Data Sheet (Cat.No.T8936)

TargetMol

Proteinase K

Chemical Properties

CAS No. : 39450-01-6

Formula:

Molecular Weight:

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Proteinase K (Protease K) is a non-specific serine protease that can tolerate changes in SDS, urea, pH (4-12), salt concentration, and temperature. Proteinase K hydrolyzes a wide range of peptide bonds and is used for protein digestion.
Targets(IC50)	Others,Serine Protease
In vitro	Protein denaturation: In general, proteins need denaturation and disulfide bond breaking before enzymatic digestion can be completed, Proteinase K has strong proteolytic activity on both denatured and natural proteins. 1. Dissolve 1-10 mg of target protein in 6 M guanidine-HCl (or 6-8 M urea), 50 mM Tri-HCl (pH 8), 2-5 mM DTT (or β-mercaptoethanol) in 1 mL (minimum 25 μL) of reaction solution. 2. Heat at 95°C for 15-20 min or at 60°C for 45-60 min. If less protein is to be digested, the recommended conditions given can be scaled down. 3. After denaturation, allow the reaction to cool and add 50 mM Tris-HCl (pH 7.5), 5 mM CaCl until the guanidine-HCl or urea concentration is below 2 M. Proteinase Digestion: Add Proteinase K to the reaction to a final concentration of 50-100 μg/mL. heat at 37-56°C for at least 1 h. To terminate the reaction, add Proteinase K to the reaction. To terminate the reaction, add an inhibitor of Proteinase K, such as PMSF or DFP. The reaction can also be terminated by the addition of EGTA (pH 8) at a final concentration of 2 mM or by precipitation with TCA. Proteinase K cannot be completely inactivated by EGTA because the enzyme retains some activity in the absence of calcium. Heat treatment (65°C for 10-15 min) only partially inactivates Proteinase K with no more than 20-25% inhibition. Protein cleavage and nuclease removal: Proteinase K can be used to cleave natural proteins and remove nuclease from DNA or RNA preparations. If digestion of nondenatured (natural) proteins is desired, incubate proteins with Proteinase K (at a concentration of 50-100 μg/mL) in 50 mM Tris-HCl (pH 7.5), 5 mM CaCl, or another buffer compatible with the stability of the target proteins at 37-56 °C. To remove nucleases from DNA/RNA preparations, nucleic acids were incubated with Proteinase K at a concentration of 50 μg/mL in 0.01 M Tris (pH 7.8), 5 mM EDTA, 0.5% SDS at 37 °C.

Solubility Information

Solubility	H2O: 25 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Reference

W Ebeling, et al. Proteinase K From Tritirachium Album Limber. Eur J Biochem . 1974 Aug 15;47(1):91-7.
Gao H, Jiang Y, Wang L, et al.Outer membrane vesicles from a mosquito commensal mediate targeted killing of Plasmodium parasites via the phosphatidylcholine scavenging pathway.Nature Communications.2023, 14(1): 5157.

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