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Akt (Ser 473): sc-24500

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 85 kDa subunit of the phosphatidylinositol 3-kinase (PI 3-kinase) complex. 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.

RESEARCH USE

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

PROTOCOLS

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

APPLICATIONS

Akt (Ser 473) is recommended for detection of Akt of origin by .

SELECT PRODUCT CITATIONS

1. Tamas, P., et al. 2003. Mechanism of epidermal growth factor regulation of Vav2, a guanine nucleotide exchange factor for Rac. *J. Biol. Chem.* 278: 5163-5171.
2. Bergo MO, et al. 2004. Inactivation of Icm1 inhibits transformation by oncogenic K-Ras and B-Raf. *J. Clin. Invest.* 113: 539-550.
3. Luwor, R. B., et al. 2004. The tumor-specific de2-7 epidermal growth factor receptor (EGFR) promotes cells survival and heterodimerizes with the wild-type EGFR. *Oncogene.* 23: 6095-6104.
4. Monick, M. M., et al. 2004. Cooperative prosurvival activity by ERK and Akt in human alveolar macrophages is dependent on high levels of acid ceramidase activity. *J. Immunology.* 173: 123-135.
5. Klein, J., et al. 2005. Akt-mediated Valosin-containing Protein 97 Phosphorylation Regulates Its Association with Ubiquitinated Proteins. *J. Biol. Chem.* 280(36): 31870-31881.
6. Graveleau, C., et al. 2005. Mouse and human resistins impair glucose transport in primary mouse cardiomyocytes, and oligomerization is required for this biological action. *J. Biol. Chem.* 280(36): 31679-31685.

Akt, protein kinase B family, to human and rodent chromosomes by fluorescence *in situ* hybridization. *Cytogenet. Cell Genet.* 88: 38-40.

CHROMOSOMAL LOCATION

Genetic locus: AKT1 (human) mapping to 14q32.32; Akt1 (mouse) mapping to 12 F1-F2.

SOURCE