SANTA CRUZ BIOTECHNOLOGY, INC.

p21 Waf1/Cip1 (WA-1): sc-51689

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.

CHROMOSOMAL LOCATION

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

SOURCE

p21 Waf1/Cip1 (WA-1) is a mouse monoclonal antibody raised against p21 Waf1/Cip1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p21 Waf1/Cip1 (WA-1) 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for p21 Waf1/Cip1 siRNA (h): sc-29427, p21 Waf1/Cip1 siRNA (m): sc-29428, p21 Waf1/Cip1 siRNA (r): sc-108036, p21 Waf1/Cip1 shRNA Plasmid (h): sc-29427-SH, p21 Waf1/Cip1 shRNA Plasmid (m): sc-29428-SH, p21 Waf1/Cip1 shRNA Plasmid (r): sc-108036-SH, p21 Waf1/Cip1 shRNA (h) Lentiviral Particles: sc-29427-V, p21 Waf1/Cip1 shRNA (m) Lentiviral Particles: sc-29428-V and p21 Waf1/Cip1 shRNA (r) Lentiviral Particles: sc-108036-V.

Molecular Weight of p21 Waf1/Cip1: 21 kDa.

Positive Controls: p21 Waf1/Cip1 (m): 293T Lysate: sc-122305, C32 whole cell lysate: sc-2205 or HeLa nuclear extract: sc-2120.

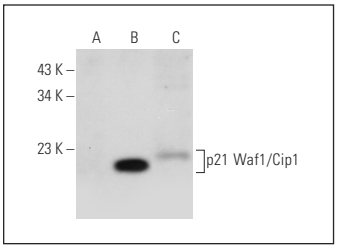
RESEARCH USE

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

STORAGE

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

DATA



p21 Waf1/Cip1 (WA-1): sc-51689. Western blot analysis of p21 Waf1/Cip1 expression in non-transfected 293T: sc-117752 (**A**), mouse p21 Waf1/Cip1 transfected 293T: sc-122305 (**B**) and C32 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Davey, R.A., et al. 2004. Cellular models of drug- and radiation-resistant small cell lung cancer. Anticancer Res. 24: 465-471.
2. Pulukuri, S.M., et al. 2009. Small interfering RNA-directed knockdown of uracil DNA glycosylase induces apoptosis and sensitizes human prostate cancer cells to genotoxic stress. Mol. Cancer Res. 7: 1285-1293.
3. Alonso-Castro, A.J., et al. 2013. Kaempferitrin induces apoptosis via intrinsic pathway in HeLa cells and exerts antitumor effects. J. Ethnopharmacol. 145: 476-489.
4. Suzuki, K., et al. 2013. Celecoxib enhances radiosensitivity of hypoxic glioblastoma cells through endoplasmic reticulum stress. Neuro Oncol. 15: 1186-1199.
5. Alva-Sanchez, C., et al. 2014. The NMDA receptor antagonist MK-801 abolishes the increase in both p53 and Bax/Bcl2 index induced by adult-onset hypothyroidism in rat. Acta Neurobiol. Exp. 74: 111-117.
6. Yoon, Y.M., et al. 2020. Melatonin-stimulated exosomes enhance the regenerative potential of chronic kidney disease-derived mesenchymal stem/stromal cells via cellular prion proteins. J. Pineal Res. 68: e12632.
7. Mateos-Nava, R.A., et al. 2021. Vanadium oxides modify the expression levels of the p21, p53, and Cdc25C proteins in human lymphocytes treated *in vitro*. Environ. Toxicol. 36: 1536-1543.
8. Zhang, Z., et al. 2021. AGR2-dependent nuclear import of RNA polymerase II constitutes a specific target of pancreatic ductal adenocarcinoma in the context of wild-type p53. Gastroenterology 161: 1601-1614.e23.