

p-Rb (Ser 249/Thr 252): sc-16671

BACKGROUND

Pediatric cancer retinoblastoma and the formation of other human tumors can be attributed to mutations in the retinoblastoma tumor suppressor gene (Rb). The Rb protein regulates differentiation, apoptosis and cell cycle control by coordinating the cell cycle at G₁-S with transcriptional machinery. During G₁, cyclin D-dependent kinase-mediated phosphorylation of Rb at Ser 795 marks the conversion of Rb from a transcriptionally repressive, hypophosphorylated state to an inactive, phosphorylated state, which may be sustained through mitosis by differential phosphorylation of 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 the cell cycle through direct protein-protein interactions and through the recruitment of histone deacetylase.

CHROMOSOMAL LOCATION

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

SOURCE

p-Rb (Ser 249/Thr 252) is available as either goat (sc-16671) or rabbit (sc-16671-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 249 and Thr 252 dually phosphorylated Rb of human 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-16671 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Rb (Ser 249/Thr 252) is recommended for detection of Ser 249 and Thr 252 dually phosphorylated Rb 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).

p-Rb (Ser 249/Thr 252) is also recommended for detection of correspondingly phosphorylated Rb in additional species, including equine, canine, bovine and porcine.

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.

Molecular Weight (predicted) of p-Rb: 106 kDa.

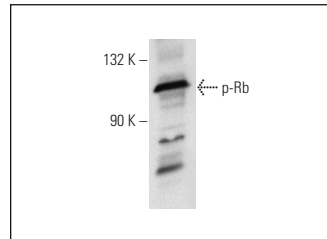
Molecular Weight (observed) of p-Rb: 107-140 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

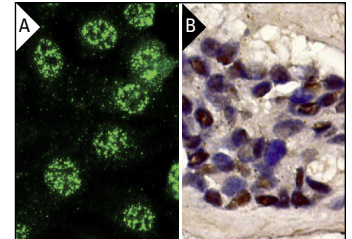
STORAGE

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

DATA



p-Rb (Ser 249/Thr 252): sc-16671. Western blot analysis of Rb phosphorylation in K-562 whole cell lysate.



p-Rb (Ser 249/Thr 252): sc-16671. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tumor showing nuclear localization (B).

SELECT PRODUCT CITATIONS

- Qiu, C., et al. 2003. Dereglulation of the cyclin D1/Cdk4 retinoblastoma pathway in rat mammary gland carcinomas induced by the food-derived carcinogen 1-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine. *Cancer Res.* 63: 5674-5678.
- Li, P., et al. 2008. Sex modulates intestinal transformation by the tumor-suppressor GCC. *Clin. Transl. Sci.* 1: 146-150.
- Entz-Werlé, N., et al. 2010. Targeted apc;twist double-mutant mice: a new model of spontaneous osteosarcoma that mimics the human disease. *Transl. Oncol.* 3: 344-353.
- Kondegowda, N.G., et al. 2011. Effects of non-digestible carbohydrates on the growth of estrogen-dependent human breast cancer (MCF-7) tumors implanted in ovariectomized athymic mice. *Nutr. Cancer* 63: 55-64.
- Musumeci, G., et al. 2011. Mineral fibre toxicity: expression of retinoblastoma (Rb) and phospho-retinoblastoma (pRb) protein in alveolar epithelial and mesothelial cell lines exposed to fluoro-edenite fibres. *Cell Biol. Toxicol.* 27: 217-225.
- Kaune, K.M., et al. 2011. Simultaneous aberrations of single CDKN2A network components and a high Rb phosphorylation status can differentiate subgroups of primary cutaneous B-cell lymphomas. *Exp. Dermatol.* 20: 331-335.

RESEARCH USE

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


 MONOS
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Try **p-Raf-1 (E-1): sc-271929** or **p-Raf-1 (H-8): sc-271928**, our highly recommended monoclonal alternatives to p-Raf-1 (Ser 249/Thr 252).