

PRODUCT INFORMATION

Proteinase K, recombinant

Cat. No. 33756

Product Description:

General Proteinase K is a subtilisin-related serine protease with a very high specific activity and a broad spectrum of action. The enzyme is a 28.9 kDa protein expressed in *Pichia pastoris*. It is widely used for digestion of proteins, including DNases and RNases during nucleic acid preparations without compromising the integrity of the isolated DNA or RNA. The recombinant preparation is much purer than the native enzyme, as it contains very little DNA, and is therefore well suited for isolating PCR and RT-PCR templates.

Application

- Inactivation of endo-, exo- and ribonucleases during DNA/RNA isolation
- Removal of protein impurities
- Improving cloning efficiency of PCR products
- Determination of enzyme localization on membranes
- Antigen retrieval in in situ hybridization

Features

- Supplied as highly purified lyophilized powder
- Specific activity: min. 30 U/mg protein
- Free of DNase and RNase activity
- DNA: ≤ 10 pg/mg enzyme
- Exhibits broad substrate specificity

Storage Recommended temperature for long-term storage: - 20 °C

Activation

- By addition of 0.2 - 1 % (w/v) SDS or 4 M urea
- Extended stability due to protection against autolysis and increased thermal stability in the presence of Ca²⁺ (1 - 6 mM)

Inhibition

- By DFP, PMSF² and mercury ions
- Unaffected by metal-chelating agents and sulfhydryl inhibitors

Reaction conditions Usually used in nucleic acid preparation in a concentration of 50 - 200 µg/ml at pH 7.5 - 8.0 and 37 °C - 55 °C. Incubation times vary from 30 minutes to 18 hours.

Working pH range: 4.0 - 12.0 (optimum activity at pH 7.5 - 8.5)

Working temperature range: 20 °C - 65 °C (optimum at 50 °C - 56 °C)

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 hydrolyzes urea-denaturated hemoglobin producing color equivalent of 1 µmol tyrosine per 1 min at 37 °C and pH 7.5 (Folin & Ciocalteu's method).
1 U = 1 mAnsonU.

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.