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# SMIT1 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51521

## Product Information

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| **Application** | WB, IHC-P |
| **Primary Accession** | P53794 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 79664 |

## Additional Information

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| **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 |
| **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 |

## Protein Information

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| **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 |

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| | 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} |

## Background

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

## 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).