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SLC31A1 / CTR1 Antibody (Internal)
Rabbit Polyclonal Antibody
Catalog # ALS11081

Specification

SLC31A1 / CTR1 Antibody (Internal) - Product Information

Application	**IHC-P**
Primary Accession	O15431
Reactivity	**Human, Rabbit, Monkey, Dog**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**21kDa KDa**
Dilution	**IHC-P~~N/A**

SLC31A1 / CTR1 Antibody (Internal) - Additional Information

Gene ID 1317

Other Names
High affinity copper uptake protein 1, Copper transporter 1, hCTR1, Solute carrier family 31 member 1, SLC31A1, COPT1, CTR1

Target/Specificity
Human CTR1. BLAST analysis of the peptide immunogen showed no homology with other human proteins.

Reconstitution & Storage
Long term: -70°C; Short term: +4°C

Precautions
SLC31A1 / CTR1 Antibody (Internal) is for research use only and not for use in diagnostic or therapeutic procedures.

SLC31A1 / CTR1 Antibody (Internal) - Protein Information

Name SLC31A1 (HGNC:11016)

Function
[High affinity copper uptake protein 1]: Uniporter that mediates the transport of copper(1+) from the extracellular space to the cytoplasm, across the plasma membrane (PubMed:11734551, PubMed:16135512, PubMed:17525160, PubMed:19740744, PubMed:20451502, PubMed:20569931, PubMed:23658018) and delivers directly copper(1+) to specific chaperone such as ATOX1, via a copper(1+)- mediated transient

interaction between the C-terminal domain and a copper(1+) chaperone, thus controlling intracellular copper(1+) levels (PubMed:11734551, PubMed:16135512, PubMed:17525160, PubMed:19740744, PubMed:20451502, PubMed:20569931, PubMed:23658018, PubMed:26745413). May function in copper(1+) import from the apical membrane thus may drive intestinal copper absorption (By similarity). The copper(1+) transport mechanism is sodium-independent, saturable and of high-affinity (PubMed:11734551). Also mediates the uptake of silver(1+) (PubMed:20569931). May function in the influx of the platinum- containing chemotherapeutic agents (PubMed:20451502, PubMed:20569931). The platinum-containing chemotherapeutic agents uptake is saturable (By similarity). In vitro, mediates the transport of cadmium(2+) into cells (PubMed:33294387). Also participates in the first step of copper(2+) acquisition by cells through a direct transfer of copper(2+) from copper(2+) carriers in blood, such as ALB to the N-terminal domain of SLC31A1, leading to copper(2+) reduction and probably followed by copper(1+) stabilization (PubMed:30489586). In addition, functions as a redox sensor to promote angiogenesis in endothelial cells, in a copper(1+) transport independent manner, by transmitting the VEGF- induced ROS signal through a sulfenylation at Cys-189 leadin g to a subsequent disulfide bond formation between SLC31A1 and KDR (PubMed:35027734). The SLC31A1-KDR complex is then co-internalized to early endosomes, driving a sustained VEGFR2 signaling (PubMed:35027734).

Cellular Location
Cell membrane; Multi-pass membrane protein. Early endosome membrane; Multi-pass membrane protein. Recycling endosome membrane; Multi-pass membrane protein. Apical cell membrane {ECO:0000250|UniProtKB:Q8K211}; Multi-pass membrane protein. Late endosome membrane {ECO:0000250|UniProtKB:Q8K211}; Multi-pass membrane protein. Basolateral cell membrane {ECO:0000250|UniProtKB:Q8K211}; Multi-pass membrane protein. Note=The localization is controlled by the intra and extra-cellular copper concentration (PubMed:15326162, PubMed:19740744, PubMed:23658018, PubMed:26205368, PubMed:26945057). Under conditions of elevated extracellular copper concentrations, it is rapidly internalized by endocytosis from the plasma membrane by a clathrin- and dynamin-mediated process and degradated in order to prevent intracellular copper accumulation and to reduce the transport of the copper across the membrane (PubMed:15326162, PubMed:19740744, PubMed:23658018, PubMed:26205368, PubMed:26945057). The internalized SLC31A1 is then localized in early endosomes, and, upon a low extracellular copper concentrations, it is transported back to the plasma membrane in a RAB11A-dependent recycling pathway (PubMed:26945057). Localizes to the apical membrane in intestinal epithelial cells (By similarity). Mainly localized on the basolateral side of renal tubular cells (By similarity). Localizes to the neuronal cell body plasma membranes (By similarity) {ECO:0000250|UniProtKB:Q8K211, ECO:0000250|UniProtKB:Q9JK41, ECO:0000269|PubMed:15326162, ECO:0000269|PubMed:19740744, ECO:0000269|PubMed:23658018, ECO:0000269|PubMed:26205368, ECO:0000269|PubMed:26945057}

Volume
50 µl

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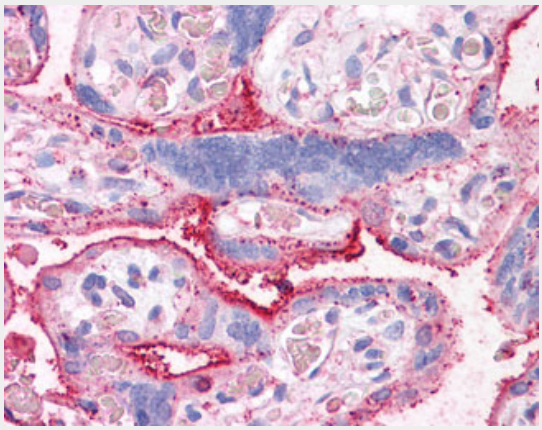
SLC31A1 / CTR1 Antibody (Internal) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SLC31A1 / CTR1 Antibody (Internal) - Images



Anti-CTR1 antibody ALS11081 IHC of human placenta.

SLC31A1 / CTR1 Antibody (Internal) - Background

High-affinity, saturable copper transporter involved in dietary copper uptake.

SLC31A1 / CTR1 Antibody (Internal) - References

Zhou B.,et al.Proc. Natl. Acad. Sci. U.S.A. 94:7481-7486(1997).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Suzuki Y.,et al.Submitted (APR-2005) to the EMBL/GenBank/DDBJ databases.
Bechtel S.,et al.BMC Genomics 8:399-399(2007).
Humphray S.J.,et al.Nature 429:369-374(2004).