SANTA CRUZ BIOTECHNOLOGY, INC.

PRAS40 (S-20): sc-32627

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The Power to Question

BACKGROUND

Akt, also known as protein kinase B, is one of the major downstream targets of the phosphatidylinositol 3-kinase pathway. This protein kinase has been implicated in Insulin signaling, stimulation of cellular growth, inhibition of apoptosis and transformation of cells. The proline-rich Akt substrate PRAS40, also designated AKT1S1, becomes phosphorylated by activated Akt on Ser or Thr residues in the motif RXRXX(S/T). Phosphorylated PRAS40 subsequently binds 14-3-3 in a sequence-specific manner, thereby inducing such changes as alteration of protein subcellular localization and regulation of intrinsic enzymatic activity. Studies also suggest that PRAS40 phosphorylation and its interaction with pAkt and 14-3-3 may play an important role in neuroprotection mediated by NGF in apoptotic neuronal cell death after cerebral ischemia. PRAS40 maps to human chromosome 19q13.33.

REFERENCES

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2. Liu, M.Y., et al. 2002. 14-3-3 interacts with the tumor suppressor tuberin or Akt phosphorylation site(s). Cancer Res. 22: 6475-6480.
3. Chen, H.K., et al. 2003. Interaction of Akt-phosphorylated ataxin-1 with 14-3-3 mediates neurodegeneration in spinocerebellar ataxia type 1. Cell 113: 457-468.
4. Kovacina, K.S., et al. 2003. Identification of a proline-rich Akt substrate as a 14-3-3 binding partner. J. Biol. Chem. 278: 10189-10194.
5. Atsushi, S., et al. 2004. Neuroprotective role of a proline-rich Akt substrate in apoptotic neuronal cell death after stroke: relationships with nerve growth factor. J. Neurosci. 24: 1584-1593.
6. Chan, P.H. 2004. Mitochondria and neuronal death/survival signaling pathways in cerebral ischemia. Neurochem. Res. 29: 1943-1949.
7. Jiang, Y., et al. 2005. Apoptosis and inhibition of the phosphatidylinositol 3-kinase/Akt signaling pathway in the anti-profliferative actions of dehydroepiandrosterone. J. Gastroenterol. 40: 490-497.
8. Reddy, P., et al. 2005. Formation of E-cadherin mediated cell-cell adhesion activates Akt and mitogen activated protein kinase (MAPK) via phosphatidylinositl 3 kinase and ligand-independent activation of epidermal growth factor (EGF) receptor in ovarian cancer cells. Mol. Endocrinol. 19: 2564-2578.
9. Suga, H., et al. 2005. Possible involvement of phosphatidylinositol 3-kinase/Akt signal pathway in vasopressiin-induced HSP27 phosphorylation in aortic smooth muscle A10 cells. Arch. Biochem. Biophys. 438: 137-145.

CHROMOSOMAL LOCATION

Genetic locus: AKT1S1 (human) mapping to 19q13.33.

SOURCE

PRAS40 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PRAS40 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-32627 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PRAS40 (S-20) is recommended for detection of PRAS40 of 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).

PRAS40 (S-20) is also recommended for detection of PRAS40 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PRAS40 siRNA (h): sc-44635, PRAS40 shRNA Plasmid (h): sc-44635-SH and PRAS40 shRNA (h) Lentiviral Particles: sc-44635-V.

Molecular Weight of PRAS40: 40 kDa.

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. Gangoiti, P., et al. 2011. Activation of mTOR and RhoA is a major mechanism by which Ceramide 1-phosphate stimulates macrophage proliferation. Cell. Signal. 23: 27-34.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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