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

SLC1A7 Antibody

Catalog # ASC11888

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O00341
Other Accession	NP_001274524, 567316146
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	60658
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	SLC1A7 antibody can be used for detection of SLC1A7 by Western blot at 1 - 2 g/ml. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	6512
Other Names	Excitatory amino acid transporter 5, Retinal glutamate transporter, Solute carrier family 1 member 7, SLC1A7, EAAT5
Target/Specificity	SLC1A7; SLC1A7 antibody is human and mouse reactive. Multiple isoforms of SLC1A7 are known to exist.
Reconstitution & Storage	SLC1A7 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	SLC1A7 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SLC1A7 (HGNC:10945)
Synonyms	EAAT5
Function	Sodium-dependent, high-affinity amino acid transporter that mediates the uptake of L-glutamate and also L-aspartate and D- aspartate. Functions as a symporter that transports one amino acid molecule together with two or three Na(+) ions and one proton, in parallel with the counter-transport of one K(+) ion (PubMed:9108121). Acts primarily as an inhibitory glutamate-gated chloride channel being a major inhibitory presynaptic receptor at mammalian rod bipolar cell axon terminals. Glutamate binding gates a large Cl(-) conductance that mediates inhibition, affecting visual processing in the retina

(By similarity).

Cellular Location	Photoreceptor inner segment membrane {ECO:0000250|UniProtKB:Q8JZR4}; Multi-pass membrane protein. Synaptic cell membrane {ECO:0000250|UniProtKB:Q8JZR4}; Multi-pass membrane protein. Note=Located in both cone and rod photoreceptor terminals and in axon terminals of rod bipolar cells. {ECO:0000250|UniProtKB:Q8JZR4}
Tissue Location	Expressed primarily in retina. Detectable in liver, heart, muscle and brain.

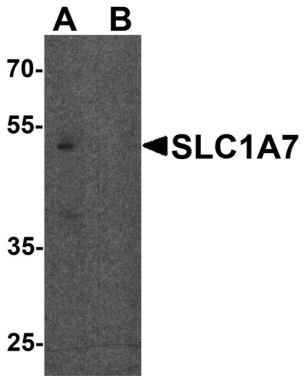
Background

The solute carrier family 1 member 7 (SLC1A7) protein was initially identified as a glutamate transporter coupled to a chloride conductance that is expressed primarily in the retina (1). More recent evidence indicates that is it widely expressed in peripheral tissues, also (2). Experiments have shown that SLC1A7 functions as a low-affinity/low-capacity glutamate transport, with an anion channel optimized for anion conductance in the negative voltage range (3). In the retina, SLC1A7 co-localizes with the serum and glucocorticoid dependent kinase SGK1, and its cell surface expression and activity is regulated SGK1 and its isoform SGK3 (4).

References

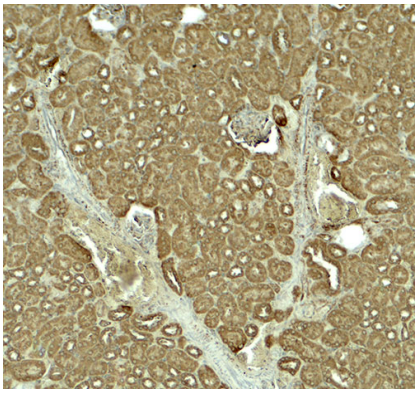
Arriza JL, Eliasof S, Kavanaugh MP, et al. Excitatory amino acid transporter 5, a retinal glutamate transporter coupled to a chloride conductance. Proc. Natl. Acad. Sci. USA 1997; 94:4155-60.
Lee A, Anderson AR, Stevens M, et al. Excitatory amino acid transporter 5 is widely expressed in peripheral tissues. Eur. J. Histochem. 2013; 57:e11.
Schneider N, Cordeiro S, Machtens JP, et al. Functional properties of the retinal glutamate transporters GLT-1c and EAAT5. J. Biol. Chem. 2014; 289:1815-24.
Boehmer C, Rajamanickam J, Schniepp R, et al. Regulation of the excitatory amino acid transporter EAAT5 by the serum and glucocorticoid dependent kinases SGK1 and SGK3. Biochem. Biophys. Res. Commun. 2005; 329:738-42.

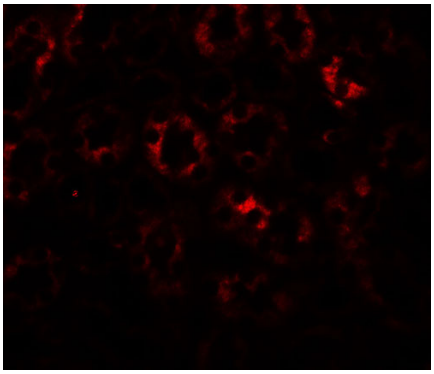
Images



Western blot analysis of SLC1A7 in C2C12 cell lysate with SLC1A7 antibody at 1 µg/ml in (A) the absence and (B) the presence of blocking peptide.

Immunohistochemistry of SLC1A7 in mouse kidney tissue with SLC1A7 antibody at 5 µg/ml.





Immunofluorescence of SLC1A7 in mouse kidney tissue with SLC1A7 antibody at 20 µg/ml.