

SuperCut™ Nuclease

User Manual

Cat. No. **PC010 (10,000U)**

Cat. No. **PC011 (50,000U)**

User Manual

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SuperCut™ Nuclease

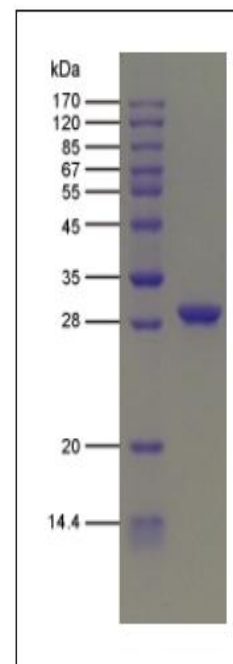
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I. Description

GeneCopoeia SuperCut™ Nuclease is a genetically engineered endonuclease derived from *Serratia marcescens*. Structurally, the protein is a dimer containing 245 amino acids carrying 2 key disulfide bonds and 30 kD subunits. The enzyme degrades all forms of DNA and RNA (single-stranded, double-stranded, linear or circular) under a wide range of conditions. The enzyme completely digests 2 to 5 bases in oligonucleotides from the nucleic acid to the 5'-phosphate terminus. Although the nuclease can digest almost all positions of the nucleotide chain, it is still somewhat sequence specific, preferring the GC-rich regions of double-stranded DNA and avoiding AT-rich regions. With its highly specific activity and absence of protease activity and viral contaminants, this product is an ideal and widely used nuclease for the complete digestion of nucleic acids.

■ Application

- ✧ Removal of nucleic acids from recombinant proteins.
Viscosity reduction during cell lysis preparation.
- ✧ Sample preparation for 2D gel electrophoresis and SDS-PAGE electrophoresis.
- ✧ Removal of nucleic acids during vaccine and viral vector preparation.
- ✧ Decrease or prevent cell aggregation during PBMC thawing and organoid processing
- ✧ Improve the quality of ELISA, Western Blot, protein chip and mass spectrometry analysis results during blood sample processing.



■ Source

Serratia Marcescens

■ Host

Escherichia coli

■ Unit definition

One unit is defined as the amount of enzyme that causes a ΔA_{260} of 1.0 in 30min.

■ **Enzyme activity**

≥ 250 U/μL

■ **Purity**

≥ 95%, as determined by SDS-PAGE

II. Storage

Store all components at -20°C (stable for at least 24 months). Avoid repeated freezing/thawing.

■ **Storage buffer**

10 mM Tris-HCl, 20 mM NaCl, 2 mM MgCl₂, 50% Glycerol (pH 8.0 @ 25°C)

III. SuperCut™ Nuclease reaction conditions

Conditions	Optimal	Effective
Mg ²⁺	1-2 mM	1-10 mM
pH	8.0-9.0	6.0-10.0
Temperature	37°C	0-42°C
DTT	0-100 mM	>0 mM
Monovalent cation concentrations (Na ⁺ , K ⁺ , etc.)	0-20 mM	0-150 mM
β -Mercaptoethanol	0-100 mM	>0 mM

■ **Note:**

- Avoid repeated freezing and thawing which may affect the activity, keep SuperCut™ Nuclease on ice when performing procedures. Storage at -80°C is not recommended. Repeated freezing and thawing may reduce the activity of the enzyme.
- The activity of SuperCut™ Nuclease is affected by factors such as ion concentration, temperature and pH, please refer to the table of Optimal Conditions and Working Conditions and explore the optimal amount of enzyme or incubation time for the initial use.
- If the reaction solution used is highly saline, acidic, alkaline, etc., it is recommended to increase the amount of enzyme or incubation time.
- SuperCut™ Nuclease requires Mg²⁺ for activity and the concentration of Mg²⁺ in the reaction system should be adjusted to 1-2 mM.

IV. Limited Use License and Warranty

Limited Use License

The following terms and conditions apply to the use of SuperCut™ Nuclease (the Product). If the terms and conditions are not acceptable, the Product in its entirety must be returned to GeneCopoeia within 5 calendar days. A limited End-User license is granted to the purchaser of the Product. The Product shall be used by the purchaser for internal research purposes only. The Product is expressly not designed, intended, or warranted for use in humans or for therapeutic or diagnostic use. The Product must not be resold, repackaged, or modified for resale, or used to manufacture commercial products without prior written consent from GeneCopoeia. This Product should be used in accordance with the NIH guidelines developed for recombinant DNA and genetic research. Use of any part of the Product constitutes acceptance of the above terms.

Limited Warranty

GeneCopoeia warrants that the Product meets the specifications described in the accompanying Product Datasheet. If it is proven to the satisfaction of GeneCopoeia that the Product fails to meet these specifications, GeneCopoeia will replace the Product. In the event a replacement cannot be provided, GeneCopoeia will provide the purchaser with a refund. This limited warranty shall not extend to anyone other than the original purchaser of the Product. Notice of nonconforming products must be made to GeneCopoeia within 30 days of receipt of the Product. GeneCopoeia's liability is expressly limited to replacement of Product, or a refund limited to the actual purchase price. GeneCopoeia's liability does not extend to any damages arising from use or improper use of the Product, or losses associated with the use of additional materials or reagents. This limited warranty is the sole and exclusive warranty. GeneCopoeia does not provide any other warranties of any kind, expressed or implied, including the merchantability or fitness of the Product for a particular purpose.

GeneCopoeia is committed to providing our customers with high-quality products. If you should have any questions or concerns about any GeneCopoeia products, please contact us at 301-762-0888.

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