

Cdc25B (H-85): sc-5619

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.

REFERENCES

1. Murray, A.W., et al. 1989. Dominoes and clocks: the union of two views of the cell cycle. *Science* 246: 614-621.
2. Gould, K., et al. 1989. Tyrosine phosphorylation of the fission Cdc2 protein kinase regulates entry into mitosis. *Nature* 342: 39-45.

CHROMOSOMAL LOCATION

Genetic locus: CDC25B (human) mapping to 20p13; Cdc25b (mouse) mapping to 2 F1.

SOURCE

Cdc25B (H-85) is a rabbit polyclonal antibody raised against amino acids 93-177 mapping near the N-terminus of Cdc25B of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Cdc25B (H-85) is recommended for detection of Cdc25B 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)], 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 Cdc25B siRNA (h): sc-37552, Cdc25B siRNA (m): sc-37553, Cdc25B shRNA Plasmid (h): sc-37552-SH, Cdc25B shRNA Plasmid (m): sc-37553-SH, Cdc25B shRNA (h) Lentiviral Particles: sc-37552-V and Cdc25B shRNA (m) Lentiviral Particles: sc-37553-V.

Molecular Weight of Cdc25B: 60 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, U-937 cell lysate: sc-2239 or mouse liver extract: sc-2256.

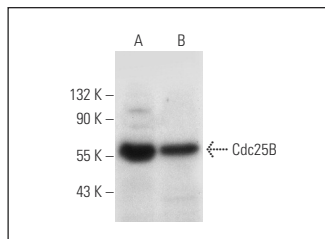
RESEARCH USE

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

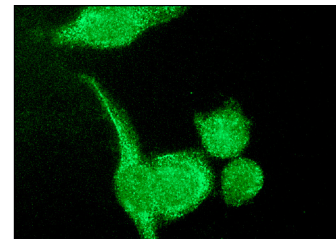
STORAGE

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

DATA



Cdc25B (H-85): sc-5619. Western blot analysis of Cdc25B expression in K-562 (A) and U-937 (B) whole cell lysates.



Cdc25B (H-85): sc-5619. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Pu, L., et al. 2002. Dual G₁ and G₂ phase inhibition by a novel, selective Cdc25 inhibitor 6-chloro-7-[corrected](2-morpholin-4-ylethylamino)-quinoline-5,8-dione. *J. Biol. Chem.* 277: 46877-46885.
2. Hu, X.W., et al. 2006. A novel indoloquinoline derivative, IQDMA, induces S-phase arrest and apoptosis in promyelocytic leukemia HL-60 cells. *Cell Biol. Toxicol.* 22: 417-427.
3. Lu, M.C., et al. 2006. Induction of G₂/M phase arrest by squamocin in chronic myeloid leukemia (K562) cells. *Life Sci.* 78: 2378-2383.
4. Leisenfelder, S.A., et al. 2006. Varicella-zoster virus infection of human foreskin fibroblast cells results in atypical cyclin expression and cyclin-dependent kinase activity. *J. Virol.* 80: 5577-5587.
5. Yang, S.H., et al. 2007. Involvement of c-Jun N-terminal kinase in G₂/M arrest and FasL-mediated apoptosis induced by a novel indoloquinoline derivative, IQDMA, in K562 cells. *Leuk. Res.* 31: 1413-1420.
6. Fernandez-L, A., et al. 2007. Gene expression fingerprinting for human hereditary hemorrhagic telangiectasia. *Hum. Mol. Genet.* 16: 1515-1533.
7. Pereg, Y., et al. 2010. Ubiquitin hydrolase Dub3 promotes oncogenic transformation by stabilizing Cdc25A. *Nat. Cell Biol.* 12: 400-406.
8. Vázquez-Novelle, M.D., et al. 2010. Human Cdc14A phosphatase modulates the G₂/M transition through Cdc25A and Cdc25B. *J. Biol. Chem.* 285: 40544-40553.
9. Wu, K., et al. 2013. EYA1 Phosphatase function is essential to drive breast cancer cell proliferation through cyclin D1. *Cancer Res.* 73: 4488-4499.

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Try **Cdc25B (DCS-162): sc-56266** or **Cdc25B (DCS-164): sc-65504**, our highly recommended monoclonal alternatives to Cdc25B (H-85).