

SLC46A1 Antibody (Center) Blocking Peptide
Synthetic peptide
Catalog # BP14994c

Specification

SLC46A1 Antibody (Center) Blocking Peptide - Product Information

Primary Accession [Q96NT5](#)

SLC46A1 Antibody (Center) Blocking Peptide - Additional Information

Gene ID 113235

Other Names

Proton-coupled folate transporter, G21, Heme carrier protein 1, PCFT/HCP1, Solute carrier family 46 member 1, SLC46A1, HCP1, PCFT

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.

SLC46A1 Antibody (Center) Blocking Peptide - Protein Information

Name SLC46A1 {ECO:0000303|PubMed:20686069, ECO:0000312|HGNC:HGNC:30521}

Function

Proton-coupled folate symporter that mediates folate absorption using an H(+) gradient as a driving force (PubMed:17129779, PubMed:17446347, PubMed:17475902, PubMed:19389703, PubMed:19762432, PubMed:25504888, PubMed:30858177, PubMed:31792273, PubMed:34619546, PubMed:29344585, PubMed:31494288, PubMed:32893190). Involved in the intestinal absorption of folates at the brush-border membrane of the proximal jejunum, and the transport from blood to cerebrospinal fluid across the choroid plexus (PubMed:17129779, PubMed:17446347).

target="_blank">>17446347, PubMed:>17475902, PubMed:>19389703, PubMed:>25504888, PubMed:>30858177, PubMed:>29344585, PubMed:>31494288, PubMed:>32893190). Functions at acidic pH via alternate outward- and inward-open conformation states (PubMed:>34040256, PubMed:>32893190). Protonation of residues in the outward open state primes the protein for transport (PubMed:>34040256). Binding of folate promotes breaking of salt bridge network and subsequent closure of the extracellular gate, leading to the inward- open state and release of protons and folate (PubMed:>34040256). Also able to transport antifolate drugs, such as methotrexate and pemetrexed, which are established treatments for cancer and autoimmune diseases (PubMed:>18524888, PubMed:>19762432, PubMed:>25608532, PubMed:>28802835, PubMed:>29326243, PubMed:>34619546, PubMed:>34040256, PubMed:>22345511). Involved in FOLR1-mediated endocytosis by serving as a route of export of folates from acidified endosomes (PubMed:>19074442). Also acts as a lower-affinity, pH-independent heme carrier protein and constitutes the main importer of heme in the intestine (PubMed:>17156779). Imports heme in the retina and retinal pigment epithelium, in neurons of the hippocampus, in hepatocytes and in the renal epithelial cells (PubMed:>32621820). Hence, participates in the trafficking of heme and increases intracellular iron content (PubMed:>32621820).

Cellular Location

Cell membrane; Multi-pass membrane protein. Apical cell membrane; Multi-pass membrane protein. Basolateral cell membrane; Multi-pass membrane protein. Endosome membrane; Multi-pass membrane protein. Cytoplasm {ECO:0000250|UniProtKB:Q6PEM8}. Note=Localizes to the apical membrane of intestinal cells in iron-deficient cells, while it resides in the cytoplasm in iron-replete cells (By similarity). Localizes to the basolateral membrane of choroid plexus (PubMed:19074442) {ECO:0000250|UniProtKB:Q6PEM8, ECO:0000269|PubMed:19074442}

Tissue Location

Expressed at highest level in the upper half of the small intestine (duodenum and jejunum), expression decreases downwardly in the subsequent quarter and is undetectable in the last quarter (the lowest ileum) (PubMed:17129779, PubMed:19762432). Also expressed in kidney, liver, placenta, spleen, retina and retinal pigment epithelium (PubMed:17129779, PubMed:17335806). Lower levels found in testis (PubMed:17129779). Very low levels in brain, lung, stomach, heart and muscle (PubMed:17129779).

SLC46A1 Antibody (Center) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

SLC46A1 Antibody (Center) Blocking Peptide - Images**SLC46A1 Antibody (Center) Blocking Peptide - Background**

This gene encodes a transmembrane proton-coupled folatetransporter protein that facilitates the movement of folate andantifolate substrates across cell membranes optimally in acidic pHenvironments. This protein is also expressed in the brain andchoroid plexus where it transports folates into the central nervoussystem. This protein further functions as a transmembrane hemetransporter in duodenal enterocytes and, potentially, in othertissues like liver and kidney. Its localization to the apicalmembrane or cytoplasm of intestinal cells is modulated by dietaryiron levels. Mutations in this gene cause the autosomal recessivehereditary folate malabsorption (HFM) disease. HFM is characterizedby folate deficiency due to reduced intestinal folate absorptionand subsequent anemia, hypoimmunoglobulinemia, and recurrentinfections.

SLC46A1 Antibody (Center) Blocking Peptide - References

Mahadeo, K., et al. Am. J. Physiol., Cell Physiol. 299 (5), C1153-C1161 (2010) :Gonen, N., et al. J. Biol. Chem. 285(44):33602-33613(2010)Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)Zhao, R., et al. Biochemistry 49(13):2925-2931(2010)Solanky, N., et al. Placenta 31(2):134-143(2010)