

## SMART-Seq® Human TCR (with UMIs)

Catalog Nos.	Amount	Lot Number
634780	24 rxns	Specified on product label.
634781	96 rxns	Specified on product label.

Also sold as part of 634779

### Description

SMART-Seq Human TCR (with UMIs) is used to generate T-cell receptor diversity information from RNA samples or purified 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 ng–1 µg of total RNA obtained from peripheral blood leukocytes, 20 ng–200 ng of total RNA obtained from whole blood, 1 ng–100 ng of total RNA obtained from T cells, or from 1,000–10,000 purified T cells. The kit can be used to generate data for both alpha- and beta-chain diversity, either in the same experiment or separately, leverages SMART® technology, and employs a 5' RACE-like approach to capture complete V(D)J variable regions of TCR transcripts.

The workflow incorporates unique molecular identifiers (UMIs), providing greater accuracy for clonotype identification and counting. Using the Unique Dual Index kits (Cat. Nos. 634752–634756, sold separately) the protocol can generate up to 384 multiplexed libraries that are ready for sequencing on any Illumina® platform.

### Package Contents

#### Package 1:

<u>634780</u> (24 rxns)	<u>634781</u> (96 rxns)	
5 µl	5 µl	Control RNA (1 µg/µl)
30 µl	120 µl	TCR SMART UMI Oligo (48 µM)

#### Package 2:

<u>634780</u> (24 rxns)	<u>634781</u> (96 rxns)	
230 µl	920 µl	10X Lysis Buffer
96 µl	384 µl	5X Ultra® Low First-Strand Buffer
48 µl	192 µl	TCR dT Primer (12 µM)
48 µl	192 µl	SMARTScribe™ Reverse Transcriptase (100 U/µl)
60 µl	240 µl	RNase Inhibitor (40 U/µl)
1.7 ml	4 x 1.7 ml	Elution Buffer (10 mM)
1.7 ml	4 x 1.7 ml	Nuclease-Free Water
100 µl	400 µl	PrimeSTAR® GXL DNA Polymerase (1.25 U/µl)
1 ml	4 x 1 ml	5X PrimeSTAR GXL Buffer
400 µl	1.7 ml	dNTP Mix (2.5 mM each)
24 µl	96 µl	hTCR PCR1 Universal Forward (12 µM)

#### Takara Bio USA, Inc.

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# Certificate of Analysis

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<u>634780</u> (24 rxns)	<u>634781</u> (96 rxns)	
48 µl	192 µl	hTCRa PCR1 Reverse (12 µM)
24 µl	96 µl	hTCRb PCR1 Reverse (12 µM)
24 µl	96 µl	hTCRa PCR2 UDI Reverse (12 µM)
24 µl	96 µl	hTCRb PCR2 UDI Reverse (12 µM)

## Storage Conditions

- Store Control RNA and TCR SMART UMI Oligo 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:

- SMART-Seq Human TCR (with UMIs) 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 SMART-Seq Human TCR (with UMIs) User Manual. The first-strand cDNA was then used as template for 18 cycles of PCR. 1 µl of this PCR product was amplified by nested PCR for 18 additional cycles. The final sequencing library were purified with NucleoMag NGS Clean-up and Size Select (Takara Bio, Catalog No. 744970.5, 744970.50, 744970.500), and resuspended in 17 µl of Elution Buffer. The final library concentration was measured by Qubit and diluted to 1 ng/µl. 1 µl of the diluted library was analyzed with an Agilent 2100 Bioanalyzer and DNA 1000 Kit (Agilent, Cat. No. 5067-1504). The resultant analysis indicated that the TCR library size range was approximately 400 bp to 1,400 bp. The area containing the peaks was manually integrated from 400 bp to 1,400 bp. The final library outputs were  $>4.0$  ng/µl.

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

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### CATALOG NOS.

634780 & 634781

### 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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