

Rabbit AKT2 Polyclonal Antibody | anti-AKT2 antibody

AKT2 Antibody

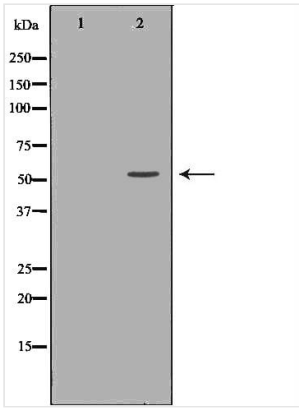
CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA325887	Rabbit	Human, Mouse, Rat	ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

AKT2; Polyclonal Antibody; AKT2 Antibody; Akt2; AKT2_HUMAN; HIHGHH; murine thymoma viral (v-akt) homolog-2; PKB; PKB beta; PKBB; PKBBETA; PRKBB; Protein kinase Akt 2; Protein kinase Akt-2; Protein kinase B beta; rac protein kinase beta; RAC-BETA; RAC-beta serine/threonine-protein kinase; RAC-PK-beta; v akt murine thymoma viral oncogene homolog 2; anti-AKT2 antibody

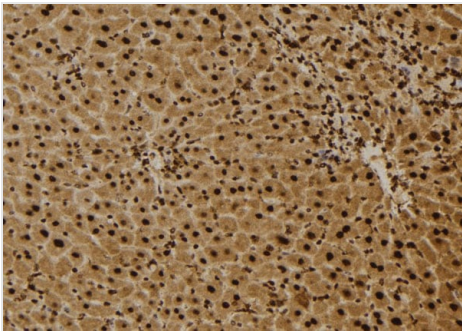
PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	AKT2 antibody detects endogenous levels of total AKT2
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	438
Applicable Applications for anti-AKT2 antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthetic peptide of human AKT2
Subcellular Location	Endosome; Nucleus; Plasma Membrane
Tissue Specificity	Expressed in all cell types so far analyzed.
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



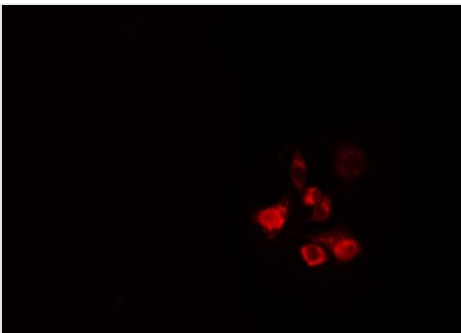
WB (Western Blot)

Western blot analysis of extracts of HeLa using AKT2 antibody. The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AAA325887 at 1/100 staining Mouse liver tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.



IF (Immunofluorescence)

AAA325887 staining A2780 cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.

Related Product Information for anti-AKT2 antibody

Description: Akt, also referred to as PKB or Rac, plays a critical role in controlling survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (2, 3). Akt is activated by phospholipid binding and activation loop phosphorylation at Thr308 by PDK1 (4) and by phosphorylation within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as mammalian target of rapamycin (mTOR) in a rapamycin-insensitive complex with rictor and Sin1 (5, 6). Akt promotes cell survival by inhibiting apoptosis through phosphorylation and inactivation of several targets, including Bad (7), forkhead transcription factors (8), c-Raf (9), and caspase-9. PTEN phosphatase is a major negative regulator of the PI3 kinase/Akt signaling pathway (10). LY294002 is a specific PI3 kinase inhibitor (11). Another essential Akt function is the regulation of glycogen synthesis through phosphorylation and inactivation of GSK-3alpha and beta (12, 13). Akt may also play a role in insulin stimulation of glucose transport (12). In addition to its role in survival and glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3beta-mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p27 Kip (15) and p21 Waf1/CIP1 (16). Akt also plays a critical role in cell growth by directly phosphorylating mTOR in a rapamycin-sensitive complex containing raptor (17). More importantly, Akt phosphorylates and inactivates tuberlin (TSC2), an inhibitor of mTOR within the mTOR-raptor complex (18, 19).

Function: AKT2 is one of 3 closely related serine/threonine-protein kinases (AKT1, AKT2 and AKT3) called the AKT kinase, and which regulate many processes including metabolism, proliferation, cell survival, growth and angiogenesis. This is mediated through serine and/or threonine phosphorylation of a range of downstream substrates. Over 100 substrate candidates have been reported so far, but for most of them, no isoform specificity has been reported. AKT is responsible of the regulation of glucose uptake by mediating insulin-induced translocation of the SLC2A4/GLUT4 glucose transporter to the cell surface. Phosphorylation of PTPN1 at 'Ser-50' negatively modulates its phosphatase activity preventing dephosphorylation of the insulin receptor and the attenuation of insulin signaling. Phosphorylation of TBC1D4 triggers the binding of this effector to inhibitory 14-3-3 proteins, which is required for insulin-stimulated glucose transport. AKT regulates also the storage of glucose in the form of glycogen by phosphorylating GSK3A at 'Ser-21' and GSK3B at 'Ser-9', resulting in inhibition of its kinase activity. Phosphorylation of GSK3 isoforms by AKT is also thought to be one mechanism by which cell proliferation is driven. AKT regulates also cell survival via the phosphorylation of MAP3K5 (apoptosis signal-related kinase). Phosphorylation of 'Ser-83' decreases MAP3K5 kinase activity stimulated by oxidative stress and thereby prevents apoptosis. AKT mediates insulin-stimulated protein synthesis by phosphorylating TSC2 at 'Ser-939' and 'Thr-1462', thereby activating mTORC1 signaling and leading to both phosphorylation of 4E-BP1 and in activation of RPS6KB1. AKT is involved in the phosphorylation of members of the FOXO factors (Forkhead family of transcription factors), leading to binding of 14-3-3 proteins and cytoplasmic localization. In particular, FOXO1 is phosphorylated at 'Thr-24', 'Ser-256' and 'Ser-319'. FOXO3 and FOXO4 are phosphorylated on equivalent sites. AKT has an important role in the regulation of NF-kappa-B-dependent gene transcription and positively regulates the activity of CREB1 (cyclic AMP (cAMP)-response element binding protein). The phosphorylation of CREB1 induces the binding of accessory proteins that are necessary for the transcription of pro-survival genes such as BCL2 and MCL1. AKT phosphorylates 'Ser-454' on ATP citrate lyase (ACLY), thereby potentially regulating ACLY activity and fatty acid synthesis. Activates the 3B isoform of cyclic nucleotide phosphodiesterase (PDE3B) via phosphorylation of 'Ser-273', resulting in reduced cyclic AMP levels and inhibition of lipolysis. Phosphorylates PIKFYVE on 'Ser-318', which results in increased PI3P-5 activity. The Rho GTPase-activating protein DLC1 is another substrate and its phosphorylation is implicated in the regulation cell proliferation and cell growth. AKT plays a role as key modulator of the AKT-mTOR signaling pathway controlling the tempo of the process of newborn neurons integration during adult neurogenesis, including correct neuron positioning, dendritic development and synapse formation. Signals downstream of phosphatidylinositol 3-kinase (PI3K) to mediate the effects of various growth factors such as platelet-derived growth factor (PDGF), epidermal growth factor (EGF), insulin and insulin-like growth factor I (IGF-I). AKT mediates the antiapoptotic effects of IGF-I. Essential for the SPATA13-mediated regulation of cell migration and adhesion assembly and disassembly. May be involved in the regulation of the placental development.

Subunit Structure: Interacts with BTBD10 (By similarity). Interacts with KCTD20 (By similarity). Interacts (via PH domain) with MTCP1, TCL1A AND TCL1B. Interacts with CLK2, PBH2 and TRAF6. Interacts (when phosphorylated) with CLIP3, the interaction promotes cell membrane localization (PubMed:19139280). Interacts with WDFY2 (via WD repeats 1-3) (PubMed:16792529).

Post-translational Modifications: Phosphorylation on Thr-309 and Ser-474 is required for full activity. Ubiquitinated; undergoes both 'Lys-48'-and 'Lys-63'-linked polyubiquitination. TRAF6-induced 'Lys-63'-linked AKT2 ubiquitination. When fully phosphorylated and translocated into the nucleus, undergoes 'Lys-48'-polyubiquitination catalyzed by TTC3, leading to its degradation by the proteasome. O-GlcNAcylation at Thr-306 and Thr-313 inhibits activating phosphorylation at Thr-309 via disrupting the interaction between AKT and PDK1.

Similarity: Binding of the PH domain to phosphatidylinositol 3, 4, 5-trisphosphate (PI(3, 4, 5)P3) following phosphatidylinositol 3-kinase alpha (PIK3CA) activity results in its targeting to the plasma membrane. Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. RAC subfamily.

NCBI AND UNIPROT INFORMATION

NCBI GI #	1059842869
NCBI GeneID	208
NCBI Accession #	NP_001317440.1
NCBI GenBank Nucleotide #	NM_001330511.1
UniProt Accession #	P31751; Q05BV0; Q0VAN0; Q0VAN1; Q68GC0; B2RBD8
Molecular Weight	Observed: 56 kDa Predicted: 56 kDa
NCBI Official Full Name	RAC-beta serine/threonine-protein kinase isoform 4
NCBI Official Synonym Full Names	AKT serine/threonine kinase 2
NCBI Official Symbol	AKT2
NCBI Official Synonym Symbols	PKBB; PRKBB; HIHGHH; PKBBETA; RAC-BETA
NCBI Protein Information	RAC-beta serine/threonine-protein kinase
UniProt Protein Name	RAC-beta serine/threonine-protein kinase
UniProt Gene Name	AKT2
UniProt Synonym Gene Names	PKB beta

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/akt2-antibody-immunocytochemistry-immunofluorescence-immunohistochemistry-western-blot-elisa/325887>