

Akt1/2/3 (H-136): sc-8312

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.

SOURCE

Akt1/2/3 (H-136) is a rabbit polyclonal antibody raised against amino acids 345-480 of Akt1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Akt1/2/3 (H-136) is recommended for detection of Akt1, Akt2 and Akt3 of mouse, rat, human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Akt1/2/3 (H-136) is also recommended for detection of Akt1, Akt2 and Akt3 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Akt1: 62 kDa.

Molecular Weight of Akt2: 56 kDa.

Molecular Weight of Akt3: 62 kDa.

Positive Controls: Akt3 (h): 293 Lysate: sc-127954, IMR-32 cell lysate: sc-2409 or NIH/3T3 whole cell lysate: sc-2210.

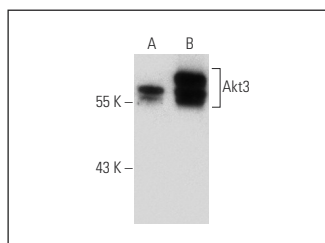
STORAGE

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

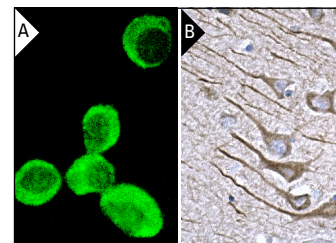
RESEARCH USE

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

DATA



Akt1/2/3 (H-136): sc-8312. Western blot analysis of Akt3 expression in non-transfected: sc-110760 (A) and human Akt3 transfected: sc-127954 (B) 293 whole cell lysates.



Akt1/2/3 (H-136): sc-8312. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic and nuclear staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal cells (B).

SELECT PRODUCT CITATIONS

- Wada, T., et al. 2001. Overexpression of SH2-containing inositol phosphatase 2 results in negative regulation of Insulin-induced metabolic actions in 3T3-L1 adipocytes via its 5'-phosphatase catalytic activity. *Mol. Cell. Biol.* 21: 1633-1646.
- Cheshenko, N., et al. 2013. HSV activates Akt to trigger calcium release and promote viral entry: novel candidate target for treatment and suppression. *FASEB J.* 27: 2584-2599.
- Baranda-Avila, N., et al. 2013. Agonistic activity of ICI 182 780 on activation of GSK 3 β /AKT pathway in the rat uterus during the estrous cycle. *Steroids* 78: 717-725.
- Su, J., et al. 2013. Suppression of chloride channel 3 expression facilitates sensitivity of human glioma U251 cells to cisplatin through concomitant inhibition of Akt and autophagy. *Anat. Rec. (Hoboken)* 296: 595-603.
- Park-York, M., et al. 2013. PKC θ expression in the amygdala regulates Insulin signaling, food intake and body weight. *Obesity* 21: 755-764.
- Zhang, P., et al. 2013. Exon 4 deletion variant of epidermal growth factor receptor enhances invasiveness and cisplatin resistance in epithelial ovarian cancer. *Carcinogenesis* 34: 2639-2646.
- Cao, C., et al. 2013. Impairment of TrkB-PSD-95 signaling in Angelman syndrome. *PLoS Biol.* 11: e1001478.
- Sosa, L.V., et al. 2013. Cooperative effect of E2 and FGF2 on lactotroph proliferation triggered by signaling initiated at the plasma membrane. *Am. J. Physiol. Endocrinol. Metab.* 305: E41-E49.

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Try **Akt1/2/3 (5C10): sc-81434** or **Akt1/2/3 (BDI111): sc-56878**, our highly recommended monoclonal alternatives to Akt1/2/3 (H-136).