SYSY Antibodies

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CaMK1

Cat.No. 211 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: external data (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 374 from mouse CaMK1 (UniProt Id: Q91YS8)
Reactivity	Reacts with: human (Q14012), rat (Q63450), mouse (Q91YS8). Other species not tested yet.
Specificity	Specifiy for CaMK 1, recognizes all isoforms (α, β, γ, and δ).
Remarks	**IHC**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols.

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

Background

Calcium- and cal**m**odulin-dependent **k**inase **1** (**CaMK 1**) is a serine/threonine kinase that belongs to the family of calcium-dependent kinases consisting of CaMK 2, CaMK 4, and CaMKK (CaMK-kinase). Four different isoforms (CaMK 1 α, β, γ, and δ) derived from independent genes have been described. CaMK 1 is the most abundant isoform in the central nervous system and is involved in cellular differentiation processes.

Selected References for 211 005

Delta-Band Dynamics of CaMKI-Positive Preoptic Neurons Encode Thermal Homeostatic Information.
Wang DD, Yang RZ, Sun ST, Sun YL, Wang RY, Meng XY, Li SM, Li JK, Liu PP, Li SA, Kang JS, et al.
Neuroscience bulletin (2026) : . . **IHC, ICC; tested species: mouse**

Thermoregulation via Temperature-Dependent PGD2 Production in Mouse Preoptic Area.
Wang TA, Teo CF, Åkerblom M, Chen C, Tynan-La Fontaine M, Greiner VJ, Diaz A, McManus MT, Jan YN, Jan LY
Neuron (2019) : . . **IHC; tested species: mouse**

Selected General References

A calcium- and calmodulin-dependent kinase Ialpha/microtubule affinity regulating kinase 2 signaling cascade mediates calcium-dependent neurite outgrowth.
Uboha NV et al. J. Neurosci. (2007) PubMed:17442826

Phosphorylation of Numb family proteins. Possible involvement of Ca2+/calmodulin-dependent protein kinases.
Tokumitsu H et al. J. Biol. Chem. (2005) PubMed:16105844

Calmodulin-dependent kinase I regulates adrenal cell expression of aldosterone synthase.
Condon JC et al. Endocrinology (2002) PubMed:12193581

Inhibition of the Ca2+/calmodulin-dependent protein kinase I cascade by cAMP-dependent protein kinase.
Matsushita M et al. J. Biol. Chem. (1999) PubMed:10187789

Characterization of the mechanism of regulation of Ca2+/ calmodulin-dependent protein kinase I by calmodulin and by Ca2+/calmodulin-dependent protein kinase kinase.
Matsushita M et al. J. Biol. Chem. (1998) PubMed:9705275

Calcium/calmodulin-dependent protein kinase I. cDNA cloning and identification of autophosphorylation site.
Picciotto MR et al. J. Biol. Chem. (1993) PubMed:8253780

Access the online factsheet including applicable protocols at https://sysy.com/product/211005 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.