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## Proteinase K

For Research Use Only

YT9052	1ml (Conc.20mg/ml)
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**Specifications:** Weight: 28.5 KD, Activity:  $\geq 30$  U/mg

**Source:** Yeast cells with cloned gene encoding Engyodontium album (Tritirachium album) endolytic protease.

**Storage/Handling:** Lyophilized Powder, Store desiccated at  $-20^{\circ}\text{C}$  for up to **2 years**. Stock Solution, aliquot your stock solution and store at  $-20^{\circ}\text{C}$  for up to **1 year**. Avoid multiple freeze-thaw cycles or exposure to frequent temperature changes.

**Solution:** Proteinase K Solution is provided in 50mM Tris-HCl (pH 8.0), 3mM CaCl<sub>2</sub> and 50% glycerol.

**Description:** Proteinase K is a highly reactive nonspecific serine protease that belongs to the subtilisin family of proteins. It cleaves at the carboxylic acid side of aliphatic, aromatic, or hydrophobic amino acids. Proteinase K is capable of inactivating RNases and DNases and is used in the isolation or preparation of high molecular weight nucleic acids. Proteinase K is stable in a wide variety of detergents and buffer salts and at various temperatures and pH. Proteinase K is also activated by heat at an optimal range of 50-65°C, dependent on your sample type. Proteinase K is active in a pH between 7.5 and 12.0, optimal activity at pH 8.0.

**Unit definition:** Unit definition One unit is the amount of enzyme which releases at 37°C in 1 min as many folin-positive amino acids and peptides from hemoglobin as 1  $\mu\text{mol}$  of tyrosine.

**Features:** Active with or without the presence of SDS, urea, EDTA or various metal ions, but the activity of proteinase K can be increased by adding the denaturing agents and the structure of proteinase K can be stabilized by addition of Ca<sup>2+</sup>. Inactivated by heating to 95°C for 10 minutes or using an inhibitor such as PMSF, AEBSF or DFP. Proteinase K activators include SDS (sodium dodecyl sulfate) and urea. Generally, proteinase K becomes more stable and more active when in buffers that contain these activators. Proteinase K is very water soluble, and it can also be dissolved in Tris or PBS.

The use of Proteinase K during lysis of the cells allows the isolation of intact highly-molecular nucleic acids.