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SLC7A5 Antibody (N-Term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP22246a

Product Information

Application	WB, IF, E
Primary Accession	Q01650
Reactivity	Human
Host	Rabbit
Clonality	polyclonal
Isotype	Rabbit IgG
Clone Names	RB55305
Calculated MW	55010

Additional Information

Gene ID	8140
Other Names	Large neutral amino acids transporter small subunit 1, 4F2 light chain, 4F2 LC, 4F2LC, CD98 light chain, Integral membrane protein E16, L-type amino acid transporter 1, hLAT1, Solute carrier family 7 member 5, y+ system cationic amino acid transporter, SLC7A5, CD98LC, LAT1, MPE16
Target/Specificity	This SLC7A5 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 15-45 amino acids from human SLC7A5.
Dilution	WB~~1:2000 IF~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SLC7A5 Antibody (N-Term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SLC7A5
Function	Forms a heterodimer with SLC3A2 that functions as a sodium- independent transporter for large neutral amino acids (PubMed:9751058, PubMed:10049700, PubMed:11557028, PubMed:10574970,

	PubMed:11564694, PubMed:12117417, PubMed:12225859, PubMed:15769744, PubMed:18262359, PubMed:25998567, PubMed:30867591). Functions as an obligatory amino acid antiporter, mediating the exchange of amino acids and amino acid- related compounds across the plasma membrane (PubMed:11557028, PubMed:12117417, PubMed:12225859, PubMed:11847106, PubMed:17896864). Also mediates sodium-independent exchange of iodothyronines with neutral and aromatic L-alpha-amino acids (PubMed:11564694, PubMed:12225859). Mediates exchange of L-tryptophan with the tryptophan metabolites L-kynurenine and 3-hydroxy-L-kynurenine (PubMed:17896864). Mediates cellular uptake of iodothyronines, including thyroxine (T4), triiodothyronine (T3), reverse triiodothyronine (rT3) and 3,3'-diiodo- L-thyronine (3,3'-T2), and iodotyrosines including 3-iodo-L-tyrosine (MIT) and 3,5-diiodo-L-tyrosine (DIT) (PubMed:26305885, PubMed:38661522). Involved in the uptake of methylmercury (MeHg) when administered as L-cysteine or D,L-homocysteine complexes, thereby contributing to metal ion homeostasis and toxicity (PubMed:12117417). Involved in the cellular activity of low-molecular-weight nitrosothiols through stereoselective transport of L-nitrosocysteine (L-CNSO) across the plasma membrane (PubMed:15769744). When associated with LAPTM4B, the heterodimer is recruited to lysosomes, where it promotes leucine uptake into these organelles and thereby contributes to mTORC1 activation (PubMed:25998567).
Cellular Location	Apical cell membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Lysosome membrane; Multi-pass membrane protein. Note=Located to the plasma membrane by SLC3A2/4F2hc (PubMed:9751058). Localized to the apical membrane of placental syncytiotrophoblastic cells (PubMed:11742812). Recruited to lysosomes by LAPTM4B (PubMed:25998567).
Tissue Location	Detected in placenta, in the syncytiotrophoblast layer (at protein level) (PubMed:11389679). Expressed abundantly in adult lung, liver, brain, skeletal muscle, placenta, bone marrow, testis, resting lymphocytes and monocytes, and in fetal liver. Weaker expression in thymus, cornea, retina, peripheral leukocytes, spleen, kidney, colon and lymph node. During gestation, expression in the placenta was significantly stronger at full-term than at the mid- trimester stage. Also expressed in all human tumor cell lines tested and in the astrocytic process of primary astrocytic gliomas. Expressed in retinal endothelial cells and in the intestinal epithelial cell line Caco-2.

Background

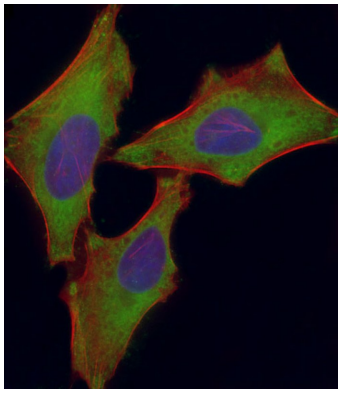
Sodium-independent, high-affinity transport of large neutral amino acids such as phenylalanine, tyrosine, leucine, arginine and tryptophan, when associated with SLC3A2/4F2hc. Involved in cellular amino acid uptake. Acts as an amino acid exchanger. Involved in the transport of L-DOPA across the blood- brain barrier, and that of thyroid hormones triiodothyronine (T3) and thyroxine (T4) across the cell membrane in tissues such as placenta. Plays a role in neuronal cell proliferation (neurogenesis) in brain. Involved in the uptake of methylmercury (MeHg) when administered as the L-cysteine or D,L-homocysteine complexes, and hence plays a role in metal ion homeostasis and toxicity. Involved in the cellular activity of small molecular weight nitrosothiols, via the stereoselective transport of L- nitrosocysteine (L-CNSO) across the transmembrane. May play an important role in high-grade gliomas. Mediates blood-to-retina L- leucine transport across the inner blood-retinal barrier which in turn may play a key role in maintaining large neutral amino acids as well as neurotransmitters in the neural retina. Acts as the major transporter of tyrosine in fibroblasts.

References

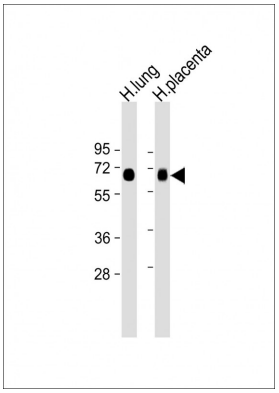
Mastroberardino L.,et al.Nature 395:288-291(1998).

Prasad P.D.,et al.Biochem. Biophys. Res. Commun. 255:283-288(1999).
Tsurudome M.,et al.J. Immunol. 162:2462-2466(1999).
Yanagida O.,et al.Biochim. Biophys. Acta 1514:291-302(2001).
Minato N.,et al.Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.

Images



Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical epithelial adenocarcinoma cell line) cells labeling SLC7A5 with AP22246a at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-rabbit IgG (NK179883) secondary antibody at 1/200 dilution (green). Immunofluorescence image showing cytoplasm staining on HeLa cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin (PD18466410) at 1/100 dilution (red). The nuclear counter stain is DAPI (blue).



All lanes : Anti-SLC7A5 Antibody (N-Term) at 1:2000 dilution Lane 1: Human lung lysate Lane 2: Human placenta lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 55 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.