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SLC5A3 Antibody (Center) Blocking Peptide

Synthetic peptide
Catalog # BP19197c

Specification

SLC5A3 Antibody (Center) Blocking Peptide - Product Information

Primary Accession P53794

SLC5A3 Antibody (Center) Blocking Peptide - Additional Information

Gene ID 6526

Other Names
Sodium/myo-inositol cotransporter, Na(+)/myo-inositol cotransporter, Sodium/myo-inositol transporter 1, SMIT1, Solute carrier family 5 member 3, SLC5A3

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.

SLC5A3 Antibody (Center) Blocking Peptide - Protein Information

Name SLC5A3 (HGNC:11038)

Function
Electrogenic Na(+)-coupled sugar symporter that actively transports myo-inositol and its stereoisomer scyllo-inositol across the plasma membrane, with a Na(+) to sugar coupling ratio of 2:1 (By similarity). Maintains myo-inositol concentration gradient that defines cell volume and fluid balance during osmotic stress, in particular in the fetoplacental unit and central nervous system (By similarity). Forms coregulatory complexes with voltage-gated K(+) ion channels, allosterically altering ion selectivity, voltage dependence and gating kinetics of the channel. In turn, K(+) efflux through the channel forms a local electrical gradient that modulates electrogenic Na(+)-coupled myo-inositol influx through the transporter (PubMed:24595108, PubMed:28793216). Associates with KCNQ1-KCNE2 channel in the apical membrane of choroid plexus epithelium and regulates the myo-inositol gradient between blood and cerebrospinal fluid with an impact on neuron excitability (By similarity) (PubMed:24595108). Associates with KCNQ2- KCNQ3 channel altering ion selectivity, increasing Na(+) and Cs(+) permeation relative to K(+) permeation (PubMed:28793216). Provides myo- inositol precursor for biosynthesis of phosphoinositides such as PI(4,5)P2, thus indirectly

affecting the activity of phosphoinositide- dependent ion channels and Ca(2+) signaling upon osmotic stress (PubMed:27217553).

Cellular Location
Apical cell membrane {ECO:0000250|UniProtKB:Q9JKZ2}; Multi-pass membrane protein. Basolateral cell membrane {ECO:0000250|UniProtKB:Q9JKZ2}; Multi-pass membrane protein. Note=Colocalizes with KCNQ1 at the apical membrane of choroid plexus epithelium. {ECO:0000250|UniProtKB:Q9JKZ2}

SLC5A3 Antibody (Center) Blocking Peptide - Protocols

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

- Blocking Peptides

SLC5A3 Antibody (Center) Blocking Peptide - Images

SLC5A3 Antibody (Center) Blocking Peptide - Background

SLC5A3 prevents intracellular accumulation of high concentrations of myo-inositol (an osmolyte) that result in impairment of cellular function.

SLC5A3 Antibody (Center) Blocking Peptide - References

Kathiresan, S., et al. Nat. Genet. 41(3):334-341(2009)Lin, X., et al. Arch. Biochem. Biophys. 481(2):197-201(2009)Thangaraju, M., et al. Cancer Res. 66(24):11560-11564(2006)Rim, J.S., et al. J. Biol. Chem. 273(32):20615-20621(1998)Porcellati, F., et al. Am. J. Physiol. 274 (5 PT 1), C1215-C1225 (1998) :