

Recombinant Human AKT1, GST-tagged, Active

Cat. No. AKT1-2521H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant human full length Akt1 was expressed in <i>E. coli</i> with a GST-tag.
Species	Human
Source	<i>E. coli</i>
Description	Akt1, also known as "Akt" or protein kinase B (PKB) is an important molecule in mammalian cellular signaling. In humans, there are three genes in the "Akt family": Akt1, Akt2, and Akt3. These enzymes are members of the serine/threonine-specific protein kinase family (EC 2.7.11.1). Akt1 is involved in cellular survival pathways, by inhibiting apoptotic processes. Akt1 is also able to induce protein synthesis pathways, and is therefore a key signaling protein in the cellular pathways that lead to skeletal muscle hypertrophy, and general tissue growth. Since it can block apoptosis, and thereby promote cell survival, Akt1 has been implicated as a major factor in many types of cancer. Akt (now also called Akt1) was originally identified as the oncogene in the transforming retrovirus, AKT8.
Application	Can be used in kinase activity assays, which measure the molar amount of phosphate incorporated into the Akt/SGK substrate peptide (RPRAATF) per minute per mg protein at 30 °C using a final concentration of 50 µM [32P]-ATP.
Biochem/physiol Actions	Akt1 is an isoform of multifunctional Akt kinase, which upon activation becomes involved in glucose metabolism, transcription, survival, cell proliferation, angiogenesis, cell motility and a number of metabolic effects of insulin.

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Physical Form	Supplied as a solution at 15 µg in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 0.25 mM dithiothreitol (DTT), 0.1 mM EGTA and 30% glycerol.
Form	aqueous glycerol solution.
Mol Wt	protein apparent mol wt ~80 kDa.
Assay	≥85% (SDS-PAGE).
Storage Temp	-70°C.
Pathways	Acute myeloid leukemia; Apoptosis; B cell receptor signaling pathway; Chemokine signaling pathway; Chronic myeloid leukemia; Colorectal cancer; Endometrial cancer; ErbB signaling pathway; Fc epsilon RI signaling pathway; Fc gamma R-mediated phagocytosis; Focal adhesion; Glioma; Inositol phosphate metabolism; Insulin signaling pathway; Jak-STAT signaling pathway; Natural killer cell mediated cytotoxicity; Leukocyte transendothelial migration; Melanoma; Non-small cell lung cancer; Pancreatic cancer; Pathways in cancer; Phosphatidylinositol signaling system; Prostate cancer; Regulation of actin cytoskeleton; Renal cell carcinoma; Small cell lung cancer; T cell receptor signaling pathway; Toll-like receptor signaling pathway; Type II diabetes mellitus; VEGF signaling pathway; VEGF signaling pathway; mTOR signaling pathway; Hemostasis; Signaling by GPCR; ignaling in Immune system; Signalling by NGF; Regulation of beta-cell development; Metabolism of nitric oxide
Full Length	Full L.
GENE INFORMATION	
Gene Name	AKT1 v-akt murine thymoma viral oncogene homolog 1 [Homo sapiens]

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Synonyms	AKT1; v-akt murine thymoma viral oncogene homolog 1; AKT; PKB; RAC; PRKBA; MGC99656; PKB-ALPHA; RAC ALPHA; AKT1 kinase; protein kinase B; rac protein kinase alpha; RAC-alpha serine/threonine-protein kinase; EC 2.7.11.1; RAC-PK-alpha
Gene ID	207
mRNA Refseq	NM_001014431
Protein Refseq	NP_001014431
MIM	164730
UniProt ID	P31749
Chromosome Location	14q32.32-q32.33
Function	ATP binding; enzyme binding; identical protein binding; nitric-oxide synthase regulator activity; nucleotide binding; phosphatidylinositol-3,4,5-trisphosphate binding; phosphatidylinositol-3,4-bisphosphate binding; protein serine/threonine kinase activity; transferase activity

PDB rendering based
on 1h10.

