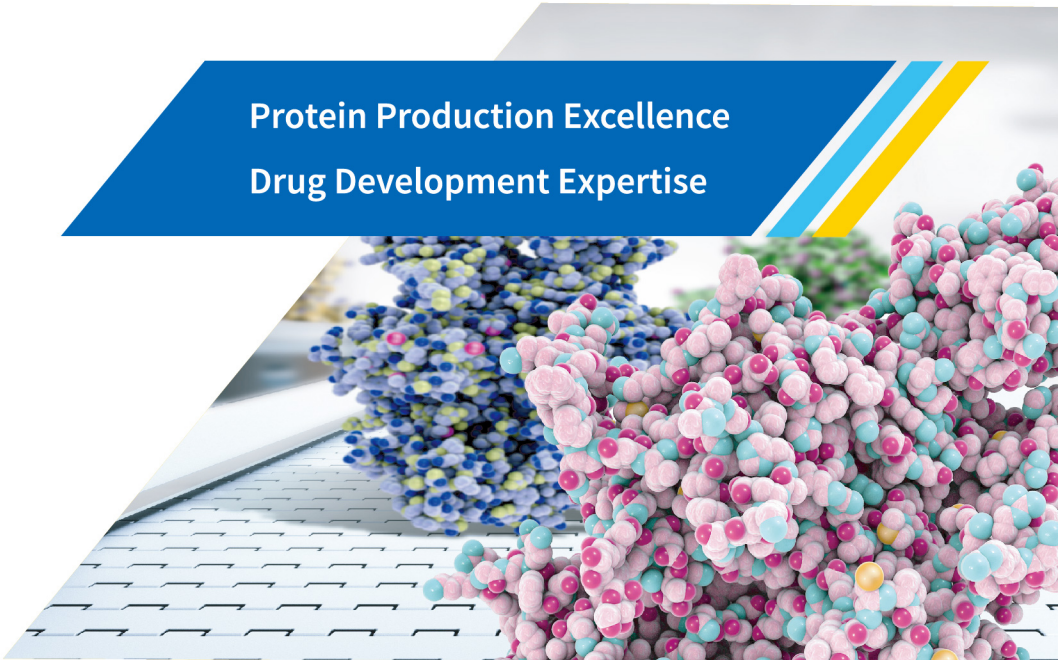


# Accelerating Biologics Drug Development: Unmatched Protein & Antibody Production Services

Protein Production Excellence  
Drug Development Expertise



# Protein Sciences: Uniting Drug Development Expertise with Protein Production Services



Construct Generation

Cloning DNA Prep

Expression

Purification

Protein Characterization

As fast as **3 weeks**



Monoclonal Antibody

Bispecific Antibody

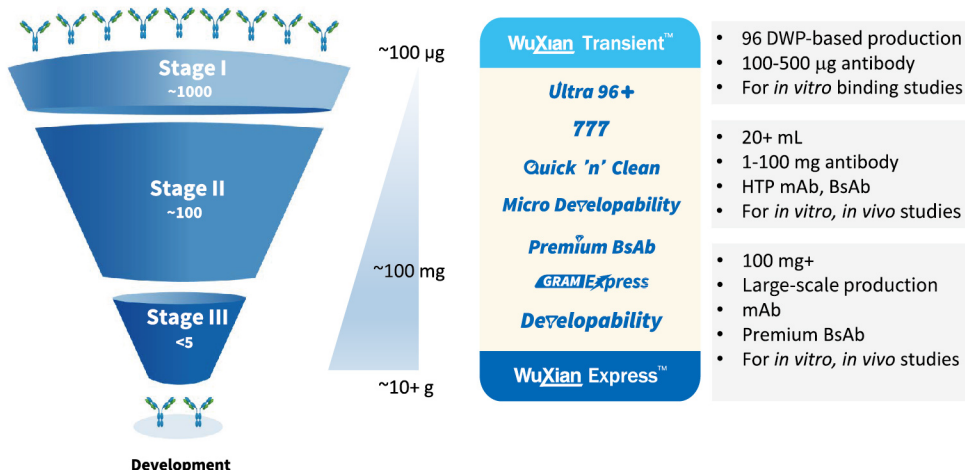
Antibody Drug Conjugate

Fc-fusion Protein

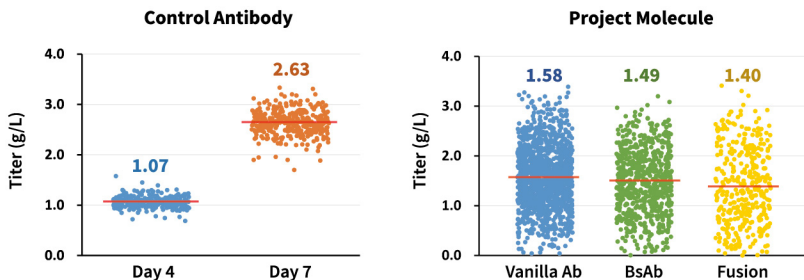
Antibody Fragment

Recombinant Protein

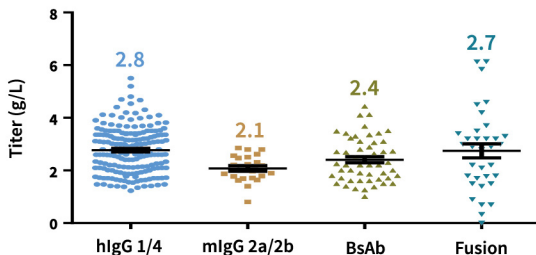
## Different Services for Different Stages of Antibody Drug Development



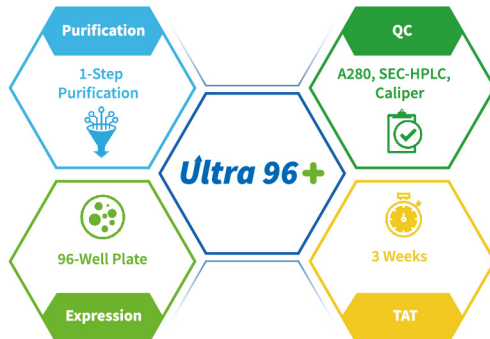
# WuXian Transient™ - Higher Titers, Less Time



# WuXian Express™ - Fast Stable Pool

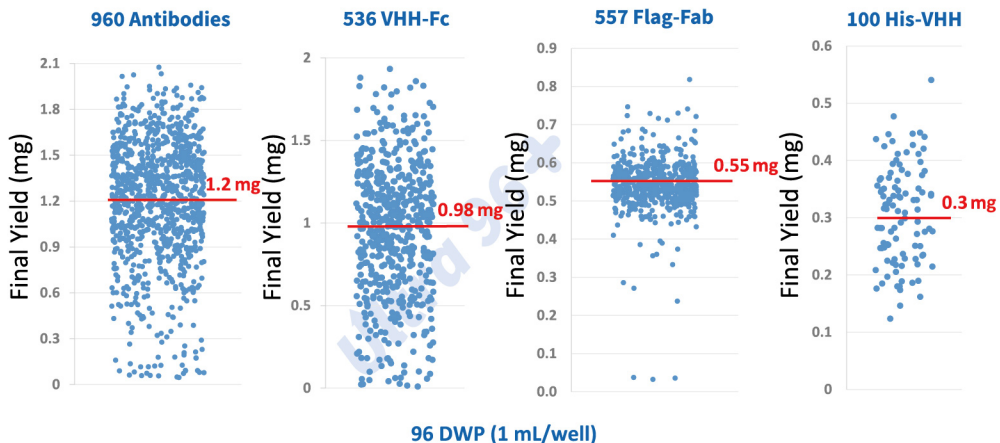


Automated **1-Step**  
Purification

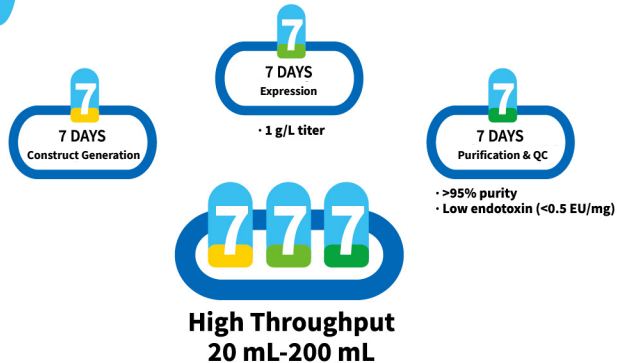


96/24-well DWP for 100-1500  $\mu\text{g}$  antibodies;  
Suitable for *in vitro* assays

## Case Study: Ultra-High Yields, Ultra-High Throughput

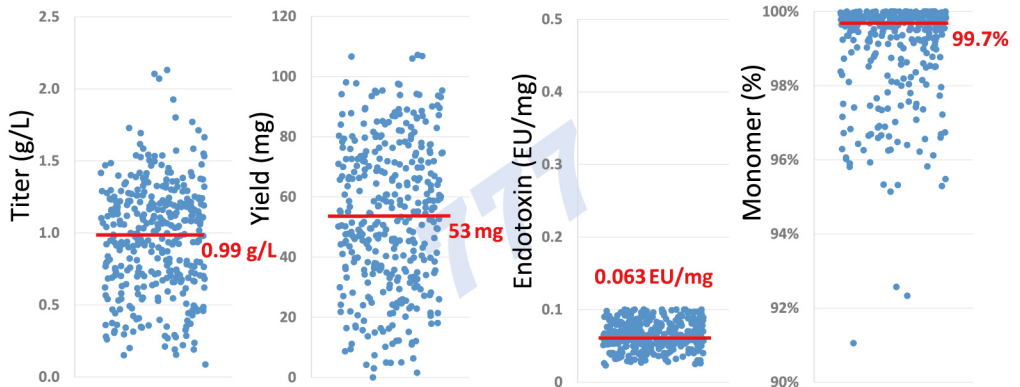


## Automated 2-Step Purification



High-quality antibodies suitable for *in vitro* and *in vivo* studies  
Weekly throughput: 500 molecules/week

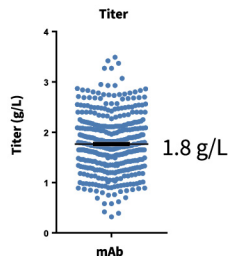
## Case Study: 360 hlgG1 at 100 mL





- 7-Day CHO Transient
- Deliver 1-100 g mAbs in 3-4 weeks
- Premium quality
- All purified molecules are verified by LC-MS

**Titers of GramExpress Molecules**



## Case Study: mAb Production at Different Scales

### Molecule 1

4 L mAb  
hulgG1  
AC-SEC  
Yield: 3 g  
Purity: 99.8%  
<0.1 EU/mg  
3 weeks

### Molecule 2

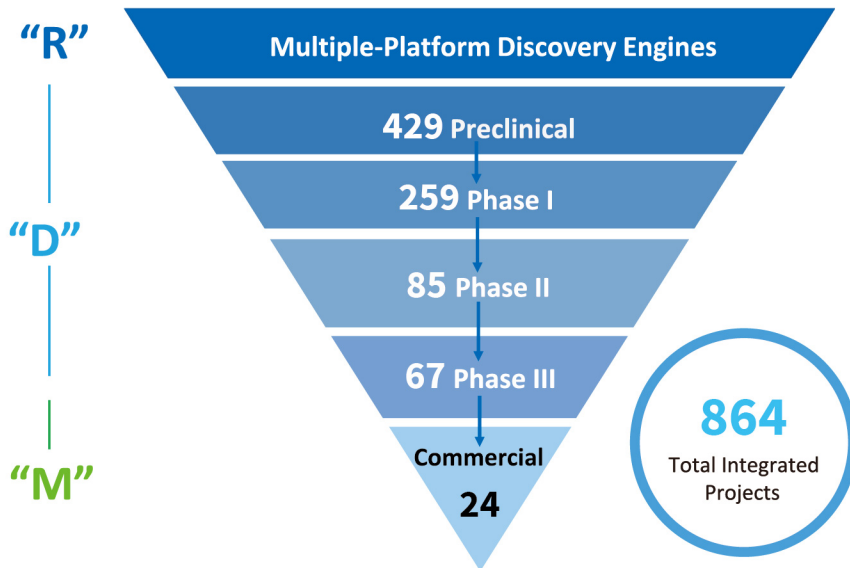
10 L mAb  
mlgG2a  
AC-CEX-UF/DF  
Yield: 11.9 g  
Purity: 98.8%  
<0.16 EU/mg  
4 weeks

### Molecule 3

60 L mAb  
hulgG1  
AC-AEX\*-CEX-UF/DF  
Yield: 80 g  
Purity: 98.5%  
<0.02 EU/mg  
4 weeks

### Molecule 4

80 L mAb  
hulgG1  
AC-CEX-UF/DF  
Yield: 110 g  
Purity: 99.8%  
<0.01 EU/mg  
4 weeks



As of June 30, 2025

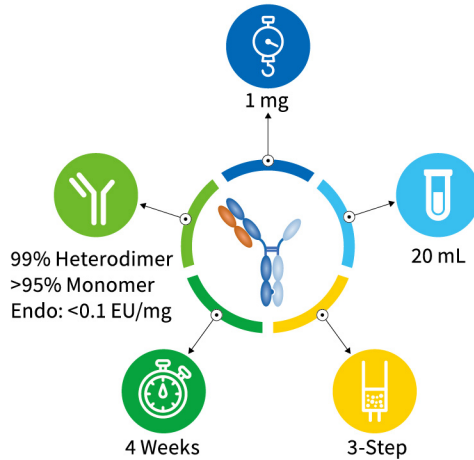
## About WuXi Biologics CRO Services

WuXi Biologics is a leading global CRDMO, with the R represented by our premium-quality CRO Services. With expertise in diverse drug modalities, we deliver comprehensive research services, including antibody discovery, protein production and engineering, and *in vitro/in vivo* testing, to seamlessly advance our clients' molecules from concept to CMC development.

# Quick 'n' Clean

- Unlock the Optimal Pairings of BsAbs

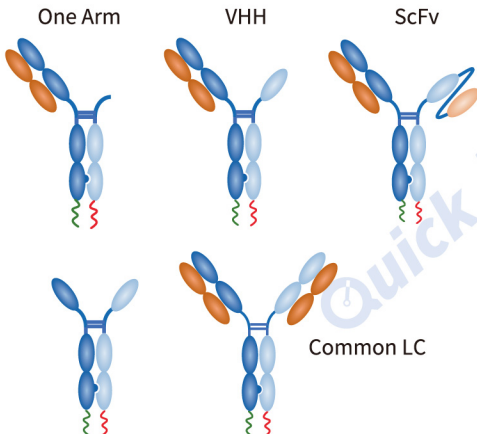
Automated **3-Step**  
Purification



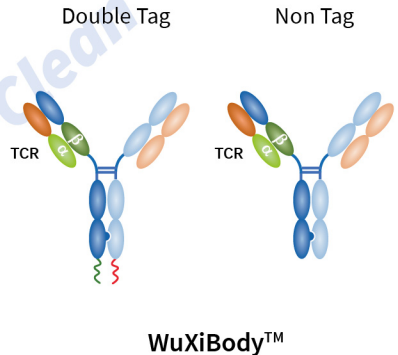
Great research tool at the discovery stage

## Customized Formats for Quick 'n' Clean

### BsAb with 0, 1 LC

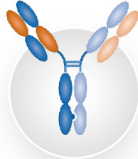


### BsAb with 2 LCs

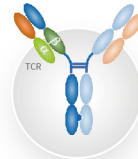




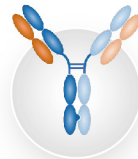
**Common LC**



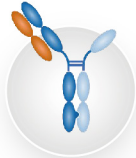
**CrossMab**



**WuXiBody™**



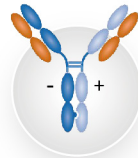
**Different LC**



**Fc Fusion**



**ScFv Fab**



**Charged Pairing**



**Others**

- Any formats
- 10 mg to grams in 4-6 weeks
- All premium bsAbs verified by LC-MS
- 3,000+ premium bsAbs delivered successfully

## Premium BsAb Production Strategies

### Molecule Design

- Formats provided by the clients or designed by CRO
- Any format

**Molecule Design**

### Expression

- Chain ratio optimization
- Achieve acceptable target purity in starting material

**Expression**

### Analytics

- LC-MS detects the target and byproducts
- SDS-PAGE, SEC-HPLC, endotoxin

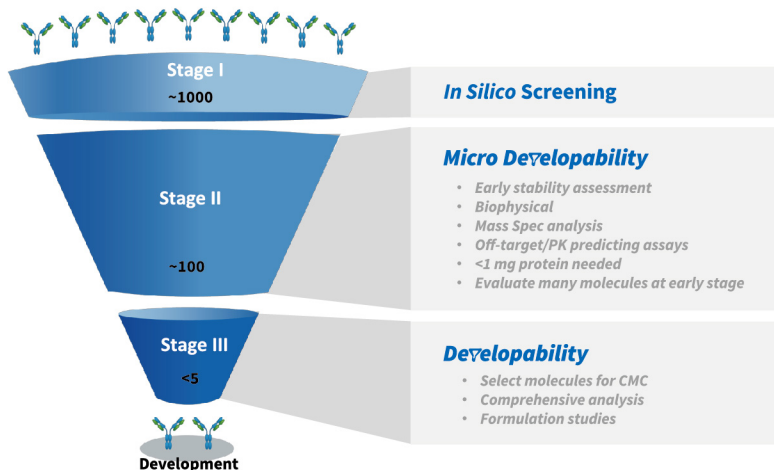
**Analytics**

### Purification

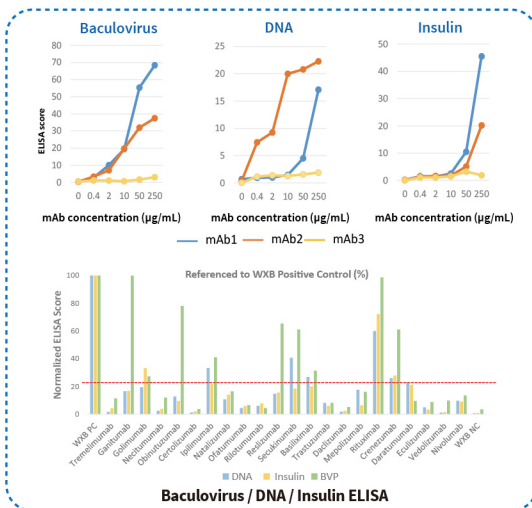
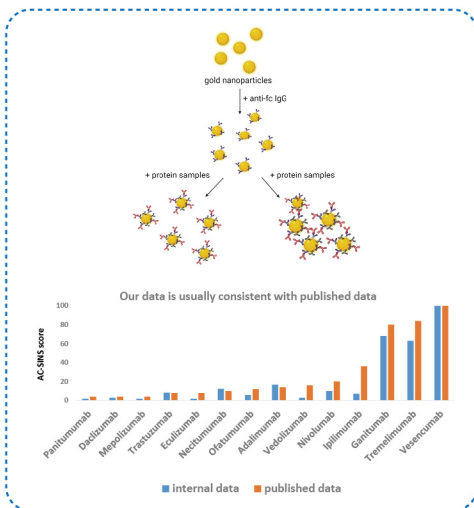
- Remove impurities: 1/2 Abs, homodimers, mispaired species
- Based on differences in charge and hydrophobicity

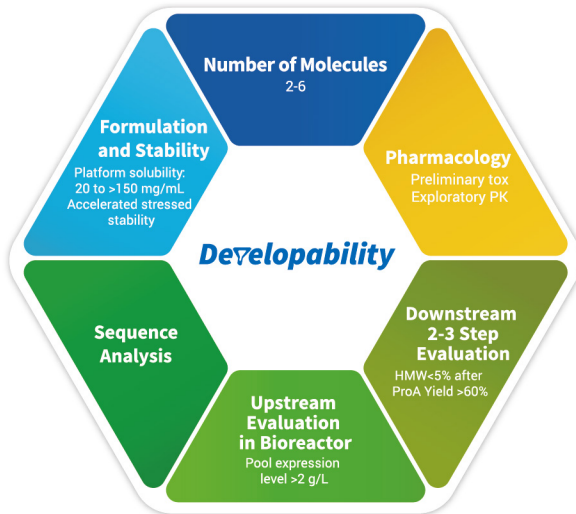
**Purification**

- Advanced 100+ bsAbs into CMC
- Multiple bsAb projects successfully filed for IND



## Example Assays for Micro-Developability



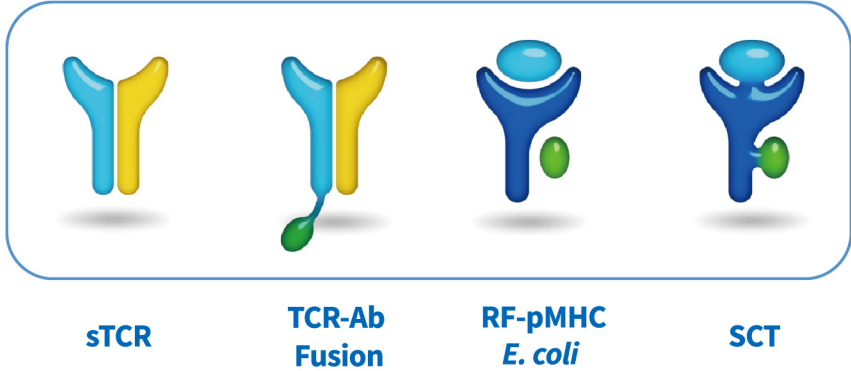


## Case Study: Developability Study for Lead Selection

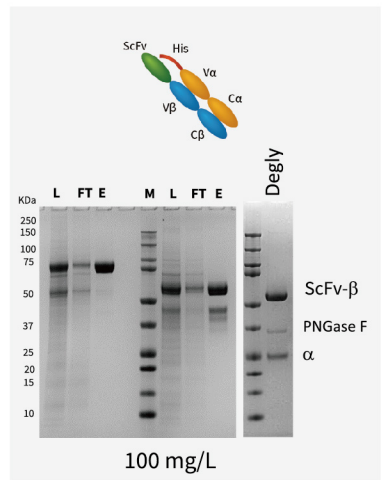
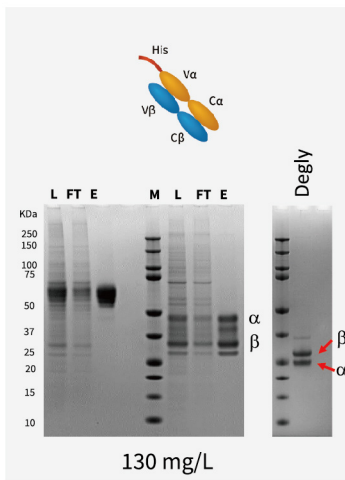
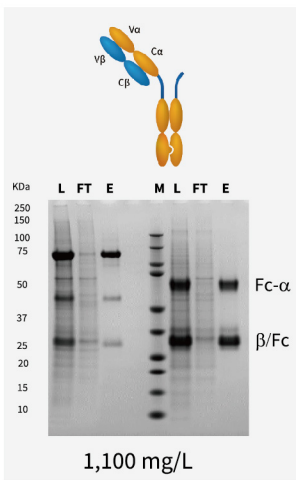
### Select candidate molecule for CMC development

1	Molecule	2
3.7 g/L	Fit for Upstream	3.7 g/L
>10% HMW level after ProA 52% CEX step yield	Fit for Downstream	87% CEX step yield
Platform solubility: 100 mg/mL	Formulation and Stability	Platform solubility: >150 mg/mL More stable after 1 month at 40°C
DSC: Tm: 76.4°C	Characterization	DSC: Tm: 78.7°C

- Molecule 2 was selected for **cell line cloning** and **CMC development**

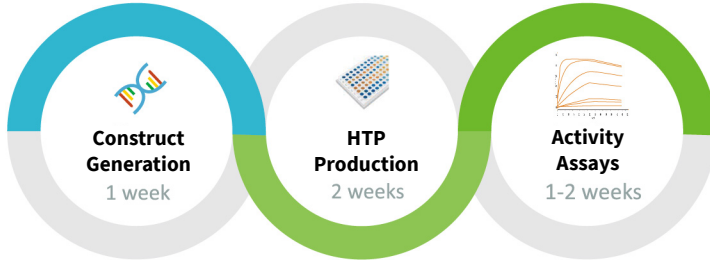


**Case Study: Production of Soluble TCR in Mammalian Cells**

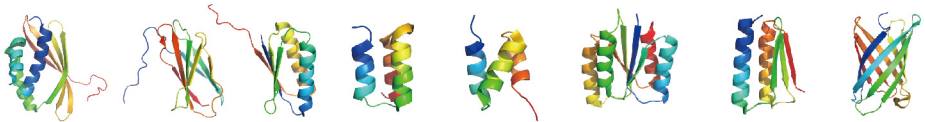


# MiniProtein Line

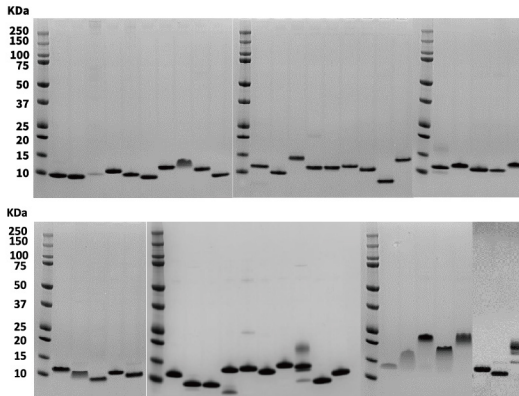
## - HTP Production of Miniproteins



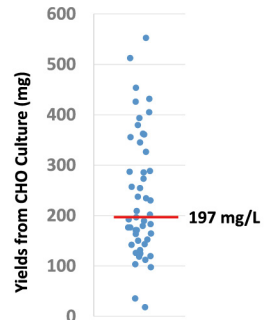
- *De novo* designed proteins with sequences unrelated to those in nature
- ~100-200 amino acid residues
- Diverse functions



### Case Study: 48 Miniproteins with 20 Different Folds are Produced in CHO Cells



N-His, Ni purified



The transient expression level of most miniproteins in CHO is >100 mg/L.

**Drug Development Expertise  
Empowering Research Services for Biologics  
Partner with us today!**



[PS\\_Marketing@wuxibiologics.com](mailto:PS_Marketing@wuxibiologics.com)  
[www.wuxibiologics.com/cro-services](http://www.wuxibiologics.com/cro-services)