SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol δ cat (h2): 293T Lysate: sc-170437

BACKGROUND

DNA replication, recombination and repair, all of which are necessary for genome 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. Exonucleases involved in these processes include DNA polymerases, including DNA pol δ and ε. DNA pol δ consists of two subunits, p125, which interacts directly with the sliding DNA clamp protein PCNA, and p50. DNA pol δ can be regulated by cell cycle proteins. DNA pol ε is a multiple subunit enzyme, the catalytic subunit of which is encoded by the POL2 gene. The exact reactions catalyzed by DNA pol δ and ε on leading and lagging strands have not yet been elucidated.

REFERENCES

1. Lee, M.Y., Tan, C.K., Downey, K.M. and So, A.G. 1984. Further studies on calf thymus DNA pol δ purified to homogeneity by a new procedure. Biochemistry 23: 1906-1913.
2. Hamatake, R.K., Hasegawa, H., Clark, A.B., Bebenek, K., Kunkel, T.A. and Sugino, A. 1990. Purification and characterization of DNA polymerase II from the yeast *Saccharomyces cerevisiae*. Identification of the catalytic core and a possible holoenzyme form of the enzyme. J. Biol. Chem. 265: 4072-4083.
3. Goulian, M., Richards, S.H., Heard, C.J. and Bigsby, B.M. 1990. Discontinuous DNA synthesis by purified mammalian proteins. J. Biol. Chem. 265: 18461-18471. Erratum: J. Biol. Chem. 1990. 265: 22569.
4. Morrison, A., Araki, H., Clark, A.B., Hamatake, R.K. and Sugino, A. 1990. A third essential DNA polymerase in *S. cerevisiae*. Cell 62: 1143-1151.
5. Zeng, X.R., Hao, H., Jiang, Y. and Lee, M.Y. 1994. Regulation of human DNA pol δ during the cell cycle. J. Biol. Chem. 269: 24027-24033.
6. Johnson, R.E., Kovvali, G.K., Prakash, L. and Prakash, S. 1995. Requirement of the yeast RTH1 5' to 3' exonuclease for the stability of simple repetitive DNA. Science 269: 238-240.
7. Zhang, P., Mo, J.Y., Perez, A., Leon, A., Liu, L., Mazloum, N., Xu, H. and Lee, M.Y. 1999. Direct interaction of proliferating cell nuclear antigen with the p125 catalytic subunit of mammalian DNA polymerase δ. J. Biol. Chem. 274: 26647-26653.

CHROMOSOMAL LOCATION

Genetic locus: POLD1 (human) mapping to 19q13.33.

PRODUCT

DNA pol δ cat (h2): 293T Lysate represents a lysate of human DNA pol δ cat transfected 293T cells and is provided as 100 µg protein in 200 µl 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.

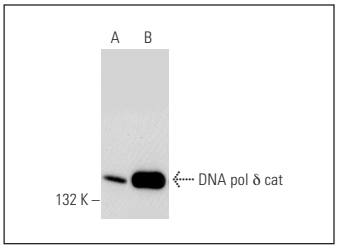
APPLICATIONS

DNA pol δ cat (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive DNA pol δ cat antibodies. Recommended use: 10-20 µl per lane.

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

DNA pol δ cat (5G1): sc-53856 is recommended as a positive control antibody for Western Blot analysis of enhanced human DNA pol δ cat expression in DNA pol δ cat transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



DNA pol δ cat (5G1): sc-53856. Western blot analysis of DNA pol δ cat expression in non-transfected: sc-117752 (**A**) and human DNA pol δ cat transfected: sc-170437 (**B**) 293T whole cell lysates.

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.