# DTI FabTaq HS

Instruction Manual for use

User Manual for DTI FabTaq HS

Catalogue number: DT0102.250

*Note: Applicable to all pack sizes*

Manufactured by
DSS Takara Bio India Pvt Ltd
A-5 Mohan Co-operative, Industrial Estate,
Mathura Road, New Delhi, Delhi 110044

## 1) Product Description:

DTI FabTaq HS is a hot start PCR enzyme derived from FabTaq that includes a neutralizing monoclonal antibody that recognizes Taq DNA polymerase. This antibody binds to Taq polymerase and prevents non-specific amplification due to mispriming and/or formation of primer dimers before thermal cycling. The antibody is denatured during the initial DNA-denaturation step, allowing this product to be used with standard PCR conditions.

## 2) Components:

| Components | Cat# DT0102.250 (250 U) |
|---|---|
| DTI FabTaq | 250 Units |
| 10X PCR Buffer ($Mg^{2+}$ plus) | 1 ml |
| dNTP Mixture | 800 µl |

## 3) Concentration: 5U/ul

## 4) Storage Buffer:

| | |
|---|---|
| Tris-HCl (pH8.0) | 20 mM |
| KCl | 100 mM |
| EDTA | 0.1 mM |
| DTT | 1 mM |
| Tween 20 | 0.5% |
| NP-40 | 0.5% |
| Glycerol | 50% |

## 5) Supplied 10X PCR Buffer (Mg2+ plus)

Composition (10X)

| | |
|---|---|
| Tris-HCl (pH8.9) | 100 mM |
| KCl | 500 mM |
| $MgCl_2$ | 15 mM |

## 6) Supplied dNTP Mixture (2.5 mM each):

dNTP Mixture is ready for use in PCR without dilution.

Form : Dissolved in water (sodium salts), pH 7 - 9

Purity : ≧ 98% for each dNTP.

## 7) Storage: -20℃

## 8) Unit definition:

One unit is the amount of enzyme that will incorporate 10 nmol of dNTPs into acid-insoluble products in 30 minutes at 74℃ with activated salmon sperm DNA as the template-primer.

9) Purity:

Nicking, endonuclease, and exonuclease activity were not detected after incubation of 0.6 µg of supercoiled pBR322 DNA, 0.6 µg of λDNA, or 0.6 µg of λ-Hin d III digest with 10 U of this enzyme for 1 hour at 74℃.

10) Applications:

- For DNA amplification by hot start PCR
- For DNA sequencing

11) PCR products:

As most PCR products amplified with DTI FabTaq HS have one A at the 3'-termini, the obtained PCR products can be directly cloned into a T-vector. It is also possible to clone the product in blunt-end vectors after blunting and phosphorylation of the ends.

12) Materials required but not provided

**Reagents:** PCR primers, sterile purified water, template

**Equipment:** Thermal cycler (DTI FabSpeed thermal cycler)

**Consumables:** PCR tubes, Micropipettes and tips

13) Quality Control Data:

Please see the Certificate of Analysis (CoA) for each lot.

14) Protocol

General reaction mixture for PCR (total 50 µl):

| Reagent | Volume |
|---|---|
| DTI FabTaq HS (5 U/µl) | 0.25 µl |
| 10×PCR Buffer ($Mg^{2+}$ plus) | 5 µl |
| dNTP Mixture (2.5 mM each) | 4 µl |
| Template | < 500 ng |
| Primer 1 | 10 - 50 pmol (final conc. 0.2 - 1.0 µM) |
| Primer 2 | 10 - 50 pmol (final conc. 0.2 - 1.0 µM) |
| Sterile purified water | up to 50 µl |
| Total | 50 µl |

**NOTE:** Reaction mixtures can be set up at room temperature. Be sure to keep all reagents on ice.

15) PCR Conditions:

This enzyme can be used with standard PCR conditions, since the monoclonal antibody is denatured in the initial DNA-denaturation step. There is no need for an additional step to denature the anti-Taq antibody.

**Example: Amplification of a 1 kb DNA fragment**

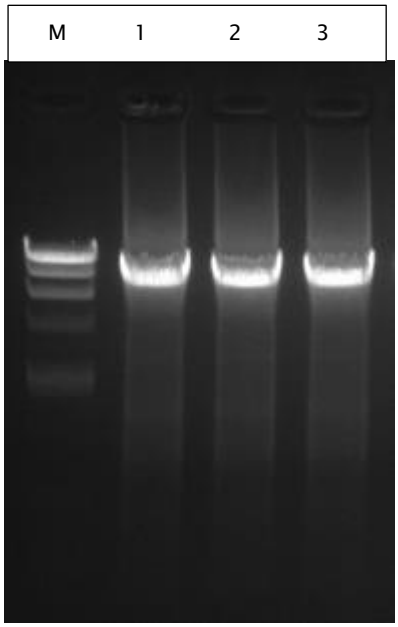
| | | |
|---|---|---|
| 98℃ | 10 sec | 30 cycles |
| 55℃* | 30 sec | |
| 72℃ | 1 min | |

**NOTE:** Denaturation conditions vary depending on the thermal cycler and tubes used for PCR. Denaturation for 5 - 10 sec at 98℃, or 20 - 30 sec at 94℃ is recommended.

**16) Experimental sample:**

a) Amplification data: Good performance of this product has been confirmed by PCR using λ DNA as template (amplified fragment size 8 kbp). The protocol used for the assay and the results are as follows:

| | | |
|---|---|---|
| 94C | 1 min | |
| | | 30 cycles |
| 94C | 30 sec | |
| 65C | 10 min | |
| 4C | ∞ | |




Lane M: λ Hind III digest marker
Lane 1-3: Test in triplicates

b) Hot start function data:

Test target sample added to a PCR system containing FabTaq and FabTaq HS respectively. Following an incubation at RT for 30 mins, the products were amplified using a thermal cycler. Non-specific bands (280 bp) were observed in the PCR system along with specific target bands (838 bp) using FabTaq, while there were no non-specific bands observed in PCR system using FabTaq HS.

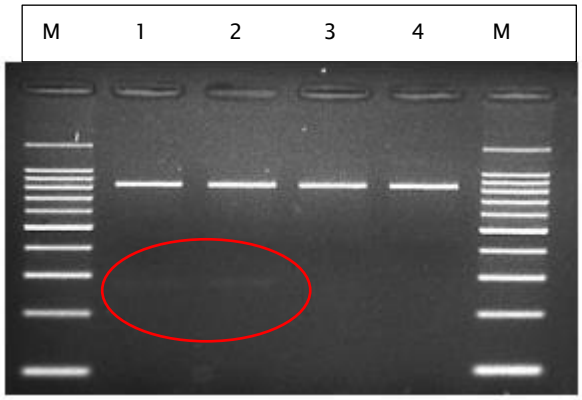
The protocol used for the assay and the results are as follows:

Incubate at 25C for 30 mins

↓

Place the tubes in thermal cycler and run the program

| | | |
|---|---|---|
| 94C | 30 sec | 25Cycles |
| 55C | 30 sec | |
| 72C | 30 sec | |
| 72C | 5 min | |




Lane M: 100 bp DNA marker
Lane 1-3: FabTaq PCR system
Lane 4-6: FabTaq HS PCR system

Visit https://store.dsstakarabio.com/pages/dti-fabtaq-hs for more detailed product information

For more information contact directly below;
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Toll-Free number 1800-212-4922

## Description of Symbol Used:

REF Catalogue number

LOT Batch Code

Date of Manufacturing

Use-by-date

Contains sufficient for <n> tests