



gBlocks™ Gene Fragments & gBlocks HiFi Gene Fragments

Genomic research starts here



Dependably fast
delivery times



Minimal screening
effort



Easy ordering &
dedicated support



Application & budget
flexibility

Designed for a variety of applications

gBlocks™ Gene Fragments are double-stranded DNA fragments of 125–3000 bp in length using the highest fidelity Ultramer™ oligos to deliver superior performance for cloning workflows. These gene fragments are designed for affordable and easy gene construction or modification, for use in applications such as antibody research and CRISPR-mediated genome editing, qPCR controls, and more. gBlocks Gene Fragments are available as DNA libraries as well. gBlocks Libraries can be designed with variable bases (N, K) to generate sequence diversity. Up to 18 sequential variable bases including N, K, or others, can be incorporated into 251–500 bp gene fragments. gBlocks Gene Fragment Libraries are ideal for generating recombinant antibodies, or for protein engineering, enabling researchers to generate hundreds of thousands of constructs within a reasonable budget.

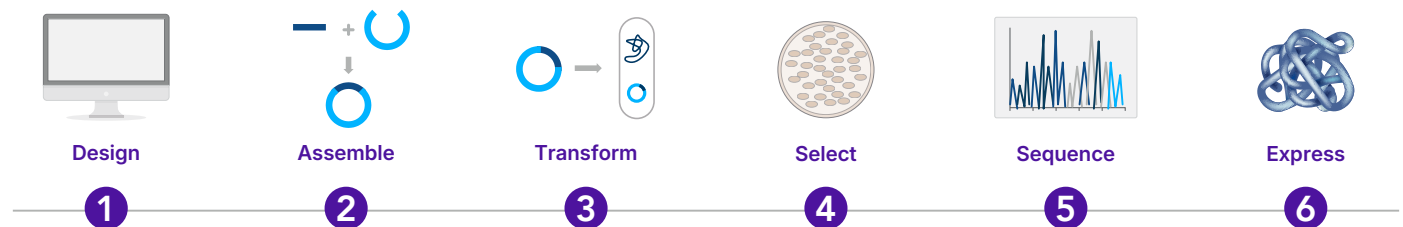


Figure 1. Alt-R CRISPR enzymes are stable and retain performance throughout a variety of storage conditions.

Quality controls for high cloning efficiency and fidelity

Rigorous quality control and precise error correction processes at IDT lead to high cloning efficiency*, so that cloning each IDT gene fragment will result in most of the recombinant colonies containing the desired insert (see [Table 1](#)). gBlocks HiFi Gene Fragments, between 1000–3000 bp with a median error rate of less than 1:12000 bp, are sequence verified via next-generation sequencing (NGS). These high-quality, high-fidelity fragments facilitate the assembly of large and complex sequences, matching both the length and accuracy needed to minimize the introduction of unwanted errors.

*Cloning efficiency is affected by many factors, including the cloning method, cell line and plasmid stability, vector preparation, and cellular stress from expressing toxic proteins.



Comparison data demonstrates idt's improved fidelity versus other suppliers

In a head-to-head comparison study against two other DNA synthesis suppliers, IDT's proprietary synthesis and error correction processes resulted in gene fragments with lower error rates. Low error rates ensure more correct clones, allowing researchers to reduce the number of colonies needed to screen by as much as 50%.

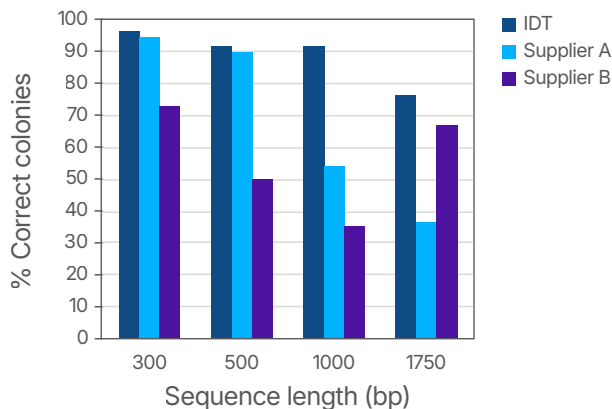


Figure 2. IDT's Gene Fragments produce a higher percentage of correct colonies when compared to two other suppliers. Based on screening and sequencing of 24 colonies per sequence, IDT's fragments were the only fragments to have greater than 75% correct colonies selected with the desired full-length sequence, and the only gene fragments to achieve greater than 90% correct colonies selected for fragments that were 1kb or less in length.

Sequence length (bp)	gBlocks Gene Fragments (colonies)	gBlocks HiFi Gene Fragments (colonies)
<1000	2–3	N/A
1001–2000	3	2
2001–3000	4	2

Table 1. gBlocks Gene Fragments reduce the time and expense of screening colonies. Table 1 shows the typical colony screening requirements, using approximate number of colonies to screen for a 90% chance of getting a correct clone.

Compatible with multiple cloning methods and workflows

IDT gBlocks Gene Fragments are compatible with many cloning and assembly kits and automation platforms, allowing easy assembly of your desired construct sequence using your preferred cloning method. Methods include traditional cloning, Gibson Assembly®, Golden Gate, Gateway®, TOPO™/TA cloning, blunt-end cloning, and others. Available as either modular, linear sequences or pooled sequences, gBlocks Gene Fragments fit seamlessly into your workflow.

Product specifications

	gBlocks Libraries	gBlocks Gene Fragments	gBlocks HiFi Gene Fragments
Sequence Length	251–500 bp	125–3000 bp	1000–3000 bp
Median Error Rate	N/A	1:5000 bp	1:12000 bp
Estimated shipping time (business days)	10–15	2–8	6–10
Yield	200 ng	250–1000 ng	1000 ng
Format	Tube	Tube/Plate	Tube

*Shipping time is dependent on the length and complexity of the gBlocks and gBlocks HiFi Gene Fragments ordered. In a few cases, shipping time may exceed the estimated time.

Commitment to Sustainability

IDT has implemented sustainable manufacturing practices, including a reagent reuse program to minimize hazardous waste.

For more information, visit www.idtdna.com/gblocks



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