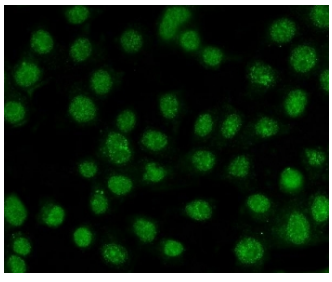
AKT1/2/3 Antibody (RQ6820)

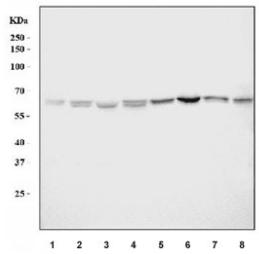
Catalog No.	Formulation	Size
RQ6820	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

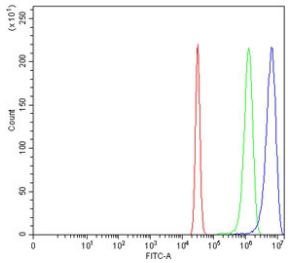
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P31749, P31751, Q9Y243
Localization	Nuclear, cytoplasmic, cell membrane
Applications	Western blot: 1-2ug/ml Immunofluorescence (FFPE): 5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml
Limitations	This AKT1/2/3 antibody is available for research use only.



AKT1/2/3 Antibody IF. Immunofluorescent staining of FFPE human MCF7 cells with AKT1/2/3 antibody. HIER: steam section in pH6 citrate buffer for 20 min.



AKT1/2/3 Antibody WB. Western blot testing of 1) human A549, 2) human HeLa, 3) human HepG2, 4) human Raji, 5) rat brain, 6) rat PC-12, 7) mouse brain and 8) mouse RAW264.7 cell lysate with AKT1/2/3 antibody. Predicted molecular weight: ~56 kDa.



AKT1/2/3 Antibody FACS. Flow cytometry testing of human HeLa cells with AKT1/2/3 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= AKT1/2/3 antibody.

Description

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 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.

For a microarray-validated AKT1 antibody supporting high-specificity detection, see our AKT1 antibody (clone AKT1/2552).

Application Notes

Optimal dilution of the AKT1/2/3 antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids E17-A477) was used as the immunogen for the AKT1/2/3 antibody.

Storage

After reconstitution, the AKT1/2/3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at

-20oC. Avoid repeated freezing and thawing.

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