

PRODUCT INFORMATION

Proteinase K solution from *Tritirachium album*

Art. No. 33755

Product Description:

- General** Proteinase K¹ is a non-specific serine protease with a very broad range of action. It has been shown to exhibit a high degree of sequence homology with the subtilisin family of proteinases. The enzyme displays a strong activity towards both native and denatured proteins. It has no pronounced cleavage specificity. The predominant site of cleavage is the peptide bond adjacent to the carboxyl group of aliphatic and aromatic amino acids with blocked amino groups.
- Features**
- Ready to use in liquid form diluted in storage buffer (20 mM Tris-HCl, pH 7.4, 1 mM CaCl₂, 50 % glycerol).
 - Can be stored at –20 °C still having the enzyme in liquid form
 - Specific activity: >30 milliAnson-U/mg*, concentration: 20 mg/ml
 - Free of Exonuclease, Endonuclease and RNase activity
 - Molecular weight (M_r): 28390¹ (AA sequence); 28500 (SDS-PAGE), Isoelectric point (pI): 8.9²
 - pH range: 7.5 – 12.0²
- Stability/Storage** High thermal stability, particularly in the presence of Ca²⁺. Autolysis can occur at alkaline pHs, but this reaction is suppressed by Ca²⁺ ions. The enzyme is progressively and irreversibly denatured at acid pHs. It is very stable in the storage buffer at 4 °C or at –20 °C. We recommend as storage temperature –20 °C.
- Application**
- Isolation of high-molecular weight DNA
 - Isolation of plasmid and genomic DNA
 - Isolation of RNA
 - Inactivation of RNase and DNase activities
- Activation** 1 – 5 mM Ca²⁺ is required for activation. Activity is enhanced by incubation at elevated temperatures (i.e. 50 °C).
- Inhibition** Diisopropylfluorophosphate, phenylmethanesulfonyl fluoride² and mercury ions. Proteinase K is unaffected by metal-chelating agents and sulfhydryl inhibitors.
- Reaction conditions** Proteinase K is typically used at 50 – 200 µg/ml in nucleic acid preparations at pH 7.5 – 8.0 and 37 °C. Incubation times vary from 30 minutes to 18 hours.

Note: If necessary, to help the product to be fully soluble before use, heat the solution to 55 °C temperature and maintain the temperature for 15 – 45 min. After that cool and store at –20 °C. The product will retain its full activity.

*Unit definition: 1 U is defined as the amount of enzyme that liberates Folin-positive amino acids and peptides, corresponding to 1 µmol tyrosine under assay conditions in 1 minute using haemoglobin as substrate.

¹Betzel, C., Pal, G.P. and Saenger, W. (1988) Eur. J. Biochem. 178, 155-171.

²Ebeling, W., Hennrich, N., Klockow, M., Metz, H., Orth, H.D and Lang, H. (1974) Eur. J. Biochem. 7, 91-97.

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