



DNA polymerase κ (N-His)

BACKGROUND

Mammalian **DNA polymerase κ** , a member of the UmuC/DinB nucleotidyl transferase superfamily, has been implicated in spontaneous mutagenesis (Ref.1). Human **DNA polymerase κ** copies undamaged DNA with average single-base substitution and deletion error rates of 7×10^{-3} and 2×10^{-3} , respectively. These error rates are high when compared to those of most other DNA polymerases (Ref.2). **DNA polymerase κ** has important role in the mutagenic bypass of certain types of DNA lesions (Ref.3).

This product was over-expressed as a recombinant protein in *E. coli* with a plasmid carrying an N-terminal histidine-tagged human **DNA polymerase κ** (1-560 aa), and highly purified by several steps of chromatography (Ref.2). The product is catalytically active and its molecular weight is 65 kD (Fig 1). Activity of this product has been confirmed by a user researcher even if it was diluted to 4,000-fold.

Form	0.2 M NaCl, 10 mM sodium phosphate buffer (pH 7.0), 50% glycerol
Volume	50 μ g
Concentration	1.7 mg/ml as measured by BCA method
Purification	Over 90% by SDS-PAGE (CBB staining)

Application notes	Analysis of mutagenesis
Conditions of measurement	50 mM Tris-HCl (pH 8.0), 2 mM MgCl ₂ , 1 mM DTT, 0.1 mg/ml BSA, 0.1 mM dNTP, 100 nM primer/template (13-mer/30-mer) DNA polymerase κ 13 - 50 ng/25 μ l assay, at 37°C, 10 min (right figure)
Data Link	Swiss-Prot Q9UBT6
Storage	-20°C
References	1. Friedberg EC <i>et al</i> "The many faces of DNA polymerases: strategies for mutagenesis and for mutational avoidance." <i>Proc Natl Acad Sci USA</i> 97 : 5681-5683 (2000) PMID: 10811923 2. Ohashi E <i>et al</i> "Fidelity and processivity of DNA synthesis by DNA polymerase kappa, the product of the human DINB1 gene." <i>J Biol Chem</i> 275 : 39678-39684 (2000) PMID: 11006276 3. Ohashi E <i>et al</i> "Error-prone bypass of certain DNA lesions by the human DNA polymerase kappa." <i>Genes Dev</i> 14 : 1589-1594 (2000) PMID: 10887153
Related product	# 10-105EX DNA polymerase κ (C-His)



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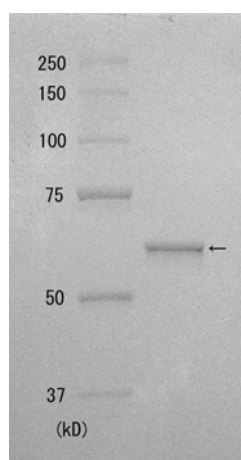
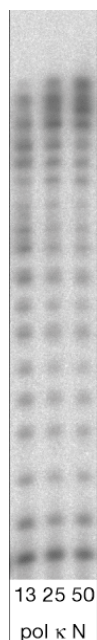


Fig.1 Polyacrylamide gel electrophoresis of DNA
polymerase κ protein

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