

# Exonuclease III



<b>Catalog #</b>	3415
<b>Package Size</b>	25,000 units
<b>Concentration</b>	100 units/μl

## Description

Intact Genomics (ig®) Exonuclease III (Exo III) is an exodeoxyribonuclease that digests one strand of duplex DNA from a blunt end, 5' overhang or nick (1, 2). The enzyme acts in a 3'→5' direction producing stretches of single-stranded DNA (1, 2). Exo III is not active on 3' overhangs of 4 or more bases in length and ssDNA (2). The enzyme has also RNase H, 3'-DNA phosphatase, and apurinic DNA endonuclease activities (2, 3). Exo III digestions proceed at a uniform rate yielding predictable and reproducible results. However, the observed rate of nucleotide excision can vary depending on the individual characteristics of the reaction mix such as reaction temperature, ionic strength, template base content, template helical structure, and enzyme-to-DNA ratios(3-5).

## Applications

- 3' → 5' exonuclease
- Production of unidirectional nested deletions
- Production of intermediates for site-directed mutagenesis
- Preparation of strand-specific probes
- Preparation of single-stranded substrates for dideoxy sequencing

## Protein Purity

The physical purity of this enzyme is ≥99% as assessed by SDS-PAGE with Coomassie® blue staining (see figure below).

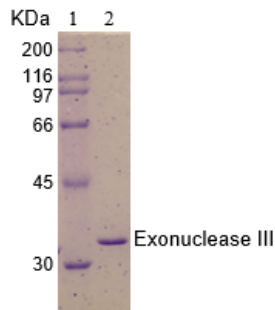


Fig: Lane 1. Protein marker  
Lane 2. Exonuclease III

## Product Source

*E. coli* BL21 (DE3) strain expressing *E. coli* Exonuclease III gene.

## Product Includes

- Exonuclease III
- 10x Exonuclease III reaction buffer

## 1x Exonuclease III Reaction Buffer

33 mM Tris-acetate, 66 mM potassium acetate, 10 mM magnesium acetate, 1 mM DTT, pH 7.5 @ 25°C

## Storage Buffer

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

## Storage Temperature

-20°C

## Heat Inactivation

70°C for 20 min

## Unit Definition

One unit is defined as the amount of enzyme that incorporates 1 nmoles of dNTP into acid-insoluble form in 30 minutes at 37° C with duplex DNA.

## Quality Control Assays

Exonuclease III is free from contaminating nuclease activities.

## References

1. Weiss, B. (1976) J. Biol. Chem. 251, 1896.
2. Rogers, S.G. and Weiss, B. (1980) Meth. Enzymology 65, 201.
3. Sambrook, J. et al., (1989) in: Molecular Cloning: A Laboratory Manual (2nd ed.), Cold Spring Harbor Laboratory Press, New York.
4. Richardson, C.C. et al., (1964) J. Biol. Chem. 239, 251.
5. Guo, L.H. and Wu, R. (1982) Nucl. Acids Res. 10, 2065

## Related Products

- T4 UvsX Protein (Cat.# 3562, 3565)
- T4 UvsY Protein (Cat.# 3572, 3575)
- T4 gp32 Protein (Cat.# 3515)
- Bsu DNA Polymerase (Cat.# 3585)
- Sau DNA Polymerase (Cat.# 3595)
- Exonuclease IV (Nfo) (Cat.# 3425)

## Technical Support

Intact Genomics is committed to supporting the worldwide scientific research community by supplying the highest quality reagents. Each new lot of our products is tested to ensure they meet the quality standards and specifications designated for the product. Please follow the instructions carefully and contact us if additional assistance is needed. We appreciate your business and your feedback regarding the performance of our products in your applications.