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# SLC22A1 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP13944b

## Product Information

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| **Application** | WB, IHC-P, E |
| **Primary Accession** | O15245 |
| **Other Accession** | NP_003048.1, NP_694857.1 |
| **Reactivity** | Human |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Isotype** | Rabbit IgG |
| **Clone Names** | RB22501 |
| **Calculated MW** | 61154 |
| **Antigen Region** | 511-539 |

## Additional Information

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| **Gene ID** | 6580 |
| **Other Names** | Solute carrier family 22 member 1, Organic cation transporter 1, hOCT1, SLC22A1, OCT1 |
| **Target/Specificity** | This SLC22A1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 511-539 amino acids from the C-terminal region of human SLC22A1. |
| **Dilution** | WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration. |
| **Format** | Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification. |
| **Storage** | Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | SLC22A1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **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:11388889, PubMed:11408531, PubMed:12439218, PubMed:12719534, PubMed:15389554, PubMed:16263091, PubMed:16272756, PubMed:16581093, PubMed:19536068, PubMed:21128598, PubMed:23680637, PubMed:24961373, PubMed:34040533, PubMed:9187257, PubMed:9260930, PubMed:9655880). 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:12439218, PubMed:24961373, PubMed:35469921, PubMed:9260930). 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:11408531, PubMed:15389554, PubMed:35469921, PubMed:9260930).

**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:11388889, PubMed:23680637, PubMed:9187257, PubMed:9260930). In liver, expressed around the central vein (PubMed:16263091). Expressed in kidney (PubMed:9187257, PubMed:9260930). 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:9187257, PubMed:9260930). [Isoform 2]: Expressed in liver and in glial cell lines. [Isoform 4]: Expressed in glial cell lines. Not expressed in liver.

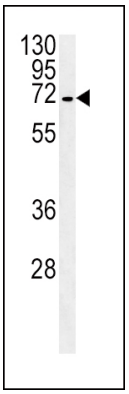
## Background

Polyspecific organic cation transporters in the liver, kidney, intestine, and other organs are critical for elimination of many endogenous small organic cations as well as a wide array of drugs and environmental toxins. This gene is one of three similar cation transporter genes located in a cluster on chromosome 6. The encoded protein contains twelve putative transmembrane domains and is a plasma integral membrane protein. Two transcript variants encoding two different isoforms have been found for this gene, but only the longer variant encodes a functional transporter. [provided by RefSeq].

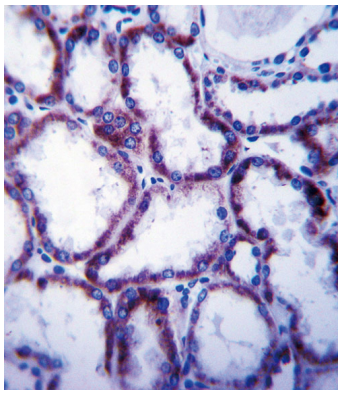
## References


Takahashi, N., et al. J. Hum. Genet. 55(11):731-737(2010)
Jablonski, K.A., et al. Diabetes 59(10):2672-2681(2010)
Hu, M., et al. Pharmacogenet. Genomics 20(10):634-637(2010)
Gambineri, A., et al. J. Clin. Endocrinol. Metab. 95 (10), E204-E208 (2010) :
Becker, M.L., et al. Neurogenetics (2010) In press :


## Images




SLC22A1 Antibody (C-term) (Cat. #AP13944b) western blot analysis in HepG2 cell line lysates (35ug/lane).This demonstrates the SLC22A1 antibody detected the SLC22A1 protein (arrow).



SLC22A1 Antibody (C-term) (Cat. #AP13944b)immunohistochemistry analysis in formalin fixed and paraffin embedded human kidney tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of SLC22A1 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.