bsm-52010R **[Primary Antibody]**

AKT1 Recombinant Rabbit mAb

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DATASHEET

Host: Rabbit
Isotype: IgG
Clonality: Recombinant
CloneNo.: 11F2
GeneID: 207
SWISS: P31749
Target: AKT1
Immunogen: A synthesized peptide derived from human AKT1: 330-479.
Purification: affinity purified by Protein A
Concentration: 1mg/ml
Storage: 0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
Shipped at 4°C. Store at -20°C for one year. Avoid repeated freeze/thaw cycles.

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]

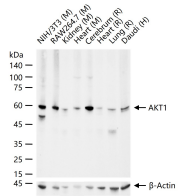
Applications: **WB** (1:500-2000)
IHC-P (1:50-200)
IHC-F (1:50-200)
IF (1:50-200)
Flow-Cyt (1:50-100)
ICC/IF (1:50-1:200)

Reactivity: Human, Mouse, Rat

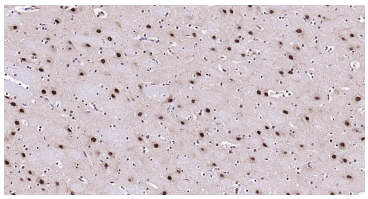
Predicted MW.: 56 kDa

Subcellular Location: Cell membrane ,Cytoplasm ,Nucleus

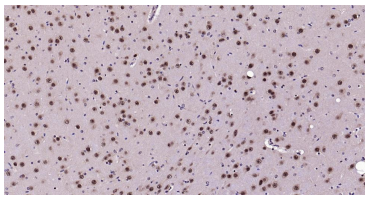
VALIDATION IMAGES



25 ug total protein per lane of various lysates (see on figure) probed with AKT1 monoclonal



Paraformaldehyde-fixed, paraffin embedded Rat Cerebrum; Antigen retrieval by boiling in sodium

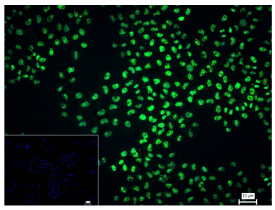


Paraformaldehyde-fixed, paraffin embedded Mouse Cerebrum; Antigen retrieval by boiling in

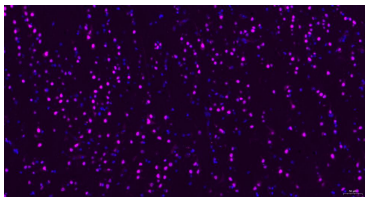
antibody, unconjugated (bsm-52010R) at 1:5000 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at r.t. for 60 min.

citrate buffer (pH6.0) for 15 min; Antibody incubation with AKT1 Monoclonal Antibody, Unconjugated(bsm-52010R) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit, SP-0023) and DAB (C-0010) staining.

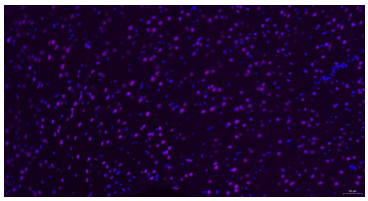
sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with AKT1 Monoclonal Antibody, Unconjugated(bsm-52010R) at 1:200 overnight at 4°C, followed by conjugation to the SP Kit (Rabbit, SP-0023) and DAB (C-0010) staining.



4% Paraformaldehyde-fixed Hela (H) cell; Triton X-100 at r.t. for 20 min; Antibody incubation with (AKT1) monoclonal Antibody, unconjugated (bsm-52010R) 1:100, 90 min at 37°C; followed by conjugated Goat Anti-Rabbit IgG antibody (green, bs-40295G-FITC) at 37°C for 90 min, DAPI (blue, C02-04002) was used to stain the cell nuclei. PBS instead of the primary antibody was used as the blank control.



Paraformaldehyde-fixed, paraffin embedded Human brain; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with AKT1 Monoclonal Antibody, Unconjugated(bsm-52010R) at 1:200 overnight at 4°C, followed by a Cy5 conjugated Goat Anti-Rabbit IgG （bs-0295G-Cy5）antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the cell nuclei.



Paraformaldehyde-fixed, paraffin embedded Mouse brain; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Antibody incubation with AKT1 Monoclonal Antibody, Unconjugated(bsm-52010R) at 1:200 overnight at 4°C, followed by a Cy5 conjugated Goat Anti-Rabbit IgG （bs-0295G-Cy5）antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the cell nuclei.

SELECTED CITATIONS

- **[IF=13.3]** Yuan Li. et al. A Biomimetic Peptide Functions as Specific Extracellular Matrix for Quiescence of Stem Cells against Intervertebral Disc Degeneration. SMALL. 2023 Jul;:2300578 WB ;Rat. 37423970
- **[IF=4.9]** Limei Wen. et al. Synergistic and toxicity-reducing effects of acteoside as an adjuvant therapy of oxaliplatin against hepatocellular carcinoma. INT J ONCOL. 2025 Jun;66(6):1-18 WB ;Mouse. 40341416
- **[IF=2.65]** Xiaoyi Meng. et al. Hugan Buzure Induces Autophagy and Apoptosis in Hepatocellular Carcinoma by Inhibiting PI3K/Akt/mTOR Signaling Pathway. EVID-BASED COMPL ALT. 2022 Dec 19;2022:1618491 WB ;Human. 10.1155/2022/1618491