

## SMARTer® Mouse TCR a/b Profiling Kit Components

Catalog Nos.	Amount	Lot Number
634405 (Not sold separately; sold as a part of 634402)	12 rxns	Specified on product label.
634406 (Not sold separately; sold as a part of 634403)	48 rxns	Specified on product label.
634407 (Not sold separately; sold as a part of 634404)	96 rxns	Specified on product label.

### Description

The SMARTer Mouse TCR a/b Profiling Kit Components are part of the SMARTer Mouse TCR a/b Profiling Kit, which enables users to analyze T-cell receptor (TCR) diversity from total RNA samples or whole cells. The full kit is designed to work with a range of RNA input amounts depending on the sample type and has been shown to generate high-quality libraries from as little as 10–500 ng of total RNA obtained from spleen, thymus, PBMCs, or from 1,000–10,000 purified T cells. As the name suggests, the kit can be used to generate data for both alpha- and beta-chain diversity, either in the same experiment or separately.

The full kit leverages SMART® (Switching Mechanism at 5' end of RNA Template) technology and employs a 5' RACE-like approach to capture complete V(D)J variable regions of TCR transcripts. Included in the full kit are primers that incorporate Illumina®-specific adaptor sequences during cDNA amplification. The protocol generates indexed libraries that are ready for sequencing on Illumina platforms.

### Package Contents

#### Package 1:

<u>634405</u> (12 rxns)	<u>634406</u> (48 rxns)	<u>634407</u> (96 rxns)	
5 µl	5 µl	5 µl	Control RNA (1 µg/µl)

#### Package 2:

<u>634405</u> (12 rxns)	<u>634406</u> (48 rxns)	<u>634407</u> (96 rxns)	
12 µl	48 µl	96 µl	SMART-Seq® v4 Oligonucleotide (48 µM)
24 µl	96 µl	192 µl	TCR dT Primer (12 µM)
48 µl	192 µl	384 µl	5X Ultra® Low First-Strand Buffer
24 µl	96 µl	192 µl	SMARTScribe™ Reverse Transcriptase (100 U/µl)
1 ml	3 x 1 ml	2 x 4 ml	Nuclease-Free Water
30 µl	120 µl	240 µl	RNase Inhibitor (40 U/µl)
230 µl	920 µl	1.85 ml	10X Lysis Buffer
1.7 ml	1.7 ml	2 x 1.7 ml	Elution Buffer (10 mM Tris-Cl, pH 8.5)
12 µl	48 µl	96 µl	TCRa Mouse Primer 1 (12 µM)
12 µl	48 µl	96 µl	TCRb Mouse Primer 1 (12 µM)
6 µl	24 µl	48 µl	SMART Primer 1 (12 µM)

Package Contents continue on Page 2.

#### Takara Bio USA, Inc.

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# Certificate of Analysis

Cat. Nos. 634405, 634406 & 634407

SMARTer Mouse TCR a/b Profiling Kit Components (Not sold separately) Sold as a part of 634402, 634403 & 634404

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<u>634405</u> (12 rxns)	<u>634406</u> (48 rxns)	<u>634407</u> (96 rxns)	
50 µl	100 µl	*	PrimeSTAR® GXL SP DNA Polymerase (1.25 U/µl)
0.5 ml	1 ml	*	5X PrimeSTAR GXL SP Buffer
200 µl	400 µl	*	dNTP Mixture (2.5 mM each)

\*PrimeSTAR GXL SP DNA Polymerase, 5X PrimeSTAR GXL SP Buffer, and dNTP Mixture are shipped separately (as Cat. No. RF220Q) from the components of the 96-reaction kit (Cat. No. 634407). The enzyme, buffer, and dNTPs are included in Package 2 of the 12-reaction and 24-reaction kit components (Cat. Nos. 634405 and 634406, respectively).

## Storage Conditions

- Store Control RNA at  $-70^{\circ}\text{C}$ .
- Store 10X Lysis Buffer at  $-20^{\circ}\text{C}$ . Once thawed, the buffer can be stored at  $4^{\circ}\text{C}$ .
- Store Elution Buffer at  $-20^{\circ}\text{C}$ . Once thawed, the buffer can be stored at room temperature.
- Store all other reagents at  $-20^{\circ}\text{C}$ .

## Expiration Date

- Specified on product label.

## Shipping Conditions

- Dry ice

## Product Documents

Documents for our products are available for download at [takarabio.com/manuals](http://takarabio.com/manuals)

The following documents apply to this product:

- SMARTer Mouse TCR a/b Profiling Kit User Manual

## Quality Control Data

A sample kit from each lot was tested as follows: 10 ng of Control RNA (mouse spleen total RNA) was subjected to first-strand cDNA synthesis as described in the SMARTer Mouse TCR a/b Profiling Kit User Manual. The first-strand cDNA was then used as a template for 21 cycles of PCR. 1 µl of the resulting double-stranded cDNA was amplified by nested PCR for 20 additional cycles. The final sequencing library was 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 sequencing library was analyzed with an Agilent 2100 Bioanalyzer and an Agilent DNA 1000 Kit (Agilent, Part No. 5067-1504). The analysis indicated that the TCR library profile produced a broad peak spanning 650–1,100 bp, with the peak maximum at approximately 700 bp. The area containing the peak was manually integrated from 550–1,200 bp, and the concentration of this region in nmol/l (nM) was determined by the Bioanalyzer software. Final library outputs were  $>4$  nmol/l (nM).

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

## SMARTer® Mouse TCR a/b Profiling Kit Components

### CATALOG NOS.

634405, 634406 & 634407

### NOTICE TO PURCHASER:

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### STATEMENT 275

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