SANTA CRUZ BIOTECHNOLOGY, INC.

PCTAIRE-1 (G6.1): sc-53410

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin dependent kinases (Cdks). Cdk proteins work in concert with cyclins to phosphorylate key substrates involved in cell cycle progression. Another family of proteins, Cdk inhibitors, also play a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. Members of the Cdk family include Cdk2-Cdk8, PCTAIRE-1–3, PITALRE and PITSLRE. PCTAIRE-1, PCTAIRE-2 and PCTAIRE-3 comprise a subfamily of cdc2-related serine/threonine kinases. PCTAIRE-1, which is expressed primarily in mammalian brain, interacts with a variety of proteins, and is thought to be part of a multiple signal transduction cascade. PCTAIRE-2, also with expression in brain, may be important in terminally differentiated neurons. The human PCTAIRE-3 gene maps to chromosome 1q32.1.

CHROMOSOMAL LOCATION

Genetic locus: CDK16 (human) mapping to Xp11.23; Cdk16 (mouse) mapping to X A1.3.

SOURCE

PCTAIRE-1 (G6.1) is a mouse monoclonal antibody raised against amino acids 2-19 of PCTAIRE-1 of human 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.

PCTAIRE-1 (G6.1) is available conjugated to agarose (sc-53410 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53410 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53410 PE), fluorescein (sc-53410 FITC), Alexa Fluor® 488 (sc-53410 AF488), Alexa Fluor® 546 (sc-53410 AF546), Alexa Fluor® 594 (sc-53410 AF594) or Alexa Fluor® 647 (sc-53410 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53410 AF680) or Alexa Fluor® 790 (sc-53410 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PCTAIRE-1 (G6.1) is recommended for detection of PCTAIRE-1 of mouse, rat, human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PCTAIRE-1 siRNA (h): sc-37584, PCTAIRE-1 siRNA (m): sc-37585, PCTAIRE-1 shRNA Plasmid (h): sc-37584-SH, PCTAIRE-1 shRNA Plasmid (m): sc-37585-SH, PCTAIRE-1 shRNA (h) Lentiviral Particles: sc-37584-V and PCTAIRE-1 shRNA (m) Lentiviral Particles: sc-37585-V.

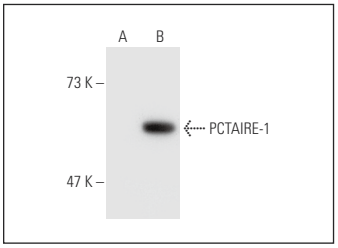
Molecular Weight of PCTAIRE-1: 54 kDa.

Positive Controls: PCTAIRE-1 (m): 293T Lysate: sc-122442, MCF7 whole cell lysate: sc-2206 or NIH/3T3 whole cell lysate: sc-2210.

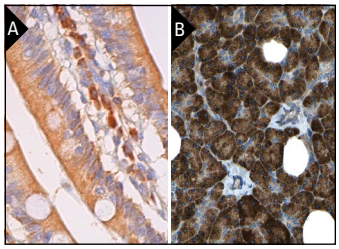
STORAGE

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

DATA



PCTAIRE-1 (G6.1): sc-53410. Western blot analysis of PCTAIRE-1 expression in non-transfected: sc-117752 (**A**) and mouse PCTAIRE-1 transfected: sc-122442 (**B**) 293T whole cell lysates.



PCTAIRE-1 (G6.1): sc-53410. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and islet cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Shehata, S.N., et al. 2012. Analysis of substrate specificity and cyclin Y binding of PCTAIRE-1 kinase. Cell. Signal. 24: 2085-2094.
2. Wu, K., et al. 2012. Enhanced expression of Pctk1, Tcf12 and Ccnd1 in hippocampus of rats: Impact on cognitive function, synaptic plasticity and pathology. Neurobiol. Learn. Mem. 97: 69-80.
3. Yanagi, T., et al. 2014. PCTAIRE1 phosphorylates p27 and regulates mitosis in cancer cells. Cancer Res. 74: 5795-5807.
4. Iwano, S., et al. 2015. PCTK1 regulates integrin-dependent spindle orientation via protein kinase A regulatory subunit KAP0 and myosin X. Mol. Cell. Biol. 35: 1197-1208.
5. Zi, Z., et al. 2015. CCNYL1, but not CCNY, cooperates with CDK16 to regulate spermatogenesis in mouse. PLoS Genet. 11: e1005485.
6. Cwiek, P., et al. 2015. RNA interference screening identifies a novel role for PCTK1/CDK16 in medulloblastoma with c-Myc amplification. Oncotarget 6: 116-129.
7. Shehata, S.N., et al. 2015. Cyclin Y phosphorylation- and 14-3-3-binding-dependent activation of PCTAIRE-1/CDK16. Biochem. J. 469: 409-420.

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.