Revision 1

#5165 Store at -20C

Geminin Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M Mk	Endogenous	25	Rabbit	#O75496	51053

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Geminin Antibody detects endogenous levels of total geminin protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly47 of human geminin protein. Antibodies are purified using protein A and peptide affinity chromatography.

Background

The initiation of DNA replication in mammalian cells is a highly coordinated process that ensures duplication of the genome only once per cell division cycle. Origins of replication are dispersed throughout the genome and their activities are regulated via the sequential binding of pre-replication and replication factors. The origin recognition complex (ORC) is thought to be bound to chromatin throughout the cell cycle (1,2). The pre-replication complex (pre-RC) forms in late mitosis/early G1 phase beginning with the binding of CDT1 and cdc6 to the origin, which allows binding of the heterohexameric MCM2-7 complex. Once this complex is formed, the origin is “licensed” for initiation of DNA replication. In order to ensure that replication occurs only once per cell cycle, geminin binds to and inhibits CDT1 during the S, G2, and M phases. This prevents the recruitment of the MCM complex to the origins of replication, which blocks the premature reformation of the pre-RC. At the metaphase/anaphase transition, geminin is degraded by the anaphase-promoting complex (APC) allowing for the formation of a new pre-RC (3,4).

Background References

1. Okuno, Y. et al. (2001) *EMBO J* 20, 4263-77.
2. McNairn, A.J. et al. (2005) *Exp Cell Res* 308, 345-56.
3. Montanari, M. et al. (2006) *Cell Death Differ* 13, 1052-6.
4. McGarry, T.J. and Kirschner, M.W. (1998) *Cell* 93, 1043-53.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **Mk:** Monkey

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Limited Uses

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