SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc2 p34 (1-297): sc-4068

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 G_2 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. Several additional Cdc2 p34 related cyclin dependent kinases have been identified. These include Cdk3, Cdk4, Cdk5, PCTAIRE-1, PCTAIRE-2, PCTAIRE-3, Cdk6, Cdk7, Cdk8 and KKIALRE.

REFERENCES

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2. Pines, J. and Hunter, T. 1989. Isolation of a human cyclin cDNA: evidence for cyclin mRNA and protein regulation in the cell cycle and for interaction with $p34^{Cdc2}$. Cell 58: 833-846.
3. Xiong, Y., Connolly, T., Futcher, B. and Beach, D.1991. Human D-type cyclin. Cell 65: 691-699.
4. Pagano, M., Pepperkok, R., Verde, F., Ansorge, W. and Draetta, G. 1992. Cyclin A is required at two points in the human cell cycle. EMBO J. 11: 961-971.
5. Meyerson, M., Enders, G.H., Wu, C., Su, L., Gorka, C., Nelson, C., Harlow, E. and Tsai, L. 1992. A family of human Cdc2-related protein kinases. EMBO J. 11: 2909-2917.
6. Elledge, S.J., Richman, R., Hall, F.L., Williams, R.T., Lodgson, N. and Harper, J.W. 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.
7. Lees, E., Faha, B., Dulic, V., Reed, S.I. and Harlow, E. 1992. Cyclin E/Cdk2 and cyclin A/Cdk2 kinases associate with p107 and E2F in a temporally distinct manner. Genes Dev. 6: 1874-1885.
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CHROMOSOMAL LOCATION

Genetic locus: CDK1 (human) mapping to 10q21.2; Cdk1 (mouse) mapping to 10 B5.3.

SOURCE

Cdc2 p34 (1-297) is expressed in *E. coli* as a 55 kDa tagged fusion protein corresponding to amino acids 1-297 representing full length Cdc2 p34 of human origin.

PRODUCT

Cdc2 p34 (1-297) is purified from bacterial lysates (> 98%) by glutathione agarose affinity chromatography; supplied as 50 µg purified protein in PBS containing 5 mM DTT and 50% glycerol.

Available as a Western blotting control; 10 µg in 0.1 ml SDS-PAGE loading buffer, Cdc2 p34 (1-297): sc-4068 WB.

APPLICATIONS

Cdc2 p34 (1-297) is suitable as a Western blotting control for sc-53, sc-54, sc-747 and sc-954.

Molecular Weight of Cdc2 p34: 34 kDa.

SELECT PRODUCT CITATIONS

1. Milton, N.G. 2001. Phosphorylation of Amyloid-β at the serine 26 residue by human Cdc2 kinase. Neuroreport 12: 3839-3844.
2. Fulco, M., Costanzo, A., Merlo, P., Mangiacasale, R., Strano, S., Blandino, G., Balsano, C., Lavia, P. and Levrero, M. 2003. p73 is regulated by phosphorylation at the G_2/M transition. J. Biol. Chem. 278: 49196-49202.
3. Yan, Y., Spieker, R.S., Kim, M., Stoeger, S.M. and Cowan, K.H. 2005. BRCA1-mediated G_2/M cell cycle arrest requires ERK1/2 kinase activation. Oncogene 24: 3285-3296.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

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.