

xGen® Blocking Oligos

Achieve more reliable sequencing through higher on-target performance.

xGen Blocking Oligos prevent adapter cross-hybridization and minimize off-target capture, increasing specificity and cost-efficiency. Incorporating proprietary oligonucleotide modifications, xGen Blocking Oligos deliver higher on-target sequencing results. Choose from a variety of industry-leading oligonucleotide blockers to suit your specific requirements.

xGen Blocking Oligos are compatible with all xGen Lockdown® Panels and Probes (Figure 1). Each blocking oligo is individually synthesized and QC tested by mass spectrometry. Additional functional validation is performed for predesigned universal blockers to provide superior performance and consistent results.

xGen Blocking Oligos for diagnostics are also available. Contact GMPinfo@idtdna.com for more information.

xGen Universal Blockers—TS Mix

xGen Universal Blockers—TS Mix is a specially formulated blend of IDT's industry leading Universal Blocking Oligos recommended for Illumina single- and dual-index adapters. This ready-to-use, single-tube mix prevents adapter cross-hybridization to deliver optimal on-target sequencing performance and reduce overall sequencing costs. xGen Universal Blockers are available in 16-, 96-, and 384-reaction formats for convenient experimental design and use with any xGen Lockdown Panel or xGen Lockdown Probe set.

Individual xGen Universal Blocking Oligos for Illumina and Ion Torrent® platforms are also available. Visit www.idtdna.com/blockers for more information.

xGen Standard Blocking Oligos

Standard blockers are individual, made-to-order oligonucleotides that target specific adapter sequences. These are available for Illumina and Ion Torrent adapters.

xGen Custom Blocking Oligos

Universal or Standard Blocking Oligos can be ordered with custom modifications, additional purification services, or specific delivery amounts for applications that require specialized blockers.

benefits

Improve on-target capture with industry-leading blocking oligos.

Attain more cost-effective sequencing with improved on-target rates.

Select the most appropriate blocking oligos for your needs from a variety of options.

Discover more at www.idtdna.com/xGen

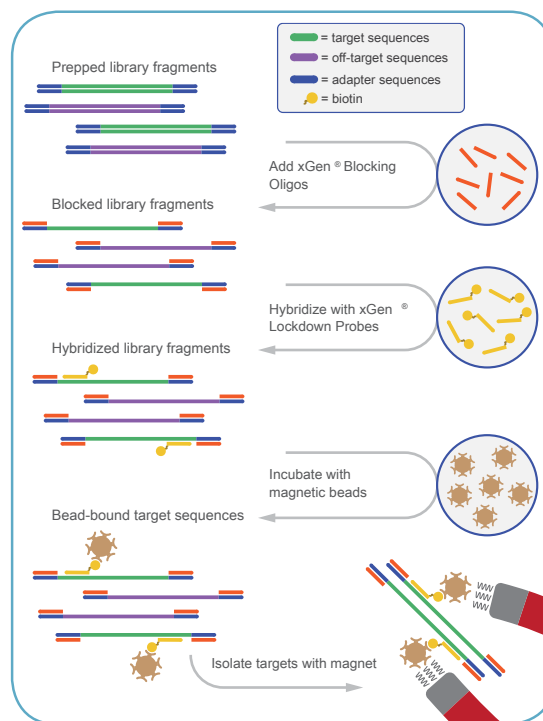


Figure 1. xGen® target capture workflow. xGen Blocking Oligos improve enrichment performance by binding to platform-specific adapters to prevent cross-reactivity between library fragments. xGen Lockdown® probes bind to target regions of interest during in-solution hybrid capture. Targeted regions are then pulled out of solution using streptavidin beads.

High on-target performance with xGen Universal Blockers—TS Mix

xGen Universal Blockers, used either as individual blocking oligos or as the convenient TS Mix, increase on-target performance of xGen Lockdown Probes (Figure 2). The pre-formulated xGen Universal Blockers—TS Mix also eliminates resuspension errors and reduces steps in the target capture workflow.

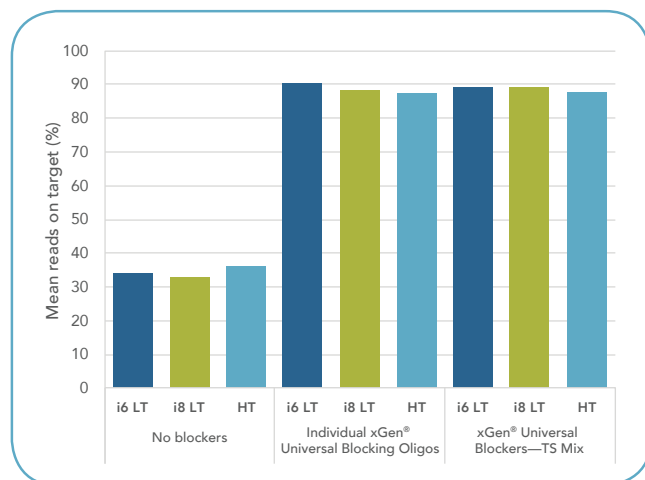


Figure 2. Improved on-target performance delivered by xGen® Universal Blockers—TS Mix or individual xGen Universal Blocking Oligos. DNA libraries were prepared from cell line NA12878 (Coriell) using the KAPA Hyper DNA Library Prep Kit for Illumina. Libraries were enriched using the xGen AML Cancer Panel 1.0 and sequenced on a MiSeq® System (Illumina) to generate 150 bp, paired-end reads. On-target values (with 150 bp flank) were averaged across experiments, demonstrating over 87% on-target rate for all tested conditions using blocking oligos.

Consistent performance across protocols using xGen Universal Blockers—TS Mix

The versatility of xGen Universal Blockers—TS Mix enables its use in singleplex or multiplex capture with reliable on-target performance (Figure 3A). Additionally, Universal Blockers—TS Mix has been designed for use with Illumina LT and HT adapter-ligated libraries, providing equivalent, effective blocking of both adapter types with a single mix (Figure 3B).

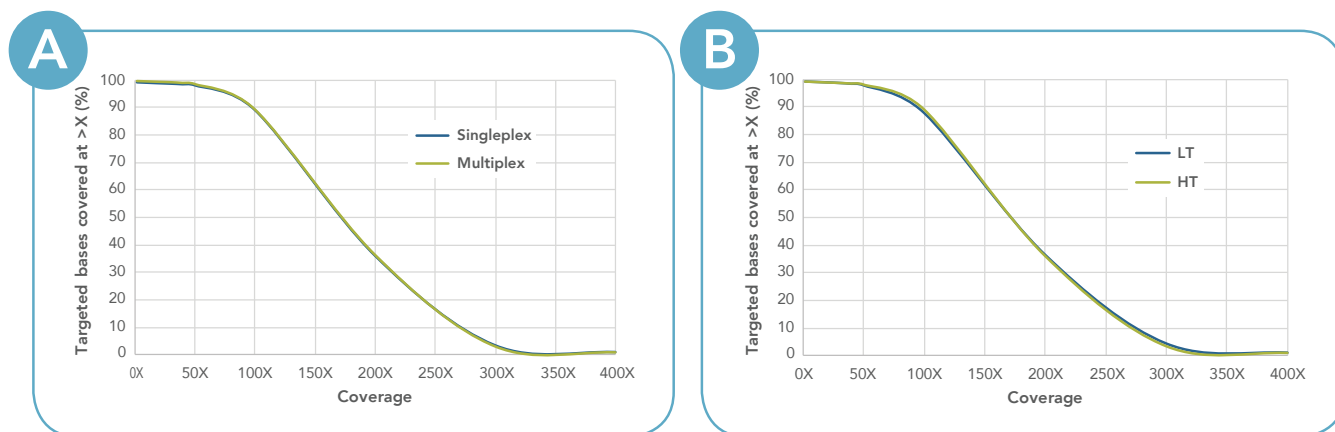


Figure 3. Consistent performance of multiplex enrichment and effective blocking of LT and HT adapters using xGen® Universal Blocker—TS Mix. Cell line NA12878 (Coriell) was used for library preparation, libraries were enriched using the xGen AML Cancer Panel v1.0 with xGen Universal Blockers—TS Mix, and sequencing was performed on a MiSeq® system (Illumina) to generate 150 bp paired-end reads. **(A)** DNA libraries (500 ng/sample) were enriched in singleplex HT (n = 12) or multiplex HT (n = 4) reactions before sequencing. No difference in performance was observed. **(B)** Enriched DNA libraries incorporating LT (n = 12) or HT (n = 12) adapters were sequenced. Comparable target coverage was demonstrated for the LT and HT adapter libraries.

Ordering information

Universal Blocking Oligos for Illumina Adapters

Product	Unit size	Catalog #
xGen® Universal Blockers—TS Mix	16 reactions	1075474
	96 reactions	1075475
	4 x 96 reactions	1075476

For our full range of inventoried and custom blocking oligos, visit www.idtdna.com/blockers.

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