bs-5193R **[Primary Antibody]**

phospho-AKT1+AKT2+AKT3 (Tyr315+316+312) Rabbit pAb

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DATASHEET

Host: Rabbit **Isotype:** IgG

Clonality: Polyclonal

GeneID: 207 **SWISS:** P31749

Target: phospho-AKT1+AKT2+AKT3 (Tyr315+316+312)

Immunogen: KLH conjugated Synthesised phosphopeptide derived from human AKT1 around the phosphorylation site of Tyr315: PE(p-Y)LA.

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]

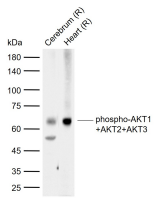
Applications: **WB** (1:500-2000)
IHC-P (1:100-500)
IHC-F (1:100-500)
IF (1:100-500)
Flow-Cyt (1μg/Test)

Reactivity: Human, Mouse, Rat (predicted: Rabbit, Pig, Sheep, Cow, Chicken, Dog)

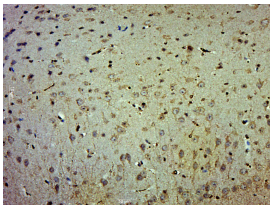
Predicted MW.: 56 kDa

Subcellular Location: Cell membrane ,Cytoplasm ,Nucleus

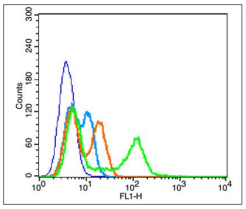
VALIDATION IMAGES



Sample: Lane 1: Rat Cerebrum tissue lysates



Paraformaldehyde-fixed, paraffin embedded



Blank control(blue): EC9706 (fixed with 2%

Lane 2: Rat Heart tissue lysates Primary: Anti-phospho-AKT1+AKT2+AKT3 (Tyr315+316+312) (bs-5193R) at 1/1000 dilution Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution Predicted band size: 56 kDa Observed band size: 65 kDa

(Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (phospho-AKT1+AKT2+AKT3 (Tyr315+316+312)) Polyclonal Antibody, Unconjugated (bs-5193R) at 1:500 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.

paraformaldehyde for 10 min at 37°C). Primary Antibody:Rabbit Anti-phospho-AKT1+AKT2+AKT3 (Tyr315+316+312) antibody (bs-5193R,Green); Dilution: 1μg in 100 μL 1X PBS containing 0.5% BSA; Isotype Control Antibody: Rabbit IgG(orange) ,used under the same conditions; Secondary Antibody: Goat anti-rabbit IgG-FITC(white blue), Dilution: 1:200 in 1 X PBS containing 0.5% BSA.

SELECTED CITATIONS

- **[IF=8.7]** Xue Sun. et al. An injectable shape-adaptive hydrogel system for subconjunctival injuries: In situ and permanently releases rapamycin to prevent fibrosis via promoting autophagy. MATER TODAY BIO. 2025 Feb;30:101380 IF,WB ;Human. 39790484
- **[IF=9]** Pinli Lin. et al. Antibacterial, ROS scavenging and angiogenesis promoting ε-polylysine/gelatin based hydrogel containing CTLP to regulate macrophages for pressure ulcer healing. BIOFABRICATION. 2024 Feb;: WB ;Mouse. 38408382
- **[IF=7.419]** Abulaiti Abulizi. et al. Quince extract resists atherosclerosis in rats by down-regulating the EGFR/PI3K/Akt/GSK-3β pathway. BIOMED PHARMACOTHER. 2023 Apr;160:114330 WB ;Rat. 36746094
- **[IF=5.6]** Chunyu Qin. et al. miR-129 Regulates Yak Intramuscular Preadipocyte Proliferation and Differentiation through the PI3K/AKT Pathway. INT J MOL SCI. 2024 Jan;25(1):632 WB ;Bovine. 38203803
- **[IF=4.8]** Xinyue Wang. et al. Serum pharmacochemistry combined with network pharmacology reveals the hepatotoxicity mechanism of Alangium chinense (Lour.) Harms. J ETHNOPHARMACOL. 2025 Jan;340:119312 WB ;Rat. 39746409