# Datasheet

## *FAST* 2.0 Bst Mastermix (2x) with SybrGreen for LAMP – Loop-mediated Isothermal Amplification

### Fast Isothermal Amplification for sensitive detection in less than 10 minutes

**Description:**
*FAST* 2.0 Bst Mastermix (2x), genetically improved Bacillus stearothermophilus cloned to E. Coli in a ready-to-use Mastermix, for next generation of isothermal DNA amplification.

The Mastermix allows the detection within 5 to 10 minutes (when using an extra primer pair) and thus it is 2 to 3 times quicker than other Bst DNA Polymerases.

The optimized *FAST* 2.0 Bst Mastermix amplification results can be compared with about 28-31 cycles in a standard PCR-Cycler Platform. The *FAST* 2.0 Bst Mastermix offers high strand displacement capability. The optimal temperature range is between 60°C and 65 °C.

**Benefits:**
- Can be more resistant in Plant tissue of blood samples to inhibitors
- Very fast screening from minimal processed individual DNA samples
- Inexpensive and simple method
- Extreme sensitive detection

**Applications:**
***FAST* Bst. DNA is an extraordinary candidate for isothermal amplifications:**
- High strand displacement amplification
- Loop-mediated isothermal amplification of DNA (LAMP)

**Content:**
Fast 2.0 Bst Polymerase, dNTPs, reaction buffer, glycerol, SybrGreen as intercalator dye, stabilizer and enhancer. READY-to-use. The Mastermix is 2x concentrated

The Mastermix can be combined with ROX reference dye in real time PCR machines working with ROX signal

**Storage**: @ -20°C for long term; for short term (up to 10-12 weeks) at +4°C

**Shipping**: blue Ice

**Primer design:**
To mark 6 DNA regions, usually 4 separate primers are used. To reduce the amplification time, even an additional primer pair can be designed. We recommend to use a professional primer design software. “In-Silco” primer design shall be carefully compared with real existing primer pairs.

**Assay:**
We recommend to work in extremely clean and separate areas for setting up and amplification to reduce the risk of carry-over contaminations. Unspecific products may arise too, when primer dimers of unspecific annealed primers occur.



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**Set up and protocol (50 µl reaction volume):**

| Component | Concentration final | 50 µl reaction volume |
|---|---|---|
| Fast Bst 2.0 Mastermix with SybrGreen (2x concentrated) | 1x | 25 µl |
| Primermix (10 X) | 1x | 5 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
- 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 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 |
|---|---|---|
| S651 | *FAST* 2.0 Bst Mastermix (2X) with SybrGreen | 2 x 1,25 ml |
| S651L | *FAST* 2.0 Bst Mastermix (2X) with SybrGreen | 10 x 1,25 ml |



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