUALITY CONTROL & INTACT MASS	Every antibody ships with a Certificate of Analysis (COA): • Purity & size: % purity incl. chain size(s) in kDa, by capillary electrophoresis SDS • Concentration: ≥0.05 mg/mL, verified by UV-Vis spectroscopy • Analytical SEC (aSEC) ADD-ON: predicted target peak (%) and/or dominant peak (%), +2–3 BD • Endotoxin testing ADD-ON: ≤4 EU/mg, subsampling or entire order, +2 BD • Intact mass spec ADD-ON: expected, observed, and Δ mass (Da), 5 BD

Binding assessment

ASSAY	TAT*
Affinity Determination by SPR Determine full binding kinetics (k_a, k_d, k_D) for large antibody panels using high-throughput SPR (up to 384 samples/run).	From 5 BD
Epitope Binning by SPR Map competitive binding relationships across large antibody panels to identify epitope families and guide lead selection.	From 5 BD
On-Cell Binding Confirmation by Flow Cytometry Confirm target engagement on cells expressing native antigen. Generates dose-response binding curves for ranking.	From 5 BD
Single-Point Binding Kinetics by BLI Rapidly confirm target engagement across large panels at a single concentration. Used for early-stage hit triage before full kinetic analysis.	From 5 BD
Multi-Point Affinity Determination by BLI Determine full binding kinetics and affinity constants across a concentration series. Orthogonal to SPR for candidate confirmation.	From 5 BD
Epitope Binning by BLI Map competitive binding relationships to identify epitope diversity and guide lead selection. Suitable when SPR throughput is not required.	From 5 BD

Developability

ASSAY	TAT*
% Monomer (Analytical SEC) Quantify monomeric purity and aggregate content.	From 2 BD
Size Distribution (DLS) Assess particle size homogeneity and flag candidates with high polydispersity as early aggregation liabilities.	From 2 BD
Thermostability (nanoDSF) Measure structural integrity under thermal stress. Three complementary parameters reported per sample.	From 2 BD
Affinity Capture-Self Interaction Nanoparticle Spectroscopy (AC-SINS) Detect self-interaction propensity as an early predictor of in vivo aggregation and clearance risk (VHH-Fc, IgG).	From 2 BD
Polyspecificity (Baculovirus Particle (BVP) ELISA) Screen for non-specific binding. BVP reactivity correlates with accelerated serum clearance in vivo.	From 2 BD
Hydrophobicity (Hydrophobic Interaction, HI) Rank candidates by surface hydrophobicity. Lower fluorescence signal suggests increased aggregation and non-specific binding risk. Plate (PAIA HI) or column (HPLC).	From 1 BD
Non-specific Propensity (Ovalbumin) Predict solution-state aggregation behavior. Lower fluorescent signal indicates off-target binding to OVA; used for confirmatory triage. Plate (PAIA OVA) or column (CIC).	From 1 BD

Cell-based functional

ASSAY	TAT
Signaling Assays (Off-the-Shelf) Quantify agonist or antagonist activity through defined signaling pathways.	Contact us
Internalization Quantify receptor internalization extent following antibody engagement.	
Custom Assay Development For programs requiring non-standard cell types, proprietary cell lines, or bespoke readouts (e.g., immunogenicity, cytotoxicity, cross-reactivity).	

BD = business days.
**Assay turnaround times do not include antibody production and vary based on the number of samples.*

Learn more about antibody characterization services and custom assay development at **twistbioscience.com/antibody-discovery/high-throughput-antibody-production**. Get in touch at **sales@twistbioscience.com**

For research use only. Not for use in diagnostic procedures. Results are specific to the institution where they were obtained and may not reflect the results achievable at other institutions.
Turnaround time (TAT) is defined as the period from order submission to delivery, in business days: HEK293 8–11 BD, CHO 11–14 BD, Cell-free expression is 5 business days; 8 to 10 business days with SPR. Data on file. Stated times reflect the fastest available configuration; actual TAT varies with format, order size and sequence complexity.

REV 5.0