10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SIK1 Rabbit pAb

Catalog # AP98725

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	P57059
Other Accession	P57059
Reactivity	Rat, Human, Mouse
Predicted	Dog, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	84902
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Snf1lk
Epitope Specificity	51-150/783
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the protein kinase superfamily. CAMK Ser/Thr protein kinase family. AMPK subfamily. Contains 1 protein kinase domain. Contains 1 UBA domain.
SUBUNIT	Interacts with ATP1A1 (By similarity). Interacts (when phosphorylated on Thr-182 and Ser-186) with YWHAZ.
Post-translational modifications	Phosphorylated at Thr-182 by STK11/LKB1 in complex withSTE20-related adapter-alpha (STRADA) pseudo kinase and CAB39,leading to its activation. Phosphorylation at Thr-182 promotesautophosphorylation at Ser-186, which is required for sustainedactivity. Autophosphorylation at Ser-186 is maintained bysequential phosphorylation at Thr-182 by GSK3-beta. GSK3-betacannot initiate phosphorylation at Thr-182, it can only maintainit. Phosphorylation at Ser-575 by PKA promotes translocation to thecytoplasm. Phosphorylation at Thr-322 by CaMK1 followingintracellular sodium concentration leads to activation.Phosphorylated upon DNA damage, probably by ATM or ATR.
DISEASE	Note=Defects in SIK1 may be associated with some cancers,such as breast cancers. Loss of SIK1 correlates with poor patientoutcome in breast cancers (PubMed:19622832).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Transient role during the earliest stages of myocardial cell differentiation and/or primitive chamber formation and may also be important for the earliest stages of skeletal muscle growth and/or differentiation. Potential role in G2/M cell cycle regulation. Inhibits CREB activity by phosphorylating and repressing the CREB-specific coactivators, CRTC1-3.

Additional Information

Gene ID	102724428;150094

Other Names	DEE30; MSK; SIK; SIK-1; SIK1B; SNF1LK; Hrt-20; SIK1_HUMAN; SIK1; Salt-inducible kinase 1 (SIK-1); Serine/threonine-protein kinase SNF1-like kinase 1 (Serine/threonine-protein kinase SNF1LK); 2.7.11.1; SIK1_MOUSE; Myocardial SNF1-like kinase; SIK1_RAT; Protein kinase KID2; Kid2; salt inducible kinase 1; SNF1-like kinase
Dilution	IHC-P=1:400-800,IHC-F=1:400-800,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	SIK1
Synonyms	SIK, SNF1LK
Function	Serine/threonine-protein kinase involved in various processes such as cell cycle regulation, gluconeogenesis and lipogenesis regulation, muscle growth and differentiation and tumor suppression. Phosphorylates HDAC4, HDAC5, PPME1, SREBF1, CRTC1/TORC1. Inhibits CREB activity by phosphorylating and inhibiting activity of TORCs, the CREB- specific coactivators, like CRTC2/TORC2 and CRTC3/TORC3 in response to cAMP signaling (PubMed:29211348). Acts as a tumor suppressor and plays a key role in p53/TP53-dependent anoikis, a type of apoptosis triggered by cell detachment: required for phosphorylation of p53/TP53 in response to loss of adhesion and is able to suppress metastasis. Part of a sodium-sensing signaling network, probably by mediating phosphorylation of PPME1: following increases in intracellular sodium, SIK1 is activated by CaMK1 and phosphorylates PPME1 subunit of protein phosphatase 2A (PP2A), leading to dephosphorylation of sodium/potassium-transporting ATPase ATP1A1 and subsequent increase activity of ATP1A1. Acts as a regulator of muscle cells by phosphorylating and inhibiting class II histone deacetylases HDAC4 and HDAC5, leading to promote expression of MEF2 target genes in myocytes. Also required during cardiomyogenesis by regulating the exit of cardiomyoblasts from the cell cycle via down-regulation of CDKN1C/p57Kip2. Acts as a regulator of hepatic gluconeogenesis by phosphorylating and repressing the CREB-specific coactivators CRTC1/TORC1 and CRTC2/TORC2, leading to inhibit CREB activity. Also regulates hepatic lipogenesis by phosphorylating and inhibiting SREBF1. In concert with CRTC1/TORC1, regulates the light-induced entrainment of the circadian clock by attenuating PER1 induction; represses CREB- mediated transcription of PER1 by phosphorylating and deactivating CRTC1/TORC1 (By similarity).
Cellular Location	Cytoplasm. Nucleus. Note=Locates to cytoplasm when inactive following cAMP-induced phosphorylation, probably by PKA (PubMed:29211348)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.