



PCR BIOSYSTEMS
simplifying research

HS Taq DNA Polymerase (250 U/ μ L)

www.pcrbio.com

Product description

HS Taq DNA Polymerase (250 U/ μ L) is a high-concentration, lyophilisation-compatible kit containing Taq DNA polymerase and a separate hot start Taq antibody. The kit has been designed to give maximum activity with minimal levels of compounds known to be non-compatible with lyophilisation.

HS Taq DNA Polymerase (250 U/ μ L) offers excellent yields with high specificity, performing consistently well on a broad range of targets including GC and AT-rich. The enzyme has 5'-3' exonuclease activity without any 3'-5' proof-reading activity. Included in the kit is a highly concentrated blend of monoclonal antibodies, specifically designed for both superior hot start capability and decreased incubation times.

HS Taq DNA Polymerase (250 U/ μ L) is supplied in a solution of 50% glycerol and 1% non-ionic detergents. This high concentration minimises the volume of lyophilisation incompatible compounds when diluted.

Component	5000 Units
Taq DNA Polymerase (250 U/ μ L)	1 x 20 μ L
HS Taq Antibody (10 mg/mL)	1 x 67 μ L

Shipping and storage

On arrival the kit should be stored between -30 °C and -15 °C. If stored correctly the kit will retain full activity for 12 months. We strongly recommend aliquoting the antibody mix at first use to avoid more than 10 freeze-thaw cycles.

Limitations of product use

The product may be used for in vitro research purposes only.

Technical support

Help and support is available on our website at <https://pcrbio.com/resources/> including answers to frequently asked technical questions. For technical support and troubleshooting you can submit a technical enquiry online, or alternatively email technical@pcrbio.com with the following information:

- Images of the lyophilised product
- Amplicon size
- Reaction setup
- Cycling conditions
- Sample quality

Important considerations

HS Taq Antibody: Optimal hot start activity is obtained by combining 1 μL of Taq DNA Polymerase (250 U/ μL) with 3.33 μL of HS Taq Antibody (10 mg/mL) in the end user's PCR buffer, followed by incubation at 37 °C for at least 30 minutes to ensure that Taq is fully bound by the antibody.

End User Lyophilisation Buffer: Use of this product will require optimisation in each lyophilisation buffer to ensure successful amplification. As such, each lyophilisation buffer should be formulated and tested by the end user for specificity and efficiency. The constituents below are a guide. Thorough optimisation and testing by the end user is required.

- pH buffering capacity – concentration and pH of compound(s) to ensure correct functioning of the polymerase
- Monovalent ions/ammonium ions – required for DNA backbone stabilization and primer annealing
- Divalent ions – usually magnesium, required for polymerase activity
- dNTPs – DNA building blocks
- Non-ionic detergents – required for optimal polymerase activity, however, the final concentration must not exceed 0.5% v/v to ensure success in lyophilisation

Primers: Primers should have a predicted melting temperature of around 60 °C, using default Primer 3 settings (<http://bioinfo.ut.ee/primer3/>). Final primer concentrations should range from 0.2 μM - 0.6 μM and final probe concentration should be 0.1 μM - 0.3 μM .

Suggested cycling conditions

Cycles	Temperature	Time	Notes
1	95 °C	120 seconds	Polymerase activation
40	95 °C	5 seconds	Denaturation
	60 °C to 65 °C	20-30 seconds	Annealing/Extension: do not exceed 30 seconds and do not use temperatures below 60 °C