

# CdcA1 (28-37): sc-53635

## BACKGROUND

Kinetochores play an essential role in chromosome segregation by forming dynamic connections with spindle microtubules. Cell division associated 1 (CdcA1) is a member of the evolutionarily conserved centromere protein complex along with kinetochore associated 2 (KNTC2), and these two proteins are involved in the regulation of cell-cycle progression. The novel human cell cycle genes CdcA1 through CdcA8 are co-expressed with the well-known cell cycle genes including Cdc2, Cdc7, Cdc23, cyclin and MCAK. Both CdcA1 and KNTC2 are implicated in non-small cell lung carcinomas (NSCLC), and selective suppression of CdcA1 or KNTC2 activity and/or inhibition of the CdcA1-KNTC2 complex formation may be a promising therapeutic target for treatment of lung cancers.

## REFERENCES

1. Nabetani, A., et al. 2001. A conserved protein, Nuf2, is implicated in connecting the centromere to the spindle during chromosome segregation: a link between the kinetochore function and the spindle checkpoint. *Chromosoma* 110: 322-334.
2. Walker, M.G. 2002. Drug target discovery by gene expression analysis: cell cycle genes. *Curr. Cancer Drug Targets* 1: 73-83.
3. DeLuca, J.G., et al. 2003. Nuf2 and Hec1 are required for retention of the checkpoint proteins Mad 1 and Mad 2 to kinetochores. *Curr. Biol.* 13: 2103-2109.
4. Hori, T., et al. 2003. Dynamic centromere and is essential for mitotic progression in vertebrate cells. *J. Cell Sci.* 116: 3347-3362.
5. Meraldi, P., et al. 2004. Timing and checkpoints in the regulation of mitotic progression. *Dev. Cell* 7: 45-60.
6. Stucke, V.M., et al. 2004. Kinetochore localization and microtubule interaction of the human spindle checkpoint kinase Mps1. *Chromosoma* 113: 1-15.
7. Tien, A.C., et al. 2004. Identification of the substrates and interaction protein from a protein-protein interaction model. *Mol. Cell. Proteomics* 3: 93-104.
8. Ciferri, C., et al. 2005. Architecture of the human Ndc80-Hec1 complex, a critical constituent of the outer kinetochore. *J. Biol. Chem.* 280: 29088-29095.
9. Hayama, S., et al. 2006. Activation of CdcA1-KNTC2, members of centromere protein complex, involved in pulmonary carcinogenesis. *Cancer Res.* 66: 10339-10348.

## CHROMOSOMAL LOCATION

Genetic locus: NUF2 (human) mapping to 1q23.3.

## SOURCE

CdcA1 (28-37) is a mouse monoclonal antibody raised against full length CdcA1 of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

CdcA1 (28-37) is recommended for detection of CDCA1 of 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 CdcA1 siRNA (h): sc-72839, CdcA1 shRNA Plasmid (h): sc-72839-SH and CdcA1 shRNA (h) Lentiviral Particles: sc-72839-V.

Molecular Weight of CdcA1: 53 kDa.

## 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## STORAGE

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

## PROTOCOLS

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