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AKT1S1 Antibody

Catalog # ASC11670

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96B36
Other Accession	NP_115751, 400153980
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	27383
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	AKT1S1 antibody can be used for detection of AKT1S1 by Western blot at 1 - 2 g/mL.

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	AKT1S1; AKT1S1 antibody is human, mouse and rat reactive. At least three isoforms of AKT1S1 are known to exist.
Reconstitution & Storage	AKT1S1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.
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)

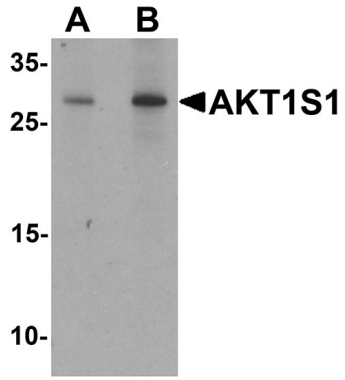
Background

AKT1S1 Antibody: The Akt signaling pathway contributes to the regulation of apoptosis after a variety of cell death signals. AKT1S1, also known as PRAS40, is a proline-rich substrate of the kinase AKT1 and is thought to play a role in neuroprotection mediated by nerve growth factor (NGF) after transient focal cerebral ischemia (1). AKT1S1 is also a substrate and potential regulator of mammalian target of rapamycin (mTOR), a serine/threonine kinase that regulates cell growth and cell cycle, and a negative regulator of autophagy (2). Treatment with the insulin-like growth factor-1 (IGF1) can indusce the phosphorylation of AKT1S1 via the PI3K/AKT signaling pathway in PC12 cells (3).

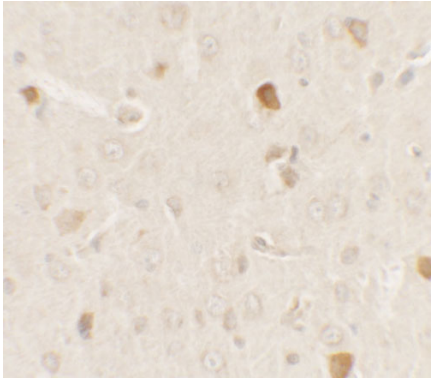
References

Saito A, Narasimhan P, Hayashi T, et al. Neuroprotective role of a proline-rich Akt substrate in apoptotic neuronal cell death after stroke: relationships with nerve growth factor. J. Neurosci. 2004; 24:1584-93.
Wiza C, Nascimento EB, and Ouwens DM. Role of PRAS40 in Akt and mTOR signaling in health and disease. Am. J. Physiol. Endocrinol. Metab. 2012; 302:E1453-60.
Wang H, Zhang Q, Zhang L, et al. Insulin-like growth factor-1 induces the phosphrylation of PRAS40 via the PI3K/Akt signaling pathway in PC12 cells. Neurosci. Lett. 516:105-9.

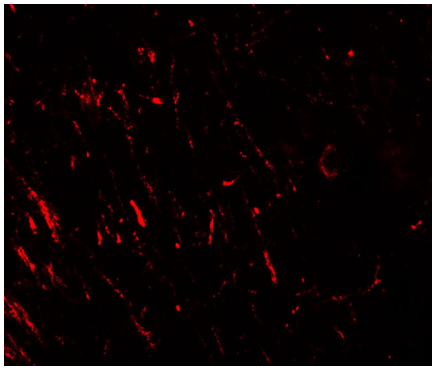
Images



Western blot analysis of AKT1S1 in human brain tissue lysate with AKT1S1 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of AKT1S1 in rat brain tissue with AKT1S1 antibody at 2.5 µg/ml.



Immunofluorescence of AKT1S1 in rat brain tissue with AKT1S1 antibody at 20 µg/ml.