Certificate of Analysis

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PRODUCT: SMART™ MMLV Reverse Transcriptase

CATALOG No.	AMOUNT
639522	2,000 Units
639523	8,000 Units
639524	20,000 Units

LOT NUMBER
Specified on product label.

STORAGE CONDITIONS
Store at –20°C.

SHELF LIFE
1 year from date of receipt under proper storage conditions.

SHIPPING CONDITIONS
Dry ice (–70°C)

DESCRIPTION
SMART MMLV Reverse Transcriptase is an ultra-pure, recombinant Moloney Murine Leukemia Virus Reverse Transcriptase (MMLV RT). This highly purified protein is a fully active RT that is free of exogenous RNases and other nucleases. As a result, SMART MMLV RT is able to synthesize a higher percentage of full-length cDNAs, making it the ideal enzyme for a wide range of applications including all SMART applications, cDNA synthesis, library construction and real-time RT-PCR.

PACKAGE CONTENTS

639522 (2,000 Units; 20 rxns)
- 10 µl SMART MMLV RT (200 Units per µl)
- 300 µl 5X First-Strand Buffer
- 165 µl 100 mM DTT

639523 (8,000 Units; 80 rxns)
- 40 µl SMART MMLV RT (200 Units per µl)
- 300 µl 5X First-Strand Buffer
- 165 µl 100 mM DTT

639524 (20,000 Units; 200 rxns)
- 100 µl SMART MMLV RT (200 Units per µl)
- 1ml 5X First-Strand Buffer
- 500 µl 100 mM DTT

OTHER
- SMART MMLV Reverse Transcriptase Protocol-at-a-Glance (PT4045-2)

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FOR RESEARCH USE ONLY

QUALITY CONTROL DATA
See back of page.

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APPROVED BY: _____

(PA9Y3459)

QUALITY CONTROL DATA

This lot of purified SMART MMLV RT was tested to ensure the quality and performance of the enzyme.

FUNCTIONAL ANALYSIS: First-strand cDNA Synthesis

SMART MMLV RT and a modified oligo(dT)$_{18}$ primer were used to reverse transcribe a ladder of nine poly A$^+$ RNA transcripts ranging in size from 0.5 to 10 kb. Following a 1 hr incubation at 42°C, the products were separated on an alkaline-agarose gel and visualized using a single-strand DNA-binding dye and UV illumination. At a minimum, distinct bands with minimal smearing were observed for all cDNAs up to 8 kb.

RAW MATERIAL ANALYSIS: Ribonuclease Contamination Assay

To ensure the absence of ribonucleases, SMART MMLV RT was incubated with an RNA ladder under conditions typical for first-strand cDNA synthesis (excluding primer and dNTPs). In this assay, 1 µl of SMART MMLV RT was incubated with 3 µg of an RNA ladder for 1 hr at 37°C. Following incubation, the sample was analyzed by electrophoresis on a formaldehyde-agarose gel. No degradation of the RNA bands was observed when compared to a control sample containing RNA and buffer but no enzyme.

Additional Testing

This preparation of SMART MMLV RT was further analyzed to ensure the absence of the following contaminants:

- Endonucleases: none detected
- Exonucleases: none detected
- DNA contamination: none detected