
Product Name: Phospho-Akt (Ser473) Rabbit Polyclonal Antibody**Catalog #: APRab04209**

For research use only.

Summary

Description	Rabbit polyclonal Antibody
Host	Rabbit
Application	WB,IHC,ICC/IF,ELISA
Reactivity	Human,Mouse,Rat,Other
Conjugation	Unconjugated
Modification	Phosphorylated
Isotype	IgG
Clonality	Polyclonal
Form	Liquid
Concentration	1mg/ml
Storage	Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.
Shipping	Ice bags
Buffer	Liquid in PBS containing 50% glycerol, 0.5% protective protein and 0.02% New type preservative N.
Purification	Affinity purification

Application

Dilution Ratio	WB 1:500-1:2000,IHC 1:100-1:300,ICC/IF 1:50-1:200,ELISA 1:20000-1:40000
Molecular Weight	56kDa

Antigen Information

Gene Name	AKT1/AKT2/AKT3 AKT1; PKB; RAC; RAC-alpha serine/threonine-protein kinase; Protein kinase B; PKB; Protein
Alternative Names	kinase B alpha; PKB alpha; Proto-oncogene c-Akt; RAC-PK-alpha; AKT2; RAC-beta serine/threonine-protein kinase; Protein kinase Akt-2; Protein kinase B
Gene ID	207/208/10000
SwissProt ID	P31749/P31751/Q9Y243
Immunogen	The antiserum was produced against synthesized peptide derived from human Akt around the phosphorylation site of Ser473. AA range:431-480

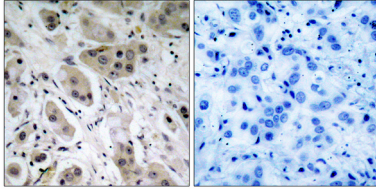
Background

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.,

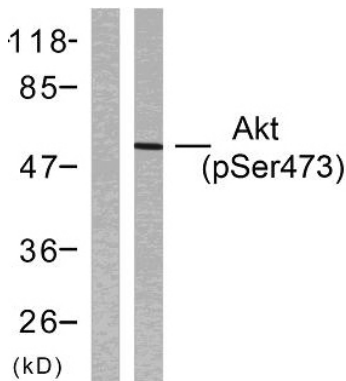
Research Area

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

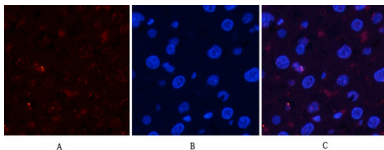
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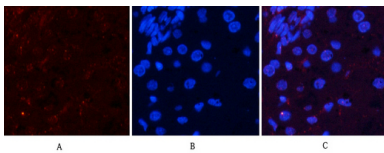
Immunohistochemistry analysis of paraffin-embedded human breast carcinoma, using Akt (Phospho-Ser473) Antibody. The picture on the right is blocked with the phospho peptide.



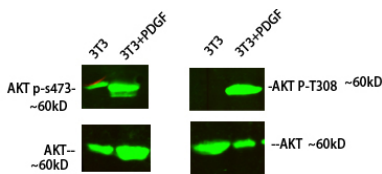
Western blot analysis of lysates from HeLa cells treated with heat shock, using Akt (Phospho-Ser473) Antibody. The lane on the left is blocked with the phospho peptide.



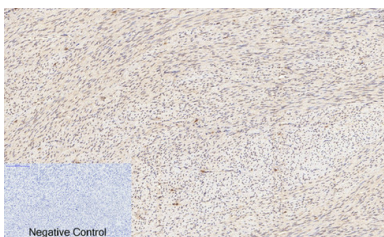
Immunofluorescence analysis of rat-liver tissue. 1, Akt (phospho Ser473) Polyclonal Antibody (red) was diluted at 1:200 (4°C, overnight). 2, Cy3 labeled Secondary antibody was diluted at 1:300 (room temperature, 50min). 3, Picture B: DAPI (blue) 10min. Picture A: Target. Picture B: DAPI. Picture C: merge of A+B



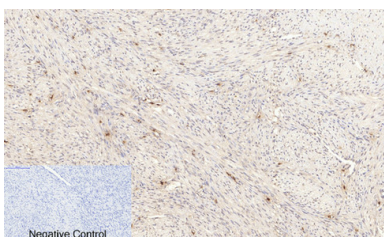
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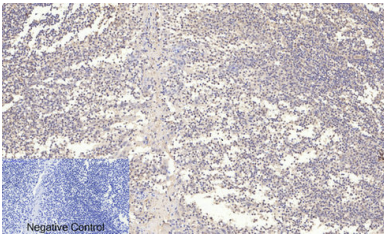
Western Blot analysis of 3T3 cells treated with PDGF using Akt (phospho Ser473) Rabbit Polyclonal Antibody diluted at 1:1000 (4°C overnight). Secondary antibody : Goat Anti-rabbit IgG IRDye 800 (diluted at 1:5000, 25°C, 1 hour)



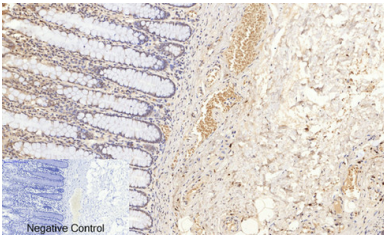
Immunohistochemical analysis of paraffin-embedded Human-uterus tissue. 1, Akt (phospho Ser473) Polyclonal Antibody was diluted at 1:200 (4°C, overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval (>98°C, 20min). 3, Secondary antibody was diluted at 1:200 (room temperature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Human-uterus-cancer tissue. 1, Akt (phospho Ser473) Polyclonal Antibody was diluted at 1:200 (4°C, overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval (>98°C, 20min). 3, Secondary antibody was diluted at 1:200 (room temperature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Human-Tonsil tissue. 1,Akt (phospho Ser473) Polyclonal Antibody was diluted at 1:200 (4°C,overnight) . 2, Sodium citrate pH 6.0 was used for antibody retrieval (>98°C,20min) . 3,Secondary antibody was diluted at 1:200 (room temperature, 30min) . Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Human-colon tissue. 1,Akt (phospho Ser473) Polyclonal Antibody was diluted at 1:200 (4°C,overnight) . 2, Sodium citrate pH 6.0 was used for antibody retrieval (>98°C,20min) . 3,Secondary antibody was diluted at 1:200 (room temperature, 30min) . Negative control was used by secondary antibody only.