

AKT1S1 Antibody

Purified Mouse Monoclonal Antibody (Mab)

Catalog # AM8673b

Product Information

Application	WB, E
Primary Accession	Q96B36
Reactivity	Human, Mouse
Predicted	Human, Mouse
Host	Mouse
Clonality	monoclonal
Isotype	IgG1, κ
Clone Names	1997CT730.74.73
Calculated MW	27383

Additional Information

Gene ID	84335
Other Names	Proline-rich AKT1 substrate 1, 40 kDa proline-rich AKT substrate, AKT1S1 {ECO:0000312 EMBL:AAH16043.1}
Target/Specificity	This AKT1S1 antibody is generated from a mouse immunized with a recombinant protein from the human region of human AKT1S1.
Dilution	WB~~1:500-1:4000 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	AKT1S1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	AKT1S1 {ECO:0000312 EMBL:AAH16043.1}
Function	Negative regulator of the mechanistic target of rapamycin complex 1 (mTORC1), an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass generation and growth (PubMed: 17277771 , PubMed: 17386266 , PubMed: 17510057 , PubMed: 29236692). In absence of insulin and nutrients,

AKT1S1 associates with the mTORC1 complex and directly inhibits mTORC1 activity by blocking the MTOR substrate- recruitment site (PubMed:[29236692](#)). In response to insulin and nutrients, AKT1S1 dissociates from mTORC1 (PubMed:[17386266](#), PubMed:[18372248](#)). Its activity is dependent on its phosphorylation state and binding to 14-3-3 (PubMed:[16174443](#), PubMed:[18372248](#)). May also play a role in nerve growth factor-mediated neuroprotection (By similarity).

Cellular Location

Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q9D1F4}. Note=Found in the cytosolic fraction of the brain. {ECO:0000250|UniProtKB:Q9D1F4}

Tissue Location

Widely expressed with highest levels of expression in liver and heart. Expressed at higher levels in cancer cell lines (e.g. A-549 and HeLa) than in normal cell lines (e.g. HEK293)

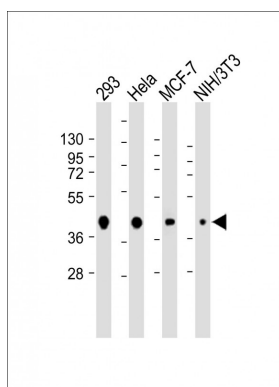
Background

Subunit of mTORC1, which regulates cell growth and survival in response to nutrient and hormonal signals. mTORC1 is activated in response to growth factors or amino acids. Growth factor-stimulated mTORC1 activation involves a AKT1-mediated phosphorylation of TSC1-TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. Amino acid-signaling to mTORC1 requires its relocalization to the lysosomes mediated by the Ragulator complex and the Rag GTPases. Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. mTORC1 phosphorylates EIF4EBP1 and releases it from inhibiting the elongation initiation factor 4E (eIF4E). mTORC1 phosphorylates and activates S6K1 at 'Thr-389', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. Within mTORC1, AKT1S1 negatively regulates mTOR activity in a manner that is dependent on its phosphorylation state and binding to 14-3-3 proteins. Inhibits RHEB-GTP-dependent mTORC1 activation. Substrate for AKT1 phosphorylation, but can also be activated by AKT1-independent mechanisms. May also play a role in nerve growth factor-mediated neuroprotection.

References

Ota T.,et al.Nat. Genet. 36:40-45(2004).
Totoki Y.,et al.Submitted (JUL-2006) to the EMBL/GenBank/DDBJ databases.
Grimwood J.,et al.Nature 428:529-535(2004).
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.
Kovacina K.S.,et al.J. Biol. Chem. 278:10189-10194(2003).

Images



All lanes : Anti-AKT1S1 Antibody at 1:500-1:4000 dilution
Lane 1: 293 whole cell lysate Lane 2: HeLa whole cell lysate Lane 3: MCF-7 whole cell lysate Lane 4: NIH/3T3 whole cell lysate Lysates/proteins at 20 µg per lane.
Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 27 kDa Blocking/Dilution buffer: 5% NFDm/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.