

# Human AKT1 / PKB / PKB $\alpha$ Protein (His Tag)

Catalog Number: 10763-H08B



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

AKT; CWS6; 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:

**No Kinase Activity**

### Endotoxin:

< 1.0 EU per  $\mu$ 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, mannitol and 0.01% Tween80 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:

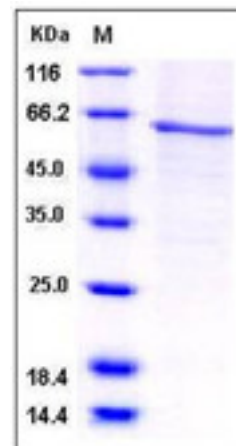
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

v-akt murine thymoma viral oncogene homolog 1 (AKT1), or protein kinase B-alpha (PKB-ALPHA) is a serine-threonine protein kinase, belonging to the Protein Kinase Superfamily. AKT1 is a major mediator of the responses to insulin, insulin-like growth factor 1 (IGF1), and glucose. AKT1 also plays a key role in the regulation of both muscle cell hypertrophy and atrophy. AKT1 activity is required for physiologic cardiac growth in response to IGF1 stimulation or exercise training. In contrast, AKT1 activity was found to antagonize pathologic cardiac growth that occurs in response to endothelin 1 stimulation or pressure overload. AKT1 selectively promotes physiological cardiac growth while AKT2 selectively promotes insulin-stimulated cardiac glucose metabolism. AKT1 deletion prevented tumor initiation as well as tumor progression, coincident with decreased Akt signaling in tumor tissues. AKT1 is the primary Akt isoform activated by mutant K-ras in lung tumors, and that AKT3 may oppose AKT1 in lung tumorigenesis and lung tumor progression. A number of separate studies have implicated AKT1 as an inhibitor of breast epithelial cell motility and invasion. AKT1 may have a dual role in tumorigenesis, acting not only pro-oncogenically by suppressing apoptosis but also anti-oncogenically by suppressing invasion and metastasis.

## References

- 1.Hollander MC, *et al.* (2011) Akt1 deletion prevents lung tumorigenesis by mutant K-ras. *Oncogene*. 30(15): 1812-21.
- 2.Devaney JM, *et al.* (2011) AKT1 polymorphisms are associated with risk for metabolic syndrome. *Hum Genet.* 129(2): 129-39.
- 3.Dillon RL, *et al.* (2010) Distinct biological roles for the akt family in mammary tumor progression. *Cancer Res.* 70(11): 4260-4.

Manufactured By Sino Biological Inc., FOR RESEARCH USE ONLY. NOT FOR USE IN HUMANS.

For US Customer: Fax: 267-657-0217 • Tel: 215-583-7898

Global Customer: Fax :+86-10-5862-8288 • Tel:+86-400-890-9989 • <http://www.sinobiological.com>