SANTA CRUZ BIOTECHNOLOGY, INC.

Akt2 (D-17): sc-7127

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKB or RacPK), Akt2 (also designated PKBβ or RacPK-β) and Akt 3 (also designated PKBγ or thyoma viral proto-oncogene 3), which exhibit sequence homology with the protein kinase A and C families and are encoded by the c-Akt proto-oncogene. All members of the Akt family have a Pleckstrin homology domain. Akt1 and Akt2 are activated by PDGF stimulation that is dependent on PDGFR-β tyrosine residues 740 and 751, which bind the subunit of the phosphatidylinositol 3-kinase (PI 3-kinase) complex. Akt proteins become phosphorylated and activated in Insulin/IGF-1-stimulated cells by an upstream kinase(s), and the activation of Akt1 and Akt2 is inhibited by the PI kinase inhibitor wortmannin. Taken together, this data strongly suggests that the protein signals downstream of the PI kinases. Akt3 is phosphorylated on a serine residue in response to Insulin, and this activation is inhibited by prior activation of protein kinase C. Akt3 is expressed in 3T3-L1 fibroblasts, adipocytes and skeletal muscle and may be involved in various biological processes, including adipocyte and muscle differentiation, glycogen synthesis, glucose uptake, apoptosis, and cellular proliferation.

CHROMOSOMAL LOCATION

Genetic locus: AKT2 (human) mapping to 19q13.2; Akt2 (mouse) mapping to 7 A3.

SOURCE

Akt2 (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Akt2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7127 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Akt2 (D-17) is recommended for detection of Akt2 of mouse, rat and 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); non cross-reactive with Akt1.

Akt2 (D-17) is also recommended for detection of Akt2 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Akt2 siRNA (h): sc-29197, Akt2 siRNA (m): sc-38910, Akt2 shRNA Plasmid (h): sc-29197-SH, Akt2 shRNA Plasmid (m): sc-38910-SH, Akt2 shRNA (h) Lentiviral Particles: sc-29197-V and Akt2 shRNA (m) Lentiviral Particles: sc-38910-V.

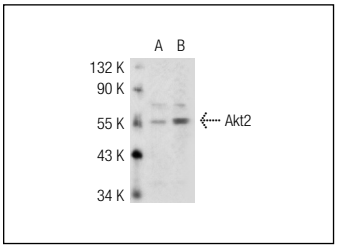
Molecular Weight of Akt2: 56 kDa.

Positive Controls: Akt2 (m): 293T Lysate: sc-126407, THP-1 cell lysate: sc-2238 or MCF7 whole cell lysate: sc-2206.

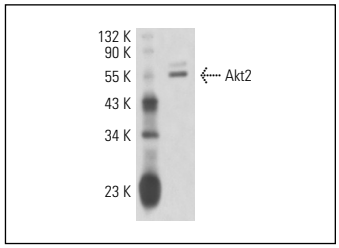
RESEARCH USE

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

DATA



Akt2 (D-17): sc-7127. Western blot analysis of Akt2 expression in non-transfected: sc-117752 (**A**) and mouse Akt2 transfected: sc-126407 (**B**) 293T whole cell lysates.



Akt2 (D-17): sc-7127. Western blot analysis of Akt2 expression in THP-1 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Bacus, S.S., et al. 2002. Akt2 is frequently upregulated in HER-2/neu-positive breast cancers and may contribute to tumor aggressiveness by enhancing cell survival. Oncogene 21: 3532-3540.
2. Basso, A.D., et al. 2002. Akt forms an intracellular complex with heat shock protein 90 (Hsp90) and Cdc37 and is destabilized by inhibitors of HSP 90 function. J. Biol. Chem. 277: 39858-39866.
3. Roy, H.K., et al. 2002. AKT proto-oncogene overexpression is an early event during sporadic colon carcinogenesis. Carcinogenesis 23: 201-205.
4. Altomare, D.A., et al. 2002. Frequent activation of AKT2 kinase in human pancreatic carcinomas. J. Cell. Biochem. 87: 470-476.
5. Vasko, V., et al. 2004. Akt activation and localisation correlate with tumour invasion and oncogene expression in thyroid cancer. J. Med. Genet. 41: 161-170.
5. Dragoi, A.M., et al. 2005. DNA-PKcs, but not TLR9, is required for activation of Akt by CpG-DNA. EMBO J. 24: 779-789.
6. Barry, J.S., et al. 2006. Developmental changes in ovine myocardial glucose transporters and insulin signaling following hyperthermia-induced intrauterine fetal growth restriction. Exp. Biol. Med. 231: 566-575.
7. Robertson, S.D., et al. 2010. Insulin reveals Akt signaling as a novel regulator of norepinephrine transporter trafficking and norepinephrine homeostasis. J. Neurosci. 30: 11305-11316.
8. Viscarra, J.A., et al. 2011. Glut4 is upregulated despite decreased insulin signaling during prolonged fasting in northern elephant seal pups. Am. J. Physiol. Regul. Integr. Comp. Physiol. 300: R150-R154.
9. Cenni, V., et al. 2011. Ankrd2/ARPP is a novel Akt2 specific substrate and regulates myogenic differentiation upon cellular exposure to H_2O_2. Mol. Biol. Cell 22: 2946-2956.

STORAGE

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