Akt1 (B-1): sc-5298

BACKGROUND
The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKB or RacPK), Akt2 (also designated PKBβ or RacPK-β), and Akt3 (also designated PKBγ 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. Phosphorylation of both residues is important to generate a high level of Akt1 activity, and 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.

REFERENCE

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

SOURCE
Akt1 (B-1) is a mouse monoclonal antibody raised against amino acids 345-480 of Akt1 of human origin.

PRODUCT
Each vial contains 200 µg IgG, kappa light chain in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin. Akt1 (B-1) is available conjugated to agarose (sc-5298 AC), 500 µg/0.25 ml for IP; to HRP (sc-5298 HRP), 200 µg/ml, for WB, IHC(P) and FCM; and to either Alexa Fluor® 594 (sc-5298 AF594) or Alexa Fluor® 647 (sc-5298 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-5298 AF680) or Alexa Fluor® 790 (sc-5298 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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

APPLICATIONS
Akt1 (B-1) is recommended for detection of 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:5000), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: NIH/3T3 whole cell lysate: sc-2210, MCF7 whole cell lysate: sc-2206 or BT-20 cell lysate: sc-2223.

DATA
Akt1 (B-1) Alexa Fluor® 680: sc-5298 AF680. Direct near infrared western blot analysis of Akt1 expression in NIH/3T3 (A), MCF7 (B), A549 (C), B16 (D), BT-20 (E) and MCF7 (F) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.

Akt1 (B-1) sc-5298. Immunofluorescence staining of methanol-fixed HeLa cells showing cyttoplasmic and nuclear staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cyttoplasmic staining of Islets of Langerhans (B).

SELECT PRODUCT CITATIONS

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