DNA Polymerase Gamma

(Human)

DNA Polymerase Gamma
(Homo sapiens)

Human mitochondrial DNA polymerase. Used for drug toxicity testing.

Cat. No.	Size
E1076-01	50 units
E1076-02	200 units

Unit Definition:
One unit is the amount of enzyme required to incorporate 1 picomole of TTP in 60 min at 37˚C using polyrA:dT as template.

Storage Conditions:
Store at -80˚C.
Avoid repeated freeze-thaw.

Source: Recombinant

Note: The enzyme is known to be slow. Incorporation of dNTPs is several orders of magnitude lower as compared to other human DNA polymerases.

1 x Reaction Buffer:

25 mM HEPES-KOH (pH 8.0), 0.5 mM $MnCl_2$, 2.5 mM ß-Mercaptoethanol, 0.1 M NaCl, 0.6 mg/ml bovine serum albumin.

Reaction buffer is supplied as:

10 x DNA Polymerase Gamma - core: 250 mM HEPES-KOH (pH 8.0), 25 mM ß-Mercaptoethanol, 1 M NaCl.
10 mM $MnCl_2$.
24 mg/ml bovine serum albumin.
Note: To avoid $MnCl_2$ hydrolysis, 10 x Reaction Buffer needs to be always prepared fresh, just before assembling the reaction.

Storage Buffer:

20 mM Tris-HCl, pH 8.0, 50 mM NaCl, 0.05% Triton X-100, 5% (v/v) glycerol, trypsin inhibitor and 10% DMSO.

Assay Conditions:

25 mM HEPES-KOH (pH 8.0), 0.5 mM $MnCl_2$, 2.5 mM ß-Mercaptoethanol, 10 µg acetylated BSA, 0.01 mM dTTP (pH 7.0), 0.3 µCi (α-^{3}H)dTTP at 88 Ci/mmol, 0.1 M NaCl, 1.6 µg poly (rA)•oligo $(dT)_{50}$. Incubation is at 37˚C for 15 min. in a reaction volume of 15 µl.

Quality Control:

The final product exhibits DNA polymerase activity. All preparations are assayed for contaminating endonuclease, 3'- and 5'-exonuclease, nonspecific RNase, and double-stranded DNase activities. The identity of human polymerase gamma was confirmed by mass spectroscopic and biochemical analyses. This enzyme has endogenous proof reading DNA Polymerase activity.

References:

1. *Gray,H. Wong, T. W.(1992) J. of Biological Chemistry 267, 5835-5841.*

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