

p-Cdk2 (Thr 160): sc-101656

BACKGROUND

In vertebrates, as in yeast, multiple cyclins have been identified, including a total of eight such regulatory proteins in mammals. In contrast to the situation in yeast, the Cdc2 p34 kinase is not the only catalytic subunit identified in vertebrates that can interact with cyclins. While Cdc2 p34 is essential for the G₂ to M transition in vertebrate cells, a second Cdc2-related kinase has also been implicated in cell cycle control. This protein, designated cyclin dependent kinase 2 (Cdk2) p33, also binds to cyclins and its kinase activity is temporally regulated during the cell cycle. Phosphorylation at Thr 14 or Tyr 15 inactivates the enzyme, while phosphorylation at Thr 160 activates it.

REFERENCES

1. Tsai, L.H., et al. 1991. Isolation of the human Cdk2 gene that encodes the cyclin A- and adenovirus E1A-associated p33 kinase. *Nature* 353: 174-177.
2. Elledge, S.J. and Spottswood, M.R. 1991. A new human p34 protein kinase, Cdk2, identified by complementation of a Cdc28 mutation in *Saccharomyces cerevisiae*, is a homolog of *Xenopus* Eg1. *EMBO J.* 10: 2653-2659.
3. Elledge, S.J., et al. 1992. CDK2 encodes a 33 kDa cyclin A-associated protein kinase and is expressed before Cdc2 in the cell cycle. *Proc. Natl. Acad. Sci. USA* 89: 2907-2911.
4. Lees, E., et al. 1992. Cyclin E/Cdk2 and cyclin A/Cdk2 kinases associate with p107 and E2F in a temporally distinct manner. *Genes Dev.* 6: 1874-1885.
5. Meyerson, M., et al. 1992. A family of human Cdc2-related protein kinases. *EMBO J.* 11: 2909-2917.
6. Okuda, T., et al. 1992. PCTAIRE-1 and PCTAIRE-3, two members of a novel Cdc2/Cdc28-related protein kinase gene family. *Oncogene* 7: 2249-2258.
7. Xiong, Y., et al. 1992. D type cyclins associate with multiple protein kinases and the DNA replication and repair factor PCNA. *Cell* 71: 505-514.

CHROMOSOMAL LOCATION

Genetic locus: CDK2 (human) mapping to 12q13.2; Cdk2 (mouse) mapping to 10 D3.

SOURCE

p-Cdk2 (Thr 160) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 160 phosphorylated Cdk2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 or our catalog for detailed protocols and support products.

APPLICATIONS

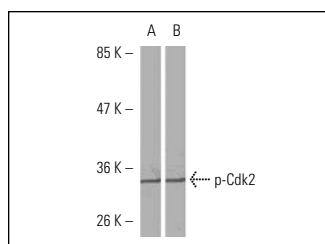
p-Cdk2 (Thr 160) is recommended for detection of Thr 160 phosphorylated Cdk2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Cdk2 siRNA (h): sc-29259, Cdk2 siRNA (m): sc-29260, Cdk2 shRNA Plasmid (h): sc-29259-SH, Cdk2 shRNA Plasmid (m): sc-29260-SH, Cdk2 shRNA (h) Lentiviral Particles: sc-29259-V and Cdk2 shRNA (m) Lentiviral Particles: sc-29260-V.

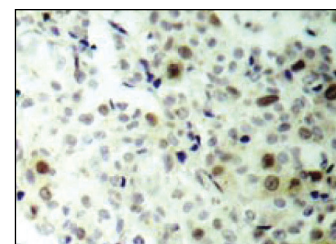
Molecular Weight of p-Cdk2: 34 kDa.

Positive Controls: A2780 whole cell lysate, MDA-MB-435 whole cell lysate or human breast carcinoma tissue extract.

DATA



p-Cdk2 (Thr 160): sc-101656. Western blot analysis of phosphorylated Cdc2 p34 expression in A2780 (A) and MDA-MB-435 (B) whole cell lysates.



p-Cdk2 (Thr 160): sc-101656. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Valdez, B.C., et al. 2010. The synergistic cytotoxicity of clofarabine, fludarabine and busulfan in AML cells involves ATM pathway activation and chromatin remodeling. *Biochem. Pharmacol.* 81: 222-232.
2. Chen, Q., et al. 2014. A critical role of CDKN3 in Bcr-Abl-mediated tumorigenesis. *PLoS ONE* 9: e111611.

RESEARCH USE

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