Product Name: KO-Validated AKT Serine/Threonine Kinase 1 Recombinant Rabbit Monoclonal Antibody
Catalog #: KVAb00032
For research use only.

Summary

Description	KO&KD-Validated antibody
Host	Rabbit
Application	WB,FCM,ICC
Reactivity	Human,Mouse,Rat
Conjugation	Unconjugated
Modification	Unmodified
Isotype	Rabbit IgG
Clonality	Rabbit mAb
Form	Liquid
Storage	Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.
Shipping	Ice bags
Buffer	Supplied in PBS (pH 7.4) containing 50% glycerol, and 0.02% sodium azide.
Purification	Affinity purification

Application

Dilution Ratio	WB 1:1,000-1:5,000; FC 1:200-1:2,000; ICC 1:100-1:1,000
Molecular Weight	Calculated MW: 55.7kDa

Antigen Information

Gene Name	AKT1
Alternative Names	AKT1; AKT Serine/Threonine Kinase 1; RAC; PKB; PRKBA; AKT; V-Akt Murine Thymoma Viral Oncogene Homolog 1; RAC-Alpha Serine/Threonine-Protein Kinase; Protein Kinase B Alpha; Proto-Oncogene C-Akt; Protein Kinase B; RAC-PK-Alpha; EC 2.7.11.1; RAC-ALPHA; PKB Alpha; V-Akt Murine Thymoma Viral Oncogene-Like Protein 1; Serine-Threonine Protein Kinase; Rac Protein Kinase Alpha; RAC-Alpha; PKB-ALPHA; EC 2.7.11; AKT1m
Gene ID	207.0
SwissProt ID	P31749
Immunogen	A synthesized peptide derived from human AKT1

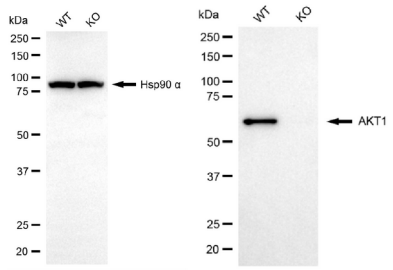
Background

This gene encodes one of the three members of the human AKT serine-threonine protein kinase family which are often referred to as protein kinase B alpha, beta, and gamma. These highly similar AKT proteins all have an N-terminal pleckstrin homology domain, a serine/threonine-specific kinase domain and a C-terminal regulatory domain. These proteins are phosphorylated by phosphoinositide 3-kinase (PI3K). AKT/PI3K forms a key component of many signalling pathways that involve the binding of membrane-bound ligands such as receptor tyrosine kinases, G-protein coupled receptors, and integrin-linked kinase. These AKT proteins therefore regulate a wide variety of cellular functions including cell proliferation, survival, metabolism, and angiogenesis in both normal and malignant cells. AKT proteins are recruited to the cell membrane by phosphatidylinositol 3,4,5-trisphosphate (PIP3) after phosphorylation of phosphatidylinositol 4,5-bisphosphate (PIP2) by PI3K. Subsequent phosphorylation of both threonine residue 308 and serine residue 473 is required for full activation of the AKT1 protein encoded by this gene. Phosphorylation of additional residues also occurs, for example, in response to insulin growth factor-1 and epidermal growth factor. Protein phosphatases act as negative regulators of AKT proteins by dephosphorylating AKT or PIP3. The PI3K/AKT signalling pathway is crucial for tumor cell survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating AKT1 which then phosphorylates and inactivates components of the apoptotic machinery. AKT proteins also participate in the mammalian target of rapamycin (mTOR) signalling pathway which controls the assembly of the eukaryotic translation initiation factor 4F (eIF4E) complex and this pathway, in addition to responding to extracellular signals from growth factors and cytokines, is disregulated in many cancers. Mutations in this gene are associated with multiple types of cancer and excessive tissue growth including Proteus syndrome and Cowden syndrome 6, and breast, colorectal, and ovarian cancers. Multiple alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Jul 2020]

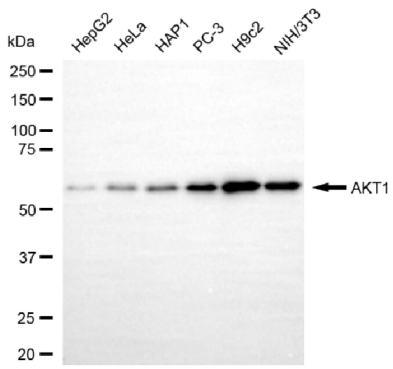
Research Area

Neuroscience,Signal Transduction,Cancer

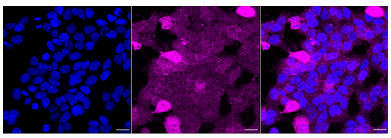
Image Data



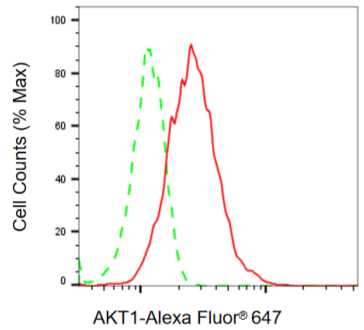
Western blotting analysis using AKT1 antibody (KVAb00032). AKT1 expression in wild type (WT) and AKT1 knockout (KO) HSHC cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with AKT1 antibody (KVAb00032, 1:2,500) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.



Western blotting analysis using AKT1 antibody (KVAb00032). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with AKT1 antibody (KVAb00032, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.



Immunocytochemical staining of HAP-1 cells with AKT1 antibody (KVAb00032, 1:1,000). Nuclei were stained blue with DAPI; AKT1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20 µm.



Flow cytometric analysis of AKT1 expression in HAP-1 cells using AKT1 antibody (KVAb00032, 1:2,000). Green, isotype control; red, AKT1.