bs-0876R **[Primary Antibody]**

phospho-AKT1 (Ser473) Rabbit pAb

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DATASHEET

Host: Rabbit **Isotype:** IgG

Clonality: Polyclonal

GeneID: 207 **SWISS:** P31749

Target: AKT1 (Ser473)

Immunogen: KLH conjugated Synthesised phosphopeptide derived from human AKT around the phosphorylation site of Ser473: QF(p-S)YS.

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]

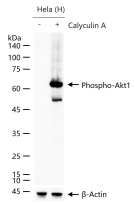
Applications: **WB** (1:500-2000)
IHC-P (1:100-500)
IHC-F (1:100-500)
IF (1:100-500)

Reactivity: Human, Mouse, Rat

Predicted MW.: 56 kDa

Subcellular Location: Cell membrane ,Cytoplasm ,Nucleus

VALIDATION IMAGES



Hela (H) cells were treated with or without

Calyculin A (100nM) for 30 min, 25 µg total protein per lane of cell lysates (see on figure) probed with Phospho-Akt1 (Ser473) polyclonal antibody, unconjugated (bs-0876R) at 1:1000 dilution and 4°C overnight incubation. Followed by conjugated secondary antibody incubation at r.t. for 60 min.

SELECTED CITATIONS

- **[IF=10.2]** Biao Zhang. et al. Okra juice used for rapid wound healing through its bioadhesive and antioxidant capabilities. MATER TODAY BIO. 2025 Apr;31:101495 WB ;Mouse. 39896277
- **[IF=7.561]** Sun J. et al. Plasma Exosomes Transfer miR-885-3p Targeting the AKT/NFκB Signaling Pathway to Improve the Sensitivity of Intravenous Glucocorticoid Therapy Against Graves Ophthalmopathy.. Front Immunol. 2022 Feb;13:819680-819680 WB ;Mouse. 35265076
- **[IF=8.469]** Que, Tianshi. et al. HMGA1 stimulates MYH9-dependent ubiquitination of GSK-3β via PI3K/Akt/c-Jun signaling to promote malignant progression and chemoresistance in gliomas. Cell Death Dis. 2021 Dec;12(12):1-12 WB ;Human. 34887392
- **[IF=8.2]** Xiaobin Wen. et al. The PI3K/Akt-Nrf2 Signaling Pathway and Mitophagy Synergistically Mediate Hydroxytyrosol to Alleviate Intestinal Oxidative Damage. INT J BIOL SCI. 2024; 20(11): 4258–4276 WB ;Pig. 39247828
- **[IF=6.74]** Li et al. The dual PI3K/mTOR inhibitor NVP-BEZ235 inhibits proliferation and induces apoptosis of burkitt lymphoma cells. (2015) Cancer.Cell.Int. 15:65 WB ;Human. 26130968