Data sheet

HotBegan™ Taq 2X Master Mix

Cat. No: P0030
2 x 1.25 mL

Introduction

HotBegan™ Taq 2X Master Mix is an optimized ready-to-use solution containing HotBegan Taq DNA Polymerase (hot start performance), dNTPs, $MgCl_2$ and stabilizers. It is inactive at room temperature and only requires addition of template, primers, and water.
HotBegan Taq DNA polymerase is a **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.

Features

- Inactive at room temperature.
- 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.

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.

Contains:

- 2 x 1.25 mL HotBegan Taq 2X Master Mix, which includes HotBegan Taq DNA polymerase (0.1U/µl), 2X PCR buffer, 0.4 mM of each dNTP, 4 mM Mg2+, 4% Glycerol.
- 2 x 1.25 mL Nuclease-free water.

Assay conditions

25mM Tris-HCl pH9.0 at 25°C, 50mM KCl, 2mM $MgCl_2$, 0.1mg/mL gelatine, 200 µM de dATP, dGTP, dTTP, 100µM[α32-P]dCTP (0.05µCi/nmol) and 12.5 µg activated salmon sperm DNA.

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.

Quality Certifications

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

Storage: Upon receipt, store the entire kit at -20 °C

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Recomended PCR assay (20 µl assay)

HotBegan Taq 2X Mastermix	10µl (1X)
Forward Primer (15µM)	1µl (0.75 pmol/µL)
Reverse Primer (15µM)	1µl (0.75 pmol/µL)
Template DNA	plasmid: 30-75ng; gDNA: 100-500ng
PCR grade H_20	up to 20 µL

Cycling instructions:

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

The optimal conditions will vary from reaction to reaction and are dependent on the template/primers used.

PRODUCT USE LIMITATION

This product is developed, designed and sold exclusively for research purposes and in vitro use only. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals. Please refer to **www.canvaxbiotech.com** for Material Safety Data Sheet of the product.

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