

SMIT1 Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51521**Specification**

SMIT1 Antibody - Product Information

Application	WB, IHC-P, E
Primary Accession	P53794
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	80 KDa

SMIT1 Antibody - 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

Dilution

WB~~1:1000

IHC-P~~N/A

E~~N/A

Format

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

Storage

Store at -20 °C. Stable for 12 months from date of receipt

SMIT1 Antibody - 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}

SMIT1 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 Cytometry](#)
- [Cell Culture](#)

SMIT1 Antibody - Images

SMIT1 Antibody - Background

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

SMIT1 Antibody - References

Berry G.T.,et al.Genomics 25:507-513(1995).
Berry G.T.,et al.Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
Mallee J.J.,et al.Genomics 46:459-465(1997).
Hattori M.,et al.Nature 405:311-319(2000).