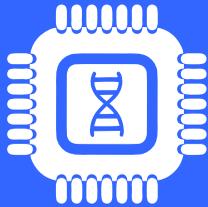


## Changing Markets



Through the introduction of next generation gene synthesis method - CHIP technology, pricing for gene synthesis is expected to be significantly reduced over the coming years. Therefore, it will be a great asset to have a partner who is capable of adjusting to this changing market.

Bio Basic strives to stay competitive in the marketplace through strategic investment in new technologies such as the parallel on-chip gene synthesis technology.

Having Bio Basic as your partner will enable you to continue to meet and exceed your expectations and needs, without the growing pressure and complications that may arise from switching partners in this ever-changing market.

### Bio Basic's Gene Synthesis:

Bio Basic is one of the largest professional gene manufacturers in the world. For over 15 years, Bio Basic as a silent OEM has synthesized millions of base pairs of genes for researchers worldwide.

Bio Basic is now delighted to offer its renowned Gene Synthesis services directly under its own name. Benefiting from its oligo houses and DNA sequencing facilities, we offer Gene Synthesis at the most affordable rates in the industry.

Bio Basic offers a variety of gene services to fit the needs of any lab. From large scale projects to small custom projects, we can assist you in selecting the service which would offer you the greatest benefit.

### Why Choose Bio Basic for your Gene Projects?

-  We offer the highest quality gene synthesis services at the most affordable rates in the market. This is because our mission is to make quality research products and services affordable to any lab, anywhere.
-  Bio Basic offers a 100% Correct DNA Sequencing Guarantee. Each gene is confirmed base-by-base in sequence and is guaranteed to match 100% with your requested sequences.
-  Absolute Confidentiality Guarantee - We understand that your projects can be highly confidential, and we thoroughly agree to not release any information to a third party. In addition, we can sign a Non Disclosure agreement if required.
-  Price Guarantee - We will beat any competitor's advertised price for identical products or services offered by Bio Basic by up to 10%.

### Bio Basic's Gene Services:



Gene Synthesis in Vector.  
From: \$0.20/bp\* (bulk)



Custom DNA Fragments.  
From: \$0.18/bp\*



Site directed Mutagenesis.  
From: \$150/mutation\*



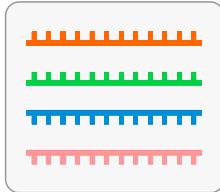
Custom Subcloning.  
From: \$90/construct\*



## The Process of Bio Basic's Gene Synthesis:

### Step 1 - Oligo Synthesis

To begin, multiple long oligos are chemically synthesized as fragments based on the desired final gene sequence. These oligos are designed to assemble with each other through overlapping sequences.



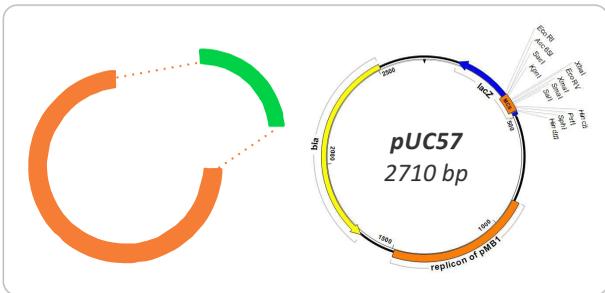
The following notes for gene design are taken into account:

- For ease of synthesis, preferable GC content should be < 70% or > 40% in regions of at least 30 base pairs or the whole sequence.
- An optimization option for long sequence repeats that exist in a high frequency.
- Preferably avoid homopolymers longer than 15 bp.

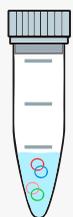
### Step 3 - Cloning

The synthesized complete DNA is cloned into a specific vector. The vector is then isolated and amplified. Unless otherwise stated, the vector used is the pUC57-Amp vector.

The pUC57 vector is a high expression vector that is 2710 bp in length; used in cloning, sequencing of DNA insertions and generation of nested deletions with ExoIII. The pUC57's MCS contain 6 restriction sites with 3'-ends that are resistant to ExoIII.



### Step 5 - Lyophilization



Further QC measures are applied and the gene is lyophilized into a microcentrifuge tube.

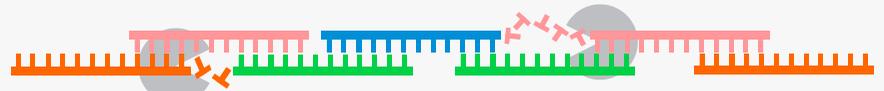


The gene is now ready for downstream applications

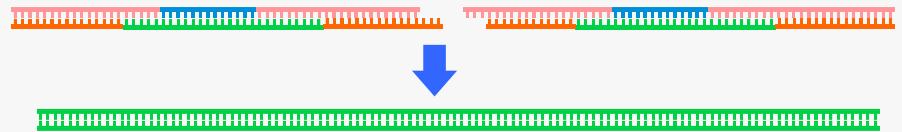
### Step 2 - Gene Assembly



a. Primers of ~50-60 bases in length and similar melting temperature ( $T_m$ ) are assembled through their overlapping sequences.



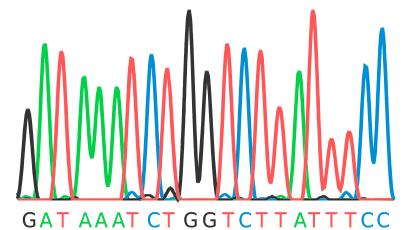
b. Using PCR, the oligo fragments are assembled into blocks of up to 1kb of double stranded DNA.



c. The double stranded DNA fragments are then assembled and amplified once again using PCR to create one large double stranded DNA construct.

### Step 4 - DNA Sequencing

All final genes are verified by DNA sequencing and only those with the correct sequences are selected. This ensures that the gene synthesized conforms to the specifications planned in the beginning of the project. Here, Sanger Sequencing is used due to its long read length short run time.



### Price Quotation Requests and more information:

To request a Quote or for more info., email [gene@biobasic.com](mailto:gene@biobasic.com) with the following:

1. Your Sequence (in .txt/FASTA format).
2. Desired Restriction Sites (if required; standard is blunt-end cloning in pUC57-Amp vector).
3. Vector of Choice/Subcloning (our standard vector is pUC57-Amp).
4. Optional: Optimization Request (FREE).

\*: Pricing subject to change. Please inquire.