

PRIM1 (H-9): sc-390265

BACKGROUND

In eukaryotic cells, the replication of DNA is carried out by a variety of proteins and requires a complex chromosomal replication structure, of which POLA2 (DNA polymerase α) and DNA primases (PRIMs) are key components. PRIM1 (DNA primase small subunit), also known as p49, is a 420 amino acid protein that exists as a heterodimer with PRIM2A, another DNA primase. Together, PRIM1 and PRIM2A function to synthesize small RNA primers that are required for the proper activity of Okazaki fragments during replication of the DNA lagging strand. Interestingly, the gene encoding PRIM1 is coamplified with other core 12q13.3 amplicon genes in human osteosarcoma. In the retina of zebrafish, mutations in PRIM1 were observed to not affect cell proliferation, though neuronal apoptosis was induced. It is likely that such mutations in PRIM1 leads to activation of the ATM-Chk2-p53 apoptotic pathway.

REFERENCES

- Adler, D.A., et al. 1991. Physical mapping of the genes for three components of the mouse DNA replication complex: polymerase α to the X chromosome, primase p49 subunit to chromosome 10, and primase p58 subunit to chromosome 1. *Genomics* 9: 642-646.
- Stadlbauer, F., et al. 1994. DNA replication *in vitro* by recombinant DNA-polymerase- α -primase. *Eur. J. Biochem.* 222: 781-793.

CHROMOSOMAL LOCATION

Genetic locus: PRIM1 (human) mapping to 12q13.3; Prim1 (mouse) mapping to 10 D3.

SOURCE

PRIM1 (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 135-175 within an internal region of PRIM1 of human origin.

PRODUCT

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

PRIM1 (H-9) is available conjugated to agarose (sc-390265 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390265 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390265 PE), fluorescein (sc-390265 FITC), Alexa Fluor[®] 488 (sc-390265 AF488), Alexa Fluor[®] 546 (sc-390265 AF546), Alexa Fluor[®] 594 (sc-390265 AF594) or Alexa Fluor[®] 647 (sc-390265 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390265 AF680) or Alexa Fluor[®] 790 (sc-390265 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390265 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

PRIM1 (H-9) is recommended for detection of PRIM1 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).

PRIM1 (H-9) is also recommended for detection of PRIM1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PRIM1 siRNA (h): sc-95796, PRIM1 siRNA (m): sc-152465, PRIM1 shRNA Plasmid (h): sc-95796-SH, PRIM1 shRNA Plasmid (m): sc-152465-SH, PRIM1 shRNA (h) Lentiviral Particles: sc-95796-V and PRIM1 shRNA (m) Lentiviral Particles: sc-152465-V.

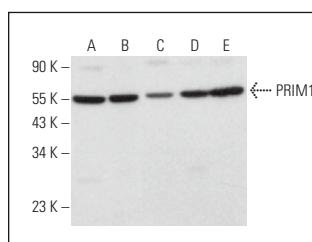
Molecular Weight of PRIM1: 49 kDa.

Positive Controls: SP2/0 whole cell lysate: sc-364795, Hep G2 cell lysate: sc-2227 or human liver extract: sc-363766.

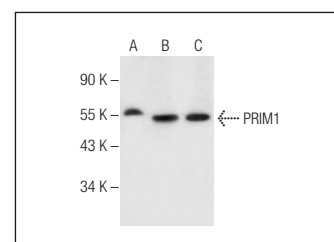
RECOMMENDED SUPPORT REAGENTS

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



PRIM1 (H-9): sc-390265. Western blot analysis of PRIM1 expression in Hep G2 (A), HEL 92.1.7 (B), NIH/3T3 (C), AT3B-1 (D) and PC-12 (E) whole cell lysates.



PRIM1 (H-9): sc-390265. Western blot analysis of PRIM1 expression in SP2/0 (A) and Hep G2 (B) whole cell lysates and human liver tissue extract (C).

SELECT PRODUCT CITATIONS

- Yu, E.Y., et al. 2021. Reciprocal impacts of telomerase activity and ADRN/MES differentiation state in neuroblastoma tumor biology. *Commun. Biol.* 4: 1315.

STORAGE

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