

p-PRAS40 (Thr 246): sc-32629

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 serine or threonine 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 p-Akt 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

- Cahill, C.M., et al. 2001. Phosphatidylinositol 3-kinase signaling inhibits DAF-16 DNA binding and function via 14-3-3 dependent and 14-3-3 independent pathways. *J. Biol. Chem.* 276: 13402-13410.
- Liu, M.Y., et al. 2002. 14-3-3 interacts with the tumor suppressor tuberlin or Akt phosphorylation site(s). *Cancer Res.* 22: 6475-6480.
- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-PRAS40 (Thr 246) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 246 phosphorylated 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-32629 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

p-PRAS40 (Thr 246) is recommended for detection of Thr 246 phosphorylated PRAS40 of human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-PRAS40 (Thr 246) is also recommended for detection of correspondingly phosphorylated 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.

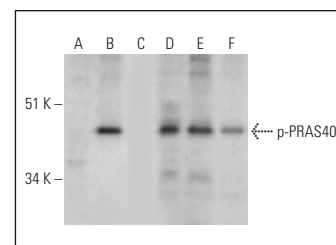
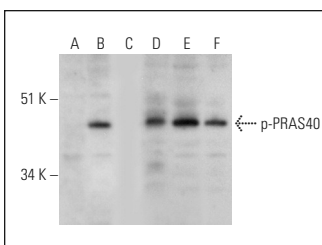
Molecular Weight of p-PRAS40: 40 kDa.

Positive Controls: Hela whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of PRAS40 phosphorylation in untreated (A, D), EGF treated (B, E) and EGF and lambda protein phosphatase (sc-200312A) treated (C, F) HeLa whole cell lysates. Antibodies tested include p-PRAS40 (Thr 246): sc-32629 (A, B, C) and PRAS40 (H-216): sc-67042 (D, E, F).

Western blot analysis of PRAS40 phosphorylation in untreated (A, D), insulin treated (B, E) and insulin and lambda protein phosphatase (sc-200312A) treated (C, F) HeLa whole cell lysates. Antibodies tested include p-PRAS40 (Thr 246): sc-32629 (A, B, C) and PRAS40 (H-216): sc-67042 (D, E, F).

SELECT PRODUCT CITATIONS

- Wu, C.W. and Storey, K.B. 2012. Regulation of the mTOR signaling network in hibernating thirteen-lined ground squirrels. *J. Exp. Biol.* 215: 1720-1727.