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DATA SHEET

Version: 2
Revision date: 03/05/2023

1. Identification

Product name **HotBegan Taq DNA polymerase**
500 U (5 U/µl)

Cat. No **P0028**

2. Description

HotBegan Taq DNA polymerase is a hot start DNA polymerase designed to minimize unspecific amplification improving PCR specificity. HotBegan Taq DNA polymerase is a Horse-Power-Taq DNA polymerase bound to a proprietary antibody that blocks polymerase activity until denaturation step occurs. The heat labile antibodies are rapidly inactivated by raising the temperature (4 minutes at 95-97˚C). This prevents or minimizes primer-dimer and nonspecific products.

Like the Taq polymerase, the enzyme has 5'→3' polymerase activity and a weak 5'→3' exonuclease activity but no 3'→5' exonuclease activity (proofreading). Before enzyme activation none of enzyme activities are detectable.

Unit definition: One unit is defined as the amount of enzyme required to catalyse the incorporation of 10 nanomoles of dNTPs into acid-insoluble material in 30 minutes at 74˚C.

3. Composition

Item	Quantity
HotBegan Taq DNA polymerase (5U/µL)	100 µL
10X Buffer B	1.5 mL
25mM MgCl2 Solution	1.5 mL

4. Features

- Adds extra nucleotides (preferentially adenine) without template at 3´ends leaving 3´overhangs PCR fragments. This fact allows the popular TA-cloning or GC cloning.
- Amplifies from a femptograms of DNA targets.
- Inactive at room temperature.

Quality Certifications:

- Functionally tested in PCR.
- Non detected bacterial DNA (by PCR).
- Not detectable activity of nucleases (endo-, exo, and ribo-).

5. Storage specifications

- Store at -20° C

6. Applications

- Real time PCR.
- RT-PCR and quantitative RT-PCR.
- Genotyping with Taqman probes.
- PCR fragments amplification for TA or GC cloning (preferably use a proofreading polymerase for cloning purpose and a blunt cloning vector) (see pSpark® DNA Cloning System).
- Amplification from a limited DNA template or low copy number genes.

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7. Further information

Product Use Limitation

This product is developed, designed and sold exclusively only for research purposes use. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals.

Disclaimer

The information provided in this Data Sheet is correct to the best of our knowledge and belief at the date of publication. This information is intended only as a guide and should not be taken as a warranty or quality specification. Canvax Reagents S.L.U. shall not be held liable for any damage resulting from handling or from contact with the above product.

Assay conditions

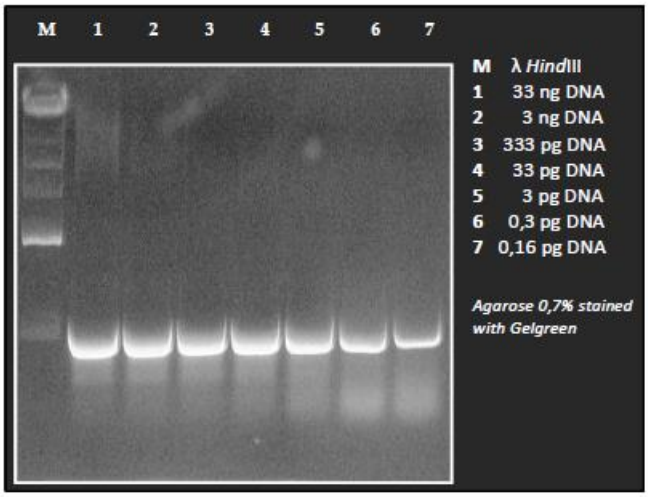
25 mM Tris-HCl pH 9.0 at 25 ˚C, 50 mM KCl, 2 mg MgCl2, 0.1 mg/mL gelatine, 200 µM dATP, dGTP, dTTP, 100 µM [α32-P] dCTP (0.05 µCi/nmol) and 12.5 µg activated salmon sperm DNA.

RECOMMENDED PCR ASSAY (20µL assay)

Components	Volume	Final con.
10X Buffer B	2 µL	1X
MgCl2 25mM	2 µL	2.5 mM
dNTPs 8mM mix	2 µL	200 µM each dNTP
Primer Forward (15µM)	1 µL	0.75 pmol/uL
Primer Reverse (15µM)	1 µL	0.75 pmol/uL
Template DNA	plasmide: 30-75ng; gDNA: 100-500ng	1.75-2.50 ng/µL
HotBegan Taq DNA polymerase	0.2 µL	0.05 U/µL
PCR grade water	to 20 µL	-

Cycling instructions:

- **94°C 5:00,**
- **40x (94°C 0:35, Tm 0:35, 72°C 1'/kb),**
- **72°C 7:00, 4°C ∞**



Amplification of up 160 fg DNA using HotBegan DNA polymerase.