



Genomics

GENE SYNTHESIS & MOLECULAR BIOLOGY

High Quality Combined With Guaranteed Turnaround Times.

Easy And Secure Online Ordering
Subcloning

Guaranteed TAT For Standard Genes

Online Gene Optimisation Using GENEius
Plasmid Preparation Service

Synthetic Biology

Strict Confidentiality

Gene Evolution Libraries

Express Genes – In Only 4 Business Days

Site Directed Mutagenesis

eurofinsgenomics.com

Gene Synthesis – Go Beyond.

Optimise your research with Eurofins Genomics' high quality synthetic DNA products. Partial or full length genes, open reading frames (ORF), cDNAs, promoters, qPCR standards or artificial genes – any double stranded DNA sequence can be synthesised "de novo" and subsequently subcloned into a plasmid vector of choice.

Our gene synthesis service is categorised into several groups:

Standard genes

- A range of available sizes
- Moderate GC content (40-65%)
- Without extensive repeats (> 20 bp) or critical hairpin structures
- Without extensive homopolymer stretches
- Guaranteed Turnaround Time for all genes up to 1000 bp – if we exceed this, you will receive 50% off list price

Complex genes

For all challenging genes, regardless of size, GC content and structure, we apply specific protocols in our lab.

How To Order Synthetic Genes Online.

Gene synthesis order wizard

Synthetic genes can easily be ordered in our new online shop.

The gene synthesis order wizard comprises all the functionality needed to order a gene online:

- DNA or amino acid sequences as entry format
- Free, immediate codon usage adaption and codon optimisation using GENEius* (see next page)
- Add and create your own "motifs to avoid" for codon optimisation
- Subcloning into your vector of choice
- Various plasmid preparation scales
- Animal-product free plasmid preps
- Endotoxin-free preparation



Express genes

In order to reduce waiting times, especially for projects with a very tight schedule, our genes can be synthesised in as little as 4 days.

Express subcloning for all Express Genes is available in only 4 additional business days.

Gene evolution libraries

Gene Evolution Libraries are ideally suited for screening approaches to improve the properties of your protein of interest.

We offer the introduction of mutations at single positions, multiple positions, within specific domains or random substitution using degenerated oligonucleotides.

GeneStrands

If you only need linear gene fragments you can order this cost-efficient product for standard sequences up to 2000 bp.

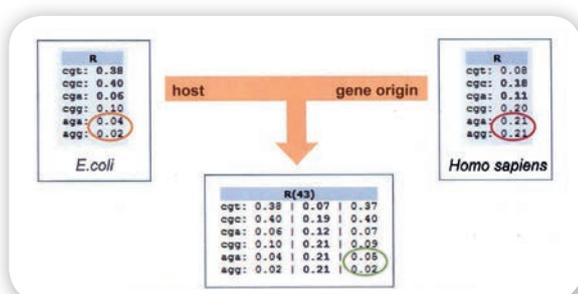
The gene synthesis online order wizard consists of 5 different steps, starting with details about your synthetic gene, via the sequence check (steps 2 & 3) to the additional options (vector selection, express service and plasmid preparation). The price for the gene will be immediately displayed in the cart (if the sequence is not highly complex).

GENEius – Optimises Your Sequence & Outperforms The Competition.

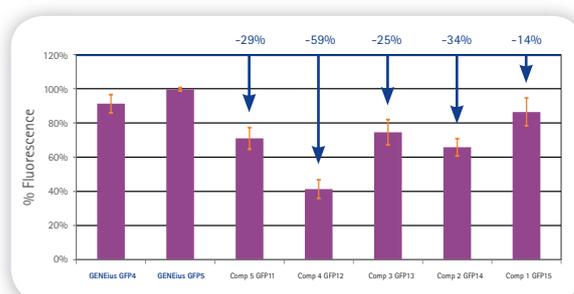
Gene optimisation is an important factor for successful protein expression. Eurofins Genomics has developed our own software tool for gene optimisation, called GENEius*.

GENEius uses codon usage tables of the heterologous expression host in order to improve protein expression:

- Usage of codons with high frequencies based on the selected organism
- Avoidance of rare codons of the expressing organism
- Removal of unwanted motifs or secondary structures, for example repeat or hairpin structures
- Evenly distributes G and C bases



GENEius optimised a human gene by comparing it to the input codon usage table for *E. coli* cells found in the Kazusa Codon Usage Database. For example, the arginine triplets aga & agg were adjusted by GENEius from a frequency of 0.21 to 0.04 & 0.02, respectively, resulting in the optimum frequency for *E. coli* cells (0.05 & 0.02).



We compared GENEius with five competitor's software packages by optimising and expressing GFP in *E. coli*. GENEius showed the highest expression levels for optimised genes compared to its competitors. For more details about this experiment, please see our GENEius application note (available for download from our website).

GENEius is integrated in our online ordering system, meaning that you can directly enter and optimise your sequence (free of charge). You can immediately place your order or request a quote. Very often the optimisation of the sequence also leads to a standard sequence (→ faster TAT, lower price).



Molecular Biology.

Lighten your workload and save valuable time by using one of our molecular biology solutions.

Site Directed Mutagenesis (SDM)

SDM can help in a wide range of applications. To alter the sequence you can either

- Incorporate single /multiple base substitutions
- Add insertions or deletions
- Perform random mutagenesis

Plasmid preparation

If you need large quantities of high quality endotoxin free, sterile plasmid or animal-product free DNA. We can deliver up to 20 mg DNA with various quality controls (restriction enzyme digest, DNA sequencing) in only 5-10 business days.

DNA cloning and free vector design

Design your own vector or send us your gene for subcloning:

- PCR products, vector inserts of full length DNA can be cloned into your vector of choice
- Choose all the elements you need from the Agilent SureVector system and receive a ready-to-use plasmid from us

Very long IVT ssRNA, dsRNA, mRNA

- From 100 bp to several thousand bp long
- Available in research grade or GMP-grade
- Custom design (modifications, scale, quality controls)

Experience The Power Of DNA.

Why Choose Eurofins Genomics For Your Synthetic Genes?

Founded in 1990, Eurofins Genomics is part of the Eurofins Scientific Group with laboratories across 39 countries with more than 22,000 employees.

Global network

Eurofins Genomics has a strong global presence enforced by its 600 highly skilled employees, production facilities and service centres based in Europe, USA, Japan and India.

Customers & markets

Eurofins Genomics supplies thousands of customers in various different markets. Our services are tailored for **pharma, diagnostics, agriculture, food, biotechnology and research applications** worldwide.

Combined expertise

Eurofins Genomics' European site in Germany uses state-of-the-art technology from all areas related to DNA applications, testing, analysis and research.

Quality management

Our QM/QA-System is ISO 9001 and ISO 13485 (medical devices requirements) certified. As a DNA-testing laboratory

we are ISO 17025 accredited and also offer testing services that are compliant to the principles of Good Laboratory Practice (GLP) and Good Clinical Practice (GCP).

Service offerings

We offer a wide-range of genomic services based on the core business lines:

- DNA & RNA Oligonucleotides
- Genotyping & Gene Expression
- Custom DNA Sequencing
- Gene Synthesis & Molecular Biology
- Next Generation Sequencing

Confidentiality

Strict confidentiality is guaranteed with every project we complete. The excellence of our service is overseen by a quality management procedure.

High quality standards & security

The oligos used for gene synthesis are manufactured at the Eurofins Genomics division in Ebersberg, Germany. All genes are 100% sequence verified in our DNA sequencing facility. Secure online ordering, status tracking and document download is available in our online shop.

Service Is More Than Just A Word For Us.



Our mission is to deliver first class products together with professional, fast and competent customer support whenever you need it. Find your customer service contact number according to your country below:

Email:

genes-eu@eurofins.com

Phone:

+49 8092 8289-77

Official business hours:

8 a.m. – 6 p.m. CET

Toll free phone numbers in Europe:

Austria	0800 296 562	Luxemburg	8002 6418
Belgium	0800 77862	Netherlands	0800 0226215
Denmark	8088 1262	Norway	800 138 44
Finland	0800 112 744	Sweden	020 798 148
France	0800 903 807	Switzerland	0800 562 013
Ireland	1800 555 056	UK	0800 0323 135
Italy	800 785 950		

Feel free to contact us via email and a member of our customer support team will be happy to assist you. To contact **Eurofins Genomics' headquarters** in **USA, Japan, India** or to locate a **distributor in your area**, please have a look on our website: eurofinsgenomics.com

