

Human AKT1 / PKB / PKB α Protein (His Tag)



Sino Biological Inc.

Biological Solution Specialist

Catalog Number: 10763-H08B

General Information

Gene Name Synonym:

AKT1, AKT1, AKT, MGC99656, PKB, PKB-ALPHA, PRKBA, RAC, RAC-ALPHA

Protein Construction:

A DNA sequence encoding the human AKT1 (NP_001014431.1) (Met 1-Ala 480) was fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 87 % as determined by SDS-PAGE

Bio-Activity

1. No Kinase Activity
2. Measured by its ability to bind biotinylated human CD136 in a functional ELISA.

Endotoxin:

< 1.0 EU per μ g of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met 1

Molecular Mass:

The recombinant human AKT1 consists of 491 amino acids and migrates as an approximately 57 kDa band as predicted in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM Tris, 100mM NaCl, 3mM DTT, 0.5mM PMSF, 5% Glycerol, pH 8.0

Normally 5 % - 8 % trehalose and mannitol are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

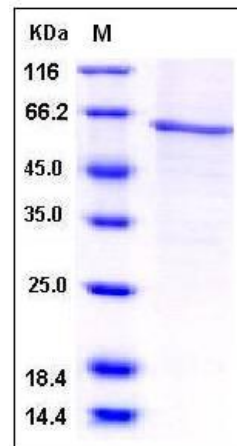
Usage Guide

Storage:

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

SDS-PAGE:



Reconstitution:

Detailed reconstitution instructions are sent along with the products.

Protein Description

RAC-alpha serine/threonine-protein kinase, also known as RAC-PK-alpha, v-akt murine thymoma viral oncogene homolog 1, Protein kinase B, Proto-oncogene c-Akt, AKT1 and PKB is an essential mediator of the phosphatidylinositol 3-kinase signaling pathway. AKT1 plays a role as a key modulator of the AKT-mTOR signaling pathway controlling the tempo of the process of newborn neurons integration during adult neurogenesis, including correct neuron positioning, dendritic development and synapse formation. AKT1 phosphorylates TBC1D4 and signals downstream of phosphatidylinositol 3-kinase (PI3K) to mediate the effects of various growth factors such as platelet-derived growth factor (PDGF), epidermal growth factor (EGF), insulin and insulin-like growth factor I (IGF-I). AKT1 plays a role in glucose transport by mediating insulin-induced translocation of the GLUT4 glucose transporter to the cell surface. It mediates the antiapoptotic effects of IGF-I and promotes glycogen synthesis by mediating the insulin-induced activation of glycogen synthase. AKT1 belongs to the protein kinase superfamily, AGC Ser/Thr protein kinase family and RAC subfamily. AKT1 contains one AGC-kinase C-terminal domain, one PH domain and one protein kinase domain. Elevated activity of AKT1 is common in human cancer. Localization at the plasma membrane, leading to enhanced phosphorylation and activation of AKT1, is an important factor determining the oncogenicity of this kinase. Although the phosphatidylinositol 3-kinase signaling pathway is frequently upregulated in cancer, cancer-specific mutations in AKT1 are not common. Defects in AKT1 are a cause of susceptibility to breast cancer (BC). A common malignancy originating from breast epithelial tissue. Defects in AKT1 are associated with susceptibility to ovarian cancer, also called susceptibility to familial breast-ovarian cancer type 1 (BROVCA1).

References

1. Coffey P.J. et al., 1991, Eur. J. Biochem. 201: 475-81.
2. Walker K.S. et al., 1998, Biochem. J. 331: 299-308.
3. Kane S., et al. 2002, J. Biol. Chem. 277: 22115-8.
4. Fujita N. et al., 2002, J. Biol. Chem. 277: 28706-13.
5. Dannemann, N. et al., Int J Cancer 2010, 127 (1): 239-44.

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