SANTA CRUZ BIOTECHNOLOGY, INC.

Geminin (N-18): sc-8449

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Geminin is a nuclear protein that regulates the initiation of DNA replication during the cell cycle. DNA replication requires the coordinated association of Cdc6 and minichromosome maintenance (MCM) proteins with chromatin. Geminin blocks this assembly of the MCM into the prereplication complex and, in turn, prevents replication from occurring. Expression of Geminin fluctuates throughout the cell cycle with Geminin levels lowest at G_1. Throughout S, G_2 and M phases, Geminin levels are consistently elevated followed by a decrease during mitosis. The initiation of DNA replication is dependent on the degradation of Geminin during mitosis and the absence of Geminin throughout G_1 phase. Geminin degradation is mediated by the anaphase-promoting complex (APC), which specifically targets B-type cyclins and other proteins containing a destruction box motif for degradation by ubiquitin-mediated proteolysis.

REFERENCES

1. Yu, H., et al. 1996. Identification of a novel ubiquitin-conjugating enzyme involved in mitotic cyclin degradation. Curr. Biol. 6: 455-466.
2. Rowles, A., et al. 1997. Chromatin proteins involved in the initiation of DNA replication. Curr. Opin. Genet. Dev. 7: 152-157.
3. Liang, C., et al. 1997. Persistent initiation of DNA replication and chromatin-bound MCM proteins during the cell cycle in cdc6 mutants. Genes Dev. 11: 3375-3386.
4. Page, A.M., et al. 1997. The anaphase promoting complex. Cancer Surv. 29: 133-150.
5. Kroll, K.L., et al. 1998. Geminin, a neuralizing molecule that demarcates the future neural plate at the onset of gastrulation. Development 125: 3247-3258.
6. McGarry, T.J., et al. 1998. Geminin, an inhibitor of DNA replication, is degraded during mitosis. Cell 93: 1043-1053.

CHROMOSOMAL LOCATION

Genetic locus: Gmnn (mouse) mapping to 13 A3.1.

SOURCE

Geminin (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Geminin of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-8449 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Geminin (N-18) is recommended for detection of Geminin of mouse and rat 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)], 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 Geminin siRNA (m): sc-108025, Geminin shRNA Plasmid (m): sc-108025-SH and Geminin shRNA (m) Lentiviral Particles: sc-108025-V.

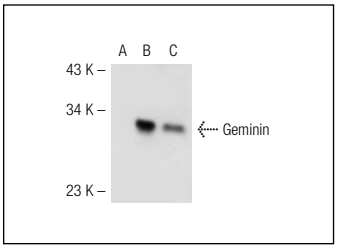
Molecular Weight of Geminin: 35 kDa.

Positive Controls: MM-142 cell lysate: sc-2246 or Geminin (m): 293T Lysate: sc-120468.

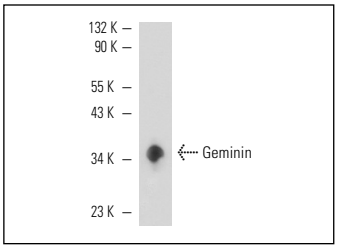
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecip-i tation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/ 2.0 ml). 3) 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.

DATA



Geminin (N-18): sc-8449. Western blot analysis of Geminin expression in non-transfected 293T: sc-117752 (**A**), mouse Geminin transfected 293T: sc-120468 (**B**) and MM-142 (**C**) whole cell lysates.



Geminin (N-18): sc-8449. Western blot analysis of human recombinant geminin (GMNN).

RESEARCH USE

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