SANTA CRUZ BIOTECHNOLOGY, INC.

Geminin (m): 293T Lysate: sc-120468

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 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.

PRODUCT

Geminin (m): 293T Lysate represents a lysate of mouse Geminin transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Geminin (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Geminin antibodies. Recommended use: 10-20 µl per lane.

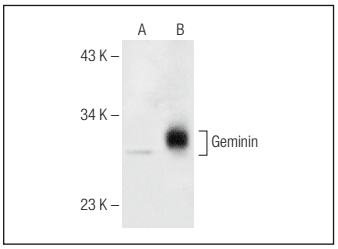
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Geminin (H-3): sc-374187 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Geminin expression in Geminin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

DATA



Geminin (H-3): sc-374187. Western blot analysis of Geminin expression in non-transfected: sc-117752 (**A**) and mouse Geminin transfected: sc-120468 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.