

# Recombinant Binuclease

Catalog No: #RE002



Package Size: #RE002-1 50KU #RE002-2 100KU #RE002-3 50KU-solution #RE002-4

100KU-solution

Orders: order@signalwayantibody.com

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## Description

Product Name	Recombinant Binuclease
Purification	Grade I: $\beta$ 90%; (SDS-PAGE); Grade II (superior purity): $\beta$ 95%; (SDS-PAGE); Protease and Endotoxin (Tachypleus Amebocyte Lysate) : None Detected.
Other Names	Serratia marcescens Binuclease; unrestricted endonuclease
Formulation	The product is available as lyophilized powder and also as buffered aqueous glycerol solution.
Storage	-20°Recommended

## Application Details

Our Binuclease Endonuclease cleaves all forms of DNA and RNA, which makes it an ideal tool to eliminate nucleic acids (DNA and RNA) contamination in vaccine, antibody, cell therapy and other biological products for therapeutic use to meet FDA guidelines that nucleic acid contamination should be limited to 100 pg per dose in the end product. Binuclease reduces nucleic acid load and viscosity in cell lysates during purification to facilitate the filtration/ultrafiltration of solutions, reduce processing time, improve the separation of pellets and supernatants in centrifugations and increase the efficiency of chromatographic purification, resulting significant improvements on both yield and purity of cell-derived particles such as viruses, AAV vectors or inclusion bodies. Bioanalytical applications: Sample preparation for ELISA, chromatography or two- dimensional electrophoresis (protein mapping), and footprint analysis to get improved resolution and increased recovery of samples.

## Product Description

Binuclease is a genetically engineered endonuclease from *Serratia marcescens* gene that can digest all forms of DNA and RNA, including single stranded, double stranded, linear, circular and supercoiled DNA and RNA. The enzyme cleaves the phosphodiester bond of nucleic acids, producing 5' monophosphate terminated oligonucleotides 2-5 bases in length. Binuclease is not a sequence dependent nuclease, capable of cleaving the phosphodiester.

Specific activity: 1000 kU/mg protein

Grade: Benzonase equivalent

Source: From yeast cells with cloned gene encoding genetically engineered *Serratia marcescens* endonuclease.

E.C.: 3.1.30.2

pH range: pH 6~10, optimum pH 8.0

Temperature profile: Optimum temperature 37°C; Temperature range of enzyme activity: 0~42°C.

Unit Definition: According to the protocol from Sigma-Aldrich, one unit of Binuclease will digest sonicated salmon sperm DNA to produce acid-soluble oligonucleotides equivalent to a  $\Delta A_{260nm}$  of 1.0 in 30 minutes at pH 8.0 at 37°C.

Advantages: Binuclease is produced from eukaryotic yeast cells that avoid the contamination of endotoxin from prokaryotic cells. Binuclease is highly stable under harsh industrial conditions and very cost effective, which make it a perfect alternative for Benzonase® endonuclease and other equivalents. The specific activity of Binuclease was measured at  $\geq$  1000 kU/mg protein, which is much higher than any existing products (as much as 200%).

Activators: 1~10 mM Mg<sup>2+</sup>

Stability: Lyophilized powder is stable for 3 years when stored below 4°C. Buffered aqueous glycerol solution is stable for 1 year when stored at -20°C.

Handling and Storage: Lyophilized powder: shipped at room temperature and storage recommended below 4°C. Buffered aqueous glycerol solution: shipped with blue ice and storage recommended at -20°C. Dilution buffer: 20mM Tris-Cl (pH 8.0), 2mM MgCl<sub>2</sub>, 20mM NaCl. Storage buffer: 20mM Tris-HCl (pH 8.0), 2mM MgCl<sub>2</sub>, 20mM NaCl, 50% glycerol.

Precautions and Disclaimer: This product is for R&D use only, not for drug, household, or other uses.

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Note: This product is for in vitro research use only