

Cdc25C (h): 293T Lysate: sc-158365

BACKGROUND

Cell cycle events are regulated by the sequential activation and deactivation of cyclin-dependent kinases (Cdks), including Cdk2 and Cdc2. Cdk2 in complexes with cyclin E and cyclin A appears necessary for the onset and progression of DNA replication, while the Cdc2 kinase in complexes with cyclin A or cyclin B is required for the initiation of cell division. Wee 1 has been identified as a protein kinase that suppresses the entry into mitosis by mediating inhibiting tyrosine phosphorylation of Cdc2 p34. In contrast, members of the Cdc25 family of protein phosphatases function as mitotic activators by dephosphorylation of Cdc2 p34 on regulatory tyrosine and possibly threonine residues. The Cdc25 gene family consists of at least three members that share approximately 40% identity in their most conserved carboxy-terminal sequences.

REFERENCES

1. Sadhu, K., Reed, S.I., Richardson, H. and Russell, P. 1990. Human homolog of fission yeast Cdc25 mitotic inducer is predominantly expressed in G₂. *Proc. Natl. Acad. Sci. USA* 87: 5139-5143.
2. Gautier, J., Solomon, M.J., Booher, R.N., Bazan, J.F. and Kirschner, M.W. 1991. Cdc25 is a specific tyrosine phosphatase that directly activates p34^{Cdc2}. *Cell* 67: 197-211.
3. Galaktionov, K. and Beach, D. 1991. Specific activation of Cdc25 tyrosine phosphatases by B-type cyclins: evidence for multiple roles of mitotic cyclins. *Cell* 67: 1181-1194.
4. Igarashi, M., Nagata, A., Jinno, S., Suto, K. and Okayama, H. 1991. Wee 1-like gene in human cells. *Nature* 353: 80-83.
5. Parker, L.L. and Piwnicka-Worms, H. 1992. Inactivation of the p34^{Cdc2}-cyclin B complex by the human Wee 1 tyrosine kinase. *Science* 257: 1955-1957.
6. Girard, F., Strausfeld, U., Cavadore, J.C., Russell, P., Fernandez, A. and Lamb, N.J. 1992. Cdc25 is a nuclear protein expressed constitutively throughout the cell cycle in nontransformed mammalian cells. *J. Cell Biol.* 118: 785-794.
7. Coleman, T.R., Tang, Z. and Dunphy, W.G. 1993. Negative regulation of the Wee 1 protein kinase by direct action of the Nim1/Cdr1 mitotic inducer. *Cell* 72: 919-929.
8. Parker, L.L., Walter, S.A., Young, P.G. and Piwnicka-Worms, H. 1993. Phosphorylation and inactivation of the mitotic inhibitor Wee 1 by the Nim1/Cdr1 kinase. *Nature* 363: 736-738.

CHROMOSOMAL LOCATION

Genetic locus: CDC25C (human) mapping to 5q31.2.

PRODUCT

Cdc25C (h): 293T Lysate represents a lysate of human Cdc25C transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

Cdc25C (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Cdc25C antibodies. Recommended use: 10-20 µl per lane.

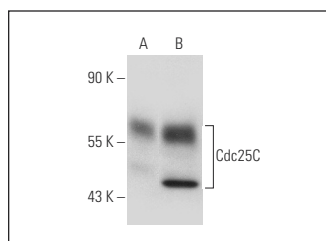
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Cdc25C (F-5): sc-55513 is recommended as a positive control antibody for Western Blot analysis of enhanced human Cdc25C expression in Cdc25C transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



Cdc25C (F-5): sc-55513. Western blot analysis of Cdc25C expression in non-transfected: sc-117752 (A) and human Cdc25C transfected: sc-158365 (B) 293T whole cell lysates.

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.