

Gojira Fine Chemicals, LLC

Fast Bst Polymerase

Cat. No: FB1006

Product Information Leaflet

Description

Fast *Bst* Polymerase is a recombinant DNA polymerase expressed by *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* 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.

Fast *Bst* Polymerase is tolerant of 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	*FB1006-16 1600 Units	*FB1006-80 8000 Units
Fast <i>Bst</i> Polymerase (8 U/ μ L)	1 X 0.2 mL	1 X 1 mL
∞ 10x Fast Buffer A	1 X 0.5 mL	2 X 1.25 mL
$\infty\infty$ 5x Fast Buffer B	1 X 1 mL	3 X 1.7 mL

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

∞ The 10x Fast Buffer A has been formulated for robust performance. The buffer contains 30 mM MgSO₄, 16 mM dNTPs, enhancers, and stabilizers.

$\infty\infty$ The 5x 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. The reagents are stable for 1 month at 4°C.

Mastermix set-up for LAMP assay

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

Reagent	Volume (μ L)	Final concentration
10x Fast Buffer A	2.5	1x
5x Fast Buffer B	5	400 M
*20x Fluorescent dye (optional)	1.25	1x
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 μ L final volume	
Total volume	25 μ L	

*Cat no. FB1006 includes the optional intercalating fluorescent dye.

∞ LAMP primers should be designed using an appropriate primer design tool. The 10x primer set should contain 16 μ M FIP, 16 μ M BIP, 2 μ M F3, 2 μ M B3, 4–8 μ M LoopF, and 4–8 μ M 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 inquiries or assay development support, please contact us via e-mail at: docsupport@gojirafc.com. Additional information and technical resources are available on our website: WWW.gojirafc.com