Recombinant Benzonase

SKU: YCP1200

Description

Golden Nuclease is a recombinant form of Serratia macescens extracellular endonuclease produced in Escherichia coli. Golden Nuclease is a homodimer with monomer molecular masses about 30 kDa. Two disulfide bonds found in the nuclease are crucial to its activity and stability. The enzyme is a non-specific nuclease with high specific activity, which degrades both single- and double-stranded nucleic acids in any form (single stranded, double stranded, linear, circular and supercoiled). It hydrolyzes internal phosphodiester bonds present between the nucleotides to 5'-phosphorylated oligonucleotides of 3-8 bases in length.

Purity

>98%

Applications

Removal of DNA/RNA from proteins; Purification of recombinant protein from inclusion bodies; Viscosity reduction of protein samples, etc.

Unit Definition

One unit is defined as the change of A260 = 1 (equivalent to 37 μg of DNA) when sonicated salmon sperm DNA is digested with the enzyme for 30 min at 37 ℃ (pH 8.0).

Working Conditions

- Optimal pH 8-8.5, functional pH 6-10.
- Optimal temperature 35 ℃ - 42 ℃, functional 0℃ to 42 ℃.
- Magnesium (1-2mM) is required for activity. In the presence of 1 mM MgCl2, activity is reduced 30% by 1mM EDTA or completely inactivated by 0.1M EDTA. Activity is reduced 75% by 0.1 M CaCl2 or 1 M NaCl.
- Under standard assay conditions, 1 mM iodoacetate had no effect on enzymatic activity. 1 mM mercaptoethanol and maleic acid reduced activity 5 to 10%. 10 mM p-Chloromercurybenzoate completely inactivates the enzyme. 0.64 M beta-mercaptoethanol in the presence of 2 M urea slightly decreases enzymatic activity. 4 to 7 M Urea increases enzymatic activity.

Formulation

Lyophilized after filtrated through 0.22 μm filter in a solution of 20 mM Tris pH8.0, 20 mM NaCl,

2mM $MgCl_2$.

Reconstitution

Resuspend the enzyme powder with 50% glyceroal to 250U/μl. Solubilize for 30-60 min at RT with occasional gentle mixing. Please avoid vigorous shaking or vortexing. Keep reconstituted enzyme at -20℃ in aliquots.

A typical SDS-PAGE gel image