

Cdc2 p34 (164E2Y): sc-517612

BACKGROUND

Cdc2, an evolutionarily conserved serine/threonine-specific protein kinase, is essential in the cell cycle transition from G₂ to M phase. Cdc2 is regulated by association with B-type cyclins and by reversible phosphorylation. Cyclin B binding facilitates the phosphorylation of Cdc2 p34 on three regulatory sites: threonine 14, tyrosine 15, and threonine 161. In higher eukaryotes, Cdc2 is negatively regulated by phosphorylation of two residues located in the ATP-binding site, Thr 14 and Tyr 15. Cdc2 is positively regulated by the cyclin-dependent phosphorylation of Thr 161. Both phosphorylation and de-phosphorylation at Thr 161 are required for progression through the cell cycle.

REFERENCES

1. Draetta, G., et al. 1987. Identification of p34 and p13, human homologs of the cell cycle regulators of fission yeast encoded by Cdc2⁺ and suc 1⁺. Cell 50: 319-325.
2. Brizuela, L., et al. 1987. p13suc 1 acts in the fission yeast cell division cycle as a component of the p34cdc2 protein kinase. EMBO J. 6: 3507-3514.
3. Arion, D., et al. 1988. Cdc2 is a component of the M phase-specific Histone H1 kinase: evidence for identity with MPF. Cell 55: 371-378.
4. Morla, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. Cell 58: 193-203.
5. 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.
6. Krek, W., et al. 1992. Vertebrate p34cdc2 phosphorylation site mutants: effects upon cell cycle progression in the fission yeast *Schizosaccharomyces pombe*. J. Cell Sci. 102: 43-53.
7. Atherton-Fessler, S., et al. 1993. Mechanisms of p34cdc2 regulation. Mol. Cell. Biol. 13: 1675-1685.
8. De Bondt, H.L., et al. 1993. Crystal structure of cyclin-dependent kinase 2. Nature 363: 595-602.
9. Draetta, G., et al. 1998. Human cdc2 protein kinase is a major cell-cycle regulated tyrosine kinase substrate. Nature 336: 738-744.

CHROMOSOMAL LOCATION

Genetic locus: CDK1 (human) mapping to 10q21.2.

SOURCE

Cdc2 p34 (164E2Y) is a mouse monoclonal antibody raised against amino acids 1-297 representing full length Cdc2 p34 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ 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

Cdc2 p34 (164E2Y) is recommended for detection of Cdc2 p34 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Cdc2 p34: 34 kDa.

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.

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.