**gBlocks™ Gene Fragments**

& **gBlocks HiFi Gene Fragments**

Genomic research starts here

---

**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.

---

**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.

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

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

* 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.

For Research Use Only. Not for use in diagnostic procedures. Unless otherwise agreed to in writing, IDT does not intend these products to be used in clinical applications and does not warrant their fitness or suitability for any clinical diagnostic use. Purchaser is solely responsible for all decisions regarding the use of these products and any associated regulatory or legal obligations.

© 2022 Integrated DNA Technologies, Inc. All rights reserved. gBlocks and Ultramer are trademarks of Integrated DNA Technologies, Inc. and registered in the USA. All other marks are the property of their respective owners. For specific trademark and licensing information, see www.idtdna.com/trademarks. Doc ID: RUO21-0628_001 03/22