Azura HS Taq DNA Polymerase

Catalog No.	Pack Size and Concentration	Components and Volume	
AZ-1505	500 units, 5 u/µl	HS Taq Polymerase - 1 x 100 µl	5x HS Taq Buffer – 4 x 1 mL
AZ-1510	1000 units, 5 u/µl	HS Taq Polymerase - 2 x 100 µl	5x HS Taq Buffer – 8 x 1 mL
AZ-1550	5000 units, 5 u/µl	HS Taq Polymerase - 10 x 100 µl	5x HS Taq Buffer – 8 x 5 mL

Description

Azura HS Taq DNA Polymerase is an engineered, antibody-mediated Hot-Start PCR enzyme with additional hydrophilic residues for improved solubility and increased affinity for template DNA, resulting in significantly improved activity, yield, speed and sensitivity when compared with standard *Taq* Polymerase. The polymerase is supplied with a new generation 5x buffer system containing optimal levels of $MgCl_2$ and PCR enhancers at exacting concentrations. Azura HS Taq requires little if any optimization, delivering superior Hot-Start PCR.

- New generation 5x PCR buffer formulation including optimal levels of $MgCl_2$ and PCR enhancers for maximum PCR efficiency and speed.
- Robust PCR performance across a wide range of DNA templates including multiplex assays and problematic templates.
- High-yields with amplicons up to 5 Kb with standard or fast cycling.

Storage

Azura HS Taq DNA Polymerase is shipped on blue ice and should be stored at –20°C upon receipt. Excessive freeze/thawing should be avoided.

Important Guidelines

Azura 5x HS Taq Buffer: The 5x HS Taq reaction buffer contains proprietary PCR enhancers and 15 mM $MgCl_2$. The buffer has been designed to deliver maximum efficiency, sensitivity and success with difficult amplicons. We do not suggest the use of additional PCR enhancers.

Template: For complex genomic DNA, we suggest 5 ng – 500 ng per reaction; For cDNA or plasmid DNA, please use < 100 ng per reaction.

Primers: Primers should have a predicted melting temperature of around 60°C, using default Primer 3 settings (http://frodo.wi.mit.edu/primer3/). The final primer concentration in the reaction should be between 0.2 µM and 0.6 µM.

Annealing: We recommend performing a temperature gradient to determine the optimal annealing temperature. Alternatively, 55°C can be used as a starting point. For optimization, increase in 2°C increments. For example, if non-specific products are present or smearing is visible, a higher annealing temperature is required.

Extension: Optimal extension is achieved at 72°C. The optimal extension time is dependent on amplicon length and complexity. 45 seconds per kilobase (Kb) is recommended for amplification from eukaryotic genomic DNA or cDNA. For Multiplex PCR, we suggest an initial annealing temperature gradient from 55°C to 65°C in order to determine the highest level of specificity. In addition, we recommend an initial extension time of 90 seconds and greater to maximize yield and specificity.

Reaction setup

1. Prepare a PCR master mix based on following table:

Component	50 µl Reaction	Final Concentration/Notes
Azura 5x HS Taq Buffer	10 µl	1x
100 mM dNTPs (25 mM each)	0.5 µl	1mM
Forward Primer (10 µM)	2.0 µl	400 nM
Reverse Primer (10 µM)	2.0 µl	400 nM
Template DNA	<100 ng cDNA, <500 ng genomic DNA	variable
Azura HS Taq DNA Polymerase (5 u/µl)	0.50 µl - 1 µl	variable
PCR-grade water	Up to 50 µl final volume	

* For alternative total reaction volumes (eg. 20 µl), scale all components proportionally to maintain final concentrations.

2. PCR cycling:

Cycles	Temperature & Time	Notes
1	95°C, 2 minutes	Initial Denaturation, enzyme activation
25 - 40	95°C, 15 seconds 55°C to 60°C, 15 seconds 72°C, 45 seconds per Kb	Denaturation Annealing (determined by user) Extension (see notes for multiplex)

Quality Control

Azura HS Taq DNA Polymerase is tested extensively for robust activity, processivity, efficiency, heat activation, sensitivity, absence of nuclease contamination and absence of nucleic acid contamination. Azura HS Taq DNA Polymerase is manufactured under a comprehensive quality management system, following ISO 9001:2008 standards.

Limitations of Use

This product is intended for research purposes only and is not intended for any animal or human therapeutic use.

Technical Support

For Trouble-shooting and Technical Guidance, please contact us at tech@azuragenomics.com and provide PCR reaction conditions, cycling parameters, amplicon size, and screen grabs (gel images) if possible.