Standard and High Throughput PCR

Horse-Power™ Taq DNA Polymerase, Recombinant

Highly purified for routine amplifications

Ordering info:

Concentration: 5 U/µL	
Cat No.	Size
P0023-S	200 U
P0023	500 U
P0024	1,000 U
P0020	10,000 U

Includes for 500 U:

- 100 µL Horse-Power™ Taq DNA Polymerase (5 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer (10x)

Concentration: 1 U/µL	
Cat No.	Size
P0025	500 U
P0019	5,000 U

Includes for 500 U:

- 500 µL Horse-Power™ Taq DNA Polymerase (1 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer (10x)

With dNTPs	
Cat No.	Size
P0026	500 U+ 2 mM each (1 mL)

Includes for 500 U:

- 100 µL Horse-Power™ Taq DNA Polymerase (5 U/µL)
- 25 mM $MgCl_2$ (1.5 mL)
- 1.5 mL Buffer (10x)
- 1 mL TruePure™ dNTPs (2 mM each)

MasterMix (2x)	
Cat No.	Size
P0035	2 x 1.25 mL (2x)

(2.5 mL= 250 rxn)

Includes for 2.5 mL:

- 2 x 1.25 mL Horse-Power™ Taq DNA Polymerase MasterMix (2x)

Related products:

- TruePure™ dNTPs (p.115)
- Loading Buffers (p.117)
- TAE (p.137)
- BrightMAX™ DNA Ladders (p.116)
- pSpark® TA DNA Cloning vectors (p.16)

Description:

Horse-Power™ Taq DNA Polymerase is pure, versatile and thermostable recombinant enzyme produced in an *E. coli* strain, which carries the cloned pol gene from *Thermus aquaticus*. The enzyme has 5'→3' polymerase activity and a weak 5'→3' exonuclease activity but no 3'→5' exonuclease activity (proofreading).

Advantages & Features:

- **Highest purity:** > 98% confirmed by SDS-PAGE.
- **Highest quality:** high activity, specificity, thermostability and performance in PCR.
- **Highly efficient:** reactivation buffer improved.
- **Thermostable:** half-life at 94° C is 40 minutes.
- **Adds extra nucleotides:** preferentially adenine, without template at 3´ends leaving 3´overhangs PCR fragments.
- **Incorporates modified nucleotides:** biotinylated, fluorescently labelled, etc.
- **Molecular Weight:** 94 kDa.
- **Convenient:** available in different concentrations, sizes and solutions.
- **Complete solution:** includes $MgCl_2$.

Assay conditions:

25 mM Tris-HCl pH 9.0 at 25 °C, 50 mM KCl, 2 mM $MgCl_2$, 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.

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.

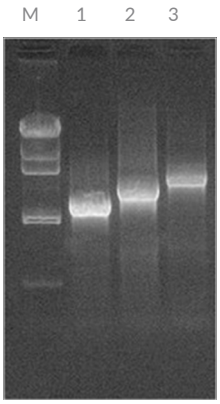
Applications:

- Routine amplifications.
- Colony screening (see Horse-Power™ Red-Taq DNA Polymerase, p.107).
- Amplifications up to 5 kb using plasmid, viral or genomic DNA as template.
- PCR fragments amplification for TA or GC cloning.

Quality control:

- Functionally tested in PCR.
- Free of bacterial DNA (by qPCR).
- Exempt of nucleases (endo, exo and ribonucleases) activities guaranteed by appropriate quality tests.

Figure 7.1.: Amplification of different length fragments in 25 cycles of PCR.



M λ *HindIII*
1 3 kb
2 4 kb
3 5 kb

Agarose 0.7% in TAE 1X stained with Gelgreen. Lane 1-2 were loaded with 5 µL of PCR while lane 3 was loaded with 10 µL.