

Proteinase K



- Freeze-dried
- Convenient package size
- Widely applicable
- DNA-free

Proteinase K



Background

Proteinase K is a subtilisin-related serine protease with broad cleavage specificity. The recombinant enzyme is identical to the native protease originally isolated from the mold *Tritirachium album*. The specifications of the recombinant enzyme are the same as those of the native protease.

The amino acid sequence, molecular weight, and the molecule structure are identical. However, the recombinant preparation is much purer than the native enzyme. According to the current quality control procedures, it is DNA-free and is therefore well suited for isolating PCR and RT-PCR templates.

Principle

Proteinase K is a proteolytic enzyme, using Ca^{2+} ions for structural stability. Due to the high total activity of the enzyme, lysis can be carried out in the presence of EDTA. Proteinase K is therefore particularly useful for the extraction of nucleic acids from various biological samples.

- This PCR grade Proteinase K is extremely effective on native proteins and can therefore be used to rapidly inactivate endogenous nucleases such as RNases and DNases. This property makes Proteinase K particularly suitable for the isolation of native RNA and DNA from tissues or cell samples.

- The enzyme promotes cell lysis by activating a bacterial autolytic factor.
- Proteinase K is also used for the analysis of membrane structures by modifying proteins and glycoproteins on cell surfaces.
- The enzyme is particularly well suited to improve the isolation of nucleic acids for amplification reactions.
- Proteinase K can be used to remove cellular debris during the preparation of colony lifts, and to treat tissue sections ensuring efficient probe infiltration during *in situ* hybridization.

Recommended Use

- Purification of target material from contaminating proteins.
- Isolation of genomic DNA and mRNA from cultured cells.
- Removal of DNases and RNases when isolating DNA and RNA from tissues or cell samples.
- Determination of enzyme localization.
- Improving cloning efficiency of PCR products
- In conjunction with Minerva Biolabs' Venor®GeM Sample Preparation Kit, 10 μl of the Proteinase K solution is added after mixing each sample with the Conditioner.

Features

Specific Activity and Working Temperature

- Approx. 30 U/mg
- 20 °C to 70 °C with an optimum from 50 to 56 °C

Stability

pH 4.0-12.5, no effect of denaturation agents like SDS or urea.

Inhibitors

Hg^{2+} ions, DFP, PMSF and phenol. No relevant inhibition by EDTA, sulfhydryl reagents or trypsin inhibitors.

Inactivation

Proteinase K is inactivated by heating above 65 °C for 20 min.

Storage

The freeze-dried product must be stored between +2 and +8 °C. The rehydrated stock solution must be stored at < -18 °C. Avoid repeated freezing and thawing.

Ordering Information

Cat. No. 56-0002 50 extractions

How to order

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