

GENE TO PROTEIN SERVICES

BaseClear offers a broad range of DNA synthesis, cloning and protein expression services. We can efficiently synthesise DNA molecules ranging from single genes up to DNA segments of 10 kb and more. In addition to this, we have considerable experience as far as performing the most challenging cloning and protein production projects is concerned. These services have the potential to greatly improve the speed and efficiency of your research, allowing you to focus more on the essential aspects of your research while outsourcing construct creation and protein production to us.

Gene synthesis service

BaseClear offers De Novo gene synthesis. This is an extremely fast and efficient way to obtain and/or optimise any possible DNA sequence, from a few hundred base pairs up to several kb.

Send us a digital version of the sequence that you want and we will deliver to you the requested gene, cloned into a standard vector. We can perform the gene synthesis in-house, or we can outsource the synthesis to our OEM gene manufacturer Bio Basic. In both cases we guarantee the same quality and confidentiality. The service options differ only in price and delivery time. Prior to gene synthesis, we can optimise the sequence to increase the final gene expression. Using a special computer program we can eliminate rarely used codons and favour codons that are dominant in the expression host of your choice. In addition to this, we can add or remove restriction sites, eliminate repeats, splice sites and motives and avoid RNA secondary structures.

Cloning service

Recombinant DNA cloning is not always easy to execute and often time consuming. BaseClear has considerable experience in challenging cloning projects and can complete projects very efficiently, due in part to our in-house sequencing and gene synthesis facilities.

Cloning projects can be complicated due to issues such as gene toxicity, large vector or insert size, unstable DNA elements or the presence of DNA secondary structures. We have experience with many of these difficulties and can help you. During the planning and execution of cloning projects, we consult our customers and ensure that every aspect of the work is agreed upon before it is performed. In addition to this, we analyse every step of the cloning process. This enables us to assess the success of each stage. If any given stage is not successful, we are able to rapidly and precisely identify the reason why. For more straightforward cloning jobs we offer an attractively priced standard PCR-cloning service. For a fixed price we will execute your cloning project and verify the results, all within 10 working days.

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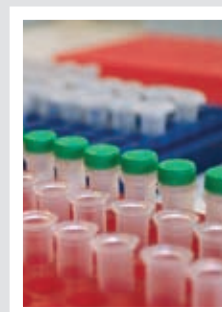
FOR 100% DNA RESULTS

Accredited service laboratory for

- DNA-based Research
- Quality Assurance
- Forensics



BaseClear offers services both for standard and specialist DNA Technologies, in the field of DNA sequencing, genome analysis, genotyping, DNA synthesis and protein expression.



BaseClear's technical team consists of experienced product specialists, who optimise experimental procedures in order to obtain optimal results.

BaseClear B.V.

P.O.Box 1336
2302 BH Leiden
The Netherlands

Einsteinweg 5
2333 CC Leiden

T +31 (0)71 523 39 17

F +31 (0)71 523 55 94

E info@baseclear.com

W www.baseclear.com

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WWW.BASECLEAR.COM

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Mutagenesis service

Based on optimised protocols, BaseClear is able to create mutations in virtually every DNA fragment. This is a valuable tool for studying DNA or protein structure and function.

Site-directed or random mutagenesis can be applied to any DNA-fragment cloned into a plasmid vector. We can help you to introduce a range of mutations, varying from point mutations to deletions or insertions. The final construct will be delivered as purified plasmid DNA of your vector with the mutation in combination with an E. coli stab containing this plasmid. Delivery time is 10-15 working days.

Synthetic library construction service

BaseClear can create a synthetic DNA library to optimise a gene sequence with a view to improving enzymatic activity.

A synthetic DNA library can be used to optimise the activity of a gene. A synthetic gene library is synthesised with variations at one or more positions. The variants are cloned into standard or custom vectors and transformed into suitable host bacteria. Subsequently, the colonies can be picked up by our automatic colony picking equipment and transferred into microtiter plates. Customers can then screen the resulting library with activity assays to find the optimal gene sequence.

Several options:

- Site Mutated Libraries: One or more specified mutations at a specific location.
- Site Saturated libraries: One location mutated in all possible variants.
- Combinatorial Libraries: Several locations mutated in one or more (or all) possible variants.

Genomic library construction service

BaseClear offers a comprehensive set of DNA library construction services that can be tailored to your needs. We can construct a DNA library for genomic sequencing or screening for genes encoding a specific genotype.

Shotgun libraries: A shotgun library enables sequencing of long DNA segments or complete genomes. DNA fragments are cloned into separate vectors. After transformation and DNA isolation, all DNA fragments are sequenced by our high throughput sequencing system. The resultant sequences are assembled into contiguous fragments.

Genomic libraries: A genomic library enables the identification of a gene encoding for a specific genotype. Fragments of the genomic DNA are cloned into vectors and transformed into bacteria. Customers can screen the resulting library using

activity assays to identify genes of interest.

cDNA libraries: A cDNA library contains the genes expressed in a host at a given time. For this specific situation, mRNA is isolated and transformed into cDNA. cDNA fragments are cloned into vectors and transformed into bacteria. Customers can screen the resulting library in their own activity-screening assay to identify the essential DNA fragments.

Protein expression and purification service

BaseClear offers a complete range of services from gene synthesis to protein purification.

Our experience in this field coupled with our in-house gene synthesis and DNA sequencing services enable us to complete projects in a fast and flexible manner. Customers can opt for a standard feasibility study on protein expression and purification or a custom service for protein expression optimisation or protein purification.

Feasibility study: In a feasibility study we will clone a gene of interest into a suitable expression vector, grow and induce a host strain and determine the protein expression level. In addition to this, we determine the solubility of the expressed protein. In the event of an affinity tag, a small-scale test will be performed to determine the purification possibilities. The total costs of the feasibility study amount to 750 euro. In the event of no expression, a sum of 600 euro is charged.

Custom service: optimisation of the expression. The expression level of a protein will be optimised in a number of stages, tailored specifically for each specific protein and subject to agreement with the customer before initiation.

- Codon usage optimisation
- Introduction of fusion proteins
- Host strain optimisation
- Induction level optimisation
- Growth condition optimisation

Custom service: protein purification. If good protein expression levels are achieved, we can purify the protein by means of affinity columns. Depending on the expression level, up to 30 mg of protein can be produced. Together with the customer, we can optimise the buffer and elution conditions to obtain a protein that has the maximum possible activity.

**FOR 100%
DNA RESULTS**