SANTA CRUZ BIOTECHNOLOGY, INC.

p-Rb (Thr 821/826): sc-16669

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 (Rb). The Rb protein regulates differentiation, apoptosis and cell cycle control by coordinating the cell cycle at G_1-S with transcriptional machinery. During G_1, 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 (Thr 821/826) is available as either goat (sc-16669) or rabbit (sc-16669-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Thr 821 and Thr 826 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-16669 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Rb (Thr 821/826) is recommended for detection of Thr 821 and Thr 826 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).

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.

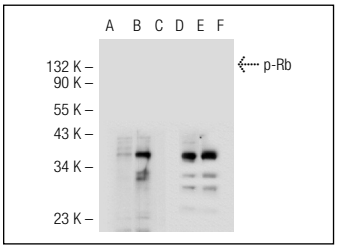
Molecular Weight (observed) of p-Rb: 107-140 kDa.

Positive Controls: Rb (h): 293T Lysate: sc-114014, K-562 whole cell lysate: sc-2203 or SK-LMS-1 cell lysate: sc-3813.

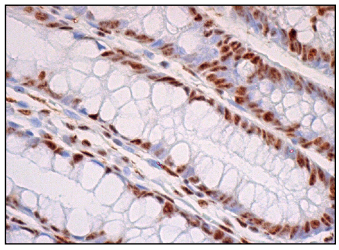
STORAGE

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

DATA



Western blot analysis of Rb phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated human Rb transfected: sc-114014 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated human Rb transfected: sc-114014 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-Rb (Thr 821/826)-R: sc-16669-R (**A**,**B**,**C**) and Rb (M-153): sc-7905 (**D**,**E**,**F**).



p-Rb (Thr 821/826)-R: sc-16669-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Borges, H.L., et al. 2005. Tumor promotion by caspase-resistant retinoblastoma protein. Proc. Natl. Acad. Sci. USA 102: 15587-15592.
2. Hara, K.T., et al. 2005. Cyclin A2-Cdk2 regulates embryonic gene activation in 1-cell mouse embryos. Dev. Biol. 286: 102-113.
3. Grinstein, E., et al. 2006. Cell cycle-controlled interaction of nucleolin with the retinoblastoma protein and cancerous cell transformation. J. Biol. Chem. 281: 22223-22235.
4. Ying, L., et al. 2007. Nitric oxide inactivates the retinoblastoma pathway in chronic inflammation. Cancer Res. 67: 9286-9293.
5. Lee, T.J., et al. 2010. Stochastic E2F activation and reconciliation of phenomenological cell-cycle models. PLoS Biol. 8: e1000488.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.