Certificate of Analysis

Advantage® 2 Polymerase Mix

Catalog Nos.	Amount	Lot Number
639201	100 rxns	Specified on product label.
639202	5 x 100 rxns	Specified on product label.
639245 (Not sold separately)	2,000 rxns	Specified on product label.

Description

The Advantage 2 Polymerase Mix allows efficient, accurate, and convenient amplification of DNA templates using long and accurate PCR. The Advantage 2 Polymerase Mix is comprised of Titanium® *Taq* DNA Polymerase, a nuclease-deficient N-terminal deletion of *Taq* DNA polymerase, plus TaqStart® Antibody to provide automatic hot-start PCR and a minor amount of a proofreading polymerase. Enough enzyme mix and PCR buffer are supplied for 100 (Cat. No. 639201), 500 (Cat. No. 639202) or 2,000 (Cat. No. 639245) PCR reactions of 50 µl each.

Package Contents

639201 (100 rxns)	639202 (5 x 100 rxns)	639245 (2,000 rxns)	
100 µl	5 x 100 µl	2 x 1 ml	50X Advantage 2 Polymerase Mix
600 µl	5 x 600 µl	1 x 12 ml	10X Advantage 2 PCR Buffer
600 µl	5 x 600 µl	1 x 12 ml	10X Advantage 2 SA PCR Buffer

Storage Conditions

- Store at –20°C.

Expiration Date

- Specified on product label.

Shipping Conditions

- Dry ice

Product Documents

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

- Advantage 2 PCR Enzyme System User Manual
- Advantage 2 PCR Kit Protocol-at-a-Glance

Takara Bio USA, Inc.
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Quality Control Data

Raw Material Quality Control

Purified N-terminal deletion mutant *Taq* polymerase was tested for enzymatic activity and PCR performance. Endonuclease, exonuclease, and DNA contamination assays were also performed.

PCR Performance

N-terminal deletion mutant *Taq* DNA polymerase was serially diluted and each serial dilution was used in a separate PCR reaction with calf thymus DNA as a template. The optimal dilution per reaction was determined as the amount of enzyme required to amplify > 20 ng/µl of a 3.5 kb fragment with minimal background.

Functional Quality Control

Amplification of cDNA fragments using SMARTer® RACE:

Advantage 2 Polymerase Mix was tested by performing 5'- and 3'-rapid amplification of cDNA ends (RACE) using the SMARTer RACE 5'/3' Kit (Takara Bio, Cat. Nos. 634858 & 634859). Reactions were performed as described in the User Manual using 50 ng of mouse heart total RNA and 5' or 3' transferrin receptor primers. The expected 2.1 kb and 3.1 kb products were observed on an agarose gel for 5'- and 3'-RACE respectively.

Amplification from a genomic DNA template:

Advantage 2 Polymerase Mix was tested in a 50-µl PCR reaction using 100 ng of calf thymus genomic DNA as a template and primers specific for the bovine pancreatic trypsin inhibitor (BPTI) gene (0.4 µM each). Two reactions were performed: amplification of a 3.5 kb fragment of the BPTI gene using the 10X Advantage 2 PCR Buffer and amplification of a 407 bp fragment in 10X Advantage 2 SA PCR Buffer. Conditions were set at:

95°C	1 min	
30 cycles:		
95°C	14 sec	⌐
68°C	3 min	⌙

5 µl of each PCR product was run on a 1% TAE/agarose gel to confirm the presence of 3.5 kb and 407 bp bands, respectively, with minimal background.

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

Notice to Purchaser

Advantage® 2 Polymerase Mix

CATALOG NOS.

639201, 639202 & 639245

NOTICE TO PURCHASER:

Our products are to be used for **Research Use Only**. They may not be used for any other purpose, including, but not limited to, use in humans, therapeutic or diagnostic use, or commercial use of any kind. 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 our prior written approval.

Your use of this product is also subject to compliance with the licensing requirements, listed below if applicable, and described on the product´s web page at http://www.takarabio.com. It is your responsibility to review, understand and adhere to any restrictions imposed by these statements.

TRADEMARKS:

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2/17/2023