AKT Blocking Peptide – >85% Purity

PRODUCT OVERVIEW

Product Name	AKT (AKT1), Blocking Peptide
Full Product Name	AKT Blocking Peptide
Product Gene Name	AKT1 blocking peptide
Product Synonym Names	PKB; RAC; RAC-alpha serine/threonine-protein kinase; Protein kinase B; PKB; Protein kinase B alpha; PKB alpha; Proto-oncogene c-Akt; RAC-PK-alpha
Host	Synthetic
Species Reactivity	Human, Mouse, Rat, Monkey
Form/Format	Lyophilized powder
Purity/Purification	>85%
Preparation and Storage	Shipped at 4 degree C. Store at -20 degree C for one year.
Antibody/Peptide Pairs	AKT peptide (MBS822438) is used for blocking the activity of AKT antibody (MBS821865)
Molecular Weight	48,347 Da
OMIM	phenotype 615109
Quality Control	The quality of the peptide was evaluated by reversed-phase HPLC and by mass spectrometry.
Applications Tested/Suitable for AKT1 blocking peptide	Blocking (BL)
Application Notes for AKT1 blocking peptide	Blocking Peptide to the diluted primary antibody in a molar ratio of 10:1 (peptide to antibody) and incubate the mixture at 4 degree C for overnight or at room temperature for 2 hours.
Related Product Information for AKT1 blocking peptide	MBS822438 is a blocking peptide targeting AKT1. Also known as AKT Blocking Peptide. Reactive in Human, Mouse, Rat, Monkey. Host: Synthetic. The peptide is used to block Anti-AKT Antibody reactivity.
Other Notes	Small volumes of AKT1 blocking peptide vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for AKT1. It may not necessarily be applicable to this product.

NCBI GI #	62241013
NCBI GeneID	207
NCBI Accession #	NP_001014431.1
UniProt Primary Accession #	P31749
UniProt Secondary Accession #	Q9BWB6; B2RAM5; B7Z5R1
UniProt Related Accession #	P31749
GenBank Nucleotide #	NM_001014431.1
NCBI Official Full Name	RAC-alpha serine/threonine-protein kinase

NCBI Official Synonym Full Names	v-akt murine thymoma viral oncogene homolog 1
NCBI Official Symbol	AKT1
NCBI Official Synonym Symbols	AKT; PKB; RAC; CWS6; PRKBA; PKB-ALPHA; RAC-ALPHA
UniProt Protein Name	RAC-alpha serine/threonine-protein kinase
UniProt Synonym Protein Names	Protein kinase B; PKB; Protein kinase B alpha; PKB alpha; Proto-oncogene c-Akt; RAC-PK-alpha
Protein Family	Potassium channel
UniProt Gene Name	AKT1
UniProt Synonym Gene Names	PKB; RAC; PKB; PKB alpha
UniProt Entry Name	AKT1_HUMAN
NCBI Protein Information	RAC-alpha serine/threonine-protein kinase; AKT1m; PKB alpha; RAC-PK-alpha; proto-oncogene c-Akt; protein kinase B alpha; rac protein kinase alpha
NCBI Summary for AKT1	The serine-threonine protein kinase encoded by the AKT1 gene is catalytically inactive in serum-starved primary and immortalized fibroblasts. AKT1 and the related AKT2 are activated by platelet-derived growth factor. The activation is rapid and specific, and it is abrogated by mutations in the pleckstrin homology domain of AKT1. It was shown that the activation occurs through phosphatidylinositol 3-kinase. In the developing nervous system AKT is a critical mediator of growth factor-induced neuronal survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating the serine/threonine kinase AKT1, which then phosphorylates and inactivates components of the apoptotic machinery. Mutations in this gene have been associated with the Proteus syndrome. Multiple alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Jul 2011]

UniProt Comments for AKT1	Akt1: an oncogenic AGC kinase that plays a critical role in regulating cell survival and metabolism in many different signaling pathways. Dual phosphorylation is required for its activation. T308 is phosphorylated by PDK1 in the PI3 kinase pathway, and S473 is phosphorylated by mTOR in the mTORC2 pathway. The 'Lys-63'-linked ubiquitination of AKT1 by TRAF6 is important for its translocation to the plasma membrane, phosphorylation, and activation. When Akt is fully phosphorylated it translocates into the nucleus, undergoes 'Lys-48'-polyubiquitination catalyzed by TTC3, leading to its proteosomal degradation. Hyperactive or overexpressed in a number of cancers including breast, prostate, lung, pancreatic, liver, ovarian and colorectal. Over 160 protein substrates are known including many that regulate transcription, metabolism, apoptosis, cell cycle, and growth. Protein type: Protein kinase, Ser/Thr (non-receptor); Kinase, protein; Oncoprotein; Protein kinase, AGC; EC 2.7.11.1; AGC group; AKT family Chromosomal Location of Human Ortholog: 14q32.32 Cellular Component: nucleoplasm; microtubule cytoskeleton; mitochondrion; cytoplasm; plasma membrane; spindle; intercellular junction; nucleus; cytosol Molecular Function: identical protein binding; protein serine/threonine kinase activity; protein binding; enzyme binding; phosphatidylinositol-3,4,5-triphosphate binding; protein kinase C binding; nitric-oxide synthase regulator activity; protein serine/threonine/tyrosine kinase activity; kinase activity; phosphatidylinositol-3,4-bisphosphate binding; ATP binding; protein kinase activity Biological Process: negative regulation of JNK cascade; positive regulation of nitric oxide biosynthetic process; regulation of myelination; nerve growth factor receptor signaling pathway; protein ubiquitination; glucose homeostasis; protein amino acid phosphorylation; regulation of cell migration; G1/S-specific positive regulation of cyclin-dependent protein kinase activity; germ cell development; positive regulation of glucose import; cell projection organization and biogenesis; protein catabolic process; maternal placenta development; response to food; platelet activation; glycogen biosynthetic process; fibroblast growth factor receptor signaling pathway; positive regulation of nitric-oxide synthase activity; positive regulation of blood vessel endothelial cell migration; glucose metabolic process; positive regulation of lipid biosynthetic process; positive regulation of cell growth; insulin-like growth factor receptor signaling pathway; cellular response to insulin stimulus; response to heat; T cell costimulation; striated muscle cell differentiation; negative regulation of protein kinase activity; positive regulation of fat cell differentiation; positive regulation of transcription from RNA polymerase II promoter; positive regulation of endothelial cell proliferation; positive regulation of transcription factor activity; regulation of nitric-oxide synthase activity; response to oxidative stress; negative regulation of apoptosis; negative regulation of autophagy; negative regulation of fatty acid beta-oxidation; translation; apoptosis; protein amino acid autophosphorylation; positive regulation of cellular protein metabolic process; positive regulation of glycogen biosynthetic process; regulation of glycogen biosynthetic process; negative regulation of cell size; glucose transport; negative regulation of caspase activity; signal transduction; nitric oxide metabolic process; regulation of translation; apoptotic mitochondrial changes; protein kinase B signaling cascade; nitric oxide biosynthetic process; cell differentiation; inflammatory response; activated T cell apoptosis; aging; epidermal growth factor receptor signaling pathway; negative regulation of proteolysis; phosphoinositide-mediated signaling; myelin maintenance in the peripheral nervous system; protein modification process; endocrine pancreas development; positive regulation of peptidyl-serine phosphorylation; osteoblast differentiation; cell proliferation; G-protein coupled receptor protein signaling pathway; peptidyl-serine phosphorylation; protein import into nucleus, translocation; positive regulation of proteasomal ubiquitin-dependent protein catabolic process; positive regulation of vasoconstriction; insulin receptor signaling pathway; innate immune response; gene expression; positive regulation of protein amino acid phosphorylation; blood coagulation; vascular endothelial growth factor receptor signaling pathway; phosphorylation; hyaluronan metabolic process Disease: Schizophrenia; Cowden Syndrome 6; Proteus Syndrome; Breast Cancer; Ovarian Cancer
Research Articles on AKT1	**1.** Data suggest that the ribosomal S6 kinase : protein kinase B (AKT) phosphorylation ratio could be useful as a biomarker of target inhibition by RAD001.
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