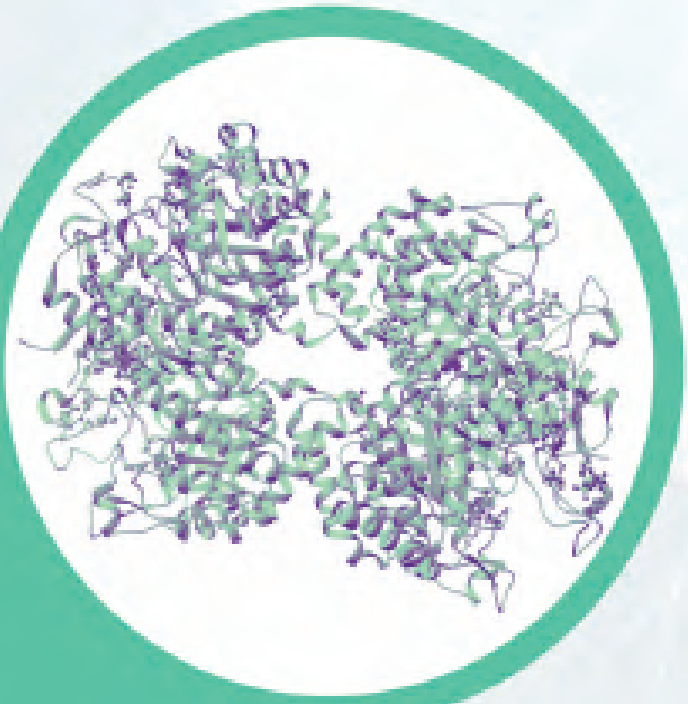
SYNBIO TECHNOLOGIES

Recombinant Protein Expression & Purification



Recombinant protein expression and purification services with the unique combination of quality, speed, and cost-effectiveness, makes Synbio Technologies the ideal choice for researchers and companies looking to produce high-quality proteins.

Our team of experienced scientists use the latest technologies and techniques to ensure that our customers receive the highest-quality proteins in the shortest possible time.

We offer a range of host organisms and expression systems to meet the needs of a wide variety of customers, and our purification methods are designed to remove contaminants and ensure that the proteins are pure.

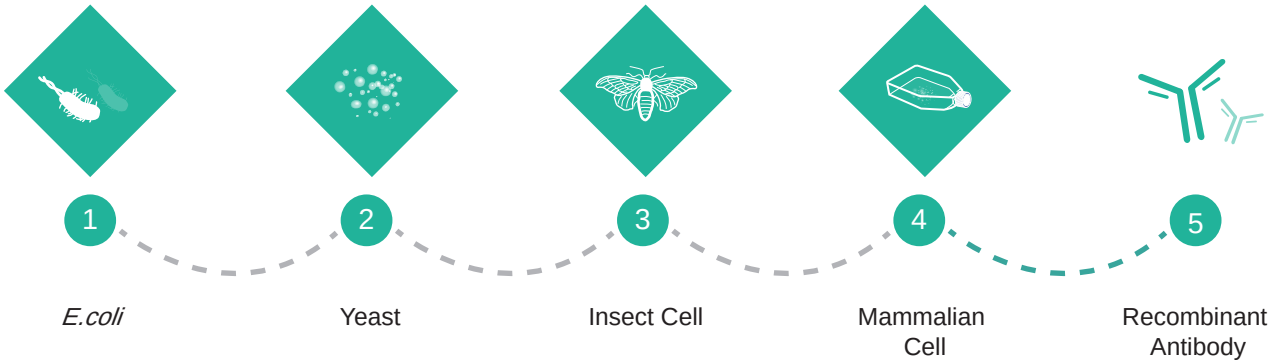
We also offer a range of additional services, including gene synthesis and vector construction, to help our customers succeed.

Recombinant Protein Expression & Purification

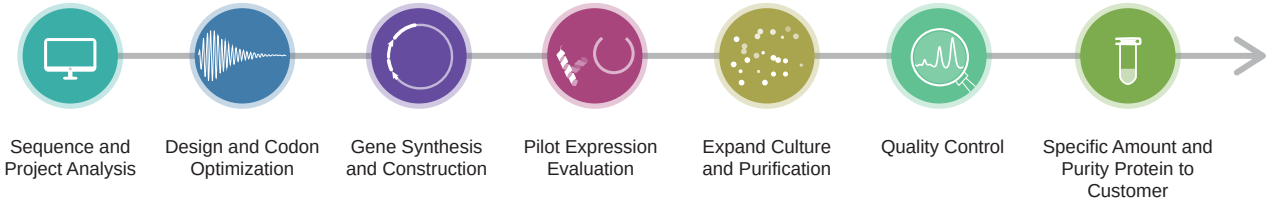
Synbio Technologies offers fast, reliable protein expression and purification services worldwide. Our four major platforms – *E.coli*, yeast, insect and mammalian cells – combined with a variety of custom capabilities enable us to create thousands of recombinant proteins/antibodies each year for our customers' diverse requirements.

With extensive experience in the field we ensure that your unique bioproduct is delivered efficiently and accurately every time.

Comprehensive Protein Expression Systems



Service Overview



The Synbio Technologies Advantage

- **Proprietary NG Codon Optimization Technology:** Significantly improves protein expression level and solubility, with a success rate of up to 95% in the *E. coli* expression system.
- **Comprehensive Solutions:** We provide one-stop solutions from gene synthesis to protein expression and purification.
- **High Quality Guaranteed:** There is no charge if we fail to deliver your desired proteins.
- **Competitive Price and Fast Turnaround Time**

Guaranteed Bacterial Protein Expression

Synbio Technologies has developed a cost-effective bacterial expression platform to deliver high quality proteins to our customers. By utilizing our self-developed NG™ codon optimization technology and mature expression system, the expression level in bacterial can be significantly improved. We offer guaranteed services, starting with our proprietary codon optimization, followed by gene synthesis, vector construction, all the way to protein expression and purification to ensure the expression of the target protein.

Service Specifications

Customer Provides	Tag	Amount	Purity Options	Endotoxin Level Options	Timeline
Target protein sequence	His, SUMO,TRX,GST…	1 mg-5 mg	85% 90% 95%	≤0.1 EU/μg	(From gene synthesis to purified proteins) 4-6 weeks

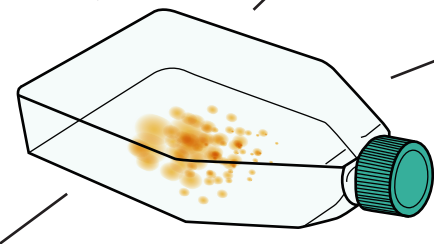
* Suitable for proteins with molecular weight between 15-120 KD, excluding membrane proteins and toxic proteins.
* If you would like to inquire about custom services for optimized protein expression or gram-level large-scale protein production, please contact us at *quote@synbio-tech.com*.

Mammalian Cell Protein Expression

Proteins with post-translational modifications and appropriate folding are critical for many downstream applications. Synbio Technologies mammalian cell expression platforms offer recombinant protein expression as well as recombinant antibody production services. Our proprietary high-density cell culture technology, combined with proprietary transfection reagents, medium formulations, and high-efficiency expression vectors, maximizes cell longevity and increases the expression success rate. By using advanced tandem purification methods, we can deliver recombinant protein/antibody products with a high purity ≥ 90% and endotoxin level less than 5 EU/mg.

High Efficiency
Our collection of proprietary expression vectors provides a range of options to meet the diverse screening needs and expectations of our customers.

Fast Delivery
As quick as 2-3 weeks.



High-Throughput Production
For recombinant antibodies, we provide one-stop, high-throughput production services.

High Purity and Quality
We ensure that each of our products meets the highest standards of quality and purity through rigorous control measures.

Service Specifications

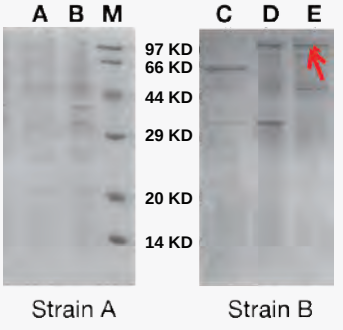
Customer Provides	Tag	Amount	Purity Options	Endotoxin Level Options	Timeline
Recombinant protein sequence	His, StrepII, MBP…	Starting from 30 mL	85% 90% 95%	≤5 EU/mg	4-6 weeks
Variable region sequence of Ab	/				1-2 weeks

* For large-scale protein/antibody production, please contact us at *quote@synbio-tech.com*.

Case Studies

Case A: Expression Strain Selection

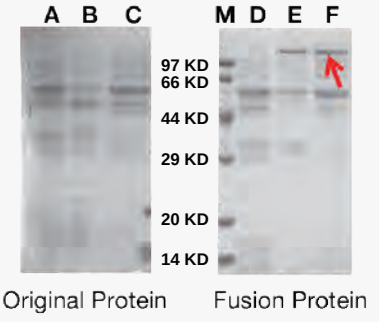
MW: 95.35KD



Lane A: 16°C Pellet after sonication
Lane B: 16°C Supernatant after sonication
Lane C: 16°C Negative control
Lane D: 16°C Pellet after sonication
Lane E: 16°C Supernatant after sonication

Case B: Fusion Protein Expression

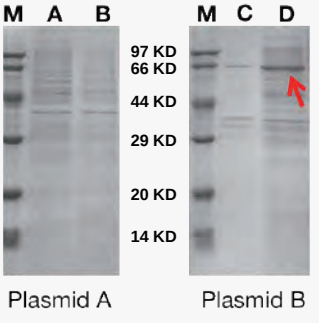
MW: Original 80.18KD, Fusion protein ≈120KD



Lane A: 16°C Negative control
Lane B: 16°C Pellet after sonication
Lane C: 16°C Supernatant after sonication
Lane D: 16°C Negative control
Lane E: 16°C Pellet after sonication
Lane F: 16°C Supernatant after sonication

Case C: Expression Plasmid Selection

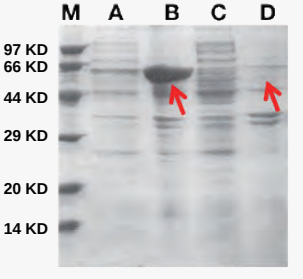
MW: 64KD



Lane A: 16°C Pellet after sonication
Lane B: 16°C Supernatant after sonication
Lane C: 16°C Pellet after sonication
Lane D: 16°C Supernatant after sonication

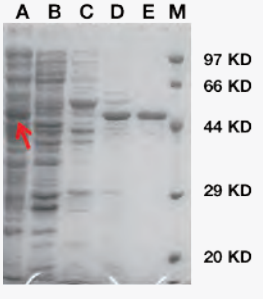
Case D: Expression Temperature Optimization

MW: 62KD

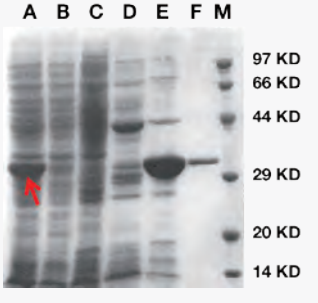


Lane A: 16°C Pellet after sonication
Lane B: 16°C Supernatant after sonication
Lane C: 37°C Pellet after sonication
Lane D: 37°C Supernatant after sonication

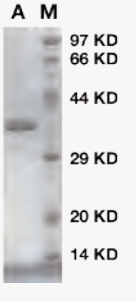
Case E: Different Purity After Tandem Purification Methods



Lane A: Original sample
Lane B: Flow through
Lane C: Nonspecific protein
Lane D: 75-80% purity
Lane E: 80-85% purity



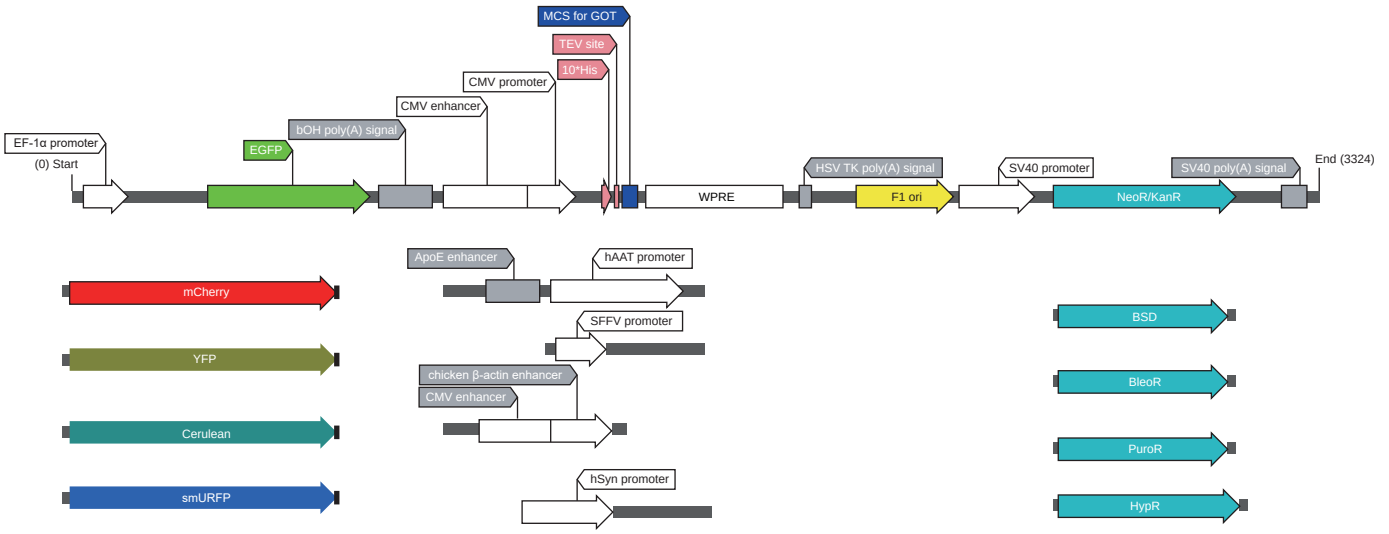
Lane A: Original sample
Lane B: Flow through
Lane C: Nonspecific protein
Lane D: Nonspecific protein
Lane E: 80-85% purity
Lane F: 90-95% purity



Lane A: 95% purity after tandem purification methods

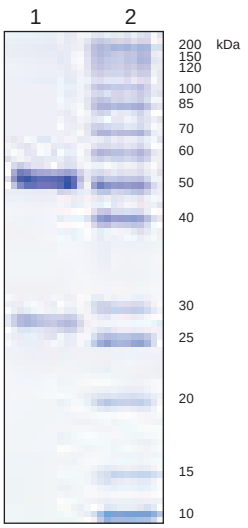
Fluorescent Proteins, Promoters, and Selectable Markers

Synbio Technologies provides a variety of mammalian expression vectors with different fluorescent proteins, promoters, and selectable markers to meet the needs of cell-specific screening.



Case Studies

SDS-PAGE

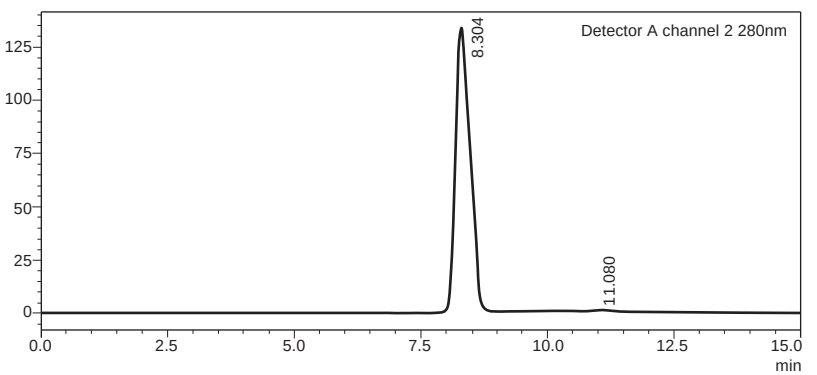


12% Gel

Lane 1: Recombinant Antibody IgG, Reducing

Lane 2: Protein Marker

SEC-HPLC (Optional)



Detector A Channel 2 280nm

Peak#	Ret.Time	Area	Height	Conc.
1	8.304	2782111	124129	99.524
2	11.080	2427374	722	0.476
Total		2795426	124850	

QC Results		
Test Items	Assay Description	Results
Purity	SDS-PAGE	>95%
Purity (Optional)	SEC-HPLC	99.524%
Endotoxin	LAL method	<1 EU/mg

Additional Expression Systems

When it comes to producing recombinant proteins, Pichia pastoris and baculovirus-insect cell expression systems are two powerful options. The former offers cost-effective simplicity with the added benefit of thorough protein postprocessing - including folding and modifications; while the latter is ideal for synthesizing toxic proteins, kinases, large or membrane ones as well as those found inside cells.

Synbio Technologies offers the ultimate advantage for attaining high-quality proteins - abundant resources in vectors and host cells. With extensive optimization approaches, we can help increase yields while providing first-class yeast and baculovirus-insect cell expression protein services.

Yeast Protein Expression System Service Specifications

Services	Description	Deliverables	TAT
Gene Synthesis (Optional)	• Codon optimization • Gene synthesis • Vector construction	• 2-5 μg lyophilized plasmid DNA • Certificate of analysis (COA)	Starting from 10 BDs
Electrotransformation and Screening Positive Clones (PCR method)	Linearized the plasmid and transformed into pichia pastoris cells to screen positive clones	Screening report	2-3 weeks
Pilot Protein Expression	Three positive clones will be used to verify the expression, then perform expression analysis validation (WB)	Expression evaluation report	4-6 weeks
Protein Expression and Purification	• 1 L or larger scale expression • One or more steps purification • Purity will be detected by SDS-PAGE or Western blot (Optional)	• Purified protein products • Certificate of analysis (COA)	3-4 weeks

Baculovirus-Insect Cell Expression System Service Specifications

Services	Description	Deliverables	TAT
Gene Synthesis (Optional)	• Codon optimization • Gene synthesis • Vector construction	• 2-5 μg lyophilized plasmid DNA • Certificate of analysis (COA)	Starting from 10 BDs
Baculovirus preparation	• Generation of recombinant Bacmid DNA • Generation of P1 stock, P2 stock, and determination of virus titer	Experiment report	3-5 weeks
Pilot Protein Expression and Purification	• P2 generation virus infect SF9 cells • Expression analysis validation (WB) • Ni column affinity purification	• A small amount of Protein • Expression evaluation report	2-4 weeks
Protein Expression and Purification	1 L or larger scale expression	• Purified protein products • Certificate of analysis (COA)	1-2 weeks

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