invitrogen
by life technologies

GeneArt® Gene Synthesis Kit

Cat. nos.:	Size:	Storage:
A14971	10 reactions	See below

Pub. Part no. 100017339 **Pub. no.** MAN0007223 **Rev.** 1.00

Description

The GeneArt® Gene Synthesis Kit is a complete do-it-yourself gene synthesis kit that includes all the reagents necessary to perform 10 gene synthesis reactions from oligonucleotide assembly to gene cloning. The kit relies on polymerase cycling assembly of synthetic oligonucleotides into a full-length gene or a DNA fragment. The majority of mismatch and frameshift mutations introduced into the assembled gene or DNA fragment as a result of errors present in the starting synthetic oligonucleotides are removed in the CorrectASE™ error correction step before the final amplification and cloning (see **GeneArt® Gene Synthesis Workflow**, page 3).

Shipping and Storage

The GeneArt® Gene Synthesis Kit is shipped in separate boxes as described below, and contains sufficient reagents to perform 10 gene synthesis reactions. Upon receipt, store each box as detailed. All reagents are guaranteed for six months if stored properly.

Box	Component	Shipping	Storage*
1	GeneArt® Gene Synthesis Kit	Dry ice	–20°C
2	DNA Quantitation Module	Gel ice or dry ice	4°C or RT, in the dark
3	One Shot® TOP10 Chemically Competent *E. coli*	Dry ice	–80°C

* You may also store the individual items in each box as indicated on the next page.
RT: room temperature.

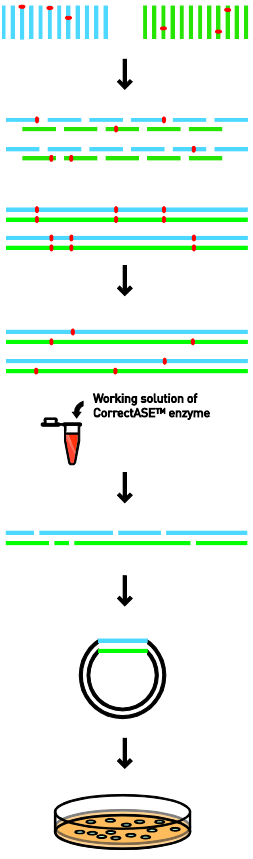
Kit Contents

	Item	Amount	Storage*
Box 1	Platinum® *Pfx* DNA Polymerase, 2.5 U/µL	12 µL	–20°C
	10 mM dNTP Mix	50 µL	–20°C
	5X Platinum® *Pfx* PCR Buffer	400 µL	–20°C
	50 mM Magnesium Sulfate	1 mL	–20°C
	CorrectASE™	10 µL	–20°C
	10X CorrectASE™ Reaction Buffer	500 µL	–20°C
	5 mM EDTA	1.3 mL	4°C or RT
	pCR™-Blunt II-TOPO®	20 µL	–20°C
	TOPO® Salt Solution	50 µL	4°C or RT
	Sterile Water	1 mL	4°C or RT
	Control Template – T800 (0.1 µg/µL)	10 µL	–20°C
	CAT Oligo Set	50 µL	–20°C
	CAT PCR Primers (10 mM each)	10 µL	–20°C
	M13 forward sequencing primer (10 mM)	20 µL	–20°C
	M13 reverse sequencing primer (10 mM)	20 µL	–20°C
Box 2	Quant-iT™ PicoGreen® dsDNA Reagent	100 µL	–20°C or 4°C, in the dark
	20X TE	2 × 1 mL	4°C or RT
	Lambda DNA Standard (100 µg/µL)	100 µL	4°C
Box 3	One Shot® TOP10 Chemically Competent *E. coli*	21 × 50 µL	–80°C
	S.O.C. medium	6 mL	4°C or RT
	pUC19 control DNA (10 pg/µL)	50 µL	–20°C

* For convenience, you may store the entire Box 1 at –20°C, Box 2 at 4°C in the dark, and Box 3 at –80°C. RT: room temperature.

GeneArt® Gene Synthesis Workflow

For detailed protocols, refer to the GeneArt® Gene Synthesis Kit user guide available at **www.lifetechnologies.com/manuals**.



Step 1:
Develop your DNA assembly strategy and design your oligonucleotides

Step 2:
Perform the primary PCR assembly and amplification to generate the full-length synthetic gene.

Step 3:
Quantitate the initial assembled gene using the Quant-iT™ PicoGreen® dsDNA reagent.

Step 4:
Denature and reanneal the gene to create mismatches and perform error correction using the CorrectASE™ enzyme.

Step 5:
Perform the final PCR amplification of the full-length synthetic gene and purify.

Step 6:
TOPO® clone your synthetic gene into pCR™-Blunt II-TOPO® vector.

Step 7:
Transform the plasmid construct containing the synthetic gene into One Shot® TOP10 Chemically Competent *E. coli*.

Step 8:
Pick 2–4 transformants and screen for the correct clone by sequencing.

Technical Support

For additional product and technical information, such as Safety Data Sheets (SDS), Certificates of Analysis, etc., visit our website at **www.lifetechnologies.com**. For further assistance, email our Technical Support team at **techsupport@lifetech.com**.

Limited Product Warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at **www.lifetechnologies.com/termsandconditions**. If you have any questions, please contact Life Technologies at **www.lifetechnologies.com/support**.

Disclaimer

LIFE TECHNOLOGIES CORPORATION AND/OR ITS AFFILIATE(S) DISCLAIM ALL WARRANTIES WITH RESPECT TO THIS DOCUMENT, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. TO THE EXTENT ALLOWED BY LAW, IN NO EVENT SHALL LIFE TECHNOLOGIES AND/OR ITS AFFILIATE(S) BE LIABLE, WHETHER IN CONTRACT, TORT, WARRANTY, OR UNDER ANY STATUTE OR ON ANY OTHER BASIS FOR SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, MULTIPLE OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THIS DOCUMENT, INCLUDING BUT NOT LIMITED TO THE USE THEREOF.

Limited Use License

Limited Use Label License: Research Use Only - The purchase of this product conveys to the purchaser the limited, non-transferable right to use the purchased amount of the product only to perform internal research for the sole benefit of the purchaser. No right to resell this product or any of its components is conveyed expressly, by implication, or by estoppel. This product is for internal research purposes only and is not for use in commercial applications of any kind, including, without limitation, quality control and commercial services such as reporting the results of purchaser's activities for a fee or other form of consideration. For information on obtaining additional rights, please contact **outlicensing@lifetech.com** or Out Licensing, Life Technologies, 5791 Van Allen Way, Carlsbad, California 92008.

For support visit www.lifetechnologies.com/support or email
techsupport@lifetech.com
www.lifetechnologies.com

life technologies™

11 September 2012