High Conc. Glycerol-Free Bst Product Handling Guide

Shipping:	On dry/blue ice
Catalog number:	MDX018
Batch No.:	See vial
Concentration:	100 units/µL

Store at –20 °C

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Storage and stability:
High Conc. Glycerol-Free Bst is shipped on dry or blue ice. On arrival store at -20 °C for optimum stability. Repeated freeze/thaw cycles should be avoided. Solutions should be mixed/equilibrated after each thawing to avoid phasing.

Expiry:
When stored under the recommended conditions and handled correctly, full activity of the kit is retained until the expiry date on the outer box label.

Safety precautions:
Read and understand the SDS (Safety Data Sheets) before handling the reagents. Hardcopies of the SDS will be provided with the first shipment, thereafter they will be available upon request.

Quality control:
Meridian operates under ISO 13485 Quality Management System. High Conc. Glycerol-Free Bst and its components are extensively tested for activity, processivity, efficiency, heat activation, sensitivity, absence of nuclease contamination and absence of nucleic acid contamination.

Notes:
For research or further manufactured use only.

Description

High Conc. Glycerol-Free Bst is a DNA polymerase (exonuclease minus), with strand-displacement properties. High Conc. Glycerol-Free Bst is used for Isothermal DNA amplification and LAMP (Loop-mediated Isothermal Amplification).

Kit components

Table 1

Component
High Conc. Glycerol-Free Bst (100 U/µL)
Bst Reaction Buffer, 10x
Enzyme Dilution Buffer, 10x

Users Guidelines

Thawing during transportation does not affect the product performance. Prior to use or storing at -20 °C, the thawed reagents must be thoroughly mixed by 10 inversions.

LAMP Optimisation

It is recommended that $MgSO_4$ (not supplied) is supplemented to a total concentration of 8 mM as indicated in the example LAMP protocol, but this can be optimised according to individual assay requirements.

dNTPs can be optimised between 1.6 mM (0.4 mM each) and 6 mM (1.5 mM each) final concentration.

High Conc. Glycerol-Free Bst can be diluted using the Enzyme Dilution Buffer provided to between 0.12 and 0.32 U/µL final concentration, depending on individual assay requirements.

Working Concentration of Bst

High Conc. Glycerol-Free Bst is diluted in 1x Enzyme Dilution Dilution Buffer, which is glycerol-free, to a working concentration of 8 U/µL as described in Table 2.

Table 2

Reagent	Ratio	Volume for 48 + 2 Reactions
Bst DNA Polymerase, 100 U/µL	0.08	4 µL
Bst Reaction Buffer, 10x	0.1	5 µL
Water (sterile, distilled)	0.82	41 µL

Typical LAMP reaction conditions:

Incubate at 60 °C for 60 minutes.

The following protocol is for a standard 25 µL LAMP reaction to be used as a starting point for optimization.

Reagent	Volume	Final Concentration
Bst Reaction Buffer, 10x	2.5 µL	1x
dNTP Mix (100 mM - 25 mM each)	0.4 - 1.5 µL	1.6 - 6 mM
$MgSO_4$ (100 mM)	1.5 µL	6 mM (8 mM total)
FIP/BIP Primers (25X)	1 µL	1.6 µM
F3/B3 Primers (25X)	1 µL	0.2 µM
Loop F/B Primers (25X)	1 µL	0.4 µM
High Conc. Glycerol-Free Bst (3-8 U/µL)	1 µL	0.12 - 0.32 U/µL
Sample DNA	variable	> 10 copies
Water (ddH_2O)	to 25 µL	

Related Products	Cat. No.
Bst DNA Polymerase, 8 U/µL	MDX012
Bst Reaction Buffer, 10x	MDX076
Enzyme Dilution Buffer, 10x	MDX080
Enzyme Dilution Buffer, 1x	MDX078
dNTP Mix, 100mM	MDX051

Technical Support

For any technical enquiries, please contact our Technical Support team via email at: mbi.tech@meridianlifescience.com

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