

AKT1 Rabbit mAb

Catalog No.: A17909

Recombinant

79 Publications

Basic Information

Observed MW

60kDa

Calculated MW

56kDa

Category

Primary antibody

Applications

WB, IHC-P, IP, ELISA

Cross-Reactivity

Human, Mouse, Rat

CloneNo number

ARC51582

Recommended Dilutions

WB	1:1000 - 1:6000
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IHC-P	1:200 - 1:800
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IP	0.5µg-4µg antibody for 200µg-400µg extracts of whole cells
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ELISA	Recommended starting concentration is 1 µg/mL. Please optimize the concentration based on your specific assay requirements.
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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
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Swiss Prot	P31749
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Immunogen

A synthetic peptide corresponding to a sequence within amino acids 381-480 of human AKT1 (P31749).

Synonyms

AKT; PKB; RAC; PRKBA; PKB-ALPHA; RAC-ALPHA; AKT1

Product Information

Source	Rabbit
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Isotype	IgG
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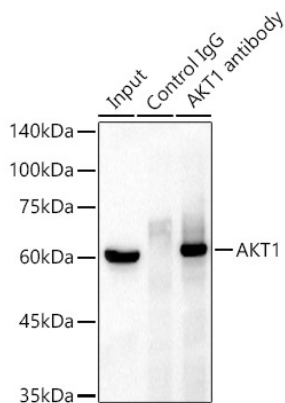
Purification	Affinity purification
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Storage

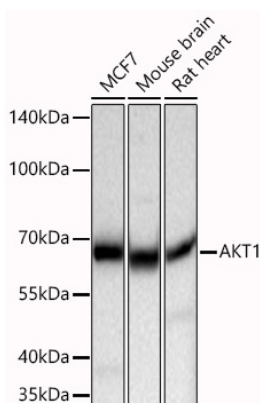
Store at -20°C. Avoid freeze / thaw cycles.

Buffer: PBS with 0.09% Sodium azide, 0.05% BSA, 50% glycerol, pH7.3.

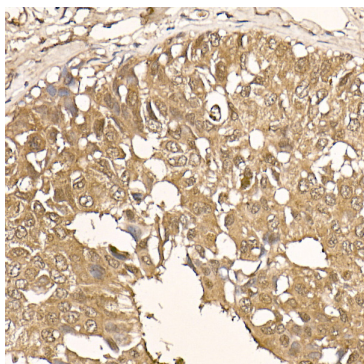
Validation Data



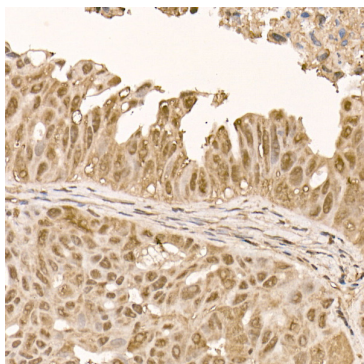
Immunoprecipitation of AKT1 from 300 μ g extracts of MCF7 cells was performed using 3 μ g of AKT1 Rabbit mAb (A17909). Rabbit IgG isotype control (AC042) was used to precipitate the Control IgG sample. IP samples were eluted with 1X reducing Laemmli Buffer. The Input lane represents 10% of the total input. Western blot analysis of immunoprecipitates was conducted using AKT1 Rabbit mAb (A17909) at a dilution of 1:1000.



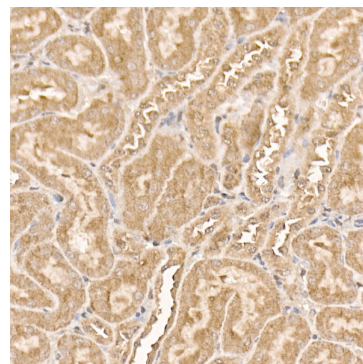
Western blot analysis of various lysates using AKT1 Rabbit mAb (A17909) at 1:1000 dilution incubated at room temperature for 1.5 hours. Secondary antibody: HRP-conjugated Goat anti-Rabbit IgG (H+L) (AS014) at 1:10000 dilution. Lysates/proteins: 25 μ g per lane. Blocking buffer: 3% nonfat dry milk in TBST. Detection: ECL Basic Kit (RM00020). Exposure time: 10s.



Immunohistochemistry analysis of paraffin-embedded Human breast cancer tissue using AKT1 Rabbit mAb (A17909) at a dilution of 1:100 (40x lens). High pressure antigen retrieval performed with 0.01M Citrate Buffer (pH 6.0) prior to IHC staining.

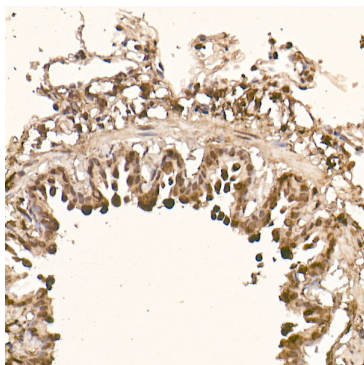


Immunohistochemistry analysis of paraffin-embedded Human colon carcinoma tissue using AKT1 Rabbit mAb (A17909) at a dilution of 1:100 (40x lens). High pressure antigen retrieval performed with 0.01M Citrate Buffer (pH 6.0) prior to IHC staining.



Immunohistochemistry analysis of paraffin-embedded Mouse kidney tissue using AKT1 Rabbit mAb (A17909) at a dilution of 1:100 (40x lens). High pressure antigen retrieval performed with 0.01M Citrate Buffer (pH 6.0) prior to IHC staining.

Validation Data



Immunohistochemistry analysis of paraffin-embedded Rat lung tissue using AKT1 Rabbit mAb (A17909) at a dilution of 1:100 (40x lens). High pressure antigen retrieval performed with 0.01M Citrate Buffer (pH 6.0) prior to IHC staining.