

# Geminin (2H7): sc-53923

## 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<sub>1</sub>. Throughout S, G<sub>2</sub> 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<sub>1</sub> 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 (human) mapping to 6p22.2; Gmn (mouse) mapping to 13 A3.1.

## SOURCE

Geminin (2H7) is a mouse monoclonal antibody raised against amino acids 1-209 of Geminin of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

Geminin (2H7) is recommended for detection of Geminin of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Geminin siRNA (h): sc-43800, Geminin siRNA (m): sc-108025, Geminin shRNA Plasmid (h): sc-43800-SH, Geminin shRNA Plasmid (m): sc-108025-SH, Geminin shRNA (h) Lentiviral Particles: sc-43800-V and Geminin shRNA (m) Lentiviral Particles: sc-108025-V.

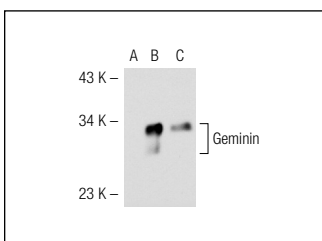
Molecular Weight of Geminin: 35 kDa.

Positive Controls: MM-142 nuclear extract: sc-2139 or Geminin (m): 293T Lysate: sc-120468.

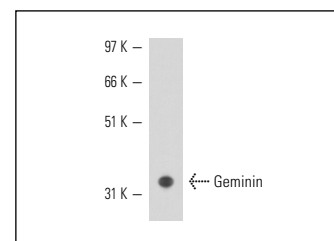
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



Geminin (2H7): sc-53923. 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 (2H7): sc-53923. Western blot analysis of human recombinant Geminin.

## SELECT PRODUCT CITATIONS

1. Bou Kheir, T., et al. 2011. miR-449 inhibits cell proliferation and is down-regulated in gastric cancer. *Mol. Cancer* 10: 29.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.