

RCK (G-12): sc-166489

BACKGROUND

RCK, also known as DDX6 and P54, is a member of the DEAD-box RNA helicase family of proteins, all of which share common protein motifs. Found in most tissues, RCK is an unwindase that exhibits ATP-dependent RNA unwinding activity, as well as the ability to decay RNA in the 5'-3' direction. In non-malignant cells, RCK is associated with all processes of normal RNA metabolism including splicing, export and translation initiation. Mutations in the gene encoding RCK can cause the protein to be overexpressed, changing its function to that of an oncogene that positively regulates the expression of genes involved in cell growth and proliferation. It is believed that, through its unwindase activity, the main function of RCK is to downregulate mRNA expression and maintain normal transcriptional levels within the cell.

REFERENCES

1. Akao, Y., et al. 1995. The RCK/p54 candidate proto-oncogene product is a 54 kilodalton DEAD box protein differentially expressed in human and mouse tissues. *Cancer Res.* 55: 3444-3449.
2. Akiyama, K., et al. 1999. Expression of two dead box genes (DDX1 and DDX6) is independent of that of MYCN in human neuroblastoma cell lines. *Biochem. Mol. Biol. Int.* 47: 563-568.
3. Smillie, D.A. and Sommerville, J. 2002. RNA helicase p54 (DDX6) is a shuttling protein involved in nuclear assembly of stored mRNP particles. *J. Cell Sci.* 115: 395-407.
4. Akao, Y., et al. 2003. A tumour-associated DEAD-box protein, RCK/p54 exhibits RNA unwinding activity toward c-Myc RNAs *in vitro*. *Genes Cells* 8: 671-676.
5. Matsumoto, K., et al. 2005. Expression of RCK/p54, a DEAD-box RNA helicase, in gametogenesis and early embryogenesis of mice. *Dev. Dyn.* 233: 1149-1156.
6. Matsui, T., et al. 2006. Structural insight of human DEAD-box protein RCK/p54 into its substrate recognition with conformational changes. *Genes Cells* 11: 439-452.
7. Chu, C.Y. and Rana, T.M. 2006. Translation repression in human cells by microRNA-induced gene silencing requires RCK/p54. *PLoS Biol.* 4: 210.

CHROMOSOMAL LOCATION

Genetic locus: DDX6 (human) mapping to 11q23.3; Ddx6 (mouse) mapping to 9 A5.2.

SOURCE

RCK (G-12) is a mouse monoclonal antibody raised against amino acids 61-170 mapping near the N-terminus of RCK of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166489 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

RCK (G-12) is recommended for detection of RCK of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 RCK siRNA (h): sc-72246, RCK siRNA (m): sc-72247, RCK shRNA Plasmid (h): sc-72246-SH, RCK shRNA Plasmid (m): sc-72247-SH, RCK shRNA (h) Lentiviral Particles: sc-72246-V and RCK shRNA (m) Lentiviral Particles: sc-72247-V.

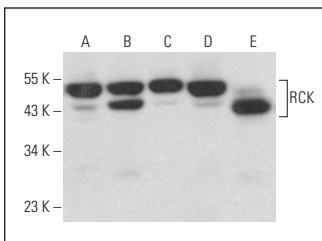
Molecular Weight of RCK: 54 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243, IB4 whole cell lysate: sc-364780 or RCK (h): 293T Lysate: sc-117056.

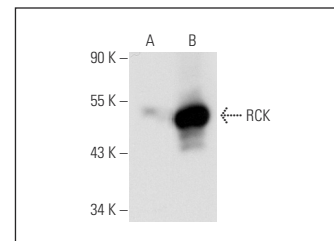
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



RCK (G-12): sc-166489. Western blot analysis of RCK expression in NIH/3T3 (A), IB4 (B), 3T3-L1 (C), RAW 264.7 (D) and PC-12 (E) whole cell lysates.



RCK (G-12): sc-166489. Western blot analysis of RCK expression in non-transfected: sc-117752 (A) and human RCK transfected: sc-117056 (B) 293T whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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