SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc25B (SPM170): sc-56357

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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2. Gould, K., et al. 1989. Tyrosine phosphorylation of the fission Cdc2 protein kinase regulates entry into mitosis. Nature 342: 39-45.
3. Doree, M. 1990. Control of M phase by maturation promoting factor. Curr. Opin. Cell. Biol. 2: 269-273.
4. Jessus, C., et al. 1990. Direct activation of Cdc2 with phosphatase: identification of p13Suc1-sensitive and insensitive steps. FEBS Lett. 266: 4-8.
5. Moreno, S., et al. 1990. Regulation of mitosis by cyclic accumulation of p80Cdc25 mitotic inducer in fission yeast. Nature 344: 549-552.
6. Alfa, C.E., et al. 1990. Distinct nuclear and spindle pole body populations of cyclin-Cdc2 in fission yeast. Nature 347: 680-682.
7. Moreno, S., et al. 1991. Clues to action of Cdc25 protein. Nature 351: 194.
8. Gautier, J., et al. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates p34Cdc2. Cell 67: 197-211.
9. Galaktionov, K., et al. 1991. Specific activation of Cdc25 tyrosine phosphatases by B-type cyclins: evidence for multiple roles of mitotic cyclins. Cell 67: 1181-1194.

CHROMOSOMAL LOCATION

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

SOURCE

Cdc25B (SPM170) is a mouse monoclonal antibody raised against recombinant Cdc25B of human 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.

RESEARCH USE

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

APPLICATIONS

Cdc25B (SPM170) is recommended for detection of Cdc25B of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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 for detailed protocols and support products.