

## ZnT 3

Cat.No. 197 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H <sub>2</sub> O, then aliquot and store at -20°C until use.
Applications	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> yes <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 500 <b>IHC-P/FFPE:</b> 1 : 500
Immunogen	Recombinant protein corresponding to 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 Zn<sup>2+</sup> bound water is involved in catalytic reactions. As a charged ion Zn<sup>2+</sup> 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

Differentiation and functional incorporation of embryonic stem cell-derived GABAergic interneurons in the dentate gyrus of mice with temporal lobe epilepsy.  
Maisano X, Litvina E, Tagliatela S, Aaron GB, Grabel LB, Naegele JR  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2012) 32(1): 46-61. **IHC**

Short-Term Depression of Sprouted Mossy Fiber Synapses from Adult-Born Granule Cells.  
Hendricks WD, Chen Y, Bensen AL, Westbrook GL, Schnell E  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 37(23): 5722-5735. **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  
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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.  
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Ultrastructural localization of zinc transporter-3 (ZnT-3) to synaptic vesicle membranes within mossy fiber boutons in the hippocampus of mouse and monkey.  
Wenzel HJ, Cole TB, Born DE, Schwartzkroin PA, Palmiter RD  
Proceedings of the National Academy of Sciences of the United States of America (1997) 94(23): 12676-81.