

# GRiSP

RESEARCH SOLUTIONS

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# 2018

# GRiSP Research Solutions would like to welcome you to our 2018 catalogue

## About GRiSP

Located in Porto, Portugal and celebrating 10 years, GRiSP empowers Life Science Research by supplying researchers in the growing fields of molecular biology, biotechnology, biochemistry and genetics, with high-quality reagents, kits and solutions.

Dedicated to the development, production and commercialization of cutting-edge as well as everyday products, our team is highly motivated to provide these value-added tools at competitive prices, allowing our customers to drive their research to the next level.

At GRiSP, we strive to the perfect combination of performance, service and costs, always keeping you in mind. We believe this catalogue gives you access to a comprehensive range of products for DNA electrophoresis, Nucleic Acid Purification, PCR, qPCR, RNA Research, Molecular Cloning, Protein Research, Cell Biology and related areas, which meets your needs to achieve excellent results.

Find out more about GRiSP at [www.grisp.pt](http://www.grisp.pt) or ask your local distributor, and do not hesitate to contact us with your questions or suggestions, because your feedback matters!

## GRiSP Team

### Terms and Conditions:

GRiSP, Lda. reserves the right to change prices as well as terms and conditions, without previous notice. GRiSP, Lda. is committed to the quality of its products. However, if a product is proven to be defective (e.g. caused by transport), returns are accepted within 10 days after receiving the product. Products ordered by mistake can be returned within 10 days after receiving the product, if unused and not damaged, and transport costs for adequate shipping conditions are to be assumed by the customer.

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Directly via E-mail or our distributors.

VAT NR:  
PT508573920

### Please use one of the following contacts:

**Email:** [info@grisp.pt](mailto:info@grisp.pt)  
**Tel:** +351 220 301 599

### Postal Address:

GRiSP, Lda.  
Rua Alfredo Allen,  
455  
4200-135 Porto  
Portugal

### Payment Options

GRiSP accepts payment via bank transfer. Please use the following account data:

### Account:

**Grisp, Lda**  
**IBAN:** PT50 0046 0109 0060 0193 9380 2  
**BIC/SWIFT:** CRBNPTPL  
**Bank:** Banco Popular Portugal, SA

### Delivery time

**Portugal:** Courier; 1-2 working days after order (except in case of stock rupture)  
**Other Countries:** Contact your local distributor, or [info@grisp.pt](mailto:info@grisp.pt) for more information





# Product Categories

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# DNA Electrophoresis



Fast Electrophoresis

Agaroses

DNA Stains

Loading Buffer

DNA Ladders

01

# Fast Electrophoresis

Perform your DNA Agarose Gel Electrophoresis under Fast conditions with the new SGTB Buffer

## SGTB Agarose Electrophoresis Buffer

SGTB is a NEW buffer ideal for Agarose Electrophoresis of DNA fragments of 100bp to 1000bp.

SGTB allows much faster runs (Time Saving). Agarose gel electrophoresis using SGTB results in very sharp bands (High Resolution) and with Better Separation. Gels made with SGTB are clearer and stronger. With SGTB you can save 25% on agarose.

GB01.0120

1L 20X

GB01.0510

5L 10X

GB01.0520

5L 20X

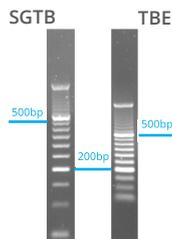


Fig 1/ Comparison of SGTB vs TBE: A 50bp DNA ladder (200bp, 500bp, and 1kb are more intense for identification) was resolved by 2% agarose electrophoresis, using a standard agarose (LE), on a 10cm length minigel until the 200bp band migrated 45mm. Initial temperatures were 20°C and final temperatures were 38°C and 29°C, resp.

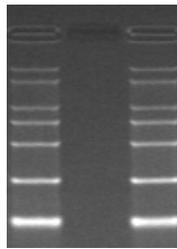


Fig 2/ DNA marker (100bp, 250bp, 500bp, 750bp, 1000bp, 1500bp, and 2000bp) resolved in 25 min at 200V using 1,5% standard agarose gel electrophoresis

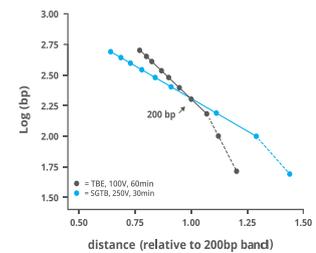


Fig 3/ Comparison of SGTB vs TBE: relationship between Relative distances and DNA size. A 50-bp DNA ladder was separated using 2% standard agarose. Since tracking dyes migrate differently in gels prepared with SGTB, Relative mobility was determined relatively to the 200bp band. As can be clearly seen, using SGTB results in a much better separation of DNA fragments in the whole range of 500bp to 50bp than with using TBE, as distances between similar sizes are greater.

## Agaroses

Molecular Biology Grade agaroses, DNase- RNase- and Protease-free, suitable for the most demanding applications. High purity allowing high resolution.

### GRS Agarose LE

(high resolution for routine analytical and preparative applications)

GA110.0500

500 g

### GRS Agarose LMT

(Low Melting, for DNA/RNA/Protein & in gel reactions)

GA115.0050

50 g

### GRS Agarose S-LMT

(Low melting, fine resolution of small DNA fragments)

GA116.0050

50 g

# DNA Stains

New and safe alternatives to ethidium bromide (EtBr) for the visualization of DNA and RNA in agarose and polyacrylamide gels.

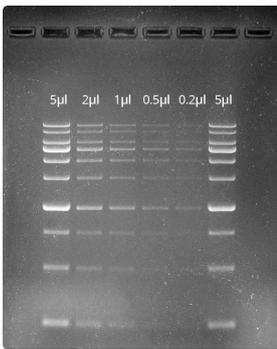
## Xpert Green DNA Stain NEW

- Safe (non-carcinogenic, non-mutagenic, non-toxic)
- for dsDNA, ssDNA and RNA
- for Agarose and Polyacrylamide gels
- as sensitive as EtBr
- no hazardous waste
- compatible with both UV light and Blue LED
- improved cloning efficiency (when using Blue LED)

GS01.0001

1 mL (20.000X)

Developed for in-gel staining.



**Figure 1.** Electrophoresis of different quantities of GRS Ladder 1 kb on a 1,2% agarose gel (TAE, 90V, 60min).

Albeit 5µl is recommended, when applying only 1µl, all bands can be readily detected with Xpert Green DNA Stain using a Blue LED transilluminator.

	UV Compatible	Blue Light Compatible	Detection Limit (ng)
Xpert Green DNA Stain	✓	✓	0.5-5.0
Xpert Green DNA Stain Direct	✓	✓	0.1-1.0
EtBr	✓	✗	0.5-5.0

## Xpert Green DNA Stain Direct NEW

- Direct Loading (no need for loading dye)
- for Agarose and Polyacrylamide gels
- for dsDNA, ssDNA and RNA
- magnificent signal-to-noise ratio
- compatible with both UV light and Blue LED
- no hazardous waste
- ultrasensitive
- Safe (non-carcinogenic, non-mutagenic, non-toxic)
- improved cloning efficiency (when using Blue LED)

GS02.0001

1 mL

Developed for direct loading as loading buffer

# Loading Buffer

**GRS DNA Loading Buffer Blue (6x)**

GLB01.0001

1 mL

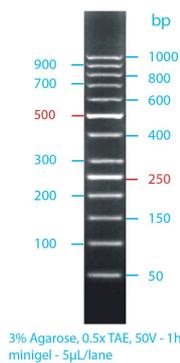
GLB01.0501

5x 1 mL

# DNA Ladders

Set of Six ready-to-use DNA ladders that are stable at room temperature: three standard and three specific ladders to meet your needs, all consisting of very sharp bands and including internal reference bands.

## GRS Ladder 50bp



Recommended Loading: 2-5 µL / lane

Suitable for sizing linear double-stranded DNA fragments from 50bp-1000bp, and composed of 13 linear chromatography-purified individual DNA fragments.

All bands (except 250bp and 500bp, which have increased intensity) are supplied at approximately 40ng/5µL

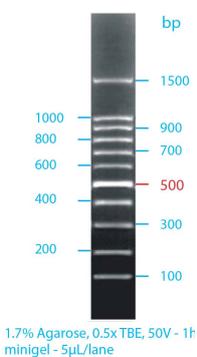
GL031.0050

50 µg

GL031.5050

5x 50 µg

## GRS Ladder 100bp



Recommended Loading: 2-5 µL / lane

Suitable for sizing linear double-stranded DNA fragments from 100bp-1500bp, and composed of 11 linear chromatography-purified individual DNA fragments.

All bands (except 500bp, which has increased intensity) are supplied at approximately 40ng/5µL

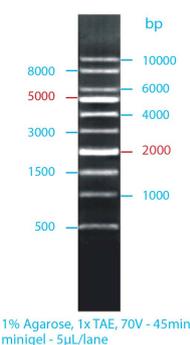
GL041.0050

50 µg

GL041.5050

5x 50 µg

## GRS Ladder 1kb



Recommended Loading: 2-5 µL / lane

Suitable for sizing linear double-stranded DNA fragments from 500bp-10kb, and composed of 10 linear chromatography-purified individual DNA fragments.

All bands (except 2kb and 5kb, which have increased intensity) are supplied at approximately 40ng/5µL

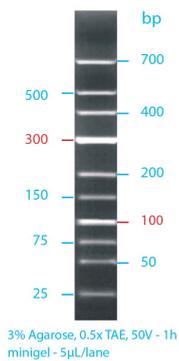
GL051.0050

50 µg

GL051.5050

5x 50 µg

## GRS Low Range Ladder



Recommended Loading: 2-5 µL / lane

Suitable for sizing linear double-stranded DNA fragments from 25bp-700bp, and composed of 10 linear chromatography-purified individual DNA fragments.

All bands (except 100bp and 300bp, which have increased intensity) are supplied at approximately 40ng/5µL

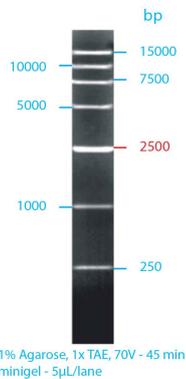
GL011.0050

50 µg

GL011.5050

5x 50 µg

## GRS High Range Ladder



Recommended Loading: 2-5 µL / lane

Suitable for sizing linear double-stranded DNA fragments from 250bp-15kb, and composed of 7 linear chromatography-purified individual DNA fragments.

All bands (except 2500bp, which has increased intensity) are supplied at approximately 40ng/5µL

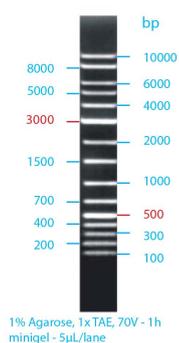
GL021.0050

50 µg

GL021.5050

5x 50 µg

## GRS Universal Ladder



Recommended Loading: 2-5 µL / lane

Suitable for sizing linear double-stranded DNA fragments from 100bp-10kb, and composed of 15 linear chromatography-purified individual DNA fragments.

All bands (except 500bp and 3kb, which have increased intensity) are supplied at approximately 40ng/5µL

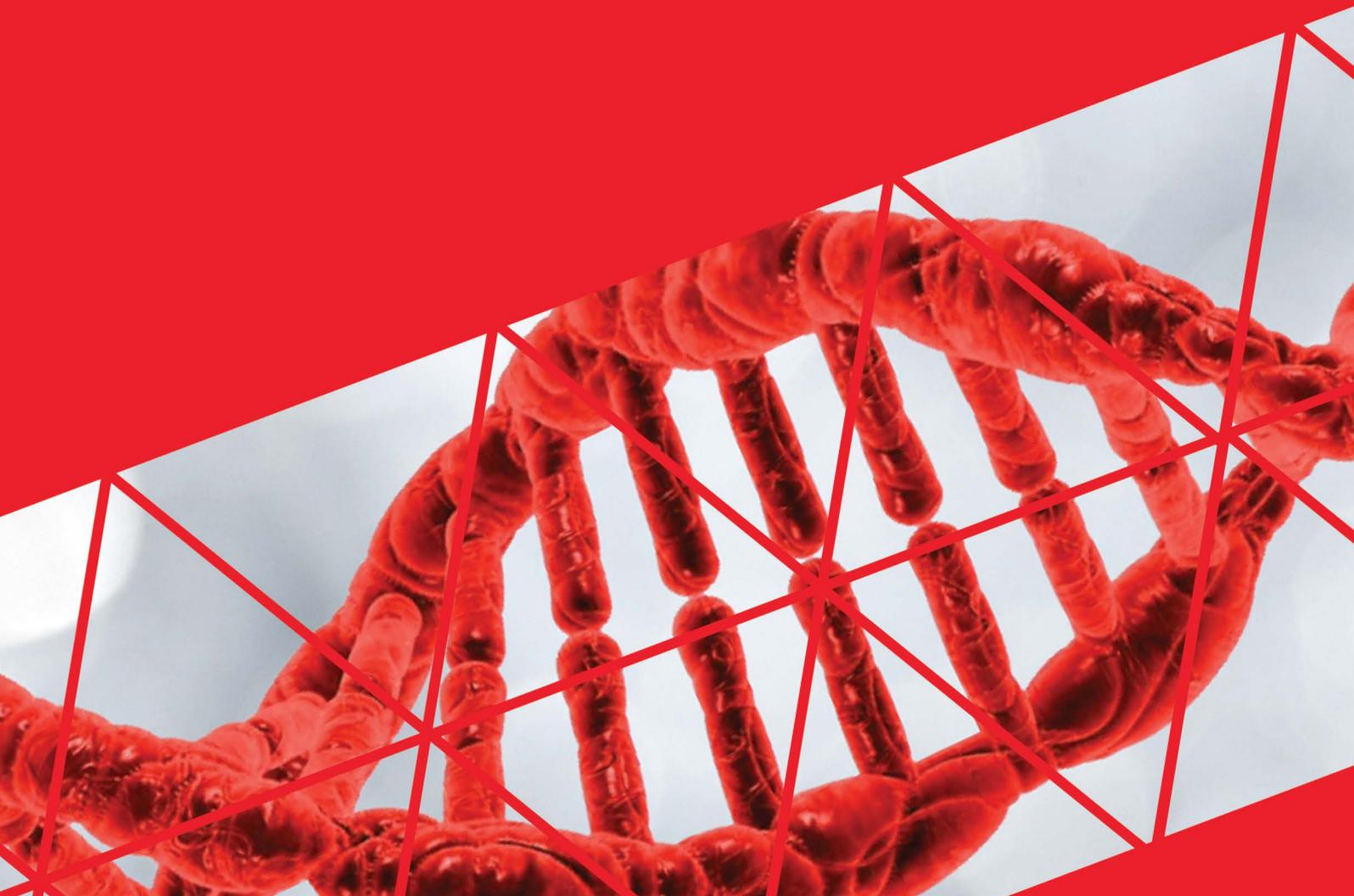
GL061.0050

50 µg

GL061.5050

5x 50 µg

# Nucleic Acid Purification



PCR Purification

gDNA Purification

RNA Purification

DNA / RNA Purification

DNA / RNA / Protein Purification

Plasmid Purification

Enzymes

Columns



02

# PCR Purification

Complete range of PCR clean-up products based on the best available technologies, including enzymatic, spin column, and SPRI beads based purification methods.

## GRS PCR & Gel Band Purification Kit

The GRS PCR & Gel Band Purification Kit provides an efficient and fast method for the purification and/or concentration of high quality DNA fragments (70bp to 15kb) from PCR reactions, enzymatic restriction digestion or from agarose gels.

Recoveries up to 95% (PCR Clean-up) or up to 90% (Gel Extraction).

 Contains a pH indicator to ensure optimal pH for DNA binding.

GK01.0100

100 preps

GK01.3100

3x 100 preps

GK01.5100

5x 100 preps

## Exo/SAP Go - PCR Purification Kit

Enzymatic PCR Clean-Up kit, comprising Exonuclease I (Exo I) and recombinant Shrimp Alkaline Phosphatase (rSAP) in an optimal molar ratio. Unused primers are hydrolyzed by Exo I, whilst rSAP dephosphorylates excess dNTPs. 100% recovery, even for very short PCR products.

 DNA is ready for sequencing in 15 minutes.

GK18.0500

500 rxn

GK018.2000

4x 500 rxn



100% amplicon recovery

## Xpert Purification SPRI Magnetic Beads

Xpert Purification SPRI (Solid Phase Reversible Immobilization) Magnetic Beads consists of paramagnetic particles coated with carboxyl groups that reversibly bind DNA. The magnetic beads are supplied in a buffer that has been optimized in order to selectively bind DNA fragments of 100bp and larger. Primers, primer dimers, dNTPs, enzymes, excess salts, and other impurities can be removed quickly and efficiently by a simple washing procedure.

 Can be seamlessly integrated into NGS Library preparation workflows.

GK19.0005

5 mL

GK19.0025

25 mL

GK19.0060

60 mL

# gDNA Purification

Spin column based genomic DNA purification kits. Complete range to ensure that there is always an option available for your type of sample.

- Spin Columns based
- High yield
- Fast and efficient procedure
- Proteinase K, RNase A, Lysozyme included, if required for the main protocol
- Adaptations available, for samples other than the primary application



## GRS Genomic DNA Kit - Blood & Cultured Cells

(for whole and frozen blood, buffy coat, and cultured animal cells)  
(available adaptation for bacteria, and fungus)

GK02.0100

100 preps

## GRS Genomic DNA Kit - Tissue

(for tissues like tailsnips, liver, kidney, brain, adipose tissue, earpunches, insects, and FFPE)  
(available adaptation for Amniotic Fluid, Buccal Swab, Soil, and Stool)

GK03.0100

100 preps

## GRS Genomic DNA Kit - Plant

(for Plant tissue and cells)

GK04.0100

100 preps

## GRS Genomic DNA Kit - Bacteria

(for Gram (+) positive and Gram (-) negative bacteria)

GK07.0100

100 preps

## GRS Genomic DNA Kit - BroadRange

(for whole and frozen blood, serum, plasma, buffy coat, amniotic fluid, buccal swab, hair, tissue, rodent tails, ear-punches, FFPE, and insect cells)  
(available adaptation for Cultured Cells)

GK06.0100

100 preps

## GRS Genomic DNA Kit - Card

(for dried blot spots, on Whatman® FTA® Cards)

GK25.0100

100 preps

## GRS Pure DNA Kit

(for purification and/or concentration from samples containing partial purified DNA)

GK05.0100

100 preps

# RNA Purification

Spin column based total RNA isolation kits. Complete range to ensure that there is always an option available for your type of sample.

- Spin Columns based
- High yield
- Fast and efficient procedure
- DNase I included
- Individually packed columns 



## GRS Total RNA Kit - Blood & Cultured Cells

(for fresh whole blood, and cultured animal cells)

GK08.0100

100 preps

## GRS Total RNA Kit - Tissue

(for a wide variety of tissues and FFPE)

GK09.0100

100 preps

## GRS Total RNA Kit - Plant

(for Plant tissue and cells)

GK10.0100

100 preps

## GRS Total RNA Kit - Bacteria

(for Gram (+) positive and Gram (-) negative bacteria)

GK16.0100

100 preps

## GRS Total RNA Kit - Yeast & Fungus

(for yeast and a wide variety of fungus species)

GK17.0100

100 preps

## GRS Pure RNA Kit

(for purification and/or concentration from samples containing partial purified RNA)

GK15.0100

100 preps

## GRS microRNA Purification Kit

(for purification of high quality miRNAs, from fresh blood, cultured cells, tissue, and FFPE)

GK11.0050

50 preps

## tripleXtractor reagent

Cost-effective monophasic phenol/guanidine thiocyanate solution. Ready-to-use reagent for the isolation of high-quality total RNA from cells and tissues. DNA and/or proteins can be subsequently recovered by sequential precipitation.

 Adaptation available, for recovering microRNAs from samples in tripleXtractor, using our GRS microRNA Purification kit (#GK11)

GB23.0050

50 mL

GB23.0100

100 mL

GB23.0200

200 mL

## tripleXtractor directRNA Kit

Combination of the strong lysis capability of "TripleXtractor" with a spin column system for convenient and rapid (within 15 min) purification of ultrapure RNA, without the need of chloroform phase separation and isopropanol precipitation. Also, DNase I treatment and individually packed columns included, for additional guarantee.

GK23.0100

100 preps



## DNA / RNA Purification

### GRS Viral DNA/RNA Purification Kit

(for DNA and RNA from cell-free media (serum, plasma, body fluids, and the supernatant from viral infected cell cultures))

GK12.0050

50 preps

# DNA/RNA/Protein Purification

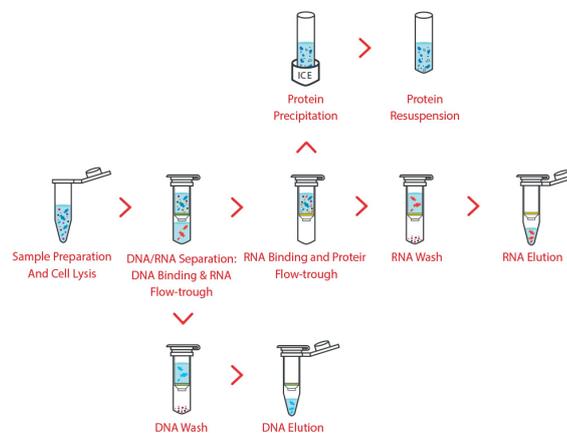
When sample is precious, the best option is to recover DNA, RNA and protein from the same volume, using this kit.

## GRS FullSample Purification Kit

The GRS FullSample Purification Kit provides an efficient and fast method for the simultaneous purification of genomic DNA, total RNA (including miRNA), and total protein from whole blood and other biological fluids, animal tissues, and cultured cells.

GK26.0050

50 preps



# Plasmid Purification

Spin column based plasmid purification kits, for fast and high-quality results.

## GRS Plasmid Purification Kit - Mini

Efficient and fast method for the purification of high quality plasmid DNA from 1-6 ml of cultured bacterial cells.

Eluted DNA is suitable for all common downstream applications including PCR, enzymatic restriction digestion, cloning and DNA sequencing.

GK13.0100

100 preps

GK13.3100

3x 100 preps

GK13.5100

5x 100 preps

**i** Includes Blue Lysis Buffer for easy visualization of lysis and neutralization.



# Enzymes

Range of highly pure enzymes, commonly used in Nucleic Acid Purifications.

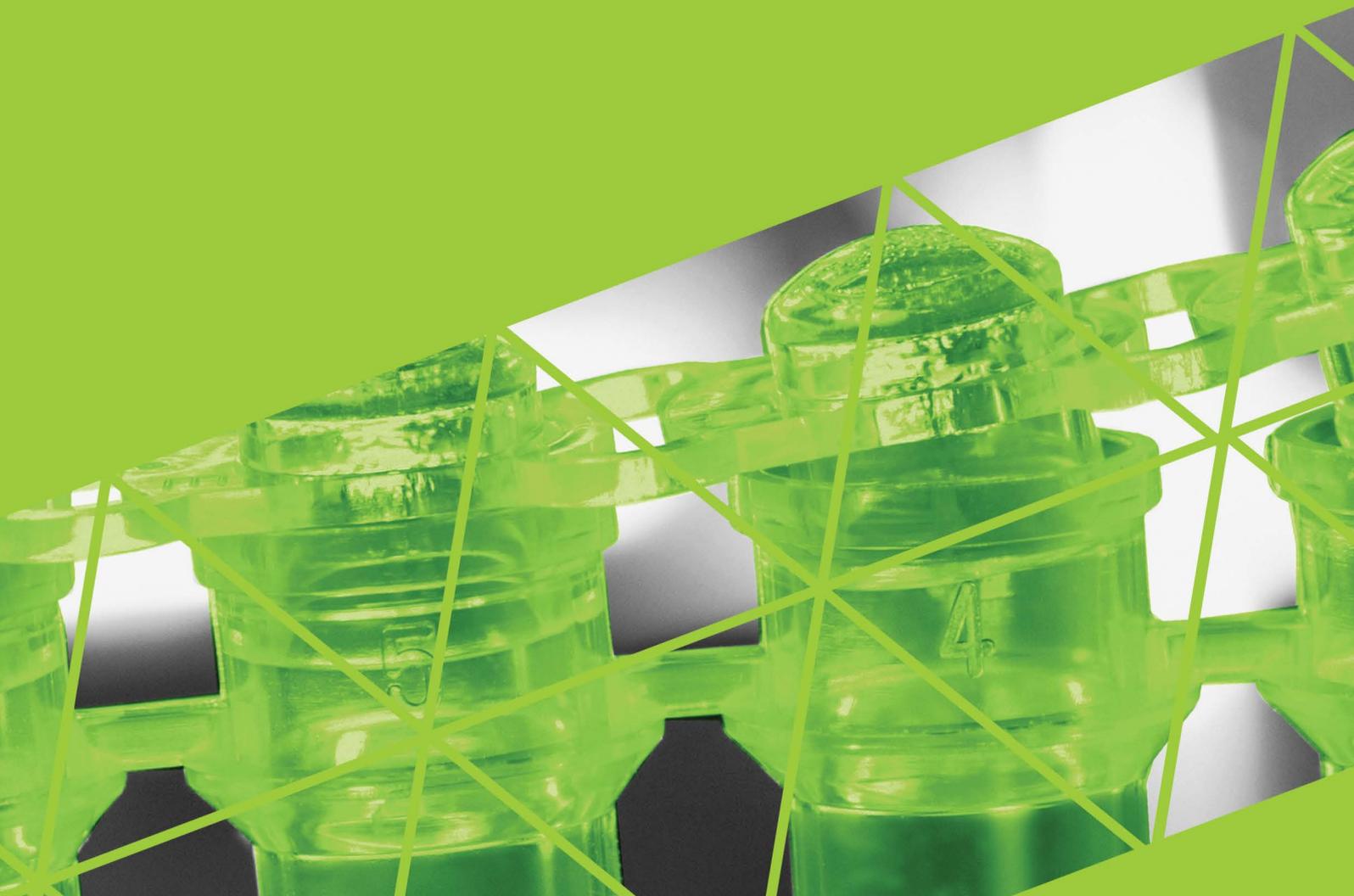
<b>Proteinase K</b> (lyophilized, ~30KU/mg)	GE010.0100	100 mg
<b>RNase A</b> (lyophilized, >50KU/mg) DNase and Protease-free	GE011.0100	100 mg
<b>DNase I</b> (lyophilized, >2000KU/mg) RNase-free	GE012.0100	100 mg
<b>Zymolyase® -20T</b>	GE013.0001	1 g
<b>Shrimp Alkaline Phosphatase (rSAP)</b> (1U/μL - 1mL)	GE015.0001	1000 U
<b>Exonuclease I</b> (20U/μL - 1mL)	GE014.0001	20000 U

# Columns

Silica-based spin columns for Nucleic Acid Purifications, which can conveniently be incorporated in your specific method.

<b>PCR Purification &amp; Gel Extraction Columns</b>	GKC.PG50	50 units
<b>Genomic DNA mini Columns</b>	GKC.GC50	50 units
<b>Genomic DNA filter columns</b>	GKC.GF50	50 units
<b>RNA mini Columns</b> (individually packed)	GKC.RC50	50 units
<b>RNA filter Columns</b>	GKC.RF50	50 units
<b>Viral mini Columns</b>	GKC.VC50	50 units
<b>Plasmid Purification mini Columns</b>	GKC.PN50	50 units

# DNA Amplification



End-Point PCR

Improved End-Point PCR

Fast PCR

Long PCR

High-Fidelity PCR

Direct PCR

qPCR

Nucleotides

Water

PCR Plastics



# End-Point PCR

Standard Taq DNA polymerases for routine applications, when regular samples are used.

Product	Application	Speed	Size
GRS Taq	Routine PCR	1 kb/min	up to 5kb
GRS Hotstart Taq	Routine PCR with Hotstart	1 kb/min	up to 5kb

## GRS Taq DNA Polymerase

Recombinant thermostable enzyme, with identical characteristics as native Taq, regarding activity, specificity, thermostability, and performance in PCR. Highly purified, it is the entry level option for routine PCR amplifications.

GRS Taq DNA Polymerase	GE01.0500	500 U
	GE01.2500	2500 U
GRS Taq DNA Polymerase (+dNTPs)	GE11.0500	500 U
	GE11.2500	2500 U
GRS Taq (2x) Mastermix (without dye)	GE02.0100	1.25 mL
	GE02.5100	5x 1.25 mL

## GRS Taq Hotstart DNA Polymerase NEW

Recombinant thermostable enzyme, with antibody based hotstart, for increased sensitivity and specificity. Highly purified, it is the entry level option for routine PCR amplifications when hotstart is required.

GRS Taq Hotstart DNA Polymerase	GE71.0500	500 U
	GE71.2500	2500 U
GRS Taq Hotstart DNA Polymerase (+dNTPs)	GE72.0500	500 U
	GE72.2500	2500 U
GRS Taq Hotstart (2x) Mastermix (without dye)	GE73.0100	1.25 mL
	GE73.5100	5x 1.25 mL

# Improved End-Point PCR

Improved Taq DNA polymerases for routine applications, because demanding samples require enhanced amplification capacity.

Product	Application	Speed	Size
Xpert Taq	Improved Routine PCR	1 kb/min	up to 8kb
Xpert Hotstart	GC-rich / Multiplex	2 kb/min	up to 5kb

## Xpert Taq DNA Polymerase

DNA polymerase with enhanced performance, optimized for demanding routine amplifications. The robustness of Xpert Taq DNA polymerase, as well as its high sensitivity and yield, makes this the ideal enzyme for daily amplifications with improved results.

<b>Xpert Taq DNA Polymerase</b> <small>(includes buffers with and without dye)</small>	GE03.0500	500 U
	GE03.2500	2500 U
<b>Xpert Taq DNA Polymerase (+dNTPs)</b> <small>(includes buffers with and without dye)</small>	GE13.0500	500 U
	GE13.2500	2500 U
<b>Xpert Taq (2x) Mastermix</b>	GE04.0100	1.25 mL
	GE04.5100	5x 1.25 mL
<b>Xpert Taq (2x) Mastermix with dye</b>	GE14.0100	1.25 mL
	GE14.5100	5x 1.25 mL

## Xpert Hotstart DNA Polymerase

Chemically modified hotstart Taq DNA polymerase with excellent amplification efficiency, enabling higher specificity, increased sensitivity, and greater yield, as compared to standard Taq DNA polymerases. The ideal choice for consistent results in complex PCR amplifications and multiplex PCR.

<b>Xpert Hotstart DNA Polymerase (+dNTPs)</b>	GE08.0500	500 U
<b>Xpert Hotstart (2x) Mastermix</b>	GE18.0100	1.25 mL
	GE18.5100	5x 1.25 mL
<b>Xpert Hotstart (2x) Mastermix with dye</b>	GE28.0100	1.25 mL
	GE28.5100	5x 1.25 mL

# Fast PCR

Based on the enhanced characteristics of Xpert Fast DNA Polymerase, it is now possible to perform amplifications with extreme sensitivity and speed, saving precious time, without sacrificing performance.

Product	Application	Speed	Size
Xpert Fast	Fast Routine PCR	2 sec/kb	up to 5kb
Xpert Fast Hotstart	GC-rich / Fast Multiplex / directPCR	2 sec/kb	up to 5kb

## Xpert Fast DNA Polymerase

Robust enzyme, ideal for amplifying with extreme speed, yield and consistency. PCR products generated with this enzyme are A-tailed, and can thus be cloned into TA cloning vectors.

 Extension time can be as low as 2s, when amplifying targets below 1kb.

Xpert Fast DNA Polymerase (buffer with dNTPs included)	GE05.0500	500 U
	GE15.0001	1 mL
Xpert Fast (2x) Mastermix with dye	GE15.5001	5x 1 mL

## Xpert Fast Hotstart DNA Polymerase

Robust enzyme, suitable for the amplification of difficult targets with extreme speed, yield and specificity. The optimized buffer composition makes the enzyme particularly resistant to PCR inhibitors. Xpert Fast Hotstart DNA Polymerase is suitable for direct PCR from unpurified samples, making this the ideal choice for consistent results in fast complex PCR amplifications.

Xpert Fast Hotstart DNA Polymerase (buffer with dNTPs included)	GE25.0250	250 U
	GE35.0001	1 mL
Xpert Fast Hotstart (2x) Mastermix	GE35.5001	5x 1 mL
	GE45.0001	1 mL
Xpert Fast Hotstart (2x) Mastermix with dye	GE45.5001	5x 1 mL

# Long PCR

Taq PLUS, because long PCR is a demanding application !

Product	Application	Speed	Size
Xpert Taq PLUS	Long PCR / GC-rich / complex samples	1- 4 kb/min	up to 30kb

## Xpert Taq PLUS DNA Polymerase

Enhanced DNA polymerase with superior PCR performance when it comes to the amplification of long templates (up to 30kb). The enzyme is particularly efficient for the amplification of difficult templates, such as mammalian genomic DNA and GC-rich or AT-rich templates.

<b>Xpert Taq PLUS Hotstart DNA Polymerase</b> (buffer with dNTPs included)	GE09.0250	250 U
<b>Xpert Taq PLUS Hotstart (2x) Mastermix</b>	GE19.0001	1 mL
	GE19.5001	5x 1 mL
<b>Xpert Taq PLUS Hotstart (2x) Mastermix with dye</b>	GE29.0001	1 mL
	GE29.5001	5x 1 mL

# High-Fidelity PCR

If you need a proof-reading enzyme, only the best is good enough. Choose for 50x less errors than regular Taq.

## Xpert HighFidelity DNA Polymerase

Robust enzyme with enhanced DNA binding, resulting in improved processivity, yield, and extremely low error-rate, ideal for applications such as high-fidelity PCR, site-directed mutagenesis, crude sample PCR, blunt-end cloning, among others, where robustness and proof-reading are important.

 Error-rate 50x lower than Taq DNA polymerase, 2 kb/min speed, and capable of amplifying up to 10kb.

<b>Xpert HighFidelity DNA Polymerase</b> (buffer with dNTPs included)	GE07.0250	250 U
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# PCR Selection Table

Select the right product for your application, with the help of our PCR selection guide.

Whether for End-Point PCR, Improved End-Point PCR, Fast PCR, Long PCR, or High-Fidelity, we can provide you with a high performance option adjusted to your sample needs.

Product	Application	Speed	Size
GRS Taq	Routine PCR	1 kb/min	up to 5kb
GRS Hotstart Taq	Routine PCR with Hotstart	1 kb/min	up to 5kb
Xpert Taq	Improved Routine PCR	1 kb/min	up to 8kb
Xpert Hotstart	GC-rich / Multiplex	2 kb/min	up to 5kb
Xpert Fast	Fast Routine PCR	2 sec/kb	up to 5kb
Xpert Fast Hotstart	GC-rich / Fast Multiplex / directPCR	2 sec/kb	up to 5kb
Xpert Taq <sup>PLUS</sup>	Long PCR / GC-rich / complex samples	1- 4 kb/min	up to 30kb
Xpert HighFidelity	Site Directed Mutagenesis Blunt-End Cloning	2 kb/min	up to 10kb

 When looking for a Taq DNA Polymerase:  
Choose between GRS Taq (regular samples), Xpert Taq (demanding samples), and Xpert Fast (fast results).

 When looking for a hotstart Taq DNA Polymerase:  
Choose between GRS Taq Hotstart (regular samples), and Xpert Hotstart (low amount samples, multiplex PCR applications, GC-rich problems).

 When looking for a crude sample / direct PCR option:  
Choose between Xpert Fast Hotstart (fast, with high tolerance to inhibitors), and Xpert Taq PLUS (enhanced amplification even for samples contaminated with inhibitors).

 When looking for a Multiplex PCR option:  
Choose between Xpert Fast Hotstart (fast multiplex), and Xpert Hotstart (chemical hotstart for increased sensitivity and specificity).

## IMPORTANT:

GRiSP recommends following our protocol guidelines at all times. Our enzymes are not regular options, and may not work as expected when other protocols are used, rather than the supplied with the product.

# DirectPCR

There is a growing need for fast and efficient methods for detection. DirectPCR allows for the DNA amplification of crude sample extracts, without compromising quality.

Below you can find our solutions for directPCR with high performance and efficiency.

## Xpert directXtract PCR Kit

Combination of a simple but efficient DNA extraction method with direct amplification using Xpert Fast Hotstart DNA polymerase in a convenient and easy-to-use manner.

Can be used with a variety of samples including whole blood, mouse tails, FTA-cards, and FFPE tissue, and is thus ideal for genotyping and screening, eliminating the need of time-consuming and costly DNA purification methods.

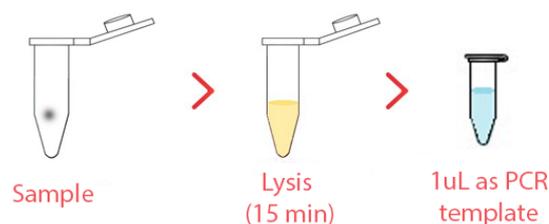
**i** Lysis: 15min  
Amplification: 4-8 kb/min (using Xpert Fast Hotstart)

<b>Xpert directXtract PCR Kit (with dye)</b>	GE60.0080	80 rxn
	GE60.0480	480 rxn
<b>Xpert directXtract PCR Kit (without dye)</b>	GE62.0080	80 rxn
	GE62.0480	480 rxn
<b>Xpert directXtract Lysis Buffer (lysis only)</b>	GE61.0080	80 rxn

**i** GE60 contains Xpert Fast Hotstart (2x) Mastermix with Dye (#GE45) - page 22  
GE62 contains Xpert Fast Hotstart (2x) Mastermix (#GE35) - page 22

**i** GRiSP does not recommend the combination of Xpert directXtract Lysis Buffer with enzymes, from other vendors. Despite the application may work with other enzymes, we do not guarantee the high performance results that are guaranteed to be achieved with our Xpert Fast Hotstart enzyme.

**i** Mouse Genotyping Application Note using Xpert directXtract can be downloaded from the product page on our website - learn how to perform you Mouse Genotyping in 1h15m



# qPCR

Looking for a high performance qPCR portfolio for fast cycling results, with low inhibition? We can help!

With solutions for both SYBR and Probe based assays, GRiSP offers a complete range of competitive products, with top performance.

## Xpert Fast SYBR

Combination of a highly efficient enzyme with a novel low inhibitory technology. The intercalating dye used in this mastermix causes little to no inhibition of the PCR reaction thus allowing for extremely high sensitivity and specificity, as well as preventing the formation of unwanted primer-dimers and non-specific products.

Supplied in multiples of 1mL, for additional convenience and reduction of contaminations during procedure.

 Available also as Blue version, for visual pipetting aid.

- Absolute quantification
- Gene expression analysis
- High throughput PCR
- Low-copy number target gene detection
- Excellent signal with low PCR inhibition
- Early Ct values – Rapid extension rate
- Extreme sensitivity – increased limit of detection
- Allows for standard and fast cycling

<b>Xpert Fast SYBR (uni)</b>	GE20.0100	1 mL
	GE20.5100	5x 1 mL
	GE20.2501	25x 1 mL
<b>Xpert Fast SYBR (uni) BLUE</b>	GE22.0100	1 mL
	GE22.5100	5x 1 mL
	GE22.2501	25x 1 mL
<b>Xpert Fast SYBR (fluorescein)</b>	GE21.0100	1 mL
	GE21.5100	5x 1 mL
	GE21.2501	25x 1 mL



**Left:**  
Xpert Fast SYBR

**Right:**  
Xpert Fast SYBR Blue



# Xpert Fast Probe

Combination of a highly efficient enzyme with a novel low inhibitory technology, which prevents the formation of primer-dimers, thus allowing for extremely high sensitivity and specificity.

Compatible with a wide range of probe-based technologies, including Taqman®, Molecular Beacons® and Scorpion probes®.

Supplied in multiples of 1mL, for additional convenience and reduction of contaminations during procedure.

- Absolute quantification
- Gene expression analysis
- Multiplex or singleplex PCR
- Low-copy number target gene detection
- Diagnostic real-time PCR
- High Efficiency in multiplex reactions
- High Efficiency in GC/AT-rich templates
- Early Ct values – Rapid extension rate
- Extreme sensitivity – increased limit of detection
- Allows for standard and fast cycling

## Xpert Fast Probe (uni)

GE30.0100

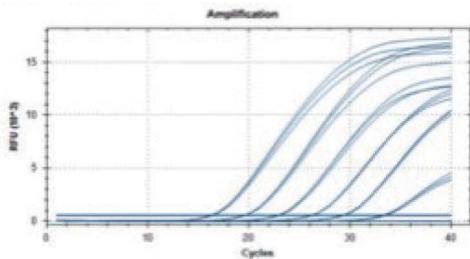
1 mL

GE30.5100

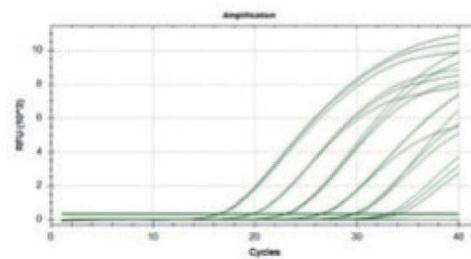
5x 1 mL

GE30.2501

25x 1 mL



Amplification  
of ACVR1B gene



Amplification  
of ACVR2B gene

## i qPCR Version Explanation

Xpert Fast SYBR and Xpert Fast Probe versions are available for most of the qPCR machines on the market.

### UNI versions

Suitable for all qPCR machines (except BioRad® iCycler®)

Supplied with 1 vial enzyme and 1 vial ROX. Add ROX to the enzyme vial, if neededm according to the instructions on the protocol, depending on the machine to be used).

### Fluorescein version

Suitable for BioRad® iCycler® machines.

Supplied with 1 vial enzyme, ready to be used for qPCR experiments.

## Nucleotides

Highly pure (>99%) dNTPs, free of endonuclease, exonuclease, RNase, and phosphatase activity.

### GRS dNTP mix (10mM each)

GP010.0001

1 mL

GP010.0501

5x 1 mL

### GRS dNTP set (100mM each)

GP011.0411

4x 0.25 mL

## Water

Ultrapure water, free of DNases, RNases, Phosphatases and Nucleic Acids.  
Not DEPC treated.

### GRS PCR Grade Water

GW010.1001

10x 1 mL

GW010.1000

1 L

# PCR Plastics

Complete range of high quality, European made, plasticware for PCR and qPCR applications.

Made of virgin, medical grade, polymers, functionally QC tested free of nucleases, human gDNA and endotoxins.

<b>GRS individual 0.2mL PCR tubes (flat cap)</b>	<b>GPP01.1000</b>	<b>1000 units</b>
<b>GRS PCR strips 0.2mL (attached flat caps)</b>	<b>GPP02.0120</b>	<b>120 strips</b>
<b>GRS PCR strips 0.1mL (attached flat caps)</b>	<b>GPP03.0120</b>	<b>120 strips</b>
<b>GRS PCR strips of 0.2mL tubes + strips of flat caps</b>	<b>GPP04.0120</b>	<b>120 strips (each)</b>
<b>GRS 96w PCR plates (non-skirted)</b>	<b>GPP05.0050</b>	<b>50 plates</b>
<b>GRS 96w qPCR plates (half-skirted)</b>	<b>GPP06.0050</b>	<b>50 plates</b>
<b>GRS 96w qPCR plates (half-skirted) white</b>	<b>GPP07.0050</b>	<b>50 plates</b>
<b>GRS 96w qPCR plates (full-skirted)</b>	<b>GPP08.0050</b>	<b>50 plates</b>
<b>GRS 96w qPCR plates (full-skirted) white</b>	<b>GPP09.0050</b>	<b>50 plates</b>
<b>GRS PCR seals</b>	<b>GPP10.0100</b>	<b>100 seals</b>
<b>GRS qPCR clear seals</b>	<b>GPP11.0100</b>	<b>100 seals</b>
<b>GRS 8-strips of flat caps</b>	<b>GPP12.0125</b>	<b>125 strips</b>
<b>NEW</b> <b>GRS 96well PCR plate (semi skirted) for LC480 (low profile)</b>	<b>GPP13.0050</b>	<b>50 plates</b>
<b>NEW</b> <b>GRS PCR Strip of 4 tubes with caps (for Rotor-Gene®)</b>	<b>GPP14.0250</b>	<b>250 tubes + caps</b>
<b>NEW</b> <b>GRS Roll for adhesive seals</b>	<b>GPP15.0001</b>	<b>1 unit</b>

# RNA Research



cDNA Synthesis  
Storage & Decontamination



# cDNA Synthesis

Achieve consistent results, even for demanding samples, with our new range of cDNA Synthesis products. Engineered enzymes with extreme performance, ready to assist you needs, whether you are looking for separate options with components, or more streamlined mastermix formats.

## Xpert cDNA Synthesis Kit NEW

**i** Xpert cDNA Synthesis Kit contains all components necessary for high performance cDNA synthesis applications, in [separate components](#).

Xpert RTase has been optimized to perform under high temperatures (45°C-55°C), which facilitates the removal of secondary mRNA structures associated with high GC content. Together with the lack of RNase H activity, which ensures minimization of template degradation during long incubation times, this enables the preparation of long full-length cDNAs (up to 15kb).

The best option when looking for versatile utilization.

GK80.0100

100 rxn

- Xpert RTase
- Reaction Buffer
- Random Hexamer Primer
- Oligo (dT)20
- RNase Inhibitor
- dNTP Mix
- RNase-free water

## Xpert cDNA Synthesis Mastermix NEW

**i** Xpert cDNA Synthesis Kit contains all components necessary for high performance cDNA synthesis applications, supplied in a convenient [mastermix format](#) (oligo and random primers included in the mastermix).

Xpert RTase has been optimized to perform under high temperatures (45°C-55°C), which facilitates the removal of secondary mRNA structures associated with high GC content. Together with the lack of RNase H activity, which ensures minimization of template degradation during long incubation times, this enables the preparation of long full-length cDNAs (up to 15kb).

The best option when looking for convenience and optimized performance.

GK81.0100

100 rxn

- Xpert RTase
- Mastermix
- RNase-free water

## Xpert cDNA Synthesis Supermix (with gDNA eraser) NEW

**i** Xpert cDNA Synthesis Kit contains all components necessary for high performance cDNA synthesis applications, in a convenient [supermix format](#) (oligo and random primers included in the supermix).

Besides the advantages of the Xpert RTase enzyme, this product allows the removal of contaminating gDNA from the sample, in only 10 minutes, prior to the direct cDNA synthesis from the RNA template (gDNA-free RNA).

The best option when looking for optimized performance and extended assurance.

GK82.0100

100 rxn

- Xpert RTase Mix
- Reaction Mix
- Reaction Stopper
- RNase-free water

## GRS One-Step RT-PCR Kit

Using gene-specific primers (GSP), the GRS One-Step RT-PCR Kit allows for first-strand cDNA synthesis and subsequent PCR in a single-tube reaction procedure, decreasing contamination risk and reducing hands-on time considerably

**GK54.0100**

**100 rxn**

Contains an enzyme mix comprising a modified M-MLV reverse transcriptase with deficient RNase H activity and improved synthesis efficiency, combined with RNase inhibitor, and a convenient mastermix containing all other required components, including a high-fidelity DNA polymerase blend, dNTPs and tracking dye.

- **GRS RT-PCR Enzyme mix**
- **GRS One-Step RT-PCR mix**
- **RNase-free water**

The best option when looking for single-tube cDNA synthesis and PCR amplification.

## Storage & Decontamination

Solutions for storing RNA and for decontamination of work material.

### RNA Stand-by Solution

Aqueous solution that inactivates RNases and preserves cellular RNA of intact fresh tissues or cells.

Does not jeopardize quality nor quantity of the RNA to be isolated subsequently, whether the sample is stored frozen or not.

Perfect for tissue collection and storage.

**GB33.0100**

**100 mL**

### RNase Xterminator Spray

Ready-to-use solution, supplied in an easy-to-use Spray Bottle, for eliminating RNase, DNase, and other enzymes, as well as DNA contamination, from laboratory surfaces.

Simply spray on the contaminated area and wipe away from the surface using ultrapure water.

**GG43.500S**

**500 mL  
spray**

# Cloning



Cloning Kits  
Antibiotics  
Miscellaneous



05

# Cloning Kits

Efficient, Flexible and Robust TA-cloning kit for Easy&Fast direct cloning of PCR products generated with non-proofreading DNA polymerases or blends

## Xpert TA Easy Cloning Kit NEW

- i • Ready-to-use stable linearized vector with single thymidine-overhangs
- Very Efficient (>700 positive colonies under optimal conditions)
- Low Background (<4%) due to reduced self-ligation
- Up to 10kb inserts
- Direct cloning (no need to purify PCR product)
- Blue/white screening
- T7/SP6 dual opposed promoters for in vitro transcription
- Flanking pUC/M13 primer binding sites for sequencing
- Flanking *EcoRI* and *NotI* recognition sites for single enzyme digestion
- Filamentous phage f1 origin of replication

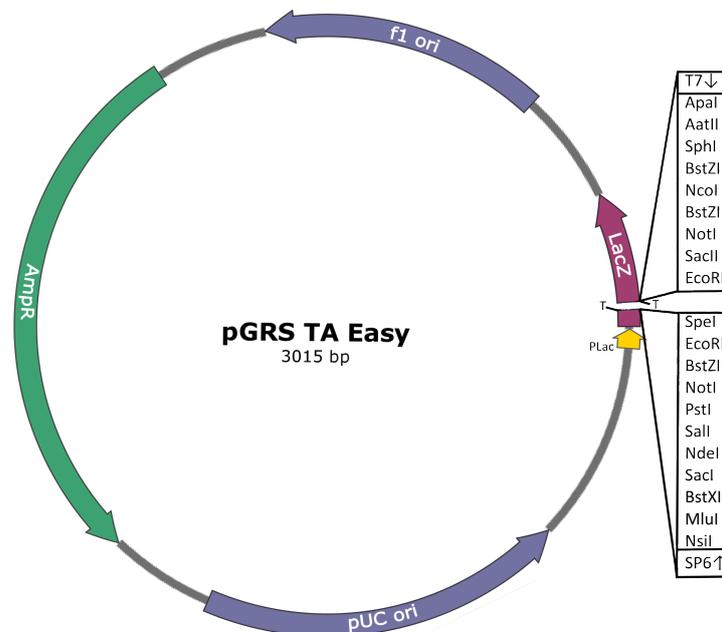
GC05.0010

10 rxn

GC05.0020

20 rxn

- **pGRS TA Easy cloning vector**
- **T4 DNA Ligase**
- **T4 DNA Ligase Buffer (10x)**
- **PEG 6000 (10x)**
- **Control Insert (600bp)**



## Antibiotics

High purity antibiotics, used in a wide range of molecular biology experiments, including cloning experiments.

**Ampicillin (sodium salt)**

GAB03.0005

5 g

**Kanamycin (sulphate)**

GAB04.0005

5 g

**Chloramphenicol**

GAB05.0005

5 g

**Carbenicillin (disodium salt)**

GAB06.0005

5 g

**Tetracycline (hydrochloride)**

GAB07.0005

5 g

**Gentamycin (sulphate)**

GAB08.0005

5 g

## Miscellaneous

Common reagents and enzymes regularly used in cloning experiments.

**T4 DNA Ligase**  
(5U/ $\mu$ L)

GC03.1000

1000 U

**IPTG**  
(max 5ppm dioxane)

GAB01.0005

5 g

**X-Gal**  
(>99% purity)

GAB02.0001

1 g

GAB02.0005

5 g

# Culture Media



Auto-Induction Media  
Media Components  
Standard Media



06

## Auto-Induction Media

Dehydrated powders, supplemented with glucose and alpha lactose for the auto induction of protein expression under the control of IPTG-inducible promoters in *E.coli*.

No cell density monitoring needed | Automatic induction of protein expression.

<b>LB Broth (AIM)</b>	GCM17.0500	500 g
<b>2x YT Broth (AIM)</b>	GCM18.0500	500 g
<b>Terrific Broth (AIM)</b>	GCM19.0500	500 g
<b>Super Broth (AIM)</b>	GCM20.0500	500 g

## Media Components

Components for the preparation of commonly used culture media in molecular biology applications.

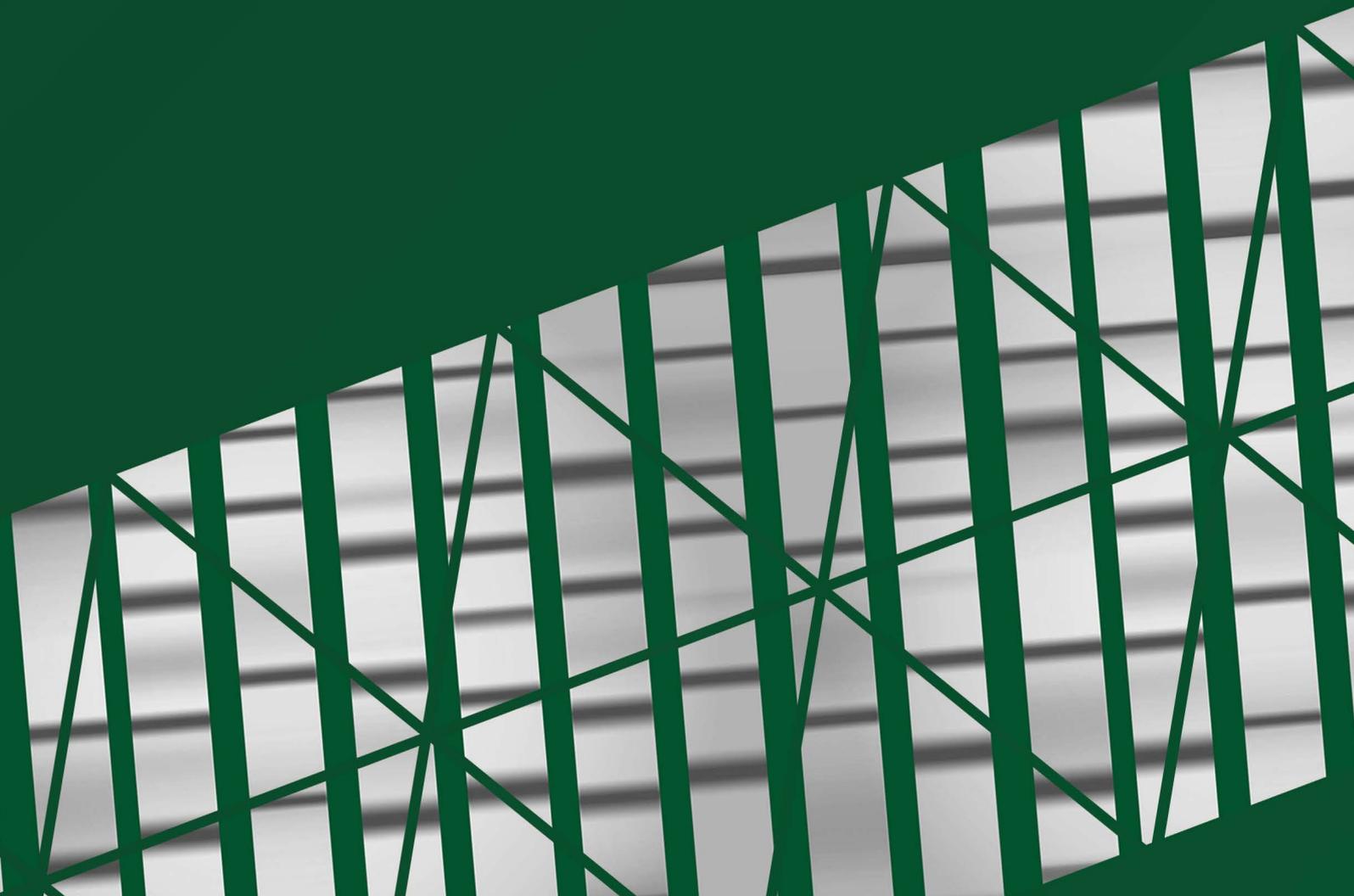
<b>Peptone</b>	GCM21.0500	500 g
<b>Bacteriological Peptone</b>	GCM22.0500	500 g
<b>Tryptone</b>	GCM23.0500	500 g
<b>Yeast Extract</b>	GCM24.0500	500 g
<b>Bacteriological Agar</b>	GCM25.0500	500 g
<b>Dextrose</b>	GCM26.0500	500 g
<b>Sucrose</b>	GCM27.0500	500 g

# Standard Media

Dehydrated powder for the preparation of broth or agar plates, for the growth of bacteria or yeast in molecular biology applications

<b>LB Agar (Lennox)</b>	<b>GCM01.0500</b>	<b>500 g</b>
<b>LB Broth (Lennox)</b>	<b>GCM02.0500</b>	<b>500 g</b>
<b>Luria Agar (Miller's LB Agar)</b>	<b>GCM03.0500</b>	<b>500 g</b>
<b>Luria Broth (Miller's LB Broth)</b>	<b>GCM04.0500</b>	<b>500 g</b>
<b>Luria Agar (Miller's Modification)</b>	<b>GCM05.0500</b>	<b>500 g</b>
<b>Luria Broth (Miller's Modification)</b>	<b>GCM06.0500</b>	<b>500 g</b>
<b>Terrific Broth</b>	<b>GCM07.0500</b>	<b>500 g</b>
<b>Modified Terrific Broth</b>	<b>GCM08.0500</b>	<b>500 g</b>
<b>2x YT Medium</b>	<b>GCM09.0500</b>	<b>500 g</b>
<b>2x YT Agar</b>	<b>GCM10.0500</b>	<b>500 g</b>
<b>SOB Medium</b>	<b>GCM11.0500</b>	<b>500 g</b>
<b>SOC Medium</b>	<b>GCM12.0500</b>	<b>500 g</b>
<b>YPD Broth</b>	<b>GCM13.0500</b>	<b>500 g</b>
<b>YPD Agar</b>	<b>GCM14.0500</b>	<b>500 g</b>
<b>YNB without amino acids and without ammonium sulphate</b>	<b>GCM15.0500</b>	<b>500 g</b>
<b>YNB without amino acids and with ammonium sulphate</b>	<b>GCM16.0500</b>	<b>500 g</b>

# Protein Research



Protein Electrophoresis  
Staining & Stripping  
Protein Markers

07

## Protein Electrophoresis

High purity solutions and reagents for the preparation of polyacrylamide gels for protein electrophoresis.

Acrylamide/Bisacrylamide Solution 30% (19:1)	GB16.3019	500 mL
Acrylamide/Bisacrylamide Solution 30% (29:1)	GB16.3029	500 mL
Acrylamide/Bisacrylamide Solution 30% (37.5:1)	GB16.3037	500 mL
Acrylamide/Bisacrylamide Solution 40% (19:1)	GB16.4019	500 mL
Acrylamide/Bisacrylamide Solution 40% (29:1)	GB16.4029	500 mL
Acrylamide/Bisacrylamide Solution 40% (37.5:1)	GB16.4037	500 mL
 <b>APS</b> (Ammonium Persulphate)	GS20.0025	25 g
 <b>TEMED</b>	GS21.0025	25 mL

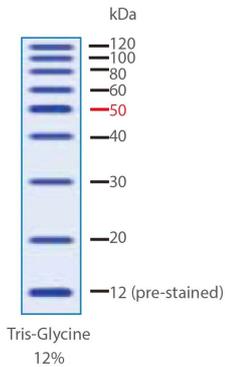
## Staining & Stripping

High purity solutions for protein electrophoresis staining and stripping applications.

<b>GRS Stripping Solution</b>	GB20.0500	500 mL
<b>Ponceau S Solution</b>	GB21.0500	500 mL
 <b>Coomassie Brilliant Blue</b>	GS22.1000	1 L
 <b>Xpert Safe Protein Stain</b> (safe, ready-to-use, with low background)	GS23.1000	1 L

# Protein Markers

Set of unstained and prestained ready-to-use protein markers for SDS-PAGE and Western Blotting. Recommended loading: 3-5  $\mu\text{L}$  for protein electrophoresis.



## GRS Unstained Protein Marker

Ready-to-use unstained protein standard suitable for size determination of proteins.

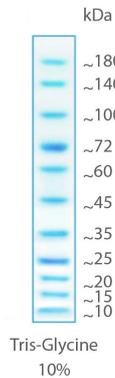
Contains one pre-stained protein, which co-migrates with proteins at  $\sim 12\text{kDa}$ .

GLP10.0500

500  $\mu\text{L}$

GLP10.3500

3x 500  $\mu\text{L}$



## GRS Protein Marker Blue

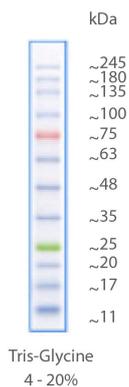
Ready-to-use blue protein standard suitable for monitoring protein separation during SDS-PAGE, size determination of proteins, and verification of transfer efficiency of Western Blotting.

GLP02.0500

500  $\mu\text{L}$

GLP02.3500

3x 500  $\mu\text{L}$



## GRS Protein Ladder MultiColour

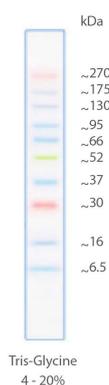
Ready-to-use three-colour protein standard suitable for monitoring protein separation during SDS-PAGE, size determination of proteins, and verification of transfer efficiency of Western Blotting.

GLP01.0500

500  $\mu\text{L}$

GLP01.3500

3x 500  $\mu\text{L}$



## GRS Protein Ladder MultiColour PLUS

Ready-to-use three-colour protein standard suitable for monitoring protein separation during SDS-PAGE, size determination of proteins, and verification of transfer efficiency of Western Blotting.

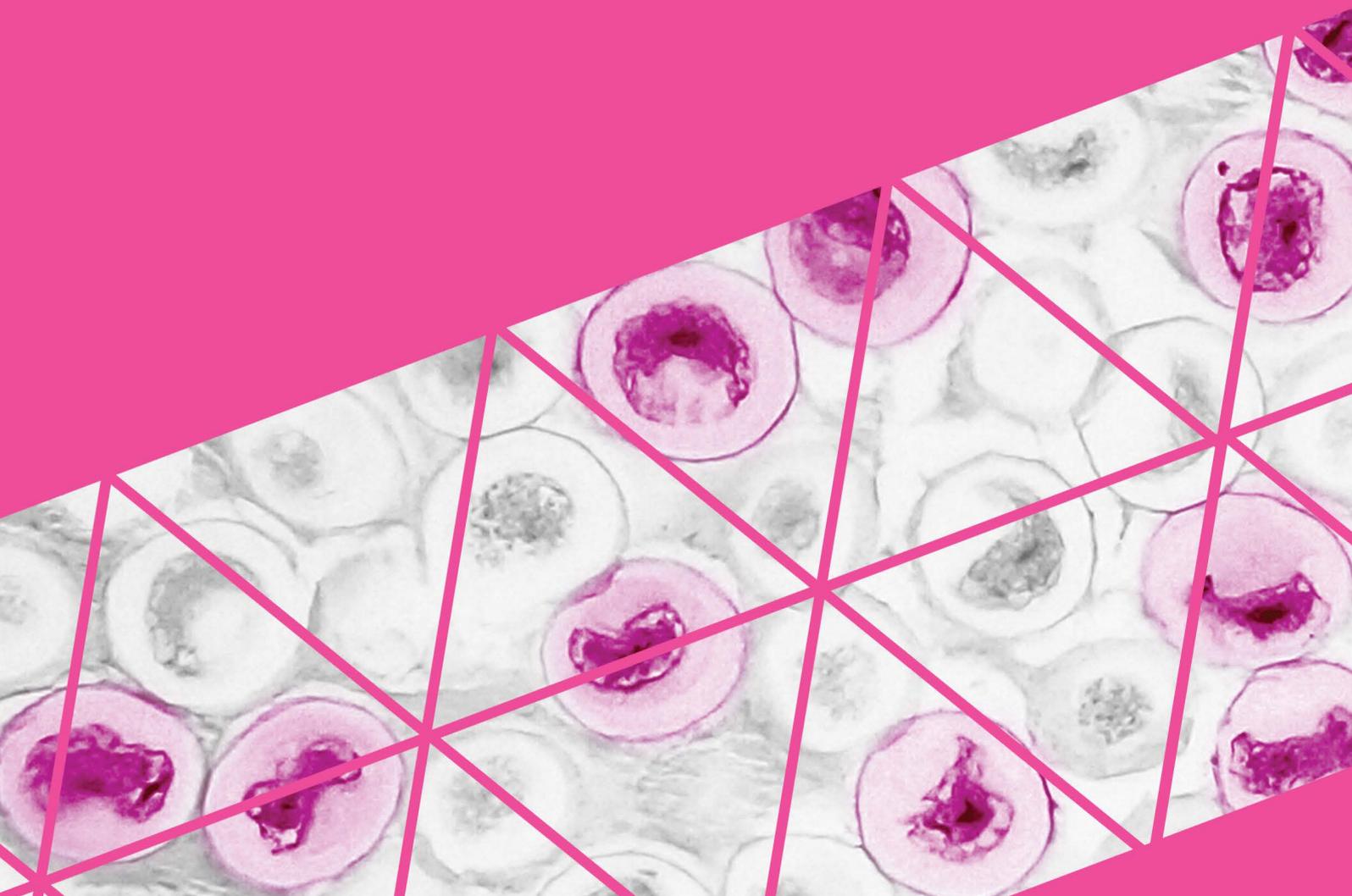
GLP03.0500

500  $\mu\text{L}$

GLP03.3500

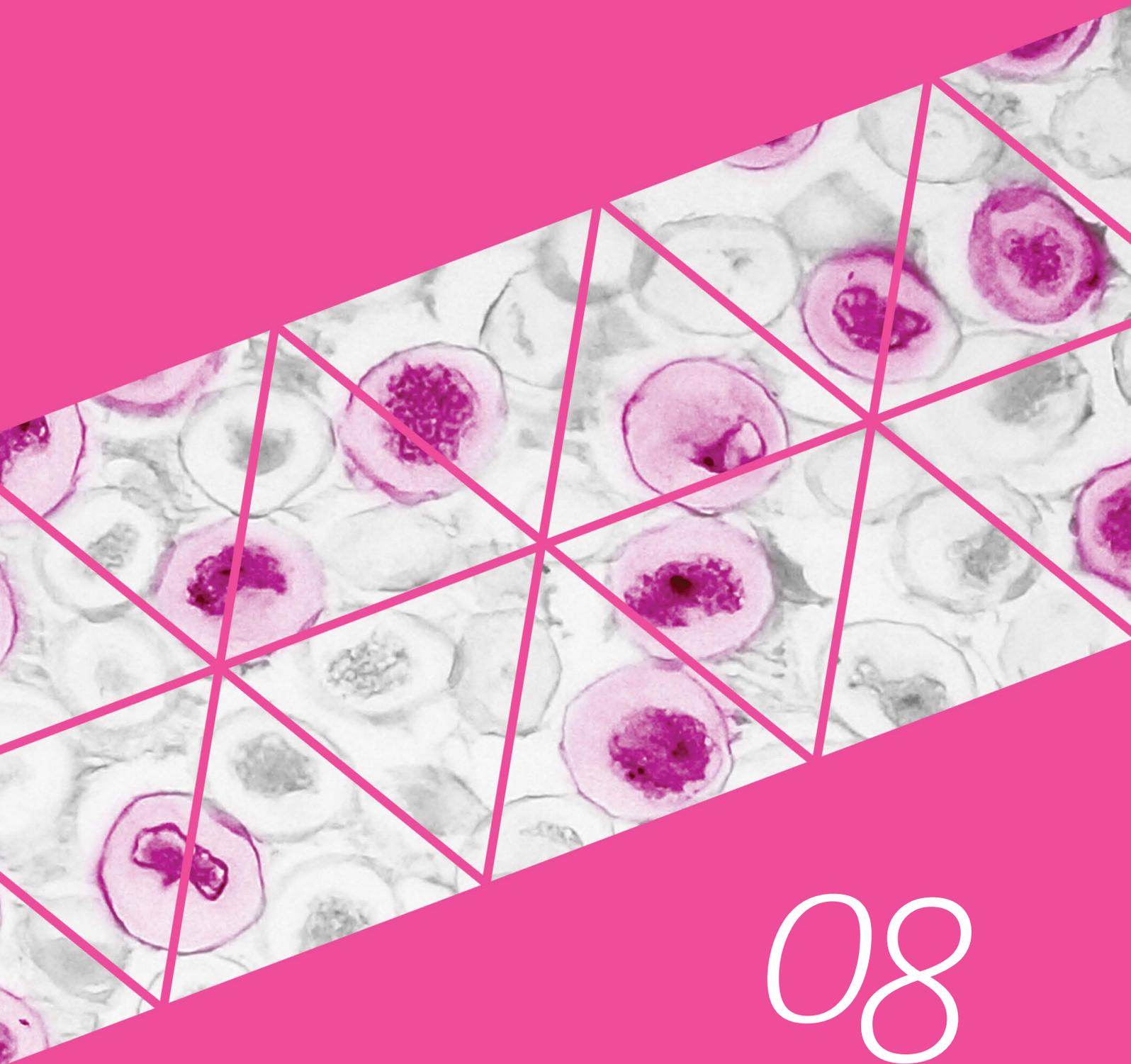
3x 500  $\mu\text{L}$

# Cell Biology



Cell Detachment  
Fetal Bovine Serum  
Transfection

Supplements  
Antibiotics



## Cell Detachment

Solutions for detachment of cells in cell culture applications. From the most common Trypsin, to the new and advantageous Accutase.

<b>Accutase</b> (less toxic and more gentle than trypsin, but just as effective. Works extremely well on embryonic and neuronal stem cells)	GTC01.0100	100 mL
Trypsin-EDTA (0.05%) in DPBS (1X)	GTC02.0100	100 mL
Trypsin-EDTA (0.5%) in DPBS (10X)	GTC06.0100	100 mL

## Fetal Bovine Serum

Comprehensive mix of serum proteins, amino acids, growth factors, and hormones, obtained after coagulation of whole blood and removing cellular components.

<b>FBS</b> (origin S.America)	GTC08.0100	100 mL
<b>FBS (Heat Inactivated)</b> (origin S.America)	GTC09.0100	100 mL

## Transfection

Solution used in the selection and maintenance of eukaryotic cells, stably transfected with neomycin resistance genes.

<b>G-418 Sulphate Solution</b> (50mg/ml)	GTC12.0010	10 mL
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## Supplements

Solutions commonly used as supplements in Cell Culture applications.

**L-Glutamine**  
(200mM)

GTC03.0100

100 mL

**Stable L-Glutamine**  
(200mM)

GTC04.0100

100 mL

**Hybridoma Supplement**  
(Serum-free)

GTC07.0050

50 mL

## Antibiotics

The most widely used antibiotics, for Cell Culture applications, including a very useful mycoplasma removal reagent.

**Penicillin-Streptomycin**  
(100x)

GTC05.0100

100 mL

**Antibiotic - antimycotic Solution**  
(100x)

GTC10.0100

100 mL

**Mycoplasma Removal Reagent**  
(50x)

GTC11.0100

100 mL

# Solutions

Wide range of solutions, commonly used for molecular biology applications.

TAE Buffer (10X)	GB11.0110	1 L
	GB11.0510	5 L
TBE Buffer (10X)	GB12.0110	1 L
	GB12.0510	5 L
TG Buffer (10X)	GB13.0110	1 L
	GB13.0510	5 L
TGS Buffer (10X)	GB15.0110	1 L
	GB15.0510	5 L
SDS Solution 10%	GB14.0110	1 L
SDS Solution 20%	GB14.0120	1 L
 PBS (20x)	GS10.0120	1 L
 PBS (10X) sterile	GS11.0110	1 L
 PBST (10X)	GS12.0110	1 L
 TBS (10X) sterile	GS13.0110	1 L
 HEPES (1M) pH 7.3 sterile	GS14.0110	1 L
 MOPS (10X) pH 7.0	GS15.0110	1 L
 SSC (20X) sterile	GS16.0120	1 L
 SSPE (20X) pH 7.4	GS17.0120	1 L
 TPE (10X)	GS18.0110	1 L
 Tris-Taurine (20X)	GS19.0120	1 L

Whenever you need a solution, GRiSP is the solution

# GRiSP Custom Solutions

По вопросам продукции свяжитесь с нами: ООО «Агентство Химэксперт»  
125009, г. Москва, Страстной б-р, д. 4, стр. 1, оф. 101  
Тел.: +7 (495) 629 28 69, 650 36 66, [info@khimexpert.ru](mailto:info@khimexpert.ru), [www.khimexpert.ru](http://www.khimexpert.ru)



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