10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SLC31A1 Rabbit mAb

Catalog # AP76896

Product Information

Application	WB
Primary Accession	O15431
Reactivity	Human, Mouse, Rat, Hamster
Host	Rabbit
Clonality	Monoclonal Antibody
Calculated MW	21091

Additional Information

Gene ID	1317
Other Names	SLC31A1
Dilution	WB~~1/500-1/1000
Format	50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.

Protein Information

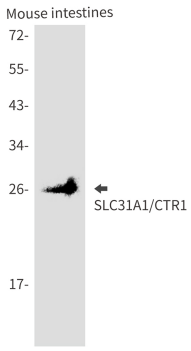
Name	SLC31A1 (HGNC:11016)
Function	[High affinity copper uptake protein 1]: Uniporter that mediates the transport of copper(1+) from the extracellular space to the cytoplasm, across the plasma membrane (PubMed:11734551, PubMed:16135512, PubMed:17525160, PubMed:19740744, PubMed:20451502, PubMed:20569931, 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

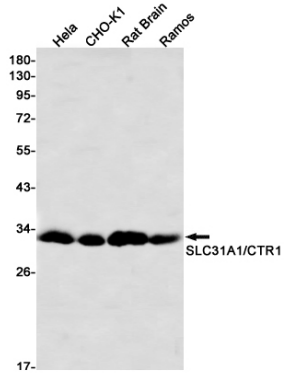
to copper(2+) reduction and probably followed by copper(1+) stabilization (PubMed:30489586). In addition, functions as a redox sensor to promote angiogenesis in endothelial cells, in a copper(1+) transport independent manner, by transmitting the VEGF- induced ROS signal through a sulfenylation at Cys-189 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}

Images





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