# Certificate of Analysis

## SMARTer® Ultra® Low Input RNA Kit for Sequencing - v3 Components

| Catalog Nos. | Amount | Lot Number |
|---|---|---|
| 634854 (Not sold separately; sold as a part of 634848) | 12 rxns | Specified on product label. |
| 634855 (Not sold separately; sold as a part of 634849) | 24 rxns | Specified on product label. |
| 634856 (Not sold separately; sold as a part of 634850) | 48 rxns | Specified on product label. |
| 634857 (Not sold separately; sold as a part of 634851–634853) | 96 rxns | Specified on product label. |

## Description

SMARTer Ultra Low Input RNA Kit for Sequencing - v3 Components is sold as part of a kit that provides reagents for direct synthesis of high-quality cDNA when starting with 1–1,000 cells or 10 pg–10 ng of total RNA. The kit has been designed and validated to prepare cDNA samples for library preparation and sequencing using the Ion Torrent or Illumina® sequencing platforms. SMART® (Switching Mechanism at 5' End of RNA Template) technology enriches for full-length transcripts and maintains the true representation of the original mRNA transcripts; these factors are critical for transcriptome sequencing and gene expression analysis. This kit improves on previous generations of SMARTer Ultra Low kits by simplifying the workflow, identifying more genes, and increasing the representation of GC-rich genes.

### Package Contents

**Box 1:**

| 634854 (12 rxns) | 634855 (24 rxns) | 634856 (48 rxns) | 634857 (96 rxns) | |
|---|---|---|---|---|
| 12 µl | 24 µl | 48 µl | 96 µl | SMARTer II A Oligonucleotide (12 µM) |
| 5 µl | 5 µl | 5 µl | 5 µl | Control Total RNA (1 µg/µl) |

**Box 2:**

| 634854 (12 rxns) | 634855 (24 rxns) | 634856 (48 rxns) | 634857 (96 rxns) | |
|---|---|---|---|---|
| 12 µl | 24 µl | 48 µl | 96 µl | 3' SMART CDS Primer II A (12 µM) |
| 12 µl | 24 µl | 48 µl | 96 µl | PCR Primer II A - v3 (12 µM) |
| 48 µl | 96 µl | 192 µl | 384 µl | 5X First-Strand Buffer |
| 12 µl | 24 µl | 48 µl | 96 µl | SMARTer dNTP Mix (dATP, dCTP, dGTP, and dTTP, each at 20 mM) |
| 6 µl | 12 µl | 24 µl | 48 µl | Dithiothreitol (DTT; 100 mM) |
| 24 µl | 48 µl | 96 µl | 192 µl | SMARTScribe™ Reverse Transcriptase (100 U/µl) |
| 2 x 1 ml | 2 x 1 ml | 2 ml | 4 ml | Nuclease-Free Water |
| 30 µl | 60 µl | 120 µl | 240 µl | RNase Inhibitor (40 U/µl) |
| 230 µl | 460 µl | 920 µl | 1.85 ml | 10X Lysis Buffer - v3 |
| 1.7 ml | 2 x 1.7 ml | 6.8 ml | 2 x 6.8 ml | Elution Buffer (10 mM Tris-Cl, pH 8.5) |
| 24 µl | 48 µl | 96 µl | 192 µl | 10X AfaI Buffer |
| 24 µl | 48 µl | 96 µl | 192 µl | 0.1% BSA |
| 12 µl | 24 µl | 48 µl | 96 µl | AfaI (10 U/µl) |

**Takara Bio USA, Inc.**
1290 Terra Bella Avenue, Mountain View, CA 94043, USA
U.S. Technical Support: techUS@takarabio.com

United States/Canada 800.662.2566
Asia Pacific +1.650.919.7300
Europe +33.(0)1.3904.6880
Japan +81.(0)77.565.6999

(021617)

### Storage Conditions

- Store Control Total RNA and SMARTer IIA Oligonucleotide at –70°C.
- Store 10X Lysis Buffer - v3 at –20°C. Once thawed, the buffer can be stored at 4°C.
- Store Elution Buffer at –20°C. Once thawed, the buffer can be stored at 4°C.
- Store all other reagents at –20°C.

### Shelf Life

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

### Shipping Conditions

- Box 1 & Box 2: 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:

- SMARTer Ultra Low Input RNA Kit for Sequencing - v3 User Manual
- SeqAmp™ DNA Polymerase Protocol-At-A-Glance

## Quality Control Data

A sample kit from each lot was tested as follows: 100 pg of Control Total RNA were subjected to first-strand cDNA synthesis as described in the SMARTer Ultra Low Input RNA Kit for Sequencing - v3 User Manual. The first-strand cDNA was then used as template in PCR for 15 cycles. PCR products were purified with an Agencourt AMPure XP Kit (Beckman Coulter Part No. A63880 or A63881), and resuspended in 17 µl of Elution Buffer. 1 µl of the PCR reaction was analyzed with an Agilent Bioanalyzer and a High Sensitivity DNA Kit (Agilent Cat No. 5067-4626). A peak was manually integrated from 300 bp to 9,000 bp. The resultant analysis indicated the cDNA size ranged approximately from 300 bp to 10,000 bp. To calculate the total cDNA output, the concentration defined by Bioanalyzer software was multiplied by 17 µl; outputs ranged from 3.4 ng–17 ng.

## Quality Control Data for AfaI:

1. Overdigestion Test: Nonspecific nuclease activity was not detected after incubating 1 µg of λDNA with 20 units of this enzyme in 50 µl of the supplied buffer overnight at 37°C, as assessed by agarose gel electrophoresis.

2. Ligation-Recutting Test: After 10-fold overdigestion with this enzyme, the DNA fragments could be ligated with T4 DNA ligase and recut with this enzyme.

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

# Notice to Purchaser

# SMARTer® Ultra® Low Input RNA Kit for Sequencing - v3 Components

## CATALOG NO.

**634854, 634855, 634856, 634857**

**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.

Your use of this product is also subject to compliance with the licensing requirements listed below 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:**



**Takara Bio USA, Inc**.
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2/16/2017