

Check the product label for actual catalog number, lot and expiry date.

Proteinase K MBG Solution, 20 mg/ml – Bulk Size

CAT.#	SIZE	COMPONENTS	COMPONENT COMPOSITION
PRK010B-500	500 ml / 10 g	500 ml - Proteinase K MBG Solution, 20 mg/ml	Storage buffer contains 50% glycerol, 10 mM Tris-HCl, pH 7.8, and 1 mM Calcium Acetate.
<i>Storage At -20°C. The product is very stable, it can also be stored at +4°C and shipped at ambient temperature.</i>			

APPLICATIONS

- Protein hydrolysis
- DNase and RNase decontamination
- Protein degradation during the procedures of:
 - ✓ Tissue/Cell lysis
 - ✓ DNA extraction
 - ✓ RNA extraction

DESCRIPTION

Proteinase K (Molecular Biology Grade Solution) is a serine peptidase with a very high specific activity and a broad spectrum of protein digestion possibilities under the wide variety of reaction conditions.

Proteinase K MBG Solution is designed to be used for protein degradation (up to tetrapeptides) during the cell lysis and RNA/DNA extraction procedures under harsh reaction conditions such as the higher temperatures and the presence of detergents. The enzyme degrades efficiently DNases and RNases during nucleic acid isolation process. The high purity of the Proteinase K and controlled absence of both DNase and RNase contamination ensures the integrity of nucleic acids. The 100% activity when stored at -20°C is guaranteed for at least two years after production. However, the experiments proved that the proteinase loses only about 15% activity in 3 years when stored at -20°C, and remains close to 90% active even when stored at +37°C for 18 months.

BENEFITS

- A recombinant broad spectrum, non-specific protease
- A ready-to-use solution with a very high specific activity
- Economical and stable for weeks at ambient temperature
- Robust, works well at a wide variety of reaction conditions: up to 56°C and in a presence of urea, SDS and guanidinium salts
- Safe – DNase and RNase free to ensure integrity of isolated NA

PRODUCT DETAILS

The enzyme is supplied as a 20 mg/ml concentrated solution with an average specific activity of more than 800 u/ml.

- Active in all common buffers used for cell lysis and RNA/DNA extraction, in a presence of urea, SDS and guanidinium salts
- Stable at high temperature of up to 56°C
- Can be inactivated by heating at 65°C for 20 minutes or at 75°C for 10 minutes
- Active in a pH range of 4–12 with an optimum pH 7.5–8.0
- The Proteinase K gene from *T. album* expressed in yeast host.
- The quality limit of allowed host DNA presence is ≤ 0.25 $\mu\text{g}/\text{U}$ measured by qPCR what is about a half when compared to other suppliers.

Unit Definition

Folin & Ciocalteu's method - One unit is required to hydrolyze urea-denatured hemoglobin producing color equivalent of 1 μmol tyrosine in 1 minute at 37°C and pH 7.5, 1 U = 1 m Anson U.

PROTOCOL RECOMMENDATIONS

- The 20 mg/ml Proteinase K MBG Solution is ready to use.
- Mix well the solution before each use.
- The recommended working concentration of the Proteinase K is in a range of 0.05 to 1 mg/ml in a final reaction mixture.
- In the presence of >1% SDS and 1–4 M urea the Proteinase K activity is stimulated.
- The activity of the enzyme is not inhibited by metal chelators, Trypsin and chymotrypsin inhibitors.
- Calcium ions present in the storage buffer increase the thermal stability of the enzyme and protect it against autolysis.
- Store and open/use of the Proteinase K containing vials separated from the facilities where you use other enzymes and proteins to protect them from accidental degradation. Discard gloves and pipet tips immediately, clean the surfaces after handling Proteinase K in case you will be handling other proteins next.

IN VITRO RESEARCH USE ONLY

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