FastGene® BAC-Free HotStart Taq

Technical Data Sheet

Product Description

The FastGene® BAC-free HS Taq DNA Polymerase is based on the single-subunit, wild-type Taq DNA polymerase of the thermophilic bacterium Thermus aquaticus. It is however not a bacterial recombinant protein but purified from an eukaryotic expression system.
In the HotStart formulation, the enzyme is chemically inactivated at temperatures below 75 °C. This prevents nonspecific amplification during reaction setup, increases sensitivity, and improves reaction efficiency. PCR products generated with FastGene® Taq HotStart are A-tailed and may be cloned into TA cloning vectors.

Product Applications

FastGene® BAC-free HS Taq Mixes are ideally suited for:

- High throughput PCR of bacterial genomes
- Amplification of low copy DNA templates
- Multiplex PCR
- Specific amplification of complex templates
- 16S/23S screening
- RT-PCR

Limitation of Use

This product is for in vitro research only and not for clinical diagnostic.

Product Specifications

Shipping and Storage

FastGene® BAC-free HS Taq PCR kits are shipped on ice packs. Upon arrival, store kit components at -20 °C in a constant-temperature freezer. When stored under these conditions and handled correctly, full activity of the kit is retained until the expiry date indicated on the kit label. FastGene® BAC-free HS Taq Buffer contains isostabilizers and may not freeze solidly, even when stored at -20 °C. This will not affect the shelf-life of the product.

Handling

Always ensure that the product has been fully thawed and mixed before use. Reagents may be stored at 4 °C for short-term use. Return to -20 °C for long-term storage.

Quality Control

Each batch of FastGene® BAC-free HS Taq DNA Polymerase is confirmed to contain <1% contaminating protein (SDS-PAGE). The FastGene® BAC-free HS Taq PCR kits are subjected to stringent quality control tests, are free of contaminating exo- and endonuclease activity, as well as RNase-free and meet strict requirements with respect to DNA contamination levels.

Kit Codes and Components

LS33S	FastGene® BAC-Free HotStart Taq	10 rxns
LS33	FastGene® BAC-Free HotStart Taq	100 rxns

Related Products

LS20	FastGene® Taq DNA Polymerase	100 Units
LS21	FastGene® Taq DNA Polymerase	500 Units
LS22	FastGene® Taq DNA Polymerase	2000 Units
LS23	FastGene® HotStart Taq DNA Polymerase	100 Units
LS24	FastGene® HotStart Taq DNA Polymerase	250 Units
LS25	FastGene® HotStart Taq DNA Polymerase	1000 Units
LS26	FastGene® Taq Ready Mix PCR	50 x 50 µl rxns
LS27	FastGene® Taq Ready Mix PCR	250 x 50 µl rxns
LS28	FastGene® Optima Polymerase Blend	250 Units
LS29	FastGene® Optima HotStart ReadyMix	500 x 25 µl rxns
LS30	FastGene® Optima Polymerase Blend	50 Units
LS31	FastGene® Optima HotStart ReadyMix	20 x 25 µl rxns

Quick Notes

- The FastGene® BAC-free HS Taq DNA Polymerase is produced in an eukaryotic expression system.
- The FastGene® BAC-free HS Taq DNA Polymerase is free of bacterial DNA.
- **The FastGene® BAC-free HS Taq DNA Polymerase needs a 10 minute heat activation step at 95 °C.**

Kit Content

- FastGene Bac free HS Taq
- 10 x reaction buffer
- dNTP mixture (2 mM each)
- Sterile water

Contact & Support

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Germany

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http://nippongenetics.eu/contact/terms/

For technical support please contact:
support@nippongenetics.eu

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FastGene® BAC-Free HotStart Taq Protocol

Step 1: Prepare the PCR master mix

- Ensure that all reagents are properly thawed and mixed.
- Prepare a PCR master mix containing the appropriate volume of all reaction components common to all or a subset of the reactions to be performed.
- Calculate the required volumes of each component based on the following table:

Component	20 µl rxn	Final conc.
PCR-grade water	Up to 20 µl	N/A
10 x Buffer	2 µl	1X
FastGene® BAC-Free HotStart Taq*	0.2 µl	1 Unit
dNTP (2 mM each)	2 µl	0.2 mM each
Template (0.1 - 500 ng/ µl)**	1 µl	as required
Forward Primer (10 µM)	0.5 µl	250 nM
Reverse Primer (10 µM)	0.5 µl	250 nM

*Add the polymerase at the final step

** Plasmid DNA 0.1 ng to 30 ng| genomic DNA 50 ng - 500 ng

Step 2: Set up individual reactions

- Transfer the appropriate volume of PCR master mix, template and primer to individual PCR tubes/wells or a PCR plate.
- Cap or seal individual reactions, mix and centrifuge briefly.

Step 3: Run the PCR

- Perform PCR with the following cycling protocol:

Step	Temperature	Duration	Cycles
Initial denaturation	95 °C	10 min[1]	1
Denaturation	95 °C	30 sec	25-35
Annealing[2]	60 - 65 °C	20 - 30 sec	
Elongation	72 °C	1 min / kB	
Final Elongation	72 °C	5 min	1

[1] Initial denaturation for 10 min at 95 °C is recommended for most assays. [2] An annealing temperature 5 °C lower than the calculated melting temperature (T_m) of the primer set is recommended as a first approach. If low yields and/or nonspecific amplification is obtained, an annealing temperature gradient PCR is recommended to determine the optimal annealing temperature of the primer pair.

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