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ProductInformation

Anti-SGK (Serum and Glucocorticoid-Inducible Kinase)
Developed in Rabbit
IgG Fraction of Antiserum

Product Number **S 5188**

Product Description

Anti-SGK (Serum and Glucocorticoid-Inducible Kinase) is developed in rabbit using a synthetic peptide corresponding to the C-terminus of human SGK (amino acids 412-431) conjugated to KLH as immunogen. This sequence is highly conserved in rat, mouse, and rabbit SGK (single amino acid substitution) and to a less extent in the human SGK2 isoform (66%). Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-SGK (Serum and Glucocorticoid-Inducible Kinase) recognizes human SGK (50 kDa, appearing as a doublet). Applications include the detection and localization of SGK by immunoblotting and immunofluorescence. Staining of SGK in immunoblotting is specifically inhibited with SGK immunizing peptide (human, amino acids 412-431).

SGK (serum and glucocorticoid-regulated protein kinase) is a 50 kDa, transcriptionally regulated, serine/threonine protein kinase involved in cell signaling events that are associated with the control of cell growth and differentiation.[1-4] SGK displays similarity (45-55% sequence identity) to the catalytic domain of other serine/threonine protein kinases, including PKB/Akt, PKCα, p70/p85 S6 kinases and cAMP-dependent protein kinase A.[1]

Glucocorticoids and serum transcriptionally regulate the *sgk* gene. The *sgk* promoter contains a functional glucocorticoid response element that accounts for its glucocorticoid inducibility.[1, 5] SGK levels are strongly altered in response to osmotic changes.[3] SGK transcription in hepatoma cells HepG2, is rapidly induced by cell shrinkage, and is reduced upon cell swelling, suggesting that SGK is a functional link between the cell hydration state and metabolic control.

SGK is strongly and rapidly stimulated in kidney cells in response to aldosterone, and stimulates epithelial Na^+ channels, suggesting a central role of SGK in the regulation of sodium transport and homeostasis.[6, 7] SGK transcription is markedly increased in diabetic nephropathy, in response to excessive extracellular glucose concentrations and in response to TGF-β1.[8, 9] The cellular localization of SGK is also under stringent hormonal and cell cycle control, regulated under conditions in which cells are growth-arrested by glucocorticoids or actively proliferating in the presence of serum.[10] In rat mammary tumor cells, arrested in the G_1 by treatment with dexamethasone, SGK is localized to the perinuclear or cytoplasmic compartment as a hypophosphorylated protein. In serum-stimulated cells, SGK is transiently hyperphosphorylated and translocates to the nucleus. The shuttling of SGK between the nucleus in S and G_2M, and the cytoplasm in G_1, has been suggested as a requirement for cell cycle progression. SGK has been identified as a component of the PI3-kinase signaling pathway.[11, 12] In response to insulin, IGF, or hydrogen peroxide; SGK is activated by phosphorylation of SGK at Thr^{256} and Ser^{422}, via a PI3-kinase dependent pathway involving PDK. Activation of SGK is initiated by PI3-kinase-dependent activation of PDK2 which phosphorylates SGK at Ser^{422}, followed by PI3-kinase-independent, PDK1-catalysed phosphorylation at Thr^{256}, which activates SGK.[12]

Reagent

Anti-SGK (Serum and Glucocorticoid-Inducible Kinase) is supplied in a solution of 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability
For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile
A minimum working dilution of 1:2,000 is determined by immunoblotting using a whole extract of the human epidermal carcinoma A431 cell line.

A minimum working dilution of 1:2,000 is determined by immunofluorescence using a human epidermal carcinoma A431 cell line.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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