

Datasheet for ABIN7597314

AKT1 Protein (AA 1-480) (DYKDDDDK Tag)



[Go to Product page](#)

Overview

Quantity:	10 µg
Target:	AKT1
Protein Characteristics:	AA 1-480
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This AKT1 protein is labelled with DYKDDDDK Tag.

Product Details

Purpose:	Recombinant human AKT1 Protein with C-terminal 3xFlag tag
Sequence:	AKT1(Met1-Ala480) 3xFlag tag
Purity:	The purity of the protein is greater than 95 % as determined by SDS-PAGE and Coomassie blue staining.

Target Details

Target:	AKT1
Alternative Name:	AKT1 (AKT1 Products)
Background:	AKT, PKB, RAC, PRKBA, PKB-ALPHA, RAC-ALPHA This gene encodes one of the three members of the human AKT serine-threonine protein kinase family which are often referred to as protein kinase B alpha, beta, and gamma. These highly similar AKT proteins all have an N-terminal pleckstrin homology domain, a serine/threonine-

specific kinase domain and a C-terminal regulatory domain. These proteins are phosphorylated by phosphoinositide 3-kinase (PI3K). AKT/PI3K forms a key component of many signalling pathways that involve the binding of membrane-bound ligands such as receptor tyrosine kinases, G-protein coupled receptors, and integrin-linked kinase. These AKT proteins therefore regulate a wide variety of cellular functions including cell proliferation, survival, metabolism, and angiogenesis in both normal and malignant cells. AKT proteins are recruited to the cell membrane by phosphatidylinositol 3,4,5-trisphosphate (PIP3) after phosphorylation of phosphatidylinositol 4,5-bisphosphate (PIP2) by PI3K. Subsequent phosphorylation of both threonine residue 308 and serine residue 473 is required for full activation of the AKT1 protein encoded by this gene. Phosphorylation of additional residues also occurs, for example, in response to insulin growth factor-1 and epidermal growth factor. Protein phosphatases act as negative regulators of AKT proteins by dephosphorylating AKT or PIP3. The PI3K/AKT signalling pathway is crucial for tumor cell survival. Survival factors can suppress apoptosis in a transcription-independent manner by activating AKT1 which then phosphorylates and inactivates components of the apoptotic machinery. AKT proteins also participate in the mammalian target of rapamycin (mTOR) signalling pathway which controls the assembly of the eukaryotic translation initiation factor 4F (eIF4E) complex and this pathway, in addition to responding to extracellular signals from growth factors and cytokines, is dysregulated in many cancers. Mutations in this gene are associated with multiple types of cancer and excessive tissue growth including Proteus syndrome and Cowden syndrome 6, and breast, colorectal, and ovarian cancers. Multiple alternatively spliced transcript variants have been found for this gene. [provided by RefSeq, Jul 2020]

Molecular Weight:	predicted molecular mass of 58.6 kDa after removal of the signal peptide. The apparent molecular mass of AKT1-FLAG is 55-70 kDa due to glycosylation.
UniProt:	P31749
Pathways:	PI3K-Akt Signaling , RTK Signaling , TCR Signaling , AMPK Signaling , Interferon-gamma Pathway , TLR Signaling , Fc-epsilon Receptor Signaling Pathway , EGFR Signaling Pathway , Neurotrophin Signaling Pathway , Response to Water Deprivation , Regulation of Actin Filament Polymerization , Carbohydrate Homeostasis , Glycosaminoglycan Metabolic Process , Cellular Glucan Metabolic Process , Regulation of Muscle Cell Differentiation , Cell-Cell Junction Organization , Regulation of Cell Size , Skeletal Muscle Fiber Development , Regulation of Carbohydrate Metabolic Process , Hepatitis C , Protein targeting to Nucleus , CXCR4-mediated Signaling Events , Signaling Events mediated by VEGFR1 and VEGFR2 , Negative Regulation of intrinsic apoptotic Signaling , Thromboxane A2 Receptor Signaling , Signaling of Hepatocyte Growth Factor Receptor , Positive Regulation of fat Cell Differentiation , VEGFR1 Specific Signals , VEGF Signaling , Warburg Effect

Application Details

Application Notes:	Extracellular Domain Proteins (ECD) can be used as: • Immunogens for antibody drug development • Reagents used for CAR-T positive cell monitoring • Reagents for antibody screening and functional testing • Reagents for antibody affinity measurement
Comment:	The protein was made using HEK293 mammalian cell secretion expression system to ensure the close-to-native structures and post-translational modifications of the target protein.
Restrictions:	For Research Use only

Handling

Format:	Lyophilized
Buffer:	Lyophilized from sterile PBS, pH 7.4. Normally 5 % – 8% trehalose is added as protectants before lyophilization.
Storage:	-20 °C,-80 °C
Storage Comment:	Store at -20°C to -80°C for 12 months in lyophilized form. After reconstitution, if not intended for use within a month, aliquot and store at -80°C (Avoid repeated freezing and thawing). Lyophilized proteins are shipped at ambient temperature.
Expiry Date:	12 months