Differentiating Research

Product Details

X-Nuclease™ (250U/µL)

Cleaves both DNA and RNA

Product Overview

DX/DT X-nuclease™, an endonuclease originally found in ***Serratia marcescens*** but now engineered through genetic manipulation, is an extremely efficient enzyme. It exists as a dimeric protein with two important disulfide bonds and possesses the remarkable ability to degrade all forms of DNA and RNA, including single-stranded, double-stranded, linear, and circular molecules. This enzyme is particularly valuable for applications that require complete digestion of nucleic acids, as it can fully break them down into short oligonucleotides that terminate with a 5'-monophosphate and typically consist of 3 to 5 bases.
When used to pretreat protein samples, X-nuclease plays a crucial role in enhancing the resolution of proteins during 2D gel electrophoresis. It achieves this by effectively removing any nucleic acids that might be bound to the proteins, which can impede the separation process. Additionally, X-nuclease helps reduce the viscosity of protein extracts and prevents the clumping of cells in samples.
This versatile enzyme functions optimally within a pH range of 8.0 to 9.2, and it can break down both native and heat-denatured forms of DNA and RNA. Its capacity to eliminate nucleic acids and improve the purity and quality of protein samples makes it an excellent choice for various applications requiring these capabilities.

Catalog Details

R3201	10,000 UNITS
R3202	50,000 UNITS

Storage

- 20 ℃

Activity

250 U/µL

Unit Definition

One unit will digest sonicated salmon sperm DNA to acid-soluble oligonucleotides equivalent to a ΔA260 of 1.0 in 30 min at pH 8.0 at 37 °C

Reaction Conditions Tips

- The protein has an isoelectric point (pI) at pH 6.85. It is functional between pH 6 and 10, and from 0 °C to 42 °C. Mg2+ (2mM) is required for enzyme activity.
- X-Nuclease degrades both DNA and RNA—whether single- stranded, double-stranded, linear, circular or supercoiled. No base preference is observed.
- Initial DNA burden can be as high as :~ 50µg/ml of solution (or cell lysate)
- Amountof X-Nuclease to be used : **100 Units/ml of above solution**
- Example buffer 1X Composition: 50mM Tris-HCl, 2mM MgCl2, pH 8.0
- Incubation temperature: 37℃
- Incubation time: 1 hr to 24 hrs, has to be decided experimentally by the user.

Ordering Details

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