

# xGEN™ UNIVERSAL BLOCKERS

Improve on-target results during targeted sequencing



Maximize cost-efficiency by improving on-target results in singleplex and multiplex capture



Effectively block a variety of index adapter designs with proprietary sequence modifications



Eliminate complicated blocker selection by using worry-free formulations

xGen Universal Blockers bind to library adapter sequences to reduce off-target capture during library enrichment, increasing specificity and cost-efficiency. Incorporating proprietary oligonucleotide modifications, xGen Universal Blockers deliver consistent on-target sequencing results. Choose from inventoried or custom blocking oligos to suit your specific requirements.

xGen Universal Blockers are compatible with all xGen Hyb Panels and Probes. Each blocking oligo is individually synthesized and quality controlled by mass spectrometry. xGen Universal Blockers can also be synthesized under a quality management system certified to ISO 13485:2016.

## xGEN UNIVERSAL BLOCKERS

These proprietary mixes have been designed to block Illumina® platform adapters using a single, optimized blocker mix. xGen Universal Blockers are available in 16-, 96-, and 4 x 96-reaction formats for convenient experimental design and use with any xGen Predesigned or Custom Hyb Panel. The preformulated xGen Universal Blockers also eliminate resuspension errors and reduce steps in the target capture workflow (Figure 1).

**xGen Universal Blockers—TS Mix** is designed for use with ligation-based library preparation techniques, such as xGen Library Prep Kits (IDT) or TruSeq® library kits (Illumina) with 6- and 8-base, single- and dual-indexing schemes.

**xGen Universal Blockers—10 bp TS Mix** is compatible with ligation-based library prep kits that use 10 bp dual-indexing.

**xGen Universal Blockers—NXT Mix** is designed for use with Nextera® library kits (Illumina) with 8- and 10-base dual-indexing schemes.

## CUSTOM xGEN UNIVERSAL BLOCKING OLIGOS

Custom xGen Universal Blocking Oligos are available for other sequencing platforms and some specialized applications. For design and ordering support, email [applicationsupport@idtdna.com](mailto:applicationsupport@idtdna.com).



**Figure 1. xGen target capture workflow.** xGen Universal Blockers bind to adapter sequences during target enrichment using xGen Hyb Panels.

> [WWW.IDTDNA.COM](http://WWW.IDTDNA.COM)

## PAIR ADAPTER WITH THE RIGHT BLOCKER

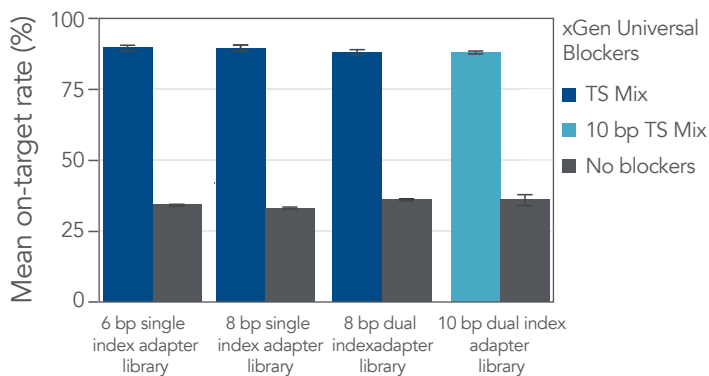
Adapter type*	Recommended IDT blocker
Single index, TruSeq or similar adapter type, 6- or 8-base index	
Dual index, TruSeq or similar adapter type, 8-base index (combinatorial or unique dual) (e.g., TruSeq-compatible adapters with 8-base index)	TS Mix
Dual index, TruSeq or similar adapter type, 10 bp index (e.g., TruSeq-compatible adapters with 10-base index)	10 bp TS Mix
Dual Index, Nextera libraries, 8- or 10-base index (e.g., Nextera-compatible adapters with 8- or 10-base index)	NXT Mix

\*For more information about adapters, visit [xGen™ NGS Adapters & Indexing Primers](#).

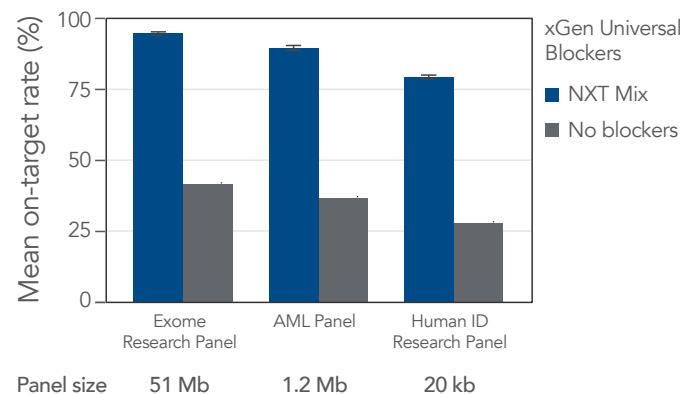
## HIGH ON-TARGET PERFORMANCE

xGen Universal Blockers increase on-target results of xGen Hyb Panels across adapter types and large or small capture panels (Figure 2).

A. On-target rate across adapter types



B. On-target rate across panels



**Figure 2. Improved on-target results delivered by xGen Universal Blockers.** (A) DNA libraries were prepared from cell line NA12878 DNA (Coriell) using a ligation-based library prep kit and TruSeq™-compatible full-length adapters, and were enriched using the xGen AML Cancer Panel with the appropriate blocking oligo (TS Mix or 10 bp TS Mix). (B) Cell line NA12878 DNA (Coriell) was used for library preparation using the Nextera DNA Library Preparation Kit for Enrichment (Illumina). Amplified libraries were enriched using the xGen Exome Panel, xGen AML Cancer Panel, and the xGen Human ID Research Panel, with xGen Universal Blockers—NXT Mix. Sequencing was performed on a NextSeq™ system (Illumina) to generate 2 x 75 bp paired-end reads. The addition of xGen Universal Blockers improved mean on-target rate between 50–60%, regardless of the library type or Hyb Panel used.

## ORDERING INFORMATION

Product	Size	Catalog #
xGen Universal Blockers—TS Mix	16 rxn	1075474
	96 rxn	1075475
	4 x 96 rxn	1075476
xGen Universal Blockers—10 bp TS Mix	16 rxn	1081100
	96 rxn	1081101
	4 x 96 rxn	1081102
xGen Universal Blockers—NXT Mix	16 rxn	1079584
	96 rxn	1079585
	4 x 96 rxn	1079586

- > FOR MORE INFORMATION AND TO ORDER, VISIT [WWW.IDTDNA.COM/BLOCKERS](http://WWW.IDTDNA.COM/BLOCKERS).
- > FOR INFORMATION ABOUT GMP BLOCKING OLIGOS, **CONTACT US**.

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