



i7® High-Fidelity DNA Polymerase

Manual

Catalog #	3254	3255
Package Size	200 units	500 units
Concentration	2 units/ μ l	



Important!

-20°C Storage Required

- * Immediately inspect packages
- * Freeze upon receipt



visit us online for more
products & custom services

Intact Genomics, Inc.

Table of Contents

Product Description.....	3
Protein Purity.....	3
Product Source.....	3
Applications.....	3
Product Components.....	3
Storage.....	3,4
Heat Inactivation.....	4
Quality Control.....	4
Unit Definition.....	4
Comparison Data.....	4
Protocol.....	5
Related Products.....	6
Ordering Information.....	6
Technical Support.....	7

Description:

Intact Genomics (ig[®]) i7[®] High-Fidelity DNA Polymerase is a genetically engineered, heat stable DNA polymerase which has 5'→3' polymerase and 3'→5' exonuclease (proofreading) activities. This enzyme has the high-fidelity, sensitivity and processivity with an error rate $\sim 2.8 \times 10^2$ -fold lower than *Taq* DNA polymerase, and significantly lower than the error rates of other proofreading enzymes in the marketplace (1). i7[®] High-Fidelity DNA Polymerase is ideal for cloning and can be used for long (up to 20kb) or difficult amplicons. This product is supplied with the Intact Genomics proprietary 2.5 x i7[®] PCR reaction buffer containing MgCl₂ with a final (1x) concentration of 2 mM. This buffer allows for amplification of non GC rich templates and of GC rich templates up to 84%.

Protein Purity:

The physical purity of this enzyme is $\geq 98\%$ as assessed by SDS-PAGE with Coomassie[®] blue staining (see figure 1).

Product Source:

E. coli strain expressing genetically engineered i7[®] High-Fidelity DNA Polymerase gene.

Applications:

- Long and difficult template DNA amplification
- Cloning
- High-fidelity PCR

Product Components:

- i7[®] High-Fidelity DNA Polymerase
- 2.5x i7[®] PCR Buffer with Mg²⁺

Storage Buffer:

50 mM Tris-HCl, 50 mM KCl, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, pH 7.5 @ 25°C

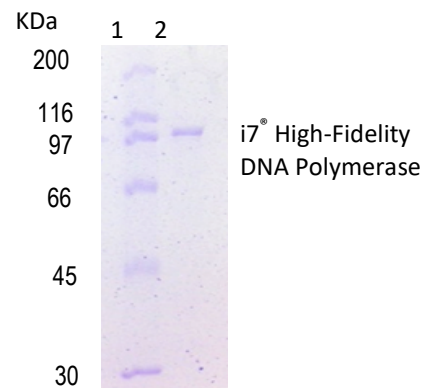


Figure 1:
Lane 1. Protein marker
Lane 2. i7[®] High-Fidelity DNA Polymerase

Storage Temperature:

-20°C

Heat Inactivation:

No

Quality Control Assays:

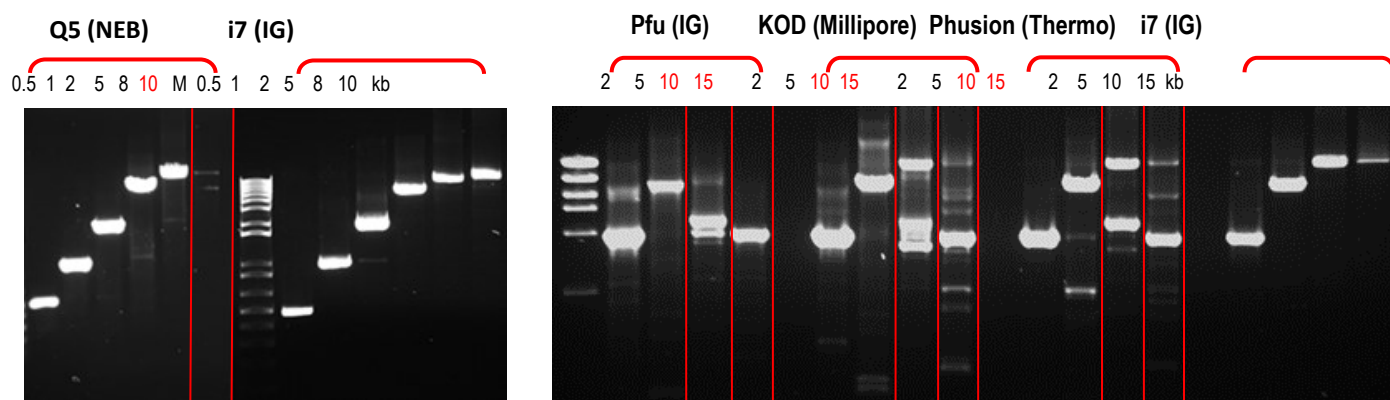
i7® High-Fidelity DNA Polymerase is free from detectable nuclease activities.

Unit Definition:

One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTP into acid-insoluble form in 30 minutes at 72° C.

Comparison Data:

We have tested i7® High-Fidelity DNA Polymerase activity with λ DNA and other difficult templates for PCR amplification up to 20kb. Intact Genomics (IG) i7 High-Fidelity DNA Polymerase generates robust and high-quality PCR products in comparison with other high-fidelity DNA polymerases available in the marketplace (data shown below):



Protocol:

1. Thaw 2.5x i7® PCR Buffer, dNTP mix, primer solutions, and mix thoroughly before use.
2. Prepare a reaction mix according to the following table: (The reaction mix typically contains all the components needed for PCR, except the template DNA.)

PCR Reaction Set Up:	
Template DNA	x µl (0.01-0.5 µg)
2.5 x i7 PCR Buffer	20.0 µl
dNTP (10 mM)	1.0 µl
Forward Primer (10 µM)	2.5 µl
Reverse Primer (10 µM)	2.5 µl
i7 High-Fidelity DNA Polymerase (2 U/µl)	0.5 µl
H ₂ O up to	50.0 µl

3. Mix the reaction mixture thoroughly.
4. Add template DNA to the individual PCR tube containing the reaction mixture.
5. Program the thermal cycler according to the manufacturer's instructions. A typical PCR cycling program is outlined in the following table:

PCR Cycling Conditions			
Steps	Temp.	Time	Cycles
Initial denaturation	98 °C	1-2 min	1
Denaturation	98 °C	10-20 sec	25-35
Annealing	54-66 °C	10-30 sec	
Extension	68-72 °C	10-30 sec/kb	
Final extension	68-72 °C	5 min	1
Hold	4-12 °C	∞	

6. Place the PCR tubes in the thermal cycler and start the cycling program.

Related Products:

- *Taq* DNA Polymerase 2x Premix (Cat.# 3249)
- ig[®] 10B Electrocompetent Cells (Cat.# 1212-12)
- ig[®] 10B Chemically Competent Cells (Cat.# 1011-12)
- ig-Fusion™ Cloning Kit (Cat.# 4111)
- i7[®] Hot Start High-Fidelity DNA Polymerase (Cat.# 3281)
- i7[®] High-Fidelity DNA Polymerase 2X Master Mix (Cat.# 3257)

Ordering Information:

- Order online within the USA. Place orders on **www.intactgenomics.com** using our secure Shopping Cart.
- Order by email, phone, or fax.
Email: **sales@intactgenomics.com**
Phone: (314) 942-3655 | Toll-free : 855-835-7172 | Fax: (314) 942-3656
- Order via our distributors.

Intact Genomics owns the following registered trademarks granted by the United States Patent and Trademark Office (USPTO): Intact Genomics®, IG®, ig®, igTherapeutics®, FastAmp®, i7®, DirectPlate®.

All technology protocols discussed within this manual are assumed proprietary to Intact Genomics. This Product may be covered by pending or issued patents or may have certain limitations. Please contact us for more information. Purchase of this material conveys to buyer the non-transferable right to use the material purchased in research conducted by buyer, whether for teaching, non-commercial or commercial research purposes. Buyer may not sell or otherwise transfer these materials, its components, or unmodified descendants to a third party.

Product Use Limitation and Disclaimers

This product is for research purposes only. It is not intended for therapeutic or diagnostic purposes in humans or animals. This product contains chemicals which may be harmful if misused or direct human contact is made.

Intact Genomics is dedicated to practicing and maintaining science and technology ethics. Buyer agrees to use the purchased materials in full compliance with applicable law and regulations.

Technical Support & Customer Services

Intact Genomics (IG®) is dedicated to customer satisfaction regarding the use of our products for your research needs. Each new lot of our products is thoroughly tested to ensure it meets high quality standards and provides excellent results. We appreciate your business and your feedback regarding the performance of our products in your applications. Please follow the instructions carefully and contact us if additional assistance is needed.

Our hours are Monday - Friday, 8AM to 5PM, U.S. Central Standard Time.

Intact Genomics, Inc.

11840 Westline Industrial Drive, Suite 120,
St. Louis, MO. 63146, USA

Phone: (314) 942-3655 | **Toll-free :** 855-835-7172 | **Fax:** (314) 942-3656

Email: sales@intactgenomics.com | ig@intactgenomics.com

Website: www.intactgenomics.com

© 2024 Intact Genomics, Inc
All Rights Reserved

