IMMOLASE™ DNA Polymerase

Shipping: Room Temperature
Exp. Date: See vial
Batch No.: See vial
Concentration: 5u/µl

Catalog numbers
BIO-21046: 250 Units
BIO-21047: 500 Units
BIO-21048: 5000 Units

Store at –20°C

Storage and stability:
IMMOLASE™ 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.

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 λ phage DNA at 72°C in the presence of 20u of IMMOLASE.

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.

Reagent specifications
10x ImmoBuffer: 160mM $(NH_4)_2SO_4$, 1M Tris-HCl pH 8.3 and enhancers

Notes
1. This product insert is a declaration of analysis at the time of manufacture.
2. Research Use Only.

Features

- Outstanding and robust performance
- Excellent specificity
- Convenient set up at room temperature
- Available in ready-to-go versions ImmoMix™ and ImmoMix™ Red

Applications

- Hot-start PCR assays
- TA cloning
- Ultra-high specificity for multiplex reactions
- Low-copy number templates

Description

IMMOLASE™ DNA Polymerase is a heat-activated thermostable DNA polymerase isolated from a novel organism. IMMOLASE provides improved specificity as compared to standard polymerases and can eliminate the presence of non-specifics, such as primer-dimers and mis-primed products. IMMOLASE 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 IMMOLASE 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

Product	250 Units	500 Units	5000 Units
IMMOLASE DNA Polymerase	1 x 50µl	1 x 100µl	10 x 100µl
10x ImmoBuffer	1.2ml	2 x 1.2ml	20 x 1.2ml
50mM $MgCl_2$ Solution	1.2ml	2 x 1.2ml	20 x 1.2ml

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
ImmoMix™	100 Reactions	BIO-25019
ImmoMix™ Red	100 Reactions	BIO-25021
Agarose	100g	BIO-41026

Product Citations:

1. Payne, B.A. *Nature Gene.* **43** 806-810 (2011)
2. Massire, C., *et al. J. Clin. Microbiol.* **49**, 908 - 917 (2011)
3. Ashton, E.J. *Meth. Mol. Biol.* **688**, 1-6 (2011)
4. Kaczmarek, K., *et al. Mol. Biol. Cell* **22**, 1766 - 1779 (2011)
5. Scoville, A.G. & Pfender, M.E. *PNAS* **107(9)** 4260-4263 (2010)

PCR Reaction conditions (for a 50µl reaction)

10x ImmoBuffer	5µl
100mM dNTP Mix*	0.5 - 1.0µl
50mM $MgCl_2$ Solution	1.5 - 4.0µl
Template and primers	As required
IMMOLASE™	0.2 - 1µl
Water (ddH_20)	Up to 50µl

** Bioline 100 mM dNTP Mix is available as a separate product (BIO-39028)*

Activation: pre-heating step at 95°C for 10 minutes
Denaturation: 94-96°C
Annealing: depends on primer Tm
Extension: 72°C (allowing 15-30 seconds/kb)

General Considerations:

Pre-incubate at 95°C for 10 minutes. Subsequently, the reaction can be treated according to the user's existing protocols.

If extension time exceeds 2.5 minutes, a maximum of 30 cycles should be used. Increasing the number of cycles may lead to smearing when run on an agarose gel.

The ideal $MgCl_2$ 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 IMMOLASE in a 50µl reaction.

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