Medix Biochemica

Product Manual
Cat. No: MX1103

MedixMDx HS HiFi DNA Polymerase

Description

MedixMDx HS HiFi DNA Polymerase is a hot-start, high fidelity hyperthermophilic recombinant DNA polymerase from the hyperthermophilic archaeon Pyrococcus furiosus. MedixMDx HS HiFi DNA Polymerase exhibits 5' to 3' polymerase activity and 3' to 5' exonuclease activity. A state-of-the-art aptamer-like molecule reversibly blocks its 3’ to 5’ exonuclease and 5’ to 3’ polymerase activities at room temperature. This abolishes the formation of primer dimers and non-specific amplification during PCRs. The enzyme has been further mutated to display higher processivity, which enables shorter PCR extension cycles.

In addition, the optimized buffer chemistry facilitates high sensitivity, yield, and specificity and robust and rapid polymerase processivity. The enzyme is ideal for long, complex, difficult DNA templates and is resistant to PCR inhibitors. MedixMDx HS HiFi DNA Polymerase has a lower error rate than standard Taq DNA polymerase (100x). The enzyme is suitable for PCR applications where higher accuracy is needed, such as site-directed mutagenesis, sequencing, and cloning. Amplified products generated by MedixMDx HS HiFi DNA Polymerase are blunt ended. The enzyme is also compatible with fast and standard cycling using a variety of DNA.

Kit components

Component	*MX1103-100 100 Units	*MX1103-500 500 Units
MedixMDx HS HiFi DNA Polymerase (2 U/µL)	0.05 mL	0.25ml
∞ 5x MedixMDx HiFi Buffer	1.7 mL	3 x 1.7 mL
∞∞10x HiFiOpt Enhancer	1.7 mL	2 x 1.7 mL

*Other pack sizes, bulk orders and customization are available upon request.

∞The 5x MedixMDx HiFi Buffer has been formulated for robust PCR performance. The buffer contains MgCl2, dNTPs, stabilizers, and enhancers.

∞∞When no amplification is observed due to complex/GC-rich templates, add 10x HiFiOpt Enhancer to the reaction.

Storage and shipment

Transport with an ice pack or on dry ice (for shipments taking more than 2 days). The reagents should be stored between -30°C and -15°C upon arrival. The reagents are stable for 12 months if stored correctly. The reagents are stable for 1 month at 4°C.

Master Mix set-up

The recommended master mix set-up for a 25 or 50 µL reaction volume is shown in the table below.

Reagent	Volume 25 µL	Volume 50 µL	Final concentration
5x MedixMDx HiFi Buffer	5 µL	10 µL	1x
10x HiFiOpt Enhancer	2.5 µL	5 µL	400 nM
∞Forward Primer (10 µM)	1 µL	2 µL	400 nM
∞Reverse Primer (10 µM)	1 µL	2 µL	100-200 nM
*DNA/cDNA Template	X	X	Variable
MedixMDx HS HiFi DNA Polymerase	0.25 µL	0.5 µL	Variable
Nuclease-free water	Up to 25 µL final volume	Up to 50 µL final volume	
Total Volume	25 µL	50 µL	

∞Primers and probes should be specific to the target DNA/RNA of interest. The recommended T_m for primers is between 56°C and 60°C.

*For 25 µL reaction volumes use < 100 ng of genomic DNA and < 5 ng of less complex DNA. For 50 µL reaction volumes use < 200 ng of genomic DNA and < 10 ng of less complex DNA.

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Instrument and program set-up

Cycles	Steps	Temperature	Time
1	Pre-denaturation	95°C	1 min
25-35	Denaturation	95°C	15 sec
	Annealing	55–65°C	15 sec
	*Extension	72°C	30 sec

*The extension time for most applications should be 30 seconds per kb of target region. The optimum extension time should be determined.

Technical information and support

For technical enquiries or assay development support, please contact us via e-mail at: mdx@medixbiochemica.com.

Additional information and technical resources are available on our website at: info.medixbiochemica.com/resources.

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