

DNA pol δ cat (H-8): sc-374025

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

1. 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.
2. 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.

CHROMOSOMAL LOCATION

Genetic locus: POLD1 (human) mapping to 19q13.33; Pold1 (mouse) mapping to 7 B4.

SOURCE

DNA pol δ cat (H-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1079-1116 near the C-terminus of DNA pol δ cat of human origin.

PRODUCT

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

DNA pol δ cat (H-8) is available conjugated to agarose (sc-374025 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374025 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374025 PE), fluorescein (sc-374025 FITC), Alexa Fluor® 488 (sc-374025 AF488), Alexa Fluor® 546 (sc-374025 AF546), Alexa Fluor® 594 (sc-374025 AF594) or Alexa Fluor® 647 (sc-374025 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374025 AF680) or Alexa Fluor® 790 (sc-374025 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374025 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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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 δ cat (H-8) is recommended for detection of DNA pol δ cat 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).

DNA pol δ cat (H-8) is also recommended for detection of DNA pol δ cat in additional species, including equine, canine 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.

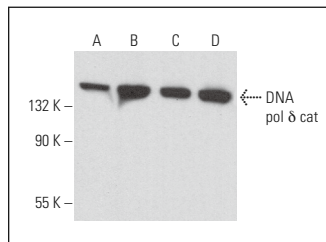
Molecular Weight of DNA pol δ cat: 125 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HeLa whole cell lysate: sc-2200 or MOLT-4 cell lysate: sc-2233.

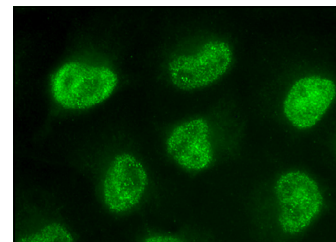
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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 λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



DNA pol δ cat (H-8): sc-374025. Western blot analysis of DNA pol δ cat expression in HeLa (A), HL-60 (B), MCF7 (C) and MOLT-4 (D) whole cell lysates.



DNA pol δ cat (H-8): sc-374025. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Gu, X., et al. 2023. Pold4 is dispensable for mouse development, DNA replication and DNA repair. *Gene* 851: 147029.

RESEARCH USE

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