SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc25A (F-6): sc-7389

BACKGROUND

The Cdc2/cyclin B enzyme, involved in regulation of mitosis in eukaryotic cells, is subject to multiple levels of control. Among these, the regulation of the catalytic subunit by Tyrosine phosphorylation is the best understood. Tyrosine phosphorylation inhibits the Cdc2/cyclin B complex, while Tyrosine dephosphorylation, which occurs at the onset of mitosis, directly activates the pre-MPH complex. The Cdc25 gene serves as a rate-limiting mitotic activator, apparently due to its action as the Cdc2 Tyrosine phosphatase. In the absence of Cdc25, Cdc2 accumulates in a Tyrosine phosphorylated state. In addition, Cdc25 proteins from a variety of species have been shown to share a low degree of sequence similarity with other Tyrosine phosphatases. The Cdc25 gene family consists of at least three members that share approximately 40% identity in their most conserved carboxy terminal sequences.

CHROMOSOMAL LOCATION

Genetic locus: CDC25A (human) mapping to 3p21.31; Cdc25a (mouse) mapping to 9 F2.

SOURCE

Cdc25A (F-6) is a mouse monoclonal antibody raised against the C-terminus of Cdc25A of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cdc25A (F-6) is available conjugated to agarose (sc-7389 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7389 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7389 PE), fluorescein (sc-7389 FITC), Alexa Fluor® 488 (sc-7389 AF488), Alexa Fluor® 546 (sc-7389 AF546), Alexa Fluor® 594 (sc-7389 AF594) or Alexa Fluor® 647 (sc-7389 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-7389 AF680) or Alexa Fluor® 790 (sc-7389 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cdc25A (F-6) is recommended for detection of Cdc25A of mouse, rat and 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 Cdc25A siRNA (h): sc-29254, Cdc25A siRNA (m): sc-35037, Cdc25A shRNA Plasmid (h): sc-29254-SH, Cdc25A shRNA Plasmid (m): sc-35037-SH, Cdc25A shRNA (h) Lentiviral Particles: sc-29254-V and Cdc25A shRNA (m) Lentiviral Particles: sc-35037-V.

Molecular Weight of Cdc25A: 67 kDa.

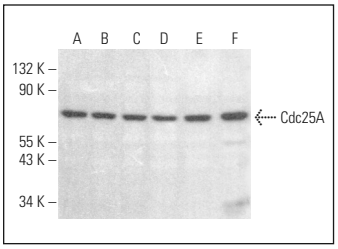
STORAGE

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

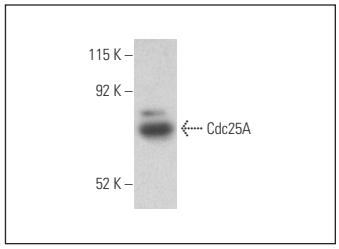
RESEARCH USE

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

DATA



Cdc25A (F-6): sc-7389. Western blot analysis of Cdc25A expression in SK-N-MC (**A**), A549 (**B**), Hep G2 (**C**), MCF7 (**D**), A-431 (**E**) and HL-60 (**F**) whole cell lysates.



Cdc25A (F-6): sc-7389. Western blot analysis of Cdc25A expression in Raji whole cell lysate. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.

SELECT PRODUCT CITATIONS

1. Vigo, E., et al. 1999. Cdc25A phosphatase is a target of E2F and is required for efficient E2F-induced S phase. Mol. Cell. Biol. 19: 6379-6395.
2. Gubanova, E., et al. 2013. SMG-1 suppresses CDK2 and tumor growth by regulating both the p53 and Cdc25A signaling pathways. Cell Cycle 12: 3770-3780.
3. Giráldez, S., et al. 2014. SCF(FBXW7α) modulates the intra-S-phase DNA-damage checkpoint by regulating Polo like kinase-1 stability. Oncotarget 5: 4370-4383.
4. Bertoli, S., et al. 2015. Cdc25A governs proliferation and differentiation of FLT3-ITD acute myeloid leukemia. Oncotarget 6: 38061-38078.
5. Brosh, R., et al. 2016. A dual molecular analogue tuner for dissecting protein function in mammalian cells. Nat. Commun. 7: 11742.
6. Di Fusco, D., et al. 2017. Smad7 positively regulates keratinocyte proliferation in psoriasis. Br. J. Dermatol. 177: 1633-1643.
7. Biswas, K., et al. 2018. BRE/BRCC45 regulates Cdc25A stability by recruiting USP7 in response to DNA damage. Nat. Commun. 9: 537.
8. Kohama, Y., et al. 2019. Regulation of the stability and activity of Cdc25A and Cdc25B by protein phosphatase PP2A and 14-3-3 binding. Cell. Signal. 54: 10-16.
9. Bai, B., et al. 2020. Small molecule 2,3-DCPE induces S phase arrest by activating the ATM/ATR-Chk1-Cdc25A signaling pathway in DLD-1 colon cancer cells. Oncol. Lett. 20: 294.
10. Kim, D., et al. 2021. Arsenic hexoxide has differential effects on cell proliferation and genome-wide gene expression in human primary mammary epithelial and MCF7 cells. Sci. Rep. 11: 3761.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.