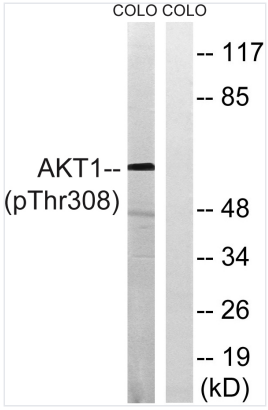
# AKT Antibody – Rabbit Polyclonal

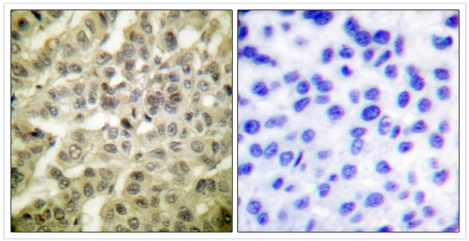
## PRODUCT OVERVIEW

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| **Product Name** | Akt, Polyclonal Antibody |
| **Full Product Name** | Akt (Phospho-Thr308) Rabbit Polyclonal Antibody |
| **Product Gene Name** | anti-Akt antibody |
| **Product Synonym Gene Name** | AKT1/AKT2/AKT3 |
| **Product Synonym Names** | AKT1; 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; AKT2; RAC-beta serine/threonine-protein kinase; Protein kinase Akt-2; Protein kinase B; BH6842; RAC-alpha serine/threonine-protein kinase/RAC-beta serine/threonine-protein kinase/RAC-gamma serine/threonine-protein kinase |
| **Clonality** | Polyclonal |
| **Host** | Rabbit |
| **Species Reactivity** | Human, Mouse, Rat |
| **Form/Format** | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide. |
| **Purity/Purification** | The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. |
| **Concentration** | 1mg/ml (lot specific) |
| **Specificity** | Phospho-Akt (T308) Polyclonal Antibody detects endogenous levels of Akt protein only when phosphorylated at T308. |
| **Preparation and Storage** | Store at -20 degree C/1 year |
| **Molecular Weight** | 55,686 Da |
| **Chromosome Location** | Chromosome: 14; NC_000014.8 (105235686..105262080, complement). Location: 14q32.32 |
| **OMIM** | 114480 |
| **3D Structure** | ModBase 3D Structure for P31749 |
| **Immunogen** | Synthesized phospho-peptide around the phosphorylation site of human Akt (phospho Thr308) |
| **Modification** | Phospho Specific |
| **Applications Tested/Suitable for anti-Akt antibody** | Immunofluorescence (IF), Immunocytochemistry (ICC), Western Blot (WB), Immunohistochemistry-Paraffin (IHC-P), ELISA (EIA) |
| **Application Notes for anti-Akt antibody** | IF: 1:50-200<br>WB: 1/500-1/2000<br>IHC: 1/100-1/300<br>ELISA: 1/20000 |
| **Related Product Information for anti-Akt antibody** | 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] |

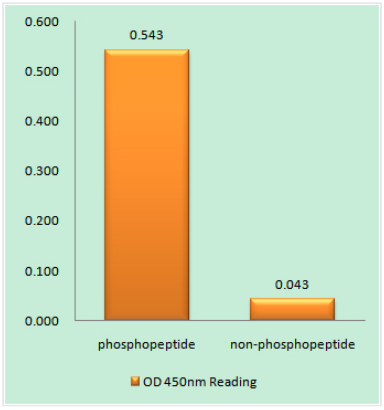
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| **Other Notes** | Small volumes of anti-Akt antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply. |
| **Searchable Terms for Akt purchase** | MBS9511799 is an antibody targeting Akt. Also known as Akt (Phospho-Thr308) Rabbit Polyclonal Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit. |



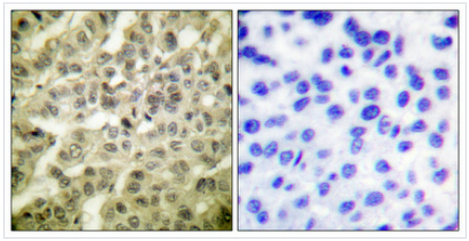

**Western Blot (WB) of anti-Akt antibody**
Western blot analysis of Akt (Phospho-Thr308) Antibody. The lane on the right is blocked with the Akt (Phospho-Thr308) peptide.



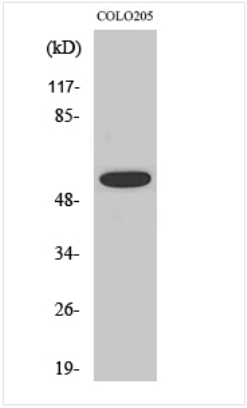
**Immunohistochemistry (IHC) of anti-Akt antibody**
Immunohistochemistry analysis of paraffin-embedded human breast cancer, using Akt (Phospho-Thr308) Antibody. The picture on the right is blocked with the Akt (Phospho-Thr308) peptide.



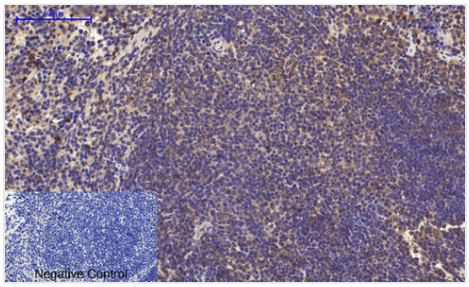

**ELISA (EIA) of anti-Akt antibody**
Enzyme-Linked Immunosorbent Assay (Phospho-ELISA) for Immunogen Phosphopeptide (Phospho-left) and Non-Phosphopeptide (Phospho-right), using Akt (Phospho-Thr308) Antibody



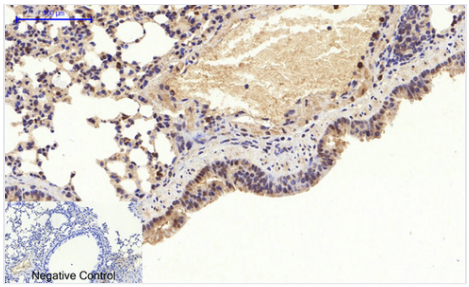
**Immunohistochemistry (IHC) of anti-Akt antibody**
Immunohistochemical analysis of paraffin-embedded Human breast cancer. Antibody was diluted at 1:100(4 degree overnight). High-pressure and temperature Tris-EDTA,pH8.0 was used for antigen retrieval. Negetive contrl (right) obtaned from antibody was pre-absorbed by immunogen peptide.



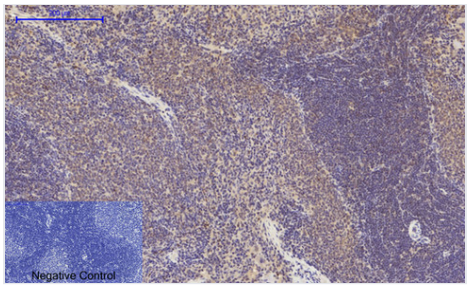

**Western Blot (WB) of anti-Akt antibody**
Western Blot analysis of various cells using Phospho-Akt (T308) Polyclonal Antibody diluted at 1:500




**Immunohistochemistry (IHC) of anti-Akt antibody**
Immunohistochemical analysis of paraffin-embedded Mouse-spleen tissue. 1,Akt (phospho Thr308) Polyclonal Antibody was diluted at 1:200(4 degree C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98 degree C,20min). 3,Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.




**Immunohistochemistry (IHC) of anti-Akt antibody**
Immunohistochemical analysis of paraffin-embedded Mouse-lung tissue. 1,Akt (phospho Thr308) Polyclonal Antibody was diluted at 1:200(4 degree C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98 degree C,20min). 3,Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.




**Immunohistochemistry (IHC) of anti-Akt antibody**
Immunohistochemical analysis of paraffin-embedded Rat-spleen tissue. 1,Akt (phospho Thr308) Polyclonal Antibody was diluted at 1:200(4 degree C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98 degree C,20min). 3,Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.

## ADDITIONAL DETAILS

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

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| **NCBI GI #** | 62241013 |
| **NCBI GeneID** | 207 |
| **NCBI Accession #** | NP_001014431.1 |
| **UniProt Primary Accession #** | P31749 |
| **UniProt Secondary Accession #** | P31751; Q9Y243 |
| **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** | AKT-interacting protein |
| **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; PKB alpha; RAC-PK-alpha; proto-oncogene c-Akt; protein kinase B alpha; rac protein kinase alpha |

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| **UniProt Comments for Akt** | 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.<br><br>Protein type: EC 2.7.11.1; Protein kinase, Ser/Thr (non-receptor); Protein kinase, AGC; Oncoprotein; Kinase, protein; AGC group; AKT family<br><br>Chromosomal Location of Human Ortholog: 14q32.32<br><br>Cellular Component: nucleoplasm; microtubule cytoskeleton; mitochondrion; cytoplasm; plasma membrane; spindle; intercellular junction; nucleus; cytosol<br><br>Molecular Function: identical protein binding; protein serine/threonine kinase activity; protein binding; phosphatidylinositol-3,4,5-triphosphate binding; enzyme 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<br><br>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; regulation of cell migration; protein amino acid phosphorylation; 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; positive regulation of fat cell differentiation; negative regulation of protein kinase activity; striated muscle cell differentiation; positive regulation of transcription from RNA polymerase II promoter; positive regulation of endothelial cell proliferation; positive regulation of transcription factor activity; response to oxidative stress; regulation of nitric-oxide synthase activity; negative regulation of apoptosis; negative regulation of autophagy; negative regulation of fatty acid beta-oxidation; translation; apoptosis; protein amino acid autophosphorylation; regulation of glycogen biosynthetic process; positive regulation of cellular protein metabolic process; positive regulation of glycogen biosynthetic process; negative regulation of cell size; negative regulation of caspase activity; glucose transport; signal transduction; nitric oxide metabolic process; regulation of translation; apoptotic mitochondrial changes; protein kinase B signaling cascade; inflammatory response; nitric oxide biosynthetic process; cell differentiation; activated T cell apoptosis; aging; negative regulation of proteolysis; epidermal growth factor receptor signaling pathway; 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; insulin receptor signaling pathway; positive regulation of vasoconstriction; 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<br><br>Disease: Schizophrenia; Cowden Syndrome 6; Proteus Syndrome; Breast Cancer; Ovarian Cancer |
| **Research Articles on Akt** | **1.** Inhibition of AKT activity by MK-2206 blocks GRP78 expression in endometrial cancer (EC) cells. SiRNA studies also revealed that knockdown of GRP78 reduces but does not abrogate AKT activity, demonstrating that GRP78 is required for optimal AKT activity. |
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