

# RKIP (R-17): sc-5424

## BACKGROUND

Raf kinase inhibitor protein (RKIP) is a cytosolic protein that was initially characterized as a phosphatidylethanolamine-binding protein (PBP) expressed in brain tissue and secreted from testes fluid. In addition, RKIP was identified by yeast two-hybrid screening of human T-cell libraries directed at identifying proteins that associate with the BXB kinase domain of the serine/threonine kinase, Raf-1. Subsequent *in vitro* and *in vivo* studies indicate that RKIP binds to both the active and inactive forms of Raf-1 and thereby regulates the signaling cascade of the MAP kinase pathway. The specific association of RKIP with kinase-active Raf-1 competitively inhibits the binding and activation of the Raf-1 substrate MEK. RKIP, in turn, affects downstream MAP kinase signaling by decreasing the activation of MEK effector proteins, including ERK1 and ERK2, and the subsequent induction of AP-1 mediated transcription.

## REFERENCES

1. Perry, A.C., et al. 1994. Sequence analysis of a mammalian phospholipid-binding protein from testis and epididymis and its distribution between spermatozoa and extracellular secretions. *Biochem. J.* 301: 235-242.
2. Minden, A., et al. 1994. Differential activation of ERK and JNK mitogen-activated protein kinases by Raf-1 and MEKK. *Science* 266: 1719-1723.
3. Tohdoh, N., et al. 1995. Sequence homology of rat and human HCNP precursor proteins, bovine phosphatidylethanol-amine-binding protein and rat 23-kDa protein associated with the opioid-binding protein. *Brain Res. Mol. Brain Res.* 30: 381-384.
4. Kolch, W., et al. 1996. Inhibition of Raf-1 signaling by a monoclonal antibody, which interferes with Raf-1 activation and with Mek substrate binding. *Oncogene* 13:1305-1314.
5. Morrison, D.K. and Cutler, R.E. 1997. The complexity of Raf-1 regulation. *Curr. Opin. Cell Biol.* 9: 174-179.
6. Yeung, K., et al. 1999. Suppression of Raf-1 kinase activity and MAP kinase signalling by RKIP. *Nature* 401: 173-177.

## CHROMOSOMAL LOCATION

Genetic locus: PBP (human) mapping to 12q24.23; Pbp (mouse) mapping to 5 F.

## SOURCE

RKIP (R-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of RKIP of rat 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-5424 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

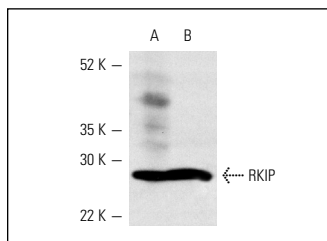
RKIP (R-17) is recommended for detection of RKIP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RKIP siRNA (h): sc-36430, RKIP siRNA (m): sc-36431, RKIP shRNA Plasmid (h): sc-36430-SH, RKIP shRNA Plasmid (m): sc-36431-SH, RKIP shRNA (h) Lentiviral Particles: sc-36430-V and RKIP shRNA (m) Lentiviral Particles: sc-36431-V.

Molecular Weight of RKIP: 23 kDa.

Positive Controls: rat liver extract: sc-2395, rat brain extract: sc-2392 or PC-12 cell lysate: sc-2250.

## DATA



RKIP (R-17): sc-5424. Western blot analysis of RKIP expression in rat liver (A) and rat brain (B) extracts.

## SELECT PRODUCT CITATIONS

1. Lorenz, K., et al. 2003. Protein kinase C switches the Raf kinase inhibitor from Raf-1 to GRK-2. *Nature* 426: 574-579.
2. Wang, C.Y., et al. 2008. Activation of protein kinase C $\alpha$  signaling prevents cytotoxicity and mutagenicity following lead acetate in CL3 human lung cancer cells. *Toxicology* 250: 55-61.
3. Takemura, T., et al. 2010. Reduction of Raf kinase inhibitor protein expression by Bcr-Abl contributes to chronic myelogenous leukemia proliferation. *J. Biol. Chem.* 285: 6585-6594.
4. Chang, H.R., et al. 2011. Hexavalent chromium inhibited the expression of RKIP of heart *in vivo* and *in vitro*. *Toxicol. In Vitro* 25: 1-6.

## RESEARCH USE

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


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Try **RKIP (H-10): sc-376925** or **RKIP (8): sc-101504**, our highly recommended monoclonal alternatives to RKIP (R-17).