PCR Set System

Cat. No.: MM2141

Store: -20ºC (Not Frost Free)

Quantity: 100 reactions

Shipment: Wet Ice

Description: The PCR SET System provides qualified reagents for the amplification of nucleic acid template by PCR. PCR SET System is supplied with quality tested Taq DNA Polymerase. One 10X PCR buffer and a separate vial of MgCl2 are provided for optimizing amplification. For added convenience, nucleotides are provided as a 10 mM dNTP mix. The PCR SET System's reagents are sufficient for 100 reactions of 100µl each.

Components (supplied):

1-DP1612	*SmarTaq™* DNA Polymerase (5 Unit/µl)
2-MM2111	10X PCR AMS Buffer
3-MM2101	10X PCR Buffer
4-MM2091	50 mM $MgCl_2$
5-MM2081	dNTP Mix (10 mM)

***SmarTaq™* DNA Polymerase:** *Taq* DNA Polymerase is purified from *E.coli* expressing *Thermus aquaticus* DNA polymerase gene with 5' to 3' polymerase activity of dNTPs. *SmarTaq* DNA Polymerase is heat stable and synthesizes DNA at elevated temperatures from single stranded templates in the presence of a primer. The *SmarTaq* DNA Polymerase has an activity of 5units/µl

10X PCR Buffer: (Supplied): The PCR buffer is supplied at a 10X concentration and contains 500mM KCl and 200mM Tris-HCl (pH=8.4). 50mM Magnesium Chloride is supplied in a separate tube.
10X PCR AMS™ Buffer: 750mM Tris–HCl (pH=8.8 at 25ºC), 200mM $(NH4)_2SO_4$, 0.1% Tween 20.
dNTP Mix: 2 × 100µl of 10mM of each ultrapure nucleotide (dATP, dCTP, dGTP, and dTTP); in water (pH=7.5).
Quality Control
DNase: 1 µg linear pUC 19 DNA was incubated with each one of the components of PCR Set System in 100 µl reaction mixture at 65 ^{o}C under paraffin oil.
Restriction endonuclease: No contamination of restriction endonucleases was detected by agarose gel electrophoresis when each one of the components of PCR SET System was incubated with 1µg of pUC 19 DNA in 50µl reaction mixture for 18 hours at 65^{o}C under paraffin oil

No destruction of DNA was observed after 5 hours of incubation.

PCR Runs: The PCR SET System has been used for amplification of different DNA templates. Data obtained from all of the reactions were satisfactory.

Basic PCR Protocol: The following basic protocol serves as a general guideline and a starting point for any PCR amplification. Optimal reaction conditions (incubation times, temperatures, concentration of *Taq* DNA Polymerase, primers, $MgCl_2$, and template DNA) vary and need to be evaluated by the user. Add the following components to a sterile 0.5ml microcentrifuge tube sitting on ice:

Components	Volume	Final Conc.
10X PCR Buffer	10µl	1X
10mM dNTP mix	2µl	0.2 mM each
50mM $MgCl_2$	3µl	1.5 mM
Primers (10µM each)	5µl	0.5 µM each
Template DNA	1-20 µl	---------
Taq DNA Polymerase	0.5 µl	2.5 units
Autoclaved distilled water	to 100 µl	

PCR maybe perform in **25- 35** cycles as follows:

Denature	93°C	45 seconds
Anneal	55°C	30 seconds
Extend	72°C	90 seconds

Optimal reaction conditions vary and need to be evaluated by the user.
Centrifuge tubes before opening to improve recovery of content.
For Research Use Only

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