Twist Universal Adapter Systems

Uniquely designed to maximize library yield

KEY BENEFITS

Maximize Performance
- Increase final yields during library preparation
- Drastically reduce adapter dimer formation
- Use fewer PCR cycles during library preparation to reduce errors and bias introduced during amplification

Increase Flexibility
- Can be used with all 'T-A' overhang ligation systems
- Available in 16, 96, and 384 sample configurations
- Compatible with all Illumina sequencing chemistries (2- or 4-color) and flow cell types (non-patterned and patterned)
- Up to 3,072 indexes for high throughput runs

## Sophisticated Design for Optimized Performance

Twist Universal Adapter Systems improve the performance of any 'T-A' overhang ligation library preparation workflow for next-generation sequencing (NGS) applications.

Engineered to optimize the performance of Twist's Library Preparation and Target Enrichment products, the systems consist of Twist's Universal Adapters and either Twist Unique Dual-Indexed (UDI) Primers or Twist HT UDI Primers.

- **Twist Universal Adapters:** Proprietary design ensures compatibility with all TruSeq 'T-A' overhang workflows, eliminates formation of undesired adapter dimer, and contributes to increasing the workflow's overall yield

- **Twist 10 bp Unique Dual-Indexed (UDI) Primers:** Mixed primer pairs provided in 96-well plates enable higher confidence sample pooling than combinatorial approaches, as well as correction of errors within index reads during post-sequencing processing.

- **Twist 12 bp High Throughput (HT) UDI Primers:** Up to 3,072 unique indexes are available in automation-friendly 96-well or 384-well plate formats. They are optimized for superior performance with either two-color or four-color sequencer chemistry.
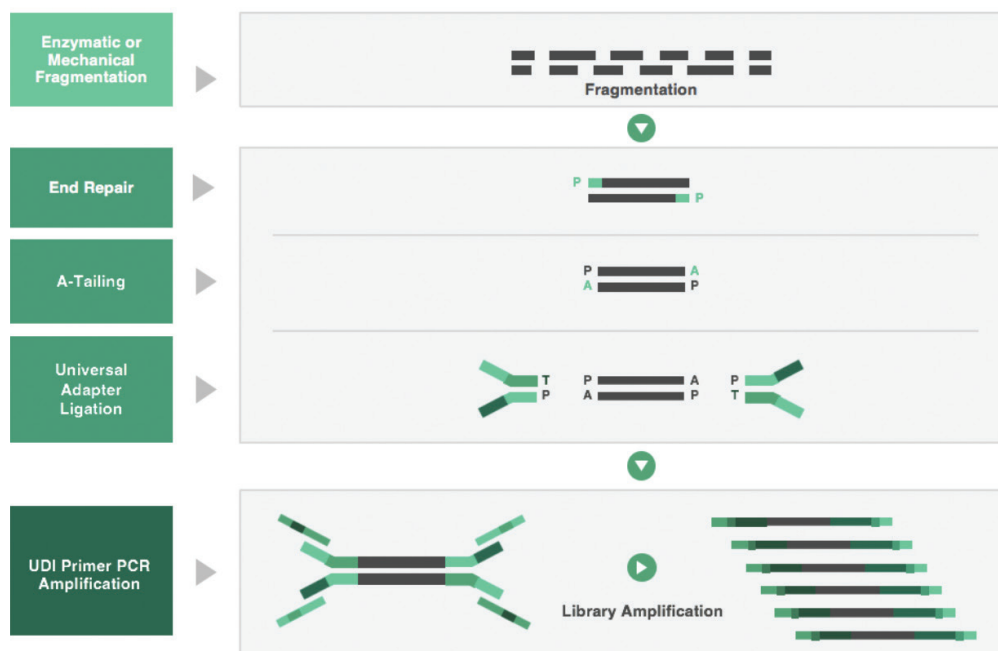
Increase Final Yields During Library Preparation

When used with Twist 10 bp UDI Primers, Twist Universal Adapters return higher total yields with fewer PCR cycles. This ultimately leads to the production of more library with fewer PCR errors to drive improvements in target enrichment efficiency.
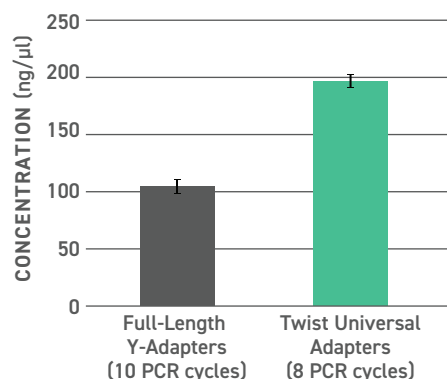
Twist Universal Adapters return higher total yields with fewer PCR cycles. DNA (50 ng NA12878) was processed with Twist Library Preparation EF Kits 1 & 2 (100572 and 100573). Samples were generated with full-length TruSeq-compatible Y-adapters and amplification primers (10 PCR cycles, N=12) or with Twist Universal Adapters and Twist 10 bp UDI primers (8 PCR cycles, N=12).

Enzymatic or Mechanical Fragmentation

Fragmentation

End Repair

A-Tailing

Universal Adapter Ligation

UDI Primer PCR Amplification

Library Amplification

Overview of the library preparation workflow with Twist Universal Adapters. Using Twist Universal Adapters for insert ligation and UDI primer PCR amplification generates a robust library.

Reduce Adapter Dimer Formation for Robust Library Construction

Library preparation and target enrichment work together to influence the ability to call variants in sequencing. Consistently constructing robust libraries is important for successful hybrid capture. When adapters dimerize during library preparation, they generate undesired products and reduce the effective concentration of adapters available for ligation to inserts. Using Twist Universal Adapters and Primers during library construction minimizes this problem.

FULL-LENGTH Y-ADAPTERS

TWIST UNIVERSAL ADAPTERS
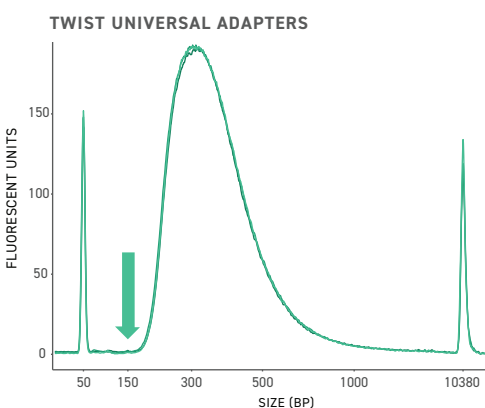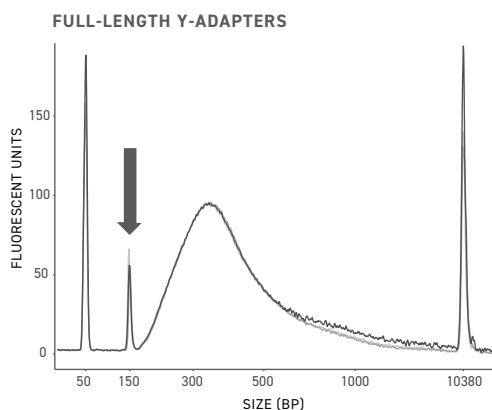
Twist Universal Adapters minimize adapter dimer formation during gDNA library preparation. DNA (50 ng NA12878) was processed with Twist Library Preparation EF Kits 1 & 2 (100572 and 100573). Samples were generated with TruSeq-compatible Y-adapters and amplification primers (10 PCR cycles) or with Twist Universal Adapters and Twist 10 bp UDI Primers (8 PCR cycles). Shown are overlays of representative electropherograms from both sample types (N = 3). Note the lack of the dimer peak (arrow) in the Twist Universal Adapter electropherogram.

Erase the Limits on Per-Run Multiplexing with Twist HT Universal Adapter System

Despite the decreasing cost of sequencing, research efforts in human genotyping, consumer genomics, and agricultural biology face challenges with the economics of highly multiplexed library preparation. Moreover, limits on sample multiplexing are often dictated by the availability of just a few hundred indexes. Twist's newest HT Universal Adapter System shatters the upper bounds on available unique dual indexing systems, offering an industry-leading 3,072 total indexes for maximum throughput.

These purpose-built high throughput indexes are available in either 96-well or 384-well configurations for use with liquid handling robots. All index sequences were optimized for use on the NovaSeq platform, and are supplemented by robust quality control to minimize cross-contamination. Twist's HT UDI primers are fully interchangeable with Twist's standard UDIs in all Twist library preparation workflows.

TWIST HT UNIVERSAL ADAPTER SYSTEM	TWIST UNIVERSAL ADAPTER SYSTEM
Contains: • Twist Universal Adapters • Twist HT UDI Primers	Contains: • Twist Universal Adapters • Twist UDI Primers
Up to **3,072** unique dual index primer pairs	Up to **384** unique dual index primer pairs
Indexes available in **96-well** plates or **384-well** plates	Indexes available in **96-well** plates
Orderable in sets as low as **384 samples**	Orderable in sets as low as **16 samples**
Compatible with all Twist library preparation protocols, including Twist Enzymatic and Mechanical Fragmentation kits.	

Twist Universal Adapters are a component of the Twist portfolio of products for NGS Target Enrichment.

LEARN MORE
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PRODUCT SKUS

Twist HT Universal Adapter System TruSeq Compatible

106390: 96W AAA01-04	**106401:** 384W AAA01
106391: 96W AAA05-08	**106402:** 384W AAA02
106392: 96W AAA09-12	**106403:** 384W AAA03
106393: 96W AAA13-16	**106404:** 384W AAA04
106396: 96W BBB01-04	**106405:** 384W BBB01
106398: 96W BBB05-08	**106406:** 384W BBB02
106399: 96W BBB09-12	**106407:** 384W BBB03
106400: 96W BBB13-16	**106408:** 384W BBB04

Twist Universal Adapter System TruSeq Compatible

101307: 16 Samples
101308: 96 Samples, Plate A
101309: 96 Samples, Plate B
101310: 96 Samples, Plate C
101311: 96 Samples, Plate D