



## Proteinase K

Cat No: DN9011 Volume: 1ml

Concentration: 20mg/ml  
Store at: -20°C

Features  
Ready to use solution  
Active in a wide range of reaction products

### Description

Proteinase K is an endolytic protease that cleaves peptide bonds at the carboxylic side of aliphatic, aromatic or hydrophobic amino acids. The Proteinase K is classified as a serine protease. The smallest peptide to be hydrolyzed by this enzyme is a tetrapeptide.

### Applications

Isolation of genomic DNA from cultured cells and tissues  
Removal of DNases and RNases when isolating DNA and RNA from tissues or cell lines  
Determination of enzyme localization  
Improving cloning efficiency of PCR products

### Quality Control

The absence of endo-, exodeoxyribonucleases and ribonucleases confirmed by appropriate quality tests.

### Source

Pichia pastoris cells with a cloned gene encoding Tritirachium album endolytic protease (Proteinase K).

### Molecular Weight

28.9 kDa monomer (6).

### Definition of Activity unit

One unit of enzyme liberates Folin-Positive amino acids and peptides corresponding to 1  $\mu$ mol tyrosine in 1 min at 37°C using denatured hemoglobin as substrate.

Enzyme activity is assayed in the following mixture: 0.08 M potassium phosphate (PH 7.5), 5 M urea, 4 mM NaCl, 3 mM CaCl<sub>2</sub>, and 16.7 mg/ml hemoglobin.

### Storage buffer



The enzyme is supplied in: 50 mM Tris-HCL (PH 7.5), containing 5 mM calcium chloride and 50% (v/v) glycerol.

#### Inhibition and inactivation

Inhibitors: Proteinase K is not inactivation by metal chelators, by thiol- reactive reagents by specific trypsin and chymotrypsin Inhibitors. Phenylmethylsulfonyl fluoride and diisopropyl phosphorofluoridate completely inhibit the enzyme.

Inactivated by heating at 95°C for 10 minutes.

#### Note

Optimum activity at 50-55°C

Rapid denaturation of enzyme occurs at temperatures above 65°C

The recommended working concentration for Proteinase K is 0.05 mg/ml. the activity of the enzyme is stimulated by 0.2-1% SDS or by 1-4 urea.

Ca<sup>+2</sup> protects Proteinase K against autolysis, increases the thermal stability and has a regulatory function for the substrate binding site of Proteinase K.

Stable over a wide PH range: 4.0-12.5 optimum PH 7.5-8.0.