



Product Insert

BIOTAQ™ HS DNA Polymerase

Catalogue Numbers:

BIO-21046	250 Units
BIO-21047	500 Units
BIO-21048	5000 Units

Features

- Outstanding and robust performance
- For PCR assays requiring hot-start
- Excellent yield in quantitative assays
- Convenient set up at room temperature
- Leaves 'A' overhang
- Available in ready-to-go versions ImmoMix™ and ImmoMix™ Red

Applications

- Highly suited to real-time assays
- Products suitable for TA cloning

Description

BIOTAQ™HS is a heat-activated thermostable DNA polymerase isolated from a novel organism. BIOTAQ HS provides improved specificity as compared to standard polymerases and can eliminate the presence of non-specifics, such as primer-dimers and mis-primed products. BIOTAQ HS is inactive at room temperature and therefore, prior to PCR cycling, requires activation by heat treatment for 10 minutes. Subsequently, the reaction can be handled according to the user's existing protocols for thermostable DNA polymerases.

Specificity and performance of BIOTAQ HS can be further improved with the use of 2x PolyMate Additive (not supplied, see associated products), which is designed for GC- or AT-rich DNA, "dirty" templates or sequences with a high level of secondary structure.

Reaction Conditions (for a 50µl reaction)

10x ImmoBuffer	5µl
50mM MgCl ₂	1.5 – 4µl
100mM dNTP Mix (see below)	0.5 – 1µl
Template and Primers	as required
BIOTAQ HS™	0.2 – 1µl
Water (ddH ₂ O)	up to 50µl

Bioline 100 mM dNTP Mix is available as a separate product (see associated products)

Activate: pre-heating step at 95°C for 10 minutes
Denature: 94-96°C
Elongate: 72°C (allowing 15-30 seconds/kb)

This data is intended for use as a guide only; conditions will vary from reaction to reaction and may need optimization.

General Considerations:

The enzyme must be activated by heat treatment before PCR cycling. All reaction components (including BIOTAQ™ HS) should be added to the reaction, and then **pre-incubated at 95°C for 10 minutes**. Subsequently, the reaction can be treated according to the user's existing protocols for thermostable DNA polymerases.

The ideal MgCl₂ concentration in the reaction is likely to be 1.5-2.5mM (final concentration), but some optimization may be necessary to achieve the best possible results. For first tests, use no less than 1 unit of BIOTAQ™ HS in a 50µl reaction.

Product Specifications

Batch details:

Batch No:	See vial
Units per vial:	See vial
Concentration:	5u/µl

Components:

	250 Units	500 Units	5000 Units
BIOTAQ HS DNA Polymerase	50µl	100µl	10 x 100µl
10x ImmoBuffer	1.2ml	2 x 1.2ml	20 x 1.2ml
50mM MgCl ₂ Solution	1.2ml	1.2ml	10 x 1.2ml

Reagent Specifications:

10x ImmoBuffer:
Separate MgCl₂ solution: 50mM MgCl₂

Storage Conditions:

BIOTAQ HS DNA Polymerase can be stored for 12 months at -20°C.

Shipping Conditions:

On Dry Ice or Blue Ice

Storage and Dilution Buffer:

20mM Tris-HCl, pH 7.5, 100mM NaCl, 0.1mM EDTA, 2mM DTT, 50% Glycerol, and stabilizers.

Associated Activities:

Endonuclease and exonuclease activities were not detectable after 4 hours of incubation of 1µg of pBR322 plasmid DNA and 0.5µg *Hind* III-digested lambda phage DNA at 72°C in the presence of 20u of BIOTAQ HS.

Unit Definition:

One unit is defined as the amount of enzyme that incorporates 10nmoles of dNTPs into acid-insoluble form in 30 minutes at 72°C.

Associated Products:

Product Name	Pack Size	Cat No
dNTP Set	4 x 25µmol	BIO-39025
dNTP Mix	500µl	BIO-39028
2x PolyMate Additive	2 x 1.2ml	BIO-37041
ImmoMix	100 Reactions	BIO-25019
HyperLadder I	200 Lanes	BIO-33025
Agarose	100g	BIO-41026

Product Citations:

1. LaPensee, C.R., *et al. Endocrinology* **147(10)**, 4638-4645 (2006).
2. Rose, S.D., *et al. Nucleic Acids Research* **33(13)**, 4140-4156 (2005).
3. Thongnoppakhun, W., *et al. BMC Medical Genetics* **5(2)** (2004).

Notes

1. IMMOLASE is a Trademark of Bioline.
2. This product insert is a declaration of analysis at the time of manufacture.
3. Research Use Only.

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