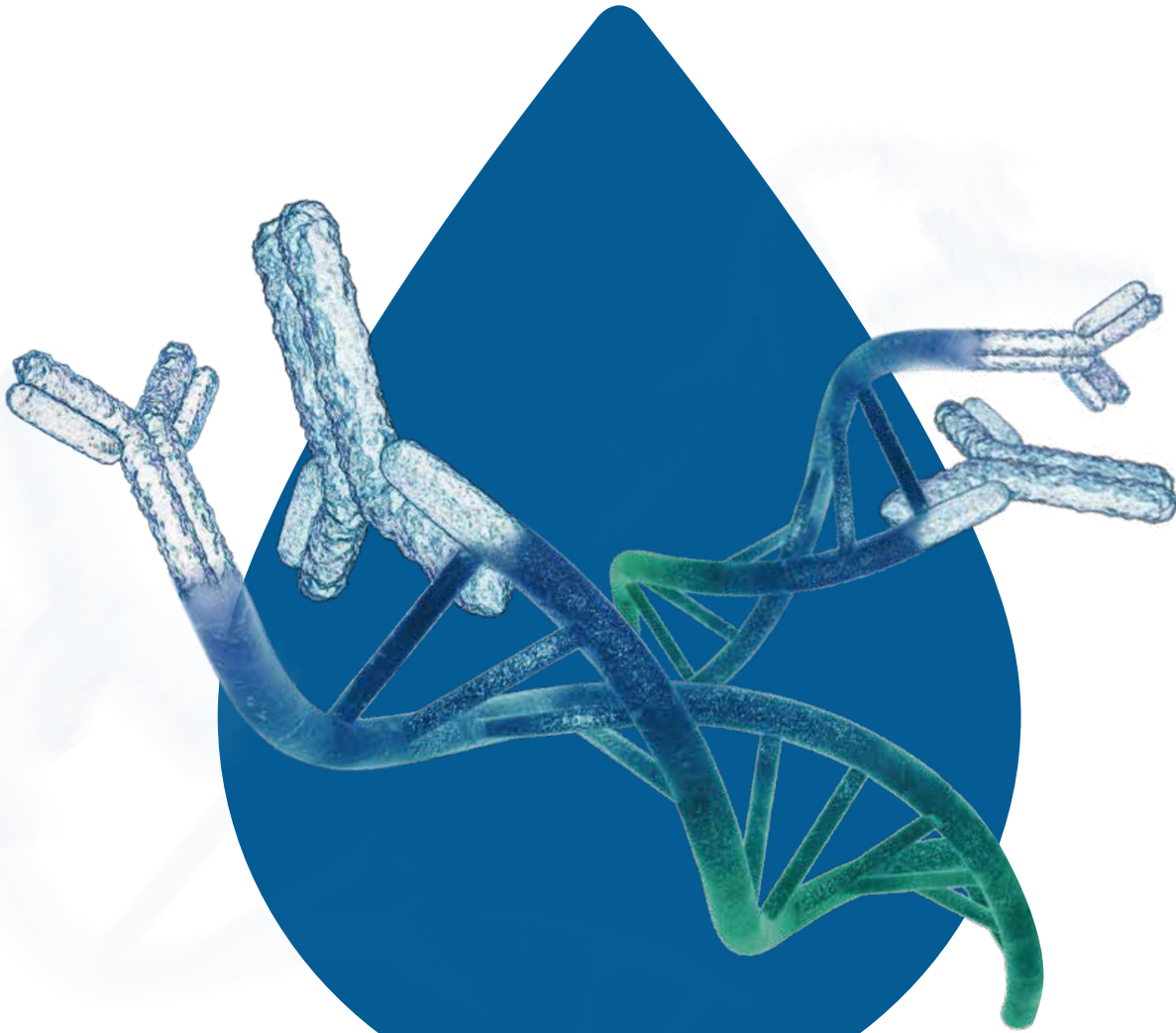


# Recombinant Antibody Expression Services

Let our Experts help you unleash the full potential of your recombinant antibody expression projects



# High Density (HD) Transient Mammalian Expression

GenScript has developed a proprietary High Density (HD) Transient Expression system (HD 293F and HD CHO-S) for the high-titer production of recombinant antibodies (rAbs). This cutting edge system enables the generation of functional rAbs at much higher yields compared to regular transient expression systems. High-titer, gram-level production of recombinant antibodies (rAbs) can be produced in a cost-effective way for functional, structural and therapeutic studies within a short timeframe.

## HD Transient Expression Service Key Features

**Choose** between HD 293F and HD CHO-S for choice of HEK293 or CHO expression

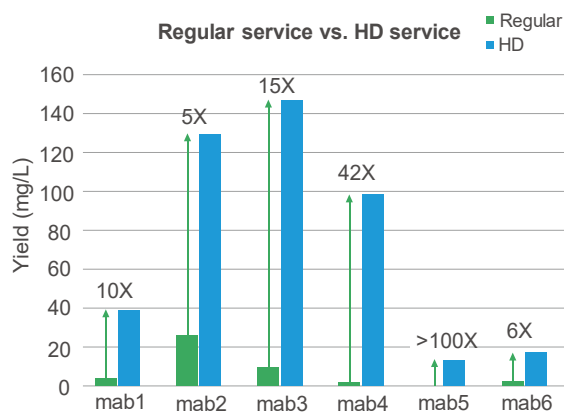
**Compare** expression between regular and HD transient expression cell-lines

**Alternative approach** for difficult and low-yielding proteins

**Yield improvements** of up to 100-fold

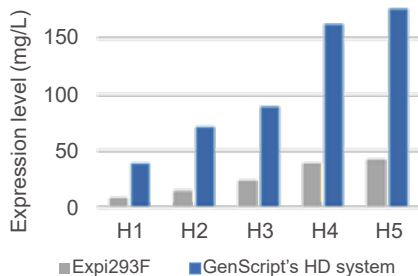
**Quick turnaround time** from sequence to protein/antibody in as little as 10 weeks

**Up to 3 g/L** recombinant antibody titer possible

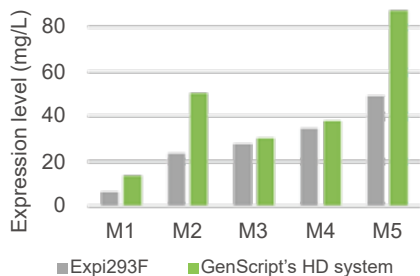


HD Transient Expression service resulted in yield improvements of 5- to >100-fold for 6 different monoclonal antibodies compared to the regular service

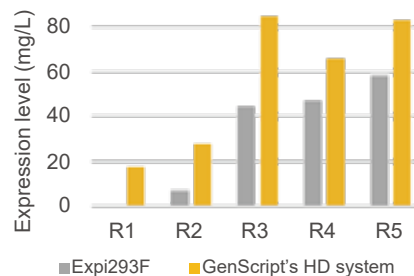
### Optimization of Low-Yield Human rAb



### Optimization of Low-Yield Mouse rAb



### Optimization of Low-Yield Rabbit rAb



**When comparing expression levels of low-yield rAbs, GenScript's HD 293F expression system consistently outperformed our competitor's Expi293F system.** (A) Approximately 4–6 fold increase in for human IgG1 and human IgG4 rAbs (H1 – H6); (B) Comparable (M3, M4, M5) and up to 2-fold increase (M1, M2) in expression for mouse rAbs; (C) 1.5 – 4 fold increase in expression levels of rabbit rAbs, with R1 showing a 174-fold expression boost from <0.1 mg/L to 17.4 mg/L.

Our HD expression systems utilize proprietary cocktails consisting of chemically-defined reagents that can boost cell growth and viability, as well as facilitating the protein folding and secretion. The antibody expressed from HD system show same binding properties and comparable PTM patterns compared with the standard expression system.

## Recombinant Antibody Expression Services

By combining our rich experience in molecular biology and cell system engineering, GenScript has made its mark as a world leader in recombinant antibody expression. Using a range of proprietary technologies to ensure high quality rAb production at any scale, GenScript's comprehensive array of expert-led rAb expression services are sure to maximize the success of your research projects.

## Recombinant Antibody Expression Service Selection Guide

Antibody Amount	Timeline (Gene synthesis included)	Pricing	Applications
Crude supernatant <b>100 ug</b> or <b>1 mg</b> purified antibody	As short as <b>13 Business days*</b>	Starting from <b>\$250</b> per antibody	Screening, Binding characterizations...
<b>Ask for "HTP Gene to Antibody" with 2 options available (Standard &amp; Economy)</b>			
<b>5-100 mg</b> purified antibody	As short as <b>4 weeks</b>	Starting from <b>\$1,800</b> per antibody	Cell based assays Preliminary efficacy...
<b>Ask for Guaranteed "MamPilot"</b>			
<b>&gt;100 mg</b> purified Antibody (up to 10 L expression)	<b>5 weeks+</b>	Customized pricing please inquire	Animal studies...
<b>Ask for High Density (HD) Transient Expression</b>			

## Global Leader in Recombinant Protein and Antibody Production

GenScript is a leading provider of a comprehensive suite of recombinant protein services across different expression platforms. Our expert scientists are invested in helping to maximize the success of your research project every step of the way, and partner with scientists all over the world to accelerate scientific discovery.

**10,000+**

Successful projects delivered

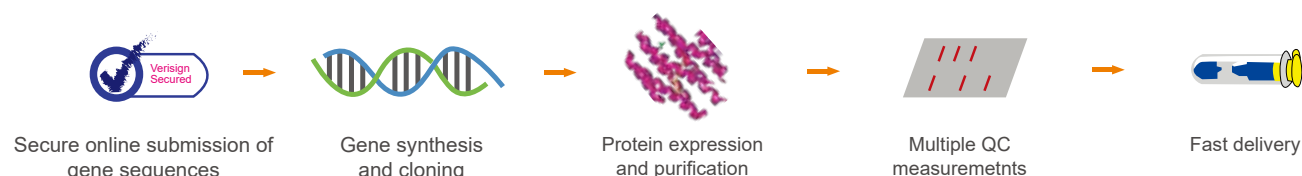
**>92%**

Expression success rate

**15+**

Years of experience

## Streamlined Workflow for Protein and Antibody Expression



# High Throughput Gene-to-Antibody Expression Service

High throughput (HTP) gene to antibody production provides the most cost effective option for small-scale recombinant antibodies. This popular service combines GenScript's expertise in high-throughput gene synthesis with a proprietary transient antibody expression technology to produce high quality recombinant antibodies for both therapeutic antibody drug candidates and reagent antibodies.



## Fastest Turnaround Time in the Industry

Express delivery of your antibodies in just 18 business days!\*

\* For standard packages



## Customizable Project Options

Multiple antibody formats available for expression; Flexible optional QCs. Now available in 24-well expression format!



## Cost Effective Option for your Investment

2 services bundled into 1 package to reduce cost. An economy option is also available!

Examples of antibody sequences accepted: variable region sequenced from hybridoma, hits (Fab or scFv) selected from display library based method, sequences from single B cell and/or repertoire analysis via next generation sequencing (NGS), and many more. You provide us the sequences of the fragments and we take care of the rest. Deliverables can be supernatant or purified antibodies. There is no additional set-up fee, and the cost of gene synthesis is waived.



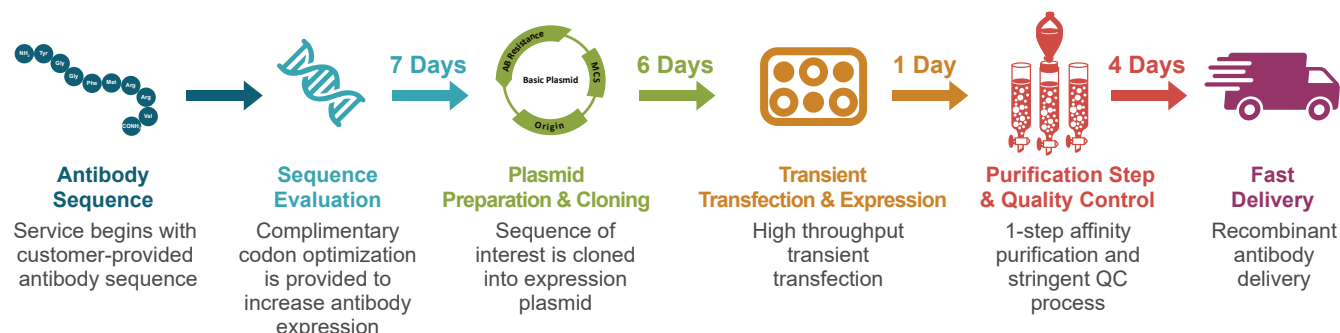
Express **hundreds** of recombinant antibodies at once, starting from gene synthesis

**Fast delivery** of supernatant or purified antibodies for your screening project

## HTPGtA service features

This popular service is perfect for researchers looking to conduct pilot expression projects involving 4+ rAbs. Projects start from HTP gene synthesis or customer-supplied DNA – get your purified antibodies shipped in as few as 18 days!

### HTPGtA Production Workflow



\*Timeline varies slightly for bispecific antibody HTPGtA service.

## HTPGtA service specifications

Packages apply to full length human IgG1, human IgG4, mouse IgG2a, and mouse/human chimeric with hIgG1/hIgG4; k and l light chains

### Service Specifications: Traditional

Starting Material	Amount	Timeline (including gene synthesis)	Deliverables	Price
Antibody Sequence (4+ mAbs required)	10 mL of supernatant (SC1945/E)	<b>Standard:</b> 13 Business Days <b>Economy:</b> 22-25 Business Days	10 mL of crude supernatant QC Data	<b>Standard:</b> Starting at \$350 <b>Economy:</b> Starting at \$255
	100 µg (SC1796/E)	<b>Standard:</b> 18 Business Days <b>Economy:</b> 28-30 Business Days	1-step affinity purified antibody as specified QC data	<b>Standard:</b> Starting at \$500 <b>Economy:</b> Starting at \$390
	1mg (SC1797/E)			
	Customized (SC1946/E)			

### Service Specifications: 24 Well Format

Starting Material	Amount	Timeline (including gene synthesis)	Deliverables	Price
Antibody Sequence (12+ mAbs required)	0.5-1 mL of supernatant (SC1973)	10 Business Days	0.5-1 mL of crude supernatant QC data	Starting at \$335
	0.5-1 mL supernatant (SC1973/E)	23-25 Business Days	0.5-1 mL of crude supernatant QC data	Starting at \$245

- Deliverables: Choose between receiving crude rAb-containing cell culture supernatants, or purified antibodies at mg to mg quantities
- Timeline excludes additional 3 – 5 days of transit time.
- QC data provided:
  - SC1945E: WB against Fc tag
  - SC1796E / SC1797E / SC1973 / SC1973E: A280 & SDS-PAGE
  - Additional QC options available (pricing may vary): SEC-HPLC, HTP ELISA, endotoxin testing, LC-MS, peptide mapping

## MamPilot Recombinant Antibody Expression Service

Our MamPilot Recombinant Antibody (rAb) expression service offers scientists who are unsure about the yield of the rAb they are seeking to express. Our cutting edge high density (HD) expression platform ensures high levels of rAb expression. In order to provide scientists with flexible and affordable options, we offer both MamPilot Guaranteed and MamPilot Customized packages, in order to best meet their research requirements.

### MamPilot Guaranteed rAb Expression Service (SC1989)

This Guaranteed service is recommended for researchers seeking to evaluate their rAb expression level, and also obtain a guaranteed amount of purified rAb to kickstart their research.



Cost-Effective



Industry Experts



Fast Delivery



Easy to Scale-up

- **Flexible** expression scale (5 – 100 mg)
- **Rapid** production time (20 BD from gene synthesis to purified rAb)
- **Guaranteed** rAb amount, purity (>90%), and endotoxin levels (<10 EU/mg)

### MamPilot Guaranteed Package Service Specifications

Guaranteed amount of purified rAb	Timeline (Gene synthesis included)	Price (I)	Price (II)
5 mg	20 BD	\$ 1800	\$ 2160
10 mg		\$ 2100	\$ 2520
20 mg	23 BD	\$ 2600	\$ 3120
50 mg	30 BD	\$ 4300	\$ 5160
100 mg		\$ 7000	\$ 8400

- All guaranteed packages include gene synthesis, cloning of antibody variable region (using customer-provided sequence), and all relevant molecular biology work.
- Purity is determined by SDS-PAGE (SEC-HPLC analysis available on request).
- Pricing: (I) applies to human IgG1, human IgG4, mouse IgG2a, or rabbit IgG; (II) applies to mouse IgG1.

# Large Scale and Gram Level rAb Production

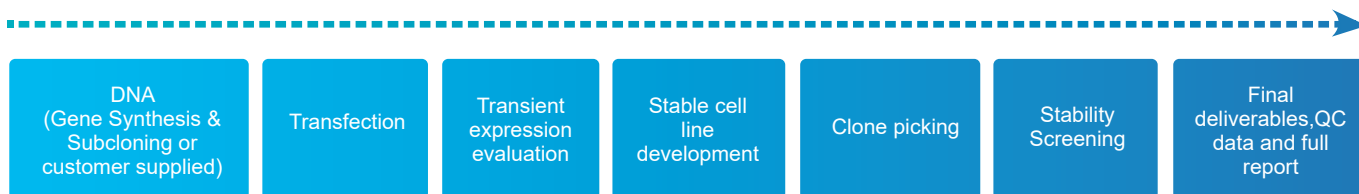
## Large scale rAb production service specifications

Customer Provides	Milestones	Timeline	Deliverables
Target sequence (DNA or protein)/DNA template/expression construct	Gene synthesis & Cloning	3 weeks	• Gene in pcDNA3.4
	Expression Evaluation	2 weeks	• Expression Report
	Scale up(1 L-10 L)	3-4 weeks	• Purified protein/rAb • QC data

QC data provided: A280, with SDS-PAGE and/or HPLC report (LC-MS as necessary).

For rAb production needs at the gram level scale, GenScript additionally offers top quality mammalian stable cell line development capabilities for rAb bioproduction.

### Stable Transfection & Cell Line Development Workflow



# Antibody Fragment Production

Antibody fragments such as scFvs, Fabs and VHH/VH retain full antigen-binding capacity and possess superior properties for research, diagnostic and therapeutic applications. Fragments are particularly useful in applications where epitope binding is sufficient for the desired effect including therapeutic applications such as virus neutralization or receptor blocking.



## HTPGtA service specifications for bispecific antibodies (SC1946)

GenScript's BsAb HTPGtA is available as a customized package and applies to the following BsAb formats: KiH with common Lc, CrossMab, and IgG-ScFv. This automated platform utilizes the HD 293F system and is ideal for quick, robust screening of different formats and linker types/lengths, while maximizing BsAb expression levels and minimizing lot-to-lot variation. In addition, GenScript's BsAb purification method, yields antibodies of high purity that can be directly used in preliminary binding and cell based assays.

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