

xGen[®] Duplex Seq Adapters—Tech Access

The xGen Duplex Seq Adapters contain an equimolar pool of duplexed adapters, each containing a 3 bp unique molecular identifier (UMI). These molecular identifiers tag both strands of input DNA, and enable the identification and removal of errors that commonly arise during sample preparation, target enrichment, and sequencing. The xGen Duplex Seq Adapters are specifically suited for somatic discovery and ultra-low frequency allele detection applications. The xGen Duplex Seq Adapters are compatible with library preparation kits that require T-A ligation steps.

The xGen Duplex Seq Adapters are delivered with a final amount of 2 nmol at a concentration of 15 μ M in 30 mM HEPES, pH 7.5; 100 mM potassium acetate.

Note: This product does not include the full-length Illumina P5 and P7 adapter sequences, or sample index. The P5/P7 adapter sequences with sample indexes need to be ordered separately.

PCR amplification must be performed to obtain sequence-ready libraries. IDT's recommended primer sequences include a unique, dual-index design. For primer sequences and ordering information, visit www.idtdna.com/duplexseq-techaccess.

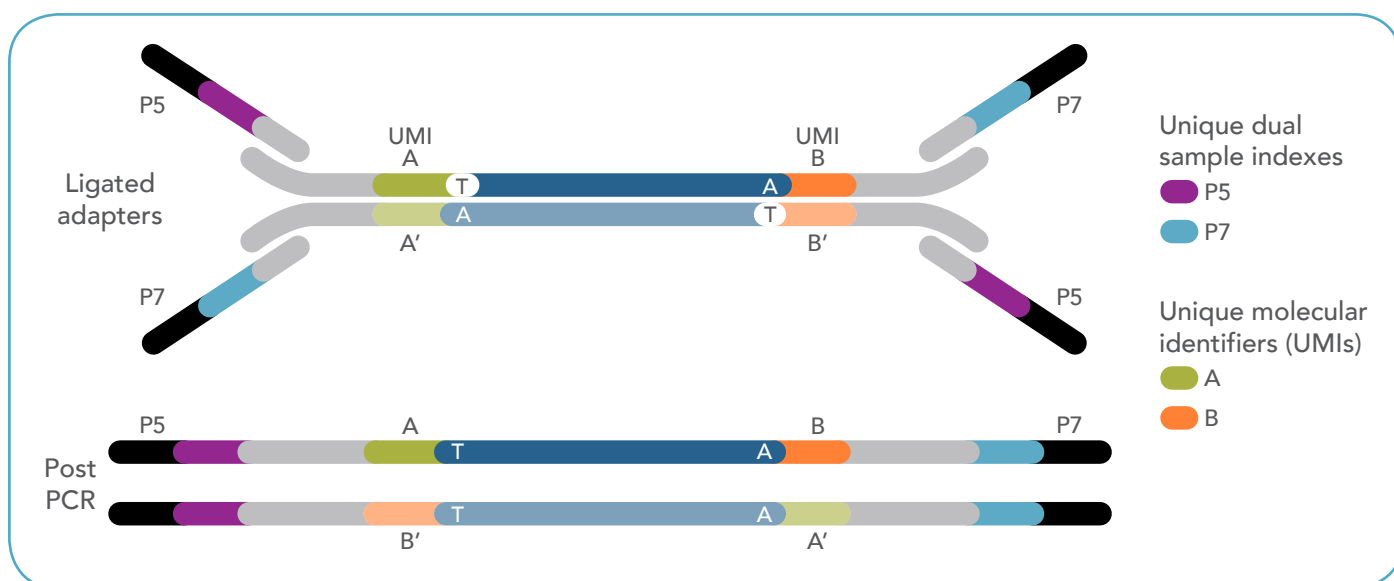


Figure 1. xGen Duplex Seq Adapters enable use of genetic information embedded in both DNA strands. xGen Duplex Seq Adapters are designed to be compatible with standard library construction methods. Adapters contain 3'-dTTP overhangs, which are ligated to 3'-dA-tailed inserts. xGen Duplex Seq Adapters incorporate degenerate UMIs to tag double-sequencing molecules in the ligation step and unique, dual sample indexes are incorporated by PCR amplification. During post-sequencing analysis, the top and bottom strands of original DNA input molecules can be paired back together to help identify errors introduced in the workflow.

Instructions for use

Use xGen Duplex Seq Adapters for library preparation on Illumina sequencers. The required concentration of adapters is dependent on the amount of input DNA as well as the kit used for library preparation. The number of PCR cycles may need to be optimized relevant to the desired yield. Always follow the instructions of the library kit manufacturer when using the xGen Duplex Seq Adapters.

Duplex UMI-aware analysis requires sequencing-duplicated reads to build consensus sequences. Optimization of consensus read construction may be needed to ensure optimal error correction. For data analysis guidelines, visit the **Resources** section at www.idtdna.com/duplexseq-techaccess.

Shipping, handling, and storage

xGen Duplex Seq Adapters are shipped on dry ice.

- Upon receipt, immediately store the adapters at -25°C to -15°C .
- Do not heat adapters above room temperature (15 – 25°C).
- Thaw adapters on ice before use and keep on ice during experimental setup.
- Avoid repeated freeze-thaw cycles.

If dilution is required, use Nuclease-Free Duplex Buffer (Cat # 11-01-03-01).

For Research Use Only. Not for use in diagnostic procedures.

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