

# Cdc123 (G-10): sc-365596

## BACKGROUND

The eukaryotic cell division cycle consists of a number of gene-controlled sequences that involve cyclin dependent kinases (Cdks) and cell division control (Cdc) proteins. Cdc123 (cell division cycle protein 123), also known as D123, is a 336 amino acid cytoplasmic protein that is involved in cell cycle control. Widely expressed with high expression in thymus, spleen, ovary, testis, small intestine and leukocytes, Cdc123 functions to destabilize Chfr (checkpoint with forkhead and ring finger domain) proteins which, when accumulated, block the G to S phase transition. Cdc123 prevents the Chfr proteins from collecting in the cell, thereby allowing the cell to enter the S phase. Due to its role in cell cycle control, Cdc123 is thought to be a basal marker for luminal breast cancers.

## REFERENCES

- Okuda, A. and Kimura, G. 1996. An amino acid change in novel protein D123 is responsible for temperature-sensitive G<sub>1</sub>-phase arrest in a mutant of rat fibroblast line 3Y1. *Exp. Cell Res.* 223: 242-249.
- Onisto, M., et al. 1998. Expression study on D123 gene product: evidence for high positivity in testis. *Exp. Cell Res.* 242: 451-459.
- Okuda, A., et al. 1999. Extensive degradation of mutant-type D123 protein is responsible for temperature-sensitive proliferation inhibition in 3Y1tsD123 cells. *Cell Struct. Funct.* 24: 443-449.
- Liu, L.X., et al. 2000. Mutation of a conserved residue (D123) required for oligomerization of human immunodeficiency virus type 1 Nef protein abolishes interaction with human thioesterase and results in impairment of Nef biological functions. *J. Virol.* 74: 5310-5319.
- Okuda, A., et al. 2001. Reversion of temperature-sensitive mutation by inhibition of proteasome-mediated degradation of mutated D123 protein. *Cell Struct. Funct.* 26: 205-214.
- Bieganowski, P., et al. 2004. Cdc123 and checkpoint forkhead associated with RING proteins control the cell cycle by controlling eIF2 $\gamma$  abundance. *J. Biol. Chem.* 279: 44656-44666.
- Adelaide, J., et al. 2007. Integrated profiling of basal and luminal breast cancers. *Cancer Res.* 67: 11565-11575.

## CHROMOSOMAL LOCATION

Genetic locus: CDC123 (human) mapping to 10p13; Cdc123 (mouse) mapping to 2 A1.

## SOURCE

Cdc123 (G-10) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Cdc123 of human origin.

## PRODUCT

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

## RESEARCH USE

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

## APPLICATIONS

Cdc123 (G-10) is recommended for detection of Cdc123 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 Cdc123 siRNA (h): sc-90774, Cdc123 siRNA (m): sc-142205, Cdc123 shRNA Plasmid (h): sc-90774-SH, Cdc123 shRNA Plasmid (m): sc-142205-SH, Cdc123 shRNA (h) Lentiviral Particles: sc-90774-V and Cdc123 shRNA (m) Lentiviral Particles: sc-142205-V.

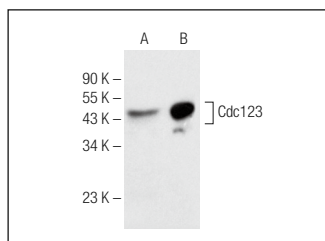
Molecular Weight of Cdc123: 39 kDa.

Positive Controls: Cdc123 (m3): 293T Lysate: sc-126610 or AML-193 whole cell lysate: sc-364182.

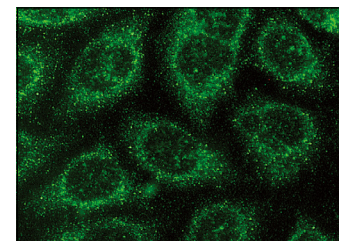
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



Cdc123 (G-10): sc-365596. Western blot analysis of Cdc123 expression in non-transfected: sc-117752 (A) and mouse Cdc123 transfected: sc-126610 (B) 293T whole cell lysates.



Cdc123 (G-10): sc-365596. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Song, N., et al. 2023. USP9X deubiquitinates and stabilizes CDC123 to promote breast carcinogenesis through regulating cell cycle. *Mol. Carcinog.* 62: 1487-1503.

## STORAGE

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