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SPAK (STK39) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1448b

Product Information

Application	IHC-P, WB, E
Primary Accession	Q9UEW8
Other Accession	O88506
Reactivity	Human, Rat, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	59474
Antigen Region	386-415

Additional Information

Gene ID	27347
Other Names	STE20/SPS1-related proline-alanine-rich protein kinase, Ste-20-related kinase, DCHT, Serine/threonine-protein kinase 39, STK39, SPAK
Target/Specificity	This SPAK (STK39) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 386-415 amino acids from the C-terminal region of human SPAK (STK39).
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SPAK (STK39) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	STK39
Function	Effector serine/threonine-protein kinase component of the WNK-SPAK/OSR1 kinase cascade, which is involved in various processes, such as ion transport, response to hypertonic stress and blood pressure (PubMed:16669787,

PubMed:18270262, PubMed:21321328, PubMed:34289367). Specifically recognizes and binds proteins with a RFXV motif (PubMed:16669787, PubMed:21321328). Acts downstream of WNK kinases (WNK1, WNK2, WNK3 or WNK4): following activation by WNK kinases, catalyzes phosphorylation of ion cotransporters, such as SLC12A1/NKCC2, SLC12A2/NKCC1, SLC12A3/NCC, SLC12A5/KCC2 or SLC12A6/KCC3, regulating their activity (PubMed:21321328). Mediates regulatory volume increase in response to hyperosmotic stress by catalyzing phosphorylation of ion cotransporters SLC12A1/NKCC2, SLC12A2/NKCC1 and SLC12A6/KCC3 downstream of WNK1 and WNK3 kinases (PubMed:12740379, PubMed:16669787, PubMed:21321328). Phosphorylation of Na-K-Cl cotransporters SLC12A2/NKCC1 and SLC12A2/NKCC1 promote their activation and ion influx; simultaneously, phosphorylation of K-Cl cotransporters SLC12A5/KCC2 and SLC12A6/KCC3 inhibit their activity, blocking ion efflux (PubMed:16669787, PubMed:19665974, PubMed:21321328). Acts as a regulator of NaCl reabsorption in the distal nephron by mediating phosphorylation and activation of the thiazide-sensitive Na-Cl cotransporter SLC12A3/NCC in distal convoluted tubule cells of kidney downstream of WNK4 (PubMed:18270262). Mediates the inhibition of SLC4A4, SLC26A6 as well as CFTR activities (By similarity). Phosphorylates RELT (By similarity).

Cellular Location Cytoplasm. Nucleus. Note=Nucleus when caspase-cleaved.

Tissue Location Predominantly expressed in brain and pancreas followed by heart, lung, kidney, skeletal muscle, liver, placenta and testis.

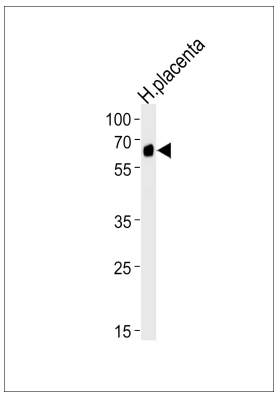
Background

STK39 is a serine/threonine kinase that is thought to function in the cellular stress response pathway. The kinase is activated in response to hypotonic stress, leading to phosphorylation of several cation-chloride-coupled cotransporters. The catalytically active kinase specifically activates the p38 MAP kinase pathway, and its interaction with p38 decreases upon cellular stress, suggesting that this kinase may serve as an intermediate in the response to cellular stress.

References

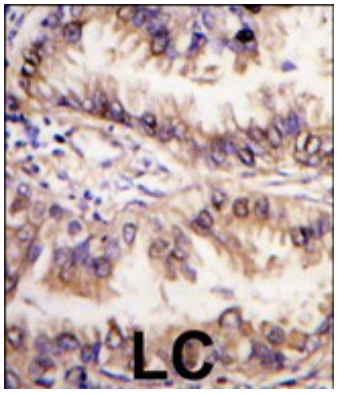
Dowd, B.F., et al., J. Biol. Chem. 278(30):27347-27353 (2003).
Johnston, A.M., et al., Oncogene 19(37):4290-4297 (2000).

Images



STK39 Antibody (C-term) (Cat. #AP1448b) western blot analysis in human placenta tissue lysates (35ug/lane).This demonstrates the STK39 antibody detected the STK39 protein (arrow).

Formalin-fixed and paraffin-embedded human lung carcinoma tissue reacted with STK39 antibody



(C-term)(Cat.#AP1448b), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

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