PROTEINASE K from *Parengyodontium album (Tritirachium album)* (Lot 180701)

Molecular Biology Grade

E-PRKMB **07/18**

(EC 3.4.21.62) Subtilisin

CAS: 39450-01-6

PROPERTIES

1. ELECTROPHORETIC PURITY:

- Single band on SDS-gel electrophoresis (MW ~ 29,000)
- One major band on isoelectric focusing (pI ~ 8.3)

2. SPECIFIC ACTIVITY:

> 40 U/mg protein (on urea-denatured haemoglobin) at pH 7.5 and 37°C

> 30 U/mg lyophilisate (on urea-denatured haemoglobin) at pH 7.5 and 37°C

One Unit of Proteinase K will hydrolyse urea-denatured hemoglobin to produce a colour (by Folin-Ciocalteu reagent) equivalent to 1.0 µmole of L-tyrosine per min at pH 7.5 and 37°C. 1 U = 1 mAnsonU.

3. SPECIFICITY:

Proteinase K from *Parengyodontium album* (*Tritirachium album*) is a subtilisin-related serine protease with broad substrate specificity for hydrolysis of peptide bonds adjacent to the carboxylic group of aliphatic and aromatic amino acids. It is able to hydrolyse peptide bonds in the presence of Triton, SDS, urea and EDTA.

4. CONTAMINANTS:

DNA content:	≤ 10 pg/mg by qPCR
Exonucleases:	1 µg of HindIII-digested λDNA is incubated with 50 µg Proteinase K for 16 h at 37°C. No DNA degradation detectable.
Endonucleases:	1 µg of pUC19 DNA is incubated with 40 µg Proteinase K for 16 h at 37°C. No DNA degradation detectable.
Ribonucleases:	2 µg of rRNA from *E. coli* is incubated with 20 µg Proteinase K for 4 h at 37°C. No RNA degradation detectable.

5. PHYSICOCHEMICAL PROPERTIES:

*Recommended conditions of use are at pH 4.0-12.0 and 20-60°C.

pH Optima:	8.0
Temperature Optima:	20-60°C

6. STORAGE CONDITIONS:

The enzyme is supplied as lyophilised powder and should be stored below -10°C.

For use, this enzyme should be reconstituted in 50 mM Tris-HCl, pH 7.8, 3 mM $CaCl_2$ for immediate use, or 50 mM Tris-HCl, pH 7.8, 3 mM $CaCl_2$, 50% glycerol for long-term storage below -10°C.

7. APPLICATIONS:

Proteinase K can be used for removal or inactivation of proteins in various analytical or research applications. It is used to inactivate nucleases during isolation of DNA and RNA. Activity in the presence of EDTA permits the use of EDTA in the purification of DNA or RNA to inhibit calcium dependent nucleases.

8. REFERENCES:

*Sweeney, P. J. & Walker, J. M. (1993). Enzymes of molecular biology. "Methods in Molecular Biology", **Vol. 16**, M. M. Burrell, ed., Humana Press, Inc., Totowa, NJ, 305.