SANTA CRUZ BIOTECHNOLOGY, INC.

Rb (C-15): sc-50

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pediatric cancer retinoblastoma and the formation of other human tumors can be attributed to mutations in the retinoblastoma tumor suppressor gene. The retinoblastoma tumor suppressor gene product, known as Rb or pRb, regulates differentiation, apoptosis and cell cycle control by coordinating the cell cycle, at G_1-S, with transcriptional machinery that includes the heterodimeric E2F family. During G_1, cyclin D (D1, D2, D3)-dependent kinase-mediated phosphorylation of Rb at Ser 795 marks the conversion of Rb from a transcriptionally repressive, hypophosphorylated state to an inactive, phosphorylated which may be sustained through mitosis by differential phosphorylation of state, up to 16 putative serine or threonine residues, including Ser 249/Thr 252, Thr 373, Thr 356, Ser 780, Ser 807/Ser 811 and Thr 821/Thr 826. Hypophosphorylated Rb represses the transcription of genes controlling cell cycle through direct protein-protein interactions, by binding and inactivating the promoters of transcription factors, and through recruitment of histone deacetylase, which deacetylates promoter regions and enhances nucleosome formation, thereby masking transcription enhancing *cis* elements.

CHROMOSOMAL LOCATION

Genetic locus: RB1 (human) mapping to 13q14.2; Rb1 (mouse) mapping to 14 D3.

SOURCE

Rb (C-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Rb of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-50 X, 200 µg/0.1 ml; as HRP conjugate for Western blotting, sc-50 HRP, 200 µg/ml; as fluorescein (sc-50 FITC) or rhodamine (sc-50 TRITC) conjugates for immunofluorescence, 200 µg/ml; and as Alexa Fluor® 405 (sc-50 AF405), Alexa Fluor® 488 (sc-50 AF488) or Alexa Fluor® 647 (sc-50 AF647) conjugates for immunofluorescence; 100 µg/2 ml.

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

APPLICATIONS

Rb (C-15) is recommended for detection of Rb p110 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

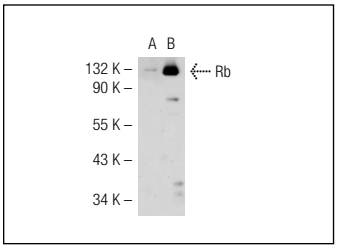
Molecular Weight (predicted) of Rb: 106 kDa.

Molecular Weight (observed) of Rb: 107-140 kDa.

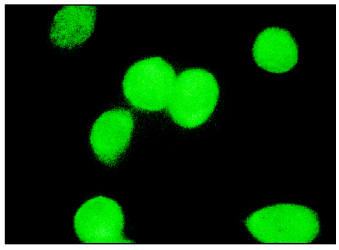
STORAGE

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

DATA



Rb (C-15): sc-50. Western blot analysis of Rb expression in non-transfected 293T: sc-117752 (**A**) and human Rb transfected 293T: sc-114014 (**B**) 293T whole cell lysates.



Rb (C-15): sc-50. Nuclear immunofluorescence staining of methanol-fixed NIH/3T3 mouse cells.

SELECT PRODUCT CITATIONS

1. Gopalakrishnan, S., et al. 1997. Immortalization of primary epithelial cells by E1A 12S requires late, second exon-encoded functions in addition to complex formation with pRB and p300. Cell Growth Differ. 8: 541-551.
2. Liu, N., et al. 1997. CDF-1, a novel E2F-unrelated factor, interacts with cell cycle-regulated repressor elements in multiple promoters. Nucleic Acids Res. 25: 4915-4920.
3. Rastogi, S., et al. 2012. TNF-α response of vascular endothelial and vascular smooth muscle cells involve differential utilization of ASK1 kinase and p73. Cell Death Differ. 19: 274-283.
4. Chell, V., et al. 2013. Tumour cell responses to new fibroblast growth factor receptor tyrosine kinase inhibitors and identification of a gatekeeper mutation in FGFR3 as a mechanism of acquired resistance. Oncogene 32: 3059-3070.
5. Yang, Y., et al. 2013. Cell cycle stage-specific roles of Rad18 in tolerance and repair of oxidative DNA damage. Nucleic Acids Res. 41: 2296-2312.
6. Reiner, T., et al. 2013. Betulinic acid selectively increases protein degradation and enhances prostate cancer-specific apoptosis: possible role for inhibition of deubiquitinase activity. PLoS ONE 8: e56234.
7. Fozzatti, L., et al. 2013. Oncogenic actions of the nuclear receptor corepressor (NCOR1) in a mouse model of thyroid Cancer. PLoS ONE 8: e67954.

RESEARCH USE

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