



DNA pol γ (h): 293T Lysate: sc-115590

BACKGROUND

DNA replication, recombination and repair, all of which are necessary for genomic stability, require the presence of exonucleases. In DNA replication, these enzymes are involved in the processing of Okazaki fragments, whereas in DNA repair, they function to excise damaged DNA fragments and correct recombinational mismatches. These exonucleases include the family of DNA polymerases. DNA pol α , β , δ , and ϵ are involved in DNA replication and repair. DNA pol δ and DNA pol ϵ are multisubunit enzymes, with DNA pol δ consisting of two subunits—p125, which interacts with the sliding DNA clamp protein PCNA, and p50. The nuclear-encoded DNA pol γ is the only DNA polymerase required for the replication of the mitochondrial DNA. DNA pol ζ is ubiquitously expressed in various tissues and mediates the cellular mechanism of damage-induced mutagenesis. DNA pol θ is a DNA polymerase-helicase that binds ATP and is involved in the repair of interstrand crosslinks.

REFERENCES

1. Bambara, R.A. and Jessee, C.B. 1991. Properties of DNA polymerases δ and ϵ , and their roles in eukaryotic DNA replication. *Biochim. Biophys. Acta* 1088: 11-24.
2. Li, J.J. and Alberts, B.M. 1992. DNA replication. Eukaryotic initiation rites. *Nature* 357: 114-115.
3. Ropp, P.A. and Copeland, W.C. 1996. Cloning and characterization of the human mitochondrial DNA polymerase, DNA polymerase γ . *Genomics* 36: 449-458.
4. Kolodner, R.D. and Marsischky, G.T. 1999. Eukaryotic DNA mismatch repair. *Curr. Opin. Genet. Dev.* 9: 89-96.
5. Wood, R.D. 1999. DNA repair: variants on a theme. *Nature* 399: 639-640.
6. Diede, S.J. and Gottschling, D.E. 1999. Telomerase-mediated telomere addition *in vivo* requires DNA primase and DNA polymerases α and δ . *Cell* 99: 723-733.
7. Lin, W., Wu, X. and Wang, Z. 1999. A full-length cDNA of hREV3 is predicted to encode DNA polymerase ζ for damage-induced mutagenesis in humans. *Mutat. Res.* 433: 89-98.
8. Sharief, F.S., Vojta, P.J., Ropp, P.A. and Copeland, W.C. 1999. Cloning and chromosomal mapping of the human DNA polymerase θ (POLQ), the eighth human DNA polymerase. *Genomics* 59: 90-96.

CHROMOSOMAL LOCATION

Genetic locus: POLG (human) mapping to 15q26.1.

PRODUCT

DNA pol γ (h): 293T Lysate represents a lysate of human DNA pol γ transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

DNA pol γ (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive DNA pol γ antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.