

ZnT 3

Cat.No. 197 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Azide was added before lyophilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 100 IHC-P/FFPE: 1 : 1000
Clone	180C1
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 2 to 75 from mouse ZnT3 (UniProt Id: P97441)
Epitop	Epitop: AA 2 to 75 from mouse ZnT3 (UniProt Id: P97441)
Reactivity	Reacts with: rat (Q6QIX3), mouse (P97441). No signal: zebrafish. Other species not tested yet.
Specificity	Specific for ZnT 3.
matching control	197-0P

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

The essential micronutrient zinc plays an important role in many biological processes like growth, development and reproduction. It is found in the active site of many enzymes, where ionization, polarization or replacement of Zn²⁺ bound water is involved in catalytic reactions. As a charged ion Zn²⁺ cannot cross biological membranes by simple diffusion and must be transported into or out of cells by specialized transport mechanisms. Four Zn transporter proteins, ZnT 1 to ZnT 4, have been cloned. All of them contain several transmembrane domains and a histidine rich intracellular loop. In the central nervous system Zn plays important roles in synaptic function and plasticity. At synapses Zn is stored in synaptic vesicles by a mechanism depending on the integral membrane protein **ZnT 3**.

Selected References SYSY Antibodies

Expression pattern of synaptic vesicle protein 2 (SV2) isoforms in patients with temporal lobe epilepsy and hippocampal sclerosis.
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Retrograde regulation of mossy fiber axon targeting and terminal maturation via postsynaptic Lnx1.
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High abundance of ArfGAP1 found in the mossy fibers in hilus of the dentate gyrus region of the mouse brain.
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PloS one (2017) 12(12): e0189659. **IHC; tested species: mouse**

Selected General References

Vglut1 and ZnT3 co-targeting mechanisms regulate vesicular zinc stores in PC12 cells.
Salazar G, Craige B, Love R, Kalman D, Faundez V
Journal of cell science (2005) 118(Pt 9): 1911-21.

The zinc transporter ZnT3 interacts with AP-3 and it is preferentially targeted to a distinct synaptic vesicle subpopulation.
Salazar G, Love R, Werner E, Doucette MM, Cheng S, Levey A, Faundez V
Molecular biology of the cell (2004) 15(2): 575-87.

Accumulation of zinc in degenerating hippocampal neurons of ZnT3-null mice after seizures: evidence against synaptic vesicle origin.
Lee JY, Cole TB, Palmiter RD, Koh JY
The Journal of neuroscience : the official journal of the Society for Neuroscience (2000) 20(11): RC79.

Elimination of zinc from synaptic vesicles in the intact mouse brain by disruption of the ZnT3 gene.
Cole TB, Wenzel HJ, Kafer KE, Schwartzkroin PA, Palmiter RD
Proceedings of the National Academy of Sciences of the United States of America (1999) 96(4): 1716-21.

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Proceedings of the National Academy of Sciences of the United States of America (1997) 94(23): 12676-81.