Datasheet

FAST Bst 2.0 DNA Polymerase

Fast Isothermal Amplification for sensitive detection in 5 – 10 minutes

Description:
FAST 2.0 Bst Polymerase (genetically improved Bacillus stearothermophilus cloned to E. Coli) for next generation of isothermal DNA amplification is has been developed recently.
The Polymerase allows the detection within 5 to 10 minutes and thus it is 2 to 3 times quicker than other Bst DNA Polymerases.
The optimized *FAST* 2.0 Bst Polymerase amplification results can be compared with about 28-31 cycles in a standard PCR-Cycler Platform. The *FAST* 2.0 Bst Polymerase offers high strand displacement capability.

Benefits:
- More resistant in Plant tissue of blood samples to inhibitors
- Very fast screening of many DNA samples
- Inexpensive and simple method
- Extreme sensitive detection

Applications:

***FAST* Bst. DNA is an extraordinary candidate for isothermal amplifications:**
- DNA strand displacement amplification (SDA)
- Cross priming amplification (CPA)
- Rolling-circle amplification (RCA)
- Loop-mediated isothermal amplification of DNA (LAMP)
- Reverse transcription isothermal multiple-self-matching-initiated amplification (RT-ISMA)
- Polymerase chain displacement reaction (PCDR)
- Sequencing of very low amounts of DNA template

Limitation:
Not recommended for multiplex amplification

Method of detection:
We recommend to use the fluorescent DNA stain EvaGreen to add in the reaction Mix or to use the ready to use *FAST*-Mastermix Bst 2.0 with Evagreen Cat.-No. S650 or S660 (Mastermix Bst 2.0 with EvaGreen and ROX)

Content:
8-10 U/µl Fast Bst 2.0 DNA Polymerase, 10 mM Tris-HCl, 100 mM KCl, 0.1 mM EDTA, 1 mM DTT, 0.1 % Triton X-100, 50 % Glycerol, pH 7.5 @ RT;

- **Separate Tube** of $MgSO_4$

- **Reaction buffer (10X):** 200 mM Tris-HCl pH 8.8, KCl, 100 mM (NH4)2SO4, 60 mM $MgSO_4$, enhancer, stabilizer

Storage: @ -20°C

Shipping: blue Ice

.. a good decision ..

GeneON GmbH Germany
Contact Phone +49-(0)-621- 5720 864 Fax: +49-(0)-621-5724 462
E-Mail: mailto:info@geneon.net WEB: www.GeneOn.net Version: 06.2021 UK

Set up and protocol (50 µl reaction volume):

Component	Concentration final	50 µl reaction volume
Reac.-buffer 10 x	1x	5 µl
$MgSO_4$ (25 mM)	0-2 mM	0-4 µl
dNTP Mix (10 mM)	1.4 µM	7 µl
Primermix (10 X)	1x	5 µl
Fast Bst 2.0 Pol. (8 U / µl)	0.32 U/µl (50 µl vol.)	2 µl
Evagreen Stain (100 µM)	1.3 mM	0.65 µl
Template DNA	Max: 500 ng/assay	X µl
PCR-water		up to 50 µl

Note:

- An optimization of $MgSO_4$ may be helpful for specific templates (6mM already in buffer; 7mM – add 2µl, 8 mM add 4µl MgSO4)
- The incubation temperature is from 60 to 65 °C. An optimization in 1 to 2 °C steps may be helpful
- For the optimization process it may be helpful to have an interval of 1-2 minutes for up to 15-20 min.

For a successful amplification:

- Work with new components. Keep your working place DNA free!
- Reduce your amplification time when you get non-template amplification in negative test
- Consider carry-over-protection to avoid contamination from other product.
- If a an “non-template” product from primer appears, redesign the target sequence of your primers

Ordering information:

Product Code	Description	Amount
S640	*FAST* 2.0 Bst DNA Polymerase	2000 Units
S640L	*FAST 2.0* Bst DNA Polymerase	10.000 Units

Related products:
FAST 2.0 Bst DNA – Mastermix with EvaGreen and ROX: Product Code: S650 and S660

.. a good decision ..

GeneON GmbH Germany
Contact Phone +49-(0)-621- 5720 864 Fax: +49-(0)-621-5724 462
E-Mail: mailto:info@geneon.net WEB: www.GeneOn.net Version: 06.2021 UK