SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol δ cat (22): sc-135884

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

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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.
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.

CHROMOSOMAL LOCATION

Genetic locus: POLD1 (human) mapping to 19q13.33; Pold1 (mouse) mapping to 7 B4.

SOURCE

DNA pol δ cat (22) is a mouse monoclonal antibody raised against amino acids 60-261 of DNA pol δ cat of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

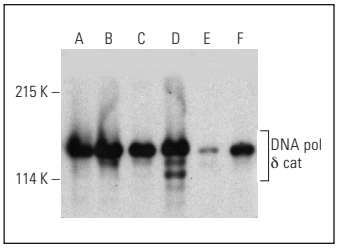
DNA pol δ cat (22) is recommended for detection of DNA pol δ cat of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for DNA pol δ cat siRNA (h): sc-37777, DNA pol δ cat siRNA (m): sc-37778, DNA pol δ cat shRNA Plasmid (h): sc-37777-SH, DNA pol δ cat shRNA Plasmid (m): sc-37778-SH, DNA pol δ cat shRNA (h) Lentiviral Particles: sc-37777-V and DNA pol δ cat shRNA (m) Lentiviral Particles: sc-37778-V.

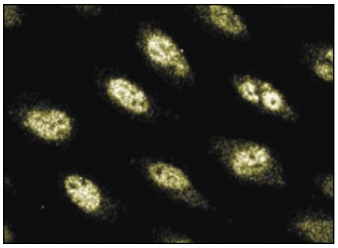
Molecular Weight of DNA pol δ cat: 125 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, HeLa nuclear extract: sc-2120 or KNRK nuclear extract: sc-2141.

DATA



DNA pol δ cat (22): sc-135884. Western blot analysis of DNA pol δ cat expression in Jurkat (**A**), HeLa (**B**), K-562 (**C**), Ramos (**D**), RAW 264.7 (**E**) and KNRK (**F**) nuclear extracts.



DNA pol δ cat (22): sc-135884. Immunofluorescence staining of human endothelial cells showing nuclear staining.

RESEARCH USE

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

PROTOCOLS

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