SANTA CRUZ BIOTECHNOLOGY, INC.

p21 Waf1/Cip1 (F-5): sc-6246

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Sherr, C.J. 1993. Mammalian G_1 cyclins. Cell 73: 1059-1065.
2. Harper, J.W., et al. 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., et al. 1993. WAF1, a potential mediator of p53 tumor suppression. Cell 75: 817-825.
4. Hunter, T. 1993. Braking the cycle. Cell 75: 839-841.

CHROMOSOMAL LOCATION

Genetic locus: CDKN1A (human) mapping to 6p21.2; Cdkn1a (mouse) mapping to 17 A3.3.

SOURCE

p21 Waf1/Cip1 (F-5) is a mouse monoclonal antibody raised against amino acids 1-159 representing full length p21 Waf1/Cip1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p21 Waf1/Cip1 (F-5) is available conjugated to agarose (sc-6246 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-6246 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-6246 PE), fluorescein (sc-6246 FITC), Alexa Fluor® 488 (sc-6246 AF488), Alexa Fluor® 546 (sc-6246 AF546), Alexa Fluor® 594 (sc-6246 AF594) or Alexa Fluor® 647 (sc-6246 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-6246 AF680) or Alexa Fluor® 790 (sc-6246 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, p21 Waf1/Cip1 (F-5) is available conjugated to biotin (sc-6246 B), 200 µg/ml, for WB, IHC(P) and ELISA; and to either TRITC (sc-6246 TRITC, 200 µg/ml) or Alexa Fluor® 405 (sc-6246 AF405), 100 µg/2 ml, for IF, IHC(P) and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

Store at 4° C. **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

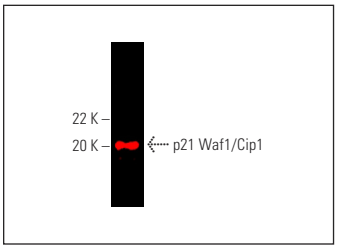
p21 Waf1/Cip1 (F-5) is recommended for detection of p21 Waf1/Cip1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for p21 Waf1/Cip1 siRNA (h): sc-29427, p21 Waf1/Cip1 siRNA (m): sc-29428, p21 Waf1/Cip1 shRNA Plasmid (h): sc-29427-SH, p21 Waf1/Cip1 shRNA Plasmid (m): sc-29428-SH, p21 Waf1/Cip1 shRNA (h) Lentiviral Particles: sc-29427-V and p21 Waf1/Cip1 shRNA (m) Lentiviral Particles: sc-29428-V.

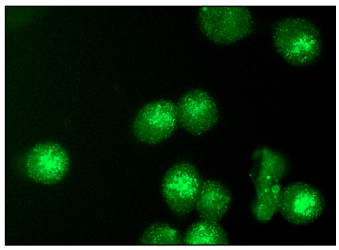
Molecular Weight of p21 Waf1/Cip1: 21 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, KNRK nuclear extract: sc-2141 or C32 whole cell lysate: sc-2205.

DATA



p21 Waf1/Cip1 (F-5) Alexa Fluor® 790: sc-6246 AF790. Direct near-infrared western blot analysis of p21 Waf1/Cip1 expression in NIH/3T3 nuclear extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.



p21 Waf1/Cip1 (F-5): sc-6246. Immunofluorescence staining of methanol-fixed KNRK cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Kamijo, T., et al. 1997. Tumor suppression at the mouse INK4a locus mediated by the alternative reading frame product p19 ARF. Cell 91: 649-659.
2. Terry, M.R., et al. 2015. Caspase-2 impacts lung tumorigenesis and chemotherapy response *in vivo*. Cell Death Differ. 22: 719-730.
3. Manton, C.A., et al. 2016. Induction of cell death by the novel proteasome inhibitor marizomib in glioblastoma *in vitro* and *in vivo*. Sci. Rep. 6: 18953.
4. He, D.M., et al. 2017. Oncogenic activity of amplified miniature chromosome maintenance 8 in human malignancies. Oncogene 36: 3629-3639.
5. Zhu, X., et al. 2018. Synergistic effects of BET and MEK inhibitors promote regression of anaplastic thyroid tumors. Oncotarget 9: 35408-35421.
6. Cai, W., et al. 2019. PBRM1 acts as a p53 lysine-acetylation reader to suppress renal tumor growth. Nat. Commun. 10: 5800.
7. Cui, D., et al. 2020. DEPTOR is a direct p53 target that suppresses cell growth and chemosensitivity. Cell Death Dis. 11: 976.

RESEARCH USE

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