

Product Information

SGK1 (δ1-60, S422D), active, human recombinant, expressed in Sf9 cells

Catalog Number **S8939**

Storage Temperature -70°C

Product Description

SGK1 (δ1-60, S422D), active, is a histidine-tagged fusion protein produced from a cDNA sequence encoding human SGK1 truncated at the amino terminus due to the deletion of amino acid residues 1-60, and that contains a S422D substitution. It is expressed in Sf9 insect cells and purified by affinity chromatography on Ni-NTA agarose. The enzyme is activated with PDK1 and repurified by affinity chromatography on heparin agarose. The molecular mass of SGK1 (δ1-60, S422D) is ~48 kDa by SDS-PAGE. SGK1 (δ1-60, S422D) is an active enzyme that is suitable for use in kinase assays.

Serum- and glucocorticoid-induced kinases (SGKs) belong to a family of serine/threonine kinases regulated through extracellular signals, including insulin-like growth factor-1 (IGF-1).¹ SGK is closely related to the PKB/Akt serine/threonine kinase that is activated by growth and survival factors, and that plays a critical role cellular survival.² The activation of SGK is regulated by the phosphorylation of Thr²⁵⁶ and Ser⁴²². Ser⁴²², located in the hydrophobic motif of the carboxyl-terminal domain, is phosphorylated first in a phosphatidylinositol 3-phosphate (PIP₃)-dependent manner by PDK2. This allows SGK to be activated by the PIP₃-independent phosphorylation of the T-loop site, Thr²⁵⁶, by PDK1.^{1,3}

The SGK1 (δ1-60, S422D) has been used to study the role of Ser⁴²² phosphorylation in the activation of SGK1. Replacing the Ser⁴²² with Asp mimics the effect of phosphorylation at that residue.¹

SGK1 (δ1-60, S422D), active, is supplied as a solution in 50 mM Tris-HCl buffer, pH 7.5, containing 0.1 mM EGTA, 0.1% 2-mercaptoethanol, 0.15 M NaCl, 0.02% Brij® L23, and 270 mM sucrose.

Purity: ~95% (SDS-PAGE)

One unit of SGK1 activity is equal to 1 nmole of phosphate incorporated into the Crosstide substrate peptide per minute at 30 °C.

Precautions and Disclaimer

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

Storage/Stability

SGK1 (δ1-60, S422D), active, remains active for six months if stored at -70°C . Centrifuge the original vial after thawing and prior to removing the cap for maximum recovery of the product. Avoid repeated freeze-thaw cycles. Do not store in a frost-free freezer.

References

1. Kobayashi, T., and Cohen, P., Activation of serum- and glucocorticoid-regulated protein kinase by agonists that activate phosphatidylinositol 3-kinase is mediated by 3-phosphoinositide-dependent protein kinase-1 (PDK1) and PDK2. *Biochem. J.*, **339**, 319, (1999).
2. Brunet, A. et al., Protein kinase SGK mediates survival signals by phosphorylating the forkhead transcription factor FKHL1 (FOXO3a). *Mol. Cell. Biol.*, **21**, 952-965 (2001).
3. Biondi, R.M. et al., The PIF-binding pocket in PDK1 is essential for activation of S6K and SGK, but not PKB. *EMBO J.*, **20**, 4380-4390 (2001)

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