

Akt(pan) 1/2/3 Rabbit mAb [1Vfj]

Cat NO. :A75065

Information:

Applications	Reactivity:	UniProt ID:	MW(kDa)	Host	Isotype	Size
WB IHC ICC/IF IP FC	Human,Mouse,R at	P31749/P31751/Q9Y243	56kDa	Rabbit	IgG	50ul,100ul,200ul

Applications detail:

Application	Dilution
WB	1:1000-2000
IHC	1:100
ICC/IF	1:100
The optimal dilutions should be determined by the end user	

Conjugate:

UnConjugate

Form:

Liquid

sensitivity:

Endogenous

Purification:

Affinity-chromatography

Specificity:

Antibody is produced by immunizing animals with A synthesized peptide derived from human AKT1/2/3

Storage buffer and conditions:

Antibody store in 10 mM PBS, 0.5mg/ml BSA, 50% glycerol (buffer) .

Shipped at 4°C. Store at-20°C or -80°C.

Products are valid for one natural year of receipt.Avoid repeated freeze / thaw cycles.

Tissue specificity:

Expressed in prostate cancer and levels increase from the normal to the malignant state (at protein level).

Expressed in all human cell types so far analyzed. The Tyr-176 phosphorylated form shows a

Subcellular location:

Cytoplasm. Nucleus. Cell membrane.

Function:

Introduction: **WB:** Western Blot **IP:** Immunoprecipitation **IHC:** Immunohistochemistry **ChIP:** Chromatin Immunoprecipitation **ICC/IF:** Immunocytochemistry/Immunofluorescence **F:** Flow Cytometry

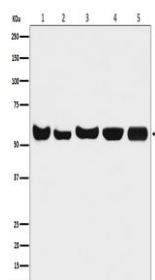
Cross Reactivity: **H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vr:** virus **Ml:** mink **C:** chicken **Dm** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Hr:** horse

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AKT1 is one of 3 closely related serine/threonine-protein kinases (AKT1, AKT2 and AKT3) called the AKT kinase, and which regulate many processes including metabolism, proliferation, cell survival, growth and angiogenesis (PubMed:15526160, PubMed:11882383, PubMed:21620960, PubMed:21432781). This is mediated through serine and/or threonine phosphorylation of a range of downstream substrates (PubMed:15526160, PubMed:11882383, PubMed:21620960, PubMed:21432781). Over 100 substrate candidates have been reported so far, but for most of them, no isoform specificity has been reported (PubMed:15526160, PubMed:11882383, PubMed:21620960, PubMed:21432781). AKT is responsible of the regulation of glucose uptake by mediating insulin-induced translocation of the SLC2A4/GLUT4 glucose transporter to the cell surface (By similarity). Phosphorylation of PTPN1 at 'Ser-50' negatively modulates its phosphatase activity preventing dephosphorylation of the insulin receptor and the attenuation of insulin signaling (By similarity). Phosphorylation of TBC1D4 triggers the binding of this effector to inhibitory 14-3-3 proteins, which is required for insulin-stimulated glucose transport (PubMed:11994271). AKT regulates also the storage of glucose in the form of glycogen by phosphorylating GSK3A at 'Ser-21' and GSK3B at 'Ser-9', resulting in inhibition of its kinase activity (By similarity). Phosphorylation of GSK3 isoforms by AKT is also thought to be one mechanism by which cell proliferation is driven (By similarity). AKT regulates also cell survival via the phosphorylation of MAP3K5 (apoptosis signal-related kinase) (PubMed:11154276). Phosphorylation of 'Ser-83' decreases MAP3K5 kinase activity stimulated by oxidative stress and thereby prevents apoptosis (PubMed:11154276). AKT mediates insulin-stimulated protein synthesis by phosphorylating TSC2 at 'Ser-939' and 'Thr-1462', thereby activating mTORC1 signaling and leading to both phosphorylation of 4E-BP1 and in activation of RPS6KB1 (PubMed:12150915). AKT is involved in the phosphorylation of members of the FOXO factors (Forkhead family of transcription factors), leading to binding of 14-3-3 proteins and cytoplasmic localization (PubMed:10358075). In particular, FOXO1 is phosphorylated at 'Thr-24', 'Ser-256' and 'Ser-319' (PubMed:10358075). FOXO3 and FOXO4 are phosphorylated on equivalent sites (PubMed:10358075). AKT has an important role in the regulation of NF-kappa-B-dependent gene transcription and positively regulates the activity of CREB1 (cyclic AMP (cAMP)-response element binding protein) (PubMed:9829964). The phosphorylation of CREB1 induces the binding of accessory proteins that are necessary for the transcription of pro-survival genes such as BCL2 and MCL1 (PubMed:9829964). AKT phosphorylates 'Ser-454' on ATP citrate lyase (ACLY), thereby potentially regulating ACLY activity and fatty acid synthesis (By similarity). Activates the 3B isoform of cyclic nucleotide phosphodiesterase (PDE3B) via phosphorylation of

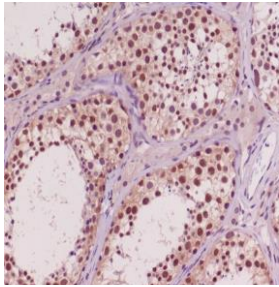
Validation Data:

Akt(pan) 1/2/3 Rabbit mAb [1Vfj] Images

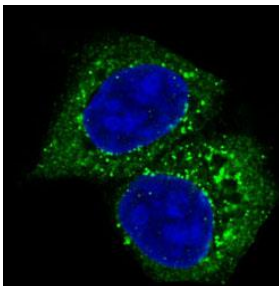


Western blot (SDS PAGE) analysis of extracts from (1) A549 cell lysate; (2) Mouse brain lysate; (3) Rat brain lysate; (4) Rat heart lysate; (5) Rat kidney lysate. Using Akt(pan) 1/2/3 Rabbit mAb [1Vfj] at dilution of 1:1000 incubated at 4°C over night.

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Immunohistochemical analysis of paraffin-embedded human testis, .Using Akt(pan) 1/2/3 Rabbit mAb [1Vfj] at dilution of 1:100 incubated at 4°C over night.Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Immunofluorescent analysis of MCF-7 cells,Using Akt(pan) 1/2/3 Rabbit mAb [1Vfj] at dilution of 1:100 incubated at 4°C over night.

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 1% w/v Milk, 1X TBST at 4°C overnight.