PR1MA™ Taq Plus DNA Polymerase

Description

Ideally suited for problematic templates, Taq Plus combines the superior performance of our standard Taq with a proofreading polymerase. The resulting complex provides greater yields and better sensitivity for low copy number PCR and longer DNA templates. Products have a 3'-dA overhang, suitable for TA cloning. A proprietary 5X buffer system with PCR enhancers, $MgCl_2$ and a high ionic strength has been formulated specifically for this enzyme blend.

- -Performs across a wide range of DNA templates and low copy assays
- -Proprietary 5X reacton buffer includes enhancers for maximizing enzyme activity and reaction speed
- -Improved yields for longer templates with standard or fast cycling

Storage

Upon receipt, immediately store at -20°C. Avoid excessive freeze/thaw cycles. When stored as directed, this product will retain its activity for 12 months from date of receipt. The product may also be stored at 4°C for up to one month.

Limitations of Use

For research purposes only. Not intended for therapeutic or diagnostic use.

Quality Control

PR1MA enzymes and reagents are tested under general assay conditions for activity, reproducibility, efficiency, heat activation, sensitivity, and absence of nuclease contamination and nuclease activity. This product is manufactured under a comprehensive quality management system, following ISO 9001:2008 standards.

General Guidelines

1. *Reaction Buffer*

The supplied 5X reaction buffer has been formulated for maximum efficiency, sensitivity and successful PCR with long and difficult templates. Proprietary PCR enhancers and 15mM $MgCl_2$ are included in the buffer. Use of additional PCR enhancers may have a negative effect on the reaction.

2. *Template*

For PCR of complex genomic DNA, 5ng - 500ng of template DNA may be added per reaction. Do not add more than 100ng of DNA for cDNA or plasmid DNA

3. *Primers*

Primers should have a predicted melting temperature of approximately 60°C, using default Primer 3 settings (http://frodo.wi.mit.edu/primer3). The final primer concentration should be 0.2µM to 0.6µM.

4. *Annealing Temperature*

An initial annealing temperature of 57°C is recommended. If nonspecific products appear, increase the temperature in 2°C increments. Alternately, a temperature gradient may be performed.

5. *Extension*

The polymerase performs optimally at 72°C. Extension time is dependent upon amplicon complexity and length. Generally, 15-30 seconds per kb is recommended for eukaryotic genomic DNA and cDNA less than 5kb. Allow 40-60 seconds per kb for longer amplicons.

Technical Support

For trouble-shooting and tech support, contact us at tech@midsci.com or call 800 227-9997.

MidSci is not responsible for consequential or incidental damages, whether direct or indirect, resulting from use of this product. MidSci guarantees the performance of this product as described when used in accordance with these instructions.

Reaction setup

Prepare the reaction as follows:

Component	*25 µl reaction*	*50 µl reaction*	*Final concentration*
PR1MA 5x Taq Plus Reaction Buffer	5 µl	10 µl	1X
100mM dNTPs (25mM each)	0.25 µl	0.5 µl	1mM
Forward Primer (10µM)	1.0 µl	2.0 µl	400 nM
Reverse Primer (10µM)	1.0 µl	2.0 µl	400 nM
Template DNA	<100ng cDNA, <500ng genomic		variable
PR1MA Taq Plus (5u/µl)	0.12 µl - 0.5 µl	0.25 µl - 1 µl	variable
PCR-grade water	to final reaction volume		

For other volumes, adjust the amount of each component accordingly.

Gently mix the solution. If needed, spin briefly in a microcentrifuge to bring reaction mixture to the bottom of the tube. Transfer samples to a thermal cycler and begin cycling. Be sure to include an initial activation/denaturation step of 1-2 minutes.

Routine PCR Cycling

Step	Temperature	Time
Enzyme activitation	95°C	1-2 minutes
25-40 cycles	95°C	15 seconds
	55°C to 67°C**	15 seconds
	72°C	15 seconds per Kb*

*See "General Guidelines" for amplification of longer templates

Package contents and reordering

PR1MA Taq Plus Polymerase is supplied at a concentration of 5 units/µl and is available in 250 and 500 unit packages. Supplied with 5X Taq Plus Buffer.

PR1MA Taq Plus, Sample Pack
Catalog number PR1000-TP-S
Includes 10 µl of enzyme and 5X buffer.

PR1MA Taq Plus, 250 units
Catalog number PR1000-TP-250
Includes 50 µl of enzyme and 2ml of 5X buffer in1ml aliquots.

PR1MA Taq Plus, 500 units
Catalog number PR1000-TP-500
Includes 100 µl of enzyme in 50µl aliquots, and 4ml of 5X buffer in1ml aliquots.

MidSci offers a full line of PCR enzymes and master mixes. Visit www.midsci.com for details

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MIDSCI™

PR1MA™ Taq Plus PR1000-TP

5 units/µl, supplied with 5X Buffer

Package contains:

- 250 units Taq Plus Polymerase (1x50µl)
  2ml 5X Taq Plus Buffer (2x1ml)
- 500 units Taq Plus Polymerase (2x50µl)
  4ml 5X Taq Plus Buffer (4x1ml)

Store at -20°C upon receipt

888-227-9997 custserv@midsci.com