SANTA CRUZ BIOTECHNOLOGY, INC.

# PACT (HL1950): sc-53523

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Interferon-inducible double stranded RNA-dependent protein kinase activator, also designated PKR-associated protein X (RAX) or PACT, acts as a protein activator of PKR. Following stress such as serum starvation or peroxide or arsenite treatment, PACT associates with and activates PKR, resulting in eIF2α activation (phosphorylation), consequent translation inhibition and apoptosis. PACT can directly interact with double stranded RNA (dsRNA), however, eIF2α activation occurs only in the absence of dsRNA. The presence of certain growth factors may suppress the pro-apoptotic function of PACT. In both human and mouse cells, PACT is phosphorylated on Serine 18, and the phosphorylated form activates PKR following stress. PACT may exist as a heterodimer with eIF2α, interacting through its DRBM domain.

## REFERENCES


1. Patel, R.C., et al. 1998. PACT, a protein activator of the interferon-induced protein kinase, PKR. EMBO J. 17: 4379-4390.
2. Ito, T., et al. 1999. RAX, a cellular activator for double-stranded RNA-dependent protein kinase during stress signaling. J. Biol. Chem. 274: 15427-15432.
3. Huang, X., et al. 2002. The C-terminal, third conserved motif of the protein activator PACT plays an essential role in the activation of double-stranded-RNA-dependent protein kinase (PKR). Biochem. J. 366: 175-186.
4. Peters, G.A., et al. 2002. Inhibition of PACT-mediated activation of PKR by the herpes simplex virus type 1 Us11 protein. J. Virol. 76: 11054-11064.
5. Yang, M., et al. 2003. A novel role for RAX, the cellular activator of PKR, in synergistically stimulating SV40 large T antigen-dependent gene expression. J. Biol. Chem. 278: 38325-38332.
6. Bennett, R.L., et al. 2004. Serine 18 phosphorylation of RAX, the PKR activator, is required for PKR activation and consequent translation inhibition. J. Biol. Chem. 279: 42687-42693.


## CHROMOSOMAL LOCATION

Genetic locus: PRKRA (human) mapping to 2q31.2; Prkra (mouse) mapping to 2 C3.

## SOURCE

PACT (HL1950) is a mouse monoclonal antibody raised against two amino acid sequences containing phosphorylated and non-phosphorylated Ser 18 of PACT of mouse origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

PACT (HL1950) is recommended for detection of PACT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for PACT siRNA (h): sc-36175, PACT siRNA (m2): sc-63342, PACT shRNA Plasmid (h): sc-36175-SH, PACT shRNA Plasmid (m2): sc-63342-SH, PACT shRNA (h) Lentiviral Particles: sc-36175-V and PACT shRNA (m2) Lentiviral Particles: sc-63342-V.

Molecular Weight of PACT: 35 kDa.

## 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, 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).

## 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.