

[KO Validated] AKT1 Rabbit pAb

Catalog No.: A11016SP

KO Validated

127 Publications

Basic Information

Observed MW

60 kDa

Calculated MW

56 kDa/48 kDa

Category

Primary antibody

Applications

WB, IF/ICC, ELISA

Cross-Reactivity

Human, Mouse, Rat

Recommended Dilutions

WB 1:1000 - 1:2000

IF/ICC 1:200 - 1:400

ELISA Recommended starting concentration is 1 µg/mL. Please optimize the concentration based on your specific assay requirements. For high-ratio antibody dilutions (≥1:10000) a sequential dilution method is strongly recommended to ensure measurement accuracy.

Contact

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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 dysregulated 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.

Immunogen Information

Gene ID

207

Swiss Prot

P31749

Immunogen

This information is considered to be commercially sensitive.

Synonyms

AKT; PKB; RAC; PRKBA; PKB-ALPHA; RAC-ALPHA

Product Information

Source

Rabbit

Isotype

IgG

Purification

Affinity purification

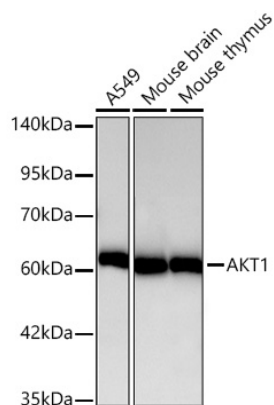
Storage

Store at -20°C. Avoid freeze / thaw cycles.

Buffer: PBS, pH 7.3, containing 50% glycerol. Preserved with Proclin300 or sodium azide.

May contain 0.05% BSA as specified on the Certificate of Analysis.

Validation Data



Western blot analysis of various lysates using [KO Validated] AKT1 Rabbit pAb (A11016SP) at 1:1000 dilution incubated overnight at 4°C.

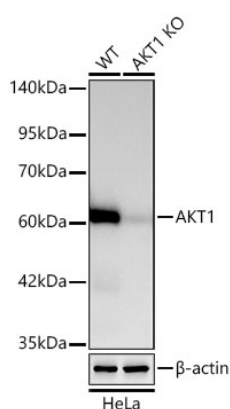
Secondary antibody: HRP-conjugated Goat anti-Rabbit IgG (H+L) (AS014) at 1:10000 dilution.

Lysates/proteins: 25 µg per lane.

Blocking buffer: 3% nonfat dry milk in TBST.

Detection: ECL Basic Kit (RM00020).

Exposure time: 45 s.



Western blot analysis of lysates from wild type (WT) and AKT1 knockout (KO) HeLa cells using [KO Validated] AKT1 Rabbit pAb (A11016SP) at 1:1000 dilution incubated overnight at 4°C.

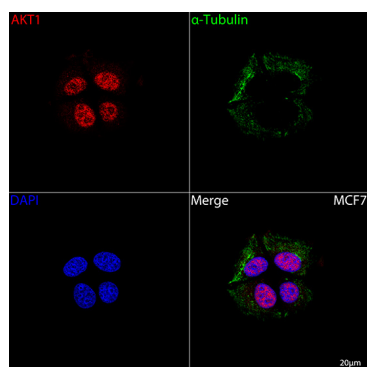
Secondary antibody: HRP-conjugated Goat anti-Rabbit IgG (H+L) (AS014) at 1:10000 dilution.

Lysates/proteins: 25 µg per lane.

Blocking buffer: 3% nonfat dry milk in TBST.

Detection: ECL Basic Kit (RM00020).

Exposure time: 45 s.



Confocal imaging of MCF7 cells using [KO Validated] AKT1 Rabbit pAb (A11016SP, dilution 1:200) followed by a further incubation with Cy3-conjugated Goat anti-Rabbit IgG (H+L) (AS007, dilution 1:500) (Red). The cells were counterstained with α-Tubulin Mouse mAb (AC012, dilution 1:400) followed by incubation with ABflo® 488-conjugated Goat Anti-Mouse IgG (H+L) Ab (AS076, dilution 1:500) (Green). DAPI was used for nuclear staining (Blue). Objective: 100x.