

DNA pol ι (h): 293T Lysate: sc-115254

BACKGROUND

DNA polymerase activity is essential for replication, repair, recombination and mutagenesis. DNA polymerases can often bypass DNA lesions that block DNA replication, thereby allowing the replication of damaged DNA. One such DNA polymerase is the distributive enzyme DNA pol ι , which is encoded by the POLI gene. POLI is located on human chromosome 18q21.2, a region often implicated in the etiology of many human cancers. At thymine templates, DNA pol ι is highly error-prone when replicating undamaged DNA in that it favors the misincorporation of guanine over the correct nucleotide, adenosine. DNA pol ι also promotes the replication of damaged DNA by misincorporating deoxynucleotides opposite DNA lesions. DNA pol ι acts sequentially with DNA pol ζ , which is essential for damage-induced mutagenesis, to complete the DNA lesion bypass. Therefore, replication involving DNA pol ι is likely to be highly mutagenic.

REFERENCES

1. Zhang, Y., Yuan, F., Wu, X. and Wang, Z. Preferential incorporation of G opposite template T by the low-fidelity human DNA polymerase ι . *Mol. Cell. Biol.* 20: 7099-7108.
2. Johnson, R.E., Washington, M.T., Haracska, L., Prakash, S. and Prakash, L. Eukaryotic polymerase ι and ζ act sequentially to bypass DNA lesions. *Nature* 406: 1015-1019.
3. Tissier, A., Frank, E.G., McDonald, J.P., Iwai, S., Hanaoka, F. and Woodgate, R. 2000. Misinsertion and bypass of thymine-thymine dimers by human DNA polymerase ι . *EMBO J.* 19: 5259-5266.
4. Tissier, A., McDonald, J.P., Frank, E.G. and Woodgate, R. 2000. Novel human and mouse homologs of *Saccharomyces cerevisiae* DNA polymerase η . *Genomics* 60: 20-30.
5. Tissier, A., McDonald, J.P., Frank, E.G. and Woodgate, R. 2000. pol ι , a remarkably error-prone human DNA polymerase. *Genes Dev.* 14: 1642-1650.

CHROMOSOMAL LOCATION

Genetic locus: POLI (human) mapping to 18q21.2.

PRODUCT

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

APPLICATIONS

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

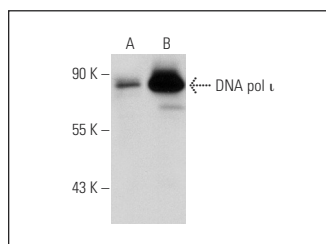
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

DNA pol ι (NN7): sc-101026 is recommended as a positive control antibody for Western Blot analysis of enhanced human DNA pol ι expression in DNA pol ι transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



DNA pol ι (NN7): sc-101026. Western blot analysis of DNA pol ι expression in non-transfected: sc-117752 (A) and human DNA pol ι transfected: sc-115254 (B) 293T whole cell lysates.

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.

RESEARCH USE

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

PROTOCOLS

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