

Recombinant Human LAT1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50610

Size: 10ug, 100ug

Protein Name: Large neutral amino acids transporter small subunit 1 (4F2 light chain) (4F2 LC) (4F2LC) (CD98 light chain) (Integral membrane protein E16) (E16) (L-type amino acid transporter 1) (hLAT1) (Solute carrier family 7 member 5) (y⁺ system cationic amino acid transporter)

Synonym: SLC7A5, CD98LC, LAT1, MPE16

UniProt ID: Q01650

UniProt Link: www.uniprot.org/uniprotkb/Q01650/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 507 AA

Molecular Weight: 55 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MAGAGPKRRALAAPAAEEKEEAREKMLAAKSADGSAPAGEGEGVTLQRNITLLNGVAIIVGTIIGSGI
FVTPTGVLKEAGSPGLALVWAAACGVFSIVGALCYAELGTTISKSGGDYAYMLEVYGSLPAFLKLWIE
LLIIRPSSQYIVALVFATYLLKPLFPTCPVPEEAAKLVACLCVLLLTAVNCYSVKAATRVQDAFAAAKLL
ALALIILLGFVQIGKGDVSNLDPNFSFEGTKLDVGNIVLALYSGLFAYGGWNYLNFVTEEMINPYRNLP
LAIISLPVITLVYVLTNLAYFTTLSTEQMLSSEAVAVDFGNVHLGVMSWIIPVFVGLSCFGSVNGSLFT
SSRLFFVGSREGHLP SILSMIHPQLLTPVPSLVFTCVMTLLYAFSKDIFSVINFFSFFNWLCVALAIIGMI
WLRHRKPELERPIKVNALPVFFILACLFLIAVSFWKTPVECGIGFTIILSGLPVYFFGVWWKNKPKWL
LQGIFSTTVLCQKLMQVVPQET

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Large neutral amino acids transporter small subunit 1 (4F2 light chain) (4F2 LC) (4F2LC) (CD98 light chain) (Integral membrane protein E16) (E16) (L-type amino acid transporter 1) (hLAT1) (Solute carrier family 7 member 5) (y+ system cationic amino acid transporter) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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).; (Microbial infection) In case of hepatitis C virus/HCV infection, the complex formed by SLC3A2 and SLC7A5/LAT1 plays a role in HCV propagation by facilitating viral entry into host cell and increasing L-leucine uptake-mediated mTORC1 signaling activation, thereby contributing to HCV-mediated pathogenesis.

Subcellular Localization: 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).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.