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Slc31a1 antibody - N-terminal region

Rabbit Polyclonal Antibody
Catalog # AI12328

Product Information

Application	WB
Primary Accession	Q8K211
Other Accession	NM_175090, NP_780299
Reactivity	Human, Mouse, Rat, Rabbit, Dog, Horse
Predicted	Human, Mouse, Rabbit, Dog, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	21961

Additional Information

Gene ID	20529
Alias Symbol	4930445G01Rik, AI787263, AU016967, Ctr1
Other Names	High affinity copper uptake protein 1, Copper transporter 1, CTR1, Solute carrier family 31 member 1, Slc31a1
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-Slc31a1 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	Slc31a1 antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Slc31a1 {ECO:0000312|MGI:MGI:1333843}
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:11391005, PubMed:12177073, PubMed:16847145, PubMed:24167251). Then, 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 (By similarity). May function in copper(1+) import from the apical membrane thus may drive intestinal copper absorption (PubMed:16950140). The copper(1+) transport mechanism is sodium- independent, saturable and of high-affinity (By similarity). Also

mediates the uptake of silver(1+) (PubMed:20569931). May function in the influx of the platinum-containing chemotherapeutic agents (PubMed:12370430, PubMed:16847145, PubMed:19144690). The platinum-containing chemotherapeutic agents uptake is saturable (By similarity). 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 (By similarity). 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-195 leading 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 (By similarity).

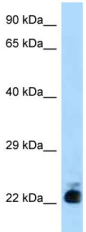
Cellular Location

Cell membrane; Multi-pass membrane protein. Early endosome membrane {ECO:0000250|UniProtKB:O15431}; Multi-pass membrane protein. Recycling endosome membrane; Multi-pass membrane protein. Apical cell membrane; Multi-pass membrane protein. Late endosome membrane; Multi-pass membrane protein. Basolateral cell membrane; Multi-pass membrane protein. Note=The localization is controlled by the intra and extra-cellular copper concentration. 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. 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 (By similarity). Localizes to the apical membrane in intestinal epithelial cells (PubMed:16950140, PubMed:20699218). Mainly localized on the basolateral side of renal tubular cells (PubMed:19144690). Localizes to the neuronal cell body plasma membranes (By similarity). {ECO:0000250|UniProtKB:O15431, ECO:0000250|UniProtKB:Q9JK41, ECO:0000269|PubMed:16950140, ECO:0000269|PubMed:19144690, ECO:0000269|PubMed:20699218}

Tissue Location

Expressed in the tubules in the inner cortex and inner medulla of the kidney, the villi of the small intestine, the choroid plexus of the brain, the stroma of the ovary, the seminiferous tubules of the testes, and the sclera of the eye (PubMed:11391004) Expressed in intestinal epithelial cells, with an increase expression from the crypt to the tip of the villus (PubMed:16950140). Mainly expressed in both proximal and distal tubular cells in kidneys (PubMed:19144690).

Images



WB Suggested Anti-Slc31a1 Antibody Titration: 1.0 µg/ml
Positive Control: Mouse Liver

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