

PACT (D-4): sc-377103

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 eIF2 α activation (phosphorylation), consequent translation inhibition and apoptosis. PACT can directly interact with double stranded RNA (dsRNA), however, eIF2 α 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 eIF2 α , interacting through its DRBM domain.

REFERENCE

- Patel, R.C., et al. 1998. PACT, a protein activator of the interferon-induced protein kinase, PKR. *EMBO J.* 17: 4379-4390.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

PACT (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 137-173 within an internal region of PACT 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.

PACT (D-4) is available conjugated to agarose (sc-377103 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377103 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377103 PE), fluorescein (sc-377103 FITC), Alexa Fluor[®] 488 (sc-377103 AF488), Alexa Fluor[®] 546 (sc-377103 AF546), Alexa Fluor[®] 594 (sc-377103 AF594) or Alexa Fluor[®] 647 (sc-377103 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377103 AF680) or Alexa Fluor[®] 790 (sc-377103 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377103 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

PACT (D-4) is recommended for detection of PACT 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).

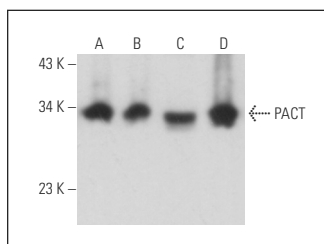
PACT (D-4) is also recommended for detection of PACT in additional species, including equine, canine, bovine and porcine.

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.

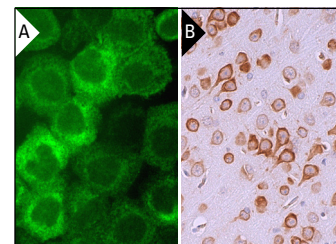
Molecular Weight of PACT: 34 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, MOLT-4 cell lysate: sc-2233 or HL-60 whole cell lysate: sc-2209.

DATA



PACT (D-4): sc-377103. Western blot analysis of PACT expression in SK-N-SH (A), SJRH30 (B), HL-60 (C) and MOLT-4 (D) whole cell lysates.



PACT (D-4): sc-377103. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic staining of neuronal cells, glial cells and endothelial cells (B).

SELECT PRODUCT CITATIONS

- Qi, Y., et al. 2014. MicroRNA-29b regulates ethanol-induced neuronal apoptosis in the developing cerebellum through SP1/RAX/PKR cascade. *J. Biol. Chem.* 289: 10201-10210.
- Sanchez David, R.Y., et al. 2019. LGP2 binds to PACT to regulate RIG-I- and MDA5-mediated antiviral responses. *Sci. Signal.* 12: eaar3993.
- Qiao, H., et al. 2021. Cell fate determined by the activation balance between PKR and SPHK1. *Cell Death Differ.* 28: 401-418.
- Jiang, L.L., et al. 2022. RNA-assisted sequestration of RNA-binding proteins by cytoplasmic inclusions of the C-terminal 35-kDa fragment of TDP-43. *J. Cell Sci.* 135: jcs259380.

STORAGE

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