

## E. coli Exonuclease III

**CATALOG NO.:** M1223-100  
**AMOUNT:** 10,000 U (100 µl)  
**PRODUCT SOURCE:** Recombinant *E. coli*  
**CONCENTRATION:** 100 U/µl  
**FORM:** Liquid. Enzyme supplied with 10X Reaction Buffer

**COMPONENTS:**

Product Name	Size	Part. No.
<i>E. coli</i> Exonuclease III (100 U/µl)	100 µl	M1223-100-1
10X Exonuclease III Reaction Buffer	500 µl	M1223-100-2

**DESCRIPTION:**

*E. coli* Exonuclease III digests duplex DNA in the 3'→5' direction from nicked DNA, blunt end DNA, 3'-recessed ends, or 3'-overhangs of less than four bases, and yields nucleoside 5'-phosphates. The DNA degradation proceeds at a uniform rate and produces stretches of ssDNA on the opposite strand. Under defined reaction conditions, the reaction can yield predictable and reproducible digestion results. Conditions such as temperature, ionic strength, template DNA sequence and the Exonuclease III to DNA ratio need to be optimized to suit specific applications to achieve the desired excision rate. Exonuclease III, *E. coli* is also capable of degrading DNA from 3'-phosphate ends due to intrinsic 3'-phosphatase activity. The enzyme also has apurinic DNA endonuclease activity as well as RNase H activity.

**APPLICATIONS:**

1. Generation of intermediates for site-directed mutagenesis
2. Preparation of strand-specific radio labelled probes
3. Preparation of single-stranded DNA
4. Preparation of single-stranded templates for dideoxy-sequencing of DNA
5. Creation of unidirectional deletions in DNA fragments

**STORAGE CONDITIONS:**

Store at -20°C. Avoid repeated freeze-thaw cycles of all components to retain maximum performance. All components are stable for one year from the date of shipping when stored and handled properly.

**ENZYME STORAGE BUFFER:** 20 mM Tris-HCl (pH 7.5), 100 mM KCl, 1 mM DTT, and 50% (v/v) Glycerol

**ENZYME UNIT DEFINITION:**

One unit is defined as the amount of Exonuclease III, *E. coli* that is required to catalyze the release of 1 nmol of acid soluble nucleotides from double stranded DNA in 30 minutes at 37°C in 1X Exonuclease III Reaction Buffer.

**10X EXONUCLEASE III REACTION BUFFER:** 100 mM Bis-Tris-Propane-HCl, 100 mM

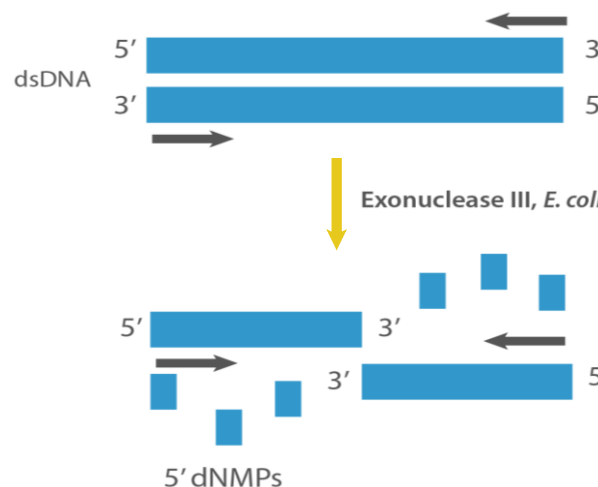
MgCl<sub>2</sub>, 10 mM DTT, pH 7.0

**REACTION CONDITIONS:**

Use 1X Exonuclease III, *E. coli* Reaction Buffer and incubate at 37°C

**HEAT INACTIVATION:**

70°C for 20 minutes



**RELATED PRODUCTS:**

- *E. coli* DNA Ligase (Cat# M1217-100)
- Link-FAST™ 5 Minutes DNA Ligation Kit (Cat# K902-50)
- New T4 DNA Ligase (Cat# M1247-200)
- T4 DNA Ligase (5 u/µl) (Cat# 9101-250)
- T4 RNA Ligase 1 (ssRNA Ligase) (Cat# M1218-100)
- T4 RNA Ligase 2 (dsRNA Ligase) (Cat# M1219-100)
- T4 RNA Ligase 2 (Truncated) (Cat# M1220-100)

**FOR RESEARCH USE ONLY! Not to be used on humans.**