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Stk39 Antibody
Catalog # ASC10791

Specification

Stk39 Antibody - Product Information

Application	**WB, IHC-P, E**
Primary Accession	Q9UEW8
Other Accession	NP_037365, 115430252
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**Stk39 antibody can be used for detection of Stk39 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 2.5 µg/mL.**

Stk39 Antibody - Additional Information

Gene ID	**27347**

Target/Specificity
STK39;

Reconstitution & Storage
Stk39 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
Stk39 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Stk39 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.

Stk39 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

Stk39 Antibody - Images

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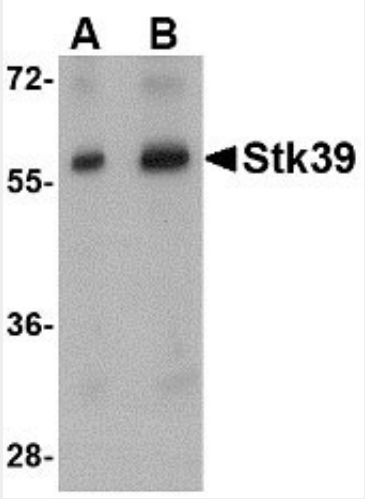
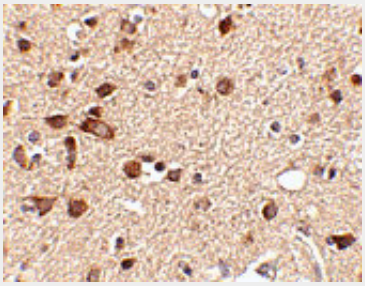


Western blot analysis of Stk39 in rat brain tissue lysate with Stk39 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of Stk39 in human brain tissue with Stk39 antibody at 2.5 µg/mL.

Stk39 Antibody - Background

Stk39 Antibody: The serine/threonine kinase Stk39 belongs to the STE20 family, a group of kinases that are known to interact with inflammation-related kinases (such as p38, JNK, NKCC1, PKC-theta, WNK and MLCK), and with transcription factor AP-1. The STE 20 family is involved in diverse biological phenomena, including cell differentiation, cell transformation/ proliferation, cytoskeleton rearrangement, and the regulation of ion transporters. STK39 contains an N-terminal series of proline and alanine repeats (PAPA box), followed by a serine/threonine kinase catalytic domain and is abundantly expressed in the brain. STK39 is activated in response to hypotonic stress, leading to phosphorylation of several cation-chloride-coupled co-transporters. 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. Recent studies show that STK39 tend to be a novel candidate gene for autism and hypertension.

Stk39 Antibody - References

Johnston AM, Nacelli G, Gonzales LJ, et al. SPAK, a STE20/SPS1-related kinase that activates the p38 pathway. Oncogene2000; 19:4290-7.
Li Y, Hu J, Vita R, et al. SPAK kinase is a substrate and target of PKCtheta in T-cell receptor-induced AP-1 activation pathway. EMBO J.2004; 23:1112-22.
Gagnon KB, England R, and Delpire E. Characterization of SPAK and OSR1, regulatory kinases of the Na-K-2Cl cotransporter. Mol. Cell Biol.2006; 26:689-98.
Dan I, Watanabe NM, and Kasumi A. The Ste20 group kinases as regulators of MAP kinase cascades. Trends Cell. Biol.2001; 11:220-30.