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SLC17A7 / VGLUT1 Antibody
Goat Polyclonal Antibody
Catalog # ALS12993

Specification

SLC17A7 / VGLUT1 Antibody - Product Information

Application	**IHC**
Primary Accession	Q9P2U7
Reactivity	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Calculated MW	**62kDa KDa**

SLC17A7 / VGLUT1 Antibody - Additional Information

Gene ID 57030

Other Names
Vesicular glutamate transporter 1, VGluT1, Brain-specific Na(+)-dependent inorganic phosphate cotransporter, Solute carrier family 17 member 7, SLC17A7, BNPI, VGLUT1

Target/Specificity
Human SLC17A7 / VGLUT1.

Reconstitution & Storage
Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

Precautions
SLC17A7 / VGLUT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

SLC17A7 / VGLUT1 Antibody - Protein Information

Name SLC17A7 (HGNC:16704)

Function
Multifunctional transporter that transports L-glutamate as well as multiple ions such as chloride, proton, potassium, sodium and phosphate (PubMed:10820226). At the synaptic vesicle membrane, mainly functions as an uniporter which transports preferentially L-glutamate but also phosphate from the cytoplasm into synaptic vesicles at presynaptic nerve terminals of excitatory neural cells (By similarity). The L-glutamate or phosphate uniporter activity is electrogenic and is driven by the proton electrochemical gradient, mainly by the electrical gradient established by the vacuolar H(+)-ATPase across the synaptic vesicle membrane (By similarity). In addition, functions as a chloride channel that allows a chloride permeation through the synaptic vesicle membrane that affects the proton electrochemical gradient and promotes synaptic vesicles acidification (By similarity). Moreover, may function as a K(+)/H(+) antiport allowing to maintain the electrical gradient and to decrease chemical gradient and therefore

sustain vesicular glutamate uptake (By similarity). The vesicular K(+)/H(+) antiport activity is electroneutral (By similarity). At the plasma membrane, following exocytosis, functions as a symporter of Na(+) and phosphate from the extracellular space to the cytoplasm allowing synaptic phosphate homeostasis regulation (PubMed:10820226). The symporter activity is driven by an inside negative membrane potential and is electrogenic (By similarity). Is necessary for synaptic signaling of visual-evoked responses from photoreceptors (By similarity).

Cellular Location
Cytoplasmic vesicle, secretory vesicle, synaptic vesicle membrane {ECO:0000250|UniProtKB:Q3TXX4}. Cell membrane; Multi-pass membrane protein. Synapse, synaptosome {ECO:0000250|UniProtKB:Q3TXX4}

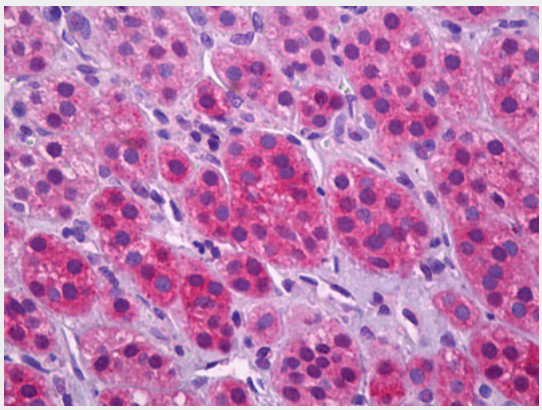
Tissue Location
Expressed in several regions of the brain including amygdala, cerebellum, cerebral cortex, hippocampus, frontal lobe, medulla, occipital lobe, putamen and temporal lobe

SLC17A7 / VGLUT1 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

SLC17A7 / VGLUT1 Antibody - Images



Anti-SLC17A7 / VGLUT1 antibody IHC of human adrenal cortex.

SLC17A7 / VGLUT1 Antibody - Background

Mediates the uptake of glutamate into synaptic vesicles at presynaptic nerve terminals of excitatory neural cells. May also mediate the transport of inorganic phosphate.

SLC17A7 / VGLUT1 Antibody - References

Aihara Y.,et al.J. Neurochem. 74:2622-2625(2000).

Ota T.,et al.Nat. Genet. 36:40-45(2004).
Grimwood J.,et al.Nature 428:529-535(2004).
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.