

# SLC31A1 Rabbit mAb

Catalog # AP76896

## Product Information

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<b>Application</b>	WB
<b>Primary Accession</b>	<a href="#">O15431</a>
<b>Reactivity</b>	Human
<b>Host</b>	Rabbit
<b>Clonality</b>	Monoclonal Antibody
<b>Isotype</b>	IgG
<b>Conjugate</b>	Unconjugated
<b>Purification</b>	Affinity Purified
<b>Calculated MW</b>	21091

## Additional Information

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<b>Gene ID</b>	1317
<b>Other Names</b>	SLC31A1
<b>Dilution</b>	WB~~1:1000
<b>Format</b>	1xPBS(pH 7.4), 150mM NaCl, 50% Glycerol, 0.02% Sodium azide and 0.05% BSA
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

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<b>Name</b>	SLC31A1 ( <a href="#">HGNC:11016</a> )
<b>Function</b>	[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: <a href="#">11734551</a> , PubMed: <a href="#">16135512</a> , PubMed: <a href="#">17525160</a> , PubMed: <a href="#">19740744</a> , PubMed: <a href="#">20451502</a> , PubMed: <a href="#">20569931</a> , PubMed: <a href="#">23658018</a> ) 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: <a href="#">11734551</a> , PubMed: <a href="#">16135512</a> , PubMed: <a href="#">17525160</a> , PubMed: <a href="#">19740744</a> , PubMed: <a href="#">20451502</a> , PubMed: <a href="#">20569931</a> , PubMed: <a href="#">23658018</a> , PubMed: <a href="#">26745413</a> ). 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: <a href="#">11734551</a> ). Also mediates the uptake of silver(1+) (PubMed: <a href="#">20569931</a> ). 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 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 (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 degraded 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}

## Background

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The protein encoded by this gene is a high-affinity copper transporter found in the cell membrane. The encoded protein functions as a homotrimer to effect the uptake of dietary copper.

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