

SPAK Antibody (Center) Blocking Peptide
Synthetic peptide
Catalog # BP7968c**Specification**

SPAK Antibody (Center) Blocking Peptide - Product InformationPrimary Accession [Q9UEW8](#)**SPAK Antibody (Center) Blocking Peptide - 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

The synthetic peptide sequence used to generate the antibody [AP7968c](/product/products/AP7968c) was selected from the Center region of human SPAK. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

SPAK Antibody (Center) Blocking Peptide - 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](http://www.uniprot.org/citations/16669787), PubMed: [18270262](http://www.uniprot.org/citations/18270262), PubMed: [21321328](http://www.uniprot.org/citations/21321328), PubMed: [34289367](http://www.uniprot.org/citations/34289367)). Specifically recognizes and binds proteins with a RFXV motif (PubMed: [16669787](http://www.uniprot.org/citations/16669787), PubMed: [21321328](http://www.uniprot.org/citations/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.

SPAK Antibody (Center) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

SPAK Antibody (Center) Blocking Peptide - Images**SPAK Antibody (Center) Blocking Peptide - Background**

SPAK is a serine/threonine kinase containing an N-terminal series of proline and alanine repeats (PAPA box), followed by a serine/threonine kinase catalytic domain, a nuclear localization signal, a consensus caspase cleavage recognition motif, and a C-terminal region. Northern blot analysis detects ubiquitous expression, most abundantly in brain and pancreas. SPAK can phosphorylate itself and an exogenous substrate in vitro. SPAK immunoprecipitates from transfected mammalian cells in a complex with another serine/threonine kinase that phosphorylates catalytically inactive SPAK. SPAK activates the p38 MAP kinase pathway in cotransfection assays. Full-length SPAK is expressed in the cytoplasm in transfected cells, while a mutant corresponding to caspase-cleaved STK39 localizes predominantly in the nucleus.

SPAK Antibody (Center) Blocking Peptide - 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).