

Rb (M-15): sc-1538

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 G₁-S, with transcriptional machinery that includes the heterodimeric E2F family. During G₁, cyclin D (D1, 2, 3)-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 (M-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Rb of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1538 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-1538 X, 200 µg/0.1 ml; as HRP conjugate for Western blotting, sc-1538 HRP, 200 µg/1 ml; and as fluorescein (sc-1538 FITC) or rhodamine (sc-1538 TRITC) conjugates for immunofluorescence, 200 µg/1 ml.

APPLICATIONS

Rb (M-15) is recommended for detection of Rb p110 of mouse, human and, to a lesser extent, rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Rb siRNA (h): sc-29468, Rb siRNA (m): sc-29469, Rb shRNA Plasmid (h): sc-29468-SH, Rb shRNA Plasmid (m): sc-29469-SH, Rb shRNA (h) Lentiviral Particles: sc-29468-V and Rb shRNA (m) Lentiviral Particles: sc-29469-V.

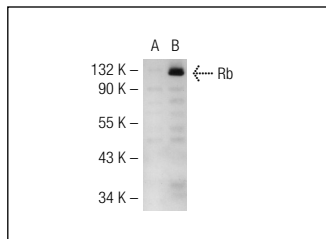
Rb (M-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted)/(observed) of Rb: 106/107-140 kDa.

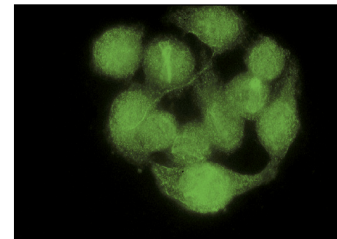
STORAGE

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

DATA



Rb (M-15): sc-1538. Western blot analysis of Rb expression in non-transfected: sc-117752 (A) and human Rb transfected: sc-114014 (B) 293T whole cell lysates.



Rb (M-15): sc-1538. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Le Cam, L., et al. 1999. Timing of cyclin E gene expression depends on the regulated association of a bipartite repressor element with a novel E2F complex. *EMBO J.* 18: 1878-1890.
2. Timchenko, N.A., et al. 1999. E2F/p107 and E2F/p130 complexes are regulated by C/EBPalpha in 3T3-L1 adipocytes. *Nucleic Acids Res.* 27: 3621-3630.
3. Wells, J., et al. 2000. Target gene specificity of E2F and pocket protein family members in living cells. *Mol. Cell. Biol.* 20: 5797-5807.
4. von Willebrand, M., et al. 2003. The tyrostatin AG1024 accelerates the degradation of phosphorylated forms of retinoblastoma protein (pRb) and restores pRb tumor suppressive function in melanoma cells. *Cancer Res.* 63: 1420-1429.
5. Chen, YF., et al. 2003. Retinoblastoma protein (pRB) was significantly phosphorylated through a Ras-to-MAPK pathway in mutant K-ras stably transfected human adrenocortical cells. *DNA Cell Biol.* 22: 657-664.
6. Knapp, A.M., et al. 2006. Nucleoprotein interactions governing cell type-dependent repression of the mouse smooth muscle α -Actin promoter by single-stranded DNA-binding proteins Pur α and Pur β . *J. Biol. Chem.* 281: 7907-7918.
7. Kucherlapati, M.H., et al. 2006. Inactivation of conditional Rb by Villin-Cre leads to aggressive tumors outside the gastrointestinal tract. *Cancer Res.* 66: 3576-3583.

RESEARCH USE

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



Try **Rb (IF8): sc-102** or **Rb (C-2): sc-74562**, our highly recommended monoclonal alternatives to Rb (M-15). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Rb (IF8): sc-102**.