

## Product Information

**SILu™Lite AKT3, RAC-gamma serine/threonine-protein kinase, human recombinant, expressed in HEK 293 cells MS Protein Standard**

Catalog Number **MSST0054**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

Synonyms: Protein kinase Akt-3, Protein kinase B gamma (PKB gamma), RAC-PK-gamma, STK-2

### Product Description

SILu™Lite AKT3 is a recombinant human protein expressed in human 293 cells. It consists of 500 amino acids (including N-terminal polyhistidine and FLAG® tags), with a calculated molecular mass of 58.29 kDa. SILu™Lite AKT3 is an analytical standard designed to be used as starting material for preparation of calibrators and controls in LC-MS applications.

AKT3 is a serine/threonine kinase that is a member of the AKT family. AKT3, like the other AKT members, is activated in cells in response to diverse stimuli such as hormones, growth factors, and extracellular matrix components.<sup>1</sup> AKT3, once activated by phosphorylation at Ser<sup>472</sup> and Thr<sup>305</sup>, promotes proliferation, cell survival, motility, and angiogenesis processes, interfering with the apoptotic functions of the cell.<sup>2</sup> AKT3 plays an important role in brain development and is crucial for the viability of malignant glioma cells.<sup>3</sup> It has been reported that mice lacking Akt3 have small brains.<sup>3</sup> Recent evidence indicates that AKT3 is frequently overexpressed in many types of human cancers including breast and prostate.<sup>4-5</sup> The aggressiveness of several types of solid tumors and hematologic malignancies is linked to the deregulation of AKT and its upstream signaling partners. Members of the AKT pathway are therefore potential targets for novel anti-cancer therapeutics.<sup>6</sup>

Each vial contains 50 µg of SILu™Lite AKT3 standard in a solution of phosphate buffered saline with 1 mM EDTA and 25% glycerol. Vial content was determined by the Bradford method using BSA as a calibrator.

Purity:  $\geq 95\%$  (SDS-PAGE)

UniProt: Q9Y243

### Sequence Information:

The N-terminal polyhistidine and FLAG® tags are italicized.

*MDYKDDDDKGGHHHHHHHGGQMSDVTIVKEGWVQ*  
*KRGEYIKNWRPRYFLLKTDGSFIGYKEKPQDVLDPYP*  
*LNNFSVAKCQLMKTERPKPNTFIIRCLQWTTVIERTFH*  
*VDTPEEREETWTEAIQAVADRLQRQEEERMNCSPTSQ*  
*IDNIGEEEMDASTTHHKRKT MNDFDYLKLLGKGTFGK*  
*VILVREKASGKYAMKILKKEVIIAKDEVAHTLTESRVL*  
*KNTRHPFLTSLKYSFQTKDRLCFVMEYVNGGELFFHL*  
*SRERVFSEDRTRFYGAEIVSALDYLHSGKIVYRDLKLE*  
*NLMLDKDGHKIDTDFGLCKEGITDAATMKTFCGTPEYL*  
*APEVLEDNDYGRAVDWWGLGVVMYEMMCGRLPFY*  
*NQDHEKLFELILMEDIKFPRTLSSDAKSLLSGLLIKDPN*  
*KRLGGGPDDAKEIMRHSFFSGVNWQDVYDKKLVPPF*  
*KPQVTSETDTRYFDEEFTAQTITITPPEKYDEDGMDC*  
*MDNERRPHFPQFSYSASGRE*

### **Precautions and Disclaimer**

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### **Storage/Stability**

Store the product at  $-20\text{ }^{\circ}\text{C}$ . The product retains its concentration for at least 2 years as supplied. After initial thawing it is recommended to store the protein in working aliquots at  $-20\text{ }^{\circ}\text{C}$ .

**References**

1. Alessi, D.R., and Cohen, P., Mechanism of activation and function of protein kinase B. *Curr. Opin. Genet. Dev.*, **8(1)**, 55-62 (1998).
2. Coffey, P.G. et al., Protein kinase B (c-Akt): a multifunctional mediator of phosphatidylinositol 3-kinase activation. *Biochem. J.*, **335(1)**, 1-13 (1998).
3. Easton, R.M. et al., Role for Akt3/protein kinase B $\gamma$  in attainment of normal brain size. *Mol. Cell Biol.*, **25(5)**, 1869-1878 (2005).
4. Nakatani, K. et al., Up-regulation of Akt3 in estrogen receptor-deficient breast cancers and androgen-independent prostate cancer lines. *J. Biol. Chem.*, **274**, 21528-21532 (1999).
5. Cicens, J., The potential role of Akt phosphorylation in human cancers. *Int. J. Biol. Markers*, **23(1)**, 1-9 (2008).
6. Garcia-Echeverria, C., and Sellers, W.R., Drug discovery approaches targeting the PI3K/Akt pathway in cancer. *Oncogene*, **27(41)**, 5511-5526 (2008).

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