



Proteinase K PROK is a serine endopeptidase with a broad spectrum of action, isolated from the fungus *Tritirachium album limber*. Worthington Proteinase K is supplied as a highly purified lyophilized powder. It is tested to be free of DNase and RNase.

Description	Activity	Code	Cat. No.	Size
Proteinase K, Powder A lyophilized powder. Purified to remove DNase and RNase. Store at 2 - 8°C.	≥ 20 units per mg dry weight	PROK	LS004220	25 mg
			LS004222	100 mg
			LS004224	1 gm
			LS004226	Bulk
Proteinase K, Solution, 20mg/ml A concentrated, ready to use liquid formulation. Proteinase K prepared at 20mg/ml in 10mM Tris-HCl, 1mM calcium acetate, pH 7.5 containing 50% glycerol, DNase and RNase free. Store at -20°C.	≥ 400 units per milliliter	PROKS	LS004240	5 ml
			LS004242	25 ml
			LS004244	Bulk

Characteristics of Proteinase K from *Tritirachium album limber*:

Molecular weight: 28,900 daltons.

pH Optimum: Stable over a wide pH range: 4.0-12.5, optimum pH 7.5-8.0, using denatured hemoglobin as substrate.

Stability: Although calcium ions do not affect the enzyme activity, they do protect PROK against autolysis and increase thermal stability when present at a concentration of 1 - 5 μmoles. An interesting characteristic of PROK is that it retains its activity in the presence of sodium dodecyl sulphate (SDS) or urea. (0.5 - 1% SDS and 1 - 4 M urea). Raising the temperature of the reaction from 37°C to 50 - 60°C can increase the activity several folds. A special feature of PROK is its ability to digest native proteins, thereby inactivating enzymes such as DNase and RNase without recourse to a denaturation process. PROK is inactivated by diisopropyl fluorophosphate (DFP) or phenyl methane sulphonyl fluoride (PMSF). Chelating agents such as citrate and EDTA have no affect on the enzyme activity. PROK can also be inactivated by heating above 65°C for 15-20 minutes or by extraction with phenol/chloroform.

Storage: The lyophilized powder is stable for ≥1 year at 2-8°C. Solutions in 50mM Tris-HCl, pH 8.0 with 1mM CaCl₂ are stable for months at 2-8°C.

Unit Definition: One Unit releases one micromole of Folin positive amino acids, measured as tyrosine, at 37°C, pH 7.5, using urea denatured hemoglobin as the substrate.

Specificity: In addition to cleavage of peptide bonds, it is able to catalyze peptide amide hydrolysis.

Application: The recommended working concentration for PROK is 0.05-1 mg/ml.

PROK is very useful in the isolation of highly native, undamaged DNAs or RNAs, since most microbial or mammalian DNases and RNases are rapidly inactivated by the enzyme, particularly in the presence of 0.2 - 1% SDS.

[10.13]

Related Products

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