SANTA CRUZ BIOTECHNOLOGY, INC.

p21 Waf1/Cip1 (1-164): sc-4077 WB

BACKGROUND

It is now well established that cyclins play a positive role in promoting cell cycle transitions via their ability to associate with and activate their cognate cyclin-dependent kinases (Cdks). Cdk2 associates with cyclins A, D and E, and has been implicated in the control of the G_1 to S phase transition in mammals. A novel Cdk-interacting protein, designated p21 Waf1/Cip1, Cip1 or WAF1, has been identified in cyclin A, cyclin D1, cyclin E and Cdk2 immunoprecipitates. p21 Waf1/Cip1 is a potent, tight-binding inhibitor of Cdks and can inhibit the phosphorylation of Rb by cyclin A-Cdk 2, cyclin E-Cdk2, cyclin D1-Cdk4 and cyclin D2-Cdk4 complexes. Expression of p21 Waf1/Cip1 is inducible by wildtype, but not mutant, p53. The mouse homolog of p21 Waf1/Cip1 is designated CAP20.

REFERENCES

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2. Harper, J.W., Adami, G.R., Wei, N., Keyomars, K. and Elledge, S.J. 1993. The p21 Cdk-interacting protein Cip1 is a potent inhibitor of G_1 cyclin-dependent kinases. Cell 75: 805-816.
3. El-Deiry, W.S., Tokino, T., Velculescu, V.E., Levy, D.B., Parsons, R., Trent, J.M., Lin, D., Mercer, W.E., Kinzier, K.W. and Vogelstein, B. 1993. WAF1, a potential mediator of p53 tumor suppression. Cell 75: 817-825.
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6. Xiong, Y., Hannon, G.J., Zhang, H., Casso, D., Kobayashi, R. and Beach, D. 1993. p21 is a universal inhibitor of cyclin kinases. Nature 366: 701-704.
7. Gu, Y., Turck, C.W. and Morgan, D.O. 1993. Inhibition of Cdk2 activity *in vivo* by an associated 20 kDa regulatory subunit. Nature 366: 707-710.
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SOURCE

p21 Waf1/Cip1 (1-164) is expressed in *E. coli* as a 50 kDa tagged fusion protein corresponding to amino acids 1-164 representing full length p21 Waf1/Cip1 of human origin.

PRODUCT

p21 Waf1/Cip1 (1-164) is purified from bacterial lysates (> 98%) by glutathione agarose affinity chromatography; supplied as 10 µg protein in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

p21 Waf1/Cip1 (1-164) is suitable as a Western blotting control for sc-397, sc-756 and sc-817.

SELECT PRODUCT CITATIONS

1. Acevedo-Duncan, M., Patel, R., Whelan, S. and Bicaku, E. 2002. Human glioma PKC-ι and PKC-βII phosphorylate cyclin-dependent kinase activating kinase during the cell cycle. Cell Prolif. 35: 23-36.
2. Inoue, Y., Tomiya, T., Nishikawa, T., Ohtomo, N., Tanoue, Y., Ikeda, H. and Koike, K. 2013. Induction of p53-dependent p21 limits proliferative activity of rat hepatocytes in the presence of hepatocyte growth factor. PLoS ONE 8: e78346.

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.