Proteinase K (recombinant), PCR grade

Catalog Number EO0491, EO0492

Pub. No. MAN0012880  Rev. D.00

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

Product description
Proteinase K is an endolytic protease that cleaves peptide bonds at the carboxylic sides of aliphatic, aromatic or hydrophobic amino acids. The Proteinase K is classified as a serine protease (1). The smallest peptide to be hydrolyzed by this enzyme is a tetrapeptide.

Contents and storage

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Contents</th>
<th>Source</th>
<th>Molecular Weight</th>
<th>Amount</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EO0491</td>
<td>Proteinase K (recombinant), PCR grade</td>
<td>Pichia pastoris cells with a cloned gene from Tritirachium album</td>
<td>28.9 kDa monomer (6)</td>
<td>1 mL, ≥ 600 U/mL (~20 mg/mL)</td>
<td>-25 °C to -15 °C</td>
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<tr>
<td>EO0492</td>
<td>5 x 1 mL, ≥ 600 U/mL (~20 mg/mL)</td>
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</tbody>
</table>

Applications
• Isolation of genomic DNA from mouse tail.
• Isolation of genomic DNA from cultured cells.
• Removal of DNases and RNases when isolating DNA and RNA from tissues or cell lines (2, 3).
• Determination of enzyme localization (4).
• Improving cloning efficiency of PCR products (5).

Definition of Activity Unit
One unit of the enzyme liberates Folin-positive amino acids and peptides corresponding to 1 µmol tyrosine in 1 min at 37 °C using denatured hemoglobin as substrate. Enzyme activity is assayed in the following mixture: 0.08 M potassium phosphate (pH 7.5), 5 M urea, 4 mM NaCl, 3 mM CaCl₂ and 16.7 mg/mL hemoglobin.

Storage Buffer
The enzyme is supplied in: 10 mM Tris-HCl (pH 7.5), containing calcium acetate and 50 % (v/v) glycerol.

Inhibition and Inactivation
• Phenylmethylsulfonyl fluoride and diisopropyl phosphorofluoridate completely inhibit the enzyme (1).
• Proteinase K is not inactivated by metal chelators, by thiol-reactive reagents or by specific trypsin and chymotrypsin inhibitors.

Note
• The recommended working concentration for Proteinase K is 0.05-1 mg/mL. The activity of the enzyme is stimulated by 0.2-1 % SDS or by 1-4 M urea (3).
• Ca²⁺ protects Proteinase K against autolysis, increases the thermal stability and has a regulatory function for the substrate binding site of Proteinase K (7).
• Stable over a wide pH range: 4.0-12.5, optimum pH 7.5-8.0 (8).
References

8. Ardelt, W., Laskowski, M.Jr., Turkey ovomucoid third domain inhibits eight different serine proteinases of varied specificity of the same ...Leu18-Glu19... reactive site, Biochemistry, 24, 5313-5320, 1985.

Limited product warranty

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