**BACKGROUND**

The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKBα or RacPK), Akt2 (also designated PKBβ or RacPK-β) and Akt3 (also designated PKBγ 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 (PI3-kinase) complex.

Activation of Akt1 by Insulin or Insulin-growth factor-1 (IGF-1) results in phosphorylation of both Thr308 and Ser473. 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.

**PRODUCT**

Each vial contains 200 µg IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

**APPLICATIONS**

p-Akt1 (5 Ser 473) 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), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30–1:3000); may cross-react with Ser 473 phosphorylated Akt2 and Ser 473 phosphorylated Akt3.

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

**DATA**

Western blot analysis of Akt1 phosphorylation in untreated (A, D), mLIF treated (B, E) and mLIF and Akt1 (C-20): mLIF treated (F).

**SELECT PRODUCT CITATIONS**


**STORAGE**

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

**PROTOCOLS**

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