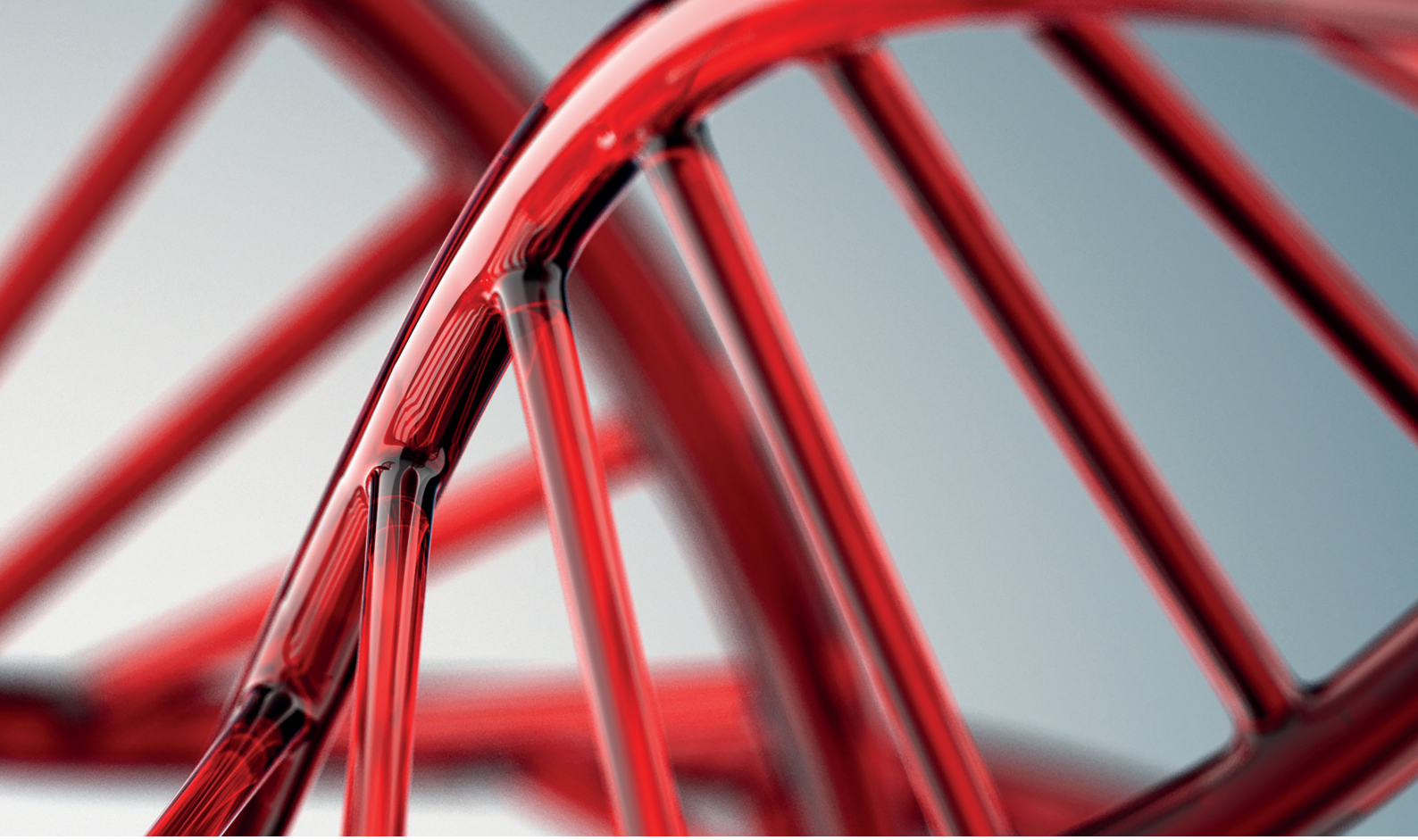


canvax

Accelerating your Molecular Biology Discoveries

// 2016-2017

DNA Cloning
Mammalian & Bacterial Expression Vectors
GPCR ORF Clones
Cell Based Assay & Molecule Detection Kits
Nucleic Acid Purification Kits
PCR Essentials
Recombinant Proteins
Buffers & Reagents

Our passion:

Total customer satisfaction

Canvax has aligned its corporate culture, people, processes and work methodologies towards total customer satisfaction. All our products are rigorously tested for all its detailed applications to ensure that they meet or exceed our published performance specifications. We will only earn your loyalty and trust by consistently delivering reliable, cost-effective and easy-to-use products, accurate technical information and best-in-class Customer Service.

Our experienced staff tests each product lot prior to stocking and then re-test on a defined schedule while the lot remains in stock. In addition, **our professional team monitors the performance of our products every day by using them in Canvax´s R&D activities.**

Table of Contents

Our commitments

We try harder! Canvax´s 26 employees work very hard to satisfy your research needs and help you achieve your goals, thanks to our:

Best quality innovative products

Our products are developed from our advanced R&D and follows a rigorous validation process, ensuring the most accurate, reliable and easy-to-use performance.

Accurate and trusted information

All catalog descriptions, features, advantages, applications, quality controls and other information are accurate, guaranteed and covered by Canvax.

Best-in-class Technical Support

Your doubts will be answered by the same scientists who are used to daily work to produce, validate and research with our products, providing you a fast and expert answer.

Cost-effective solutions

As Scientists, we understand the importance of reducing your reagents costs, time and sample expenditures, offering you important price savings and promotions.

About us

For 15 years, Canvax has been an original manufacturer and supplier of the most innovative solutions, services, kits and R&D Reagents inside the Molecular Biology field. Thanks to our reliable, cost-effective and easy-to-use products, we enable our worldwide customers to improve its laboratory productivity and accelerate their discoveries.

Based in Córdoba (Spain), since its foundation Canvax has focused on R&D of multiplex high throughput platforms (HTS) for Drug discovery and Diagnostic applied biosensors. Over a decade later, Canvax is a worldwide leading expert in Molecular Biology and GPCR expression in heterologous cells, with important patents and exclusive know-how. Canvax prides itself to be the first company to obtain an unprecedented milestone that will revolutionize the Diagnostics sector:

Canvax established stable high-level expression of odour GPCRs into heterologous cell lines in 2014.

With several awards as relevant Innovative Company, Canvax markets all its unmatched know-how, exclusive expertise and worldwide leading R&D knowledge through its original manufactured innovative solutions, kits and R&D Reagents within the Molecular Biology.

INNOVATIVE SME

Our R&D

Thanks to our sustained commitment to R&D, exclusive patents and unmatched know-how, Canvax has prominent outcomes within the following business areas: Drug Discovery, Nutraceuticals, Biosensors and Molecular Nose.

Drug Discovery

Canvax has built a unique ecosystem of Excellency for Drug Discovery and development, to cover unmet clinical needs in disorders such as cancer and Central Nervous System diseases. It is supported by a worldwide expert network in disease target validation, screening of novel molecular libraries against both kinases and GPCRs, medicinal chemistry, *in vitro* and *in vivo* studies, ADME and toxicology studies.

One patented lead molecule, Bozinib, is already in preclinical research and has shown promising properties as anti cancer agent, specifically against cancer stem cells, the resistant core of cancers. Three more programs are ready to enter the Drug discovery phase using Canvax´s exclusive screening patented platform, $FRIDA_{GPCR}$, a robust cell based homogenous assay validated for cancer and Central Nervous System GPCRs.

$FRIDA_{GPCR}$ screening technology allows us to outline a diversified pipeline of innovative drugs.

INDICATION	DISCOVERY	PRECLINICAL	CLINICAL STAGES
Cancer			
Psoria is			
Parkinson			

Nutraceuticals

Canvax, in collaboration with IMIBIC (Córdoba, Spain), have developed a patented formulation from a vegetal source that ameliorates significantly Oxidative Stress in an animal model of Multiple Sclerosis. In addition, Canvax´s Scientists have developed a process that improves 14-fold the yield of the active molecule, when compared with the best industrial process used today and such process is also being patented.

Canvax is carrying the Human Proof-of-Concept (PoC) of the value of the product as a functional ingredient. It is expected to begin commercialisation by late 2017.

INDICATION	DISCOVERY	PRECLINICAL	CLINICAL STAGES
Multiple Sclerosis			
Metabolic syndrome			

Immunoenzymatic Biosensors and Molecular Nose

All our original know-how obtained in GPCRs Expression during the development of the HTS FRIDA platform has allowed us a prestigious entry in a great scientific and technical innovative field as is Odorant Receptors. First described in 1991, this large family of molecules (approx. 300 in Humans and 1,000 in dogs and rats) has been difficult to express in heterologous cells, until Canvax achieved stable high-level expression of odour GPCRs into heterologous cell lines in 2014, aiming to develop a Molecular Nose with important applications in the Pharmaceutical industry as a Biosensor for the detection of cancer and other diseases, in the fragance industry to establish a molecular brand of a perfume, and even in the identification of individuals by their smell.

According to Immunoenzymatic Biosensors, Canvax are developing Multiplex assay methods compatible with a wide range of proteins. Although Multiplex tests are available for molecules against which antibodies are highly specific (e.g. Interleukins), it couldn't be extended to the entire market of molecules that are detected by Monoplex Immunoenzymatic methods. In this area, we are focused in the development of better assay surfaces, methods to coat them with orientated antibodies and more sensitive systems already in development.

Do you have something interesting to offer us?
write us to info@canvaxbiotech.com

Grants & Funders

How to use this catalog

Description of icons

Ordering:

FS
Free sample available upon request (just in some countries)

ST
Product is on stock and it will be dispatched as soon as possible

SI
The components of the vector/kit are available to ordering individually

BULK
Bulk quantities and custom formulations available upon request

Storage:

-80° C
Store the product at -80° C in a non-frost free freezer

-20° C
Store the product at -20° C in a non-frost free freezer

4° C
Store the product at 4° C

RT
Store the product in a dry place at Room Temperature

Shipped in:

DI
Dry Ice

GP
Gel Pack

AT
Ambient Temperature

Additional info:

FAQS
Available Frequent Asked Question section about this product in our website

TIPS
Available Expert Tips & Tricks section of this product in our website

Other icons:

RE
Recombinant Protein

Product use limitation

All products are developed, designed and sold exclusively for research purposes and *in vitro* use only. The products were not tested for use in diagnostics or for Drug development, nor is it suitable for administration to Humans or animals. Please, for more info please visit lifescience.canvaxbiotech.com for Material Safety Data Sheet of each product.

Ordering & Support info

ORDERING

Distributors
To get more info about Canvax´s reliable, cost-effective and easy-to-use innovative tools in your region, place an order or quotation, please visit the complete list of our worldwide distributors at distributors.canvaxbio.com

If you are not able to find a distributor in your area, you can order products from the nearest distributor or directly from Canvax:

quotes.canvaxbio.com

info@canvaxbio.com

TECHNICAL SUPPORT

Ask a scientist
Our Customer and Technical Support is provided by the same Senior Scientists who develop the products, already familiar with the manufacture, validation and research work with the products. Thanks to this important fact, Canvax offers best-in-class Customer Service, providing to our customers an expert answer in average time of 2 hours*.

If you need further help, please do not hesitate to contact your local distributor or Canvax at:

support.canvaxbio.com

*When the customer contact us directly, on working days and hours.

Website

Additionally to all the information presented in this catalog, you could find at **canvaxbio.com** the most up-to-date information about our:

- ✔ Product Brochures
- ✔ Manuals
- ✔ MSDS
- ✔ New releases
- ✔ New producs
- ✔ Discounts and exclusive offers
- ✔ FAQs

Any doubt?

Visit the **Expert tips & tricks** section of our website to solve your doubts.

Tell us what you think

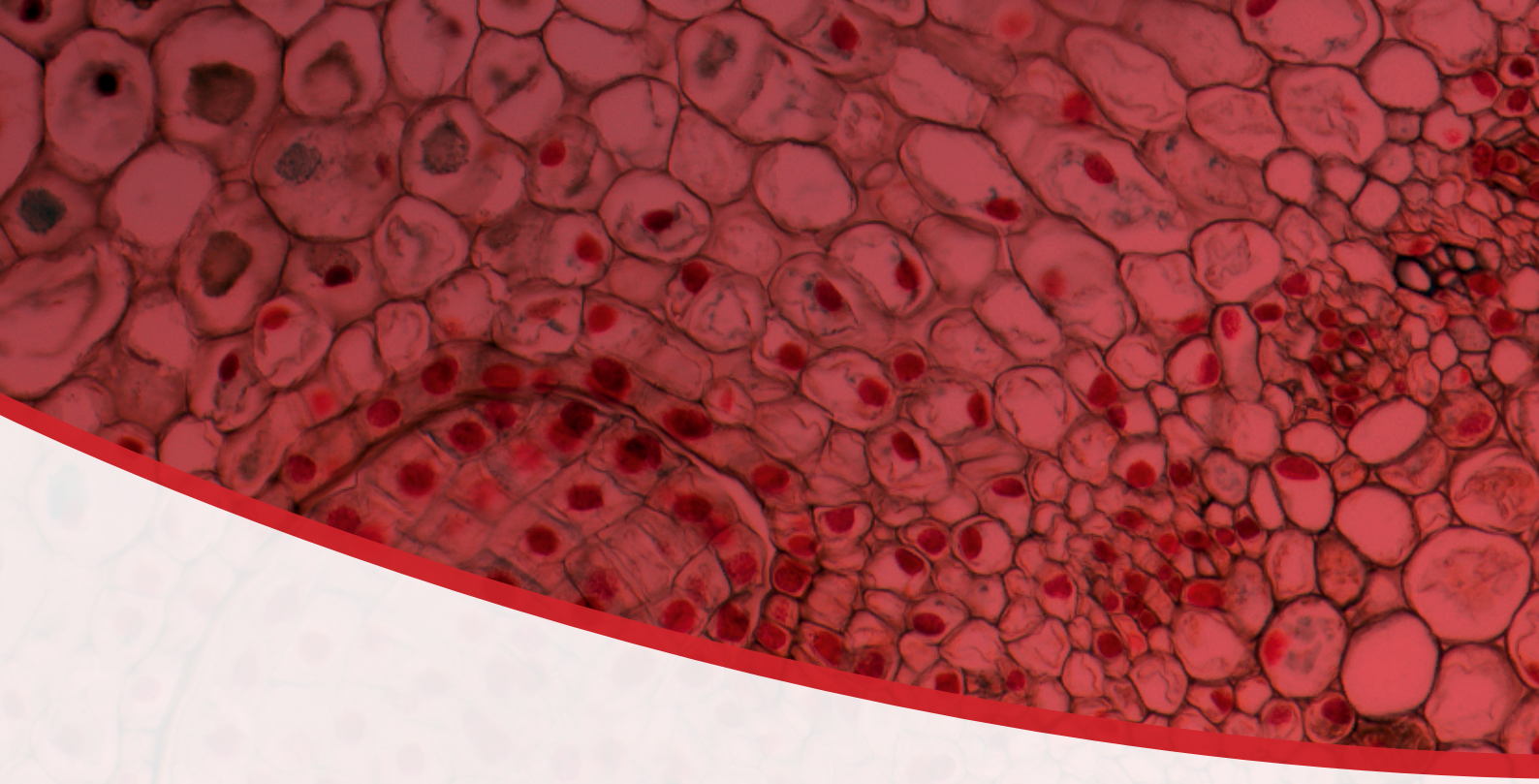
Review our products.

It´s really easy!

As a valued customer, we would appreciate to know what you think about our products' price, performance, information or even presentation and listen about your own experiences regarding those Canvax´s products you have bought. It provides us a valuable feedback to help us to improve our service to you and to other customers and analyse its performance.

Join our newsletter:

Be the first to know our latest news and promotions.



1. DNA Cloning

Blunt-end DNA Cloning Kits
TA DNA Cloning Kits
Universal DNA Cloning Kits
Chemically competent cells
Mutagenesis
Other compounds

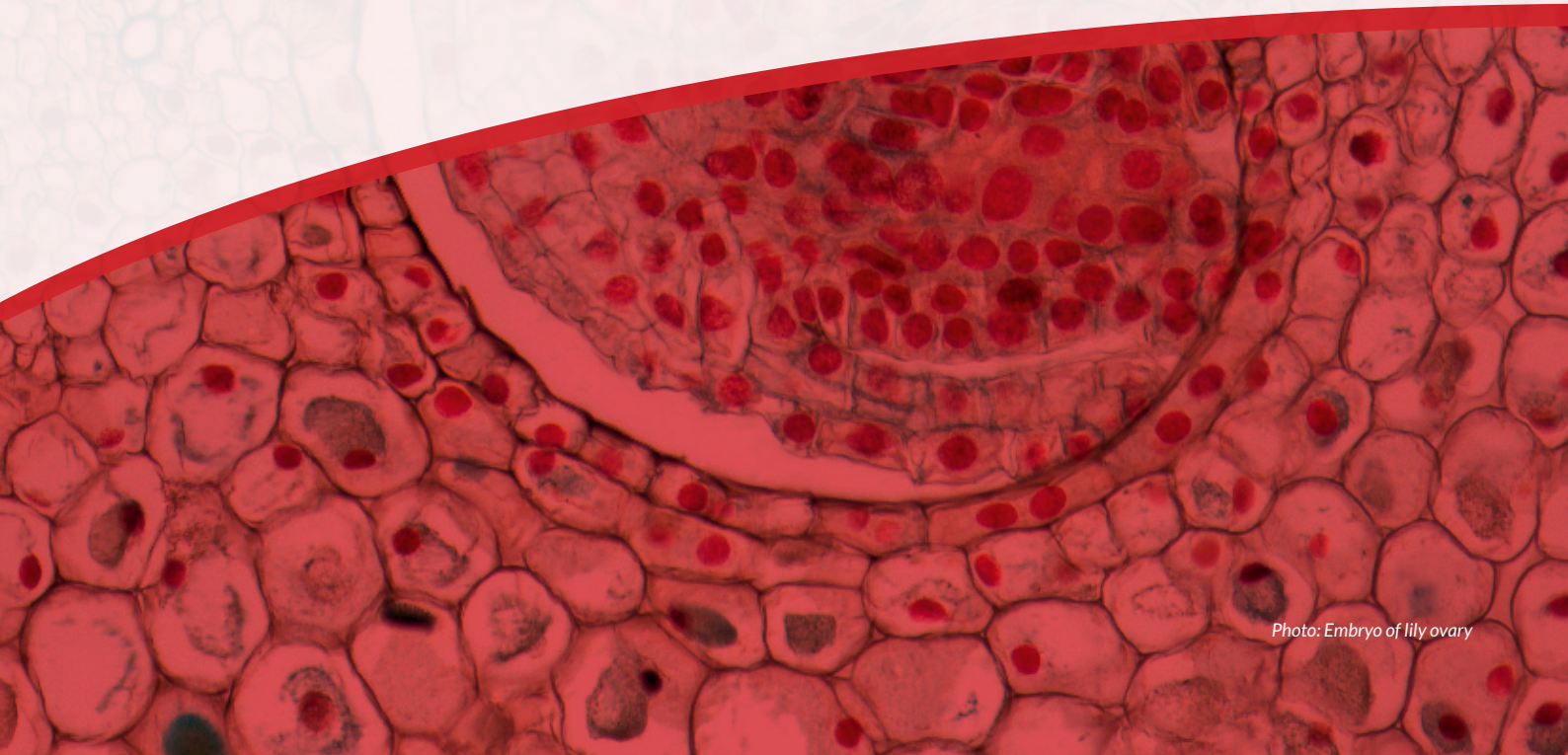


Photo: Embryo of lily ovary

DNA Cloning

pSpark® DNA Cloning Vectors Selection Guide:

	pSpark®							
Features	**I**	**II**	**III**	**IV**	**V**	**Done**	**TA**	**TA Done**
Catalog Number	**C0001**	**C0002**	**C0003**	**C0004**	**C0005**	**C0006**	**C0020**	**C0021**
Page	12	14	14	15	15	16	16	17
Blunt-End Cloning	✓	✓	✓	✓	✓	✓		
TA Cloning							✓	✓
Advanced MCS	✓		✓	✓	✓			
Classic MCS		✓					✓	
Done MCS						✓		✓
Ampicillin Resistance	✓	✓	✓	✓	✓	✓	✓	✓
Amp/Kanamycin Resistance			✓					
High copy number (pUC origin)	✓	✓	✓	✓		✓	✓	✓
Low copy number (pBR322 origin)					✓			
Advantages								
Cloning without Toxic genes	✓	✓	✓			✓	✓	✓
Cloning of unstable fragments				✓	✓			
kb cloning limit	✓	✓	✓	✓	✓	✓	✓	✓
Less initial insert amount needed	✓	✓	✓	✓	✓	✓	✓	✓
Extremely high cloning efficiency	✓	✓	✓	✓	✓	✓	✓	✓
Flexibility and free protocol	✓	✓	✓	✓	✓	✓	✓	✓
Very low background	✓	✓	✓	✓	✓	✓	✓	✓
High stability with no cloning bias	✓	✓	✓	✓	✓	✓	✓	✓

Blunt-end DNA Cloning Kits

pSpark® I

For highly efficient, accurate and robust general cloning from PCR High Fidelity fragments, without the use of toxic genes

Ordering info:

Cat No.	Size
C0001-S	10 rxn
C0001	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® I (20 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)

Related Products:

- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- CVX5α™ Chemically Competent cells (p.18)
- Custom cloning services (p.140)
- CleanEasy™ PCR Purification Kit (p.91)
- PickMutant™ Site-directed Mutagenesis Kit (p.19)
- FastPANGEA™ High Fidelity DNA Pol. (p.105)
- Ampicillin (p.126)
- ITPG (p.19)
- X-Gal (p.19)

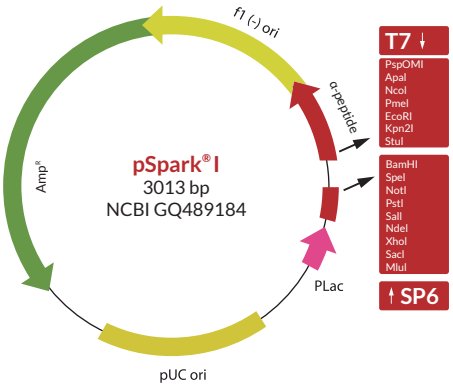
Description:

pSpark® I is a highly efficient, accurate and easy-to-use DNA cloning system based on a novel breakthrough technology to generate blunt vectors with a highly cloning efficiency.

The vector is prepared by digestion of pSpark® at EcoRV site before treating both ends to prevent vector self-ligation. The end treatment is supported by a exclusive know-how that guarantees a higher cloning efficiency than just dephosphorylated vector.

Advantages & Features:

- ✔ **Unprecedented high cloning efficiency:** > 2,500 positive colonies expected under optimal conditions.
- ✔ **Easy-to-use:** eliminate recombinant screening due to its <1% background, avoiding "suicide" strategies from toxic genes.
- ✔ **Time-saving protocol:** no hidden steps such as phosphorylation, just ligation after PCR and transformation.
- ✔ **High stability:** eliminates cloning bias or pitfalls.
- ✔ **Powerful:** clone from < 1 ng/kb, obtain 5x more positive colonies using 10x less DNA insert.
- ✔ **Compatible with blue/white screening.**
- ✔ **Great versatility:** compatible with any protocol, proofreading polymerase, competent cells, ligation time or primers.
- ✔ **Sensitive:** clone from 50 bp insert to up to 14 kb with just 5ng per kb of insert.
- ✔ **Eliminates positive selection vector.**
- ✔ **High cost-saving:** reduces your cloning costs as no expensive phosphorylated primers are needed.
- ✔ **Robust for every DNA size:** just 6.7 ng per kb of insert needed for optimal ligation.



Applications:

- ✔ General cloning.
- ✔ Cloning of High Fidelity PCR amplified products.
- ✔ Production of ssDNA.
- ✔ Blue/white screening for recombinants.
- ✔ *In vitro* transcription from T7/SP6 dual-opposed promoters.

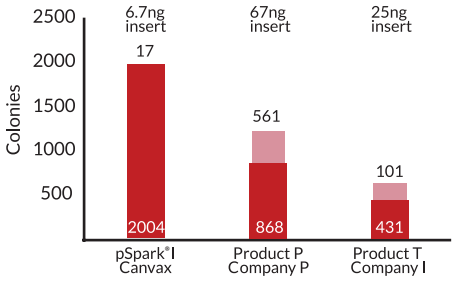
Quality control:

- ✔ Functionally test using 1.0 kb PCR fragment.

Comparison with other popular vectors:

In 2016, Canvax conducted a rigorous study where the efficiency of all pSpark® Blunt-end DNA Cloning systems were analyzed in comparison other popular cloning systems, developed almost two decades ago. In this catalog the results of pSpark® I compared to Product P and Product T are presented. If you want to review the full white paper, please visit pspark.canvaxbio.com

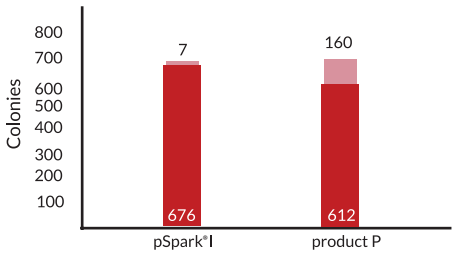
Figure 1.1: Efficiency and background



Cloning efficiency of pSpark® I over other popular cloning systems. The cells used had a cloning efficiency of 2 x 10^7 cfu/µg.

As shown in the previous figure, the background for pSpark® I is 0.8%, while in other cases, it is 40% and 20%, respectively. On the other hand, pSpark® I has an efficiency of 300 cfu/µg of DNA Insert, while other products have 13 cfu/µg and 17 cfu/µg of DNA, respectively.

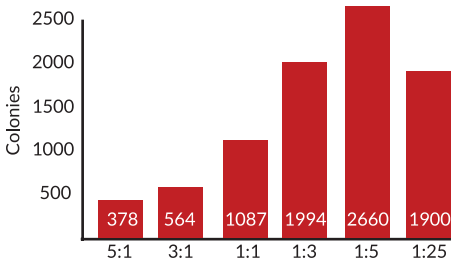
Figure 1.2: Robust and versatile



Cloning efficiency using pSpark® I with blend polymerase. The 1 kb-insert was amplified with FastPANGEA™ High Fidelity DNA Polymerase MasterMix for cloning with pSpark® I and with blend polymerase to clone with Company P. Competent cells had a cloning efficiency of 2 x 10^7 cfu/µg.

Despite the similarity of the results, it is important to highlight that PCR products, obtained with a mix of both DNA polymerases, contain a mixture of molecules with blunt ends and molecules with adenine at the 3´ends in a proportion of 30% and 70%, respectively. Therefore, pSpark® I is more robust and versatile than Product P.

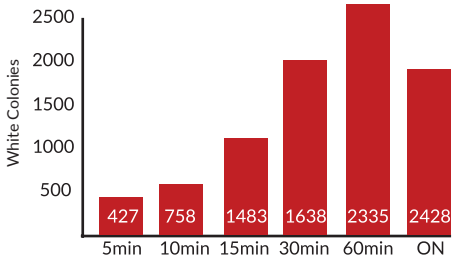
Figure 1.3: Insert amount



Number of positive white colonies obtained after ligation with different ratios of pSpark® I vector:insert. The amount of vector was the same in all cases, varying the amount of insert to achieve the vector: insert ratio identified. The background was less than 1%. Competent cells had an efficiency of 2 x 10^7 cfu/µg.

As is described, it allows obtaining a high number of colonies even using < 1 ng of insert as in the 5:1 vector: insert ratio.

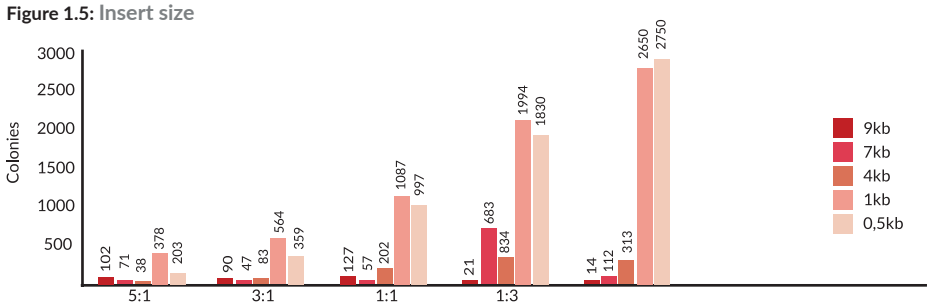
Figure 1.4: Ligation Time



pSpark® I ligation-determined efficiency in response to different ligation times. Competent cells used had an efficiency of 2 x 10^7 cfu/µg. Is possible to use pSpark® using almost any lab protocol, ligation temperature (example: 25°C-RT, 22°C, 16° or 4°C), and it could even tolerate some changes depending on the needs of each cloning task or laboratory resources.

It is necessary to emphasize that with only 5-10 minutes of ligation time, >400-700 positive colonies and a background <1% are obtained.

Figure 1.5: Insert size



Efficiency of cloning pSpark® I inserts of different sizes using different vector: insert ratios. Inserts were used 0.5 kb, 1kb, 4kb, 7kb and 9kb in the ratios indicated below. Competent cells were 2 x 10^7 cfu/µg DNA. Background was always below 1%.

As is shown, the vector: insert relationship 1:5 is the best with >2,000 positive colonies for inserts equal or < 1kb.

pSpark® II

For highly efficient, accurate and easy general cloning with classical MCS, without the use of toxic genes

Ordering info:

Cat No.	Size
C0002-S	10 rxn
C0002	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® II (20 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)

Related Products:

- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- Custom Cloning services (p.140)
- BrightMAX™ DNA Ladders (p.116)
- Ampicillin (p.126)
- ITPG (p.19)
- X-Gal (p.19)

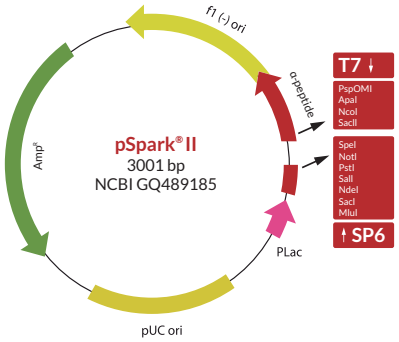
Description:

pSpark® II is a highly efficient, accurate and easy-to-use DNA cloning system based on a breakthrough technology for cloning blunt ended DNA generated by PCR with a proofreading or High Fidelity DNA Polymerases.

The vector is prepared by digestion of pSpark® II at EcoRV site before treating both ends to prevent vector self-ligation. The end treatment is supported by a exclusive know-how that guarantees a higher cloning efficiency than just dephosphorylated vector.

Advantages & Features:

- ✓ **Unprecedented high cloning efficiency:** > 2,500 positive colonies expected under optimal conditions.
- ✓ **Great sensitivity:** over hundreds positive colonies with few nanograms of insert.
- ✓ **High stability:** eliminates cloning bias or pitfalls.
- ✓ **Time-saving protocol:** no hidden steps such as phosphorylation, just ligation after PCR and transformation.
- ✓ **Powerful:** clone from < 1 ng/kb to up to 14 kb, obtain 4x more positive colonies using 3x less DNA insert.
- ✓ **Easy-to-use:** eliminate recombinant screening due to its <1% background, avoiding "suicide" strategies from toxic genes.
- ✓ **Great versatility:** compatible with any protocol, proofreading polymerase, competent cells, ligation time or primers.
- ✓ **Flexible:** ligation time from 10 minutes to overnight.
- ✓ **Robust for every DNA size:** just 6.7 ng per kb of insert needed for optimal ligation.
- ✓ **High cost-saving:** reduces your cloning costs as no expensive phosphorylated primers are needed.
- ✓ **Eliminates positive selection vector.**



Applications:

- ✓ General cloning.
- ✓ Clone PCR fragments included in a low amount.
- ✓ Cloning of PCR products amplified with High Fidelity Polymerases.
- ✓ Cloning of PCR fragments generated with blend polymerases.
- ✓ Production of ssDNA.
- ✓ Blue/white screening for recombinants.
- ✓ *In vitro* transcription from T7/SP6 dual-opposed promoters.

Quality control:

- ✓ Functionally test using 1.0 kb PCR fragment.

Comparison with other vectors:

- ✓ Please visit page 13 to review it.

pSpark® III

For highly efficient, accurate and easy cloning with Ampicillin and Kanamycin resistance cassettes, without the use of toxic genes

Ordering info:

Cat No.	Size
C0003-S	10 rxn
C0003	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® III (20 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)

Related Products:

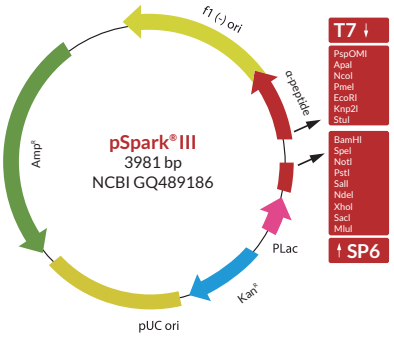
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- Custom Cloning services (p.140)
- PickMutant™ Site-directed Mutagenesis Kit (p.19)
- FastPANGEA™ High Fidelity DNA Pol. (p.105)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)
- Kanamycin (p.126)

Description:

pSpark® III is a highly efficient, accurate and easy-to-use DNA cloning system that combines Ampicillin and Kanamycin resistance. Ideal for cloning PCR products amplified from any plasmid vector without the need to gel-purify bands to eliminate the background due to the template vector used for PCR.

Advantages & Features:

- ✓ **Unprecedented high cloning efficiency:** > 2,500 positive colonies expected under optimal conditions.
- ✓ **Time-saving protocol:** no hidden steps such as phosphorylation, just ligation after PCR and transformation.
- ✓ **Powerful:** obtain 5x more positive colonies using 10x less DNA insert.
- ✓ **Easy-to-use:** eliminate recombinant screening due to its <1% background, avoiding "suicide" strategies from toxic genes.
- ✓ **High stability:** eliminates cloning bias or pitfalls.
- ✓ **Great versatility:** compatible with any protocol, proofreading polymerase, competent cells, ligation time or primers.
- ✓ **Sensitive:** clone from 50 bp insert to up to 14 kb with just 5ng per kb of insert.
- ✓ **High cost-saving:** reduces your cloning costs as no expensive phosphorylated primers are needed.
- ✓ **Eliminates positive selection vector.**



Applications:

- ✓ Cloning directly from PCR using plasmid cloned genes as template.
- ✓ Unpurified PCR cloning.
- ✓ Cloning of high fidelity PCR amplified products.
- ✓ Production of ssDNA.
- ✓ Blue/white screening for recombinants.
- ✓ *In vitro* transcription from T7/SP6 dual-opposed promoters.

Quality control:

- ✓ Functional test using a 1.0 kb PCR fragment.

Comparison with other vectors :

- ✓ Please visit page 13 to review it.

pSpark® IV

For highly efficient, stable and powerful cloning under transcription-free conditions

Ordering info:

Cat No.	Size
C0004-S	10 rxn
C0004	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® IV (20 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)

Related Products:

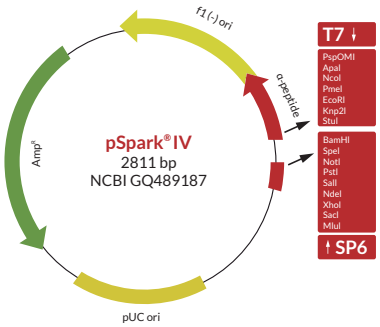
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- Custom Cloning services (p.140)
- BrightMAX™ DNA Ladders (p.116)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)

Description:

pSpark® IV is a highly efficient, accurate and easy-to-use DNA cloning system that exploit its very low background feature for the expression of toxic genes under transcription-free conditions. In this vector, the *lac* promoter has been eliminated and therefore blue/white screening is not allowed (alpha-peptide coding region remains and you can find blue colony). The vector is ideal for cloning genes that produce toxic polypeptides by transcription/translation.

Advantages & Features:

- **Unprecedented high cloning efficiency:** > 2,500 positive colonies expected under optimal conditions.
- **Transcription-free.**
- **Easy-to-use:** eliminate screening of recombinants due to its <1% background.
- **High stability:** eliminates cloning bias or pitfalls.
- **Time-saving protocol:** avoids any step required after PCR, just 19 minutes from PCR to plating.
- **Powerful:** obtain 5x more positive colonies using 10x less DNA insert.
- **Great versatility:** compatible with any protocol, proofreading polymerase, competent cells, ligation time or primers.
- **Sensitive:** clone from 50 bp insert to up to 14 kb with just 5ng per kb of insert.
- **Cost avoidance:** removes expensive primer phosphorylation use.
- **Eliminates positive selection vector.**



Applications:

- Cloning of high fidelity PCR amplified products.
- Production of ssDNA.
- *In vitro* transcription from T7/SP6 dual-opposed promoters.
- Cloning of toxic genes.

Quality control:

- Functional test using a 1.0 kb PCR fragment.

Comparison with other vectors :

- Please visit page 13 for a review.

pSpark® V

For highly efficient, accurate and easy cloning with pBR322 and transcription-free conditions

Ordering info:

Cat No.	Size
C0005-S	10 rxn
C0005	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® V (20 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)

Related Products:

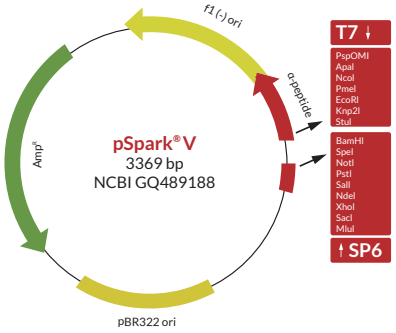
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- Custom Cloning services (p.140)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)

Description:

pSpark® V is a highly efficient, accurate and easy-to-use DNA cloning system developed with low copy number, as a help for cloning of inserts with the highers kb. This low copy variant is also transcription-free, for the most demanding cloning tasks. In this vector, the *lac* promoter has been eliminated and therefore blue/white screening is not allowed (alpha-peptide coding region has been truncated).

Advantages & Features:

- **Unprecedented high cloning efficiency:** > 2,500 positive colonies expected under optimal conditions.
- **Transcription-free.**
- **Easy-to-use:** eliminate screening of recombinants due to its <1% background.
- **High stability:** eliminates cloning bias or pitfalls.
- **Time-saving protocol:** avoids any step required after PCR, just 19 minutes from PCR to plating.
- **Powerful:** obtain 5x more positive colonies using 10x less DNA insert.
- **Great versatility:** compatible with any protocol, proofreading polymerase, competent cells, ligation time or primers.
- **Sensitive:** clone from 50 bp insert to up to 14 kb with just 5ng per kb of insert.
- **Optimized:** truncated alpha-peptide coding region.
- **Cost avoidance:** removes expensive primer phosphorylation use.
- **Eliminates positive selection vector.**



Applications:

- Cloning of toxic genes.
- Cloning of unstable genes, for example genes with repeated sequences.
- Cloning of high fidelity PCR amplified products.
- Production of ssDNA.
- Blue/white screening for recombinants.
- *In vitro* transcription from T7/SP6 dual-opposed promoters.

Quality control:

- Functional test using a 1.0 kb PCR fragment.

Comparison with other vectors :

- Please visit page 13 for a review.

pSpark® Done

For highly efficient, accurate and easy cloning of PCR fragments with EcoRI and NotI flanking the insertion site

Ordering info:

Cat No.	Size
C0006-S	10 rxn
C0006	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® Done (20 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)

Related Products:

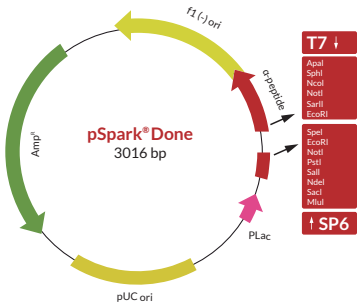
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- Custom Cloning services (p.140)
- FastPANGEA™ High Fidelity DNA Polymerase (p.105)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)

Description:

pSpark® Done is a highly efficient, accurate and easy-to-use DNA cloning system designed for cloning of blunt ended DNA with very high efficiency. The MCS of the pSpark® Done vector incorporates sequences on either side of the insert that are recognized by the restriction enzymes NotI and EcoRI. This allows the insert DNA to be removed with a single restriction digest using either of these enzymes.

Advantages & Features:

- ✓ **Optimized:** recognition sites for NotI and EcoRI either side of the insert of cloning point.
- ✓ **Flexible:** allows removing the desired insert DNA with others restriction digestion.
- ✓ **Unprecedented efficiency:** > 2,500 positive colonies expected under optimal conditions.
- ✓ **Easy-to-use:** eliminate screening of recombinants due to its <1% background.
- ✓ **Time-saving protocol:** avoids any step required after PCR, just 19 minutes from PCR to plating.
- ✓ **Powerful:** obtain 5x more positive colonies using 10x less DNA insert.
- ✓ **High stability:** eliminates cloning bias or pitfalls.
- ✓ **Great versatility:** compatible with any protocol, proofreading polymerase, competent cells, ligation time or primers.
- ✓ **Sensitive:** clone from 50 bp insert to up to 14 kb with just 5ng per kb of insert.
- ✓ **Eliminates positive selection vector.**
- ✓ **Cost avoidance:** removes expensive primer phosphorylation use.
- ✓ **Robust for every DNA size:** just 6.7 ng per kb of insert needed for optimal ligation.



Applications:

- ✓ Cloning of high fidelity PCR amplified products.
- ✓ Production of ssDNA.
- ✓ Blue/white screening for recombinants.
- ✓ *In vitro* transcription from T7/SP6 dual-opposed promoters.
- ✓ One restriction enzyme allows gene fragment excision.

Quality control:

- ✓ Functionally test using 1.0 kb PCR fragment.

Comparison with other vectors :

- ✓ Please visit page 13 to review it.

TA DNA Cloning Kits

pSpark® TA

For efficient, stable and easy cloning of non-proofreading PCR fragments or PCR from blend enzymes

Ordering info:

Cat No.	Size
C0020-S	10 rxn
C0020	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® TA DNA Cloning vectors (50 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 5 µL Insert Control 600 bp (30 ng/µL)

Description:

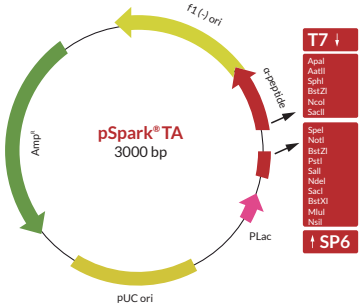
pSpark® TA is efficient, stable and easy-to-use DNA cloning vector based on an optimized TA technology for cloning single 3´-adenine overhanging DNA. The vectors are prepared by digestion of pSpark® TA at EcoRV site and the subsequent addition of a single thymidine at each 3´- end to allow cloning Taq DNA Polymerase amplified DNA fragments. Its exclusive procedure offers greater efficiency and less background of blue colonies than the others TA vectors.

Advantages & Features:

- ✓ **Efficient:** >600 white positive colonies expected under optimal conditions.
- ✓ **Easy-to-use:** eliminate screening of recombinants due to its <4% background.
- ✓ **High stability:** vector without cloning bias due to transcription of toxic genes.
- ✓ **Fast protocol:** ligation time from 60 minutes to overnight.
- ✓ **Compatible:** with direct cloning of PCR products.
- ✓ **Great versatility.**
- ✓ **Cost avoidance:** removes primer phosphorylation.

Applications:

- ✓ Cloning of non-proofreading PCR fragments.
- ✓ Production of ssDNA.
- ✓ Blue/white screening for recombinants.
- ✓ *In vitro* transcription from T7/SP6 dual-opposed promoters.



Quality control:

- ✓ Functional test using a 600 bpPCR fragment.

Related Products:

- TruePure™ dNTPs (p.115)
- Horse-Power™ Taq DNA Polymerase (p.102)
- CVX5α™ Chemically Competent cells (p.18)
- Horse-Power™ Red-Taq DNA Polymerase (p.107)
- Horse-Power™ Green-Taq DNA Polymerase (p.107)
- CleanEasy™ PCR Purification kit (p.91)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)

pSpark® TA Done

For efficient, stable and easy cloning of PCR fragments with EcoRI and NotI flanking the insertion site

Ordering info:

Cat No.	Size
C0021-S	10 rxn
C0021	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® TA Done (50 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 5 µL Insert Control 600 bp(30 ng/µL)

Related Products:

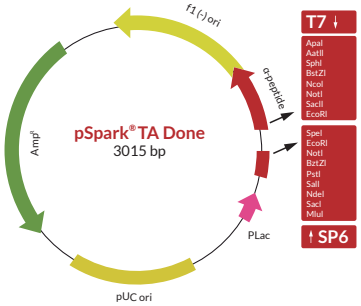
- Horse-Power™ Taq DNA Polymerase (p.102)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)
- Horse-Power™ Red-Taq DNA Polymerase (p.107)
- Horse-Power™ Green-Taq DNA Polymerase (p.107)

Description:

pSpark® TA Done is efficient, stable and easy-to-use DNA cloning vector based on an improved TA technology that offers all of the advantages of pSpark® TA with the added convenience of recognition sites for EcoRI and NotI flanking the insertion site. Thus, several options exist to remove the desired insert DNA with a single restriction digestion.

Advantages & Features:

- **Convenient:** recognition sites for EcoRI and NotI flanking the insertion site.
- **Flexible:** allows removing the desired insert DNA with other restriction digestion.
- **Efficient:** >600 white positive colonies expected under optimal conditions.
- **Stable:** without cloning bias due to transcription of toxic genes.
- **Easy-to-use:** eliminate screening of recombinants due to its <4% background.
- **Fast protocol:** ligation time from 60 minutes to overnight.
- **Compatible:** with direct cloning of PCR products.
- **Great versatility:** compatible with any competent cell or primer design.
- **Cost avoidance:** removes primer phosphorylation.



Applications:

- Cloning of non-proofreading PCR fragments.
- Production of ssDNA.
- Blue/white screening for recombinants.
- *In vitro* transcription from T7/SP6 dual-opposed promoters.

Quality control:

- Functional test using a 600 bp PCR fragment.

pMBL-T™ Vector

Efficient, convenient and fast cloning of DNA fragments with A overhangs

Ordering info:

Cat No.	Size
C0030	20 rxn

Includes for 20 rxn:

- 20 µL pMBL-T™ Vector (50 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 100 µL T4 DNA Ligase Buffer (10x)
- 5 µL Insert Control 600 bp (30 ng/µL)

Related Products:

- Horse-Power™ Taq DNA Polymerase (p.103)
- T4 DNA Ligase (p.111)
- CVX5α™ Chemically Competent cells (p.18)
- Horse-Power™ Red-Taq DNA Polymerase (p.107)
- Horse-Power™ Green-Taq DNA Polymerase (p.107)
- CleanEasy™ PCR Purification kit (p.91)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)

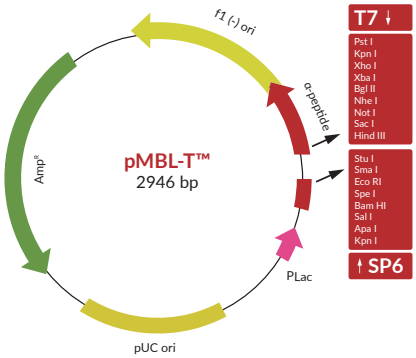
Description:

pMBL-T™ Vector DNA Cloning Kit is an efficient, convenient and fast system for the cloning of PCR products. The vector is prepared by cutting pMBL-T™ vector with EcoRV and adding a 3´ terminal thymidine to both ends. These single 3´-T overhangs at the insertion site greatly improve the efficiency of ligation of a PCR product into the plasmids by preventing recircularization of the vector and providing a compatible overhang for PCR products generated by certain thermostable polymerases such as Horse-Power™ Taq DNA Polymerase.

These polymerases often add a single deoxyadenosine, in a template-independent fashion, to the 3´-ends of the amplified fragments.

Advantages & Features:

- **Highly efficient:** > 90% white colonies in a transformation with supplied insert control.
- **Proven performance:** > 1,000 recombinant colonies in optimal conditions.
- **Fast and easy protocol:** results from 15 min protocol.
- **Optimized:** improve efficiency of ligation of a PCR product into the plasmid.
- **Compatible:** overhang for ligation of PCR products preventing recircularization of the vector.
- **Designed** by cutting the vector with EcoRV and adding a 3´ terminal thymidine to both ends.



Applications:

- Cloning of PCR fragments into DNA.
- Cloning vector.
- Blue/white screening for recombinants.

Quality control:

- Functionally test using 600 bp PCR fragment.

Universal DNA Cloning Kit

pSpark® Universal DNA Cloning kit

Highly efficient, robust and easy-to-use system compatible with Blunt and TA DNA cloning

Ordering info:

Cat No.	Size
C0019	20 rxn

Includes for 20 rxn:

- 20 µL pSpark® II (20 ng/µL)
- 20 µL pSpark® TA DNA Cloning vector (50 ng/µL)
- 20 µL T4 DNA Ligase (5U/Weiss)
- 200 µL T4 DNA Ligase Buffer (5x)
- 150 µL PEG 6000 (10x)
- 5 µL Insert Control 1 kb (20 ng/µL)
- 5 µL Insert Control 600 bp (30 ng/µL)

Related Products:

- pSpark® II DNA Cloning vector (p.14)
- pSpark® TA DNA Cloning vector (p.17)
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- Horse-Power™ Taq DNA Polymerase (p.103)
- CVX5α™ Chemically Competent cells (p.18)
- CleanEasy™ PCR Purification kit (p.91)
- ITPG (p.19)
- X-Gal (p.19)
- Ampicillin (p.126)

Description:

pSpark® Universal is a highly efficient, accurate and easy-to-use DNA cloning kit ideal for a broad range of PCR fragments cloning applications. There is a range of DNA polymerases available that do not generate PCR products with identical ends: proofreading DNA polymerases leave blunt ends while blends of polymerases and non-proofreading DNA polymerases leaves 3´A overhangs. Therefore, it is necessary to employ different vectors to clone both kinds of PCR fragments.

pSpark® Universal DNA cloning kit has been designed to save time, looking for a kit for several cloning scenarios. It is mainly composed of two cloning vectors which allow blunt or TA DNA cloning. For blunt DNA cloning and TA DNA cloning, pSpark® II DNA cloning vector and pSpark® TA DNA cloning vector, respectively, are included.

Advantages & Features:

- **Compatible with Blunt and TA DNA cloning:** it is composed by pSpark® II (p.14) and pSpark® TA DNA cloning vector (p.16).
- **Convenient:** ideal for a broad range of PCR fragments cloning applications.
- **Versatile:** compatible with any DNA polymerase.

Applications:

- Cloning of high fidelity PCR amplified products into pSpark® II Blunt DNA cloning vector.
- Cloning of non-proofreading PCR fragments into pSpark® TA DNA Cloning vector.
- Production of ssDNA.
- *In vitro* transcription from T7/SP6 dual-opposed promoters.

Quality control:

- Functionally test using 1.0 kb PCR fragment (pSpark® II) and 600 bp PCR fragment (pSpark® TA).

Chemically Competent Cells

CVX5α™ (1 x 10^7 CFU/µg)

Versatile, convenient and cost-effective solution for routine subcloning procedures

Ordering info:

Cat No.	Size
C0031	40 rxn (4 x 500 µl)
C0032	40 rxn (40 x 50 µl)
C0033	90 rxn (9 x 500 µl)

Includes for 40 rxn:

- 2,000 µl CVX5α™ (1 x 10^7 CFU/µg)
- 10 µl pUC18 Transformation Control Plasmid (10 ng / µl)
- 50 mL SOC Medium
- Dry ice

Description:

CVX5α™ Chemically competent cells are a versatile, convenient and cost-effective solution for routine subcloning procedures or any application where the starting DNA is not limiting.

CVX5α™ are calcium chloride-treated to facilitate attachment of the plasmid DNA to the competent cell membrane.

Advantages & Features:

- **Versatile:** proven performance for high-efficiency transformation in a wide variety of applications.
- **Convenient:** ideal for routine.
- **Compatible:** with blue/white screening of colonies on bacterial plates containing Bluo-gal or X-gal.
- **Cost avoidance:** dry ice free of charge.

CVX5α™ Genotype:

F - , gyrA96, recA1, endA1, thi1, hsdR17 (rK - mK +), deoR, supE44, Δ (*lacZ*YA-argF) U169 Φ80*lacZ*ΔM15.

Applications:

- Routine cloning and subcloning of genes into plasmid vectors.

Quality control:

- Each lot of competent cells is tested to verify transformation efficiencies using 100 pg pUC18 supercoiled DNA and the recommended protocol.
- Under these conditions, transformation efficiency will be ≥ 1 x 10^7 cfu/µg pUC18.
- Transformation efficiency is defined as the number of colony forming units (cfu) produced by transforming 1 µg of plasmid (3 kb) into a given volume of competent cells.

Note:
Optimal competence for cloning but it is not enough for the generation of cDNA libraries.

Related Products:

- pSpark® Blunt-end DNA Cloning vectors (p.12)
- pSpark® TA DNA Cloning vectors (p.16)
- pOnebyOne™ Mammalian Expression vectors (p.22)
- pColiExpress™ Glue Enzyme kits (p.34)
- Custom Cloning services (p.140)

Mutagenesis

PickMutant™

For a reliable, robust and highly efficient Site-directed Mutagenesis based in PCR

Ordering info:

Cat No.	Size
MT001	15 rxn

Includes for 15 rxn:

- 150 µl MasterMix Proofreading DNA Polymerase (2x)
- 300 U Glue enzyme (10 U/µl)
- 40 µl Glue enzyme Buffer (10x)
- 5 µl Insert Control DNA
- 15 µl pSpark® I (20 ng/µl)

Description:

PickMutant™ is a reliable, robust and highly efficient PCR-based mutagenesis kit. Extremely easy-to-use, the kit allows creating single or multiple point mutations, deletions or insertions using a rapid and easy protocol. All these mutation could be obtained by PCR using a FastPANGEA™ High Fidelity DNA Polymerase and well-designed mutagenesis primers. The assembled mutagenic PCR fragments is cloned into pSpark® cloning vector, specially designed to clone blunt PCR fragments with high efficiency or into other vector designing, in this case, an additional specific vector primer pair.

Advantages & Features:

- ✔ **Highly Effective** point mutations (single or multiple), deletions or insertions.
- ✔ **Easy and fast protocol:** it takes less than 3 hours in one step procedure.
- ✔ **Cost avoidance:** compatible with any bacterial strains or primers.
- ✔ **Versatile:** compatible with any cloning vector.
- ✔ **Efficient:** includes highly efficient pSpark® to clone blunted fragments.
- ✔ **Robust:** simultaneous assemble and clone of PCR fragments.

Applications:

- ✔ Site-directed Mutagenesis.
- ✔ Study protein function.
- ✔ Identify enzyme active sites.
- ✔ Design new proteins.

Quality control:

- ✔ The kit has been tested using the insert control DNA provided.

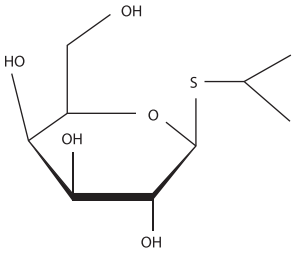
Related Products:

- Custom Mutagenesis services (p.140)
- pSpark® I DNA Cloning vector (p.12)
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- Molecular Microbiology services (p.140)
- ITPG (p19)
- X-Gal (p.19)

Related Compounds

IPTG

Isopropyl β-D-thiogalactopyranoside



Specifications:

CAS Number: 367-93-1
Chemical Formula: $C_9H_{18}O_5S$
Molecular Weight: 238.30
Purity (HPLC)(on dry basis):<99.0%
Melting point: 110 - 114°C
Identity (IR): conforms to structure
Solubility: soluble in water and methanol
Heavy metals (Pb): >5ppm
1,4-Dioxane: Not detected
pH(5% in water): 5.0 - 7.0
Water content (Karl Fischer): >1.0%

Ordering info:

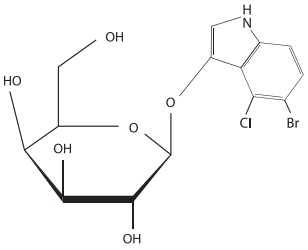
Cat No.	Size
C0040	5g
C0041	25g

Applications:

- ✔ Blue/white screening.
- ✔ Expression of genes under *lac* promoter control.

X-Gal

5-Bromo-4-chloro-3-indolyl β-D-Galactopyranoside



Specifications:

CAS Number: 7240-90-6
Chemical Formula: $C_{14}H_{15}BrClNO_6$
Molecular Weight: 408.63
Assay (HPLC):<98% w/w
Purity (HPLC):<99%
Purity (TLC): single spot
Water content (Karl Fischer): >1%
Identity (IR): conforms to structure
Solubility (5% w/v, DMF): soluble

Ordering info:

Cat No.	Size
C0043	1g
C0044	5g

Applications:

- ✔ Blue/white screening.
- ✔ Gene expression detection of β-galactosidase reporter.
- ✔ Detection of β-galactosidase activity in immunological and histochemical applications.

2. Mammalian & Bacterial Expression Vectors

Bicistronic Mammalian Expression Vectors

Non-viral Mammalian Expression Vectors
Retroviral Expression Vectors
Lentiviral Expression Vectors

Dual Reporter Plasmids

Non-viral Dual Reporter Plasmid controls
Retroviral Dual Reporter Plasmid controls
Lentiviral Dual Reporter Plasmid controls

Packaging Vectors

Retroviral Packaging Systems
Lentiviral Packaging Systems

Bacterial Expression Vectors

Photo: Animal tissue structures under the microscope

Bicistronic Mammalian Expression vectors

pOnebyOne™ Selection Guide:

		pOnebyOne™ Non-viral																		pOnebyOne™ Retroviral				pOnebyOne™ Lentiviral			
Name		I-Neo	II-Neo	III-Neo	IV-Neo	V-Neo	VI-Neo	I-Puro	II-Puro	III-Puro	IV-Puro	V-Puro	VI-Puro	I-Hyg	II-Hyg	III-Hyg	IV-Hyg	V-Hyg	VI-Hyg	I-Retro	II-Retro	III-Retro	IV-Retro	I-Lent.	II-Lent.	III-Lent.	IV-Lent.
Catalog Number		ME001-N	ME002-N	ME003-N	ME004-N	ME005-N	ME006-N	ME001-P	ME002-P	ME003-P	ME004-P	ME005-P	ME006-P	ME001-H	ME002-H	ME003-H	ME004-H	ME005-H	ME006-H	ME0013	ME0014	ME0015	ME0016	ME0017	ME0018	ME0019	ME0020
Page		23	23	23	23	24	24	23	23	23	23	24	24	23	23	23	23	24	24	24	24	24	25	25	25	25	25
Mammalian Resistance Marker	Neomycin	✓	✓	✓	✓	✓	✓																				
	Puromycin							✓	✓	✓	✓	✓	✓														
	Hygromycin													✓	✓	✓	✓	✓	✓								
Promoter	Pcmv	✓	✓			✓		✓	✓			✓		✓	✓			✓		✓	✓			✓	✓		
	PEF1α			✓	✓		✓		✓	✓	✓		✓			✓	✓		✓			✓	✓			✓	✓
Selection Marker	ΔNGFR	✓		✓				✓		✓				✓		✓				✓		✓		✓		✓	
	eGFP		✓		✓				✓		✓				✓		✓				✓		✓		✓		✓
	Luciferase					✓	✓					✓	✓					✓	✓								
Copy number	High	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
	Low																			✓	✓	✓	✓	✓	✓	✓	✓
Bacterial Resistence Marker	Ampicillin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Viral Vector	Retroviral																			✓	✓	✓	✓				
	Lentiviral																							✓	✓	✓	✓

pOnebyOne™

Highly efficient lineal vector ready-to-clone your PCR gene and express your Protein of Interest

All vectors includes for 20 rxn:

- 20 µL Linearized vector (50 ng/µL)
- 40 µL Glue Enzyme (10 u/µL)
- 50 µL Glue-Enzyme Buffer (10x)
- 10 µL Insert Control (30 ng/µL)
- 5 µL pOnebyOne™ Control (50 ng/µL)

Description:

pOnebyOne™ are efficient, accurate and flexible Bicistronic Mammalian expression family vectors that contains an expression cassette based in 2A sequence breakthrough technology.

As Bicistronic vector, it allows simultaneous expression of two proteins from the same mRNA. Unlike the transfection with vectors with two different expression cassettes, cells transfected with bicistronic vectors ensure that if one of the proteins is present, the other one is present too.

Bicistronic expression vectors are supported on viral elements: the IRES or 2A sequence. IRES has been widely used. It is a relative short sequence, around 600-700 bp, although this length could be a disadvantage in viral vectors where packaging capacity is limited. IRES based expression vectors are characterized by a non-stoichiometric production of both proteins, generally there is a lower expression of the downstream gene.

Many 2A sequences from several families of viruses have been described for producing multiple polypeptides. 2A mediated cleavage is a universal phenomenon in all eukaryotic cells. With just 20 bp in length, the 2A sequence has been used succesfully to generate multiple proteins in some biological models: plants, zebrafish, transgenic mice or eukaryotic cell lines. Vectors based on 2A produce stoichiometric proportion of both proteins.

Canvax offers a ready-to-clone solution of your gene of interest onto a wide collection of bicistronic vectors based on 2A sequence. You can choose among different promoters, selection antibiotics or reporter genes.

Related Products:

- WideUse™ Plasmid Purification Kit (p.92)
- CVX5α™ Chemically Competent cells (p.18)
- FastCONTROL™ Dual Reporter Plasmid (p.27)
- FastPANGEA™ High Fidelity DNA Pol. (p.105)
- Ampicillin (p.126)
- CANFAST™ Transfection reagent (p.76)
- Nerve Growth Factor Receptor Antibody (p.123)
- pASSEMBLE™ Packaging Systems (p.33)
- pOnebyOne™ MCS1-2A-MCS2

Advantages & Features:

- ✔ **Complete solution:** a directional cloning vector to clone and produce a protein of interest.
- ✔ **Breakthrough technology:** based in 2A sequence simultaneous expression of two proteins in mammalian cells (a protein of interest and reporter).
- ✔ **Highly efficient:** cloning system tested with up to 4 kb inserts.
- ✔ **Time-saving cloning process:** linearized vector ready-to-mix with your PCR fragment.
- ✔ **Easy-to-use:** facilitates the selection of positive cells expressing the recombinant gene of interest.
- ✔ **Cost avoidance:** avoids the use of restriction enzymes.
- ✔ **Accurate:** proven performance for most common cell lines.
- ✔ **Flexible:** allows transfection in difficult cell lines.
- ✔ **Really low experimental background:** < 1%.
- ✔ **Convenient:** available with different resistance marker cassettes.
- ✔ **Directional cloning:** of PCR with the gene of interest.
- ✔ **Reporter checking:** stoichiometric amount of your protein of interest and a reporter protein.

Applications:

pOnebyOne™ Non-viral Mammalian Expression vectors

- ✔ Protein Expression of intracellular, extracellular or transmembrane in higher cells in an equimolecular ratio with a surface marker that allows quantification.

pOnebyOne™ Retroviral Expression vectors

- ✔ Introduction of DNA in refractile transfection cell lines.
- ✔ Co-expression of your gene of interest and a reporter gene.

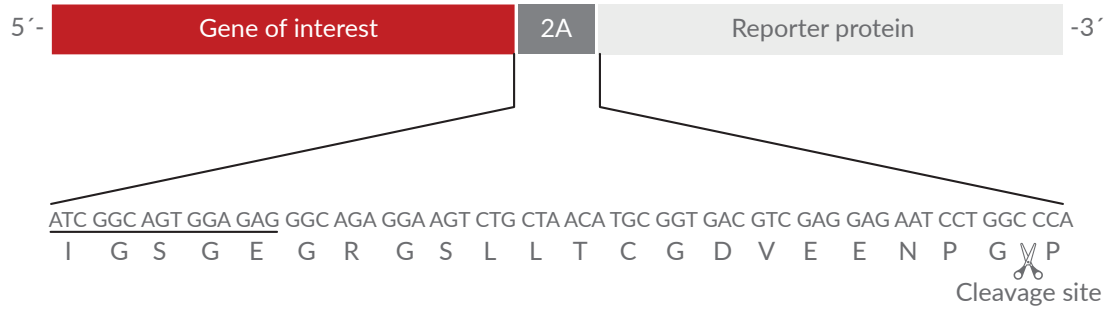
pOnebyOne™ Lentiviral Expression vectors

- ✔ Highest generation Lentiviral transfer vector to transform replicating and non-replicating cells, including stem and neuronal cells.
- ✔ Vector of choice for short-interfering RNA (siRNA) delivery and for gene therapy.

Quality control of all pOnebyOne™:

- ✔ Cloning of SEAP open reading frame and testing phosphatase alkaline activity in mammalian cells.

Figure 2.1.: 2A sequence based vector.



Both genes must be in frame and the nascent peptide is cleaving between the glycine and proline. After the cleavage, the short peptide IGSGEGRGSLLTCGDAEENPG (21 aminoacids) remains fused to the C-terminus of the protein of interest while the proline is added to the N-terminus of the reporter protein. 2A sequence used has high cleavage efficiency in some biological systems. Essential reverse primer sequence for directional cloning is underlined.

pOnebyOne™ Non-viral Mammalian Expression vectors

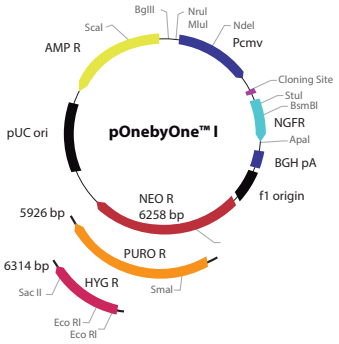
pOnebyOne™ I

Ordering info:

I-NEO (Neomycin):	
Cat No.	Size
ME001-N-S	10 rxn
ME001-N	20 rxn
I-PURO (Puromycin):	
Cat No.	Size
ME001-P-S	10 rxn
ME001-P	20 rxn
I-HYG (Hygromycin):	
Cat No.	Size
ME001-H-S	10 rxn
ME001-H	20 rxn

Description:

The expression cassette of pOnebyOne™ I incorporates the cytomegalovirus early promoter that precedes 2A sequence in frame with truncated nerve growth factor receptor (ΔNGFR). ΔNGFR is a complete solution to select positive clones. It could be visualized by cytometry using specific antibody labelled with FITC or similar and also, it could be enriched from negative clones with magnetic beads bearing anti-ΔNGFR antibody. Stable mammalian cells could be selected by Neomycin, Puromycin or Hygromycin resistance.



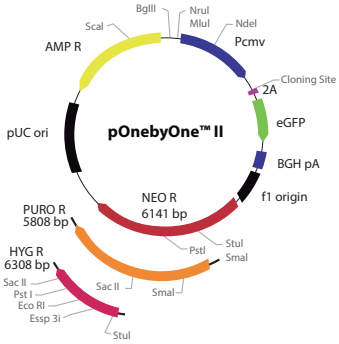
pOnebyOne™ II

Ordering info:

II-NEO (Neomycin):	
Cat No.	Size
ME002-N-S	10 rxn
ME002-N	20 rxn
II-PURO (Puromycin):	
Cat No.	Size
ME002-P-S	10 rxn
ME002-P	20 rxn
II-HYG (Hygromycin):	
Cat No.	Size
ME002-H-S	10 rxn
ME002-H	20 rxn

Description:

The expression cassette of pOnebyOne™ II contains the cytomegalovirus early promoter that precedes 2A sequence in frame with the green fluorescent protein (eGFP) from *Aequoria victoria*. eGFP is optimized for brighter and higher expression in mammalian cells, it can be visualized by cytometry or microscopy (Excitation wavelength maximum=488 nm/ Emission wavelength maximum=507 nm). Positive cells can be sorted by means of a sorter cytometer. Stable mammalian cells can be selected by Neomycin, Puromycin or Hygromycin resistance.



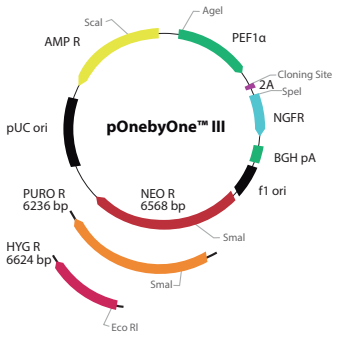
pOnebyOne™ III

Ordering info:

III-NEO (Neomycin):	
Cat No.	Size
ME003-N-S	10 rxn
ME003-N	20 rxn
III-PURO (Puromycin):	
Cat No.	Size
ME003-P-S	10 rxn
ME003-P	20 rxn
III-HYG (Hygromycin):	
Cat No.	Size
ME003-H-S	10 rxn
ME003-H	20 rxn

Description:

The expression cassette of pOnebyOne™ III incorporates the Human elongation factor 1 alpha promoter that precedes 2A sequence, in frame with the truncated nerve growth factor receptor (ΔNGFR). ΔNGFR is a complete solution to select positive clones. It can be visualized by cytometry using a specific antibody labelled with FITC or a similar method, and also, it can be enriched from negative clones with magnetic beads bearing an anti-ΔNGFR antibody. Stable mammalian cells can be selected by Neomycin, Puromycin or Hygromycin resistance.



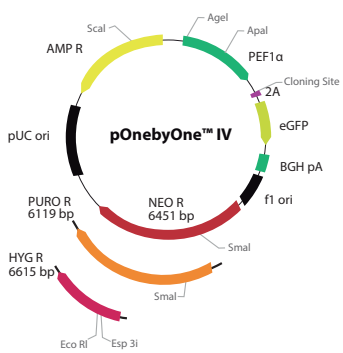
pOnebyOne™ IV

Ordering info:

IV-NEO (Neomycin):	
Cat No.	Size
ME004-N-S	10 rxn
ME004-N	20 rxn
IV-PURO (Puromycin):	
Cat No.	Size
ME004-P-S	10 rxn
ME004-P	20 rxn
IV-HYG (Hygromycin):	
Cat No.	Size
ME004-H-S	10 rxn
ME004-H	20 rxn

Description:

The expression cassette of pOnebyOne™ IV incorporates the Human elongation factor 1 alpha promoter that precedes 2A sequence in frame with the green fluorescent protein (eGFP) from *Aequoria victoria*. eGFP is optimized for brighter and higher expression in mammalian cells, it can be visualized by cytometry or microscopy (Excitation wavelength maximum=488 nm/ Emission wavelength maximum=507 nm). Positive cells can be sorted by means of a sorter cytometer. Stable mammalian cells can be selected by Neomycin, Puromycin or Hygromycin resistance.



pOnebyOne™ V

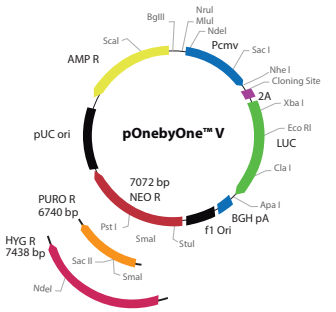
Ordering info:

V-NEO (Neomycin):	
Cat No.	Size
ME005-N-S	10 rxn
ME005-N	20 rxn
V-PURO (Puromycin):	
Cat No.	Size
ME005-P-S	10 rxn
ME005-P	20 rxn
V-HYG (Hygromycin):	
Cat No.	Size
ME005-H-S	10 rxn
ME005-H	20 rxn

Description:

The expression cassette of pOnebyOne™ V incorporates the cytomegalovirus early promoter that precedes 2A sequence in frame with the luciferase from the firefly *Photinus pyralis*.

Luciferase is a sensitive enzymatic reporter that can be assayed by standard luciferase activity reaction. Stable mammalian cells can be selected by Neomycin, Puromycin or Hygromycin resistance.



pOnebyOne™ VI

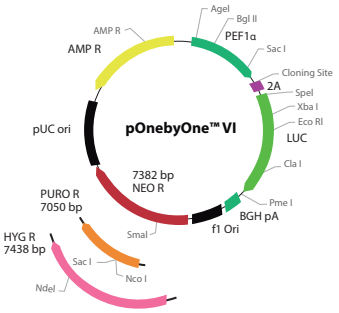
Ordering info:

VI-NEO (Neomycin):	
Cat No.	Size
ME006-N-S	10 rxn
ME006-N	20 rxn
VI-PURO (Puromycin):	
Cat No.	Size
ME006-P-S	10 rxn
ME006-P	20 rxn
VI-HYG (Hygromycin):	
Cat No.	Size
ME006-H-S	10 rxn
ME006-H	20 rxn

Description:

The expression cassette of pOnebyOne™ VI includes the Human elongation factor 1 alpha promoter that precedes 2A sequence in frame with the luciferase from the firefly *Photinus pyralis*.

Luciferase is a sensitive enzymatic reporter that can be assayed by standard luciferase activity reaction. Stable mammalian cells can be selected by Neomycin, Puromycin or Hygromycin resistance.



pOnebyOne™ Retroviral expression vectors

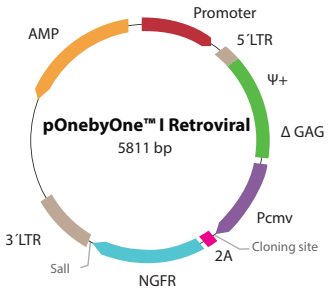
pOnebyOne™ I - Retroviral

Ordering info:

Cat No.	Size
ME0013-S	10 rxn
ME0013	20 rxn

Description:

The expression cassette of pOnebyOne™ I - Retroviral incorporates the cytomegalovirus early promoter that precedes 2A sequence in frame with the truncated nerve growth factor receptor (ΔNGFR). ΔNGFR is a complete solution to select positive clones. It can be visualized by cytometry using a specific antibody labelled with FITC or using a similar method and also, it can be enriched from negative clones with magnetic beads bearing anti-ΔNGFR antibody.



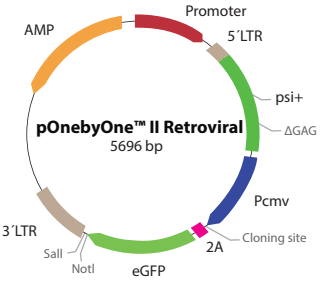
pOnebyOne™ II - Retroviral

Ordering info:

Cat No.	Size
ME0014-S	10 rxn
ME0014	20 rxn

Description:

The expression cassette of pOnebyOne™ II - Retroviral includes the cytomegalovirus early promoter that precedes 2A sequence in frame with the green fluorescent protein (eGFP) from *Aequoria victoria*. eGFP is optimized for brighter and higher expression in mammalian cells, it can be visualized by cytometry or microscopy (Excitation wavelength maximum=488 nm/ Emission wavelength maximum=507 nm). Positive cells can be sorted by means of a sorter cytometer.



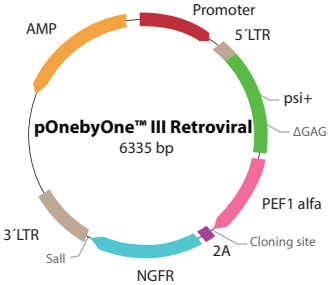
pOnebyOne™ III - Retroviral

Ordering info:

Cat No.	Size
ME0015-S	10 rxn
ME0015	20 rxn

Description:

The expression cassette of pOnebyOne™ III - Retroviral incorporates the Human elongation factor 1 alpha promoter that precedes 2A sequence in frame with the truncated nerve growth factor receptor (ΔNGFR). ΔNGFR is a complete solution to select positive clones. It can be visualized by cytometry using a specific antibody labelled with FITC or using a similar method and also, it can be enriched from negative clones with magnetic beads bearing an anti-ΔNGFR antibody.

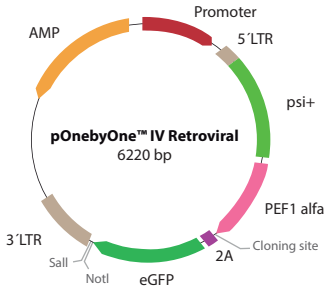


pOnebyOne™ IV - Retroviral

Ordering info:

Cat No.	Size
ME0016-S	10 rxn
ME0016	20 rxn

Description:
The expression cassette of pOnebyOne™ IV - Retroviral includes the Human elongation factor 1 alpha promoter that precedes 2A sequence in frame with the green fluorescent protein (eGFP) from *Aequoria victoria*. eGFP is optimized for brighter and higher expression in mammalian cells, it can be visualized by cytometry or microscopy (Excitation wavelength maximum=488 nm/ Emission wavelength maximum=507 nm). Positive cells can be sorted by means of a sorter cytometer.



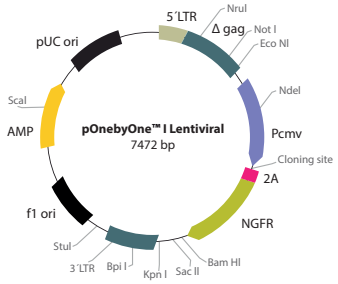
pOnebyOne™ Lentiviral expression vectors

pOnebyOne™ I - Lentiviral

Ordering info:

Cat No.	Size
ME0017-S	10 rxn
ME0017	20 rxn

Description:
The expression cassette of pOnebyOne™ I - Lentiviral includes the Human cytomegalovirus promoter that precedes 2A sequence in frame with the truncated nerve growth factor receptor (ΔNGFR). ΔNGFR is a complete solution to select positive clones as they can be visualized by cytometry using a specific antibody labelled with FITC or using a similar method, and also, they can be enriched from negative clones with magnetic beads bearing an anti ΔNGFR antibody.

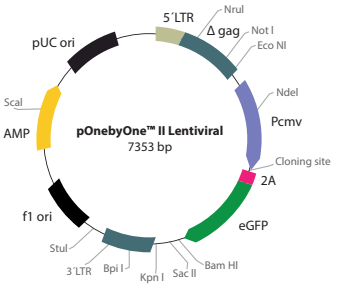


pOnebyOne™ II - Lentiviral

Ordering info:

Cat No.	Size
ME0018-S	10 rxn
ME0018	20 rxn

Description:
The expression cassette of pOnebyOne™ II - Lentiviral incorporates the Human cytomegalovirus promoter that precedes 2A sequence in frame with the Enhanced green fluorescent protein (eGFP) from *Aequoria victoria*. eGFP is optimized for brighter and higher expression in mammalian cells, it can be visualized by cytometry or microscopy (Excitation wavelength maximum=488 nm/ Emission wavelength maximum=507 nm). Positive cells can be sorted by means of a sorter cytometer.

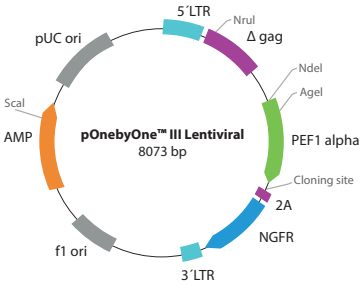


pOnebyOne™ III - Lentiviral

Ordering info:

Cat No.	Size
ME0019-S	10 rxn
ME0019	20 rxn

Description:
The expression cassette of pOnebyOne™ III - Lentiviral incorporates the Human elongation factor 1 alpha promoter that precedes 2A sequence in frame with the truncated nerve growth factor receptor (ΔNGFR). ΔNGFR is a complete solution to select positive clones as they can be visualized by cytometry using a specific antibody labelled with FITC or using a similar method and also, they can be enriched from negative clones with magnetic beads bearing an anti-ΔNGFR antibody.

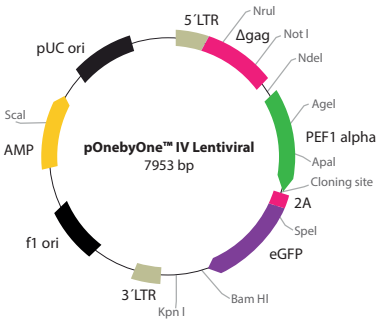


pOnebyOne™ IV - Lentiviral

Ordering info:

Cat No.	Size
ME0020-S	10 rxn
ME0020	20 rxn

Description:
The expression cassette of pOnebyOne™ IV - Lentiviral includes the Human elongation factor 1 alpha promoter that precedes 2A sequence in frame with the enhanced green fluorescent protein (eGFP) from *Aequoria victoria*. eGFP is optimized for brighter and higher expression in mammalian cells, it can be visualized by cytometry or microscopy (Excitation wavelength maximum=488 nm/ Emission wavelength maximum=507 nm). Positive cells can be sorted by means of a sorter cytometer.



Dual reporter Plasmids

FastCONTROL™ Dual Reporter Plasmid Control Selection Guide:

			Reporter Proteins					Promoters		Resistance Markers		
Page Number	Catalog Number	Vector	LUC	SEAP	LacZ	eGFP	ΔNGFR	P_{CMV}	$P_{EF1\alpha}$	Neo	Puro	Hyg
30	PC0101	p2V-SEAP/eGFP-I		✓		✓		✓		✓		
30	PC0102	p2V-SEAP/ΔNGFR-I		✓			✓	✓		✓		
30	PC0104	p2V-LacZ/ΔNGFR-I			✓		✓	✓		✓		
30	PC0103	p2V-SEAP/LUC-I	✓	✓				✓		✓		
30	PC0105	p2V-SEAP/eGFP-Ia		✓		✓			✓	✓		
30	PC0106	p2V-SEAP/ΔNGFR-Ia		✓			✓		✓	✓		
30	PC0108	p2V-LacZ/ΔNGFR-Ia			✓		✓		✓	✓		
30	PC0107	p2V-SEAP/LUC-Ia	✓	✓					✓	✓		
30	PC0110	p2V-SEAP/ΔNGFR-II		✓			✓	✓			✓	
30	PC0112	p2V-LacZ/ΔNGFR-II			✓		✓	✓			✓	
31	PC0111	p2V-SEAP/LUC-II	✓	✓				✓			✓	
31	PC0114	p2V-SEAP/ΔNGFR-IIa		✓			✓		✓		✓	
31	PC0116	p2V-LacZ/ΔNGFR-IIa			✓		✓		✓		✓	
31	PC0115	p2V-SEAP/LUC-IIa	✓	✓					✓		✓	
31	PC0118	p2V-SEAP/ΔNGFR-III		✓			✓	✓				✓
31	PC0120	p2V-LacZ/ΔNGFR-III			✓		✓	✓				✓
31	PC0119	p2V-SEAP/LUC-III	✓	✓				✓				✓
31	PC0122	p2V-SEAP/ΔNGFR-IIIa		✓			✓		✓			✓
31	PC0124	p2V-LacZ/ΔNGFR-IIIa			✓		✓		✓			✓
31	PC0123	p2V-SEAP/LUC-IIIa	✓	✓					✓			✓
RETROVIRAL VECTOR												
32	PC0126	p2RVc-SEAP/ΔNGFR		✓			✓	✓				
32	PC0127	p2RVc-SEAP/eGFP		✓		✓		✓				
32	PC0128	p2RVc-LacZ/ΔNGFR			✓		✓	✓				
32	PC0129	p2RVc-LacZ/eGFP			✓	✓		✓				
32	PC0135	p2RVa-SEAP/ΔNGFR		✓			✓		✓			
32	PC0136	p2RVa-SEAP/eGFP		✓		✓			✓			
32	PC0137	p2RVa-LacZ/ΔNGFR			✓		✓		✓			
32	PC0138	p2RVa-LacZ/eGFP			✓	✓			✓			
LENTIVIRAL VECTOR												
33	PC0140	p2LVc-SEAP/ΔNGFR		✓			✓	✓				
33	PC0141	p2LVc-SEAP/eGFP		✓		✓		✓				
33	PC0142	p2LVa-SEAP/ΔNGFR		✓			✓		✓			
33	PC0143	p2LVa-SEAP/eGFP		✓		✓			✓			

FastCONTROL™ Dual Reporter Plasmid Controls

To fast, convenient and flexible target cell transfection control for high co-expression of two reporter genes

Includes for 100 assays:

· 15 µL FastCONTROL™ Dual Reporter Plasmid Control (1 µg/µL)

Plus Version

Includes for 100 assays:

· 15 µL FastCONTROL™ Dual Reporter Plasmid Control (1 µg/µL)
· 0.2 mL CANFAST™ Transfection reagent (1 mg/mL)

Related Products:

· pOnebyOne™ Mammalian expression vectors (p.22)
· WideUSE™ Plasmid Purification Kit (p.92)
· Custom Cloning services (p.140)
· Ampicillin (p.126)
· pOnebyOne™ MCS1-2A-MCS2

Description:

FastCONTROL™ Dual Reporter Plasmid Controls are fast, convenient and flexible target cell transfection control ideal for high co-expression of two reporter genes drive for ubiquitous, strong and constitutive promoters [cytomegalovirus promoter (Pcmv) or elongation factor 1 alpha promoter (PEF1α)].

The reporter proteins are produced in stoichiometric proportion because the expression cassettes are based on 2A sequence.

This family of vectors 2A-like sequence are used by several families of viruses for producing multiple polypeptides. Unlike IRES based vectors where protein expression from the insert downstream IRES is lower than of the upstream insert, 2A based vectors allow both proteins are produced in identical proportion.

2A-mediated cleavage is a universal phenomenon in all eukaryotic cells. The 2A peptides have been used successfully to generate multiple proteins from a single promoter in some biological models: plants, zebrafish, transgenic mice and human cell lines.

Advantages & Features:

- ✔ **Fast:** available combination of 2 cell location markers in one vector.
- ✔ **Convenient:** available in Lentiviral, Retroviral or non-viral vectors, for immediate *in vivo* and *in vitro* expression.
- ✔ **Compatible with transient or stable transfections.**
- ✔ **Flexible:** available with different mammalian resistance markers and Dual Reporter genes combination for different cell location.

Applications:

- ✔ Control for assessing the efficiency of transfection in mammalian cells.
- ✔ Targering of different cell locations.
- ✔ Obtention of cell lines with reporter proteins.

Quality control:

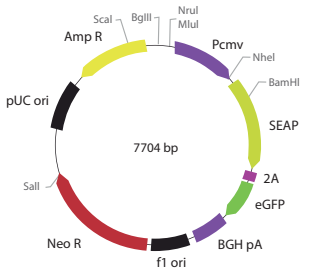
- ✔ The quantity and quality of purified DNA attend to:
  - · Ratio 260/280 (1.8-2.0).
  - · Agarose gel electrophoresis.
  - · Digestion with restriction endonucleases.
- ✔ Transient Transfection CHO-K1 (625 cells / well with these vectors) provides a SEAP activity >1,000 fold higher than untransfected cells themselves.
- ✔ The surface expression of NGFR in transiently transfected CHO > 60%.
- ✔ Expression of eGFP in transient intracellular CHO > 60%.

p2V-SEAP/eGFP-I

Description:
p2V-SEAP/ eGFP-I FastCONTROL™ Dual Reporter Plasmid incorporates Pcmv to conduct the expression of both SEAP and GFP. GFP from *Aequoria victoria* has been optimized for brighter and higher expression in mammalian cells.

Ordering info:

Cat No.	Size
PC0101	15 µL
PC0101-Plus	15 µL + 0.2 mL

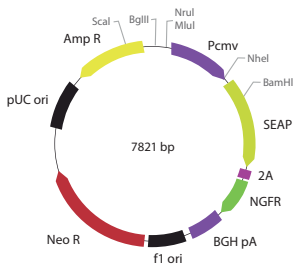


p2V-SEAP/ΔNGFR-I

Description:
p2V-SEAP/ ΔNGFR-I FastCONTROL™ Dual Reporter Plasmid incorporates Pcmv to drive the expression of both SEAP and ΔNGFR.

Ordering info:

Cat No.	Size
PC0102	15 µL
PC0102-Plus	15 µL + 0.2 mL

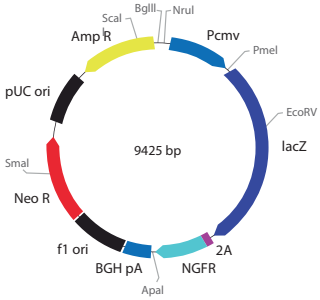


p2V-*LacZ*/ ΔNGFR-I

Description:
p2V-*LacZ*/ ΔNGFR-I Dual Reporter Plasmid incorporates Pcmv to drive the expression of both *lacZ* gene and ΔNGFR.

Ordering info:

Cat No.	Size
PC0104	15 µL
PC0104-Plus	15 µL + 0.2 mL

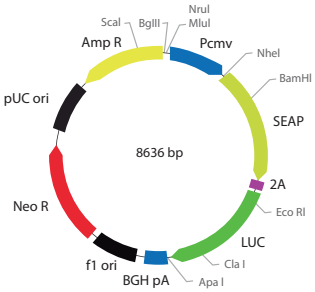


p2V-SEAP/ LUC-I

Description:
p2V-SEAP/ LUC-I FastCONTROL™ Dual Reporter Plasmid incorporates Pcmv to conduct the expression of both SEAP and LUC.

Ordering info:

Cat No.	Size
PC0103	15 µL
PC0103-Plus	15 µL + 0.2 mL

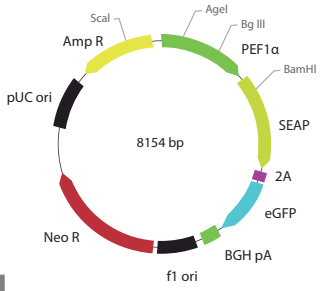


p2V-SEAP/eGFP-Ia

Description:
p2V-SEAP/ eGFP-Ia FastCONTROL™ Dual Reporter Plasmid incorporates PEF1α to conduct the expression of both SEAP and GFP. GFP from *Aequoria victoria* has been optimized for brighter and higher expression in mammalian cells.

Ordering info:

Cat No.	Size
PC0105	15 µL
PC0105-Plus	15 µL + 0.2 mL

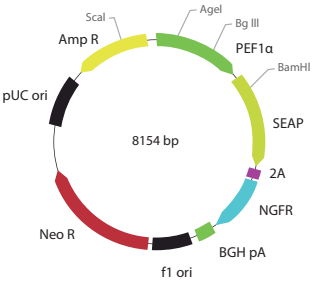


p2V-SEAP/ΔNGFR-Ia

Description:
p2V-SEAP/ ΔNGFR-Ia Dual Reporter vector incorporates PEF1α to drive the expression of both SEAP and ΔNGFR.

Ordering info:

Cat No.	Size
PC0106	15 µL
PC0106-Plus	15 µL + 0.2 mL

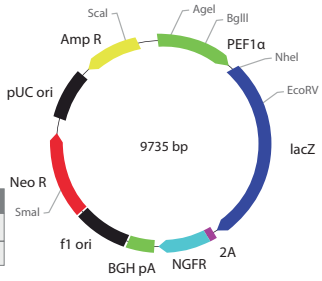


p2V-*LacZ*/ ΔNGFR-Ia

Description:
p2V-*LacZ*/ ΔNGFR-Ia FastCONTROL™ Dual Reporter Plasmid incorporates PEF1α to conduct the expression of both *lacZ* gene and ΔNGFR.

Ordering info:

Cat No.	Size
PC0108	15 µL
PC0108-Plus	15 µL + 0.2 mL

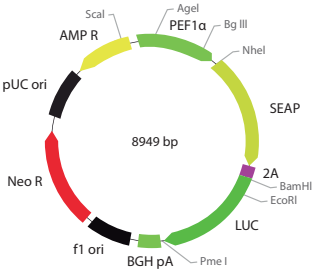


p2V-SEAP/ LUC-Ia

Description:
p2V-SEAP/ LUC-Ia Dual Reporter Plasmid incorporates PEF1α to conduct the expression of both SEAP and LUC.

Ordering info:

Cat No.	Size
PC0107	15 µL
PC0107-Plus	15 µL + 0.2 mL

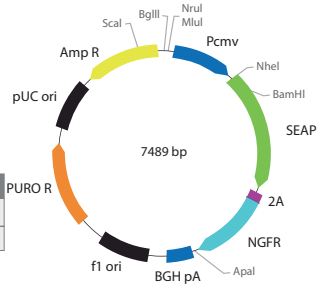


p2V-SEAP/ΔNGFR-II

Description:
p2V-SEAP/ ΔNGFR-II Dual Reporter Plasmid incorporates Pcmv to drive the expression of both SEAP and ΔNGFR.

Ordering info:

Cat No.	Size
PC0110	15 µL
PC0110-Plus	15 µL + 0.2 mL

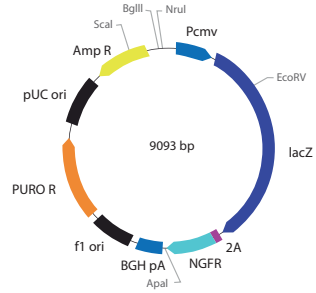


p2V-*LacZ*/ ΔNGFR-II

Description:
p2V-*LacZ*/ ΔNGFR-II FastCONTROL™ Dual Reporter Plasmid incorporates Pcmv to conduct the expression of both *lacZ* gene and ΔNGFR.

Ordering info:

Cat No.	Size
PC0112	15 µL
PC0112-Plus	15 µL + 0.2 mL

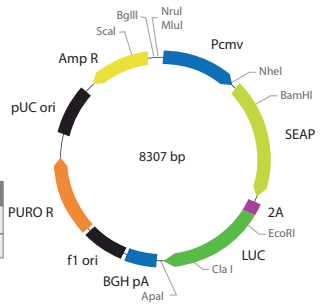


p2V-SEAP/ LUC-II

Description:
p2V-SEAP/ LUC-II Dual Reporter Plasmid incorporates Pcmv to conduct the expression of both SEAP and LUC.

Ordering info:

Cat No.	Size
PC0111	15 µL
PC0111-Plus	15 µL + 0.2 mL

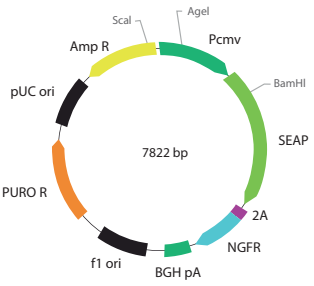


p2V-SEAP/ΔNGFR-IIa

Description:
p2V-SEAP/ ΔNGFR-IIa Dual Reporter vector incorporates PEF1α to drive the expression of both SEAP and ΔNGFR.

Ordering info:

Cat No.	Size
PC0114	15 µL
PC0114-Plus	15 µL + 0.2 mL

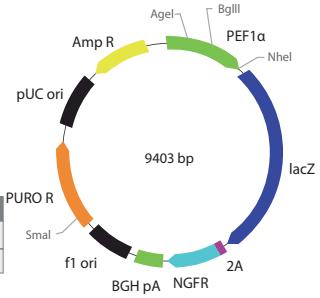


p2V-*LacZ*/ΔNGFR-IIa

Description:
p2V-*LacZ*/ ΔNGFR-IIa FastCONTROL™ Dual Reporter Plasmid incorporates PEF1α to drive the expression of both *lacZ* gene and ΔNGFR.

Ordering info:

Cat No.	Size
PC0116	15 µL
PC0116-Plus	15 µL + 0.2 mL

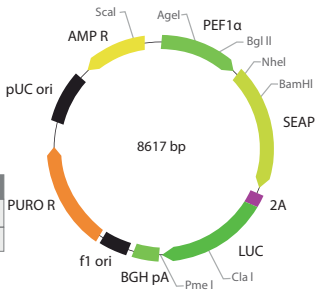


p2V-SEAP/ LUC-IIa

Description:
p2V-SEAP/ LUC-IIa Dual Reporter Plasmid incorporates PEF1α to drive the expression of both SEAP and LUC.

Ordering info:

Cat No.	Size
PC0115	15 µL
PC0115-Plus	15 µL + 0.2 mL

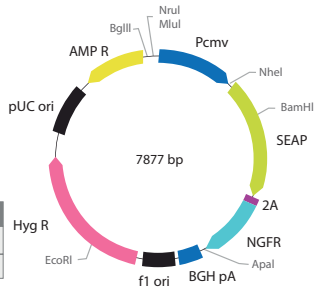


p2V-SEAP/ΔNGFR-III

Description:
p2V-SEAP/ ΔNGFR-III Dual Reporter Plasmid incorporates Pcmv to conduct the expression of both SEAP and ΔNGFR.

Ordering info:

Cat No.	Size
PC0118	15 µL
PC0118-Plus	15 µL + 0.2 mL

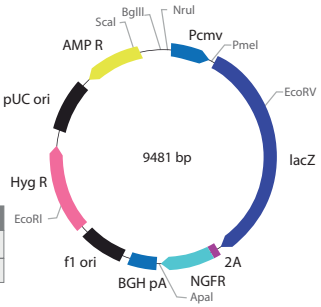


p2V-*LacZ*/ ΔNGFR-III

Description:
p2V-*LacZ*/ ΔNGFR-III FastCONTROL™ Dual Reporter Plasmid incorporates Pcmv to conduct the expression of both *lacZ* gene and ΔNGFR.

Ordering info:

Cat No.	Size
PC0120	15 µL
PC0120-Plus	15 µL + 0.2 mL

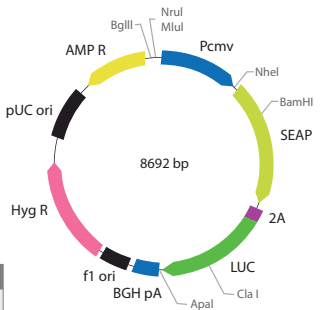


p2V-SEAP/ LUC-III

Description:
p2V-SEAP/ LUC-III Dual Reporter Plasmid incorporates cytomegalovirus promoter (Pcmv) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and firefly luciferase from *Photinus pyralis* (LUC).

Ordering info:

Cat No.	Size
PC0119	15 µL
PC0119-Plus	15 µL + 0.2 mL

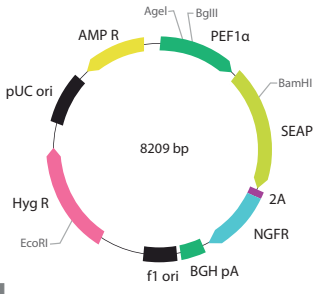


p2V-SEAP/ΔNGFR-IIIa

Description:
p2V-SEAP/ ΔNGFR-IIIa Dual Reporter Plasmid incorporates elongation factor 1 alpha promoter (PEF1α) to conduct the expression of both secreted embryonic alkaline phosphatase (SEAP) and truncated nerve growth factor receptor (ΔNGFR).

Ordering info:

Cat No.	Size
PC0122	15 µL
PC0122-Plus	15 µL + 0.2 mL

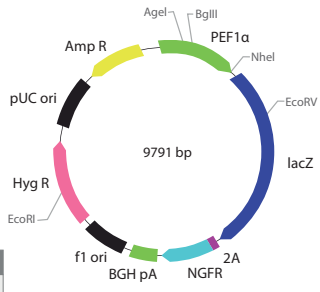


p2V-*LacZ*/ ΔNGFR-IIIa

Description:
p2V-*LacZ*/ ΔNGFR-IIIa Dual Reporter Plasmid incorporates elongation factor 1 alpha promoter (PEF1α) to drive the expression of both beta galactosidase enzyme (*lacZ* gene) and truncated nerve growth factor receptor (ΔNGFR).

Ordering info:

Cat No.	Size
PC0124	15 µL
PC0124-Plus	15 µL + 0.2 mL

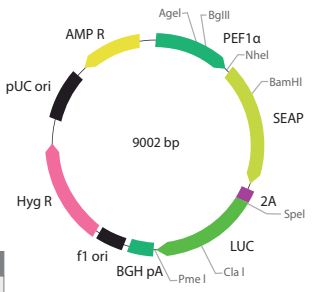


p2V-SEAP/ LUC-IIIa

Description:
p2V-SEAP/ LUC-IIIa Dual Reporter Plasmid incorporates elongation factor 1 alpha promoter (PEF1α) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and firefly luciferase from *Photinus pyralis* (LUC).

Ordering info:

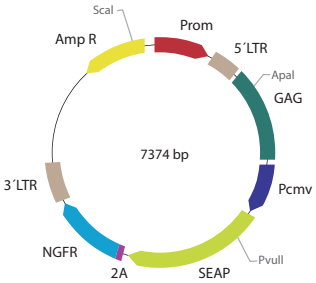
Cat No.	Size
PC0123	15 µL
PC0123-Plus	15 µL + 0.2 mL



Retroviral Dual Reporter Plasmid Controls

p2RVc-SEAP/ΔNGFR - Retroviral

Description:
p2RVc-SEAP/ ΔNGFR Dual Reporter is a Retroviral vector that incorporates cytomegalovirus promoter (Pcmv) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and truncated nerve growth factor receptor (ΔNGFR). This is a self-inactivating Retroviral vector that lack viral promoter and enhancer activity in their 3′ long terminal repeat.

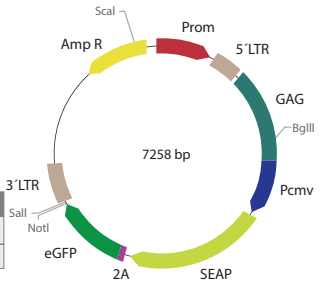


Ordering info:

Cat No.	Size
PC0126	15 µL
PC0126-Plus	15 µL + 0.2 mL

p2V-SEAP/ LUC-Ia - Retroviral

Description:
p2RVc-SEAP/ eGFP FastCONTROL™ Dual Reporter is a Retroviral vector that incorporates Pcmv to drive the expression of both SEAP and eGFP.

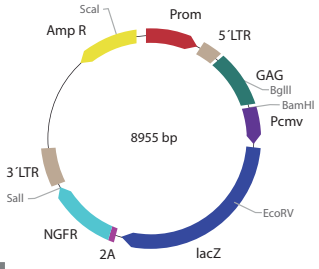


Ordering info:

Cat No.	Size
PC0127	15 µL
PC0127-Plus	15 µL + 0.2 mL

p2RVc-*LacZ*/ ΔNGFR - Retroviral

Description:
p2RVc-*lacZ*/ ΔNGFR Dual Reporter is a Retroviral vector that includes Pcmv to drive the expression of both *lacZ* gene and ΔNGFR. This is a self-inactivating Retroviral vector that lack viral promoter and enhancer activity in their 3′ long terminal repeat.

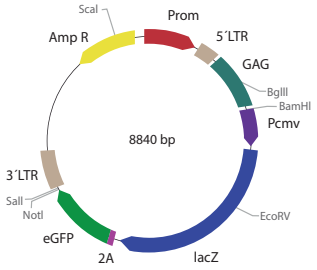


Ordering info:

Cat No.	Size
PC0128	15 µL
PC0128-Plus	15 µL + 0.2 mL

p2RVc-*LacZ*/ eGFP - Retroviral

Description:
p2RVc-*LacZ*/ eGFP Dual Reporter is a Retroviral vector that includes Pcmv to drive the expression of both *LacZ* gene and eGFP. This is a self-inactivating Retroviral vector that lack viral promoter and enhancer activity in their 3′ long terminal repeat.

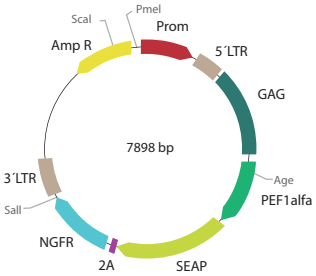


Ordering info:

Cat No.	Size
PC0129	15 µL
PC0129-Plus	15 µL + 0.2 mL

p2RVa-SEAP/ΔNGFR - Retroviral

Description:
p2RVa-SEAP/ ΔNGFR Dual Reporter is a Retroviral vector that incorporates PEF1α to drive the expression of both SEAP and ΔNGFR. This is a self-inactivating Retroviral vector that lack viral promoter and enhancer activity in their 3′ long terminal repeat.

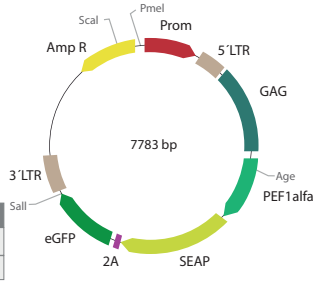


Ordering info:

Cat No.	Size
PC0135	15 µL
PC0135-Plus	15 µL + 0.2 mL

p2RVa-SEAP/eGFP - Retroviral

Description:
p2RVa-SEAP/ eGFP FastCONTROL™ Dual Reporter is a Retroviral vector that includes PEF1α to drive the expression of both SEAP and eGFP.

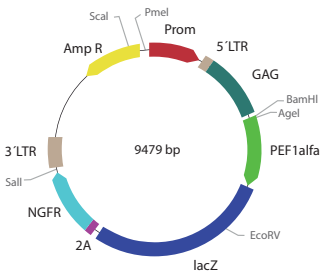


Ordering info:

Cat No.	Size
PC0136	15 µL
PC0136-Plus	15 µL + 0.2 mL

p2RVa-*LacZ*/ ΔNGFR - Retroviral

Description:
p2RVa-*lacZ*/ ΔNGFR Dual Reporter is a Retroviral vector that includes elongation factor 1alpha promoter (PEF1α) to drive the expression of both beta galactosidase (*lacZ* gene) and truncated nerve growth factor receptor (ΔNGFR). This is a self-inactivating Retroviral vector that lack viral promoter and enhancer activity in their 3′ long terminal repeat.

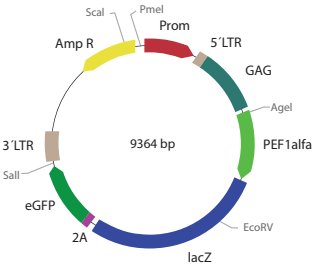


Ordering info:

Cat No.	Size
PC0137	15 µL
PC0137-Plus	15 µL + 0.2 mL

p2RVa-*LacZ*/ eGFP - Retroviral

Description:
p2RVa-*LacZ*/ eGFP Dual Reporter is a Retroviral vector that incorporates PEF1α to drive the expression of both *LacZ* gene and eGFP. This is a self-inactivating Retroviral vector that lack viral promoter and enhancer activity in their 3′ long terminal repeat.



Ordering info:

Cat No.	Size
PC0138	15 µL
PC0138-Plus	15 µL + 0.2 mL

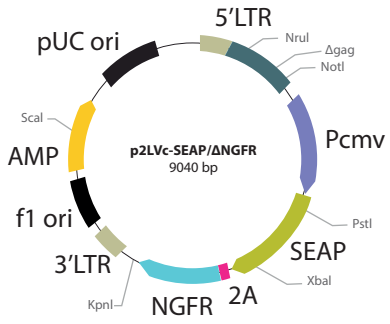
Lentiviral Dual Reporter Plasmid controls

p2LVc-SEAP/ΔNGFR - Lentiviral

Description:
p2LVc-SEAP/ ΔNGFR FastCONTROL™ Dual Reporter is a Lentiviral vector that contains the cytomegalovirus promoter (Pcmv) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and truncated nerve growth factor receptor (ΔNGFR). It is a HIV based lentivector, self-inactivating (SIN), lacking viral promoter and enhancer activity in its 3′ long terminal repeat (LTR).

Ordering info:

Cat No.	Size
PC0140	15 µL
PC0140-Plus	15 µL + 0.2 mL

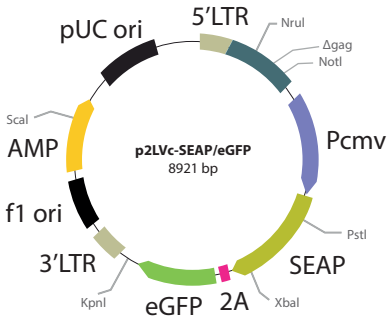


p2LVc-SEAP/eGFP - Lentiviral

Description:
p2LVc-SEAP/ eGFP FastCONTROL™ Dual Reporter is a Lentiviral vector that contains the cytomegalovirus promoter (Pcmv) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and green fluorescent protein (eGFP). It is a HIV based lentivector, self-inactivating (SIN), lacking viral promoter and enhancer activity in its 3′ long terminal repeat (LTR).

Ordering info:

Cat No.	Size
PC0141	15 µL
PC0141-Plus	15 µL + 0.2 mL

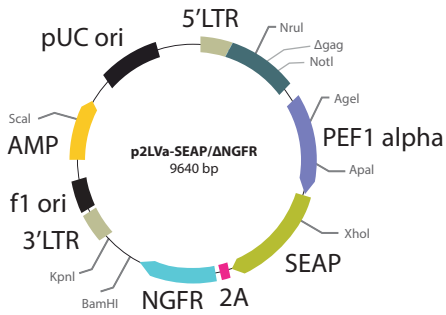


p2LVa-SEAP/ΔNGFR - Lentiviral

Description:
p2LVa-SEAP/ ΔNGFR FastCONTROL™ Dual Reporter is a Lentiviral vector that contains the human elongation factor 1 alpha promoter (PEF1α) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and truncated nerve growth factor receptor (ΔNGFR). It is a HIV based lentivector, self-inactivating (SIN), lacking viral promoter and enhancer activity in its 3′ long terminal repeat (LTR).

Ordering info:

Cat No.	Size
PC0142	15 µL
PC0142-Plus	15 µL + 0.2 mL

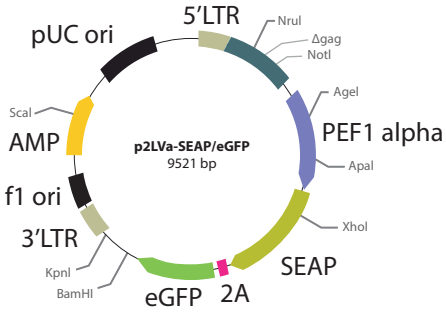


p2LVa-SEAP/eGFP - Lentiviral

Description:
2LVa-SEAP/ eGFP FastCONTROL™ Dual Reporter is a Lentiviral vector that contains the human elongation factor 1 alpha promoter (PEF1α) to drive the expression of both secreted embryonic alkaline phosphatase (SEAP) and green fluorescent protein (eGFP). It is a HIV based lentivector, self-inactivating (SIN), lacking viral promoter and enhancer activity in its 3′ long terminal repeat (LTR).

Ordering info:

Cat No.	Size
PC0143	15 µL
PC0143-Plus	15 µL + 0.2 mL



Packaging vectors

To produce virions, once your gene of interest is cloned into a viral vector (known as transfer vector), you need to use a packaging viral vector(s). Transfer vectors have been modified to reduce the hazardous level, and latest generations of transfer vectors are lacking of *gag*, *pol*, *env* viral genes. Packaging vectors provide all the viral proteins required for transcription and packaging of your expression cassette into recombinant viral particles.

pASSEMBLE™ Retroviral Packaging System

For a higher efficiency, titer and a versatile packaging of Retroviral transfer vectors

Includes:

ME0040
- 20 µL pASSEMBLE™ Ecotropic Retroviral Packaging Vector (50 ng/ µL)

ME0040 Plus
- 20 µL pASSEMBLE™ Ecotropic Retroviral Packaging Vector (50 ng/ µL)
- 0.2 mL CANFAST™ Transfection Reagent
- 20 µL eGFP Retroviral Transfer Control Vector (50 ng/ µL)
- 20 µL mCAT-1 Expression Vector (50 ng/ µL)

ME0042
- 20 µL pASSEMBLE™ Amphotropic Retroviral Packaging Vector (50 ng/ µL)

ME0042-Plus
- 20 µL pASSEMBLE™ Amphotropic Retroviral Packaging Vector (50 ng/ µL)
- 0.2 mL CANFAST™ Transfection Reagent
- 20 µL eGFP Retroviral Transfer Control Vector (50 ng/ µL)

ME0046
-20 µL pASSEMBLE™ 10A1 Retroviral Packaging Vector (50 ng/ µL)

ME0046-Plus
- 20 µL pASSEMBLE™ 10A1 Retroviral Packaging Vector (50 ng/ µL)
- 0.2 mL CANFAST™ Transfection Reagent
- 20 µL eGFP Retroviral Transfer Control Vector (50 ng/ µL)

Description:

pASSEMBLE™ Retroviral Packaging System includes a unique packaging vector with *gag*, *pol* and *env* from different viruses confering a tropism in the cell to be infected. pASSEMBLE™ Ecotropic Packaging System includes a packaging vector with *gp70* envelope genes from Moloney murine leukaemia virus (MoMLV). The *gp70* envelope glycoproteins of ecotropic MoMLV viruses bind to receptors that occur only on mouse and rat cells and on interspecies hybrid cells that contain mouse chromosome 5. In murine cells, the entry of this ecotropic virus is mediated by mCAT-1 receptor. Higher efficiency of transduction is obtained by infection of cells previously transfected with mCAT-1 expression vector.

pASSEMBLE™ Amphotropic Packaging System includes a packaging vector with *env* gene from 4070A murine leukaemia virus (MuLV) generating virus capable of infecting most mammalian cells except hamsters. To infect hamster cell lines, like CHO-K1 cells, it is necessary to use a packaging vector with 10A1 envelope gene from MuLV.

Advantages & Features:

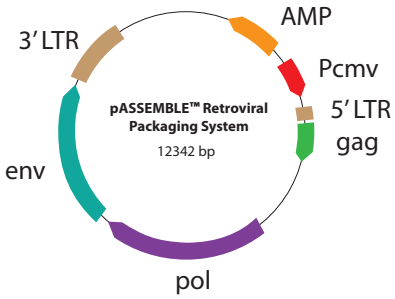
- ✔ **Higher efficiency of transduction.**
- ✔ **High titer.**
- ✔ **Tropism versatility.**

Applications:

- ✔ Packaging of Retroviral transfer vectors.

Related Products:

- FastCONTROL™ Dual Reporter Plasmids (p.27)
- pOnebyOne™ Mammalian Expression vectors (p.22)



Ordering info:

Envelope gene	Packaging	Catalog Number	Size	Tropism
gp 70 MoMLV	Ecotropic	ME0040 ME0040-Plus	20 µl	Mouse and rat cell
4070A MuLV	Amphotropic	ME0042 ME0042-Plus	20 µl	Most mammalian cells (hamster cells are not included)
10A1 MuLV		ME0046 ME0046-Plus	20 µl	Most mammalian cells (hamster cells are included)

pASSEMBLE™ Lentiviral Packaging System

For third or higher generation of Lentiviral transfer vector

Ordering info:

Cat No.	Size
ME0044	20 rxn
ME0044 - Plus	20 rxn + 0.2 mL

Includes:

ME0044

- 20 µL pASSEMBLE™ Lentiviral Packaging System (50 ng/ mL)

ME0044-Plus

- 20 µL pASSEMBLE™ Lentiviral Packaging System (50 ng/ mL)
- 0.2 mL CANFAST™ Transfection Reagent
- 20 µL eGFP Lentiviral Transfer Control Vector (50 ng/ µL)

Related Products:

- FastCONTROL™ Dual Reporter Plasmids (p.27)
- pOnebyOne™ Mammalian expression vectors (p.22)

Description:

pASSEMBLE™ Lentiviral Packaging System includes an optimized mix of three vectors with sequences of *gag*, *pol* and *rev* genes from Human immunodeficiency virus (HIV-1) and the envelope gene from vesicular stomatitis virus (VSV-G).

VSV-G envelope confers a wide range of tropism as this glycoprotein binds to phospholipid receptor universally expressed in mammalian cells. This packaging system requires Lentiviral transfer vectors of 3rd generation or higher.

Advantages & Features:

- ✔ **High titer.**
- ✔ **Tropism versatility.**

Applications:

- ✔ Packaging of Lentiviral transfer vectors.

Bacterial Expression Vectors

pColiExpress™ Glue Enzyme Kits Selection guide:

Name		pColiExpress™ I	pColiExpress™ II	pColiExpress™ III	pColiExpress™ IV
Catalog Number		**BE001**	**BE005**	**BE010**	**BE015**
Page		35	35	35	35
Features					
5´His^{6} Tag		✓			
3´His^{6} Tag			✓	✓	✓
Periplasmic expression				✓	
5´cmyc Tag					✓
HRV protease cut site					✓
Resistance Marker-Ampicillin		✓	✓	✓	✓
T7 promoter		✓	✓	✓	✓
Low copy number (ori pBR322)		✓	✓	✓	✓
Strain Protein Expression	BL21 (DE3)	✓	✓	✓	✓
	BL21 (DE3) pLys	✓	✓	✓	✓

pColiExpress™ Glue Enzyme Kits

For a highly efficient and versatile protein Expression in *E. coli* from PCR fragment cloned

All vectors includes for 20 rxn:

- 20 µL pColiExpress™ (50 ng/µL)
- 50 µL Glue Enzyme Buffer (10x)
- 40 µL Glue Enzyme (10 UI/µL)
- 10 µL Insert Control DNA (30 ng/µL)
- 5 µL pColiExpress™ Control (50 ng/µL)

Related Products:

- FastPANGEA™ High Fidelity DNA Polymerase (p.105)
- WideUse™ Plasmid Purification kit (p.92)
- CVX5α™ Chemically Competent cells (p.18)
- Ampicillin (p.126)

Description:

pColiExpress™ Glue Enzyme Kits are a highly efficient, versatile and fast system of DNA cloning vectors for protein expression in *E. coli*. All family vectors are based in a breakthrough technology which allows cloning efficiently DNA fragments and the fast production of a large quantity of the desired protein.

Advantages & Features:

- ✓ **Ready-to-use vectors.**
- ✓ **Highly efficient cloning system.**
- ✓ **Special design** that allows the cell to keep larger numbers of copies than other plasmids with ori pBR322.
- ✓ **Linearized vector:** ready for ligation with your PCR amplified with the recommended primers.
- ✓ **Low background:** < 1%.
- ✓ **Time-saving protocol:** avoids any step required after PCR.
- ✓ **Higher protein expression** than other suppliers.
- ✓ **Cost avoidance:** avoids the use of expensive phosphorylated primers.
- ✓ **Versatility:** cloning of PCR fragments amplified with any type of DNA polymerase.

Applications:

- ✓ Cloning of PCR fragments for subsequent expression of proteins in *E. coli*.
- ✓ Expression of proteins under the control of the T7 promoter.
- ✓ Protein expression in BL21 (DE3) or BL21 (DE3) (pLys).

Quality control:

- ✓ Efficiency of ligation with the insert Control >1,000 cfu with 1:5 relationship vector: insert using CVX5α™ competent cells with > 10^{7} cfu/µg.

Incoming Products:

- pColiExpress™ I T4 Ligase Kit
- pColiExpress™ II T4 Ligase Kit
- pColiExpress™ III T4 Ligase Kit
- pColiExpress™ VI T4 Ligase Kit

pColiExpress™ I

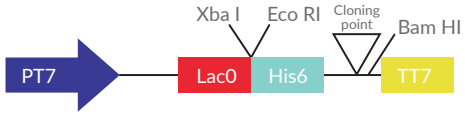
Ordering info:

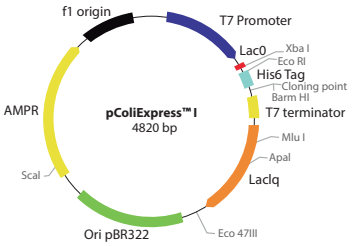
Cat No.	Size
BE001-S	10 rxn
BE001	20 rxn

Description:

pColiExpress™ I contains all elements required for expression of large quantities of any desired protein by T7 RNA Polymerase Inducible System and a His6 tag at the NH_2 end of the protein that allows the protein purification.

The vector also has an f1 origin of replication, an Ampicillin resistance cassette, and the pBR322 origin of replication.





pColiExpress™ II

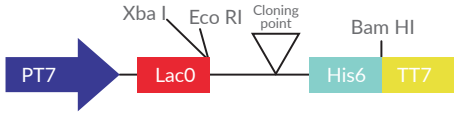
Ordering info:

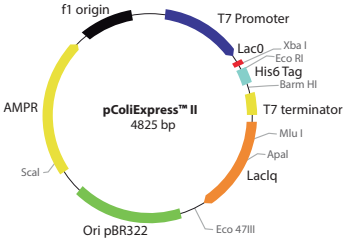
Cat No.	Size
BE005-S	10 rxn
BE005	20 rxn

Description:

pColiExpress™ II contains all elements required for expression of large quantities of any desired protein by T7 RNA Polymerase Inducible System and a His6 tag at the COOH end of the protein that allows the purification.

The vector has also an f1 origin of replication, an Ampicillin resistance cassette, and the pBR322 origin of replication.





pColiExpress™ III

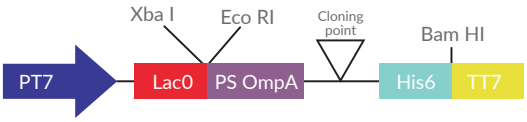
Ordering info:

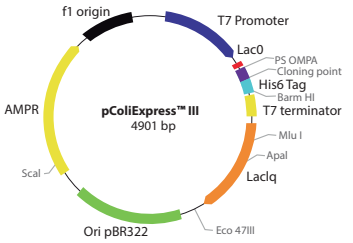
Cat No.	Size
BE0010-S	10 rxn
BE0010	20 rxn

Description:

pColiExpress™ III contains all elements required for periplasmic expression of any desired protein by OMPA Periplasmatic Signal peptide and T7 RNA Polymerase Inducible System.

It includes a His6 tag at COOH end of the protein that allows the purification. The vector also has an f1 origin of replication, an Ampicillin resistance cassette, and the pBR322 origin of replication.





pColiExpress™ IV

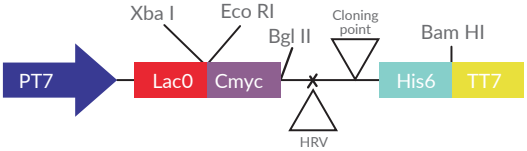
Ordering info:

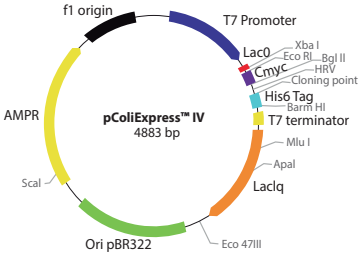
Cat No.	Size
BE0015-S	10 rxn
BE0015	20 rxn

Description:

pColiExpress™ IV contains all elements required for the expression of large quantities of any desired protein by the T7 RNA Polymerase Inducible System, and a His6 tag at COOH end of the protein that allows the purification. It contains at the NH_2 end the Cmyc tag followed by a 3C from human Rhinovirus (HRV) Protease cleavage site, too.

The vector has also an f1 origin of replication, an Ampicillin resistance cassette, and the pBR322 origin of replication.





Note:
3C Protease HRV Recognition site is Leu-Glu-Val-Leu-Phe-Gln-Gly-Pro. It cleaves between Gln and Gly residues.

3. GPCR ORF Clones

Photo: Intestinal glands lieberk hn s crypts showing mucous goblet cells.

ExpressMAX™ GPCR ORF Clones Selection Guide:

GPCR Symbol	GPCR Name	Promoter	TAG	Size (pb)	Catalog Number	Page
HT1A	5-hydroxytryptamine (serotonin) Receptor 1A	PEF1α	cmyc	7242	G0611	40
HT1D	5-hydroxytryptamine (serotonin) Receptor 1D	PEF1α	cmyc	7129	G0613	40
HT1E	5-hydroxytryptamine (serotonin) Receptor 1E	PEF1α	cmyc	7095	G0614	40
HT1F	5-hydroxytryptamine (serotonin) Receptor 1F	PEF1α	cmyc	7107	G0615	40
ADRA2B	Adenosine A2b Receptor	PEF1α	cmyc	7326	G0503	41
ADORA3	Adenosine A3 Receptor	PSFFV	cmyc	6596	G0501	41
ADRA2A	Adrenergic ADRA2A Receptor	PSFFV	cmyc	6983	G0502	41
ADRB2	Adrenergic ADRB2 Receptor	PEF1α	cmyc	7290	G0505	41
ADRB1	Adrenoceptor beta 1	PEF1α	cmyc	7406	G0504	42
C3AR1	Anaphylatoxin C3AR1	PMoMLV	cmyc	6788	G0506	42
C5AR1	Anaphylatoxin C5AR1	PMoMLV	cmyc	6392	G0507	42
GPR77	Anaphylatoxin GPR77	PMoMLV	cmyc	6353	G0508	42
AGTR1	Angiotensin AGTR1	PEF1α	cmyc	7128	G0509	43
AT2R	Angiotensin II Receptor, type 2	PEF1α	cmyc	7065	G0510	43
APLNR	Apelin Receptor	PMoMLV	cmyc	6479	G0511	43
AVPR2	Arginine Vasopressin Receptor 2	PEF1α	cmyc	7160	G0634	43
DARC	Atypical chemokine Receptor 1	PEF1α	cmyc	7002	G0519	44
CCBP2	Atypical chemokine Receptor 2	PEF1α	cmyc	7140	G0520	44
CCRL1	Atypical chemokine Receptor 4	PEF1α	cmyc	7029	G0531	44
GPBAR1	Bile Acid Receptor	PMoMLV	cmyc	6332	G0512	44
BDKRB1	Bradykinin B1 Receptor	PEF1α	cmyc	6705	G0514	45
CaSR	Calcium Sensing Receptor	PMoMLV	cmyc	8573	G0515	45
CNR1	Cannabinoid 1 Receptor	PMoMLV	cmyc	6758	G0516	45
CNR2	Cannabinoid 2 Receptor	PMoMLV	cmyc	6419	G0517	45
GPR55	Cannabinoid 3 Receptor	PMoMLV	cmyc	6299	G0518	46
CMKLR1	Chemerin chemokine-like Receptor 1	PEF1α	cmyc	7110	G0533	46
XCR1	Chemokine (C motif) Receptor 1	PEF1α	cmyc	6972	G0542	46
CCR1	Chemokine (C-C motif) Receptor 1	PEF1α	cmyc	7054	G0521	46
CCR2	Chemokine (C-C motif) Receptor 2	PEF1α	cmyc	7074	G0522	47
CCR3	Chemokine (C-C motif) Receptor 3	PEF1α	cmyc	7059	G0523	47
CCR4	Chemokine (C-C motif) Receptor 4	PEF1α	cmyc	7071	G0524	47
CCR5	Chemokine (C-C motif) Receptor 5	PEF1α	cmyc	7044	G0525	47
CCR6	Chemokine (C-C motif) Receptor 6	PEF1α	cmyc	7177	G0526	48
CCR7	Chemokine (C-C motif) Receptor 7	PEF1α	cmyc	7062	G0527	48
CCR8	Chemokine (C-C motif) Receptor 8	PEF1α	cmyc	7056	G0528	48
CCR9	Chemokine (C-C motif) Receptor 9	PEF1α	cmyc	7071	G0529	48
CCR10	Chemokine (C-C motif) Receptor 10	PEF1α	cmyc	7069	G0530	49
CCRL2	Chemokine (C-C motif) Receptor-like 2	PEF1α	cmyc	7023	G0532	49
CXCR1	Chemokine (C-X-C motif) Receptor 1	PEF1α	cmyc	6762	G0535	49
CXCR2	Chemokine (C-X-C motif) Receptor 2	PEF1α	cmyc	7062	G0536	49
CXCR3A	Chemokine (C-X-C motif) Receptor 3	PEF1α	cmyc	7080	G0537	50
CXCR3B	Chemokine (C-X-C motif) Receptor 3 (isoform 2)	PEF1α	cmyc	7218	G0636	50
CXCR5	Chemokine (C-X-C motif) Receptor 5	PEF1α	cmyc	7064	G0539	50
CXCR6	Chemokine (C-X-C motif) Receptor 6	PEF1α	cmyc	7022	G0540	50
CXCR7	Chemokine (C-X-C motif) Receptor 7	PMoMLV	cmyc	6427	G0541	51
CX3CR1	Chemokine CX3CR1	PCMV	cmyc	6705	G0534	51
CCKBR	Cholecystokinin B Receptor	PCMV	cmyc	6974	G0543	51
M1	Cholinergic Receptor, muscarinic 1	PEF1α	cmyc	7431	G0580	51
M2	Cholinergic Receptor, muscarinic 2	PEF1α	cmyc	7445	G0581	52
M3	Cholinergic Receptor, muscarinic 3	PEF1α	cmyc	7746	G0582	52
M4	Cholinergic Receptor, muscarinic 4	PEF1α	cmyc	7413	G0583	52
M5	Cholinergic Receptor, muscarinic 5	PEF1α	cmyc	7572	G0584	52
PAR1	Coagulation factor II (thrombin) Receptor	PEF1α	cmyc	7183	G0599	53
CRHR1	Corticotropin Releasing Hormone Receptor 1	PMoMLV	cmyc	6527	G0544	53
CysLT1	Cysteinyl leukotriene Receptor 1	PEF1α	cmyc	6987	G0566	53
CysLTR2	Cysteinyl leukotriene Receptor 2	PMoMLV	cmyc	6365	G0567	53
DRD1	Dopamine Receptor D1	PEF1α	cmyc	7389	G0545	54
DRD2	Dopamine Receptor D2	PEF1α	cmyc	7376	G0546	54
DRD5	Dopamine Receptor D5	PEF1α	cmyc	6773	G0547	54
EDNRB	Endothelin Receptor type B	PCMV	cmyc	6881	G0548	54
FPR1	Formyl Peptide Receptor 1	PMoMLV	cmyc	6424	G0585	55
FPR3	Formyl Peptide Receptor 3	PMoMLV	cmyc	6433	G0586	55
GPR40	Free fatty acid Receptor 1	PEF1α	cmyc	6876	G0550	55
GPR43	Free fatty acid Receptor 2	PEF1α	cmyc	6966	G0553	55
GPR41	Free fatty acid Receptor 3	PEF1α	cmyc	7026	G0551	56
FZD1	Frizzled class Receptor 1	PEF1α	cmyc	7713	G0554	56
FZD2	Frizzled class Receptor 2	PEF1α	cmyc	7605	G0555	56
FZD7	Frizzled class Receptor 7	PEF1α	cmyc	7455	G0556	56
FZD9	Frizzled class Receptor 9	PEF1α	cmyc	7691	G0557	57

GPCR Symbol	GPCR Name	Promoter	TAG	Size (pb)	Catalog Number	Page
FZD10	Frizzled class Receptor 10	PEF1α	cmyc	7662	G0558	57
GPER	G protein-coupled Estrogen Receptor 1	PMoMLV	cmyc	6467	G0549	57
GPR4	G protein-coupled Receptor 4	PEF1α	cmyc	7062	G0622	57
GPR37	G protein-coupled Receptor 37	PEF1α	cmyc	7815	G0641	58
GPR42	G protein-coupled Receptor 42	PEF1α	cmyc	7014	G0552	58
GPR65	G protein-coupled Receptor 65	PEF1α	cmyc	6987	G0623	58
GPR68	G protein-coupled Receptor 68	PEF1α	cmyc	7071	G0124	58
GPR119	G protein-coupled Receptor 119	PMoMLV	cmyc	6379	G0595	59
GPR161	G protein-coupled Receptor 161	PEF1α	cmyc	7563	G0639	60
GALR1	Galanin Receptor 1	PCMV	cmyc	6517	G0559	60
GRPR	Gastrin Releasing Peptide Receptor	PCMV	cmyc	6785	G0513	60
GHSR1a	Growth hormone secretagogue Receptor	PEF1α	cmyc	7074	G0640	60
HRH1	Histamine Receptor H1	PMoMLV	cmyc	6835	G0561	61
HRH2	Histamine Receptor H2	PMoMLV	cmyc	6451	G0562	61
GPR81	Hydroxycarboxylic acid Receptor 1	PEF1α	cmyc	7032	G0592	61
GPR109A	Hydroxycarboxylic acid Receptor 2	PEF1α	cmyc	7065	G0594	61
GPR109B	Hydroxycarboxylic acid Receptor 3	PEF1α	cmyc	7137	G0593	62
GPR48	Leucine-rich repeat containing G protein- coupled Receptor 4	PEF1α	cmyc	8688	G0637	62
GPR49	Leucine-rich repeat containing G protein- coupled Receptor 5	PEF1α	cmyc	8637	G0638	62
LTB4R	Leukotriene B4 Receptor	PMoMLV	cmyc	6398	G0564	62
LTB4R2	Leukotriene B4 Receptor 2	PMoMLV	cmyc	6416	G0565	63
FPR2	Lipoxin Receptor (FPR2)	PMoMLV	cmyc	6427	G0563	63
GPR23	Lysophosphatidic Acid Receptor 4	PEF1α	cmyc	7089	G0569	63
GPR92	Lysophosphatidic Acid Receptor 5	PEF1α	cmyc	7134	G0570	63
LPAR6	Lysophosphatidic Acid Receptor 6	PMoMLV	cmyc	6374	G0607	64
MC1R	Melanocortin 1 Receptor	PCMV	cmyc	6585	G0575	64
MC2R	Melanocortin 2 Receptor (adrenocorticotropic hormone)	PEF1α	cmyc	6867	G0576	64
MC3R	Melanocortin 3 Receptor	PEF1α	cmyc	7056	G0577	64
MC4R	Melanocortin 4 Receptor	PEF1α	cmyc	6972	G0578	65
MC5R	Melanocortin 5 Receptor	PEF1α	cmyc	6951	G0579	65
GRM4	Metabotropic Glutamate Receptor 4	PCMV	cmyc	8227	G0560	65
NPY1R	Neuropeptide Y Receptor 1	PSFFV	cmyc	6785	G0588	65
Y2	Neuropeptide Y Receptor 2	PEF1α	cmyc	7137	G0589	66
Y4	Neuropeptide Y Receptor 4	PEF1α	cmyc	7119	G0590	66
Y5	Neuropeptide Y Receptor 5	PEF1α	cmyc	7330	G0591	66
NPBWR2	Neuropeptides B W Receptor 2	PMoMLV	cmyc	6341	G0587	66
OXER1	Oxoeicosanoid (OXE) Receptor 1	PMoMLV	cmyc	6611	G0568	67
OXGR1	Oxoglutarate Receptor 1	PMoMLV	cmyc	6353	G0635	67
PTAF	Platelet-activating factor Receptor	PEF1α	cmyc	7027	G0596	67
PRLHR	Prolactin Releasing Hormone Receptor	PMoMLV	cmyc	6425	G0597	67
GPR44	Prostaglandin D2 Receptor 2	PEF1α	cmyc	7182	G0598	68
P2RY12	Purinergic Receptor P2RY12	PMoMLV	cmyc	6400	G0602	68
P2RY13	Purinergic Receptor P2RY13	PMoMLV	cmyc	6373	G0603	68
P2RY1	Purinergic Receptor P2Y, G-protein coupled, 1	PEF1α	cmyc	7113	G0600	68
P2RY4	Pyrimidinergic Receptor P2Y, G-protein coupled, 4	PEF1α	cmyc	7080	G0606	69
P2RY6	Pyrimidinergic Receptor P2Y, G-protein coupled, 6	PEF1α	cmyc	6973	G0608	69
P2RY11	Purinergic Receptor P2Y, G-protein coupled, 11	PEF1α	cmyc	7114	G0601	69
P2RY14	Purinergic Receptor P2Y, G-protein coupled, 14	PEF1α	cmyc	7005	G0604	69
RX3	Relaxin insulin-like family peptide Receptor 3	PEF1α	cmyc	7415	G0609	70
RX4	Relaxin-insulin-like family peptide Receptor 4	PEF1α	cmyc	7098	G0610	70
HTR1B	Serotonin Receptor 1B	PEF1α	cmyc	7201	G0612	70
SSTR1	Somatostatin Receptor 1	PMoMLV	cmyc	6515	G0616	70
SSTR2	Somatostatin Receptor 2	PMoMLV	cmyc	7201	G0617	71
SSTR3	Somatostatin Receptor 3	PMoMLV	cmyc	6601	G0618	71
SSTR4	Somatostatin Receptor 4	PEF1α	cmyc	7140	G0619	71
SSTR5	Somatostatin Receptor 5	PEF1α	cmyc	7065	G0620	71
S1PR1	Sphingosine-1-Phosphate Receptor 1	PMoMLV	cmyc	6491	G0571	72
EDG2	Sphingosine-1-phosphate Receptor 2	PEF1α	cmyc	7053	G0572	72
EDG3	Sphingosine-1-phosphate Receptor 3	PEF1α	cmyc	7128	G0574	72
GPR91	Succinate Receptor 1	PEF1α	cmyc	6978	G0625	72
TACR3	Tachykinin Receptor 3	PEF1α	cmyc	7443	G0626	73
TAAR5	Trace amine associated Receptor 5	PEF1α	cmyc	6987	G0629	73
TAAR1	Trace amine associated Receptor 1	PEF1α	cmyc	6993	G0627	73
TAAR2	Trace amine associated Receptor 2	PEF1α	cmyc	6894	G0628	73
TAAR6	Trace amine associated Receptor 6	PEF1α	cmyc	7011	G0630	74
TAAR8	Trace amine associated Receptor 8	PEF1α	cmyc	7002	G0631	74
TAAR9	Trace amine associated Receptor 9	PEF1α	cmyc	7000	G0632	74
UTS2R	Urotensin 2 Receptor	PMoMLV	cmyc	6508	G0633	74

ExpressMAX™ GPCR ORF Clones

For highest levels of GPCR expression, wide spectrum and complete Expression Ready GPCR ORF Clones

(15 µg = 15 assays)

Includes for 15 µg:

ExpressMAX™ GPCR ORF Clones

- 15 µg ExpressMAX™ Mammalian expression vector (1mg/ml)

Mammalian transfection kits:

- 15 µg ExpressMAX™ Mammalian expression vector (1mg/ml)
- 0.2 mL CANFAST™ Transfection Reagent

Related Products:

- CANFAST™ Transfection Reagent (p.76)
- pOnebyOne™ Mammalian expression vectors (p.22)
- Ampicillin (p.126)

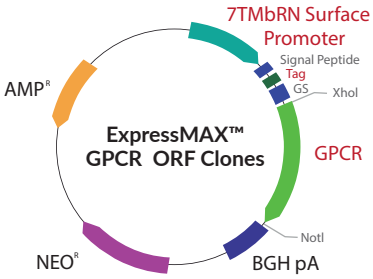
Description:

G protein-coupled receptors (GPCRs) are used to achieve the highest levels of GPCR expression, a wide spectrum of complete numerous groups of integral membrane receptors and important candidates in all Drug screening programmes and in many research labs. Laboratories in all disciplines of science devote time and energy into developing practical methods for the discovery, isolation and characterization of these proteins.

ExpressMAX™ GPCR ORF Clones have been designed to save time and effort in the process of put on surface a heterologous GPCR of your interest. The expression vector included in each ExpressMAX™ GPCR ORF Clones has been selected using 7TMbRN Surface GPCR Expression Vector System. The 7TMbRN Surface system comprises a group of ten for GPCR membrane proteins. Each GPCR has been cloned in this vector set, which incorporates vectors with different promoters, tags and glycosylation signal (GS) sequences.

Advantages & Features:

- ✓ **Native structure.**
- ✓ **Wide range:** a large collection of ExpressMAX™ GPCR ORF Clones availables.
- ✓ **Highest levels of GPCR expression:** on surface cell lines, > 50% of TAG detection by cytometry.
- ✓ **Wide spectrum:** of strong constitutive promoters.
- ✓ **Complete solution:** it contains all necessary elements for maximum receptor expression.
- ✓ **Ready-to-use solution:** avoids cloning steps, DNA ready to transfect.
- ✓ **Easy protocol and detection:** the whole procedure is simple, with minimal handling.
- ✓ **Neomycin resistance.**
- ✓ **Ampicillin bacterial selection.**



Applications:

- ✓ Functional assays, as protein immobilization, cellular localization and other functional assays.
- ✓ High-throughput and large scale protein production and purification.
- ✓ Reverse transfection arrays and nucleic acid programmable protein arrays (NAPPA).

Quality control:

- ✓ The quantity and quality of purified DNA is checked by:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Choose when do you want to start working

Cat. No. -A

START HERE
with own designs with specific requirements

Cat. No. -B

START HERE
with clones arrive as bacterial stock

Cat. No. -PLUS

START HERE
ExpressMAX™ clones arrives as purified plasmid DNA

DAY 1
Gene amplification, ligation in expression vector, transformation and plating

DAY 2
Inoculate isolated colonies

DAY 3
Plasmid purification and verification by PCR/ digestion

DAY 4
Start YOUR EXPERIMENTS

Canvax offers you the possibility to choose your ExpressMAX™ GPCR ORF Clones and decide its advance status.

5-hydroxytryptamine (serotonin) Receptor 1A

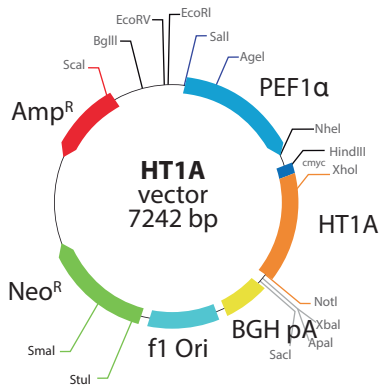
Description:
It belongs to the 5-hydroxytryptamine Receptor subfamily. Serotonin has been implicated in a number of physiologic processes and pathologic conditions. Inactivation of the gene in mice results in behavior consistent with an increased anxiety and stress response. Mutation in the promoter of this gene has been associated with menstrual cycle-dependent periodic fevers.

Ordering info:

Cat No.	Size
G0611	15 µg
G0611-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7242 bp
Promoter: PEF1α
ORF Sequence: NM_000524
Protein Sequence: P08908

Alternative names:
G-21, 5HT1a, PFMCD, 5-HT1A



5-hydroxytryptamine (serotonin) Receptor 1D

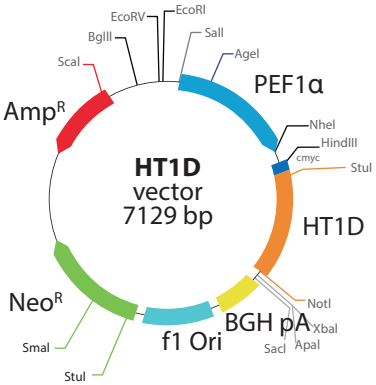
Description:
GPCR for serotonin, found in nociceptors throughout the body. The anti-migraine action of "triptan" Drugs involves the activation of serotonin subtype 1D (HT1D) Receptors expressed on "pain-responsive" trigeminal primary afferents. HT1D Receptors are present in a similar subpopulation of trigeminal and dorsal root ganglia neurons and in the central terminals of primary afferents.

Ordering info:

Cat No.	Size
G0613	15 µg
G0613-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7129 bp
Promoter: PEF1α
ORF Sequence: NM_012852
Protein Sequence: P28565

Alternative names:
5HT1D



5-hydroxytryptamine (serotonin) Receptor 1E

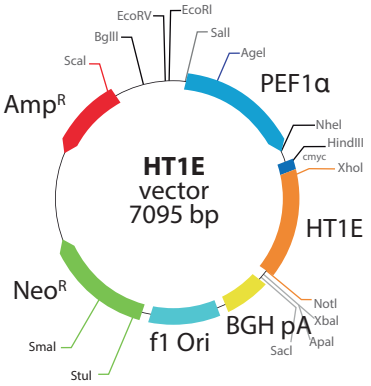
Description:
It is a GPCR that belongs to the 5-hydroxytryptamine Receptor subfamily. The 5-HT1E (HT1E) Receptor is highly expressed in the Human frontal cortex and hippocampus and this distribution suggests the function of 5-HT1E Receptors might be linked to memory.

Ordering info:

Cat No.	Size
G0614	15 µg
G0614-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7095 bp
Promoter: PEF1α
ORF Sequence:NM_000865
Protein Sequence: P28566

Alternative names:
5-HT1E



5-hydroxytryptamine (serotonin) Receptor 1F

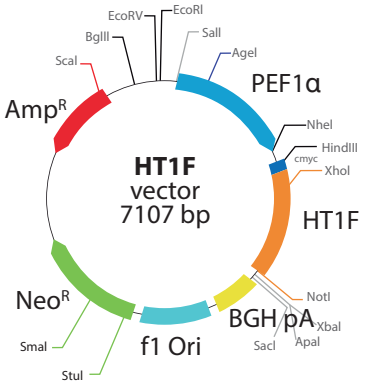
Description:
It belongs to the 5-hydroxytryptamine Receptor subfamily. There is not so much information known related the binding requirements of HT1F Receptors, but it is known that the tryptamine neurotransmitter serotonin (5-HT) binds with high affinity.

Ordering info:

Cat No.	Size
G0615	15 µg
G0615-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7107 bp
Promoter: PEF1α
ORF Sequence: NM_000866
Protein Sequence: P30939

Alternative names:
5HT6, MR77, 5-HT1F, HTR1EL or 5-HT-1F



Adenosine A2b Receptor

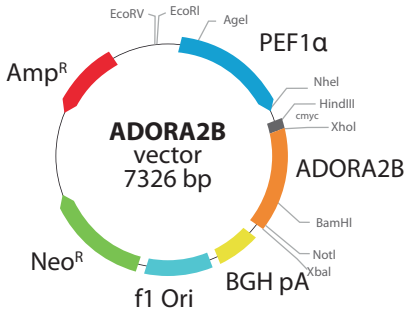
Description:
This adenosine Receptor (ADORA2B) is a member of the GPCR superfamily. This integral membrane protein stimulates adenylate cyclase activity in the presence of adenosine. It also interacts with netrin-1, which is involved in axon elongation. The gene is located near the Smith-Magenis syndrome region on chromosome 17.

Ordering info:

Cat No.	Size
G0503	15 µg
G0503-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7326 bp
Promoter: PEF1α
ORF Sequence: NM_000676
Protein Sequence: P29275

Alternative names:
ADORA2B



Adenosine A3 Receptor

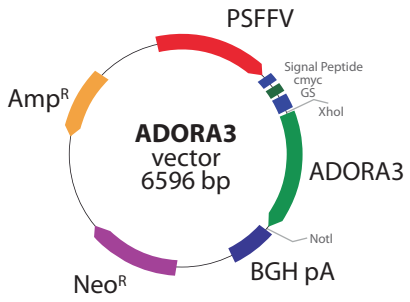
Description:
Adenosine A3 (ADORA3) belongs to the family of adenosine Receptors, which are GPCRs that mediates a sustained cardioprotective function during cardiac ischemia. Also it is involved in the inhibition of neutrophil degranulation in neutrophil-mediated tissue injury, it has been implicated in both neuroprotective and neurodegenerative effects and it may mediate both cell proliferation and cell death. Multiple transcript variants encoding different isoforms (1, 2 and 3) have been found for the gene.

Ordering info:

Cat No.	Size
G0501	15 µg
G0501-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6596 bp
Promoter: PSFFV
ORF Sequence: NM_000677.3
Protein Sequence: P33765

Alternative names:
A3AR



Adrenergic ADRA2A Receptor

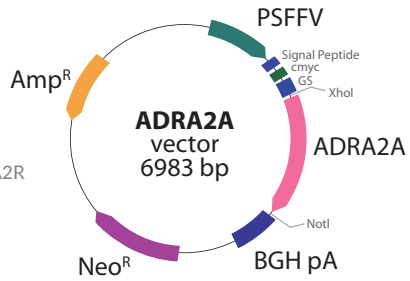
Description:
Alpha-2A-adrenergic Receptor is a member of the adrenergic GPCR family. These Receptors have a critical role in regulating neurotransmitter release from sympathetic nerves and from adrenergic neurons in the Central Nervous System. Studies in mouse revealed that alpha2A was required for normal presynaptic control of transmitter release from sympathetic nerves in the heart and from central noradrenergic neurons, the alpha2A subtype inhibited transmitter release at high stimulation frequencies.

Ordering info:

Cat No.	Size
G0502	15 µg
G0502-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6983 bp
Promoter: PSFFV
ORF Sequence: NM_000681.3
Protein Sequence: P08913

Alternative names:
ADRA2, ADRAR, ZNF32 or ADRA2R



Adrenergic ADRB2 Receptor

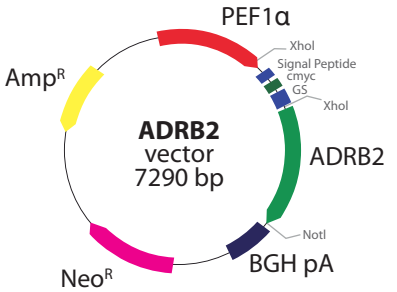
Description:
Beta-2-adrenergic Receptor is a member of beta adrenergic Receptors, which mediate catecholamine-induced activation of adenylate cyclase through the action of G proteins. It is located primarily in the CNS, heart, kidney and muscle where it is involved in smooth muscle relaxation (e.g. bronchodilation). ADRB2 is directly associated with one of its ultimate effectors, the class C L-type calcium channel Ca(V)1.2. Different polymorphic forms, point mutations and/or downregulation of the gene are associated with **nocturnal** asthma, obesity and type 2 diabetes.

Ordering info:

Cat No.	Size
G0505	15 µg
G0505-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7290 bp
Promoter: PEF1α
ORF Sequence: NM_000024.5
Protein Sequence: P07550

Alternative names:
BAR, B2AR, ADRBR or ADRB2R



Adrenoceptor beta 1

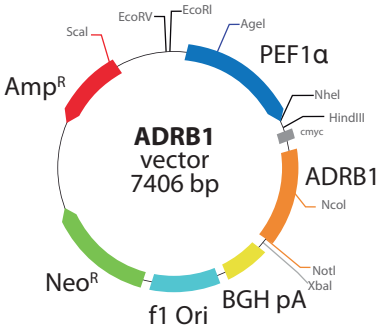
Description:
The adrenergic Receptors (subtypes alpha 1, alpha 2, beta 1 and beta 2) are a prototypic family of guanine nucleotide binding regulatory protein-coupled Receptors that mediate the physiological effects of the hormone epinephrine and the neurotransmitter norepinephrine. Specific polymorphisms in this gene have been shown to affect the resting heart rate and can be involved in heart failure. Human cardiac β 1-AR performs a crucial role in mediating the cardiostimulating effects of norepinephrine. Gly389Arg and Ser49Gly polymorphisms of β 1-adrenoreceptors (β 1-AR) can influence the cardiovascular prognosis.

Ordering info:

Cat No.	Size
G0504	15 µg
G0504-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7406 bp
Promoter: PEF1α
ORF Sequence: NM_000684
Protein Sequence: P08588

Alternative names:
RHR, B1AR, ADRB1R or BETA1AR



Anaphylatoxin C3AR1

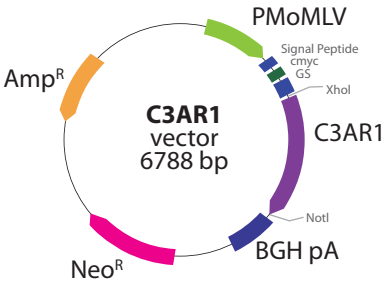
Description:
Anaphylatoxin C3AR1 is a protein involved in complement system. Although mainly expressed in lymphoid tissues, it is also expressed in several differentiated hematopoietic cell lines, in the lung, spleen, ovary, placenta, small intestine, throughout the brain, heart and endothelial cells.
This GPCR is the Receptor for the chemotactic and inflammatory peptide, stimulating chemotaxis, granule enzyme release and superoxide anion production.

Ordering info:

Cat No.	Size
G0506	15 µg
G0506-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6788 bp
Promoter: PMoMLV
ORF Sequence: NM_004054
Protein Sequence: Q16581

Alternative names:
AZ3B, C3AR or HNFAG09



Anaphylatoxin C5AR1

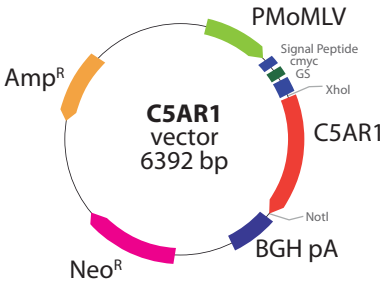
Description:
The C5a is a GPCR for the chemotactic and inflammatory peptide anaphylatoxin C5a. It stimulates chemotaxis, granule enzyme release and superoxide anion production.

Ordering info:

Cat No.	Size
G0507	15 µg
G0507-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6392 bp
Promoter: PMoMLV
ORF Sequence: NM_001736
Protein Sequence: P21730

Alternative names:
C5A, C5AR, C5R1 or CD88



Anaphylatoxin GPR77

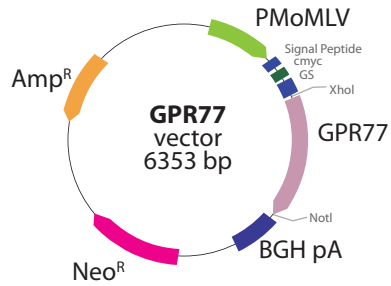
Description:
GPR77, is a Receptor for the chemotactic and inflammatory peptide anaphylatoxins C5a, C4a and C3a and their desarginated derivatives. It is expressed on various immune cells and non-immune cells such as adipocytes, astrocytes, fibroblasts, immature dendritic cells, macrophages, mast cells, monocytes, neurons, neutrophils. The Receptor binds complement factor C5a with high affinity.

Ordering info:

Cat No.	Size
G0508	15 µg
G0508-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6353 bp
Promoter: PMoMLV
ORF Sequence: NM_018485
Protein Sequence: Q9P296

Alternative names:
C5L2, GPR77 or C5AR2



Angiotensin AGTR1

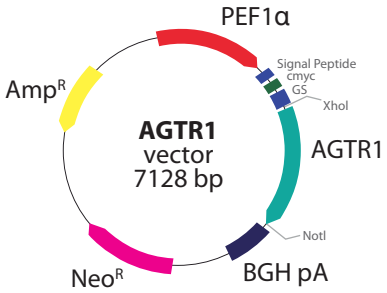
Description:
It is a member of the angiotensin group of GPCR that also includes AT2 and AT4. It mediates the major cardiovascular effects of angiotensin II, an important effector controlling blood pressure and volume in the cardiovascular system. It is located primarily in the liver, kidney, adrenal gland and lung where it play a role in vasoconstriction, aldosterone and vasopressin release, salt and water retention, cell proliferation and migration and sympathetic stimulation.

Ordering info:

Cat No.	Size
G0509	15 µg
G0509-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7128 bp
Promoter: PEF1α
ORF Sequence: NM_001082324
Protein Sequence: P34976

Alternative names:
AGTR1A



Angiotensin II Receptor, type 2

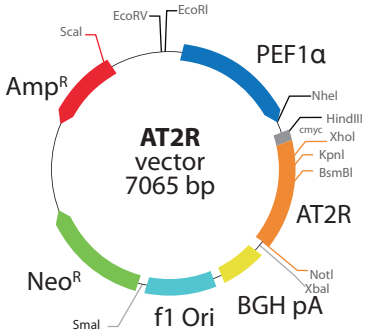
Description:
It belongs to the GPCR 1 family and functions as a Receptor for angiotensin II. It is an integral membrane protein that is highly expressed in fetus, but scantily in adult tissues, except brain, adrenal medulla and atretic ovary. It has been shown to mediate programmed cell death and this apoptotic function may play an important role in developmental biology and pathophysiology. Mutations in the gene has been associated with X-linked mental retardation.

Ordering info:

Cat No.	Size
G0510	15 µg
G0510-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7065 bp
Promoter: PEF1α
ORF Sequence: AY322542
Protein Sequence: P50052

Alternative names:
AGTR2, AT2, ATGR2 or MRX88



Apelin Receptor

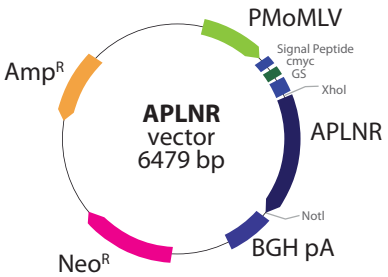
Description:
Apelin Receptor (APLNR, APJ) is a GPCR with considerable sequence homology to the angiotensin Receptor, which is actually an apelin Receptor that inhibits adenylate cyclase activity and plays a counter-regulatory role against the pressure action of angiotensin II by exerting hypertensive effect. Its predominant endogenous ligands are apelin-36, apelin-13 and [Pyr1]-apelin-13.
APLNR Receptor and apelin peptides act as mediators of cardiovascular and Central Nervous System functions, fluid homeostasis, adipocyte endocrine secretion, glucose metabolism, in embryonic and tumor angiogenesis and as a HIV-1 co-receptor.

Ordering info:

Cat No.	Size
G0511	15 µg
G0511-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6479 bp
Promoter: PMoMLV
ORF Sequence: NM_005161.4
Protein Sequence: P35414

Alternative names:
APJ, APJR, HG11 or AGTRL1



Arginine Vasopressin Receptor 2

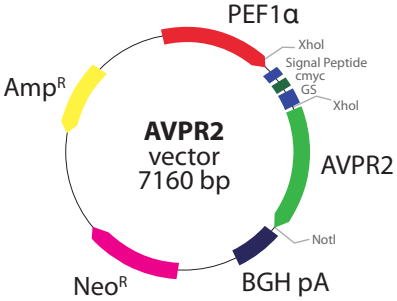
Description:
Human arginine Vasopressin Receptor 2 is encoded by the AVPR2 gene that is expressed in the kidney tubule. It is a member of the GPCR family and couples to Gs thus stimulating adenylate cyclase.
It binds to the pituitary hormone arginine vasopressin by stimulating mechanisms that concentrate the urine and maintain water homeostasis in the organism.

Ordering info:

Cat No.	Size
G0634	15 µg
G0634-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7160 bp
Promoter: PEF1α
ORF Sequence: NM_000054.4
Protein Sequence: P30518

Alternative names:
DI1, AVPR2, DIR, NDI, V2R, ADHR or DIR3



Atypical Chemokine Receptor 1

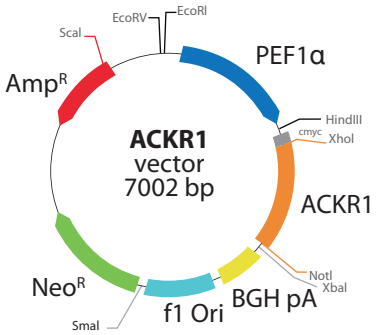
Description:
It is a glycosylated membrane protein and a non-specific Receptor for several chemokines. ACKR1 protein is the Receptor for the Human malarial parasites Plasmodium vivax and Plasmodium knowlesi. Polymorphisms in this gene are the basis of the Duffy blood group system. Two transcript variants encoding different isoforms have been found for this gene.

Ordering info:

Cat No.	Size
G0519	15 µg
G0519-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7002 bp
Promoter: PEF1α
ORF Sequence: NM_002036
Protein Sequence: Q16570

Alternative names:
FY, Dfy, GPD, GpFy, DARC



Atypical Chemokine Receptor 2

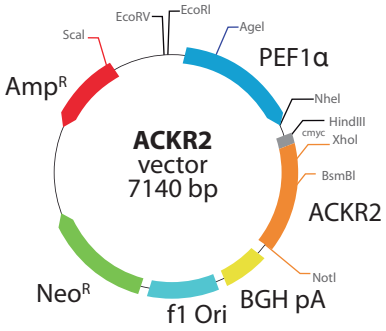
Description:
Is a beta chemokine Receptor. Chemokines and their receptor-mediated signal transduction are critical for the recruitment of effector immune cells to the inflammation site. The expression of this Receptor in lymphatic endothelial cells and overexpression in vascular tumors suggested its function in chemokine-driven recirculation of leukocytes and possible chemokine effects on the development and growth of vascular tumors. It appears to bind the majority of beta-chemokine family members.

Ordering info:

Cat No.	Size
G0520	15 µg
G0520-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7140 bp
Promoter: PEF1α
ORF Sequence: NM_001296
Protein Sequence: O00590

Alternative names:
D6, hD6, CCBP2 or CCR10



Atypical Chemokine Receptor 4

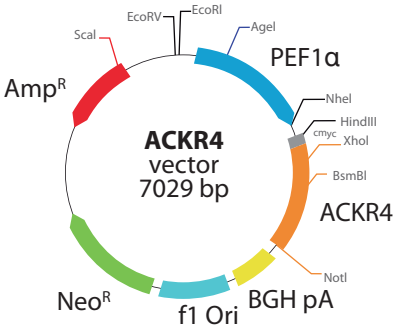
Description:
It is a member of the GPCR family and is a Receptor for C-C type chemokines. It has been shown to bind dendritic cell- and T cell-activated chemokines including CCL19/ELC, CCL21/SLC and CCL25/TECK. A pseudogene of the gene is found on chromosome 6. Alternatively spliced transcript variants encoding the same protein have been described.

Ordering info:

Cat No.	Size
G0531	15 µg
G0531-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7029 bp
Promoter: PEF1α
ORF Sequence: NM_016557
Protein Sequence: Q9NPB9

Alternative names:
PPR1, CCBP2 or CCR1



Bile Acid Receptor

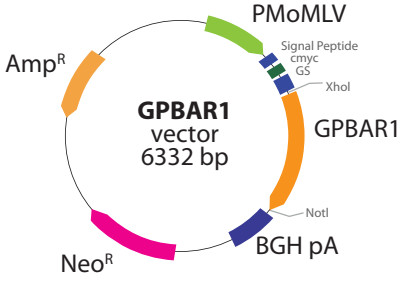
Description:
Bile Acid GPCR (GPBAR1) functions as a cell surface Receptor for bile acids. Treatment of cells expressing this GPCR with bile acids induces the production of intracellular cAMP, activation of a MAP kinase signaling pathway and internalization of the Receptor. The Receptor is implicated in the suppression of macrophage functions and regulation of energy homeostasis by bile acids. Alternative splicing results in three transcript variants encoding the same protein.

Ordering info:

Cat No.	Size
G0512	15 µg
G0512-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6332 bp
Promoter: PMoMLV
ORF Sequence: NM_170699
Protein Sequence: Q8TDU6

Alternative names:
BG37, TGR5, M-BAR or GPCR19



Bradykinin B1 Receptor

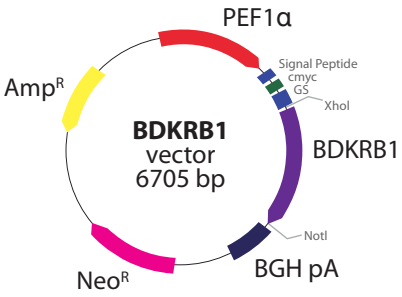
Description:
Bradykinin Receptor B1 is a GPCR encoded in Humans by the BDKRB1 gene. The B1 Receptor is one of two of GPCRs known which bind bradykinin and mediate responses to some pathophysiologic conditions such as inflammation, trauma, burns, shock and allergy.
BDKRB1 is synthesized *de novo* following tissue injury and Receptor binding leads to an increase in the cytosolic calcium ion concentration, ultimately resulting in chronic and acute inflammatory responses.

Ordering info:

Cat No.	Size
G0514	15 µg
G0514-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6705 bp
Promoter: PEF1α
ORF Sequence: NM_000710.3
Protein Sequence: P46663

Alternative names:
B1R, BKR1, B1BKR or BKB1R



Calcium Sensing Receptor

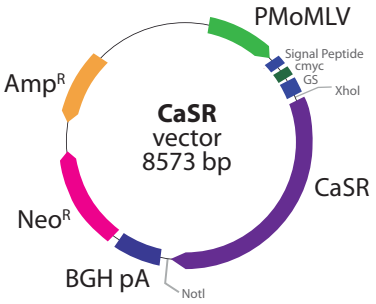
Description:
Calcium-sensing Receptor is a GPCR that is expressed in the parathyroid gland and the cells lining the kidney tubule. In the parathyroid gland, CaSR controls calcium homeostasis by regulating the release of parathyroid hormone (PTH). Decreased calcium binding on the extracellular side gives a conformation change in the receptor, which initiates the phospholipase C pathway, presumably through a Gqα type of G protein.

Ordering info:

Cat No.	Size
G0515	15 µg
G0515-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 8573 bp
Promoter: PMoMLV
ORF Sequence: NM_000388
Protein Sequence: P41180

Alternative names:
CaSR, CAR



Cannabinoid 1 Receptor

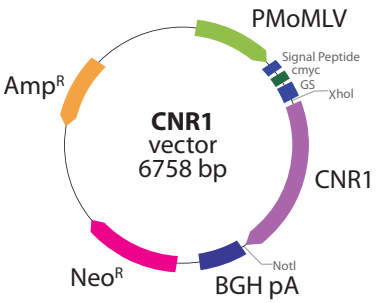
Description:
Cannabinoid 1 Receptor (CNR1) is located in the brain. It is activated by the endocannabinoid neurotransmitters anandamide and 2-arachidonoyl glyceride and by plant cannabinoids. CNR1 modulates neurotransmitter release when activated in a dose-dependent. Most CNR1 Receptors are coupled through G α i/o proteins. It plays a major role in the maintenance of homeostasis in health and disease. Increased receptor expression has been found in Human hepatocellular carcinoma tumor and other prostate cancer cells. CNR1 is well known for their cardiovascular activity. Disease relationships for CNR1 gene are multiple sclerosis, cannabis dependence, liver fibrosis, etc.

Ordering info:

Cat No.	Size
G0516	15 µg
G0516-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6758 bp
Promoter: PMoMLV
ORF Sequence: NM_016083.4
Protein Sequence: P21554

Alternative names:
CB1, CNR, CB-R or CB1A



Cannabinoid 2 Receptor

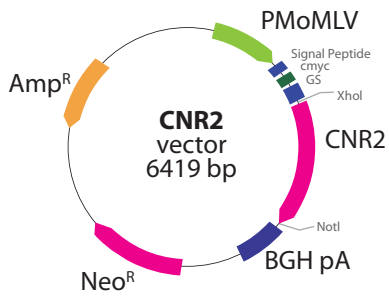
Description:
Cannabinoid 2 Receptor inhibits adenylate cyclase activity through their Gi/Gαo subunits in a dose dependent for its ligand. The principal endogenous ligand for the CNR2 receptor is 2-archidonoylglycerol.
Through their GβY subunits, CNR2 Receptor is coupled to the MAPK-ERK pathway, which regulates cellular processes in both mature and developing tissues. It is localized on immune cells such as monocytes, macrophages, B-cells and T-cells. It is also found in the brain, on microglia but not in neurons and the gastrointestinal system, where it modulates intestinal inflammatory response.

Ordering info:

Cat No.	Size
G0517	15 µg
G0517-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6419 bp
Promoter: PMoMLV
ORF Sequence: NM_001841.2
Protein Sequence: P34972

Alternative names:
CB2, CX5 or CB-2



Cannabinoid 3 Receptor

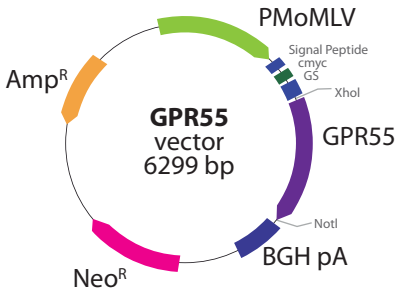
Description:
Cannabinoid 3 Receptor is coupled to the G-protein α13 and activation of the receptor leads to stimulation of rhoA, cdc42 and rac1. GPR55 is activated by the plant cannabinoids Δ9-THX and cannabidiol. Lysophosphatidylinositol and its 2-aracchidonoyl derivate may be the endogenous ligands.
The Receptor appears likely to be a possible target for treatment of inflammation. It is expressed in the brain, especially in the cerebellum, also in osteoblasts and osteoclasts to regulate bone cell function.

Ordering info:

Cat No.	Size
G0518	15 µg
G0518-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6299 bp
Promoter: PMoMLV
ORF Sequence: NM_005683.3
Protein Sequence: Q9Y2T6

Alternative names:
LPIR1, CB3



Chemerin Chemokine-like Receptor 1

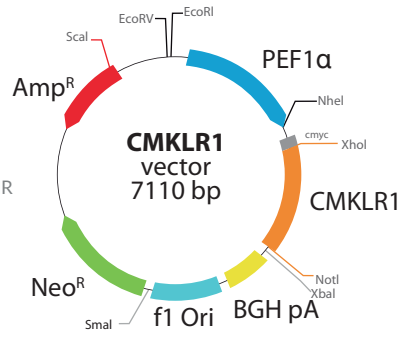
Description:
Chemerin acting via its distinct GPCR CMKLR1 (ChemR23), is a novel adipokine, circulating levels of which are raised in inflammatory states. Chemerin shows strong correlation with various facets of the metabolic syndrome, these states are associated with an increased incidence of cardiovascular disease (CVD) and dysregulated angiogenesis.

Ordering info:

Cat No.	Size
G0533	15 µg
G0533-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7110 bp
Promoter: PEF1α
ORF Sequence: NM_004072
Protein Sequence: Q99788

Alternative names:
DEZ, RVER1, ChemR23 or CHEMERINR



Chemokine (C motif) Receptor 1

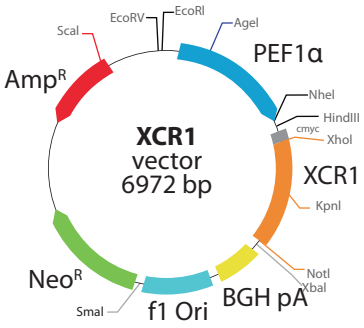
Description:
It is a chemokine receptor belonging to the GPCR superfamily. The family members are characterized by the presence of 7 transmembrane domains and numerous conserved amino acids. It is most closely related to RBS11 and the MIP1-alpha/RANTES Receptor. It transduces a signal by increasing the intracellular calcium ions level. The viral macrophage inflammatory protein-II is an antagonist of this receptor and blocks signaling. Two alternatively spliced transcript variants encoding the same protein have been found for the gene.

Ordering info:

Cat No.	Size
G0542	15 µg
G0542-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6972 bp
Promoter: PEF1α
ORF Sequence: NM_005283
Protein Sequence: P46094

Alternative names:
GPR5 or CCXCR1



Chemokine (C-C motif) Receptor 1

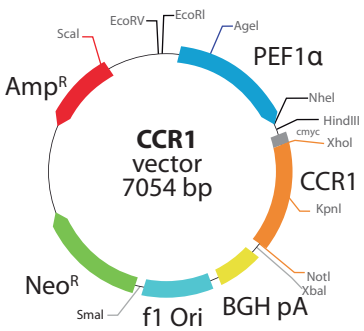
Description:
It is a member of the beta Chemokine Receptor family, which is predicted to be a seven transmembrane protein similar to GPCRs. The ligands of this receptor include macrophage inflammatory protein 1 alpha (MIP-1 alpha), regulated on activation normal T expressed and secreted protein (RANTES), monocyte chemoattractant protein 3 (MCP-3) and myeloid progenitor inhibitory factor-1 (MPIF-1).

Ordering info:

Cat No.	Size
G0521	15 µg
G0521-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7054 bp
Promoter: PEF1α
ORF Sequence: NM_001295
Protein Sequence: P32246

Alternative names:
CKR1, CD191, CKR-1 or HM145



Chemokine (C-C motif) Receptor 2

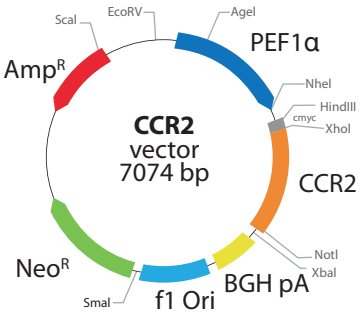
Description:
It is a Receptor for monocyte chemoattractant protein-1, a chemokine which specifically mediates monocyte chemotaxis. Monocyte chemoattractant protein-1 is involved in monocyte infiltration in inflammatory diseases such as rheumatoid arthritis as well as in the inflammatory response against tumors. This Receptor, encoded by the gene CCR2, mediate agonist-dependent calcium mobilization and inhibition of adenylyl cyclase. The gene is located in the chemokine receptor gene cluster region. Two alternatively spliced transcript variants are expressed by the gene.

Ordering info:

Cat No.	Size
G0522	15 µg
G0522-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7074 bp
Promoter: PEF1α
ORF Sequence: NM_001123041.2
Protein Sequence: P41597

Alternative names:
CKR2, CCR-2, CCR2A or CCR2B



Chemokine (C-C motif) Receptor 3

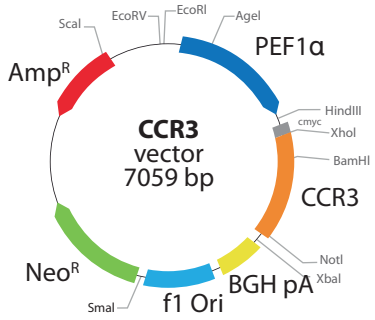
Description:
It is a Receptor for C-C type chemokines. It belongs to family 1 of the GPCRs. It binds and responds to a variety of chemokines, including eotaxin (CCL11), eotaxin-3 (CCL26), MCP-3 (CCL7), MCP-4 (CCL13) and RANTES (CCL5). It is highly expressed in eosinophils and basophils and is also detected in TH1 and TH2 cells, as well as in airway epithelial cells. It may contribute to the accumulation and activation of eosinophils and other inflammatory cells in the allergic airway. It is also known to be an entry co-receptor for HIV-1.

Ordering info:

Cat No.	Size
G0523	15 µg
G0523-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7059 bp
Promoter: PEF1α
ORF Sequence: NM_001837
Protein Sequence: P51677Z

Alternative names:
CKR3, CD193, CMKBR3
or CC-CKR-3



Chemokine (C-C motif) Receptor 4

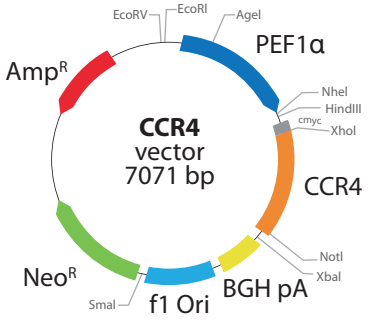
Description:
It is a Receptor for the CC chemokine - MIP-1, RANTES, TARC and MCP-1. Chemokines are a group of small polypeptide, structurally related molecules that regulate cell trafficking of various types of leukocytes.
The chemokines also play fundamental roles in the development, homeostasis and function of the immune system and it has effects on cells of the Central Nervous System as well as on endothelial cells involved in angiogenesis or angiostasis.

Ordering info:

Cat No.	Size
G0524	15 µg
G0524-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7071 bp
Promoter: PEF1α
ORF Sequence: NM_005508
Protein Sequence: P51679

Alternative names:
CKR4, K5-5, CD194 or CMKBR4



Chemokine (C-C motif) Receptor 5

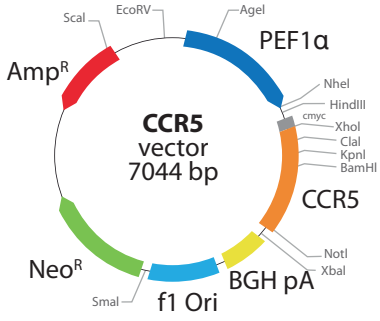
Description:
Is a member of the beta chemokine Receptor family, which is predicted to be a seven transmembrane protein similar to GPCRs. It is expressed by T cells and macrophages and is known to be an important co-receptor for macrophage-tropic virus, including HIV, to enter host cells.
Defective alleles of this gene have been associated with the HIV infection resistance. The ligands of this receptor include monocyte chemoattractant protein 2 (MCP-2), macrophage inflammatory protein 1 alpha (MIP-1 alpha), macrophage inflammatory protein 1 beta (MIP-1 beta) and regulated on activation normal T expressed and secreted protein (RANTES).

Ordering info:

Cat No.	Size
G0525	15 µg
G0525-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7044 bp
Promoter: PEF1α
ORF Sequence: NM_000579
Protein Sequence: P51681

Alternative names:
CKR5, CCR-5, CD195 or CKR-5



Chemokine (C-C motif) Receptor 6

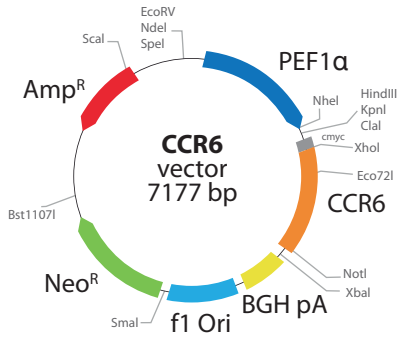
Description:
It is a member of the beta Chemokine Receptor family, which is predicted to be a seven transmembrane protein similar to GPCRs. The gene is preferentially expressed by immature dendritic cells and memory T cells. Its ligand is macrophage inflammatory protein 3 alpha (MIP-3 alpha).
It has been shown to be important for B-lineage maturation and antigen-driven B-cell differentiation and it may regulate the migration and recruitment of dendritic and T cells during inflammatory and immunological responses.

Ordering info:

Cat No.	Size
G0526	15 µg
G0526-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7177 bp
Promoter: PEF1α
ORF Sequence: NM_004367
Protein Sequence: P51684

Alternative names:
BN-1, DCR2, DRY6 or CCR-6



Chemokine (C-C motif) Receptor 7

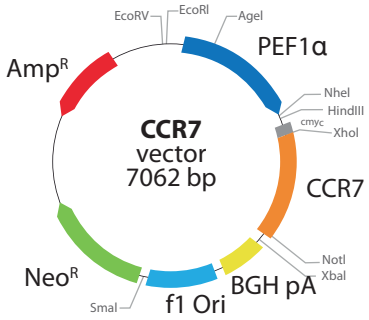
Description:
It Receptor was identified as a gene induced by the Epstein-Barr virus (EBV) and is thought to be a mediator of EBV effects on B lymphocytes. It is expressed in various lymphoid tissues and activates B and T lymphocytes. It has been shown to control the migration of memory T cells to inflamed tissues, as well as stimulate dendritic cell maturation. The chemokine (C-C motif) ligand 19 (CCL19/ECL) has been reported to be a specific ligand of this receptor. Alternative splicing of the gene results in multiple transcript variants.

Ordering info:

Cat No.	Size
G0527	15 µg
G0527-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7062 bp
Promoter: PEF1α
ORF Sequence: NM_001838
Protein Sequence: P32248

Alternative names:
BLR2, EBI1, CCR-7 or CD197



Chemokine (C-C motif) Receptor 8

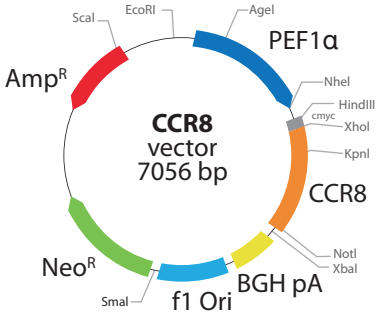
Description:
It is a member of the beta chemokine Receptor family, which is predicted to be a seven transmembrane protein similar to GPCRs. Chemokines and their receptors are important for the migration of various cell types into the inflammatory sites. It protein preferentially expresses in the thymus. I-309, thymus activation-regulated cytokine (TARC) and macrophage inflammatory protein-1 beta (MIP-1 beta) have been identified as ligands of this receptor. Studies of this receptor and its ligands suggested its role in regulation of monocyte chemotaxis and thymic cell apoptosis.

Ordering info:

Cat No.	Size
G0528	15 µg
G0528-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7056 bp
Promoter: PEF1α
ORF Sequence: NM_005201
Protein Sequence: P51685

Alternative names:
CY6, TER1, CCR-8 or CKRL1



Chemokine (C-C motif) Receptor 9

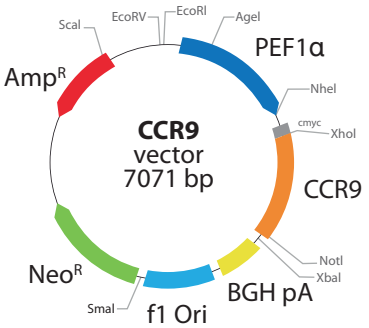
Description:
It is a member of the beta chemokine Receptor family. It is predicted to be a seven transmembrane protein similar to GPCRs. Chemokines and their receptors are key regulators of the thymocytes migration and maturation in normal and inflammation conditions. Its ligand is CCL25.
It has been found that this gene is differentially expressed by T lymphocytes of small intestine and colon, suggested a role in the thymocytes recruitment and development that may permit functional specialization of immune responses in different segment of the gastrointestinal tract.

Ordering info:

Cat No.	Size
G0529	15 µg
G0529-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7071 bp
Promoter: PEF1α
ORF Sequence: NM_006641
Protein Sequence: P51686

Alternative names:
GPR28, CDw199, GPR-9-6, CC-CKR-9



Chemokine (C-C motif) Receptor 10

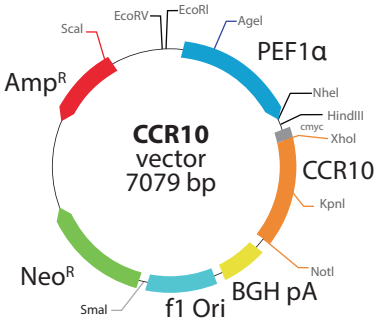
Description:
Chemokines are a group of small GPCRs (approximately 8 to 14 kD), mostly basic, structurally related molecules that regulate cell trafficking of various types of leukocytes through interactions with a subset of 7-transmembrane. Chemokines also play fundamental roles in the development, homeostasis and function of the immune system and it has effects on cells of the Central Nervous System as well as on endothelial cells involved in angiogenesis or angiostasis.

Ordering info:

Cat No.	Size
G0530	15 µg
G0530-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7079 bp
Promoter: PEF1α
ORF Sequence: NM_016602
Protein Sequence: P46092

Alternative names:
GPR2



Chemokine (C-C motif) Receptor-like 2

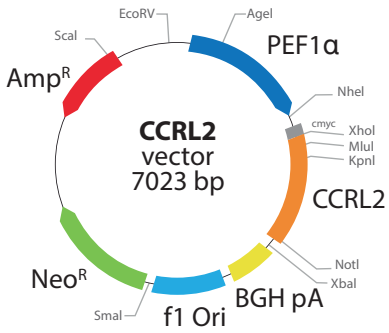
Description:
It is a chemokine Receptor like protein, which is predicted to be a seven transmembrane protein and most closely related to CCR1. Chemokines and their receptors mediated signal transduction are critical for the recruitment of effector immune cells to the site of inflammation.
The gene is expressed at high levels in primary neutrophils and primary monocytes and is further upregulated on neutrophil activation and during monocyte to macrophage differentiation. This gene is mapped to the region where the chemokine receptor gene cluster is located.

Ordering info:

Cat No.	Size
G0532	15 µg
G0532-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7023 bp
Promoter: PEF1α
ORF Sequence: NM_003965
Protein Sequence: O00421

Alternative names:
HCR, CKRX, CRAM or ACKR5



Chemokine (C-X-C motif) Receptor 1

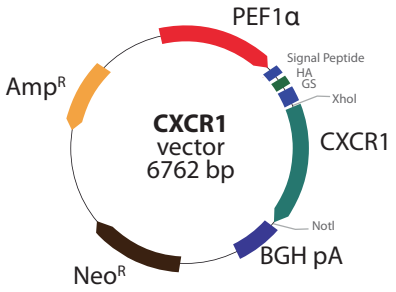
Description:
CXCR1 is a receptor for interleukine 8 (IL8) and it binds to IL8 with high affinity and transduces the signal through a G-protein activated second messenger systems. Knockout mice have inhibited embryonic oligodendrocyte precursor migration in developing spinal cord. *In vitro* and in mice has been shown that blocking CXCR1 inhibits some Human breast cancer stem cells. CXCR1 interacts with GNAI2.

Ordering info:

Cat No.	Size
G0535	15 µg
G0535-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6762 bp
Promoter: PEF1α
ORF Sequence: NM_000634.2
Protein Sequence: P25024

Alternative names:
C-C, CD128, CD181 or CKR-1



Chemokine (C-X-C motif) Receptor 2

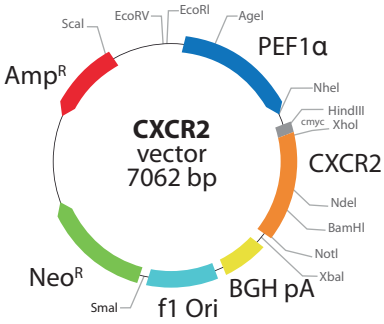
Description:
It is a receptor for interleukin 8 (IL8). It binds to IL8 with high affinity and transduces the signal through a G-protein activated second messenger system. It also binds to chemokine (C-X-C motif) ligand 1 (CXCL1/MGSA), a protein with melanoma growth stimulating activity and has been shown to be a major component required for serum-dependent melanoma cell growth. It mediates neutrophil migration to sites of inflammation. The angiogenic effects of IL8 in intestinal microvascular endothelial cells are found to be mediated by this receptor.

Ordering info:

Cat No.	Size
G0536	15 µg
G0536-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7062 bp
Promoter: PEF1α
ORF Sequence: NM_001557
Protein Sequence: P25025

Alternative names:
CD182, IL8R2 or IL8RB



Chemokine (C-X-C motif) Receptor 3 (isoform 1)

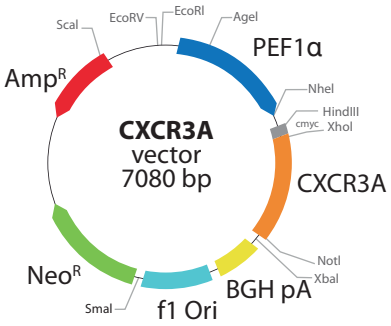
Description:
It is a GPCR with selectivity for three chemokines, termed CXCL9/Mig (monokine induced by interferon-γ), CXCL10/IP10 (interferon-g-inducible 10 kDa protein) and CXCL11/I-TAC (interferon-inducible T cell a-chemoattractant). Binding of chemokines to this protein induces cellular responses that are involved in leukocyte traffic, most notably integrin activation, cytoskeletal changes and chemotactic migration. Alternatively spliced transcript variants encoding different isoforms have been found for the gene. This isoform (isoform 1) functions as a receptor for chemokines CXCL9/Mig, CXCL10/IP-10 and CXCL11/I-TAC.

Ordering info:

Cat No.	Size
G0537	15 µg
G0537-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7080 bp
Promoter: PEF1α
ORF Sequence: NM_001504
Protein Sequence: P49682

Alternative names:
GPR9, MigR, CD182 or CD183



Chemokine (C-X-C motif) Receptor 3 (isoform 2)

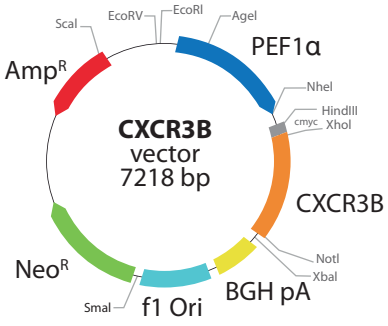
Description:
It is a GPCR with selectivity for three chemokines, termed CXCL9/Mig (monokine induced by interferon-γ), CXCL10/IP10 (interferon-g-inducible 10 kDa protein) and CXCL11/I-TAC (interferon-inducible T cell a-chemoattractant). Binding of chemokines to this protein induces cellular responses that are involved in leukocyte traffic, most notably integrin activation, cytoskeletal changes and chemotactic migration. Alternatively spliced transcript variants encoding different isoforms have been found for the gene. This isoform (isoform 2) has a longer and distinct N-terminus compared to isoform 1. This isoform acts as functional receptor for chemokine CXCL4/PF4.

Ordering info:

Cat No.	Size
G0636	15 µg
G0636-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7218 bp
Promoter: PEF1α
ORF Sequence: NM_001142797
Protein Sequence: P49682

Alternative names:
GPR9, MigR, CD182 or CD183



Chemokine (C-X-C motif) Receptor 5

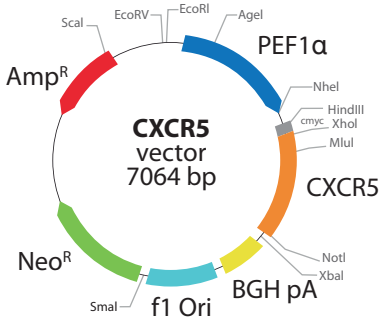
Description:
It is a multi-pass membrane protein that belongs to the CXC chemokine receptor family. It is expressed in mature B-cells and Burkitt's lymphoma. This cytokine receptor binds to B-lymphocyte chemoattractant (BLC) and is involved in B-cell migration into B-cell follicles of spleen and Peyer patches. Alternatively spliced transcript variants encoding different isoforms have been described for the gene.

Ordering info:

Cat No.	Size
G0539	15 µg
G0539-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7064 bp
Promoter: PEF1α
ORF Sequence: NM_001716
Protein Sequence: P32302

Alternative names:
BLR1, CD185 or MDR15



Chemokine (C-X-C motif) Receptor 6

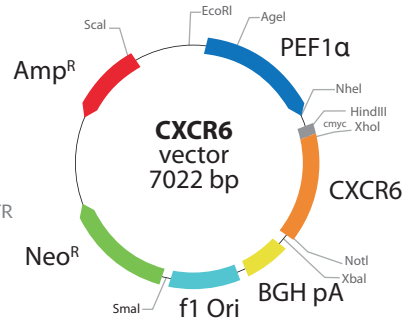
Description:
The chemokine receptor CXCR6, is selectively expressed on the surface of CD4+ T cells, CD8+ T cells, NKT cells ¡, natural killer (NK) cells and plasma cells. The ligand CXCL16 exists both in trans-membrane and soluble forms. Trans-membrane CXCL16 is expressed on macrophages, dendritic cells, monocytes and B cells. It can function as an adhesion molecule for cell expressing CXCR6 and has also been identifies as a novel scavenger receptor which binds to phospatydilserine and oxidized lipoprotein.

Ordering info:

Cat No.	Size
G0540	15 µg
G0540-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7022 bp
Promoter: PEF1α
ORF Sequence: NM_006564
Protein Sequence: O00574

Alternative names:
BONZO, CD186, STRL33 or TYMSTR



Chemokine (C-X-C motif) Receptor 7

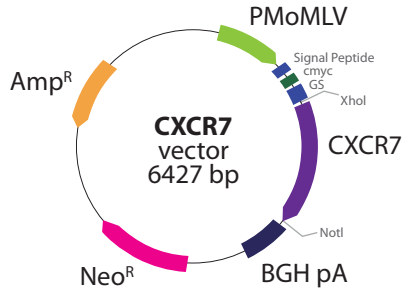
Description:
CXCR7 is encoded in Humans by the CXCR7 gene. It is a member of the GPCR family and was considered as an orphan receptor, its endogenous ligand had not been identified. It is classified as a chemokine receptor able to bind the chemokines CXCL12/SDF-1 and CXCL11. Ligand binding to CXCR7 activates MAP kinases through Beta-arrestins and thus has functions primarily by sequestering the chemokine CXCL12. It is also a coreceptor for Human immunodeficiency viruses (HIV).

Ordering info:

Cat No.	Size
G0541	15 µg
G0541-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6427 bp
Promoter: PMoMLV
ORF Sequence: NM_020311.2
Protein Sequence: P25106

Alternative names:
RDC1, ACKR3, RDC-1 or CMKOR1



Chemokine (C-X-C motif) CX3CR1

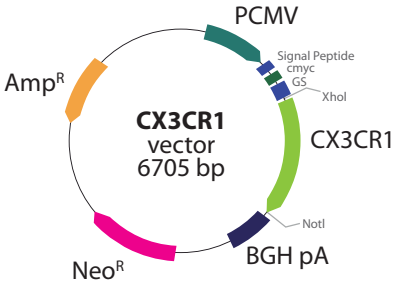
Description:
CX3CR1 binds the chemokine CX3CL1 (also known neurotactin or fractalkine). Fractalkine is a transmembrane protein and chemokine involved in the adhesion and migration of leukocytes. CX3CR1 is a coreceptor for HIV-1 and it is expressed by lymphocytes and monocytes and plays major role in the survival of monocytes. Also this GPCR is important in the migration of microglia in the Central Nervous Systems to their synaptic targets, where phagocytosis and synapsis occur.

Ordering info:

Cat No.	Size
G0534	15 µg
G0534-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6705 bp
Promoter: PCMV
ORF Sequence: NM_001337.3
Protein Sequence: P49238

Alternative names:
V28, CCRL1, GPR13 or CMKDR1



Cholecystokinin B Receptor

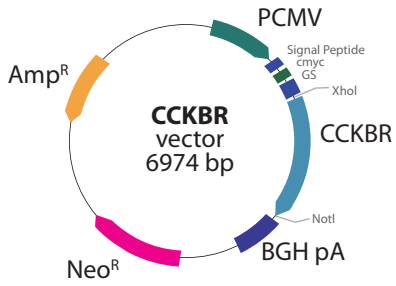
Description:
Cholecystokinin B receptor (CCKBR) is a GPCR for gastrin and cholecystokinin (CCK), regulatory peptides of the brain and gastrointestinal tract. It has a high affinity for both sulfated and nonsulfated CCK analogs and is found principally in the Central Nervous System and the gastrointestinal tract. It is encoded in Humans by the CCKBR gene. CCKBR plays a major role in the neurotransmission in the brain, regulating anxiety, feeding and locomotion and may correlate to depression phenotype in Humans. It possesses a complex regulation of dopamine activity in the brain.

Ordering info:

Cat No.	Size
G0543	15 µg
G0543-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6974 bp
Promoter: PCMV
ORF Sequence: NM_176875.3
Protein Sequence: P32239

Alternative names:
GASR, CCK-B or CCK2R



Cholinergic Receptor, Muscarinic 1

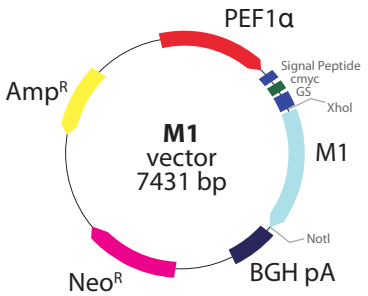
Description:
Cholinergic receptor, muscarinic 1 is encoded in Humans by the CHRM1 gene. It is a member of the GPCR family. CHRM1 binds acetylcholine and plays a role in adenylate cyclase inhibition, phosphoinositide degeneration, modulation of potassium channels and is involved in mediation of vagally-induced bronchoconstriction and in the acid secretion of the gastrointestinal tract.

Ordering info:

Cat No.	Size
G0580	15 µg
G0580-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7431 bp
Promoter: PEF1α
ORF Sequence: NM_000738.2
Protein Sequence: Q53XZ3

Alternative names:
M1, HM1, M1R or M1



Cholinergic Receptor, Muscarinic 2

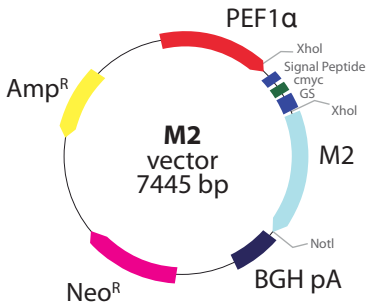
Description:
Muscarinic 2 Receptor is a member of the GPCR family. It is encoded in Humans by eight transcriptional variants of CHRM2 gene that generates the same protein. CHRM2 binds acetylcholine and plays a role in adenylate cyclase inhibition, phosphoinositide degeneration, modulation of potassium channels and is involved in mediation of bradycardia and decrease in cardiac contractility.

Ordering info:

Cat No.	Size
G0581	15 µg
G0581-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7445 bp
Promoter: PEF1α
ORF Sequence: NM_000739.2
Protein Sequence: P08172

Alternative names:
HM2



Cholinergic receptor, muscarinic 3

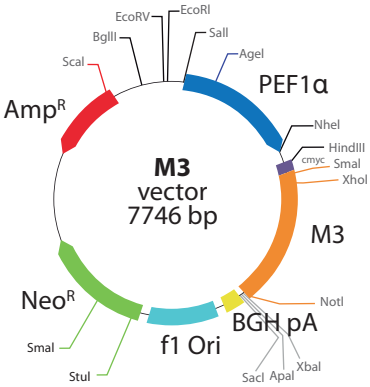
Description:
The muscarinic cholinergic receptors belong to a larger family of GPCRs. The functional diversity of these receptors is defined by the binding of acetylcholine and includes cellular responses such as adenylate cyclase inhibition, phosphoinositide degeneration and potassium channel mediation. Muscarinic receptors influence many effects of acetylcholine in the central and Peripheral Nervous System.
The muscarinic cholinergic receptor 3 controls smooth muscle contraction and its stimulation causes secretion of glandular tissue.

Ordering info:

Cat No.	Size
G0582	15 µg
G0582-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7746 bp
Promoter: PEF1α
ORF Sequence: NM_000740
Protein Sequence: P20309

Alternative names:
HM3



Cholinergic receptor, muscarinic 4

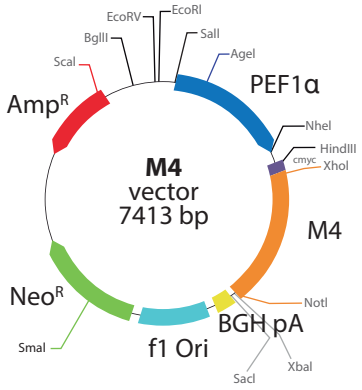
Description:
Like other muscarinic receptors, the M4 receptor is widely expressed in different regions of the forebrain. Interestingly, M4receptor is coexpressed with D1 dopamine receptors in a specific subset of striatal projection neurons. Those receptors have opposing effects on the activity of adenylyl cyclase: activation of M4 receptor has an inhibitory effect on adenylyl cyclase whereas D1 has an increasement of intracellular cAMP levels.

Ordering info:

Cat No.	Size
G0583	15 µg
G0583-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7413 bp
Promoter: PEF1α
ORF Sequence: NM_000741
Protein Sequence: P08173

Alternative names:
HM4, M4R



Cholinergic receptor, muscarinic 5

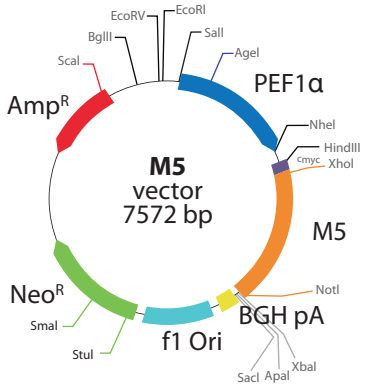
Description:
M5 receptor is principally expressed in the CNS although it is also found in heart and esophageal smooth muscle. No highly selective agonists or antagonists for the M5 receptor have been discovered as of 2009, but several non-selective muscarinic agonists and antagonists have significant affinity for M5. The functional diversity of these receptors is defined by the binding of acetylcholine and includes cellular responses such as adenylate cyclase inhibition, phosphoinositide degeneration, and potassium channel mediation. Muscarinic receptors influence many effects of acetylcholine in the central and peripheral nervous system. The clinical implications of this receptor are unknown, however, stimulation of this receptor is known to increase cyclic AMP levels.

Ordering info:

Cat No.	Size
G0584	15 µg
G0584-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7572 bp
Promoter: PEF1α
ORF Sequence: NM_012125
Protein Sequence: P08912

Alternative names:
HM5 or CHRM5



Coagulation factor II (thrombin) receptor

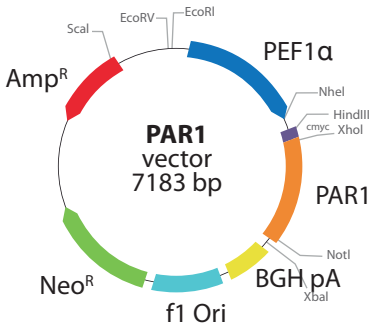
Description:
Coagulation factor II receptor is a 7-transmembrane receptor involved in the regulation of thrombotic response. Proteolytic cleavage leads to the activation of the receptor. Alternative splicing results in multiple transcript variants.

Ordering info:

Cat No.	Size
G0599	15 µg
G0599-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7183 bp
Promoter: PEF1α
ORF Sequence: NM_001992
Protein Sequence: P25116

Alternative names:
F2R, TR, HTR or CF2R



Corticotropin Releasing Hormone Receptor 1

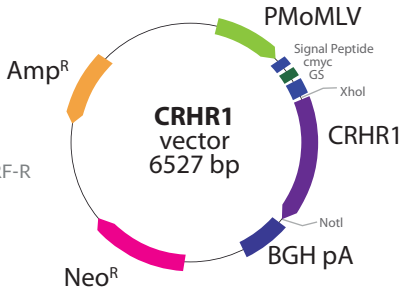
Description:
Corticotropin releasing hormone receptor 1 is encoded in Humans by the CRHR1 gene. It is a member of the GPCR family and binds neuropeptides of the corticotropin releasing hormone family.
It is regulated from the hypothalamic-pituitary-adrenal pathway and participates in processes such as immune response, reproduction, stress and obesity. CRHR1 binds to the corticotropin-releasing hormone and to urocortin.

Ordering info:

Cat No.	Size
G0544	15 µg
G0544-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6527 bp
Promoter: PMoMLV
ORF Sequence: NM_004382.4
Protein Sequence: P34998

Alternative names:
CRF-R, CRF-R-1, CRF1, CRHR, CRF-R or CRFR1



Cysteinyl leukotriene receptor 1

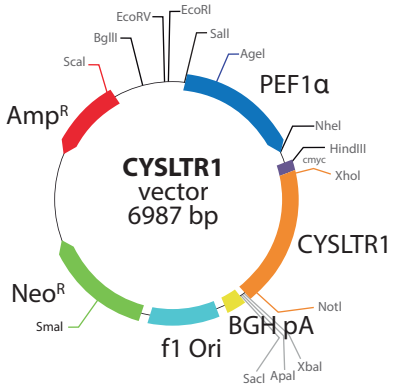
Description:
The encoded protein is a receptor for cysteinyl leukotrienes and is involved in mediating bronchoconstriction via activation of a phosphatidylinositol-calcium second messenger system.
Activation of the encoded receptor results in contraction and proliferation of bronchial smooth muscle cells, eosinophil migration and damage to the muscle layer in the lung. Upregulation of the gene is associated with asthma and dysregulation may also be implicated in cancer. Alternative splicing results in multiple transcript variants.

Ordering info:

Cat No.	Size
G0566	15 µg
G0566-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6987 bp
Promoter: PEF1α
ORF Sequence: NM_006639
Protein Sequence: Q9Y271

Alternative names:
CYSLTR1, CYSLTR or CYSLT1R



Cysteinyl leukotriene Receptor 2

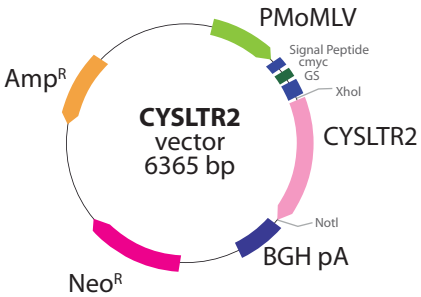
Description:
Cysteinyl leukotriene receptor 2 is encoded in Humans by the CYSLTR2 gene. The cysteinly leukotrienes LTC4, LTD4 and LTE4 are important mediators of Human bronchial asthma and activate at least two receptors, CYSLTR2 and CYSLTR1. It seems to play a major role in endocrine and cardiovascular systems.

Ordering info:

Cat No.	Size
G0567	15 µg
G0567-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6365 bp
Promoter: PMoMLV
ORF Sequence: NM_001308465
Protein Sequence: Q9NS75

Alternative names:
HG57, CYSLT2 or GPCR21



Dopamine Receptor D1

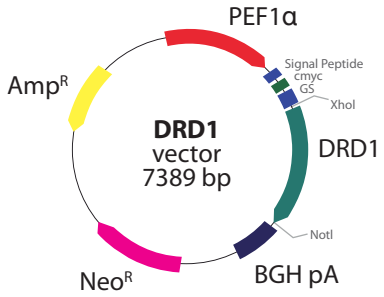
Description:
Dopamine Receptor D1, encoded in Humans by DRD1 gene. It stimulates adenylyl cyclase and activates cyclic AMP-dependent protein kinases. DRD1 is the most abundant dopamine receptor in the Central Nervous System and regulates neuronal growth and development, mediates some behavioral responses and modulates dopamine receptor D2-mediated events.

Ordering info:

Cat No.	Size
G0545	15 µg
G0545-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7389 bp
Promoter: PEF1α
ORF Sequence: NM_000794.3
Protein Sequence: P21728

Alternative names:
DADR or DRD1A



Dopamine Receptor D2

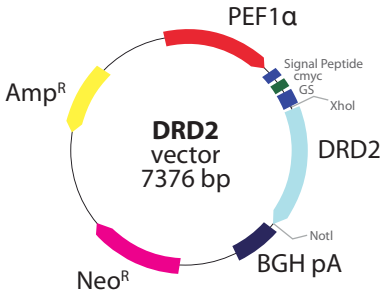
Description:
Dopamine receptor D2 is a member of the GPCR family and it is encoded in Humans by the DRD2 gene. Alternative splicing of this gene results in two different isoforms. There is a third form but it is not known whether it is actually a splicing aberration or a normal form.
A missense mutation in this gene causes myoclonus dystonia and others mutations have been associated with schizophrenia. It inhibits adenylyl cyclase activity. Regulating the expression of this receptor in mice, controls synaptic plasticity, memory and exploration.

Ordering info:

Cat No.	Size
G0546	15 µg
G0546-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7376 bp
Promoter: PEF1α
ORF Sequence: NM_000795.3
Protein Sequence: P14416

Alternative names:
D2R or D2DR



Dopamine Receptor D5

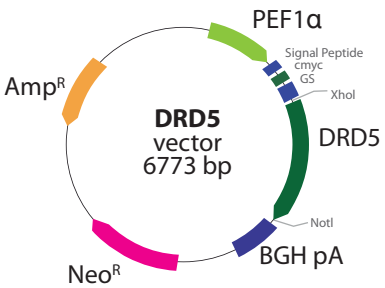
Description:
Dopamine receptor D5 is encoded in Humans by the DRD5 gene. It stimulates adenylyl cyclase. DRD5 is expressed in neurons, in the limbic regions of the brain and has an affinity to dopamine 10-fold higher than the DRD1. DRD1 and DRD5 have a high structural homolgy and few ligands are capable of distinguishing between them. Dihydrexidine is a agonist ligand of this receptor. DRD5 has been shown to interact with GABRG2.

Ordering info:

Cat No.	Size
G0547	15 µg
G0547-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6773 bp
Promoter: PEF1α
ORF Sequence: NM_000798.4
Protein Sequence: P21918

Alternative names:
DBDR, DRD1B or DRD1L2



Endothelin Receptor type B

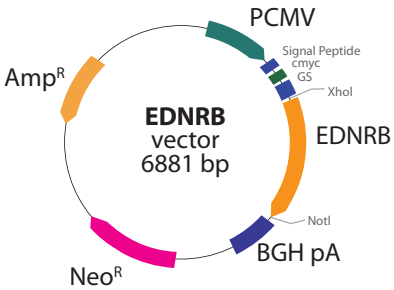
Description:
Endothelin receptor type B is a member of the GPCR family, encoded in Humans by the EDNRB gene. Alternatively spliced transcript variants encoding different isoforms have been found for this gene and it exhibit different responses upon binding. Mutations in this gene cause Hirschsprung disease type 2 and in melanocytic cells, the mutated EDNRB gene is linked to Waadenburg syndrome. It activates a phosphatidylinositol-calcium second messenger system.

Ordering info:

Cat No.	Size
G0548	15 µg
G0548-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6881 bp
Promoter: PCMV
ORF Sequence: NM_000115.3
Protein Sequence: P24530

Alternative names:
ETB, ET-B, ETB1 or ETBR



Formyl Peptide Receptor 1

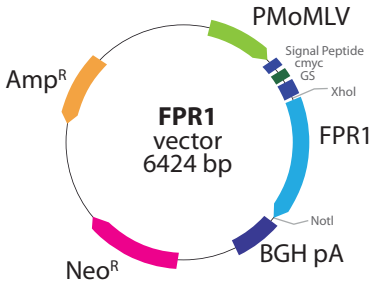
Description:
Formyl peptide receptor 1 is encoded in Humans by the FPR1 gene that encodes a receptor of mammalian phagocytic cells. It is a member of the GPCR family and is Gi protein-coupled receptor. FPR1 mediates the response of phagocytic cells to invasion of the host by microorganisms and is important in host defense and inflammation. Activations of FPRs mediate induction of neutrophil chemotaxis, production of reactive oxygen species and stimulation of degranulation of neutrophils.

Ordering info:

Cat No.	Size
G0585	15 µg
G0585-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6424 bp
Promoter: PMoMLV
ORF Sequence: NM_002029.3
Protein Sequence: P21462

Alternative names:
FPR or FMLP



Formyl Peptide Receptor 3

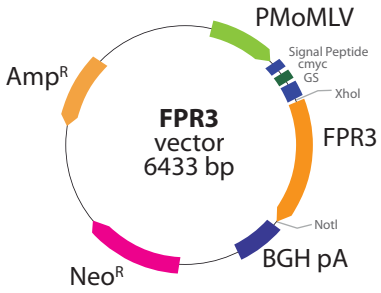
Description:
Formyl peptide receptor 3 is encoded in Humans by the FPR3 gene that encodes a receptor of mammalian phagocytic cells and found at lower expression levels on endothelial cells, neurons, astrocytes and hepatocytes. It is a member of the GPCR family and is Gi protein-coupled receptor. Binding of N-formyl-methionyl peptides to the receptor causes activation of neutrophils.

Ordering info:

Cat No.	Size
G0586	15 µg
G0586-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6433 bp
Promoter: PMoMLV
ORF Sequence: NM_002030.3
Protein Sequence: P25089

Alternative names:
FMLPY, FPRH1, FPRH2 or FPRL2



Free fatty acid receptor 1

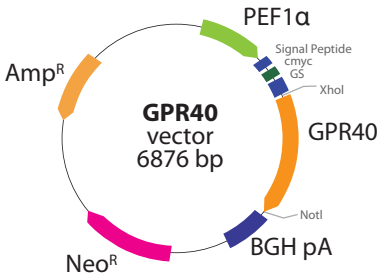
Description:
It is a member of the GP40 family of GPCRs that are clustered together on chromosome 19. It is a receptor for medium and long chain free fatty acids and may be involved in the metabolic regulation of insulin secretion. Polymorphisms in the gene may be associated with type 2 diabetes.

Ordering info:

Cat No.	Size
G0550	15 µg
G0550-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6876 bp
Promoter: PEF1α
ORF Sequence: NM_005303
Protein Sequence: O14842

Alternative names:
FFAR1 or FFA1R



Free fatty acid receptor 2

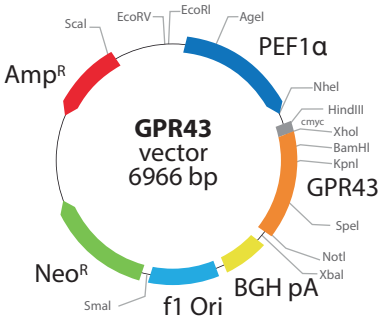
Description:
The gene encodes a member of the GP40 family of GPCRs that are clustered together on chromosome 19. The encoded protein is a receptor for short chain free fatty acids and may be involved in the inflammatory response and in regulating lipid plasma levels.

Ordering info:

Cat No.	Size
G0553	15 µg
G0553-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6966 bp
Promoter: PEF1α
ORF Sequence: NM_005306
Protein Sequence: O15552

Alternative names:
FFA2R or FFAR2



Free fatty acid receptor 3

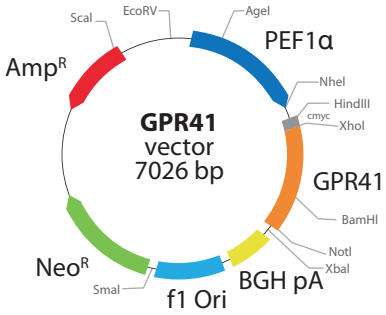
Description:
It is a member of the GP40 family of GPCRs that are clustered together on chromosome 19. Fermentation end products, especially short chain fatty acids, are believed to engage the epigenetic regulation of inflammatory reactions via FFARs (free fatty acid receptor) and other short chain fatty acid receptors. Polymorphisms in the gene may be associated with type 2 diabetes.

Ordering info:

Cat No.	Size
G0551	15 µg
G0551-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7026 bp
Promoter: PEF1α
ORF Sequence: NM_005304
Protein Sequence: O14843

Alternative names:
FFAR3 or FFA3R



Frizzled class receptor 1

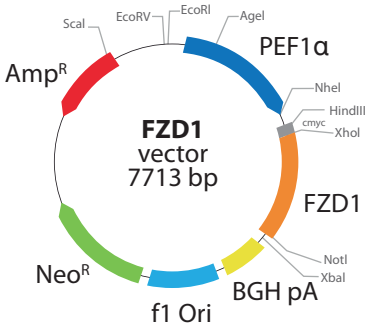
Description:
Members of the 'frizzled' gene family encode 7-transmembrane domain proteins that are receptors for Wnt signaling proteins. The FZD1 protein incorporates a signal peptide, a cysteine-rich domain in the N-terminal extracellular region, 7 transmembrane domains and a C-terminal PDZ domain-binding motif. The FZD1 transcript is expressed in various tissues.

Ordering info:

Cat No.	Size
G0554	15 µg
G0554-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7713 bp
Promoter: PEF1α
ORF Sequence: NM_003505
Protein Sequence: Q9UP38

Alternative names:
fz-1, fzE1 or hFz1



Frizzled class receptor 2

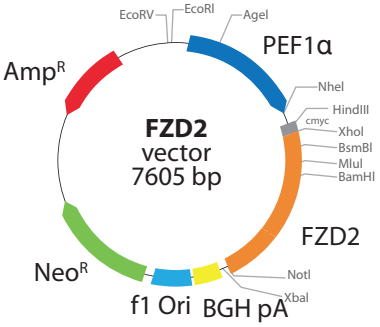
Description:
The gene is intronless gene, is a member of the frizzled gene family. Members of this gene family encode seven-transmembrane domain proteins that are receptors for the wingless type MMTV integration site family of signaling proteins. It that is coupled to the beta-catenin canonical signaling pathway. Competition between the wingless-type MMTV integration site family, member 3A and wingless-type MMTV integration site family, member 5A gene products for binding of this protein is thought to regulate the beta-catenin-dependent and beta-catenin-independent pathways.

Ordering info:

Cat No.	Size
G0555	15 µg
G0555-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7605 bp
Promoter: PEF1α
ORF Sequence: NM_001466
Protein Sequence: Q14332

Alternative names:
Fz2, fz-2, fzE2 or hFz2



Frizzled class receptor 7

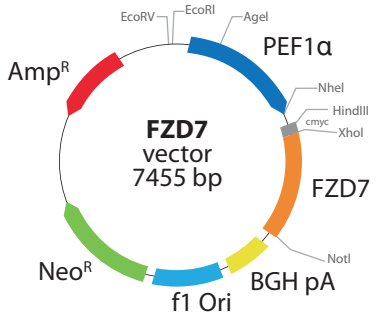
Description:
Members of the 'frizzled' gene family encode 7-transmembrane domain proteins that are receptors for Wnt signaling proteins. The FZD7 protein incorporates an N-terminal signal sequence, 10 cysteine residues typical of the cysteine-rich extracellular domain of Fz family members, 7 putative transmembrane domains and an intracellular C-terminal tail with a PDZ domain-binding motif. FZD7 gene expression may downregulate APC function and enhance beta-catenin-mediated signals in poorly differentiated Human esophageal carcinomas.

Ordering info:

Cat No.	Size
G0556	15 µg
G0556-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7455 bp
Promoter: PEF1α
ORF Sequence: BC015915
Protein Sequence: O75084

Alternative names:
FzE3



Frizzled class receptor 9

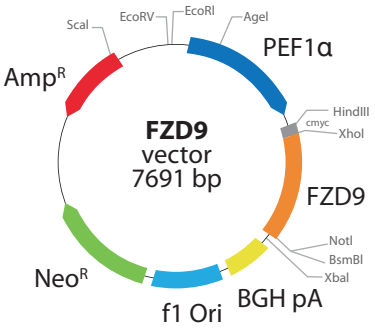
Description:
Members of the 'frizzled' gene family encode 7-transmembrane domain proteins that are receptors for Wnt signaling proteins. The FZD9 gene is located within the Williams syndrome common deletion region of chromosome 7 and heterozygous deletion of the FZD9 gene may contribute to the Williams syndrome phenotype. FZD9 is expressed predominantly in brain, testis, eye, skeletal muscle and kidney.

Ordering info:

Cat No.	Size
G0557	15 µg
G0557-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7691 bp
Promoter: PEF1α
ORF Sequence: NM_003508
Protein Sequence: O00144

Alternative names:
FZD3 or CD349



Frizzled class receptor 10

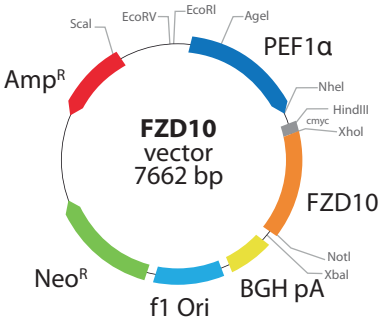
Description:
The gene is a member of the frizzled gene family. Members of this family encode 7-transmembrane domain proteins that are receptors for the Wingless type MMTV integration site family of signaling proteins.
Most frizzled receptors are coupled to the beta-catenin canonical signaling pathway. Using array analysis, expression of this intronless gene is significantly up-regulated in two cases of primary colon cancer.

Ordering info:

Cat No.	Size
G0558	15 µg
G0558-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7662 bp
Promoter: PEF1α
ORF Sequence: NM_007197
Protein Sequence: Q9ULW2

Alternative names:
Fz10, FzE7 or CD350



G protein-coupled Estrogen Receptor 1

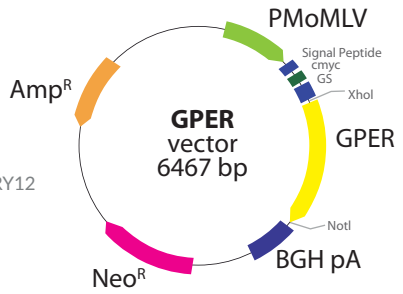
Description:
G protein-coupled Estrogen receptor 1 is a member of the GPCR family and is encoded in Humans by the GPER gene. Alternate transcriptional splice variants that encode the same protein have been characterized.
It is a member of the rhodopsin-like family and is localized to the endoplasmic reticulum membrane. GPER binds estrogen with high affinity, resulting in intracellular calcium mobilization and synthesis of phosphatidylinositol 3,4,5-trisphosphate in the nucleus.

Ordering info:

Cat No.	Size
G0549	15 µg
G0549-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6467 bp
Promoter: PMoMLV
ORF Sequence: NM_001505.2
Protein Sequence: Q99527

Alternative names:
GPER, mER, CEPR, GPER1 or DRY12



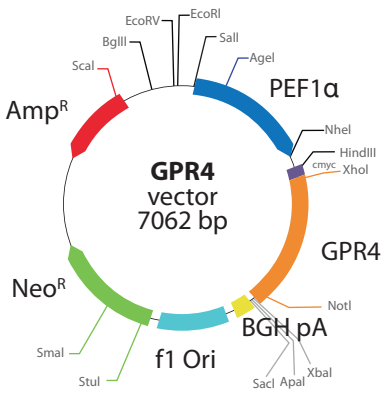
G protein-coupled receptor 4

Description:
GPCR 4 (GPR4) is a GPCR activated by sphingosylphosphorylcholine (SPC) and lysophosphatidylcholine (LPC). GPR4 has been known to play a critical role in the tube formation of vascular endothelial cells and GPR4 overexpression is observed in various types of malignancies, suggesting its involvement in the cancer-related angiogenesis.

Ordering info:

Cat No.	Size
G0622	15 µg
G0622-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7062 bp
Promoter: PEF1α
ORF Sequence NM_005282
Protein Sequence: P46093



G protein-coupled receptor 37

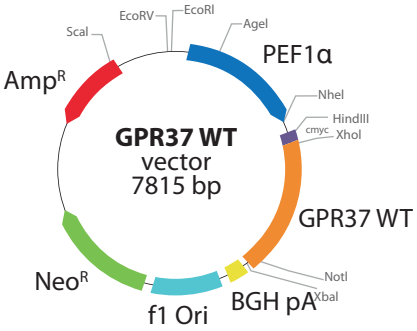
Description:
It incorporates seven transmembrane domains and is found in cell and endoplasmic reticulum membranes. GPCRs are involved in translating outside signals into G protein mediated intracellular effects. The gene product interacts with Parkin and is involved in juvenile Parkinson disease.

Ordering info:

Cat No.	Size
G0641	15 µg
G0641-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7815 bp
Promoter: PEF1α
ORF Sequence: NM_005302
Protein Sequence: O15354

Alternative names:
PAELR, EDNRBL or hET(B)R-LP



G protein-coupled receptor 42

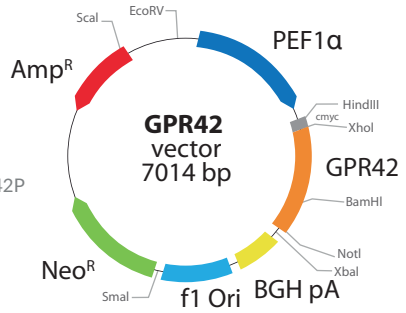
Description:
GPR41 and *GPR42* are two closely related genes that are part of a cluster of four adjacent GPCRs (GPR40, 41, 42 and 43) localized on Human chromosome 19. There are only six nucleotide and amino acid differences between GPR41 and GPR42. High sequence homology between these two genes suggests that it is the result of a recent duplication event.
Mutagenesis studies have previously shown that amino acid 174 is important for functional signaling since conversion of R174 (found in GPR41) to W174 (found in GPR42) silences the response to short chain fatty acids, raising the possibility that GPR42 might be an inactive pseudogene.

Ordering info:

Cat No.	Size
G0552	15 µg
G0552-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7014 bp
Promoter: PEF1α
ORF Sequence: NM_005305
Protein Sequence: O15529

Alternative names:
FFAR1L, FFAR3L, GPR41L or GPR42P



G protein-coupled receptor 65

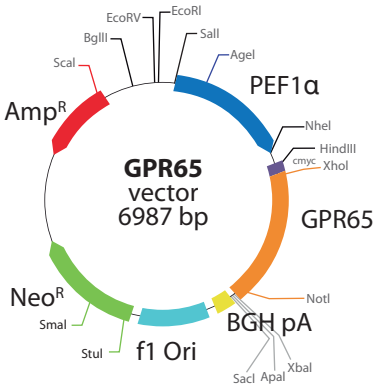
Description:
A family of GPCRs, including GPR4, GPR65, GPR68 and GPR132, has been identified as proton sensors. GPR65 is highly expressed in lymphoid tissues and lymphoma and leukemia cell lines. Both tumor-promoting and tumor-suppressing activities of GPR65 have been reported.

Ordering info:

Cat No.	Size
G0623	15 µg
G0623-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6987 bp
Promoter: PEF1α
ORF Sequence: NM_003608
Protein Sequence: Q8IYL9

Alternative names:
TDAG8 or hTDAG8



G protein-coupled receptor 68

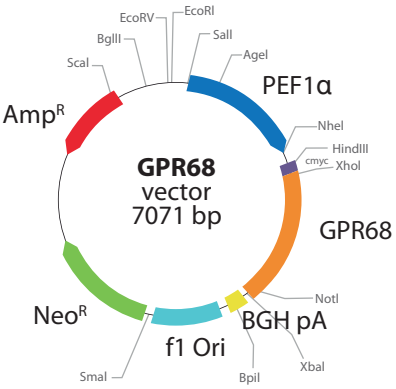
Description:
GPR68 gene is a tumor metastasis suppressor in prostate cancer (PCa). GPR68 knockout mice (ogr1(-/-)) are grossly normal under physiological conditions, however, reduced melanoma tumorigenesis has been observed.

Ordering info:

Cat No.	Size
G0124	15 µg
G0124-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7071 bp
Promoter: PEF1α
ORF Sequence: NM_003485
Protein Sequence: Q15743

Alternative names:
OGR1 or GPR12A



G protein-coupled Receptor 119

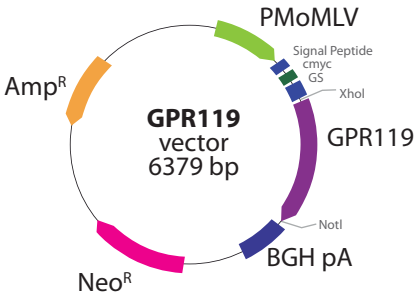
Description:
G protein-coupled receptor 119 is encoded in Humans by the GPR119 gene. It is a member of the rhodopsin subfamily GPCRthat is expressed in the pancreas and gastrointestinal tract. It is activated by lipid amides including lysophosphatidyl-choline and oleoylethanolamide and may be involved in glucose homeostasis through modulation of insulin secretion. GPR119 is target in the treatment of type 2 diabetes and obesity.

Ordering info:

Cat No.	Size
G0595	15 µg
G0595-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6379 bp
Promoter: PMoMLV
ORF Sequence: NM_178471.2
Protein Sequence: Q8TDV5

Alternative names:
GPR119 or GPCR2



GPR23, see in Lysophosphatidic acid Receptor 4 (p.63)

GPR40, see in Free Fatty Acid Receptor 1 (p.55)

GPR41, see in Free Fatty Acid Receptor 3 (p.56)

GPR43, see in Free Fatty Acid Receptor 2 (p.55)

GPR44, see in Prostaglandin D2 Receptor 2 (p.68)

GPR48, see in Leucine-rich repeat containing G protein-coupled Receptor 4 (p.62)

GPR49, see in Leucine-rich repeat containing G protein-coupled Receptor 5 (p.62)

GPR55, see in Cannabinoid 3 Receptor (p.46)

GPR77, see in Anaphylatoxin GPR77 (p.42)

GPR81, see in Hydroxycarboxylic acid Receptor 1 (p.61)

GPR91, see in Succinate Receptor 1 (p.72)

GPR92, see in Lysophosphatidic acid Receptor 4 (p.63)

GPR109A, see in Hydroxycarboxylic acid Receptor 2 (p.61)

GPR109B, see in Hydroxycarboxylic acid Receptor 3 (p.62)

G protein-coupled Receptor 161

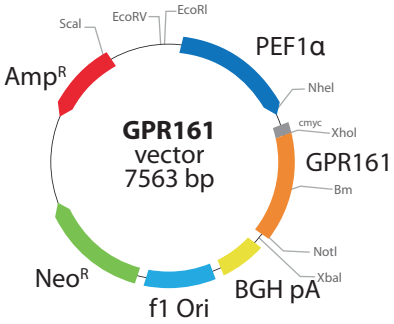
Description:
Upon ligand binding, GPCRs, such as GPR161, activate cytoplasmic G proteins, allowing the receptors to transduce extracellular signals across the plasma membrane into the cell. Phosphorylation of the receptor attenuates signaling.

Ordering info:

Cat No.	Size
G0639	15 µg
G0639-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7563 bp
Promoter: PEF1α
ORF Sequence: NM_007369
Protein Sequence: Q8N6U8

Alternative names:
RE2



Galanin Receptor 1

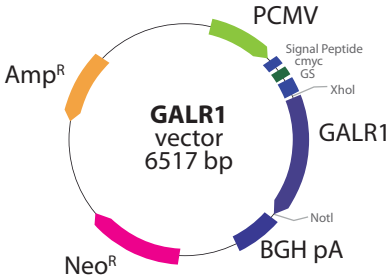
Description:
Galanin receptor 1 is a member of the GPCR family, or metabotropic receptor and is encoded in Humans by the GAL1R gene. The neuropeptide galanin is ligand of this receptor and participates in a wide range of biological effects. GALR1 inhibits adenylyl cyclase via Gi/Go protein.
It is expressed in the brain, spinal cord, small intestine and heart. Selective galanin agonists are anticonvulsant, while antagonists produce antidepressant and anxiolytic effects in animals, so these ligands for the galanin receptors may be potentially therapeutic compounds in Humans.

Ordering info:

Cat No.	Size
G0559	15 µg
G0559-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6517 bp
Promoter: PCMV
ORF Sequence: NM_001480.3
Protein Sequence: P47211

Alternative names:
GALNR or GALNR1



Gastrin Releasing Peptide Receptor

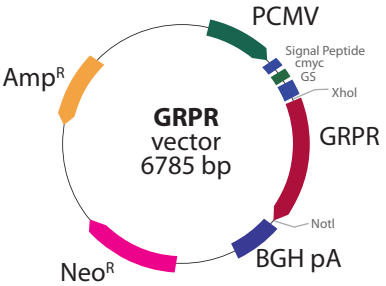
Description:
The gastrin-releasing peptide receptor (GRPR) is a GPCR whose endogenous ligand is gastrin releasing peptide. In Humans, it is highly expressed in the pancreas although it is also expressed in the stomach, adrenal cortex and brain. Moreover the receptor is aberrantly expressed in numerous cancers such as those of the lung, colon and prostate.

Ordering info:

Cat No.	Size
G0513	15 µg
G0513-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6785 bp
Promoter: PCMV
ORF Sequence: NM_005314.2
Protein Sequence: P30550

Alternative names:
BB2



Growth Hormone Secretagogue Receptor

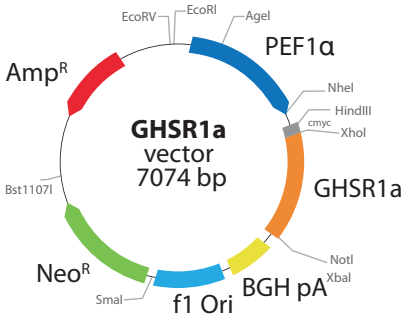
Description:
It may play a role in energy homeostasis and regulation of body weight. Two identified transcript variants are expressed in several tissues and are evolutionary conserved in fish and swine.
The transcript, 1a, excises an intron and encodes the functional protein, this protein is the receptor for the Ghrelin ligand and defines a neuroendocrine pathway for growth hormone release. Mutations in the gene are associated with autosomal idiopathic short stature.

Ordering info:

Cat No.	Size
G0640	15 µg
G0640-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7074 bp
Promoter: PEF1α
ORF Sequence: NM_198407
Protein Sequence: Q92847

Alternative names:
GHDP



Histamine Receptor H1

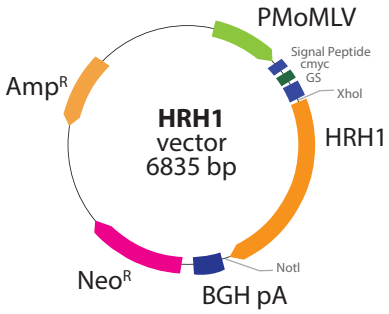
Description:
Histamine Receptor H1 is a member of the Rhodopsin like GPCR family. It is activated by the biogenic amine histamine. HRH1 is expressed in smooth muscles, in the heart and in the Central Nervous System. It is linked to an intracellular G-protein (Gq) that activates phospholipase C and the phosphatidylinositol signaling pathway. Antihistamines are used as anti-allergic Drugs. The production of prostaglandin E2 synthase induces the histamine release from neurons, causing systemic vasodilation, contraction of smooth muscles and increased capillary permeability due to its action on HRH1.

Ordering info:

Cat No.	Size
G0561	15 µg
G0561-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6835 bp
Promoter: PMoMLV
ORF Sequence: NM_000861
Protein Sequence: P35367

Alternative names:
H1R, H1-R, HH1R or hisH1



Histamine Receptor H2

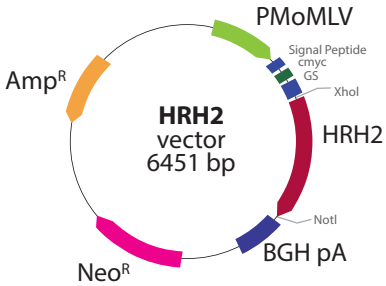
Description:
Histamine Receptor H2 is a member of the Rhodopsin like GPCR family. HRH2 is positively coupled to adenylate cyclase via Gs and is a potent stimulant of cAMP production, increases the intracellular Ca2+ levels and releases Ca2+ from intracellular stores. It is in the gastric parietal cells, vascular smooth muscle, neutrophils, Central Nervous System, heart and uterus. HRH2 stimulates gastric acid secretion, regulates gastrointestinal motility and intestinal secretion, smooth muscle relaxation and inhibit antibody production, T-cell proliferation and cytokine synthesis.

Ordering info:

Cat No.	Size
G0562	15 µg
G0562-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6451 bp
Promoter: PMoMLV
ORF Sequence: NM_022304.2
Protein Sequence: P25021

Alternative names:
H2R



Hydroxycarboxylic Acid Receptor 1

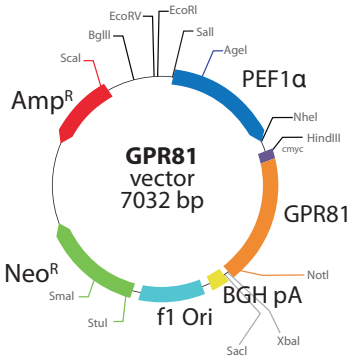
Description:
It contains 7 transmembrane domains and transduces extracellular signals through heterotrimeric G proteins. GPR81 is a lactate receptor recently identified in adipose and muscle cells. A recently research, showed that GPR81 was present in colon, breast, lung, hepatocellular, salivary gland, cervical and pancreatic carcinoma cell lines.

Ordering info:

Cat No.	Size
G0592	15 µg
G0592-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7032 bp
Promoter: PEF1α
ORF Sequence: AF345568
Protein Sequence: Q9BXC0

Alternative names:
HCA1, HCAR1, LACR1 or FKSG80



Hydroxycarboxylic acid receptor 2

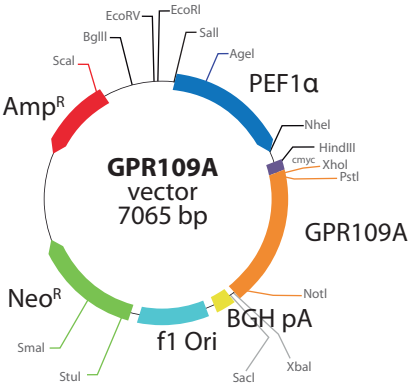
Description:
GPR109A is a G protein-coupled anti-inflammatory receptor. It is present in macrophages and neutrophils, at higher levels of expression than other Human organs and tissues. Its anti-inflammatory role is well-established in *in-vivo* and *in-vitro* studies.
GPR109A has a high affinity for niacin (also known as vitamin B3 or nicotinic acid) which also acts as its agonists and help suppress inflammation.

Ordering info:

Cat No.	Size
G0594	15 µg
G0594-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7065 bp
Promoter: PEF1α
ORF Sequence: NM_177551
Protein Sequence: Q8TDS4

Alternative names:
HCAR2, HCA2, HM74a or HM74b



Hydroxycarboxylic Acid Receptor 3

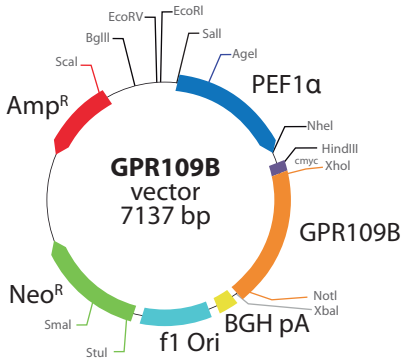
Description:
It contains 7 transmembrane domains and transduce extracellular signals through heterotrimeric G proteins. GPR109B is of particular interest given its ability to treat lipid disorders and atherosclerosis.

Ordering info:

Cat No.	Size
G0593	15 µg
G0593-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7137 bp
Promoter: PEF1α
ORF Sequence: NM_006018
Protein Sequence: P49019

Alternative names:
HCAR3, HCA3, HM74 or PUMAG



Leucine-rich repeat containing G protein-coupled Receptor 4

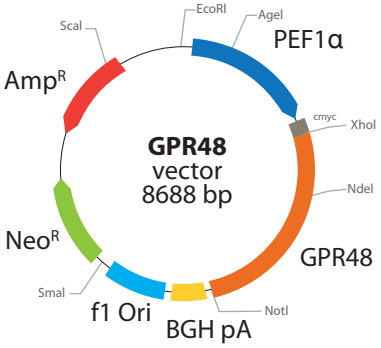
Description:
GPCRs play key roles in a variety of physiologic functions. Members of the leucine-rich GPCR (LGR) family, such as GPR48, have multiple N-terminal leucine-rich repeats (LRRs) and a 7-transmembrane domain. GPR48 deficiency causes developmental defects in several organs, including male reproductive tracts, gallbladder, cystic duct and bone.

Ordering info:

Cat No.	Size
G0637	15 µg
G0637-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 8688 bp
Promoter: PEF1α
ORF Sequence: NM_018490
Protein Sequence: Q9BXB1

Alternative names:
LGR4 or BNMD17



Leucine-rich repeat containing G protein-coupled Receptor 5

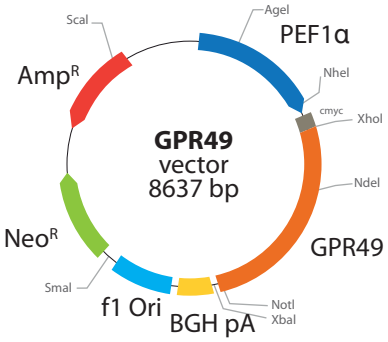
Description:
It is a leucine-rich repeat-containing receptor (LGR) and member of the G protein-coupled, 7-transmembrane receptor (GPCR) superfamily. It is a receptor for R-spondins and is involved in the canonical Wnt signaling pathway.
It plays a role in the formation and maintenance of adult intestinal stem cells during postembryonic development. Several transcript variants encoding different isoforms have been found for the gene.

Ordering info:

Cat No.	Size
G0638	15 µg
G0638-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 8637 bp
Promoter: PEF1α
ORF Sequence: BC096324
Protein Sequence: O75473

Alternative names:
LGR5, FEX or HG38



Leukotriene B4 Receptor

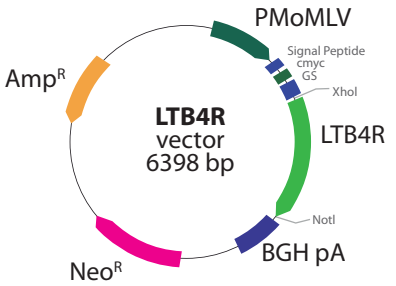
Description:
Leukotriene B4 Receptor is a G protein-coupled seven transmembrane domain receptors. Its gene is located in very close proximity to another leukotriene receptor, BLT2, both in the Human and mouse genomes. The two receptors differ in their affinity and specificity for LTB4 being LTB4R a high-affinity receptor specific for LTB4 and in their pattern of expression. LTB4R is expressed primarily in leukocytes. Reduced disease severity in animal inflammatory models seen with LTB4 receptor antagonists and in mice with targeted deletion of BLT1 have revealed important roles for LTB4 and its receptors in regulating pathologic inflammation.

Ordering info:

Cat No.	Size
G0564	15 µg
G0564-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6398 bp
Promoter: PMoMLV
ORF Sequence: NM_181657.3
Protein Sequence: Q15722

Alternative names:
BLT1, BLTR, P2Y7 or GPR16



Leukotriene B4 Receptor 2

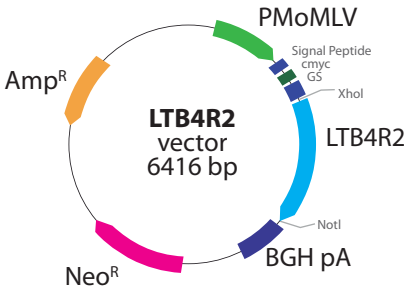
Description:
Leukotriene B4 Receptor 2 is a member of the GPCR family. Its gene is located in very close proximity to another leukotriene receptor, LTB4R, both in the Human and mouse genomes. The two receptors differ in their affinity and specificity for LTB4 being LTB4R2 a low-affinity receptor for leukotrienes, that also binds other eicosanoids.
The major function of this receptor is chemotaxis of granulocytes and macrophages. The response is mediated via G-proteins that activate a phosphatidylinositol-calcium second messenger system.

Ordering info:

Cat No.	Size
G0565	15 µg
G0565-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6416 bp
Promoter: PMoMLV
ORF Sequence: NM_019839.4
Protein Sequence: Q9NPC1

Alternative names:
BLT2, NOP9, BLTR2 or JULF2



Lipoxin Receptor (FPR2)

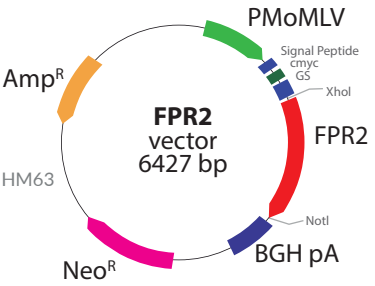
Description:
FPR2 is a seven-transmembrane domain phagocyte receptor with high affinity for lipoxin A4 and low affinity for bacterial chemotactic peptide fMLP, although it interacts with a large array of exogenous and endogenous ligands, including the chemokine variant sCKbeta8-1 and the neuroprotective peptide, Humanin. FPR2 is present on eosinophils, enterocytes and in crypt and brush border epithelial cells.

Ordering info:

Cat No.	Size
G0563	15 µg
G0563-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6427 bp
Promoter: PMoMLV
ORF Sequence: NM_001462
Protein Sequence: P25090

Alternative names:
Formyl peptide receptor 2, ALXR, HM63



Lysophosphatidic Acid Receptor 4

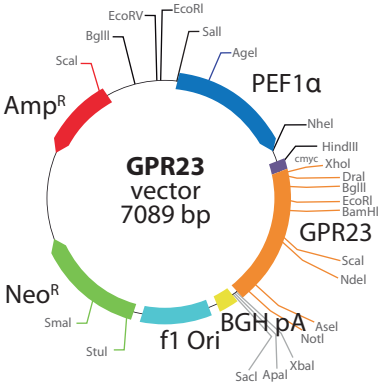
Description:
The gene encodes a member of the lysophosphatidic acid receptor family. It may also be related to the P2Y receptors, a family of receptors that bind purine and pyrimidine nucleotides and are coupled to G proteins. The encoded protein may play a role in monocytic differentiation.

Ordering info:

Cat No.	Size
G0569	15 µg
G0569-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7089 bp
Promoter: PEF1α
ORF Sequence: NM_005296
Protein Sequence: Q99677

Alternative names:
LPAR4, LPA4 or P2Y9



Lysophosphatidic Acid Receptor 5

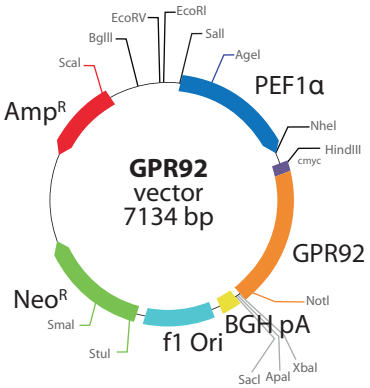
Description:
The gene encodes a member of the rhodopsin class of G protein-coupled transmembrane receptors. It transmits extracellular signals from lysophosphatidic acid to cells through heterotrimeric G proteins and mediates numerous cellular processes.
Many G protein receptors serve as targets for pharmaceutical Drugs. Transcript variants of the gene have been described.

Ordering info:

Cat No.	Size
G0570	15 µg
G0570-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7134 bp
Promoter: PEF1α
ORF Sequence: AJ272207
Protein Sequence: Q9H1C0

Alternative names:
LPAR5 or LPA5



Lysophosphatidic Acid Receptor 6

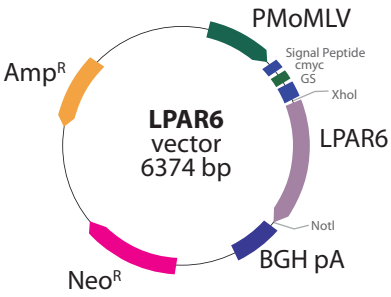
Description:
Lysophosphatidic acid receptor 6 is preferentially activated by adenosine and uridine nucleotides. In Humans is encoded by the *LPAR6* gene. LPAR6 receptor binds to oleoyl-L-alpha-lysophosphatidic acid. It is important for the maintenance of hair growth and texture. Intracellular cAMP is involved in the receptor activation. It is expressed ubiquitously, including in skin and hair follicle cells and at low levels in peripheral blood leukocytes.

Ordering info:

Cat No.	Size
G0607	15 µg
G0607-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6374 bp
Promoter: PMoMLV
ORF Sequence: NM_005767.5
Protein Sequence: P43657

Alternative names:
LAH3, P2RY5 or ARWH1



Melanocortin 1 Receptor

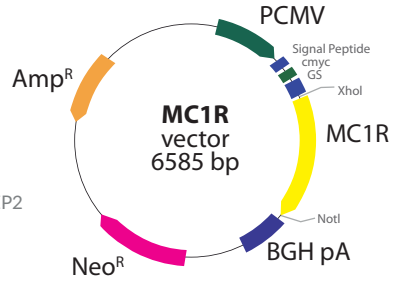
Description:
Melanocortin 1 Receptor is encoded in Humans by the *MC1R* gene. This gene is an important component in determining normal Human pigment variation. It is a member of the GPCR family and controls melanogenesis. Binding of MSH to its receptor activates the receptor and stimulates eumelanin synthesis. MC1R is a major factor in sun sensitivity and is a genetic risk factor for melanoma and non-melanoma skin cancer.

Ordering info:

Cat No.	Size
G0575	15 µg
G0575-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6585 bp
Promoter: PCMV
ORF Sequence: NM_002386.3
Protein Sequence: Q01726

Alternative names:
CMM5, MSH-R, SHEP2,
MGC14337, CMM5, MSH-R or SHEP2



Melanocortin 2 Receptor

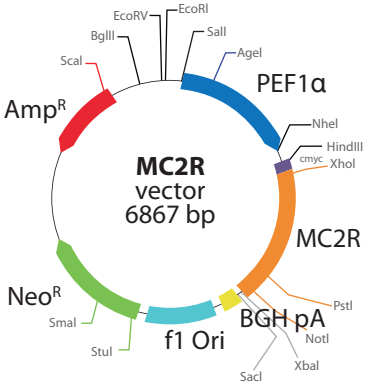
Description:
MC2 is a member of the five-member G-protein associated melanocortin receptor family. Melanocortins (melanocyte-stimulating hormones and adrenocorticotropic hormone) are peptides derived from pro-opiomelanocortin (POMC). MC2 is selectively activated by adrenocorticotropic hormone, whereas the other four melanocortin receptors recognize a variety of melanocortin ligands. Mutations in MC2 gene can result in familial glucocorticoid deficiency. Alternate transcript variants have been found for this gene.

Ordering info:

Cat No.	Size
G0576	15 µg
G0576-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6867 bp
Promoter: PEF1α
ORF Sequence: BC094710
Protein Sequence: Q01718

Alternative names:
ACTHR



Melanocortin 3 Receptor

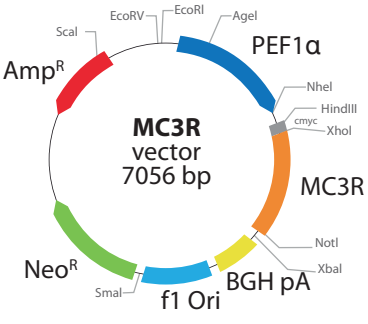
Description:
It is a GPCR for melanocyte-stimulating hormone and adrenocorticotropic hormone that is expressed in tissues other than the adrenal cortex and melanocytes. The gene maps to the same region as the locus for benign neonatal epilepsy.
Mice deficient for this gene have increased fat mass despite decreased food intake, suggesting a role for this gene product in the regulation of energy homeostasis. Mutations in the gene are associated with a susceptibility to obesity in Humans.

Ordering info:

Cat No.	Size
G0577	15 µg
G0577-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7056 bp
Promoter: PEF1α
ORF Sequence: BC098351
Protein Sequence: P41968

Alternative names:
MC3R, OB20, OQTL,
BMIQ9 or MC3-R



Melanocortin 4 Receptor

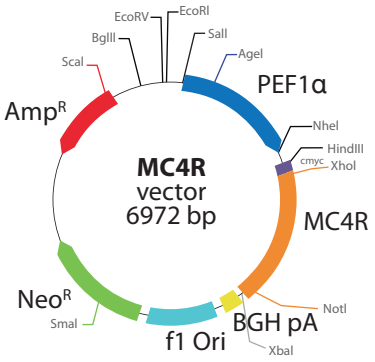
Description:
It is a membrane-bound receptor and member of the melanocortin receptor family. It interacts with adrenocorticotropic and MSH hormones and is mediated by G proteins. The gene is an intronless gene. Defects in this gene are a cause of autosomal dominant obesity.
Malfunction in the energy homeostasis system is a major cause of developing obesity. Melanocortin 4 receptor (MC4) plays a crucial role in this system as a key receptor.

Ordering info:

Cat No.	Size
G0578	15 µg
G0578-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6972 bp
Promoter: PEF1α
ORF Sequence: NM_005912
Protein Sequence: P32245

Alternative names:
MC4R



Melanocortin 5 receptor

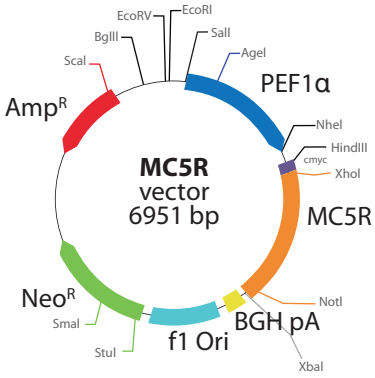
Description:
It is a member of the seven-pass transmembrane G protein-coupled melanocortin receptor protein family that stimulate cAMP signal transduction. MC5R protein is a receptor for melanocyte-stimulating hormone and adrenocorticotropic hormone and MC5 has been implicated in many different physiological fields such as lipid metabolism and exocrine function.

Ordering info:

Cat No.	Size
G0579	15 µg
G0579-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6951 bp
Promoter: PEF1α
ORF Sequence: NM_005913
Protein Sequence: P33032

Alternative names:
MC5R



Metabotropic Glutamate Receptor 4

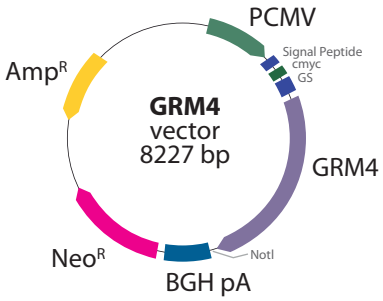
Description:
Metabotropic Glutamate Receptor 4 is a member of the GPCR family and is encoded in Humans by the GRM4 gene. GRM4, GRM6, GMR7 and GRM8 belong to group III of the metabotropic glutamate receptor. L-glutamate is the major excitatory neurotransmitter in the Central Nervous System and activates both ionotropic and metabotropic glutamate receptors.
These receptors inhibit of the cyclic AMP cascade. Activation of GRM4 has potential therapeutic benefits in the treatment of Parkinson´s disease. Taste GRM4 is involved in the perception of umami.

Ordering info:

Cat No.	Size
G0560	15 µg
G0560-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 8227 bp
Promoter: PCMV
ORF Sequence: NM_000841
Protein Sequence: Q14833

Alternative names:
mGlu4, MGLUR4, MGC177594, GPRC1D mGlu4, GPRC1D or MGLUR4



Neuropeptide Y Receptor 1

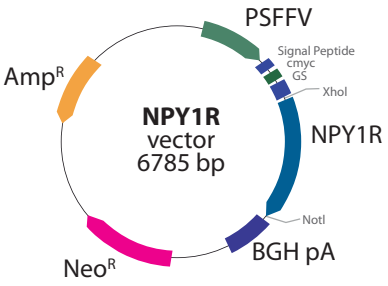
Description:
Neuropeptide Y Receptor 1 is a member of the Gi/o-protein-coupled receptor family. It is localized in brain, spleen, small intestine, kidney, testis, placenta and aortic smooth muscle.
In Humans, encoded by the NPY1R gene, NPY1R has effects on psychomotor activity, food intake, anxiolysis, regulation of central endocrine secretion, vasoactive effects on the cardiovascular system, pain transmission and control of pituitary hormone release.

Ordering info:

Cat No.	Size
G0588	15 µg
G0588-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6785 bp
Promoter: PCMV
ORF Sequence: NM_000909.5
Protein Sequence: P25929

Alternative names:
NPYR or NPY1-R



Neuropeptide Y Receptor Y2

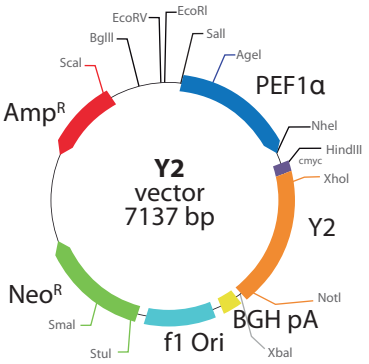
Description:
NPY is a 36-amino acid peptide present in the brain and Peripheral Nervous System in nerve endings, from which it is coreleased with norepinephrine (NE) during stress. Several observations suggest that NPY is an important neurotransmitter involved in the central and peripheral control of blood pressure. NPY stimulates at least six types of GPCRs, called Y1, Y2, Y3, Y4, Y5 and Y6. NPY also presynaptically inhibits the release of catecholamines through the Y2 receptor.

Ordering info:

Cat No.	Size
G0589	15 µg
G0589-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7137 bp
Promoter: PEF1α
ORF Sequence: AY236540
Protein Sequence: P49146

Alternative names:
NPY2R



Neuropeptide Y receptor Y4

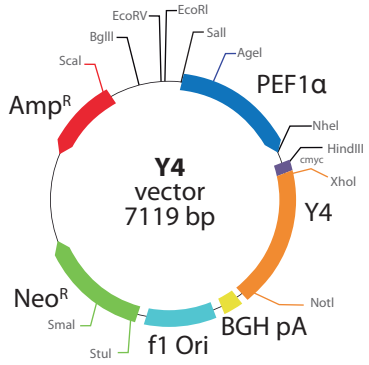
Description:
NPY is a 36-amino acid peptide present in the brain and Peripheral Nervous System in nerve endings, from which it is coreleased with norepinephrine (NE) during stress. Several observations suggest that NPY is an important neurotransmitter involved in the central and peripheral control of blood pressure. NPY stimulates at least six types of GPCRs, called Y1, Y2, Y3, Y4, Y5 and Y6. No functions in the cardiovascular system have been associated with the Y4 and Y5 receptors.

Ordering info:

Cat No.	Size
G0590	15 µg
G0590-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7119 bp
Promoter: PEF1α
ORF Sequence: AY268432
Protein Sequence: P50391

Alternative names:
NPY4R, PP1, PPYR1 or NPY4-R



Neuropeptide Y receptor Y5

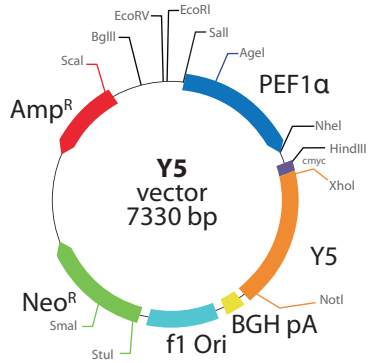
Description:
NPY is a 36-amino acid peptide present in the brain and Peripheral Nervous System in nerve endings, from which it is coreleased with norepinephrine (NE) during stress. Several observations suggest that NPY is an important neurotransmitter involved in the central and peripheral control of blood pressure. NPY stimulates at least six types of GPCRs, called Y1, Y2, y3, Y4, Y5 and Y6. No functions in the cardiovascular system have been associated with the Y4 and Y5 receptors.

Ordering info:

Cat No.	Size
G0591	15 µg
G0591-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7330 bp
Promoter: PEF1α
ORF Sequence: NM_006174
Protein Sequence: Q15761

Alternative names:
NPYR5, NPY5-R or NPYY5-R



Neuropeptides B/W Receptor 2

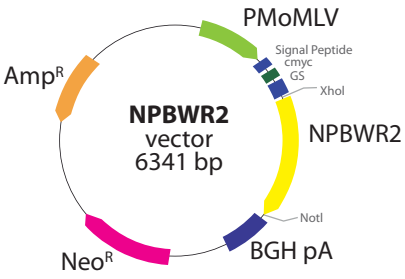
Description:
Neuropeptide B/W Receptor 2 is encoded in Humans by the NPBWR2 gene. It is similar to GPR7 and it is structurally similar to opioid and somatostatin receptors and is expressed primarily in the frontal cortex of the brain and at moderate levels in the adult brain, thalamus, pituitary gland and adrenal gland and lymph nodes. NPBWR2 binds neuropeptides B and W, which may be involved in neuroendocrine system regulation, food intake and the organization of other signals.

Ordering info:

Cat No.	Size
G0587	15 µg
G0587-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6341 bp
Promoter: PMoMLV
ORF Sequence: NM_005286.2
Protein Sequence: P48146

Alternative names:
GPR8



Oxoeicosanoid (OXE) Receptor 1

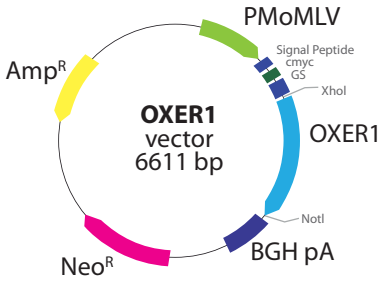
Description:
Oxoeicosanoid Receptor 1 (OXER1) is a member of the GPCR family and seems to be coupled to the Gi/Go, families of heteromeric G proteins. It is a member of the leukotriene receptors and is expressed in liver, kidney, peripheral leukocyte, lung and spleen and in high concentrations on eosinophils, neutrophils and monocytes. Its major function is chemotaxis and intracellular calcium mobilization. OXER1 is receptor for eicosanoids and polyunsaturated fatty acids and arachidonic acid.

Ordering info:

Cat No.	Size
G0568	15 µg
G0568-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6611 bp
Promoter: PMoMLV
ORF Sequence: NM_148962.4
Protein Sequence: Q8TDS5

Alternative names:
GPCR, GPR170 or TG1019



Oxoglutarate Receptor 1

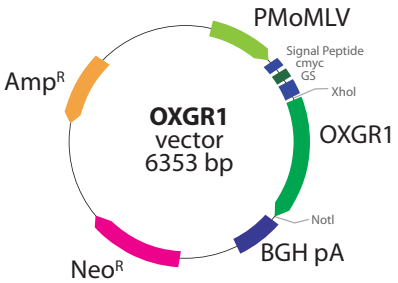
Description:
Human oxoglutarate (alpha-ketoglutarate) receptor 1 (OXGR1) is encoded by the OXGR1 gene that is expressed in kidney and, to a lower extend, in placenta, not detected in brain tissues. It is a member of the GPCR family and is similar to the Purinergic P2Y receptors. OXGR1 is receptor for alpha-ketoglutarate, an intermediate in the citric acid cycle. Because OXGR1 activation did not affect cAMP levels and both inositol phosphate formation and calcium ion flux were found to be insensitive to pertussis toxin, this receptor seems to act exclusively through a G(q)-mediated pathway.

Ordering info:

Cat No.	Size
G0635	15 µg
G0635-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6353 bp
Promoter: PMoMLV
ORF Sequence: NM_080818.3
Protein Sequence: Q96P68

Alternative names:
aKGR, GPR80, GPR99, P2Y15 or P2RY15



Platelet-activating Factor Receptor

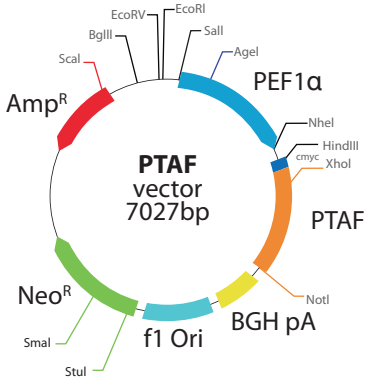
Description:
It is a seven-transmembrane GPCR for platelet-activating factor (PAF) that localizes to lipid rafts and/or caveolae in the cell membrane.
PAF (1-0-alkyl-2-acetyl-sn-glycero-3-phosphorylcholine) is a phospholipid that plays a significant role in oncogenic transformation, tumor growth, angiogenesis, metastasis and pro-inflammatory processes.

Ordering info:

Cat No.	Size
G0596	15 µg
G0596-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7027 bp
Promoter: PEF1α
ORF Sequence: NM_000952
Protein Sequence: P25105

Alternative names:
PTAFR



Prolactin Releasing Hormone Receptor

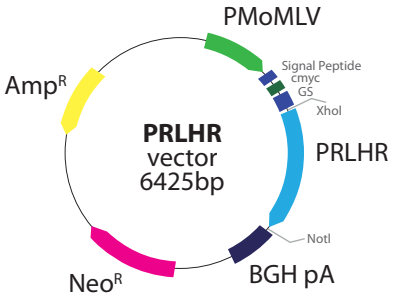
Description:
Prolactin Releasing Hormone Receptor is encoded in Humans by the PRPLHR gene. It is a member of the GPCR family for prolactin-releasing hormone that is highly expressed in anterior pituitary. PRLHR is implicated in lactation, regulation of food intake and pain-signal processing.

Ordering info:

Cat No.	Size
G0597	15 µg
G0597-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6425 bp
Promoter: PMoMLV
ORF Sequence: NM_004248.2
Protein Sequence: P49683

Alternative names:
GR3, GPR10 or PrRPR



Prostaglandin D2 receptor 2

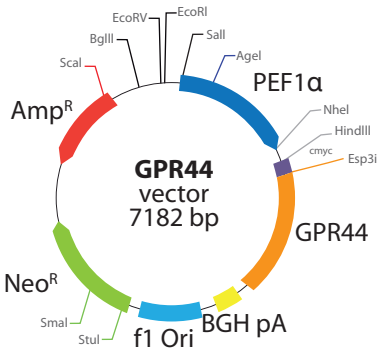
Description:
It is a GPCR that is preferentially expressed in CD4+ effector T helper 2 (Th2) cells. It is a prostaglandin D2 receptor that mediates the pro-inflammatory chemotaxis of eosinophils, basophils and Th2 lymphocytes generated during allergic inflammation. Single nucleotide polymorphisms in the 3' UTR of the gene have been associated with asthma susceptibility.

Ordering info:

Cat No.	Size
G0598	15 µg
G0598-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7182 bp
Promoter: PEF1α
ORF Sequence: NM_004778
Protein Sequence: Q9Y5Y4

Alternative names:
PTGDR2, DP2, DL1R, CD294 or CRTH2



Purinergic Receptor P2RY12

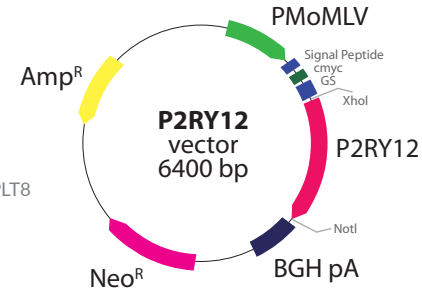
Description:
Purinergic Receptor P2RY12, is encoded in Human by the P2RY12 gene. P2RY12 is found in most Human tissues. It is a member of the GPCR family that responds to extracellular purine and pyrimidine nucleotides.
It is involved in platelets aggregation, muscle contraction, neurotransmission and epithelial cell communication and migration and is a potential target for the treatment of thromboembolisms and other clotting disorders.

Ordering info:

Cat No.	Size
G0602	15 µg
G0602-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6400 bp
Promoter: PMoMLV
ORF Sequence: NM_176876
Protein Sequence: Q9H244

Alternative names:
HORK3, P2Y12, ADPG-R or BDPLT8



Purinergic Receptor P2RY13

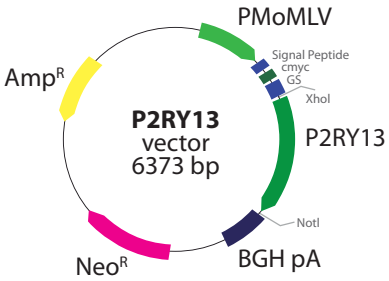
Description:
Purinergic receptor P2Y, G-protein coupled 13 is encoded in Humans by the P2RY13 gene. It is a member of the GPCR family. P2RY13 is activated by ADP and respond to extracellular purine and pyrimidine nucleotides. It is found in most Human tissues and has diverse physiological roles including regulation of platelet aggregation, muscle contraction, neurotransmission and epithelial cell communication and migration.

Ordering info:

Cat No.	Size
G0603	15 µg
G0603-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6373 bp
Promoter: PMoMLV
ORF Sequence: NM_176894.2
Protein Sequence: Q9BPV8

Alternative names:
GPCR1, GPR86, GPR94 or P2Y13



Purinergic Receptor P2RY1

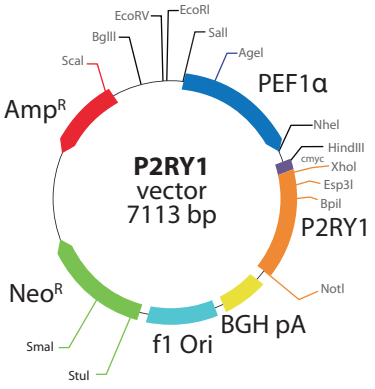
Description:
This family has several receptor subtypes with different pharmacological selectivity, which overlaps in some cases, for various adenosine and uridine nucleotides. It functions as a receptor for extracellular ATP and ADP. In platelets binding to ADP leads to mobilization of intracellular calcium ions via activation of phospholipase C, a change in platelet shape and probably to platelet aggregation.

Ordering info:

Cat No.	Size
G0600	15 µg
G0600-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7113 bp
Promoter: PEF1α
ORF Sequence: NM_002563
Protein Sequence: P47900

Alternative names:
P2Y1



Pyrimidinergic Receptor P2RY4

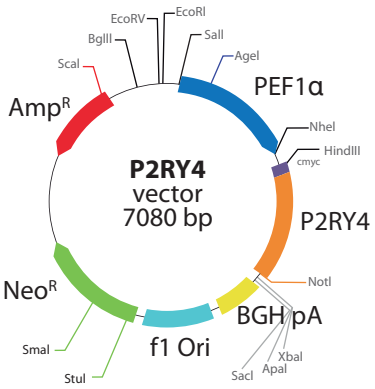
Description:
It has several receptor subtypes with different pharmacological selectivity, which overlaps in some cases, for various adenosine and uridine nucleotides. It is responsive to uridine nucleotides, partially responsive to ATP and not responsive to ADP.

Ordering info:

Cat No.	Size
G0606	15 µg
G0606-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7080 bp
Promoter: PEF1α
ORF Sequence: NM_002565
Protein Sequence: P51582

Alternative names:
NRU, P2P, UNR or P2Y4



Pyrimidinergic Receptor P2RY6

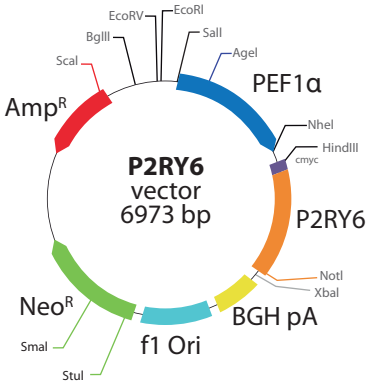
Description:
It belongs to the family of P2 receptors, which is activated by extracellular nucleotides and subdivided into P2X ligand-gated ion channels and P2Y GPCRs. This family has several receptor subtypes with different pharmacological selectivity, which overlaps in some cases, for various adenosine and uridine nucleotides. This receptor is responsive to UDP, partially responsive to UTP and ADP and not responsive to ATP. It is proposed that this receptor mediates inflammatory responses.

Ordering info:

Cat No.	Size
G0608	15 µg
G0608-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6973 bp
Promoter: PEF1α
ORF Sequence: NM_004154
Protein Sequence: Q15077

Alternative names:
P2Y6



Purinergic Receptor P2RY11

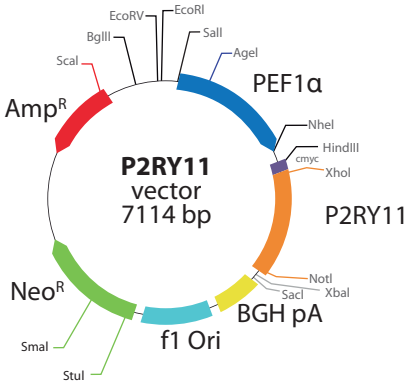
Description:
It is coupled to the stimulation of the phosphoinositide and adenylyl cyclase pathways and behaves as a selective purinoceptor. Naturally occuring read-through transcripts, resulting from intergenic splicing between the gene and an immediately upstream gene (PPAN, encoding peter pan homolog), have been found. The PPAN-P2RY11 read-through mRNA is ubiquitously expressed and encodes a fusion protein that shares identity with each individual gene product.

Ordering info:

Cat No.	Size
G0601	15 µg
G0601-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7114 bp
Promoter: PEF1α
ORF Sequence: NM_002566
Protein Sequence: Q96G91

Alternative names:
P2Y11



Purinergic Receptor P2RY14

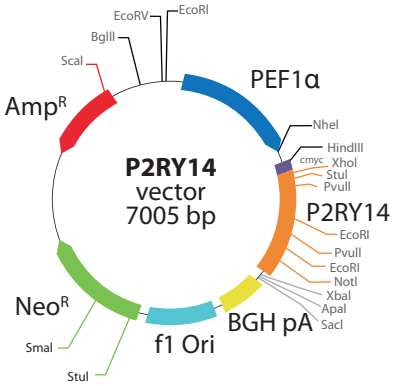
Description:
It incorporates several receptor subtypes with different pharmacological selectivity for various adenosine and uridine nucleotides. It is a P2Y purinergic receptor for UDP-glucose and other UDP-sugars coupled to G-proteins. It has been implicated in extending the known immune system functions of P2Y receptors by participating in the regulation of the stem cell compartment and it may also play a role in neuroimmune function. Two transcript variants encoding the same protein have been identified for the gene.

Ordering info:

Cat No.	Size
G0604	15 µg
G0604-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7005 bp
Promoter: PEF1α
ORF Sequence: NM_014879
Protein Sequence: Q15391

Alternative names:
P2Y14, BPR105 or GPR105



Relaxin insulin-like family peptide Receptor 3

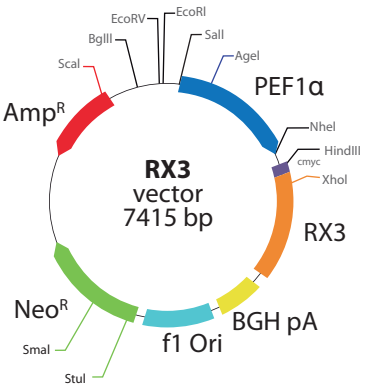
Description:
Recent findings suggest that the relaxin-3 neural network may represent a new ascending arousal pathway able to modulate a range of neural circuits including those affecting circadian rhythm and sleep/wake states, spatial and emotional memory, motivation and reward, the response to stress and feeding and metabolism. Therefore, the relaxin-3 receptor (RX3) is a potential therapeutic target for the treatment of various CNS diseases.

Ordering info:

Cat No.	Size
G0609	15 µg
G0609-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7415 bp
Promoter: PEF1α
ORF Sequence: NM_016568
Protein Sequence: Q9NSD7

Alternative names:
RXFP3, SALPR, RLN3R1 or RXFPR3



Relaxin-insulin-like family peptide Receptor 4

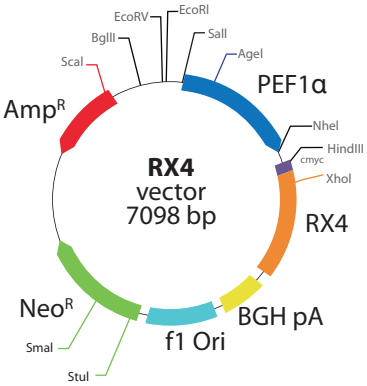
Description:
RX4 is a member of the rhodopsin family of GPCRs. The gene was discovered by searching the Human genome database for novel G-protein-coupled peptide receptors. RX4 shows highest homology to Human SALPR, an orphan somatostatin- and angiotensin-like peptide receptor.

Ordering info:

Cat No.	Size
G0610	15 µg
G0610-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7098 bp
Promoter: PEF1α
ORF Sequence: NM_181885
Protein Sequence: Q8TDU9

Alternative names:
GPR100, RLN3R2, RXFPR4 or GPCR142



Serotonin Receptor 1B

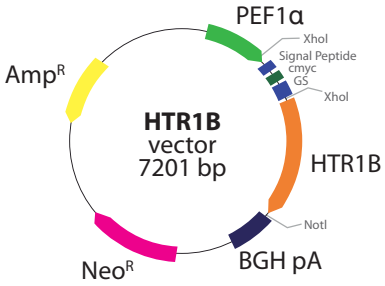
Description:
Serotonin Receptor 1B is a member of the GPCR family, coupled to guanine nucleotide-binding proteins that inhibits adenylate cyclase activity. In Humans, it is encoded by the HTR1B gene. This is one of the different receptors for serotonin, a biogenic hormone that functions as a neurotransmitter, as hormone and as mitogen. HTR1B is located in the basal ganglia, striatum, hippocampus and vascular smooth muscle and plays a role in thermoregulation, respiration, appetite control, sexual behavior, aggression and anxiety.

Ordering info:

Cat No.	Size
G0612	15 µg
G0612-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7201 bp
Promoter: PEF1α
ORF Sequence: NM_000863.1
Protein Sequence: P28222

Alternative names:
S12, 5-HT1B or HTR1D2



Somatostatin Receptor 1

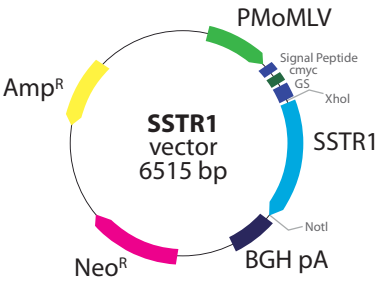
Description:
Somatostatin Receptor 1 is a member of the GPCR family and acts at many sites to inhibit the release of many hormones and other secretory proteins. In Humans, it is encoded by the SSTR1 gene that is expressed in highest levels in jejunum and stomach. SSTR1 is receptor for somatostatin with higher affinity for somastostatin-14 than –28 and is coupled via pertussis toxin sensitive G proteins to inhibition of adenylyl cyclase. It stimulates phosphotyrosine phosphatase and Na(+)/H(+) exchanger via pertussis toxin insensitive G proteins.

Ordering info:

Cat No.	Size
G0616	15 µg
G0616-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6515 bp
Promoter: PMoMLV
ORF Sequence: NM_001049.2
Protein Sequence: P30872

Alternative names:
SS1R, SS1-R, SRIF-2 or SS-1-R



Somatostatin Receptor 2

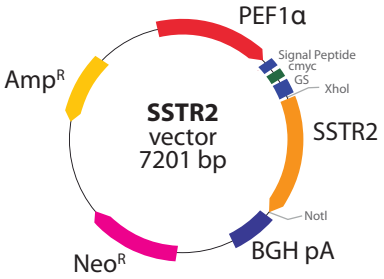
Description:
Somatostatin Receptor 2 is a member of the GPCR family and acts at many sites to inhibit the release of many hormones and other secretory proteins. In Humans, is encoded by the SSTR2 gene that is expressed in highest levels in cerebrum and kidney.
It is coupled via pertussis toxin sensitive G proteins to inhibition of adenylyl cyclase and stimulates phosphotyrosine phosphatase and PLC via pertussis toxin insensitive as well as sensitive G proteins.

Ordering info:

Cat No.	Size
G0617	15 µg
G0617-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7201 bp
Promoter: PEF1α
ORF Sequence: NM_001050.2
Protein Sequence: P30874

Alternative names:
SRIF-1 or SS2R



Somatostatin Receptor 3

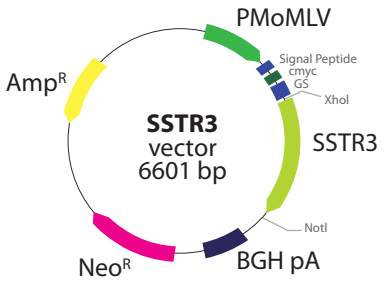
Description:
Somatostatin receptor 3 is a member of the GPCR family and is enconded in Humans by SSTR3 gene, which is expressed in highest levels in brain and pancreatic islets. It acts at many sites to inhibit the release of many hormones and other secretory proteins. It binds to somatostatins-14 and 28 and is coupled via pertussis toxin sensitive G proteins to inhibition of adenylyl cyclase.

Ordering info:

Cat No.	Size
G0618	15 µg
G0618-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6601 bp
Promoter: PMoMLV
ORF Sequence: NM_001051
Protein Sequence: P32745

Alternative names:
SS3R, SS3-R, SS-3-R or SSR-28



Somatostatin Receptor 4

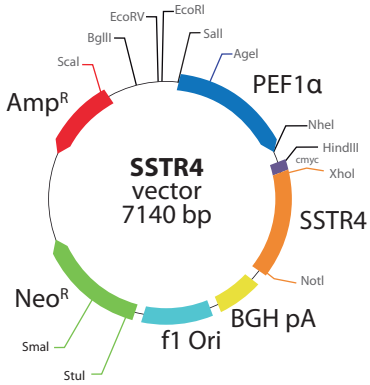
Description:
Somatostatin acts at many sites to inhibit the release of many hormones and other secretory proteins. The biologic effects of somatostatin are probably mediated by a family of GPCRs that are expressed in a tissue-specific manner. SSTR4 is a member of the superfamily of receptors having seven transmembrane segments and is expressed in highest levels in fetal and adult brain and lung.

Ordering info:

Cat No.	Size
G0619	15 µg
G0619-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7140 bp
Promoter: PEF1α
ORF Sequence: NM_001052
Protein Sequence: P31391

Alternative names:
SSTR4, SS4R or SS4-R



Somatostatin Receptor 5

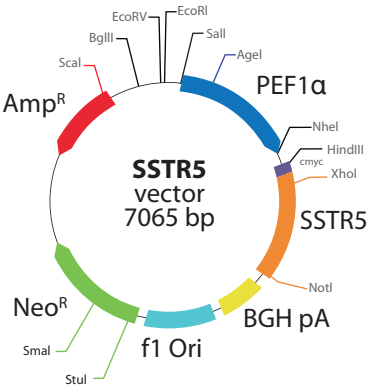
Description:
Somatostatin and its related peptide cortistatin exert multiple biological actions on normal and tumoral tissue targets by interacting with somatostatin receptors (SSTs). It is one of the SSTs, which is a multi-pass membrane protein and belongs to the GPCR 1 family. The activity of this receptor is mediated by G proteins which inhibit adenylyl cyclase and different regions of this receptor molecule are required for the activation of different signaling pathways. A mutation in the gene results in somatostatin analog resistance. Alternatively spliced transcript variants have been identified in this gene.

Ordering info:

Cat No.	Size
G0620	15 µg
G0620-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7065 bp
Promoter: PEF1α
ORF Sequence: NM_001053
Protein Sequence: P35346

Alternative names:
SSTR5 or SS-5-R



Sphingosine-1-Phosphate Receptor 1

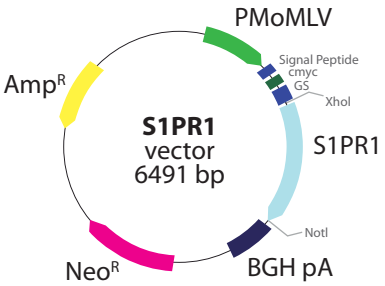
Description:
Sphingosine-1-phosphat Receptor 1 is encoded in Humans by the S1PR1 gene, which is highly expressed in endothelial cells. The ligand sphingosine-1-phosphate binds with high affinity. It has been suggested to be involved in the regulation and differentiation of endothelial cells. Activated S1PR1 induces cell-cell adhesion. S1PR1 has been shown to interact with 5-HT1A receptor, GNAI1 and GNAI3.

Ordering info:

Cat No.	Size
G0571	15 µg
G0571-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6491 bp
Promoter: PMoMLV
ORF Sequence: NM_001400.4
Protein Sequence: P21453

Alternative names:
EDG1, S1P1, CD363 or ECGF1



Sphingosine-1-phosphate Receptor 2

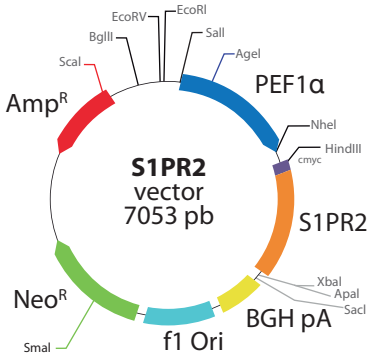
Description:
EDG5 (or S1PR2) is a member of the GPCRs, as well as the EDG family of proteins. It participates in sphingosine 1-phosphate-induced cell proliferation, survival and transcriptional activation. Sphingosine-1-phosphate (S1P) is a bioactive sophospholipid with various S1P receptor (S1PR) expression profiles in cells of different origin. S1PR1, R3 and - to a lesser extent - R2 were the main receptors expressed in most of endothelial cells (ECs). The balances in the expression and activation of S1PR1, R2 and R3 help to maintain the physiological functions of ECs.

Ordering info:

Cat No.	Size
G0572	15 µg
G0572-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7053 bp
Promoter: PEF1α
ORF Sequence: NM_004230
Protein Sequence: O95136

Alternative names:
EDG5, H218, LPB2 or S1P2



Sphingosine-1-phosphate Receptor 3

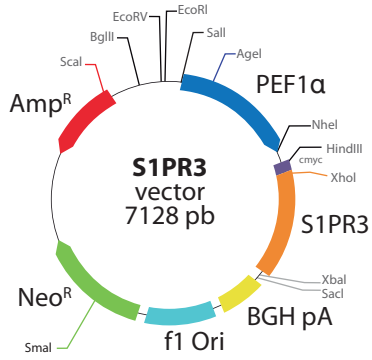
Description:
S1PR3 is a member of the EDG family of receptors. It has been identified as a functional receptor for sphingosine 1-phosphate and likely contributes to the regulation of angiogenesis and vascular endothelial cell function. Sphingosine-1-phosphate (S1P) is a bioactive sophospholipid with various S1P receptor (S1PR) expression profiles in cells of different origin. S1PR1, R3 and - to a lesser extent - R2 were the main receptors expressed in most of endothelial cells (ECs).

Ordering info:

Cat No.	Size
G0574	15 µg
G0574-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7128 bp
Promoter: PEF1α
ORF Sequence: NM_005226
Protein Sequence: Q99500

Alternative names:
EDG3, LPB3 or S1P3



Succinate Receptor 1

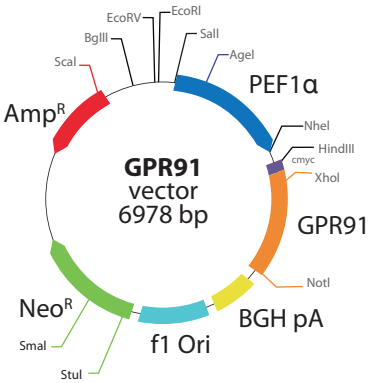
Description:
It is a GPCR for succinate, an intermediate molecule of the citric acid cycle. It is involved in the promotion of hematopoietic progenitor cell development and it has a potential role in renovascular hypertension which has known correlations to renal failure, diabetes and atherosclerosis.

Ordering info:

Cat No.	Size
G0625	15 µg
G0625-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6978 bp
Promoter: PEF1α
ORF Sequence: NM_033050
Protein Sequence: Q9BXA5

Alternative names:
SUCNR1



Tachykinin Receptor 3

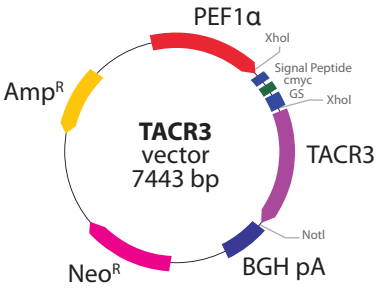
Description:
Tachykinin receptor 3 is encoded in Humans by the TACR3 gene, also referred to as neurokinin B. It binds to tachykinin neuropeptide neuromedin-K and is predominantly expressed in the CNS with lited expression in the periphery. It is associated with G proteins that activate a phosphatidylinositol-calcium second messenger system and mediates afferent neuron transmission and intestinal motility and secretion.

Ordering info:

Cat No.	Size
G0626	15 µg
G0626-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7443 bp
Promoter: PEF1α
ORF Sequence: NM_001059.2
Protein Sequence: P29371

Alternative names:
NKR, HH11, NK3R or NK-3R



Trace amine associated Receptor 1

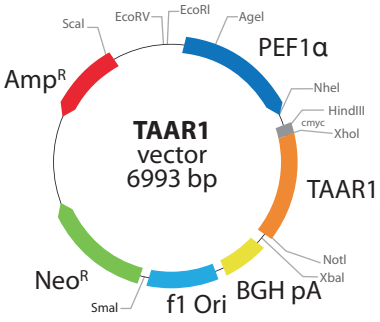
Description:
Trace amine-associated receptors (TAAR) belong to the family of G-protein coupled receptors (GPCR): TAAR1, the first deorphanized member, responds to biogenic trace amines like ß-phenylethylamine, p-tyramine or octopamine. Human TAAR1 is expressed in a variety of tissues including brain, stomach, kidney, lung and intestine, but not in the olfactory epithelium. TAAR1 has been found recently in blood B cells, suggesting a functional role of TAAR1 in these cells.

Ordering info:

Cat No.	Size
G0627	15 µg
G0627-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6993 bp
Promoter: PEF1α
ORF Sequence: NM_138327
Protein Sequence: Q96RJ0

Alternative names:
TA1, TAR1 or TRAR1



Trace amine associated Receptor 2

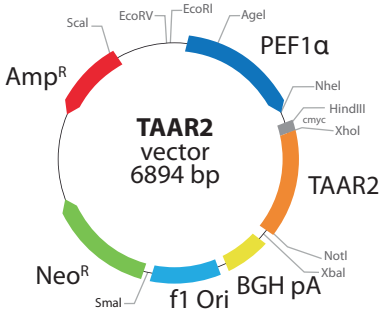
Description:
Closest related to TAAR1 GPCR, TAAR2 is most abundantly expressed in polymorphonulcear (PMN), T and B cells. PMN are a first line of defense of our innate cellular immune system at sites of inflammation or bacterial infection. Some studies indicate that TAAR2 responds to the same amines as TAAR1, or TAAR1 and TAAR2 build functional dimers.

Ordering info:

Cat No.	Size
G0628	15 µg
G0628-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6894 bp
Promoter: PEF1α
ORF Sequence: NM_001033080.1
Protein Sequence: Q9P1P5

Alternative names:
GPR58 or taR-2



Trace amine associated Receptor 5

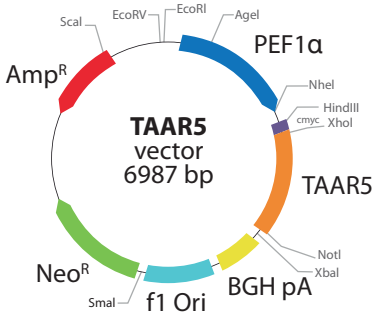
Description:
Human TAAR5 is exclusively expressed in small subsets of olfactory sensory neurons in the human olfactory epithelium, where it is the most highly expressed TAAR gene. This receptor can be activated with a high specificity by the tertiary amines trimethylamine (TMA) (full agonist) and dimethylethylamine (DMEA) (partial agonist). TMA has an unpleasant odor of rotting fish, that will be released in bodily secretions like sweat, breath and urine in people with the genetic disorder trimethylaminuria disease.

Ordering info:

Cat No.	Size
G0629	15 µg
G0629-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6987 bp
Promoter: PEF1α
ORF Sequence: NM_003967.2
Protein Sequence: O14804

Alternative names:
TRAR5, TAR-5



Trace amine associated Receptor 6

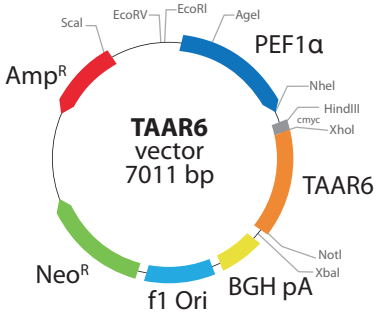
Description:
It is a seven-transmembrane GPCR that likely functions as a receptor for endogenous trace amines. By screening the genomic sequence using a non-redundant set of all vertebrate GPCRs as queries, identified TAAR6. Mutations in the gene may be associated with schizophrenia.

Ordering info:

Cat No.	Size
G0630	15 µg
G0630-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7011 bp
Promoter: PEF1α
ORF Sequence: BC069157
Protein Sequence: Q96RI8

Alternative names:
TA4, TAR4, TAR6 or TRAR4



Trace amine associated Receptor 8

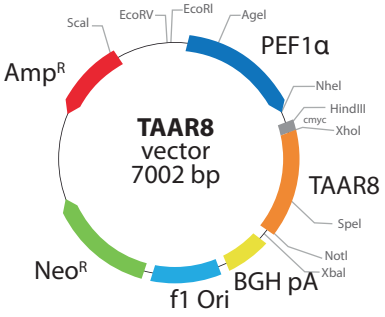
Description:
The discovery of a family of GPCRs, some of which bind and are activated by biogenic trace amines, has prompted speculation as to the physiological role of these receptors. Observations associated with the distribution of these trace amine associated receptors (TAARs) suggest that it may be involved in depression, attention-deficit hyperactivity disorder, eating disorders, migraine headaches and Parkinson's disease. Preliminary *in vitro* data, obtained using cloned receptors, also suggest a role for TAARs in the function of hallucinogens.

Ordering info:

Cat No.	Size
G0631	15 µg
G0631-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7002 bp
Promoter: PEF1α
ORF Sequence: NM_053278
Protein Sequence: Q969N4

Alternative names:
TA5, TAR5, TRAR5 or TaR-5



Trace amine associated Receptor 9

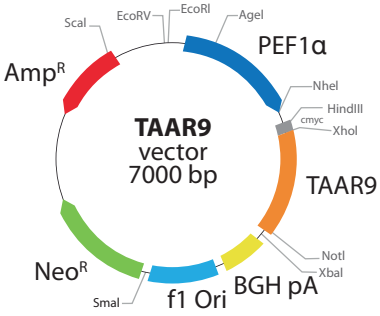
Description:
TAAR9 is a member of a large family of rhodopsin GPCRs. It contains 7 transmembrane domains and transduces extracellular signals through heterotrimeric G proteins.

Ordering info:

Cat No.	Size
G0632	15 µg
G0632-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 7000 bp
Promoter: PEF1α
ORF Sequence: NM_175057.3
Protein Sequence: Q96RI9

Alternative names:
TA3, TAR3 or TAR9



Urotensin 2 Receptor

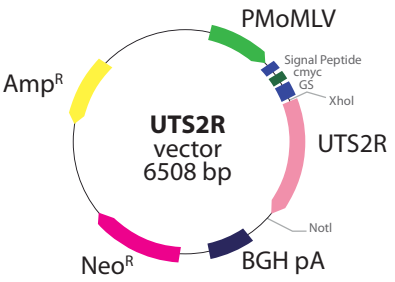
Description:
Human urotensin 2 receptor is encoded by the UTS2R gene that is greatest expression levels in the peripheral vasculature, heart and kidney. It is a member of the GPCR family and has high affinity for urotensin-2 and urotensin-2B. Its activity is mediated by a Gq/11 protein that activates a phosphatidylinositol-calcium second messenger system and mediates complex hemodynamic effects and influences neuromuscular physiology.

Ordering info:

Cat No.	Size
G0633	15 µg
G0633-Plus	15 µg + 0.2 mL

Specifications:
Plasmid size: 6508 bp
Promoter: PMoMLV
ORF Sequence: NM_018949
Protein Sequence: Q9UKP6

Alternative names:
UTR, UTR2, GPR14 or UR-2-R



4. Cell Transfection

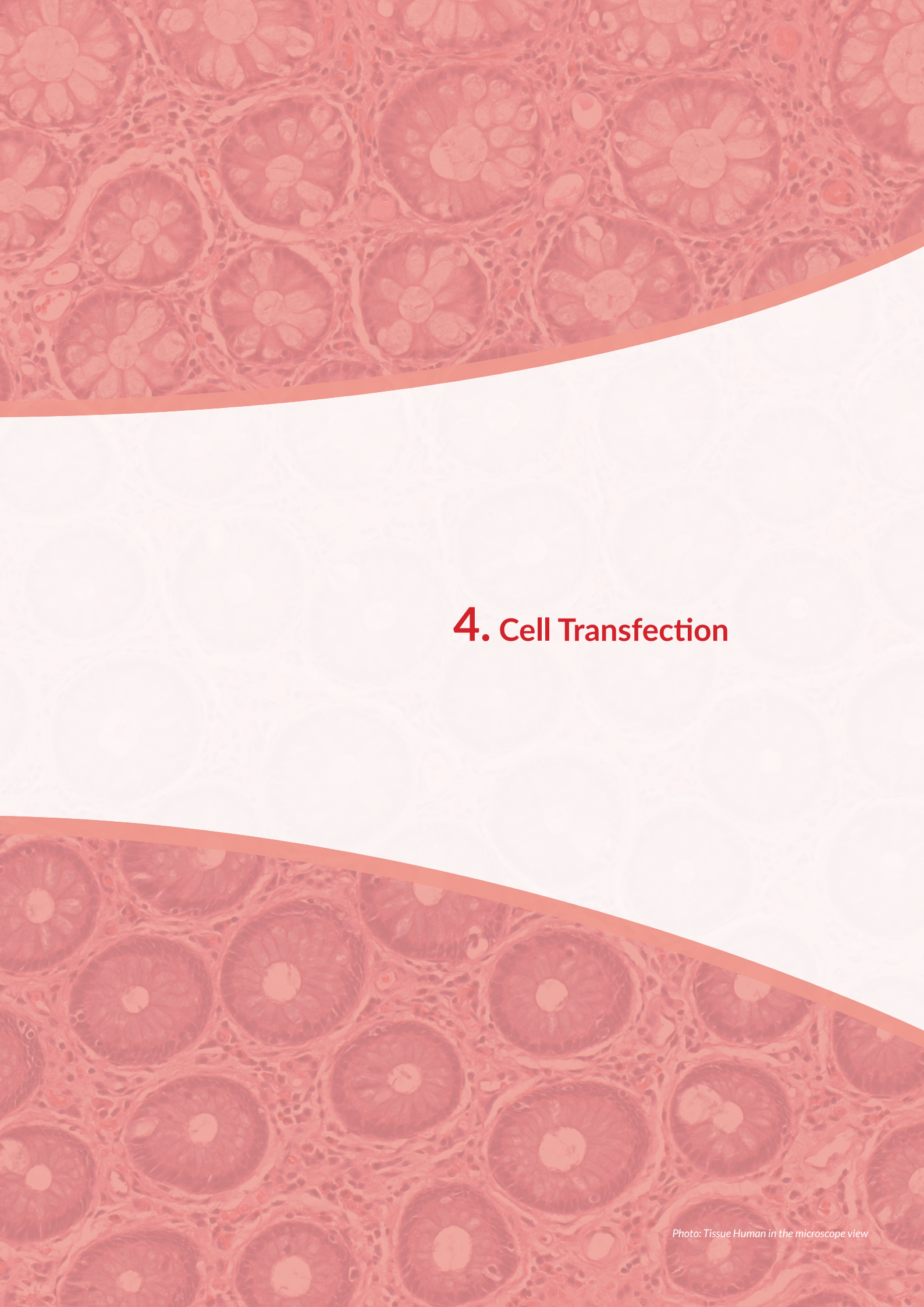


Photo: Tissue Human in the microscope view

CANFAST™

For a highly efficient, easy and non-toxic High-throughput transfection

Description:

CANFAST™ is a highly efficient, ready-to-use and non-toxic new generation of cationic polymer. It has important features as DNA condensation and endosomal release, which improves gene transfection efficiency.

Advantages & Features:

- ✔ **High transfection efficiency and reproducibility** in most common cell lines, both adherent and suspension cell lines.
- ✔ **Non-toxic:** minimal cytotoxicity with a cell survival rate >90%.
- ✔ **Serum compatible in cell cultures.**
- ✔ **Easy and time-saving protocol:** just 24 minutes to successful transfections with minimal handling.
- ✔ **Optimized:** direct application for most cell lines.
- ✔ **Proven performance:** for transient and stable transfections, adherent and suspension cells.
- ✔ **Cost effective:** minimal amount of DNA required and allows use the same medium after transfection.

Protocol:

Prepare the transfection mix

Prepare the transfection mix adding CANFAST™ solution dropwise into the DNA solution

Transfect the cells

Add transfection mix into each well containing the cells

Ordering info:

Cat No.	Size
T0082-S	0.5 mL
T0082	1.5 mL
T0083	1 mL

(1.5 mL= 375-750 transfections)

Include for 1.5 mL:

· 1.5 mL CANFAST™ Transfection Reagent (1 µg/µl)
· 15 µl GFP-Plasmid Transfection control (1 µg/µl)

Applications:

- ✔ High-throughput transfection.
- ✔ Stable and transient transfections.
- ✔ Co-transfection.
- ✔ Transfection of primary cells and cell lines.
- ✔ Transfection of adherent and suspension cells.
- ✔ All cellular analysis applications.

Incoming Products:

· CrispFAST™ Transfection Reagent

Quality control:

- ✔ Transfection range of Green fluorescent protein expression vector in JURKAT cell line are >50%.

High transfection efficiency in most common cell lines:

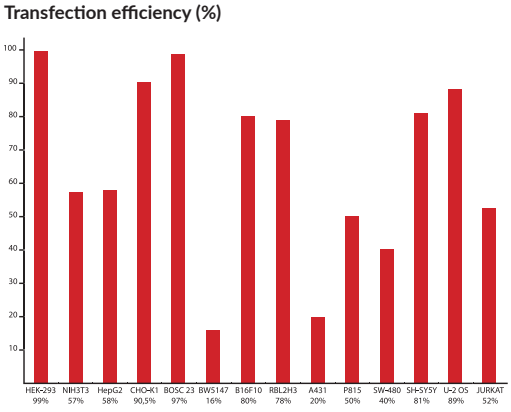


Figure 4.1.: Transfection efficiency in different cell lines using CANFAST™. The cells lines have been transfected with a vector expressing green fluorescent protein reporter, driven by cytomegalovirus promoter.

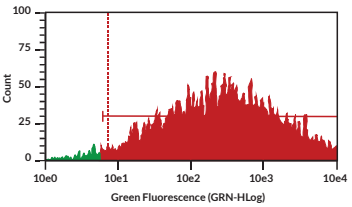


Figure 4.2.: CHO Transfection with CANFAST™

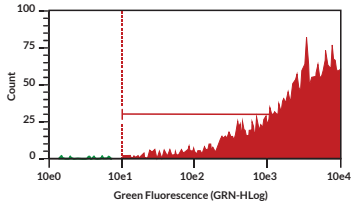
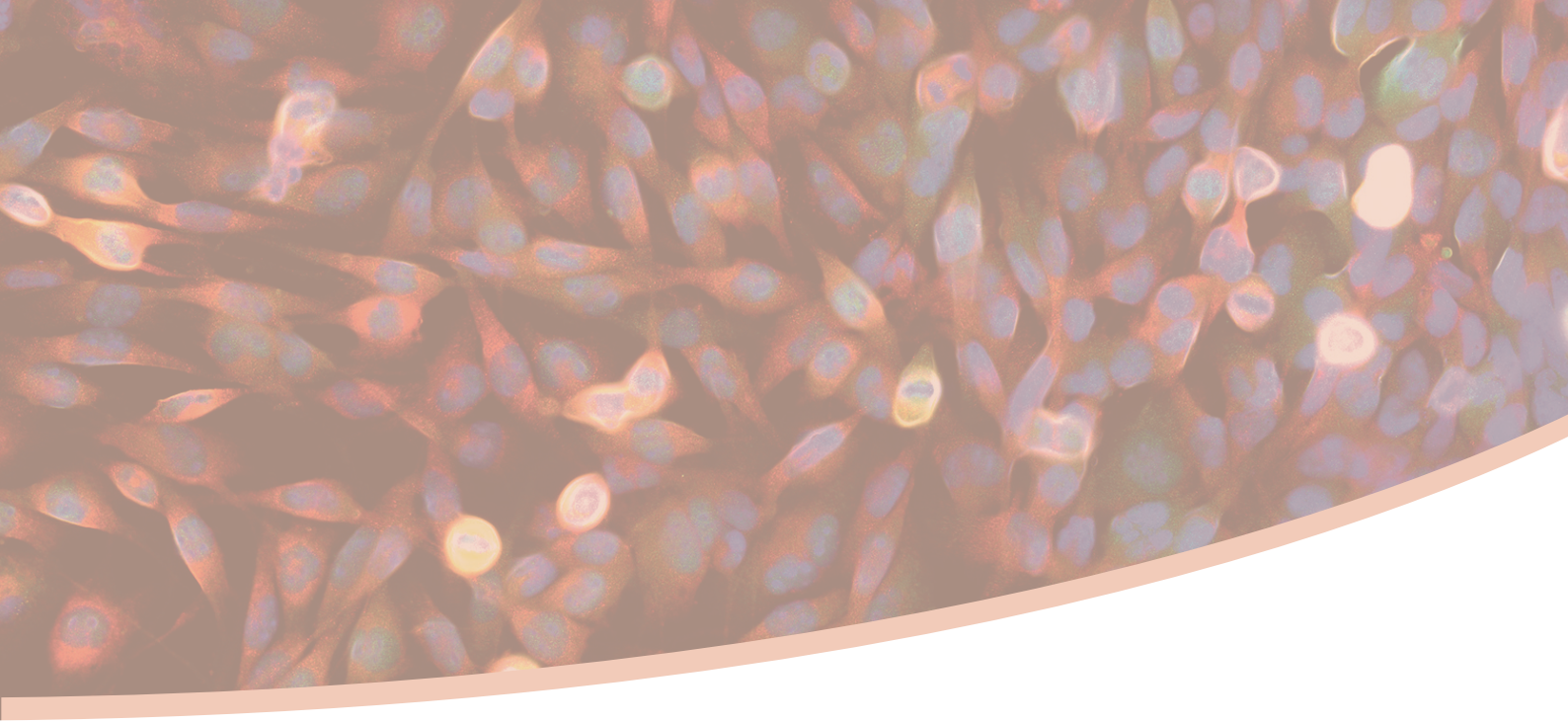


Figure 4.3.: HEK-293 Transfection with CANFAST™

Cells succesfully transfected with CANFAST™ include:

Cells line	Origin	Cell type
CHO-K1	Hamster	Chinese ovary cells, epithelial
HEK-293	Human	Embryonic kidney fibroblast
BOSC 23	Human	Kidney: transformed with adenovirus 5 DNA
HepG2	Human	Hepatocarcinoma, epithelial
A431	Human	Squamous carcinoma
SW480	Human	Colon adenocarcinoma
56FTH 80	Human	Fetal trachea epithellium cells
6CFSMEo-	Human	Submocosal gland epithelium cells
9HTEo-	Human	Adult trachea epithelial cells
A549	Human	Type II pneumocytes
CACO-2	Human	Colorectal adenocarcinoma cells
CFNPE9o-	Human	Nasal epithelium cells
CFPEo-	Human	Trachea epithelium cells
HCS-2/8	Human	Chondrocyte-like cells
HeLa	Human	Cervix epitheloid carcinoma
Hep 2C	Human	Epidermal carcinoma cells
Jurkat	Human	T cell leukemia
KB	Human	Epithelial cells
MCF7	Human	Breast adenocarcinoma cells
Cos-7	Monkey	Kidney cells
B16F10	Mouse	Skin melanoma, epithelial
BW5147	Mouse	AKR/JT cell lymphoma
P815	Mouse	Matocytoma
NIH3T3	Mouse	Embryonic fibroblast
BNL CL.2	Mouse	Hepatocytes
C-26	Mouse	Colon carcinoma cells
C2C12	Mouse	Myoblasts
CT26	Mouse	Non-immunogenic colon carcinoma
L929	Mouse	Subcutaneous connective tissue fibroblasts
MCA-38	Mouse	Colon carcinoma cells
Neuro 2A	Mouse	Neuroblastoma cells
SH-SY5Y	Human	Neuroblastoma cells
LLC-PK1	Porcine	Kidney epithelial cells
RBL2H3	Rat	Basophilic leukemia
Primary cell cultures	**Origin**	
Postmitotic neurons	Human	
Embryonic stem cells	Human	
Embryonic stem cells	Mouse	
Postmitotic	Rat	



5. Cell Based Assay and Molecule Detection Kits

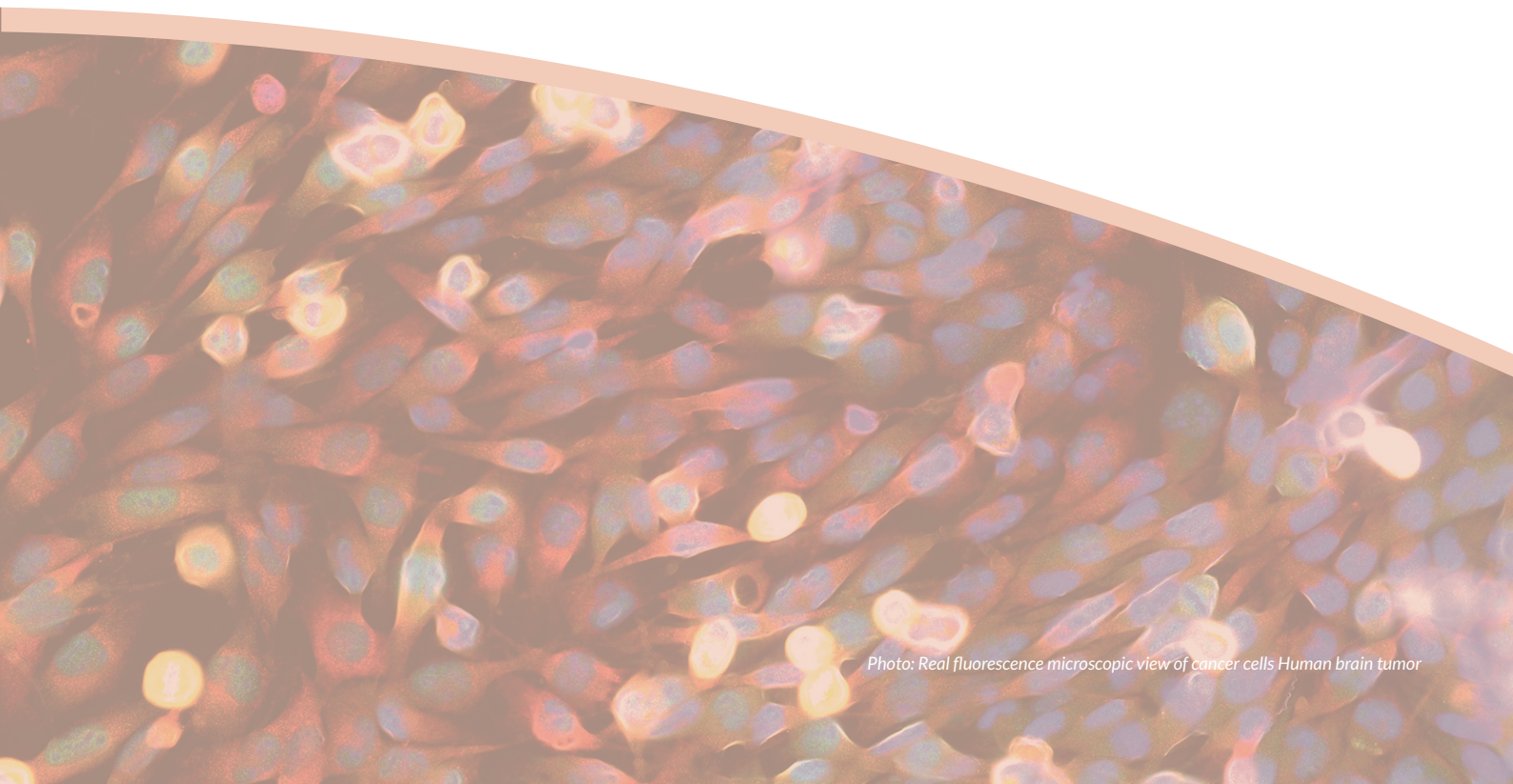


Photo: Real fluorescence microscopic view of cancer cells Human brain tumor

Cell Viability, Proliferation and Cytotoxicity assays

Annexin V Apoptosis Detection Kits

Ordering info:

Annexin V-FITC	
Cat No.	Size
CA011	100 assays
Annexin V-APC	
Cat No.	Size
CA012	100 assays
Annexin V-Biotin	
Cat No.	Size
CA013	100 assays
Annexin V-PE	
Cat No.	Size
CA014	100 assays

Description:

Annexin V Apoptosis Detection Kits is a convenient, easy-to-use and safe method for Apoptosis Detection. Annexins are a family of calcium-dependent phospholipid-binding proteins, which bind to phosphatidylserine (PS).

Externalization of phosphatidylserine residues on the outer plasma membrane of apoptotic cells allows detection via Annexin V. Once the apoptotic cells are bound with labelled Annexin V, it can be visualized with fluorescent microscopy or cytometry.

Since loss of membrane integrity is a pathognomonic feature of necrotic cell death, necrotic cells will stain with specific membrane-impermeant nucleic acid dyes such as propidium iodide, the membrane integrity of apoptotic cells can be demonstrated by the exclusion of these dyes.

Advantages & Features:

- ✓ **Easy and fast protocol.**
- ✓ **Versatile:** proven performance for both adherent and suspension cells.
- ✓ **Safe:** non-enzymatic assay that avoids fixation.

Includes for 100 assays:

- 500 µl Labeled Annexin V
- 50 mL Binding Buffer (10x)
- 500 µl Propidium iodide

Applications:

- ✓ Detect early/middle stages of apoptosis.
- ✓ Differentiate apoptosis from necrosis.

Related Products:

- XTT Cell Proliferation Assay Kit (p.78)

XTT Cell Proliferation Assay Kit

Ordering info:

Cat No.	Size
CA031	1,000 assays

Description:

XTT Cell Proliferation Assay Kit is an optimized, accurate and sensitive colorimetric assay that detects the cellular metabolic activities. During the assay, the yellow tetrazolium salt XTT (sodium 2,3,-bis(2-methoxy-4-nitro-5-sulfophenyl)-5-[(phenylamino)-carbonyl]-2H-tetrazolium) is reduced to a highly colored formazan dye by dehydrogenase enzymes in metabolically active cells.

This conversion only occurs in viable cells and thus, the amount of the formazan produced is proportional to viable cells in the sample. The formazan dye formed in the assay is soluble in aqueous solution and quantified by measuring the absorbance at wavelength 450 nm using a spectrophotometer. An electron coupling reagent, such as PMS (N-Methylphenazonium methyl sulphate), can significantly improve the efficiency of XTT reduction in cells.

Advantages & Features:

- ✓ **Accurate:** dye absorbance is proportional to the number of cells in each well.
- ✓ **Sensitive:** assayed even in low cell concentrations.
- ✓ **Fast protocol:** results within 2-5 hours with minimal handling steps.
- ✓ **Time-saving protocol:** avoids solubilisation step.
- ✓ **Complete solution:** includes all reagents needed for cell washing procedures.
- ✓ **Safe:** avoids radioactivity.
- ✓ **Optimized:** for high throughput assays (no requieres washing or other steps that can cause cell loss and variability).
- ✓ **Cost avoidance:** allows performance directly in a microtiter plate.

Applications:

- ✓ Spectrophotometric quantification of cell proliferation and viability in response to pharmaceutical, chemical, nutrients and environmental compounds.
- ✓ High throughput screening.

Includes for 1,000 assays:

- 2 x 25 mL XTT Cell Proliferation Assay Kit Reagent
- 1 mL Activation Reagent

Related Products:

- SRB Cytotoxicidad assay (p.79)
- Resazurin Cell Viability assay (p.79)

SRB Cytotoxicity Assay (Sulforhodamine B)

Ordering info:

Cat No.	Size
CA050	1,000 assays

Includes for 1,000 assays:

- 0.4 g SRB Dye
- 60 mL Fixative Reagent
- 100 mL Dye Wash Solution (10x)
- 200 mL SRB Solubization Buffer

Related Products:

- XTT Cell Proliferation Assay Kit (p.78)
- Resazurin Cell Viability assay (p.79)

Description:

Sulforhodamine B (SRB) Cytotoxicity Assay is a sensitive, reproducible and easy-to-use assay based on the ability of SRB to bind to protein components of cells that have been fixed to tissue culture plates. SRB is a bright-pink aminoxanthene dye with two sulfonic groups that bind to basic aminoacid residues under mild acidic conditions and dissociate under basic conditions. As the binding of SRB is stoichiometric, the amount of dye extracted from stained cells is directly proportional to the cell mass.

The fixed dye is solubilized and is measured photometrically at OD 540 nm with a reference filter of 690 nm. The OD values correlate with total protein content and therefore with cell number.

Advantages & Features:

- **Sensitive.**
- **Easy-to-use.**
- **Fast:** avoids time-sensitive measurement.
- **Reproducible.**
- **Great linearity.**
- **Good signal-to-noise ratio.**
- **Has a stable end-point.**

Applications:

- Detection of cell toxicity, death, viability or proliferation.
- High throughput screening.

Resazurin Cell Viability Assay

Ordering info:

Cat No.	Size
CA035	10,000 assays

Includes for 10,000 assays:

- 4 x 25 mL Resazurin solution

Related Products:

- XTT Cell Proliferation Assay Kit (p.78)
- SRB Cytotoxicidad assay (p.79)

Description:

Resazurin Cell Viability Assay is a reliable, sensitive and easy-to-use fluorescent assay that detects cellular metabolic activity. Resazurin (7-Hydroxy-3H-phenoxazin-3-one 10-oxide) is a blue dye non-fluorescent until it is irreversibly reduced to the pink colored and highly red fluorescent resorufin by dehydrogenase enzymes in metabolically active cells.

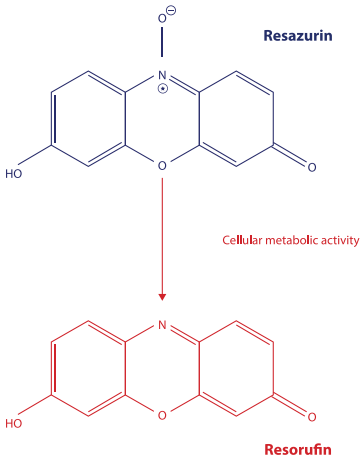
The fluorescent signal is monitored using 530-560 nm excitation wavelength and 590 nm emission wavelength. The absorbance is monitored at 570 nm and 600 nm. The fluorescent or colorimetric signal generated from the assay is proportional to the number of living cells in the sample.

Advantages & Features:

- **Easy procedure:** easy to perform with minimal handling.
- **Really fast:** just one step to results.
- **Reliable.**
- **Sensitive.**
- **Safe.**
- **Cost-effective.**

Applications:

- Spectrophotometric measurement of metabolic activity of living cells.



Senescence Detection Kit (SA-ß-gal Staining)

Ordering info:

Cat No.	Size
CA090	100 assays

Includes for 100 assays:

· 150 mg X-Gal (lyophilized)
· PBS (10x)
· Staining Solution A
· Staining Solution B
· Staining Solution C
· Fixative solution (10x)

Related Products:

· PBS (p.133)
· X-Gal (p.19)

Description:

Senescence detection kit is a fast, convenient and easy-to-use kit that measures activity of SA-B-Gal in cells cultures by hydrolysis of X-gal, which results in the accumulation of a distinctive blue color in senescent cells.

Senescence cells display a phenotype like increase of cell size, distinctive flat morphology, changes in gene expression and activity of senescence-associate ß-galactosidase (SA-ß-gal).

Senescence represent tumor suppressor mechanism for this reason cellular senescence has become an increasingly target in the development of novel therapeutics.

Advantages & Features:

- ✓ **Fast, convenient and easy procedure:** takes 28 minutes to results with minimal handling steps.
- ✓ **The specific histochemical marker is only present in senescent cells** and is not found in pre-senescent, quiescent or immortal cells.

Applications:

- ✓ Histochemically detect SA-β-Galactosidase activity in cultured cell and tissue sections.

Reporter Gene Assays

SEAP Reporter Gene Assay

Ordering info:

Cat No.	Size
CA040	288 assays

Includes for 288 assays:

· 3 x 96 W Solid Plate (white)
· 3 units of lid
· 50 µl Alkaline Phosphatase Standard
· 15 mL SEAP Substrate (Luminescence)

Related Products:

· FastCONTROL™ Dual Reporter Plasmid (p.28)
· CANFAST™ Transfection Reagent (p.76)

Description:

Secreted alkaline phosphatase (SEAP) reporter gene is an easy, sensitive and fast assay that utilizes enzyme activity of alkaline phosphatase to dephosphorylate the chemiluminescent Alkaline Phosphatase substrate into an unstable dioxetane anion which decomposes and emits light.

SEAP encodes a truncated form of the placental enzyme that lacks the membrane anchoring domain, thereby allowing the protein to secret efficiently from transfected cells.

Changes in levels of SEAP activity detected in the culture medium are directly proportional to changes in intracellular concentrations of SEAP mRNA and protein.

Advantages & Features:

- ✓ **Convenient:** single set of cells are used for both the SEAP assay and another purpose.
- ✓ **Time-saving protocol:** results in 55 minutes due the elimination of cell lysates preparation.
- ✓ **Cost-effective:** allows performance directly in a microtiter plate.
- ✓ **Sensitive:** assayed even in low cell concentrations.
- ✓ **Secreted** from transfected cells into the culture medium.

Applications:

- ✓ Measurement the levels of SEAP in the culture medium of transfected cells.

MUG - Galactosidase Assay kit

Ordering info:

Cat No.	Size
CA085	500 assays

Includes for 500 assays:

- 20 mM ß-galactosidase substrate 4MU
- 10 mM Reference Standard
- ß-galactosidase enzyme (0.1 mg/mL)
- Triton X-100
- 1M DTT
- Assay Buffer (2x)
- Stop solution

Description:

The MUG ß-Galactosidase Assay Kit is an efficient, easy and highly sensitive tool to measure levels of active ß-galactosidase expressed in cells transfected with plasmids expressing *Lac Z*.

Lac Z is often used as reporter gene in Transfection experiments because the ß-galactosidase is highly resistant to proteolytic degradation and its activity is easily measured. ß-galactosidase performs the hydrolysis of 4-methylumbelliferyl ß-D-galactopyranoside (MUG) to the 4-methylumbelliferone (4MU). This MUG produces as a bright blue fluorescence that are detected at excitation/emission = 360/460 nm. The concentration of ß-galactosidase is proportional to fluorescence produced.

Advantages & Features:

- **Fast, easy and convenient.**
- **Easy-to-use** method to quantify the enzyme expression in transfected cells.
- **Sensitive:** measure ß-galactosidase at femtogram level.

Applications:

- Measurement of β-Galactosidase activity in the lysates of transfected cell.

Related Products:

- PBS (p.133)
- CANFAST™ Transfection Reagent (p.76)
- ONPG – Galactosidase Assay kit (p.81)
- FastCONTROL™ Dual Reporter Plasmid (p.28)

ONPG - Galactosidase Assay kit

Ordering info:

Cat No.	Size
CA080	500 assays

Includes for 500 assays:

- ONPG Substrate solution
- DTT
- Buffer Lysis
- Buffer Assay
- Buffer Stop
- ß-galactosidase enzyme

Related Products:

- pOnebyOne™ Mammalian expression vectors (p.22)
- pColiExpress™ Glue Enzyme kits (p.34)
- FastCONTROL™ Dual Reporter Plasmid (p.28)
- Custom solutions (p.147)

Description:

The ONPG B-Galactosidase Assay Kit is an optimized, stable and colometric tool to fast measure the levels of active ß-galactosidase expressed in cells transfected with plasmids expressing *Lac Z*.

Lac Z is often used reporter gene in experiments transfection because the ß-galactosidase is very resistant to proteolytic degradation and its activity is easily measured. ß-galactosidase performs the hydrolysis of orthonitrophenyl-ß-D-galactopyranoside (ONPG) to the ortho-nitrophenol (ONP). This ONP produces as a bright yellow colour that is detected at absorbance 420 nm. The concentration of ß-galactosidase is proportional to colour produced.

Advantages & Features:

- **Proven performance** to quantify high expression level of beta-Gal.
- **Very stable:** resistant to proteolytic degradation and easily assayed.
- **Convenient** for all transfection assays.
- **Versatile:** proven performance for cultured cells and tissues.
- **Rapid and easy protocol.**
- **Cost-effective.**

Applications:

- Measurement of β-Galactosidase activity in the lysates of transfected cells.

Firefly Luciferase Assay Kit

Ordering info:

Cat No.	Size
CA130	100 assays
CA135	1,000 assays

Includes for 100 assays:

- 10 mL Luciferase Assay Substrate
- 4 mL Cell Lysis Buffer (5x)
- 10 µg Luciferase (control)

Related Products:

- pOnebyOne™ Mammalian expression vectors (p.22)
- Custom solutions (p.147)
- FastCONTROL™ Dual Reporter Plasmid (p.28)

Description:

Luciferase from the firefly (*Photinus pyralis*) is an accurate, sensitive and easy **Luciferase Assay Kit** for studying gene reporter regulation and function in transformed cell lines in culture.

Firefly luciferase has an apparent molecular weight of 62 kDa, which is active as a monomer and does not require subsequent processing for its activity. The enzyme catalyzes the oxidation of reduced luciferin in the presence of ATP-Mg^{2+} and oxygen to generate CO_2, AMP, PPi, oxyluciferin and produces a flash of light that is proportional to the quantity of luciferase in the reaction mixture.

The Luciferase Assay Substrate includes coenzyme A, ATP and luciferin. Including coenzyme A in the reaction enhances the sensitivity of the assay and provides a sustained light reaction (half-life >5 minutes). This eliminates the need for automated luminometer injection of substrate and allows analysis by photographic film or scintillation counting.

Advantages & Features:

- **Easy and Fast protocol:** results within 14 minutes.
- **Sensitive and linear:** correlation between luciferase gene expression and light output for transfection.
- **Accurate.**
- **Ideal for high throughput assays.**

Applications:

- Detection and quantification of Firefly luciferase.

Stress oxidative Assay Kits

SOD Assay Kit

Ordering info:

Cat No.	Size
CA061	100 assays

Includes for 100 assays:

- 1 mL WST-1 Reagent
- 20 mL SOD Assay Buffer
- 10 mL SOD Dilution Buffer
- 20 µl SOD Enzyme solution
- 50 µl SOD Standard (50 U/µl)

Related Products:

- PBS (p.133)
- Custom solutions (p.147)

Description:

Superoxide dismutases (SOD) catalyse the breakdown of superoxide radicals and provide the first line of defense against oxygen toxicity.

SOD Assay Kit, superoxide ions are generated from the conversion of xanthine and O_2 to uric acid and H_2O_2 by Xanthine Oxidase (XO). The superoxide anion then coverts the tetrazolium salt WST-1 to the colored product WST-1 formazan.

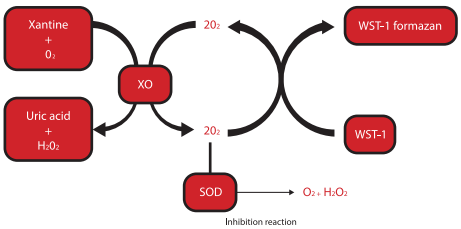
Absorbance is then measured at 450 nm using a standard microplate reader. Addition of SOD to this reaction reduces superoxide ion levels, thereby lowering the rate of WST-1 formazan formation. SOD activity in the experimental sample is measured as the percent inhibition of the rate of WST-1 formazan formation.

Advantages & Features:

- **Easy-to-use.**
- **Fast protocol.**

Applications:

- Quantitative determination of superoxide dismutase (SOD) enzyme activity.



Catalase activity Assay Kit

Description:

Catalase Activity Assay Kit is a fast, easy and highly sensitive method for measuring catalase activity in biological samples.

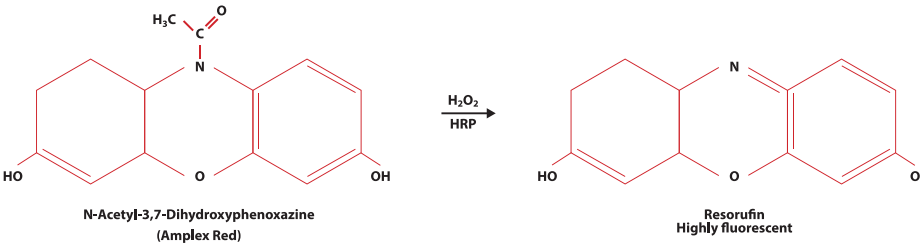
In the assay, catalase first reacts with H_2O_2 to produce water and oxygen. In the presence of horseradish peroxidase (HRP), the unconverted H_2O_2 reacts 1:1 with the fluorogenic substrate 10-Acetyl-3,7- dihydroxyphenoxazine to produce a product highly fluorescent (resorufin), which is measured at Ex/Em=535/587nm (fluorometric method) or at 570 nm (colorimetric method).

Applications:

- ✓ Determination of catalase activity by colometric or fluorometric assay.

Advantages & Features:

- ✓ **Fast and easy protocol:** it takes 34 minutes.
- ✓ **Sensitive** assays for measuring catalase in various biological samples.



N-Acetyl-3,7-Dihydroxyphenoxazine (Amplex Red)

Resorufin Highly fluorescent

Ordering info:

Cat No.	Size
CA063	100 assays

Includes for 100 assays:

- 200 µl Probe (in DMSO)
- 20 mL CAT Assay Buffer
- 50 µl H_2O_2 (0.88 M)
- 250 µl HRP solution
- 1.5 mL Stop solution
- 5 µl Catalase Positive Control

Related Products:

- PBS (p.133)
- Custom solutions (p.147)

Glutathione Assay Kit

Description:

Glutathione Assay Kit is an accurate, fast and easy-to-use assay based on a chemical reaction in two steps. The Kit makes possible the quantification of glutathione with only one sampling and one colorimetric measurement.

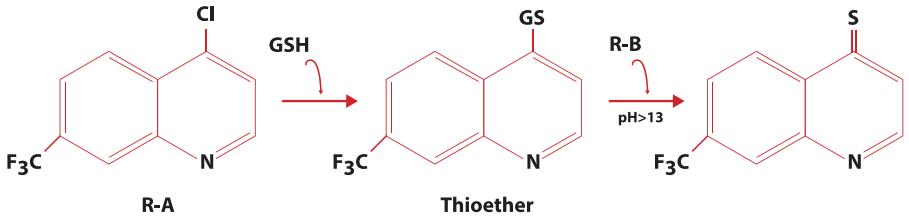
Glutathione (gamma-glutamyl-cysteinyl-glycine, GSH) is a cysteine-containing tripeptide, which is the most abundant nonprotein thiol in cells. GSH is composed of glutamate, cysteine, and glycine and is synthesized in both eukaryotic as well as prokaryotic cells. It is a powerful antioxidant that prevents ROS-mediated damage to essential cellular components and acts as a cofactor for enzymes in the destruction of ROS.

Applications:

- ✓ For quantitative determination of reduced Glutathione (GSH).

Advantages & Features:

- ✓ **Cost avoidance:** avoids the use of any enzyme as reagent.
- ✓ **Really fast and easy procedure.**
- ✓ **Accurate:** more specific than the DTNB method.



R-A

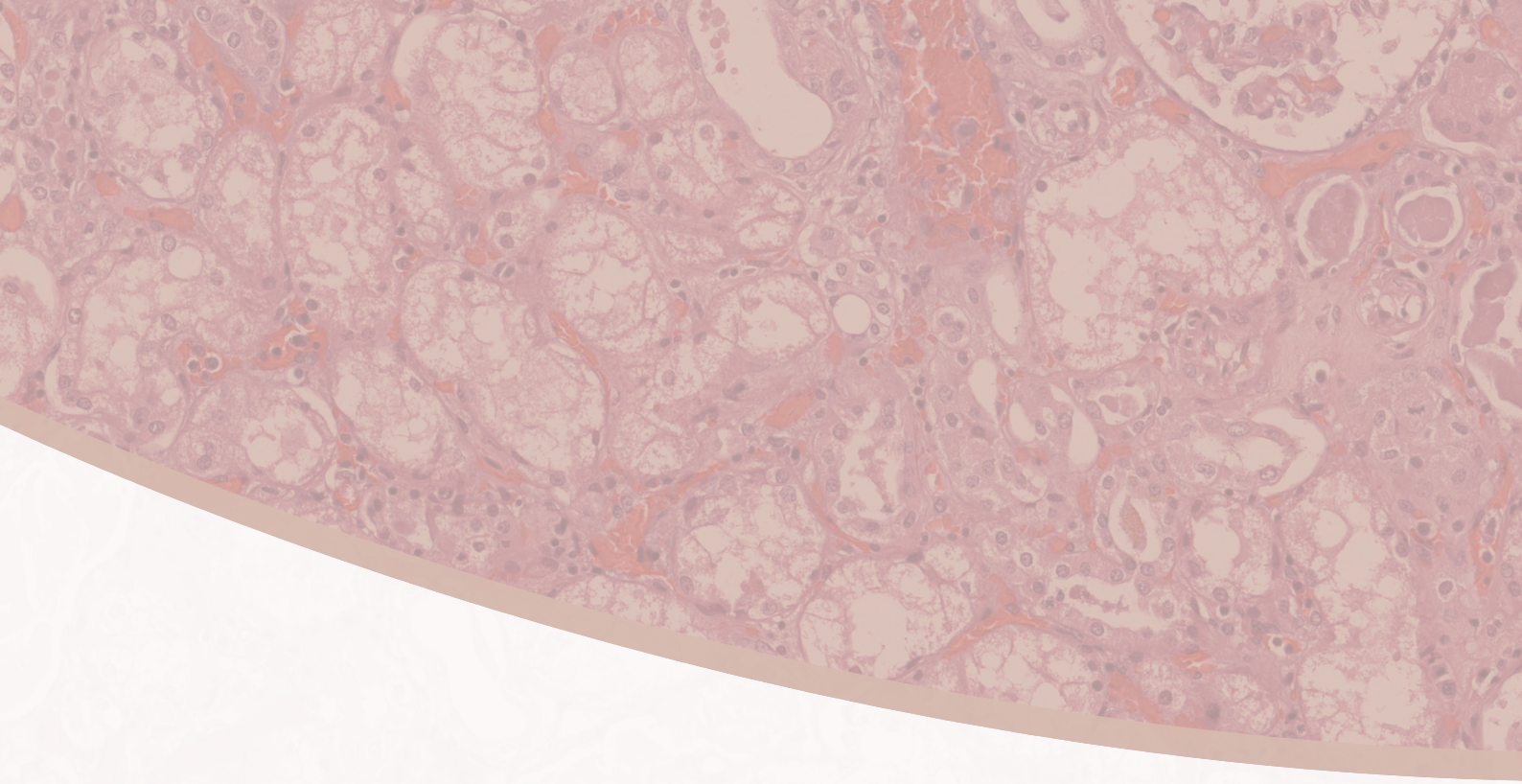
Thioether

Ordering info:

Cat No.	Size
CA066	100 assays

Includes for 100 assays:

- 6 mL Reagent A (R-A)
- 10 mL Reagent B (R-B)
- 2 x 50 mL Buffer Solution
- 2 mg GSH Standard
- 3 x 0.5 mg Metaphosphoric Acid



6. Nucleic Acid Purification Kits

DNA Spin Column based Purification

DNA Reagent based Purification

DNA Magnetic Bead based Purification

RNA Spin Column based Purification

Sample collection

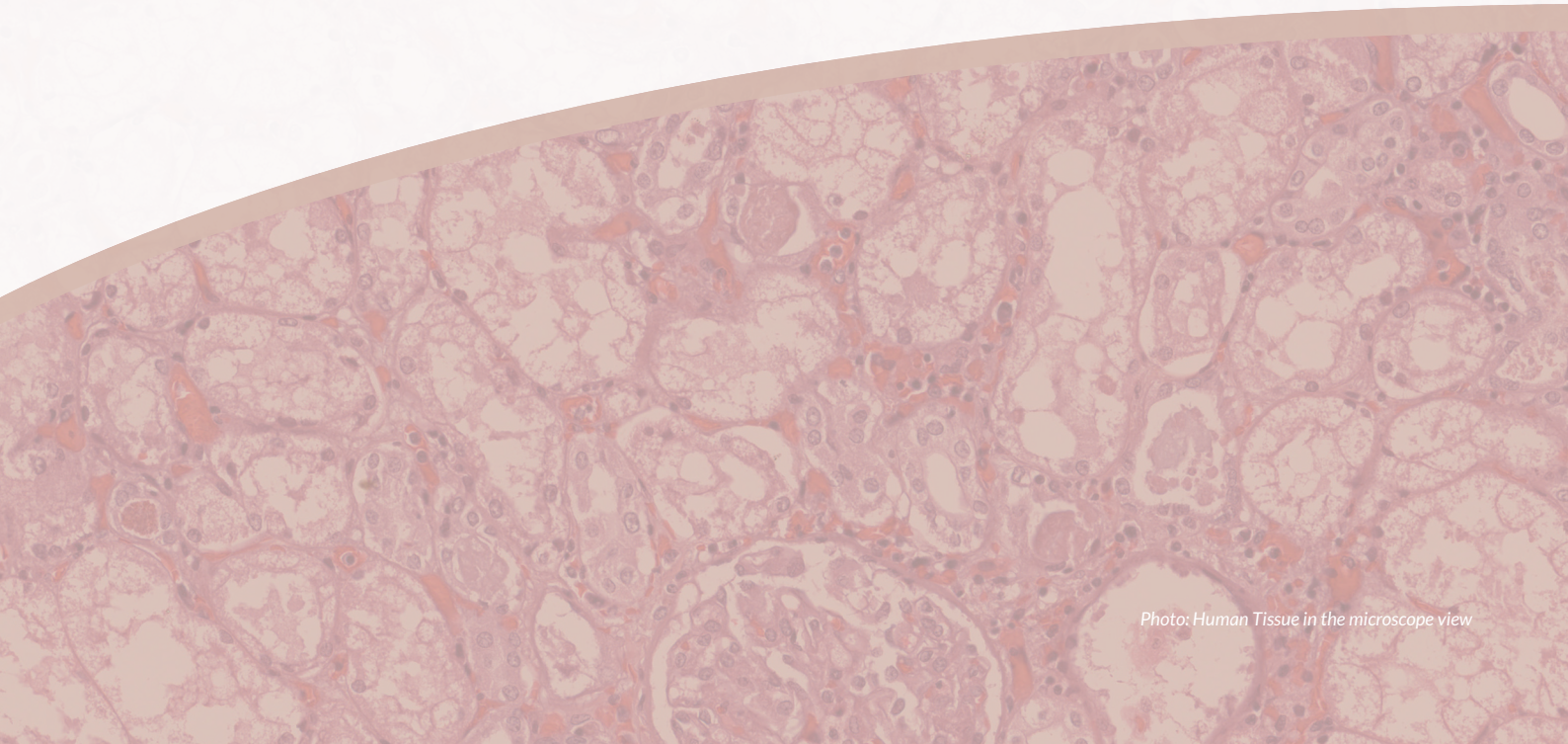


Photo: Human Tissue in the microscope view

Nucleic Acid Purification Kits Selection Guide:

		Product	Page	Ref.	Starting material	Format: Spin Columns	Format: Reagent	Format: Magnetic Bead
DNA	Genomic	HigherPurity™ Blood Genomic DNA Extraction Mini Spin Kit	86	AN0044 AN0045	Mammalian/human blood, cultured cells	✓		
		HigherPurity™ Blood Genomic DNA Extraction kit	94	AN0043	Mammalian/human blood, cultured cells		✓	
		HigherPurity™ Buccal Swab Genomic DNA Extraction kit	92	AN0036	Buccal Swab		✓	
		HigherPurity™ Buccal Saliva Genomic DNA Extraction kit	93	AN0037	Buccal Saliva		✓	
		HigherPurity™ Buccal Swab/Saliva Genomic DNA Extraction kit	93	AN0038	Buccal Swab Buccal Saliva		✓	
		HigherPurity™ Tissue Genomic DNA Purification kit	86	AN0210 AN0211	Tissue, cultured cells, mouse tail	✓		
		HigherPurity™ Stool DNA Isolation kit	88	AN0130 AN0131	Fresh or frozen stool samples	✓		
		HigherPurity™ FFPE DNA Isolation kit	87	AN0160	Tissue sections (FFPE)	✓		
		HigherPurity™ Plant DNA Purification kit	88	AN0110 AN0112	Plant tissues	✓		
		MagBeads™ Plant Genomic DNA Isolation kit	97	AN0531 AN0532 AN0533	Plant tissues			✓
		HigherPurity™ Soil DNA Isolation kit	90	AN0140 AN0141	Soil samples	✓		
		HigherPurity™ Bacterial Genomic DNA Isolation	89	AN0066 AN0067	Bacteria	✓		
		MagBeads™ Bacterial G (-) Genomic DNA Isolation	94	AN0501 AN0502 AN0503	Gram (-) Bacteria			✓
		MagBeads™ Bacterial G (+) Genomic DNA Isolation	95	AN0511 AN0512 AN0513	Gram (+) Bacteria			✓
		HigherPurity™ Yeast Genomic DNA Isolation Mini Spin Kit	89	AN0080 AN0081	Yeast	✓		
		MagBeads™ Yeast Genomic DNA Isolation kit	96	AN0551 AN0552 AN0553	Yeast			✓
	Plasmid	WideUSE™ Plasmid Purification kit	92	AN0068 AN0069	Plasmid propagated in *E. coli*	✓		
		Magbeads™ Plasmid Purification kit	96	AN0541 AN0542 AN0543	Plasmid propagated in *E. coli*			✓
	DNA Fragments	Clean-Easy™ PCR Purification kit	91	AN0063 AN0064	PCR mixture	✓		
		Clean-Easy™ Agarose Purification kit	91	AN0070 AN0071	Agarose gel slices	✓		
		MagBeads™ PCR Clean-up	95	AN0521 AN0522 AN0523	PCR mixture			✓
	Viral	HigherPurity™Viral DNA/RNA Mini Spin kit	90	AN0605	Serum, plasma, whole blood	✓		
	Others	HigherPurity™ Circulating Genomic DNA Purification Mini Spin Kit	87	AN0260	Serum, plasma, other body fluids	✓		
RNA	Tissue	HigherPurity™ Blood/Cultured Cell Total RNA kit	98	AN0142	Cultured cells, blood	✓		
		HigherPurity™Tissue Total RNA Purification kit	98	AN0150 AN0152	Cultured cells, tissues, total RNA	✓		
		HigherPurity™ Plant RNA Purification kit	97	AN0100 AN0102	Plant tissues	✓		
	Viral	HigherPurity™ Viral DNA/RNA Mini Spin kit	90	AN0605	Serum, plasma, whole blood	✓		
	Others	HigherPurity™ RNA Total (All Sizes) Isolation Kit	99	AN0280	Cultured cells, tissues, bacteria, yeast, blood, plants	✓		

DNA Spin Column based Purification

HigherPurity™ Blood Genomic DNA Extraction Mini Spin Kit

For a reliable, easy and rapid DNA purification from whole blood, plasma, serum, buffy coat and cell culture

Ordering info:

Cat No.	Size
AN0044-S	20 rxn
AN0044	50 rxn
AN0045	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 50 Collection tubes (2 mL)
- 20 mL BLY Buffer
- 15 mg Proteinase K
- 30 mL WB1 Buffer
- 6 mL WB2 Buffer
- 10 mL EB Buffer

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Pol. (p.103)

Description:

HigherPurity™ Blood Genomic DNA Extraction Mini Spin kit is a reliable, easy-to-use and rapid method for high-quality genomic DNA purification from various sources, including: whole blood, plasma, serum, buffy coat and cell culture. The kit uses HigherPurity™ breakthrough technology based in DNA ability to bind silica in the presence of high concentrations of chaotropic salts.

Advantages & Features:

- ✓ **Fast protocol:** results in 28 minutes.
- ✓ **High-quality** genomic DNA purification from various sources.
- ✓ **Reproducible** extraction of high molecular weight genomic DNA purified.
- ✓ **Safe and convenient:** avoids phenol/chloroform extraction.
- ✓ **Efficient:** 3-6 µg of genomic DNA from a 200 µl blood sample.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.

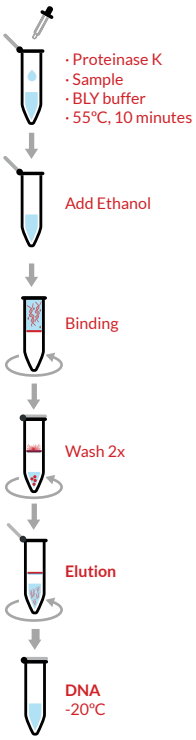
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - PCR.
  - Cloning.
  - DNA sequencing.
  - Southern blot analysis.

Quality control:

- ✓ Tested on a lot-to-lot basis by isolating total DNA from 200 µl of whole Human blood.
- ✓ DNA purified is analysed by:
  - Spectrophotometer: Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.

Protocol:



HigherPurity™ Tissue Genomic DNA Purification Kit

For a highly efficient, easy and convenient purification of total DNA from a variety of tissue

Ordering info:

Cat No.	Size
AN0210-S	20 rxn
AN0210	50 rxn
AN0211	100 rxn

Includes for 50 rxn:

- 15 mL Buffer BLY1
- 15 mL Buffer BLY2
- 22 mL Wash Buffer 1
- 10 mL Wash Buffer 2
- 30 mL Elution Buffer
- 11 mg Proteinase K
- 0.55 mL RNAse A (100 mg/mL)
- 50 CleanEasy™ MiniSpin Columns
- 100 Collection tube (2 mL)
- 50 microtubes (1.5 mL)
- 50 Micropestle

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Polymerase (p.103)
- Custom solutions (p.147)
- RNAse (p.111)

Description:

HigherPurity™ Tissue Genomic DNA Purification Kit offers a highly efficient, rapid and convenient method for purification of total DNA from a variety of tissues. The kit is based in DNA ability to bind silica in the presence of high concentrations of chaotropic salts.

Advantages & Features:

- ✓ **Highly efficient:** yields up to 50 µg, depends on type of sample.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Easy and fast procedure:** it takes 54 minutes for purification of total DNA from a variety of tissues.
- ✓ **Mini format.**

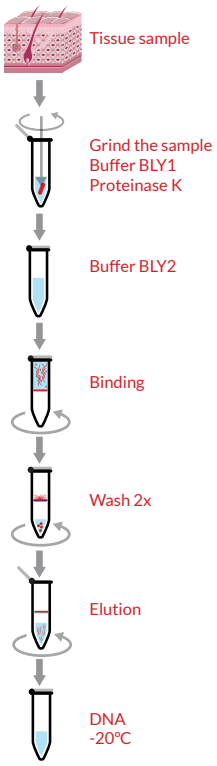
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - RT-PCR.
  - Southern blotting.
  - RFLP.

Quality control:

- ✓ Total DNA is isolated from a 30 mg thorax muscle tissue sample.
- ✓ Purified DNA is quantified using a spectrophotometer with a typical yield of more than 10 µg of genomic DNA and an A260nm/A280nm ratio of 1.8-2.0.
- ✓ Quality is further checked by agarose gel electrophoresis.

Protocol:



HigherPurity™ Circulating Genomic DNA Purification Mini Spin Kit

For a pure, concentrated and rapid purification of circulating DNA from serum and plasma

Ordering info:

Cat No.	Size
AN0260-S	20 rxn
AN0260	50 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 100 Collection tubes (2 mL)
- 15 mL BLY Buffer
- 30 mg Proteinase K
- 80 mL Binding Buffer
- 10 mL WB1 Buffer
- 4 mL Elution Buffer

Related products:

- Horse-Power™ Taq DNA Pol. (p.103)
- Proteinase K (p.112)
- RNAse (p.111)

Description:

The kit offers a pure, concentrated and rapid simultaneous purification of circulating DNA from cell–free samples such as serum and plasma (250 µl). The cell-free DNA in plasma and serum is known to be highly fragmented 50 - 1,000 bp. The degree of fragmentation depends on several parameters like origin DNA (fetal, tumor, microbial DNA), health of the donor blood, blood sampling procedure and handling of the sample.

The kit uses HigherPurity™ breakthrough technology based in nucleic acid ability to bind silica in the presence of high concentrations of chaotropic salts. For this, it is used a special columns designed for high recovery, especially of fragmented DNA in a range 100-1,000 bp and optimized Binding buffer.

Advantages & Features:

- ✓ **Fast protocol:** rapid isolation of circulating DNA in 58 minutes.
- ✓ **Sample size:** 250 µl (plasma or serum).
- ✓ **High purity:** complete removal of inhibitors.
- ✓ **Proven performance:** expected yield from 0.1-100 ng per mL (plasma/serum). Variable because each donor and disease status.
- ✓ **Concentrated:** elution volume from 25-50 µl.
- ✓ **Ready-to-use:** DNA obtained for direct use in PCR or real-time PCR.

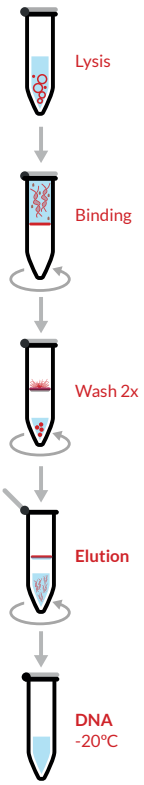
Applications:

- ✓ Circulating DNA from plasma or serum.
- ✓ Detection of biomarkers in various diseases.
- ✓ Analysis of fetal DNA from maternal plasma.

Quality control:

- ✓ DNA isolated from 250 - 1,000 µl of plasma/serum quantified by spectrophotometer and analysed by PCR.

Protocol:



HigherPurity™ FFPE DNA Isolation Kit

For easy, rapid and efficient extraction and purification of DNA From FFPE samples

Ordering info:

Cat No.	Size
AN00160-S	20 rxn
AN00160	50 rxn

Includes for 50 rxn:

- 30 mL Deparaffinization solution
- 10 mL Tissue Lysis Buffer
- 15 mL Lysis/ Binding Buffer
- 2 x 30 mg Proteinase K
- 18 mL Desinhibition Buffer
- 10 mL Wash Buffer
- 10 mL Elution Buffer
- 50 units MicroSpin Columns
- 100 units Collection tubes

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Pol. (p.103)
- RNAse (p.111)

Description:

HigherPurity™ Formalin fixation and paraffin embedding (FFPE) DNA Isolation Kit is an easy, rapid and efficient method for long-term preservation of most archived pathological specimens. It extraction involves two different phases: Deparaffinization and DNA extraction.

HigherPurity™ advanced technology omits the use of flammable and malodorous xylene or d-limonene commonly used for deparaffinization, a proprietary buffer formulation Deparaffinization solution is used for the complete dissolution of the wax to release the tissue.

Advantages & Features:

- ✓ **High quality:** of DNA obtained.
- ✓ **Very easy procedure:** it takes 173 minutes to paraffin removal with minimal handling.
- ✓ **Safe:** avoids xylene and other toxic solvents.
- ✓ **High purity of sample:** complete removal of contaminants and inhibitors for reliable downstream applications.
- ✓ **Concentrated:** low elution volume between 15-30 µl.
- ✓ **High durability:** optimized for long-term preservation of most archived pathological specimens.
- ✓ **Complete solution:** includes two different phases Deparaffinization and DNA extraction.

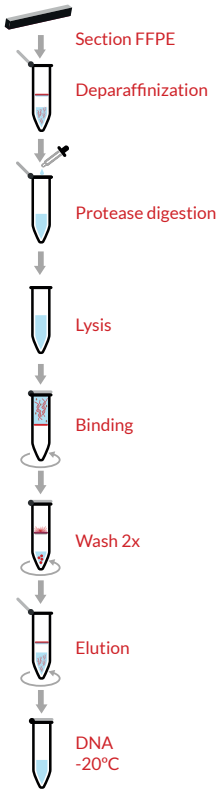
Applications:

- ✓ Rapid isolation of DNA from formalin-fixed, paraffin-embedded samples.
- ✓ Isolation of DNA from fresh and archived FFPE samples.
- ✓ Isolation of DNA from specimen of object slides.
- ✓ Typical downstream applications: PCR, qPCR, NGS, STR analysis.

Quality control:

- ✓ DNA isolated from tissue slice paraffin-embedded (10 µm) quantified by spectrophotometer and analysed by PCR.

Protocol:



HigherPurity™ Plant DNA Purification Kit

For a highly efficient, convenient and rapid purification of total DNA from a variety of plant tissues

Ordering info:

Cat No.	Size
AN00110-S	20 rxn
AN00110	50 rxn
AN00112	100 rxn

Includes for 50 rxn:

- 50 DNAprep spin columns
- 50 Filter columns
- 100 Elution tubes (1.5 mL)
- 100 Collection tubes (2 mL)
- 25 mL BL1A Buffer
- 25 mL BL1B Buffer
- 7.5 mL BL2 Buffer
- 15 mL BL3 Buffer
- 22.5 mL Wash Buffer 1
- 12 mL Wash Buffer 2
- 15 mL Elution Buffer
- 275 µl RNase A Solution (10 mg/mL)

Description:

HigherPurity™ Plant DNA Purification Kit offers a highly efficient, convenient and rapid method for purification of total DNA from a variety of plant tissues. The kit uses HigherPurity™ breakthrough technology based in DNA ability to bind silica in the presence of high concentrations of chaotropic salts.

Advantages & Features:

- ✓ **Highly efficient:** yields up to 5-40 µg total DNA from young leaves.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Really easy and fast procedure:** it takes 56 minutes to results with minimal handling steps.
- ✓ **Versatile:** high quality DNA obtained from several types of plants.
- ✓ **Mini format.**

Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - RT-PCR.
  - Southern blotting.
  - RFLP.

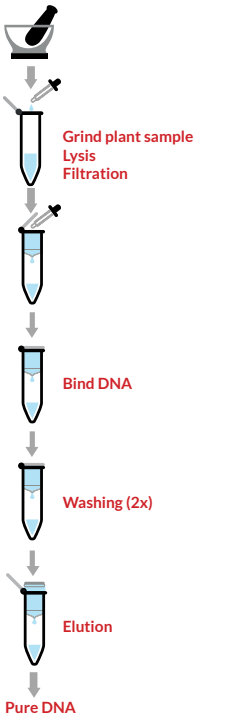
Quality control:

- ✓ Isolated from a 100 mg young leaf sample, quantified with a spectrophotometer and analysed by electrophoresis.

Related products:

- RNAse (p.111)
- HigherPurity™ Plant RNA Purification Kit (p.97)
- Horse-Power™ Taq DNA Polymerase (p.103)
- pSpark® DNA Cloning vectors (p.12)

Protocol:



HigherPurity™ Stool DNA Isolation Kit

For a reliable, easy and convenient high quality DNA isolation from fresh or frozen stool samples

Ordering info:

Cat No.	Size
AN0130-S	20 rxn
AN0130	50 rxn
AN0131	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 100 Collection tubes (2 mL)
- 50 Dry bead tube
- 50 microcentrifuge tube (1.5 mL)
- 12 g Glass Beads
- 20 mL Lysis Solution 1 (LS1)
- 15 mL Buffer A
- 15 mL Inhibitor Removal Buffer (IR-Buffer)
- 20 mL Buffer B
- 20 mL WB1 Buffer
- 20 mL EB Buffer
- 15 mg Proteinase K

Description:

HigherPurity™ Stool DNA Isolation Kit provides a reliable, easy and convenient technique to isolate high quality DNA from fresh or frozen stool samples. The kit uses HigherPurity™ breakthrough technology based in DNA ability to bind silica in the presence of high concentrations of chaotropic salts as guanidinium thiocyanate.

Fecal samples are rapidly and efficiently lysed by bead beating. The sample DNA is then bound to the surface of a Spin Filter membrane and washed and the bound DNA is then desorbed from the surface of the Spin Filter column. The inhibitors of the downstream PCR will be removed by utilizing the DNA binding column and the buffers system included in the kit.

Advantages & Features:

- ✓ **High purity:** eliminates humic acid, polysaccharides, phenol compounds and enzyme inhibitor from stool sample.
- ✓ **Efficient:** fecal samples are lysed by bead beating.
- ✓ **Time-saving protocol:** rapid isolation of ready-to-use DNA within 54 minutes with minimal handling steps.
- ✓ **Safe and convenient:** avoids phenol/chloroform extraction.
- ✓ **Sample Size:** 50~200 mg of fresh or frozen stool sample.
- ✓ **Extremely easy procedure:** to isolate high quality DNA from fresh or frozen stool samples.

Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blots.

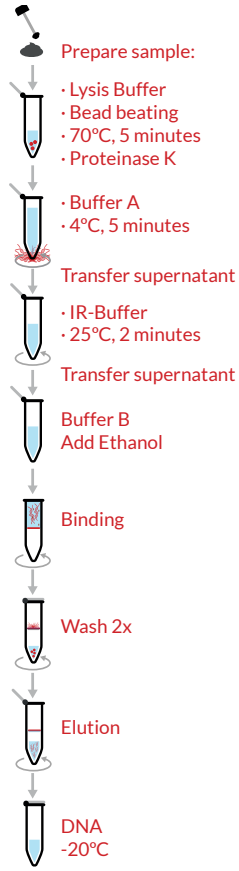
Quality control:

- ✓ Tested for isolation of DNA from stool sample.
- ✓ The quantity and quality of purified DNA attend to:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Pol. (p.103)

Protocol:



HigherPurity™ Bacterial Genomic DNA Isolation Kit

For an accurate, easy and rapid high quality DNA isolation from both Gram negative and Gram positive bacteria

Ordering info:

Cat No.	Size
AN0066-S	20 rxn
AN0066	50 rxn
AN0067	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 50 Collection tubes
- 15 mL BR-1 Buffer
- 20 mL BLU Buffer
- 30 mL WB1 Buffer
- 30 mL WB2 Buffer
- 15 mL EB Buffer
- 30 mg Proteinase K
- 25 mg Lysozyme

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Pol. (p.103)
- pColiExpress™ Glue Enzyme kits (p.34)
- Molecular Microbiology services (p.140)

Description:

HigherPurity™ Bacterial Genomic DNA Isolation Kit provides an accurate, easy-to use and rapid method to isolate high quality DNA from both Gram negative and Gram positive bacteria. The kit uses HigherPurity™ breakthrough technology based in the ability to bind silica in the presence of high concentrations of chaotropic salts as guanidinium thiocyanate.

The extraction process uses comfortable CleanEasy™ MiniSpin Columns and includes an initial cell-wall lysis step with the appropriate enzyme to ensure efficient cell lysis and DNA release from the cell.

Advantages & Features:

- ✓ **Highly efficient:** yields up to 24 µg.
- ✓ **Really fast and easy procedure:** it takes 78 minutes to get results with minimal handling steps.
- ✓ **Safe:** avoids phenol/chloroform extraction.
- ✓ **Convenient:** ideal for bacterial DNA isolation from cell pellets after culturing.

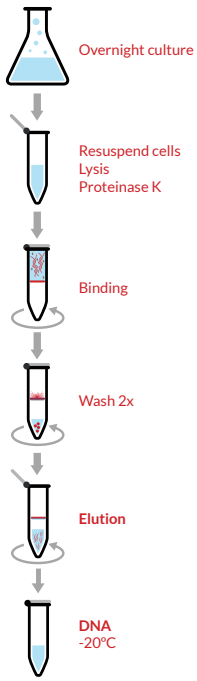
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - Digestion with restriction enzymes
  - Automated sequencing
  - PCR template.
  - Southern Blots.

Quality control:

- ✓ Tested on a lot-to-lot basis by isolating total DNA from *E. coli*.
- ✓ The quantity and quality of purified DNA attend to:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



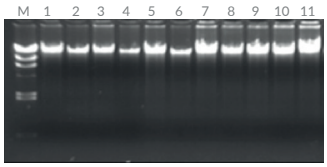


Figure 6.3.: Genomic DNA isolated from different strains of ***E. coli*** and ***B. subtilis*** purified with Bacterial Genomic DNA Isolation Kit

HigherPurity™ Yeast Genomic DNA Isolation Kit

For a easy, consistent and rapid high-quality genomic DNA purification from yeast

Ordering info:

Cat No.	Size
AN0080-S	20 rxn
AN0080	50 rxn
AN0081	100 rxn

Includes for 50 rxn:

- 50 Minispin columns
- 50 collection tubes
- 35 mL BLL Buffer
- 20 mL BLY Buffer
- 15 mg Proteinase K
- 5,000 U Lyticase
- 30 mL WB1 Buffer
- 6 mL WB2 Buffer
- 10 mL EB Buffer

Description:

HigherPurity™ Yeast Genomic DNA Extraction Kit is an easy, consistent and rapid method for high-quality genomic DNA purification from yeast. The kit uses HigherPurity™ breakthrough technology based DNA ability to bind silica in the presence of high concentrations of chaotropic salts. The kit combines the power of CleanEasy™ Spin Columns technology with the lyticase, glass beads and alkaline-SDS lysis of yeast cells. The cell wall of yeast cells are rapidly and efficiently lysed enzymatically by lyticase.

The sample DNA is then bound to the surface of a Spin Filter membrane and washed and the bound DNA is then desorbed from the surface of the Spin Filter column. The inhibitors of the downstream PCR will be removed by utilizing the DNA binding column and buffers system included in the kit.

Advantages & Features:

- ✓ **Proven performance:** isolating DNA from yeast and other cultured fungus.
- ✓ **Safe:** no phenol-chloroform extraction.
- ✓ **Pure and high quality genomic.**
- ✓ **DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Easy and fast protocol:** results in 88 minutes.

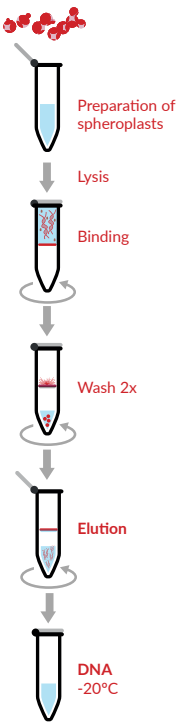
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blots.

Quality control:

- ✓ Tested on a lot-to-lot basis by isolating total DNA from 50 mg yeast.
- ✓ DNA purified is analysed by:
  - Spectrophotometer: Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.

Protocol:



HigherPurity™ Soil DNA Isolation Kit

For a high quality, convenient and easy high quality DNA isolation from soil samples

Ordering info:

Cat No.	Size
AN0140-S	20 rxn
AN0140	50 rxn
AN0141	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 100 Collection tubes (2 mL)
- 50 Dry bead tube
- 12 g Glass Bead
- 40 mL Lysis Solution 1 (LS1)
- 20 mL WB1 Buffer
- 35 mL EB Buffer
- 15 mg Proteinase K
- 15 mL Inhibitor Removal Buffer (IR-Buffer)
- 50 microcentrifuge tube (1.5 mL)
- 15 mL Buffer A
- 25 mL Buffer B

Description:

HigherPurity™ Soil DNA Isolation Kit provides a high quality, convenient and easy-to use method technique to isolate high quality DNA from soil samples. The kit uses HigherPurity™ breakthrough technology based in DNA ability to bind silica in the presence of high concentrations of chaotropic salts as guanidinium thiocyanate.

Extractions are rapidly and efficiently lysed by bead beating. The sample DNA is then bound to the surface of a silica membrane that is inside the CleanEasy™ Spin Columns and washed and the bound DNA is then desorbed from the surface of the membrane. The inhibitors of the downstream PCR will be removed with the buffers system included in the kit.

Advantages & Features:

- ✓ **High quality** DNA isolated from soil samples.
- ✓ **Time-Saving:** rapid isolation of ready-to-use DNA within 58 minutes.
- ✓ **Easy, safe and convenient:** avoids phenol/chloroform extraction.
- ✓ **High purity:** eliminate humic acid, polysaccharides, phenol compounds and enzyme inhibitor from stool sample.
- ✓ **Sample Size:** mini Kit Prep: 0.2~1g of soil sample.
- ✓ **Efficient:** soil samples are lysed by bead beating.

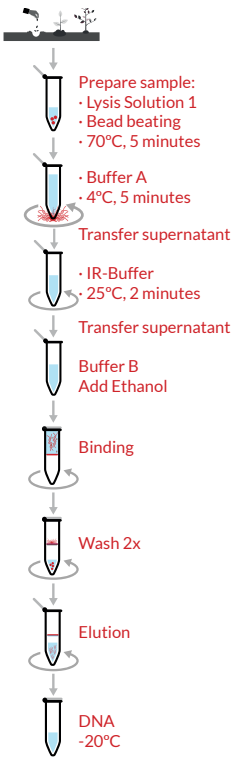
Applications:

- ✓ All Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blots.

Quality control:

- ✓ Tested for isolation of DNA from soil sample.
- ✓ The quantity and quality of purified DNA attend to:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.

Protocol:



HigherPurity™ Viral DNA/RNA Mini Spin Kit

For a efficient, safe and rapid simultaneous purification of viral DNA and RNA from cell –free samples

Ordering info:

Cat No.	Size
AN0605-S	20 rxn
AN0605	100 rxn

Includes for 100 rxn:

- 100 CleanEasy™ MiniSpin Columns
- 200 Collection tubes (2 mL)
- 25 mL BLY Buffer
- 40 mg Proteinase K
- 36 mL WB1 Buffer
- 20 mL WB2 Buffer
- 620 µg Carrier RNA (lyophilized)
- 15 mL Elution Buffer

Related products:

- BrightMAX™ DNA Ladders (p.116)
- RNA services (p.140)
- Proteinase K (p.112)

Description:

HigherPurity™ Viral DNA/RNA Mini Spin Kit offers an efficient, fast and simultaneous purification of viral DNA and RNA from cell–free samples such as serum, plasma and cerebrospinal fluid. The kit uses HigherPurity™ breakthrough technology based in nucleic acid ability to bind silica in the presence of high concentrations of chaotropic salts. The viral RNA/DNA molecules bind to the silica-based media and impurities such as proteins and nucleases are removed by thorough washing with Wash Buffer. The RNA/DNA is then eluted in sterile, RNase free water.

Advantages & Features:

- ✓ **Efficient:** 3-6 µg of genomic DNA from a 200 µl plasma/serum.
- ✓ **Fast:** results in less of 28 minutes.
- ✓ **Safe:** no phenol-chloroform extraction.
- ✓ **Ready-to-use:** genomic DNA, in all Molecular Biology applications.

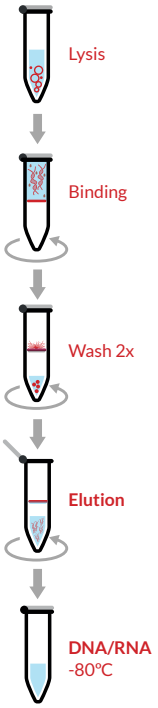
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - RT-PCR.
  - qRT-PCR.
  - qPCR.
  - Viral load monitoring.
  - Viral detection.
  - Viral genotyping.

Quality control:

- ✓ DNA isolated from 200 µl of plasma/serum and analysed by PCR.

Protocol:



CleanEasy™ Agarose Purification Kit

For an accurate, rapid and efficient DNA extraction from agarose gels

Ordering info:

Cat No.	Size
AN0070-S	20 rxn
AN0070	50 rxn
AN0071	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 50 Collection tubes (2 mL)
- 60 mL QG Buffer
- 11.25 mL PE Buffer
- 10 mL EB Buffer

Related products:

- Horse-Power™ Taq DNA Pol. (p.103)
- pColiExpress™ Glue Enzyme kits (p.34)
- BrightMAX™ DNA Ladders (p.116)
- Custom solutions (p.147)
- pSpark® DNA cloning vectors (p.12)

Description:

CleanEasy™ Agarose Purification Kit provides an accurate, rapid and efficient method to extract DNA from agarose gels. The kit uses HigherPurity™ breakthrough technology based in solubilisation and binding of DNA to a silica membrane in presence of chaotropic salts. Comfortable CleanEasy™ MiniSpin Columns contains an exclusive membrane that allows binding a unique DNA fragment, previously excised from agarose gel.

Advantages & Features:

- ✓ **Extremely fast and easy procedure:** it takes 5 minutes to results with minimal handling steps.
- ✓ **Reproducible yields:** > 80% DNA Recovery (0.7 -1% agarose) and reproducible yields of pure DNA.
- ✓ **Versatile:** compatible with a wide spectrum of size fragments, suitable since 100 bp up or any kind of agarose and gel buffer systems.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.

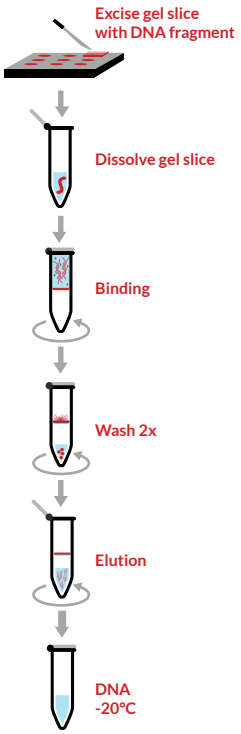
Applications:

- ✓ Purification of DNA fragments (obtained by PCR or digestion with restriction enzymes) from agarose gels.
- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - PCR.
  - Cloning.
  - DNA sequencing.
  - Southern blot analysis.

Quality control:

- ✓ Tested in the purification of a 0.5 kb DNA fragment excised from 2% agarose gel.
- ✓ The purified band is analysed in agarose gel electrophoresis and quantify by spectrophotometry 260/280nm.

Protocol:



CleanEasy™ PCR Purification Kit

For efficient, consistent and rapid purification of DNA and remove contaminants from reaction mixtures

Ordering info:

Cat No.	Size
AN0063-S	20 rxn
AN0063	50 rxn
AN0064	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 50 Collection tubes
- 25 mL PB Buffer
- 11.25 mL PE Buffer
- 9 mL EB Buffer

Related products:

- Horse-Power™ Taq DNA Polymerase (p.103)
- BrightMAX™ DNA Ladders (p.116)
- FastPANGEA™ Long PCR DNA Polymerase (p.106)
- Custom solutions (p.147)

Description:

CleanEasy™ PCR Purification kit provides an efficient, consistent and rapid method to purify DNA and remove contaminants from reaction mixtures (e.g. PCR, digestion or labeling reactions). Comfortable CleanEasy™ MiniSpin Columns contains an exclusive membrane that allows DNA adsorption in presence of chaotropic salts and the removal of contaminants.

Advantages & Features:

- ✓ **Really fast and easy procedure:** it takes 14 minutes to results with minimal handling steps.
- ✓ **Reproducible yields:** high DNA Recovery (70-90%) and consistent yields of pure DNA.
- ✓ **Sensitive:** proven performance for DNA fragments as short as 75 bp.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.

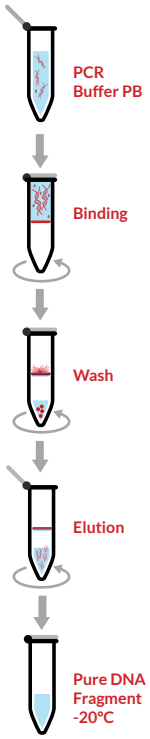
Applications:

- ✓ Removal of proteins and salts from PCR, restriction digestion, dephosphorylation, ligation or labelling reactions.
- ✓ Changing of a restriction enzyme buffer.
- ✓ Re-purification of genomic DNA.

Quality control:

- ✓ Tested in the purification of a 0.6 kb DNA fragment from PCR mixture.
- ✓ Purified band is analysed in agarose gel electrophoresis.

Protocol:



WideUse™ Plasmid Purification Kit

For a reliable, convenient and rapid routinary isolation of high quality plasmid preparations in mini format

Ordering info:

Cat No.	Size
AN0068-S	20 rxn
AN0068	50 rxn
AN0069	100 rxn

Includes for 50 rxn:

- 50 CleanEasy™ MiniSpin Columns
- 50 Collection tubes
- 16 mL S-I Buffer
- 16 mL S-II Buffer
- 16 mL S-III Buffer
- 30 mL Binding Buffer
- 8 mL Washing Buffer
- 10 mL Elution Buffer
- 160 µl RNAse

Description:

WideUse™ Plasmid Purification kit offers a reliable, convenient and rapid method for routinary isolation of high quality plasmid preparations in mini format. The kit uses HigherPurity™ breakthrough technology based in DNA ability to bind silica in the presence of high concentrations of chaotropic salts. Comfortable CleanEasy™ MiniSpin Columns have packet an exclusive silica membranes and it binds up to 24 µg DNA.

Advantages & Features:

- ✓ **Highly efficient:** yields up to 24 µg.
- ✓ **Pure plasmid DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Really fast and easy procedure:** it takes 56 minutes to results with minimal handling steps.
- ✓ **Safe:** avoids phenol/chloroform extraction.
- ✓ **Convenient:** ideal for routinary isolation of high quality plasmid preparations.

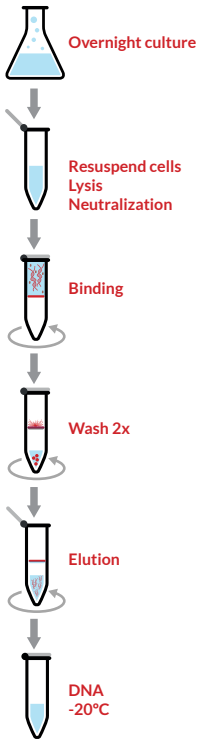
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Bacterial transformation.
  - Transfection.

Quality Control:

- ✓ Tested for the isolation of any plasmid DNA from transformed *E. coli*.
- ✓ The quality of purified DNA is analysed by:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



DNA Reagent based Purification

HigherPurity™ Buccal Swab Genomic DNA Extraction Kit

For an efficient, convenient and easy DNA extraction from buccal swab

Ordering info:

Cat No.	Size
AN0036-S	20 rxn
AN0036	50 rxn

Includes for 50 rxn:

- 60 mL Resuspension Solution
- 12 mL S2 Buffer
- 10 mL S3 Buffer
- 1 mL S4 Buffer
- 15 mg Proteinase K
- 10 mL EB Buffer
- 50 units Sterile swabs

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Pol. (p.103)
- Custom solutions (p.147)
- RNAse (p.111)

Description:

HigherPurity™ Buccal Swab Genomic DNA Extraction kit provides an efficient, convenient and easy method for DNA extraction from buccal swab. The procedure includes sample collection, lysis, protein removing, DNA precipitation, washing and hydration.

Advantages & Features:

- ✓ **Convenient:** ideal for routine.
- ✓ **Highly Efficient:** 0.5-3 µg of genomic DNA from buccal swab.
- ✓ **Safe:** avoids phenol/chloroform extraction.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Easy protocol:** reduces sample collection distress and blood sample handling.
- ✓ **Versatile:** proven performance to isolate DNA from buccal swab of human, cats, dogs, sheeps, etc.

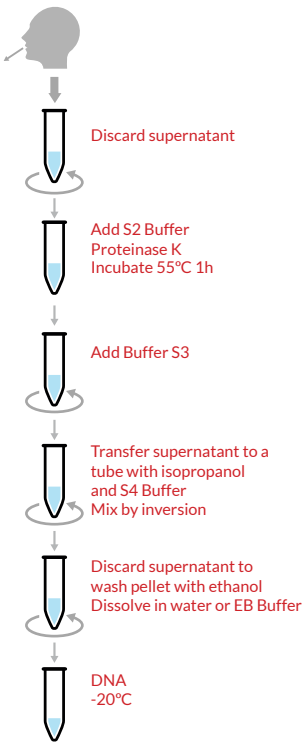
Applications:

- ✓ Purification of genomic DNA from buccal swab of different origins (human or animal).

Quality control:

- ✓ Analysed by a buccal swab DNA genomic extraction.
- ✓ DNA purified is analysed by:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.

Protocol:



HigherPurity™ Buccal Saliva Genomic DNA Extraction Kit

For an efficient, consistent and rapid DNA extraction from buccal saliva

Ordering info:

Cat No.	Size
AN0037-S	20 rxn
AN0037	50 rxn

Includes for 50 rxn:

- 60 mL Resuspension Solution
- 12 mL S2 Buffer
- 10 mL S3 Buffer
- 1 mL S4 Buffer
- 15 mg Proteinase K
- 10 mL EB Buffer
- 50 Funnels
- 50 Saliva Collection Tube

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Polymerase (p.103)
- BrightMAX™ DNA Ladders (p.116)
- Custom solutions (p.147)
- RNAse (p.111)
- Saliva Sample collection Kit (p.100)

Description:

HigherPurity™ Buccal Saliva Genomic DNA Extraction kit provides an efficient, consistent and rapid method for DNA extraction from buccal saliva. The procedure includes sample collection, lysis, protein removing, DNA precipitation, washing and hydration.

Advantages & Features:

- ✓ **Convenient:** ideal for routine.
- ✓ **Safe:** avoids phenol/chloroform extraction.
- ✓ **Highly efficient:** 10 µg of genomic DNA from saliva.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Time-saving protocol:** reduces sample collection distress and blood sample handling.

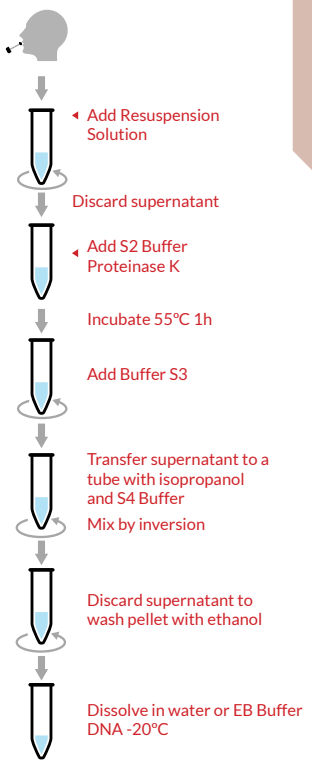
Applications:

- ✓ Purification of genomic DNA from buccal saliva of different origins (Human or animal).

Quality control:

- ✓ Analysed by saliva DNA genomic extraction.
- ✓ DNA purified is analysed by:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



HigherPurity™ Buccal Swab/Saliva Genomic DNA Extraction Kit

For accurate, easy and rapid DNA extraction from buccal swab and saliva

Ordering info:

Cat No.	Size
AN0038 - S	20 rxn
AN0038	150 rxn

Includes for 150 rxn:

- 3 x 60 mL Resuspension Solution
- 36 mL S2 Buffer
- 30 mL S3 Buffer
- 3 mL S4 Buffer
- 45 mg Proteinase K · 10 mL EB Buffer
- 150 units Sterile swabs

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Polymerase (p.103)
- Custom solutions (p.147)
- RNAse (p.111)

Description:

HigherPurity™ Buccal Swab/Saliva Genomic DNA Extraction kit provides an accurate, easy-to use and rapid method for DNA extraction from buccal swab and saliva. The procedure includes sample collection, lysis, protein removing, DNA precipitation, washing and hydration.

Advantages & Features:

- ✓ **Safe:** avoids phenol-chloroform extraction.
- ✓ **Efficient:** 0.5-3 µg of genomic DNA from buccal swab or 10 µg from saliva.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Time-saving protocol:** reduces sample collection distress and blood sample handling.

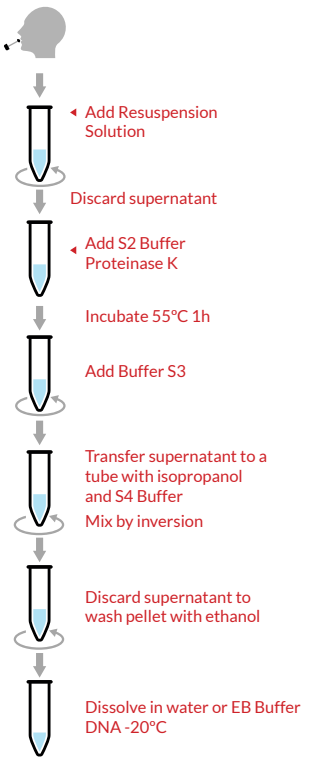
Applications:

- ✓ Purification of genomic DNA from Buccal Swab of different origins (Human or animal).
- ✓ Purification of genomic DNA from Saliva.

Quality control:

- ✓ Analysed by a Buccal Swab DNA Genomic extraction:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



HigherPurity™ Blood Genomic DNA Extraction Kit

For a reliable, easy and high-quality genomic DNA purification from whole blood, serum or cell lines

Ordering info:

Cat No.	Size
AN0043-S	20 rxn
AN0043	150 rxn

Includes for 150 rxn:

- 2 x 60 mL S1 Buffer
- 36 mL S2 Buffer
- 12 mL S3 Buffer
- 30 mg Proteinase K
- 10 mL EB Buffer

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Polymerase (p.103)
- BrightMAX™ DNA Ladders (p.116)
- Custom solutions (p.147)
- RNAse (p.111)

Description:

HigherPurity™ Blood Genomic DNA Extraction kit is a reliable, easy-to-use and rapid method for high-quality genomic DNA purification from various sources, including: whole blood, serum and cell lines. The procedure includes: lysis, protein removal, DNA precipitation, washing and hydration.

Advantages & Features:

- ✓ **Really easy and fast protocol:** it takes 86 minutes to results.
- ✓ **Highly efficient:** 3-6 µg of genomic DNA from a 200 µl blood sample.
- ✓ **Versatile:** high quality DNA obtained from different sources.
- ✓ **Safe and convenient:** avoids phenol/chloroform extraction.
- ✓ **Pure genomic DNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Reproducible extraction** of high molecular weight genomic DNA purified.

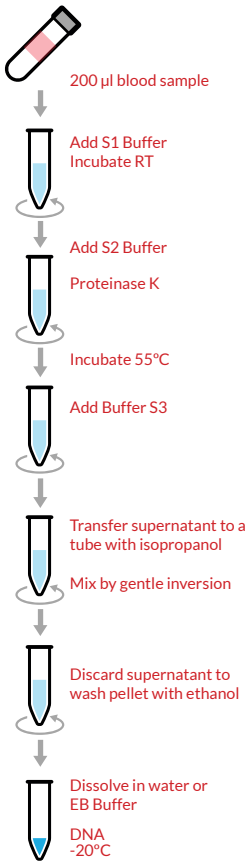
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - PCR.
  - Cloning.
  - DNA sequencing.
  - Southern blot analysis.

Quality control:

- ✓ Tested on a lot-to-lot basis by isolating total DNA from 200 µl of whole Human blood. DNA purified is analysed by:
  - Spectrophotometer: Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.

Protocol:



DNA Magnetic Bead based Purification

MagBeads™ Bacteria G (-) Genomic DNA Isolation

For a consistent, easy and rapid high quality DNA isolation from Gram-negative bacteria

Ordering info:

Cat No.	Size
AN0501	50 rxn
AN0502	100 rxn
AN0503	250 rxn

Includes for 50 rxn:

- 0.5 mL MagBeads™ solution
- 15 mL Lysis Buffer solution 1
- 5 mL Lysis Buffer solution 2
- 10 mL WB1 Buffer
- 5 mL EB Buffer
- 500 µL RNAse A

Related products:

- Proteinase K (p.112)
- Horse-Power™ Taq DNA Pol. (p.103)
- Custom solutions (p.147)
- RNAse (p.111)
- CaxBeads™ Magnetic Particles (p.129)

Description:

MagBeads™ Bacteria G (-) Genomic DNA Isolation Kit provides a consistent, easy-to use and rapid method to isolate high quality DNA from Gram negative bacteria. The kit uses MagBeads™ breakthrough technology for extraction based on paramagnetic beads.

It has been optimized specifically for isolating bacterial DNA from cell pellets after culturing. The extraction process includes an initial cell-wall lysis step with the appropriate Buffer to ensure efficient cell lysis and DNA release from the cell, DNA binding to the surface of the magnetic beads, washing and elution.

Advantages & Features:

- ✓ **High quality:** 100% chloroform and phenol free.
- ✓ **Safe:** avoids the uses of dangerous and polluting chaotropic salts.
- ✓ **Harmless:** ideal for the downstream applications.
- ✓ **Time-saving protocol:** avoids centrifugation step in DNA purification process.
- ✓ **Cost avoidance:** saves on equipment costs and increases portability of the technique.

Applications:

- ✓ All Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blot.

Quality control:

- ✓ Tested for isolation of DNA from *E. coli*. The quantity and quality of purified DNA attend to:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:

MagBeads™ Bacteria G (+) Genomic DNA Isolation

For effective, easy and convenient high quality DNA isolation from Gram-positive bacteria

Ordering info:

Cat No.	Size
AN0511	50 rxn
AN0512	100 rxn
AN0513	250 rxn

Includes for 50 rxn:

- 0.5 mL MagBeads™ solution
- 15 mL Suspension Buffer
- 1.5 mL Rupture Buffer
- 15 mL Lysis Buffer solution 1
- 5 mL Lysis Buffer solution 2
- 10 mL WB2 Buffer
- 5 mL EB Buffer
- 500 µL RNAse A

Related products:

- BrightMAX™ DNA Ladders (p.116)
- Molecular Microbiology services (p.140)
- RNAse (p.111)
- CaxBeads™ Magnetic Particles (p.129)

Description:

MagBeads™ Bacteria G (+) Genomic DNA Isolation Kit provides an effective, easy and convenient technique to isolate high quality DNA from Gram positive bacteria. The kit uses MagBeads™ advanced technology for extraction based on paramagnetic beads. Extraction process includes an initial cell-wall lysis step with the appropriate Buffer to ensure efficient cell lysis and DNA release from the cell, DNA binding to the surface of the magnetic beads, washing and elution.

Advantages & Features:

- **Proven performance:** for isolating bacterial DNA from cell pellets after culturing.
- **High quality:** 100% chloroform and phenol free.
- **Safe:** avoids the uses of dangerous and polluting chaotropic salts.
- **Harmless:** ideal for the downstream applications.
- **Time-saving protocol:** avoids centrifugation step in DNA purification process.
- **Cost-effective:** saves on equipment costs and increases portability of the technique.

Applications:

- All Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blot.

Quality control:

- Tested for isolation of DNA from *Bacillus subtilis*. The quantity and quality of purified DNA attend to:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:

MagBeads™ PCR Clean-up

For an efficient, easy and rapid DNA purification and remove contaminants from reaction mixtures

Ordering info:

Cat No.	Size
AN0521	50 rxn
AN0522	100 rxn
AN0523	250 rxn

Includes for 50 rxn:

- 5 mL MagBeads™ PCR solution
- 5 mL EB Buffer

Related products:

- BrightMAX™ DNA Ladders (p.116)
- CaxBeads™ Magnetic Particles (p.129)

Description:

MagBeads™ PCR Clean-up Kit provides an efficient, easy and rapid method to purify DNA and remove contaminants from reaction mixtures (e.g. PCR or labeling reactions). Protocol comprises of binding, washing and eluting steps, where contaminants in the reaction mixture are efficiently removed.

Advantages & Features:

- **High quality:** purity of DNA attends to Ratio A260/A280 (1.8-2.0).
- **Highly efficient:** yields up to 5 µg of PCR DNA.
- **Fast protocol:** results in 5 minutes.
- **Easy-to-use:** avoid centrifugation step.
- **Convenient:** proven performance in manual or automated DNA isolation.
- **Scalable:** sample size is adjustable.

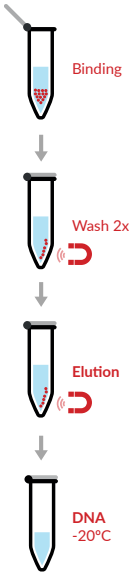
Applications:

- All Molecular Biology applications, such as:
  - Automated sequencing.
  - PCR template.
  - Southern Blot.

Quality control:

- Tested in the purification of a 0.6 kb DNA fragment from PCR mixture. The purified band is analysed in agarose gel electrophoresis.

Protocol:



MagBeads™ Plasmid Purification Kit

For a reliable, easy and high quality plasmid DNA isolation from bacteria cells

Ordering info:

Cat No.	
AN0541	50 rxn
AN0542	100 rxn
AN0543	250 rxn

Includes for 50 rxn:

- 0.5 mL MagBeads™ solution
- 6 mL Lysis Buffer 1
- 12 mL Lysis Buffer 2
- 9 mL Lysis Buffer 3
- 10 mL WB2 Buffer
- 5 mL EB Buffer
- 500 µL RNAse A

Related products:

- BrightMAX™ DNA Ladders (p.116)
- Custom solutions (p.147)
- WideUse™ Plasmid Purification Kit (p.92)
- CaxBeads™ Magnetic Particles (p.129)

Description:

MagBeads™ Plasmid Purification Kit provides a reliable, easy and convenient technique to isolate high quality plasmid DNA from bacteria cells. The kit uses for extraction MagBeads™ advanced technology based on paramagnetic beads.

Advantages & Features:

- ✓ **Proven performance:** for isolating plasmid DNA from overnight *E. coli* culture.
- ✓ **High quality:** 100% chloroform and phenol free.
- ✓ **Safe:** avoids the uses of dangerous and polluting chaotropic salts.
- ✓ **Harmless:** ideal for the downstream applications.
- ✓ **Time-saving protocol:** avoids centrifugation step in DNA purification process.
- ✓ **Cost-effective:** saves on equipment costs and increases portability of the technique.

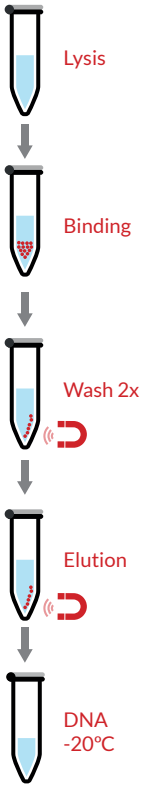
Applications:

- ✓ All Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Bacterial transformation.
  - Transfection.

Quality control:

- ✓ Tested for the isolation of any plasmid DNA from transformed *E. coli*. The quality of purified DNA is analysed by:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



MagBeads™ Yeast Genomic DNA Isolation Mini Kit

For an accurate, easy and convenient high quality DNA isolation from yeast

Ordering info:

Cat No.	Size
AN0551	50 rxn
AN0552	100 rxn
AN0553	250 rxn

Includes for 50 rxn:

- 0.5 mL MagBeads™ solution
- 1.5 mL Rupture Buffer
- 15 mL Lysis Buffer solution 1
- 5 mL Lysis Buffer solution 2
- 17.5 mL Binding Buffer
- 10 mL WB2 Buffer
- 5 mL EB Buffer
- 500 µL RNAse A

Related products:

- BrightMAX™ DNA Ladders (p.116)
- CaxBeads™ Magnetic Particles (p.129)

Description:

MagBeads™ Yeast Genomic DNA Isolation Kit provides an accurate, easy and convenient technique to isolate high quality DNA from yeast. The kit uses for extraction MagBeads™ advanced technology based on paramagnetic beads.

The extraction process includes an initial cell-wall lysis step with the appropriate Buffer to ensure efficient cell lysis and DNA release from the cell, DNA binding to the surface of the magnetic beads, washing and elution.

Advantages & Features:

- ✓ **High quality:** 100% chloroform and phenol free.
- ✓ **Safe:** avoids the uses of dangerous and polluting chaotropic salts.
- ✓ **Harmless:** ideal for the downstream applications.
- ✓ **Time-saving protocol:** avoids centrifugation step in DNA purification process.
- ✓ **Cost-effective:** saves on equipment costs and increases portability of the technique.

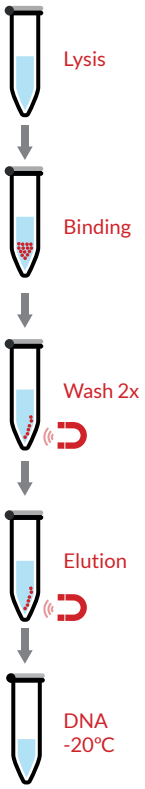
Applications:

- ✓ All Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blots.

Quality control:

- ✓ Tested for isolation of DNA from *Pichia pastori*. The quantity and quality of purified DNA attend to:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



MagBeads™ Plant Genomic DNA Isolation Kit

For efficient, easy and convenient isolation of high quality DNA from plant tissues

Ordering info:

Cat No.	Size
AN0531	50 rxn
AN0532	100 rxn
AN0533	250 rxn

Includes for 50 rxn:

- 0.5 mL MagBeads™ solution
- 15 mL Lysis Buffer 1
- 5 mL Lysis Buffer 2
- 10 mL Lysis Buffer 3
- 40 mL WB2 Buffer
- 5 mL EB Buffer
- 500 µL RNAse A

Related products:

- BrightMAX™ DNA Ladders (p.116)
- CaxBeads™ Magnetic Particles (p.129)
- RNAse (p.111)

Description:

MagBeads™ Plant Genomic DNA Isolation Kit provides an efficient, easy and convenient technique to isolate high quality DNA from plant tissues. Extraction is based on paramagnetic beads advanced technology. The extraction process includes an initial cell-wall lysis step with the appropriate Buffer to ensure efficient cell lysis and DNA release from the cell, DNA binding to the surface of the magnetic beads, washing and elution.

Advantages & Features:

- ✓ **Proven performance:** for isolating genomic DNA from Plant.
- ✓ **High quality:** 100% chloroform and phenol free.
- ✓ **Safe:** avoids the uses of dangerous and polluting chaotropic salts.
- ✓ **Harmless:** ideal for the downstream applications.
- ✓ **Time-saving protocol:** avoids the centrifugation step in the DNA purification process.
- ✓ **Cost-effective:** saves on equipment costs and increases portability of the technique.

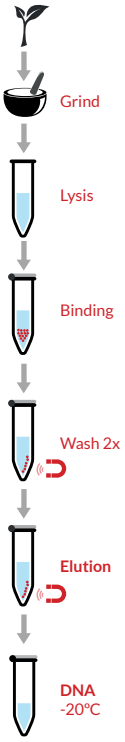
Applications:

- ✓ All Molecular Biology applications, such as:
  - Digestion with restriction enzymes.
  - Automated sequencing.
  - PCR template.
  - Southern Blot.

Quality control:

- ✓ Tested for the isolation of DNA from 100 mg of young leaves. The quantity and quality of purified DNA is analysed by:
  - Ratio 260/280 (1.8-2.0).
  - Agarose gel electrophoresis.
  - Digestion with restriction endonucleases.

Protocol:



RNA Spin Column based Purification

HigherPurity™ Plant RNA Purification Kit

For a highly efficient, easy and rapid of Total RNA purification from a variety of plant tissues

Ordering info:

Cat No.	Size
AN0100-S	20 rxn
AN0100	50 rxn
AN0102	100 rxn

Includes for 50 rxn:

- 50 RNAprep spin columns
- 100 Collection tubes (2 mL)
- 50 Filter column
- 30 mL L1 Buffer
- 30 mL L2 Buffer
- 30 mL WB1 Buffer
- 20 mL WB2 Buffer
- 6 mL RNase-free water
- 1.5 mL DNase Solution (1U/µl)

Related products:

- DNAse (p.112)
- Horse-Power™ Taq DNA Polymerase (p.103)
- HigherPurity™ Plant DNA Purification kit (p.88)
- RNA services (p.140)

Description:

HigherPurity™ Plant RNA Purification Kit offers a consistent, easy-to use and rapid method for purification of Total RNA from a variety of plant tissue. The kit uses HigherPurity™ breakthrough technology based in RNA ability to bind silica in the presence of high concentrations of chaotropic salts.

Advantages & Features:

- ✓ **Highly efficient:** yields up to 30 µg Total RNA from young leaves.
- ✓ **Pure RNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Easy and fast procedure:** it takes 28 minutes with minimal handling.
- ✓ **Safe:** avoids phenol-chloroform extraction, centrifugation with CsCl gradients or precipitation with LiCl.
- ✓ **Mini format.**

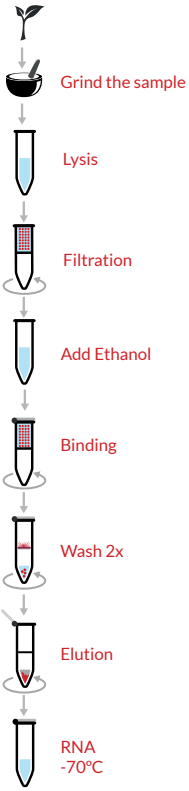
Applications:

- ✓ Purified RNA suitable for all common Molecular Biology applications, such as:
  - RT-PCR.
  - Northern blotting.

Quality control:

- ✓ Total RNA is isolated from a 100 mg young leaf sample.
- ✓ Purified RNA is quantified using a spectrophotometer with a typical yield of more than 10 µg of Total RNA and an A260nm/A280nm ratio of 1.9-2.1.
- ✓ Quality is further checked by agarose gel electrophoresis.

Protocol:



HigherPurity™ Blood/Cultured Cell Total RNA Kit

For a highly efficient, easy and convenient Total RNA from fresh whole Human blood and cultured cells

Ordering info:

Cat No.	Size
AN0145-S	20 preps
AN0145	50 preps
AN0146	100 preps

Includes for 50 rxn:

- 120 mL RL Buffer
- 25 mL Buffer
- 30 mL Wash Buffer 1
- 15 mL Wash Buffer 2 (concentrate)
- 10 mL RNase-free Water
- 50 RNAprep spin column
- 50 Filter Column
- 100 Collection Tube
- 50 Elution Tube

Description:

The kit is a highly efficient, easy and convenient **HigherPurity™ Blood/Cultured Cell Total RNA Kit** designed specifically for purifying Total RNA from fresh whole Human blood and cultured cells.

It is based in the use of special detergents and chaotropic salt to lyse cells and inactivate RNase. Once all contaminants have been removed the purified Total RNA is eluted by RNase-Free Water.

Advantages & Features:

- ✓ **Highly efficient:** yields up to 2 µg from whole blood or up to 30 µg from 1x10⁶ 293T cells.
- ✓ **Easy and fast protocol:** ready-to-use Total RNA in 19 minutes.
- ✓ **Convenient:** flexible column applicability (centrifugation and vaccum).
- ✓ **Optimized spin colums:** for Total RNA extraction.
- ✓ **High Binding capacity:** < 100 µg Total RNA/column.
- ✓ **Minimal Sample Volume:** less of 300 µl whole blood is needed.
- ✓ **Minimum elution volume:** 40 µl.

Quality control:

- ✓ Total RNA is isolated from 300 µl of fresh whole Human blood.
- ✓ Purified RNA is quantified using a spectrophotometer with a typical yield of more than 2 µg of Total RNA and an A260/A280 ratio of 1.8-2.0.
- ✓ Quality is further checked by agarose gel electrophoresis.

Applications:

- ✓ RT-PCR.
- ✓ Northern Blotting.
- ✓ Primer Extension.
- ✓ mRNA Selection.
- ✓ cDNA Synthesis.

Related products:

- BrightMAX™ DNA Ladders (p.116)
- RNA services (p.140)
- DNAse (p.112)

HigherPurity™ Tissue Total RNA Purification Kit

For an efficient, rapid and convenient purification of Total RNA from a variety of tissue and culture cells

Ordering info:

Cat No.	Size
AN0150-S	20 preps
AN0150	50 preps
AN0152	100 preps

Includes for 50 rxn:

- 25 mL Buffer BLY
- 30 mL Wash Buffer 1
- 15 mL Wash Buffer 2
- 10 mL RNase-free ddH2O
- 50 RNAprep spin column
- 50 Filter Column
- 100 Collection tube (2 mL)
- 50 microtube (1.5 mL)
- 50 Micropestle

Related products:

- Horse-Power™ Taq DNA Pol. (p.103)
- BrightMAX™ DNA Ladders (p.116)
- RNA services (p.140)
- DNAse (p.112)

Description

HigherPurity™ Tissue Total RNA Purification Kit offers an efficient, rapid and convenient method for purification of Total RNA from a variety of tissue and culture cells. The kit is based in nucleic acid ability to bind silica in the presence of high concentrations of chaotropic salts. Tissue samples can be efficiently homogenized in a microcentrifuge tube using the provided micropestle.

Advantages & Features:

- ✓ **Highly efficient:** yields up to to 50 µg, depends on type of sample.
- ✓ **Pure RNA:** ready-to-use in all Molecular Biology applications.
- ✓ **Easy and fast procedure:** it takes 28 minutes with minimal handling.
- ✓ **Mini format.**

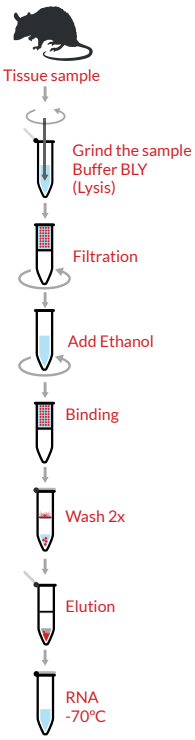
Applications:

- ✓ Purified DNA suitable for all common Molecular Biology applications, such as:
  - RT-PCR.
  - Northern blotting.
  - cDNA library construction.

Quality Control:

- ✓ Total RNA is isolated from a 30 mg thorax muscle tissue sample.
- ✓ Purified RNA is quantified using a spectrophotometer with a typical yield of more than 10 µg of Total RNA and an A260nm/A280nm ratio of 1.9-2.1.
- ✓ Quality is further checked by agarose gel electrophoresis.

Protocol:



HigherPurity™ RNA Total (All sizes) Isolation Kit

For an efficient, high quality and easy purification of Total RNA from small input amounts

Ordering info:

Cat No.	Size
AN0280-S	10 preps
AN0280	50 preps

Includes for 50 preps:

- 22 mL RNA Buffer Lysis
- 20 mL RNA Wash Buffer
- 6 mL RNA Elution Buffer
- 50 microRNA Spin Columns
- 100 Collection tubes

Description:

HigherPurity™ RNA Total (All sizes) Isolation Kit is ideal for an efficient, high quality and easy isolation and purification of Total RNA from cultured animal cells, tissue samples, blood, bacteria, yeast, fungi or plants. The kit purifies all size of RNA, from large mRNA and ribosomal RNA down to microRNA (miRNA) and small interfering RNA (siRNA). Purification is based on spin column chromatography.

Advantages & Features:

- **High quality** of Total RNA obtained.
- **Efficient:** streamlined protocol isolation of small RNA species using a 2 column process.
- **Convenient:** proven performance in all sizes of RNA, including all small RNA species (<200 nt) including miRNA, siRNA, tRNA and 5S rRNA.
- **Safe:** avoids the use of harmful chemicals as phenol or chloroform.
- **Easy and fast protocol:** results in 30-45 minutes.
- **Pure RNA:** ready-to-use in all downstream applications.

Quality control:

- RNA isolated from 10 mg tissue slice quantified by spectrophotometer and analysed by electrophoreshis.

Applications:

- real-time RT-PCR.
- RT-PCR.
- Northern blotting.
- Primer extension.
- RNase protection.
- Expression array assays.
- microRNA Cloning.

Related products:

- Custom solutions (p.147)
- DNAse (p.112)

Sample collection

Stool Sample Collection & Stabilization Kit

For a convenient, versatile and easy collection, transportation and storage of stool samples

Ordering info:

Cat No.	Size
SC0010	10 units
SC0011	50 units
SC0012	100 units

Includes for 50 units:

- 50 Stool Collection & Stabilization tubes pre-filled with 8ml of DNA Stabilization Buffer
- 1 Product Insert

Description:

Stool sample collection & stabilization is convenient, versatile and easy-to-use kit ideal for collection, transportation and storage of stool samples using a DNA stabilization buffer. It prevents degradation of DNA and ensures nucleic acid stability. The stabilized samples can be stored during various months at Room Temperatures and indefinitely at -20°C or -80°C.

Advantages & Features:

- **Easy to self-collect**.
- **Cost avoidance:** ship stool samples at Room Temperature.
- **High quality** samples obtained without need to immediately process.
- **Versatile:** compatible with various DNA purification kits.
- **Convenient:** eliminates odor during processing.
- **Fast protocol:** results in 58 minutes.

Quality control:

- DNA isolated from 200 mg feces preserved with our sample collection kit quantified by spectrophotometer and analysed by electrophoreshis.

Applications:

- DNA Isolation: DNA can be purified from the preserved stool sample.

Related products:

- HigherPurity™ Stool DNA Isolation Kit (p.90)
- PBS (p.133)
- Custom solutions (p.147)

Saliva Sample collection Kit

For an easy, convenient and safe collection, transportation and storage of Saliva samples

Ordering info:

Cat No.	Size
SC001	20 units
SC002	100 units
SC003	250 units

Includes for 100 units:

- 100 Funnels
- 100 Saliva Collection Tube
- 100 Saliva Preservation Solution (2.5 mL)

Related products:

- HigherPurity™ Buccal Saliva Genomic DNA Extraction Kit (p.93)
- HigherPurity™ Buccal Swab/Saliva Genomic DNA Extraction Kit (p.93)
- PBS (p.133)
- Custom solutions (p.147)

Description:

The kit offers an easy, convenient and safe collection, transportation and storage of saliva samples. It is based in an optimized Saliva Preservation Solution which allows stabilizes buccal cells and white blood cells found in saliva over 1 year at Room Temperature.

Advantages & Features:

- **Easy, fast and non-invasive:** sample collection method.
- **Pure DNA:** ready-to-use in all downstream applications, including sensitive downstream assays.
- **Convenient:** all-in-one kit, that includes all material needed.
- **Compatible** with most DNA isolation methods.
- **Safe:** samples are non-infectious thanks to its optimized Saliva Preservation solution.

Quality control:

- Rigorous quality control standards to guarantee lot-to-lot consistency.

Applications:

- PCR.
- qPCR.
- Sequencing.
- SNP analysis.
- Microarrays.
- RFLP.
- Southern Blot Analysis.
- Methylation studies.

7. PCR Essentials

DNA Polymerases

Other Polymerases

Other enzymes

Nucleotides

DNA Ladders

Photo: Tissue in the microscopic view

DNA Polymerases

DNA Polymerases Selection Guide:

	Catalog Number	Page	5'→3´ exonuclease	3'→5´ exonuclease	Target length	Difficult template	MasterMix	Blunt or 3´-A ends	Fidelity vs Taq	Primary applications
Horse-Power™ Taq-DNA Polymerase	P0023-S P0023 P0024 P0020 P0025 P0019 P0026 P0035	103	+	-	≤ 5kb	✓	✓	3´-A	1x	· Routine PCR.
HotBegan™ Hot Start Taq-DNA Polymerase	P0028 P0030	104	+	-	≤ 5kb	✓	✓	3´-A	1x	· Hot Start and real time PCR.
FastPangea™ High Fidelity DNA polymerase	P0031 P0032 P0033 P0061	105	-	+++	≤ 20kb	✓	✓	Blunt	50x	· Ultra High Fidelity PCR.
FastPangea™ Long PCR DNA polymerase	P0060 P0022	106	+	++	≤ 15kb	✓	✓	3´-A/Blunt	6.5x	· High Fidelity PCR.
Horse-Power™ Green-Taq DNA Polymerase	P0029	107	+	-	≤ 5kb	✓	✓	3´-A	1x	· Routine PCR.
Horse-Power™ Red-Taq DNA Polymerase	P0027	107	+	-	≤ 5kb	✓	✓	3´-A	1x	· Routine PCR.
SNP Taq DNA Polymerase	P0055 P0056	110	-	-	≤ 5kb		✓	3´-A	1x	· High specific PCR. · Multiplex PCR. · Real-Time PCR with intercalation dyes. · Mini-Sequencing, SNP-genotyping.
Bst DNA Polymerase	P0045 P0046	109	+	-	Whole genome	✓		Blunt		· Isothermal amplification. · Whole genome amplification. · Multiple displacement amplification. · Sequencing DNA with high GC content and secondary structures. · Rapid sequencing from nanogram amounts of DNA Template.
DNA Polymerase I	P0040	108	+	++		✓		Blunt		· Nick translation. · Removal of 3' protruding DNA ends (without dNTPs).
DNA Polymerase I, Large (Klenow) Fragment	P0041	108	-	++				Blunt		· DNA replication when exonuclease activity in 3' needs to be avoided (fill in large gaps).
T4 DNA Polymerase	P0042 P0043	111	-	+++				Blunt		· DNA replication when exonuclease activity. · Amplification of large DNA fragments. · Preparation of radioactive probes. ·In 3' needs to be avoided (fill in larges gaps):

Standard and High Throughput PCR

Horse-Power™ Taq DNA Polymerase, Recombinant

Highly purified for routine amplifications

Ordering info:

Concentration: 5 U/µL	
Cat No.	Size
P0023-S	200 U
P0023	500 U
P0024	1,000 U
P0020	10,000 U

Includes for 500 U:
- 100 µL Horse-Power™ Taq DNA Polymerase (5 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer (10x)

Concentration: 1 U/µL	
Cat No.	Size
P0025	500 U
P0019	5,000 U

Includes for 500 U:
- 500 µL Horse-Power™ Taq DNA Polymerase (1 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer (10x)

With dNTPs	
Cat No.	Size
P0026	500 U+ 2 mM each (1 mL)

Includes for 500 U:
- 100 µL Horse-Power™ Taq DNA Polymerase (5 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer (10x)
- 1 mL TruePure™ dNTPs (2 mM each)

MasterMix (2x)	
Cat No.	Size
P0035	2 x 1.25 mL (2x)

(2.5 mL= 250 rxn)

Includes for 2.5 mL:
- 2 x 1.25 mL Horse-Power™ Taq DNA Polymerase MasterMix (2x)

Related products:
- TruePure™ dNTPs (p.115)
- Loading Buffers (p.117)
- TAE (p.137)
- BrightMAX™ DNA Ladders (p.116)
- pSpark® TA DNA Cloning vectors (p.16)

Description:
Horse-Power™ Taq DNA Polymerase is pure, versatile and thermostable recombinant enzyme produced in an *E. coli* strain, which carries the cloned pol gene from *Thermus aquaticus*. The enzyme has 5'→3' polymerase activity and a weak 5'→3' exonuclease activity but no 3'→5' exonuclease activity (proofreading).

Advantages & Features:
- **Highest purity:** > 98% confirmed by SDS-PAGE.
- **Highest quality:** high activity, specificity, thermostability and performance in PCR.
- **Highly efficient:** reactivation buffer improved.
- **Thermostable:** half-life at 94° C is 40 minutes.
- **Adds extra nucleotides:** preferentially adenine, without template at 3´ends leaving 3´overhangs PCR fragments.
- **Incorporates modified nucleotides:** biotinylated, fluorescently labelled, etc.
- **Molecular Weight:** 94 kDa.
- **Convenient:** available in different concentrations, sizes and solutions.
- **Complete solution:** includes $MgCl_2$.

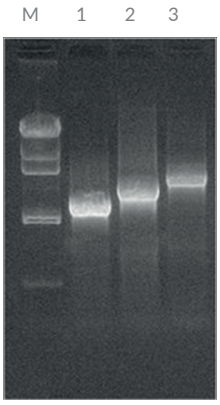
Assay conditions:
25 mM Tris-HCl pH 9.0 at 25 °C, 50 mM KCl, 2 mM $MgCl_2$, 0.1 mg/mL gelatine, 200 µM dATP, dGTP, dTTP, 100 µM [α32-P] dCTP (0.05 µCi/nmol) and 12.5 µg activated salmon sperm DNA.

Unit definition:
One unit is defined as the amount of enzyme required to catalyse the incorporation of 10 nanomoles of dNTPs into acid-insoluble material in 30 minutes at 74 °C.

Applications:
- Routine amplifications.
- Colony screening (see Horse-Power™ Red-Taq DNA Polymerase, p.107).
- Amplifications up to 5 kb using plasmid, viral or genomic DNA as template.
- PCR fragments amplification for TA or GC cloning.

Quality control:
- Functionally tested in PCR.
- Free of bacterial DNA (by qPCR).
- Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.

Figure 7.1.: Amplification of different length fragments in 25 cycles of PCR.



M λ *HindIII*
1 3 kb
2 4 kb
3 5 kb

Agarose 0.7% in TAE 1X stained with Gelgreen. Lane 1-2 were loaded with 5 µL of PCR while lane 3 was loaded with 10 µL.

HotBegan™ Hot Start DNA Polymerase

For a specific, efficient and reliable amplifications of DNA up 160 fg

Ordering info:

Concentration: 5 U/µL	
Cat No.	Size
P0028	500 U

Includes for 500 U:

- 100 µL HotBegan™ Hot Start DNA Pol. (5 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer B (10x)

MasterMix (2x)	
Cat No.	Size
P0030	2 x 1.25 mL (2x)

(2.5 mL=250 rxn)

Includes for 2.5 mL:

- 2 x 1.25 mL HotBegan™ Hot Start DNA Polymerase MasterMix (2x)

Description:

HotBegan™ Hot Start Taq DNA Polymerase is a specific, efficient and sensitive Hot Start DNA Polymerase designed to minimize unspecific amplification improving PCR specificity. It is a Horse-Power™ Taq DNA Polymerase bound to a proprietary antibody that blocks polymerase activity until denaturation step occurs. The heat labile antibodies are rapidly inactivated by raising the temperature (4 minutes at 95-97°C). This prevents or minimizes primer-dimer and non-specific products.

Like Horse-Power™ Taq DNA Polymerase, the enzyme has 5'→3' polymerase activity and a weak 5'→3' exonuclease activity but no 3'→5' exonuclease activity (proofreading). Before enzyme activation none of enzyme activities are detectable.

Advantages & Features:

- ✓ **High specificity:** minimize unspecific amplification.
- ✓ **Efficient:** prevents or minimizes primer-dimer and nonspecific products.
- ✓ **Great sensitivity:** amplifies from a femptograms of DNA targets.
- ✓ **Inactive:** at Room Temperature.
- ✓ **Optimized:** adds extra nucleotides (preferentially adenine) without template at 3´ends leaving 3´overhangs PCR fragments.
- ✓ **Powerful:** amplification of targets up to 5 kb.
- ✓ **Convenient:** available in kit and Master Mix solution.

Applications:

- ✓ qPCR.
- ✓ RT-PCR and RT-PCR.
- ✓ Genotyping with Taqman probes.
- ✓ PCR fragments amplification for TA or GC cloning.
- ✓ Amplification from a limited DNA template or low copy number genes.

Quality control:

- ✓ Functionally tested in qPCR.
- ✓ None detected bacterial DNA (by qPCR).
- ✓ Exempt of nucleases (endo, exo and ribonucleases) activity guaranteed by appropriate quality tests.

Unit definition:

One unit is defined as the amount of enzyme required to catalyse the incorporation of 10 nanomoles of dNTPs into acid-insoluble material in 30 minutes at 74°C.

Figure 7.2.: Amplification of up 160 fg.

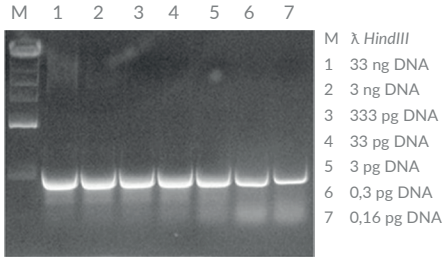
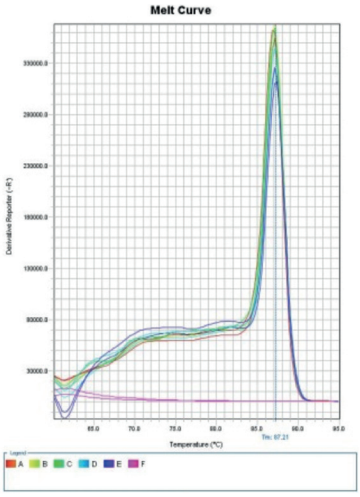
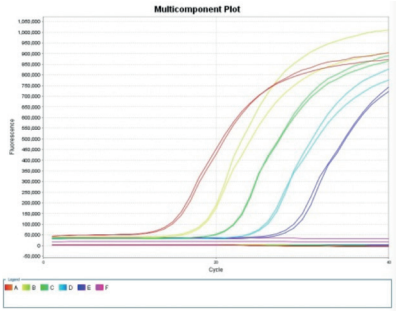


Figure 7.3.: Actin Melt Curve.



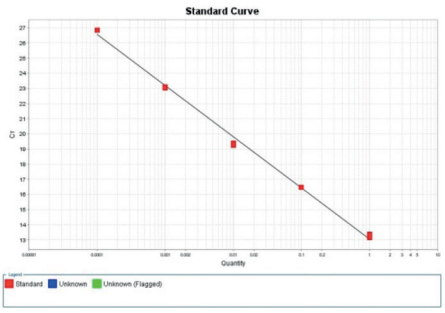
Tm= 93.03° C

Figure 7.4.: qPCR curve from actin amplification from cDNA of HEK-293 cells.



A= 2 * 10^{-1}	m= -3.374
B= 2 * 10^{-2}	y= 13.045
C= 2 * 10^{-3}	R^2= 0.996
D= 2 * 10^{-4}	Efficiency %= 97.884
E= 2 * 10^{-5}	
F= NTC	

Figure 7.5.: Actin Standard Curve.



FastPANGEA™ High Fidelity DNA Polymerase

For robust, fast and extreme fidelity for all PCR applications

Ordering info:

Concentration: 2 U/µL	
Cat No.	Size
P0031	50 U
P0032	100 U
P0033	500 U

Includes for 100 U:

- 100 U FastPANGEA™ High Fidelity DNA Pol. (2U/µl)
- 500 µL Buffer Uni (2.5x)
- 100 µL DMSO
- 100 µL $MgCl_2$ (25 mM)

MasterMix (2x)	
Cat No.	Size
P0061	200 rxn

Includes for 200 rxn:

- 2 x 1 mL FastPANGEA™ High Fidelity DNA Pol. (2x)
- 50 µL DMSO (100%)
- 100 µL $MgCl_2$ (25 mM)

Related products:

- pSpark® DNA cloning vectors (p.12)
- TruePure™ dNTPs (p.115)
- TAE (p.137)
- TBE (p.137)
- Custom solutions (p.147)
- BrightMAX™ DNA Ladders (p.116)
- Loading Buffers (p.117)

Description:

FastPANGEA™ High Fidelity DNA Polymerase is a second generation High-fidelity DNA Polymerase that offers extreme performance for all PCR applications. It generates long templates with an accuracy and speed previously unattainable with other thermostable DNA polymerases. The error rate of FastPANGEA™ DNA polymerase is at least 50-fold lower than a normal Taq DNA Polymerase.

It possesses the 5'→3´ DNA polymerase activity, 3´→5´ exonuclease activity and it generates PCR products with blunt ends. It is also suitable for amplification of long amplicons such as 10-15 kb of genomic DNA.

Advantages & Features:

- ✓ **Second generation** High-Fidelity DNA polymerase.
- ✓ **Extreme Fidelity:** error rate is > 50x more accurate than normal Taq DNA Polymerase.
- ✓ **Robust:** maximal success with minimal optimisation.
- ✓ **Very Fast:** extension times are 15-30 seconds/kb.
- ✓ **Increased product yield:** with minimal amount of enzyme.
- ✓ **Versatile:** ideal for routine PCR, as well as long or difficult templates.

Unit definition:

One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTPs into acid-insoluble form in 30 minutes at 75°C under assay conditions: 25 mM TAPS-HCl, pH 9.0 (at 25°C), 100 mM KCl, 1.5 mM $MgCl_2$, 1 mM Beta-mercaptoethanol, 200 µM each dNTP and 10 µg activated calf thymus DNA in 50 µl.

Applications:

- ✓ PCR-Cloning.
- ✓ Primers extension.
- ✓ Long or difficult amplification.
- ✓ High-Throughput PCR.

Quality control:

- ✓ Functionally tested in PCR.
- ✓ Undetected bacterial DNA (by PCR).

Note:
Highly recommended for cloning into **pSpark® DNA** cloning vectors.

FastPANGEA™ Long PCR DNA Polymerase

For an accurate and robust PCR amplification of fragments up to 15 kb

Ordering info:

Concentration: 5 U/µL	
Cat No.	Size
P0060	200 U

Includes:

- 200 U FastPANGEA™ Long PCR DNA Pol. (5U/µl)
- 1.5 mL Buffer (10x)
- 1.5 mL $MgCl_2$ (25 mM)
- 50 µL DMSO (100%)

MasterMix (2x)	
Cat No.	Size
P0022	200 rxn

Includes for 200 rxn:

- 2 x 1 mL FastPANGEA™ Long PCR DNA Polymerase MasterMix (2x)
- 50 µL DMSO (100%)
- 100 µL $MgCl_2$ (25 mM)

Related products:

- pSpark® DNA Cloning vectors (p.12)
- TruePure™ dNTPs (p.115)
- TAE (p.137)
- TBE (p.137)
- BrightMAX™ DNA Ladders (p.116)
- Loading Buffers (p.117)

Description:

FastPANGEA™ Long PCR DNA Polymerase is an accurate and robust enzyme that combines Horse-Power™ Taq DNA Polymerase and a DNA proofreading Polymerase with 3' to 5' exonuclease activity that is optimized for PCR amplification of very long DNA templates (long range PCR).

As it is already well-known, Taq DNA Polymerase is inefficient at amplifying fragments larger than 3–5 kb due to its inability to repair nucleotide mismatches following misincorporation. The addition of a small quantity of proofreading enzyme allows mismatches to be repaired and extension to continue, resulting in the amplification of long amplicons with high yield. The presence of the proofreading polymerase significantly increases fidelity (6.5x) as compared to Taq DNA Polymerase alone. This mixture of enzymes allows for long and accurate PCR amplification of targets from a variety of templates, such as 5-15 kb of genomic DNA.

It generates long templates with an accuracy and speed previously unattainable with other thermostable DNA polymerases. As well, it possesses 3´→ 5´ exonuclease activity and it generates PCR products with blunt ends and generate 3´-adenine overhang in amplified DNA and thus such Taq amplified DNA could be cloned into T-vectors.

Advantages & Features:

- **High Fidelity:** 6.5 times higher fidelity than Taq DNA Polymerase alone.
- **Robust:** PCR amplification of fragments up to 15 kb such as 5-15 kb of genomic DNA.
- **High Yield:** increased amplicon specificity and yield.
- **Accurate.**
- **Versatile:** proven performance for long or difficult templates.

Applications:

- PCR-Cloning.
- Primers extension.
- Long or difficult amplification.
- High-Throughput PCR.

Quality control:

- Functionally tested in PCR.
- Free of bacterial DNA (by qPCR).

Unit definition:

One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTP's into acid-insoluble form in 30 minutes at 75 °C under assay conditions: 25 mM TAPS-HCl, pH 9.0 (at 25 °C), 100 mM KCl, 1.5 mM $MgCl_2$, 1 mM Beta-mercaptoethanol, 200 µM each dNTP and 10 µg activated calf thymus DNA in 50 µl.

Note:
Highly recommended for cloning with **pSpark® DNA** cloning vectors.

Horse-Power™ Green-Taq DNA Polymerase

For an optimized, accurate and fast visual tracking of DNA migration

Ordering info:

Cat No.	Size
P0029	5 x 100 rxn

Includes for 500 rxn:

· 5 x 100 rxn Horse-Power™ Green-Taq DNA Polymerase (2x)

Related products:

· pSpark® DNA Cloning vectors (p.12)
· TruePure™ dNTPs (p.115)
· TAE (p.137)
· TBE (p.137)
· BrightMAX™ DNA Ladders (p.116)
· Loading Buffers (p.117)

Description:

Horse-Power™ Green-Taq DNA Polymerase is an optimized, accurate and ready-to-use (2x) MasterMix that incorporates all PCR reaction components: TruePure™ dNTPs, PCR buffer, Mg^{2+} and Horse-Power™ Taq DNA Polymerase.

The mix also incorporates an agarose Loading Buffer including two tracking dyes (blue and yellow dye) for visual tracking of DNA migration and a dense compound to facilitate the drop-down of the samples into the well agarose gels. The migration in 1% agarose gel of blue dye is 3 to 5 kb DNA fragments, meanwhile yellow dye migrates in 1% agarose gel faster than 10 bp DNA fragments.

Advantages & Features:

- ✔ **Optimized:** adds extra nucleotides (preferentially adenine) without template at 3´ends leaving 3´overhangs PCR fragments.
- ✔ **Time-saving protocol:** ready-to-use format that saves time in the PCR process and in agarose loading samples.
- ✔ **Complete solution:** includes all PCR reaction components except primers and template.

Assay conditions:

Enzyme activity is assayed in the following mixture: 25 mM Tris-HCl pH 9.0 at 25°C, 50 mM KCl, 2 mM $MgCl_2$, 0.1 mg/mL gelatine, 200 µM Φ dATP, dGTP, dTTP, 100 µM [α32-P] dCTP (0.05 µCi/nmol) and 12.5 µg activated salmon sperm DNA.

Applications:

- ✔ Design for medium or high throughput applications (e.g. colony screening).
- ✔ PCR fragments amplification for TA or GC cloning.

Quality control:

- ✔ Functionally tested in PCR.
- ✔ Free of bacterial DNA (by PCR).
- ✔ Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.

Concentration:

2x (Buffer Green 2X; TruePure™ dNTPs 0.4 mM each; Horse-Power™ Taq DNA Polymerase 0.2 U/µL, Glycerol 24%).

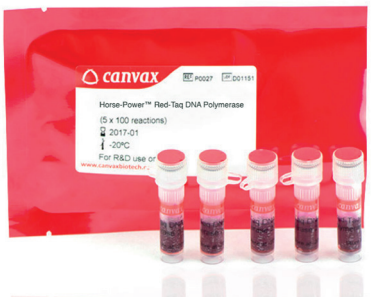
Green dye Agarose Mobility*:

Agarose Gel Concentration (%)	Blue Dye (bp)	Yellow Dye (bp)
0.5 - 1.5	10,000-4,000	<20
2.0 - 3.0	750-200	<20

*in TAE Buffer

Horse-Power™ Red-Taq DNA Polymerase

For an optimized, accurate and fast visual tracking of DNA migration



Ordering info:

Cat No.	Size
P0027	5 x 100 rxn

Includes for 500 rxn:

· 5 x 100 rxn Horse-Power™ Red-Taq DNA Polymerase MasterMix (2.5x)

Related products:

· TruePure™ dNTPs (p.115)
· Loading Buffers (p.117)
· TAE (p.137)
· TBE (p.137)
· Custom solutions (p.147)
· BrightMAX™ DNA Ladders (p.116)
· pSpark® TA DNA Cloning vectors (p.16)

Description:

Horse-Power™ Red-Taq DNA Polymerase is an optimized, accurate and ready-to-use (2,5x) MasterMix that incorporates all PCR reaction components: TruePure™ dNTPs, PCR buffer, Mg^{2+} and Horse-Power™ Taq DNA Polymerase.

The mix also incorporates an agarose Loading Buffer including a red dye for visual tracking of DNA migration and a dense compound to facilitate the drop-down of the samples into the well agarose gels.

Advantages & Features:

- ✔ **Optimized:** adds extra nucleotides (preferentially adenine) without template at 3´ends leaving 3´overhangs PCR fragments.
- ✔ **Time-saving:** ready-to-use format that saves time in the PCR process and in agarose loading samples.
- ✔ **Complete solution:** includes all PCR reaction components except primers and template.

Concentration:

2.5x (Buffer Red 2.5X, TruePure™ dNTPs 0.5 mM each, HorsePower™ Taq DNA Polymerase 0.25 U/µL, Glycerol 30%).

Assay conditions:

25 mM Tris-HCl pH9.0 at 25 °C, 50 mM KCl, 2 mM $MgCl_2$, 0.1 mg/mL gelatine, 200 µM dATP, dGTP, dTTP, 100 µM [α32-P] αCTP (0.05 µCi/nmol) and 12.5 µg activated salmon sperm DNA.

Applications:

- ✔ Design for medium or high throughput applications (e.g. colony screening).
- ✔ PCR fragments amplification for TA or GC cloning.

Quality control:

- ✔ Functionally tested in PCR.
- ✔ Free of bacterial DNA (by PCR).
- ✔ Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.

Red dye Agarose Mobility*:

Agarose Gel Concentration (%)	Migration Rate (bp)
0.7	3,000
1.0	1,500
1.5	900
2.0	300
3.0	>100

*in TAE Buffer

Related Polymerases

DNA Polymerase I *(E. coli)*

Ordering info:

Concentration: 10 U/µL	
Cat No.	Size
P0040	500 U

Includes for 500 U:

· 50 µL DNA Polymerase I (10 U/µL)
· 1 mL Reaction Buffer (10x)

Related products:

· TruePure™ dNTPs (p.115)
· DNA Polymerase I, Large (Klenow) Fragment (p.108)
· BrightMAX™ DNA Ladders (p.116)

Description:

DNA Polymerase I is a multifunctional enzyme that combines a DNA Polymerase activity, a 5´→ 3´exonuclease activity and a 3'→5' proofreading exonuclease activity. The 5´→3´ exonuclease activity enables the enzyme to use nicks and gaps in the DNA as starting points for labelling DNA by nick translation.

Advantages & Features:

- ✓ **Native:** isolated from *E. coli* cells with a cloned fragment of the *polA* gene.
- ✓ **DNase I-dependent nick translation:** second-strand synthesis in cDNA cloning, fill-in of 5´ overhangs.
- ✓ **Complete solution:** supplied with 10x Reaction Buffer.

Assays conditions:

67 mM potassium phosphate (pH 7.4), 6.7 mM $MgCl_2$, 1 mM 2-mercaptoethanol, 0.033 mM dATP, 0.033 mM dTTP, 0.4 MBq/mL [3H]-dTTP and 62.5 µg/mL poly(dA-dT)·poly(dA-dT).

Applications:

- ✓ High percentage incorporation of radioactivity for nick translation assays.
- ✓ Manufacturing of alternating copolymers such as poly d(A-T) and homopolymers such as poly dG-poly dC.
- ✓ Klenow fragment: DNA sequencing, fill-in of 5'overhangs and removal of 3' overhangs to form blunt ends and second strand synthesis in mutagenesis.

Quality control:

- ✓ Absence of covalently conversion of closed circular DNA to nicked DNA after incubation of 20 units of DNA polymerase I with 1 µg of pUC18 DNA for 4 hours at 37°C.

DNA Polymerase I, Large (Klenow) Fragment

Ordering info:

Concentration: 10 U/µL	
Cat No.	Size
P0041	500 U

Includes for 500 U:

· 50 µL DNA Polymerase I (10 U/µL)
· 1 mL Reaction Buffer (10x)

Related products:

· TruePure™ dNTPs (p.115)
· Custom solutions (p.147)
· BrightMAX™ DNA Ladders (p.116)

Description:

Klenow Fragment is the Large Fragment of DNA Polymerase I. It shows 5'→3' polymerase activity and 3'→5' exonuclease (proofreading) activity, but lacks 5'→3' exonuclease activity of DNA Polymerase I.

Advantages & Features:

- ✓ **Recombinant:** isolated from *E. coli* cells with a cloned fragment of the *polA* gene.
- ✓ **DNase I-dependent nick translation:** second-strand synthesis in cDNA cloning, fill-in of 5´overhangs.
- ✓ **Generates probes** using random primers.
- ✓ **Creates blunt ends.**
- ✓ **Complete solution:** supplied with 10x Reaction Buffer.

Unit definition:

One unit of the enzyme catalyses the incorporation of 10 nmol of deoxyribonucleotides into a polynucleotide fraction in 30 min at 37°C, using poly(dA-dT)·poly(dAdT) as a template primer.

Applications:

- ✓ DNA sequencing, fill-in of 5' overhangs and removal of 3' overhangs to form blunt ends and second strand synthesis in mutagenesis.
- ✓ DNA blunting by fill-in of 5'-overhangs or removal of 3'-overhangs.
- ✓ Random-primed DNA labeling.
- ✓ Labeling by fill-in 5'-overhangs of dsDNA.
- ✓ DNA sequencing by the Sanger method.
- ✓ Site-specific mutagenesis of DNA with synthetic oligonucleotides.
- ✓ Second strand synthesis of cDNA.

Quality control:

- ✓ Absence of covalently conversion of closed circular DNA to nicked DNA after incubation of 20 units of DNA polymerase I with 1 µg of pUC18 DNA for 4 hours at 37°C.

T4 DNA Polymerase

Ordering info:

Concentration: 5 U/µL	
Cat No.	Size
P0042	100 U
P0043	500 U

Includes for 100 U:

· 20 µL T4 DNA Polymerase (5 U/µL)
· 1 mL Reaction Buffer (5x)

Related products:

· DNAse (p.112)
· TruePure™ dNTPs (p.115)
· pSpark® DNA cloning vectors (p.12)
· Custom solutions (p.147)

Description:

Bacteriophage **T4 DNA Polymerase** is a DNA-directed 5' to 3' DNA polymerase. It is the product of gene 43 from bacteriophage T4 and is therefore often referred to as T4 gp43 DNA Polymerase. The enzyme catalyzes the polymerization of deoxynucleotide triphosphates in a 5' to 3' direction. It possesses very active 3' to 5' exonuclease activity that is more active on single than double stranded DNA, T4 DNA polymerase has no 5' to 3' exonuclease activity. For polymerase activity the enzyme requires DNA with a 5' protruding end and a high concentration of TruePure™ dNTPs.

Advantages & Features:

- ✔ **Recombinant:** isolated from a recombinant source (*E. coli* cells with a cloned gene 43 from bacteriophage T4).
- ✔ **Powerful:** stronger 3'-5' exonuclease activity on single-stranded than on double-stranded DNA.
- ✔ **Complete solution:** supplied with 10x Reaction Buffer.

Unit Definition:

One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid insoluble material in 30 minutes at 37°C using DNAse I-Nicked DNA as template-primer.

Applications:

- ✔ Generation of blunt double-stranded DNA from DNA containing 5' overhangs.
- ✔ Generation of blunt double-stranded DNA from DNA containing 3' overhangs.
- ✔ 5'-end or 3'-end labeling of double-stranded DNA
- ✔ *In vitro* mutagenesis.

Quality control:

- ✔ Absence of covalently conversion of closed circular DNA to nicked DNA after incubation of 20 units of DNA polymerase I with 1 µg of pUC18 DNA for 4 hours at 37°C.

Bst DNA Polymerase, Exonuclease Minus

Ordering info:

Concentration: 8 U/µL	
Cat No.	Size
P0045	2,000 U
P0046	10,000 U

Includes for 2,000 U:

· Bst DNA Polymerase (8 U/µL)
· Reaction Buffer (10x)
· 100mM $MgSO_4$ solution

Related products:

· TruePure™ dNTPs (p.115)
· Custom solutions (p.147)

Description:

Large Fragment of **Bst DNA Polymerase, Exonuclease Minus**, is isolated from a *Bacillus stearothermophilus*.

It catalyzes 5'→3' synthesis of DNA and lacks 5' →3' and 3' → 5' exonuclease activities.

Advantages & Features:

- ✔ **High Purity:** >99% by SDS PAGE.
- ✔ **Reverse transcription activity.**
- ✔ **Optimized:** Increased activity.
- ✔ **Strong strand displacement activity.**

Unit definition:

One unit catalyzes the incorporation of 10 nmol of dNTP into acid-insoluble material in 30 minutes at 65 °C in 20 mMTris-HCl pH 8.8, 10 mM $(NH_4)_2SO_4$, 10 mM KCl, 2 mM $MgSO_4$, 0.1% Triton X-100, 30 nM M13mp18 ssDNA, 70 nM M13 sequencing primer(-47) 24-mer 200 µM dGTP, dATP, dTTP, dCTP (a mix of unlabeled and [^{32}P]dCTP) and 0.1 mg/mL BSA.

Applications:

- ✔ Nucleic acid amplification methods.
- ✔ Whole genome amplification.
- ✔ Multiple displacement amplification.
- ✔ DNA Sequencing.

Quality control:

- ✔ Purity: >99% by SDS PAGE.
- ✔ Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.
- ✔ 10 µl of the enzyme was tested for *E. coli* genomic DNA contamination by PCR amplifying with the *E. coli* 16S ribosomal primers.

SNP Taq DNA Polymerase

Ordering info:

Concentration: 20 U/µL	
Cat No.	Size
P0055	500 U
P0056	2,500 U

Includes for 500 U:

- SNP Taq DNA Polymerase (20 U/ µL)
- Reaction Buffer (5x) without $MgCl_2$
- 100mM $MgCl_2$

Description:

SNP Taq DNA Polymerase is an efficient, High Fidelity and specific Hot-Start Polymerase with special N-terminal deletion and proprietary amino acids substitutions introduced into the active domine of the enzyme. Due this special modification the enzyme increases its sensitivity to mismatches at 3'-end of the primer. For this reason, unspecific amplicons are formatted due the non-perfect primers annealing.

Advantages & Features:

- **Efficient:** 10 to 15-fold lower mutation rate than normal Taq DNA Polymerase.
- **High Versatility:** allele-specific amplification of DNA fragments.
- **High Specificity:** lowest background AS-PEX and AS-PCR.
- **Cost avoidance:** reduce the use of expensive primer dimers.

Unit definition:

One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTPs into acid-insoluble form in 30 minutes at 72°C.

Applications:

- High specific or Multiplex PCR.
- Real-Time PCR with intercalation dyes.
- High Fidelity dNTPs and ddNTPs.
- Mini Sequencing procedures.
- Allele-specific primer extension (AS-PEX).
- SNP genotyping by allele-specific PCR (AS-PCR).
- Single Nucleotide Polymorphism (SNP).

Quality control:

- Functionally tested in PCR.
- Free of bacterial DNA (by PCR).
- Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.

Related products:

- TruePure™ dNTPs (p.115)
- BrightMAX™ DNA Ladders (p.116)
- Custom solutions (p.147)

AMV Reverse Transcriptase

Ordering info:

Cat No.	Size
P0070	300 U
P0071	1,000 U

Includes:

- AMV Reverse Transcriptase (10U/µL)
- Reaction Buffer (5x)

Description:

AMV Reverse Transcriptase, encoded by Avian Myeloblastosis Virus (AMLV) is an RNA dependent DNA polymerase that synthesizes the complementary cDNA first strand from a single-stranded RNA template. AMV Reverse Transcriptase (AMV RT) catalyzes the polymerization of DNA using template DNA, RNA or RNA:DNA hybrids.

Applications:

- RT PCR.
- Synthesis of cDNA.
- RNA Sequencing.

Quality control:

- Exempt of nucleases (endo, exo and ribonucleases) activities.
- Purity: >90% as judged by SDS-polyacrylamide gels with blue staining.

MMLV Reverse Transcriptase

Ordering info:

Cat No.	Size
P0073	10,000 units
P0074	5 x 10,000 units

Includes:

- MMLV Reverse Transcriptase (200U/µL)
- Reaction Buffer (5x)

Description:

MMLV Reverse Transcriptase (MMLV-RT), encoded by Moloney Murine Leukemia Virus (MMLV) is an RNA-dependent DNA polymerase that synthesizes the cDNA first strand from a single-stranded RNA template to which a primer has been hybridized. MMLV-RT will also extend primers hybridized to single-stranded DNA.

Applications:

- RT PCR.
- Synthesis of cDNA.
- mRNA 5'-end Mapping by Primer Extension Analysis.
- End-labeling of DNA.
- Dideoxynucleotide Sequencing.

Quality control:

- Exempt of nucleases (endo, exo and ribonucleases) activities.
- Purity: >90% as judged by SDS-polyacrylamide gels with blue staining.

Related enzymes

T4 DNA Ligase

For highly efficient, accurate and easy ligation of DNA insert into plasmid vectors in 5-15 minutes

Ordering info:

Concentration: 5 U/µL	
Cat No.	Size
C005	300 U
C006	1,000 U

Includes for 300 U:

· 60 µL T4 DNA Ligase (5U Weiss/µL)
· 250 µL T4 DNA Ligase Buffer (5x)

Related products:

· FastPANGEA™ High Fidelity DNA Polymerase (p.105)
· pSpark® DNA cloning vectors (p.12)
· CVX5α™ Chemically Competent cells (p.18)
· Horse-Power™ Taq DNA Polymerase (p.103)
· Custom solutions (p.147)

Description:

T4 DNA Ligase is highly efficient, accurate and rapid enzyme designed for an efficient ligation of cohesive and blunt ended DNA insert into plasmid vectors in 5-15 minutes. It is based on the combination of T4 DNA Ligase with a premium 5x Ligation Buffer. The ligation reaction mixture is used directly for bacterial transformation using conventional transformation procedures. It enables sticky end or blunt end DNA ligation in only 5 minutes at Room Temperature. The efficiency of this fast ligation is 24% at 5 minutes and 75% at 15 minutes.

Advantages & Features:

- ✓ **Recombinant:** isolated from *E. coli*.
- ✓ **Highly efficient:** 3,500 white colonies and 10 blue colonies expected under optimal conditions.
- ✓ **Fast and easy protocol:** efficient ligation in only 5 minutes.
- ✓ **Powerful:** allows cloning insert amounts < 1 ng/kb.

Unit Definition:

One Weiss unit of the enzyme catalyses the conversion of 1 nmol of [^{32}PPi] into Norit- absorbable form in 20 min at 37° C. One Weiss unit is equivalent to approximately 200 cohesive end ligation (CEL) units and one CEL unit is defined as the amount of enzyme required to give 50% ligation of HindIII fragments of 1 µg lambda DNA in 30 min. at 16° C.

Applications:

- ✓ Routine cloning procedure: blunt and cohesive double stranded DNA cloning.
- ✓ TA cloning.
- ✓ Joining of adaptors with blunt or cohesive ends.

Quality control:

- ✓ Functionally tested in the ligation of a blunted fragment of 1 kb into pSpark® I vector.
- ✓ Exempt of nucleases (endo, exo and ribonucleases) and phosphatases activity guaranteed by appropriate quality tests.

Note:
One Weiss unit is equivalent to approximately 200 CEL units.

RNase A (Ribonuclease A)

Ordering info:

Cat No.	Size
EZ0002	1 mL
EZ0003	5 x 1 mL

Includes for 1 mL:

· 1 mL RNase A Solution (10 mg/mL)

Related products:

· WideUse™ Plasmid Purification Kit (p.92)
· HigherPurity™ Soil DNA Isolation Kit (p.90)
· MagBeads™ Bacteria G (-) Genomic DNA Isolation (p.94)
· HigherPurity™ Yeast Genomic DNA Isolation Kit (p.89)
· HigherPurity™ Plant DNA Purification Kit (p.88)

Description:

RNase A (ribonuclease A) is a bovine pancreatic endoribonuclease that cleaves single-stranded RNA. It catalyzes the cleavage of the phosphodiester bond between the 5'-ribose of a nucleotide and the phosphate group attached to the 3'-ribose of an adjacent pyrimidine nucleotide. This cleavage forms a 2', 3'-cyclic phosphate, which is then hydrolysed to the corresponding 3'-nucleoside phosphate.

Advantages & Features:

- ✓ **Small single-chain polypeptide:** 124 residues, ~13.7 kDa.
- ✓ **Avoids the use of co-factors and divalent cations.**
- ✓ **High specific activity:** > 100 Kunitz units per mg protein.
- ✓ **High Quality:** free of DNase, Proteinase or exonuclease contamination.
- ✓ **Time-saving protocol:** avoids to RNAse heat step before use.

Unit definition:

One unit of the enzyme causes an increase in absorbance of 1.0 at 260 nm when yeast RNA is hydrolyzed at 37 °C and pH 5.0. 50 units are approximately equivalent to 1 Kunitz unit.

Applications:

- ✓ RNA removal during DNA isolation.
- ✓ RNA sequence analysis.
- ✓ RNase protection assays.
- ✓ RNA quantification or mapping.
- ✓ Purifying plasmid DNA.
- ✓ Genomic DNA isolation.
- ✓ Molecular weight marker.

Quality control:

- ✓ Functionally tested for RNA degradation in a plasmid DNA purification protocol.
- ✓ Exempt of contaminant exo- and endodeoxyribonuclease activities guaranteed by appropriate quality tests.

Note:
One Kunitz unit equals to 50 Worthington units.

DNase I

Ordering info:

Cat No.	Size
EZ0018	1 mL
EZ0019	5 x 1 mL

Includes for 1 mL:

· 1 mL DNase I (10 mg/mL)
· 1 mL Reaction Buffer (10x)

Related products:

· HigherPurity™ Tissue Total RNA Purification kit (p.98)
· HigherPurity™ Plant RNA Purifiction kit (p.97)
· HigherPurity™ Blood / Cultured Cell Total RNA kit (p.98)

Description:

DNase I is a recombinant endonuclease that cleaves DNA preferentially at phosphodiester linkages adjacent to a pyrimidine nucleotide, to release di-, tri- and oligonucleotide products (on average producing tetranucleotides) with 5'-phosphorylated and 3'-hydroxylated ends.

It acts on single-stranded DNA, double-stranded DNA, RNA-DNA hybrids and chromatin. DNase I requires bivalent cations (Mg^{2+} and Ca^{2+}) for maximal activity.

Advantages & Features:

- ✓ **Recombinant:** bovine Pancreatic, purified from *E. coli* (29 kDa monomer).
- ✓ **High specific activity:** > 2,000 Kunitz units per mg protein.
- ✓ **High Quality:** free of RNase and Proteinase contamination.
- ✓ **Complete solution:** supplied with 10x Reaction Buffer.

Unit definition:

One Kunitz unit is defined as the amount of enzyme required for the complete degradation of 1 µg of plasmid DNA in 10 minutes at 37˚C.

Applications:

- ✓ Removal of residual genomic DNA from RNA samples.
- ✓ Degradation of DNA template in transcription reactions.
- ✓ DNAse I footprinting.
- ✓ Perform Nick Translation.

Quality control:

- ✓ Functionally tested for digestion of template DNA after in vitro transcription.
- ✓ Confirmed absence of RNAse activity.
- ✓ Specific activity assayed by degradation of 1 µg of pUC18 in 40 mM Tris-HCl (pH 8.0), 10 mM $MgSO_4$, 1 mM $CaCl_2$.

Note:
One Kunitz unit equals to 50 Worthington units.

Proteinase K

Ordering info:

Cat No.	Size
EZ0011	30 mg
EZ0012	5 x 30 mg

Includes for 30 mg:

· 30 mg Proteinase K (Lyophilized powder)

Related products:

· HigherPurity™ Buccal Swab Genomic DNA Extraction Kit (p.92)
· HigherPurity™ Blood Genomic DNA Extraction Kit (p.94)
· HigherPurity™ FFPE DNA Isolation Kit (p.87)
· HigherPurity™ Bacterial Genomic DNA Isolation Kit (p.89)
· HigherPurity™ Stool DNA Isolation Kit (p.88)
· HigherPurity™ Blood Genomic DNA Extraction Mini Spin Kit (p.86)
· RNA services (p.140)

Description:

Proteinase K isolated from *Tritirachium album* is used for protease digestion during DNA and RNA preparation. It is a serine protease that exhibits broad cleavage specificity. With a molecular weight 28.900 kD, it cleaves peptide bonds adjacent to the carboxylic group of aliphatic and aromatic amino acids.

Proteinase K is not inactivated by chelating reagents such as EDTA or detergents such as SDS and is active over a wide range of pH (4-12.5).

Advantages & Features:

- ✓ **Highly active and stable:** > 30 units/mg protein (hemoglobin, pH 7.5, 37°C).
- ✓ **High Quality:** free of RNases, DNases and Exonucleases contamination.
- ✓ **Purified by chromatography.**
- ✓ **Lyophilised format.**
- ✓ **Low cutting specificity.**

Applications:

- ✓ Isolation of genomic DNA from cultured cells and tissues.
- ✓ Removal of DNases and RNases during DNA and/or RNA purification.
- ✓ Determination of enzyme locations.

Quality control:

- ✓ Enzyme activity is assayed by digesting hemoglobin at a concentration of 16.7 mg/mL in a solution of 0.08 M potassium phosphate (pH 7.5), 5M urea, 4 mM NaCl, 3 mM $CaCl_2$.
- ✓ Free of detectable RNase, DNase and exonuclease activities.

Exonuclease I *(E. coli)*

Ordering info:

Cat No.	Size
EZ0016	5,000 U
EZ0017	20,000 U

Includes for 5,000 U:

- 5,000 U Exonuclease I (20 U/µL)
- 375 µL Exonuclease I Reaction Buffer (10x)

Description:

Exonuclease I, the product of the sbcB gene of *E. coli*, is an exodeoxyribonuclease that hydrolyzes single-stranded DNA (ssDNA) stepwise in a 3´→5´ direction releasing 5'-mononucleotides and leaving the terminal 5'-dinucleotide intact.

Advantages & Features:

- **High Specific Activity:** 185,000 U /mg.
- **3' → 5' single strand exonuclease.**
- **Versatile:** suitable with a wide-range of Buffer conditions.
- **Compatible with magnesium.**
- **Complete solution:** supplied with 10x Exonuclease I Reaction Buffer.

Unit Definition:

One unit is defined as the amount of enzyme that will catalyze the release of 10 nmol of acid-soluble nucleotide in a total reaction volume of 50 µl in 30 minutes at 37°C in 1X Exonuclease I Reaction Buffer with 0.17 mg/ml single-stranded [3H]-DNA.

Applications:

- Removal of residual ssDNA, including oligos, from reaction mixes.

Quality control:

- Exonuclease I is tested in degradation of ssDNA and is free of detectable RNase, endonuclease and double stranded exonuclease activities.

Nucleotides

TruePure™ Nucleotides

Highest purity and stability for High-End PCR

Includes:
· TruePure™ dNTP

Advantages & Features:
- ✔ **Highest purity:** > 99% confirmed by HPLC.
- ✔ **Highly stable.**
- ✔ **Proven performance for PCR.**
- ✔ **High Quality:** free of DNAse, protease, phosphatase, nuclease, Human or *E. coli* DNA contamination.

Applications:
- ✔ For use in all common Molecular Biology applications, such as:
  - · PCR.
  - · Real-time PCR.
  - · High fidelity and long PCR.
  - · RT-PCR.
  - · cDNA synthesis.
  - · DNA sequencing.
  - · DNA amplification.

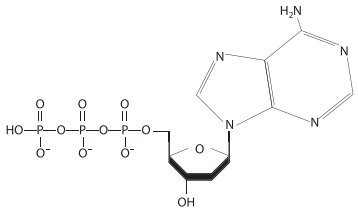
Quality control:
- ✔ TruePure™ dNTPs Certification: Functionally tested in 18 kb long range PCR (template dilution from 20 to 1,000 pg), with a proofreading enzyme and by RT-PCR.
- ✔ Exempt of DNAse, protease, phosphatase, nuclease, Human or *E. coli* DNA activities guaranteed by appropriate quality tests.

TruePure™ dATP

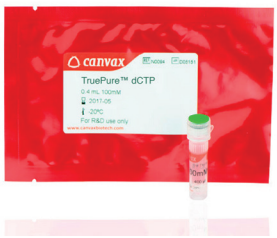
Ordering info:

Cat No.	Size
N0093-S	40 µmol: 0.2 mL of 100 mM solution
N0093	40 µmol: 0.4 mL of 100 mM solution

Specifications:
Formula: $C_{10}H_{16}N_5O_{12}P_3$
Molecular Weight: 491.18 g/mol
λmax pH 7.0= 259 nm
ε at λmax, pH 7.0= 15.4 mmol^{-1} cm^{-1}
Purity: > 99% confirmed by HPLC
Concentration: 100 mM
pH: 8.5



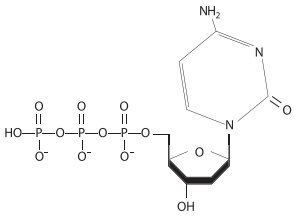
TruePure™ dCTP



Ordering info:

Cat No.	Size
N0094-S	40 µmol: 0.2 mL of 100 mM solution
N0094	40 µmol: 0.4 mL of 100 mM solution

Specifications:
Formula: $C_9H_{16}N_3O_{13}P_3$
Molecular Weight: 467.15 g/mol
λmax pH 7.0= 271 nm
ε at λmax, pH 7.0= 8.9 mmol^{-1} cm^{-1}
Purity: > 99% confirmed by HPLC
Concentration: 100 mM
pH: 8.5

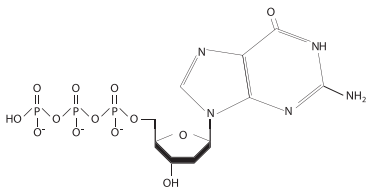


TruePure™ dGTP

Ordering info:

Cat No.	Size
N0095-S	40 µmol: 0.2 mL of 100 mM solution
N0095	40 µmol: 0.4 mL of 100 mM solution

Specifications:
Formula: $C_{10}H_{16}N_5O_{13}P_3$
Molecular Weight: 507.18 g/mol
λmax pH 7.0= 252 nm
ε at λmax, pH 7.0= 13.7 mmol^{-1} cm^{-1}
Purity: > 99% confirmed by HPLC
Concentration: 100 mM
pH: 8.5

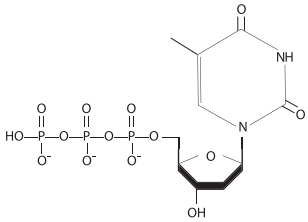


TruePure™ dTTP

Ordering info:

Cat No.	Size
N0096-S	40 µmol: 0.2 mL of 100 mM solution
N0096	40 µmol: 0.4 mL of 100 mM solution

Specifications:
Formula: $C_{10}H_{17}N_2O_{14}P_3$
Molecular Weight: 482.17 g/mol
λmax pH 7.0= 267 nm
ε at λmax, pH 7.0= 9.6 mmol^{-1} cm^{-1}
Purity: > 99% confirmed by HPLC
Concentration: 100 mM
pH: 8.5



Deoxynucleotides (dNTPs)

TruePure™ dNTP Mix

Description:

TruePure™ dNTP Mixes are solutions with each dNTP (dATP, dCTP, dGTP, dTTP) mixed at a final concentration of either 8, 10 or 100 mM total.

Advantages & Features:

- ✓ **Highest purity:** > 99% of each component confirmed by HPLC.
- ✓ **High Quality:** free of DNAse, protease, phosphatase, nuclease, human or *E. coli* DNA contamination.
- ✓ **Time-saving:** ready-to-use format that eliminates experiment preparation time.
- ✓ **Highly stable.**
- ✓ **Proven performance for PCR.**

Related products:

· Horse-Power™ Taq DNA Polymerase (p.103)
· FastPANGEA™ High Fidelity Polymerase (p.105)

Ordering info:

Cat No.	Size
N0030	5 x 1 mL 2 mM each (8mM total)
N0031	5 x 1 mL 2.5 mM each (10mM total)
N0032	1 mL 25 mM each (100mM total)

Includes:

· Premixed aqueous solutions of dATP, dTTP, dCTP and dGTP (pH 8.5)

TruePure™ dNTP set

Description:

TruePure™ dNTP set includes 4 vials, a separate vial of each dNTP (dATP, dCTP, dGTP, dTTP). Each dNTP are in aqueous solution at 100 mM.

Advantages & Features:

- ✓ **Highest purity:** > 99% of each component confirmed by HPLC.
- ✓ **Time-saving:** ready-to-use format that eliminates experiment preparation time.
- ✓ **Highly stable.**
- ✓ **Proven performance for PCR.**
- ✓ **High Quality:** free of DNAse, protease, phosphatase, nuclease, human or *E. coli* DNA contamination.

Related products:

· Horse-Power™ Taq DNA Polymerase (p.103)
· FastPANGEA™ High Fidelity Polymerase (p.105)
· AMV-RT (p.110)
· MMLV-RT (p.110)

Ordering info:

Cat No.	Size
N0098-S	4 x 0.2 mL of 100 mM
N0098	4 x 0.4 mL of 100 mM

Includes:

· 1 vial of each dNTP (dATP, dCTP, dGTP, dTTP) in aqueous solution at 100 mM each (pH 8.5)

DNA Ladders

BrightMAX™ DNA Ladders

For a highly efficient, bright and accurate DNA Fragment Separation on Agarose Gels

Includes for 50 µg:

· 50 µg of BrightMAX™ DNA Ladder (0.1 µg/µL)

Description:

Highly efficient, bright and accurate **BrightMAX™ DNA Ladders** for visualization on agarose gel DNA size standards. Canvax manufactures 7 different DNA size standards for small and large DNA molecules. These standards are ready-to-use markers which contain loading dye with one or two migration visualisation dye.

Related products:

· TAE (p.138)
· TBE (p.138)
· Loading Buffers (p.117)
· Horse-Power™ Taq DNA Polymerase (p.103)

Advantages & Features:

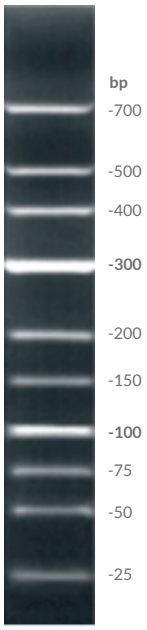
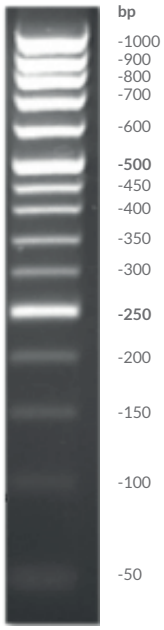
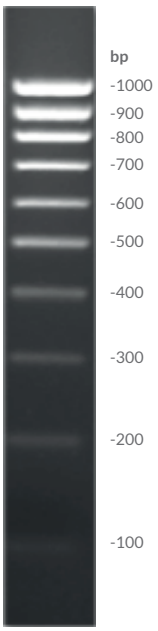
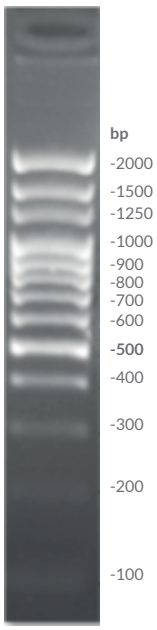
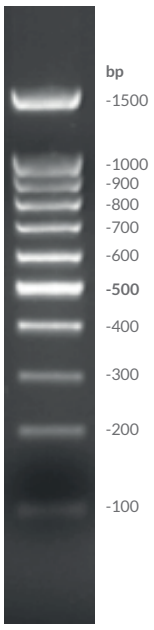
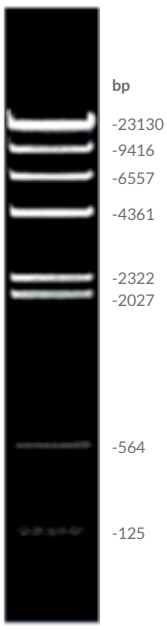
- ✔ **Ready-to-use** format to perfect visualization on agarose gel.
- ✔ **Well-defined bands** patterns.
- ✔ **Highly Stable** at Room Temperature.
- ✔ **Bright and accurate.**
- ✔ **Tested** with Ethidium bromide and Gel green.

Applications:

- ✔ Molecular weight standards for gel electrophoresis.

Quality control:

- ✔ Agarose gel electrophoresis.

	25 - 700 bp	50 - 1,000 bp	100 - 1,000 bp	100 - 2,000 bp	100 - 1,500 bp	300 - 10,000 bp	Lambda DNA/ HindIII Marker
							
	3% TAE Agarose, ethidium bromide stain	2.5% TAE Agarose, ethidium bromide stain	2.5% TAE Agarose, ethidium bromide stain	2% TAE Agarose, ethidium bromide stain	2.5% TAE Agarose, ethidium bromide stain	0.7% TAE Agarose, ethidium bromide stain	0.7% TAE Agarose, ethidium bromide stain
Catalog Number							
20 µg	L0007-S	L0009-S	L0011-S	L0013-S	L0015-S	L0017-S	L0020-S
50 µg	L0007	L0009	L0011	L0013	L0015	L0017	L0020
250 µg	L0008	L0010	L0012	L0014	L0016	L0018	L0021

Loading Buffers

Includes for 5 mL:
· 5 x 1 mL of selected Loading Buffer

Related products:
· BrightMAX™ DNA Ladders (p.116)
· TAE (p.137)
· TBE (137)

Advantages & Features:
- ✔ **High quality.**
- ✔ **Proven performance** for DNA Ladders preparation.
- ✔ **Optimized** for protect sample from nuclease degradation, provide high density and to be confined in the well without diffusing out from the well.

Applications:
- ✔ Preparation of DNA Ladders, markers and samples for loading on agarose or polyacrylamide gels.

Quality control:
- ✔ Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.

6x BX

Ordering info:

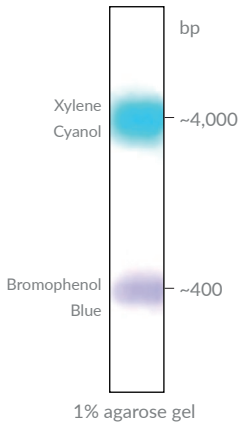
Cat No.	Size
L0030	5 x 1 mL

Concentration:
0.03% bromophenol blue, 0.03% xylene cyanol FF, 60% Glycerol, 10 mM Tris-HCl (pH 7.6) and 60 mM EDTA.

Description:
6X BX/Loading Buffer is used as a loading dye for visual tracking of DNA migration during electrophoresis. It incorporates Bromophenol blue and Xylene Cyanol FF as tracking dye. Bromophenol blue migrates fast in the agarose gel and corresponds to the migration of a 300 - 500 bp long DNA fragment in a 1% agarose gel. Xylene cyanol FF migrates comparatively slower and corresponds to the migration of a 4,000 – 5,000 bp long DNA fragment in a 1% agarose gel.

EDTA is included in the solution to protect the sample from nuclease degradation. Glycerol is added to provide high density to the solution. Due to its high density, the sample settles at the bottom of the well. It also helps DNA samples to be confined in the well without diffusing out from it.

Quality control:



1% agarose gel

6x B

Ordering info:

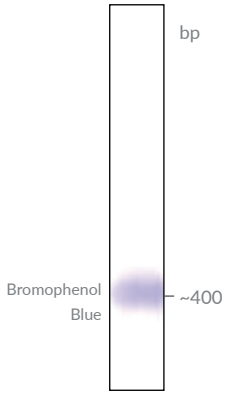
Cat No.	Size
L0031	5 x 1 mL

Concentration:
0.03% bromophenol blue, 60% Glycerol, 10 mM Tris-HCl (pH 7.6) and 60 mM EDTA.

Description:
6X B/Loading Buffer is used as a loading dye for visual tracking of DNA migration during electrophoresis. It incorporates Bromophenol blue. Bromophenol blue migrates fast in the agarose gel and corresponds to the migration of a 300 - 500 bp long DNA fragment in a 1% agarose gel.

EDTA is included in the solution to protect sample from nuclease degradation. Glycerol is added to provide high density to the solution. Due to its high density, sample settles at the bottom of the well. It also helps DNA samples to be confined in the well without diffusing out from it.

Quality control:



1% agarose gel

6x 0X

Ordering info:

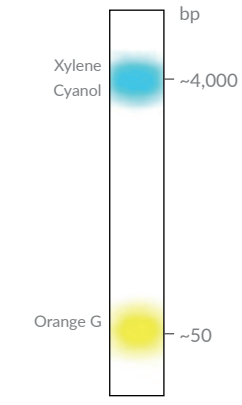
Cat No.	Size
L0032	5 x 1 mL

Concentration:
0.15% orange G, 0.03% xylene cyanol FF, 60% Glycerol, 10 mM Tris-HCl (pH 7.6) and 60 mM EDTA

Description:
6X OX/Loading Buffer is used as a loading dye for visual tracking of DNA migration during electrophoresis. It incorporates Orange G and Xylene Cyanol FF as tracking dye. Orange G migrates comparatively very fast and corresponds to the migration of a 50 bp long DNA fragment in 1% agarose gel. Xylene cyanol FF migrates comparatively slower and corresponds to the migration of a 4,000 – 5,000 bp long DNA fragment in a 1% agarose gel.

The EDTA is included in the solution to protect samples from nuclease degradation. Glycerol is added to provide high density to the solution. Due to its high density, sample settles at the bottom of the well. It also helps DNA samples to be confined in the well without diffusing out from it.

Quality control:



1% agarose gel

8. Recombinant Proteins

Photo: Tissue in the microscopic view

Recombinant Proteins

Recombinant proteins

Includes:

- Recombinant Protein
- Dry ice

Related products:

- Protein Expression Services (p.140)
- Small scale recombinant protein production Services (p.140)
- Monoclonal antibodies (p.123)
- Polyclonal antibodies (p.123)
- Polyclonal & Monoclonal Antibody Production Services (p.140)

Description:

Canvax offers a wide range of high quality Human Recombinant proteins for several research applications like ELISA, Western Blot, Antibody Production or Protein array.

Advantages & Features:

- **Highest purity:** free of interferences from other proteins or contaminants.
- **Tagged versions:** including His-tagged, GST-tagged and untagged versions.
- **Convenient:** available in different formats.
- **Cost avoidance:** dry ice free of charge.

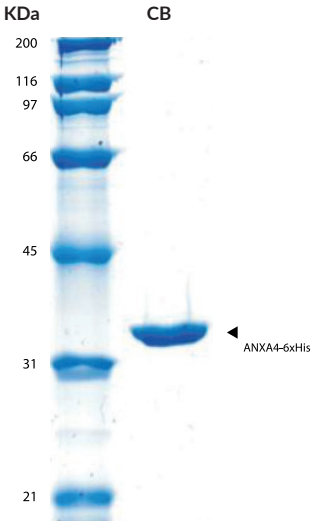
Applications:

- ELISA.
- Western Blot.
- Antibody Production.
- Protein array.

Quality control:

- SDS-PAGE stained with Coomassie Blue (CB).
- Immunobloting (WB).
- Peptide fingerprinting by MALDI-TOF-TOF mass spectrometry.

Figure 8.1.: Example of Quality control for Human Annexin A4 (ANXA4) recombinant protein.



Description	Origin	Purity	Catalog No.	Size
Human AKT1 (RAC-alpha serine/theorine-proteine-protein kinase), 6xHis tagged	*E. coli*	>90%	PR0331 PR0332 PRO333	20 µg 50 µg 100 µg
Human AKT1 (RAC-alpha serine/theorine-proteine-protein kinase), 6xHis-GST tagged	*E. coli*	>95%	PR0301 PR0302 PRO303	20 µg 50 µg 100 µg
Human ANXA1 (Annexin A1), GST tag	*E. coli*	>90%	PR0241 PR0242 PRO243	10 µg 25 µg 50 µg
Human ANXA2 (Annexin A2), 6xHis tag	*E. coli*	>95%	PR0251 PR0252 PRO253	10 µg 25 µg 50 µg
Human ANXA3 (Annexin A3), 6xHis tag	*E. coli*	>95%	PR0011 PR0012 PR0013	10 µg 25 µg 50 µg
Human ANXA4 (Annexin A4), 6xHis tag	*HEK293E cells*	>99%	PR0021 PR0022	10 µg 25 µg
Human ANXA5 (Annexin A5), 6xHis tag	*E. coli*	>95%	PR0291 PR0292 PR0293	10 µg 25 µg 50 µg
Human ANXA6 (Annexin A6), 6xHis tag	*E. coli*	>95%	PR0261 PR0262 PR0263	10 µg 25 µg 50 µg
Human ANXA9 (Annexin A9), 6xHis tag	*E. coli*	>95%	PR0271 PR0272 PR0273	10 µg 25 µg 50 µg
Human ANXA10 (Annexin A10), GST tag	*E. coli*	>95%	PR0281 PR0282 PR0283	10 µg 25 µg 50 µg
Human BMP4 (Bone morphogenetic protein 4), His-MBP tags	*E. coli*	>90%	PR0031 PR0032 PR0033	20 µg 50 µg 100 µg
Human BTLA (B-and T-lymphocyte attenuator), 6xHis tag	*E. coli*	>95%	PR0221 PR0222 PR0223	10 µg 25 µg 50 µg
Human Calcinesurin heterodimer (PPP3CA & PPP3R1), MBP tag	*E. coli*	>90%	PR0481 PR0482 PR0483	10 µg 25 µg 50 µg
Human CTHRC1 (Collagen triple helix repeat-containing 1), MBP tag	*E. coli*	>95%	PR0471 PR0472 PR0473	10 µg 25 µg 50 µg
Human CTHRC1 (Collagen triple helix repeat-containing 1), MBP tag	*E. coli*	>90%	PR0441 PR0442 PR0443	25 µg 50 µg 100µg
Human CXCL1 (Growth-regulated alpha protein), MBP tag	*E. coli*	>95%	PR0051 PR0052 PR0053	10 µg 25 µg 50 µg
Human CXCL3 (C-X-C motif chemokine 3), MBP tag	*E. coli*	>95%	PR0061 PR0062 PR0063	10 µg 25 µg 50 µg
Human CypA (Cyclophilin A), without tag	*E. coli*	>95%	PR0461 PR0462 PR0463	10 µg 25 µg 50 µg
Human DIABLO (Diablo homolog, mitochondrial), 6xHis-GST tagged	*Insect Sf9 cells*	>90%	PR0401 PR0402 PR0403	10 µg 25 µg 50 µg
Human EDIL3, 6xHis tag	*Sf9-Baculovirus*	>80%	PR0591 PR0592 PR0593	10 µg 25 µg 50 µg
Human EDIL3, GST tag	*Sf9-Baculovirus*	>80%	PR0601 PR0602 PR0603	10 µg 25 µg 50 µg
Human EFNB2 (Ephrin-B2) extracellular domain, Fc and 6xHis	*HEK293E cells*	>99%	PR0071 PR0072 PR0073	10 µg 25 µg 50 µg
Human EMILIN1 (Emilin 1), 6xHis tagged	*E. coli*	>95%	PR0441 PR0442 PR0443	10 µg 25 µg 50 µg
Human EMILIN1 (Emilin 1), 6xHis-GST tagged	*E. coli*	>90%	PR0431 PR0432 PR0433	10 µg 25 µg 50 µg
Human FGF2 (Fibroblast Growth Factor 2), 6xHis tag	*Insect Sf9 cells*	>80%	PR0491 PR0492 PR0493	5 µg 10 µg 25 µg
Human FGF2 (Fibroblast Growth Factor 2), 18kDa isoform, 6xHis tag	*E. coli*	>90%	PR0501 PR0502 PR0503	10 µg 25 µg 50 µg
Human FGFR3 (Fibroblast Growth Factor receptor 3), extracellular domain, Fc and 6xHis tag	*HEK293E cells*	>99%	PR0081 PR0082 PR0083	20 µg 50 µg 100 µg
Human FKBP12 (Calstabin 1), without tag	*Insetc Sf9 cells*	>95%	PR0451 PR0452 PR0453	10 µg 25 µg 50 µg
Human FLT3LG, GST tag	*Sf9-Baculovirus*	>70%	PR0691 PR0692 PR0693	10 µg 25 µg 50 µg
Human GABPB, 6xHis tag	*Sf9-Baculovirus*	>90%	PR0651 PR0652 PR0653	10 µg 25 µg 50 µg
Human GABPB1, GST tag	*Sf9-Baculovirus*	>90%	PR0661 PR0662 PRO663	10 µg 25 µg 50 µg
Human GRB2 (Growth Factor Receptor-Bound Protein 2) 6xHis-GST tagged	*E. coli*	>95%	PR0341 PR0342 PRO343	20 µg 50 µg 100 µg
Human GRB2 (Growth Factor Receptor-Bound Protein 2) 6xHis tagged	*E. coli*	>95%	PR0251 PR0252 PRO253	20 µg 50 µg 100 µg
Human GTF2E1, GST tag	*Sf9-Baculovirus*	>70%	PR0671 PR0672 PRO673	10 µg 25 µg 50 µg
Human TDGF1 (Teratocarcinoma-derived growth factor 1), MBP tag	*E. coli*	>95%	PR0201 PR0202 PRO203	10 µg 25 µg 50 µg

Description	Origin	Purity	Catalog No.	Size
Human GTF2E1, 6xHis tag	*E. coli*	>70%	PR0681 PR0682 PR0683	10 µg 25 µg 50 µg
Human HN1 (Hematological and neurological expressed 1 protein), 6xHis-tag	*E. coli*	>90%	PR0311 PR0312 PR0313	10 µg 25 µg 50 µg
Human HN1 (Hematological and neurological expressed 1 protein), 6xHis tag	*E. coli*	>95%	PR0321 PR0322 PR0323	10 µg 25 µg 50 µg
Human IFITM2 (Interferon-induced transpembrane protein 2), 6His-GST tag	*E. coli*	>90%	PR0091 PR0092 PR0093	10 µg 25 µg 50 µg
Human IFITM3 (Interferon-induced transpembrane protein 3), 6His-GST tag	*E. coli*	>90%	PR0101 PR0102 PR0103	10 µg 25 µg 50 µg
Human IL6 (Interleukin 6), 6xHis tag	*E. coli*	>95%	PR0111 PR0112 PR0113	25 µg 50 µg 100 µg
Human IL6 (Interleukin 6), without tag	*E. coli*	>95%	PR0581 PR0582 PR0583	20 µg 50 µg 100 µg
Human IL8 (72aa residues) (Interleukin 8), 6His tag	*E. coli*	>95%	PR0121 PR0122 PR0123	25 µg 50 µg 100 µg
Human IL8 (72aa residues) (Interleukin 8), without tag	*E. coli*	>95%	PR0561 PR0562 PR0563	25 µg 50 µg 100 µg
Human IL8 (77aa residues) (Interleukin 8), 6His tag	*E. coli*	>95%	PR0131 PR0132 PR0133	25 µg 50 µg 100 µg
Human IL8 (77aa residues) (Interleukin 8), without tag	*E. coli*	>95%	PR0571 PR0572 PR0573	25 µg 50 µg 100µg
Human KAL1 Overexpression lysate product, Tag-free	*CHO-K1 cells*	>90%	PR0511	200 µg
Human KAL1 (Aposmin 1) partial (297 residues), 6xHis tag	*E. coli*	>90%	PR0521 PR0522 PR0523	10 µg 25 µg 50 µg
Human LCN2 (Lipocalin 2), GST tag	*E. coli*	>95%	PR0141 PR0142 PR0143	10 µg 25 µg 50 µg
Human MEF2A, 6xHis tag	*E. coli*	>90%	PR0611 PR0612 PR0613	10 µg 25 µg 50 µg
Human MEF2A, GST tag	*Sf9-Baculovirus*	>90%	PR0621 PR0622 PR0623	10 µg 25 µg 50 µg
Human MMP7 (Matrilysin), 6His tag	*E. coli*	>95%	PR0151 PR0152 PR0153	10 µg 25 µg 50 µg
Human MMP11 (Stromelysin-3), 6His-GST tag	*E. coli*	>80%	PR0161 PR0162 PR0163	10 µg 25 µg 50 µg
Human PDCD2 (Programmed cell death protein 2), MBP tag	*E. coli*	>90%	PR0231 PR0232 PR0233	10 µg 25 µg 50 µg
Human RAB2A (Bas-related protein Rab-2A) 6xHis tagged	*E. coli*	>95%	PR0361 PR0362 PR0363	10 µg 25 µg 50 µg
Human RAB2A (Bas-related protein Rab-2A) 6xHis-GST tagged	*E. coli*	>95%	PR0371 PR0372 PR0373	10 µg 25 µg 50 µg
Human SEPT5 (Septin 5), 6xHis-GST tagged	*E. coli*	>95%	PR0381 PR0382 PR0383	10 µg 25 µg 50 µg
Human SEPT5 (Septin 5), 6xHis tagged	*E. coli*	>95%	PR0391 PR0392 PR0393	10 µg 25 µg 50 µg
Human SPARC (Ostennectin), MBP tag	*E. coli*	>90%	PR0171 PR0172 PR0173	20 µg 50 µg 100 µg
Human SPP1 (Ostennectin), GST tag	*E. coli*	>90%	PR0181 PR0182 PR0183	20 µg 50 µg 100 µg
Human SPP1 (Ostennectin), MBP tag	*E. coli*	>80%	PR0191 PR0192 PR0193	20 µg 50 µg 100 µg
Human TCEAL2, 6xHis tag	*Sf9-Baculovirus*	>70%	PR0631 PR0632 PRO633	10 µg 25 µg 50 µg
Human TCEAL2, GST tag	*Sf9-Baculovirus*	>70%	PR0641 PR0642 PRO643	10 µg 25 µg 50 µg
Human TERF1 (Telomecic repeat-binding factor1), 6xHis-GST tags	*E. coli*	>85%	PR0421 PR0422 PRO423	10 µg 25 µg 50 µg
Human TERF1 (Telomecic repeat-binding factor 1), 6xHis tagged	*CHO-K1 cell*	>85%	PR0411 PR0412 PR0413	10 µg 25 µg 50 µg
Human TIMP1 (Metalloproteinase inhibitor 1), MBP tag	*E. coli*	>90%	PR0211 PR0212 PR0213	10 µg 25 µg 50 µg
Human TNFa (Tumor Necrosis Factor) partial (157 ass) 6His-tagged	*E. coli*	>90%	PR0551 PR0552 PR0553	10 µg 25 µg 50 µg
Human VEGF A (Vascular Endothelial Growth Factor A), 6xHis tag	*Sf9-Baculovirus*	>90%	PR0531 PR0532 PR0533	10 µg 25 µg 50 µg
Human VEGF A (Vascular Endothelial Growth Factor A), 6xHis tag	*Insect Sf9 cell*	>90%	PR0541 PR0542 PR0543	10 µg 25 µg 50 µg
Human PDCD2 (Programmed cell death protein 2), MBP tag	*E. coli*	>95%	PR0231 PR0232 PR0233	10 µg 25 µg 50 µg

9. Antibodies & Serums

Antibodies

Serums, Plasma and Albumin

Photo: Crossection of glandular ducts

Antibodies & Serums

Antibodies

For highest performance and purity for Elisa or Western Blot

Related Products:

- Recombinant Proteins (p.119)
- Protein Expression Services (p.140)
- Small scale recombinant Protein production Services (p.140)
- Polyclonal & Monoclonal Antibody Production Services (p.140)

Description:

Canvax has designed, properly prepared and characterized a portfolio of monoclonal and polyclonal antibodies for ELISA and Western Blot applications.

Applications:

- ✔ ELISA.
- ✔ Western Blot.
- ✔ Immunohistochemistry.

Advantages & Features:

- ✔ **Proven performance** for Elisa and Western Blot.
- ✔ **Highest performance and purity.**
- ✔ **Human specifity:** reactivity with other species untested.
- ✔ **Cost avoidance:** dry ice free of charge.
- ✔ **Purification Method:** protein G/A affinity chromatography.

Polyclonal antibodies

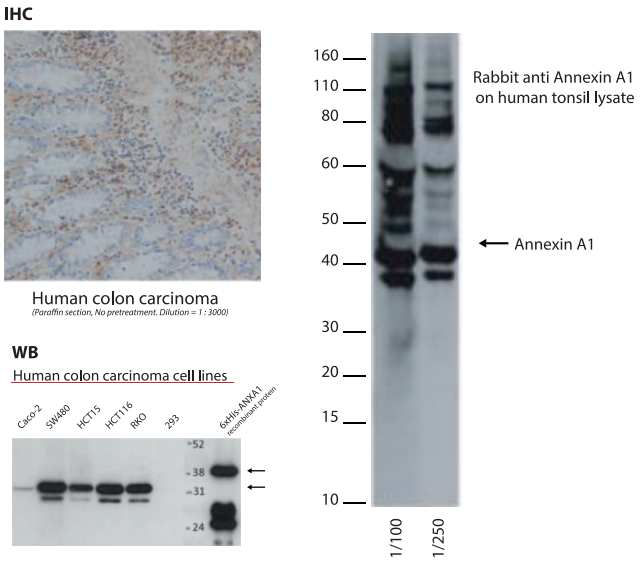
Host	Antibody	Protein	Isotype	Catalog Number	Unit Size
Rabbit	Anti-ANXA1	Annexin A1	IgG	PA001	100 µg
Rabbit	Anti-ANXA2	Annexin A2	IgG	PA002	100 µg
Rabbit	Anti-ANXA3	Annexin A3	IgG	PA003	100 µg
Rabbit	Anti-ANXA5	Annexin A5	IgG	PA004	100 µg
Rabbit	Anti-ANXA6	Annexin A6	IgG	PA005	100 µg
Rabbit	Anti-ANXA9	Annexin A9	IgG	PA006	100 µg
Rabbit	Anti-ANXA10	Annexin A10	IgG	PA007	100 µg
Rabbit	Anti-FGF2	Fibroblast Growth Factor 2	IgG	PA008	100 µg
Rabbit	Anti-KAL1	Anosmin 1	IgG	PA009	100 µg

Monoclonal antibodies

Host	Antibody	Protein	Isotype	Clone	Catalog Number	Unit Size
Mouse	Anti-LCN2	Lipocalin 2	IgG1κ	PA348-26.3.5	MA0001	100 µg
Mouse	Anti-ANXA4	Annexin A4	IgG2aκ	PA351-29.1.3	MA0002	100 µg
Mouse	Anti-EFNB2	Ephrin B2	IgG1κ	PA349-18.4.3	MA0003	100 µg
Mouse	Anti-NR1H4	Bile acid receptor isoform 2	IgG1	322.1.2.2	MA0004	100 µg
Mouse	Anti-BMP4	Bone morphogenetic protein 4	IgG1κ	PA354-16.1.1	MA0005	100 µg
Mouse	Anti-FGF2	Fibroblast Growth Factor 2	IgG1	PA341.15.23.3	MA0006	100 µg
Mouse	Anti-KAL1	Anosmin 1	IgG1	PA343-13.22.2	MA0007	100 µg
Mouse	Anti-NGFR	Nerve Growth Factor Receptor	IgG1	HB-8737 (20.4)	MA0320	100 µg
Mouse	Anti-FITC	Fluorescein	IgG2a	4.4.20	MA0330	100 µg

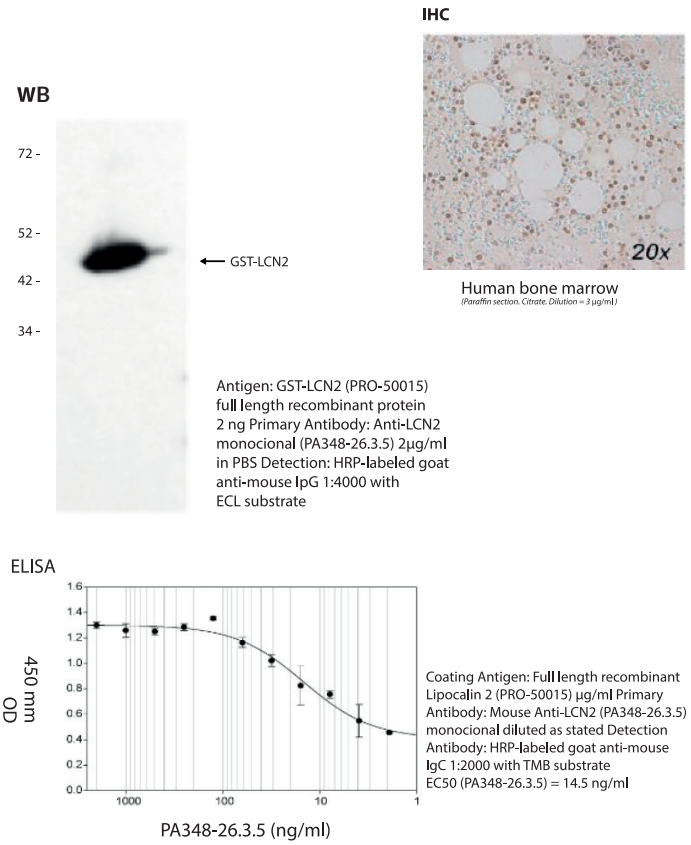
Quality control:

Example of Quality control for Rabbit Anti-ANXA1 (Annexin A1):



Quality control:

Example of Quality control for Mouse Monoclonal Anti-LCN2:



Animal Serum, Plasma and Albumin

List of commercial Serum, Plasma and Albumin availables:

Product	Catalog No.	Size
Fetal Bovine Serum (FBS)	SUF001 SUF002	20 ml 50 ml
Horse Serum	SUH001 SUH002	20 ml 50 ml
Donor Foal Serum	SUD001 SUD002	20 ml 50 ml
Donkey Serum	SUD004 SUD005	20 ml 50 ml
Goat Serum	SUG001 SUG002	20 ml 50 ml
Lamb Serum	SUL001 SUL002	20 ml 50 ml
Sheep Serum	SUS001 SUS002	20 ml 50 ml
Pig Serum	SUP001 SUP002	20 ml 50 ml
Chicken Serum	SUC004 SUC005	20 ml 50 ml
Rabbit Serum	SUR001 SUR002	20 ml 50 ml
Rat Serum	SUR004 SUR005	20 ml 50 ml
Mouse Serum	SUM001 SUM002	20 ml 50 ml
Guinea Pig Serum	SUG004 SUG005	20 ml 50 ml
Bovine Plasma w/ Sodium Citrate	SUB004 SUB005	20 ml 50 ml
Rabbit Plasma w/ EDTA	SUR007 SUR008	20 ml 50 ml
Rat Plasma w/ Lithium Heparin	SUR010 SUR011	20 ml 50 ml
Bovine Serum Albumin (BSA) Lyophilised pH ~7	SUB001 SUB002	20 ml 50 ml
Bovine Serum Albumin (BSA) 30 % liquid	SUB010 SUB011	20 ml 50 ml
Human Plasma pooled	SUM007 SUM008	20 ml 50 ml
Human Serum Albumin Lyophilised	SUM010 SUM011	20 ml 50 ml

10. Antibiotics

Photo: Plant stem section under microscope

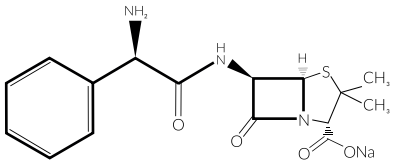
Antibiotics

Ampicillin Sodium salt

Ordering info:

Cat No.	Size
AB001	10 g
AB002	25 g

Specifications:
CAS No: 69-52-3
MDL No: MFCD00064313
Chemical Formula: $C_{16}H_{18}N_3O_4SNa$
Molecular Weight: 371.39
pH: 8.0 - 10.0
Water content: >2.0%

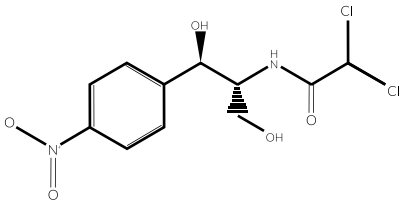


Chloramphenicol

Ordering info:

Cat No.	Size
AB003	25 g
AB004	50 g

Specifications:
CAS Number: 56-75-7
Chemical Formula: $C_{11}H_{12}Cl_2N_2O_5$
Molecular Weight: 323.13
Appearance: White or slightly yellow
Assay: 98.0~102.0%
Loss on drying: >0.5%

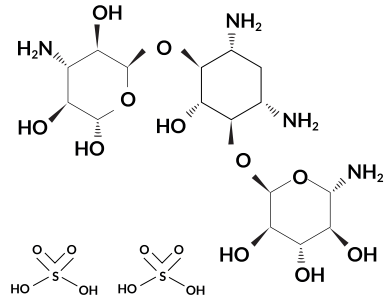


Kanamycin Sulphate

Ordering info:

Cat No.	Size
AB005	5 g
AB006	25 g

Specifications:
CAS Number: 25389-94-0
Chemical Formula: $C_{18}H_{36}N_4$
Molecular Weight: 582.58
Appearance: White to off-white crystalline powder
Loss on drying: >2%
Potency:<750 µg/mg

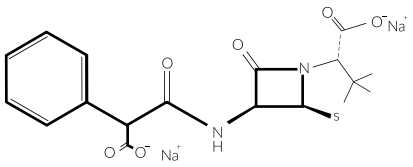


Carbenicillin Disodium

Ordering info:

Cat No.	Size
AB007	1 g
AB008	5 g

Specifications:
CAS Number: 4800-94-6
Chemical Formula: $C_{17}H_{16}N_2Na_2O_6S$
Molecular Weight: 422.36
Appearance: White to pale yellow powder
Purity (on dried basis):<90%
Water content: >5%

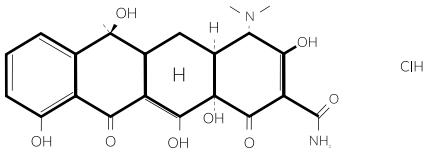


Tetracycline Hydrochloride

Ordering info:

Cat No.	Size
AB009	25 g
AB010	50 g

Specifications:
CAS Number: 64-75-5
Chemical Formula: $C_{22}H_{25}ClN_2O_8$
Molecular Weight: 480.90
Appearance: Yellow powder
Potency:<950 µg/mg
Specific optical rotation: -240 to -255°



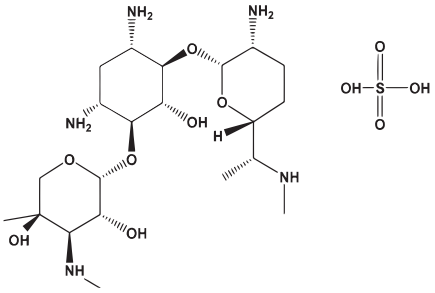
Gentamicin Sulphate

Ordering info:

Cat No.	Size
AB011	5 g
AB012	10 g

Specifications:

CAS Number: 1405-41-0
Chemical Formula: $C_{60}H_{125}N_{15}O_{25}S$
Loss on drying: >18%
Appearance: White or slightly yellow
Activity anhydrous basis:<590 ug/mg
Gentamicin content: C1a: 10 - 35%
Gentamicin content: C2+C2a: 25 - 55%
Gentamicin content: C1: 25 - 50%
pH: 3.5 - 5.5
Molecular Weight: 1488,79



Neomycin

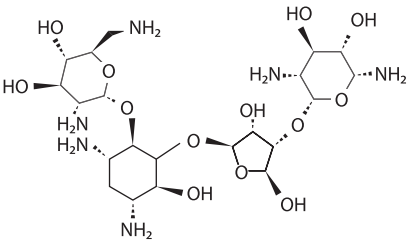
Ordering info:

Powder format	
Cat No.	Size
AB018	1 g
AB019	5 g

Ready-to-use format	
Cat No.	Size
AB021	10 mL
AB022	50 mL

Specifications:

Formula: $C_{23}H_{46}N_6O_{13}{\cdot}xH_2SO_4$
Molecular weight: 614.7 (Base)
Potency: min. 680
pH (1% in H_2O): 5.0 – 7.5
Sulfate (%): 27.0 – 31.0
Origin : microbiological fermentation
Sulfated ash: <1.0



Puromycin dihydrochloride

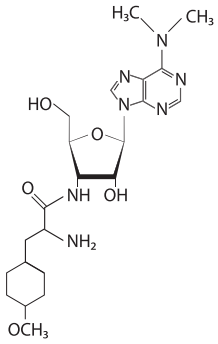
Ordering info:

Powder format	
Cat No.	Size
AB024	1 g
AB025	5 g

Ready-to-use format	
Cat No.	Size
AB027	10 mL
AB028	50 mL

Specifications:

CAS Number: 58-58-2
Chemical Formula: $C_{22}H_{29}N_7O_5.2HCl$
Molecular Weight: 544.44
Purity (HPLC): > 98%



Hygromycin

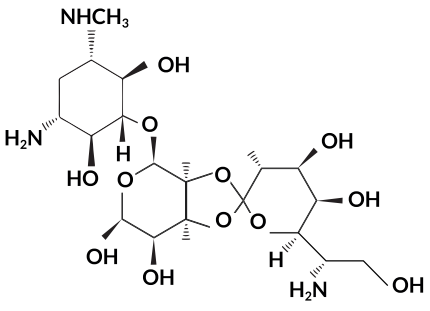
Ordering info:

Powder format	
Cat No.	Size
AB030	1 g
AB031	5 g

Ready-to-use format	
Cat No.	Size
AB033	10 mL
AB034	50 mL

Specifications:

CAS Number: 31282-04-9
Chemical Formula: $C_{20}H_{37}N_3O_{13}$
Molecular Weight: 527.52
Purity (HPLC): > 92%
Potency: > 1,000 U/mg



11. Magnetic Particles

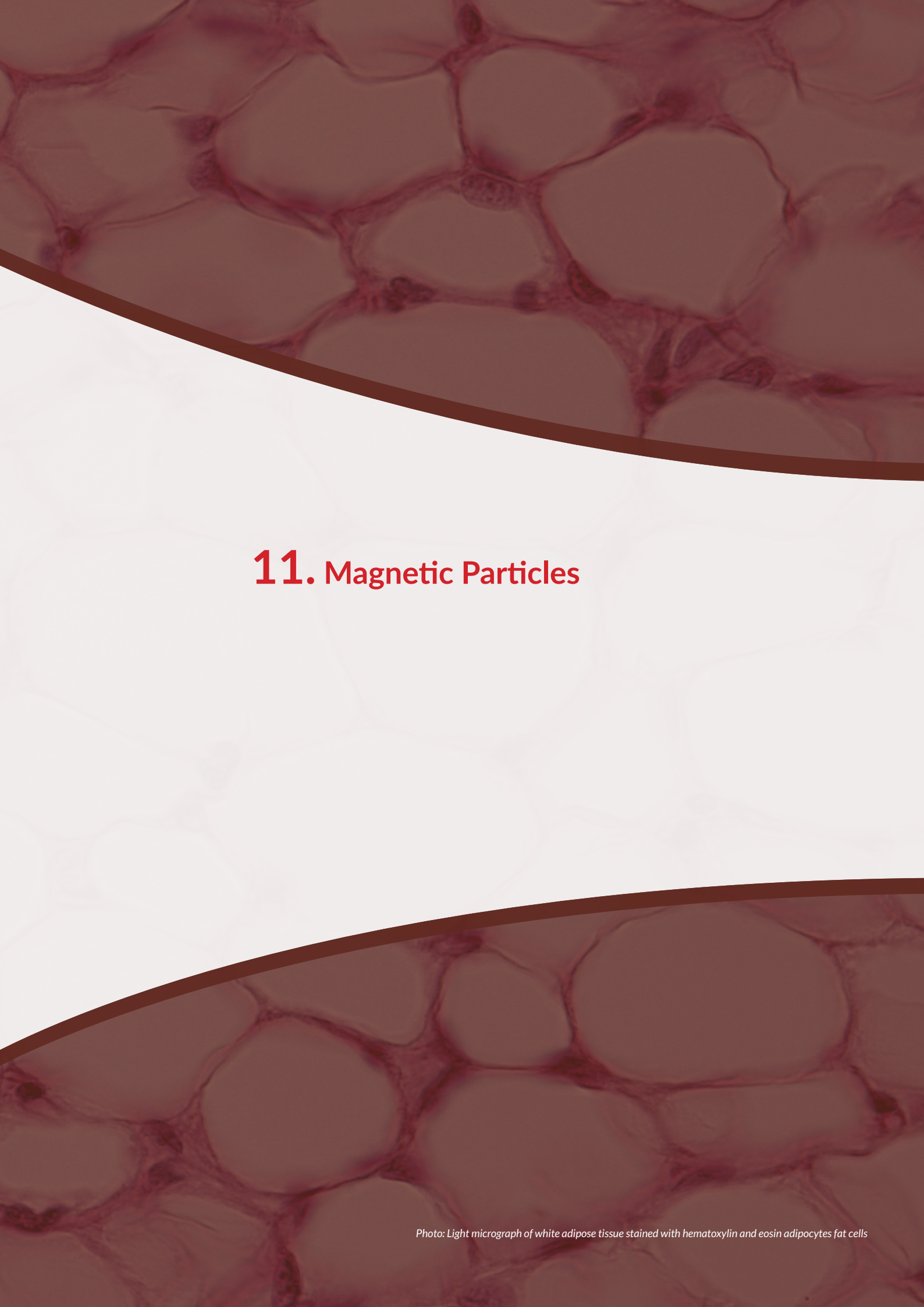


Photo: Light micrograph of white adipose tissue stained with hematoxylin and eosin adipocytes fat cells

CaxBeads™ Magnetic Particles

Widely functionalized ferromagnetic particles including uniform non-porous silica beads

Concentration: 50 mg/mL

Description:

CaxBeads™ Magnetic Particles include a wide range of ferromagnetic particles with a magnetite core coated with non-porous silica and functionalized with different reactive groups. CaxBeads™ ferromagnetic particles have been optimized to improve its very strong magnetic properties, therefore offering a fast separation with an external magnetic field even in viscous media. These 250-300 nm uniform high-quality particles are ideal for many applications such as purification of DNA/RNA and proteins, immobilization of target molecules, cell sorting, immunoassay or proteomics.

Advantages & Features:

- ✓ **High quality.**
- ✓ **Proven performance.**
- ✓ **Rapid and robust.**
- ✓ **Easy scalability and flexibility.**

Quality control:

- ✓ Stringent quality control standards to guarantee lot-to-lot consistency.

Related Products:

- MagBeads™ Yeast Genomic DNA Isolation Kit (p.96)
- MagBeads™ Plasmid Purification Kit (p.96)
- MagBeads™ Plant Genomic DNA Isolation Kit (p.97)
- MagBeads™ PCR Cleanup Kit (p.95)
- MagBeads™ Bacteria G (+) Genomic DNA Isolation (p.95)
- MagBeads™ Bacteria G (-) Genomic DNA Isolation (p.94)

CaxBeads™ C8

Ordering info:

Cat No.	Size
MP021	4 mL
MP022	10 mL

Description:

Ferromagnetic particles coated with hydrophobic C8 alkyl gropus on the surface of non-porous silica beads. **CaxBeads™ C8** offer an intermediate hydrophobicity (less hydrophobic than C18 and more hydrophobic than C4 beads), most suitable for low to intermediate molecular weight protein purification.

Functional Group: $-CH_2-(CH_2)_6-CH_3$

Applications:

- ✓ Adsorption of Biomolecules.
- ✓ MALDI sample preparation.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization by adsorption.

CaxBeads™ C4

Ordering info:

Cat No.	Size
MP011	4 mL
MP012	10 mL

Description:

Ferromagnetic beads coated with hydrophobic C4 alkyl groups on the surface of non-porous silica. The relatively low hydrophobicity of the C4 beads allows the purification and fractionation of larger biomolecules. Although in many cases the three types of reverse phase magnetic beads can be used interchangeably, C4 beads are most suitable for larger molecular weight proteins.

Functional Group: $-CH_2-(CH_2)_2-CH_3$

Applications:

- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization by adsorption.
- ✓ MALDI sample preparation.
- ✓ Fractionation of larger molecular weight proteins and peptides.
- ✓ Rapid release hydrophobic molecules by weaker organic solvents.

CaxBeads™ C18

Ordering info:

Cat No.	Size
MP001	4 mL
MP002	10 mL

Description:

Ferromagnetic particles coated with hydrophobic C18 alkyl gropus on the surface of non-porous silica beads. C-18 Magnetic beads are recommended for purification, desalting and concentration of low molecular weight proteins or peptides.

Functional Group: $-CH_2-(CH_2)_{16}-CH_3$

Applications:

- ✓ Binds most organic analytes from aqueous matrices.
- ✓ Extraction of numerous analytes diverse in structure for the same sample.
- ✓ Adsorption of Biomolecules.
- ✓ MALDI sample preparation.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization by adsorption.

CaxBeads™ DEAE

Ordering info:

Cat No.	Size
MP031	4 mL
MP032	10 mL

Description:

CaxBeads™ DEAE is a weak anionic resin with a thick cover of diethyl-aminoethyl groups, rendering the amine group as a quaternary amine. The beads allow the rapid release of very strong anions. These beads are specifically designed for easier and quicker fractionation of proteins/ peptides from complex biological samples.

Functional Group: Diethylaminoethyl $(-CH_2-N-(CH_3)_2)$

Applications:

- ✓ Weak Anionic exchange resin.
- ✓ Nucleic acid caption, adsorption, isolation or purification.
- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.

CaxBeads™ IDA

Ordering info:

Cat No.	Size
MP041	4 mL
MP042	10 mL

Description:

CaxBeads™ IDA are coated with high-density iminodiacetic Acid (IDA) functional groups on the surface. It can be charged with nickel (Ni^{+2}), cobalt (Co^{+2}), zinc (Zn^{2+}) or copper (Cu^{2+}). They are used for immobilized metal affinitychromatography (IMAC). CaxBeads™ IDA-Ni^{2+} has three Ni^{2+} binding sites to His TAG, while chelates resins have two Ni^{2+} binding sites. More binding sites to metal means more affinity to metal, resulting in less loss of metal (less metal contamination in the elution).

Functional Group: silanol-iminodiacetic acid-Metal (Ni^{2+} or other).

Applications:

- ✓ Isolation, purification or immobilization of Histidine modified proteins.
- ✓ Inmobilized metal affinity chromatography (IMAC).

CaxBeads™ AmineLC

Ordering info:

Cat No.	Size
MP101	4 mL
MP102	10 mL

Description:
CaxBeads™ Amine LC is an anionic exchange resin with a high density of primary amine as functional group on the surface of ferromagnetic beads. The beads are used to covalently conjugate carboxyl-containing molecules. Hydrophilic, stable in aqueous solutions, more stable when the amine groups are charged in mild acid pH.
Functional Group: Primary amine ($-NH_2$).

Applications:
- ✓ Anionic exchange resin.
- ✓ Caption, adsorption, isolation or purification of Nucleic acid.
- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization of Enzymes by Crosslinking.

CaxBeads™ BetaCD

Ordering info:

Cat No.	Size
MP111	4 mL
MP112	10 mL

Description:
CaxBeads™ BetaCD are ferromagnetic beads coated with terminal beta ciclodextrin groups on the surface of non-porous silica.
Functional Group: β-ciclodextrin

Applications:
- ✓ Encapsulation of Hydrophobic molecules.
- ✓ Absorption and detection of molecules in biological samples.
- ✓ Refolding of proteins.
- ✓ Increase the solubility of low solubility compounds.

CaxBeads™ Tris

Ordering info:

Cat No.	Size
MP121	4 mL
MP122	10 mL

Description:
CaxBeads™ Tris is a cationic exchange resin to purify proteins based in a highly hydrophilic support due to the tris hydroxymethyl methane groups attached to the particles' surface.
Functional Group: Tris (Hidroxymethyl) amine methane.

Applications:
- ✓ Cationic exchange resin.
- ✓ Caption, adsorption, isolation or purification of Nucleic acid.
- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization by adsortion.
- ✓ Heavy Metal absorption such Ni^{+2}, Co^{+2}, Zn^{+2}, Cu^{+2}.
- ✓ Glycoproteins modified proteins purification.

CaxBeads™ Citrate

Ordering info:

Cat No.	Size
MP131	4 mL
MP132	10 mL

Description:
CaxBeads™ Citrate is a cationic exchange resin with a high density of citric acid via chemisorption on non-porous silica surface. The beads are used to covalently conjugate primary amine-containing ligands via a stable amide bond.
Functional Group: Carboxile/ Carboxilate.

Applications:
- ✓ Cationic exchange resin.
- ✓ Caption, adsorption, isolation or purification of Nucleic acid.
- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.
- ✓ Covalent immobilization of proteins.

CaxBeads™ Cyane

Ordering info:

Cat No.	Size
MP141	4 mL
MP142	10 mL

Description:
CaxBeads™ Cyane are ferromagnetic beads coated with cyane groups on the surface of non-porous silica.
Functional Group: Cyane (-CN)

Applications:
- ✓ Absorption of Hydrophobic molecules.
- ✓ Covalent inmobilization of proteins.

CaxBeads™ EpoxiLC

Ordering info:

Cat No.	Size
MP151	4 mL
MP152	10 mL

Description:
CaxBeads™ Epoxi LC are ferromagnetic beads coated with a large chain of epoxy/ oxirane on the surface of non-porous silica. The beads are used to covalently conjugate amine, sulfhydryl, or hydroxyl group-containing ligands. More preferable than CaxBeads™ Epoxi SC to immobilize peptides.
Functional Group: large chain epoxy/ oxirane.

Applications:
- ✓ Covalent immobilization of Biomolecules in mild conditions pH 5-9, temperature between 4-37° C.

CaxBeads™ EpoxiSC

Ordering info:

Cat No.	Size
MP161	4 mL
MP162	10 mL

Description:
CaxBeads™ Epoxi SC are ferromagnetic beads coated with short chain of epoxy/ oxirane on the surface of non-porous silica. The beads are used to covalently conjugate amine, sulfhydryl, or hydroxyl group-containing ligands. More preferable than CaxBeads™ Epoxi LC to immobilize higher proteins.
Functional Group: short chain epoxy/ oxirane.

Applications:
- ✓ Covalent immobilization of Biomolecules in mild conditions pH 5-9, temperature between 4-37° C.

CaxBeads™ Imidazol

Ordering info:

Cat No.	Size
MP171	4 mL
MP172	10 mL

Description:
It has a non-porous silica surface and histidine functional groups in the surface adsorption at low pH (4-5) and desorption at neutral/alkaline pH 7-8.
Functional Group: Thiol (-SH).

Applications:
- ✓ Cell sorting.
- ✓ Immunoprecipitation.
- ✓ Adsorption of Nucleic acid.
- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization of Enzymes by Crosslinking.
- ✓ Transfection of gene vectors to culture cell.

CaxBeads™ Oleic

Ordering info:

Cat No.	Size
MP181	4 mL
MP182	10 mL

Description:
CaxBeads™ Oleic are ferromagnetic beads coated with oleic groups on the surface of non-porous silica. This particles are hydrophobic and only soluble in organic solvents as hexane, heptane, ciclohexane or dodecane.
Functional Group: Oleic acid ($-CH_3(CH_2)_7CH=CH(CH_2)_7COOH$)

Applications:
- ✓ Hidrophobic molecules adsorption.

CaxBeads™ Polyamine

Ordering info:

Cat No.	Size
MP191	4 mL
MP192	10 mL

Description:
It has a thick coverture of polyamine and a very high density of primary amines in the surface. The particles are hydrophilic, stable in aqueous solutions, more stables when the amine groups are charged in mild acid pH.
Functional Group: Primary ($-NH_2$) and secondary amines (-NH).

Applications:
- ✓ Anionic exchange resin.
- ✓ Caption, adsorption, isolation or purification of Nucleic acid.
- ✓ Adsorption of Biomolecules.
- ✓ Adsorption or isolation of Proteins.
- ✓ Immobilization of Enzymes by Crosslinking.
- ✓ Gene vectors to culture cell Transfection.

CaxBeads™ Thiol

Ordering info:

Cat No.	Size
MP201	4 mL
MP202	10 mL

Description:
CaxBeads™ Thiol are ferromagnetic particles coated with thiol functional groups on the surface. The beads are used to reversibly couple thiol-containing ligands and are most suitable for conjugation of large proteins.
Functional Group: Thiol (-SH).

Applications:
- ✓ Immobilization of Biomolecules in mild conditions pH 5-9, temperature between 4-37 °C.

CaxBeads™ Thiosulfate

Ordering info:

Cat No.	Size
MP211	4 mL
MP212	10 mL

Description:
CaxBeads™ Thiosulfate is a weak anionic resin with thiosulfate groups on surface. The beads allow the rapid release of very strong anions. These beads are specifically designed for easier and quicker fractionation of proteins/ peptides from complex biological samples.
Functional Group: Thiosulfate ($-S_2O_3^{2-}$)

Applications:
- ✓ Weak anionic exchange resin.
- ✓ Biomolecules affinity purification.

CaxBeads™ Tosyl

Ordering info:

Cat No.	Size
MP221	4 mL
MP222	10 mL

Description:
CaxBeads™ Tosyl is used to covalently conjugate any ligand (e.g. antibody, protein, peptide or glycoprotein) containing amino or sulfhydryl groups to the surface of the beads. After coating them with a ligand with affinity for the protein to be isolated (markers, receptors, enzymes), the resin can be used for protein purification.
Functional Group: Tosyl ($CH_3C_6H_4SO_3-$)

Applications:
- ✓ Cell sorting.
- ✓ Inmunoprecipitation.
- ✓ Purification for antibodies, proteins, peptides and DNA.

CaxBeads™ Triazine

Ordering info:

Cat No.	Size
MP231	4 mL
MP232	10 mL

Description:
CaxBeads™ Triazine is used to easily conjugate covalently any ligand containing amino groups to the surface of the beads.
Functional Group: Triazine chloride $(-ClCN)_3$

Applications:
- ✓ Covalent immobilization of Biomolecules in mild conditions pH 5-9, temperature between 4-37 °C.
- ✓ Covalent immobilization of large molecules.
- ✓ Adsorption of Biomolecules

12. Buffers & Reagents

Photo: Light micrograph showing the golgi apparatus in neurons of dorsal root ganglion cajal s-formol

PBS (pH 7.4)

Tablets format:

Cat No.	Size
BR0001	8 L= 8 Tablets
BR0002	16 L= 16 T
BR0095	50 L= 50 T
BR0096	100 L= 100 T

Includes:

· Exactly pre-weighed tablets (1,000 mL/Tablet)

Aqueous solution format:

Cat No.	Size
BR0003	1 L (1x)
BR0004	1 L (10x)

Includes for 1 unit:

· 1,000 mL PBS solutions

Specifications:

Chemicals: analytical grade.
Composition: 0.14 M NaCl, 0.0027 M KCl, 0.010 M PO_4^{3-}.
pH: 7.4 ± 0.05 at 25° C

Description:

Phosphate-Buffered Saline (PBS) is a high quality, reliable and convenient water-based salt solution containing sodium phosphate, sodium chloride, potassium chloride and potassium phosphate. PBS is used in cell biology to maintain the osmolarity, in immunoassays (ELISA, immuno-histochemical), to maintain the protein pH, to dissolve proteins and peptides samples.

Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Flexible format:** available in tablets and time-saving ready-to-use solution.
- ✓ **Convenient:** ideal for standardizing laboratory work.

Applications:

- ✓ Dilute substances.
- ✓ Immobilize a substance, as a protein, in a solid surface.
- ✓ Inmuno-histochemichal, ELISA and Western blot assays.
- ✓ Cell cultures procedures.
- ✓ Microbiological procedures.

Quality Control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

Related Products:

· Custom solutions (p.147)

PBS with Tween ™ 20 (pH 7.4)

Tablets format:

Cat No.	Size
BR0005	8 L= 8 Tablets
BR0006	16 L= 16 T
BR0007	50 L= 50 T
BR0092	100 L= 100 T

Includes:

· Exactly pre-weighed tablets and (1,000 mL/Tablet)

Aqueous solution format:

Cat No.	Size
BR0008	1 L (1x)
BR0009	1 L (10x)

Specifications:

Chemicals: analytical grade.
Composition: 0.14 M NaCl, 0.0027 M KCl, 0.05% Tween™ 20, 0.010 M PO_4^{3-}
pH: 7.4 ± 0.05 at 25°C

Description:

Phosphate-Buffered Saline with Tween™ 20 (PBS-T) is a high quality, reliable and convenient water-based salt solution ideal for use in sample preparation and as a wash buffer in general immunoassay applications.

It includes Tween™ 20, a non-ionic detergent additive that reduces non-specific binding and protein-protein interaction during the wash step in protein and immunoassay procedures such as ELISA and Western blotting. Decreasing the non-specific binding and staining makes ELISA results and blots easier to interpret.

Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Convenient:** available in tablets and time-saving ready-to-use solution.
- ✓ **Complete solution:** includes a non-ionic detergent.
- ✓ **Proven performance** for general immunoassay applications.

Applications:

- ✓ Wash buffer in immunolabelling techniques, such as ELISA and Western blotting.
- ✓ Blocking buffer for plate based assays.
- ✓ Protein-plate coating.

Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

Related Products:

· Custom solutions (p.147)

TBS (pH 7.6)

Tablets format:

Cat No.	Size
BR0040	4 L= 8 Tablets
BR0041	8 L= 16 T
BR0042	25 L= 50 T
BR0093	50 L= 100 T

Includes:
· Exactly pre-weighed tablets (500 mL/Tablet)

Related Products:
· Custom solutions (p.147)

Specifications:
Chemicals: analytical grade.
Composition: 0.050 M Tris-HCl, 0.15 M KCl.
pH: 7.6 ± 0.05 at 25°C.

Description:
Tris Buffered saline (TBS) is a high quality, reliable and reproducible buffer to maintain the pH without large variations. TBS is isotonic and non-toxic to cells thereby emulating the physiological conditions. It is used to dilute sample and wash buffer in immunoassays as ELISA or immuno-histochemistry when the background is high. In Western blot, is used for diluting phosphatase or peroxidase-conjugated antibodies.

Advantages & Features:
- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **Reproducibility Assured.**
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Really fast and easy procedure:** results in few seconds with minimal handling steps.
- ✓ **Safe:** isotonic and non-toxic to cells.

Applications:
- ✓ Dilute substances.
- ✓ Wash buffer in ELISA.
- ✓ Dilute phosphatase and peroxidase conjugated antibodies in Western Blot.
- ✓ Immuno-histochemistry staining, to clean the background.
- ✓ Wash buffer *in situ* hybridization.

Quality control:
- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

TBS with Tween ™ 20 (pH 7.6)

Tablets format:

Cat No.	Size
BR0043	4 L= 8 Tablets
BR0044	8 L= 16 T
BR0045	25 L= 50 T
BR0094	50 L= 100 T

Includes:
· Exactly pre-weighed tablets (500 mL/Tablet)

Related Products:
· Custom solutions (p.147)

Specifications:
Chemicals: analytical grade.
Composition: 0.15 M NaCl, 0.050 M Tris-HCl, 0.05% Tween™ 20.
pH: 7.6 ± 0.05 at 25°C.

Description:
TBS Tween™ 20 (TBS-T) is a high quality, reliable and non-toxic buffer ideal to remove excess material, decreasing non-specific background staining. It is preferably used with alkaline phosphatase or peroxidase-conjugated antibodies.

Advantages & Features:
- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Really fast and easy procedure:** results in few seconds with minimal handling steps.
- ✓ **Safe:** non-toxic to cells.
- ✓ **Accurate:** eliminates variables in laboratory work flow.

Applications:
- ✓ Washing nitrocellulose membrane in Western Blot and microtiter plate wells in ELISA assays.
- ✓ Blocking buffer for plate based assays.

Quality control:
- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

Tris-Glycine Buffer (pH 8.3)

Pouch format:

Cat No.	Size
BR0050	1 pouch
BR0051	5 pouch

Includes for 1 pouch:
· Exactly pre-weighed pouchs (1,000 mL/pouch)

Aqueous solution format:

Cat No.	Size
BR0055	1 L (10x)

Includes for 1 unit:
· 1,000 mL of Tris-Glycine Buffer (10x)

Specifications:
Chemicals: Analytical grade.
Composition: 0.025 M Tris, 0.192 M glycine.
pH: 8.3 ± 0.2 at 25° C.

Description:
Tris-Glycine buffer (TG) is high quality, reliable and consistent running buffer in native (non-denaturing) homogeneous and gradient poly-acrylamide gel electrophoresis (PAGE) of proteins. Tris-glycine gels resolve proteins by size. However, very small proteins and peptides do not resolve well due to interference from the glycine/pH discontinuity front.

It is also used to make Tris-glycine/20% methanol Western transfer buffer, which is the most frequently used protein transfer buffer for wet blot transfers.

Advantages & Features:
- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Proven performance:** for protein electrophoresis.
- ✓ **Consistency guaranteed.**

Applications:
- ✓ Protein electrophoresis.
- ✓ Denatured protein electrophoresis.
- ✓ Polyacrylamide gel electrophoresis.
- ✓ Western blotting.

Quality control:
- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

Related Products:
· Custom solutions (p.147)

Tris-Glycine SDS Buffer (pH 8.3)

Pouch format:

Cat No.	Size
BR0052	1 pouch

Includes for pouch:
· Exactly pre-weighed powder (1,000 mL/Pouch)

Aqueous solution format:

Cat No.	Size
BR0053	1 L (10x)

Includes for 1 unit:
· 1,000 mL of Tris-Glycine SDS (10x)

Specifications:
Chemicals: analytical grade.
Composition: 0.025 M Tris, 0.192 M glycine, 0.10% SDS.
pH: 8.3 ± 0.2 at 25° C.

Description:
Tris-glycine-SDS (TG-SDS) is high quality, reliable and consistent buffer that incorporates the denaturing agent sodium dodecyl sulphate (SDS). Protein electrophoresis under denaturing conditions (SDS-PAGE) involves separating proteins based on their size. By treating the sample under denaturing and reducing conditions with SDS, proteins unfold and become coated with SDS detergent molecules.

Advantages & Features:
- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Convenient:** available in pouches and time-saving ready-to-use solution.
- ✓ **Complete solution:** includes the denaturing agent SDS.
- ✓ **Proven performance:** for protein electrophoresis.
- ✓ **Consistency guaranteed.**

Applications:
- ✓ Protein electrophoresis.
- ✓ Denatured protein electrophoresis.
- ✓ Polyacrylamide gel electrophoresis.
- ✓ Western blotting.

Quality control:
- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

Related Products:
· Custom solutions (p.147)

0.5M EDTA Solution (pH 8.0)

Pouch format:

Cat No.	Size
BR0060	1 pouch

Includes:

· Exactly pre-weighed powder (500 mL/pouch)

Aqueous solution format:

Cat No.	Size
BR0061	100 mL

Includes:

· 100 mL of 0.5M EDTA Solution

Specifications:

Chemicals: analytical grade.
Concentration: 0.5 M EDTA.
pH: 8.0 ± 0.05 at 25 °C.

Description:

Ethylene-diamine-tetra acetic acid (EDTA) is a high quality, reliable and safe solution that sequesters a variety of polyvalent cations such as Ca^{2+} and Mg^{2+}. EDTA is usually used like inactivator of metal-dependent enzymes, preventing damage to DNA and RNA.

In cell cultures is used to avoid cumpling of cells in liquid suspensions, as EDTA binds to calcium and prevents joining of cadherins between cells.

Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNAse, RNase or protease contamination.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **Safe:** prevents damage to DNA and RNA.

Applications:

- ✓ Anticoagulant for blood samples and its storage.
- ✓ Abduct the metal required to metal-dependent enzyme, inactivating the reactions.
- ✓ Avoid junctions between cells by cadherins, usually used to cell culture procedures.
- ✓ Used in TAE and TBE buffers because it inhibits metal-dependent nucleases by chelating the divalent cations (Ca^{2+} Mg^{2+}), protecting the DNA from nucleases during the run.
- ✓ Added to TE buffer, used to solubilize DNA and RNA, inactivating nucleases by binding to metals cations required by these enzymes.

Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

TE (10x) (pH 7.4)

Pouch format:

Cat No.	Size
BR0011	1 pouch
BR0012	5 x 1 pouch

Includes:

· Exactly pre-weighed powder (1,000 mL/pouch)

Aqueous solution format:

Cat No.	Size
BR0013	1 L (10x)

Includes:

· TE Ready-to-use Solution (10x)

Related Products:

· Custom solutions (p.147)

Specifications:

Chemicals: analytical grade.
Composition: 0.1 M Tris-HCl, 0.010 M EDTA (10x).
pH: 7.4 ± 0.05 at 25 °C.

Description:

Tris-EDTA (TE) is a high quality, reliable and convenient solution which incorporates a buffer, Tris and chelating agent, EDTA. EDTA avoids the degradation of DNA and RNA by kidnapping of magnesium or other divalent metal ions.

Generally, TE is used to solubilize DNA and RNA, protecting it from degradation. Moreover, in immunohistochemichal, formalin and other aldehyde fixation produce protein cross-link that masks the antigenic sites giving weak or false negative. With TE buffer breaks the protein cross-link, unmasks the antigenics and epitopes and therefore enhances staining intensity of antibodies.

Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease activities.
- ✓ **Complete solution:** includes chelating agent.
- ✓ **Versatile and convenient:** pH adjusted for DNA/RNA work.
- ✓ **Sterile:** by autoclaving or filtration.

Applications:

- ✓ DNA and RNA procedures, as electrophoresis, storage, extraction and others.
- ✓ Immuno-histochemistry procedures.

Quality control:

- ✓ Strict quality controls in every phase of manufacturing to guarantee the highest quality and reproducibility.

TAE (10x) (pH 8.3)

Cat No.	Size
BR0020	1 L

Includes for 1 L:
· 1,000 mL TAE (10x)

Related Products:
· Custom solutions (p.147)

Specifications:
Chemicals: analytical grade.
Format: 10x solution.
Concentration: 40 mM Tris, 20 mM Acetic Acid and 1mM EDTA (1x).
pH: 8.3± 0.05 at 25° C.

Description:
TAE is a high quality, reliable and versatile buffer. It is useful due its basic pH that allows migrations of the DNA through the gel toward the positive anode. TAE buffers are used for the analyses of DNA products resulting from PCR amplification, DNA purification, or DNA cloning experiments.

TAE has a low ionic strength and buffering ability, it used to separating DNA larger than 1,500 bp and easily recovers the DNA from gel.

Advantages & Features:
- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease activities.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **Complete solution:** includes chelating agent.
- ✓ **Versatile:** pH adjusted for DNA/RNA work.
- ✓ **Sterile:** by autoclaving or filtration.

Applications:
- ✓ Running buffer and gels for RNA analysis native and denaturing.
- ✓ Polyacrylamide and agarose gels.
- ✓ Nucleic acid electrophoresis.
- ✓ Transfer buffer in Northern Blotting.

Quality control:
- ✓ Exempt of DNase, RNase or protease activities guaranteed by appropriate quality tests.

TBE (10x) (pH 8.3)

Cat No.	Size
BR0030	1 L

Includes for 1 unit:
· 1,000 mL TBE (10x)

Related Products:
· Custom solutions (p.147)

Specifications:
Chemicals: analytical grade.
Format: 10x solution.
Composition: 0.89 M Tris-Borate, 0.02M EDTA (10x).
pH: 8.3 ± 0.15 at 25° C.

Description:
TBE is a high quality, reliable and versatile buffer for DNA and RNA polyacrilamide gel electrophoresis. It is useful due its basic pH, which allows migrations of the DNA through the gel toward the positive anode. TBE buffers are used for the analysis of DNA products resulting from PCR amplification, DNA purification, or DNA cloning experiments.

TBE has high resolution for separating smaller DNA fragments but it is complicated recovery DNA from gel.

Advantages & Features:
- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality:** free of DNase, RNase or protease activities.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **High purity of components used.**

Applications:
- ✓ Nucleic acid electrophoresis.
- ✓ Running buffer and gels for RNA analysis native and denaturing.
- ✓ Polyacrylamide and agarose gels.
- ✓ Transfer buffer in Northern Blotting.

Quality control:
- ✓ Exempt of DNase, RNase or protease activities guaranteed by appropriate quality tests.

1M Tris Buffer (pH 7.4)

Ready-to-use format:

Cat No.	Size
BR0070	1 L

Includes for 1 units:

· 1,000 mL Tris-HCl

Related Products:

· Custom solutions (p.147)

Specifications:

Chemicals: analytical grade.
Concentration: 1M Tris-HCl.
pH: 7.4 ± 0.05 at 25° C.

Description:

Tris-HCl or Tris (hydroxymethyl)-aminomethane hydrochloride is a high quality, reliable and rapid solution used in a variety of biological systems. Their uses include pH control *in vitro* and *in vivo*, being that coincides with the typical pH of most living organism. In Molecular Biology laboratories are used buffering system for electrophoresis assays (TAE and TBE).

Advantages & Features:

- ✓ **Reliable:** rigorous quality control standards to guarantee lot-to-lot consistency.
- ✓ **High Quality and purity:** free of DNase, RNase or protease contamination.
- ✓ **Time-saving** due its ready-to-use format that avoids experiment preparation time.
- ✓ **High purity** of components used.

Applications:

- ✓ Several techniques in Molecular Biology and biochemistry.
- ✓ Electrophoresis buffer running.
- ✓ Cell cultures assays.

Quality control:

- ✓ Exempt of DNase, RNase or protease activities guaranteed by appropriate quality tests.

13. Services

Custom cloning

RNA services

Molecular Microbiology

R&D Services

Protein Expression Services

Polyclonal & Monoclonal Antibody Production

Photo: Plant tissue under microscopy

Services

Advantages & features

- ✓ **Top quality:** experienced and well trained staff and reliable Canvax´s innovative products used ensure you the highest quality standards.
- ✓ **Results guaranteed**: our team performs all this tasks daily, to premium customers or to our leading R&D.
- ✓ **Trustworthy:** confidentiality agreement, experienced technical advice, regular updates, and much more.
- ✓ **Custom-tailored and Modularised services:** to assure that every step meets your needs.

Custom cloning

As a highly expert company in cloning and expression, Canvax offers time-saving services for plasmids with different antibiotic markers, copy numbers, promoters, tags or fusions. Our team synthetize daily genes and sequences of any origin and sub-clone them in the most suitable customized-vector depending on your needs: constitutive or inducible expression, translation-transcriptional reporters, introduction of selectable markers for stable cell line generation, IP-free plasmid backbones or "*de novo*" constructions and much more.

Some examples of the services that Canvax offers:

- PCR cloning & subcloning.
- Screening and transformation of *E. coli*.
- Gene synthesis.
- Minipreps and maxipreps.
- DNA barcoding.
- Restriction, purification and ligation of DNA.
- Transcriptional and translational fusions.
- Epitope tagging.
- Competent cells production.

RNA services

Thanks to our deep understanding of RNA, Canvax offers high level services like:

- cDNA synthesis.
- sRNAs analysis.
- Quantitative RT-PCR analysis.
- RNA extraction/isolation.
- Northern blot.
- *In vitro* RNA transcription.
- RACE.

Molecular Microbiology

Some examples of the genetic tools Canvax can use and customize are:

- Engineering yeast, Gram-positive and Gram-negative bacteria, with bio-safety levels 1 and 2.
- Versatile shuttle vectors to introduce exogenous DNA in certain bacterial species using plasmids and phages.
- Random mutagenesis and overexpression process including transposition, bank generation and screening steps.
- Reporter genes based on fluorescence or luminescence.
- Chromosomal gene inactivation an aminoacidic changes in different bacterial species.

R&D Services

Canvax is expert in designing and constructing microorganisms with broad biotechnological applicability, such as:

- Probiotics.
- Live attenuated vaccines (LAV).
- Subcellular vaccines.
- Biofactories for recombinant proteins and molecules.
- Amino acid, mineral and vitamin-enriched food supplements.

Protein Expression Services

Our high level Protein Expression Services in Bacteria, Baculovirus and Mammalian from gene cloning to large-scale production, include:

- Codon optimization.
- POC assays expression in bacterial and yeast platforms.
- Small scale recombinant protein production.
- cDNA Synthesis & Cloning.
- Expression trials.
- Double affinity-exclusion purification steps to 20 mg.

Polyclonal & Monoclonal Antibody Production

Thanks to our novel Recombinant Antibodies Technology, Canvax offers high quality Polyclonal and Monoclonal antibody Production services, in rabbit and mouse, or additional services like:

- Protein A Antibody Affinity purification.
- Peroxidase & Biotin coupling.
- Functional validation in ELISA.
- Western Blot.
- Immunohistochemistry.
- Flow cytometry services for analysis and sorting of cells.
- Purification by protein G.
- Antibody Isotyping and Characterization assays.
- Liquid N2 storage (1 year).
- Hybridoma cell culture and antibody purification.
- Production and purification of scFvs, Fabs, vNARs or VHH.

Canvax performs all its procedures, protocols and animal experimentation care according to the specifications established on "Protection of animals used for experimentation and other scientific purposes" in Spanish Real Decreto 21/10/2005.

Ordering Terms and conditions

Please, read the Terms and conditions below before a purchase. If you place an order, you confirm that you understand and agree with all of them.

Warranty:

Canvax warrants that all its products will meet the specifications accompanying the technical literature and agrees to replace the product free of charge if the product does not conform to the specifications but, please, the notice for replacement must be given within the next 15 days after receipt of the product, or if the product was damaged during shipping, within 3 days after receipt of the product. In consideration of the above undertakings by Canvax Biotech SL, the purchaser agrees to and accepts the following conditions:

(1) This warranty is in lieu of all other warranties, expressed or implied,

(2) ALL WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED OR WAIVED,

(3) The purchaser's sole remedy shall be to obtain replacement of the product free of charge from Canvax.

This remedy is in lieu of all other remedies or claims for damages, consequential or otherwise, which the buyer may have against Canvax Biotech SL.

Use of Products:

Canvax's kits and reagents are for research or laboratory use only and must not to be used for diagnostic, on Humans or for any drug purposes.

Discontinuation of Products:

Canvax reserves its right to discontinue the offering of any item without prior notice.

Product Shipping and Delivery:

All our products are transported in appropriate conditions to maintain intact all the properties inherent to its expected output. For most countries, the delivery occurs within two to five working days, except in case of stock rupture. Shipping costs may apply and the necessity of dry ice is signalised in the products and extra charge may apply.

Pricing and Payment Terms:

To know more about economic terms and the most up-to-date version of pricing please contact your closest distributor or Canvax agent.

For direct purchases from Canvax, invoices will be due within 30 days from issue date and advanced Payment may be required. In this case, banking expenses are fully supported by the client and orders will only be processed upon payment validation.

Notice to the purchaser:

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