

## MedixMDx Fast *Bst* Polymerase Fluorescence

### Description

MedixMDx Fast *Bst* Polymerase is a recombinant DNA polymerase expressed by *Geobacillus stearothermophilus* (formerly *Bacillus stearothermophilus*). The DNA polymerase displays high strand displacement activities, exhibits 5' to 3' polymerase activity, but lacks 5' to 3' exonuclease activity. MedixMDx Fast *Bst* Polymerase is suitable for several nucleic acid amplification methods such as loop-mediated isothermal amplification (LAMP), strand invasion-based amplification (SIBA), whole genome amplification, multiple displacement amplification, and isothermal amplification.

MedixMDx Fast *Bst* Polymerase is tolerant to inhibitors, enabling rapid and robust LAMP reactions at a constant temperature. The typical reaction temperature is 65°C. However, the enzyme is also active at lower and higher temperatures (55–70°C). The enzyme can be inactivated at temperatures higher than 80°C. Addition of an intercalating dye allows the reaction to be monitored using a real-time PCR instrument. Reactions can also be run using small and portable instruments with incubation and fluorescence measurement capabilities.

### Kit components

Component	*MX1107-16 1600 Units	*MX1107-80 8000 Units
MedixMDx Fast <i>Bst</i> Polymerase (8 U/μL)	0.2 mL	1 mL
∞10x MedixMDx Fast Buffer A	0.5 mL	2 X 1.25 mL
∞∞5x MedixMDx Fast Buffer B	1 mL	3 X 1.7 mL
20x Fluorescent dye	2 X 0.125 mL	2 X 0.625 mL

\*Other pack sizes or bulk orders are available upon request.

∞The 10x MedixMDx Fast Buffer A has been formulated for robust performance. The buffer contains MgSO<sub>4</sub>, dNTPs, enhancers, and stabilizers.

∞∞The 5x MedixMDx Fast Buffer B contains an additional enhancer to further improve the reaction speed.

### 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.

### Mastermix set-up for LAMP assay

The recommended mastermix set-up for a 25 μL reaction volume is shown in the table below.

Reagent	Volume (μL)	Final concentration
10x MedixMDx Fast Buffer A	2.5	1x
5x MedixMDx Fast Buffer B	5	1x
20x Fluorescent dye	1.25	1x
MedixMDx Fast <i>Bst</i> Polymerase	1	8 U
∞10x LAMP primer set	2.5	1x
DNA/cDNA template	X	Variable
Nuclease-free water	Up to 25 μL final volume	
Total volume	25 μL	

∞LAMP primers should be designed using an appropriate primer design tool. The 10x primer set should contain 16 μM FIP, 16 μM BIP, 2 μM F3, 2 μM B3, 4–8 μM LoopF, and 4–8 μM LoopB in TE buffer or water.

After preparation of the mastermix, incubate at 65°C for 30 minutes. The reaction time can be extended, and the incubation temperature can be varied between 55°C and 70°C to improve sensitivity and speed. The reaction can be monitored in a qPCR instrument by measuring fluorescence (FAM) every 10–30 seconds.



## Technical information and support

For technical enquiries or assay development support, please contact us via e-mail at: [mdx@medixbiochemica.com](mailto:mdx@medixbiochemica.com). Additional information and technical resources are available on our website at: [www.medixbiochemica.com/en/MedixMDx](http://www.medixbiochemica.com/en/MedixMDx).



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