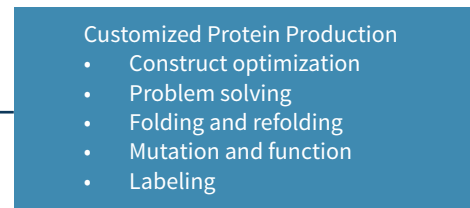
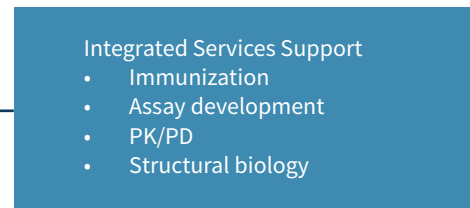
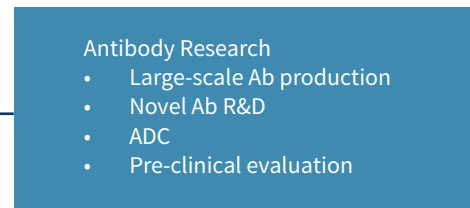
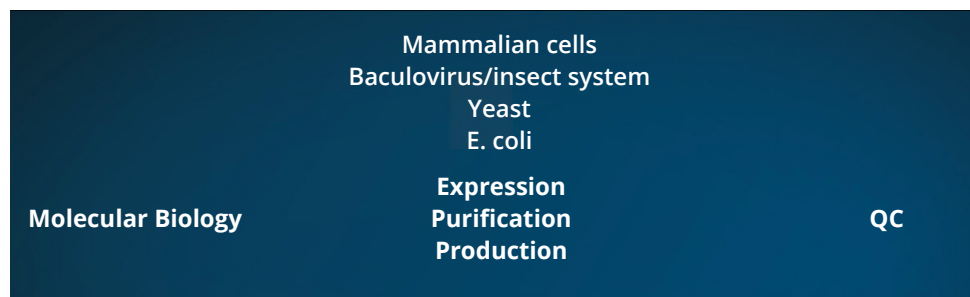




## PROTEIN SCIENCES

### WE ARE

- Experienced with recombinant protein generation
- Flexible and adaptable to meet the needs of various integrated services
- Willing to solve difficult problems for customers



### WE EXCEL

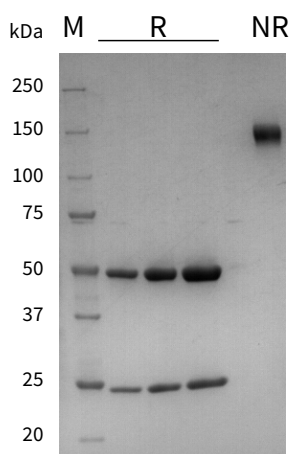
- Standardized transient transfection of CHO or HEK293 cells
- Standardized recombinant expression in insect or E. coli cells
- 8 weeks from DNA to final products
- High quality and quantity

# Abs/Ab FRAGMENTS PRODUCTION

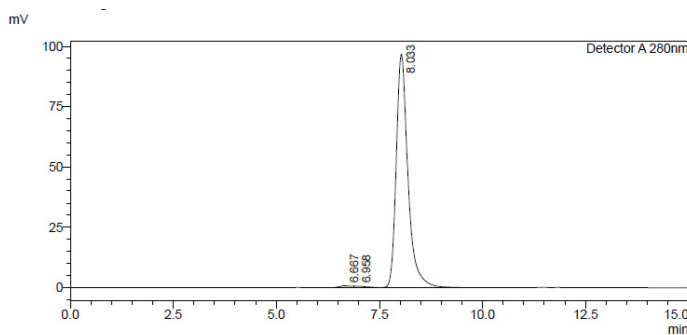
	2011	2012	2013	2014
Number of projects	> 50	> 100	> 300	> 500
Quantity (per project)	10-2000 mg			

Ab Name	Isotype	Host Cell	Exp Vol	Qty	SEC-HPLC	Endotoxin
XXX	hulgG1	CHO	20 L	>1900 mg	5.58 min, 100%	0.01 EU/m

SDS-PAGE (4-20%)



SEC-HPLC, TSK-GEL G3000SWXL



<Peak Table>  
Detector A 280nm

Peak#	Ret. Time	Area	Area%	Height	Height%
1	6.667	14354	0.742	711	0.726
2	6.958	10831	0.560	551	0.562
3	8.033	1910440	98.699	96717	98.712
Total		1935625	100.000	97979	100.000

- Transient transfection and expression in 50L CellBag using Wave system
- 2 g hIgG1 Ab recovered after affinity column followed by SEC, a yield of 100 mg/L
- Delivery of 2 g purified product in 8 weeks

## INTEGRATED SERVICES & CUSTOMIZED PROTEIN PRODUCTION

	Receptors/Ligands	Cellular Signaling	Enzymes & Complexes
Number of projects	> 100	> 50	> 400
Quantity (per project)	5-100 mg	5-100 mg	5-200 mg

Protein Name	Qty	Purity	Mass Spec.	X-ray Diffraction
Integrate Service XXX	> 20 mg	> 99%	Double peaks (poor homogeneity)	8.0 Å

### Client Protocol

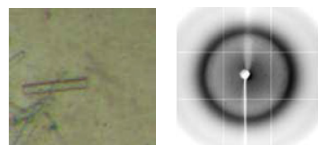
- High yield but poor homogeneity
- Poor crystal quality



Protein Name	Qty	Purity	Mass Spec.	X-ray Diffraction
Integrate Service XXX	> 10 mg	> 99%	Single peak (good homogeneity)	2.2 Å

### Optimized Protocol

- Extra purification step
- Trade yield for homogeneity
- Improved crystal quality



Our optimized purification protocol for the client largely improved homogeneity. It also helped our Structural Group with their X-ray crystallography work.