

# Delphi Genetics

Expert service provider from gene synthesis  
to recombinant protein production



## Your recombinant protein production in *E. coli*

Antibiotic  
FREE

### From :

- cDNA or protein sequence
- Genomic DNA
- RNA extract
- cDNA cloned into StabyExpress® or any other vector

### Advantages to use StabyExpress® technology

- ✳ Higher yields of expressed proteins
  - Perfect plasmid stability
  - No burden of energy
  - Scalability from research to industrial scale
- ✳ No need to use antibiotics (according to FDA, USDA, EMA guidelines)

### We perform :

Gene synthesis with codon optimization

Small scale expression with or without antibiotic selection

Preliminary protein expression study to determine the best system and the optimal conditions

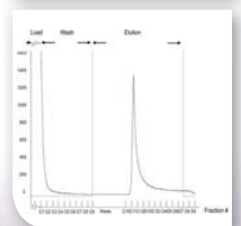
- ✳ Bacterial strain
- ✳ Medium
- ✳ Temperature
- ✳ Protein yield

Expression scale-up with optimal conditions up to several grams (non-GMP)

Multiple purification strategies: chromatography (affinity column (tag) or ion-exchange columns), gel filtration, precipitation

- ✳ For protein expressed in inclusion bodies: denaturation and refolding conditions will be defined.

Customized purification protocol for your protein



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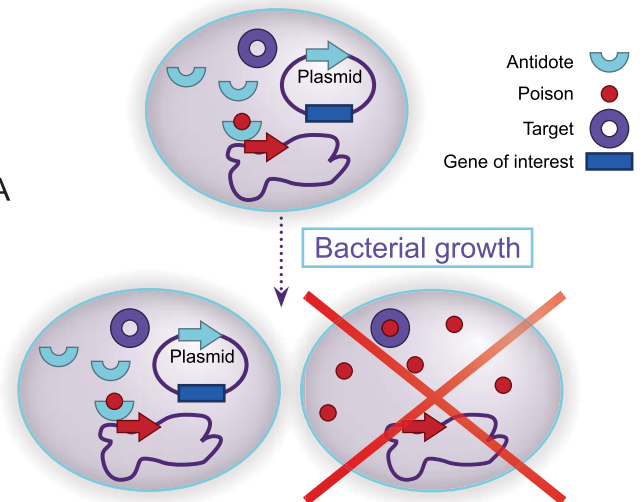


## More information about the StabyExpress® technology developed by Delphi Genetics :

The stabilization system is based on the use of bacterial antidote/poison genes naturally found in the F plasmid of *E. coli* (*ccdA* and *ccdB*). In the StabyExpress system, the antidote gene *ccdA* is introduced in the plasmid DNA under the control of a constitutive promoter. The bacterial toxin gene *ccdB* is introduced in the chromosome of the bacteria.

### Benefits of the StabyExpress® system:

- Higher yields of expressed proteins (2 to 10 times)
- Higher batch-to-batch reproducibility
- No need to use antibiotics in the production process, therefore meeting regulatory guidelines
- StabyExpress® system works with animal free medium
- The process is easily transferred from R&D to industrial scale fermentation
- Fully sequenced strains available: complete traceability
- Any vector or *E. coli* strain can be enhanced with the Staby® technology



The advantages of StabyExpress® convinced several biomanufacturers who validated it in industrial conditions. Non-exclusive licenses for industrial recombinant productions have already been granted to :

**SANOFI PASTEUR**

«License for use in human vaccines»

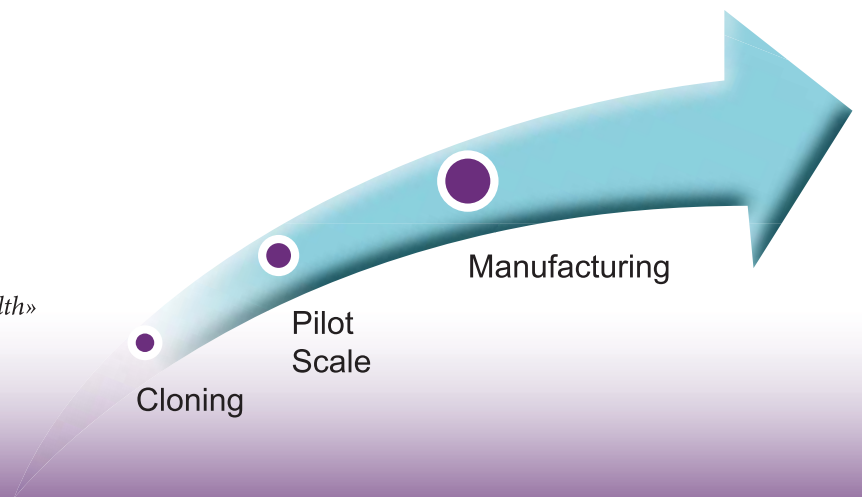


GlaxoSmithKline

«License for use in human vaccines»



«Broad licensing agreement in Human and animal health»



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