Proteinase K

Catalog No.	Pack Size	Components
AZ-3101	100 mg	Proteinase K - 1 x 100 mg
AZ-3105	500 mg	Proteinase K - 5 x 100 mg
AZ-3110	1000 mg	Proteinase K– 10 x 100 mg

Description

Proteinase K is provided as a lyophilized powder form and is of molecular biology grade. It is a broad-spectrum serine protease with very high specific activity. Proteinase K is a recombinant enzyme expressed in *Pichia pastoris*, and undergoes extensive purification to yield the highest quality product. It is active under a wide range of reaction conditions, including elevated temperatures and in the presence of SDS. As a result, Proteinase K is widely using for the digestion of proteins, including DNases and RNases, during nucleic acid preparations without compromising the integrity of isolated DNA or RNA. Proteinase K is free of exonucleases, endonucleases, and ribonucleases.

- Recombinant broad-spectrum non-specific protease derived from *Tritirachium album* and over-expressed in *Pichia pastoris*.
- Molecular Biology Grade
- High activity and exceptional purity.
- Active at high temperatures (up to 56 °C) and denaturing conditions (in the presence of urea and/or SDS), making it ideal for digesting proteins in variety of applications.
- Stable over a wide pH range: 4.0–12.5 (optimum pH 7.5–8.0).
- Low residual DNA content (≤ 10 pg/mg).

Storage

Storage of Proteinase K at -20°C is recommended.

Recommendations for Use

Proteinase K is soluble in water, PBS and Tris. We recommend dissolving our lyophilized Proteinase K powder into a 20 mg/mL solution of 50 mM Tris-HCl of pH = 7.8 and 3 mM $CaCl_2$ for immediate use, which gives an activity of ≥ 800 U/ml. However, if you intend to prepare Proteinase K solution for long-term storage -20°C, dissolve the powder in 50 mM Tris-HCl of pH = 7.8, 3 mM $CaCl_2$ and 50% glycerol.

Important Guidelines

Protein concentration: Protein concentration is determined by measuring absorbance at 280 nm.

Exonuclease activity: Free of detectable exonucleases activity as judged by gel electrophoresis following incubation of 1 µg of HindIII-digested λ DNA with 50 µg of Proteinase K for 16 h at 37°C.

Endonuclease activity: Free of detectable endonucleases activity as judged by gel electrophoresis following incubation of 1 µg pUC19 DNA with 40 µg of Proteinase K for 16 h at 37°C.

RNase activity: Free of detectable RNase activities as judged by gel electrophoresis following incubation of 2 µg rRNA from E. coli with 20 µg of Proteinase K for 4 h at 37°C.

DNA content: DNA content is ≤ 10 pg/mg, which is determined by qPCR.

Quality Control

Our Proteinase K activity measurements demonstrate very low batch-to-batch variability. Such a high reproducibility enables stable working conditions, and therefore repeatable and reliable experiment results.

	Proteinase K- Lyophilized Powder, MB Grade
Source	*Parengyodontium album (Tritirachium album)*
Host	*Komagataella phaffii (Pichia pastoris)*
Solubility in Water	≥ 20 mg/ml
Activity	≥ 30 U/mg lyophilizate
Specific Activity	≥ 40 U/mg protein
Unit Definition	One unit of Proteinase K hydrolyzes urea-denatured 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.
Protein Content	≥ 70%
DNA Contamination	≤ 10 pg/mg
Storage Conditions	-20°C
Shelf Life	24 months.

Limitations of Use

This product is intended for research purposes and is not intended for any animal or human therapeutic use.

Technical Support

For trouble-shooting and technical guidance, please contact us at tech@azuragenomics.com and provide reaction parameters.