SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol ε A (34): sc-135885

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: POLE (human) mapping to 12q24.33; Pole (mouse) mapping to 5 F.

SOURCE

DNA pol ε A (34) is a mouse monoclonal antibody raised against amino acids 629-749 of DNA pol ε A of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

STORAGE

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

APPLICATIONS

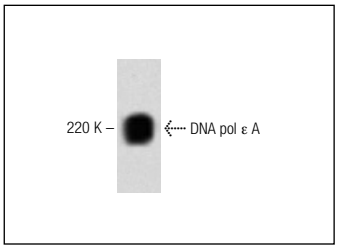
DNA pol ε A (34) is recommended for detection of DNA pol ε A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for DNA pol ε A siRNA (h): sc-43728, DNA pol ε A siRNA (m): sc-45512, DNA pol ε A shRNA Plasmid (h): sc-43728-SH, DNA pol ε A shRNA Plasmid (m): sc-45512-SH, DNA pol ε A shRNA (h) Lentiviral Particles: sc-43728-V and DNA pol ε A shRNA (m) Lentiviral Particles: sc-45512-V.

Molecular Weight of DNA pol ε A: 220 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa + UV irradiated cell lysate: sc-2221 or K-562 nuclear extract: sc-2130.

DATA



DNA pol ε A (34): sc-135885. Western blot analysis of DNA pol ε A expression in HeLa whole cell lysate.

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.