

# MaxNuclease, GMP-Grade

## Catalog # GMP-NUC-SE101

**Storage Condition** -20°C ± 5°C for 24 months. Avoid repeated freeze/thaw cycles.

**Form** Liquid

**Source** *E. Coli* with nuclease gene from *Serratia Marcescens*

**Concentration** ≥ 250U/μL

**Unit Definition** One unit is the amount of enzyme required to produce a change in absorbance at 260nm of 1.0 in 30 minutes, under optimum conditions with excess substrate.

**Specific Activity** ≥ 1.1x10<sup>6</sup> U/mg

### Product Contents

- MaxNuclease (250U/μL)

### Product Description

MaxNuclease is a non-specific nucleic acid endonuclease derived from *Serratia Marcescens* that degrades both DNA and RNA including double-stranded, single-stranded, linear, circular, or supercoiled nucleic acids. No base preference is observed. MaxNuclease hydrolyzes internal phosphodiester bonds between the nucleotides and completely digests nucleic acids into fragments two to five bases in length.

### Applications

- Removing DNA/RNA from other biologicals
- Reducing viscosity caused by nucleic acids
- Purification of viral vaccines, viral vectors for vaccines
- Preparing samples in western blot analysis, 2D gel electrophoresis, ELISA, and chromatography
- Preventing cell clumping

### Quality Control Statement

This product has been filed with the FDA Drug Master Files and is assigned DMF #036799. KACTUS manufactures this product according to GMP guidelines and performs stringent quality control testing before release. The production is antibiotic- and animal-free.

### Quality Control Release Criteria

Assay	Criteria
Activity (Dissolving herring sperm DNA)	≥ 250U/μL
Purity (Bis-Tris)	≥ 95%
Purity (SEC-HPLC)	≥ 99%
Endotoxin	≤ 0.01EU/kU
Residual Protease	Negative
Residual Host Protein	≤ 10ppm
Sterility	Negative
Residual Heavy Metal	≤ 10ppm
Mycoplasma	Negative

### MaxNuclease Reaction Conditions

Condition	Optimal*	Effective**
Mg <sup>2+</sup>	1-2mM	1-10mM
Monovalent cation concentrations (Na <sup>+</sup> , K <sup>+</sup> , etc.)	0-100mM	0-300mM
pH	8.0-10.0	4.0-10.0
Temperature	37C	0-50C
PO <sub>4</sub> <sup>3-</sup>	0-10mM	0-80mM

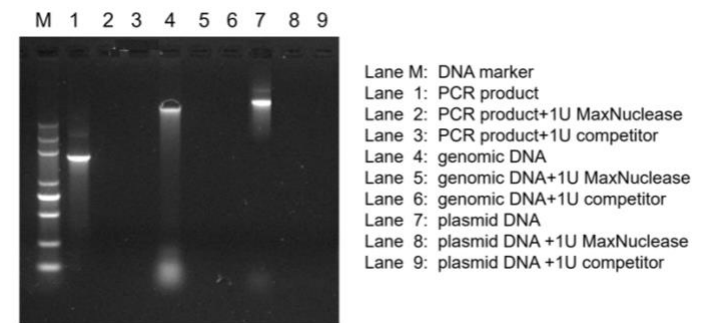
\*Optimal is defined as the conditions under which MaxNuclease retains >90% of its activity.

\*\*Effective is defined as the condition under which MaxNuclease retains >15% of its activity.

### Notes

- Inappropriate salt ion concentrations can inhibit MaxNuclease. In addition, denaturants, protein precipitants, etc. in the system can also inhibit the activity of MaxNuclease.

### Performance Validation



MaxNuclease shows comparable degradation activity of nucleic acids to leading competitors.