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Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody
Catalog # ABO16116

Specification

Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody - Product Information

Application	**WB**
Primary Accession	O15431
Host	**Rabbit**
Isotype	**IgG**
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Format	**Liquid**

Description
Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody . Tested in WB application. This antibody reacts with Human, Mouse, Rat.

Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody - Additional Information

Gene ID 1317

Other Names
High affinity copper uptake protein 1, Copper transporter 1, hCTR1, Solute carrier family 31 member 1, Truncated CTR1 form, SLC31A1 (HGNC:11016)

Calculated MW
29 kDa KDa

Application Details
WB 1:500-1:2000

Contents
Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

Immunogen
A synthesized peptide derived from human CTR1/SLC31A1

Purification
Affinity-chromatography

Storage	**Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.**

Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody - 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}

Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody - 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

Anti-CTR1/SLC31A1 Rabbit Monoclonal Antibody - Images

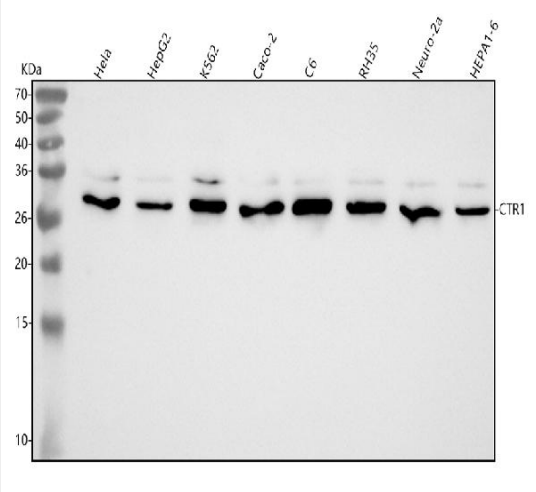

Figure 1. Western blot analysis of CTR1/SLC31A1 using anti-CTR1/SLC31A1 antibody (M03447). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.
Lane 1: human Hela whole cell lysates,
Lane 2: human HepG2 whole cell lysates,
Lane 3: human K562 whole cell lysates,
Lane 4: human CACO-2 whole cell lysates,
Lane 5: rat C6 whole cell lysates,
Lane 6: rat RH35 whole cell lysates,
Lane 7: mouse Neuro-2a whole cell lysates,
Lane 8: mouse HEPA1-6 whole cell lysates.
After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90

minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-CTR1/SLC31A1 antigen affinity purified monoclonal antibody (Catalog # M03447) at 1:500 overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:1000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for CTR1/SLC31A1 at approximately 29 kDa. The expected band size for CTR1/SLC31A1 is at 21 kDa.