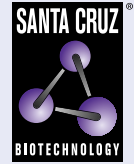


PKR (A-12): sc-393038



The Power to Question

BACKGROUND

Interferon-inducible RNA-dependent protein serine/threonine kinase, PKR, is variously designated in earlier literature 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 α subunit of protein synthesis initiation factor eIF-2. Phosphorylation of eIF-2 α 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 post-translational regulation by RNA-mediated autophosphorylation.

CHROMOSOMAL LOCATION

Genetic locus: EIF2AK2 (human) mapping to 2p22.2; Eif2ak2 (mouse) mapping to 17 E3.

SOURCE

PKR (A-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of PKR of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} 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-393038 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

PKR (A-12) is recommended for detection of PKR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 PKR siRNA (h): sc-36263, PKR siRNA (m): sc-36264, PKR shRNA Plasmid (h): sc-36263-SH, PKR shRNA Plasmid (m): sc-36264-SH, PKR shRNA (h) Lentiviral Particles: sc-36263-V and PKR shRNA (m) Lentiviral Particles: sc-36264-V.

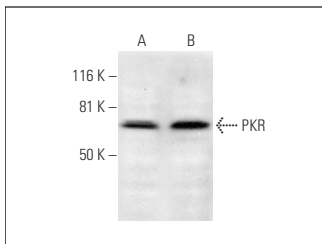
Molecular Weight of PKR: 68 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or BJAB whole cell lysate: sc-2207.

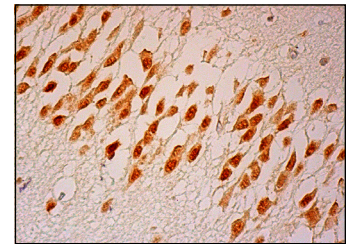
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PKR (A-12): sc-393038. Western blot analysis of PKR expression in HeLa (A) and BJAB (B) whole cell lysates.



PKR (A-12): sc-393038. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing nuclear and cytoplasmic staining of neuronal cells.

SELECT PRODUCT CITATIONS

- Ivanov, A., et al. 2018. HIV-1 Tat phosphorylation on Ser-16 residue modulates HIV-1 transcription. *Retrovirology* 15: 39.
- Pennisi, R., et al. 2020. VHS, US3 and UL13 viral tegument proteins are required for herpes simplex virus-induced modification of protein kinase R. *Sci. Rep.* 10: 5580.
- Lanzillotta, C., et al. 2021. Chronic PERK induction promotes Alzheimer-like neuropathology in Down syndrome: insights for therapeutic intervention. *Prog. Neurobiol.* 196: 101892.
- Al Sabaani, N. 2021. Inhibition of protein kinase R by C16 protects the retinal ganglion cells from hypoxia-induced oxidative stress, inflammation, and apoptosis. *Curr. Eye Res.* 46: 719-730.
- Pennisi, R. and Sciortino, M.T. 2023. HSV-1 triggers an antiviral transcriptional response during viral replication that is completely abrogated in PKR^{-/-} cells. *Pathogens* 12: 1126.

RESEARCH USE

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



See **PKR (B-10): sc-6282** for PKR antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.