

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

Catalog No.	Amount	Lot Number
635019 (Not sold separately) Sold as a part of 635016	96 rxns	Specified on product label.

### Description

The SMARTer Human TCR a/b Profiling Kit Components are part of the SMARTer Human TCR a/b Profiling Kit, which enables users to analyze T-cell receptor (TCR) diversity from RNA input samples. 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 ng–3 µg of total RNA obtained from peripheral blood leukocytes, or from 50–10,000 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:

5 µl Control RNA (1 µg/µl)

#### Package 2:

96 µl SMART-Seq® v4 Oligonucleotide (48 µM)  
192 µl TCR dT Primer (12 µM)  
384 µl 5X Ultra® Low First-Strand Buffer  
192 µl SMARTScribe™ Reverse Transcriptase (100 U/µl)  
4 ml Nuclease-Free Water  
240 µl RNase Inhibitor (40 U/µl)  
1.85 ml 10X Lysis Buffer  
4 x 1.7 ml Elution Buffer (10 mM Tris-Cl, pH 8.5)  
96 µl TCRA Human Primer 1 (12 µM)  
96 µl TCRb Human Primer 1 (12 µM)  
96 µl SMART Primer 1 (12 µM)

### Storage Conditions

- Store Control RNA at –70°C.
- Store 10X Lysis Buffer 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 room temperature.
- Store all other reagents at –20°C.

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#### Takara Bio USA, Inc.

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# Certificate of Analysis

Cat. No. 635019

SMARTer® Human TCR a/b Profiling Kit Components (Not sold separately)

Sold as a part of 635016

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## 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 Human 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 (human blood, peripheral leukocytes total RNA) was subjected to first-strand cDNA synthesis as described in the SMARTer Human 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 twice 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 a DNA 1000 Kit (Agilent Cat 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 600 bp–1,200 bp, and the concentration of this region in nmol/L (nM) was determined by the Bioanalyzer software. Final library outputs were greater than 2 nmol/L (nM).

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

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### CATALOG NO.

635019

### 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.

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### STATEMENT 275

SMART-Seq2 Technology. This product is sold under exclusive license from Ludwig Institute of Cancer Research, Ltd. and is covered by US Patent No. 10266894, Japanese Patent No. 6336080, and European Patent No. 3036336, and pending U.S. patent application and/or pending claims of foreign counterparts. For license information, please contact a Takara Bio USA, Inc. licensing representative by e-mail at [licensing@takarabio.com](mailto:licensing@takarabio.com).

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