



Recombinant Human Active SGK-2 Kinase

PRODUCT ANALYSIS SHEET

Catalog Number:	PHO3294
Lot Number:	22156-04S
Quantity:	5 µg
Concentration:	0.1 mg/mL
Molecular Weight:	~79 kDa (migrates aberrantly on SDS-PAGE gel)
Purity:	>80%, as determined by SDS PAGE analysis.
Biological Activity:	~310 U/mg. One unit of SGK-2 activity is equal to 1 nmol of phosphate transferred to Akt substrate peptide (RPRAATF) per minute at 30°C with a final ATP concentration of 50 µM. Kinase activity may vary depending on the substrate and reaction conditions. The optimal concentration should be determined for each specific application.
Description:	SGK-2 (Serum and Glucocorticoid-induced Kinase 2), a serine/threonine protein kinase, is a member of the SGK family of proteins. SGK family members function as part of signaling modules that also include PI3-K. In response to insulin and insulin-like growth factor, activated PI3-K produces PtdIns(3,4,5)P3 or PtdIns(3,4)P2 which activate and recruit PDK1 to the plasma membrane. Activated PDK1 in turn activates SGK family members. SGK proteins regulate ion channels and Na ⁺ /K ⁺ ATPase. The role of SGK-2 in hypertension and diabetic nephrology is currently under investigation.
Formulation:	0.1 mg/mL in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 0.25 mM DTT, 0.1 mM EGTA, 30% glycerol. Carrier-free.
Production:	Recombinant Human SGK-2 (amino acids 2-464) is produced in Sf9 cells as a glutathione-S-transferase (GST) fusion protein and is purified via affinity chromatography.
Handling Recommendation:	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom.
Storage:	Store at -70°C. This protein is sensitive to temperature and therefore should be used immediately upon thawing. For maximal stability, apportion the undiluted recombinant protein into working aliquots and store at -70°C. Avoid repeated freeze/thaw cycles.
References:	<p>Lang, F. and P. Cohen (2001) Regulation and physiological roles of serum- and glucocorticoid-induced protein kinase isoforms. <i>Sci. STKE</i> 13(108):RE17. Review.</p> <p>Kobayashi, T., M. Deak, N. Morrice, and P. Cohen (1999) Characterization of the structure and regulation of two novel isoforms of serum- and glucocorticoid-induced protein kinase. <i>Biochem. J.</i> 344:189-197.</p>

This product is for research use only. Not for use in diagnostic procedures.

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Manufactured under ISO 13485 Quality Standard

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PI PHO329

(Rev 1.0) (DCC-08-1232)

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Henke, G., I. Setiawan, C. Bohmer, and F. Lang (2002) Activation of Na⁺/K⁺-ATPase by the serum and glucocorticoid-dependent kinase isoforms. *Kidney Blood Press. Res.* 25(6):370-374.

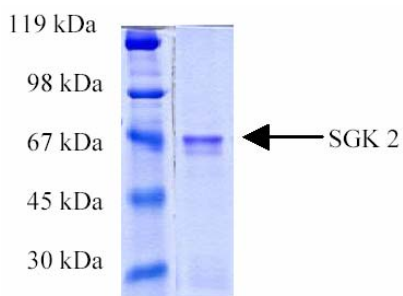
References (cont'd):

Friedrich, B., Y. Feng, P. Cohen, T. Risler, A. Vandewalle, S. Broer, J. Wang, D. Pearce, and F. Lang (2003) The serine/threonine kinases SGK2 and SGK3 are potent stimulators of the epithelial Na⁺ channel α , β , γ -ENaC. *Pflugers Arch.* 445(6):693-696.

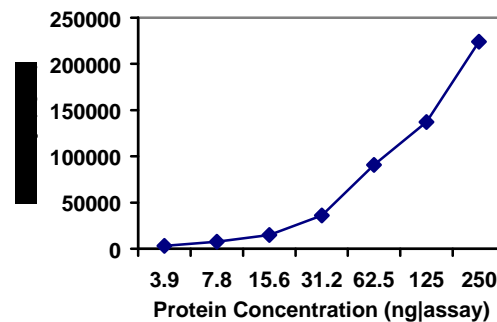
Tong, Q., R.E. Booth, R.T. Worrell, and J.D. Stockand (2004) Regulation of Na⁺ transport by aldosterone: signaling convergence and cross talk between the PI3-K and MAPK1/2 cascades. *Am. J. Physiol. Renal Physiol.* 286(6):F1232-F1238.

Palmada, M., H.M. Embark, A.W. Wyatt, C. Bohmer, and F. Lang (2003) Negative charge at the consensus sequence for the serum- and glucocorticoid-inducible kinase, SGK1, determines pH sensitivity of the renal outer medullary K⁺ channel, ROMK1. *Biochem. Biophys. Res. Commun.* 307(4):967-972.

Lang, F., G. Henke, H.M. Embark, S. Waldegger, M. Palmada, C. Bohmer, and V. Vallon (2003) Regulation of channels by the serum and glucocorticoid-inducible kinase - implications for transport, excitability and cell proliferation. *Cell Physiol. Biochem.* 13(1):41-50.



Purity Analysis



SGK-2 Activity Assay. Varying amounts of recombinant SGK-2 were incubated with 50 μ M [³²P]- γ -ATP and Akt substrate peptide in an *in vitro* kinase reaction. Activity is calculated based on the amount of ³²P incorporated into substrate peptide.

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