Cloning

Cloning
DNA Amplification
DNA Preparation

01

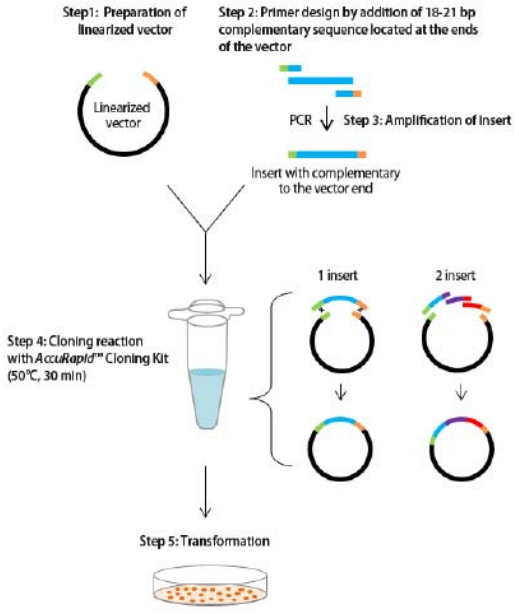
Cloning

01 *AccuRapid*™ Cloning Kit[NEW]

Description

AccuRapid™ Cloning Kit provides cloning of up to 3 PCR products into linearized vector accurately and quickly. This kit uses 18-21 bp complimentary sequence located at the ends of both PCR-amplified insert and linearized vector, for recognition followed by ligation. This method does not require restriction enzyme treatment on PCR product/plasmid; therefore directional insertion becomes possible. Design of PCR primer for insert amplification is easier by addition of 18-21 bp complimentary sequence which is already located at the end of linearized vector.

Procedure



Features and Benefits

- Quick & accurate cloning in 30 min
- Directional addition of insert into a vector is possible without restriction enzyme treatment
- Addition of up to 3 pieces of insert is possible through appropriate design of PCR primers
- Vector manipulation into customer-desired form through various cloning design

Applications

- Multiple fragment cloning
- Gene synthesis
- Gene cloning
- Mutagenesis
- Vector modification
- Fusion protein

Ordering Information

Cat. no.	Product Description
K-7110	*AccuRapid*™ Cloning Kit, 10 rxns
K-7120	*AccuRapid*™ Cloning Kit, 20 rxns
K-7130	*AccuRapid*™ Cloning Kit, 50 rxns

01 Gene Cloning Service

Description

Let us perform the time-consuming task of gene cloning, subcloning and sequence verification. Bioneer brings years of experience in molecular biology together with state-of-the-art QC to guarantee the quality of custom gene cloning service.

Features and Benefits

- 100% Sequence Guarantee:
  Individual custom clones are 100% confirmed by sequencing
- Value pricing:
  The best value for your research dollar - Automatic DNA

Applications

- Protein Modification
  Codon optimization can increase protein expression efficiency, and a mutant library derived from this process can yield proteins with increased function. Optimizations include secondary structure removal, and repeat reduction as well as organism optimizations.
- Antibody Construction
  Antibodies targeted toward specific diseases or targets can be constructed for maximum expression in the host organism. Also, an antibody library can be constructed to screen for the most efficient antibody variant.
- Organism Production Optimization
  Optimize expression of genes related to resource production to maximize industrial biological production efficiency.

Procedure

Ordering Information

Gene Cloning Service		
Accepted Materials	Plasmid, PCR product, Cultured *E. coli* cell	
Price	$200.00/cloning (~ 1 kb insert, ~7 kb vector) * Possible to do cloning into the vector provided from Bioneer	
Additional Costs	With cultured cells	$50.00
	Insert	$50.00 / 500 bp (>1 kb insert)
	Vector	7 - 10 kb: $100.00
		10 kb - : Inquire
		Low copy: Inquire
Service Period	1 ~ 8 kb (vector+insert)	Average 5 ~ 10 working days
	8 ~ 11 kb (vector+insert)	Average 10 ~ 15 working days
	11 kb ~ (vector+insert)	Inquire
Additional Service	Produce high yield of plasmid DNA ($100.00/100 µg) ***Low copy vector is exemption**	
	Proceed with Gene Synthesis Service($100.00 discount)	

✓ Price & period can be increased based on the structure, quality of gene.

✓ In the cloning service, if customer requests to purchase the commercial vector by Bioneer, vector purchasing cost will be charged separately.

✓ If customer needs to send template DNA, please send it as plasmid DNA (over than 150~200 ng/µl, vol. 10 µl), purified PCR product (over than 50 ng/µl, vol.10 µl).

✓ If customer sends the wrong sample, 50% of total amount will be charged. So please make sure to send us as checking completely by your side.

✓ If customer cancels the order during process, 50% of total amount will be charged.

✓ If customer requests to hold the cloning service due to personal reason, we can hold 1 month at the maximum.
After 1 month, order will be canceled automatically & 50% of total amount will be charged.

01 Gene Cloning Service

● Quotation and Ordering

1. Download the ordering form(s) from the link on web site (www.bioneer.co.kr).
2. Fill out the form and email the form to geneorder@bioneer.co.kr
3. We will review the order and send you service information (final quote and service period) via email.
4. If you decide to go ahead with the service, please confirm the service by an email (geneorder@bioneer.co.kr).
5. Service will be initiated when we receive the sample from you.

● Technical Support

Tel. +82-42-930-8793, 8515 (Synthetic Biology team)
E-mail: genesynthesis-support@bioneer.com
GMT +9 AM - 6 PM (Monday - Friday)

01 *AccuPower*® Ligation PreMix

Ready-to-use DNA Ligation Master Mix with T4 DNA Ligase

Description

The *AccuPower*® DNA Ligation PreMix is a lyophilized master mix containing T4 DNA Ligase, ATP, reaction buffer, and patented stabilizer. This DNA Ligation PreMix is conveniently aliquoted in tube-strips for reactions; you need only add DNAs to be ligated and water. The reaction will work for DNA ligation for all applications: blunt cloning, sticky end cloning and TA cloning. The PreMix is stable up to four months at room temperature and for three years at -20°C.

Features and Benefits

- Fast Reaction Time:
  The product performs DNA ligation in 5 minutes for cohesive end and in 10 minutes for blunt end DNA at 25°C.
- Stability:
  The product is stable at room temperature for four month and for three years in a -20°C freezer by the stabilizer.
- Ease-of-Use:
  Just add a vector and insert DNA to the tube containing all reagent for ligation, such as T4 ligase, ATP, and reaction buffer.
- Reproducibility:
  Under ISO 9001 Quality Assurance System, Bioneer's products provide consistency of experimental results.

Applications

- Cloning into vectors
- Library construction
- TA cloning
- Linker ligation
- Recirclization of linear DNA

Experimental Data

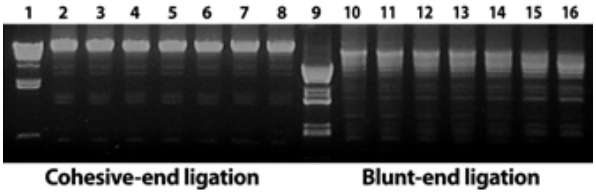


Figure 1. Effeciency test of *AccuPower*® Ligation PreMix.

Lane 1 ~ 8: Lambda DNA / *Hin*d III fragment (1 µg)
Lane 9 ~ 16: Lambda DNA / *Eco*R V fragment (1 µg)
Lane 2, 10: ligation for 60 min
Lane 3, 11: ligation for 50 min
Lane 4, 12: ligation for 40 min
Lane 5, 13: ligation for 30 min
Lane 6, 14: ligation for 20 min
Lane 7, 15: ligation for 10 min
Lane 8, 16: ligation for 5 min

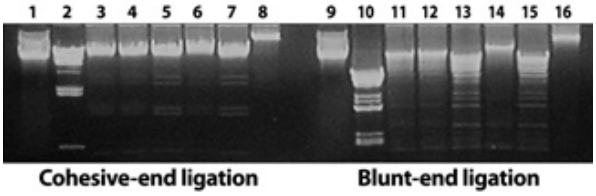


Figure 2. DNA Ligation efficiency comparison between *AccuPower*® DNA Ligation PreMix and other competitors' products.

Lane 1, 9: Intact Lambda DNA (1 µg)
Lane 2 ~ 8: Lambda DNA / *Hin*d III fragment (1 µg)
Lane 10 ~ 16: Lambda DNA / *Eco*R V fragment (1 µg)
Lane 3, 4, 11, 12: Bioneer *AccuPower*® Ligation PreMix
Lane 5, 13: Company N T4 DNA ligase
Lane 6, 14: Company N Quick Ligation Kit
Lane 7, 15: Company P LigaFast Rapid DNA ligation system
Lane 8, 16: Company A Ready-To-Go T4 DNA ligase

Ordering Information

Cat. no.	Product Description
K-7103	*AccuPower*® Ligation PreMix, 96 tubes, 0.2 ml 8-tube strips, 20 µl reaction

01 T4 DNA Ligase

For Ligation of DNA, TA cloning, and Other Recombinant DNA Applications

Description

T4 DNA Ligase catalyzes the formation of a phosphodiester bond between 5′ phosphate and 3′ hydroxyl termini in duplex DNA or RNA. This enzyme ligates DNA from blunt-end and cohesive-end termini (including sticky ends for TA cloning) as well as repairs single stranded nicks in duplex DNA, RNA, or DNA/RNA hybrids. T4 DNA Ligase is isolated from a recombinant *E. coli* strain.

Features and Benefits

- High speed:
  The product performs DNA ligation in 5 minutes for cohesive end and in 10 minutes for blunt end DNA at 25°C.
- Flexibility:
  The product is suitable for all common DNA ligation.
- Reproducibility:
  Under ISO 9001 Quality Assurance System, Bioneer's products provide consistency of experimental results.

Specifications

Heat Inactivation: 70°C for 10 min

Application

- Blunt or cohesive-end ligation
- Repair of nicks in double-stranded nucleic acids

Reagents Supplied

10 X Reaction Buffer: 500 mM Tris-HCl (pH 7.8), 100 mM $MgCl_2$, 50 mM DTT, 10 mM ATP, and 25 µg/ml BSA

Concentration

20,000 U (200 U/µl)

Storage Conditions

10 X Reaction Buffer: 500 mM Tris-HCl (pH 7.8), 100 mM $MgCl_2$, 50 mM DTT, 10 mM ATP, and 25 µg/ml BSA

Storage Temperature

-20°C

Unit Definition

0.01 Weiss unit of enzyme is defined as the amount of enzyme required to give 90% ligation of *Hin*d III fragments of lambda DNA in 30 min, at 16°C in 20 µl of the assay mixture.

Experimental Data

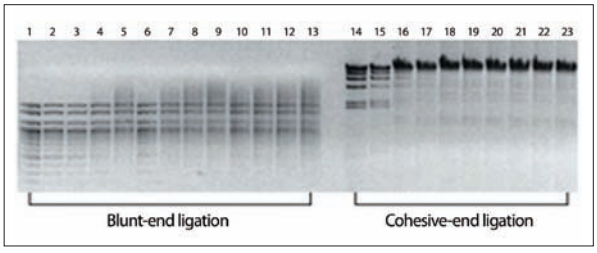
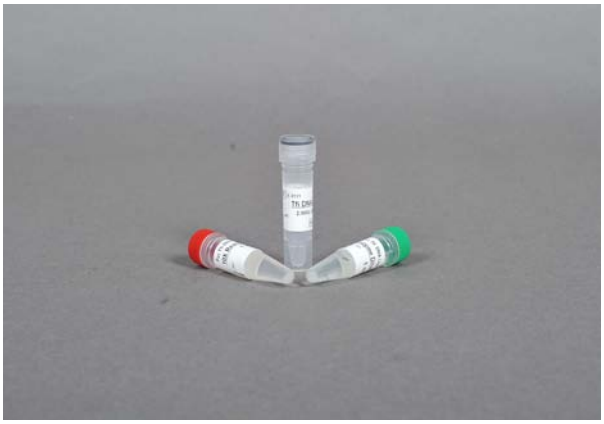


Figure 1. Lagation using T4 DNA Ligase.
Lane 1: DNA fragment (digested with *Eco*R V)
Lane 2, 3, 4, 5: T4 DNA Ligase 1 U, 16°C, 10, 20, 30 and 60 min
Lane 6, 7, 8, 9: T4 DNA Ligase 1 U, 25°C, 10, 20, 30 and 60 min
Lane 10, 11, 12, 13: T4 DNA Ligase 1 U, 37°C, 10, 20, 30 and 60 min
Lane 14: Lambda DNA (digested with *Hin*d III)
Lane 15, 16, 17: T4 DNA Ligase 1 U, 16°C, 10, 20 and 30 min
Lane 18, 19, 20: T4 DNA Ligase 1 U, 25°C, 10, 20 and 30 min
Lane 21, 22, 23: T4 DNA Ligase 1 U, 37°C, 10, 20 and 30 min

Ordering Information

Cat. no.	Product Description
E-3061	T4 DNA Ligase, 20,000 U, 1 tube
E-3062	T4 DNA Ligase, 100,000 U, 20,000 U x 5 tubes

01 Thermostable *Thermus filiformis* (*Tfi*) DNA Ligase



Description

Tfi DNA Ligase plays a role of formatting phosphodiester bond by connecting double stranded DNA or connecting oligonucleotides 3′-hydroxyl end and 5′-phosphate end together.
Especially the reaction temperature for *Tfi* DNA Ligase is between 45°C and 65°C, which is higher compared to that of different DNA ligase such as T4 DNA Ligase, *E. coli* DNA Ligase, etc. The high reaction temperature increases reaction specificity and shortens the reaction time.

Applications

- Ligase Chain Reaction (LCR)
- Oligonucleotide Ligation Assay (OLA)
- Mutagenesis by incorporation of a phosphorylated oligo during PCR amplification
- Simultaneous mutagenesis of multiple sites

Reagents Supplied

10 X Reaction buffer (1 ml): 300 mM Tris-HCl (pH 8.3), 250 mM KCl, 50 mM $MgCl_2$, and 5 mM NAD
1X Dilution buffer (1 ml): 10 mM Tris-HCl (pH 7.6), 0.1 mM EDTA, 50 mM KCl, 1 mM DTT, 200 μg/ml acetylated BSA, and 50% Glycerol.

Storage Condition

20 mM Tris-HCl (pH 7.6), 2 mM $MgCl_2$, 1 mM EDTA, 1 mM DTT, 0.5% Tween -20, 0.5% IGEPAL CA-630, and 50% Glycerol, store at -20°C.

Concentration

20 units/μl

Unit Definition

One unit of *Tfi* DNA Ligase is defined as the amount of enzyme required to give 50% ligation of the 12 base pair cohesive ends of 1 μg of *Psp*EI digested lambda DNA in 10 min at 45°C.

Activity Assay Conditions

The activity assay is carried out in a 20 μl reaction containing 1 μg of *Psp*E I digested lambda DNA and 1X *Tfi* DNA ligase reaction buffer. After incubation at 45°C for 10 min, the reaction is terminated by addition of stop solution (40% (w/v) sucrose, 50 mM EDTA and 0.25% bromophenol blue). Then heat at 70°C for 10 min and immediately load on a 0.8% agarose gel.

Stability

The half-life of the enzyme in 1X reaction buffer is more than 1 hr at 95°C and 55 hr at 65°C.

Note: *Tfi* DNA Ligase should not be used as a substitute for other DNA ligase, i.e., T4 DNA Ligase.

References

- Barany, F. (1991) *Proc. Natl. Acad.* Sci. USA, 88, 189 - 193.
- Landegren, U. *et al.*(1988) *Science* 241, 1077 - 1080.
- Michael, Scott F. (1994) *Biotechniques* 16:3, 410 - 412.
- Gerard J. A. *et al.* (1993) *Biotechniques* 15:1, 172 - 178.

Thermostable *Thermus filiformis (Tfi)* DNA Ligase

Experimental Data

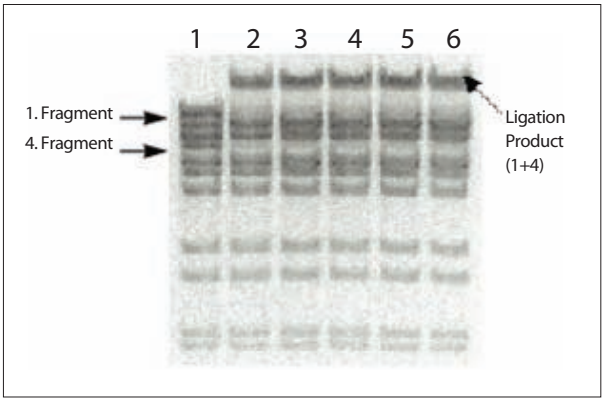


Figure 1. Ligation test at various temperatures (45°C~65°C)
Incubate the reaction containing ligase 1 unit and 1 μg DNA [lambda *Psp*EI] at each temperature for 10 min.
Lane 1: λ DNA/*Psp*E I (control)
Lane 2: Incubate at 45°C, 10 min
Lane 3: Incubate at 50°C, 10 min
Lane 4: Incubate at 55°C, 10 min
Lane 5: Incubate at 60°C, 10 min
Lane 6: Incubate at 65°C, 10 min

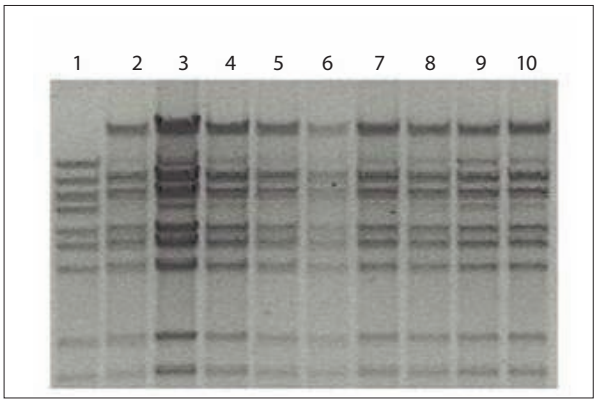


Figure 2. Heat Stability test at 95°C.
Incubate the enzyme at 95°C each time. And then add 1 unit ligase to a 20 μl reaction containing 1 μl DNA [lambda *Psp*E I] and incubate the mixture at 45°C for 10 min.
Lane 1: λDNA/*Psp*E I (control)
Lane 2: Incubate at 95°C, 10 min
Lane 3: Incubate at 95°C, 20 min
Lane 4: Incubate at 95°C, 30 min
Lane 5: Incubate at 95°C, 40 min
Lane 6: Incubate at 95°C, 50 min
Lane 7: Incubate at 95°C, 60 min
Lane 8: Incubate at 95°C, 70 min
Lane 9: Incubate at 95°C, 80 min
Lane 10: Incubate at 95°C, 90 min

Ordering Information

Cat. no.	Product Description
E-3111	*Tfi* DNA Ligase, 2,000 U, 10 X reaction buffer, 1 ml, 1 X dilution buffer, 1 ml
E-3112	*Tfi* DNA Ligase, 10,000 U, 10 X reaction buffer, 1 ml, 1 X dilution buffer, 1 ml

02

DNA Amplification

AccuPower® Pfu PCR PreMix

For High Fidelity PCR, Dried-type Premix with *Pfu* DNA Polymerase

Description

AccuPower® Pfu PCR PreMix is a lyophilized mixture of *Pfu* DNA polymerase, dNTPs and reaction buffer in a convenient premix format. Simply add template, primers and water and mix – *AccuPower®* offers easy set-up for every PCR application. Bioneer's patented stabilizer maintains the activity of the PreMix for over a month when stored at room temperature (25°C) and for over 2 years in the freezer (-20°C).

Features and Benefits

- High Fidelity:
  AccuPower® Pfu PCR PreMix is a high fidelity (error rate = 1.9×10^{6}) enzyme that reduces errors during DNA amplification.
- High Purity:
  AccuPower® Pfu PCR PreMix is a recombinant enzyme that eliminates smearing and unwanted background found in native *Pfu* enzymes.
- Thermostability:
  Pfu has an optimal activity that is higher than most other thermostable polymerases, and exhibits low activity at temperatures below 50°C. This results in higher specificity for your PCR reactions.
- Stability:
  Stable for a month at room temperature and for 2 years in a -20°C freezer.
- Reproducibility:
  Bioneer's strict quality controlled production system ensures that your results will be reproducible experiment after experiment.
- Convenient:
  Just add template and primers and start your reaction. dNTPs, buffer and enzyme are provided.

Specifications

- Enzyme: *Pfu* DNA polymerase
- 5'to 3'exonuclease activity: No
- 3'to 5'exonuclease activity: Yes
- 3'- A overhang: No
- Fragment size: Up to ~ 10 kb

Application

- Gene synthesis
- Gene cloning
- Conventional PCR
- Primer extension
- Site directed mutagenesis
- High fidelity

Transport Temperature

Room temperature

Storage Temperature

- 20°C

Experimental Data

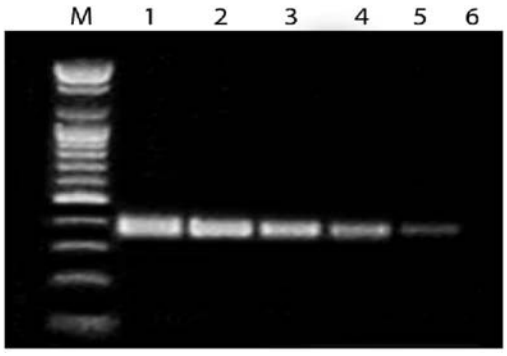


Figure 1. Template range & sensitivity of *AccuPower® Pfu* PCR PreMix for human DNA template.
Test of working range & sensitivity of *AccuPower® Pfu* PCR PreMix for human DNA template.

Line 1: 100 ng Line 2: 10 ng Line 3: 1 ng
Line 4: 100 pg Line 5: 10 pg Line 6: Template negative
M: 100 bp DNA Ladder (Bioneer, Cat. no. D-1030)

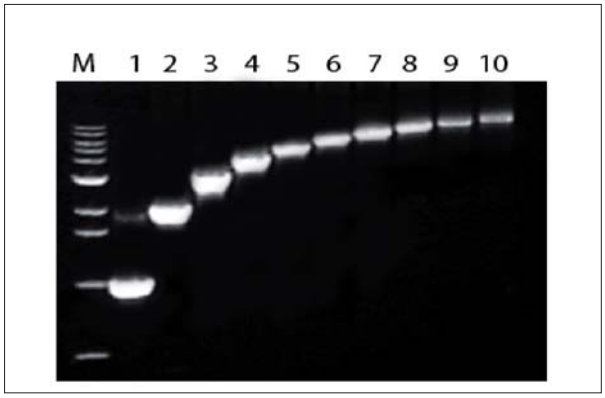


Figure 2. Amplification of lambda DNA of 1 kb to 10 kb with *AccuPower® Pfu* PCR PreMix.

Lane 1: 1 kb fragment Lane 2: 2 kb fragment
Lane 3: 3 kb fragment Lane 4: 4 kb fragment
Lane 5: 5 kb fragment Lane 6: 6 kb fragment
Lane 7: 7 kb fragment Lane 8: 8 kb fragment
Lane 9: 9 kb fragment Lane 10: 10 kb fragment
M: 1 kb DNA Ladder (Bioneer, Cat. no. D-1040)

Ordering Information

Cat. no.	Product Description
K-2022	*AccuPower® Pfu* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached cap / 96 tubes, 20 µl rxn
K-2023	*AccuPower® Pfu* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached cap / 96 tubes, 50 µl rxn
K-2024	*AccuPower® Pfu* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached cap / 480 tubes, 20 µl rxn
K-2025	*AccuPower® Pfu* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached cap / 480 tubes, 50 µl rxn
K-2026	*AccuPower® Pfu* PCR Master Mix, 1 ml of 2X master mix solution
K-2027	*AccuPower® Pfu* PCR PreMix, 0.5 ml thin-wall tubes with attached cap / 100 tubes, 50 µl rxn

AccuPower® ProFi Taq PCR PreMix

For Long PCR (up to 30 kb) and High Fidelity PCR, Dried-type Premix

Description

AccuPower® ProFi Taq PCR PreMix is a convenient lyophilized PCR master mix containing *ProFi Taq* DNA polymerase, reaction buffer, dNTPs, tracking dye, and a patented stabilizer. *ProFi Taq* DNA polymerase in the premix is a unique recombinant *Taq* DNA polymerase that offers enhanced amplification efficiency and higher fidelity for PCR. *AccuPower® ProFi Taq* PCR PreMix is applicable to any human template DNA, and especially effective in amplifying long genomic DNA fragments around 30 kb. *AccuPower® ProFi Taq* PCR PreMix provides accurate long-range amplification of standard and amplification of low-copy target, and is highly suitable for all PCR applications.

Features and Benefits

- Long Range PCR:
  ProFi Taq is especially effective in amplifying long human genomic DNA fragments around 21 kb and amplifying lambda DNA up to 30 kb.
- Ease-of-use:
  All reaction components required for PCR, including thermo-stable DNA polymerase and dNTPs are contained within each tube and in a lyophilized "PreMix" form.
- Reproducibility:
  Bioneer's strict quality controlled production system ensures that your results will be reproducible experiment after experiment.
- Convenient:
  Just add template and primers and start your reaction. dNTPs, buffer and enzyme are provided.
- Stability:
  Stable at room temperature for a month and for 2 years in a -20°C freezer.
- High Fidelity:
  Profi Taq DNA Polymerase fidelity is over 5-times higher than *Taq* DNA polymerase.

Specifications

- Enzyme: *ProFi Taq* DNA polymerase
- 5′ to 3′ exonuclease: Yes
- 3′ to 5′ exonuclease: Yes
- 3′ - A overhang: Yes
- PCR product size: ~ 30 kb

Application

- Primer extension
- Long range amplification from genomic DNA
- High amplification efficiency
- Excellent performance on difficult templates
- Amplification of low-copy targets
- High yield and high sensitivity PCR

Transport Temperature

Room temperature

Storage Temperature

- 20°C

Experimental Data

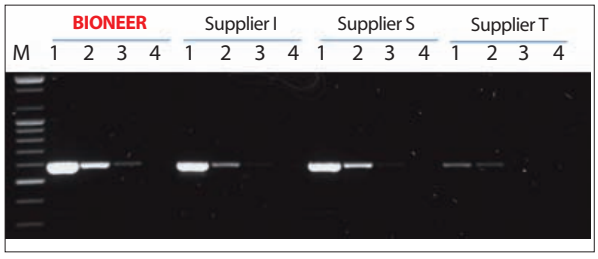


Figure 1. Comparison of PCR amplification efficiency between *AccuPower® ProFi Taq* PCR PreMix from Bioneer and other suppliers' PCR master mix.

cDNA synthesized from 10-fold serial-diluted human total RNA from 10 ng to 10 pg using *AccuPower® RocketScript™* Cycle RT PreMix(Bioneer, Cat. no. K-2201) was used as a template for PCR amplification. The cycling conditions for *AccuPower® ProFi Taq* PCR PreMix were 95°C for 5 min, 33 cycles of 95°C for 20 sec, 55°C for 20 sec and 72°C for 30 sec. PCR reactions using other suppliers' PCR master mix were performed according to each supplier's protocol.

Target: human GAPDH gene
Lane 1: 10 ng of human total cDNA
Lane 2: 1 ng of human total cDNA
Lane 3: 100 pg of human total cDNA
Lane 4: 10 pg of human total cDNA
Lane M: 100 bp DNA Ladder (Bioneer, Cat. no. D-1030)

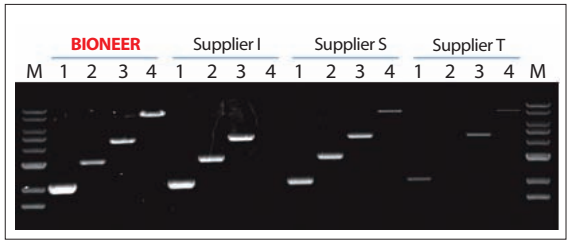


Figure 2. Comparison of PCR amplification sensitivity between *AccuPower® ProFi Taq* PCR PreMix from Bioneer and other suppliers' PCR master mix.

The cycling conditions for *AccuPower® ProFi Taq* PCR PreMix were 95°C for 5 min, 30 cycles of 95°C for 20 sec, 65°C for 20 sec and 68°C for 4 min. PCR reactions using other suppliers' PCR master mix were performed according to each supplier's protocol.

Lane 1: 2 kb fragment (human tumor protein p53 gene)
Lane 2: 3 kb fragment (human tumor protein p53 gene)
Lane 3: 4.5kb fragment (human DNA cross-link repair 1A gene)
Lane 4: 8 kb fragment (human hemoglobin epsilon 1 gene)
Lane M: 1 kb DNA Ladder (Bioneer, Cat. no. D-1040)

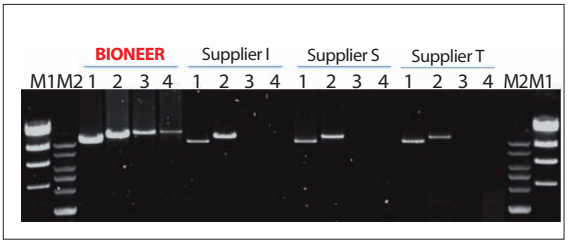


Figure 3. Comparison of PCR amplification of long targets between *AccuPower® ProFi Taq* PCR PreMix from Bioneer and other suppliers' PCR master mix.

The cycling conditions for *AccuPower® ProFi Taq* PCR PreMix were 95°C for 5 min, 32 cycles of 95°C for 20 sec, 65°C for 40 sec, and 68°C for 15 min. PCR reactions using other suppliers' PCR master mix were performed according to each supplier's protocol. Human DNA was used as a template for PCR amplification.

Lane 1: 11 kb fragment
Lane 2: 13.5 kb fragment
Lane 3: 17.6 kb fragment
Lane 4: 21.4 kb fragment
Lane M1: Lambda/*Hin*d III marker (Bioneer, Cat. no. D-1050)
Lane M2: 1 kb DNA Ladder (Bioneer, Cat. no. D-1040)

Ordering Information

Cat. no.	Product Description
K-2631	*AccuPower® ProFi Taq* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached caps / 96 tubes, 20 µl rxn/tube
K-2632	*AccuPower® ProFi Taq* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached caps / 480 tubes, 20 µl rxn/tube
K-2633	*AccuPower® ProFi Taq* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached caps / 96 tubes, 50 µl rxn/tube
K-2634	*AccuPower® ProFi Taq* PCR PreMix, 0.2 ml thin-wall 8-tube strips with attached caps / 480 tubes, 50 µl rxn/tube

02 *AccuPower*® HotStart *Pfu* PCR PreMix

For Hotstart PCR and High Fidelity PCR, Dried-type Premix with *Pfu* DNA Polymerase

Description

AccuPower® HotStart *Pfu* PCR PreMix is a ready-to-use lyophilized mastermix containing all components for high fidelity PCR. Just addition of primers and template into the tube provides reproducible results. *AccuPower*® HotStart *Pfu* PCR PreMix uses a unique enzyme-mediated hotstart PCR method that reduces pre-PCR mis-primings, primer dimers, artifacts, and any other non-specific amplification. Besides *AccuPower*® HotStart *Pfu* PCR PreMix provides sensitivity, high specificity and proofreading activity. So you'll get fewer errors in your PCR product.

Features and Benefits

- High Fidelity:
  AccuPower® HotStart *Pfu* PCR PreMix has the high fidelity which reduces the mispriming during DNA amplification.
- High Specificity:
  Pyrophosphate (PPi) has a high affinity for Mg^{2+} and PPi binds to Mg^{2+} which is essential component for PCR so that DNA polymerase activity is suppressed. Consequently, PPi-Mg^{2+} binding prevents non-specific amplification
- Ease-of-Use:
  Just add template and primers and start your reaction.

Specifications

- Enzyme: *Pfu* DNA polymerase
- 5′ to 3′ exonuclease activity: No
- 3′ to 5′ exonuclease activity: Yes
- 3′ - A overhang: No
- Fragment size: Up to ~ 10 kb

Application

- Gene cloning with blunt ends
- Site-directed mutagenesis
- High fidelity amplification
- High specificity PCR
- cDNA template PCR

Transport Temperature

Room temperature

Storage Temperature

- 20°C

Experimental Data

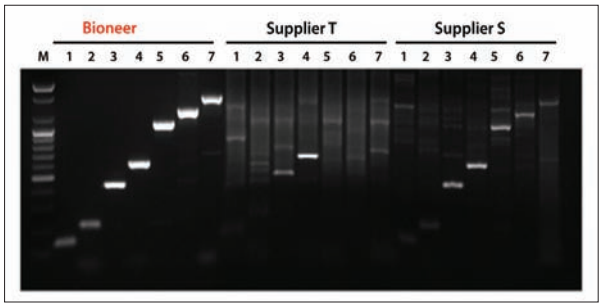


Figure 1. *AccuPower*® HotStart *Pfu* PCR PreMix shows enhanced specificity compared to competitors.

Specificity test was performed using 7 different sets of primers targeting the p53 gene. 10 ng of human genomic DNA was used for each PCR reaction. The cycling conditions were 95°C for 5 min, 32 cycles of 95°C for 30 sec, 62°C for 40 sec, and 72°C for 1 min 30 sec, and 72°C for 5 min for final extension.

Lane 1: P75/73 primer set (139 bp)
Lane 2: P55/53 primer set (211 bp)
Lane 3: P55/63 primer set (447 bp)
Lane 4: P75/83 primer set (618 bp)
Lane 5: P55/73 primer set (1082 bp)
Lane 6: P65/83 primer set (1296 bp)
Lane 7: P55/83 primer set (1561 bp)
Lane M: 100 bp DNA Ladder (Bioneer, Cat. no. D-1030)

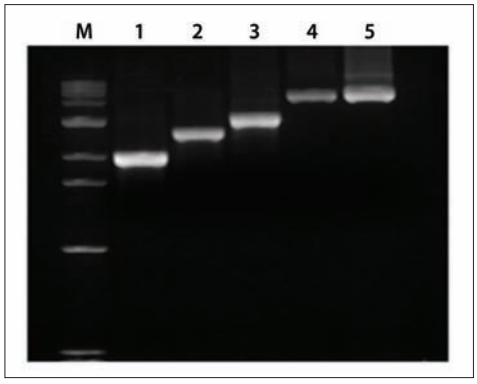


Figure 2. *AccuPower*® HotStart *Pfu* PCR PreMix has high amplification efficiency.

Template DNA: 200 ng of human genomic DNA

Bioneer reaction mixture was followed by 95°C for 5 min, 35 cycles of 95°C for 20 sec, 65°C for 20 sec, and 68°C for 15 min, and 68°C for 5 min for final extension.

Lane 1: 2 kb fragment
Lane 2: 2.5 kb fragment
Lane 3: 3 kb fragment
Lane 4: 4.5 kb fragment
Lane 5: 5 kb fragment
Lane M: 1 kb DNA Ladder (Bioneer, Cat. no. D-1040)

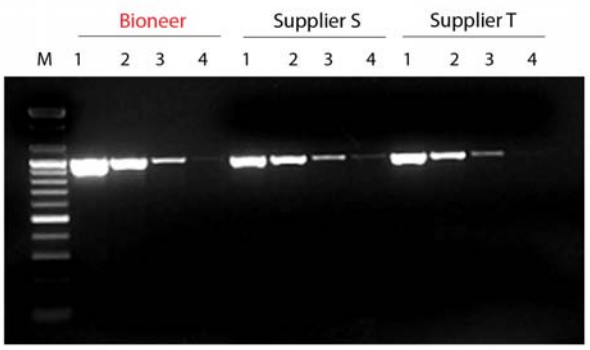


Figure 3. Comparison of PCR amplification efficiency between *AccuPower*® HotStart *Pfu* PCR PreMix from Bioneer and other suppliers' PCR master mix.

Target: human insulin receptor gene.

The cycling conditions for *AccuPower*® HotStart *Pfu* PCR PreMix were 95°C for 5 min, 30 cycles of 95°C for 30 sec, 55°C for 30 sec and 72°C for 2 min. PCR reactions using other suppliers' PCR master mix were performed according to each supplier's protocol.

Lane 1: 10 ng of human genomic DNA
Lane 2: 1 ng of human genomic DNA
Lane 3: 100 pg of human genomic DNA
Lane 4: 10 pg of human genomic DNA
Lane M: 100 bp DNA Ladder (Bioneer, Cat. no. D-1030)

Ordering Information

Cat. no.	Product Description
K-2301	*AccuPower*® HotStart *Pfu* PCR PreMix 96 tubes, 20 µl rxn
K-2302	*AccuPower*® HotStart *Pfu* PCR PreMix 96 tubes, 50 µl rxn
K-2303	*AccuPower*® HotStart *Pfu* PCR PreMix 480 tubes, 20 µl rxn
K-2304	*AccuPower*® HotStart *Pfu* PCR PreMix 480 tubes, 50 µl rxn

02 *Pfu* DNA Polymerase

Novel Enzyme for High Fidelity PCR with DNA Proofreading

Description

Pfu DNA polymeraseis a thermostable DNA polymerase isolated from *Pyrococcus furiosus* Vc1. It catalyzes the DNA-dependent polymerization of nucleotides into duplex DNA in the 5′ → 3′ direction and exhibits 3′ → 5′ exonuclease (proof reading) activity. *Pfu* DNA polymerase is the ideal choice for a variety of techniques requiring high-fidelity DNA synthesis by PCR reaction. It can apply to cloning, gene expression, site-directed mutagenesis and etc.

Features and Benefits

- High Fidelity PCR:
  3′→ 5′ exonuclease (proofreading) activity exists
- Thermostability:
  Retaining up to 99% of its thermostable activity after 1 hour at 95°C.
- Terminal Transferase Activity:
  Devoid of terminal transferase activity and generates blunt-ended PCR products

Specifications

- 5′ to 3′ exonuclease activity: No
- 3′ to 5′ exonuclease activity: Yes
- 3′-A overhang: No
- Fragment size: ~10 kb

Application

- Gene synthesis
- PCR or Primer extension requested high fidelity
- Blunt-end PCR Cloning or mutagenesis requested high fidelity

Reagents Supplied

- 10X Reaction Buffer (pH 9.0): Tris-HCl, KCl, etc.
- 1X Dilution buffer (pH 8.0): Tris-HCl, EDTA, DTT, Stablizers, etc.
- dNTPs mixture: 10 mM, each dNTP 2.5 mM (optional)

Concentration

250 U/100 µl

Storage Condition

pH 8.0, Tris-HCl, EDTA, DTT, stabilizers, etc.

Storage Temperature

- 20°C

Unit Definition

One unit is defined at the amount of enzyme that will incorporate 10 nmol of dNTP into acid-insoluble material in 30 min at 72°C.

Experimental Data

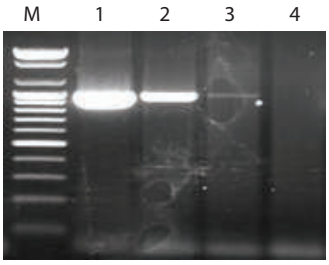


Figure 1. Human DNA was amplified using 2.5 units of enzyme in 50 µl reaction volume.

Lane 1: 20 ng Lane 2: 2 ng
Lane 3: 200 pg Lane 4: 20 pg
M: 100 bp DNA ladder (Bioneer, Cat. no. D-1030)

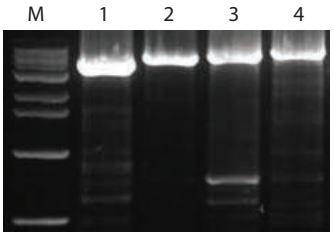


Figure 2. Long kb PCR test of *Pfu* DNA polymerase with lambda DNA

Lane 1: Lambda DNA 5 kb
Lane 2: Lambda DNA 6 kb
Lane 3: Lambda DNA 7 kb
Lane 4: Lambda DNA 8 kb
M: 1 kb DNA ladder (Bioneer, Cat. no. D-1040)

Ordering Information

Cat. no.	Product Description
E-2015	*Pfu* DNA Polymerase, 250 U, 10 x reaction buffer
E-2015-1	*Pfu* DNA Polymerase, 250 U, 10 mM dNTPs, 10 x reaction buffer
E-2016	*Pfu* DNA Polymerase, 1,000 U, 10 x reaction buffer

ProFi Taq DNA Polymerase

For High Efficiency and Amplification of Long Range PCR.

Description

ProFi Taq DNA polymerase, developed by Bioneer, is a unique recombinant *Taq* DNA polymerase that offers enhanced amplification efficiency for PCR. *ProFi Taq* DNA polymerase provides more efficient amplification and higher fidelity than conventional *Taq* DNA polymerase. This enzyme is applicable to any template DNA, and especially effective in amplifying large genomic DNA fragments up to 20 kb. *ProFi Taq* DNA polymerase provides accurate long-range amplification of standard and complex templates and amplification of low-copy target, and is highly suitable for all PCR applications.

Features and Benefits

- Flexible:
  ProFi Taq provides accurate long-range amplification of standard and amplification of low-copy target, and is highly suitable for all PCR applications.
- Long PCR:
  ProFi Taq is especially effective in amplifying large genomic DNA fragments around 21 kb and amplifying Lambda DNA up to 30 kb.
- Reproducibility:
  Each batch is produced under strict quality controls. Errors that commonly occur during mass production are eliminated during the individual packaging process. Bioneer's current batch processing system allows for the production of more accurate and reproducible end-product yield.

Specifications

- 5' to 3' exonuclease activity: Yes
- 3' to 5' exonuclease activity: Yes
- 3'-A overhang: Yes
- Fragment size: ~30 kb

Application

- Primer extension
- long-range amplification from genomic DNA
- High amplification efficiency
- Excellent performance on difficult templates
- Amplification of low-copy targets
- High yield and high sensitivity PCR

Reagents Supplied

- 10X Reaction Buffer (pH 9.0): Tris-HCl, KCl, etc.
- 1X Dilution buffer (pH 8.0): Tris-HCl, EDTA, DTT, KCl, Stablizers, etc.
- dNTPs mixture: 10 mM, each dNTP 2.5 mM

Concentration

250 U/50 µl

Storage Condition

pH 8.0, Tris-HCl, KCl, EDTA, DTT, stabilizers, etc.

Storage Temperature

- 20°C

Experimental data

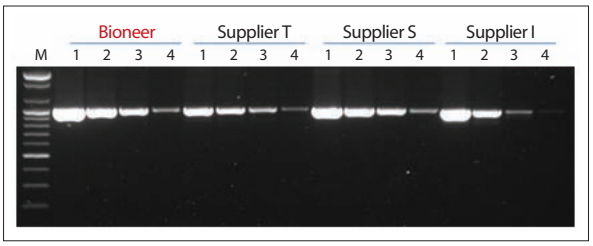


Figure 1. Comparison of PCR amplification efficiency between *ProFi Taq* DNA Polymerase from Bioneer and other suppliers' DNA polymerase.
The cycling conditions for *ProFi Taq* DNA Polymerase were 95°C for 5 min, 30 cycles of 95°C for 20 sec, 55°C for 20 sec and 72°C for 30 sec. PCR reaction using other suppliers' DNA polymerase were performed according to each supplier's protocol.
Target: human Insulin receptor gene
Lane 1: 10 ng of human genomic DNA
Lane 2: 1 ng of human genomic DNA
Lane 3: 100 pg of human genomic DNA
Lane 4: 10 pg of human genomic DNA
Lane M: 100 bp DNA Ladder(Bioneer, Cat. no. D-1030)

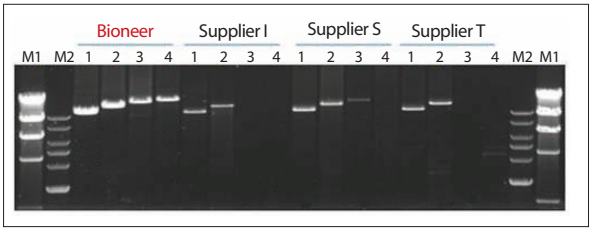


Figure 2. Comparison of PCR amplification of long targets between *ProFi Taq* DNA Polymerase from Bioneer and other suppliers' DNA polymerase.

The cycling conditions for *ProFi Taq* DNA Polymerase were 95°C for 5 min, 32 cycles of 95°C for 20 sec and 68°C for 15 min. PCR reactions using other suppliers' DNA polymerase were performed according to each supplier's protocol. Human genomic DNA was used as a template for PCR amplification.

Lane 1: 11 kb fragment Lane 2: 13.5 kb fragment
Lane 3: 17.6 kb fragment Lane 4: 21.4 kb fragment
Lane M1: Lambda/*Hin*d III marker (Bioneer, Cat. no. D-1050)
Lane M2: 1 kb DNA Ladder (Bioneer, Cat. no. D-1040)

Ordering Information

Cat. no.	Product Description
E-2201	*ProFi Taq* DNA Polymerase 250 U, 10 mM dNTPs, 10 X reaction buffer with $MgCl_2$
E-2202	*ProFi Taq* DNA Polymerase 250 U, 10 mM dNTPs, 10 X reaction buffer without $MgCl_2$, 20 mM $MgCl_2$
E-2203	*ProFi Taq* DNA Polymerase 250 U, 10 X reaction buffer with $MgCl_2$
E-2204	*ProFi Taq* DNA Polymerase 250 U, 10 X reaction buffer without $MgCl_2$, 20 mM $MgCl_2$
E-2205	*ProFi Taq* DNA Polymerase 1000 U, 10 mM dNTPs, 10 X reaction buffer with $MgCl_2$
E-2206	*ProFi Taq* DNA Polymerase 1000 U, 10 mM dNTPs, 10 X reaction buffer without $MgCl_2$, 20 mM $MgCl_2$
E-2207	*ProFi Taq* DNA Polymerase 1000 U, 10 X reaction buffer with $MgCl_2$
E-2208	*ProFi Taq* DNA Polymerase 1000 U, 10 X reaction buffer without $MgCl_2$, 20 mM $MgCl_2$

03

DNA Preparation

Magnetic Bead Type Kit

Spin Column Type Kit

MagListo™ 5M Plasmid Extraction Kit

Just 5 minutes to extract nucleic acids without centrifuge! A single kit serves mini, midi and maxi scale!

Description

MagListo™ 5M Plasmid Extraction Kit is an innovative product to extract plasmid DNA from bacterial cultures using Magnetic Nanobeads. With *MagListo*™ Magnetic Separation Rack and 5M Plasmid Extraction Kit, it takes only five minutes in mini scale even without centrifugation! This kit also provides greater convenience to customers by serving different scales of extraction- mini, midi and maxi - with a single reagent kit.

Features and Benefits

- Magnetic bead technology enables rapid extraction: mini-5 min., midi-10 min., maxi-15 min
- One kit serves mini, midi and maxi scale prep
- No need of expensive extra instrument (vacuum system or air pressure system etc) except *MagListo*™ Magnetic Separation Rack

Application

Gene cloning, PCR, Real-Time PCR, sequencing, transformation, transfection, and *in vitro* transcription/translation

Experimental Data

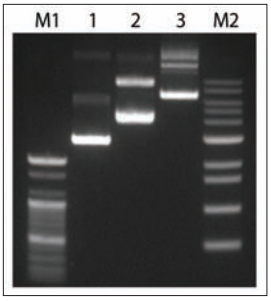


Figure 1. Electrophoresis data of 500 ng of several size plasmids purified with *MagListo*™ 5M Plasmid Extraction Kit.

M1: Bioneer 100 bp ladder
1: 3.5 kb plasmid DNA
2: 5.4 kb plasmid DNA
3: 8 kb plasmid DNA
M2: Bioneer 1 kb ladder

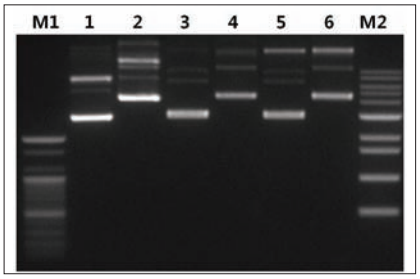


Figure 2. Comparison of plasmid DNAs purified using *MagListo*™ and competitors' products (magnetic bead type).

M1: Bioneer 100 bp ladder
1-2: Plasmid DNA purified with Bioneer *MagListo*™ (3.5 kb / 5 kb)
3-4: Plasmid DNA purified with competitor P kit (3.5 kb / 5 kb)
5-6: Plasmid DNA purified with competitor I kit (3.5 kb / 5 kb)
M2: Bioneer 1 kb ladder

	Concentration(ng/ul)	$A_{260/280}$
1(B)	63.9	2.01
2(B)	86.1	2.09
3(B)	45.7	1.93
4(B)	37.2	1.97
5(B)	38.6	2.14
6(B)	40.1	2.1

Specifications

	Mini scale	Midi scale	Maxi scale
Starting culture volume	1-5 ml	20-50 ml	100-200 ml
Elution volume	100 µl	500 µl	1 ml
Expected DNA yield	~ 20 µg	~ 400 µg	~ 1 mg
Preparation time	~ 5 min	~ 10 min	~ 15 min

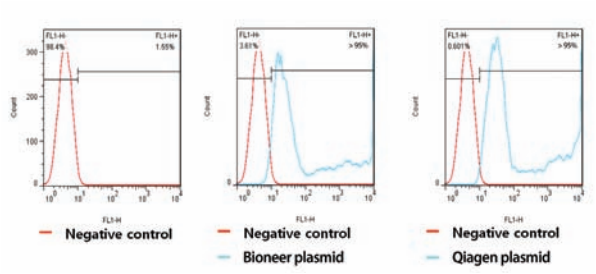


Figure 3. Comparison of plasmid transfection efficiency in 293T cells between *MagListo*™ and a competitor's product (spin column type).

As a result of transfection efficiency from 293T cell 1x10^6, all plasmids extracted from Bioneer *MagListo*™ and other product showed the efficiency of more than 95%.

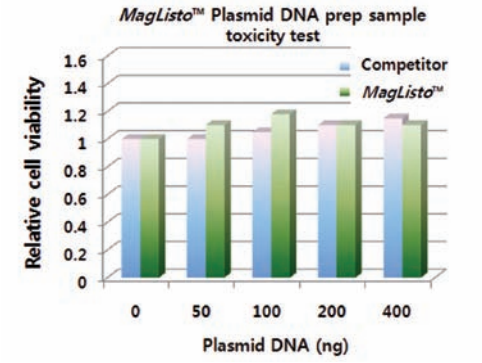
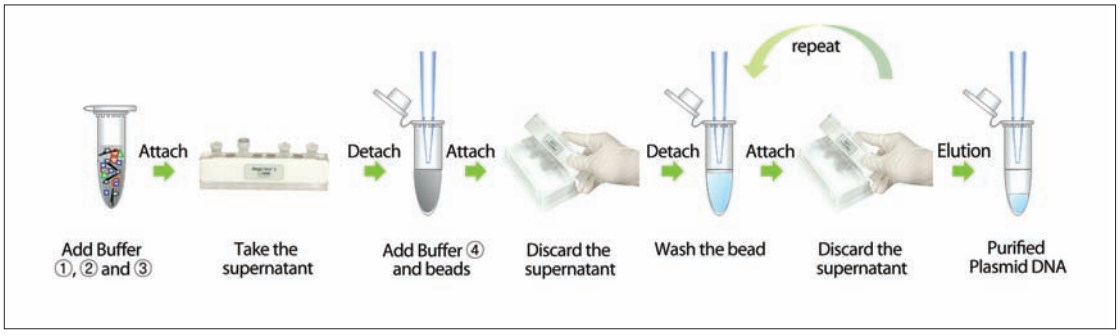


Figure 4. Comparison cell viability after transfected with prep samples by *MagListo*™ and a competitor's product (spin column type).

The WST assay demonstrates that the cell viability in 293T cell was not affected by plasmid DNA of up to 400 ng/well (6 well plate) extracted respectively by *MagListo*™ and a competitor's kit

Procedure



Ordering Information

Cat. no.	Product Description
K-3600	*MagListo*™ 5M Plasmid Extraction Kit, 500 rxn in mini
K-3601	*MagListo*™ 5M Plasmid Extraction Kit, 100 rxn in mini

MagListo™ 5M PCR Purification Kit

Fast & easy purification of fragment DNAs from PCR product or enzymatic reactant!

Description

MagListo™ 5M PCR Purification Kit is designed to purify fragment DNAs of PCR products or other DNA products from various enzymatic reactions including restriction enzyme reaction, A-tailing reaction and labeling reaction. With *MagListo*™ Magnetic Separation Rack, *MagListo*™ 5M PCR Purification Kit enables easier and faster purification of fragment DNA in high purity rather than that of a centrifugation, by effective removal of various contaminants in the solution such as dimer, salts, dNTPs, enzymes, mineral oil, dye, detergent, etc.

Features and Benefits

- Only 5 min for the purification of fragment DNA with the use of Magnetic Nanobead
- No need of expensive, complicated instrument (vacuum system or air pressure system, etc) except *MagListo*™ Magnetic Separation Rack

Specifications

Size range	100 bp -10 kb
Typical recovery	90 -100%
Expected purity	$A_{260/280}$ > 1.8, $A_{260/230}$ > 1.6
Purification time	~ 4 min

Application

Subcloning, Sequencing, Labeling, DNA concentration and other molecular biological applications

Experimental Data

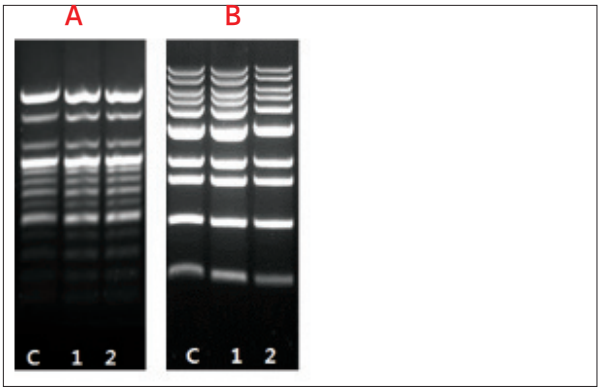
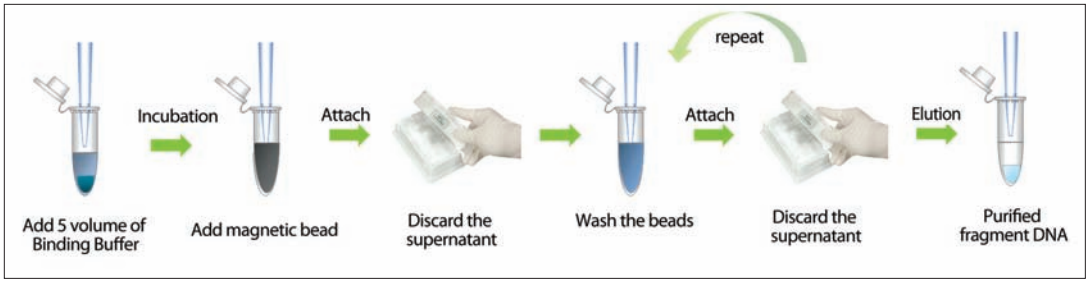


Figure 1. Comparison of fragment DNA purified with *MagListo*™ PCR Purification Kit and control.

A. C: Control 100 bp DNA Ladder (D-1030)
1-2: 100 bp DNA Ladder purified with *MagListo*™ 5M PCR Purification Kit
B. C: Control 1 kb DNA Ladder (D-1040)
1-2: 1 kb DNA Ladder purified with *MagListo*™ 5M PCR Purification Kit

Procedure



Ordering Information

Cat. no.	Product Description
K-3609	*MagListo*™ 5M PCR Purification Kit, 100 rxn in mini

03 *MagListo*™ 5M Gel Extraction Kit

Fast, easy purification of fragment DNA from an agarose gel!

Specifications

Size range	100 bp -10 kb
Typical recovery	90 -100%
Expected purity	$A_{260/280}$ > 1.8
Purification time	~ 15 min

Application

Subcloning, Sequencing, Labeling, DNA concentration and other molecular biological applications

Description

MagListo™ 5M Gel Extraction Kit is designed to extract fragment DNA from a TAE or TBE agarose gel using Magnetic Nanobeads. With *MagListo*™ Magnetic Separation Rack and 5M Gel Extraction Kit, it takes only 15 minutes to extract fragment DNA in mini scale even without centrifugation! This kit also provides greater convenience to customers by serving different scales of extraction-mini, midi and maxi - with a single reagent kit. The pH indicator included in the Gel Solubilization Buffer of the kit enables easy optimization for binding condition.

Features and Benefits

- Only 15 min to purify fragment DNA from an agarose gel using Magnetic Nanobeads
- No need of expensive extra instrument (vacuum system or air pressure system etc) except *MagListo*™ Magnetic Separation Rack

Experimental Data

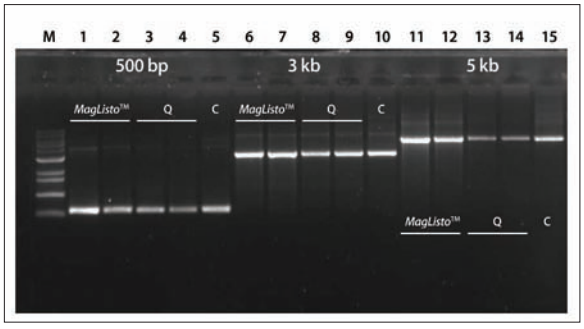
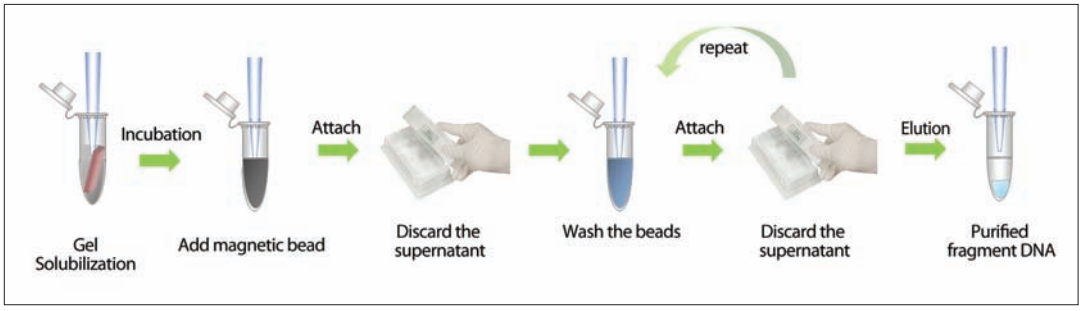


Figure 1. Comparison of fragment DNA from TBE agarose gel purified with *MagListo*™ 5M Gel Extraction Kit and competitor's kit (spin column type).

M: Bioneer 1 kb ladder
1-2: 500 bp DNA purified with Bioneer *MagListo*™ 5M Gel Extraction Kit
3-4: 500 bp DNA purified with competitor Q kit
5: Control 500 bp DNA
6-7: 3 kb DNA purified with Bioneer *MagListo*™ 5M Gel Extraction Kit
8-9: 3 kb DNA purified with competitor Q kit
10: Control 3 kb DNA
11-12: 5 kb DNA purified with Bioneer *MagListo*™ 5M Gel Extraction Kit
13-14: 5 kb DNA purified with competitor Q kit
15: Control 5 kb DNA

Procedure



Ordering Information

Cat. no.	Product Description
K-3607	*MagListo*™ 5M Gel Extraction Kit, 100 rxn in mini

AccuPrep® Nano-Plus Plasmid Mini Extraction Kit

Description

AccuPrep® Nano-Plus Plasmid Mini Extraction Kit extracts highly-purified plasmid DNA from cultured bacterial cells in 10 minutes. The overall principle utilizes a modified alkaline lysis protocol that is enhanced by patented Bioneer's novel Nano-Technology.

Features and Benefits

- Principle is based on modified alkaline lysis protocol combined with a novel nanoparticle technology
- Suitable for high-copy and low copy number plasmid DNA.
- Highly purified and high purity plasmid DNA can be extracted from cultured *E. coli* cells within 10 min
- Endonuclease A denaturation buffer for the endA+ strains
- Silica based DNA binding column with high DNA binding efficiency

Specifications

Starting culture volume	1 ml -10 ml
Column binding capacity	> 20 µg
Elution volume	50 - 100 µl
Expected DNA yield	~ 20 µg
Preparation time	~ 10 min

Application

Subcloning, Sequencing, Transformation, Transfection, and *In vitro* transcription/translation

Experimental Data

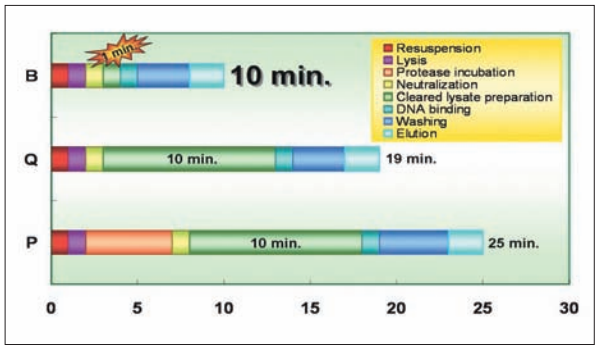


Figure 1. Reduced total preparation time.
B: *AccuPrep*® Nano-Plus Plasmid Mini Extraction Kit
Q, P: Competitors' plasmid extraction kit

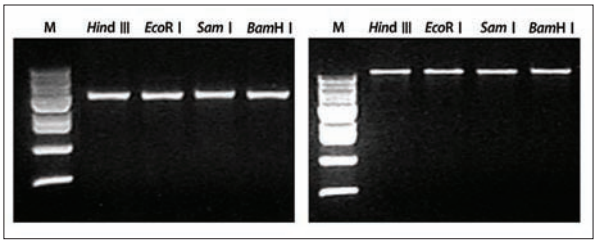
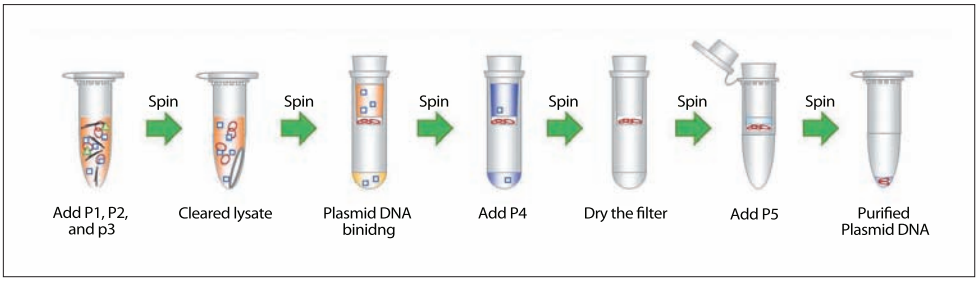


Figure 2. Restriction enzyme digestion test.
Electrophoresis results with extracted plasmid DNA after restriction enzyme digestion with various restriction enzymes.
Left: pBlueScript SK(+) vector, Right: pBI121 vector
Lane M: Molecular Marker (Cat. no. D-1040, Bioneer).

AccuPrep® Nano-Plus Plasmid Mini Extraction Kit

Procedure



Ordering Information

Cat. no.	Product Description
K-3111	*AccuPrep*® Nano-Plus Plasmid Mini Extraction Kit, 200 rxn
K-3112	*AccuPrep*® Nano-Plus Plasmid Mini Extraction Kit, 50 rxn
KB-0101	RNase A powder, lyophilized (6 mg/tube)
KA-0033-1	DNA Binding Column Tubes (50 ea X 4 box)

AccuPrep® Plasmid Mini Extraction Kit

Description

AccuPrep® Plasmid Extraction Kit is designed for the rapid extraction of high-purity plasmid DNA from bacterial cultures such as *E. coli*. As a column-type tube is utilized in the purification process, extraction is carried out in three simple steps of binding/washing/elution, and use of dangerous organic solvents is avoided, for the safe and convenient extraction of high-purity plasmid DNA.

Features and Benefits

- Silica-based DNA binding column with high DNA binding capacity
- Endonuclease A denaturation buffer for the *end*A+ strains
- Based on the modified alkaline lysis method
- 50 well tube rack for the storage of the extracted plasmid DNA

Specifications

Starting culture volume	1 ml -10 ml
Column binding capacity	> 20 µg
Elution volume	50 -100 µl
Expected DNA yield	~ 20 µg
Preparation time	~ 20 min

Application

Subcloning, Sequencing, Transformation, Transfection, and *In vitro* transcription/translation

Experimental Data

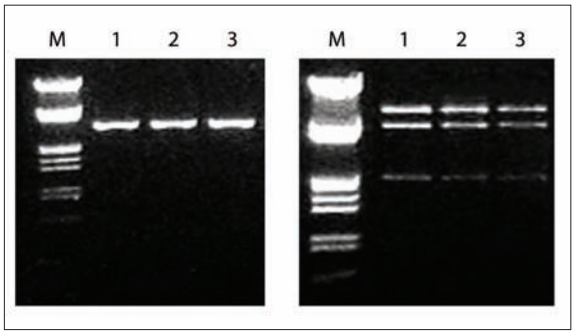


Figure 1. Restriction enzyme (*Xba* I) digestion test.

200 ng of extracted plasmid DNA (pBluescript SK(+)) was digested with *Xba* I.
Lane M: Molecular weight marker (λDNA/*Hin*d III+*Eco*R I, Cat. no. D-1070, Bioneer)
Lane 1: *AccuPrep*® Plasmid Mini Extraction Kit
Lane 2, 3: competitor's plasmid extraction kit

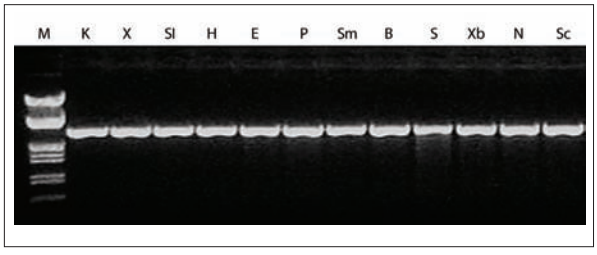
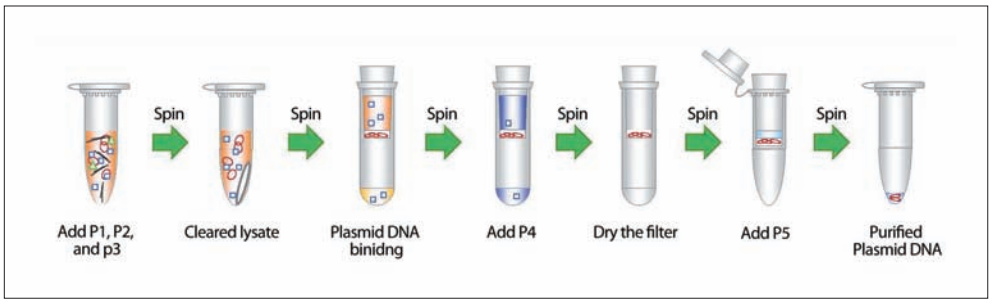


Figure 2. Restriction enzyme digestion test.

200 ng of extracted plasmid DNA (pBluescript SK(+)) was digested with various restriction enzymes.
Lane M: Molecular weight marker (λDNA/*Hin*d III+*Eco*R I, Cat. no. D-1070, Bioneer)
K: *Kpn* I, X: *Xho* I, SI: *Sal* I, H: *Hin*d III, E: *Eco*R I, P: *Pst* I, Sm: *Sma* I, B: *Bam*H I, S: *Spe* I, Xb: *Xba* I, N: *Not* I, Sc: *Sac* I

Procedure



Ordering Information

Cat. no.	Product Description
K-3030	*AccuPrep*® Plasmid Mini Extraction Kit, 200 rxn
K-3030-1	*AccuPrep*® Plasmid Mini Extraction Kit, 50 rxn
KB-0101	RNase A powder, lyophilized (6 mg/tube)
KA-0033-1	DNA Binding Column Tubes (50 ea X 4 box)

AccuPrep® PCR Purification Kit

Description

AccuPrep® PCR Purification Kit is designed for the purification of up to 10 µg of DNA fragment from PCR and other enzymatic products within 5 minutes. The size range for effective purification is 100 bp - 10 kb, thus common 20 - 40 mer oligonucleotides are removed. The recovery yield exceeds 70 - 90%. Elution volume can be as little as 30 µl when concentrated product is needed.

Features and Benefits

- Completely purify the fragment DNA from various enzymatic reaction products within 5 min
- Highly purified and high yield fragment DNA can be purified from various enzymatic reaction products (restriction enzyme digestion, A-tailing, labeling…)
- Double strand and single strand DNA can be purified with high recovery
- Usable range is 100 bp to 10 kb with 70%-90% recovery
- Silica-based DNA binding column with high binding efficiency

Application

Subcloning, Sequencing, Labeling, DNA concentration, etc.

Experimental Data

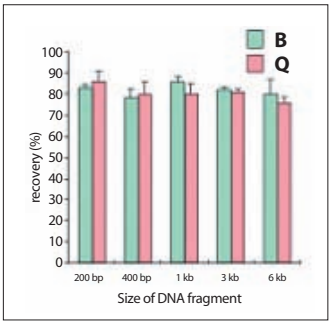


Figure 1. Comparison of typical recovery % in PCR purification kits.
This figure shows recovery percentage after purification of DNA amplified by PCR. The 70% - 90% of DNA were recovered regardless of DNA size (0.2 - 6.0 kb).
B: *AccuPrep*® PCR Purification Kit (K-3034, K-3034-1), Q: Competitor

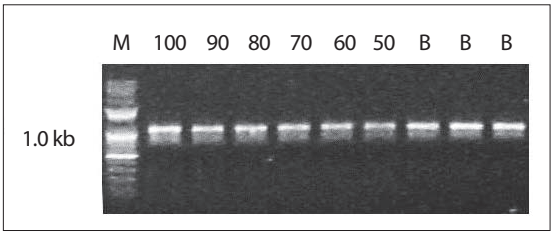


Figure 2. Recovery analysis of the purified PCR product.
Lane M: Molecular weight marker, 100 bp Plus ladder (D-1035, Bioneer)
Lane 100: 100% Lane 90: 90%, Lane 80: 80%
Lane 70: 70% Lane 60: 60%, Lane 50: 50%
Lane B: purified PCR product

Procedure

Ordering Information

Cat. no.	Product Description
K-3034	*AccuPrep*® PCR Purification Kit, 200 rxn
K-3034-1	*AccuPrep*® PCR Purification Kit, 50 rxn
KA-0033-1	DNA Binding Column Tubes (50 ea X 4 box)

Description

AccuPrep® Gel Purification Kit is designed for the purification of up to 10 μg of DNA fragment from low-melting, TAE, TBE agarose gel fraction within 15 min. Provided Gel binding buffer can extracts the target DNA fragment from the agarose gel into the solution. The recovery yield exceeds 70%.

Features and Benefits

- Extraction of fragment DNA from low melting agarose gel as well as TAE, TBE agarose gel
- DNA purification from 70 bp to 10 kb in various size
- Using silica-based DNA binding column with High binding capacity
- Purification of both double and single strand DNA
- Less than 15 min until the purification process is completed
- Very safety and convenience due to nonuse organic solvent and no process of ethanol precipitation

Specifications

Subcloning, Sequencing, Labeling, DNA concentration, etc.

Experimental Data

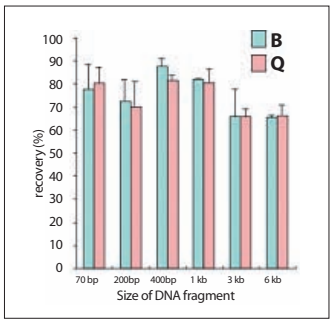


Figure 1. Comparison of typical recovery yield between *AccuPrep*® Gel Purification Kit and competitor.

This data shows the superior yield of *AccuPrep*® Gel PurificationKit as competing products.

B: *AccuPrep*® Gel Purification Kit (K-3035)

Q: competitor

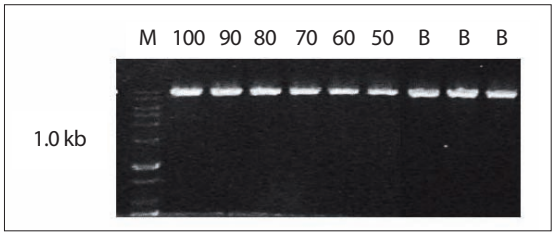


Figure 2. Recovery analysis of the purified fragment DNA.

10.0 kb of plasmid DNA was purified from agarose gel after restriction enzyme digestion.

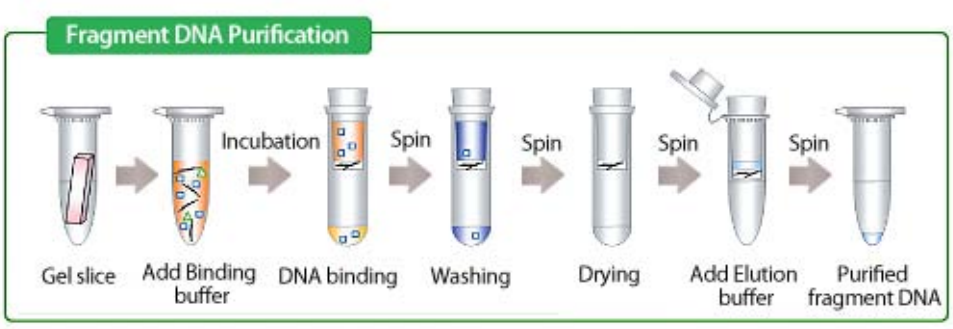
Lane M: Molecular weight marker, 100 bp Plus ladder (D-1035, Bioneer),

Lane 100: 100%, Lane 90: 90%, Lane 80: 80%,

Lane 70: 70%, Lane 60: 60%, Lane 50: 50%,

Lane B: *AccuPrep*® Gel Purification Kit

Procedure



Ordering Information

Cat. no.	Product Description
K-3035	*AccuPrep*® Gel Purification Kit, 200 rxn
K-3035-1	*AccuPrep*® Gel Purification Kit, 50 rxn
KA-0033-1	DNA Binding Column Tubes (50 ea X 4 box)