

## ZnT 3

**Cat.No. 197 003DY5; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)**

### Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen, fluorescence-labeled with DY® 649P. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Either add 1:1 (v/v) glycerol, then aliquot and store at -20°C until use, or store aliquots at -80°C without additives. Reconstitute immediately upon receipt! Avoid bright light when working with the antibody to minimize photo bleaching of the fluorescent dye.
Applications	<b>WB:</b> N/A <b>IP:</b> N/A <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 500 <b>IHC-P/FFPE:</b> not tested yet
Label	DY 649P
Immunogen	Recombinant protein corresponding to AA 2 to 75 from mouse ZnT3 (UniProt Id: P97441)
Reactivity	Reacts with: human (Q99726), 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 General References

Vglut1 and ZnT3 co-targeting mechanisms regulate vesicular zinc stores in PC12 cells.

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The zinc transporter ZnT3 interacts with AP-3 and it is preferentially targeted to a distinct synaptic vesicle subpopulation.

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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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Proceedings of the National Academy of Sciences of the United States of America (1999) 96(4): 1716-21.

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.