# SANTA CRUZ BIOTECHNOLOGY, INC.

# Akt2 (1G8C12): sc-81148



### BACKGROUND

The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKB or RacPK), Akt2 (also designated PKBß or RacPK- $\beta$ ) and Akt3 (also designated PKBy 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 3kinase) 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 Wort-mannin. 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

- 1. 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 protooncogene 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  $\mu g ~ lgG_{2b}$  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 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-81148 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81148 PE), fluorescein (sc-81148 FITC), Alexa Fluor<sup>®</sup> 488 (sc-81148 AF488), Alexa Fluor<sup>®</sup> 546 (sc-81148 AF546), Alexa Fluor<sup>®</sup> 594 (sc-81148 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-81148 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-81148 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-81148 AF790), 200 µg/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  $\mu$ g per 100-500  $\mu$ 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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° 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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