SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol δ cat (5G1): sc-53856

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., et al. 1984. Further studies on calf thymus DNA pol δ purified to homogeneity by a new procedure. Biochemistry 23: 1906-1913.
2. Hamatake, R.K., et al. 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., et al. 1990. Discontinuous DNA synthesis by purified mammalian proteins. J. Biol. Chem. 265: 18461-18471.
4. Morrison, A., et al. 1990. A third essential DNA polymerase in *S. cerevisiae*. Cell 62: 1143-1151.
5. Zeng, X.R., et al. 1994. Regulation of human DNA pol δ during the cell cycle. J. Biol. Chem. 269: 24027-24033.
6. Johnson, R.E., et al. 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 (5G1) is a rat monoclonal antibody raised against recombinant His-DNA pol δ p125 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DNA pol δ cat (5G1) is available conjugated to either phycoerythrin (sc-53856 PE) or fluorescein (sc-53856 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

STORAGE

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

APPLICATIONS

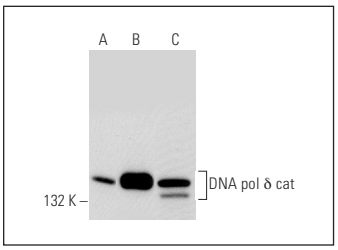
DNA pol δ cat (5G1) is recommended for detection of DNA pol δ catalytic subunit of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

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.

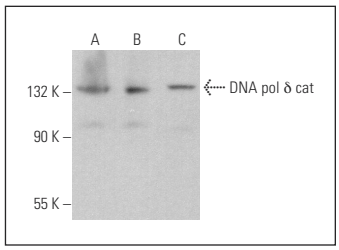
Molecular Weight of DNA pol δ cat: 125 kDa.

Positive Controls: DNA pol δ cat (h2): 293T Lysate: sc-170437, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

DATA



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



DNA pol δ cat (5G1): sc-53856. Western blot analysis of DNA pol δ cat expression in KNRK (**A**), RAW 264.7 (**B**) and Jurkat (**C**) 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.