T4 DNA Polymerase (3 U/µL)

Product Description

T4 DNA polymerase is a mesophilic DNA polymerase that catalyzes 5'→3' synthesis of DNA. T4 DNA polymerase has 3'→5' exonuclease (proofreading) activity but has no 5'→3' exonuclease activity.

Table of Contents

Kit Contents

Kit	Kit Code	Description	Component kU and Volume
			0.75 kU
T4 DNA Polymerase (3 U/µL)	**7K0075-250UL**	T4 DNA Polymerase (3 U/µL)	250 µL

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

Product Applications*

- Gap Filling
- Generation of blunt DNA ends (removal of 3' overhangs or fill in 5' overhangs during end repair and A-tailing)
- Library preparation
- Probe labeling via replacement synthesis

*Watchmaker Genomics has not tested or validated T4 DNA Polymerase in all applications listed.

Unit Definition and Buffer Composition

- One unit is defined as the amount of enzyme that will incorporate 160 nmol of dNTPs into a DNA template in 60 minutes at 37°C.
- Storage Buffer: 100 mM Potassium Phosphate, pH 6.5, 1 mM DTT, 0.1 mM EDTA, 50% Glycerol
- Recommended 10X T4 DNA Pol Reaction Buffer (not provided with kit): 100 mM Tris-HCl pH 7.9, 500 mM NaCl, 100 mM $MgCl_2$, 10 mM DTT

Storage and Handling

T4 DNA polymerase kits are shipped on ice packs. Upon receipt, store all kit components at -25°C to -15°C. Keep all components and 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

75°C for 20 minutes

Recommended Reaction Setup

Blunting Protocol

3'-overhang removal or fill-in of 3' recessed-end utilizing T4 DNA Polymerase

1. On ice, combine components as specified:

Component	Final Concentration	Volume (per 50 µL reaction)
10X Reaction Buffer	1X	5 µL
DNA	0.5 – 2.0 µg DNA	Variable
dNTP	100 µM of each	Variable
T4 DNA pol	1 unit per µg DNA	Variable
Water		Up to 50 µL

2. Incubate as follows:

Purpose	Temp (°C)	Time (min)
Extension	12	15
Inactivation*	75	20

*The reaction can also be stopped by adding 2 µL of 0.5M EDTA

Revision History

Version	Description	Date
1.0	• First protocol release	3/2024

WATCHMAKER GENOMICS

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