



Unbiased Multi-Chain Immune Repertoire Profiling with Superior Clonotype Detection

An immune repertoire is the sum of functionally diverse T and B cells. It provides both a snapshot and a historical record of immune function — a powerful tool for characterizing the adaptive immune system's responses to cancer, autoimmune and infectious diseases, allergies, vaccinations, and therapeutic treatments.

MULTI-CHAIN COVERAGE

Complete profiling of all TCR and BCR chains in a single workflow.

- TRA, TRB, TRD, TRG for T-cell receptors
- IGH, IGL, IGK for B-cell receptors
- Captures chains missed by single-chain competitor kits

DUAL INPUT SUPPORT

Flexible workflows for RNA starting materials.

- RNA: 5' RACE for unbiased V-gene profiling
- DNA: multiplex PCR (mPCR) for CDR3 capture
- Compatible with fresh PBMC/tissue and FFPE samples

UMI-BASED QUANTIFICATION

Accurate clonotype counting with molecular barcoding and error correction.

- Template-switching RT incorporates UMI at cDNA synthesis
- Eliminates PCR amplification bias
- Enables precise clonal frequency measurement

HIGH SENSITIVITY

Detect rare clonotypes with exceptional depth.

- <0.001% detection from fresh RNA PBMC
- <0.01% from FFPE RNA

KEY PERFORMANCE

TRA CLONOTYPES

4,207

vs 1,095 Takara

TRB CLONOTYPES

12,026

vs 2,595 Takara

SENSITIVITY

<0.001%

Fresh RNA PBMC

Genovo vs. Competitors

Feature	ThermoFisher	Takara	Qiagen	Adaptive	Genovo
Chain Coverage	Single	Single	Single	Single	Multi-Chain
Input Type	RNA or gDNA	RNA	RNA	RNA or gDNA	RNA
Methodology	mPCR	5' RACE	Anchored PCR	mPCR	5' RACE
Read Length	Short or Long				
UMI	No	Yes	Yes	No	Yes
Software	Yes	Partial	Partial	Service	Yes

Genovo vs. Vendor T Kit Performance

Using PBMC RNA from the same donor, the Genovo kit identified significantly more clonotypes across all TCR chains and was able to detect TRD and TRG clonotypes that Takara kit missed entirely.

4,207

TRA Clonotypes
vs 1,095 Vendor T

12,026

TRB Clonotypes
vs 2,595 Vendor T

62 / 190

TRD / TRG Detected
vs 0 / 0 Vendor T

Assay Specifications

	Fresh RNA (PBMC/tissue)	FFPE RNA (tissue)
Methodology	5' RACE	5' RACE
Quantification	UMI	UMI
Input	500 ng	500 ng
Read Depth	2M	2M
Sensitivity	<0.001%	<0.01%
Read Length	Long or short	Short