

## Fast *Bst* Mix

### Description

Fast *Bst* Mix is a simple ready-to-use mix containing 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. Fast *Bst* Mix is suitable for isothermal nucleic acid amplification methods such as loop-mediated isothermal amplification (LAMP).

Fast *Bst* Mix 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	S pack*	M pack*
2x Fast <i>Bst</i> Mix	1.25 mL	5 x 1.25 mL
20x Fluorescent dye	0.125 mL	0.625 mL

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

### Storage and Shipment

Transport with an ice pack. The reagents should be stored at -20°C upon arrival. The reagents are stable until the expiration date if stored correctly.

### Reaction Master Mix Set-Up

The recommended master mix set-up for a 25 µL reaction volume is shown in the table below. After preparation of the master mix, 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

Reagent	Volume (µL)	Final concentration
2x Fast <i>Bst</i> Mix	12.5	1x
20x Fluorescent dye	1.25	1x
≈10x LAMP primer set	2.5	1x
DNA/cDNA template	X	Variable
Nuclease-free Water	Up to 25 µL final volume	

≈LAMP primers should be designed using an appropriate primer design tool. A predicted melting temperature of around 60°C is recommended. 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.

### 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: [info.medixbiochemica.com/resources](http://info.medixbiochemica.com/resources).