

Basic Information

Product Name	Anti-AKT1/2/3 Antibody	
Gene Name	AKT1/AKT2/AKT3	
Source	Rabbit	
Isotype	IgG	
Species Reactivity	human, mouse, rat	
Tested Application	WB, ICC/IF, FCM, ELISA	
Contents	500 ug/ml antibody with PBS, 0.02% NaN ₃ , 1 mg BSA and 50% glycerol.	
Immunogen	E.coli-derived human AKT1,2,3 recombinant protein (Position: E17-A477).	
concentration	500 ug/ml	
Purification	Immunogen affinity purified.	
Observed MW	60KD	
Dilution Ratios	Western blot(WB): 1:500-2000 Immunocytochemistry/Immunofluorescence (ICC/IF):1:50-400 Flow cytometry (FCM): 1-3µg/1x10 ⁶ cells ELISA: 1:100-1000	

Storage

12 months from date of receipt, -20°C as supplied. 6 months 2 to 8°C after reconstitution. Avoid repeated freezing and thawing.

Background Information

RAC-alpha serine/threonine-protein kinase is an enzyme that in humans is encoded by the AKT1 gene. 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.

Reference

Anti-AKT1/2/3 Antibody被引用在2文献中。

Selected Validation Data

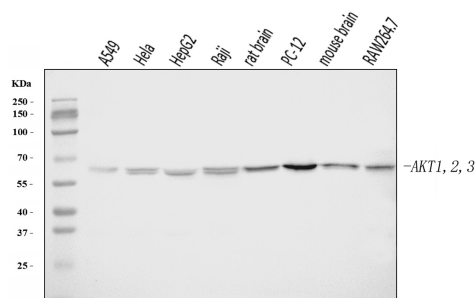


Figure 1. Western blot analysis of anti- AKT1,2,3 Antibody (A00024-2). The sample well of each lane was loaded with 50ug of sample under reducing conditions.

Lane 1: A549 whole cell lysates,

Lane 2: Hela whole cell lysates,

Lane 3: HepG2 whole cell lysates,

Lane 4: Raji whole cell lysates,

Lane 5: rat brain tissue lysates,

Lane 6: PC-12 whole cell lysates,

Lane 7: mouse brain tissue lysates,

Lane 8: RAW264.7 whole cell lysates.

Use rabbit anti- AKT1,2,3 1:1000, probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002). A specific band was detected for AKT1,2,3 at approximately 60KD. The expected band size for AKT1,2,3 is at 56KD.

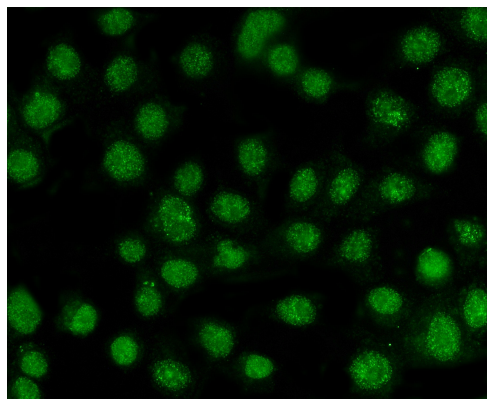


Figure 2. ICC analysis using anti- AKT1,2,3 Antibody (A00024-2). was detected in immersion fixed MCF-7 cell line. Cells were stained using the Dylight488-conjugated Anti-rabbit IgG Secondary Antibody (green)(Catalog # BA1127).

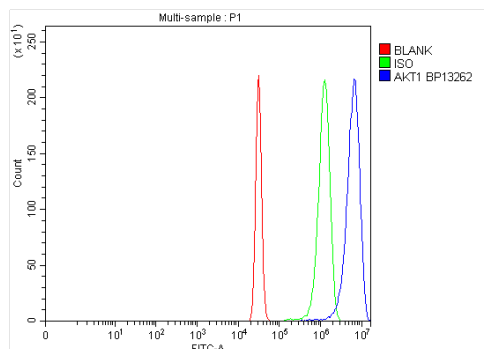


Figure 3. Flow cytometry analysis of HeLa cell (1x10⁶) DyLight 488 conjugated goat anti- rabbit IgG(blue) was used as secondary antibody. Isotype control antibody (Green line) was rabbit IgG DyLight 488. Unlabelled sample (Red line).