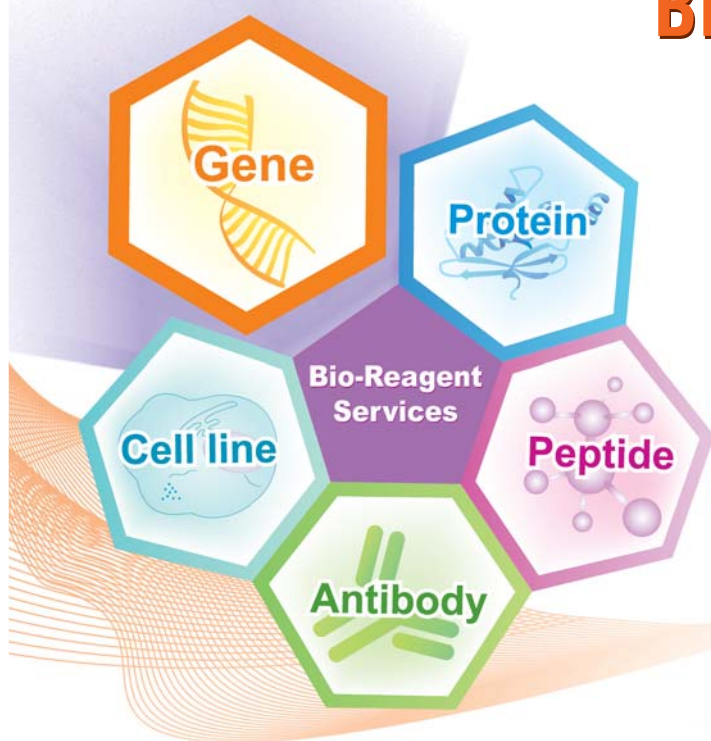


# Bio-Reagent Services



## Custom Gene Services

Gateway to Smooth Molecular Biology!

Gene Synthesis

Mutagenesis

Mutant Libraries

Plasmid Preparation

siRNA and miRNA Services

Large-scale DNA Sequencing

GenPool™ ORF Cloning

PCR Cloning and Subcloning

Knock-in and Knock-out Vector Construction



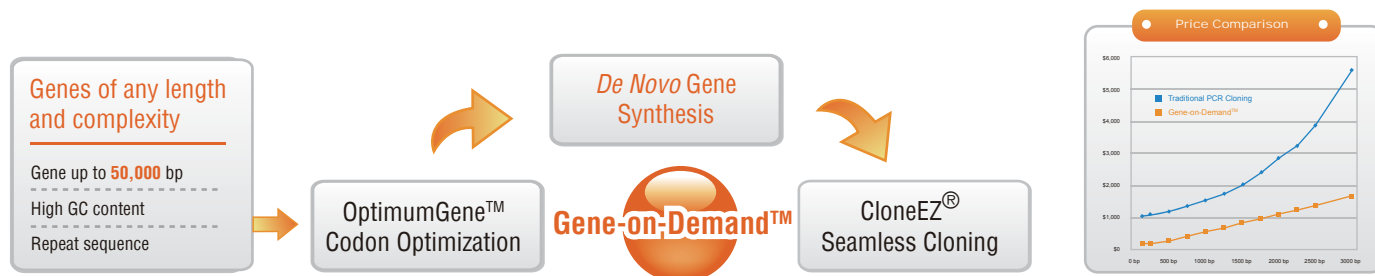
**GenScript**

The Biology CRO

*Your Innovation Partner in Drug Discovery!*



## Gene-on-Demand™ Gene Synthesis



Struggling with cloning? Try GenScript Gene-on-Demand™ services!

### Features:

Services	Key Features
Gene-on-Demand™ Gene Synthesis	<ul style="list-style-type: none"><li>Guaranteed <b>100%</b> sequence fidelity</li><li>Cloning into ANY vector</li><li>Advanced OptimumGene™ codon optimization</li><li>CloneEZ® seamless cloning technology</li></ul>
<ul style="list-style-type: none"><li>Large-scale Gene Synthesis</li></ul>	<ul style="list-style-type: none"><li>Genes of over <b>50,000</b> bp in length synthesized</li><li>Over one hundred thousand genes synthesized</li></ul>
<ul style="list-style-type: none"><li>OptimumGene™ Codon Optimization</li></ul>	<ul style="list-style-type: none"><li>Optimize any difficult sequence</li><li>Comprehensive codon tables</li><li>Cutting-edge algorithms</li></ul>

### Special Partnership Promotion

GenScript's special strategic partnership promotion campaign aims to establish long-term partnerships with customers who regard GenScript's as preferred vendor and provide them with large-volume services at competitive price. In order to fit your budget, GenScript will serve you in a flexible manner under current economic conditions.

### Customer Testimonials

"GenScript is the company that I have entrusted my project with. The delivery of your gene synthesis is on time and the OptimumGene™ technology on your Gene-on-Demand™ gene synthesis platform has increased my gene expression dramatically. I am very happy with my results and GenScript is always my first choice for gene services."

— Bin He, Bristol-Myers Squibb, USA

"We repeatedly ordered synthetic genes from GenScript. In any case, the synthesis was exceptionally fast (usually within 7–10 business days), convenient, reliable and cost-effective. Customer service was exceptionally friendly and even approachable over Christmas vacation. For that reason, we can only recommend this service to any customer—wherever they may be located."

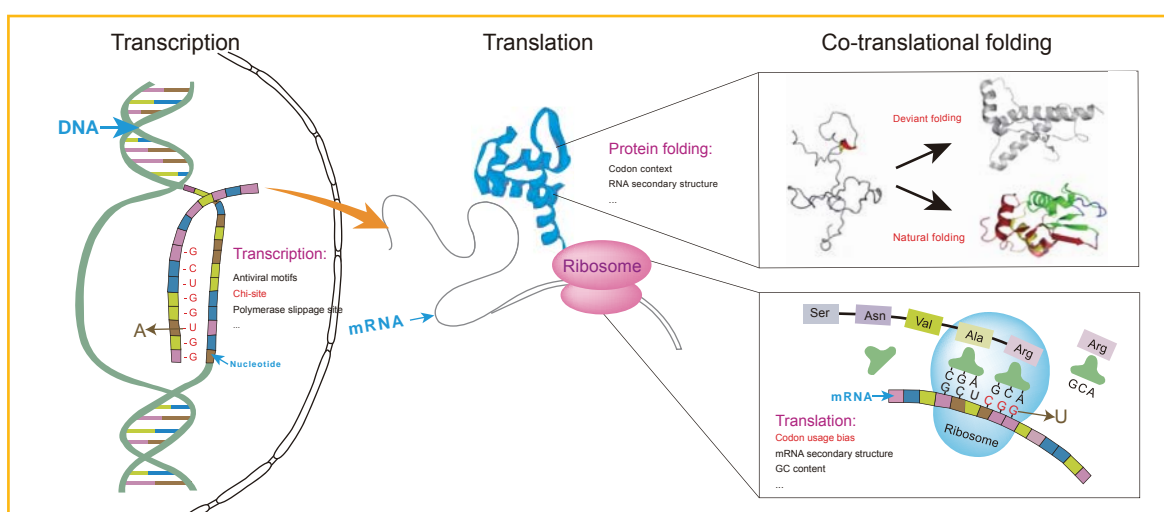
— Dr. Tilmann Bürckstümmer, Research Center for Molecular Medicine of the Austrian Academy of Sciences

# Molecular Biology Services

Gateway to Smooth Molecular Biology!

## OptimumGene™ Codon Optimization

GenScript OptimumGene™ Gene Design system is a proprietary gene optimization technology that can alter both naturally occurring and recombinant gene sequences to achieve the highest possible levels of productivity in any given expression system. The OptimumGene™ algorithm takes into consideration a variety of critical factors involved in different stages of protein expression, such as codon adaptability, mRNA structure, and various *cis*-elements in transcription and translation.



Visit [http://www.genscript.com/codon\\_opt.html](http://www.genscript.com/codon_opt.html) for a FREE codon analysis!

## Codon Adaptation Index (CAI)

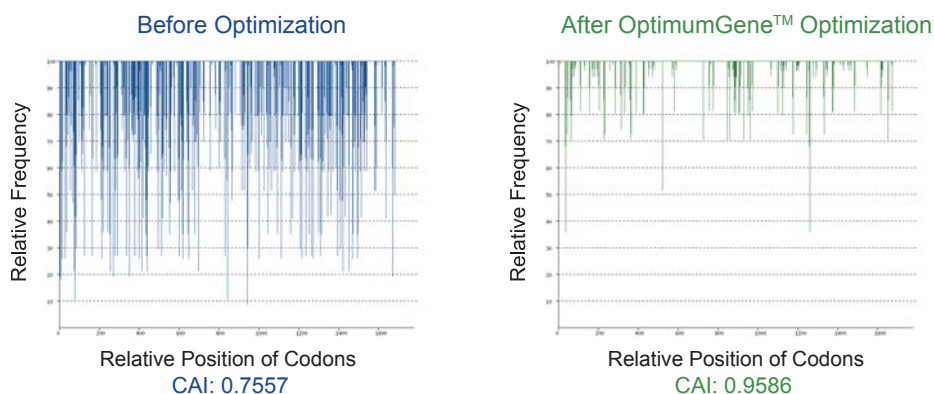
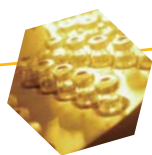


Figure 1. The distribution of codon usage frequency along the length of the gene sequence. A CAI of 1.0 is considered to be perfect in the desired expression organism, and a CAI of > 0.9 is regarded as very good, in terms of high gene expression level.

## Selected Publications

- Schumacher MA *et al.* **Science**. Jan 2009; 323(5912): 396–401
- Shao N *et al.* **Curr Genet**. Jun 2008; 53(6): 381–388
- Burgess-Brown NA *et al.* **Protein Expr Purif**. May 2008; 59(1): 94–102



## CloneEZ® Seamless Cloning Technology

**Fuse ANY gene seamlessly into ANY vector!**

- » Clone any insert, into any location, within any vector you choose
- » Seamless joints with no extra or unwanted base pairs
- » Compatible with high throughput PCR cloning
- » 30-minute, one-step procedure
- » Efficiently clone any insert up to 12 kb
- » Success rate over 95%

## Related Services and Products

### Custom PCR Cloning and Subcloning Services

Description	Advantages	Deliverables
GenScript PCR cloning and subcloning services will free your energy and time from routine cloning for more creative research.	<ul style="list-style-type: none"><li>• Highly flexible to meet any specific project requirement</li><li>• Reliable result with quality assurance</li><li>• Convenient delivery</li><li>• Ready to use</li></ul>	<ul style="list-style-type: none"><li>• 4 µg lyophilized destination vector</li><li>• Sequence chromatograms covering your gene</li><li>• Construct map for the plasmid</li><li>• Quality assurance certificate</li></ul>

### Knock-in and Knock-out Vector Construction Services

Description	Advantages	Deliverables
GenScript's targeting vectors and services have been successfully used in traditional and conditional knock-out, knock-in, and many other genetic modification projects.	<ul style="list-style-type: none"><li>• Any gene of or under <b>20 kb</b> in size on any part of any vector</li><li>• Seamless cloning without undesired joint sequences</li><li>• High successful rate up to 95%</li><li>• Cost-effective solution</li></ul>	<ul style="list-style-type: none"><li>• 4 µg lyophilized targeting vector</li><li>• Restriction enzyme digestion map of the vector</li><li>• Sequencing data covering the junction regions</li><li>• Sequencing data covering the arms</li><li>• Quality assurance certificate</li></ul>

### GenPool™ ORF Cloning Services

Description	Advantages	Deliverables
GenScript GenPool™ ORF cloning services provide quick and sophisticated means to turn DNA sequences into expression-ready clones.	<ul style="list-style-type: none"><li>• Over <b>1 million</b> ORF clones from <b>90</b> different species</li><li>• Cloning with Gene-on-Demand™ technology platform</li><li>• No limit on vector choice</li><li>• Expression-ready cloning</li></ul>	<ul style="list-style-type: none"><li>• 10 µg lyophilized destination vector</li><li>• Sequencing data of each clone</li><li>• Construct map for the plasmid</li><li>• Quality assurance certificate</li></ul>

### Related Products

Cat. No.	Name	Size	Price
L00339	CloneEZ® Kit	24 reactions	\$175.00



## Comprehensive Service Packages! Fast Turnaround Time!

GenScript is your reliable source for economical molecular biology service. Our services cover the entire range of gene and genome research, from gene synthesis and cloning to advanced engineering and library construction.

### Gene Synthesis—Any gene you desire!

- ▶ Guaranteed **100%** sequence fidelity
- ▶ Cloning into ANY vector
- ▶ Advanced OptimumGene™ codon optimization
- ▶ Genes of over **50,000** bp in length synthesized
- ▶ Over one hundred thousand genes synthesized

### Plasmid Preparation—Any amount to fit your plan!

- ▶ Flexible scale: up to gram level
- ▶ Predominantly supercoiled
- ▶ Excellent quality control

### Mutagenesis—Any variant from your design!

- ▶ Unparalleled accuracy in site-directed mutagenesis
- ▶ Feasible to introduce mutations at any site
- ▶ Large constructs up to **12 kb**

### Cloning—Any construct you want to build!

- ▶ CloneEZ® seamless cloning technology
- ▶ Highly flexible PCR cloning and subcloning
- ▶ GenPool™ ORF cloning (over **1 million** ORFs from **90** species)

### Mutant Libraries (Protein Engineering)

- ▶ Site-directed mutagenesis libraries
- ▶ Scanning point mutation libraries
- ▶ Randomized and degenerated libraries

### Vector Construction

- ▶ Knock-in and knock-out vector construction
- ▶ Vector construction services

### Vector-based siRNA and miRNA

- ▶ Advanced siRNA design software (**2<sup>nd</sup>** generation)
- ▶ Guaranteed silencing

### Large-scale DNA Sequencing

- ▶ Guaranteed accuracy and coverage
- ▶ Long read-through length
- ▶ High single pass rate



***Your Innovation Partner in Drug Discovery!***

# Molecular Biology Services

Largest Gene Synthesis Supplier in USA

## Selected Popular Molecular Biology Services

Cat. No.	Services Name	Timeline
SC1010	Gene Synthesis	12 business days
SC1023	Site-directed Mutagenesis	10 business days
SC1153	Site-directed Mutagenesis Libraries	
SC1154	Scanning Point Mutation Libraries	Request
SC1155	Randomized and Degenerated Libraries	
SC1323	Plasmid Preparation: Midi (100 µg)	
SC1324	Plasmid Preparation: Maxi (200 µg)	
SC1325	Plasmid Preparation: Maxi (500 µg)	Request
SC1326	Plasmid Preparation: Mega (1 mg)	
SC1089	Plasmid Preparation: Mega (2 mg)	
SC1090	Plasmid Preparation: Giga (10 mg–High-copy)	
SC1091	Plasmid Preparation: Giga (10 mg–Low-copy)	Request
SC1092	Plasmid Preparation: 20 mg (High-copy)	
SC1093	Plasmid Preparation: 20 mg (Low-copy)	
SC1094	Plasmid Preparation: 50 mg (High-copy)	Request
SC1095	Plasmid Preparation: 50 mg (Low-copy)	
SC1096	Plasmid Preparation: 100 mg (High-copy)	Request
SC1097	Plasmid Preparation: 100 mg (Low-copy)	
SC1098	Customized Plasmid Preparation (up to 1,000 mg)	Request
SC1007	Vector-based siRNA Services	14 business days
SC1080	Vector-based miRNA Services	
SC1200	GenPool™ ORF Cloning Services	7 business days
SC1017	PCR Cloning and Subcloning	14 business days
SC1161	Vector Construction for Traditional Knock-out	
SC1162	Vector Construction for Conditional Knock-out	Request
SC1163	Vector Construction for Knock-in	
SC1164	Modification of Targeting Vector or BAC Construction	

**CALL NOW FOR MORE INFORMATION**  
**1-732-885-9188**

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