

Summary

Production Name	Akt1 Rabbit Polyclonal Antibody
Description	Rabbit Polyclonal Antibody
Host	Rabbit
Application	WB,IHC,IF,ELISA
Reactivity	Human,Mouse,Rat

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Polyclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
Purification	Affinity purification

Immunogen

Gene Name	AKT1
Alternative Names	AKT1; PKB; RAC; RAC-alpha serine/threonine-protein kinase; Protein kinase B; PKB; Protein kinase B alpha; PKB alpha; Proto-oncogene c-Akt; RAC-PK-alpha
Gene ID	207.0
SwissProt ID	P31749.The antiserum was produced against synthesized peptide derived from human Akt. AA range:95-144

Application

Dilution Ratio	WB 1:500 - 1:2000. IHC 1:100 - 1:300. IF 1:200 - 1:1000. ELISA: 1:40000. Not yet tested in other applications.
Molecular Weight	56kD

Background

The serine-threonine protein kinase encoded by the AKT1 gene is catalytically inactive in serum-starved primary and immortalized fibroblasts. AKT1 and the related AKT2 are activated by platelet-derived growth factor. The activation is rapid and specific, and it is abrogated by mutations in the pleckstrin homology domain of AKT1. It was shown that the activation occurs through phosphatidylinositol 3-kinase. In the developing nervous system AKT is a critical mediator of growth factor-induced neuronal survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating the serine/threonine kinase AKT1, which then phosphorylates and inactivates components of the apoptotic machinery. Mutations in this gene have been associated with the Proteus syndrome. Multiple alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Jul 2011]catalytic activity:ATP + a protein = ADP + a phosphoprotein.,disease:Defects in AKT1 are associated with breast cancer (BC) [MIM:114480]. BC is an extremely common malignancy, affecting one in eight women during their lifetime.,disease:Defects in AKT1 are associated with colorectal cancer (CRC) [MIM:114500],disease:Defects in AKT1 are associated with susceptibility to ovarian cancer [MIM:604370]; also called susceptibility to familial breast-ovarian cancer type 1 (BROVCA1),,domain:Binding of the PH domain to the phosphatidylinositol 3-kinase alpha (PI(3)K) results in its targeting to the plasma membrane.,domain:The AGC-kinase C-terminal mediates interaction with THEM4.,enzyme regulation:Three specific sites, one in the kinase domain (Thr-308) and the two other ones in the C-terminal regulatory region (Ser-473 and Tyr-474), need to be phosphorylated for its full activation.,function:General protein kinase capable of phosphorylating several known proteins. Phosphorylates TBC1D4. Signals downstream of phosphatidylinositol 3-kinase (PI(3)K) 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). Plays a role in glucose transport by mediating insulin-induced translocation of the GLUT4 glucose transporter to the cell surface. Mediates the antiapoptotic effects of IGF-I. Mediates insulin-stimulated protein synthesis, partly by playing a role in both insulin-induced phosphorylation of 4E-BP1 and in insulin-induced activation of p70 S6 kinase. Promotes glycogen synthesis by mediating the insulin-induced activation of glycogen synthase.,PTM:Phosphorylation on Thr-308, Ser-473 and Tyr-474 is required for full activity. Ser-473 phosphorylation by the Rictor-mTor complex favors Thr-308 phosphorylation by PDPK1. Ser-473 phosphorylation is enhanced by interaction with AGAP2 isoform 2 (PIKE-A). Ser-473 phosphorylation is enhanced in focal cortical dysplasias with Taylor-type balloon cells.,similarity:Belongs to the protein kinase superfamily.,similarity:Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. RAC subfamily.,similarity:Contains 1 AGC-kinase C-terminal domain.,similarity:Contains 1 PH domain.,similarity:Contains 1 protein kinase domain.,subcellular location:Nucleus after activation by integrin-linked protein kinase 1 (ILK1). Nuclear translocation is enhanced by interaction with TCL1A.,subunit:Interacts with AGAP2 isoform 2 (PIKE-A) in the presence of guanine nucleotides. The C-terminus interacts with CCDC88A/GRDN and THEM4. Interacts with AKTIP. Interacts (via PH domain) with MTCP1, TCL1A AND TCL1B. Interacts with CDKN1B; the interaction phosphorylates CDKN1B promoting 14-3-3 binding and cell-cycle progression.,tissue specificity:In all human cell types so far analyzed,

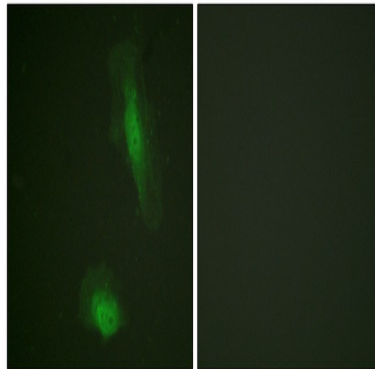
Research Area

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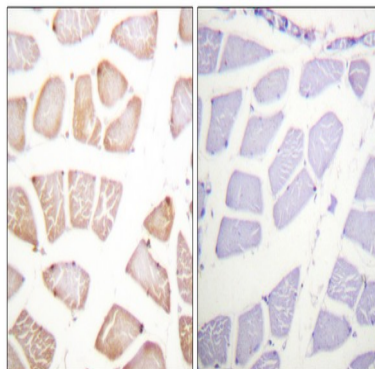


Regulation_Microtubule; T_Cell_Receptor; Regulates Angiogenesis; SAPK_JNK; Stem cell pathway; Insulin Receptor; Toll_Like; ErbB/HER; AMPK; MAPK_ERK_Growth;MAPK_G_Protein; B_Cell_Antigen; Adherens_Junction; PI3K/Akt; mTOR

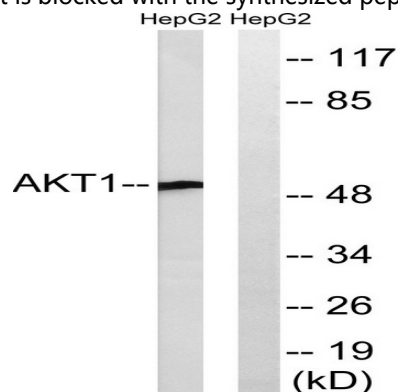
Image Data



Immunofluorescence analysis of HeLa cells, using Akt Antibody. The picture on the right is blocked with the synthesized peptide.

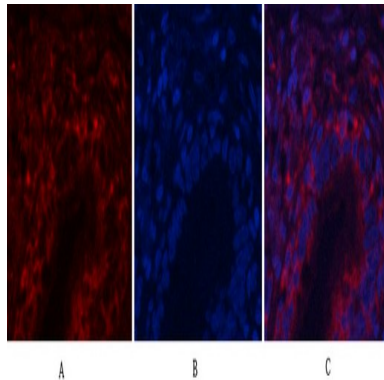


Immunohistochemistry analysis of paraffin-embedded human skeletal muscle tissue, using Akt Antibody. The picture on the right is blocked with the synthesized peptide.

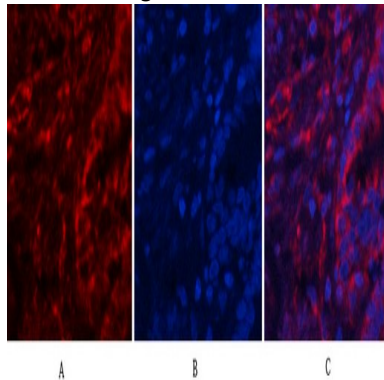


Western blot analysis of lysates from HepG2 cells, treated with Serum 30% 30', using Akt Antibody. The lane on the right is blocked with the synthesized peptide.

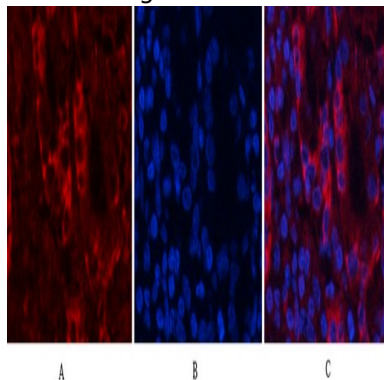
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Immunofluorescence analysis of human-lung tissue. 1, Akt1 Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min). 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B

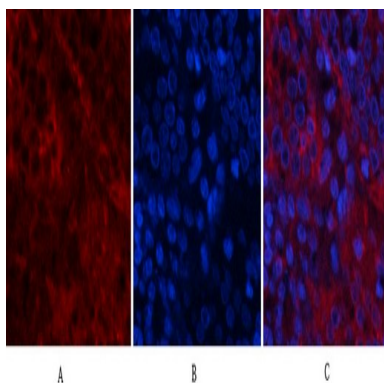


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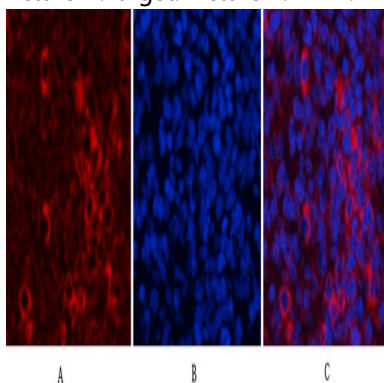


Immunofluorescence analysis of human-stomach tissue. 1, Akt1 Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min). 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B

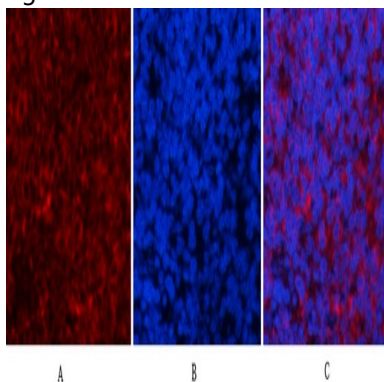
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Immunofluorescence analysis of human-stomach tissue. 1, Akt1 Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight) . 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min) . 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B



Immunofluorescence analysis of rat-spleen tissue. 1, Akt1 Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight) . 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min) . 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B



Immunofluorescence analysis of rat-spleen tissue. 1, Akt1 Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight) . 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min) . 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B

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Note

For research use only.