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SANTA CRUZ BIOTECHNOLOGY, INC.

Cdk4 (m): 293T Lysate: sc-119150

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Another family of proteins, Cdk inhibitors, also plays a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Several Cdk proteins have been identified, including Cdk2-Cdk8, PCTAIRE-1-PCTAIRE-3, PITALRE and PITSLRE. Cdk4, in complex with D-type cyclins, is thought to regulate cell growth during the G_1 phase of the cell cycle. This association with a D-type cyclin upregulates Cdk4 activity, whereas binding to the Cdk inhibitor p16 downregulates Cdk4 activity. Activation of the Cdk4-cyclin complexes requires phosphorylation on a single threonyl residue of Cdk4, catalyzed by a Cdk-activating protein (CAK).

REFERENCES

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2. Serrano, M., et al. 1993. A new regulatory motif in cell-cycle control causing specific inhibition of cyclin D/CDK4. Nature 366: 704-707.
3. Pines, J. 1994. The cell cycle kinases. Semin. Cancer Biol. 5: 305-313.
4. Kato, J.Y., et al. 1994. Regulation of cyclin D-dependent kinase (Cdk4) by Cdk4-activating kinase. Mol. Cell. Biol. 14: 2713-2721.
5. Matsuoka, M., et al. 1994. Activation of cyclin-dependent kinase 4 (Cdk4) by mouse MO15-associated kinase. Mol. Cell. Biol. 14: 7265-7275.
6. MacLachlan, T.K., et al. 1995. Cyclins, cyclin-dependent kinases and cdk inhibitors: implications in cell cycle control and cancer. Crit. Rev. Euk. Gene Expr. 5: 127-156.
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8. Dirks, P.B., et al. 1997. Current concepts in neuro-oncology: the cell cycle—a review. Neurosurgery 40: 1000-1013.
9. Coleman, K.G., et al. 1997. Identification of Cdk4 sequences involved in cyclin D1 and p16 binding. J. Biol. Chem. 272: 18869-18874.

CHROMOSOMAL LOCATION

Genetic locus: Cdk4 (mouse) mapping to 10 D3.

PRODUCT

Cdk4 (m): 293T Lysate represents a lysate of mouse Cdk4 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.

RESEARCH USE

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

APPLICATIONS

Cdk4 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Cdk4 antibodies. Recommended use: 10-20 µl per lane.

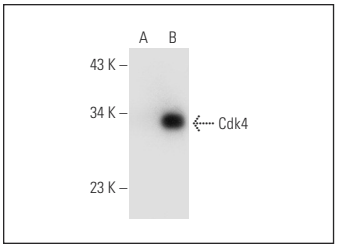
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Cdk4 (F-8): sc-393653 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Cdk4 expression in Cdk4 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

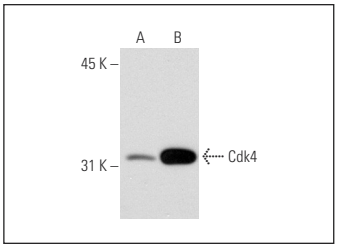
RECOMMENDED SUPPORT REAGENTS

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



Cdk4 (F-8): sc-393653. Western blot analysis of Cdk4 expression in non-transfected: sc-117752 (**A**) and mouse Cdk4 transfected: sc-119150 (**B**) 293T whole cell lysates.



Cdk4 (SPM382): sc-56361. Western blot analysis of Cdk4 expression in non-transfected: sc-117752 (**A**) and mouse Cdk4 transfected: sc-119150 (**B**) 293T whole cell lysates.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.