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SIK1 Antibody

Catalog # ASC11320

Product Information

Application	WB, E, IHC-P
Primary Accession	P57059
Other Accession	NP_775490, 116256471
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	84902
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SIK1 antibody can be used for detection of SIK1 by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL.

Additional Information

Gene ID	102724428;150094
Other Names	Serine/threonine-protein kinase SIK1, 2.7.11.1, Salt-inducible kinase 1, SIK-1, Serine/threonine-protein kinase SNF1-like kinase 1, Serine/threonine-protein kinase SNF1LK, SIK1, SIK, SNF1LK
Target/Specificity	SIK1; Two isoforms of SIK1 are known to exist; this antibody will detect both isoforms. SIK1 antibody is predicted to not cross-react with other SIK protein family members.
Reconstitution & Storage	SIK1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	SIK1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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)

Background

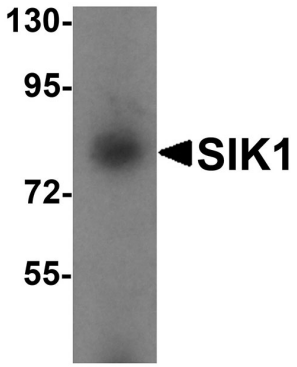
SIK1 Antibody: Salt-inducible kinase 1 (SIK1), also known as SNF1LK or MSK, plays a role in histone modification and G2/M cell cycle regulation. It is a 783 amino acid protein that contains one UBA domain and belongs to the Ser/Thr protein kinase family (AMPK subfamily). Localized to both the nucleus and the cytoplasm, SIK1 is a class II HDAC kinase that uses magnesium as a cofactor to catalyze the ATP-dependent phosphorylation of target proteins and is thought to be important for the early stages of skeletal muscle growth and myocardial cell differentiation.

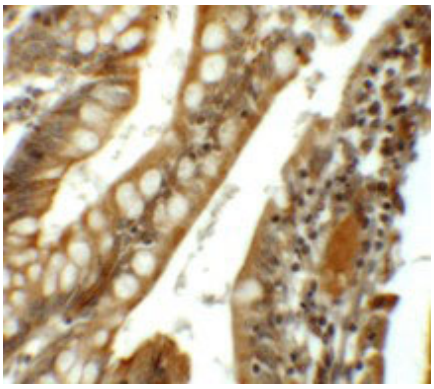
References

Stephenson A, Huang GY, Nguyen NT, et al. SNF1LK encodes a protein kinase that may function in cell cycle regulation. Genomics 2004; 83:1105-15
Ruiz JC, Conlon FL, and Robertson EJ. Identification of novel protein kinases expressed in the myocardium of the developing mouse heart. Mech. Dev. 1994; 48:153-64
Lizcano JM, Goransson O, Toth R, et al. LKB1 is a master kinase that activates 13 kinases of the AMPK subfamily, including MARK/PAR-1. EMBO J. 2004; 23:833-43.
Sj □str □m M, Senstrom K, Eneling K, et al. SIK1 is part of a cell sodium-sensing network that regulates active sodium transport through a calcium-dependent process. Proc. Natl. Acad. Sci. USA 2007; 104:16922-7.

Images

Western blot analysis of SIK1 in human small intestine tissue lysate with SIK1 antibody at 1 µg/mL.





Immunohistochemistry of SIK1 in human small intestine tissue with SIK1 antibody at 5 µg/mL.