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Wee 1 (h2): 293T Lysate: sc-178140

BACKGROUND

Phosphorylation of Cdc2 on threonine 14 and tyrosine 15 is required to maintain Cdc2 in an inactive state throughout the S and G₂ phases of the cell cycle. The human Wee 1 protein, WEE1Hu, encodes a tyrosine-specific protein kinase that phosphorylates Cdc2 on tyrosine 15. Myt 1, a member of the Wee 1 family of protein kinases, has been shown to phosphorylate Cdc2 on both threonine 14 and tyrosine 15 in a cyclin-dependent manner. Activity of both Wee 1 Hu and Myt 1 is regulated during the cell cycle, suggesting that both proteins play a role in mitotic control. Dephosphorylation of Cdc2 on threonine 14 and tyrosine 15 in late G₂ by Cdc25 then activates the Cdc2/cyclin B complex to allow entry into mitosis.

REFERENCES

1. Morla, A., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.
2. Krek, W., et al. 1991. Differential phosphorylation of vertebrate p34Cdc2 kinase at the G₁/S and G₂/M transitions of the cell cycle: identification of major phosphorylation sites. *EMBO J.* 10: 305-316.
3. Igarashi, M., et al. 1991. Wee 1-like gene in human cells. *Nature* 353: 80-83.
4. McGowan, C.H., et al. 1995. Human Wee 1 kinase inhibits cell division by phosphorylating p34Cdc2 exclusively on Tyr 15. *EMBO J.* 12: 75-85.
5. Watanabe, N., et al. 1995. Regulation of the human WEE1Hu Cdk Tyrosine 15 kinase during the cell cycle. *EMBO J.* 14: 1878-1891.
6. Liu, F., et al. 1997. The human Myt 1 kinase preferentially phosphorylates Cdc2 on Threonine 14 and localizes to the endoplasmic reticulum and Golgi complex. *Mol. Cell. Biol.* 17: 571-583.

CHROMOSOMAL LOCATION

Genetic locus: WEE1 (human) mapping to 11p15.4.

PRODUCT

Wee 1 (h2): 293T Lysate represents a lysate of human Wee 1 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

Wee 1 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Wee 1 antibodies. Recommended use: 10-20 µl per lane.

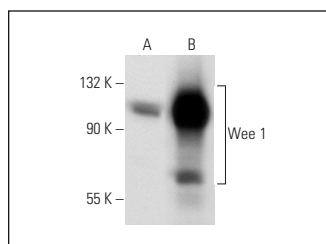
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Wee 1 (B-11): sc-5285 is recommended as a positive control antibody for Western Blot analysis of enhanced human Wee 1 expression in Wee 1 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



Wee 1 (B-11): sc-5285. Western blot analysis of Wee 1 expression in non-transfected: sc-117752 (A) and human Wee 1 transfected: sc-178140 (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.