

# BIOTAQ™ Red DNA Polymerase

Shipping: Room Temperature    Catalog numbers

BIO-21041: 500 Units (500µl)

Batch No.: See vial

BIO-21061: 2500 Units (5 x 500µl)

Concentration: 1u/µl

Store at -20°C



DATA SHEET

## Storage and stability:

BIOTAQ™ Red DNA Polymerase is shipped on Dry/Blue Ice. All kit components should be stored at -20°C upon receipt. Excessive freeze/thawing is not recommended. When stored under optimum conditions, the reagents are stable for a minimum of 12 months from date of purchase.

## 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.

## Storage and Dilution Buffer:

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

## Reaction Specifications:

10x NH<sub>4</sub> Reaction Buffer: 670mM Tris-HCl (pH 8.8 at 25°C), 160mM (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 0.1% stabilizer.  
MgCl<sub>2</sub> Stock Solution: 50mM MgCl<sub>2</sub>

## Notes

1. Research Use Only.
2. BIOTAQ and BioMix are Trademarks of Bioline.

## Features

- Easy visual recognition
- Premium Taq polymerase suited to a wide range of applications
- Direct loading onto agarose gels
- Available as ready-to-use 2x reaction mixes (BioMix™ Red)

## Applications

- Routine PCR applications
- TA cloning
- High throughput applications

## Description

BIOTAQ™ Red DNA Polymerase is a formulation of our regular BIOTAQ DNA polymerase, which contains a non-toxic and non-hazardous red dye. The red dye provides easy and quick identification of reactions to which the enzyme has been added, and facilitates the confirmation of complete mixing. When the reaction is complete, a sample of the reaction mix can be loaded directly onto the agarose gel without the need for loading buffer, since the mix is of sufficiently high density to sink to the bottom of the gel. The red dye migrates towards the positive electrode, thereby providing a means to monitor the progress of the electrophoresis.

The presence of the dye has no effect on routine enzymatic manipulations, although rare exceptions may occur. To produce a reaction of sufficient density to allow for the direct loading of a sample onto a gel, we recommend using a minimum of 1.5u per 50µl reaction.

Specificity and performance of BIOTAQ Red 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.

## Components:

Reagent	500 Units	2500 Units
BIOTAQ Red DNA Polymerase	500µl	5 x 500µl
10x NH <sub>4</sub> Reaction Buffer	2 x 1.2ml	10 x 1.2ml
50mM MgCl <sub>2</sub> Solution	1.2ml	5 x 1.2ml

## General Considerations:

The optimum concentration of Mg<sup>2+</sup> is 3mM and should only be increased above this if absolutely necessary. For first tests, use no less than 2.5 units of BIOTAQ in a 50µl reaction.

## Citations:

1. Grossart H-P., *et al. PNAS* **108**(49), 19657-19661 (2011)
2. Sanzani, S.M., *et al. Int. J. Food Microbiol.* doi: 10.1016/j.ijfoodmicro.2011.11.021 (2011)
3. Garch, F.E., *et al. J. Antimicrob. Chemother.* **65**(10), 2076-2082 (2010)
4. Quinn, A.E., *et al. Heredity* **104**, 410-417 (2010)
5. Teotia, S. & Lamb, R. *Plant Physiol.* **151**, 180-198 (2009)
6. Telle, S. & Thines, M. *PLoS ONE* **3**(10): e3584 (2008)
7. Kittler, R., *et al. Nat. Meth.* **10**, 779-84 (2005)
8. Arndt, P., *et al. J. Immunol.* **175**, 4049-4059 (2005)
9. Stark, B., *et al. J. Biotechnol. Lett.* **25**(12), 959-962 (2003)

## PCR Reaction Conditions (for a 50µl reaction)

10x NH <sub>4</sub> Reaction Buffer	5µl
50mM MgCl <sub>2</sub> Solution	1.5 - 4.0µl
100mM dNTP Mix (see below)	0.5 - 1.0µl
Template and primers	As required
BIOTAQ Red	1.0 - 2.5µl
Water (ddH <sub>2</sub> O)	Up to 50µl

Bioline 100mM dNTP Mix is available as a separate product (Cat. No: BIO-39028)

Denature: 94-96°C;  
Extension: 70-72°C allowing 15-30 seconds per Kb

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

## Associated Products:

Product	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
HyperLadder I	200 Lanes	BIO-33025

GentaUR Molecular Products  
Voortstraat 49  
1910 Kampenhout, Belgium