

**Anti-Human SGK-1 (Rabbit)**  
**SKG-1 Antibody**  
**Catalog # ASR4403**

**Specification**

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**Anti-Human SGK-1 (Rabbit) - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human
Clonality	Polyclonal
Application	WB, IHC, E, I, LCI
Application Note	SKG-1 Antibody has been tested for use in ELISA, immunohistochemistry and western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band at ~49 kDa in size corresponding to SGK-1 by western blotting in the appropriate cell lysate or extract.
Physical State	Liquid (sterile filtered)
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Immunogen	SKG-1 Antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to a C-Terminal region near amino acids 400-431 of human SGK-1.
Preservative	0.01% (w/v) Sodium Azide

**Anti-Human SGK-1 (Rabbit) - Additional Information**

**Gene ID** 6446

**Other Names**  
6446

**Purity**

Anti-SKG-1 Antibody is directed against human SGK-1 protein. The product was protein A purified from monospecific antiserum. A BLAST analysis was used to suggest reactivity with this protein from human, macaque and chimpanzee sources based on 100% homology for the immunogen sequence. This antibody is expected to cross react with SGK-1 homologues from mouse, rat, dog, chicken, bovine, rabbit and spiny dogfish based on an 92% sequence homology for the immunogen (12/13) from these sources. Cross reactivity with SGK-1 homologues from other sources has not been determined.

**Storage Condition**

Store SKG-1 Antibody at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an

undiluted liquid. Dilute only prior to immediate use.

### Precautions Note

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-Human SGK-1 (Rabbit) - Protein Information

**Name** SGK1

**Synonyms** SGK

### Function

Serine/threonine-protein kinase which is involved in the regulation of a wide variety of ion channels, membrane transporters, cellular enzymes, transcription factors, neuronal excitability, cell growth, proliferation, survival, migration and apoptosis. Plays an important role in cellular stress response. Contributes to regulation of renal Na(+) retention, renal K(+) elimination, salt appetite, gastric acid secretion, intestinal Na(+)/H(+) exchange and nutrient transport, insulin-dependent salt sensitivity of blood pressure, salt sensitivity of peripheral glucose uptake, cardiac repolarization and memory consolidation. Up-regulates Na(+) channels: SCNN1A/ENAC, SCN5A and ASIC1/ACCN2, K(+) channels: KCNJ1/ROMK1, KCNA1-5, KCNQ1-5 and KCNE1, epithelial Ca(2+) channels: TRPV5 and TRPV6, chloride channels: BSND, CLCN2 and CFTR, glutamate transporters: SLC1A3/EAAT1, SLC1A2 /EAAT2, SLC1A1/EAAT3, SLC1A6/EAAT4 and SLC1A7/EAAT5, amino acid transporters: SLC1A5/ASCT2, SLC38A1/SN1 and SLC6A19, creatine transporter: SLC6A8, Na(+)/dicarboxylate cotransporter: SLC13A2/NADC1, Na(+)-dependent phosphate cotransporter: SLC34A2/NAPI-2B, glutamate receptor: GRIK2/GLUR6. Up-regulates carriers: SLC9A3/NHE3, SLC12A1/NKCC2, SLC12A3/NCC, SLC5A3/SMIT, SLC2A1/GLUT1, SLC5A1/SGLT1 and SLC15A2/PEPT2. Regulates enzymes: GSK3A/B, PMM2 and Na(+)/K(+) ATPase, and transcription factors: CTNNB1 and nuclear factor NF-kappa-B. Stimulates sodium transport into epithelial cells by enhancing the stability and expression of SCNN1A/ENAC. This is achieved by phosphorylating the NEDD4L ubiquitin E3 ligase, promoting its interaction with 14-3-3 proteins, thereby preventing it from binding to SCNN1A/ENAC and targeting it for degradation. Regulates store-operated Ca(+2) entry (SOCE) by stimulating ORA1 and STIM1. Regulates KCNJ1/ROMK1 directly via its phosphorylation or indirectly via increased interaction with SLC9A3R2/NHERF2. Phosphorylates MDM2 and activates MDM2-dependent ubiquitination of p53/TP53. Phosphorylates MAPT/TAU and mediates microtubule depolymerization and neurite formation in hippocampal neurons. Phosphorylates SLC2A4/GLUT4 and up-regulates its activity. Phosphorylates APBB1/FE65 and promotes its localization to the nucleus. Phosphorylates MAPK1/ERK2 and activates it by enhancing its interaction with MAP2K1/MEK1 and MAP2K2/MEK2. Phosphorylates FBXW7 and plays an inhibitory role in the NOTCH1 signaling. Phosphorylates FOXO1 resulting in its relocalization from the nucleus to the cytoplasm. Phosphorylates FOXO3, promoting its exit from the nucleus and interference with FOXO3-dependent transcription. Phosphorylates BRAF and MAP3K3/MEKK3 and inhibits their activity. Phosphorylates SLC9A3/NHE3 in response to dexamethasone, resulting in its activation and increased localization at the cell membrane. Phosphorylates CREB1. Necessary for vascular remodeling during angiogenesis. Sustained high levels and activity may contribute to conditions such as hypertension and diabetic nephropathy. Isoform 2 exhibited a greater effect on cell plasma membrane expression of SCNN1A/ENAC and Na(+) transport than isoform 1.

### Cellular Location

Cytoplasm. Nucleus. Endoplasmic reticulum membrane. Cell membrane. Mitochondrion. Note=The subcellular localization is controlled by the cell cycle, as well as by exposure to specific hormones and environmental stress stimuli. In proliferating cells, it shuttles between the nucleus and cytoplasm in synchrony with the cell cycle, and in serum/growth factor-stimulated cells it resides in the nucleus. In contrast, after exposure to environmental stress or treatment with glucocorticoids, it is detected in the cytoplasm and with certain stress conditions is associated with the mitochondria. In osmoregulation through the epithelial sodium channel, it can be localized to

the cytoplasmic surface of the cell membrane. Nuclear, upon phosphorylation

#### **Tissue Location**

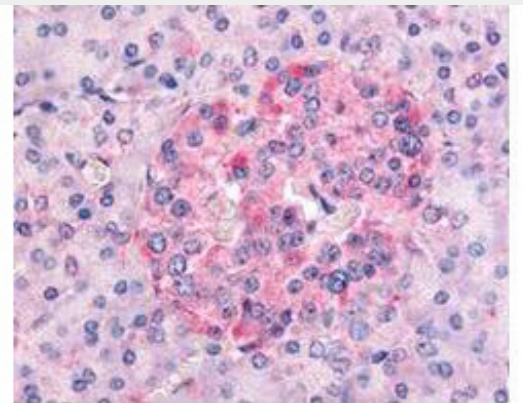
Expressed in most tissues with highest levels in the pancreas, followed by placenta, kidney and lung. Isoform 2 is strongly expressed in brain and pancreas, weaker in heart, placenta, lung, liver and skeletal muscle.

#### **Anti-Human SGK-1 (Rabbit) - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **Anti-Human SGK-1 (Rabbit) - Images**



Rockland's Affinity Purified anti-SGK-1 antibody was used at a 15 µg/ml to detect nuclear and cytoplasmic signal in a variety of tissues including adrenal, heart, liver, ovary, pancreas, placenta, skin, spleen, testes, thyroid and uterus. Low to moderate levels of background staining were noted. This image shows SGK-1 staining of human pancreas. Tissue was formalin-fixed and paraffin embedded. Personal Communication, Tina Roush, LifeSpanBiosciences, Seattle, WA.

#### **Anti-Human SGK-1 (Rabbit) - Background**

SGK-1 (also called Serine/threonine-protein kinase Sgk1 and Serum/glucocorticoid-regulated kinase 1) is a protein kinase that plays an important role in cellular stress response. SGK1 activates certain potassium, sodium, and chloride channels, suggesting an involvement in the regulation of processes such as cell survival, neuronal excitability, and renal sodium excretion. Sustained high levels and activity may contribute to conditions such as hypertension and diabetic nephropathy. This kinase mediates cell survival signals, phosphorylates and negatively regulates pro-apoptotic FOXO3A and phosphorylates NEDD4L, which leads to its inactivation and to the subsequent activation of various channels and transporters such as ENaC, Kv1.3, or EAAT1. SGK1 is localized to the cytoplasm and upon phosphorylation is translocated to the nucleus. The kinase is expressed in most tissues with highest levels in the pancreas, followed by placenta, kidney and lung. Induction occurs upon exposure to glucocorticoids and by excessive extracellular glucose or TGF-beta, in

cultured cells. SGK-1 is regulated by phosphorylation. Phosphoinositide 3-kinase (PI3-kinase) pathway promotes phosphorylation at Ser-422 which in turn increases the phosphorylation of Thr-256 by PDK1. The kinase is ubiquitinated by NEDD4L; which promotes proteasomal degradation.