

Benzonase Nuclease, 250 U/μl

Cat. # OTD-01



Description:

Benzonase Nuclease is a non-specific endonuclease, genetically engineered from *Serratia marcescens*. Benzonase Nuclease degrades all kinds of DNA and RNA (double stranded, single stranded, linear and circular and supercoiled) but without proteolytic activity. It is effective over a wide range of conditions and possesses an exceptionally high specific activity. Benzonase Nuclease completely digests nucleic acids to 5'-monophosphate terminated oligonucleotides 2 to 5 bases in length, which is ideal for removal of nucleic acids from recombinant proteins, enabling compliance with regulatory guidelines for nucleic acid contamination. The ability of Benzonase to rapidly hydrolyze nucleic acids makes the enzyme an excellent choice for viscosity reduction to shorten processing time and increase yields of protein. For example, the enzyme is compatible with BugBuster® and PopCulture® Protein Extraction Reagents and can therefore be added along with these reagents to eliminate viscosity and remove nucleic acids from *E. coli* extracts. The enzyme consists of two subunits of 30 kDa each. It is functional between pH 6 and 10 and from 0 to 42° C and requires 1-2 mM Mg²⁺ for activation. The enzyme is also active in the presence of ionic and non-ionic detergents, reducing agents, PMSF (1 mM), EDTA (1 mM) and urea (relative activity depends on specific conditions). Activity is inhibited by > 150 mM monovalent cations, > 100 mM phosphate, > 100 mM ammonium sulfate, or > 100 mM guanidine HCl.

Source: *Serratia marcescens*; **Molecular weight:** 27.9 KD (SDS)

Purity: ≥ 90%, (Ultra ≥ 99%,) (SDS-PAGE)

PI: 6.85; **Optimum pH:** 8.0; **Optimum temperature:** 37°C

Cofactor: 1~10mM Mg²⁺

Form: Clear Solution (Contain Glycerin)

Concentration: 250 U/μl; **Activity:** ≥ 250 U/μl

Specific activity: ≥ 1.0 × 10⁶ U/mg protien

Protease: Not detectable

Microbial limit: aerobe <10CFU/100 KU Yeast and mold: <10CFU/ 100 KU **Endotoxin Test:** (Gel Clot LAL Assay) <0.25EU/1000U

Storage Buffer: 20 mM Tris-Cl (pH 8.0), 2 mM MgCl₂, 2 mM NaCl, 50% Glycerin

Dilution Buffer: 20 mM Tris-Cl (pH 8.0), 2 mM MgCl₂, 2 mM NaCl.

Unit definition: One unit is defined as the amount of enzyme that causes a ΔA₂₆₀ of 1.0 in 30 minutes, which corresponds to complete digestion of 37 μg DNA.

Application:

Its high intrinsic activity and broad substrate tolerance make the endonuclease an ideal tool in a variety of biotechnological and pharmaceutical applications:

- Removal of nucleic acid from protein samples
- Elimination of nucleic acids from recombinant proteins
- Purification of protein fragments from inclusion bodies;
- Sample preparation in western blotting or two-dimensional gel electrophoresis
- Viscosity reduction in protein extracts.

Shipping and Handling: Liquid enzyme: Ship with Blue Ice or Room Temperature, with recommended storage at -20°C

Stability: 2 years stored at -20°C



info@genebiosystems.com
1-833 LabShop (1-833 5227467)
www.genebiosystems.com