SANTA CRUZ BIOTECHNOLOGY, INC.

PACT (2830C1a): sc-81569

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.

SOURCE

PACT (2830C1a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of PACT of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

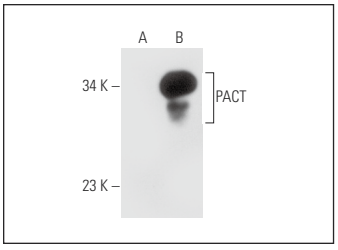
PACT (2830C1a) is recommended for detection of PACT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

Molecular Weight of PACT: 34 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410 or HeLa whole cell lysate: sc-2200.

DATA



PACT (2830C1a): sc-81569. Western blot analysis of PACT expression in non-transfected: sc-117752 (**A**) and mouse PACT transfected: sc-127290 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fabozzi, G., et al. 2011. Ebolavirus proteins suppress the effects of small interfering RNA by direct interaction with the mammalian RNA interference pathway. J. Virol. 85: 2512-2523.
2. Zhang, Y., et al. 2021. Efficient Dicer processing of virus-derived double-stranded RNAs and its modulation by RIG-I-like receptor LGP2. PLoS Pathog. 17: e1009790.

RESEARCH USE

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