SYSY Antibodies

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# CPT1c

**Cat.No. 415 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Azide was added before lyophilization. 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)<br>**IP**: yes<br>**ICC**: 1 : 500<br>**IHC**: 1 : 500 up to 1 : 1000<br>**IHC-P (FFPE)**: not tested yet |
| Immunogen | Synthetic peptide corresponding to AA 784 to 798 from mouse Cpt1c (UniProt Id: Q8BGD5) |
| Reactivity | Reacts with: mouse (Q8BGD5), rat (F1LN46).<br>Other species not tested yet. |
| Specificity | K.O. validated PubMed: 37309891 |
| Matching control | 415-0P |

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

## Background

**CPT1c** is a **c**arnitine **p**almitoyl**t**ransferase **1** (CPT 1) isoform that is expressed only in the brain. It has been shown to be an integral part of native AMPA receptor complexes in neurons and modulates the surface expression of these ionotropic glutamate receptors.

## Selected References for 415 003

CPT1C is required for synaptic plasticity and oscillatory activity that supports motor, associative and non-associative learning.
Iborra-Lázaro G, Djebari S, Sánchez-Rodríguez I, Gratacòs-Batlle E, Sánchez-Fernández N, Radošević M, Casals N, Navarro-López JD, Soto Del Cerro D, Jiménez-Díaz L
The Journal of physiology (2023) : . . **IHC; KO verified; tested species: mouse**

## Selected General References

Mechanisms of CPT1C-Dependent AMPAR Trafficking Enhancement.
Gratacòs-Batlle E et al. Front Mol Neurosci (2018) PubMed:30135643

Cpt1c regulated by AMPK promotes papillary thyroid carcinomas cells survival under metabolic stress conditions.
Wang R et al. J Cancer (2017) PubMed:29151954

Novel Regulation of the Synthesis of α-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Subunit GluA1 by Carnitine Palmitoyltransferase 1C (CPT1C) in the Hippocampus.
Fadó R et al. J. Biol. Chem. (2015) PubMed:26338711

AMPAR interacting protein CPT1C enhances surface expression of GluA1-containing receptors.
Gratacòs-Batlle E et al. Front Cell Neurosci (2014) PubMed:25698923

CPT1c is localized in endoplasmic reticulum of neurons and has carnitine palmitoyltransferase activity.
Sierra AY et al. J. Biol. Chem. (2008) PubMed:18192268

Localization and effect of ectopic expression of CPT1c in CNS feeding centers.
Dai Y et al. Biochem. Biophys. Res. Commun. (2007) PubMed:17559810

Access the online factsheet including applicable protocols at https://sysy.com/product/415003 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.