

# PRODUCT INFORMATION

**Proteinase K, recombinant**

**Cat. No. 33756**

## Product Description:

<b>General</b>	A recombinant Proteinase K is a subtilisin-related serine protease. It is an endopeptidase with a very high specific activity and a broad spectrum of action. The enzyme is a 28.9 kDa protein expressed in <i>Pichia pastoris</i> . It's widely used for digestion of proteins, including DNases and RNases during nucleic acid preparations without compromising the integrity of the isolated DNA or RNA. It is active in a wide range of reaction conditions.
<b>Applic- ation</b>	<ul style="list-style-type: none"> <li>• Inactivation of RNases and DNases during isolation of DNA or RNA from tissues, cell lines or cultured cells</li> <li>• Removal of protein impurities</li> <li>• Improving cloning efficiency of PCR products</li> <li>• Determination of enzyme localization on membranes</li> <li>• Removal of nucleases for <i>in situ</i> hybridization</li> </ul>
<b>Features</b>	<ul style="list-style-type: none"> <li>• Supplied as highly purified lyophilized powder</li> <li>• Specific activity: approximately 30 U/mg protein</li> <li>• Free of DNase and RNase activity</li> <li>• Exhibits broad substrate specificity</li> </ul>
<b>Storage</b>	Recommended temperature for long-term storage: - 20 °C
<b>Activation</b>	The enzyme is stimulated by addition of denaturing agents 0.2 - 1 % (w/v) SDS or 4 M urea. It exhibits prolonged stability due to the presence of Ca <sup>2+</sup> (1 - 6 mM), which protects enzyme from autolysis and increases its thermal stability.
<b>Inhibition</b>	Diisopropylfluorophosphate, phenylmethysulfonyl fluoride <sup>2</sup> and mercury ions. Proteinase K is unaffected by metal-chelating agents and sulfhydryl inhibitors.
<b>Reaction conditions</b>	<p>Proteinase K is typically used at 50 – 200 µg/ml in nucleic acid preparations at pH 7.5 – 8.0 and 37 °C – 55 °C.            Incubation times vary from 30 minutes to 18 hours.            Working pH range: 4.0 - 12.0 (optimum activity at pH 7.5 - 8.5)            Working temperature range: 20 °C - 65 °C (optimum at 50 °C - 56 °C)</p> <p><i>Note: If necessary, to help the product to be fully soluble before use, heat the solution to 55 °C temperature and maintain the temperature for 15 – 45 min. After that cool and store at -20 °C. The product will retain its full activity.</i></p>

**\*Unit definition:** 1 U is defined as the amount of enzyme that liberates Folin-positive amino acids and peptides, corresponding to 1 µmol tyrosine under assay conditions in 1 minute using haemoglobin as substrate.

<sup>1</sup>Betzel, C., Pal, G.P. and Saenger, W. (1988) Eur. J. Biochem. 178, 155-171.

<sup>2</sup>Ebeling, W., Hennrich, N., Klockow, M., Metz, H., Orth, H.D and Lang, H. (1974) Eur. J. Biochem. 7, 91-97.

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