Certificate of Analysis

Advantage® Genomic LA Polymerase Mix

Catalog No.	Amount	Lot Number
639152	100 reactions	Specified on product label.

Description

The Advantage Genomic LA Polymerase Mix is composed of a full-length *Taq* DNA polymerase, a small amount of proofreading enzyme, and a hot-start antibody that inhibits polymerase activity at ambient temperature. The Advantage Genomic LA Polymerase Mix allows synthesis of products up to 30 kb for complex templates such as genomic DNA, and up to 48 kb for less complex templates such as λ DNA. This polymerase also has a 6.5X higher fidelity than wild-type *Taq* DNA polymerase due to the presence of the 3'-to-5' exonuclease activity. The polymerase also requires less optimization and produces higher yields than other "long and accurate polymerases" due to the robust enzyme/buffer system. Sufficient Advantage Genomic LA Polymerase Mix and 10X optimized buffer for 100 25-µl reactions are provided.

Package Contents

- 25 µl Advantage Genomic LA Polymerase Mix (5 units/µl)
- 500 µl 10X Advantage Genomic LA Buffer (containing 25 mM $MgCl_2$)

Storage Conditions

- Store at –20°C

Shelf Life

- 1 year from date of receipt under proper storage conditions.

Shipping Conditions

- Dry ice (–70°C)

Product Documents

Documents for our products are available for download at **takarabio.com/manuals**
The following documents apply to this product:

- Advantage Genomic LA Polymerase Mix Protocol-at-a-Glance (PT3885-2)

Quality Control Data

Raw Material Quality Control

Purity

No nicking activity, endonuclease activity, or exonuclease activity was detected after incubation of 0.6 mg of supercoiled pBR322 DNA, 0.65 mg of λ DNA, or 0.6 mg of λ-Hind III digest with 10 units of this enzyme for 1 hour at 74°C.

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Unit definition

One unit is the amount of enzyme that will incorporate 10 nmol of dNTP into acid-insoluble products in 30 min at 74°C using activated salmon sperm DNA as template.

Reaction mixture for unit definition

25 mM	TAPS (pH 9.3 at 25°C)
50 mM	KCl
2 mM	$MgCl_2$
1 mM	2-mercaptoethanol
200 mM	Each dATP, dGTP, dTTP
100 mM	[α-^{32}P]-dCTP
0.25 mg/ml	activated salmon sperm DNA

Functional Quality Control

PCR performance

The Advantage Genomic LA Polymerase Mix was tested for PCR performance using a λ DNA control template and primers. Reactions (50 µl) were assembled and performed using a standard PCR protocol. When the PCR products were examined by electrophoresis on a 1.0% agarose/EtBr gel, a major band of 35 kb was observed.

To ensure optimum PCR performance, the Advantage Genomic LA Polymerase Mix was also tested using human genomic DNA as template. Reactions were assembled and performed using a standard PCR protocol. When the PCR products were examined by electrophoresis on a 1.0% agarose/EtBr gel, a major band of 17.5 kb was observed.

Hot-start antibody

Hot-start antibody inhibition of the Advantage Genomic LA enzyme was confirmed to be greater than 80% following a 10 min incubation of the reaction at 55°C.

It is certified that this product meets the above specifications, as reviewed and approved by the Quality Department.

Notice to Purchaser

Advantage® Genomic LA Polymerase Mix

CATALOG NO.

639152

NOTICE TO PURCHASER:

Our products are to be used for research purposes only. They may not be used for any other purpose, including, but not limited to, use in drugs, in vitro diagnostic purposes, therapeutics, or in humans. Our products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products or to provide a service to third parties without prior written approval of Takara Bio USA, Inc.

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