

Cdc14a phosphatase (DCS-291): sc-56260

BACKGROUND

In budding yeast, the Cdc14a phosphatase activates mitotic exit by dephosphorylation of specific cyclin-dependent kinase (Cdk) substrates and seems to be regulated by sequestration in the nucleolus until its release during mitosis. Human Cdc14a phosphatase is highly similar to *Saccharomyces cerevisiae* Cdc14 and is a member of the dual specificity protein Tyrosine phosphatase family. It interacts with and dephosphorylates tumor suppressor protein p53 and may regulate the function of p53. In addition, Cdc14a dephosphorylates hCdh1 and activates APC^{Cdh1}. Cdc14a phosphatase plays a role in the regulation of the centrosome cycle, mitosis and cytokinesis, thereby influencing chromosome partitioning and genomic stability in human cells. Deregulated human Cdc14a phosphatase disrupts centrosome separation and chromosome segregation.

REFERENCES

1. Wong, A.K., et al. 1999. Genomic structure, chromosomal location, and mutation analysis of the human Cdc 14a gene. *Genomics* 59: 248-251.
2. Li, L., et al. 2000. The human Cdc14 phosphatases interact with and dephosphorylate the tumor suppressor protein p53. *J. Biol. Chem.* 275: 2410-2414.
3. Bembek, J., et al. 2001. Regulation of the anaphase-promoting complex by the dual specificity phosphatase human Cdc14a. *J. Biol. Chem.* 276: 48237-48242.
4. Kaiser, B.K., et al. 2002. Disruption of centrosome structure, chromosome segregation, and cytokinesis by misexpression of human Cdc14a phosphatase. *Mol. Biol. Cell* 13: 2289-2300.
5. Mailand, N., et al. 2002. Deregulated human Cdc14a phosphatase disrupts centrosome separation and chromosome segregation. *Nat. Cell Biol.* 4: 317-322.

CHROMOSOMAL LOCATION

Genetic locus: CDC14A (human) mapping to 1p21.2.

SOURCE

Cdc14a phosphatase (DCS-291) is a mouse monoclonal antibody raised against a recombinant fragment of Cdc14a phosphatase of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdc14a phosphatase (DCS-291) is available conjugated to agarose (sc-56260 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56260 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56260 PE), fluorescein (sc-56260 FITC), Alexa Fluor® 488 (sc-56260 AF488), Alexa Fluor® 546 (sc-56260 AF546), Alexa Fluor® 594 (sc-56260 AF594) or Alexa Fluor® 647 (sc-56260 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56260 AF680) or Alexa Fluor® 790 (sc-56260 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Cdc14a phosphatase (DCS-291) is recommended for detection of Cdc14a phosphatase 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Cdc14a phosphatase siRNA (h): sc-37551, Cdc14a phosphatase shRNA Plasmid (h): sc-37551-SH and Cdc14a phosphatase shRNA (h) Lentiviral Particles: sc-37551-V.

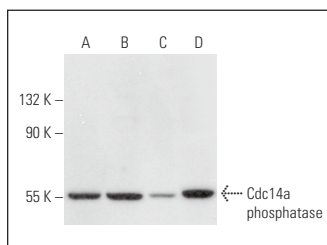
Molecular Weight of Cdc14a phosphatase: 69 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, A549 cell lysate: sc-2413 or PANC-1 whole cell lysate: sc-364380.

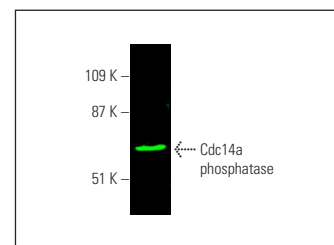
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Cdc14a phosphatase (DCS-291): sc-56260. Western blot analysis of Cdc14a phosphatase expression in PANC-1 (A), A549 (B), HeLa (C) and A-431 (D) whole cell lysates.



Cdc14a phosphatase (DCS-291): sc-56260. Near-infrared western blot analysis of Cdc14a phosphatase expression in A-431 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

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 for detailed protocols and support products.