

# p-Akt1/2/3 (Ser 473): sc-135651

## BACKGROUND

The serine/threonine kinase Akt family contains several members, including Akt1 (also designated PKB or RacPK), Akt2 (also designated PKB $\beta$  or RacPK- $\beta$ ) and Akt 3 (also designated PKB $\gamma$  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- $\beta$  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

p-Akt1/2/3 (Ser 473) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 473 phosphorylated Akt2 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-Akt1/2/3 (Ser 473) is recommended for detection of Ser 473 phosphorylated Akt1 and correspondingly Ser 474 phosphorylated Akt2 and correspondingly Ser 472 phosphorylated Akt3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Akt1/Akt2/Akt3: 62/56/60 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243, HEK293 whole cell lysate: sc-45136 or Jurkat whole cell lysate: sc-2204.

## STORAGE

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

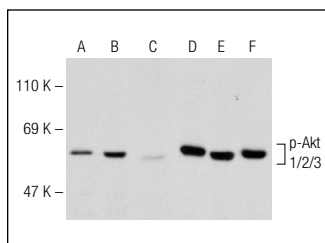
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

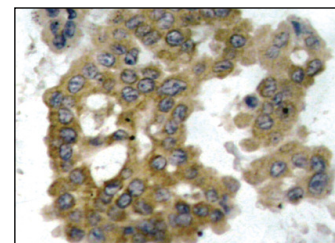
## RESEARCH USE

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

## DATA



Western blot analysis of Akt1/2/3 phosphorylation in untreated (A, D), mLIF treated (B, E), mLIF and lambda protein phosphatase (sc-200312A) treated (C, F) 3T3-L1 whole cell lysates. Antibodies tested include p-Akt1/2/3 (Ser 473): sc-135651 (A, B, C) and Akt1/2/3 (H-136): sc-8312 (D, E, F).



p-Akt1/2/3 (Ser 473): sc-135651. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung carcinoma tissue showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Aquila, S., et al. 2008. Leptin and leptin receptor in pig spermatozoa: evidence of their involvement in sperm capacitation and survival. *Reproduction* 136: 23-32.
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Try **p-Akt1/2/3 (C-11): sc-514032** or **p-Akt1 (5.Ser 473): sc-293125**, our highly recommended monoclonal alternatives to p-Akt1/2/3 (Ser 473).