Product Manual

Product Name	Deoxyribonuclease I /DNase I（GMP-grade）
Source	Bovine Pancreas
Catalog Number	CSB-DEM079
Physical Form	Liquid
Enzyme activity	2U/μL
Storage Conditions	-20±5°C
Storage Buffer	20 mM sodium acetate (pH 6.5), 5 mM CaCl2, 0.1 mM PMSF, 50% glycerol
Activity definition	At 25°C, pH 5.0, when acting on highly polymerized DNA, the amount of enzyme required to increase the absorbance at 260 nm by 0.001 per minute per milliliter is defined as one unit.
Shelf Life	24 months

Product Description

Deoxyribonuclease I (DNase I), also known as Deoxyribonuclease I, is a type of nucleic acid enzyme found in various cells and tissues. It is a endonuclease that cleaves phosphodiester bonds adjacent to pyrimidines, generating polynucleotides with a 5' phosphate group and a 3' hydroxyl group. The average digestion product size is a minimum of tetranucleotides.

DNase I can catalyze various forms of DNA, including single-stranded DNA, double-stranded DNA, and even chromatin (its cutting rate is influenced by histones). The optimal working range is pH 7-8. DNase activity depends on Ca2+ and can be activated by divalent metal ions such as Co2+, Mn2+, and Zn2+. 5 mM Ca2+ can protect the enzyme from hydrolysis.

In the presence of Mg2+, the enzyme can randomly recognize and cleave at any site on either strand of DNA, while in the presence of Mn2+, it can simultaneously recognize both strands of DNA and cleave at almost the same sites. DNase I was originally isolated from the pancreas and remains one of the major sources of this enzyme in mammals.

Product Components

Label	Components	Specifications		
1	Deoxyribonuclease I /DNase I	200U	1KU	2KU

Operating instructions

This product is intended for use in protein extraction experiments and is for reference only.

1. Reaction System: Add DNase I storage solution to the protein extraction solution at a 1/100 volume ratio (final

concentration of 20 U/mL), and add 1 M MgCl2 at a 1/100 volume ratio.

2. Reaction Conditions: 37℃, 30-60 min. Proceed with subsequent protein extraction experiments.

Note: EDTA should be removed from the initial protein lysate as it chelates the Ca2+ and Mg2+ ions required for enzyme activity, which can reduce the digestion capacity of DNase I.

Precautions

Avoid use in sample solutions containing reducing agents, chelating agents, SDS, and actin, as these can inhibit enzyme activity.