



Catalog No.: DB0452-1, DB0452-2, DB0452-3

Product Name: Proteinase K

CAS#: 39450-01-6

Grade: Molecular biology grade

Format: Lyophilized powder

Size:
DB0452-1: 100mg
DB0452-2: 500mg
DB0452-3: 1000mg

Description: Proteinase K is commonly used in molecular biology to remove proteins from preparations of nucleic acids. It will effectively inactivate nucleases that might degrade the DNA or RNA even in the presence of denaturing reagents. Proteinase K is active in 1% Triton X-100 and fully active in 0.5% (w/v) SDS which denatures protein substrates to increase the digestion efficiency. The optimal working condition for the enzyme is at the concentration of 50-200µg/ml at pH 7.5-8.0, 37°C, although higher temperature such as 70°C does not reduce the activity of the enzyme. The enzyme will be inactivated and denatured by phenol extractions, or by heating at 95°C for 10 minutes or using an inhibitor such as PMSF, AEBSF or DFP. Incubation times vary from 30 minutes to 18 hours although Proteinase K may be auto-digested during longer incubation. The recombinant enzyme is a mutant to the native protease, which gains higher specific activity and activity as well as wider working pH and temperature ranges. The large scale recombinant preparation has advantage in lot-to-lot consistency, superior purity and productivity. The DNA/RNA-free feature of the recombinant Proteinase K made it well-suited for isolating PCR and RT-PCR templates. Proteinase K is typically used at a concentration of 50-200µg/ml. It is active with or without the presence of SDS, urea, EDTA or various metal ions, but the activity of Proteinase K can be increased by adding the denaturing agents and the structure of proteinase K can be stabilized by addition of Ca²⁺.

Specifications:	Appearance:	Lyophilized powder
	Molecular weight:	29,300
	DNase/RNase	Free
	DNA and RNA	Free
	pH range:	4.5-12.0
	pI:	8.9
	Activity:	≥34U/mg
	Working temperature:	37°C-60°C
	Maximal activity at:	70°C

Quality Testing: This Proteinase K is tested for molecular biology applications.

Unit Definition: Unit Definition: One unit is defined as the amount of enzyme that will liberate 1.0µmol tyrosine (Folin-positive amino acid) from casein per minute at 37°C, pH7.5.

Source: Purified from yeast cells with cloned gene encoding *Engyodontium album* (*Tritirachium album*) endolytic protease.

Reconstitution: 50mM Tris-HCl (pH 8.0), 3mM CaCl₂.

Storage: Store at -20°C.

Note: This Product Is For Research Use Only.