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## PRODUCT: SMARTScribe™ Reverse Transcriptase

CATALOG No.	AMOUNT
639536	40 rxns
639537	100 rxns
639538	400 rxns

### 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

SMARTScribe Reverse Transcriptase is a modified Moloney Murine Leukemia Virus Reverse Transcriptase that synthesizes full-length cDNA from rare or long transcripts. SMARTScribe RT preparations are exceptionally pure, with all contaminating nucleases removed. The enzyme is useful for a wide range of applications, and has been specially formulated for use with all of our SMART™ Kits.

### PACKAGE CONTENTS

**639536** (4,000 Units; 40 rxns)

- 40 µl SMARTScribe RT (100 Units per µl)
- 1ml 5X First-Strand Buffer
- 500 µl 20 mM DTT

**639537** (10,000 Units; 100 rxns)

- 100 µl SMARTScribe RT (100 Units per µl)
- 1ml 5X First-Strand Buffer
- 500 µl 20 mM DTT

**639538** (40,000 Units; 400 rxns)

- 4 x 100 µl SMARTScribe RT (100 Units per µl)
- 2 x 1ml 5X First-Strand Buffer
- 2 x 500 µl 20 mM DTT

### OTHER

- SMARTScribe Reverse Transcriptase Protocol-at-a-Glance (PT4080-2)



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**FOR RESEARCH USE ONLY**

### QUALITY CONTROL DATA

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(PA063905)

**QUALITY CONTROL DATA**

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

**FUNCTIONAL ANALYSIS: First-strand cDNA Synthesis**

SMARTScribe RT and a modified oligo(dT)<sub>18</sub> primer were used to reverse transcribe a ladder of nine poly A<sup>+</sup> 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 agarose-EtBr stained gel and visualized by UV illumination. At a minimum, distinct bands with minimal smearing were observed for all cDNAs up to 10 kb.

**FUNCTIONAL ANALYSIS: SMART RACE cDNA Amplification**

5' and 3' SMART RACE reactions were performed using SMARTScribe RT, Mouse Heart Total RNA, and our SMARTer™ RACE cDNA Amplification Kit. The products were separated on an agarose gel and visualized by UV illumination. At a minimum, the 5' and 3' RACE reactions produced 2.1 kb and 3.1 kb products, respectively, from 50 ng of template RNA. Controls for both the 5' and 3' RACE reactions produced a 0.38 kb fragment.

**RAW MATERIAL ANALYSIS: Ribonuclease Contamination Assay**

To ensure the absence of ribonucleases, SMARTScribe 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 SMARTScribe 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 SMARTScribe RT was further analyzed to ensure the absence of the following contaminants:

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

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