

Product Information

SILu™Lite AKT1, RAC-alpha serine/threonine-protein kinase, human recombinant, expressed in HEK 293 cells MS Protein Standard

Catalog Number **MSST0050**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonyms: Protein kinase B (PKB), Protein kinase B alpha (PKB alpha), Proto-oncogene c-Akt, RAC-PK-alpha

Product Description

SILu™Lite AKT1 is a recombinant human protein expressed in human 293 cells. It consists of 501 amino acids, with a calculated molecular mass of 58.2 kDa (including N-terminal polyhistidine and FLAG® tags). SILu™Lite AKT1 is an analytical standard designed to be used as starting material for preparation of calibrators and controls in LC-MS applications.

AKT1 is a serine/threonine kinase that is a member of the AKT family. AKT1, like the other AKT proteins, is activated in cells in response to diverse stimuli such as hormones, growth factors, and extracellular matrix components.¹ Once activated by phosphorylation at Ser⁴⁷³ and Thr³⁰⁸, AKT1 promotes proliferation, cell survival, motility, and angiogenesis processes, interfering with the apoptotic functions of the cell.²

Overexpressed phospho-AKT is frequently observed in human lung, gastric, hepatocellular, pancreatic, renal, prostate, and endometrial cancer as well as multiple myeloma.³⁻⁴ The aggressiveness of several types of solid tumors and hematologic malignancies is linked to the deregulation of AKT and its upstream signaling partners.⁵ Members of the AKT pathway are therefore potential targets for novel anti-cancer therapeutics.⁵

Each vial contains 50 µg of SILu™Lite e AKT1 standard in a solution of phosphate buffered saline with 1mM EDTA and 25% glycerol. Vial content was determined by the Bradford method using BSA as a calibrator.

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

UniProt: P31749

Sequence Information:

The N-terminal polyhistidine and FLAG tags are italicized.

MDYKDDDDKGGHHHHHHHGGQMSDVAIVKEGWLH
KRGEYIKTWRPRYFLLKNDGTFIGYKERPQDQDQRE
APLNNFSVAQCQLMKTERPRPNTFIIRCLQWTTVIERT
FHVETPEEREETTAIQTVADGLKKQEEEMDFRSG
SPSDNSGAEEMEVSLAKPKHRVTMNEFEYLKLLGKG
TFGKVLVKEKATGRYYAMKILKKEVIVAKDEVAHTLT
ENRVLQNSRHPFLTALKYSFQTHDRLCFVMEYANGG
ELFFHLSRERVFSEDRARFYGAEIVSALDYHSEKNV
VYRDLKLENLMLDKDGHKIDDFGLCKEGIKDGATMKT
FCGTPEYLAPEVLEDNDYGRAVDWWGLGVVYEMM
CGRLPFYNQDHEKLFELILMEEIRFPRTLGPPEAKSLLS
GLLKKDPKQRLGGGSEDAKEIMQHRFFAGIVWQHVV
EKKLSPPFKPQVTSETDTRYFDEEFTAQMITITPPDQD
DSMECVDSERRPHFPQFSYSASGTA

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. Altomare, D.A., and Testa, J.R., Perturbations of the AKT signaling pathway in human cancer. *Oncogene*, **24(50)**, 7455-7464 (2005).
4. Cicens, J., The potential role of Akt phosphorylation in human cancers. *Int. J. Biol. Markers*, **23(1)**, 1-9 (2008).
5. 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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