ELISABETH PHARMACON Ltd.
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EliZyme™ HIFI

Intended use:

For Research Use Only. Not for use in diagnostic procedures.

Storage:

Upon arrival store components at -20 °C. Avoid prolonged exposure to light. When stored under these conditions, the kit will retain full activity until the expiration date indicated on the kit label. Reagents may be stored at 4 °C up to 1 month.

Product description

EliZyme™ HIFI Polymerase is a high-fidelity DNA polymerase that is derived from Pfu DNA polymerase, which is known for its proofreading activity in PCR. The polymerase has been engineered with proprietary point mutations that significantly improve its performance compared to its native form. This, along with advanced buffer chemistry, provides robust and reliable high-fidelity PCR. The enhanced DNA binding of the polymerase allows for improved processivity, resulting in increased yield and shortened cycling times.

EliZyme™ HIFI Polymerase is efficient in minimizing PCR inhibition from impure samples, such as colony PCR and direct PCR. It is suitable for everyday PCR applications, including DNA amplification for Sanger sequencing, genotyping, screening, and library construction. The polymerase can perform consistently well on a broad range of templates, including both GC and AT-rich targets.

One of the major advantages of EliZyme™ HIFI is its low error rate, which is 50 times lower than that of Taq DNA polymerase, with an error rate of 1 error per 1.5 x 10^7 nucleotides incorporated. This high-fidelity polymerase has increased PCR success rates with amplicons up to 10kb, making it suitable for a wide range of PCR applications that require high fidelity and long amplicon sizes.

Content

	Ref. No.	Content	Size
EliZyme™ HIFI	EZ2102	1×0.1 ml 2 U/µl + 3×1 ml buffer	200 U
	EZ2110	4×0.125 ml 2 U/µl + 2×7.5 ml buffer	1000 U

	Buffer/MIX	Content
EliZyme™ HIFI	5X buffer	15 mM $MgCl_2$, 5 mM dNTPs

Additional $MgCl_2$ is not necessary. The buffer composition has been optimized to maximize PCR success rates.

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Primers

Primers should have a predicted melting temperature of around 60 °C. Primers should be designed to eliminate the possibility of primer-dimer formation and non-specific amplification. The final primer concentration in the reaction should be between 0.2 µM and 0.6 µM.

PCR

We recommend performing a temperature gradient to experimentally determine the optimal annealing temperature. Alternatively, we recommend a 57 °C annealing temperature then increase in 2 °C increments if non-specific products are present.

Optimal extension is achieved at 72 °C. The optimal extension time is dependent on amplicon length and complexity of template. 30 seconds per kilobase (kb) is recommended for amplification from eukaryotic genomic DNA or cDNA.

Reaction setup

After thawing, briefly vortex 5X EliZyme™ Reaction Buffer and shortly spin.

Reagent	50 µl reaction	Final conc.
5X EliZyme™ Reaction Buffer	10 µl	1×
Forward primer (10 µM)	2 µl	400 nM
Reverse primer (10 µM)	2 µl	400 nM
Template DNA	< 500 ng genomic DNA, < 100 ng cDNA	Variable
EliZyme™ HIFI Polymerase (2 U/µl)	0.5 µl	
PCR grade water	Up to 50 µl	

PCR cycling profile

Step	Temperature	Time	Cycles
Initial denaturation	95 °C	1 min	1
Denaturation	95 °C	15 s	25 - 35
Annealing	55 – 65 °C	15 s	
Extension	72 °C	30 s/kb	

Manufacturer:

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Catalog number

Batch code


Use by (last day of month)


Upper limit of temperature


Manufacturer

Contains sufficient "N" tests