

DNA pol ϵ A (D-10): sc-390785

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., et al. 1984. Further studies on calf thymus DNA polymerase δ purified to homogeneity by a new procedure. *Biochemistry* 23: 1906-1913.
- 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.
- Goulian, M., et al. 1990. Discontinuous DNA synthesis by purified mammalian proteins. *J. Biol. Chem.* 265: 18461-18471.
- Morrison, A., et al. 1990. A third essential DNA polymerase in *S. cerevisiae*. *Cell* 62: 1143-1151.

CHROMOSOMAL LOCATION

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

SOURCE

DNA pol ϵ A (D-10) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of DNA pol ϵ A of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DNA pol ϵ A (D-10) is available conjugated to agarose (sc-390785 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390785 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390785 PE), fluorescein (sc-390785 FITC), Alexa Fluor[®] 488 (sc-390785 AF488), Alexa Fluor[®] 546 (sc-390785 AF546), Alexa Fluor[®] 594 (sc-390785 AF594) or Alexa Fluor[®] 647 (sc-390785 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390785 AF680) or Alexa Fluor[®] 790 (sc-390785 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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 (D-10) is recommended for detection of DNA pol ϵ A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

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.

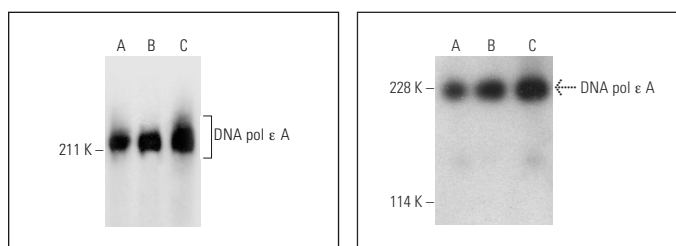
Molecular Weight of DNA pol ϵ A: 220 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, K-562 nuclear extract: sc-2130 or HeLa nuclear extract: sc-2120.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



DNA pol ϵ A (D-10): sc-390785. Western blot analysis of DNA pol ϵ A expression in Jurkat (A), K-562 (B) and HeLa (C) nuclear extracts.

DNA pol ϵ A (D-10) HRP: sc-390785 HRP. Direct western blot analysis of DNA pol ϵ A expression in Jurkat (A), K-562 (B) and HeLa (C) nuclear extracts.

SELECT PRODUCT CITATIONS

- Fan, Y., et al. 2021. LRR1-mediated replisome disassembly promotes DNA replication by recycling replisome components. *J. Cell Biol.* 220: e202009147.
- Vipat, S., et al. 2022. The non-catalytic role of DNA polymerase ϵ in replication initiation in human cells. *Nat. Commun.* 13: 7099.

RESEARCH USE

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