SYSY Antibodies

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Ca2+ channel P/Q-type α-1A

Cat.No. 152 211; 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_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**: 1 : 100 up to 1 : 500 (see remarks) **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet **IHC-Fr**: 1 : 500 (see remarks)
Clone	23F11
Subtype	IgG2b (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1921 to 2212 from rat Ca2+ channel P/Q-type α-1A (Cav2.1) (UniProt Id: P54282)
Reactivity	Reacts with: rat (P54282), mouse (P97445). 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. Less sensitive than the polyclonal antibodies (152 103, 152 205). **ICC**: 2% formaldehyde/PFA fixation is recommended. **IHC-Fr**: The following fixatives are possible: methanol, acetone, methanol-acetone, 4% formaldehyde/PFA.

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-1A isoform occurs in VGCCs of the **P/Q-type** while isoform α-1B is found in the N-type. Both belong to the high voltage activated group (hva).

Selected References for 152 211

Transient Confinement of CaV2.1 Ca2+-Channel Splice Variants Shapes Synaptic Short-Term Plasticity.
Heck J, Parutto P, Ciuraszkiewicz A, Bikbaev A, Freund R, Mitlöhner J, Alonso M, Fejtova A, Holcman D, Heine M
Neuron (2019) : . . **WB; tested species: rat**

Selected General References

Calcium channel types with distinct presynaptic localization couple differentially to transmitter release in single calyx-type synapses.
Wu LG et al. J. Neurosci. (1999) PubMed:9880593

Localization of Ca2+ channel subtypes on rat spinal motor neurons, interneurons, and nerve terminals.
Westenbroek RE et al. J. Neurosci. (1998) PubMed:9698323

Biochemical properties and subcellular distribution of the BI and rbA isoforms of alpha 1A subunits of brain calcium channels.
Sakurai T et al. J. Cell Biol. (1996) PubMed:8707834

Immunochemical identification and subcellular distribution of the alpha 1A subunits of brain calcium channels.
Westenbroek RE et al. J. Neurosci. (1995) PubMed:7472404

Immunochemical identification and differential phosphorylation of alternatively spliced forms of the alpha 1A subunit of brain calcium channels.
Sakurai T et al. J. Biol. Chem. (1995) PubMed:7673157

Primary structure of a calcium channel that is highly expressed in the rat cerebellum.
Starr TV et al. Proc. Natl. Acad. Sci. U.S.A. (1991) PubMed:1648226

Access the online factsheet including applicable protocols at https://sysy.com/product/152211 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.