

Akt2 (1G8C12): sc-81148

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 Akt3 (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-I (IGF-I) results in phosphorylation of both Thr 308 and Ser 473. Akt proteins become phosphorylated and activated in Insulin/IGF-I-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.

REFERENCES

- Burgering, B.M., et al. 1995. Protein kinase B (c-Akt) in phosphatidylinositol 3-OH kinase signal transduction. *Nature* 376: 599-602.
- Datta, K., et al. 1995. AH/PH domain-mediated interaction between Akt molecules and its potential role in Akt regulation. *Mol. Cell. Biol.* 15: 2304-2310.
- Franke, T.F., et al. 1995. The protein kinase encoded by the Akt proto-oncogene is a target of the PDGF-activated phosphatidylinositol 3-kinase. *Cell* 81: 727-736.

CHROMOSOMAL LOCATION

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

SOURCE

Akt2 (1G8C12) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 2-150 of Akt2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Akt2 (1G8C12) is available conjugated to agarose (sc-81148 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-81148 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81148 PE), fluorescein (sc-81148 FITC), Alexa Fluor[®] 488 (sc-81148 AF488), Alexa Fluor[®] 546 (sc-81148 AF546), Alexa Fluor[®] 594 (sc-81148 AF594) or Alexa Fluor[®] 647 (sc-81148 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-81148 AF680) or Alexa Fluor[®] 790 (sc-81148 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Akt2 (1G8C12) 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) 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 Akt2 siRNA (h): sc-29197, Akt2 siRNA (m): sc-38910, Akt2 siRNA (r): sc-108063, Akt2 shRNA Plasmid (h): sc-29197-SH, Akt2 shRNA Plasmid (m): sc-38910-SH, Akt2 shRNA Plasmid (r): sc-108063-SH, Akt2 shRNA (h) Lentiviral Particles: sc-29197-V, Akt2 shRNA (m) Lentiviral Particles: sc-38910-V and Akt2 shRNA (r) Lentiviral Particles: sc-108063-V.

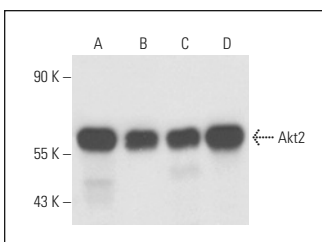
Molecular Weight of Akt2: 56 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

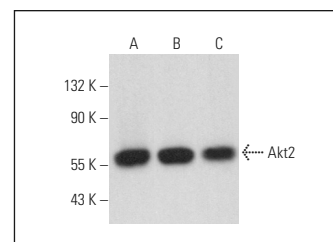
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Akt2 (1G8C12): sc-81148. Western blot analysis of Akt2 expression in MCF7 (A), HeLa (B), A-431 (C) and THP-1 (D) whole cell lysates.



Akt2 (1G8C12): sc-81148. Western blot analysis of Akt2 expression in MDA-MB-231 (A), NIH/3T3 (B) and PC-12 (C) whole cell lysates.

STORAGE

Store at 4 $^{\circ}$ 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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