e2TAK DNA Polymerase

Code No. RF001A

Size : 200 react.

Shipping at -20℃
Stored at -20℃

Supplied Reagents :

5 × e2TAK Buffer (Mg^{2+} plus)

dNTP Mixture (2.5 mM each)

Lot No.

Volume : **100 μl**

Expiry Date :

Description : e2TAK is a versatile DNA Polymerase optimized for PCR amplification of DNA. e2TAK has higher amplification efficiency than *Taq* DNA polymerase, and contains a 3' - 5' exonuclease activity. It is suitable for a variety of standard PCR applications.

Components :

e2TAK DNA Polymerase	100 μl
5 × e2TAK Buffer (Mg^{2+} plus)	1 ml × 2
dNTP Mixture (2.5 mM each)	800 μl

Storage buffer :

50 mM	Tris-HCl (pH 8.2 at 4℃)
100 mM	NaCl
0.1 mM	EDTA
1 mM	DTT
50%	Glycerol

Purity : Nicking, endonuclease, and exonuclease activities were not detected using supercoiled pBR322 DNA, λ DNA, or λ-*Hin*d III digest DNA as substrates.

Application : For DNA amplification via the Polymerase Chain Reaction(PCR)

PCR products : The majority of the PCR products obtained using e2TAK DNA Polymerase will possess blunt ends, Thus, e2TAK products may be cloned directly into blunt-ended vectors. (If necessary, phosphorylate the PCR products before cloning.)

PCR test : Good performance of DNA amplification by PCR was confirmed by using λ DNA as the template (amplified fragment : 10 kbp).
Good performance of DNA amplification of a single copy gene by PCR was also confirmed by using human genome DNA as the template (amplified fragment : approx. 4 kbp).

Supplied 5X e2TAK Buffer (Mg^{2+} plus)

Size	: 1 ml / vial X 2
Mg^{2+} concentration (5X)	: 5mM
Storage	: − 20 ℃

Supplied dNTP Mixture
Mixture of dNTP, ready for use in PCR reactions without dilution.

Size	: 800 μl / vial
Consentration	: 2.5 mM of each dNTP
pH	: pH 7 ~ 9
Form	: Dissolved in water (sodium salts)
Purity	: ≧ 98 % for each dNTP
Storage	: − 20 ℃

Protocol :

- **Reaction mixture preparation:**
  The reaction mixture should be prepared on ice, and all necessary reagents should be stored on ice during reaction assembly. Preparing the reaction on ice decreases non-specific amplification due to primer misannealing.

  Add the reagents to the reaction tube in the following order: Sterilized distilled water, 5× e2TAK Buffer, dNTP Mixture, e2TAK DNA Polymerase, Template DNA, Primer 1, Primer 2.

  Mix the final reaction mixture by pipetting. TaKaRa recommends starting the reaction as soon as possible after reaction assembly.

- **General composition of PCR reaction mixture (50 μl)**

e2TAK DNA Polymerase	0.5 μl
5 × e2TAK Buffer	10 μl
dNTP Mixture (2.5 mM each)	4 μl
Template DNA	< 100 ng
Primer 1	0.2 ~ 0.3 μM (final conc.)
Primer 2	0.2 ~ 0.3 μM (final conc.)
Sterilized distilled water	up to 50 μl

*Recommended template amount

Human genomic DNA	5 ng ~ 100 ng (< 100 ng)
E.coli genomic DNA	100 pg ~ 100 ng
λ DNA	10 pg ~ 10 ng
Plasmid DNA	100 pg ~ 10 ng

- **PCR condition (an example)**
  Important Note: TaKaRa strongly recommends use of short (5 - 15 sec.) annealing times in e2TAK PCR amplifications. Longer annealing times may increase the likelihood of product smears upon gel electrophoresis.

98℃	10 sec.	┐
55℃	5 sec. (or 15 sec.)	├ 30 cycles
72℃	1 min./kb	┘
or		
98℃	10 sec.	┐
68℃	1 min./kb	┘ 30 cycles

Note:
This product is intended to be used for research purpose only. They are not to be used for drug or diagnostic purposes, nor are they intended for human use. They shall not to be used products as food, cosmetics, or utensils, etc.
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