



# Considerations when selecting the right barcoded adapters.

All of Revvity's NEXTFLEX™ NGS adapters incorporate unique dual indexes (UDI). Revvity now also offers adapters with both unique molecular adapters (UMI) and UDIs. Our barcodes are compatible with DNA-seq and RNA-seq applications and can be used with Illumina® and Element® sequencing platforms. The information below will help you decide what adapter is best for your application.

## Unique Dual Indexes (UDI)

UDIs (represented as i5 and i7 in Figure 1) are added to both ends of an NGS library molecule. This enables researchers to multiplex multiple samples in parallel. We offer sets of 384 adapters (8 nt index) and 1536 adapters (10 nt index). The presence of dual indices minimizes index hopping—a phenomenon where a read is incorrectly assigned to the wrong index due to sequencing errors.

## Unique Molecular Identifier (UMI)

A single 9-base-pair UMI is incorporated into each library. Revvity's UMIs provide over 250,000 unique combinations to tag individual molecules within a sample library. UMIs are relevant in applications where we want to differentiate PCR duplicates (which share the same UMI sequence) from true copy numbers (each copy having a distinct UMI sequence). They are also used to distinguish true variants from errors introduced during library preparation.

## Advantages of Revvity's ligation-based adapters

Incorporating full-length UDI and UMI sequences via ligation (instead of PCR) reduces the risk of introducing errors. This approach allows researchers to leverage these features effectively in PCR-free workflows. We recommend the use of the NEXTFLEX UMI-UDI Barcodes to improve variant calling, gene expression analysis, heterogeneous tumor sample sequencing, ctDNA sequencing, deep exome sequencing, single-cell RNA-seq, and haplotyping via linked reads.

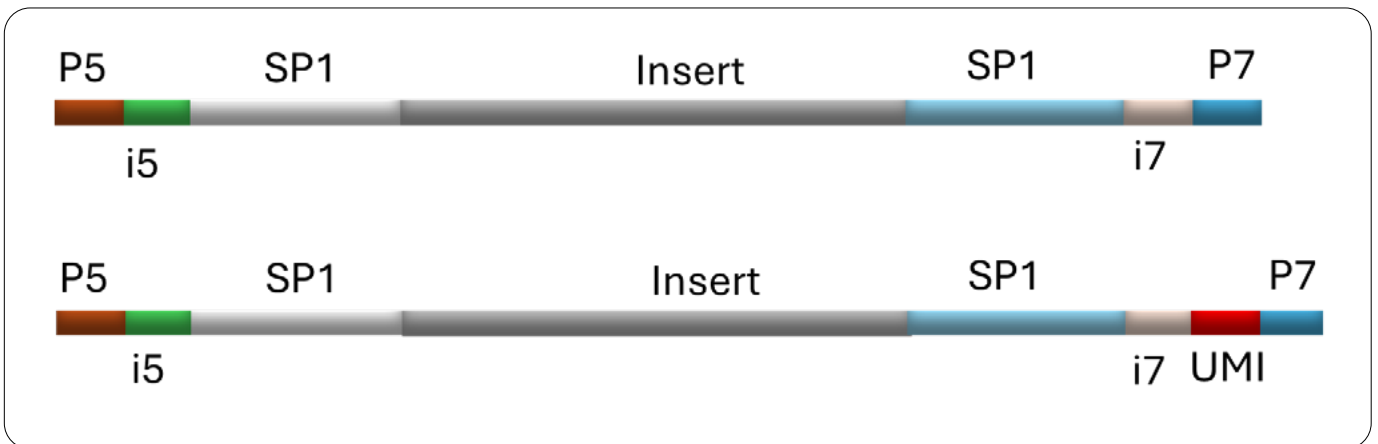
- Every lot is functionally verified and tested for index purity by sequencing.

## Selection guide

Configuration	Index length	Multiplexing options	Library type compatibility	Kit
UDI	8	384 samples	TruSeq® style* with ligation-based adapters	<a href="#">NEXTFLEX Unique Dual Index Barcodes</a>
	10	1536 samples		<a href="#">NEXTFLEX UDI Barcodes (Set of 1536)</a>
UDI-UMI	10	96 samples**		<a href="#">NEXTFLEX UDI-UMI Barcodes</a>

\*To verify if your library prep kit is compatible with our barcodes, please contact [NGS@revvity.com](mailto:NGS@revvity.com)

\*\*Contact us for availability beyond 96 UDI-UMIs.



*Example of NEXTFLEX® Adapter design. Insert: DNA or RNA fragment from a sample. P5 and P7: flow cell binding sites for Illumina® platforms. SP1 and SP2: binding sites for sequencing primers. i5 and i7: short sequences (8 or 10 bp) used to identify a particular sample (UDI). UMI: 9 bp sequence used to uniquely tag each molecule within a library.*



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