TWIST BIOSCIENCE

Product Sheet

Twist Express Screening Antibodies

Take the fast route from design to format-ready leads

Screening-grade antibodies bind across three formats

Modern antibody discovery pipelines, particularly those driven by AI and ML design, routinely generate hundreds to thousands of de novo candidate sequences that require functional triage before a small lead set advances to mammalian re-expression. Traditional HEK or CHO transient expression imposes a 3 to 6 week cycle and a high per-sample cost, creating a structural bottleneck between in silico design and biophysical validation.

Twist Express Screening Antibodies close that gap. By coupling linear-DNA cell-free protein synthesis with single-step Protein A capture, Twist delivers SPR-grade full-length IgG, or single-chain formats, in as few as 5 business days at a starting price of $88 per variant.

Because the platform supports multiple formats on a single workflow, the same pipeline carries a program across early concept screening, format conversion, and lead nomination. Candidates that earn deeper evaluation move into Twist mammalian expression and the full characterization suite without changing vendors or re-validating the data already generated.

Screen full-length antibodies directly

Twist Express Screening delivers correctly assembled IgG, so every candidate is evaluated in the format you intend to develop. Your data reflects the molecule you plan to advance, with no single-chain stand-in and no reformatting before it counts.

Key benefits

Built for screening scale

- Hundreds to thousands of candidates triaged per campaign
- Per-sequence yield data as a built-in triage signal
- Select either data-only or product + data

Full-length IgG, not just fragments

- Cell-free expression of correctly assembled heavy chain plus light chain antibodies
- hIgG1, plus VHH-Fc and scFv-Fc on the same workflow

Fast enough to close the loop

- Purified antibody in as few as 5 business days
- Protein plus SPR affinity data in 8 business days

Priced for high-throughput triage

- Published pricing from $88 per variant
- Order online or through your account team

Specifications

Expression	Linear-DNA cell-free protein synthesis
Purification	Single-step Protein A capture
Scale	100 µL reactions, 96-well plate format. 50 µL available for data-only orders.
Formats	Full-length IgG (hIgG1), VHH-Fc, scFv-Fc
Yield	See table below
Characterization	SPR affinity data, optional
Quality control	Reducing CE-SDS for size and purity

Yield

Format	Scale	Avg. yield
Full-length IgG	100 µL	~15–20 µg
Full-length IgG	50 µL	~10–15 µg
VHH-FC/ScFv-Fc	100 µL	~20–30 µg
VHH-FC/ScFv-Fc	50 µL	~10–20 µg

Actual yield varies depending on the sequence. 50 µL scale is available for data-only orders. Purified protein deliverables are supplied at 100 µL.

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How does Twist Express Screening work?

1. Sequence submission

Submit variable region (VH and VL), VHH or scFv sequences and select format and project options.

2. Linear DNA synthesis

Heavy and light chain genes synthesized as linear DNA on the Twist silicon platform.

3. Cell-free expression

Paired or single chains expressed by cell-free protein synthesis in 50 or 100 µL reactions, 96-well format.

4. Protein A capture

Single-step Protein A capture purifies assembled antibody directly from the cell lysate.

5. QC & characterization

Reducing CE-SDS confirms heavy and light chain size and quantifies purity. SPR affinity data optional.

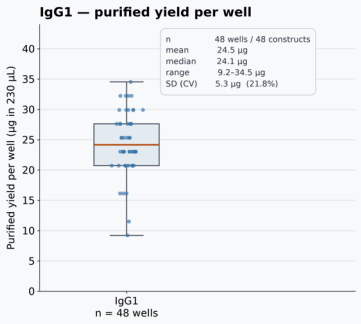


Figure 1. Per-sample purified yield across the 48-mAb benchmark panel

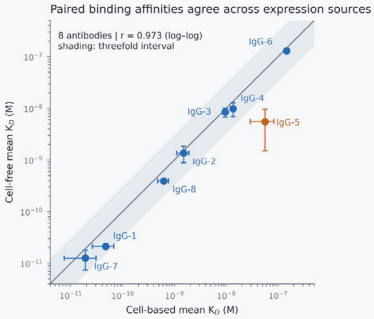


Figure 2. SPR affinity bridging study. Cell-free IgG vs HEK-expressed reference, log-log.

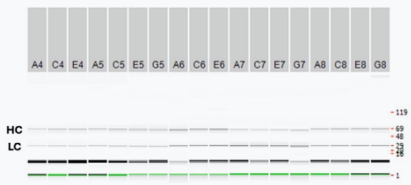


Figure 3. CE-SDS profile. Heavy and light chain size and purity, reducing conditions.

Affinity validation

To establish that cell-free-expressed IgG produces binding affinities comparable to mammalian-expressed reference material, Twist ran a head-to-head SPR comparison of eight antibodies tested against seven distinct antigens, spanning four orders of magnitude in KD.

Cell-free IgG was assayed by SPR against HEK-expressed reference antibodies. KD values from the two expression systems were strongly correlated (Pearson r = 0.973, log–log), and seven of eight cell-free KDs were within threefold of the HEK293 values. The tightest binder measured 12.6 pM.

Quality control

Purified antibodies are inspected by reducing CE-SDS (digital SDS-PAGE) to confirm correct heavy chain and light chain size and to quantify purity. Microfluidic capillary electrophoresis shows the expected product profile, with two principal bands at approximately 50–70 kDa for heavy chain and 25–35 kDa for light chain.

Yield data is reported per antibody sequence and can be used directly as a screening signal for candidate selection. SPR data is generated from 5–15 µg per construct, which is what makes triage at plate scale practical.

You design it, we build it.

Get in touch at sales@twistbioscience.com or learn more at twistbioscience.com

For Research Use Only. Not for use in diagnostic procedures. Turnaround time (TAT) is defined as the period from order submission to delivery, in business days (BD): HEK293 8–11 BD, CHO 11–14 BD, Cell-free 5 BD. Stated times reflect the fastest available configuration; actual TAT varies with format, order size and sequence complexity. All pricing in USD.