SANTA CRUZ BIOTECHNOLOGY, INC.

PKR (H-12): sc-514626

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-2α 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.

REFERENCES

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2. 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.
3. Icely, P.L., et al. 1991. TIK, a novel serine/threonine kinase, is recognized by antibodies directed against phosphotyrosine. J. Biol. Chem. 266: 16073-16077.
4. Thomis, D.C., et al. 1992. Mechanism of interferon action: cDNA structure expression, and regulation of the interferon-induced, RNA-dependent P1/eIF-2 α protein kinase from human cells. Virology 188: 33-46.
5. McCormack, S.J., et al. 1992. Mechanism of interferon action: identification of a RNA binding domain within the N-terminal region of the human RNA-dependent P1/eIF-2 α protein kinase. Virology 188: 47-56.
6. Samuel, C.E. 1993. The eIF-2 α protein kinases, regulators of translation in eukaryotes from yeasts to humans. J. Biol. Chem. 268: 7603-7606.
7. Baier, L.J., et al. 1993. The mouse antiphosphotyrosine immunoreactive kinase, TIK, is indistinguishable from the double-stranded RNA-dependent, interferon-induced protein kinase, PKR. Nucleic Acids Res. 21: 4830-4835.
8. Tanaka, H., et al. 1994. Mechanism of interferon action: structure of the mouse PKR gene encoding the interferon-inducible RNA-dependent protein kinase. Proc. Natl. Acad. Sci. USA 91: 7995-7999.

CHROMOSOMAL LOCATION

Genetic locus: EIF2AK2 (human) mapping to 2p22.2.

SOURCE

PKR (H-12) is a mouse monoclonal antibody raised against amino acids 229-306 mapping within an internal region of PKR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PKR (H-12) is recommended for detection of PKR 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 PKR siRNA (h): sc-36263, PKR shRNA Plasmid (h): sc-36263-SH and PKR shRNA (h) Lentiviral Particles: sc-36263-V.

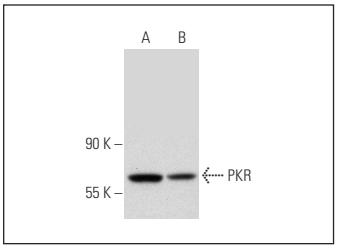
Molecular Weight of PKR: 68 kDa.

Positive Controls: A2058 whole cell lysate: sc-364178 or COLO 205 whole cell lysate: sc-364177.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PKR (H-12): sc-514626. Western blot analysis of PKR expression in A2058 (**A**) and COLO 205 (**B**) 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 or our catalog for detailed protocols and support products.