

AKT3 Protein, Human, Recombinant (GST)

General Information

Synonyms:	PRKBG;RAC- γ ;RAC-PK- γ ;MPPH;PKB- γ ;PKBG;RAC-PK-gamma;STK-2;PKB-GAMMA;RAC-gamma;v-akt murine thymoma viral oncogene homolog 3;MPPH2
Protein Construction:	A DNA sequence encoding the full length of human PKBG (NP_005456.1) (Met 1-Glu 479) was expressed with the GST tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q9Y243-1
Molecular Weight:	81 kDa (predicted); 81 kDa (reducing conditions)

QC Testing

Biological Activity:	No Kinase Activity
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

v-akt murine thymoma viral oncogene homolog 3 (AKT3), also known as PKB-GAMMA, with AKT1/PKBalpha, AKT2/PKBbeta, are the members of Akt kinase family, share extensive structural similarity and perform common as well as unique functions within cells. The Akt signaling cascade initiates at the cell surface when growth factors or other extracellular stimuli activate phosphoinositide 3-kinase (PI3K). AKT3 was discovered to be the predominant isoform activated in sporadic melanomas. Levels of activity increased during melanoma progression

with metastatic melanomas having the highest activity. Although mechanisms of AKT3 activation remain to be fully characterized, overexpression of AKT3 and decreased PTEN activity play important roles in this process. Targeted reduction of AKT3 activity decreased survival of melanoma tumor cells leading to inhibition of tumor development, which may be therapeutically effective for shrinking tumors in melanoma patients. AKT2 and AKT3 play an important role in the viability of human malignant glioma cells. Targeting AKT2 and AKT3 may hold promise for the treatment of patients with gliomas.

Reference

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- Cristiano BE, et al. (2006) A specific role for AKT3 in the genesis of ovarian cancer through modulation of G(2)-M phase transition. *Cancer Res.* 66(24): 11718-25.
- Robertson GP. (2005) Functional and therapeutic significance of Akt deregulation in malignant melanoma. *Cancer Metastasis Rev.* 24(2): 273-85.
- Altomare DA, et al. (2005) Perturbations of the AKT signaling pathway in human cancer. *Oncogene.* 24: 7455-64.
- Stahl JM, et al. (2004) Deregulated Akt3 activity promotes development of malignant melanoma. *Cancer Res.* 64: 7002-10.

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