Revision 1

Store at -20C

#12937

VGLUT2 Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	M R	Endogenous	65-70	Rabbit	#Q9P2U8	57084

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

VGLUT2 recognizes endogenous levels of total VGLUT2 protein.

Species predicted to react based on 100% sequence homology

Human, Monkey

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human VGLUT2 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Glutamatergic neurons release glutamate, the most common excitatory neurotransmitter. Their synaptic vesicles are filled with glutamate by vesicular glutamate transporters, VGLUTs (1). VGLUT1, also called solute carrier family 17 member 7 (SLC17A7), was first identified as an inorganic phosphate transporter (2). Despite the absence of homology with neurotransmitter transporters, VGLUT1 was later demonstrated to be a glutamate transporter (1) specific to glutamatergic neurons (3). Closely related to VGLUT1, VGLUT2 and VGLUT3 are also involved in glutamate uptake into synaptic vesicles, but define different neuronal subpopulations (4,5). VGLUT1 and VGLUT2 are the most abundant isoforms. VGLUT1 is expressed in the cortex, hippocampus, and cerebellar cortex, while VGLUT2 is mostly found in the thalamus (6,7). VGLUT3 is expressed in hair cells of the auditory system (8).

Background References

1. Bellocchio, E.E. et al. (2000) *Science* 289, 957-60.
2. Ni, B. et al. (1996) *J Neurochem* 66, 2227-38.
3. Takamori, S. et al. (2000) *Nature* 407, 189-94.
4. Fremeau, R.T. et al. (2001) *Neuron* 31, 247-60.
5. Fremeau, R.T. et al. (2002) *Proc Natl Acad Sci U S A* 99, 14488-93.
6. Herzog, E. et al. (2001) *J Neurosci* 21, RC181.
7. Kaneko, T. and Fujiyama, F. (2002) *Neurosci Res* 42, 243-50.
8. Seal, R.P. et al. (2008) *Neuron* 57, 263-75.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

M: Mouse **R:** Rat

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Limited Uses

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