

# CdcA3 (M-79): sc-134626

## BACKGROUND

Cell cycle events are regulated by the sequential activation and deactivation of cyclin dependent kinases (Cdks) and by the proteolysis of cyclins. The cell division control (Cdc) genes are required at various points in the cell cycle. CdcA3 (cell division cycle-associated protein 3), also known as TOME1 (trigger of mitotic entry protein 1) and GRCC8 (gene-rich cluster protein C8), is a 268 amino acid cytoplasmic protein that is required for entry into mitosis. By participating with E3 ligase complexes, CdcA3 is involved in ubiquitination and degradation of the mitosis-inhibitory kinase Wee 1, leading to the dephosphorylation of Cdc2 in the late G<sub>2</sub> phase. CdcA3 itself is targeted for destruction by anaphase promoting complex (APC) in the G<sub>1</sub> phase of the cell cycle, then allowing for Wee 1 accumulation during interphase.

## REFERENCES

- Hershko, A. 1999. Mechanisms and regulation of the degradation of cyclin B. *Philos. Trans. R. Soc. Lond., B, Biol. Sci.* 354: 1571-1575; discussion 1575-1576.
- Ayad, N.G., Rankin, S., Murakami, M., Jebanathirajah, J., Gygi, S. and Kirschner, M.W. 2003. Tome-1, a trigger of mitotic entry, is degraded during G1 via the APC. *Cell* 113: 101-113.
- Lim, H.H. and Surana, U. 2003. Tome-1, wee1, and the onset of mitosis: coupled destruction for timely entry. *Mol. Cell* 11: 845-846.
- Yoshida, K. 2005. Cell-cycle-dependent regulation of the human and mouse Tome-1 promoters. *FEBS Lett.* 579: 1488-1492.
- Owens, L., Simanski, S., Squire, C., Smith, A., Cartzendafner, J., Cavett, V., Busby, J.C., Sato, T. and Ayad, N.G. 2009. Activation domain dependent degradation of somatic Wee 1 kinase. *J. Biol. Chem.* 285: 6761-6769.
- Sawin, K.E. 2009. Cell cycle: Cell division brought down to size. *Nature* 459: 782-783.
- Kim, D.M., Ko, B.S., Ju, J.W., Cho, S.H., Yang, S.J., Yeom, Y.I., Kim, T.S., Won, Y. and Kim, I.C. 2009. Gene expression profiling in mouse liver infected with *Clonorchis sinensis* metacercariae. *Parasitol. Res.* 106: 269-278.
- Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 607749. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: CDCA3 (human) mapping to 12p13.31; Cdca3 (mouse) mapping to 6 F2.

## SOURCE

CdcA3 (M-79) is a rabbit polyclonal antibody raised against amino acids 1-79 mapping at the N-terminus of CdcA3 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.

## APPLICATIONS

CdcA3 (M-79) is recommended for detection of CdcA3 of mouse, rat and, to a lesser extent, human 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 CdcA3 siRNA (h): sc-96127, CdcA3 siRNA (m): sc-142218, CdcA3 shRNA Plasmid (h): sc-96127-SH, CdcA3 shRNA Plasmid (m): sc-142218-SH, CdcA3 shRNA (h) Lentiviral Particles: sc-96127-V and CdcA3 shRNA (m) Lentiviral Particles: sc-142218-V.

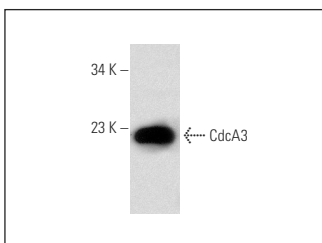
Molecular Weight of CdcA3: 29 kDa.

Positive Controls: rat small intestine extract: sc-364811.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



CdcA3 (M-79): sc-134626. Western blot analysis of CdcA3 expression in rat small intestine tissue extract.

## 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.

## PROTOCOLS

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