

DNA pol δ 2 (T-20): sc-12343

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

- Lee, M.Y., Tan, C.K., Downey, K.M. and So, A.G. 1984. Further studies on calf thymus DNA polymerase δ purified to homogeneity by a new procedure. *Biochemistry* 23: 1906-1913.
- 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.
- 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.
- 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.
- Zeng, X.R., Hao, H., Jiang, Y. and Lee, M.Y. 1994. Regulation of human DNA polymerase δ during the cell cycle. *J. Biol. Chem.* 269: 24027-24033.
- Johnson, R.E., Kowali, 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.
- Zhang, P., Mo, J.Y., Perez, A., Leon, A., Liu, L., Mazloun, 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: POLD2 (human) mapping to 7p13; Pold2 (mouse) mapping to 11 A1.

SOURCE

DNA pol δ 2 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DNA pol δ 2 of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-12343 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DNA pol δ 2 (T-20) is recommended for detection of DNA pol δ 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 2 (T-20) is also recommended for detection of DNA pol δ 2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DNA pol δ 2 siRNA (h): sc-37783, DNA pol δ 2 siRNA (m): sc-37780, DNA pol δ 2 shRNA Plasmid (h): sc-37783-SH, DNA pol δ 2 shRNA Plasmid (m): sc-37780-SH, DNA pol δ 2 shRNA (h) Lentiviral Particles: sc-37783-V and DNA pol δ 2 shRNA (m) Lentiviral Particles: sc-37780-V.

Molecular Weight of DNA pol δ 2: 50 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132 or HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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



Try **DNA pol δ 2 (D-7): sc-390583** or **DNA pol δ 2 (E-7): sc-390804**, our highly recommended monoclonal alternatives to DNA pol δ 2 (T-20).