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Goat Anti-STK39 / SPAK Antibody
Peptide-affinity purified goat antibody
Catalog # AF2042a

Specification

Goat Anti-STK39 / SPAK Antibody - Product Information

Application	**WB, Pep-ELISA**
Primary Accession	Q9UEW8
Other Accession	NP_037365, 27347, 53416 (mouse), 54348 (rat)
Reactivity	**Human, Mouse, Rat**
Predicted	**Dog**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**0.5mg/ml**
Isotype	**IgG**
Calculated MW	**59474**

Goat Anti-STK39 / SPAK Antibody - Additional Information

Gene ID 27347

Other Names
STE20/SPS1-related proline-alanine-rich protein kinase, Ste-20-related kinase, 2.7.11.1, DCHT, Serine/threonine-protein kinase 39, STK39, SPAK

Dilution
WB~~1:1000
Pep-ELISA~~N/A

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-STK39 / SPAK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-STK39 / SPAK Antibody - 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.

Goat Anti-STK39 / SPAK Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-STK39 / SPAK Antibody - Images

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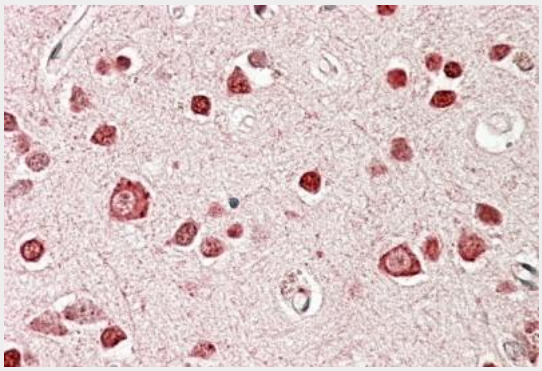
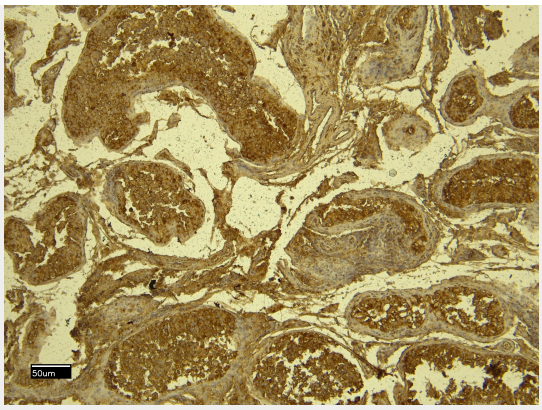
AF2042a (0.5 µg/ml) staining of Jurkat lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

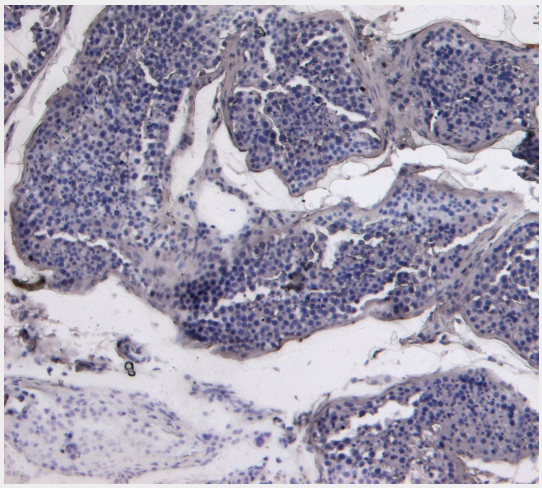


AF2042a (3.8 µg/ml) staining of paraffin embedded Human Cerebral Cortex. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.

EB09416 (0.3µg/ml) staining of Human Cerebellum lysate (35µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.



EB09416 (6µg/ml) staining of paraffin embedded Human Testis. Heat induced antigen retrieval with citrate buffer pH 6, HRP-staining.



EB09416 Negative Control showing staining of paraffin embedded Human Testis, with no primary antibody.

Goat Anti-STK39 / SPAK Antibody - Background

This gene encodes 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.

Goat Anti-STK39 / SPAK Antibody - References

Lack of association between polymorphisms in STK39, a putative thiazide response gene, and blood pressure response to hydrochlorothiazide. Duarte JD, et al. Pharmacogenet Genomics, 2010 Aug. PMID 20555294.
Personalized smoking cessation: interactions between nicotine dose, dependence and quit-success genotype score. Rose JE, et al. Mol Med, 2010 Jul-Aug. PMID 20379614.
STK39 polymorphisms and blood pressure: an association study in British Caucasians and assessment of cis-acting influences on gene expression. Cunnington MS, et al. BMC Med Genet, 2009 Dec 14. PMID 20003416.
Epigenetic silencing of Stk39 in B-cell lymphoma inhibits apoptosis from genotoxic stress. Balatoni CE, et al. Am J Pathol, 2009 Oct. PMID 19717643.
Renal and brain isoforms of WNK3 have opposite effects on NCCT expression. Glover M, et al. J Am

Soc Nephrol, 2009 Jun. PMID 19470686.