

RBKS (F-9): sc-365733

BACKGROUND

The phosphorylation and dephosphorylation of proteins is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. Ribose is a five carbon-containing monosaccharide that is an essential component of RNA and is, thus, critical to the survival of all living creatures. Ribose is trapped inside the cell (for use in a variety of chemical reactions) via phosphorylation by RBKS (ribokinase), a 322 amino acid member of the carbohydrate kinase pfkB family. RBKS uses magnesium as a cofactor to catalyze the ATP-dependent phosphorylation of ribose, a reaction that yields ADP and ribose 5-phosphate and is the first step in ribose metabolism.

REFERENCES

1. Bork, P., Sander, C. and Valencia, A. 1993. Convergent evolution of similar enzymatic function on different protein folds: the hexokinase, ribokinase, and galactokinase families of sugar kinases. *Protein Sci.* 2: 31-40.
2. Sigrell, J.A., Cameron, A.D. and Mowbray, S.L. 1999. Induced fit on sugar binding activates ribokinase. *J. Mol. Biol.* 290: 1009-1018.
3. Andersson, C.E. and Mowbray, S.L. 2002. Activation of ribokinase by monovalent cations. *J. Mol. Biol.* 315: 409-419.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611132. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Park, J., van Koeverden, P., Singh, B. and Gupta, R.S. 2007. Identification and characterization of human ribokinase and comparison of its properties with *E. coli* ribokinase and human adenosine kinase. *FEBS Lett.* 581: 3211-3216.
6. Park, J. and Gupta, R.S. 2008. Adenosine kinase and ribokinase—the RK family of proteins. *Cell. Mol. Life Sci.* 65: 2875-2896.

CHROMOSOMAL LOCATION

Genetic locus: RBKS (human) mapping to 2p23.2.

SOURCE

RBKS (F-9) is a mouse monoclonal antibody raised against amino acids 1-322 representing full length RBKS of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RBKS (F-9) is available conjugated to agarose (sc-365733 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365733 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365733 PE), fluorescein (sc-365733 FITC), Alexa Fluor® 488 (sc-365733 AF488), Alexa Fluor® 546 (sc-365733 AF546), Alexa Fluor® 594 (sc-365733 AF594) or Alexa Fluor® 647 (sc-365733 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365733 AF680) or Alexa Fluor® 790 (sc-365733 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

RBKS (F-9) is recommended for detection of RBKS of 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 RBKS siRNA (h): sc-94340, RBKS shRNA Plasmid (h): sc-94340-SH and RBKS shRNA (h) Lentiviral Particles: sc-94340-V.

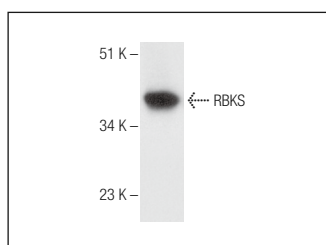
Molecular Weight of RBKS: 34 kDa.

Positive Controls: human liver extract: sc-363766, A549 cell lysate: sc-2413 or Hep G2 cell lysate: sc-2227.

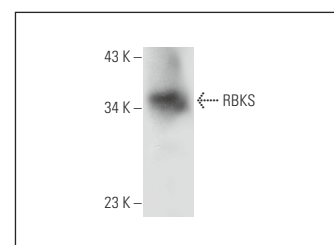
RECOMMENDED SUPPORT REAGENTS

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



RBKS (F-9): sc-365733. Western blot analysis of RBKS expression in human liver tissue extract.



RBKS (F-9): sc-365733. Western blot analysis of RBKS expression in A549 whole cell lysate.

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.