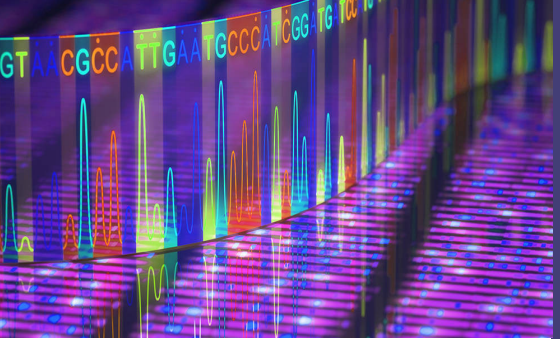
MCLAB
Molecular Cloning Laboratories

DNA Sequencing Products

- Sanger DNA Sequencing
- Fragment Analysis
- Accessories and Reagents



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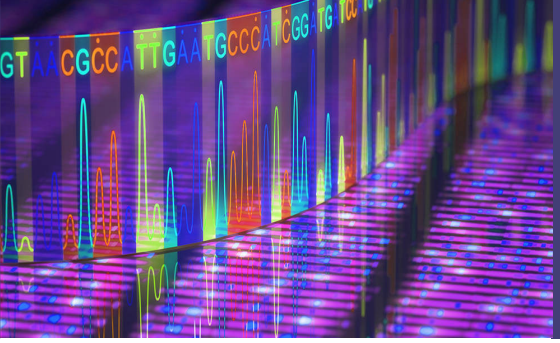


Sanger DNA Sequencing

BrightDye® Terminator Cycle Sequencing Kit

Description

The BrightDye® Terminator Cycle Sequencing Kit is a reagent used for labeling the dideoxynucleoside triphophates. It is designed for de novo sequencing, resequencing, PCR product, plasmid, fosmid, and BAC templates by utilizing highly flexible chemistry. This kit uses four different fluorescent dyes to label ddNTPs, which are added sequentially to the primer through a cycle sequencing reaction. All required reagents for the sequencing procedure are in a reaction-ready, pre-mixed format. BrightDye terminator kit is compatible with commercially available BigDye terminator V3.1 kit, without any changes in the workflow.

With enhanced robustness and better dye mobility characteristics, the BrightDye® Terminator Cycle Sequencing Kit can be used in a wide range of applications with the following features:

- Long read lengths
1. Better performance reading through GC rich regions
- Longer reads with more uniform peak heights
- Improved productivity for less cost

Applications

- De novo sequencing
- Resequencing
- Sequencing difficult templates
- Long-read sequencing
- Sequencing across all template types (plasmids, PCR products, BACs, and fosmids)
- Mixed-base detection
- Sequencing short PCR products using rapid electrophoresis run modules

Platforms

GeneAmp® 9700, Veriti® Thermal Cycler, 3730 DNA Analyzer, 3500xl Genetic Analyzer, 3500 Genetic Analyzer, 310 Genetic Analyzer, 3130 Genetic Analyzer, 3130xl Genetic Analyzer, 3730xl DNA Analyzer

Template Compatibility

- Plasmid DNA (≤15Kb)
- Fosmids
- Single Stranded DNA
- Lambda DNA
- BAC DNA
- Genomic DNA (Bacterial)
- PCR Amplicons
- Rolling circle amplified products

Storage

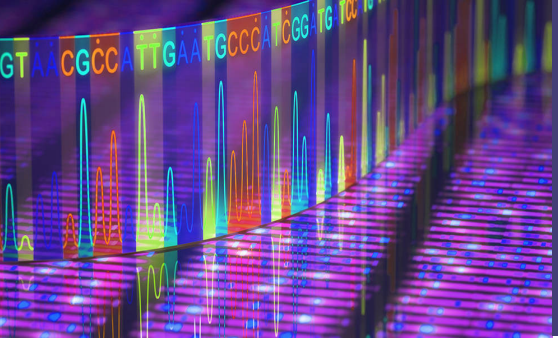
Store kit at -20°C. Avoid repeated freeze-thaw cycles.

Regulatory Statement

For Research Use Only. Not for use in diagnostic procedures.

Product Information

BDT3-24	24 reactions
BDT3-100	100 reactions
BDT3-200	2,500 reactions
BDT3-300	5,000 reactions (2x20 ml bottles)
BDT3-400	25,000 reactions



Sanger DNA Sequencing

dGTP BrightDye® Terminator Cycle Sequencing Kit

Description

The dGTP BrightDye® Terminator Cycle Sequencing Kit is optimized for sequencing GC-rich and other difficult to sequence templates. The dGTP BrightDye® Terminator Kit comprises dGTP, replacing dITP, which facilitates the extension through those difficult to sequence regions without early signal loss. This is compatible with commercially available BigDye terminator, V3.0.

Features

- Sequence templates with challenging sequence regions
- Optimized for sequencing GC- rich templates
- Easily integrate into your current workflow with minimal changes to your protocols

Application

- GC-rich or challenging template sequencing

Template Compatibility

- Genomic DNA (Bacterial)
- Plasmid DNA (≤15Kb)
- PCR Amplicons
- Single Stranded DNA
- BAC DNA

Storage

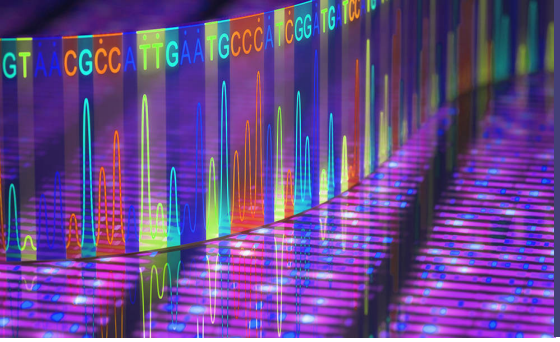
Store kit at -15 to -25°C. Avoid repeated freeze-thaw cycles.

Regulatory Statement

For Research Use Only. Not for use in diagnostic procedures.

Product Information

BDT5-100	100 reactions
BDT5-200	2,500 reactions
BDT5-300	5,000 reactions (2x20 ml bottles)
BDT5-400	25,000 reactions



BigDye® Sequencing Clean Up Kit

Description

BigDye® Sequencing Clean Up Kit is a magnetic bead-based, high-throughput purification kit for DNA sequencing reactions. The kit consists of beads and an elution buffer. Each component has been optimized for removing salts and unincorporated dye terminators from DNA sequencing reaction mixtures. The purified DNA products are more stable compared to the products purified using competitors' magnetic beads. The system can be easily adapted by your current system. You may use the same protocol as the CleanSeq® beads.

MCLAB's BigDye® Sequencing Clean Up Kit, based on carboxylated magnetic bead technology, delivers higher yield after dye terminator removal at a fraction of the cost.** With its high sequencing pass rates and longer Phred 20 read lengths (> 900 base pairs on average), the BigDye® Sequencing Clean Up Kit is superior to alternative cleanup methods like ethanol precipitation, gel filtration or silica-based magnetic reagents adsorption.

Features

- Cost effective- Same quality, lowest price. More than 90% savings off leading brand prices**
- Fast workflow (only 9 minutes) with the provided protocol

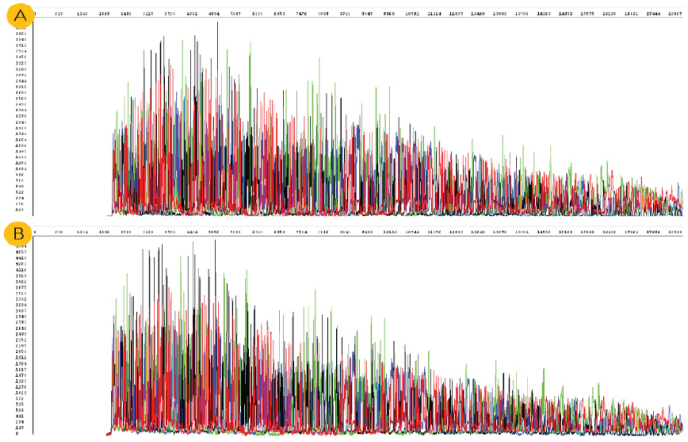


Figure 1. The MCLAB BigDye® Sequencing Clean Up Kit (A) delivers consistent results compared to the market leader Agencourt CleanSEQ Kit (B).

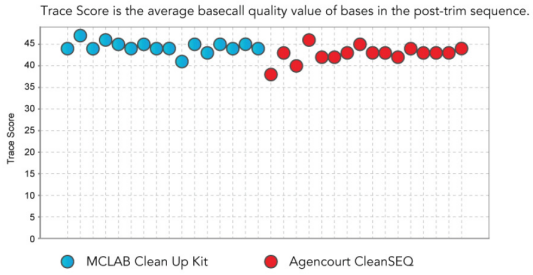


Figure 2. The QV 20 of trace scores produced by ABI 3730xl after BigDye® Terminators being removed by MCLAB BigDye® Sequencing Clean Up Kit (blue) and Agencourt CleanSEQ Kit (red) are plotted side by side.

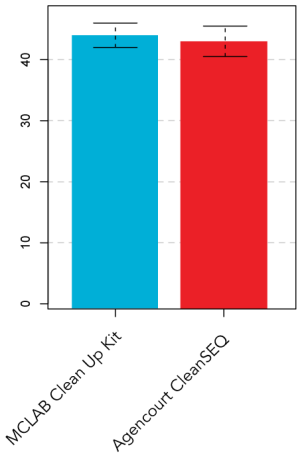
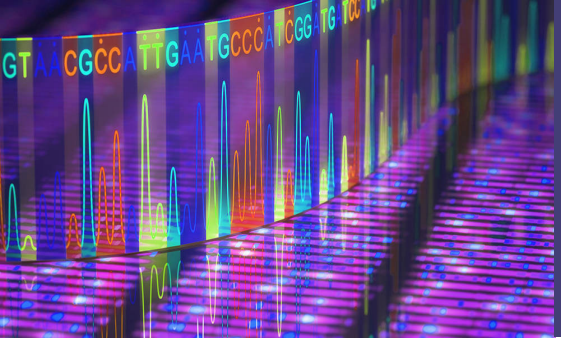


Figure 3. Identical 96-well plates were sequenced and dye terminators removed using either MCLAB BigDye® Sequencing Clean Up Kit (blue) or Agencourt CleanSEQ Kit (red) with the sequences delineated on an ABI 3730xl.

* Agencourt CleanSEQ is a trademark of Beckman Coulter
** price calculated based on 500 ml packages

Product Information

BCB-100	500 samples, 5 ml
BCB-200	5,000 samples, 50 ml
BCB-250	20,000 samples, 200 ml
BCB-300	50,000 samples, 500 ml

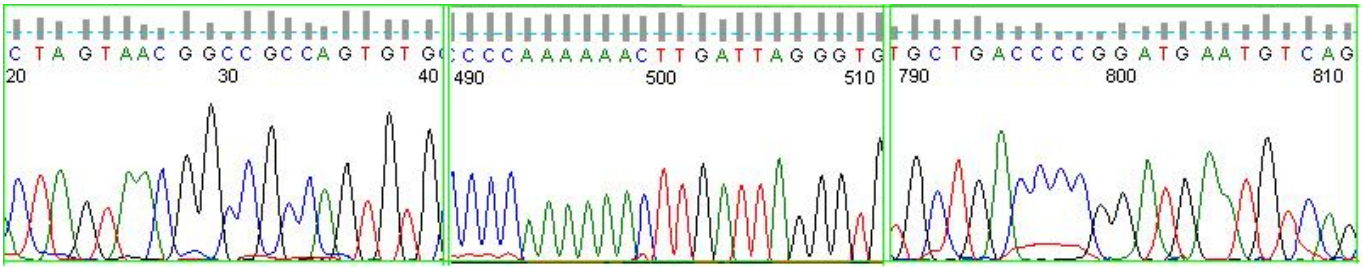


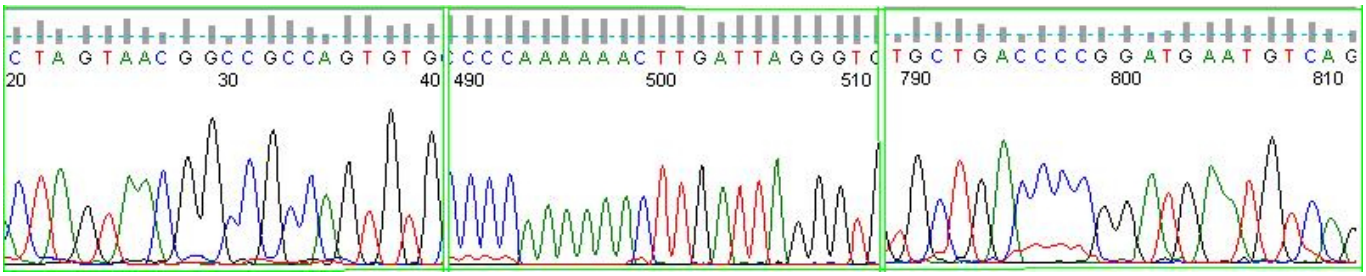
BDX64 (BigDye® Enhancing Buffer)

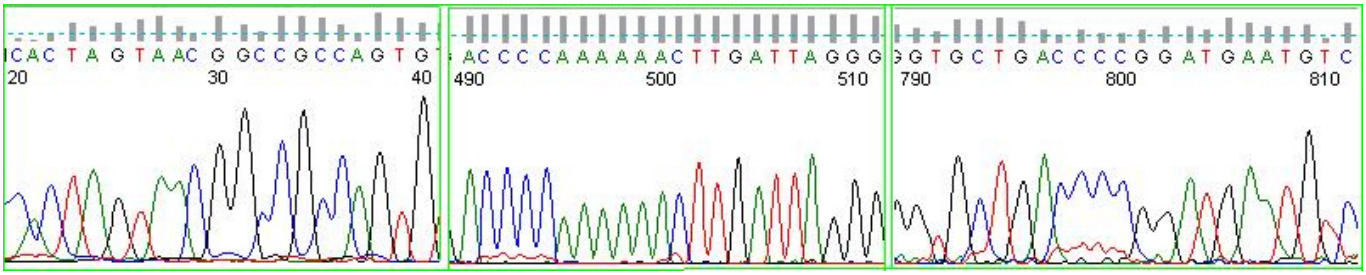
Description

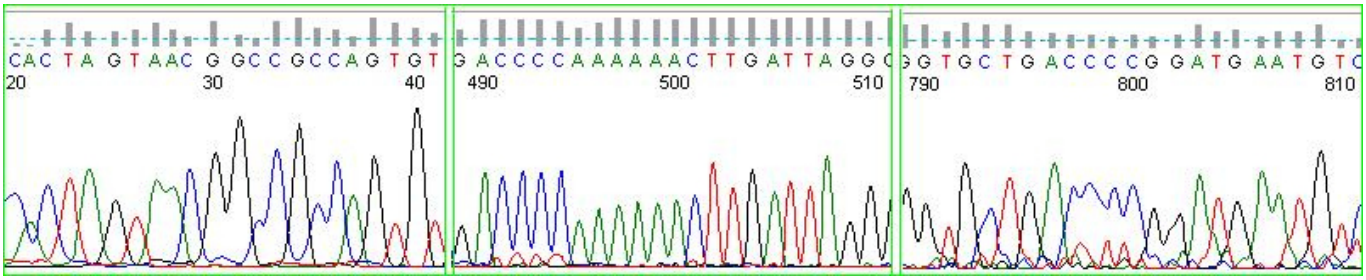
MCLAB's BDX64 is a BigDye® enhancing buffer for DNA sequencing. BDX64 buffer has the same ion strength as the BigDye® premix 3.1 and 1.1.

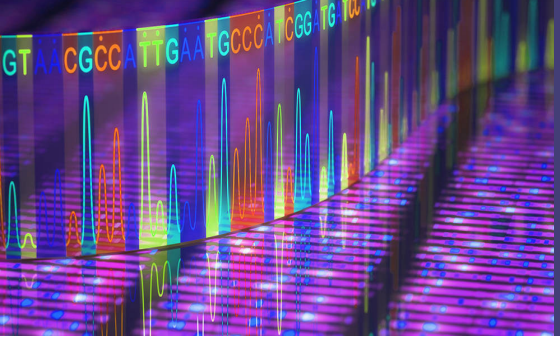
- Up to 64 (0.12 µl bigdye in 10 µl reaction) or more fold dilutions by combining with the 5x dilution buffer
- Enhances the polymerase activity and reduces the extension time from 4 to 1 minute
- Reduces the signal decline rate and results in even peak distributions
- Optimizes for use with BigDye® Chemistry (ABI) on 310, 3100, 3130/3130xl & 3730/3730xl



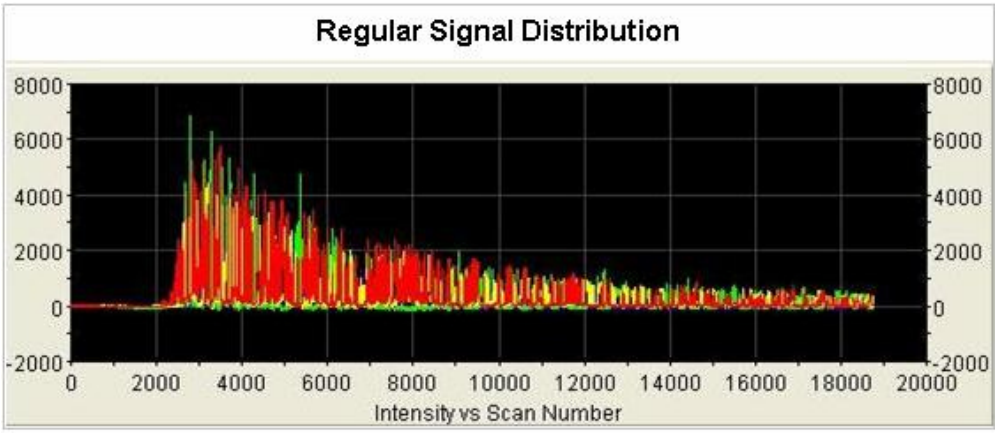


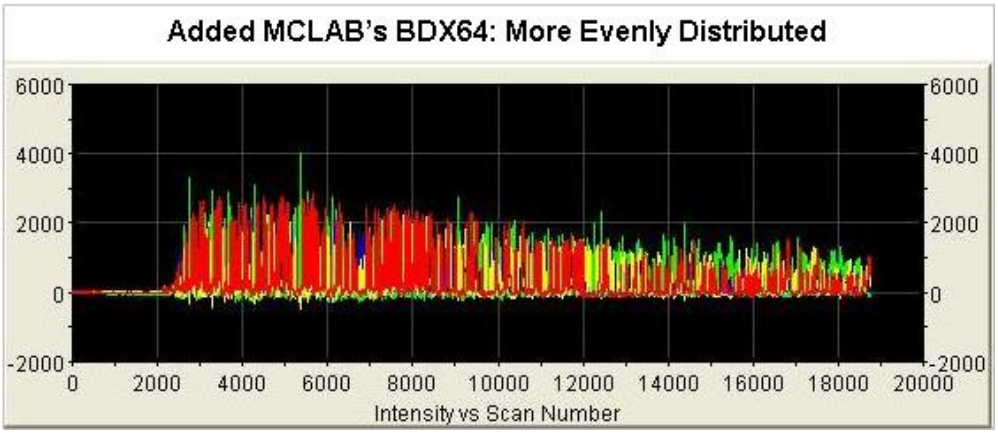






Sanger DNA Sequencing





Recommended Cycle Conditions

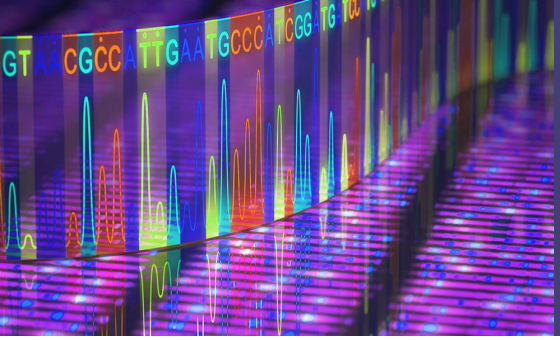
96 ºC, 3 minutes, 30X (96 ºC, 10 seconds, 50 ºC, 5 seconds, 60 ºC, 2 minutes)

Recommended Storage Condition

-20 ºC

Product Information

BDX-100	2 x 1.25 ml
BDX-OEM	Any Size



Sanger DNA Sequencing

BigDye® Terminator 5X Sequencing Buffer

Description
MCLAB's BigDye® Terminator 5X Sequencing Buffer reduces sequencing costs without affecting sequence accuracy or read length. Its buffer system requires less dye terminator mix.

Application
- DNA sequencing

Recommended Storage Condition
4 °C

Recommended Protocol
Prepare sequencing reactions (10µl reaction) according to the following:
Add dye terminator mix 0.25-0.5 µl
Add 5X Sequencing Buffer 1.75-1.875 µl
Add template (100-200 ng/µl) 1 µl
Add primer (3 pmol/µl) 1 µl
Add H_2O to 10 µl

Cycle the reaction according to the following protocol:
Step 1: 96°C 3 minutes
Step 2: 96°C 10 seconds
Step 3: 50°C 5 seconds
Step 4: 60°C 2 minutes and 30 seconds
(25 to 30 cycles from step 2 to step 4)
Step 5: 4°C hold

Notes
Other cycle conditions may work well for individual users. These conditions work well for most of the samples processed in our lab using reduced volume and reduced terminator mix concentrations.

Product Information

SBUF-100	1 ml
SBUF-110	28 ml
SBUF-120	233 ml
SBUF-OEM	Any Size

CE 10X Running Buffer (with EDTA)

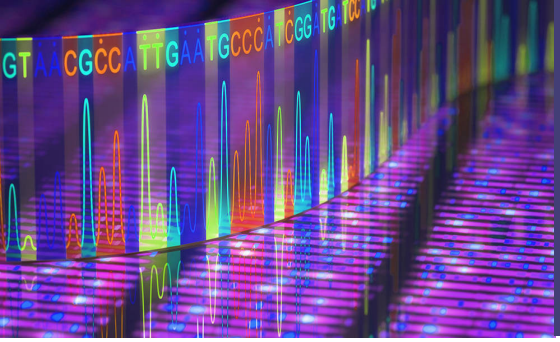
Description
MCLAB's CE 10X Running Buffer (with EDTA) has been tested and approved by many labs. It is optimized for use with various ABI's Genetic Analyzers, including 310, 3100, 3130xl, 3730, 3730xl.

Applications
- The CE 10X Running Buffer is used with ABI's POP-4, ABI's POP-6, ABI's POP-7 and MCLAB's NanoPOP-4™ .
- DNA sequencing and DNA fragment analysis
- Optimized for use during capillary electrophoresis on all ABI's Genetic Analyzers, including 310, 3100, 3130xl, 3700, and 3730, 3730xl.

Recommended Storage Condition
Room Temperature

Product Information

RBUF-100	100 ml
RBUF-500	500 ml
RBUF-OEM	Any size



Sanger DNA Sequencing

Matrix Standard Kit

Description

Spectral calibration of the DNA sequencing instrument is critical to maintaining high throughput sequencing operations. By evaluating multicolor systems of the sequencing instrument, sequencing providers can automatically correct the spectral overlap in samples loaded onto the capillary arrays.
This matrix standard is for use with capillary electrophoresis (CE) –based genetic analyzers such as ABI's 310, 3100, 3130 and 3730 series. The DNA contained in the preparation has been lyophilized to maximize stability and the standard has been optimized through MCLAB's proprietary technology. The preparation step before loading has been significantly simplified.

Applications

- DNA sequencing
- Spectral calibration

Features

- pGEM plasmid sequenced by M13F primer through dye terminator 3.1 chemistry
- Highly purified, low background, high signal intensity
- Consistent intensity for routine QC purposes
- Replace ABI's BigDye® Terminator v3.1 Sequencing

Standard Reagents (cat# 4486194, 4486194)

Product Information

MSK-100	1 ml for 96 reactions

NanoPOP™ 10X Running Buffer (with EDTA)

Description

MCLAB's NanoPOP™ 10X Running Buffer (with EDTA) has been tested and approved by many labs. It is optimized for use with various ABI's Genetic Analyzers, including 310, 3100, 3130/3130xl, 3730/3730xl.

Applications

- DNA sequencing and DNA fragment analysis
- Optimized for use during capillary electrophoresis on all ABI's Genetic Analyzers

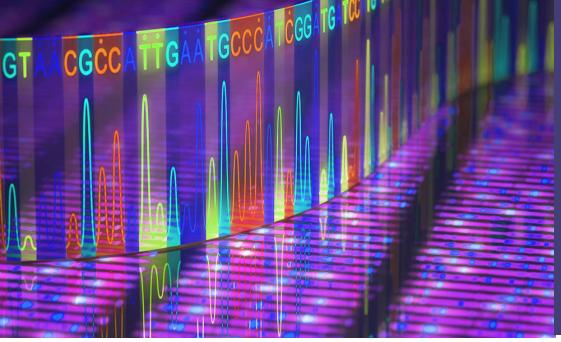
Recommended Storage Condition

Room Temperature

*The NanoPOP buffer is used with NanoPOP-6™ and NanoPOP-7™

Product Information

NPB-100	100 ml
NPB-500	500 ml
NPB-OEM	Any Size



Hairpin DNA & GC Rich Sequencing Premix for BigDye® 3.1

Description

MCLAB's Hairpin DNA Sequencing Premix is designed to sequence difficult templates containing hairpin structures and high GC contents.

The example condition is as follows

Hairpin DNA Sequencing Premix	4 µl
DNA template	100 ng
Primer	3.2 pmol
Add ABI's BigDye®	0.25-0.5 µl
Add water to final volume of 10 µl	

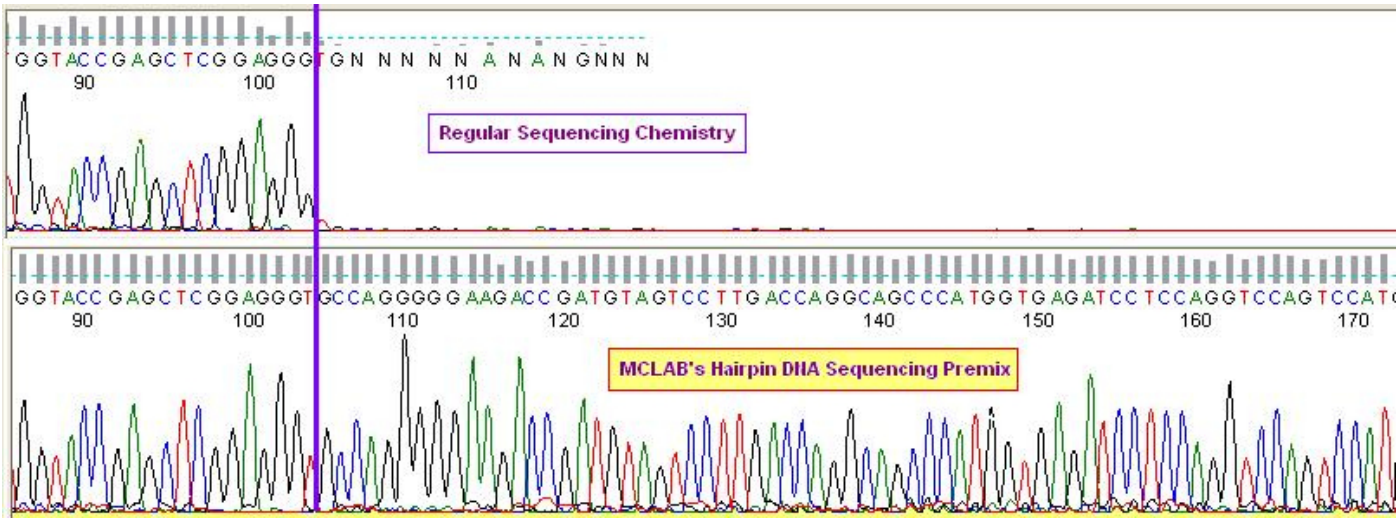
Cycle Condition

1 cycle: 98°C for 3 minutes
25 cycles: 98°C for 10 seconds; 50°C for 5 seconds, and 60°C for 2 minutes

Recommended Storage Condition: -20°C

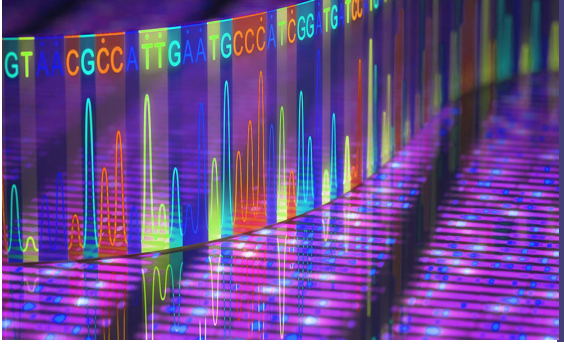
Comparison

Regular sequencing chemistry vs. MCLAB's Hairpin DNA Sequencing Premix for ABI's BigDye® 3.1



Product Information

BDP-100	1 ml	4 µl/reaction



CARE (Capillary Array Regeneration Excellence)™ Solution

Description

MCLAB's CARE Solution is designed for inline capillary regeneration. It has been tested on ABI's 310, 3100, 3130xl and 3730xl successfully. CARE Solution is used for fragment analysis and DNA sequencing applications. Besides capillary arrays, the CARE Solution can also be used to clean polymer contacted surfaces (e.g. pump channels, polymer blocks and tubings). The inline capillary regeneration protocol makes the system cleaning easier than ever, resulting in a regenerated capillary with lower background noise and longer sequencing reads.

Applications

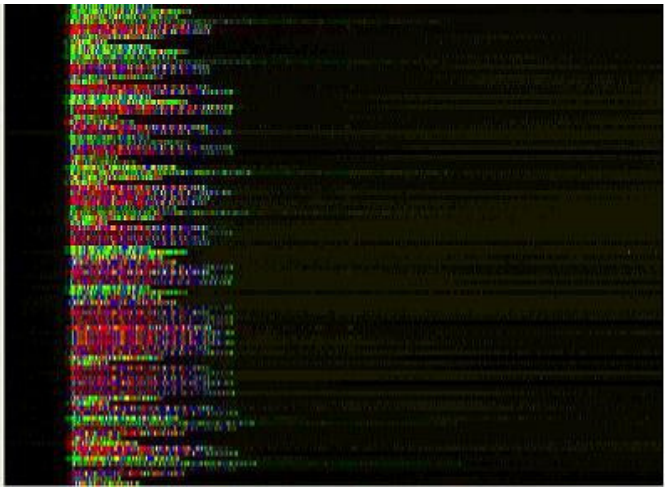
- Capillary inline rejuvenation
- Pump channels, polymer block and tubing cleaning
- Yellow haze background removal

Recommended Storage Condition

4° C

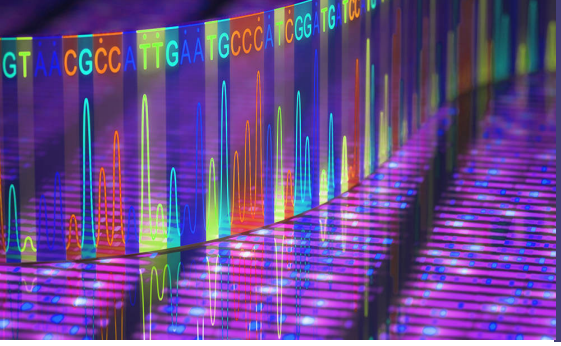
Comparison

Before CARE applied (left) vs. after CARE applied (right)



Product Information

CR-100	28 ml
CR-500	5 X 28 ml



NanoPOP™ Polymers

Description

NanoPOP-4™, NanoPOP-6™, and NanoPOP-7™ are separation matrixes formulated from nanoparticles based on MCLAB's "Block Copolymer Technology" chemistry. The new matrixes have better coating and separating abilities. They are designed for ABI™ Genetic Analyzers with different applications. Customers can use their current run modules and protocols without any change. New spectral calibration is not needed.

Application

NanoPOP-4™: denaturing DNA fragment analysis such as microsatellite and SNP genotyping
NanoPOP-6™: standard and rapid DNA sequencing
NanoPOP-7™: DNA sequencing and fragment analysis

Size 5ml, for 310/3100, 3130/3130xl Genetic Analyzer Accessories
Size 10ml, for 3130/3130xl Genetic Analyzer Accessories
Size 10ml, for 310/3100 Genetic Analyzer Accessories
Size 28ml, for 310/3100, 3130/3130xl, 3730/3730xl Genetic Analyzer Accessories

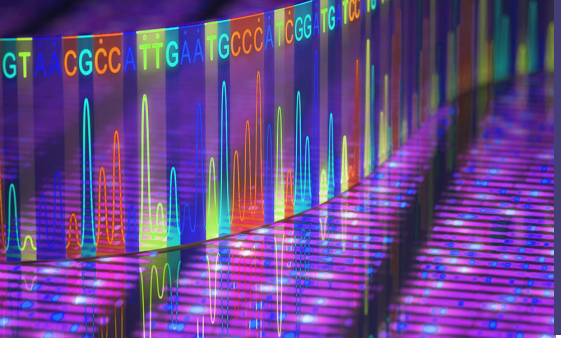
Used With

NanoPOP-4™ is used with CE 10X Running Buffer.
NanoPOP-6™ and NanoPOP-7™ are used with NanoPOP 10X Running Buffer.

Recommended Storage Condition: 4-8°C

Product Information

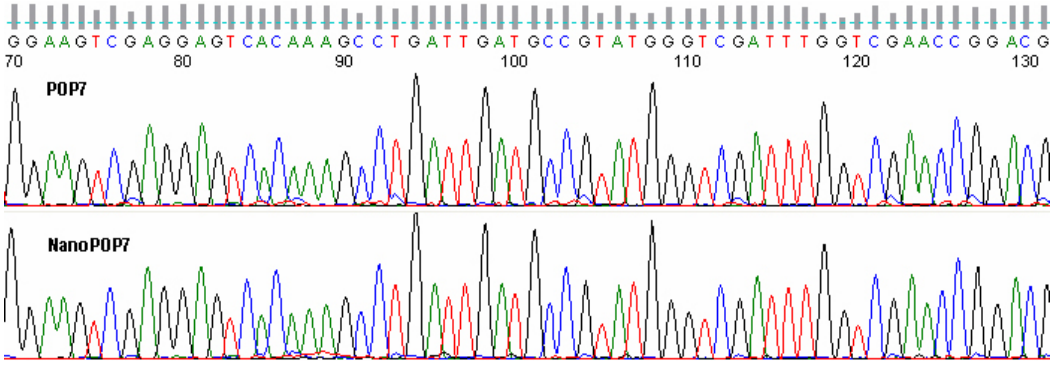
NP4-100	3130/3130xl Genetic Analyzers(ABI), 5 ml
NP4-101	3130/3130xl Genetic Analyzers(ABI), 10 ml
NP4-102	3130/3130xl Genetic Analyzers(ABI), 28 ml
NP4-120	310 Genetic Analyzers (ABI), 5 ml
NP4-121	310 Genetic Analyzers (ABI), 10 ml
NP4-122	310 Genetic Analyzers (ABI), 28 ml
NP6-100	3130/3130xl Genetic Analyzers (ABI), 5 ml
NP6-101	3130/3130xl, 3100 Genetic Analyzers (ABI), 10 ml
NP6-120	310 Genetic Analyzers (ABI), 5 ml
NP6-121	310 Genetic Analyzers (ABI), 10 ml
NP7-100	3130/3130xl Genetic Analyzers (ABI), 5 ml
NP7-101	3130/3130xl Genetic Analyzers (ABI), 10 ml
NP7-300	3130/3130xl, 3730/3730xl Genetic Analyzers (ABI), 28 ml
NP7-301	3730/3730xl Genetic Analyzers (ABI), 10 x 28 ml
NP7-302	3730/3730xl Genetic Analyzers (ABI), 30 x 28 ml



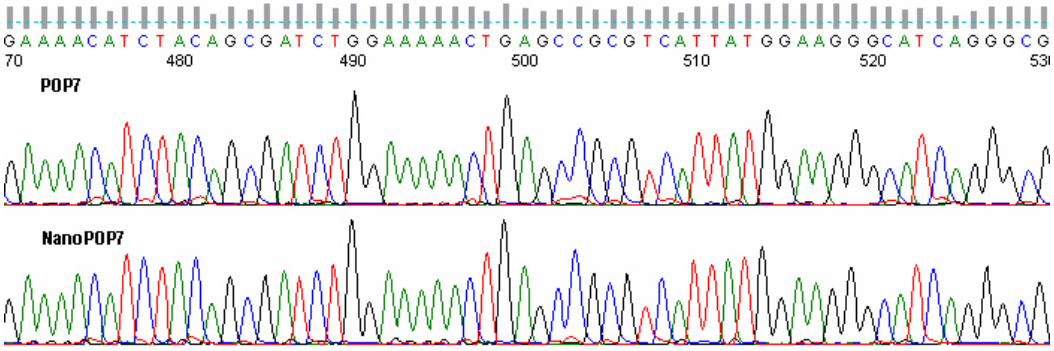
Sanger DNA Sequencing

Comparisons

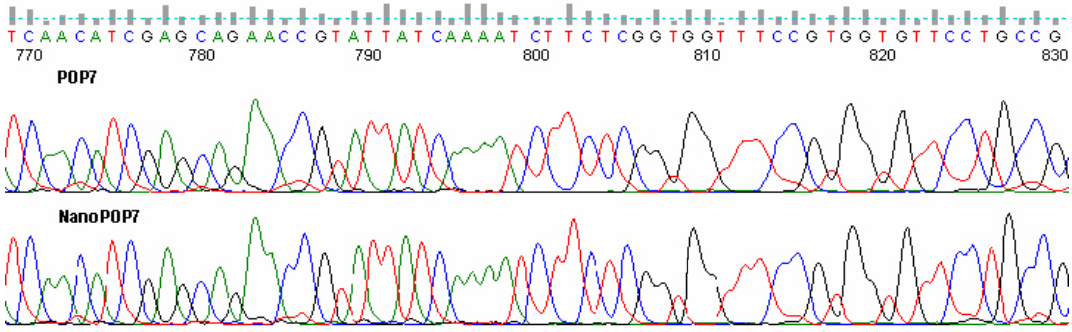
1. NanoPOP-7™ vs POP-7™: near 100 bp

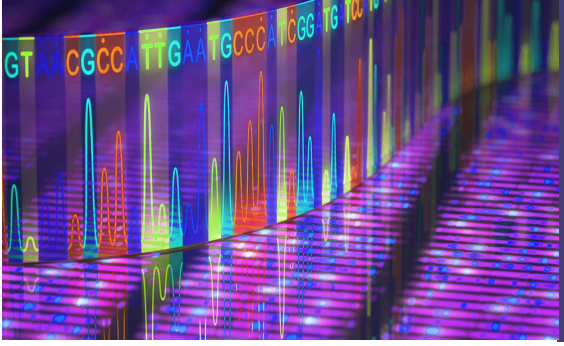


2. NanoPOP-7™ vs POP-7™: near 500 bp



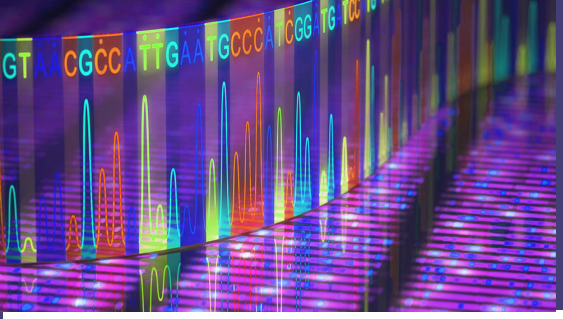
3. NanoPOP-7™ vs POP-7™: near 800 bp





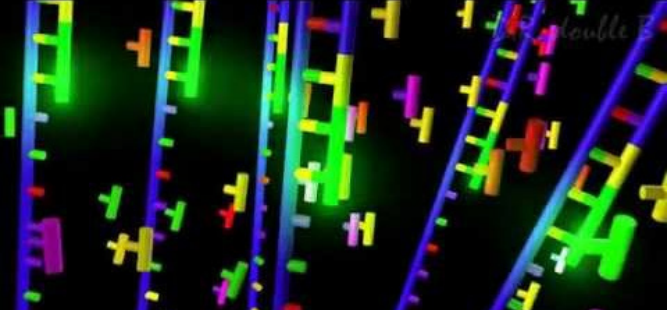
Sanger DNA Sequencing

Order Information		
Name	Cat #	Description
BrightDye® Terminator Cycle Sequencing Kit	BDT3-24	24 reactions
BrightDye® Terminator Cycle Sequencing Kit	BDT3-100	100 reactions
BrightDye® Terminator Cycle Sequencing Kit	BDT3-200	2,500 reactions
BrightDye® Terminator Cycle Sequencing Kit	BDT3-300	5,000 reactions (2x20 ml bottles)
BrightDye® Terminator Cycle Sequencing Kit	BDT3-400	25,000 reactions
dGTP BrightDye® Terminator Cycle Sequencing Kit	BDT5-100	100 reactions
dGTP BrightDye® Terminator Cycle Sequencing Kit	BDT5-200	2,500 reactions
dGTP BrightDye® Terminator Cycle Sequencing Kit	BDT5-300	5,000 reactions (2x20 ml bottles)
dGTP BrightDye® Terminator Cycle Sequencing Kit	BDT5-400	25,000 reactions
BDX64 Buffer	BDX-100	2 x1.25 ml
BDX64 Buffer	BDX-OEM	Any size
BigDye® Sequencing Clean Up Kit	BCB-100	500 samples, 5 ml
BigDye® Sequencing Clean Up Kit	BCB-200	5,000 samples, 50 ml
BigDye® Sequencing Clean Up Kit	BCB-250	20,000 samples, 200 ml
BigDye® Sequencing Clean Up Kit	BCB-300	50,000 samples, 500 ml
BigDye Terminator 5X Sequencing Buffer	SBUF-100	1 ml
BigDye Terminator 5X Sequencing Buffer	SBUF-110	28 ml
BigDye Terminator 5X Sequencing Buffer	SBUF-120	233 ml
BigDye Terminator 5X Sequencing Buffer	SBUF-OEM	Any size
CE 10X Running Buffer (with EDTA)	RBUF-100	100 ml
CE 10X Running Buffer (with EDTA)	RBUF-500	500 ml
CE 10X Running Buffer (with EDTA)	RBUF-OEM	Any size
Matrix Standard Kit	MSK-100	96 reactions, 1 ml
NanoPOP™ 10X Running Buffer (with EDTA)	NPB-100	100 ml
NanoPOP™ 10X Running Buffer (with EDTA)	NPB-500	500 ml
NanoPOP™ 10X Running Buffer (with EDTA)	NPB-OEM	Any size



Sanger DNA Sequencing

Order Information		
Name	Cat #	Description
Hairpin DNA & GC Rich Sequencing Premix for BigDye® 3.1"	BDP-100	1 ml, 4 µl/reaction
NanoPOP-4™	NP4-100	3130/3130xl Genetic Analyzers (ABI), 5 ml
NanoPOP-4™	NP4-101	3130/3130xl Genetic Analyzers (ABI), 10 ml
NanoPOP-4™	NP4-102	3130/3130xl Genetic Analyzers (ABI), 28 ml
NanoPOP-4™	NP4-120	310/3100 Genetic Analyzers (ABI), 5 ml
NanoPOP-4™	NP4-121	310/3100 Genetic Analyzers (ABI), 10 ml
NanoPOP-4™	NP4-122	310/3100 Genetic Analyzers (ABI), 28 ml
NanoPOP-6™	NP6-100	3130/3130xl Genetic Analyzers (ABI), 5 ml
NanoPOP-6™	NP6-101	3130/3130xl, 3100 Genetic Analyzers (ABI), 10 ml
NanoPOP-6™	NP6-120	3130/3130xl Genetic Analyzers (ABI), 5 ml
NanoPOP-6™	NP6-121	3130/3130xl Genetic Analyzers (ABI), 10 ml
NanoPOP-7™	NP7-100	310/3100 Genetic Analyzers (ABI), 5 ml
NanoPOP-7™	NP7-101	310/3100 Genetic Analyzers (ABI), 10 ml
NanoPOP-7™	NP7-300	3130/3130xl, 3730/3730xl Genetic Analyzers (ABI), 28 ml
NanoPOP-7™	NP7-301	3730/3730xl Genetic Analyzers (ABI), 10x28 ml
NanoPOP-7™	NP7-302	3730/3730xl Genetic Analyzers (ABI), 30x28 ml
CARE Solution	CR-100	28 ml
CARE Solution	CR-500	5X28 ml



RCA DNA Amplification Kit

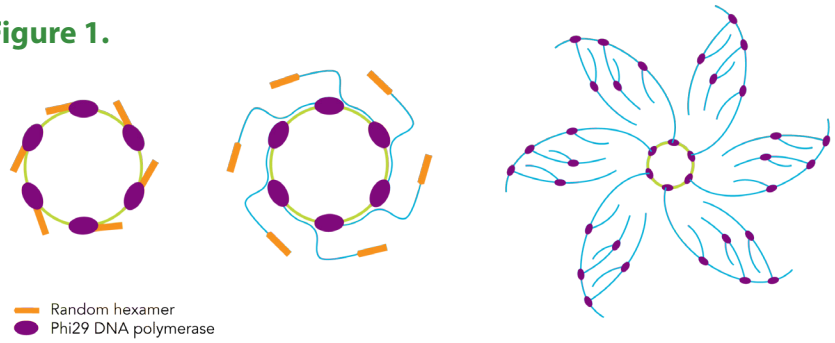
Description

RCA DNA Amplification Kit is a novel product developed specifically to prepare templates for DNA sequencing. As illustrated in Figure 1, the RCA method utilizes bacteriophage phi29 DNA polymerase to exponentially amplify single- or double-stranded circular DNA templates by rolling circle amplification (RCA). This isothermal amplification method produces microgram quantities of DNA from picogram amounts of starting material in a few hours.

Amplification in vitro of very small amounts of template DNA eliminates the need for overnight cell culture and conventional plasmid or M13 DNA purification. The proofreading activity of phi29 DNA polymerase ensures high fidelity DNA replication.

The starting material for amplification can be a small amount of bacterial cells containing plasmids, isolated plasmids, intact M13 phage, or any circular DNA samples. Bacterial colonies can be picked from agar plates and added directly to the RCA reaction. Alternatively, microliter quantities of a saturated bacterial culture or a glycerol stock can serve as starting material. Depending on the source of the starting material, amplification is completed in 4–18 hours at 30 ˚C with no need for thermal cycling. The product of the RCA reaction is high molecular weight, double-stranded concatemers of the circular template.

Figure 1.



Schematic of the RCA process. Random hexamer primers anneal to the circular template DNA at multiple sites. Phi29 DNA polymerase extends each of these primers. When the DNA polymerase reaches a downstream extended primer, strand displacement synthesis occurs. The displaced strand is rendered single-stranded and available to be primed by more hexamer primers. The process continues, resulting in exponential, isothermal amplification.

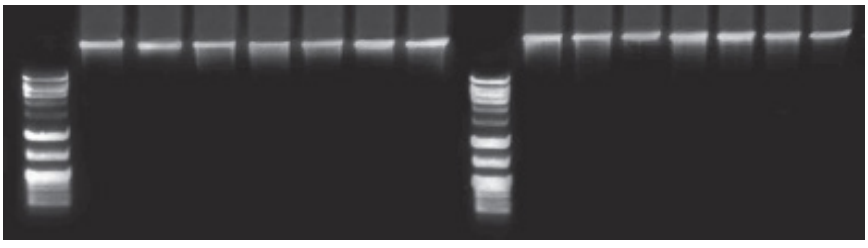


Figure 2. RCA 2X Mix amplified templates

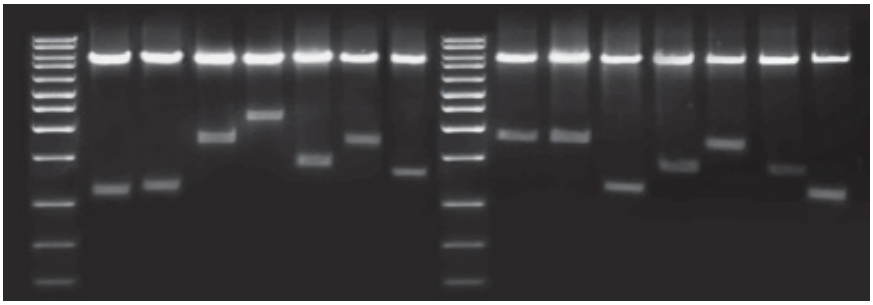
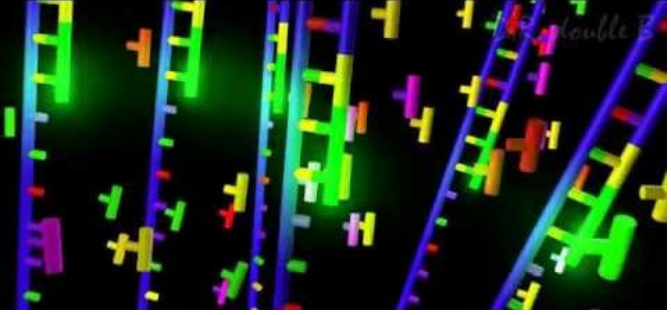


Figure 3. Restriction enzyme digested amplified templates

Product Information

PPK-100	100 reactions
PPK-200	500 reactions
PPK-OEM	Any Size



Super-DI™ Formamide

Description

MCLAB's Super-DI™ Formamide is a newly developed loading solution used for DNA fragment analysis. It is recommended to be used as a sample loading solution for all ABI sequencers (3730, 3130, 3100, 310) to ensure sample preservation and resistance to evaporation.

Features

Very stable: high signal and excellent performance even after storing at 4°C for 6 months.

Applications

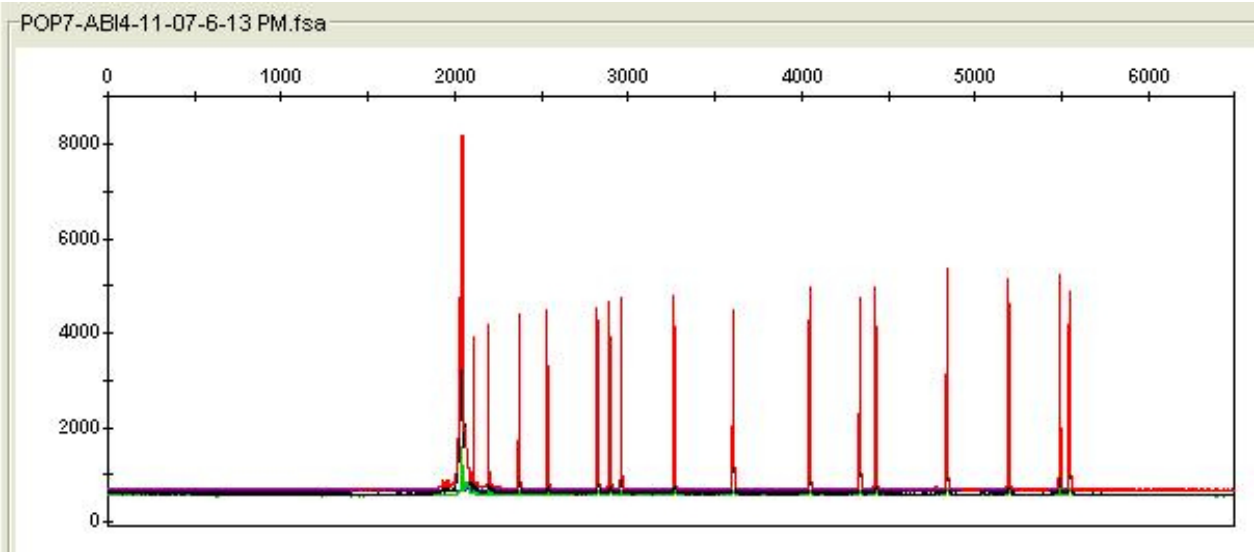
Sample loading solution for all ABI sequencers to ensure sample preservation and resistance to evaporation

Recommended Storage Conditions

4°C for up to 1 month; -20°C for 24 months

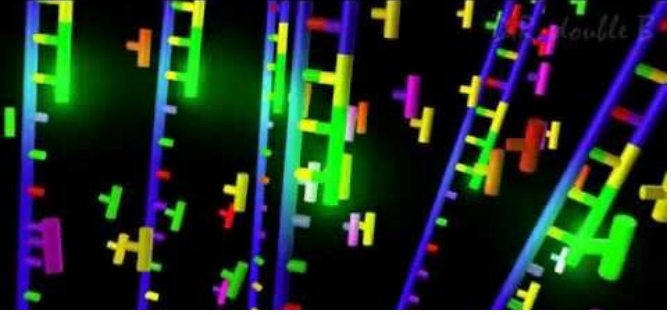
Example

MCLAB's Super-DI™ Formamide as loading solution



Product Information

SDI-100	25 ml



Super-DI™ Seq Formamide

Description

MCLAB's Super-DI™ Seq Formamide is a newly developed loading solution for DNA sequencing. This highly deionized formamide is used to resuspend samples before electrokinetic injection on capillary electrophoresis systems. It is recommended to be used as a sample loading solution for all ABI sequencers (3730, 3130, 3100, 310) to ensure sample preservation and resistance to evaporation.

Features

Very stable: high signal and excellent performance even after storing at 4°C for 6 months.

Application

Sample loading solution for all ABI sequencers to ensure sample preservation and resistance to evaporation

Recommended Storage Conditions: -15 to -25°C, minimize the number of freeze-thaw cycles.

Examples

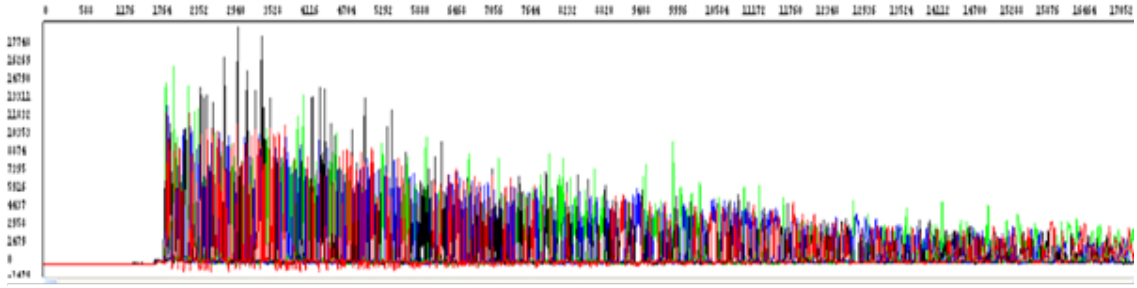


Figure 1. Example of high quality raw data using a standard DNA template with MCLAB's Super-DI™ Seq Formamide as a loading solution

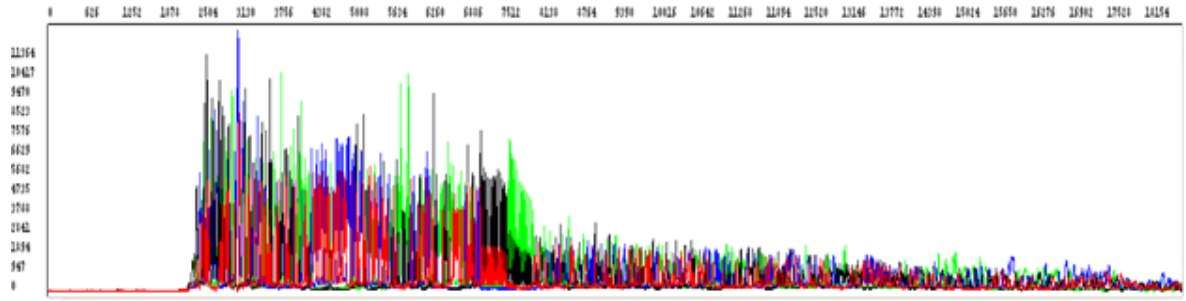
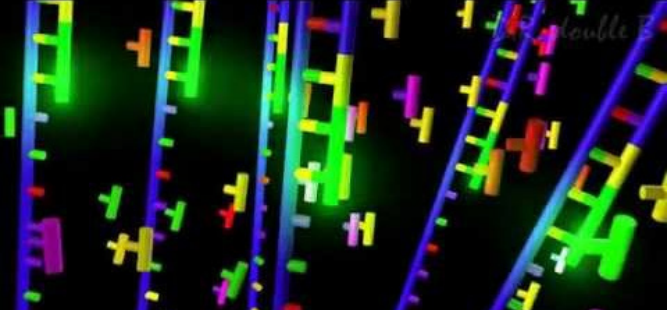


Figure 2. Example of high quality raw data using a difficult DNA template with MCLAB's Super-DI™ Seq Formamide as a loading solution

Product Information

SDIS-100	25 ml



Fragment Analysis

Fragment Analysis Matrix

Description
The 5 dye Fragment Analysis Matrix Standard generates proper spectral calibration for multicolor analysis. The matrix contains fragments labelled with five different dyes: Flourescein, HEX, Tamra, Rox, and Liz. This product can be used to calibrate various ABI's instruments such as ABI PRISM 310, 3100, 3100-avant or ABI's 3130, 3130xl, 3500, 3500xl, and 3730 Genetic Analyzers.

Application
- Fragment analysis

Features
- 5-color system
- Easy to use package
- Add formamide and go

Product Information

FAM-100	200 µl

Primers for Sequencing

100+ universal primers for sequencing. Free for customers using MCLAB's sequencing services.

If you are using MCLAB's DNA sequencing services, you do not need to purchase or submit any primers, which are listed on our website, in your orders. You only need to specify the primer names in your order form and MCLAB will take care of everything related to these primers.

MCLAB Primers
MC Easy Depository™ for DNA Sequencing Guidelines
We provide custom oligonucleotide synthesis service in combination with our DNA sequencing service to better assist our customers. First time primer synthesis orders will be fulfilled within 24 hours. Once the primers are synthesized, we aliquot them for DNA sequencing and save the rest in the MC Easy Depository™ for possible future usage at your behest. Your future orders with the same primers will be processed faster and more efficiently with the MC Easy Depository™. This is a completely free service from MCLAB to help customers with future orders.

Human Genomic DNA

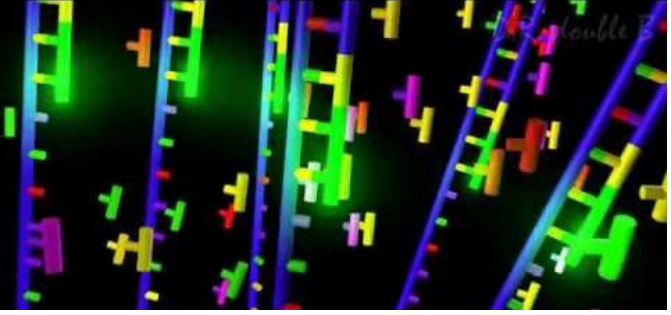
Description
Standard human genomic DNA can be used in a variety of applications (i.e. genotyping and tissue culture stain identification).

Applications
DNA typing, DNA analysis, human identity testing, and tissue culture strain identification

Recommended Storage Condition
-20° C

Product Information

9947A Genomic DNA	HGD-9947A-100	250 ng, 10 ng/µl
9948 Genomic DNA	HGD-9948-100	250 ng, 10 ng/µl
K562 Genomic DNA	HGD-K562-100	250 ng, 10 ng/µl



DNA Size Standard

Description

MCLAB's DNA Size Standard series products are internal lane standards that are intended to be used in assigning sizes to DNA fragments on fluorescence-detecting instruments. Common applications include genotyping and DNA Fragment Analysis. Each of these standards consists of 16 DNA fragments, ranging in 35, 50, 75, 100, 139, 150, 160, 200, 250, 300, 340, 350, 400, 450, 490 and 500 bp. Each band is single-stranded and fluorescence-labeled either with carboxy-x-rhodamine (Rox dye) or MCLAB's proprietary fifth orange dye. Size fragments are evenly distributed and can be used for very accurate size calling.

Red DNA Size Standard: Designed for both fragment analysis and DNA sequencing applications. It has been adapted on DNA fragment analysis software, e.g. GeneMapper™ (ABI) and GeneScan™ (ABI) by using the same parameters as ABI's GeneScan™ 500 ROX™ Size Standard.

Orange DNA Size Standard: (The relative size of MCLAB's Orange Size Standard is slightly different with ABI's Liz-500) Designed for both fragment analysis and DNA sequencing applications. 16 DNA fragments ranging in 35, 51.11, 75.71, 100.73, 139.81, 149.80, 160.75, 200.81, 250.78, 300.79, 340.78, 350.78, 400.80, 450.78, 490.82 and 500.90 bp.

Double Peak DNA Size Standard: It is used for fragment analysis. Similar to Red/Orange DNA Size Standard, except every fragment is accompanied by an one-base-plus band. For example, 50 becomes 50 and 51, 75 become 75 and 76, etc. This single base separation is very useful for monitoring the performance of the installed capillary arrays.

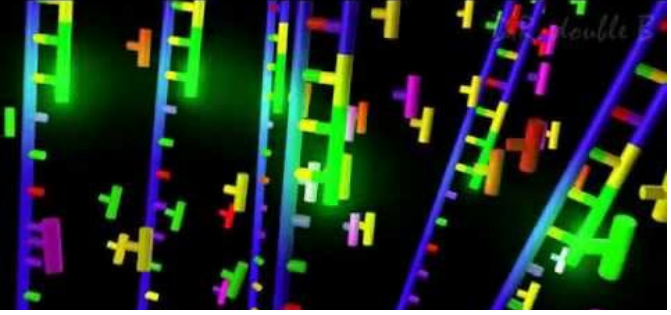
Product Formats
(1) Normal (DSMR-100, DSMO-100, DSMD-100)
(2) Premixed in Super-DI™ Formamide (DSMR-101, DSMO-101, DSMD-101)

Recommended Loading
(1) Normal: 0.5 µl per well
(2) Premixed in Super-DI™ Formamide: 15 µl per well
The premixed size standard products are ready-to-use and can be aliquoted into the plate well directly.

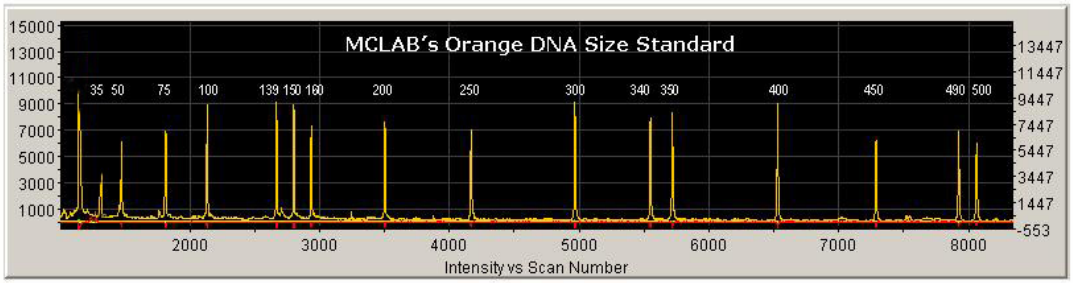
Recommended Storage Conditions
-20° C for 6 months. Avoid repeatedly freeze-thawing.

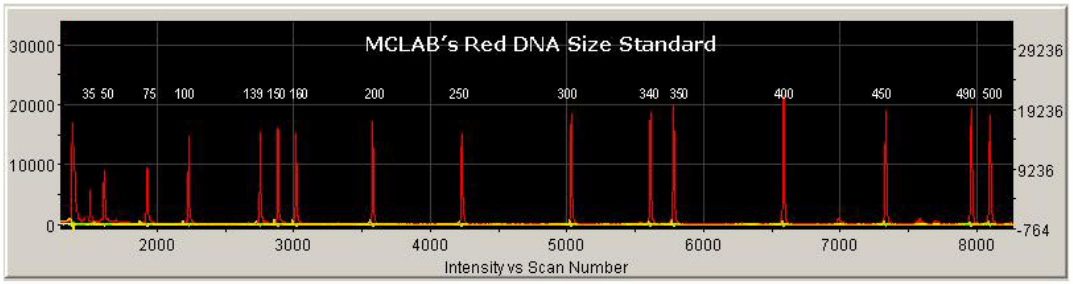
Product Information

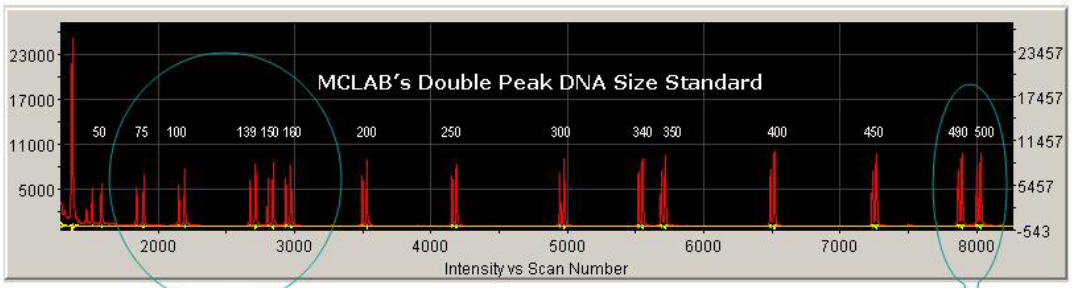
DSMR-100	800 analyses (400 µl)
DSMR-101	800 analyses (8 x 1.5 ml, premixed in Super-DI™)
DSMO-100	800 analyses (400 µl)
DSMO-101	800 analyses (8 x 1.5 ml, premixed in Super-DI™)
DSMD-100	800 analyses (400 µl)
DSMD-101	800 analyses (8 x 1.5 ml, premixed in Super-DI™)

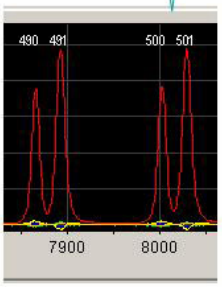


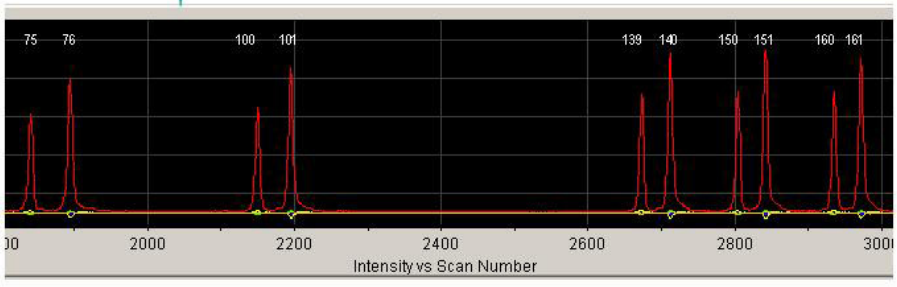
Fragment Analysis

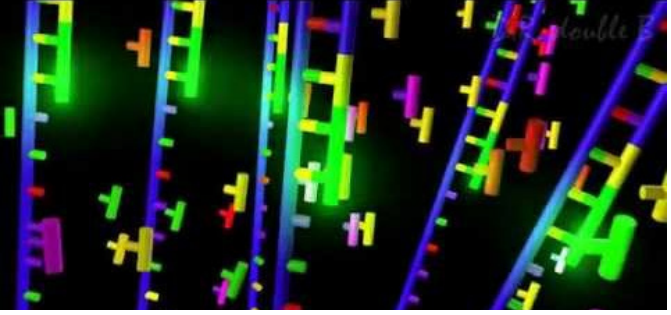












Fragment Analysis

Order Information		
Name	**Cat #**	**Description**
RCA DNA Amplification Kit	PPK-100	100 reactions
RCA DNA Amplification Kit	PPK-200	500 reactions
RCA DNA Amplification Kit	PPK-OEM	Any Size
Super-DI Formamide	SDI-100	25 ml
Super-DI Seq Formamide	SDIS-100	25 ml
Red DNA Size Standard	DSMR-100	800 analyses (400 µl)
Red DNA Size Standard	DSMR-101	800 analyses (8 x 1.5 ml, premixed in Super-DI™)
Orange DNA Size Standard	DSMO-100	800 analyses (400 µl)
Orange DNA Size Standard	DSMO-101	800 analyses (8 x 1.5 ml, premixed in Super-DI™)
Double Peak DNA Size Standard	DSMD-100	800 analyses (400 µl)
Double Peak DNA Size Standard	DSMD-101	800 analyses (8 x 1.5 ml, premixed in Super-DI™)
Fragment Analysis Matrix	FAM-100	200 µl
9947A Genomic DNA	HGD-9947A-100	250 ng, 10 ng/µl
9948 Genomic DNA	HGD-9948-100	250 ng, 10 ng/µl
K562 Genomic DNA	HGD-K562-100	250 ng, 10 ng/µl

2X STR Master Mix

Description

2X STR Master Mix allows for even and reliable multiplex PCR analysis of microsatellite loci. The Master Mix contains a proprietary buffer mix and *Taq*-based enzyme system, which provides robust and specific amplifications of target STRs. The protocol for the system has been optimized for use with fluorescent primers and enables efficient downstream analysis using high-resolution capillary sequencing.

Application

- STR SSR
- VNTR
- Microsatellite analysis
- Genotyping

Features

- Even multiplex STR amplification
- High amplification power
- Hot-start specificity

Product Information

STR-100	80 reactions (1 ml)

2X Ori-Master Plasmid Amplification Mix

Description

The 2X Ori-Master Plasmid Amplification Mix is a premixed, ready-to-use solution containing a high-fidelity DNA polymerase, ori specific primers, dNTPs, and $MgCl_2$. The Master Mix can produce linear copies of bacterial plasmids from a single colony. The reaction mixture and conditions are optimized regardless of the plasmid copy number. Amplified products can be directly sequenced without the need for purification.

Application

- Bacterial sequencing
- Colony PCR
- Bacterial screening

Features

- Fast reaction within 2 hrs
- Easy to use
- Long amplification fragments
- High throughput capability
- High-fidelity

Product Information

OMM-100	80 reactions (1 ml)

Direct DNA Solution

Description

Direct DNA Solution is for purifying genomic DNA from a variety of sample types, such as whole blood, tissues, bone marrow, buffy coat, body fluids, cultured cells, cell suspensions, and Gram-negative bacteria. This method employs a unique purification matrix and reagents for lysing cells and capturing DNA. It is well-suited for standard PCR screening applications. There is no need to pre-lyse the sample or precipitate the DNA, and the purified DNA is ready to use in standard PCR.

Protocol

1. Take out the whole sample or part of it for DNA extraction. Wash it if necessary.
2. Mechanically pulverize the sample into a mush. For example, slice or grind the sample.
3. Transfer pulverized sample to a sterile tube and mix well with 100 µl (or other volume that can immerse the sample) of Direct DNA Solution.
4. Incubate overnight at 37°C in a shaking incubator.
5. Spin the tube at maximum speed for 10 min.
6. Use 1µl of the supernatant as template in PCR reaction (50 µl) with compatible PCR master mix, for example, 2X BlueStar PCR Master Mix.

Product Information

GDES-100	500 ml

310 Capillaries

Description

310 Capillaries are bare fused-silica capillary tubings, 47 cm x 50 µm (36 cm well-to-read) and 61 cm x 50 µm (50 cm well-to-read). They are designed and optimized for fragment analysis or sequencing applications on ABI's 310 Genetic Analyzer. The capillaries have lower fluorescent background and are very reliable (>100 runs/capillary).

Product Information

CAP-47	5 (quantity)
CAP-61	2 (quantity)

96-well Silicone Septa Mat

Description

- Silicone Septa Mat for capillary sequencing of 96-well PCR plates.
- Autoclavable and reusable up to 5 times.
- Ideal for work on ABI's multi-capillary sequencing instruments.
- Minimizes evaporation in a wide range of temperatures in PCR and storage applications.

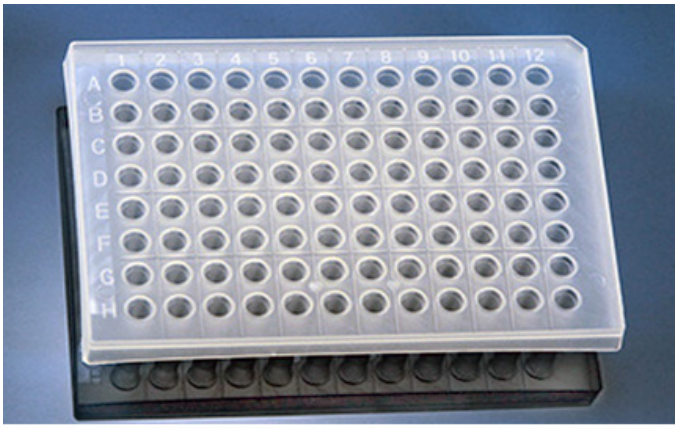
Product Information

96SEPTA-20	10 mats/unit; 2 units/case

96-well PCR Plate with 8-strip Caps

Description

The 96-well plate accompanied with flat 8-cap strip can be used to ship 96-well plate samples for DNA sequencing and other purposes.
The 96-well plates are a cost effective alternative for use in any ABI's regular PCR thermal cycler. They have a very rigid, extra-stabilized frame. Plates are suitable for both automatic loading as well as robotic handling.
The 8-cap strip can be used in regular cycling experiments. It features an extremely clear flat glass-grade area that equals the performance properties of optical seals. Strip has frosted writing areas at terminal sides.



96 well PCR plate - sub skirt

8 strip caps

Product Information

96P8C-010	(10) 96-well flat plates (96 x 0.2 ml) and (120) 8-cap strips for closure of the plates

Exo-Resistant Random Hexamer

Description

MCLAB´s Exo-Resistant Random Hexamer is a mixture of single-stranded random oligonucleotides. It can be used in many applications such as highly efficient random priming of various DNA synthesis reactions. The primer in this product has two 3´-terminal phosphorothioate (PTO) modifications that are resistant to the 3´> 5´ exonuclease activity of proofreading DNA polymerases. Like Klenow Fragment and phi29 DNA Polymerase, it also has 5´- and 3´-hydroxyl ends. The product is supplied in a ready-to-use, 20X concentrated aqueous solution.

Applications

- 3- Strand displacement amplification of genomic DNA, plasmids and phage DNA
- DNA labeling by random primers

Concentration

500 µM (1.1 µg/µl)

Quality Control

Functionally tested for the efficient priming of DNA synthesis using phi29 DNA Polymerase.

- Single strand deletion for sub-cloning
- Second strand synthesis in site-directed mutagenesis
- Probe labeling using replacement synthesis

Product Information

ERRP-100	100 µl, 100 reactions, 500 µM (1.1 µg/µl)
ERRP-110	1,000 µl , 1,000 reactions, 500 µM (1.1 µg/µl)
ERRP-120	10,000 µl, 10,000 reactions, 500 µM (1.1 µg/µl)
ERRP-OEM	Any Size, 500 µM (1.1 µg/µl)

Accessories and Reagents

Order Information		
Name	Cat #	Description
STR Master Mix	STR-100	80 reactions, 1 ml
2X Ori-Master Plasmid Amplification Mix	OMM-100	80 reactions, 1 ml
Direct DNA Solution	GDES-100	500 ml
310 Genetic Analysis Capillary, 47 cm	CAP-47	5 (quantity)
310 Genetic Analysis Capillary, 61 cm	CAP-61	2 (quantity)
96-Well Silicone Septa Mat	96SEPTA-20	10 mats/unit; 2 units/case
96-well PCR Plate with 8-strip Caps	96P8C-010	(10) 96-well flat plates (96 x 0.2 ml) and (120) 8-cap strips for closure of the plates
Exo-Resistant Random Primer	ERRP-100	100 µl, 100 reactions, 500 µM (1.1 µg/µl)
Exo-Resistant Random Primer	ERRP-110	1,000 µl , 1,000 reactions, 500 µM (1.1 µg/µl)
Exo-Resistant Random Primer	ERRP-120	10,000 µl, 10,000 reactions, 500 µM (1.1 µg/µl)
Exo-Resistant Random Primer	ERRP-OEM	Any size, 500 µM (1.1 µg/µl)