

## Manual


# Proteinase K

Enzyme for digesting proteins in biological samples. Concentration 20 mg/ml. Activity  $\geq 30$  U/mg.

REF	size
1019IV-1S	1 ml
1019IV-100S	100 ml
1019IV-500S	500 ml

For in vitro diagnostics use.



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### Guarantee

A&A Biotechnology provides guarantee on this product.

The company does not guarantee correct performance of this kit in the event of:

- not adhering to the supplied protocol
- use of not recommended equipment or materials
- use of other reagents than recommended or which are not a component of the product
- use of expired or improperly stored product or its components

## Description

**Proteinase K** (EC 3.4.21.64) is a broad-spectrum serine protease. The predominant site of cleavage is the peptide bond adjacent to the carboxyl group of aliphatic and aromatic amino acids with blocked alpha amino groups.

Proteinase K is inactivated by diisopropyl fluorophosphate (DFP) or phenyl methane sulfonyl fluoride (PMSF).

It's a recombinant enzyme cloned from fungus *Engyodontium album* and produced in *Pichia pastoris*.

## Application

- extremely effective proteolytic degradation of biological material
- inactivation of endogenous DNases and RNases during nucleic acid purification

## Contents

	1019IV-1S	1019IV-100S	1019IV-500S	storage
proteinase K, recombinant	1 ml	100 ml	500 ml	2–8 °C*

storage buffer:

20 mM Tris, pH 7.5, 1 mM CaCl<sub>2</sub>, 0.02% sodium azide, 50% glycerol (v/v)

\* Transport at 15–25 °C.

## Unit definition

One unit of proteinase K hydrolyzes denatured hemoglobin to produce color equivalent to 1.0 μmol of tyrosine per minute at pH 7.5 and 37 °C (color development with Folin & Ciocalteu's Phenol Reagent).

## References

1. Burkiewicz A., Dąbrowski S., Barski P., *Polska rekombinowana Proteinaza K*, (2007) *Postępy Biochemii* 53(4): 327-328
2. Ebeling W., Hennrich N., Klockow M., Metz H., Orth H.D., Lang H., (1974) *Eur. J. Biochem.* 47(1):91-97
3. Hilz H., Wieggers U., Adamietz P., (1975) *Eur. J. Biochem.* 56(1):03-08
4. Betzel C., Sigh T.P., Visanji M., et al., (July 1993) *J. Biol. Chem.* 268(21):15854-15858

## Safety information



**DANGER**

### Proteinase K

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

P261 Avoid breathing dust.









P305+P351+P338 If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P342+P311 If experiencing respiratory symptoms call a Poison Center or doctor/physician.

## Troubleshooting

Problem	Possible cause	Suggested solution
Low or no enzyme activity	Repeated freezing–thawing cycles.	Avoid repeated freezing.
Gradual loss of activity during storage	Storage for too long or at incorrect temperature.	Follow the recommended storage temperature and duration.
	No aliquoting and repeated sampling from a single tube.	Store the enzyme in small aliquots.
Suspected microbiological contamination of the solution	Lack of aseptic technique during use.	Use the solution under aseptic conditions. Employ sterile tubes and pipette tips.
	Prolonged storage at a temperature higher than recommended.	Store the solution at the recommended temperature.
Lack of the expected effect in the procedure (e.g., DNA/RNA isolation)	Enzyme concentration too low or too high.	Verify the kit/method recommendations and adjust the enzyme amount.
	Incorrect incubation time or temperature.	Adjust incubation time and temperature.
	Sample-specific factors.	Modify sample preparation (e.g., more thorough homogenization, buffer change). Perform the reaction on a reference sample as a control.

## Explanation of symbols used

symbol	symbol meaning	symbol	symbol meaning
	Indicates the <i>In vitro</i> diagnostics medical device		Indicates the manufacturer's catalogue number
	Indicates the medical device manufacturer		Indicates the need for the user to consult the instructions for use
	Indicates the manufacturer's batch code or lot can be identified		Indicates the need for the user to consult the instructions for use for important information such as warnings and cautions
	Indicates the date after which the medical device is not to be used		Indicates the temperature limits to which the medical device can be safely exposed



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