

## Anti-Phospho-AKT1/AKT2/AKT3 (Tyr315, 316, 312) Polyclonal Antibody

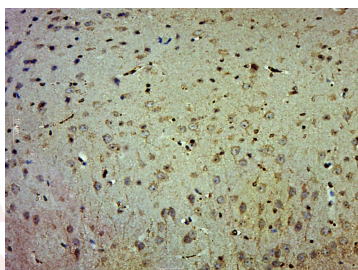
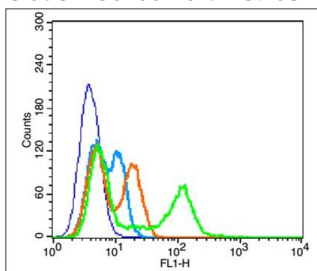
### Product Details

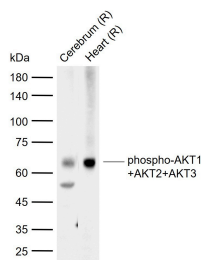
Ig Type:	IgG
Reactivity:	Human, Mouse, Rat (predicted: Chicken, Dog, Pig, Cow, Rabbit, Sheep)
Molecular Weight:	Theoretical: 56 kDa. Actual: 65 kDa.
Purification:	Protein A purified

### Applications

#### Verified Activity:

- Blank control (blue): EC9706 (fixed with 2% paraformaldehyde for 10 min at 37°C). Primary Antibody: Rabbit Anti-phospho-AKT1+AKT2+AKT3 (Tyr315+316+312) antibody (TMAB-01383, Green); Dilution: 1 µg 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.
  - Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15 min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 min; Blocking buffer (normal goat serum) at 37°C for 30 min; Antibody incubation with (phospho-AKT1+AKT2+AKT3 (Tyr315+316+312)) Polyclonal Antibody, Unconjugated (TMAB-01383) at 1:500 overnight at 4°C, followed by a conjugated secondary for 20 min and DAB staining.
  - Sample:
    - Lane 1: Rat Cerebrum tissue lysates
    - Lane 2: Rat Heart tissue lysates
- Primary: Anti-phospho-AKT1+AKT2+AKT3 (Tyr315+316+312) (TMAB-01383) at 1/1000 dilution  
 Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution  
 Predicted band size: 56 kDa  
 Observed band size: 65 kDa





Application: FCM,IF,IHC-Fr,IHC-P,WB

Recommended WB: 1:500-2000; IHC-P: 1:100-500; IHC-Fr: 1:100-500; IF: 1:100-500; FCM: 1µg/Test

### Properties

Stability & Storage: Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles.

Shipping: Shipping with blue ice.

### Antigen Details

Immunogen: KLH conjugated Synthesised phosphopeptide: human AKT1 around the phosphorylation site of Tyr315

Antigen Species: Human

Gene ID: 207

Uniprot ID: P31749

Synonyms: Protein kinase B;STK-2;PKB alpha;RAC-alpha serine/threonine-protein kinase;AKT3;PKB gamma;RAC-PK-alpha;RAC-PK-beta;AKT1/AKT2/AKT3 (p-Y315, 316, 312);Protein kinase Akt-3;Proto-oncogene c-Akt;AKT 2;AKT 3;EC 2.7.11.1;p-AKT1/AKT2/AKT3 (Y315, 316, 312);RAC-beta serine/threonine-protein kinase;Protein kinase B gamma;RAC-gamma serine/threonine-protein kinase;AKT 1;AKT1/AKT2/AKT3 (p-Tyr315, 316, 312);AKT2;Protein kinase B beta;PKB beta;Protein kinase Akt-2;Protein kinase B alpha;p-AKT1/AKT2/AKT3 (Tyr315, 316, 312);PKB RAC;PKBG;PKB;RAC-PK-gamma;AKT1

Biology Area: Metabolism,AKT,Nuclear,Apoptosis,PKB / AKT

### Research 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

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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]

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Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481