

## SMART-Seq® Human BCR (with UMIs)

Catalog Nos.	Amount	Lot Number
634777	24 rxns	Specified on product label.
634778	96 rxns	Specified on product label.
Also sold as part of 634776		

### Description

SMART-Seq Human BCR (with UMIs) enables users to analyze human B-cell receptor (BCR) diversity from RNA input samples. The 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 mononuclear cells (PBMCs) and 1–100 ng of total RNA from B cells.

The kit leverages SMART® technology and employs a 5' RACE-like approach to capture complete V(D)J variable regions of BCR transcripts. Included in the 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

#### Box 1:

<u>634777</u> (24 rxns)	<u>634778</u> (96 rxns)	
5 µl	5 µl	Control RNA (1 µg/µl)
24 µl	96 µl	SMART UMI Oligo

#### Box 2:

<u>634777</u> (24 rxns)	<u>634778</u> (96 rxns)	
48 µl	192 µl	dT Primer
96 µl	384 µl	First-Strand Buffer (5X)
48 µl	192 µl	SMARTScribe™ Reverse Transcriptase (100 U/µl)
5 ml	20 ml	Nuclease-Free Water
24 µl	96 µl	RNase Inhibitor (40 U/µl)
24 µl	96 µl	BCR Enhancer
1 ml	4 x 1 ml	Elution Buffer (10 mM Tris HCl, pH 8.5)
24 µl	96 µl	hBCR PCR1 Universal Forward
24 µl	96 µl	hBCR PCR1 Reverse
24 µl	96 µl	hBCR PCR2 HC Reverse
24 µl	96 µl	hBCR PCR2 LC Reverse
2 x 1 ml	8 x 1 ml	PrimeSTAR® GXL Premix

#### Takara Bio USA, Inc.

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# Certificate of Analysis

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## Storage Conditions

- Store Control RNA and SMART UMI Oligo at  $-70^{\circ}\text{C}$ .
- Store BCR Enhancer at  $-20^{\circ}\text{C}$ . Once thawed, the buffer can be stored at  $4^{\circ}\text{C}$ .
- Store Nuclease-Free Water at  $-20^{\circ}\text{C}$ . Once thawed, the water 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 BCR (with UMIs) User Manual

## Quality Control Data

A sample kit from each lot was tested as follows: 10 ng of Control RNA (Human Spleen Total RNA) was subjected to first-strand cDNA synthesis as described in the SMART-Seq Human BCR (with UMIs) User Manual. The first-strand cDNA was then used as a template for all 7 isotypes (IgA/D/E/G/M/K/L) in a PCR reaction, each for 16 cycles of PCR. The heavy chains (IgA/D/E/G/M) and the light chains (IgK/L) are amplified separately in the second PCR (PCR2). 1  $\mu\text{l}$  of the resulting double-stranded cDNA was amplified by nested PCR for 20 cycles for corresponding heavy chains and light chains. The final sequencing libraries were purified using NucleoMag NGS Clean-up and Size Select (Takara Bio; Cat. Nos. 744970.5, 744970.50, or 744970.500) and resuspended in 17  $\mu\text{l}$  of Elution Buffer.

2  $\mu\text{l}$  of each sequencing library was quantified by Qubit Fluorometer and Qubit dsDNA HS Assay Kit (Cat No. Q32854) and then 1  $\mu\text{l}$  of each sequencing library was analyzed with an Agilent 2100 Bioanalyzer and the DNA High Sensitivity Kit (Agilent, Cat. No. 5067-4401). Qubit assay indicated the yield of both heavy chain library and light chain library is  $\geq 3$  ng/ $\mu\text{l}$ . The following Bioanalyzer analysis indicated that all library profiles produced single peak with size between 600–900 bp region on electropherogram picture. Size distributions as below:

- Heavy chain library: 720 bp (+/- 60 bp)
- Light chain library: 630 bp (+/- 60 bp)

All primers are verified by ESI analysis to have a major peak with a calculated molecular weight within 30 Da of the predicted molecular weight.

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

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### CATALOG NOS.

634777, 634778

### 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 392

This product is protected by U.S. Patent Nos. 10,941,397 and 10,954,510 and European Patent No. 1485394804 and Japanese Patent No. 2016-524004 and corresponding U.S. pending patents and other foreign patents pending. For further license information, please contact a Takara Bio USA licensing representative by email at [licensing@takarabio.com](mailto:licensing@takarabio.com).

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