SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol δ cat (A-9): sc-17776

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

DNA pol δ cat (A-9) is a mouse monoclonal antibody raised against amino acids 1-300 of DNA pol δ cat of human origin.

PRODUCT

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

DNA pol δ cat (A-9) is available conjugated to agarose (sc-17776 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17776 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17776 PE), fluorescein (sc-17776 FITC), Alexa Fluor® 488 (sc-17776 AF488), Alexa Fluor® 546 (sc-17776 AF546), Alexa Fluor® 594 (sc-17776 AF594) or Alexa Fluor® 647 (sc-17776 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17776 AF680) or Alexa Fluor® 790 (sc-17776 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

DNA pol δ cat (A-9) is recommended for detection of DNA pol δ cat of human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of DNA pol δ cat: 125 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HeLa whole cell lysate: sc-2200 or HCT-116 whole cell lysate: sc-364175.

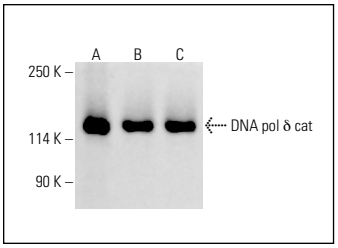
STORAGE

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

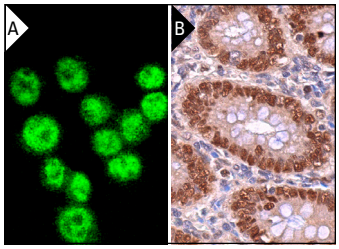
RESEARCH USE

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

DATA



DNA pol δ cat (A-9): sc-17776. Western blot analysis of DNA pol δ cat expression in HeLa (**A**), K-562 (**B**) and HCT-116 (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



DNA pol δ cat (A-9): sc-17776. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear staining of glandular and lymphoid cells (**B**).

SELECT PRODUCT CITATIONS

1. Watanabe, K., et al. 2004. Rad18 guides poleta to replication stalling sites through physical interaction and PCNA monoubiquitination. EMBO J. 23: 3886-3896.
2. Hilton, B.A., et al. 2017. Progerin sequestration of PCNA promotes replication fork collapse and mislocalization of XPA in laminopathy-related progeroid syndromes. FASEB J. 31: 3882-3893.
3. Weon, J.L., et al. 2018. Cytosolic iron-sulfur assembly is evolutionarily tuned by a cancer-amplified ubiquitin ligase. Mol. Cell 69: 113-125.e6.
4. Tang, L., et al. 2019. DNA polymerase α is essential for intracellular amplification of hepatitis B virus covalently closed circular DNA. PLoS Pathog. 15: e1007742.
5. Job, A., et al. 2020. The $POLD1^{R689W}$ variant increases the sensitivity of colorectal cancer cells to ATR and CHK1 inhibitors. Sci. Rep. 10: 18924.
6. Chen, J., et al. 2021. Anlotinib suppresses MLL-rearranged acute myeloid leukemia cell growth by inhibiting SETD1A/Akt-mediated DNA damage response. Am. J. Transl. Res. 13: 1494-1504.
7. Zhu, C., et al. 2022. Profilin-1 regulates DNA replication forks in a context-dependent fashion by interacting with SNF2H and BOD1L. Nat. Commun. 13: 6531.
8. Mehawej, C., et al. 2023. POLD3 deficiency is associated with severe combined immunodeficiency, neurodevelopmental delay, and hearing impairment. Clin. Immunol. 251: 109326.

PROTOCOLS

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