DNA Polymerase I Kit (10 U/µL)

Product Description

DNA Polymerase I is a mesophilic *E. coli* polymerase that catalyzes 5'→3' template-directed DNA synthesis. DNA Polymerase I has 3'→5' exonuclease activity (i.e., proofreading activity) and 5'→3' exonuclease activity. DNA Polymerase I is capable of catalyzing *de novo* synthesis of synthetic homopolymers and provides a convenient method for the preparation of a variety of defined DNA substrates in the laboratory.

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Kit Contents

Kit	Kit Code	Description	Component Volume
			250 µL kit (2.5 kU)
DNA Polymerase I (10 U/µL)	**7K0113-250UL**	DNA Polymerase I (10 U/µL)	250 µL

For custom formats, contact the **Sales Team** at sales@watchmakergenomics.com.

Product Applications*

- Second-strand synthesis
- Nick translation

*Watchmaker Genomics has not tested or validated DNA Polymerase I in all applications listed.

Unit Definition and Buffer Composition

- One unit is defined as the amount of enzyme that will incorporate 300 nmol of dNTPs into a DNA template in 60 minutes at 37°C.
- Enzyme Storage Buffer: 25 mM Tris-HCl, pH 7.4, 0.1 mM EDTA, 50% Glycerol, 1 mM DTT
- Recommended 10X DNA Polymerase I Reaction Buffer (not supplied with the kit): 500 mM Tris-HCl, pH 7.9 at 25°C, 100 mM $MgCl_2$, 10 mM DTT

Storage and Handling

DNA Polymerase I kits are shipped on ice packs. Upon receipt, store all kit components at -20°C. Setup reaction mixes on ice or a cooled reagent block during routine use. Take care to homogenize solutions thoroughly before use and during reaction setup. Do not vortex the polymerase. When stored and handled as indicated, the product will retain full performance until the expiry date printed on the kit box.

Heat Inactivation

75ºC for 20 minutes or 0.25M EDTA at pH 8.0

Recommended Reaction Setup

- Depending on the application, add DNA Polymerase I at 0.25 – 1.0 U/µL and dNTPs at 25 – 100 µM final concentration in 1X DNA Polymerase I reaction buffer.†
- Incubate at 37°C for 30 minutes to 20 hours.
- Stop the reaction by heating at 75°C for 20 minutes to inactivate the enzyme or alternatively stop the reaction by adding an equal volume of 0.25M EDTA pH 8.0.

†DNA Polymerase I reaction buffer and dNTPs are not supplied with the Watchmaker DNA Polymerase I Kit.

Revision History

Version	Description	Date
1.0	• First protocol release	5/2024

WATCHMAKER GENOMICS

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