

# PKR (M-515): sc-1702

## BACKGROUND

An interferon-inducible, RNA-dependent protein serine/threonine kinase, PKR, has been described. PKR in earlier literature is variously known as DAI, dsJ, PI kinase, p65, p67 or TIK for the mouse kinase; and p68 or p69 for the human kinase. The PKR kinase substrate is the  $\alpha$  subunit of protein synthesis initiation factor eIF-2. Phosphorylation of eIF-2 $\alpha$  on Serine 51 results in inhibition of translation. Molecular cDNA clones have been isolated from both human and mouse cells. The serine/threonine kinase catalytic domains map to the carboxy-terminal half of the protein while the RNA binding domains are located in the amino-terminal region. Three kinds of regulation of PKR enzymatic activity have been described. These include transcriptional regulation in response to interferon, an autoregulatory mechanism controlling PKR expression at the level of translation and posttranslational regulation by RNA mediated autophosphorylation.

## REFERENCES

- Hershey, J.W.B. 1989. Protein phosphorylation controls translation rates. *J. Biol. Chem.* 264: 20823-20826.
- Meurs, E., et al. 1990. Molecular cloning and characterization of the human double-stranded RNA-activated protein kinase induced by interferon. *Cell* 62: 379-390.

## CHROMOSOMAL LOCATION

Genetic locus: Eif2ak2 (mouse) mapping to 17 E3.

## SOURCE

PKR (M-515) is a rabbit polyclonal antibody raised against amino acids 1-515 representing full length PKR of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-1702 AC, 500  $\mu$ g/0.25 ml agarose in 1 ml.

## APPLICATIONS

PKR (M-515) is recommended for detection of PKR of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 PKR siRNA (m): sc-36264, PKR shRNA Plasmid (m): sc-36264-SH and PKR shRNA (m) Lentiviral Particles: sc-36264-V.

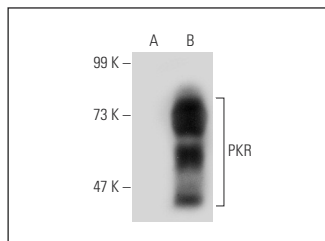
Molecular Weight of PKR: 68 kDa.

Positive Controls: PKR (m): 293T Lysate: sc-122612 or NIH/3T3 whole cell lysate: sc-2210.

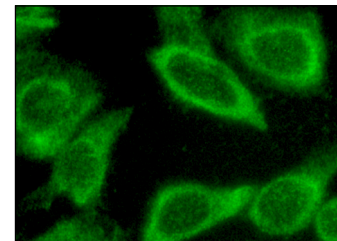
## STORAGE

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

## DATA



PKR (M-515): sc-1702. Western blot analysis of PKR expression in non-transfected: sc-117752 (A) and mouse PKR transfected: sc-122612 (B) 293T whole cell lysates.



PKR (M-515): sc-1702. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Calkhoven, C.F., et al. 2000. Translational control of C/EBP $\alpha$  and C/EBP $\beta$  isoform expression. *Genes Dev.* 14: 1920-1932.
- Wiesenthal, V., et al. 2006. A translation control reporter system (TCRS) for the analysis of translationally controlled processes in the vertebrate cell. *Nucleic Acids Res.* 34: e23.
- Bennett, R.L., et al. 2006. RAX, the PKR activator, sensitizes cells to inflammatory cytokines, serum withdrawal, chemotherapy, and viral infection. *Blood* 108: 821-829.
- Kolodkin-Gal, D., et al. 2009. Herpes simplex virus delivery to orthotopic rectal carcinoma results in an efficient and selective antitumor effect. *Gene Ther.* 16: 905-915.
- Teramachi, J., et al. 2010. Double stranded RNA-dependent protein kinase is involved in osteoclast differentiation of RAW264.7 cells *in vitro*. *Exp. Cell Res.* 316: 3254-3262.
- Domingo-Gil, E., et al. 2011. Diversity in viral anti-PKR mechanisms: a remarkable case of evolutionary convergence. *PLoS ONE* 6: e16711.
- Korom, M., et al. 2013. A proautophagic antiviral role for the cellular prion protein identified by infection with a herpes simplex virus 1 ICP34.5 mutant. *J. Virol.* 87: 5882-5894.

## RESEARCH USE

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


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Try **PKR (B-10): sc-6282** or **PKR (23): sc-136352**, our highly recommended monoclonal alternatives to PKR (M-515). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PKR (B-10): sc-6282**.