

p-Akt1 (104A282): sc-52940

BACKGROUND

The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKB or RacPK), Akt2 (also designated PKB β or RacPK- β) and Akt 3 (also designated PKB γ or thymoma 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 (104A282) is a mouse monoclonal antibody raised against synthetic p-Akt1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Akt1 (104A282) is recommended for detection of Ser 473 phosphorylated Akt1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

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.

Positive Controls: Akt1 (h): 293T Lysate: sc-158248 or Jurkat + Calyculin A cell lysate: sc-2277.

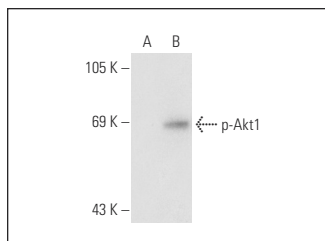
STORAGE

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



p-Akt1 (104A282): sc-52940. Western blot analysis of Akt1 phosphorylation in non-transfected: sc-117752 (A) and human Akt1 transfected: sc-158248 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Li, J., et al. 2009. Anti-tumor activity of a novel EGFR tyrosine kinase inhibitor against human NSCLC *in vitro* and *in vivo*. *Cancer Lett.* 279: 213-220.
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- Stepanenko, A.A., et al. 2016. Temozolomide promotes genomic and phenotypic changes in glioblastoma cells. *Cancer Cell Int.* 16: 36.
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- Yang, Y., et al. 2019. Loss of ARID1A promotes proliferation, migration and invasion via the Akt signaling pathway in NPC. *Cancer Manag. Res.* 11: 4931-4946.
- Shamekhi, S., et al. 2020. Apoptotic effect of *Saccharomyces cerevisiae* on human colon cancer SW480 cells by regulation of Akt/NF κ B signaling pathway. *Probiotics Antimicrob. Proteins* 12: 311-319.

PROTOCOLS

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