

# Akt1 (7): sc-135829

## BACKGROUND

The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKB or RacPK), Akt2 (also designated PKB $\beta$  or RacPK- $\beta$ b) and Akt3 (also designated PKB $\gamma$  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. Activation is dependent on PDGFR- $\beta$  Tyr 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. Phosphorylation of both residues is important to generate a high level of Akt1 activity. The phosphorylation of Thr 308 is not dependent on phosphorylation of Ser 473 *in vivo*. Thus, Akt proteins become phosphorylated and activated in Insulin/IGF-1-stimulated cells by an upstream kinase(s). The activation of Akt1 and Akt2 is inhibited by the PI kinase inhibitor wortmannin, suggesting that the protein signals downstream of the PI kinases.

## CHROMOSOMAL LOCATION

Genetic locus: AKT1 (human) mapping to 14q32.33; Akt1 (mouse) mapping to 12 F1.

## SOURCE

Akt1 (7) is a mouse monoclonal antibody raised against amino acids 71-184 of Akt1 of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Akt1 (7) is recommended for detection of Akt1 of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

Suitable for use as control antibody for Akt1 siRNA (h): sc-29195, Akt1 siRNA (m): sc-29196, Akt1 siRNA (r): sc-108059, Akt1 shRNA Plasmid (h): sc-29195-SH, Akt1 shRNA Plasmid (m): sc-29196-SH, Akt1 shRNA Plasmid (r): sc-108059-SH, Akt1 shRNA (h) Lentiviral Particles: sc-29195-V, Akt1 shRNA (m) Lentiviral Particles: sc-29196-V and Akt1 shRNA (r) Lentiviral Particles: sc-108059-V.

Molecular Weight of Akt1: 62 kDa.

Positive Controls: Akt1 (h): 293T Lysate: sc-158248, MCF7 whole cell lysate: sc-2206 or HCT-8 cell lysate: sc-24675.

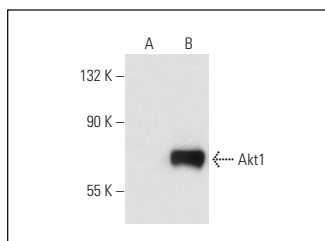
## STORAGE

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

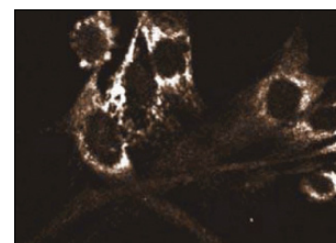
## RESEARCH USE

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

## DATA



Akt1 (7): sc-135829. Western blot analysis of Akt1 expression in non-transfected: sc-117752 (A) and human Akt1 transfected: sc-158248 (B) 293T whole cell lysates.



Akt1 (7): sc-135829. Immunofluorescence staining of WI-38 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Cornide-Petronio, M.E., et al. 2016. The effect of high-mobility group box 1 in rat steatotic and nonsteatotic liver transplantation from donors after brain death. *Am. J. Transplant.* 16: 1148-1159.
- Yang, W., et al. 2016. Treatment with bone marrow mesenchymal stem cells combined with plumbagin alleviates spinal cord injury by affecting oxidative stress, inflammation, apoptosis and the activation of the Nrf2 pathway. *Int. J. Mol. Med.* 37: 1075-1082.
- Wu, Y., et al. 2018. Restoration of microRNA-130b expression suppresses osteosarcoma cell malignant behavior *in vitro*. *Oncol. Lett.* 16: 97-104.
- Nie, X., et al. 2018. mTOR acts as a pivotal signaling hub for neural crest cells during craniofacial development. *PLoS Genet.* 14: e1007491.
- Chang, L., et al. 2019. miR-181b-5p suppresses starvation-induced cardiomyocyte autophagy by targeting Hspa5. *Int. J. Mol. Med.* 43: 143-154.
- Li, J., et al. 2019. The oncogenic role of Wnt10a in colorectal cancer through activation of canonical Wnt/ $\beta$ -catenin signaling. *Oncol. Lett.* 17: 3657-3664.
- Jia, L., et al. 2019. Puerarin suppresses cell growth and migration in HPV-positive cervical cancer cells by inhibiting the PI3K/mTOR signaling pathway. *Exp. Ther. Med.* 18: 543-549.
- Li, N., et al. 2019. The role of Zeb1 in the pathogenesis of morbidly adherent placenta. *Mol. Med. Rep.* 20: 2812-2822.
- Shamekhi, S., et al. 2019. Apoptotic effect of *Saccharomyces cerevisiae* on human colon cancer SW480 cells by regulation of Akt/NF $\kappa$ B signaling pathway. *Probiotics Antimicrob. Proteins.* E-published.

## CONJUGATES

See **Akt1 (B-1): sc-5298** for Akt1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.