SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol δ cat (C-20): sc-8797

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; Pold1 (mouse) mapping to 7 B4.

SOURCE

DNA pol δ cat (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DNA pol δ cat of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-8797 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DNA pol δ cat (C-20) 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DNA pol δ cat (C-20) is also recommended for detection of DNA pol δ cat in additional species, including equine, canine, bovine and porcine.

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: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

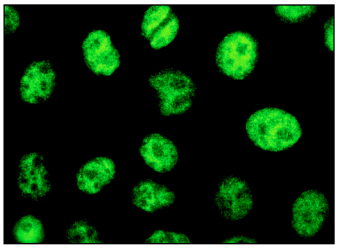
STORAGE

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 (C-20): sc-8797. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Ducoux, M., et al. 2001. Mediation of proliferating cell nuclear antigen (PCNA)-dependent DNA replication through a conserved $p21^{Cip1}$-like PCNA-binding motif present in the third subunit of human DNA polymerase δ. J. Biol. Chem. 276: 49258-49266.
2. Perucca, P., et al. 2006. Spatiotemporal dynamics of $p21^{CDKN1A}$ protein recruitment to DNA-damage sites and interaction with proliferating cell nuclear antigen. J. Cell Sci. 119: 1517-1527.
3. Shiomi, Y., et al. 2007. A second proliferating cell nuclear antigen loader complex, CTF18-replication factor C, stimulates DNA polymerase η activity. J. Biol. Chem. 282: 20906-20914.
4. Venkatesan, R.N., et al. 2007. Mutation at the polymerase active site of mouse DNA polymerase δ increases genomic instability and accelerates tumorigenesis. Mol. Cell. Biol. 27: 7669-7682.
5. Shimamura, S., et al. 2008. Interaction between Dnmt1 and DNA replication reactions in the SV40 *in vitro* replication system. Cancer Sci. 99: 1960-1966.
6. Bhattacharyya, S., et al. 2009. Telomerase associated protein 1, HSP 90 and topoisomerase IIα associate directly with the BLM helicase in immortalized cells using altand modulate its helicase activity using telomeric DNA substrates. J. Biol. Chem. 284: 14966-14977.
7. Uchimura, A., et al. 2009. DNA polymerase δ is required for early mammalian embryogenesis. PLoS ONE 4: e4184.
8. Revuelta-Cervantes, J., et al. 2011. Protein Tyrosine Phosphatase 1B (PTP1B) deficiency accelerates hepatic regeneration in mice. Am. J. Pathol. 178: 1591-1604.