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SLC22A1 Antibody (clone 2C5)

Mouse Monoclonal Antibody
Catalog # ALS15712

Specification

SLC22A1 Antibody (clone 2C5) - Product Information

Application	**IHC**
Primary Accession	O15245
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**61kDa KDa**

SLC22A1 Antibody (clone 2C5) - Additional Information

Gene ID 6580

Other Names
Solute carrier family 22 member 1, Organic cation transporter 1, hOCT1, SLC22A1, OCT1

Target/Specificity
Human SLC22A1

Reconstitution & Storage
Long term: -20°C; Short term: +4°C; Avoid freeze-thaw cycles.

Precautions
SLC22A1 Antibody (clone 2C5) is for research use only and not for use in diagnostic or therapeutic procedures.

SLC22A1 Antibody (clone 2C5) - Protein Information

Name SLC22A1 (HGNC:10963)

Synonyms OCT1

Function
Electrogenic voltage-dependent transporter that mediates the transport of a variety of organic cations such as endogenous bioactive amines, cationic drugs and xenobiotics (PubMed:9260930, PubMed:9187257, PubMed:11388889, PubMed:9655880, PubMed:11408531, PubMed:15389554, PubMed:16263091, PubMed:16272756, PubMed:16581093, PubMed:<a

href="http://www.uniprot.org/citations/19536068" target="_blank">19536068, PubMed:21128598, PubMed:23680637, PubMed:24961373, PubMed:34040533, PubMed:12439218, PubMed:12719534). Functions as a pH- and Na(+)- independent, bidirectional transporter (By similarity). Cation cellular uptake or release is driven by the electrochemical potential (i.e. membrane potential and concentration gradient) and substrate selectivity (By similarity). Hydrophobicity is a major requirement for recognition in polyvalent substrates and inhibitors (By similarity). Primarily expressed at the basolateral membrane of hepatocytes and proximal tubules and involved in the uptake and disposition of cationic compounds by hepatic and renal clearance from the blood flow (By similarity). Most likely functions as an uptake carrier in enterocytes contributing to the intestinal elimination of organic cations from the systemic circulation (PubMed:16263091). Transports endogenous monoamines such as N-1-methylnicotinamide (NMN), guanidine, histamine, neurotransmitters dopamine, serotonin and adrenaline (PubMed:9260930, PubMed:24961373, PubMed:35469921, PubMed:12439218). Also transports natural polyamines such as spermidine, agmatine and putrescine at low affinity, but relatively high turnover (PubMed:21128598). Involved in the hepatic uptake of vitamin B1/thiamine, hence regulating hepatic lipid and energy metabolism (PubMed:24961373). Mediates the bidirectional transport of acetylcholine (ACh) at the apical membrane of ciliated cell in airway epithelium, thereby playing a role in luminal release of ACh from bronchial epithelium (PubMed:15817714). Transports dopaminergic neuromodulators cyclo(his-pro) and salsolinol with lower efficency (PubMed:17460754). Also capable of transporting non-amine endogenous compounds such as prostaglandin E2 (PGE2) and prostaglandin F2-alpha (PGF2-alpha) (PubMed:11907186). May contribute to the transport of cationic compounds in testes across the blood- testis-barrier (Probable). Also involved in the uptake of xenobiotics tributylmethylammonium (TBuMA), quinidine, N-methyl-quinine (NMQ), N- methyl-quinidine (NMQD) N-(4,4-azo-n-pentyl)-quinuclidine (APQ), azidoprocainamide methoiodide (AMP), N-(4,4-azo-n-pentyl)-21- deoxyajmalinium (APDA) and 4-(4-(dimethylamino)styryl)-N- methylpyridinium (ASP) (PubMed:9260930, PubMed:11408531, PubMed:15389554, PubMed:35469921).

Cellular Location

Basolateral cell membrane; Multi-pass membrane protein. Apical cell membrane; Multi-pass membrane protein. Lateral cell membrane; Multi-pass membrane protein. Basal cell membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Note=Localized to the sinusoidal/basolateral membrane of hepatocytes (By similarity). Mainly localized to the basolateral membrane of renal proximal tubular cells (By similarity). However, also identified at the apical side of proximal tubular cells (PubMed:19536068). Mainly expressed at the lateral membrane of enterocytes (PubMed:16263091). Also observed at the apical side of enterocytes (PubMed:23680637). Localized to the luminal/apical membrane of ciliated epithelial cells in bronchi (PubMed:15817714). Localized to the basal membrane of Sertoli cells (PubMed:35307651) {ECO:0000250|UniProtKB:Q63089, ECO:0000269|PubMed:15817714, ECO:0000269|PubMed:16263091, ECO:0000269|PubMed:19536068,

ECO:0000269|PubMed:23680637, ECO:0000269|PubMed:35307651}

Tissue Location
Widely expressed with high level in liver (PubMed:9260930, PubMed:9187257, PubMed:11388889, PubMed:23680637). In liver, expressed around the central vein (PubMed:16263091). Expressed in kidney (PubMed:9260930, PubMed:9187257). Expressed in small intestine enterocytes (PubMed:16263091, PubMed:23680637). Localized to peritubular myoid cells, Leydig cells and moderately to the basal membrane of Sertoli cells in testes (PubMed:35307651). Expressed in tracheal and bronchial ciliated epithelium in the respiratory tract (PubMed:15817714). Also expressed in skeletal muscle, stomach, spleen, heart, placentacolon, brain, granulycytes and lympohocytes (PubMed:9260930, PubMed:9187257). [Isoform 2]: Expressed in liver and in glial cell lines. [Isoform 4]: Expressed in glial cell lines. Not expressed in liver.

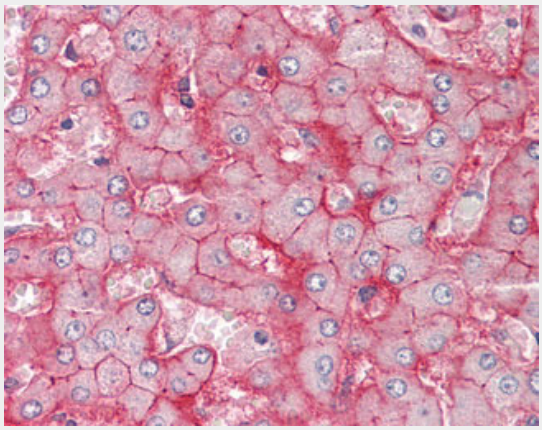
Volume
50 µl

SLC22A1 Antibody (clone 2C5) - 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

SLC22A1 Antibody (clone 2C5) - Images



Anti-SLC22A1 / OCT1 antibody IHC staining of human liver.

SLC22A1 Antibody (clone 2C5) - Background

Translocates a broad array of organic cations with various structures and molecular weights including the model compounds 1-methyl-4-phenylpyridinium (MPP), tetraethylammonium (TEA), N-1-methylnicotinamide (NMN), 4-(4-(dimethylamino)styryl)- N-methylpyridinium (ASP), the endogenous compounds choline, guanidine, histamine, epinephrine, adrenaline, noradrenaline and dopamine, and the drugs quinine, and metformin. The transport of organic cations is inhibited by a broad array of compounds like tetramethylammonium (TMA), cocaine, lidocaine, NMDA receptor

antagonists, atropine, prazosin, cimetidine, TEA and NMN, guanidine, cimetidine, choline, procainamide, quinine, tetrabutylammonium, and tetrapentylammonium. Translocates organic cations in an electrogenic and pH-independent manner. Translocates organic cations across the plasma membrane in both directions. Transports the polyamines spermine and spermidine. Transports pramipexole across the basolateral membrane of the proximal tubular epithelial cells. The choline transport is activated by MMTS. Regulated by various intracellular signaling pathways including inhibition by protein kinase A activation, and endogenously activation by the calmodulin complex, the calmodulin- dependent kinase II and LCK tyrosine kinase.

SLC22A1 Antibody (clone 2C5) - References

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