

## YourTaq™ Hot Start PCR Mix, 2×

LOT: See product label

EXPIRY DATE: See product label

### ORDERING INFORMATION

| CAT. NO.  | SIZE              | PACKAGE CONTENT                        |
|-----------|-------------------|----------------------------------------|
| BR0202201 | 200 rxn of 50 µl  | 4 × 1.25 ml YourTaq Hot Start PCR Mix  |
| BR0202202 | 1000 rxn of 50 µl | 20 × 1.25 ml YourTaq Hot Start PCR Mix |

### COMPONENT

### COMPOSITION

YourTaq Hot Start PCR Mix    Optimized 2× YourTaq Hot Start PCR Master Mix

### STORAGE

–20°C (until expiry date – see product label)

### FEATURES

- Exceptionally pure YourTaq Hot Start DNA Polymerase
- Optimized Master Mix for increased yield of amplification
- Resistant to PCR inhibitor carry-over
- Excellent PCR specificity and sensitivity for a broad range of amplicons

### APPLICATIONS

- Routine and demanding PCR amplification up to 3 kb
- Suitable for amplification of low target copy number
- TA cloning

# YourTaq™ Hot Start PCR Mix, 2×

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## DESCRIPTION

biotechrabbit™ YourTaq Hot Start PCR Mix is optimized for high yield of amplification of 0.1–3 kb DNA targets, even from low copy number. The mix shows excellent PCR specificity and sensitivity for a broad range of amplicons. YourTaq Hot Start PCR Mix is resistant to PCR inhibitors, such as blood (up to 20%), Ethanol or humic acid enabling PCR amplification from DNA templates with carry-over of PCR-inhibitors.

The 2× YourTaq Hot Start PCR Mix contains pure biotechrabbit YourTaq Hot Start DNA Polymerase, extremely high-quality dNTPs and optimized PCR buffer; thus, only template, PCR primers and PCR-grade water are added. In addition, the mix is suitable for amplification of GC-rich templates (up to 70%) pairing with 5× PCR Enhancer (BR1900201).

*Info: Recommended annealing temperature is 2°C above primer T<sub>m</sub> (use gradient PCR to optimize the annealing temperature).*

## PROTOCOL

### Prevention of PCR contamination

When assembling the amplification reactions, care should be taken to eliminate the possibility of contamination with undesired DNA.

- Use separate clean areas for preparation of samples and reaction mixtures and for cycling.
- Wear fresh gloves. Use sterile tubes and pipette tips with aerosol filters for PCR setup.
- Use only water and reagents that are free of DNA and nucleases.
- With every PCR setup, perform a contamination control reaction that does not include template DNA.

### Standard PCR setup

The standard PCR protocol using biotechrabbit reaction buffer provides excellent results for most applications. Optimization might be necessary for certain conditions, such as the amplification of long targets, high GC or AT content, strong template secondary structures or insufficient template purity. In such cases, optimization of template purification (see biotechrabbit nucleic acid purification kits), primer design and annealing temperature is recommended.

The best conditions for each primer-template can be optimized with the following:

- Choosing the optimal quantities of template and primers
- Optimizing cycling conditions

## BASIC PROTOCOL

- The Master Mix is designed to be used without any optimization as it has all necessary reaction components in optimal amounts for successful PCR.
- 5× PCR Enhancer (BR1900201) can be used to apply the mix for GC-rich target amplification (up to 70% GC).
- Thaw on ice and mix all reagents well.
- Keep all reagents and reactions on ice.
- Pipet the master mix into thin-walled 0.2 ml PCR tubes.
- Add template and primers separately if they are not used in all reactions.

| COMPONENT                                                                                                                                                                                                                                            | VOLUME   | FINAL CONCENTRATION |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|
| YourTaq Hot Start PCR Mix, 2×                                                                                                                                                                                                                        | 25 µl    | 1×                  |
| 5× PCR Enhancer<br>(optional, see BR1900201)                                                                                                                                                                                                         | 10 µl    | 1×                  |
| Forward primer                                                                                                                                                                                                                                       | Variable | 0.2–1 µM            |
| Reverse primer                                                                                                                                                                                                                                       | Variable | 0.2–1 µM            |
| Template DNA                                                                                                                                                                                                                                         | Variable | 10 pg–1 µg          |
| <i>Use 0.01–1 ng for plasmid or phage DNA and 0.05–1 µg for genomic DNA</i>                                                                                                                                                                          |          |                     |
| Nuclease free water                                                                                                                                                                                                                                  | Variable |                     |
| Total volume                                                                                                                                                                                                                                         | 50 µl    |                     |
| <ul style="list-style-type: none"> <li>For total reaction volumes other than 50 µl, scale reagents proportionally.</li> <li>Mix and centrifuge briefly to collect the liquid in the bottom of the tube.</li> <li>Place in the PCR cycler.</li> </ul> |          |                     |

## CYCLING PROGRAM

| STEP                                                                                                                                                                                      | TEMPERATURE | TIME         | CYCLES |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|--------|
| Initial activation                                                                                                                                                                        | 95°C        | 2 min        | 1      |
| Denaturation                                                                                                                                                                              | 95°C        | 30 s         | 25–35  |
| Annealing*                                                                                                                                                                                | (55–68°C)   | 15–30 s      | 25–35  |
| <i>*Recommended annealing temperature is 2°C above T<sub>m</sub> of primers.<br/>Use gradient PCR to optimize the annealing temperature.</i>                                              |             |              |        |
| Extension                                                                                                                                                                                 | 72°C        | 30–60 s/kb   | 25–35  |
| Final extension                                                                                                                                                                           | 72°C        | 5 min        | 1      |
| <i>To extend all incomplete PCR products</i>                                                                                                                                              |             |              |        |
| Storage in the cycler                                                                                                                                                                     | 4°C         | Indefinitely | 1      |
| <ul style="list-style-type: none"> <li>Add loading dye solution (see DNA Loading Dye, 6×, BR0800301) to the reactions to analyze PCR products on a gel or store them at –20°C.</li> </ul> |             |              |        |

## CERTIFICATE OF ANALYSIS

### Quality Control

### Functional assay

Human genomic DNA was amplified using the YourTaq Hot Start PCR Mix and specific primers to produce a distinct band.

Quality confirmed by: Head of Quality Control

## SAFETY INSTRUCTIONS

For safety instructions please see Safety Data Sheets (SDS)/Sicherheitshinweise finden Sie in den SDS unter:

<http://www.biotechrabbit.com/support/documentation.html>.

## USEFUL HINTS

- Visit Applications at [www.biotechrabbit.com](http://www.biotechrabbit.com) for more products and product selection guides.
- Most biotechrabbit products are available in custom formulations and bulk amounts.

## CONTACT BIOTECHRABBIT

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valid from 04.03.2019