SYSY Antibodies

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Ca2+ channel L-type α-1C

Cat.No. 334 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°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	**WB**: 1 : 1000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: not tested yet **IHC**: external data (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1901 to 2169 from rat Ca2+ channel L-type α-1C (Cav1.2) (UniProt Id: P22002)
Reactivity	Reacts with: rat (P22002), mouse (Q01815). Other species not tested yet.
Remarks	**WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE. Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE. **IHC**: This antibody has been successfully applied for this method by our customers using mild fixation (4% PFA and 15% picric acid) according to Kirizs et al. 2014 (see gallery). It has not been validated using our standard protocol.

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

Background

Voltage **g**ated **c**alcium **c**hannels (VGCCs), also referred to as voltage sensitive calcium channels (VSCCs), are present in most excitable cells. They mediate the influx of Ca^{2+} ions into the cell and trigger the release of neurotransmitters or hormons but are also involved in other calcium dependent processes like metabolism, cell proliferation and cell death.
VGCCs are composed of four subunits (α-1, α-2, β and δ) in a 1:1:1:1 ratio. The **α-1C subunit** occurs in VGCCs of the L-type which belongs to the high voltage activated group (hva).

Selected References for 334 003

Adaptive Mechanisms of Somatostatin-Positive Interneurons after Traumatic Brain Injury through a Switch of α Subunits in L-Type Voltage-Gated Calcium Channels.
Ihbe N, Le Prieult F, Wang Q, Distler U, Sielaff M, Tenzer S, Thal SC, Mittmann T
Cerebral cortex (New York, N.Y. : 1991) (2021) : . . **WB, IHC; tested species: mouse**

Temporal characterisation and electrophysiological implications of TBI-induced serine/threonine kinase activity in mouse cortex.
Celine G, Thomas M
Cellular and molecular life sciences : CMLS (2025) 821: 102. . **WB, IHC; tested species: mouse**

Selected General References

A specific role for the REV-ERBα-controlled L-Type Voltage-Gated Calcium Channel CaV1.2 in resetting the circadian clock in the late night.
Schmutz I et al. J. Biol. Rhythms (2014) PubMed:25238857

A CACNA1C variant associated with reduced voltage-dependent inactivation, increased CaV1.2 channel window current, and arrhythmogenesis.
Hennessey JA et al. PLoS ONE (2014) PubMed:25184293

The role of L-type voltage-gated calcium channels Cav1.2 and Cav1.3 in normal and pathological brain function.
Berger SM et al. Cell Tissue Res. (2014) PubMed:24996399

Cav1.2 and Cav1.3 L-type calcium channels regulate dopaminergic firing activity in the mouse ventral tegmental area.
Liu Y et al. J. Neurophysiol. (2014) PubMed:24848473

Role of hippocampal Cav1.2 Ca2+ channels in NMDA receptor-independent synaptic plasticity and spatial memory.
Moosmang S et al. J. Neurosci. (2005) PubMed:16251435

Role of the C terminus of the alpha 1C (CaV1.2) subunit in membrane targeting of cardiac L-type calcium channels.
Gao T et al. J. Biol. Chem. (2000) PubMed:10816591

Access the online factsheet including applicable protocols at https://sysy.com/product/334003 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.