

## Calretinin

Cat.No. 214 102; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

### Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For <b>reconstitution</b> add 200 µl H <sub>2</sub> O, then aliquot and store at -20°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	<b>WB:</b> 1 : 1000 up to 1 : 5000 (AP staining) <b>IP:</b> yes <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 500 <b>IHC-P:</b> yes
Immunogen	Full-length recombinant mouse Calretinin (UniProt Id: Q08331)
Reactivity	Reacts with: rat (P47728), mouse (Q08331), chicken, zebrafish, grasshopper. Other species not tested yet.
Specificity	K.O. validated PubMed: <a href="https://pubmed.ncbi.nlm.nih.gov/30015247/">30015247</a>
Matching control	214-1P

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

## Background

Two isoforms of the vitamin D-dependent Ca-binding proteins have been described so far: **Calretinin**, also referred to as calbindin D29k, calbindin 2, CALB 2, CAL 2, and CAB 29, and calbindin D28k. These proteins are expressed in cells that have to handle a high calcium influx such as brain, bone, teeth, inner ear and others. Calbindins are believed to regulate cellular activity by suppressing or buffering intracellular calcium.

### Selected References for 214 102

- Characterization and potential roles of calretinin in rodent spermatozoa.  
Dressen C, Schwaller B, Vegh G, Leleux F, Gall D, Lebrun P, Lybaert P  
Cell calcium (2018) 74: 94-101. . **WB, IHC-P; KO verified; tested species: mouse, rat**
- Loss of Mecp2 Causes Atypical Synaptic and Molecular Plasticity of Parvalbumin-Expressing Interneurons Reflecting Rett Syndrome-Like Sensorimotor Defects.  
Morello N, Schina R, Pilotto F, Phillips M, Melani R, Plicato O, Pizzorusso T, Pozzo-Miller L, Giustetto M  
eNeuro ( ) 55: . . **IHC; tested species: mouse**
- Dendritic Degeneration and Altered Synaptic Innervation of a Central Auditory Neuron During Age-related Hearing Loss.  
Wang M, Zhang C, Lin S, Xie R  
Neuroscience (2023) 514: 25-37. . **IHC; tested species: mouse**
- Calretinin-Expressing Synapses Show Improved Synaptic Efficacy with Reduced Asynchronous Release during High-Rate Activity.  
Zhang C, Wang M, Lin S, Xie R  
The Journal of neuroscience : the official journal of the Society for Neuroscience (2022) 4213: 2729-2742. . **IHC; tested species: mouse**
- Diversity in striatal synaptic circuits arises from distinct embryonic progenitor pools in the ventral telencephalon.  
van Heusden F, Macey-Dare A, Gordon J, Krajcski R, Sharott A, Ellender T  
Cell reports (2021) 354: 109041. . **IHC; tested species: mouse**
- Biased auditory nerve central synaptopathy is associated with age-related hearing loss.  
Wang M, Zhang C, Lin S, Wang Y, Seicol BJ, Ariss RW, Xie R  
The Journal of physiology (2021) 5996: 1833-1854. . **IHC; tested species: mouse**
- Lack of APP and APLP2 in GABAergic Forebrain Neurons Impairs Synaptic Plasticity and Cognition.  
Mehr A, Hick M, Ludewig S, Müller M, Herrmann U, von Engelhardt J, Wolfer DP, Korte M, Müller UC  
Cerebral cortex (New York, N.Y. : 1991) (2020) 307: 4044-4063. . **IHC; tested species: mouse**
- A Hippocampus-Accumbens Tripartite Neuronal Motif Guides Appetitive Memory in Space.  
Trouche S, Koren V, Doig NM, Ellender TJ, El-Gaby M, Lopes-Dos-Santos V, Reeve HM, Perestenko PV, Garas FN, Magill PJ, Sharott A, et al.  
Cell (2019) : . . **IHC; tested species: mouse**
- Female Mice with Apolipoprotein E4 Domain Interaction Demonstrated Impairments in Spatial Learning and Memory Performance and Disruption of Hippocampal Cyto-Architecture.  
Adeosun SO, Hou X, Shi L, Stockmeier CA, Zheng B, Raffai RL, Weisgraber KH, Mosley TH, Ming Wang J  
Neurobiology of learning and memory (2019) : . . **IHC; tested species: mouse**

### Selected General References

- Influence of the "open field" exposure on calbindin D28K, calretinin, and parvalbumin containing cells in the rat midbrain - developmental study.  
Klejbor I et al. J. Physiol. Pharmacol. (2006) PubMed:16601322
- Calbindin D-28 and microtubule-associated protein-2: their use as sensitive immunohistochemical markers of cerebellar neurotoxicity in a regulatory toxicity study.  
Haworth R et al. Exp. Toxicol. Pathol. (2006) PubMed:16542831

Access the online factsheet including applicable protocols  
at <https://sysy.com/product/214102> or scan the QR-code.



# FAQ - How should I store my antibody?

## Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

## Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

## Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

## Product Specific Hints for Storage

### Control proteins / peptides

- Store at -20°C to -80°C.

### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

# Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.