SD TM DNA/RNA Polymerase

User's Instruction

Description

SD TM DNA/RNA Polymerase is a novel artificial thermostable polymerase with strong strand displacement and reverse transcriptase activity. SD TM DNA/RNA polymerase is particularly effective for TaqMan PCDR of both DNA and RNA templates. With hot start property, the polymerase is 100% inactive below 50°C and can be completely recovered only after heating at 90°C for 5 min.

Kit Contents

	200T
1. SD TM DNA/RNA Polymerase (1.25 U/μl)	200 μl
2. 2.5× PCDR Buffer Mix	1 ml×2

Features

- Strong strand displacement activity and polymerase activity.
- Stable at high temperature.
- Tolerable to ethanol, guanidine salt, heparin, serum and plant polysaccharide polyphenols.
- Ideal for long and complex templates amplification.
- With hot start property, the polymerase is 100% inactive below 50°C and can be completely recovered only after heating at 90°C for 5 min.
- Particularly effective for TaqMan PCDR of both DNA and RNA templates.

About PCDR

Polymerase chain displacement reaction (PCDR) uses multiple nested primers in a rapid, capped, one-tube reaction that increases the sensitivity of normal quantitative PCR (qPCR) assays. In PCDR, when extension occurs from the outer primer, it displaces the extension strand produced from the inner primer by utilizing a polymerase that has strand displacement activity. This allows a greater than 2-fold increase of amplification product for each amplification cycle and therefore increased sensitivity and speed over

conventional PCR. Increased sensitivity in PCDR would be useful in nucleic acid detection for viral diagnostics.

Protocol (For TaqMan PCDR)

1. Set up TaqMan PCDR reaction as the following table (take 25 μl per well as an example):

Component	Volume
2.5× PCDR Buffer Mix	10 μl
SD TM DNA Polymerase (1.25 U/μl)	1 μl
Template DNA or RNA	X ul
Inner Primer F1 (10 μM)	0.5-1 μl
Inner Primer R1 (10 μM)	0.5-1 μl
Outer Primer F2 (10 μM)	0.2 μl
Outer Primer R2 (10 μM)	0.2 μl
Probe (10 μM)	0.1-0.4 μl
ddH_2O	up to 25 μl

Note:

- Adding an extra pair of outer primers (6 primers system) will make the amplification speed and sensitivity higher. However, please note that the specificity of the primers also needs to be very high at this moment, otherwise non-specific amplification may occur.
- As the binding ability and the cutting efficiency of conventional TaqMan probe is very low in PCDR, we recommend our specialized probe for the reaction. Please contact us if you would like to order or learn more details.

2. Thermocycling Conditions

Number of Cycles	Temperature	Time
1st Cycle	90°C	5min
35-45 Cycles	90°C	10s

	60°C	30s (collect signal)

Note:

- The denaturation temperature of SD TM DNA/RNA Polymerase is 90°C, and other temperature conditions will lead to the degradation of the performance. Please repeatedly check whether the parameters are set correctly.

Storage

Minimum shelf life is 2 years at -20°C.