SANTA CRUZ BIOTECHNOLOGY, INC.

Pim-3 (C-18): sc-49485

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Pim (provirus integration site for Moloney murine leukemia virus) family serine/threonine protein kinases were first identified in studies examining genes targeted for proviral insertion in murine leukemia virus-induced T lymphomas. Increased levels of Pim kinases predispose cells to lymphomagenesis and enhance the activity of mitogenic proteins such as p100, c-Myb and Cdc25A. In addition, Pim kinases are also involved in modulation of synaptic strength in neurons and anti-apoptotic signaling in hematopoietic progenitor cells. Pim-3, a member of the proto-oncogene Pim family that expresses serine/threonine kinase activity, shares significant homology with Pim-1 serine/threonine protein kinases. Pim-3 may function as a mediator of synaptic plasticity in the brain and is presumably involved in the anti-apoptosis process and cell cycle progression as well as the proliferation of human hepatoma cell lines. The Pim-3 protein is widely expressed, however no expression is observed in the colon, thymus or small intestine.

REFERENCES

1. Feldman, J.D., et al. 1998. KID-1, a protein kinase induced by depolarization in brain. J. Biol. Chem. 273: 16535-16543.
2. Konietzko, U., et al. 1999. Pim kinase expression is induced by LTP stimulation and required for the consolidation of enduring LTP. EMBO J. 18: 3359-3369.
3. Eichmann, A., et al. 2000. Developmental expression of Pim kinases suggests functions also outside of the hematopoietic system. Oncogene 19: 1215-1224.
4. Yan, B., et al. 2003. The Pim-2 kinase phosphorylates Bad on Serine 112 and reverses Bad-induced cell death. J. Biol. Chem. 278: 45358-45367.
5. Deneen, B., et al. 2003. Pim-3 proto-oncogene kinase is a common transcriptional target of divergent EWS/ETS oncoproteins. Mol. Cell. Biol. 23: 3897-3908.
6. Bachmann, M., et al. 2005. The serine/threonine kinase Pim-1. Int. J. Biochem. Cell. Biol. 37: 726-730.
7. Fujii, C., et al. 2005. Aberrant expression of serine/threonine kinase Pim-3 in hepatocellular carcinoma development and its role in the proliferation of human hepatoma cell lines. Int. J. Cancer 114: 209-218.
8. Qian, K.C., et al. 2005. Structural basis of constitutive activity and a unique nucleotide binding mode of human Pim-1 kinase. J. Biol. Chem. 280: 6130-6137.
9. Li, Y.Y., et al. 2006. Pim-3, a proto-oncogene with serine/threonine kinase activity, is aberrantly expressed in human pancreatic cancer and phosphorylates Bad to block Bad-mediated apoptosis in human pancreatic cancer cell lines. Cancer Res. 66: 6741-6747.

CHROMOSOMAL LOCATION

Genetic locus: PIM3 (human) mapping to 22q13.33; Pim3 (mouse) mapping to 15 E3.

RESEARCH USE

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

SOURCE

Pim-3 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Pim-3 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-49485 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Pim-3 (C-18) is recommended for detection of Pim-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 Pim-3 siRNA (h): sc-61353, Pim-3 siRNA (m): sc-61354, Pim-3 shRNA Plasmid (h): sc-61353-SH, Pim-3 shRNA Plasmid (m): sc-61354-SH, Pim-3 shRNA (h) Lentiviral Particles: sc-61353-V and Pim-3 shRNA (m) Lentiviral Particles: sc-61354-V.

Molecular Weight of Pim-3: 41 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or LNCaP cell lysate: sc-2231.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Xu, D., et al. 2011. The oncogenic kinase Pim-1 is modulated by K-Ras signaling and mediates transformed growth and radioresistance in human pancreatic ductal adenocarcinoma cells. Carcinogenesis 32: 488-495.

STORAGE

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