SANTA CRUZ BIOTECHNOLOGY, INC.

p-Akt1 (Thr 308): sc-135650

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. This activation is dependent on PDGFR-β tyrosine residues 740 and 751, which bind the subunit of the phosphatidylinositol 3-kinase (PI 3-kinase) complex. Activation of Akt1 by Insulin or Insulin-growth factor-1(IGF-1) results in phosphorylation of both Thr 308 and Ser 473. 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. However, the activation of Akt3 by Insulin is inhibited by prior activation of protein kinase C via a mechanism that does not require the presence of the PH domain. 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: AKT1 (human) mapping to 14q32.33; Akt1 (mouse) mapping to 12 F1.

SOURCE

p-Akt1 (Thr 308) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 308 phosphorylated Akt of human origin.

PRODUCT

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

APPLICATIONS

p-Akt1 (Thr 308) is recommended for detection of Thr 308 phosphorylated Akt1 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Akt1 siRNA (h): sc-29195, Akt1 siRNA (m): sc-29196, Akt1 shRNA Plasmid (h): sc-29195-SH, Akt1 shRNA Plasmid (m): sc-29196-SH, Akt1 shRNA (h) Lentiviral Particles: sc-29195-V and Akt1 shRNA (m) Lentiviral Particles: sc-29196-V.

Molecular Weight of p-Akt1: 62 kDa.

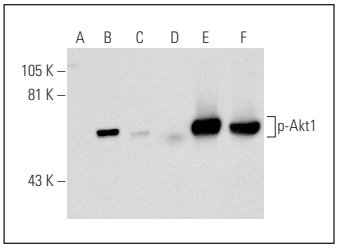
STORAGE

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

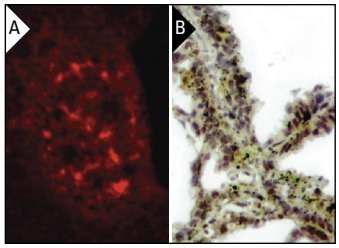
RESEARCH USE

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

DATA



Western blot analysis of Akt1 phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated human Akt1 transfected: sc-158248 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated human Akt1 transfected: sc-158248 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-Akt1 (Thr 308): sc-135650 (**A**,**B**,**C**) and Akt1 (C-20): sc-1618 (**D**,**E**,**F**).



p-Akt1 (Thr 308): sc-135650. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung carcinoma tissue showing nuclear and cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Torre, F., et al. 1987. Effectiveness of sublingual isosorbide dinitrate in chest pain: coronary or esophageal angina? Minerva Cardioangiol. 35: 75-77.
2. Qi, L. and Zhang, Y. 2014. Truncation of inhibitor of growth family protein 5 effectively induces senescence, but not apoptosis in human tongue squamous cell carcinoma cell line. Tumour Biol. 35: 3139-3144.
3. Krishna, M.B., et al. 2015. Reduced Tregs in peripheral blood of PCOS patients-a consequence of aberrant Il2 signaling. J. Clin. Endocrinol. Metab. 100: 282-292.
4. Khare, V., et al. 2015. Overexpression of PAK1 promotes cell survival in inflammatory bowel diseases and colitis-associated cancer. Inflamm. Bowel Dis. 21: 287-296.
6. Wen, X.R., et al. 2015. Neuroprotection of sevoflurane against ischemia/reperfusion-induced brain Injury through inhibiting JNK3/caspase-3 by enhancing akt signaling pathway. Mol Neurobiol. E-published.
7. Zhang, Y., et al. 2015. Melatonin-mediated inhibition of Purkinje neuron P-type Ca^{2+} channels *in vitro* induces neuronal hyperexcitability through the phosphatidylinositol 3-kinase-dependent protein kinase C δ pathway. J. Pineal Res. 58: 321-334.
8. Gravina, G.L., et al. 2015. Dual PI3K/mTOR inhibitor, XL765 (SAR245409), shows superior effects to sole PI3K [XL147 (SAR245408)] or mTOR [rapamycin] inhibition in prostate cancer cell models. Tumour Biol. E-published.