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 antibody-mediated DNA Polymerase which exhibits increased affinity for template DNA and improved specificity. The recombinant hot-start polymerase and proprietary 5x buffer system deliver enhanced sensitivity, DNA yield and reaction speed with a wide range of templates including complex mammalian genomic DNA. Azura HS Taq DNA Polymerase catalyzes 5′→3′ synthesis of DNA, has no detectable 3′→5′ exonuclease (proofreading) activity and possesses 5′→3′ exonuclease activity. In addition, the enzyme exhibits deoxynucleotidyl transferase activity, which results in the addition of extra adenines at the 3′-end of PCR products.

- 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 strongly recommend performing a temperature gradient to determine the optimal annealing temperature. Alternatively, 58°C can be used as a starting point. The optimal annealing temperature is usually 2-5 °C below the lower Tm of the pair. Depending on the reaction, the annealing time can also be reduced to 5 seconds.

Extension: Optimal extension is achieved at 72°C. The optimal extension time is dependent on amplicon length and complexity. For low complexity template such as plasmid DNA, an extension time of 15 seconds is sufficient for amplicons under 1 kb. For amplification from eukaryotic genomic DNA or cDNA, 30 seconds per kb is recommended.

Reaction setup: Allow reagents to thaw and mix well by inversion. Centrifuge prior to use.

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 60°C, 15 seconds 72°C, 30 seconds per kb	Denaturation Annealing* (determined by user) Extension*

* See Important Guidelines

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 9001:2015 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.