

xGEN™ ADAPTERS

Single-use, TA-ligation-ready adapters



**Our NGS quality control
minimizes risk of mis-assignment**



**UDI is the standard for data
accuracy and confidence**



**Pre-configured and
ready-to-ship**

xGen Adapters bring you preconfigured and stocked adapter options with smaller reaction sizes, which translates to cost and time-saving advantages. The adapters can be used with TruSeq™-compatible TA-ligation libraries, such as those produced using the **Lotus™ DNA Library Prep Kit**. These adapters use 8 bp unique dual index (UDI) sequences to remove index-hopping reads and cross-contamination.

These adapters are available as universal stubby-Y adapters or as full-length designs with unique molecular identifiers (UMI) to track individual molecules. IDT-developed sample indexes are compatible with 2- and 4-color Illumina sequencing platforms, ensuring good sequencing quality. Methylated options are available for bisulfite sequencing (Methyl-Seq). The UDI design uses an edit distance of ≥ 3 , which prevents demultiplexing errors. See Table 1 to identify the best adapter for your experiment.

Table 1. Choosing the best adapter for your application

Application	Best choice	Rationale
PCR-free whole genome sequencing (WGS)	xGen UDI-UMI Adapters	Full-length adapters are required for PCR-free applications
PCR-free metagenomics		
PCR-free sequencing (≥ 100 ng input)		
Low-level mutation detection (down to ~1% frequency)	xGen Methyl UDI-UMI Adapters	Increased sensitivity: use UMI consensus analysis to remove sequencing errors
RNA-seq starting with full-length, double-stranded, cDNA input		
Methyl-Seq	xGen Stubby Adapters and UDI Primer Pairs (methylated option)	Methylated cytosines are required for bisulfite conversion
WGS	xGen Stubby Adapters and UDI Primer Pairs	Simple workflow: prepare your ligation master mix with a universal adapter and introduce sample barcodes via PCR
Metagenomics (1–250 ng input)		
Exome sequencing		
Targeted germline sequencing (SNPs, indels)		

TruSeq is a trademark of Illumina, Inc. and is used with permission.

> WWW.IDTDNA.COM

ADAPTER LIGATION OPTIONS

One of 2 different adapter structures—xGen UDI-UMI Adapters (indexed full-length adapters) or the xGen Stubby Adapter and UDI Primers (universal duplex adapters + indexed primer mix)—are attached to DNA library fragments. Typically, the duplex adapters are ligated directly to sample DNA fragments. When using the xGen Stubby Adapter, a PCR step adds the indexed primers (included with the adapters) to the ligated stubby-Y adapters. Figure 1 provides a comparison of these structures.

A. xGen UDI-UMI Adapters



B. xGen Stubby Adapter and UDI primers

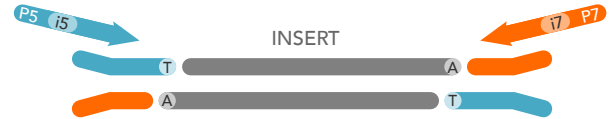


Figure 1. Adapter structures.

COMPLETE WORKFLOW FOR HYBRIDIZATION CAPTURE EXPERIMENTS

The IDT DNA library prep kit paired with xGen Adapters creates libraries that are compatible with xGen hybridization capture probes and reagents for targeted next generation sequencing (Figure 2). For custom options, use our [Custom Adapter Configurator tool](#).

Prepare libraries

IDT library prep kit and xGen adapters

Perform hybridization capture

xGen hybridization capture probes and reagents

Sequence libraries and analyze data

Illumina platforms

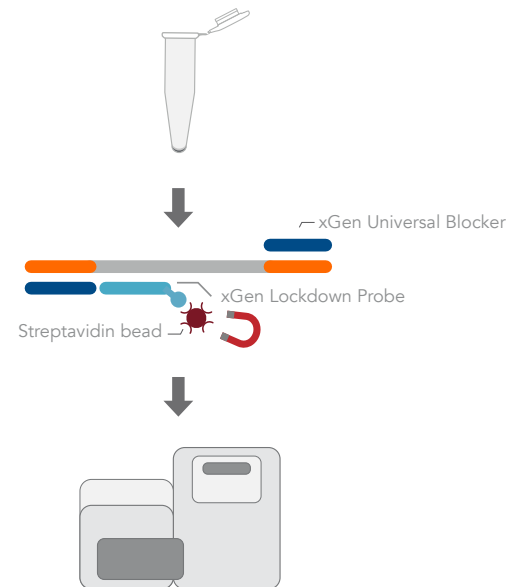


Figure 2. Overview of hybridization capture sequencing workflow.

ORDERING INFORMATION

Product	Size	Catalog #
xGen UDI-UMI Adapters	varies	www.idtdna.com/UDI-UMI
xGen Methyl UDI-UMI Adapters	varies	www.idtdna.com/UDI-UMI
xGen Stubby Adapter and UDI Primer Pairs	varies	www.idtdna.com/stubby-UDI

> FOR MORE INFORMATION, VISIT WWW.IDTDNA.COM/NGS-ADAPTERS.

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

© 2020 Integrated DNA Technologies, Inc. All rights reserved. xGen and Lockdown are trademarks of Integrated DNA Technologies Inc. and are registered in the USA. Lotus is a trademark of Integrated DNA Technologies, Inc. TruSeq is a trademark of Illumina, Inc. and is used with permission. For specific trademark and licensing information, see www.idtdna.com/trademarks. NGS 3418 1120