

Recombinant Human AKT3, Active

Cat. No. AKT3-2522H Lot. No. (See product label)

SPECIFICATION

Product Overview

Species	Human
Source	E.coli
Description	RAC-gamma serine/threonine-protein kinase is an enzyme that in humans is encoded by the AKT3 gene. The protein encoded by this gene is a member of the AKT, also called PKB, serine/threonine protein kinase family. AKT kinases are known to be regulators of cell signaling in response to insulin and growth factors. They are involved in a wide variety of biological processes including cell proliferation, differentiation, apoptosis, tumorigenesis, as well as glycogen synthesis and glucose uptake. This kinase has been shown to be stimulated by platelet-derived growth factor (PDGF), insulin, and insulin-like growth factor 1 (IGF1). Alternatively splice transcript variants encoding distinct isoforms have been described. Mice lacking Akt3 have a normal glucose metabolism (no diabetes), have approximately normal body weight, but have a 25% reduction in brain mass. Incidentally, Akt3 is highly expressed in the brain.
Application	Kinase activity is measured as the molar amount of phosphate incorporated 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	One of three highly conserved isoforms, which are designated in humans as PKBα (Akt1), PKBβ (Akt2), and PKBγ (Akt3). Akt3 is expressed widely, but not in liver or

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skeletal muscle, suggesting that its principle function may not be in regulating insulin signaling. Akt3 is involved in tumorigenesis and may contribute to the more aggressive clinical phenotype of the estrogen receptor-negative breast cancers and androgen-insensitive prostate carcinomas.

Physical Form	Supplied at a concentration of approximately 0.1 mg/mL in 50 µl of 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 0.25 mM dithiothreitol (DTT), 0.1 mM EGTA and 30% glycerol.
Form	buffered aqueous glycerol solution.
Mol Wt	protein apparent mol wt ~83 kDa.
Assay	≥85% (SDS-PAGE).
Storage Temp	-70°C.
Pathways	Acute myeloid leukemia; Adipocytokine signaling pathway; 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; Insulin signaling pathway; Jak-STAT signaling pathway; MAPK signaling pathway; Melanoma; Neurotrophin signaling pathway; Non-small cell lung cancer; Pancreatic cancer; Pathways in cancer; Progesterone-mediated oocyte maturation; Prostate cancer; Renal cell carcinoma; Small cell lung cancer; T cell receptor signaling pathway; Tight junction; Toll-like receptor signaling pathway; VEGF signaling pathway; mTOR signaling pathway

GENE INFORMATION

Gene Name AKT3 v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma) [Homo sapiens]

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Synonyms	AKT3; v-akt murine thymoma viral oncogene homolog 3 (protein kinase B, gamma); PKBG; PRKBG; STK-2; PKB-GAMMA; RAC-gamma; RAC-PK-gamma; DKFZp434N0250; OTTHUMP00000037911; OTTHUMP00000037912; protein kinase B gamma; serine threonine protein kinase, Akt-3; RAC-gamma serine/threonine protein kinase; EC 2.7.11.1; RAC-gamma serine/threonine-protein kinase; Protein kinase B, gamma; PKB gamma
Gene ID	10000
mRNA Refseq	NM_005465
Protein Refseq	NP_005456
MIM	611223
UniProt ID	Q9Y243
Chromosome Location	1q44
Function	ATP binding; nucleotide binding; protein binding; protein serine/threonine kinase activity; transferase activity