SMOBiO®

Small Bio, Smart Tool

SMART
MODERN
ORIGINAL
BIO

CATALOG

& Technical Reference

SYSTEM CERTIFICATION ISO 9001 SGS

UKAS MANAGEMENT SYSTEMS 0005

- Illuminator
- Cloning Vectors
- DNA Ladders and Dyes
- Precast Gel
- Protein Markers and Stain
- DNA Amplification
- cDNA Synthesis and RT-PCR
- IVT mRNA related

Original Manufacturing

Table of Contents

Established in 2004, SMOBIO excels in developing and manufacturing molecular biology reagents and testing tools. SMOBIO's motto – "Small Bio, Smart tool" suggests, we take pride in the high quality reagents we make which are specially designed to meet the individual needs of the researchers using them.

Our high quality protein markers contain ready-to-use stabilized combinations of pre-stained proteins with a broad range of molecular weights. They are suitable for just about all protein electrophoresis applications.

In addition, our user-friendly and highly consistent DNA molecular weight markers include a wide selection of DNA ladders ranging from 50 bp to 25 kbp in various packages. SMOBIO also provides DNA polymerase and reverse transcriptase in various package formats. They can be optimized for different laboratory applications, facilitating easy and routine performance of successful PCR, and RT-PCR. Furthermore, we provide safe and highly sensitive DNA and protein fluorescent dyes that can be illuminated by safer LED blue light instead of damaging UV light, resulting in an unprecedented level of safety for the user as well as the highest level of detection sensitivity at the same time.

In an effort to protect users and their samples, SMOBIO created the bi-functional B-BOX™ Blue Light LED epi-illuminator which works flawlessly with DNA and protein related products. B-BOX™ features a multi-angled filter plate that can be adjusted to create a very accessible working area, allowing for real time visualization, precision gel cutting, and documentation all in one compact lightweight unit.

B-BOX™ works without limits using many of SMOBIO's products including SMOBIO's ExcelTaq™ Fluorescent PCR Master Mix, FluoroDye™ DNA Fluorescent Loading Dye, or even the FluoroStain™ DNA Fluorescent Staining Dye for maximum visualization.

DNA in gels with fluorostain will become a better prospect for cloning when used with B-BOX™. Unlike traditional UV light which results in damage to samples, the blue light system allows for safer illumination that doesn't damage biomolecules.

If you are looking for unsurpassed cloning efficiency just pair our B-BOX™ with SMOBIO's GetClone™ PCR Cloning Vector and your experiments will thank you.

Contacting SMOBIO Technology, Inc.

For orders, quotations, or information, please visit www.smobio.com or contact your authorized SMOBIO distributor.

Distributors

For information on finding your nearest SMOBIO distributors, please visit www.smobio.com/distributor.html or email us: **info@smobio.com**

How to Place an Order or Request a Quote

Quotation requests can be submitted online at www.smobio.com from anywhere in the world or through your authorized SMOBIO distributor.

Prices and Terms

For current prices, contact your authorized SMOBIO distributor.

Perishable and Hazardous Materials Surcharges:

Orders for products classified as dangerous, and those requiring special packaging with blue ice (wet ice) or dry ice may incur additional charges. Please contact your authorized SMOBIO distributor for more information.

Customer Service & Technical Support

For troubleshooting or further information about products, techniques, or applications please visit our **website:**
www.smobio.com

- Product Information, Instruction Manuals, and Brochures
- Technical Data Sheets (TDS)
- Safety Data Sheet(SDS)
- Frequently Asked Questions (FAQs)
- Contact Information

SMOBIO®
Small Bio, Smart Tool

Claims and Returns Policy

SMOBIO Technology, Inc. will ship orders promptly. If any error or damage occurs, please contact the SMOBIO office immediately (info@smobio.com). Report all shipping damage to the courier, take pictures, and keep all containers and packing material until an inspection is made. If any merchandise must be returned, please contact SMOBIO (info@smobio.com) for instruction.

SMOBIO will not accept returns without prior authorization. Merchandise is returnable for replacement only if requested within 7 days of receiving products, and only if the merchandise remains unused, unopened, and inside the original packaging. SMOBIO cannot authorize any return of products for any erroneously placed order from a distributor.

Please provide the following information for returning merchandise.

Order number + Invoice number + Shipping date + Catalog number + Quantity

Warranty Information

All SMOBIO products are guaranteed to meet the specifications listed.

Instruments generally receive 1 year of warranty coverage from the date of shipment or installation. Warranties do not cover consumable parts, such as lamps or platinum wire. Repairs have different warranty periods. Warranties are not transferable from the original purchaser.

SMOBIO is responsible for the quality of its products. We will replace any merchandise with any defect due to a manufacturing error or inadequate precaution made during packaging by sending an additional replacement. The warranty period for B-BOX™ Blue Light LED epi-illuminator is one year.

Icon Descriptions

New product

Recommend using B-BOX™ Blue Light LED epi-illuminator

Ready-to-use

This product provides high resolution

Molecular weight marker

Product provides more bands with uniform intervals

This product is a regular range marker/ladder

This product provides fast running feature

This product is a broad range marker/ladder

This product is a high range marker/ladder

This product is an extra range marker/ladder

This product is available for hot-start PCR reaction

This enzyme owns high-fidelity

Amplicon's end structure is blunt

This product is for GC-rich template

3'→5' exonuclease activity (proofreading)

This product is a master mix

This product does not need extraction steps

This enzyme is available for real-time PCR

This product contains SYBR

This product is for TaqMan qPCR

This product is for high throughput PCR

This enzyme is available for reverse transcription

For general polymerase chain reaction

SMOBiO®
Small Bio, Smart Tool

Tree Diagram of SMOBIO Products

Apparatus

Blue Light LED Epi-illuminator
Phox

Cloning

PCR Cloning E.coli
Transformation Kit
Getclone

DNA

DNA Ladder
Fluorescent DNA Ladder
6× DNA Loading Dye
DNA Fluorescent Loading Dye
DNA Fluorescent Staining Dye
Nucleic Acid Gel Stain

Precast Gel

Bis-Tris Precast Gel
Tris-Glycine Precast Gel
Running Buffer Powder

Protein

All Blue Protein Marker
3-color Protein Marker/Ladder
Western Marker
Protein Fluorescent Staining Dye

dNTP

dNTP Single Solution
dNTP Mix

PCR

High Fidelity PCR
Standard PCR
Extraction-free PCR
Hot Start PCR
Real-time PCR

RNA

cDNA Synthesis
One-Step RT-PCR
One-Step RT-qPCR
RNase Inhibitors

IVT mRNA

T7 High Yield RNA Synthesis Kit
T7 High Yield RNA Synthesis Kit (Ψ-UTP)
T7 High Yield RNA Synthesis Kit (me1Ψ-UTP)
RNA Capping System

P.80

Pathogen Detection
COVID-19 Detection
Cat. No.IP2000

SMOBiO®
Small Bio, Smart Tool

Illuminator

Blue Light LED Epi-illuminator

Photobox

SMOBiO®
Small Bio, Smart Tool

B-BOX™Blue Light LED Epi-illuminator

VE0100

Description

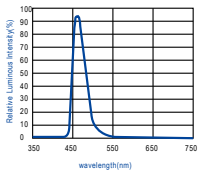
SMOBIO's B-BOX™ is a long wavelength, blue light LED epi-illuminator. It is compact in design and robust in construction. The B-BOX™ epi-illuminator provides an unprecedented level of safety for its user due to its non-UV light source and a low operating voltage of only 12 Volts, as well as its capability in working with non-carcinogenic DNA/ protein dye. The B-BOX™ comes with high quality non-flickering LED light that is highly sensitive for DNA and protein dye. B-BOX™ can greatly ease the routine chore of gel extraction, enabling easy visualization and gel cutting even in bright ambient light. The multi-angle filter plate (Cat. No. VE0102) provides optimal angles for gel cutting, visualization, and documentation. The B-BOX™ also comes with amber colored filter goggles (Cat. No. VE0103) for gel cutting and visualization. The Phox™ Photobox (Cat. No. VE0104) provides a mini darkroom environment for images taken with any smartphone. Finally, a built-in barrier system around the working area helps facilitate cleaning.

Features

- Improved cloning efficiency
- Compact, lightweight, and portable (less than 1 kg (in weight)
- Safety features include 470 nm long wavelength, without any UV radiation hazard to its user
- Compatible with non-carcinogenic, non-ethidium bromide DNA staining dye
- User friendly: Samples are easy to visualize (when using the filter plate or goggles)
- LED light source lasts up to 50,000 hours
- Superior detection sensitivity: ≤ 0.04 ng of DNA when using FluoroStain™ DNA Fluorescent Staining Dye, ≤3 ng of protein when using FluoroStain™ Protein Fluorescent Staining Dye (as sensitive as silver stain)
- Adjustable and removable filter plate allows for gel cutting, visualization, and documentation
- Built-in barrier design, for easy clean up
- Visible in bright ambient light
- Emphasizes minimal power reliance, low heat generation, with its own built-in heat sink

Physical Specifications

• Overall Dimensions (mm):	201.4 x 200 x 38 (D x W x H)
• Viewing Area (mm):	158 x 96 (D x W)
• Wavelength of LEDs (nm):	470
• Number of LED Units:	72 Super Flux LEDs
• LED Life	up to 50,000 hours
• Power:	12 Volt DC , 0.72 Amp
• Electrical Requirements:	AC 100~240 V, 50/ 60 Hz (Adapter)
• Weight (kg):	0.95kg (Net Weight)
• Shipping Weight (kg):	1.0 (Gross Weight) – Adapter (0.5 kg) not included
• Material:	ASA for housing; Tempered glass working area
• Recommended Dyes:	ExcelDye™ DNA Fluorescent Loading Dye
	FluoroDye™ DNA Fluorescent Staining Dye
	FluoroStain™ Protein Fluorescent Staining Dye
	FluoroVue™ Nucleic Acid Gel Stain
	SYBR Green I Nucleic Acid Gel Stain



Blue light LED wavelength

Phox™ PhotoBox

VE0104

Description

SMOBIO's Phox™ is a lightweight portable photobox designed to help users take high quality photos of gels observed with SMOBIO's B-BOX™ Blue light epi-illuminator. When working with the Phox™ Photobox, users don't need to turn off any lights or take the gel and system into a dark room to prevent light interference. With a large platform, any smartphone can easily fit the Phox™ Photobox. the Phox™ Photobox is designed to fit B-Box™, but its compact size allows it to work with other UV & blue light illuminators without the need for a large and expensive imaging system.

Features

1. Light and portable
2. Compatible with B-BOX™ and various illuminators
3. Designed with 3D support structure
4. Large platform designed for bigger smartphones
5. Made from a single sheet of paper

Physical Specifications

- Weight : 34 g (net weight)
- Size (mm) : 155 x145 x 100 (D x W x H)
- Tolerance Weight : 1 kg
- Material : Paper
- Photo window size (mm) : 10 x 10

SMOBiO®
Small Bio, Smart Tool

Cloning

PCR Cloning Vector

E. coli Transformation Kit

SMOBiO®
Small Bio, Smart Tool

GetClone™ PCR Cloning Vector II

CV1100 (20 RXN)

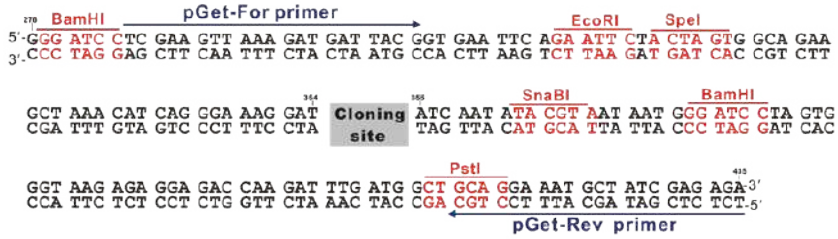
Description

The GetClone™ PCR Cloning Vector is a positive selection system for high efficiency cloning of blunt end DNA or amplicons. This cloning vector contains a lethal gene which can be disrupted by ligation of a blunt end DNA insert at the cloning site. Only colonies with inserted vectors are able to propagate, eliminating the need for IPTG and X-Gal for blue/white screening. The GetClone™ pGet II vector includes ampicillin and kanamycin resistance genes that can meet the needs of most users.

Features

1. Cloning efficiency greater than 90%
2. IPTG and X-Gal are not required
3. Accepts a wide range of insert/vector ratios 0.5:1 to 12:1
4. Accepts insert sizes of 6 bp to 12 kb
5. The phosphorylation of PCR products is not required
6. Accepts blunt end amplicon or DNA fragment (not for sticky ends)
7. Resistance to ampicillin and kanamycin

Cloning sites of GetClone™ PCR Cloning Vector



CV1100

GetClone™ PCR Cloning Vector II

Contents

Component	Volume
pGet II Vector	23 µl
pGet-For Primer (10 µM)	100 µl
pGet-Rev Primer (10 µM)	100 µl

Storage

-20°C for 24 months

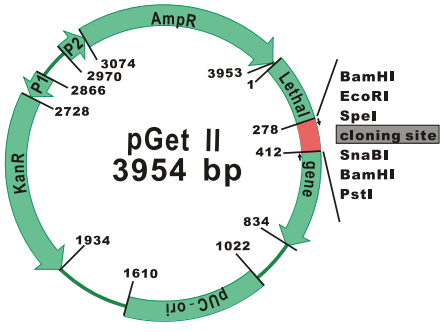


Fig. 1. Cloning map of pGet II vector.
The pGet II vector carries a pUC origin, two antibiotic resistant genes as selectable markers, and a lethal gene disrupted by cloning sites.

Champion™

E. coli Transformation Kit

QR code for teaching and learning

Catalog number : CK1000

Flexible | High Efficiency | Fast and Easy

Easy . Fast . Efficient

- **Flexible** – fresh culture, overnight culture, 4°C stored liquid culture or even colonieson agar plate can be used for transformation.
- **Fast and Easy** – only few steps for preparation; suitable for time-saving transformation
- **High efficiency** – up to 10^9 cfu/µg
- **Personalization** – suitable for most *E. coli* strains

So Easy to Have Your Own Competent Cells

Description

Champion™ *E. coli* Transformation Kit provides an easy method for rapid preparation of chemically competent cells with high transformation efficiency from fresh culture, overnight culture, or even directly from bacterial colonies on the plate. The competent cell preparation method eliminates the requirement of time-wasting wash step. In addition, preparation of competent cells from overnight culture or directly from bacterial colonies provides flexibility to cloning experiments. The resultant competent cells can be immediately used or stored at -70°C for one year.

This kit includes a specialized SMO-Broth™ medium and a unique Champion™ CC Buffer for culturing and preparing competent cells efficiently. Following the simple and quick competent cell preparation protocol from fresh culture, the transformation efficiency is typically ranged from 10^8 to 10^9 transformants/µg of pUC19 plasmid DNA, but varies depending on the *E. coli* strains.

The resultant competent cells can be further transformed using time-saving transformation protocol, eliminating the requirement of heat-shock and recovery steps.

Kit Contents

Component	Volume
Champion™ CC Buffer	20 ml
SMO-Broth™	100 ml x 2
pUC19 Control Plasmid (10^{-4} µg/µl)	5 µl
Instruction Manual	1
Champion™ Competent Cell Preparation Card	1

Storage

4°C for 12 months

SMOBiO®
Small Bio, Smart Tool

DNA Ladders and Dyes

DNA Ladder

Fluorescent DNA Ladder

6× DNA Loading Dye

DNA Fluorescent Loading Dye

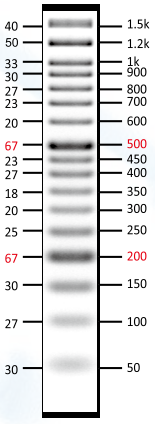
DNA Fluorescent Staining Dye

Nucleic Acid Gel Stain

SMOBiO®
Small Bio, Smart Tool

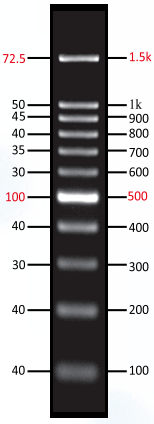
DNA Ladders and Markers Information

DM1100



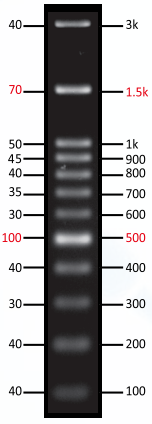
2% Agarose Gel
0.5x TAE Buffer

DM2100



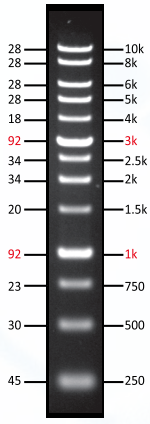
2% Agarose Gel
0.5x TAE Buffer

DM2300



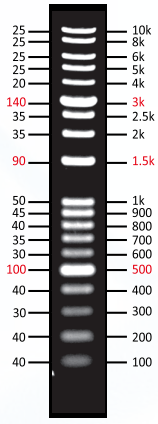
1.5% Agarose Gel
0.5x TAE Buffer

DM3100



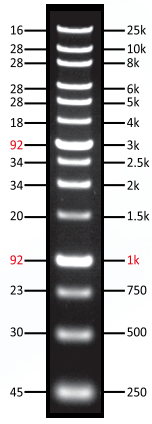
1% Agarose Gel
0.5x TAE Buffer

DM3200



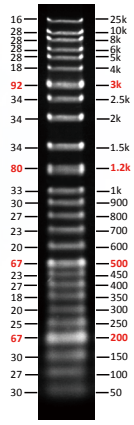
1.2% Agarose Gel
0.5x TAE Buffer

DM4100



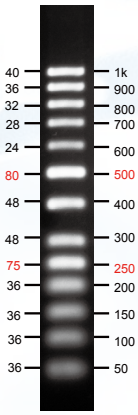
1.2% Agarose Gel
0.5x TAE Buffer

DM5100



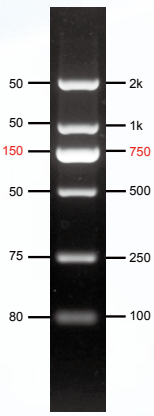
1.2% Agarose Gel
1X TBE Buffer

DM1200



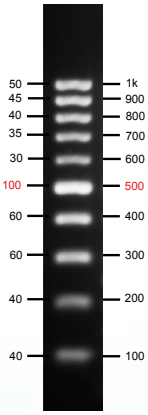
2% agarose gel
0.5X TAE

DM2000



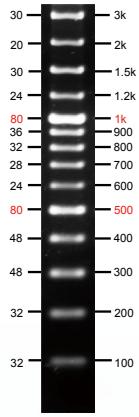
2% agarose gel
0.5X TAE

DM2200



2% agarose gel
0.5X TAE

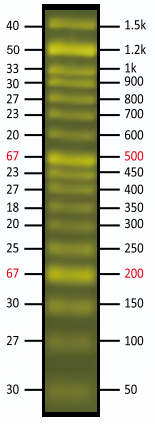
DM2400



2% agarose gel
0.5X TAE

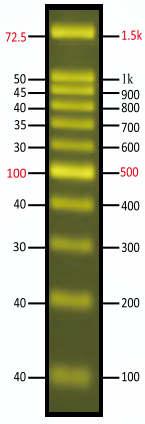
Fluorescent DNA Ladders

DM1160



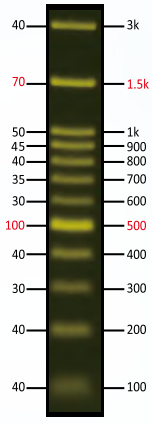
2% Agarose Gel
0.5x TAE Buffer

DM2160



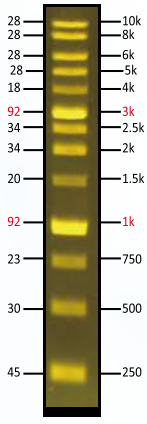
2% Agarose Gel
0.5x TAE Buffer

DM2360



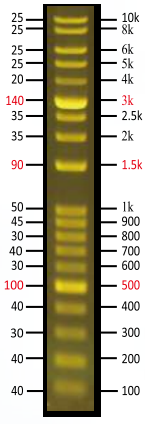
1.5% Agarose Gel
0.5x TAE Buffer

DM3160



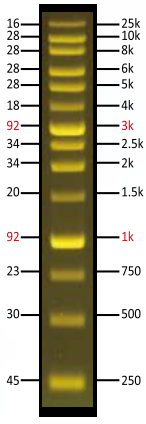
1% Agarose Gel
0.5x TAE Buffer

DM3260

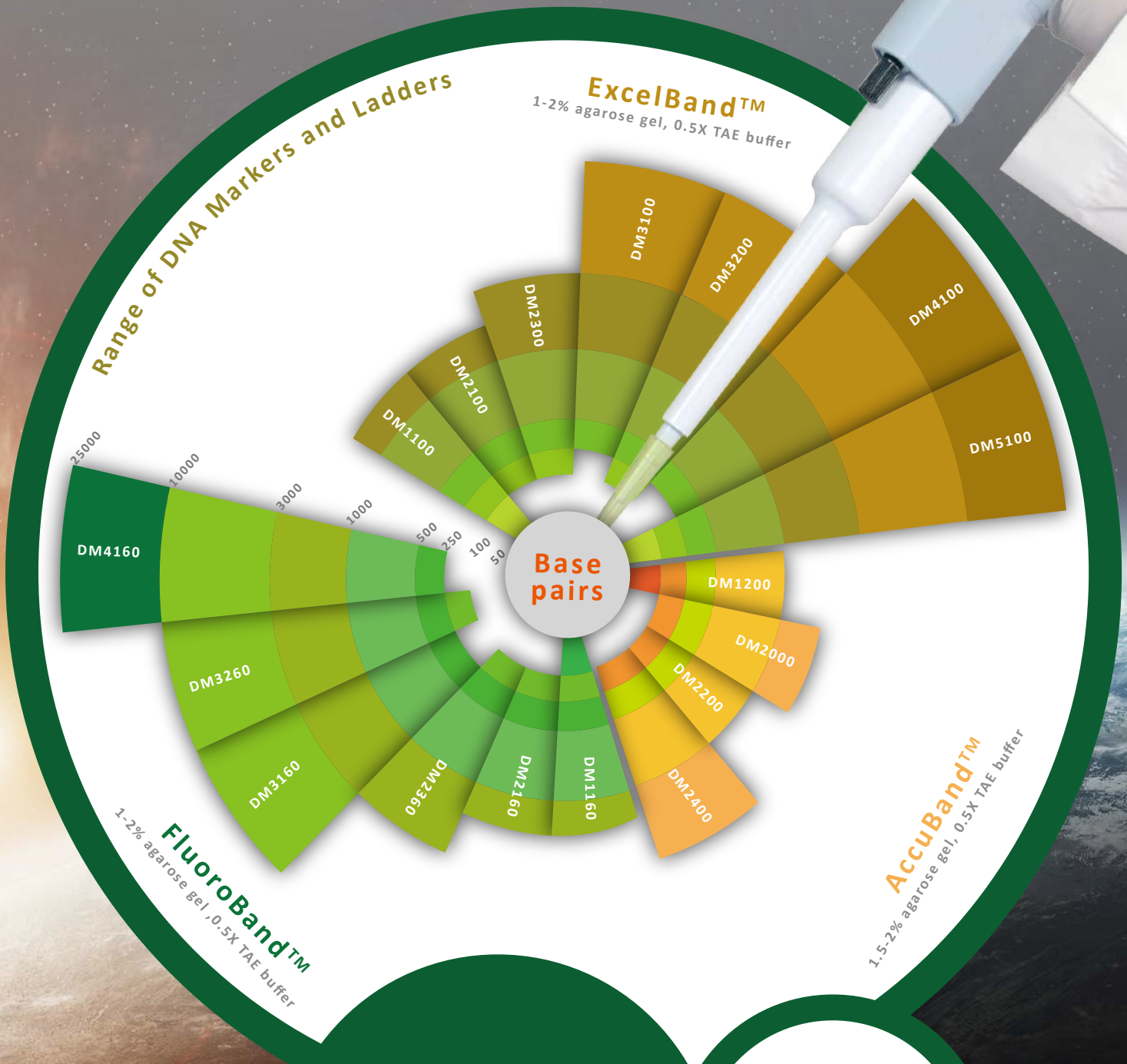


1% Agarose Gel
0.5x TAE Buffer

DM4160



1% Agarose Gel
0.5x TAE Buffer



YOUR RANGE YOUR CHOICE

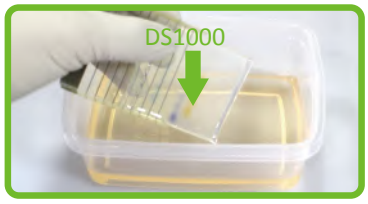
S MOBIO
A ccuBand™
F luoroBand™
E xcelBand™

DNA loading dye Information

Cat.No.	Application	Dilution fold	Suitable gel	Dye component	Dye migration (1% agarose gel/ 1X TAE)
DL1000	DNA	6X	agarose gel, polyacrylamide gel	Orange G	~50 bp
DL2000	DNA	6X	agarose gel, polyacrylamide gel	Orange G, Xylene cyanol FF	~50 bp, ~4000 bp
DL3000	DNA	6X	agarose gel, polyacrylamide gel	Bromophenol blue, Xylene cyanol FF	~500 bp, ~4000 bp
DL4000	DNA	6X	agarose gel, polyacrylamide gel	Orange G, Bromophenol blue, Xylene cyanol FF	~50 bp, ~500 bp, ~4000 bp

DNA fluorescent loading and staining dye Information

Cat.No.	Application	Dilution fold	Sensitivity	Excitation (nm)	Emission (nm)	Observation
DL5000 DL5001	DNA	6X	0.14 ng	270, 370, 479	522	B-BOX/UV-BOX
DS1000 DS1001	DNA	10000X	0.04 ng	270, 370, 479	522	B-BOX/UV-BOX
NS1000 NS1001	DNA/RNA	10000X	0.14 ng	250, 482	509	B-BOX/UV-BOX



Post stain

Premix DNA sample with DL5000

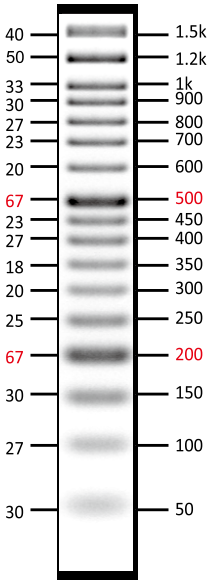
How to use DNA fluorescent loading and staining dye

Running buffer stain

In-gel stain

ExcelBand™ 50 bp DNA Ladder

DM1100 (500 µl)



2% Agarose Gel
0.5x TAE Buffer

Description

The DM1100 ExcelBand™ 50 bp DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DM1100 DNA ladder is composed of 17 individual DNA fragments: 1.5k, 1.2k, 1k, 900, 800, 700, 600, 500, 450, 400, 350, 300, 250, 200, 150, 100 and 50 bp derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains two enhanced bands (500 bp and 200 bp) for easy reference. In addition, the low range Orange G tracking dye mimics the migration of a 50 bp dsDNA during electrophoresis, and allows for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

50 ~ 1,500 bp

Concentration

54 µg/500 µl

Recommended loading volume

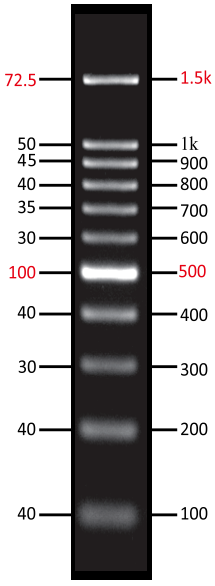
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

ExcelBand™ 100 bp DNA Ladder

DM2100 (500 µl)



2% Agarose Gel
0.5x TAE Buffer

Description

The DM2100 ExcelBand™ 100 bp DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DM2100 DNA marker is composed of 11 individual DNA fragments: 1.5k, 1k, 900, 800, 700, 600, 500, 400, 300, 200 and 100 bp derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains two enhanced bands (1.5 kb and 500 bp) for easy reference. In addition, two tracking dyes Xylene cyanol FF and Orange G which mimic the migration of 4,000 bp and 50 bp dsDNA during electrophoresis. These dyes allow for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

100 ~ 1,500 bp

Concentration

52.2 µg/500 µl

Recommended loading volume

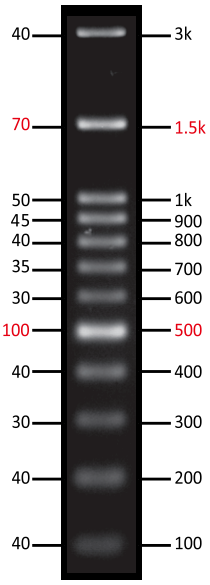
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

ExcelBand™ 100 bp+3K DNA Ladder

DM2300 (500 µl)



1.5% Agarose Gel
0.5x TAE Buffer

Description

The DM2300 ExcelBand™ 100 bp+3K DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DM2300 DNA ladder is composed of 12 individual DNA fragments: 3k, 1.5k, 1k, 900, 800, 700, 600, 500, 400, 300, 200 and 100 bp derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains two enhanced bands (1.5 kb and 500 bp) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Orange G which mimic the migration of 4,000 bp and 50 bp dsDNA during electrophoresis are added for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

100 ~ 3,000 bp

Concentration

56 µg/500 µl

Recommended loading volume

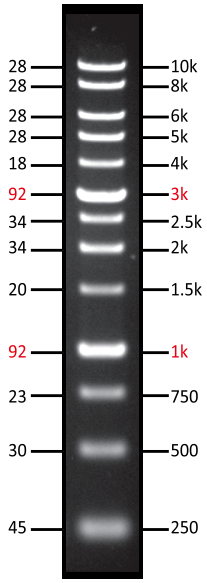
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

ExcelBand™ 1 KB (0.25-10 kb) DNA Ladder

DM3100 (500 µl)



1% Agarose Gel
0.5x TAE Buffer

Description

The DM3100 ExcelBand™ 1 KB (0.25-10 kb) DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DNA ladder DM3100 is composed of 13 individual DNA fragments: 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1k, 750, 500, and 250 bp derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains two enhanced bands (3 kb and 1 kb) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Bromophenol blue which mimic the migration of 4,000 bp and 500 bp dsDNA during electrophoresis are added for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

250 ~ 10,000 bp

Concentration

50 µg/500 µl

Recommended loading volume

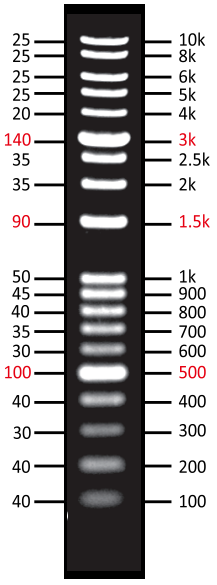
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

ExcelBand™ 1 KB Plus (0.1-10 kb) DNA Ladder

DM3200 (500 µl)



1.2% Agarose Gel
0.5x TAE Buffer

Description

The DM3200 ExcelBand™ 1 KB Plus (0.1-10 kb) DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DNA Ladder DM3200 is composed of 19 individual DNA fragments: 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1k, 900, 800, 700, 600, 500, 400, 300, 200, and 100 bp derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains three enhanced bands (3 kb, 1.5 kb and 500 bp) for easy reference. In addition, three tracking dyes, Xylene cyanol FF, Bromophenol blue and Orange G which mimic the migration of 4,000 bp, 500 bp and 50 bp dsDNA during electrophoresis are added for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

100 ~ 10,000 bp

Concentration

87 µg/500 µl

Recommended loading volume

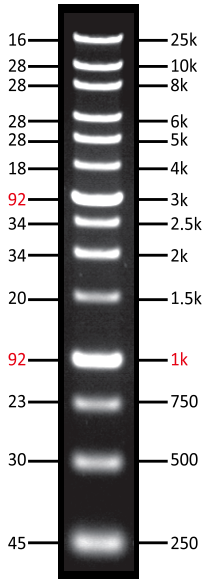
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

ExcelBand™ XL 25 kb DNA Ladder, Broad Range (up to 25 kb)

DM4100 (500 µl)



1.2% Agarose Gel
0.5x TAE Buffer

Description

The DM4100 ExcelBand™ XL 25 kb DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DNA Ladder DM4100 is composed of 14 individual DNA fragments: 25k, 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1k, 750, 500, and 250 bp derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains two enhanced bands (3 kb and 1 kb) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Bromophenol blue which mimic the migration of 4,000 bp and 500 bp dsDNA during electrophoresis are added for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

250 ~ 25,000 bp

Concentration

51.6 µg/500 µl

Recommended loading volume

5 µl/well

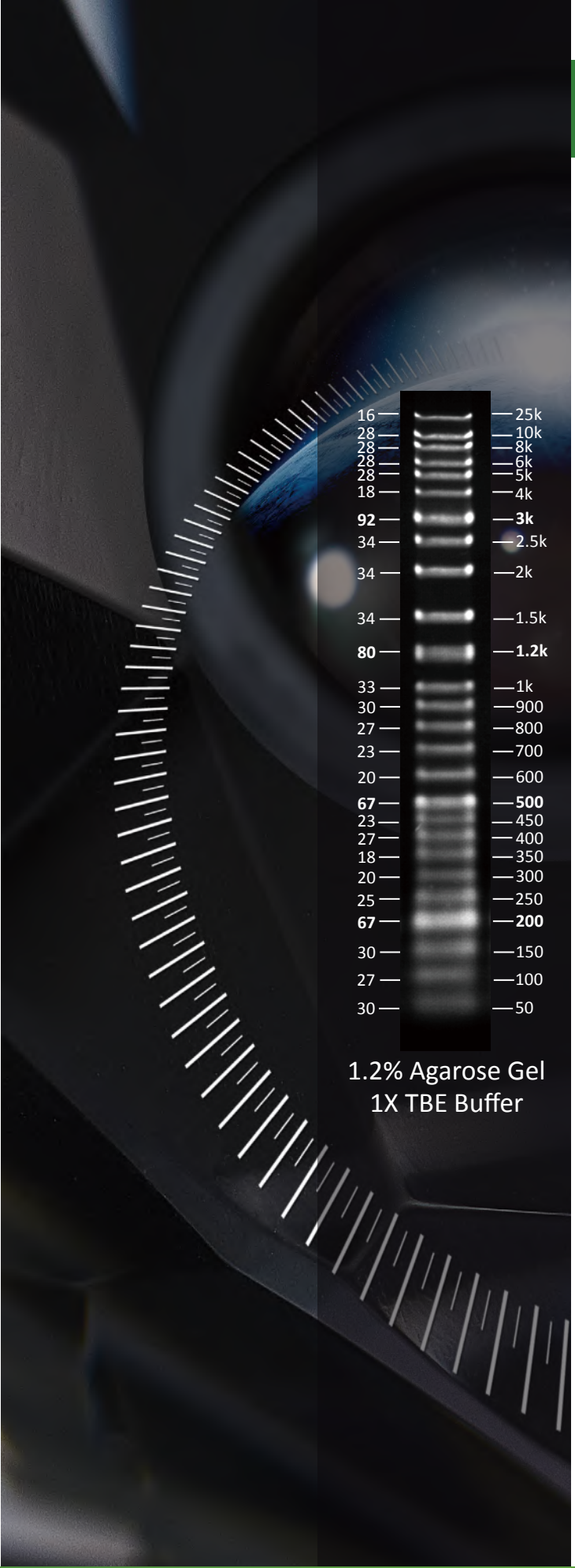
Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

ExcelBand™ Super Range DNA Ladder (50 bp-25 kb)

DM5100 (500 µl)

RTU Ladder ER



Description

The DM5100 ExcelBand™ Super Range DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with loading dye for direct gel loading. The DNA Ladder DM5100 is composed of 26 individual DNA fragments: 25k, 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1.2k, 1k, 900, 800, 700, 600, 500, 450, 400, 350, 300, 250, 200, 150, 100 and 50 base pairs derived from a mixture of PCR products and specifically digested plasmid DNA. This product contains four enhanced bands (3k, 1.2k, 500 and 200 bp) for easy reference. In addition, three tracking dyes, Xylene cyanol FF, Bromophenol blue and Orange G which mimic the migration of 4,000 bp, 500 bp and 50 bp dsDNA during electrophoresis are added for real time monitoring.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

50 ~ 25,000 bp

Concentration

88.7 µg/500 µl

Recommended loading volume

5 µl/well

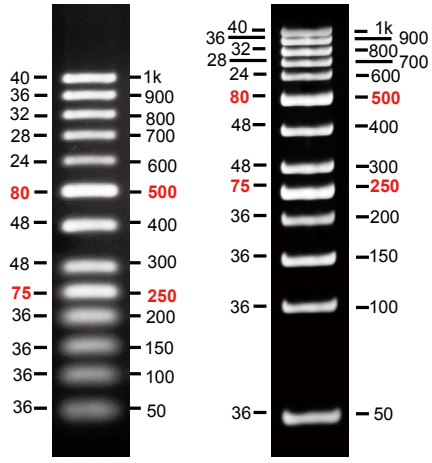
Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

AccuBand™ 50 bp DNA Ladder II

RTU Ladder

DM1200 (500 µl)



Description

AccuBand™ 50 bp DNA Ladder II is composed of 13 individual DNA fragments, presenting 1k, 900, 800, 700, 600, 500, 400, 300, 250, 200, 150, 100 and 50bp sharp bands respectively. This product contains 2 enhanced bands (500 bp and 250 bp) for easy band identification. AccuBand™ 50 bp DNA Ladder II is ready-to-use, containing loading buffer with a tracking dye (Orange G). AccuBand™ 50 bp DNA Ladder II provides a sufficient amount of DNA for clear observation of all DNA bands ranging from 50 bp to 1 kb, either in agarose gel or in polyacrylamide gel electrophoresis.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

50 ~ 1000 bp

Concentration

55.5 µg/500 µl

Recommended loading volume

5 µl/well

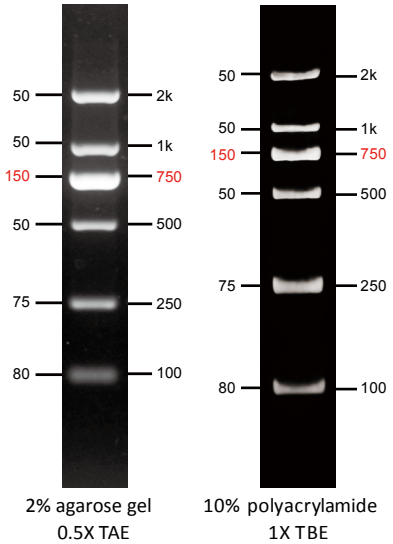
Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

AccuBand™ 100 bp DNA Marker II

RTU Marker

DM2000 (500 µl)



Description

AccuBand™ 100 bp DNA Marker II is composed of 6 individual DNA fragments, presenting 2k, 1k, 750, 500, 250 and 100 bp sharp bands respectively. This product contains 1 enhanced band (750 bp) for easy band identification. AccuBand™ 100 bp DNA Marker II is ready-to-use, containing loading buffer with dual color tracking dyes (Orange G and Xylene cyanol FF). To improve the faint visibility of low molecular weight bands frequently occurred in use of conventional DNA Markers, AccuBand™ 100 bp DNA marker II provides a sufficient amount of DNA for 250 and 100 bp fragments, ensuring clear observation of all DNA bands ranging from 100 bp to 2 kb, either in agarose gel or in polyacrylamide gel electrophoresis.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

100 ~ 2000 bp

Concentration

45.5 µg/500 µl

Recommended loading volume

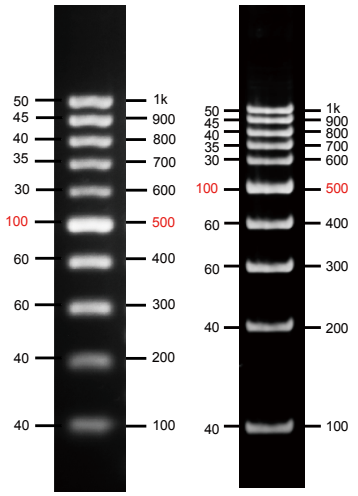
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

AccuBand™ 100 bp DNA Ladder II

DM2200 (500 µl)



2% agarose gel
0.5X TAE

8% polyacrylamide
1X TBE

Description

AccuBand™ 100 bp DNA Ladder II is composed of 10 individual DNA fragments, presenting 1k, 900, 800, 700 600, 500, 400, 300, 200 and 100 bp sharp bands respectively. This product contains 1 enhanced band (500 bp) for easy identification of bands. AccuBand™ 100 bp DNA Ladder II is ready-to-use, containing loading buffer with dual color tracking dye (Orange G and Xylene Cyanol FF). AccuBand™ 100 bp DNA Ladder II provides a sufficient amount of DNA for clear observation of all DNA bands ranging from 100 bp to 1 kb, either in agarose gel or in polyacrylamide gel electrophoresis.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

100 ~ 1000 bp

Concentration

50 µg/500 µl

Recommended loading volume

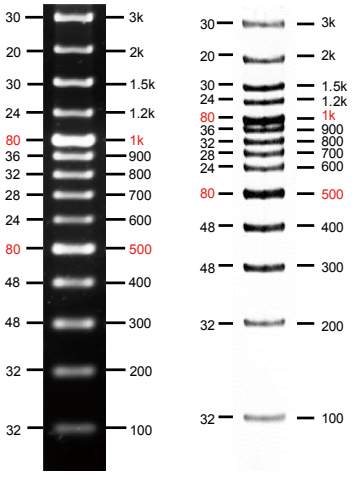
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

AccuBand™ 100 bp+3K DNA Ladder II

DM2400 (500 µl)



2% agarose gel
0.5X TAE

8% polyacrylamide
1X TBE

Description

AccuBand™ 100 bp+3K DNA Ladder II is composed of 14 individual DNA fragments, presenting 3k, 2k, 1.5k, 1.2k, 1k, 900, 800, 700 600, 500, 400, 300, 200 and 100 bp sharp bands respectively. This product contains 2 enhanced bands (1k and 500 bp) for easy band identification. AccuBand™ 100 bp+3K DNA Ladder II is ready-to-use, containing loading buffer with dual color tracking dyes (Orange G and xylene Cyanol FF). AccuBand™ 100 bp+3K DNA Ladder II provides a sufficient amount of DNA for clear observation of all DNA bands ranging from 100 bp to 3 kb, either in agarose gel or in polyacrylamide gel electrophoresis.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

100 ~ 3000 bp

Concentration

54.4 µg/500 µl

Recommended loading volume

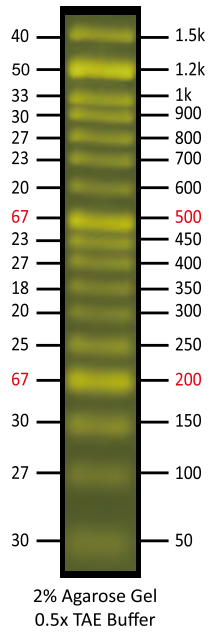
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 36 months

FluoroBand™ 50 bp Fluorescent DNA Ladder

DM1160 (500 µl)



2% Agarose Gel
0.5x TAE Buffer

Description

The DM1160 FluoroBand™ 50 bp Fluorescent DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with high sensitivity DNA binding fluorescent dye and loading dye for direct gel loading. The DNA Ladder DM1160 is composed of 17 individual DNA fragments: 1.5k, 1.2k, 1k, 900, 800, 700, 600, 500, 450, 400, 350, 300, 250, 200, 150, 100, and 50 bp derived from a mixture of PCR products and specifically digested plasmid DNA. These bands can be visualized when illuminated with 470 nm blue or UV light. This product contains two enhanced bands (500 bp and 200 bp) for easy reference. In addition, the low range Orange G tracking dye which mimics the migration of a 50 bp dsDNA during electrophoresis is added for real time monitoring. Real time observation of electrophoresis is also possible if a compatible light source is fitted to the electrophoresis tank.

Source
Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range
50 ~ 1,500 bp

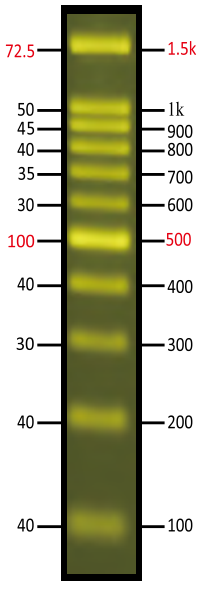
Concentration
54 µg/500 µl

Recommended loading volume
5 µl/well

Storage
Room temperature	for 6 months
4°C	for 12 months
-20°C	for 24 months

FluoroBand™ 100 bp Fluorescent DNA Ladder

DM2160 (500 µl)



2% Agarose Gel
0.5x TAE Buffer

Description

The DM2160 FluoroBand™ 100 bp Fluorescent DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with high sensitivity DNA binding fluorescent dye and loading dye for direct gel loading. The DNA Ladder DM2160 is composed of 11 individual DNA fragments: 1.5k, 1k, 900, 800, 700, 600, 500, 400, 300, 200 and 100 bp derived from a mixture of PCR products and specifically digested plasmid DNA. These bands can be visualized when illuminated with 470 nm blue or UV light. This product contains two enhanced bands (1.5 kb and 500 bp) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Orange G which mimic the migration of 4,000 bp and 50 bp dsDNA during electrophoresis are added for real time monitoring. Real time observation of electrophoresis is also possible if a compatible light source is fitted to the electrophoresis tank.

Source
Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range
100 ~ 1,500 bp

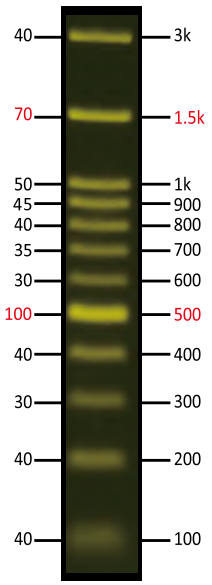
Concentration
52.2 µg/500 µl

Recommended loading volume
5 µl/well

Storage
Room temperature	for 6 months
4°C	for 12 months
-20°C	for 24 months

FluoroBand™ 100 bp+3K Fluorescent DNA Ladder

DM2360 (500 µl)



1.5% Agarose Gel
0.5x TAE Buffer

Description

The DM2360 FluoroBand™ 100bp+3K Fluorescent DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with high sensitivity DNA binding fluorescent dye and loading dye for direct gel loading. The DNA Ladder DM2360 is composed of 12 individual DNA fragments: 3k, 1.5k, 1k, 900, 800, 700, 600, 500, 400, 300, 200 and 100 bp derived from a mixture of PCR products and specifically digested plasmid DNA. These bands can be visualized when illuminated with 470 nm blue or UV light. This product contains two enhanced bands (1.5 kb and 500 bp) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Orange G which mimic the migration of 4,000 bp and 50 bp dsDNA during electrophoresis are added for real time monitoring. Real time observation of electrophoresis is also possible if a compatible light source is fitted to the electrophoresis tank.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

100 ~ 3,000 bp

Concentration

56 µg/500 µl

Recommended loading volume

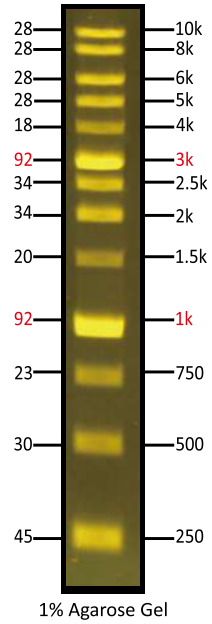
5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 24 months

FluoroBand™ 1 KB (0.25-10 kb) Fluorescent DNA Ladder

DM3160 (500 µl)



1% Agarose Gel
0.5x TAE Buffer

Description

The DM3160 FluoroBand™ 1KB (0.25-10 kb) Fluorescent DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with high sensitivity DNA binding fluorescent dye and loading dye for direct gel loading. The DNA ladder DM3160 is composed of 13 individual DNA fragments: 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1k, 750, 500, and 250 bp derived from a mixture of PCR products and specifically digested plasmid DNA. These bands can be visualized when illuminated with 470 nm blue or UV light. This product contains two enhanced bands (3 kb and 1 kb) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Bromophenol blue which mimic the migration of 4,000 bp and 500 bp dsDNA during electrophoresis are added for real time monitoring. Real time observation of electrophoresis is also possible if a compatible light source is fitted to the electrophoresis tank.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

250 ~ 10,000 bp

Concentration

50 µg/500 µl

Recommended loading volume

5 µl/well

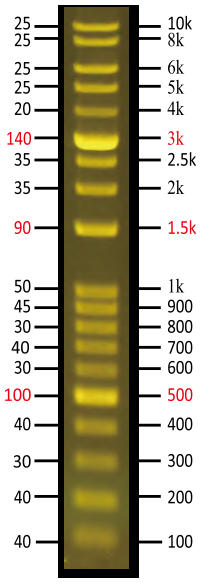
Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 24 months

FluoroBand™ 1 KB Plus (0.1-10 kb) Fluorescent DNA Ladder

RTU Ladder B-BOX

DM3260 (500 µl)



1% Agarose Gel
0.5x TAE Buffer

Description

The DM3260 FluoroBand™ 1 KB Plus (0.1-10 kb) Fluorescent DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with high sensitivity DNA binding fluorescent dye and loading dye for direct gel loading. The DNA Ladder DM3260 is composed of 19 individual DNA fragments: 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1k, 900, 800, 700, 600, 500, 400, 300, 200, and 100 bp derived from a mixture of PCR products and specifically digested plasmid DNA; these bands can be visualized when illuminated with 470 nm blue or UV light. This product contains three enhanced bands (3 kb, 1.5 kb and 500 bp) for easy reference. In addition, three tracking dyes, Xylene cyanol FF, Bromophenol blue and Orange G which mimic the migration of 4,000 bp, 500 bp and 50 bp dsDNA during electrophoresis are added for real time monitoring. Real time observation of electrophoresis is also possible if a compatible light source is fitted to the electrophoresis tank.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA.

Range

100 ~ 10,000 bp

Concentration

87 µg/500 µl

Recommended loading volume

5 µl/well

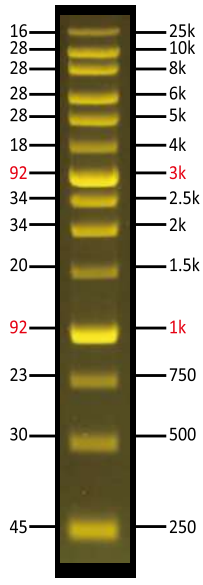
Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 24 months

FluoroBand™ XL 25 kb Fluorescent DNA Ladder, Broad Range (up to 25 kb)

RTU Ladder B-BOX

DM4160 (500 µl)



1% Agarose Gel
0.5x TAE Buffer

Description

The DM4160 FluoroBand™ XL 25 kb Fluorescent DNA Ladder is a ready-to-use DNA ladder, which is pre-mixed with high sensitivity DNA binding fluorescent dye and loading dye for direct gel loading. The DNA Ladder DM4160 is composed of 14 individual DNA fragments: 25k, 10k, 8k, 6k, 5k, 4k, 3k, 2.5k, 2k, 1.5k, 1k, 750, 500, and 250 bp derived from a mixture of PCR products and specifically digested plasmid DNA; these bands can be visualized when illuminated with 470 nm blue or UV light. This product contains two enhanced bands (3 kb and 1 kb) for easy reference. In addition, two tracking dyes, Xylene cyanol FF and Bromophenol blue which mimic the migration of 4,000 bp and 500 bp dsDNA during electrophoresis are added for real time monitoring. Real time observation of the electrophoresis is also possible if a compatible light source is fitted to the electrophoresis tank.

Source

Phenol extracted PCR products and dsDNA digested with specific restriction enzymes, equilibrated in 10 mM Tris-HCl (pH 8.0) and 10 mM EDTA

Range

250 ~ 25,000 bp

Concentration

51.6 µg/500 µl

Recommended loading volume

5 µl/well

Storage

Room temperature	for 6 months
4°C	for 12 months
-20°C	for 24 months

ExcelDye™ 6X DNA Loading Dye

DL1000 (5 ml x2) DL2000 (5 ml x2) DL3000 (5 ml x2) DL4000 (5 ml x2)

Description

The SMOBIO ExcelDye™ 6X DNA Loading Dye is pre-mixed buffer for loading and tracking DNA samples during electrophoresis on agarose or polyacrylamide gels. It contains different composition of three dyes (Xylene cyanol FF, Bromophenol blue, and Orange G) for tracking DNA migration. The Xylene cyanol FF, Bromophenol blue and Orange G migrate at approximately 800 bp, 150 bp and 30 bp on a standard 2% agarose gel/0.5X TAE buffer respectively (4,000 bp, 500 bp and 50 bp on 1% agarose gel/0.5X TAE buffer respectively). The included glycerol keeps the DNA at the bottom of the well and the presence of EDTA chelates divalent metal ions to prevent a process of metal-dependent nuclease.

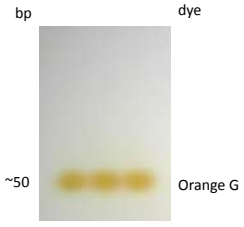
DL1000 ExcelDye™ 6X DNA Loading Dye, Orange

Contents

Component	Volume
ExcelDye™ 6X DNA Loading Dye, Orange	5 ml x 2

Composition
0.15% Orange G
10 mM Tris-HCl (pH 8.0)
60% glycerol
60 mM EDTA

Storage
4°C for 12 months
-20°C for 36 months



1%Agarose Gel,0.5X TAE Buffer

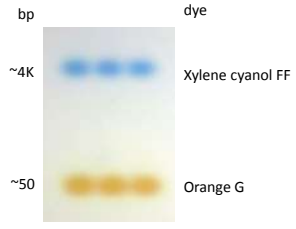
DL2000 ExcelDye™ 6X DNA Loading Dye, Green

Contents

Component	Volume
ExcelDye™ 6X DNA Loading Dye, Green	5 ml x 2

Composition
0.03% Xylene cyanol FF
0.15% Orange G
10 mM Tris-HCl (pH 8.0)
60% glycerol
60 mM EDTA

Storage
4°C for 12 months
-20°C for 36 months



1%Agarose Gel,0.5X TAE Buffer

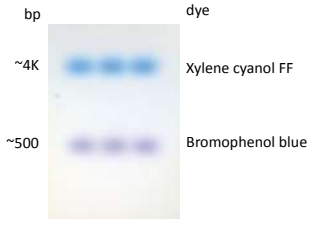
DL3000 ExcelDye™ 6X DNA Loading Dye, Blue

Contents

Component	Volume
ExcelDye™ 6X DNA Loading Dye, Blue	5 ml x 2

Composition
0.03% Xylene cyanol FF
0.03% Bromophenol blue
10 mM Tris-HCl (pH 8.0)
60% glycerol
60 mM EDTA

Storage
4°C for 12 months
-20°C for 36 months



1%Agarose Gel,0.5X TAE Buffer

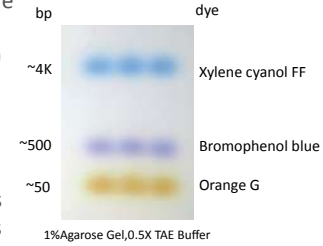
DL4000 ExcelDye™ 6X DNA Loading Dye, Tri-color

Contents

Component	Volume
ExcelDye™ 6X DNA Loading Dye, Tri-color	5 ml x 2

Composition
0.03% Xylene cyanol FF
0.03% Bromophenol blue
0.15% Orange G
10 mM Tris-HCl (pH 8.0)
60% glycerol
60 mM EDTA

Storage
4°C for 12 months
-20°C for 36 months



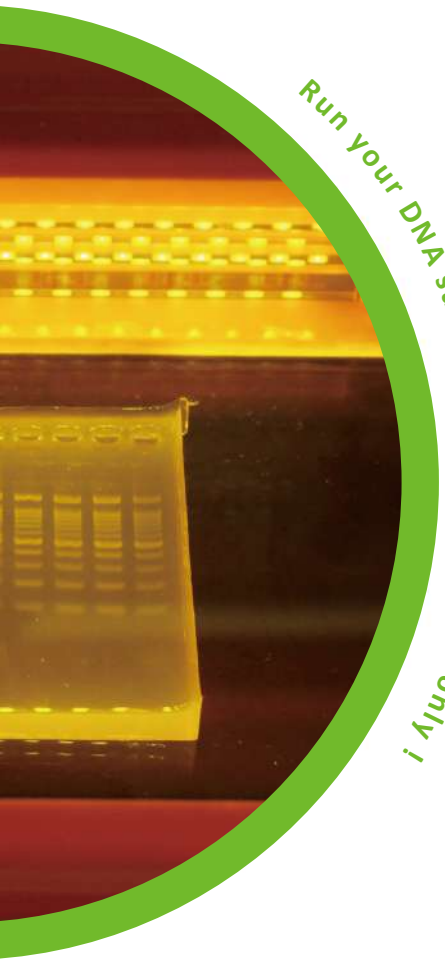
1%Agarose Gel,0.5X TAE Buffer

FluoroDye™ DNA Fluorescent Loading Dye, (Green,6X)

DL5000 (1 ml) **DL5001** (1 ml × 5)

Description

FluoroDye™ DNA Fluorescent Loading Dye is a ready-to-use 6X DNA loading dye designed for fast qualitative electrophoresis analysis. Containing sensitive fluorescent dye with high specific affinity towards double stranded DNA (dsDNA), the FluoroDye™ DNA Fluorescent Loading Dye has negligible background and renders destaining process unnecessary. The FluoroDye™ DNA Fluorescent Loading Dye allows the user to immediately visualize electrophoresis result upon completion or to monitor the electrophoresis in real time. FluoroDye™ DNA Fluorescent Loading Dye is compatible with both the conventional UV gel-illuminating system as well as the less harmful long wavelength blue light illumination system. FluoroDye™ emission as bound to dsDNA is 522 nm, while its excitation peaks are at 270, 370 and 497 nm (Fig. 1).



Contents

FluoroDye™ DNA Fluorescent Loading Dye is stored in 6X concentration in 60% glycerol and buffered with Tris-HCl and EDTA, containing Bromophenol blue, Xylene cyanol FF, and Orange G as tracking dyes.

Storage

Protected from light
-20°C for 24 months

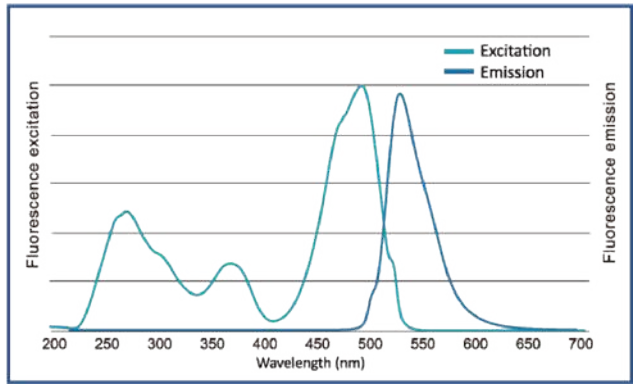


Fig. 1. DL5000 FluoroDye™ DNA Fluorescent Loading Dye emission as bound to dsDNA is 522 nm while its excitation peaks are at 270, 370 and 497 nm.

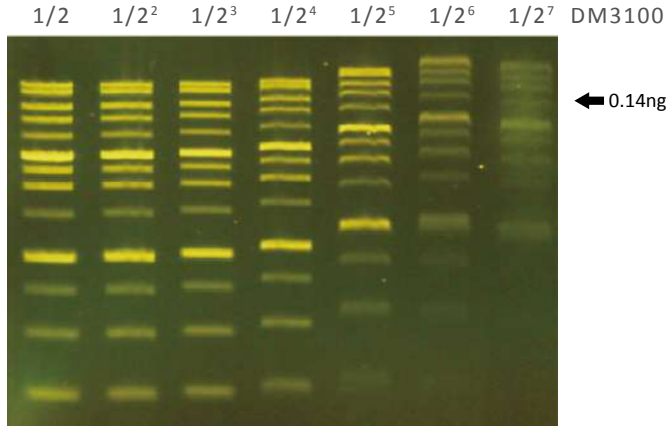


Fig. 2. FluoroDye™ DNA Fluorescent Loading Dye is capable of detecting dsDNA fragments down to 0.14 ng.

FluoroStain™ DNA Fluorescent Staining Dye, (Green, 10,000X)

DS1000 (500 µl) **DS1001** (500 µl × 5)

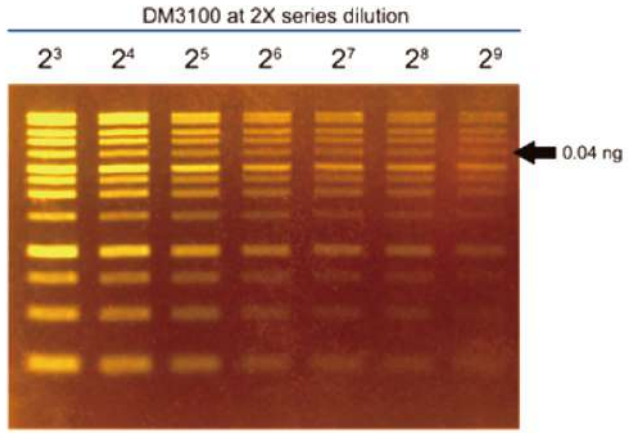


Fig. 1. FluoroStain™ DNA Fluorescent Staining Dye exhibits extreme sensitivity when detecting dsDNA.

Description

FluoroStain™ DNA Fluorescent Staining Dye is designed to be a safer replacement for conventional Ethidium bromide (EtBr) which poses a significant health and safety hazard for its users (Fig. 3). FluoroStain™ DNA Fluorescent Staining Dye offers at least 10 times greater sensitivity in DNA detection levels, and is capable of detecting double stranded DNA (dsDNA) fragments up to 0.04 ng in electrophoresis analysis (Fig. 1).

FluoroStain™ DNA Fluorescent Staining Dye shows a high specificity to dsDNA, with negligible background signal, making the destaining process entirely optional. FluoroStain™ DNA Fluorescent Staining Dye is compatible with both the conventional UV gel-illuminating systems as well as the less harmful long wavelength blue light illumination systems. The emission when bound to dsDNA is 522 nm, while its excitation peaks are at 270, 370 and 497 nm (Fig. 2)

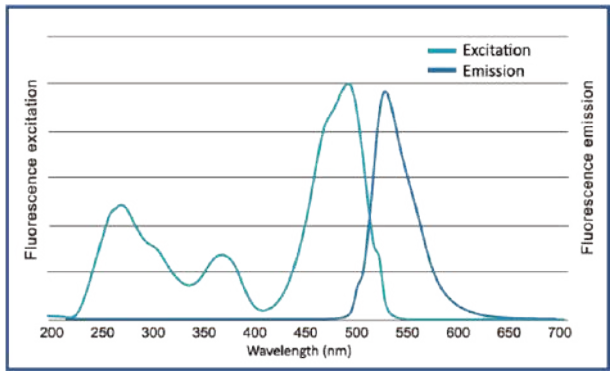


Fig. 2. FluoroStain™ DNA fluorescent Staining Dye (Green, 10,000X), emission as bound to dsDNA is 522 nm while its excitation peaks are at 270, 370 and 497 nm.

Contents

Proprietary dye in a 10,000X concentration.

Storage

Protected from light

4°C	for 12 months
-20°C	for 24 months

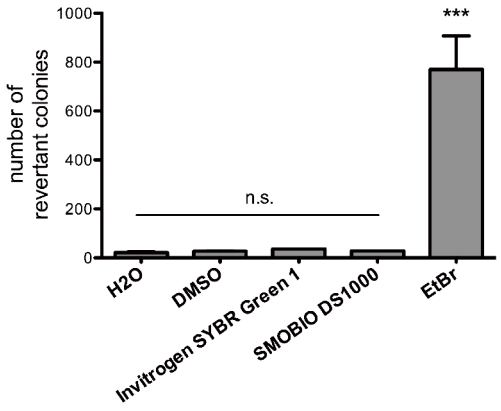


Fig. 3. FluoroStain™ DNA Fluorescent Staining Dye shows no mutagenic activity in the Ames test.

FluoroVue™ Nucleic Acid Gel Stain (10,000X)

NS1000 (500 µl) NS1001 (500 µl × 5)

Description

FluoroVue™ Nucleic Acid Gel Stain (10,000X) is specially designed for in-gel use and is a safer replacement for conventional Ethidium bromide (EtBr), which poses a significant health and safety hazard its users (Fig.1). It is a fluorescent stain which offers high sensitivity detection of double-stranded or single-stranded DNA and RNA in a convenient manner. FluoroVue™ Nucleic Acid Gel Stain offers high sensitivity (Table 1 and Fig.2) that is several times greater than EtBr.

FluoroVue™ Nucleic Acid Gel Stain is compatible with both conventional UV gel-illumination systems as well as harmless long wavelength blue light illumination systems, like B-BOX™. When bound to nucleic acids, FluoroVue™ Nucleic Acid Gel Stain has a fluorescent excitation maximum of ~250 and ~482 nm, and an emission maximum of ~509 nm (Fig. 3). Therefore, it can replace EtBr without the need of changing existing lab imaging systems.

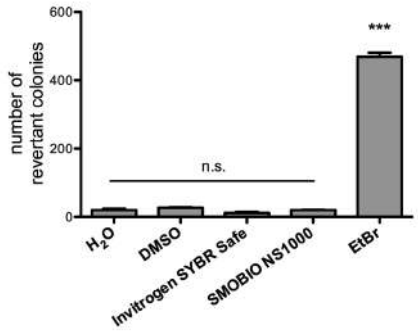


Fig. 1. FluoroVue™ Nucleic Acid Gel Stain shows no mutagenic activity in the Ames test.

Contents

Proprietary dye in a 10,000X concentration.

Storage

Protected from light
4°C for 12 months
-20°C for 24 months

Table 1. Different staining methods for using the FluoroVue™ Nucleic Acid Gel Stain

Staining methods[1]	Required dye[2]	Sensitivity[3]	Convenience
In- gel staining	4 µl	0.14 ng	Very good
Staining during electrophoresis	30 µl	0.56 ng	Very good
Post stain	10 µl	0.56 ng	Good

1 For detailed protocols of different staining methods: please see the product information. We recommend using an in-gel staining method for optimal effect.

2 With a mini horizontal gel electrophoresis system: Combine 40 ml of agarose gel with 300 ml running buffer. The regular post staining buffer volume is 100 ml.

3 Sensitivity is evaluated according to the 4 kb band of DM3100.

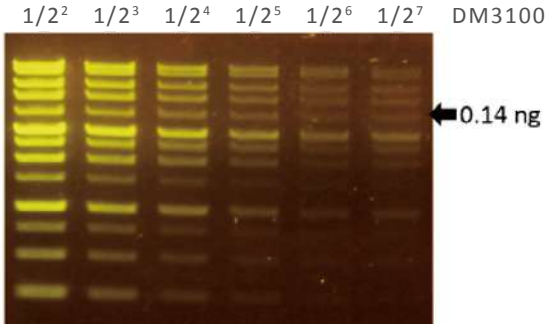


Fig. 2. The FluoroVue™ Nucleic Acid Gel Stain shows a green-yellow fluorescence under blue light excitation. The sensitivity of NS1000 is about 0.14 ng (arrow) for a 4 kb fragment

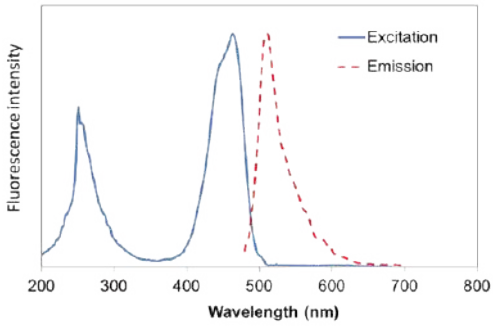


Fig. 3. The emission and exitation spectrum of FluoroVue™ Nucleic Acid Gel Stain


SMOBIO®
Small Bio, Smart Tool
Original Manufacturing
The best quality comes from the best technique

Q-PAGE

Precast Gel

Quick & Quality

QR code for teaching and learning

Features

User-friendly gel cassette:

- Numbered and framed wells for sample loading
- Labeled warning sign and green tape as reminder

Easy compatibility:

- Available as homogeneous and adjusted gradient gels for a wide range of protein separation
- Compatible with most popular protein electrophoresis systems

Enhanced gel performance:

- Enhanced electrophoresis speed / band sharpness
- Better separation / better resolution of small proteins
- Stable for shipping at ambient temperature

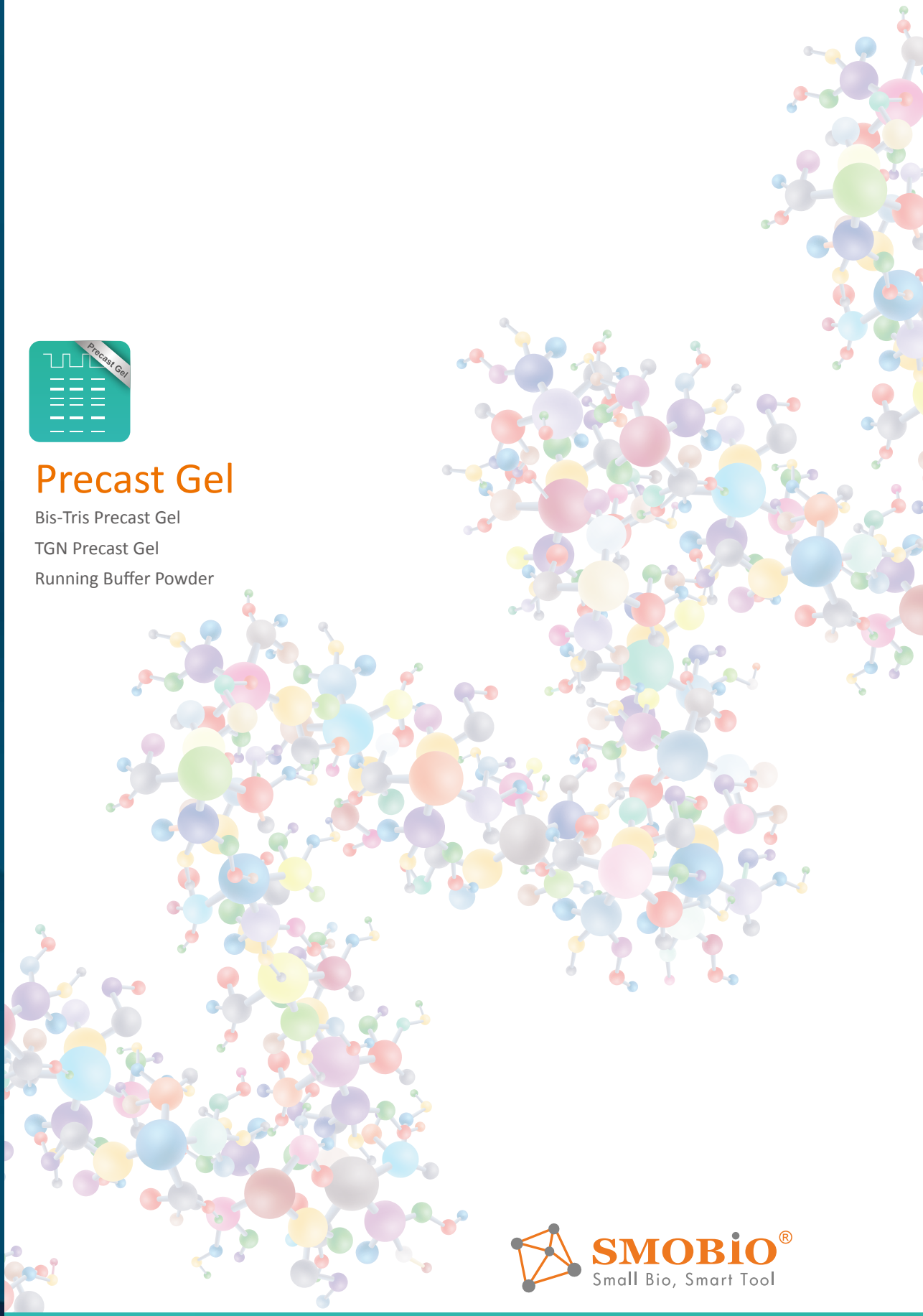
SMOBiO®
Small Bio, Smart Tool

Precast Gel

Bis-Tris Precast Gel

TGN Precast Gel

Running Buffer Powder



SMOBiO®
Small Bio, Smart Tool

Q-PAGE Mini Precast Gel (cassette size :10 x 8.3 cm)

. BioRad System
  . Mini-PROTEAN II
  . Mini-PROTEAN Tetra
. Others

TGN | 12 wells

Acrylamide 10 %
QP4210

Acrylamide 4-15 %
QP4510

TGN | 15 wells

Acrylamide 10 %
QP4220

Acrylamide 4-15 %
QP4520

Bis-Tris | 12 wells

Acrylamide 8 %
QP2110

Acrylamide 12 %
QP2310

Acrylamide 4-12 %
QP2510

Bis-Tris | 15 wells

Acrylamide 8 %
QP2120

Acrylamide 12 %
QP2320

Acrylamide 4-12 %
QP2520

Q-PAGE Midi Precast Gel (cassette size :10 x 10 cm)

. Invitrogen System
  . Mini Gel Tank
  . XCell SureLock Mini-Cell
. Hoefer SE260
. Others

Bis-Tris | 12 wells

Acrylamide 8 %
QP3110

Acrylamide 12 %
QP3310

Acrylamide 4-12 %
QP3510

Bis-Tris | 15 wells

Acrylamide 8 %
QP3120

Acrylamide 12 %
QP3320

Acrylamide 4-12 %
QP3520

TGN | 12 wells

Acrylamide 10 %
QP5210

Acrylamide 4-15 %
QP5510

TGN | 15 wells

Acrylamide 10 %
QP5220

Acrylamide 4-15 %
QP5520

Q-PAGE™ Bis-Tris Precast Gel

(10 gels)

Description

Q-PAGE™ Bis-Tris Precast Gel is a high-performance and easy to use precast polyacrylamide gel for electrophoresis in Bis-Tris buffer system (MOPS or MES). The optimized gel formula allows Q-PAGE™ Bis-Tris Precast Gel to show improved resolution, accurate results, and an extended shelf-life over conventional Laemmli Tris-HCl gels.
Q-PAGE™ Bis-Tris Precast Gels are available in gradient (4 to 12%) and fixed (8% and 12%) concentrations of polyacrylamide in 12-and 15-well formats. Two available cassette sizes, Mini (10 x 8.3 cm) and Midi (10 x 10 cm), are compatible with most popular protein electrophoresis systems. Q-PAGE™ Mini (QP2XXX) Gels are suitable for Bio-Rad® and other systems. Q-PAGE™ Midi (QP3XXX) Gels are suitable for Invitrogen® XCell SureLock® Mini-Cell, Invitrogen® Mini Gel Tank, Hoefer SE260, and other systems.

Features

- User-friendly gel cassette:

Numbered and framed wells for sample loading
Labeled warning sign and green tape as reminder

- Easy compatibility:

Available as homogeneous and adjusted gradient gels for a wide range of protein separation
Compatible with most popular protein electrophoresis systems

- Enhanced gel performance:

Enhanced band sharpness
Better resolution of small proteins
Stable for shipping at ambient temperature

Product list

Bis-Tris				
Cassette size	Mini		Midi	
Well No.	12 well	15 well	12 well	15 well
8%	QP2110	QP2120	QP3110	QP3120
12%	QP2310	QP2320	QP3310	QP3320
4-12%	QP2510	QP2520	QP3510	QP3520

Storage and stability

Store Q-PAGE™ Precast Gels at 4°C for periods up to 12 months.
Do not freeze Q-PAGE™ Precast Gels. Remove tape and comb before electrophoresis.

※Keep Q-PAGE™ Precast Gels flat during storage.

Q-PAGE™ TGN Precast Gel

(10 gels)

Description

Q-PAGE™ TGN (Tris-Glycine Novel) Precast Gels are ready-to-use acrylamide gels for SDS-PAGE running in Tris-Glycine buffer system. With unique formula, Q-PAGE™ TGN Precast Gels perform enhanced speed, better separation, and longer shelf life as compared with conventional Laemmli Tris-HCl gels. The protein migration patterns in Q-PAGE™ TGN series, however, are similar with typical Laemmli Tris-HCl gels, and thus Q-PAGE™ TGN Precast Gels are compatible to traditional SDS-PAGE and subsequent analyses.
Q-PAGE™ TGN Precast Gels are available in gradient (4 to 15%) and fixed (10%) concentrations of polyacrylamide in 12- and 15-well formats. Two available cassette sizes, Mini (10 x 8.3 cm) and Midi (10 x 10 cm), are compatible with most popular protein electrophoresis systems. Q-PAGE™ Mini (QP4XXX) Gels are suitable for Bio-Rad® and other systems. Q-PAGE™ Midi (QP5XXX) Gels are suitable for Invitrogen® XCell SureLock® Mini-Cell, Invitrogen® Mini Gel Tank, Hoefer SE260, and other systems.

Features

- User-friendly gel cassette:

Numbered and framed wells for sample loading
Labeled warning sign and green tape as reminder

- Easy compatibility:

Available as homogeneous and adjusted gradient gels for a wide range of protein separation
Compatible with most popular protein electrophoresis systems

- Enhanced gel performance:

Enhanced band sharpness
Better resolution of small proteins
Stable for shipping at ambient temperature

Product list

TGN				
Cassette size	**Mini**		**Midi**	
Well No.	**12 well**	**15 well**	**12 well**	**15 well**
10%	QP4210	QP4220	QP5210	QP5220
4-15%	QP4510	QP4520	QP5510	QP5520

Storage and stability

Store Q-PAGE™ Precast Gels at 4°C for periods up to 12 months.
Do not freeze Q-PAGE™ Precast Gels. Remove tape and comb before electrophoresis.

※Keep Q-PAGE™ Precast Gels flat during storage.

SMOChem™ 1X MOPS-SDS Running Buffer Powder

BF2000 (For 5000 ml)

Description

1X MOPS-SDS Running Buffer Powder is used for electrophoresis on Q-PAGE™ Bis-Tris Precast Gel or polyacrylamide gels in Bis-Tris buffer system. It is convenient and universal for electrophoresis in Bis-Tris buffer system.

Features

- Reliable:

Rigorous quality control for reproducible separation of protein electrophoresis.

- Convenient:

Premeasured pouches make 1 liter of 1X buffer solution; No pH adjustment is necessary.

- Fast:

Dissolving in minutes and then ready to use.

- Stable:

Powder packaging suitable for long-term storage.

Contents

1X MOPS-SDS Running Buffer Powder, 5 packs

Storage and stability

Room Temperature for 24 months

SMOChem™ 1X Tris-Glycine-SDS Running Buffer Powder

BF4000 (For 5000 ml)

Description

1X Tris-Glycine-SDS Running Buffer Powder is used for electrophoresis on Q-PAGE™ TGN Precast Gel or Laemmli Tris-HCl gels in Tris-Glycine buffer system. It is convenient and universal for electrophoresis in Tris-Glycine buffer system.

Features

- Reliable:

Rigorous quality control for reproducible separation of protein electrophoresis.

- Convenient:

Premeasured pouches make 1 liter of 1X buffer solution; No pH adjustment is necessary.

- Fast:

Dissolving in minutes and then ready to use.

- Stable:

Powder packaging suitable for long-term storage.

Contents

1X Tris-Glycine-SDS Running Buffer Powder, 5 packs

Storage and stability

Room Temperature for 24 months


SMOBiO®
Small Bio, Smart Tool

SMOBiO®
Small Bio, Smart Tool

Protein Markers and Stain

All Blue Protein Marker

3-color Protein Marker and Ladder

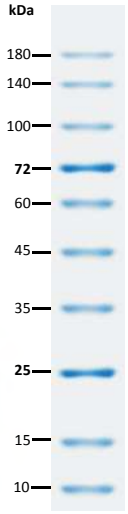
Western Marker

Protein Fluorescent Staining Dye

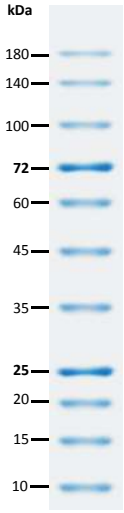
SMOBiO®
Small Bio, Smart Tool

Overview of Protein Markers and Ladders

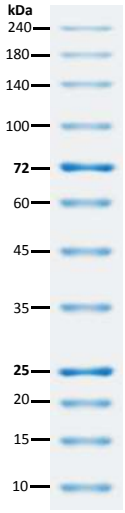
PM1500



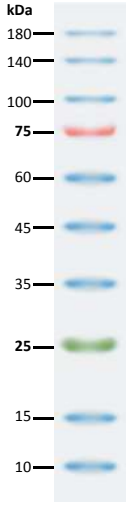
PM1600



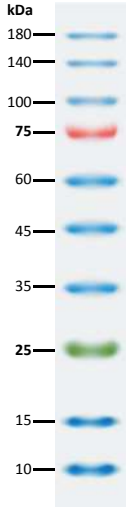
PM1700



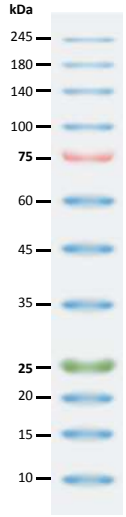
PM2500



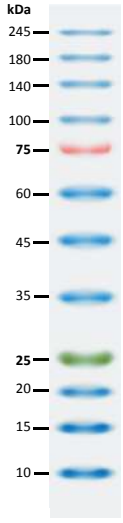
PM2510



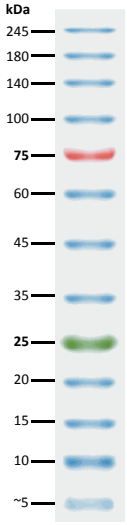
PM2600



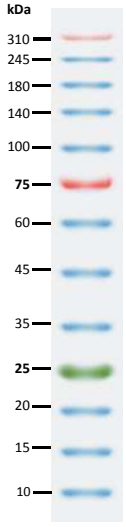
PM2610



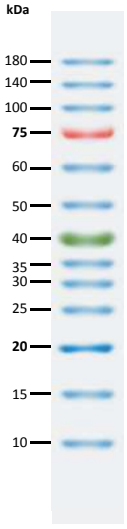
PM2700



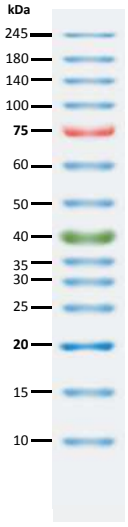
PM2800



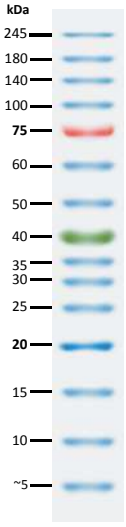
PM5000



PM5100



PM5200



Molecular Weight Range of Protein Markers and Ladders

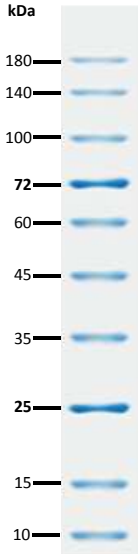
Protein Marker and Ladder Information

Series Name	Catalog Number	MW Range*	Band Number	Band Color	Enhanced (Markered) Bands
ExcelBand™	PM1500	10~180 kDa	10	B	25, 72 kDa
ExcelBand™	PM1600	10~180 kDa	11	B	25, 72 kDa
ExcelBand™	PM1700	10~240 kDa	12	B	25, 72 kDa
ExcelBand™	PM2500	10~180 kDa	10	R/G/B	25, 75 kDa
ExcelBand™	PM2510	10~180 kDa	10	R/G/B	25, 75 kDa
ExcelBand™	PM2600	10~245 kDa	12	R/G/B	25, 75 kDa
ExcelBand™	PM2610	10~245 kDa	12	R/G/B	25, 75 kDa
ExcelBand™	PM2700	5~245 kDa	13	R/G/B	25, 75 kDa
ExcelBand™	PM2800	10~310 kDa	13	R/G/B	25, 75, 310 kDa
ExcelBand™	PM5000	10~180 kDa	13	R/G/B	40, 75 kDa
ExcelBand™	PM5100	10~245 kDa	14	R/G/B	40, 75 kDa
ExcelBand™	PM5200	5~245 kDa	15	R/G/B	40, 75 kDa
YesBlot™	WM1000	15~200 kDa	10	R/G/B	30, 80 kDa

*In Tris-Glycine buffer

ExcelBand™ All Blue Regular Range Protein Marker (9-180 kDa)

PM1500 (250 µl × 2)



Tris-Glycine

Description

The PM1500 ExcelBand™ All Blue Regular Range Protein Marker is a blue protein standard with 10 pre-stained proteins covering a wide range of molecular weights from 10 to 180 kDa in Tris-Glycine buffer (9 to 170 kDa in Bis-Tris (MOPS) buffer and Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore, and two reference bands (at 25 kDa and 72 kDa, respectively) are enhanced in intensity when separated on SDS-PAGE (Tris-Glycine buffer).
The PM1500 ExcelBand™ All Blue Regular Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.5 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

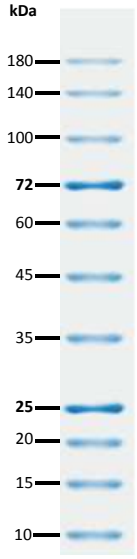
Under suggested conditions, the PM1500 ExcelBand™ All Blue Regular Range Protein Marker resolves 10 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ All Blue Regular Range Plus Protein Marker (9-180 kDa)

PM1600 (250 µl × 2)



Tris-Glycine

Description

The PM1600 ExcelBand™ All Blue Regular Range Plus Protein Marker is a blue protein standard with 11 pre-stained proteins covering a wide range of molecular weights from 10 to 180 kDa in Tris-Glycine buffer (9 to 170 kDa in Bis-Tris (MOPS) buffer and Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore, and two reference bands (at 25 kDa and 72 kDa, respectively) are enhanced in intensity when separated on SDS-PAGE (Tris-Glycine buffer).
The PM1600 ExcelBand™ All Blue Regular Range Plus Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.5 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

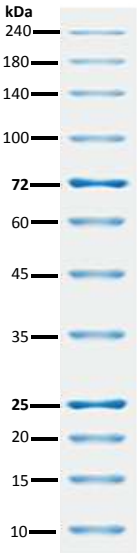
Under suggested conditions, the PM1600 ExcelBand™ All Blue Regular Range Plus Protein Marker resolves 11 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ All Blue Broad Range Protein Marker (9-240 kDa)

PM1700 (250 µl × 2)



Tris-Glycine

Description

The PM1700 ExcelBand™ All Blue Broad Range Protein Marker is a blue protein standard with 12 pre-stained proteins covering a wide range of molecular weights from 10 to 240 kDa in Tris-Glycine buffer (9 to 235 kDa in Bis-Tris (MOPS) buffer and Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore, and two reference bands (at 25 kDa and 72 kDa, respectively) are enhanced in intensity when separated on SDS-PAGE (Tris-Glycine buffer).

The PM1700 ExcelBand™ All Blue Broad Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.5 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

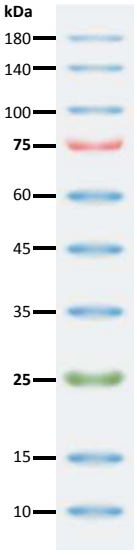
Under suggested conditions, the PM1700 ExcelBand™ All Blue Broad Range Protein Marker resolves 12 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color Regular Range Protein Marker (9-180 kDa)

PM2500 (250 µl × 2)



Tris-Glycine

Description

The PM2500 ExcelBand™ 3-color Regular Range Protein Marker is a ready-to-use three-color protein standard with 10 pre-stained proteins covering a wide range of molecular weights from 10 to 180 kDa in Tris-Glycine Buffer (9 to 170 kDa in Bis-Tris (MOPS) buffer and 10 to 170 kDa in Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore except for two reference bands (one green and one red band at 25 kDa and 75 kDa respectively) when separated on SDS-PAGE (Tris-Glycine buffer). PM2500 ExcelBand™ 3-color Regular Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

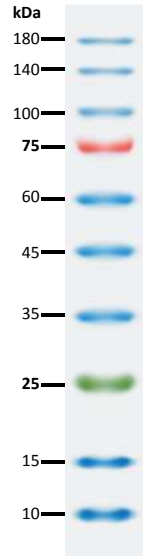
Under suggested conditions, the PM2500 ExcelBand™ 3-color Regular Range Protein Marker resolves 10 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ Enhanced 3-color Regular Range Protein Marker (9-180 kDa)

PM2510 (250 µl × 2) PM2511 (250 µl × 10)



Tris-Glycine

Description

PM2510/PM2511 ExcelBand™ Enhanced 3-color Regular Range Protein Marker is a ready to use three-color protein standard with 10 pre-stained proteins covering a wide range of molecular weights from 10 to 180 kDa (9 to 170 kDa in Bis-Tris (MOPS) buffer and 10 to 170 kDa in Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore except for two reference green and red bands (25 kDa and 75 kDa, respectively) when separated on SDS-PAGE (Tris-Glycine buffer). The PM2510/PM2511 ExcelBand™ Enhanced 3-color Regular Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.2~0.6 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5), 2% SDS, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM2510/PM2511 ExcelBand™ Enhanced 3-color Regular Range Protein Marker resolves 10 major bands in SDS-PAGE (Tris- Glycine, MOPS, and MES buffer) and after Western blotting transfer to a nitrocellulose membrane.

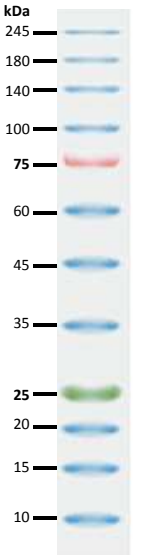
Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color High Range Protein Marker (9-245 kDa)

HR Marker

PM2600 (250 µl × 2)



Tris-Glycine

Description

The PM2600 ExcelBand™ 3-color High Range Protein Marker is a ready-to-use three-color protein standard with 12 pre-stained proteins covering a wide range of molecular weights from 10 to 245 kDa in Tris-Glycine Buffer (9 to 235 kDa in Bis-Tris (MOPS) buffer and 10 to 235 kDa in Bis-Tris (MES) buffer). Proteins are covalently coupled with different chromophores for easy identification of bands, with two reference proteins carrying enhanced intensity corresponding to a green at 25 kDa and red at 75 kDa, respectively, as separated on SDS-PAGE (Tris-Glycine buffer). The PM2600 3-color High Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C) 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM 2600 ExcelBand™ 3-color High Range Protein Marker resolves 12 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

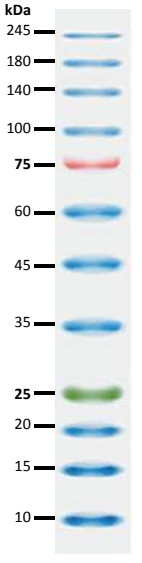
Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ Enhanced 3-color High Range Protein Marker (9-245 kDa)

HR Marker

PM2610 (250 µl × 2) PM2611 (250 µl × 10)



Tris-Glycine

Description

The PM2610/PM2611 ExcelBand™ Enhanced 3-color High Range Protein Marker is a ready-to-use three-color protein standard with 12 pre-stained proteins covering a wide range of molecular weights from 10 to 245 kDa in Tris-Glycine Buffer (9 to 235 kDa in Bis-Tris (MOPS) buffer and 10 to 235 kDa in Bis-Tris (MES) buffer). Proteins are covalently coupled with different chromophores for easy identification of bands, with two reference proteins carrying enhanced intensity corresponding to a green at 25 kDa and red at 75 kDa, respectively, as separated on SDS-PAGE (Tris-Glycine buffer). The ExcelBand™ Enhanced 3-color High Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.2~0.6 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM2610/PM2611 ExcelBand™ Enhanced 3-color High Range Protein Marker resolves 12 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

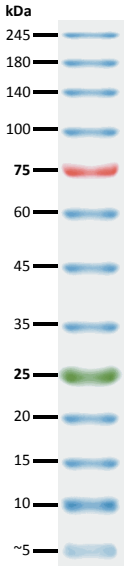
Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color Broad Range Protein Marker (3.5-245 kDa)

BR Marker

PM2700 (250 µl × 2)



Tris-Glycine

Description

The PM2700 ExcelBand™ 3-color Broad Range Protein Marker is a ready-to-use three-color protein standard with 13 pre-stained proteins covering a wide range of molecular weights from 5 to 245 kDa in Tris-Glycine buffer (3.5 kDa to 235 kDa in Bis-Tris (MOPS) buffer and Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore except for two reference bands (one green and one red band at 25 kDa and 75 kDa, respectively) when separated on SDS-PAGE (Tris-Glycine buffer). The PM2700 ExcelBand™ 3-color Broad Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM 2700 ExcelBand™ 3-color Broad Range Protein Marker resolves 13 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

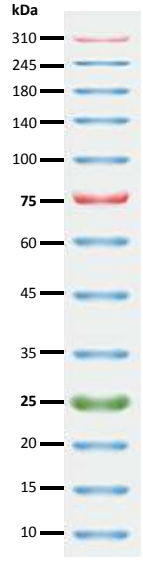
Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color Extra Range Protein Marker (10-310 kDa)

ER Marker

PM2800 (250 µl × 2)



Tris-Glycine

Description

The PM2800 ExcelBand™ 3-color Extra Range Protein Marker is a ready-to-use three-color protein standard with 13 pre-stained proteins covering an extra range of molecular weights from 10 to 310 kDa in Tris-Glycine Buffer (9 to 290 kDa in Bis-Tris (MOPS) buffer and 10 to 290 kDa in Bis-Tris (MES) buffer). Proteins are covalently coupled with a blue chromophore except for three reference bands (one green and two red bands at 25 kDa and 75, 310 kDa respectively) when separated on SDS-PAGE (Tris-Glycine buffer). The PM2800 ExcelBand™ 3-color Extra Range Protein Marker is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM 2800 ExcelBand™ 3-color Extra Range Protein Marker resolves 13 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

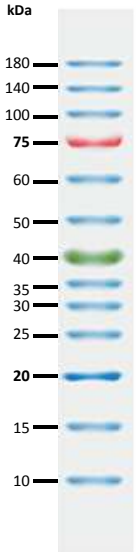
Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color Pre-Stained Protein Ladder, Regular Range (9-180 kDa)

RR Ladder

PM5000 (250 µl × 2)



Tris-Glycine

Description

The PM5000 ExcelBand™ 3-color Pre-Stained Protein Ladder Regular Range is a ready-to-use three-color protein standard with 13 pre-stained proteins covering a wide range of molecular weights from 10 to 180 kDa in Tris-Glycine Buffer (9 to 170 kDa in Bis-Tris (MOPS) buffer and 10 to 170 kDa Bis-Tris (MES) buffer). Proteins are covalently coupled with different chromophores for easy identification of bands, with three reference proteins carrying enhanced intensity corresponding to a blue band at 20 kDa, green at 40 kDa, and red at 75 kDa, respectively, as separated on SDS-PAGE (Tris-Glycine buffer). The PM5000 ExcelBand™ 3-color Pre-Stained Protein Ladder Regular Range is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transferefficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM5000 ExcelBand™ 3-color Pre-Stained Protein Ladder Regular Range resolves 13 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

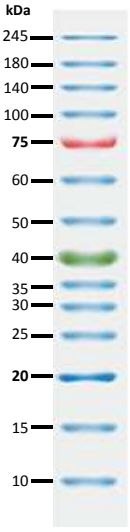
Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color Pre-Stained Protein Ladder, High Range (9-245 kDa)

HR Ladder

PM5100 (250 µl × 2)



Tris-Glycine

Description

The PM5100 ExcelBand™ 3-color Pre-Stained Protein Ladder High Range is a ready-to-use three-color protein standard with 14 pre-stained proteins covering a wide range of molecular weights from 10 to 245 kDa in Tris-Glycine Buffer (9 to 235 kDa in Bis-Tris (MOPS) buffer and 10 to 235 kDa in Bis-Tris (MES) buffer). Proteins are covalently coupled with different chromophores for easy identification of bands, with three reference proteins carrying enhanced intensity corresponding to a blue band at 20 kDa, green at 40 kDa, and red at 75 kDa, respectively, as separated on SDS-PAGE (Tris-Glycine buffer). The PM5100 3-color Pre-Stained Protein Ladder High Range is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate (pH 7.5 at 25°C), 2% SDS, 0.2 mM Dithiothreitol, 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

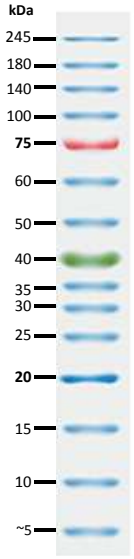
Under suggested conditions, the PM5100 ExcelBand™ 3-color Pre-Stained Protein Ladder High Range resolves 14 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

Storage

4°C	for 3 months
-20°C	for long term storage

ExcelBand™ 3-color Pre-Stained Protein Ladder, Broad Range (3.5-245 kDa)

PM5200 (250 µl × 2)



Tris-Glycine

Description

The PM5200 ExcelBand™ 3-color Pre-Stained Protein Ladder Broad Range is a ready-to-use three-color protein standard with 15 pre-stained proteins covering a wide range of molecular weights from 5 to 245 kDa in Tris-Glycine Buffer (3.5 to 235 kDa in Bis-Tris (MOPS) buffer and Bis-Tris (MES) buffer). Proteins are covalently coupled with different chromophores for easy identification of bands, with three reference proteins carrying enhanced intensity corresponding to a blue band at 20 kDa, green at 40 kDa, and red at 75 kDa, respectively, as separated on SDS-PAGE (Tris-Glycine buffer). The PM5200 3-color Pre-Stained Protein Ladder Broad Range is designed for monitoring protein separation during SDS-polyacrylamide gel electrophoresis, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the size of proteins.

Contents

Approximately 0.1~0.4 mg/ml of each protein in the buffer (20 mM Tris-phosphate, pH 7.5 at 25°C, 2% SDS, 0.2 mM Dithiothreitol 3.6 M Urea, and 15% (v/v) Glycerol).

Quality Control

Under suggested conditions, the PM5200 ExcelBand™ 3-color Pre-Stained Protein Ladder Broad Range resolves 15 major bands in SDS-PAGE (Tris-Glycine, MOPS, and MES buffer) and after Western blotting to a nitrocellulose membrane.

Storage

4°C	for 3 months
-20°C	for long term storage

YesBlot™ Western Marker I

WM1000 (250 µl)

Description

YesBlot™ Western Marker I is a ready-to-use mixture with ten IgG-binding proteins covering a wide range of molecular weights from 15 to 200 kDa in Tris- Glycine buffer.
YesBlot™ Western Marker I performs dual functions. First, it contains 4 pre-stained proteins (10, 25, 45 and 70 kDa) for monitoring protein separation during SDS-PAGE, verification of Western transfer efficiency on membranes (nitrocellulose, PVDF, or nylon) and for approximating the protein size. Second, ten IgG-binding proteins can be immuno- detected on film or by CCD imaging.
YesBlot™ Western Marker I is compatible for chemiluminescent, fluorescent, chromogenic or other detection systems. In addition, YesBlot™ Western Marker I has two reference bands with enhanced intensity (at 30 kDa and 80 kDa).
The marker is supplied in gel loading buffer and is ready to use. **Do NOT heat, dilute, or add reducing agents before loading.**

Contents

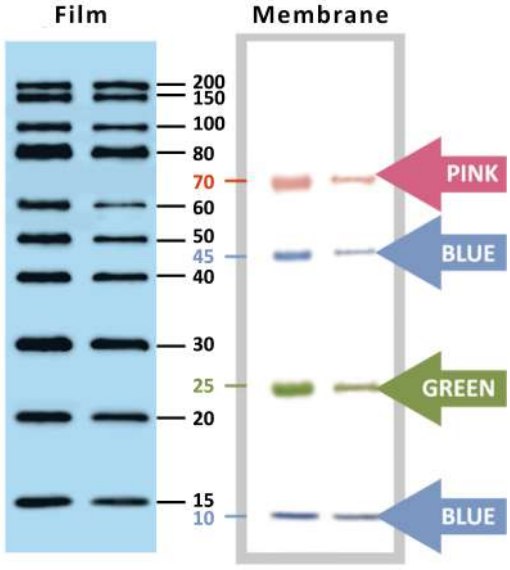
The YesBlot™ Western Marker I contains recombinant IgG binding proteins, prestained recombinant proteins, Glycerol, and SDS.

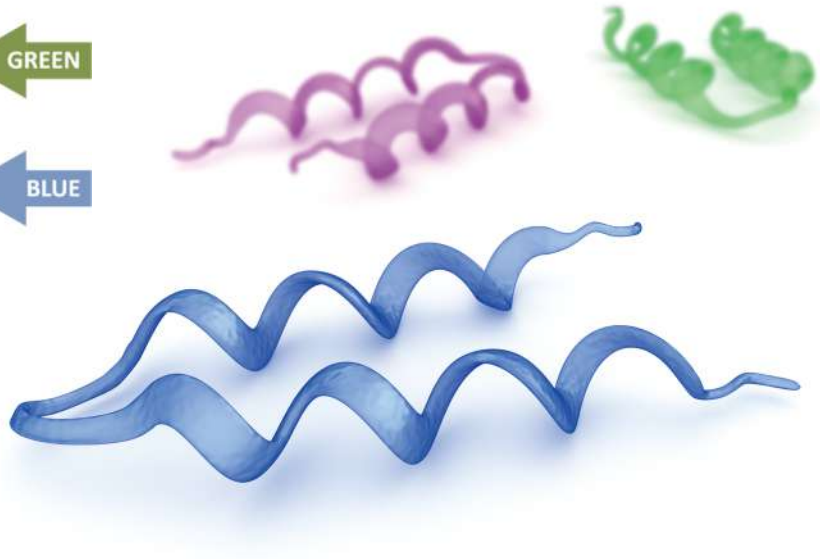
Quality Control

Under suggested conditions, the YesBlot™ Western Marker I resolves 4 pre-stained bands on the membrane and 10 bands after primary and secondary antibodies binding followed by chemiluminescent detection.

Storage

4°C	for 3 months
-20°C	for long term storage





FluoroStain™ Protein Fluorescent Staining Dye (Red, 1000X)

PS1000 (1 ml × 1) **PS1001** (1 ml × 5)

Description

The FluoroStain™ Protein Fluorescent Staining Dye (PS1000/PS1001) is designed to substitute the common Coomassie Blue protein staining method, offering greater sensitivity and ease of operation. Unlike Coomassie Blue stain, the FluoroStain™ Protein Fluorescent Staining Dye binds to protein with high specificity, making destaining process an option rather than a requirement. With further reduction of background signals via destaining process, the FluoroStain™ Protein Fluorescent Staining Dye is capable of achieving detection level parallel to silver stain without specialized imaging equipment (Fig. 1), making it one of the most sensitive dyes available. In addition to its remarkable sensitivity, the FluoroStain™ Protein Fluorescent Staining Dye brings a more reliable and safer user experience, since the stained gel can be visualized with blue-light illumination,users avoid the risk of skin/ eye damage caused by UV light. For best result, we suggest using the B-BOX™ Blue Light LED epi-illuminator to visualize and analyze the gel stained with FluoroStain™ Protein Fluorescent Staining Dye.

The FluoroStain™ Protein Fluorescent Staining Dye is compatible to the analysis of mass spectra, i.e. LC-MS/MS, MALDI-TOF, etc. (Fig. 2). The FluoroStain™ Protein Fluorescent Staining Dye is also for a less toxic (Fig. 3) and more environmentally-friendly procedure for protein staining, because it's designed to be used in a aqueous solution of ethanol and phosphoric acid for staining, avoiding the use of conventional methanol / acetic acid solution which is much more harmful and stimulating.

Spectral Characteristics

When it is bound with bovine serum albumin (BSA), the fluorescent emission of FluoroStain™ Protein Fluorescent Staining Dye can be excited by UV and blue light sources, with excitation peaks around 369 and 517 nm and emission at 605 nm (Fig. 4). In absence of BSA, FluoroStain™ Protein Fluorescent Staining Dye shows ignorable fluorescence as compared with protein-bound form, therefore giving a clear background for photographic analysis. These spectral characteristics made this fluorescent dye compatible with a wide variety of gel reading facilities, including UV/ blue light epi- and transilluminator, argon laser and mercury-arc lamp excitation gel scanners.

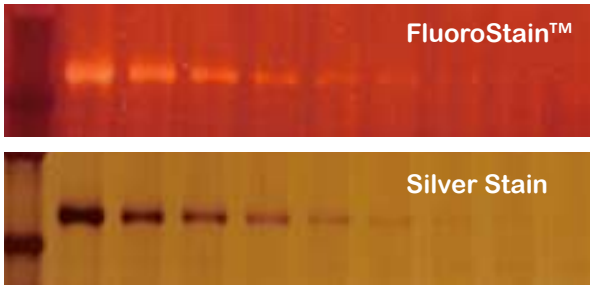


Fig.1. Remarkable sensitivity of the FluoroStain™ Protein Fluorescent Staining Dye (PS1000/PS1001) in comparison with Silver Stain.

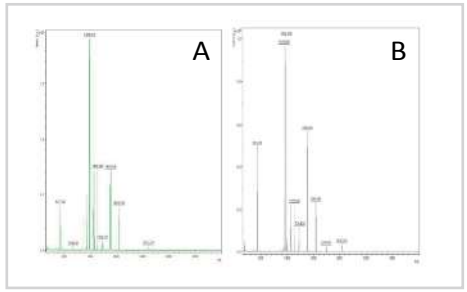


Fig. 2. Comparison of MALDI-TOF mass spectra of bovine serum albumin (BSA) stained with FluoroStain™ Protein Fluorescent Staining Dye (A) and with Coomassie Blue (B). BSA proteins are seperated on an SDS-PAGE, stained with fluorescent dye or conventional Coomassive Blue, followed by trypsin digestion in gel, and then analyzed by MALDI-TOF.

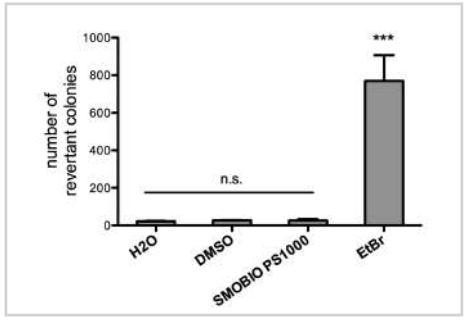


Fig. 3. FluoroStain™ Protein Fluorescent Staining Dye shows no mutagenic activity in the Ames test.

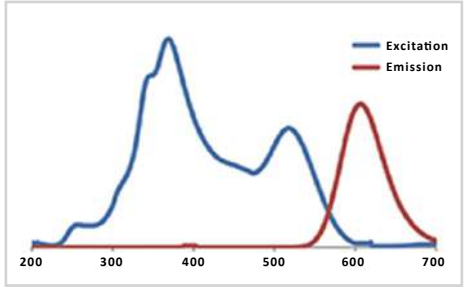


Fig. 4. The Excitation and Emission Spectra of FluoroStain™ Protein Fluorescent Staining Dye (PS1000/PS1001) bound with BSA protein.

Working Reagent Preparation

1:1000 dilution in 40% ethanol and 2% H_3PO_4

Storage

Protected from light
-20°C for 24 months

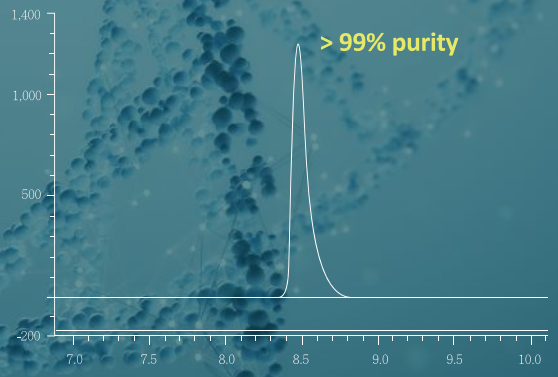
Deoxynucleotide(dNTP)

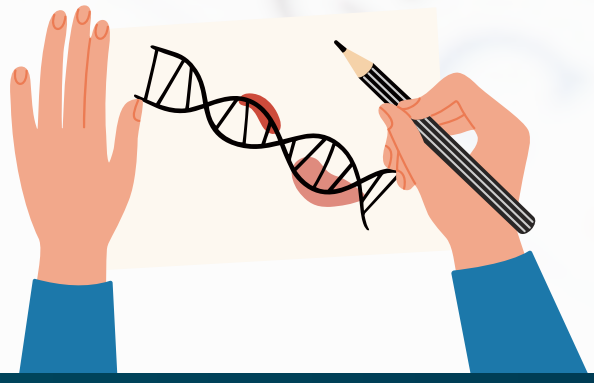
dNTP Single Solution

dNTP Mix

SMOBiO®
Small Bio, Smart Tool

Cat. No.	Product Description
CD1010	Deoxynucleotide (dNTP) Mix, 10 mM each (40 mM total), 200 µl
CD1011	Deoxynucleotide (dNTP) Mix, 10 mM each (40 mM total), 200 µl x 5
CD1020	Deoxynucleotide (dNTP) Mix, 25 mM each (100 mM total), 500 µl
CD1021	Deoxynucleotide (dNTP) Mix, 25 mM each (100 mM total), 500 µl x 6
CD3000	dATP Solution - Sodium Salt (100 mM), 25 ml
CD3001	dATP Solution - Sodium Salt (100 mM), 100 ml
CD4000	dTTP Solution - Sodium Salt (100 mM), 25 ml
CD4001	dTTP Solution - Sodium Salt (100 mM), 100 ml
CD5000	dCTP Solution - Sodium Salt (100 mM), 25 ml
CD5001	dCTP Solution - Sodium Salt (100 mM), 100 ml
CD6000	dGTP Solution - Sodium Salt (100 mM), 25 ml
CD6001	dGTP Solution - Sodium Salt (100 mM), 100 ml
CD7000	dUTP Solution - Sodium Salt (100 mM), 25 ml
CD7001	dUTP Solution - Sodium Salt (100 mM), 100 ml





SMOChem™ dNTP Single Solution

Description

Highly quality dNTPs are a vital requirement for successful PCR, as the presence of contaminating impurities will result in a decrease in amplification sensitivity and yield of PCR product. SMOChem™ dNTP Single Solutions are ready-to-use dNTP aqueous solutions include 100 mM solutions of dATP, dCTP, dGTP , dTTP and dUTP respectively. SMOChem™ dNTPs undergo highly stringent purification steps to offer greater than 99% purity and are tested for the absence of DNase, RNase, Protease, and Nicking activity. dNTPs are suitable for application in PCR, sequencing, fill-in reactions,cDNA synthesis, nick translation, and TdT-tailing reactions. SMOChem™ dNTP Single Solution supplied as sodium salt in purified water (pH 8.5).

Features

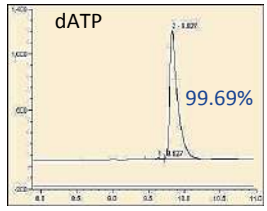
- Greater than 99% purity determined by HPLC
- Ideal for use in PCR amplification and cDNA synthesis
- Long shelf-life
- Nuclease and ribonuclease free

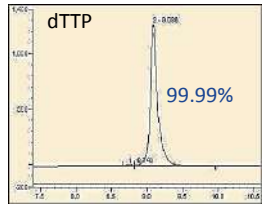
Contents

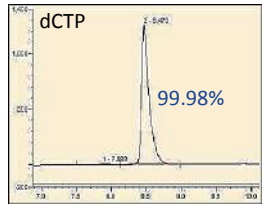
Component	Cat. No.	Volume
dATP Solution- Sodium Salt (100 mM)	CD3000 CD3001	25 ml 100 ml
Component	**Cat. No.**	**Volume**
dTTP Solution- Sodium Salt (100 mM)	CD4000 CD4001	25 ml 100 ml
Component	**Cat. No.**	**Volume**
dCTP Solution- Sodium Salt (100 mM)	CD5000 CD5001	25 ml 100 ml
Component	**Cat. No.**	**Volume**
dGTP Solution- Sodium Salt (100 mM)	CD6000 CD6001	25 ml 100 ml
Component	**Cat. No.**	**Volume**
dUTP Solution- Sodium Salt (100 mM)	CD7000 CD7001	25 ml 100 ml

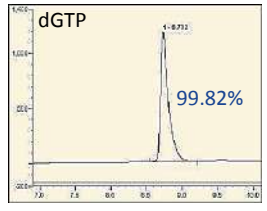
Storage

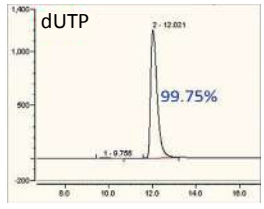
-20℃ for 24 months











SMOBIO's dNTPs show greater than 99% purity using HPLC analysis.

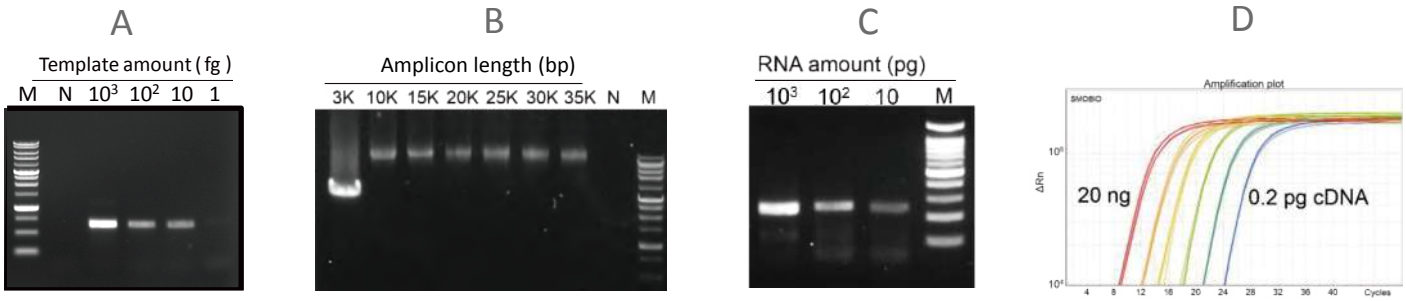
SMOChem™ dNTP Mix

Description

The SMOChem™ Deoxynucleotide (dNTP) Mix is an aqueous solution that contains an equimolar solution of ultrapure dATP, dCTP, dGTP and dTTP, each at a concentration of 10 mM or 25 mM at pH 8.5. The dNTP Mix is designed for many different molecular biology applications that involved in DNA synthesis or labeling, such as PCR, real-time PCR, DNA sequencing, reverse transcription, primer extension, and etc. The dNTP Mix is free of exo-deoxyribonuclease and endo-deoxyribonuclease as well as ribonuclease activity. The dNTP Mix offers the possibility to reduce the number of pipetting steps and the risk of reaction set up errors.

Features

- Greater than 99% purity determined by HPLC
- Ideal for use in PCR amplification and cDNA synthesis
- Long shelf-life
- Nuclease and ribonuclease free



SMOBIO's dNTPs have highly performance for general PCR (A), long range PCR (B), RT-PCR (C), and real-time PCR (D).

Contents

Component	Cat. No.	Volume
Deoxynucleotide (dNTP) Mix, 10 mM each (40 mM total)	CD1010 CD1011	200 µl 200 µl × 5

Component	Cat. No.	Volume
Deoxynucleotide (dNTP) Mix, 25 mM each (100 mM total)	CD1020 CD1021	500 µl 500 µl × 6

Storage

-20℃ for 24 months


SMOBiO®
Small Bio, Smart Tool

DNA Amplification

High Fidelity PCR

Standard PCR

Extraction-free PCR

Hot Start PCR

Real-time PCR

SMOBiO®

Small Bio, Smart Tool

SMOBIO DNA Polymerase Information

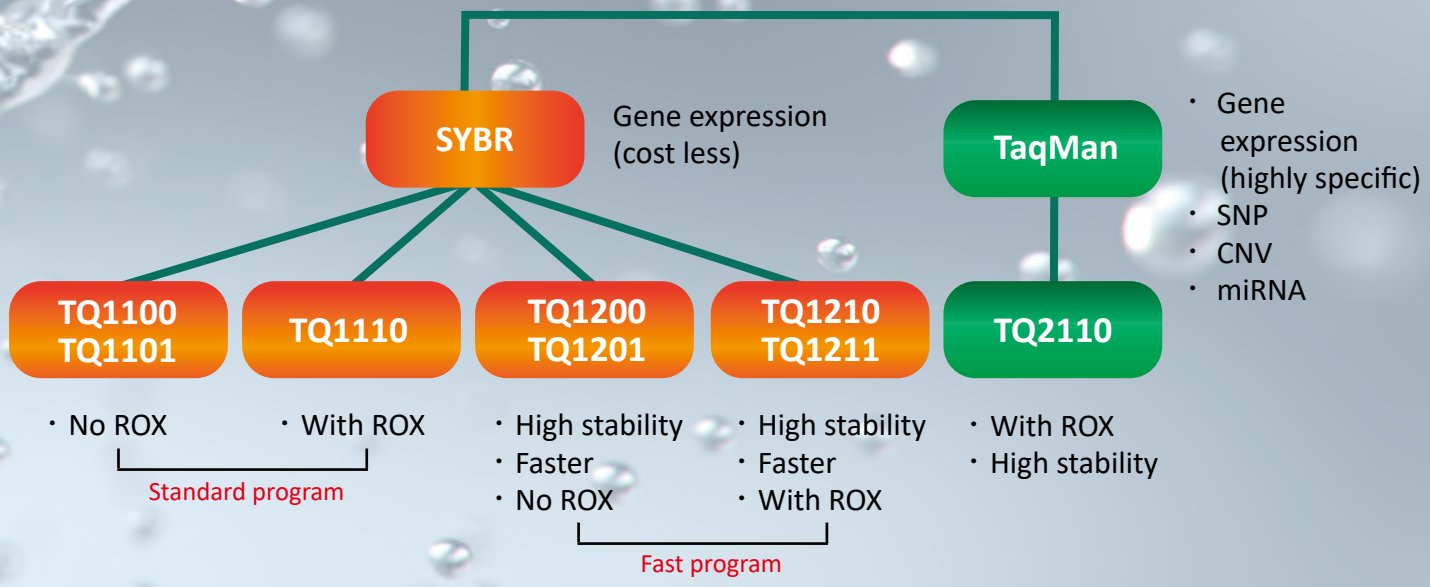
	High Fidelity PCR			Standard PCR	Extraction free PCR	Hot Start PCR
Catalog number	TF1000	TF3000	TK1000	TP1000	TP2000	TP5000
DNA polymerase	SMO-HiFi	G-HiFi	Klen-Taq	Taq	Blood direct	Hot Start II
Properties						
Fidelity (comapred to Taq)	70X	70X	4X	1X	1X	1X
Amplification length	12 kb	40 kb	10 kb	8 kb	≤ 2kb	8 kb
Extenstion rate	1 kb/ 10 s	1 kb/ 7 s	1 kb/ 20 s	1 kb/ 20 s	1 kb/ 20 s	1 kb/ 20 s
Product end structure	blunt end	blunt end	3'A/blunt end	3'A	3'A	3'A
3'→5' exonuclease activity	Yes	Yes	Yes	No	No	No
5'→3' exonuclease activity	No	No	No	Yes	Yes	Yes
Units/ 50 µl reaction volume	1U	1U	1.25U	1.25~5U	1.25~5U	1.25~5U
Annealing temperature	Tm-5	Tm-5	Tm-5	Tm-5	Tm-5	Tm-5
Applications						
Routine PCR	✓	✓	✓	★	✓	★
Colony PCR				★		★
High fidelity	★	★	✓			
High yield PCR	★	✓	✓			✓
High reaction rate	★	★				
Long amplicon	✓	★	✓			
GC rich template	★	★				
AT rich template			✓	✓	✓	✓
Multiplex PCR	✓	✓		✓	✓	✓
Site-directed mutagenesis	★	★				
Additional Formats						
Master Mix				TP1100/TP1120		
Master Dye Mix				TP1200	TP2100	
Fluorescent Master Mix				TP1260		

✓ : General use ★ : Recommended choice

SMOBIO Q-PCR Master Mix Information

Product Name	ExcelTaq™ 2X Q-PCR Master Mix (SYBR, no ROX)	ExcelTaq™ 2X Q-PCR Master Mix (SYBR, ROX)	ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX)	ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, ROX)	ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX)
Cat. No.	TQ1100/TQ1101	TQ1110	TQ1200/TQ1201	TQ1210/TQ1211	TQ2110
Detection chemistry	SYBR	SYBR	SYBR	SYBR	TaqMan
Blue contrast dye	✓	✓	✓	✓	X
ROX reference dye	X	✓	X	✓	✓
Time required for enzyme activation	10 min	10 min	2 min	2 min	10 min
qPCR program	Standard	Standard	Fast and Standard	Fast and Standard	Standard

How to choose SMOBIO Q-PCR Master Mix



SMO-HiFi™ DNA Polymerase

Blunt end | 3'→5' | HiFi | GC-rich

TF1000 (1 U/µl, 100 U)

Description

The SMO-HiFi™ DNA Polymerase is a new genetically modified, recombinant DNA polymerase with fidelity 70 times higher than *Taq* DNA polymerase during amplification, as well as very high elongation rate. Being highly thermostable, SMO-HiFi™ DNA Polymerase can remain viable even after being subjected to boiling for 2 minutes. The SMO-HiFi™ DNA Polymerase is also designed to operate in much lower Mg^{2+} concentration as compared to other DNA polymerase products.

Contents

Component	Volume
SMO-HiFi™ DNA Polymerase (1 U/µl)	100 µl
10X HiFi™ Buffer	600 µl
25mM $MgSO_4$	500 µl
dNTPs Mix (2 mM each)	600 µl
DMSO	600 µl

Features

- 5'→3' DNA polymerase activity
- 3'→5' exonuclease (proofreading) activity
- High reaction rate (up to 1 kb/10 second)
- High fidelity, 70 times higher than *Taq* DNA polymerase
- Blunt end amplicons
- Thermo-stable: half-life is more than 10 hrs at 95°C

Storage Buffer

50 mM Tris-HCl (pH 8.0), 50 mM KCl, 0.1 mM EDTA, 1 mM DTT, stabilizers, and 50% (v/v) glycerol

Unit Definition

One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTPs into acid-insoluble material in 30 minutes at 74°C.

Storage

-20°C for 24 months

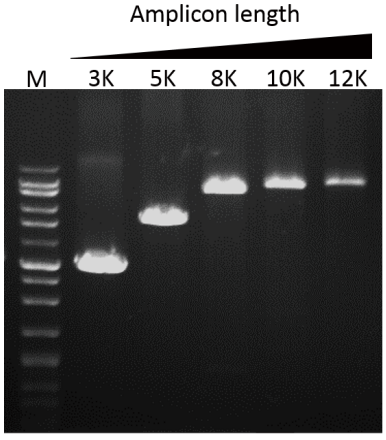


Fig. 1. SMO-HiFi™ DNA Polymerase's high processability enables reliable amplification of λDNA up to 12 kb in length (M: DM5100).

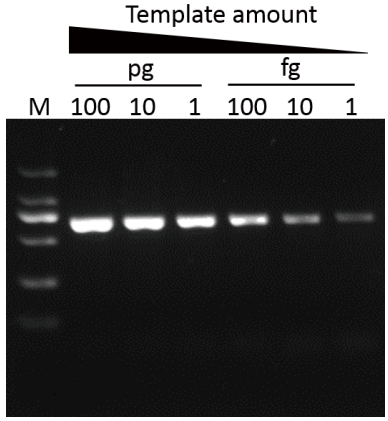


Fig. 2. SMO-HiFi™ DNA Polymerase can amplify PCR products from as little as 1 fg of template DNA (M: DM2000).

G-HiFi™ DNA Polymerase

Blunt end | 3'→5' | HiFi | GC-rich

TF3000 (1 U/µl, 100 U)

Description

The G-HiFi™ DNA Polymerase is a new genetically modified, recombinant DNA polymerase suitable for GC-rich templates that are difficult to amplify. The fidelity of G-HiFi™ DNA Polymerase is 70 times higher than that of *Taq* DNA polymerase. The high extension rate of G-HiFi™ DNA Polymerase is achieved by blending the DNA polymerase with an elongation enhancer. The optimized 5X G-HiFi™ Buffer includes special ingredients that suppress non-specific amplification as well as plateau effect produced by conventional PCR. With the optimized 5X G-HiFi™ Buffer, G-HiFi™ DNA Polymerase is capable to amplify most templates, such as longer targets (up to 40 kb from lambda DNA) and that contain GC-rich sequences.

Contents

Component	Volume
G-HiFi™ DNA Polymerase (1 U/µl)	100 µl
5X G-HiFi™ Buffer	1200 µl
dNTPs Mix (2 mM each)	600 µl

Features

- 5'→3' DNA polymerase activity
- 3'→5' exonuclease (proofreading) activity
- Suitable for GC-rich templates
- High reaction rate: 7 seconds/kb
- High fidelity: 70 times higher than *Taq* polymerase
- Generates blunt end amplicons
- Vast elongation capability (up to 40 kb)
- Thermo-stable for more than 10 hrs at 95°C.

Unit Definition

One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTPs into acid-insoluble material in 30 minutes at 74°C.

Storage Buffer

50 mM Tris-HCl (pH 8.0), 50 mM KCl, 0.1 mM EDTA, 1 mM DTT, stabilizers, and 50% (v/v) glycerol

Storage

-20°C for 24 months

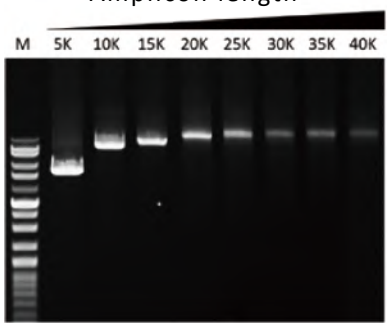


Fig. 1. G-HiFi™ DNA Polymerase's high processability enables reliable amplification of λDNA up to 40 kb in length (M: DM5100).

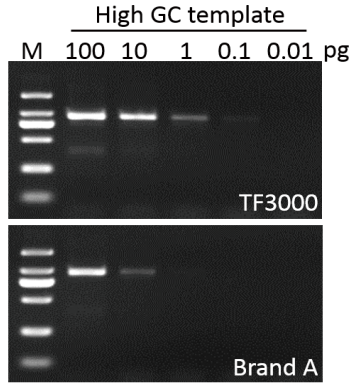


Fig. 2. G-HiFi™ DNA Polymerase performs higher sensitivity for high GC content templates (GC: 71%) compare to high fidelity DNA Polymerase from Brand A (M: DM2000).

ExcelTaq™ Klen-Taq DNA Polymerase

TK1000 (5 U/µl, 500 U)

Description

The ExcelTaq™ Klen-Taq DNA Polymerase is a specially blended enzyme mix containing KlenTaq-1 DNA polymerase (a 5'-exo-minus, N-terminal deletion of *Taq* DNA polymerase) and a small amount of a proof-reading DNA polymerase. This unique blending helps to improve the fidelity, yield and processivity of the resultant PCR process. Klen-Taq is also highly robust, showing high tolerance of varying concentrations of Mg^{2+}; it is highly thermostable and has four times the fidelity compared to *Taq* DNA polymerase. The Excel-Taq™ Klen-Taq DNA Polymerase is ideal for DNA amplifications 0.5-5 kb in length on genomic DNA, and up to 10 kb on less complex templates.

Features

- 5'→3' DNA polymerase activity
- 3'→5' exonuclease activity (proofreading)
- Thermo-stable: up to 98°C during PCR denaturing step
- 4X fidelity compared to *Taq* DNA polymerase
- Robust PCR performance, resistant to variance in PCR conditions

Contents

Component	Volume
ExcelTaq™ Klen-Taq DNA Polymerase (5 U/µl)	100 µl
10X Klen Buffer	1.2 ml

ExcelTaq™ Klen-Taq Polymerase mixture

DNA polymerase,	5 units/µl
Proofreading DNA polymerase	Trace

Storage Buffer

40 mM Tris-HCl (pH 7.5), 50 mM KCl, 25 mM $(NH_4)_2SO_4$, 0.1 mM EDTA, 5.0 mM 2-mercaptoethanol, stabilizer, 50% (v/v) glycerol

10X Klen Buffer

400 mM Tricine-KOH (pH 9.2), 150 mM KOAc, 35 mM Mg $(OAc)_2$, 750 µg/ml BSA

Unit Definition

One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into an acid-insoluble material in 30 minutes at 74°C.

Storage

-20°C for 24 months

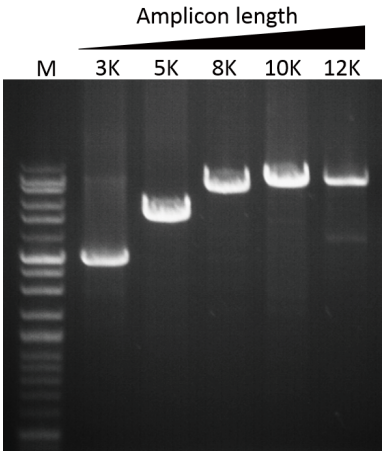


Fig. 1. ExcelTaq™ Klen-Taq DNA Polymerase can amplify PCR products from λDNA up to 12 kb (M: DM5100).

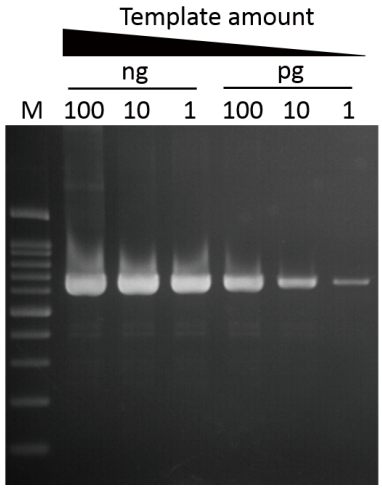


Fig. 2. ExcelTaq™ Klen-Taq DNA Polymerase can amplify PCR products from as little as 1 pg of template DNA (M: DM2100).

ExcelTaq™ Taq DNA Polymerase

TP1000 (5 U/µl, 500 U)

Description

The ExcelTaq™ *Taq* DNA Polymerase is a recombinant thermo-stable DNA polymerase expressed and purified from an *E. coli* strain carrying the cloned gene. With high DNA synthesis rate and thermo-stability, ExcelTaq™ *Taq* DNA Polymerase is suitable for general and specialized PCR applications.

Features

- 5'→3' DNA polymerase activity
- 5'→3' exonuclease activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- Thermo-stable: half-life is more than 40 min at 95°C

Contents

Component	Volume
ExcelTaq™ *Taq* DNA Polymerase (5 U/µl)	100 µl
10X *Taq* Buffer	1 ml x 2

Storage Buffer

20 mM Tris-HCl (pH 8.0), 100 mM KCl, 0.1 mM EDTA, 1 mM DTT, Stabilizer, 50% (v/v) glycerol

10X Taq Buffer

200 mM Tris-HCl (pH 8.8), 100 mM KCl, 100 mM $(NH_4)_2SO_4$, 20 mM $MgCl_2$, 1% Triton X-100

Unit Definition

One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into an acid-insoluble material in 30 minutes at 74°C.

Storage

-20°C for 24 months

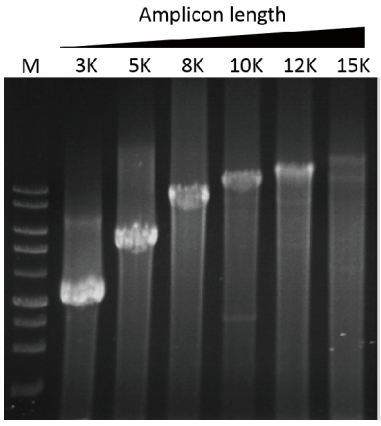


Fig. 1. ExcelTaq™ *Taq* DNA Polymerase can amplify PCR products from λDNA up to 15 kb (M: DM3100).

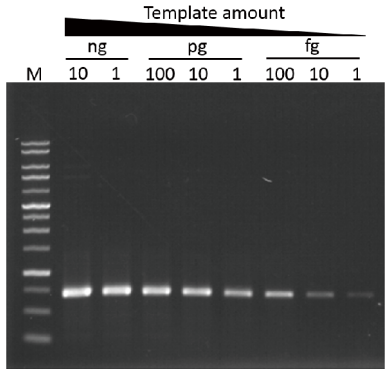


Fig. 2. ExcelTaq™ *Taq* DNA Polymerase can amplify PCR products from as little as 1 fg of template DNA (M: DM3100).

ExcelTaq™ PCR Master Mix

TP1100 (200 RXN) TP1120 (100 RXN)

Description

The ExcelTaq™ PCR Master Mix is a ready-to-use mixture for amplifying targeted DNA fragments. It is designed to serve as ready-to-use master mix for virtually all PCR applications. The mixture contains all essential ingredients for PCR with the exception of template and primers. This not only saves valuable time in the laboratory, but also reduces the number of pipetting and reagent handling errors. The PCR Master Mix is supplied as a 5X/ 2X concentrated master mix, that is a mixture of recombinant *Taq* DNA polymerase, reaction buffer, $MgCl_2$ (TP1120 contains $MgSO_4$), dNTPs, and enzyme stabilizer.

Contents

TP1100 Component	Volume
ExcelTaq™ 5X PCR Master Mix	1 ml x 2
6X DNA Loading Dye (Blue)	1 ml x 2

TP1120 Component	Volume
ExcelTaq™ 2X PCR Master Mix ($MgSO_4$)	1.25 ml x 2
6X DNA Loading Dye (Blue)	1 ml

Storage

4°C	for 6 months
-20°C	for 24 months

Features

- 5'→3' DNA polymerase activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- High throughput PCR
- High Yield PCR
- High reproducibility, less pipetting errors

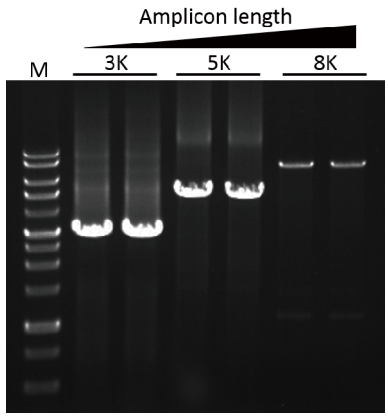


Fig. 1. The ExcelTaq™ 5X PCR Master Mix can reliably amplify λDNA up to 8 kb in length (M: DM3100).

ExcelTaq™ 5x PCR Master Dye Mix

TP1200 (200 RXN)

Description

The ExcelTaq™ 5x PCR Master Dye Mix is a ready-to-use mixture for amplifying targeted DNA fragments. It is designed to serve as ready-to-use master mix for virtually all PCR applications. The mixture contains all essential ingredients for PCR with the exception of template and primers. This not only saves valuable time in the laboratory, but also reduces the number of pipetting and reagent handling errors. The PCR Master Dye Mix is supplied as a 5X concentrated ready-to-use mix, that is a mixture of recombinant Taq DNA Polymerase, reaction buffer, $MgCl_2$, dNTPs, enzyme stabilizer and PCR friendly loading dye solution containing a tracking dye (Bromophenol blue) enabling efficient amplification of template in PCR and allowing the user to prepare a PCR reagent-loading dye master mix conveniently.

Contents

Component	Volume
ExcelTaq™ 5X PCR Master Dye Mix	1 ml x 2

Storage

4°C	for 6 months
-20°C	for 24 months

Features

- 5'→3' DNA polymerase activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- High throughput PCR
- High Yield PCR
- High reproducibility, less pipetting errors
- Load directly into electrophoresis

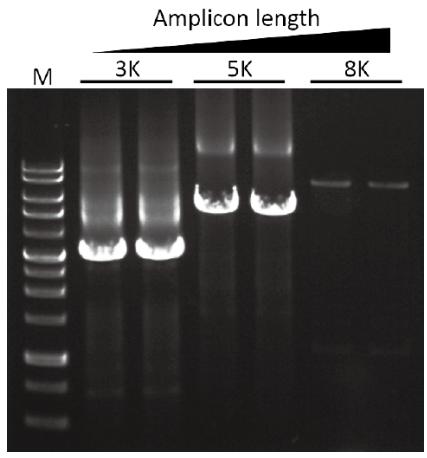


Fig. 1. The ExcelTaq™ 5X PCR Master Dye Mix can reliably amplify λDNA up to 8 kb in length (M: DM3100).

ExcelTaq™ 5X Fluorescent PCR Master Mix

TP1260 (200 RXN)

Description

The ExcelTaq™ 5X Fluorescent PCR Master Mix is a ready-to-use mixture for amplifying targeted DNA fragments. It is designed to serve as ready-to-use master mix for virtually all PCR applications. The ExcelTaq™ 5X Fluorescent PCR Master Mix is supplied as a 5X concentrated ready-to-use mixture containing all the essential ingredients for PCR with the exception of template and primers. In addition, the mixture contains a tracking dye (Bromophenol blue), and a safer fluorescent DNA staining dye, which enables the user to track the electrophoresis process in real time as well as eliminating the need for staining process. The resultant PCR reaction mixture is sufficiently dense enough to be loaded directly into 1X TAE or 1X TBE buffer for electrophoresis.

Features

- 5'→3' DNA polymerase activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- High throughput PCR
- High Yield PCR
- High reproducibility, less pipetting errors
- Load directly into electrophoresis
- DNA bands can be visualized directly under UV or 470 nm blue light illumination

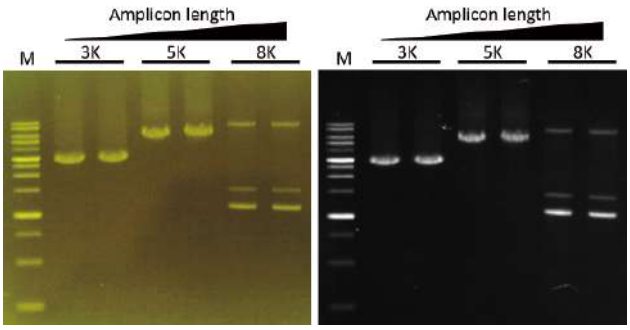
Contents

Component	Volume
ExcelTaq™ 5X Fluorescent PCR Master Mix	1 ml x 2

Storage

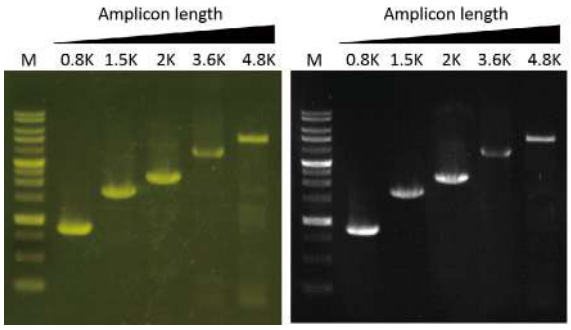
Protected from light and avoid multiple freeze/thaw cycles

4°C	for 6 months
-20°C	for 24 months



Viewed with B-Box™ Viewed with UV light

Fig. 1. λDNA was amplified with ExcelTaq™ 5X Fluorescent PCR Master Mix. The λDNA was amplified with specific primers for amplifying different ranges. The pictures were captured under B-BOX™ blue light (left). While using UV light (right), the amplicons can be seen in the right picture (M: DM 3160).



Viewed with B-Box™ Viewed with UV light

Fig. 2. Colony PCR with ExcelTaq™ 5X Fluorescent PCR Master Dye Mix. The JM109 or modified JM109 was used for amplifying the genomic galactosidase Z gene. The pictures were captured under B-BOX™ blue light (left). While using UV light (right), the amplicons can be seen in the right picture (M: DM 3160).

ExcelTaq™ Blood Direct DNA Polymerase

TP2000 (5 U/µl, 500 U)

Description

The ExcelTaq™ Blood Direct DNA Polymerase is designed for amplifying targeted DNA directly from whole blood, eliminating the need for a lengthy DNA isolation process. The ExcelTaq™ Blood Direct DNA Polymerase is highly tolerant in the presence of PCR interfering/ inhibiting substances in blood, such as IgG, hemoglobin, and lactoferrin. The ExcelTaq™ Blood Direct DNA Polymerase is compatible with most anticoagulants, such as citrate, EDTA, and heparin (Fig. 1). The ExcelTaq™ Blood Direct DNA Polymerase includes a pair of positive control primers (CCR5) that are compatible with primate blood samples.

Features

- 5'→3' DNA polymerase activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- Perform PCR directly from blood samples
- Compatible with most anticoagulants

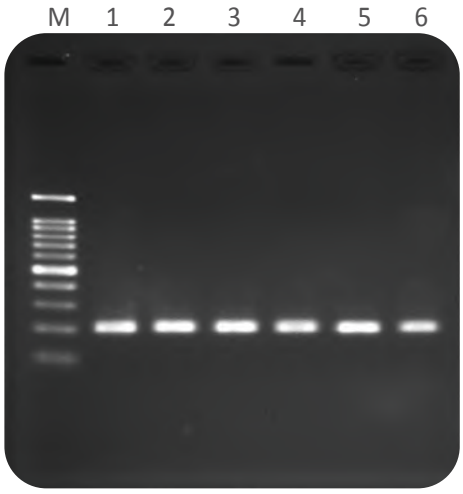


Fig. 1. The ExcelTaq™ Blood Direct DNA Polymerase amplified 200 bp from separately treated blood samples using CCR5 specific primers. M: DM2100 marker, lane 1: fresh blood, lane 2: blood + citrate, lane 3: blood + EDTA, lane 4: blood + EDTA/ NaF, lane 5: blood + Heparin, lane 6: 1 mm^2 of dry blood on filter paper.

Contents

Component	Volume
ExcelTaq™ Blood Direct DNA Polymerase (5 U/µl)	100 µl
5X Blood Direct Buffer	1 ml x 4
Positive Control Primers (10 µM, each)	50 µl

Storage Buffer

20 mM Tris-HCl (pH 8.0), 100 mM KCl, 0.1 mM EDTA, 1 mM DTT, stabilizer, 50% (v/v) glycerol

Storage

-20°C for 24 months

ExcelTaq™ 5X Blood Direct PCR Master Mix Kit

TP2100 (200 RXN)

Description

The ExcelTaq™ 5X Blood Direct PCR Master Mix Kit is designed for amplifying targeted DNA directly from whole blood, eliminating the need for a lengthy DNA isolation process. The PCR master mix kits contains all the essential components for a PCR reaction and a PCR friendly loading and tracking dye (Orange G) allowing the user to easily prepare a PCR reagent and directly loading PCR product into agarose gel for electrophoresis.
The ExcelTaq™ 5X Blood Direct PCR Master Mix Kit is capable of tolerating the presence of PCR interfering/inhibiting substances in blood and is ideal for high-throughput screening of blood samples for high reproducibility. The PCR master mix kit includes a pairs of positive control primers (CCR5) that are compatible with primate blood samples.

Features

- 5'→3' DNA polymerase activity
- No detectable 3'→5' exonuclease (proofreading) activity
- Generates PCR products with 3'-dA overhangs
- High throughput PCR
- Execute PCR directly from blood samples
- High reproducibility, less pipetting errors
- Compatible with most anticoagulants

Contents

Component	Volume
ExcelTaq™ 5X Blood Direct PCR Master Mix	1 ml x 2
Positive Control Primers (10 µM, each)	25 µl

Storage

4°C	for 6 months
-20°C	for 24 months

Caution : Avoid multiple freeze/thaw cycles

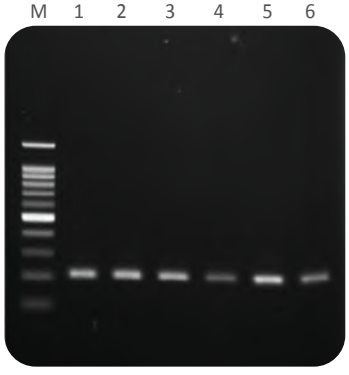


Fig. 1. The ExcelTaq™ 5X Blood Direct PCR Master Mix Kit amplified 200 bp from differently treated blood samples using CCR5 specific primers. M: DM2100 marker, Lane 1: fresh blood, Lane 2: blood + citrate, Lane 3: blood + EDTA, Lane 4: blood + EDTA/ NaF, Lane 5: blood + Heparin, Lane 6: 1mm^2 of dry blood on filter paper.

ExcelTaq™ Hot Start II DNA Polymerase

TP5000 (5 U/µl, 500 U)

Description

The ExcelTaq™ Hot Start II DNA Polymerase is a mixture of an aptamer-based inhibitor and a recombinant thermo-stable *Taq* DNA polymerase designed for preventing or minimizing non-specific DNA amplification in PCR reaction. The inactivation of polymerase is achieved by a reversible binding of the aptamer to the polymerase at temperatures below 45°C. The aptamer inhibitor releases polymerase during normal PCR cycling. The aptamer-based inhibition omits the time-consuming initial activation step required by chemically modified or antibody-based hot start polymerases.

The high specificity and sensitivity of ExcelTaq™ Hot Start II DNA Polymerase allows sensitive detection from limited amount of DNA templates, such as 1 pg of cDNA or 1 fg of plasmid DNA. With a high DNA synthesis rate and high thermo-stability, the ExcelTaq™ Hot Start II DNA Polymerase allows reactions to be set up at room temperature and is suitable for common and specialized PCR applications.

Features

- Reversible enzyme inactivation
- Omits extra enzyme activation step
- Convenient for room temperature PCR set-up
- High yield and specificity of target amplicons
- Wide range of amplicon length (up to 10 kb)
- High sensitivity (as low as 1 fg of plasmid)
- Aptamer-based hot start PCR

Contents

Component	Volume
Hot Start II DNA Polymerase (5 U/µl)	100 µl
10X HS Buffer	1 ml x 2

Storage

-20°C for 24 months

Storage Buffer

50 mM Tris-HCl (pH 8.0), 50 mM KCl, 0.1 mM EDTA, 1 mM DTT, stabilizer, 50% (v/v) glycerol

10X HS Buffer

200 mM Tris-HCl (pH 8.8 at 25°C), 100 mM KCl, 100 mM $(NH4)_2SO_4$, 20 mM $MgCl_2$, 1% Triton X-100

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 74°C.

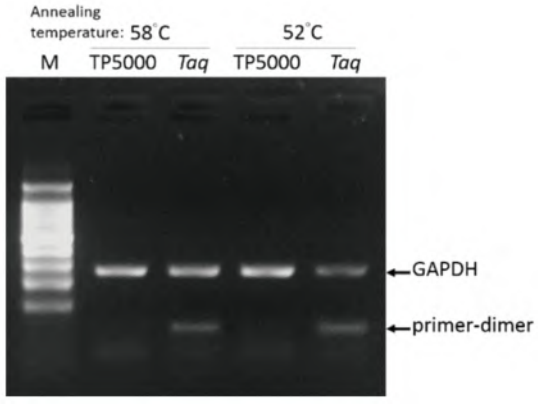


Fig. 1. ExcelTaq™ Hot Start II DNA Polymerase shows high specificity on amplifying target DNA. The optimal annealing temperature of GAPDH primer set is 58˚C. Improper annealing temperature set at 52˚C may force primer-dimer formation. ExcelTaq™ Hot Start II DNA Polymerase eliminated primer-dimer and increased amounts of desired product at improper annealing temperature of 52˚C.

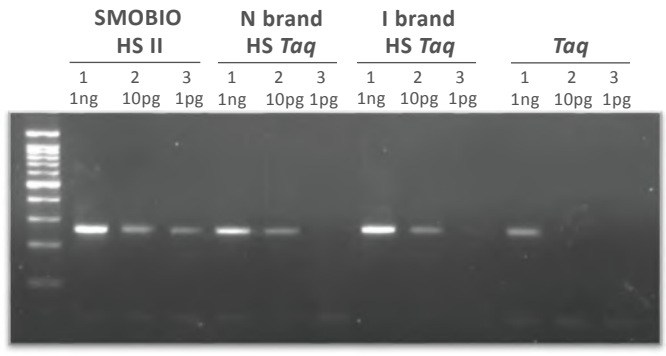


Fig. 2. ExcelTaq™ Hot Start II DNA Polymerase shows high sensitivity to amplify from low amount of templates. Each set of PCR reactions contained either 1 pg, 10 pg, or 1 ng of HeLa cell cDNA as templates. ExcelTaq™ Hot Start II DNA Polymerase successfully amplified targets from lower amount of templates, in comparison with hot-start DNA polymerases from other suppliers and general *Taq* DNA polymerase

ExcelTaq™ 2X Q-PCR Master Mix (SYBR)

TQ1100 (200 RXN)(SYBR, no ROX) TQ1101(500 RXN)(SYBR, no ROX)
TQ1110 (200 RXN)(SYBR, ROX)

Description

The ExcelTaq™ 2X Q-PCR Master Mix (SYBR) is a ready-to-use reagent with all the essential components for quantitative real-time PCR (qPCR) except primers and template. The master mix features high sensitivity and signal intensity(Fig. 1-2) as well as low background and better compatibility with cDNA templates derived directly from reverse transcription reaction mixture.(Fig. 3) The ExcelTaq™ 2X Q-PCR Master Mix (SYBR) contains hot-start *Taq* polymerase in an optimized buffer with dsDNA specific SYBR green fluorescent dye. This master mix allows for sensitive, precise amplification, real-time tracking of the amplification process, and simultaneous quantification for targeted DNA molecules. With inert smart blue contrast dye, the ExcelTaq™ 2X Q-PCR Master Mix (SYBR) is ready-to-use and greatly reduces pipetting errors, while largely improving the reproducibility of the process. The TQ1110 ExcelTaq™ 2X Q-PCR Master Mix (SYBR, ROX) includes ROX reference dye for normalization of each qPCR assay.

Features

- High sensitivity and signal intensity
- Better compatibility for reverse transcription
- Smart blue contrast dye as a visual aid for reaction setup
- Low background
- With ROX reference dye (TQ1110)

Contents

TQ1100 Component	Volume
ExcelTaq™ 2X Q-PCR Master Mix (SYBR, no ROX)	1 ml x 2
TQ1101 Component	**Volume**
ExcelTaq™ 2X Q-PCR Master Mix (SYBR, no ROX)	1 ml x 5
TQ1110 Component	**Volume**
ExcelTaq™ 2X Q-PCR Master Mix (SYBR, ROX)	1 ml x 2

Storage

Aliquot to avoid multiple freeze-thaw cycles
Protect from light
-20°C for 12 months

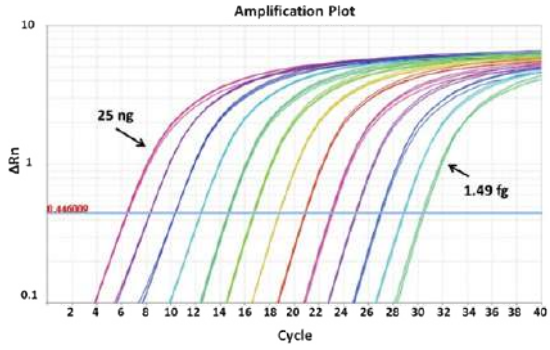


Fig. 2. The amplification plot of real-time PCR with cDNA templates ranging from 1.49 fg to 25 ng in quantity, analyzed by using TQ1110 ExcelTaq™ 2X Q-PCR Master Mix (SYBR, ROX) for qPCR amplification.

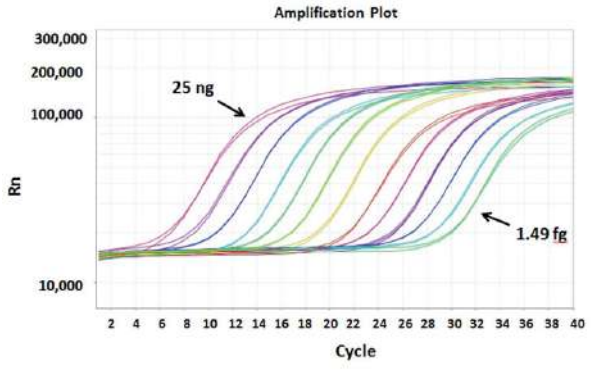


Fig. 1. The amplification plot of real-time PCR with cDNA templates ranging from 25 ng to 1.49 fg in quantity, analyzed by using TQ1100 ExcelTaq™ 2X Q-PCR Master Mix (SYBR, no ROX) for qPCR amplification.

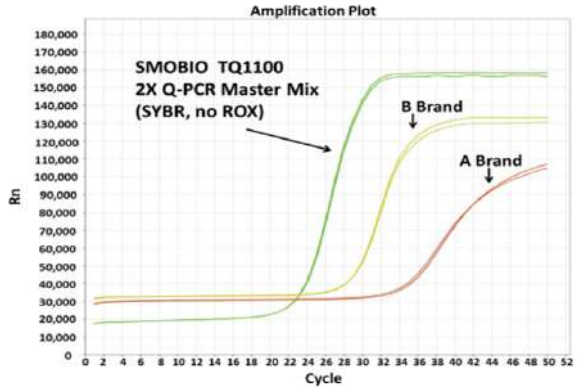


Fig. 3. SMOBIO's TQ1100 ExcelTaq™ 2X Q-PCR Master Mix (SYBR, no ROX) shows better compatibility with reverse-transcription reaction mixture as compared to similar products from A and B brands. Two µl of cDNA directly obtained from reverse-transcription reaction mixture were used in a 20 µl qPCR reaction for the compatibility test.

ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR)

TQ1200 (200 RXN)(SYBR, no ROX) TQ1201(500 RXN)(SYBR, no ROX)
TQ1210 (200 RXN)(SYBR, ROX) TQ1211 (500 RXN)(SYBR, ROX)

Description

The ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR) is a ready-to-use reagent with all the essential components for quantitative real-time PCR (qPCR) except primers and templates. The master mix features high sensitivity and signal intensity as well as low background and better compatibility with fast PCR programs.
The ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR) contains hot-start *Taq* polymerase in an optimized buffer with dsDNA specific SYBR green fluorescent dye. This master mix allows sensitive, precise amplification, real-time tracking of the amplification process, and simultaneous quantification for targeted DNA molecules.
With inert smart blue contrast dye, the ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR) is ready-to-use and greatly reduces pipetting errors, while largely improving the reproducibility of the process. TQ1210 ExcelTaq™ 2X Fast Q-PCR Master(SYBR, ROX) includes ROX reference dye for normalization of each qPCR assay

Features

- Fast hot start
- High stability
- High sensitivity and signal intensity
- Compatible with fast PCR program
- Smart blue contrast dye as a visual aid for reaction setup
- With ROX reference dye (TQ1210)

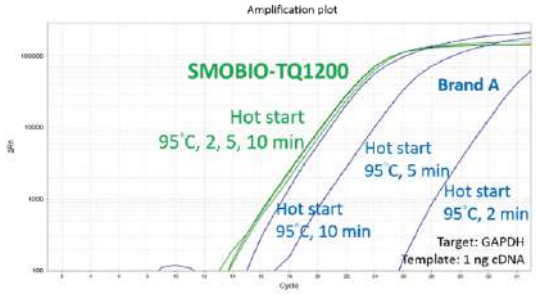


Fig. 1. The overlapped amplification curves from hot start duration of 2, 5, and 10 minutes display that TQ1200 ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX) preforms successfully in short duration of initial activation (2 min).

Contents

TQ1200 Component	Volume
ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX)	1 ml x 2
TQ1201 Component	**Volume**
ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX)	1 ml x 5
TQ1210 Component	**Volume**
ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, ROX)	1 ml x 2
TQ1211 Component	**Volume**
ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, ROX)	1 ml x 5

Storage

Aliquot to avoid multiple freeze-thaw cycles
Protect from light
-20°C for 12 months

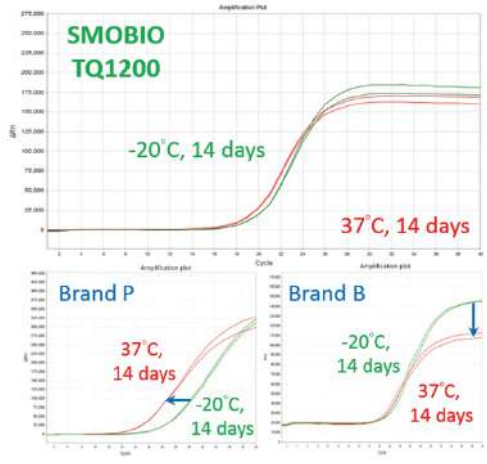


Fig. 2. SMOBIO's TQ1200 ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX) shows higher stability as compared to a similar products (Brand P and B).

ExcelTaq Q-PCR Master Mix features blue dye to clearly recognize aliquoted reaction mixes in plates to minimize aliquoting errors.

ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX)

TQ2110 (200 RXN)

Description

The ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX) is a ready-to-use reagent with all the essential components for quantitative real-time PCR (qPCR) except primers, TaqMan probes and templates. The master mix includes a 5' to 3' exonuclease activity to cleave TaqMan probes that hybridize to target sequences, releasing fluorophore during probe displacement. With TaqMan probes, the master mix features high specificity and high sensitivity (Fig. 1).

The ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX) contains hot-start *Taq* polymerase in an optimized buffer that allows for sensitive and precise amplification, real-time tracking of the amplification process, and simultaneous quantification for targeted DNA molecules. The master mix includes ROX reference dye for the normalization of each qPCR assay. The ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX) is ready-to-use and greatly reduces pipetting errors, while largely improving the reproducibility in the process.

Features

- High sensitivity
- High specificity
- With ROX reference dye

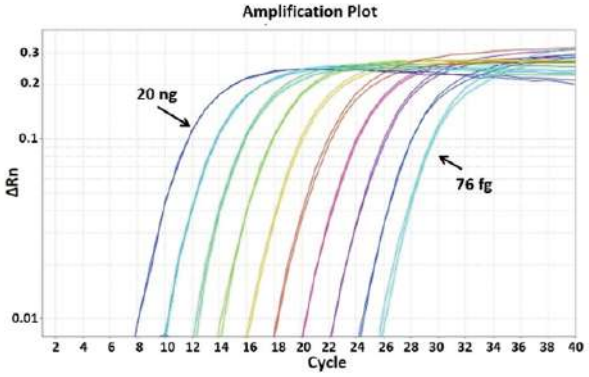


Fig. 1. The amplification plot of real-time PCR with cDNA templates ranging from 76 fg to 20 ng in quantity, analyzed by using TQ2110 ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX) for qPCR amplification.

Contents

Component	Volume
ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX)	1 ml x 2

Storage

Aliquot to avoid multiple freeze-thaw cycles
Protect from light
-20°C for 12 months

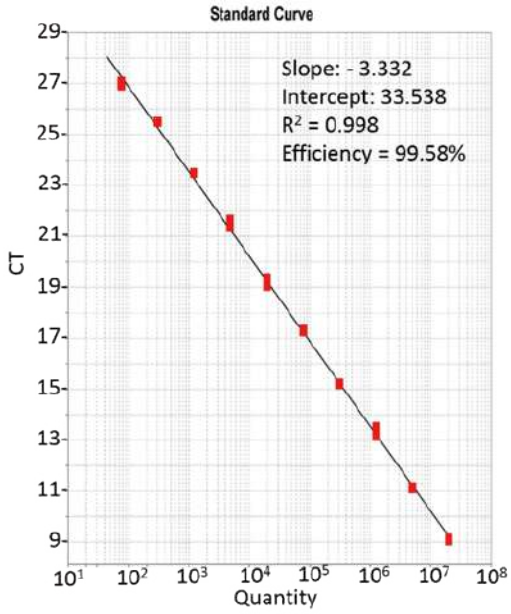


Fig. 2. The standard curve of TQ2110 ExcelTaq™ 2X Q-PCR Master Mix (TaqMan, ROX) was generated by using a 4-fold dilution of total cDNA ranging from 76 fg to 20 ng.


SMOBiO®
Small Bio, Smart Tool

SMOBiO®
Small Bio, Smart Tool

cDNA Synthesis and RT-PCR

cDNA Synthesis

One-Step RT-PCR

One-Step RT-qPCR

RNase Inhibitors

SMOBiO®
Small Bio, Smart Tool

ExcelRT™ Reverse Transcriptase

RP1000 (200 U/µl, 20,000 U)
RP1300 (100 RXN)
RP1400 (100 RXN)

Description

The ExcelRT™ Reverse Transcriptase is a recombinant Moloney Murine Leukemia Virus (M-MLV) reverse transcriptase – an RNA dependent DNA polymerase capable of generating first strand cDNA using an RNA template. It is designed to reduce RNase H activity and create better thermal stability. The ExcelRT™ Reverse Transcriptase is able to routinely synthesize first strand cDNA > 8 kb at 37~50°C.

Additional Kit Format

The ExcelRT™ Reverse Transcription Kits contain all components to synthesize high quality first strand cDNA. The kits contain ExcelRT™ Reverse Transcriptase, RNAok™ RNase Inhibitor, oligo $(dT)_{20}$ and random hexamers, which are used to synthesize cDNA from poly(A) tailed mRNA and total RNA, respectively. The RP1400 ExcelRT™ Reverse Transcription Kit II is supplied with Oligo (dT)/Random Primer Mix that is optimal for highly efficient synthesis of short chain cDNA suitable for real-time PCR.

Features

- High yield
- Thermostable, up to 50°C, during first strand synthesis
- High processivity, generating cDNA up to 8 kb
- Reduced RNase H ribonuclease activity
- No detectable 3'→ 5' exonucleolytic proofreading function
- Thermal stable for at least 4 weeks when stored at 4°C
- Suitable for real-time PCR
- Contains all components for reverse transcription (RP1300 and RP1400)
- Time saving for short chain cDNA synthesis (RP1400)

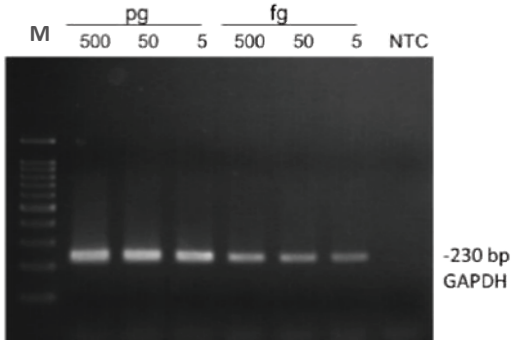


Fig. 1. ExcelRT™ Reverse Transcriptase can synthesize first strand cDNA using only 5 fg of total RNA in solution. The bands in the gel represent the results of GAPDH (230 bp) from two step RT-PCR reaction. (M: DM2100)

Contents

RP1000
ExcelRT™ Reverse Transcriptase

Component	Volume
Reverse Transcriptase (200 U/µl)	100 µl
5X RT Buffer	1 ml
0.1 M DTT	500 µl

RP1300
ExcelRT™ Reverse Transcription Kit

Component	Volume
Reverse Transcriptase (200 U/µl)	100 µl
RNase Inhibitor (20 U/µl)	100 µl
5X RT Buffer (DTT)	500 µl
dNTPs (10 mM each)	200 µl
Oligo $(dT)_{20}$ (50 µM)	100 µl
Random Hexamers (100 µM)	100 µl
DEPC-Treated H_2O	1 ml x 2

RP1400
ExcelRT™ Reverse Transcription Kit II

Component	Volume
RTase/RI Enzyme Mix	100 µl
5X RT Buffer (DTT/dNTPs)	500 µl
Oligo (dT)/Random Primer Mix	100 µl
DEPC-Treated H_2O	1 ml x 2

Unit definition

One unit is defined as the amount of enzyme that will incorporate 1 nM of dTTP into acid-insoluble material in 10 minutes at 37°C using Poly (A) • oligo$(dT)_{25}$ as a template-primer.

Storage

-20°C for 24 months

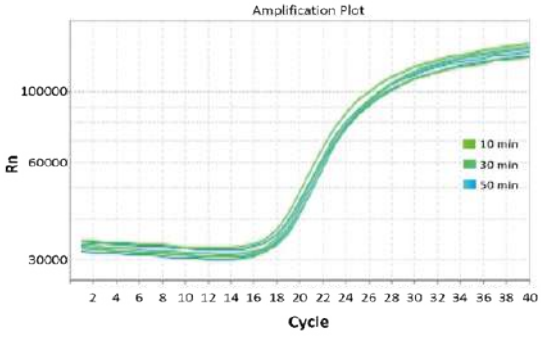


Fig. 2. cDNA synthesized in 10 minutes is suitable for real-time PCR analysis. cDNA was synthesized in 10, 30, and 50 min from reverse transcription reaction. The amplification plot represents the results of 18S rRNA analyzed by using the ExcelTaq™ 2X Q-PCR Master Mix (Cat. No. TQ1100) for real-time PCR amplification.

ExcelRT™ One-Step RT-PCR Kit

RP1100 (50 RXN)

Description

The ExcelRT™ One-Step RT-PCR Kit is designed for the reverse transcription and PCR amplification of a specific target RNA from either total RNA or mRNA. The ExcelRT ™ One-Step RT-PCR Kit provides the user an alternative to the lengthy two step process (first strand generation and amplification) by using a single mixture, single tube, one step reaction. The ExcelRT™ One-Step RT-PCR Kit contains a 2X reaction premix consisting of an optimized buffer, dNTPs, Mg^{2+} and enzyme stabilizer, and a blend of recombinant reverse transcriptase and *Taq* DNA polymerase. The ExcelRT™ One-Step RT-PCR Kit allows the user to complete the RT-PCR process using a thermocycler in a single reaction setting and is ideal for target RNA amplification/ analysis capable of detecting even trace amounts of target RNA.

Features

- Generates dsDNA directly from RNA samples
- High throughput
- High reproducibility, less pipetting errors
- High sensitivity and yields
- Reduced RNase H ribonuclease activity

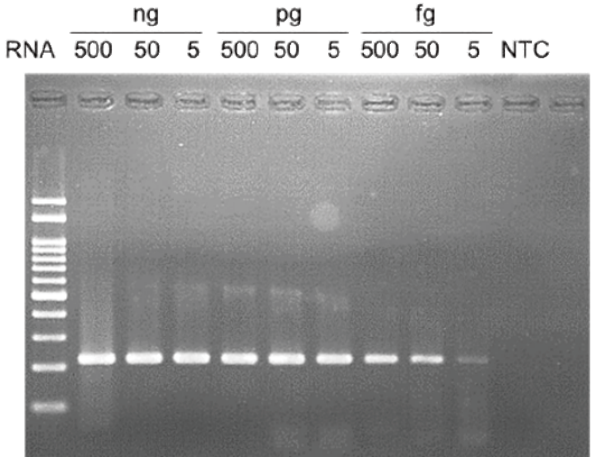


Fig. 1. ExcelRT™ One-Step RT- PCR Kit can synthesize PCR products with a minimal amount of total RNA in reaction solution. The bands in the gel represent the results of GAPDH (230 bp) from one-step RT-PCR reaction (M: DM2300)

Contents

Component	Volume
2X One-Step Buffer	750 µl x 2
Taq/RT Enzyme Mix	50 µl

Storage

-20°C for 24 months

ExcelRT™ One-Step RT-qPCR Kit (TaqMan, ROX)

RQ2110 (200 RXN)

Description

The ExcelRT™ One-Step RT-qPCR kit (TaqMan, ROX) is designed for reverse transcription and quantitative real-time analysis of a specific target RNA by one-step reaction. The ExcelRT™ One-Step RT-qPCR kit (TaqMan, ROX), consisting of One-Step RT Enzyme Mix and 2X One-Step Master Mix, is a convenient kit designed for highly efficient cDNA synthesis and highly specific real-time PCR in a single tube. The One-Step RT Enzyme Mix contains a thermostable ExcelRT™ Reverse Transcriptase and a RNAok™ RNase inhibitor. Consequently, One-Step RT Enzyme Mix can reverse transcribe RNA to cDNA at a wide temperature range from 42 to 60°C and be active against RNase A, RNase B and RNase C. By containing specialized hot-start *Taq* DNA polymerase, which greatly reduce primer-dimer formation and can be activated within 2 minutes, the 2X One-Step Master Mix features high specificity and is suitable for fast cycle program. This master mix includes ROX reference dye for normalization of each RT-qPCR assay.

Features

- High yield
- Reverse transcription at wide temperature range (42-60°C)
- High specificity
- Suitable for fast cycle program
- ROX reference dye

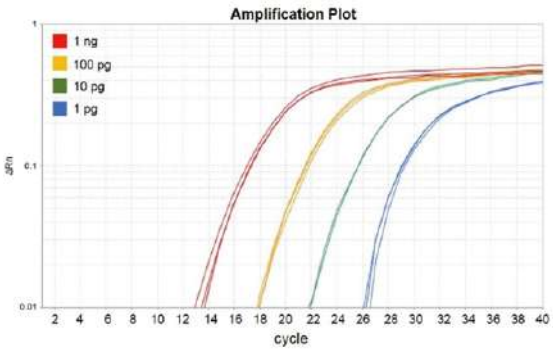


Fig. 1. ExcelRT™ One-Step RT-qPCR Kit can quantitatively analyze target RNA from a wide range of RNA template input. The amplification plot of one-step RT-qPCR with total RNA templates ranging from 1 pg to 1 ng in quantity, analyzed by using RQ2110 ExcelRT™ One-Step RT-qPCR Kit (TaqMan, ROX) for RT-qPCR amplification.

Contents

Component	Volume
One-Step RT Enzyme Mix	400 µl
2X One-Step Master Mix (TaqMan, ROX)	1 ml x 2

Storage

Aliquot to avoid multiple freeze-thaw cycles (stable within 30 freeze-thaw cycles)
Protect from light
-20°C for 12 months

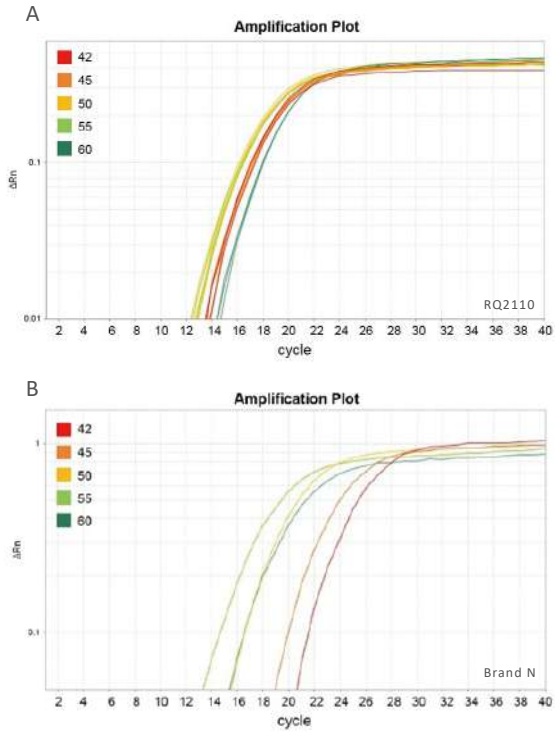


Fig. 2. ExcelRT™ One-Step RT-qPCR Kit can quantitatively analyze target RNA at a wide temperature range (42-60°C). The amplification plot of one-step RT-qPCR with reverse transcription at temperature range from 42 to 60°C, analyzed by using RQ2110 ExcelRT™ One-Step RT-qPCR Kit (A) or kit from brand N (B) for RT-qPCR amplification. The overlapped amplification curves display that ExcelRT™ One-Step RT-qPCR Kit preforms successfully cDNA synthesis at wide temperature range.

ExcelRT™ One-Step RT-qPCR Kit (TaqMan, no ROX)

RQ2200 (200 RXN)

Description

The ExcelRT™ One-Step RT-qPCR kit (TaqMan, no ROX) is designed for reverse transcription and quantitative real-time analysis of a specific target RNA by one-step reaction. The ExcelRT™ One-Step RT-qPCR kit (TaqMan, no ROX), consisting of One-Step RT Enzyme Mix and 2× One-Step Master Mix, is a convenient kit designed for highly efficient cDNA synthesis and highly specific real-time PCR in a single tube. The One-Step RT Enzyme Mix contains a thermostable ExcelRT™ Reverse Transcriptase and a RNAok™ RNase inhibitor. Consequently, One-Step RT Enzyme Mix can reverse transcribe RNA to cDNA at a wide temperature range from 42 to 60°C and be active against RNase A, RNase B and RNase C. By containing specialized hot-start *Taq* DNA polymerase, which greatly reduce primer-dimer formation and can be activated within 2 minutes, the 2× One-Step Master Mix features high specificity and is suitable for fast cycle program.

Features

- High specificity
- With no ROX reference dye
- Suitable for fast program
- Reverse transcription at wide temperature range (42°C-60°C)

Contents

Component	Volume
One-Step RT Enzyme Mix	400 µl
2X One-Step Master Mix (TaqMan, no ROX)	1 ml x 2

Storage

Aliquot to avoid multiple freeze-thaw cycles
Protect from light
-20°C for 12 months

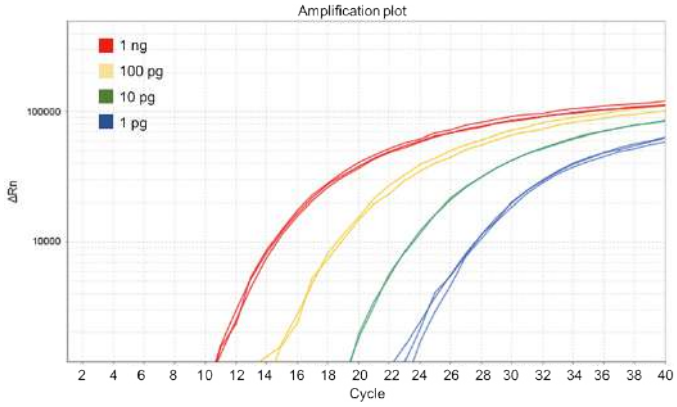


Fig. 1. ExcelRT™ One-Step RT-qPCR Kit can quantitatively analyze target RNA from a wide range of RNA template input. The amplification plot of one-step RT-qPCR with total RNA templates ranging from 1 pg to 1 ng in quantity, analyzed by using RQ2200 ExcelRT™ One-Step RT-qPCR Kit (TaqMan, no ROX) for RT-qPCR amplification.

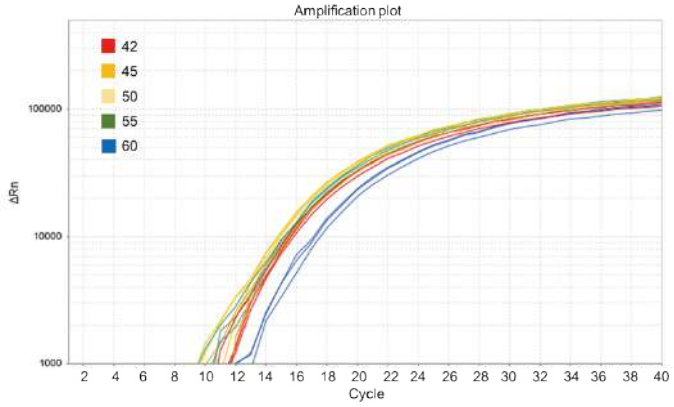


Fig. 2. ExcelRT™ One-Step RT-qPCR Kit can quantitatively analyze target RNA at a wide temperature range (42-60°C). The overlapped amplification plot of one-step RT-qPCR with reverse transcription at temperature range from 42 to 60°C, analyzed by using RQ2200 ExcelRT™ One-Step RT-qPCR Kit display that ExcelRT™ One-Step RT-qPCR Kit performs successfully cDNA synthesis at wide temperature range.

RNAok™ RNase Inhibitor

RI1000 (20 U/µl, 2000 U x 1)
RI1001 (20 U/µl, 2000 U x 5)

Description

RNAok™ RNase Inhibitor is a recombinant mammalian RNase inhibitor that is purified by affinity chromatography from *E. coli*. This protein inhibits pancreatic-type ribonucleases, RNase A, B, and C by binding strongly to RNases in a noncompetitive mode at a 1:1 ratio. RNAok™ RNase Inhibitor does not inhibit eukaryotic RNases T1, T2, U1, U2, CL3 as well as prokaryotic RNases I and H. RNAok™ RNase Inhibitor is compatible with RT-PCR enzymes such as AMV, M-MLV and ExcelRT™ Reverse Transcriptase or *Taq* DNA polymerase.

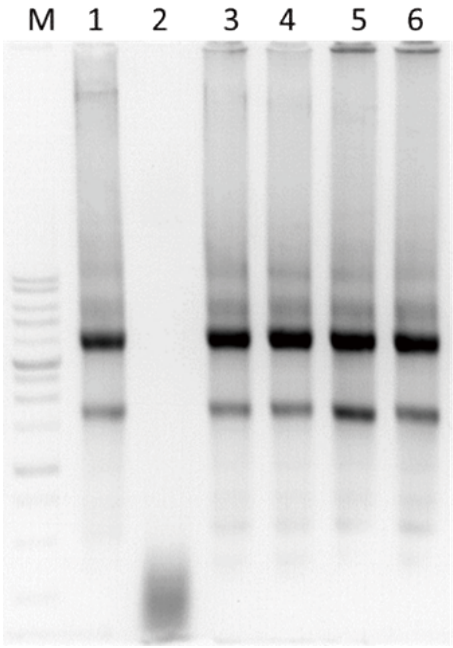


Fig. 1. RNAok™ RNase Inhibitor inhibits RNase A activity. Total HeLa RNA (1 µg) was incubated with 1U/ 1 µl of RNAok™ RNase Inhibitor and 0.4 ng RNase A for 30 min at 37°C. The result shows that RNAok™ RNase Inhibitor can protect RNA against 0.4 ng RNase A. M: DM3100, Lane 1: total HeLa RNA (1 µg), Lane 2: total HeLa RNA with RNase A (no inhibitor added), Lane 3: total HeLa RNA with RNase A and inhibitor from brand A, Lane 4-6: total HeLa RNA with RNase A and RNAok™ RNase Inhibitor.

Application

- RT-PCR
- cDNA Synthesis
- *in vitro translation*
- *in vitro* transcription
- Separation and identification of specific ribonuclease activities

Usage Recommendation

Add RNAok™ RNase Inhibitor to transcription, translation, and cDNA synthesis reactions at a final concentration of 1 Unit/µl.

Storage Buffer

40 mM HEPES-KOH (pH 7.5), 100 mM KCl, 8 mM DTT, 0.1 mM EDTA, stabilizer and 50% (v/v) glycerol

Unit Definition

One unit is defined as the amount of RNAok™ RNase Inhibitor required to inhibit the activity of 5 ng of RNase A by 50%.

Storage

-20°C for 24 months

SMOBiO®
Small Bio, Smart Tool

IVT mRNA related

T7 High Yield RNA Synthesis Kit

T7 High Yield RNA Synthesis Kit (Ψ-UTP)

T7 High Yield RNA Synthesis Kit (me1Ψ-UTP)

RNA Capping System

SMOBiO®
Small Bio, Smart Tool

T7 High Yield RNA Synthesis Kit

IT1000 (50 RXN)
IT1100 (50 RXN)
IT1200 (50 RXN)

Description

The EzRNA™ T7 High Yield RNA Synthesis Kit is a user-friendly product for enzymatic RNA production. The enzyme mix contains adequate amount of T7 RNA polymerase, pyrophosphatase, and RNase inhibitors for in vitro transcription (IVT). Along with 10X Transcription Buffer and NTP Premix, users can swiftly assemble IVT reactions without compromising RNA yield. The EzRNA™ T7 High Yield RNA Synthesis Kit allows for the attainment of approximately up to 150 µg RNA yield within 2 hours at 37°C.

Application

- Generation of RNA from T7 promoter-driven DNA sequences.
- Suitable for subsequent cap-0 and cap-1 modification.

Features

- High yield
- Versatile- suitable for short and long transcripts
- NTP premixed- Minimal pipetting and setup time
- Compatible with CleanCap® Reagent AG
- Lithium chloride included for RNA purification

Storage

-20°C for 24 months

Contents

IT1000
T7 High Yield RNA Synthesis Kit

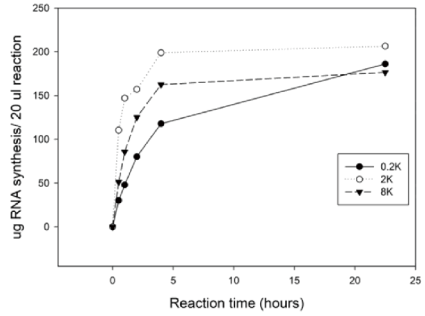
Component	Volume
T7 RNA Polymerase Mix	100 µl
10X T7 Reaction Buffer	100 µl
NTP Premix (25 mM each)	400 µl
Control DNA	10 µl
Lithium Chloride (7.5M)	1 ml
Nuclease-Free Water	1 ml

IT1100
T7 High Yield RNA Synthesis Kit(Ψ-UTP)

Component	Volume
T7 RNA Polymerase Mix	100 µl
10X T7 Reaction Buffer	100 µl
NTP (Ψ) Premix (25 mM each)	400 µl
Control DNA	10 µl
Lithium Chloride (7.5M)	1 ml
Nuclease-Free Water	1 ml

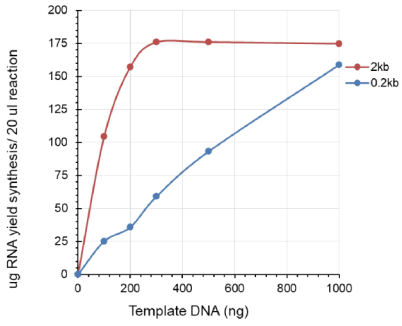
IT1200
T7 High Yield RNA Synthesis Kit(me^{1}Ψ-UTP)

Component	Volume
T7 RNA Polymerase Mix	100 µl
10X T7 Reaction Buffer	100 µl
NTP (me^{1}Ψ) Premix (25 mM each)	400 µl
Control DNA	10 µl
Lithium Chloride (7.5M)	1 ml
Nuclease-Free Water	1 ml



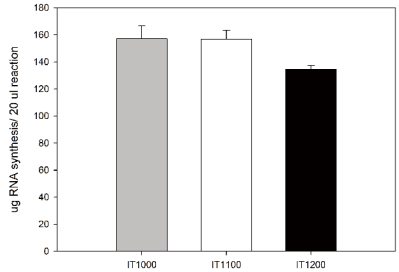
Time course of RNA synthesis from 3 DNA templates

The 0.2k, 2k and 8k RNA transcripts were generated using the SMOBIO EzRNA™T7 High Yield RNA Synthesis Kit, the reaction containing 1 ug DNA template was incubated at 37°C for indicated reaction time.



Dose effect of DNA template on RNA yield

The 0.2k and 2k RNA transcripts were generated using the SMOBIO EzRNA™ T7 High Yield RNA Synthesis Kit , the reaction containing indicated amounts of DNA template was incubated at 37°C for 2 hours.



Yield of RNA synthesized by EzRNA™ T7 High Yeield RNA Synthesis Kits

EzRNA™ RNA Capping System

RC1000(50 RXN)

Description

The EzRNA™ RNA Capping System is a user-friendly product for post-transcriptional RNA modification. Both Vaccinia Capping Enzyme and 2'-O-Methyltransferase are included in the package, which are able to perform in a single reaction. The Vaccinia Capping Enzyme attach 7-methylguanylate cap (m7Gppp, Cap-0) to the 5' end of RNA to form m7Gppp5'N-RNA (Cap-0 RNA). The 2'-O-methyltransferase utilizes Cap-0 RNA as a substrate, employing S-adenosine methionine (SAM) as a methyl donor to methylate 2' -OH of the first nucleotide at the 5' end of Cap-0 RNA, resulting in the formation of Cap-1 RNA.

Application

- Generation of 5' Cap-0 (m7Gppp) and Cap-1 (m7GpppNm-) RNA by enzymatic reaction
- mRNA synthesis for in vitro translation
- Gene expression studies
- mRNA vaccine development and therapeutics

Features

- 2'-O-Methyltransferase included for Cap-1 RNA
- High capping efficiency
- High stability
- RNase inhibitor included to enhance the stability of capping reaction.

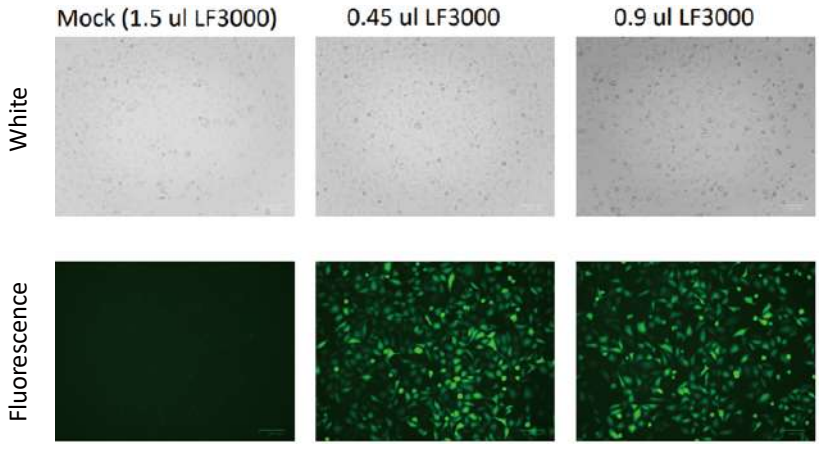
Storage

-20°C for 24 months

Contents

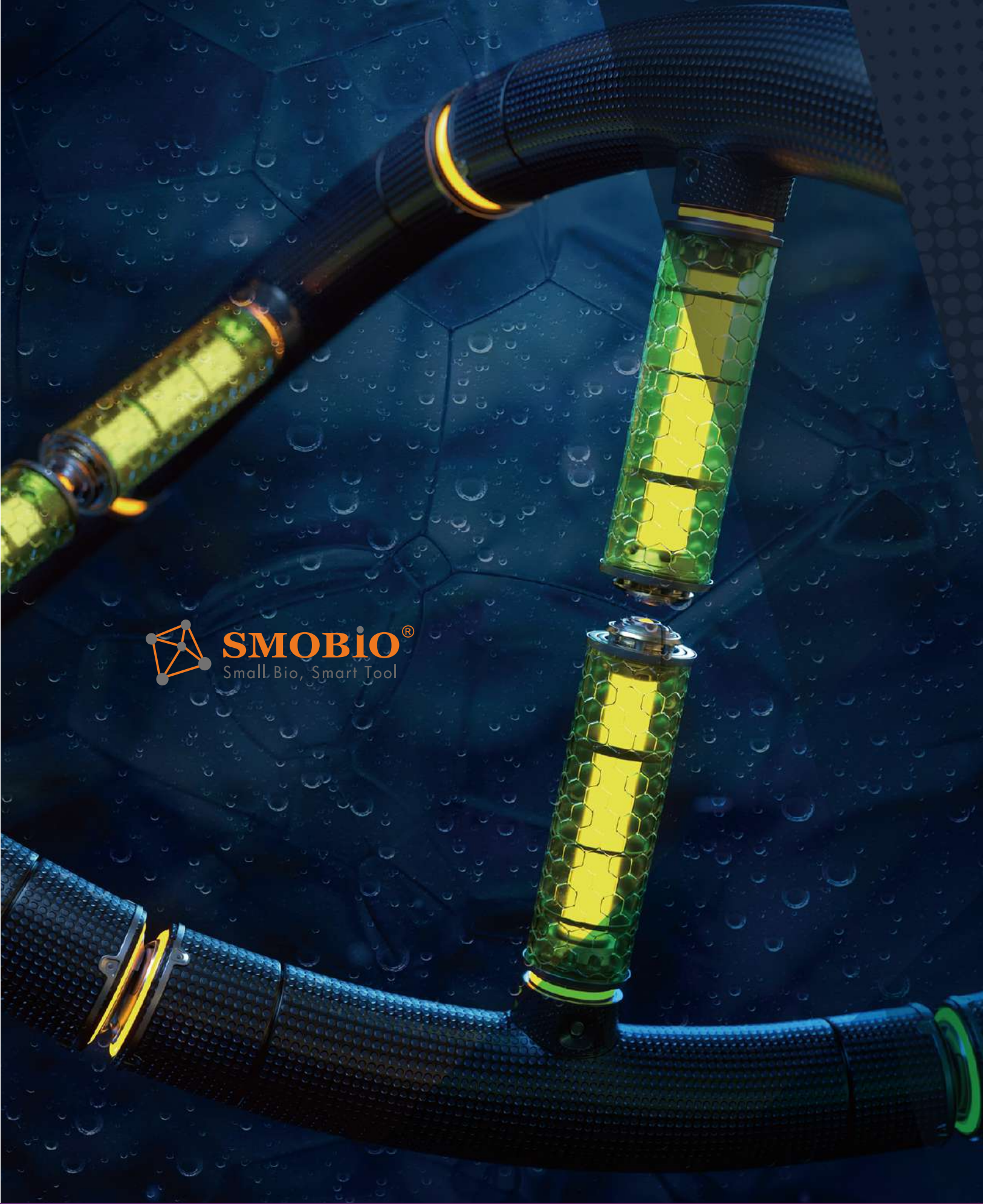
RC1000
EzRNA™ RNA Capping System

Component	Volume
Vaccinia Capping Enzyme	50 µl
2'-O-Methyltransferase	50 µl
10X Capping Buffer	100 µl
S-adenosylmethionine (SAM) (32 mM)	50 µl
RNase Inhibitor (20 U/µl)	50 µl
GTP (10 mM)	50 µl
Nuclease-Free Water	1 ml



Transient expression of eGFP-mRNA in mammalian cells

The eGFP-mRNA was generated utilizing the SMOBIO EzRNA™ T7 High Yield RNA Synthesis Kit (Ψ-UTP) in conjunction with the EzRNA™ RNA Capping System. Subsequently, eGFP-mRNA was transfected into HeLa cells using Lipofectamine 3000 for an incubation period of 18 hours. Higher than 90% transfection efficiency was observed.


SMOBiO®
Small Bio, Smart Tool

COVID-19

Real-Time RT-PCR Kit

For Research Use Only

Cat no. IP2000

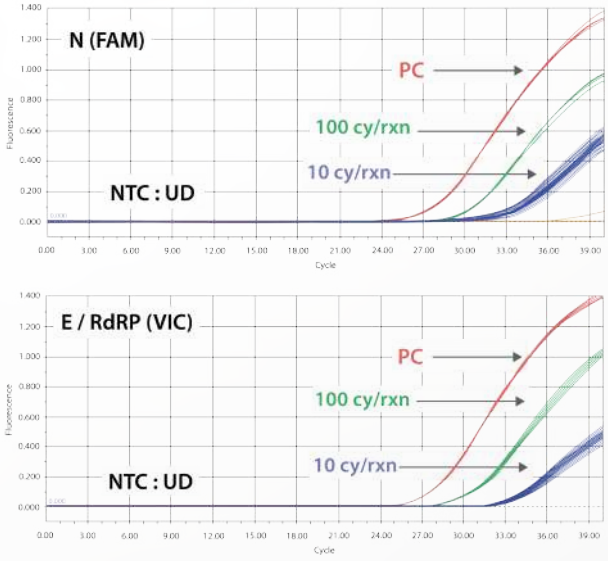
INTENDED USE

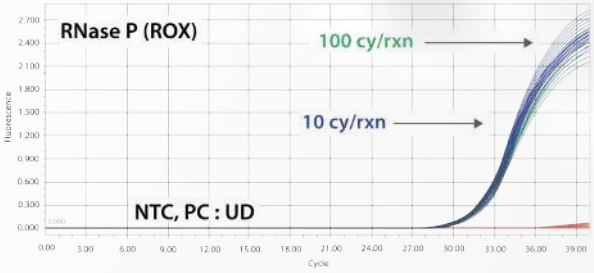
For research purpose, IdPath™ COVID-19 Real-Time RT-PCR Kit is a real-time RT-PCR test intended for the detection of SARS-CoV-2 virus RNA which might be extracted from the respiratory tract specimens. The Kit provides reagents for multiplex real-time RT-PCR to detect SARS-CoV-2 by one-step reaction, specifically targeting the E (Envelope), RdRP (RNA-dependent RNA polymerase) and N (Nucleocapsid protein) gene for SARS-CoV-2 virus.

The Kit contains the RT enzyme mix and qPCR master mix for reverse transcription and real-time PCR of virus RNA. The COVID-19 Control (positive control) and ddWater (negative control) are used as indicators to avoid false negative/positive results across all experimental procedures. The Primers/probes Mix contains multiplex primers and TaqMan probes specific to the N, E/RdRP genes of SARS-CoV-2 and RNase P gene of human, detected by FAM, VIC and ROX channels, respectively.

FEATURES

- **High Sensitivity**：5×10² copies/ml (10 copies/rxn)
- **High Inclusivity**： >99% of currently available complete virus genomes for SARS-CoV-2 including Omicron variant
- **High Accuracy**：Clinical validation with 100% accuracy
- **High Compatibility**：Suitable for most laboratory qPCR machines
- **Operation Control**：Including internal control for quality control of total process
- **Convenience**：Multiplex (E/RdRP and N) detection by one-step reaction





UD: Undetectable

NTC: Negative control (ddWater)

PC: Positive control for the SARS-COV-2 E/RdRP, N, and human RNase P genes.

ORDERING INFORMATION

Catalog No.	Description	Package
IP2000	IdPath™ COVID-19 Real-Time RT-PCR Kit (Cat no. IP2000)	100 tests

Illuminator

Cat. No.	Product Description
VE0100	B-BOX™ Blue Light LED Epi-illuminator, DC 12 Volt, 0.72 Amp
VE0101	Adapter, AC 100-240V, 50/60 Hz, 1.8 m Power Cord, 1/pk
VE0102	Multi-angle Filter Plate for B-BOX™, 1/pk
VE0103	Amber Goggles for B-BOX™, 1/pk
VE0104	Phox™ Photobox, 1/pk

Cloning

Cat. No.	Product Description
CV1100	GetClone™ PCR Cloning Vector II, 20 RXN
CK1000	Champion™ E. coli Transformation Kit, 200 RXN

DNA Ladders and Dyes

DNA Ladders and Markers

Cat. No.	Product Description
DM1100	ExcelBand™ 50 bp DNA Ladder, 500 µl
DM2100	ExcelBand™ 100 bp DNA Ladder, 500 µl
DM2300	ExcelBand™ 100 bp+3K DNA Ladder, 500 µl
DM3100	ExcelBand™ 1 KB (0.25-10 kb) DNA Ladder, 500 µl
DM3200	ExcelBand™ 1 KB Plus (0.1-10 kb) DNA Ladder, 500 µl
DM4100	ExcelBand™ XL 25 kb DNA Ladder, Broad Range (up to 25 kb), 500 µl
DM5100	ExcelBand™ Super Range DNA Ladder (50 bp-25 kb) , 500 µl
DM1200	AccuBand™ 50 bp DNA Ladder II, 500 µl
DM2000	AccuBand™ 100 bp DNA Marker II, 500 µl
DM2200	AccuBand™ 100 bp DNA Ladder II, 500 µl
DM2400	AccuBand™ 100 bp+3K DNA Ladder II, 500 µl

DNA Fluorescent Ladders

Cat. No.	Product Description
DM1160	FluoroBand™ 50 bp Fluorescent DNA Ladder, 500 µl
DM2160	FluoroBand™ 100 bp Fluorescent DNA Ladder, 500 µl
DM2360	FluoroBand™ 100 bp+3K Fluorescent DNA Ladder, 500 µl
DM3160	FluoroBand™ 1 KB (0.25-10 kb) Fluorescent DNA Ladder, 500 µl
DM3260	FluoroBand™ 1 KB Plus (0.1-10 kb) Fluorescent DNA Ladder, 500 µl
DM4160	FluoroBand™ XL 25 kb Fluorescent DNA Ladder, Broad Range (up to 25 kb), 500 µl

DNA Loading Dyes

Cat. No.	Product Description
DL1000	ExcelDye™ 6X DNA Loading Dye, Orange, 5 ml x 2
DL2000	ExcelDye™ 6X DNA Loading Dye, Green, 5 ml x 2
DL3000	ExcelDye™ 6X DNA Loading Dye, Blue, 5 ml x 2
DL4000	ExcelDye™ 6X DNA Loading Dye, Tri-color, 5 ml x 2

DNA Fluorescent Loading Dye

Cat. No.	Product Description
DL5000	FluoroDye™ DNA Fluorescent Loading Dye (Green, 6X), 1 ml
DL5001	FluoroDye™ DNA Fluorescent Loading Dye (Green, 6X), 1 ml x 5

DNA Fluorescent Staining Dyes

Cat. No.	Product Description
DS1000	FluoroStain™ DNA Fluorescent Staining Dye (Green, 10,000X), 500 µl
DS1001	FluoroStain™ DNA Fluorescent Staining Dye (Green, 10,000X), 500 µl x 5
NS1000	FluoroVue™ Nucleic Acid Gel Stain (10,000X), 500 µl
NS1001	FluoroVue™ Nucleic Acid Gel Stain (10,000X), 500 µl x 5

Precast Gel

Bis-Tris series

Cat. No.	Product Description
QP2110	Q-PAGE™ Bis-Tris Precast Gel (Mini, 12 wells, 8%), 10 gels
QP2310	Q-PAGE™ Bis-Tris Precast Gel (Mini, 12 wells, 12%), 10 gels
QP2510	Q-PAGE™ Bis-Tris Precast Gel (Mini, 12 wells, 4-12%), 10 gels
QP3110	Q-PAGE™ Bis-Tris Precast Gel (Midi, 12 wells, 8%), 10 gels
QP3310	Q-PAGE™ Bis-Tris Precast Gel (Midi, 12 wells, 12%), 10 gels
QP3510	Q-PAGE™ Bis-Tris Precast Gel (Midi, 12 wells, 4-12%), 10 gels
QP2120	Q-PAGE™ Bis-Tris Precast Gel (Mini, 15 wells, 8%), 10 gels
QP2320	Q-PAGE™ Bis-Tris Precast Gel (Mini, 15 wells, 12%), 10 gels
QP2520	Q-PAGE™ Bis-Tris Precast Gel (Mini, 15 wells, 4-12%), 10 gels
QP3120	Q-PAGE™ Bis-Tris Precast Gel (Midi, 15 wells, 8%), 10 gels
QP3320	Q-PAGE™ Bis-Tris Precast Gel (Midi, 15 wells, 12%), 10 gels
QP3520	Q-PAGE™ Bis-Tris Precast Gel (Midi, 15 wells, 4-12%), 10 gels

TGN series

Cat. No.	Product Description
QP4220	Q-PAGE™ TGN Precast Gel (Mini, 15 wells, 10%), 10 gels
QP4510	Q-PAGE™ TGN Precast Gel (Mini, 12 wells, 4-15%), 10 gels
QP5210	Q-PAGE™ TGN Precast Gel (Midi, 12 wells, 10%), 10 gels
QP5510	Q-PAGE™ TGN Precast Gel (Midi, 12 wells, 4-15%), 10 gels
QP4220	Q-PAGE™ TGN Precast Gel (Mini, 15 wells, 10%), 10 gels
QP4520	Q-PAGE™ TGN Precast Gel (Mini, 15 wells, 4-15%), 10 gels
QP5220	Q-PAGE™ TGN Precast Gel (Midi, 15 wells, 10%), 10 gels
QP5520	Q-PAGE™ TGN Precast Gel (Midi, 15 wells, 4-15%), 10 gels

Running Buffer Powder

Cat. No.	Product Description
BF2000	SMOChem™ 1X MOPS-SDS Running Buffer Powder, 5 packs
BF4000	SMOChem™ 1X Tris-Glycine-SDS Running Buffer Powder, 5 packs

Protein Markers and Stain

Protein Markers and Ladders

Cat. No.	Product Description
PM1500	ExcelBand™ All Blue Regular Range Protein Marker, 250 µl x 2
PM1600	ExcelBand™ All Blue Regular Range Plus Protein Marker, 250 µl x 2
PM1700	ExcelBand™ All Blue Broad Range Protein Marker, 250 µl x 2
PM2500	ExcelBand™ 3-color Regular Range Protein Marker, 250 µl x 2
PM2510	ExcelBand™ Enhanced 3-color Regular Range Protein Marker, 250 µl x 2
PM2600	ExcelBand™ 3-color High Range Protein Marker, 250 µl x 2
PM2610	ExcelBand™ Enhanced 3-color High Range Protein Marker, 250 µl x 2
PM2700	ExcelBand™ 3-color Broad Range Protein Marker, 250 µl x 2
PM2800	ExcelBand™ 3-color Extra Range Protein Marker, 250 µl x 2
PM5000	ExcelBand™ 3-color Pre-stained Protein Ladder, Regular Range, 250 µl x 2
PM5100	ExcelBand™ 3-color Pre-stained Protein Ladder, High Range, 250 µl x 2
PM5200	ExcelBand™ 3-color Pre-stained Protein Ladder, Broad Range, 250 µl x 2

Western Marker

Cat. No.	Product Description
WM1000	YesBlot™ Western Marker I, 250 µl

Protein Fluorescent Staining Dye

Cat. No.	Product Description
PS1000	FluoroStain™ Protein Fluorescent Staining Dye (Red, 1000X), 1 ml
PS1001	FluoroStain™ Protein Fluorescent Staining Dye (Red, 1000X), 1 ml x 5

Nucleic acid

Cat. No.	Product Description
CD1010	Deoxynucleotide (dNTP) Mix, 10 mM each (40 mM total), 200 µl
CD1011	Deoxynucleotide (dNTP) Mix, 10 mM each (40 mM total), 200 µl x 5
CD1020	Deoxynucleotide (dNTP) Mix, 25 mM each (100 mM total), 500 µl
CD1021	Deoxynucleotide (dNTP) Mix, 25 mM each (100 mM total), 500 µl x 6
CD3000	dATP Solution - Sodium Salt (100 mM), 25 ml
CD3001	dATP Solution - Sodium Salt (100 mM), 100 ml
CD4000	dTTP Solution - Sodium Salt (100 mM), 25 ml
CD4001	dTTP Solution - Sodium Salt (100 mM), 100 ml
CD5000	dCTP Solution - Sodium Salt (100 mM), 25 ml
CD5001	dCTP Solution - Sodium Salt (100 mM), 100 ml
CD6000	dGTP Solution - Sodium Salt (100 mM), 25 ml
CD6001	dGTP Solution - Sodium Salt (100 mM), 100 ml
CD7000	dUTP Solution - Sodium Salt (100 mM), 25 ml
CD7001	dUTP Solution - Sodium Salt (100 mM), 100 ml

DNA Amplification

High Fidelity PCR

Cat. No.	Product Description
TF1000	SMO-HiFi™ DNA Polymerase, 1 U/μl, 100 U
TF3000	G-HiFi™ DNA Polymerase, 1 U/μl, 100 U
TK1000	ExcelTaq™ Klen-Taq DNA Polymerase, 5 U/μl , 500 U

Standard PCR

Cat. No.	Product Description
TP1000	ExcelTaq™ DNA Polymerase, 5 U/μl, 500 U
TP1100	ExcelTaq™ 5X PCR Master Mix, 200 RXN
TP1120	ExcelTaq™ 2X PCR Master Mix ($MgSO_4$), 100 RXN
TP1200	ExcelTaq™ 5X PCR Master Dye Mix, 200 RXN
TP1260	ExcelTaq™ 5X Fluorescent PCR Master Mix, 200 RXN

Extraction-free PCR

Cat. No.	Product Description
TP2000	ExcelTaq™ Blood Direct DNA Polymerase, 5 U/μl, 500 U
TP2100	ExcelTaq™ 5X Blood Direct PCR Master Mix Kit, 200 RXN

Hot Start PCR

Cat. No.	Product Description
TP5000	ExcelTaq™ Hot Start II DNA Polymerase, 5 U/μl, 500 U

Real-time PCR

Cat. No.	Product Description
TQ1100	ExcelTaq™ 2X Q-PCR Master Mix, (SYBR, no ROX), 200 RXN
TQ1101	ExcelTaq™ 2X Q-PCR Master Mix, (SYBR, no ROX), 500 RXN
TQ1110	ExcelTaq™ 2X Q-PCR Master Mix, (SYBR, ROX), 200 RXN
TQ1200	ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX), 200 RXN
TQ1201	ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, no ROX), 500 RXN
TQ1210	ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, ROX), 200 RXN
TQ1211	ExcelTaq™ 2X Fast Q-PCR Master Mix (SYBR, ROX), 500 RXN
TQ2110	ExcelTaq™ 2X Q-PCR Master Mix, (TaqMan, ROX), 200 RXN

cDNA Synthesis and RT-PCR

cDNA Synthesis

Cat. No.	Product Description
RP1000	ExcelRT™ Reverse Transcriptase, 200 U/μl, 20000 U
RP1300	ExcelRT™ Reverse Transcription Kit, 100 RXN
RP1400	ExcelRT™ Reverse Transcription Kit II, 100 RXN

One-Step RT-PCR

Cat. No.	Product Description
RP1100	ExcelRT™ One-Step RT-PCR Kit, 50 RXN

One-Step RT-qPCR

Cat. No.	Product Description
RQ2110	ExcelRT™ One-Step RT-qPCR Kit (TaqMan, ROX), 200 RXN
RQ2200	ExcelRT™ One-Step RT-qPCR Kit (TaqMan, no ROX), 200 RXN

RNase Inhibitor

Cat. No.	Product Description
RI1000	RNAok™ RNase Inhibitor, 20 U/μl, 2000 U
RI1001	RNAok™ RNase Inhibitor, 20 U/μl, 2000 U x 5

IVT mRNA related

T7 High Yield RNA Synthesis Kit

Cat. No.	Product Description
IT1000	T7 High Yield RNA Synthesis Kit
IT1100	T7 High Yield RNA Synthesis Kit(Ψ-UTP)
IT1200	T7 High Yield RNA Synthesis Kit(me^1Ψ-UTP)

RNA Capping System

Cat. No.	Product Description
RC1000	EzRNA™ RNA Capping System

Pathogen Detection

Cat. No.	Product Description
IP2000	IdPath™ COVID-19 Real-Time RT-PCR Kit, 100 RXN

Ver. 1121001

SMOBiO®

Small Bio, Smart Tool

www.smobio.com