SYSY Antibodies

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Cannabinoid receptor CB1-R

Cat.No. 258 003; 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**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 450 to 473 from rat CB1-R (UniProt Id: P20272)
Reactivity	Reacts with: rat (P20272), mouse (P47746). Other species not tested yet.
Specificity	K.O. validated PubMed: 32631938
Remarks	**WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE.

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

Background

The **cannabinoid receptor CB1-R** is a G-protein coupled receptor (GPCR) with 7 transmembrane domains. It is responsive to tetrahydrocannabinol, the psychotropic component of marijuana. Endogenous cannabinoids (endocannabinoids) are released from postsynaptic neurons and act onto presynaptic cannabinoid receptors where they play important physiological roles in synaptic plasticity, analgesia, appetite, and neuroprotection.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 258 003

Involvement of the endocannabinoid system in the physiological response to transient common carotid artery occlusion and reperfusion.
Quartu M, Poddighe L, Melis T, Serra MP, Boi M, Lisai S, Carta G, Murru E, Muredda L, Collu M, Banni S, et al.
Lipids in health and disease (2017) 161: 14. . **WB, IHC**

Multiomics of synaptic junctions reveals altered lipid metabolism and signaling following environmental enrichment.
Borgmeyer M, Coman C, Has C, Schött HF, Li T, Westhoff P, Cheung YFH, Hoffmann N, Yuanxiang P, Behnisch T, Gomes GM, et al.
Cell reports (2021) 371: 109797. . **ICC, IHC; tested species: mouse,rat**

Developmentally transient CB1Rs on cerebellar afferents suppress afferent input, downstream synaptic excitation, and signaling to migrating neurons.
Barnes JL, Mohr C, Ritchey CR, Erikson CM, Shiina H, Rossi DJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **IHC; KO verified; tested species: mouse,rat**

A High-Resolution Method for Quantitative Molecular Analysis of Functionally Characterized Individual Synapses.
Holderith N, Heredi J, Kis V, Nusser Z
Cell reports (2020) 324: 107968. . **IHC; tested species: rat**

Phenotypic characterization of MCP-1 expressing neurons in the rat cerebral cortex.
Mulet M, Blasco-Ibáñez JM, Kirstein M, Crespo C, Nacher J, Varea E
Journal of chemical neuroanatomy (2020) 106: 101785. . **IHC; tested species: rat**

Dark exposure affects plasticity-related molecules and interneurons throughout the visual system during adulthood.
Carceller H, Guirado R, Nacher J
The Journal of comparative neurology (2019) : . . **IHC; tested species: mouse**

An opposing function of paralogs in balancing developmental synapse maturation.
Favaro PD, Huang X, Hosang L, Stodieck S, Cui L, Liu YZ, Engelhardt KA, Schmitz F, Dong Y, Löwel S, Schlüter OM, et al.
PLoS biology (2018) 1612: e2006838. . **WB; tested species: mouse**

Active zone proteins RIM1αβ are required for normal corticostriatal transmission and action control.
Kupferschmidt DA, Augustin SM, Johnson KA, Lovinger DM
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) : . . **IHC; tested species: mouse**

NPAS4 recruits CCK basket cell synapses and enhances cannabinoid-sensitive inhibition in the mouse hippocampus.
Hartzell AL, Martyniuk KM, Brigidi GS, Heinz DA, Djaja NA, Payne A, Bloodgood BL
eLife (2018) 7: . . **IHC; tested species: mouse**

Differential role of GABAA receptors and neuroligin 2 for perisomatic GABAergic synapse formation in the hippocampus.
Panzanelli P, Früh S, Fritschy JM
Brain structure & function (2017) 2229: 4149-4161. . **IHC; tested species: mouse**

Neuronal Dystroglycan Is Necessary for Formation and Maintenance of Functional CCK-Positive Basket Cell Terminals on Pyramidal Cells.
Früh S, Romanos J, Panzanelli P, Bürgisser D, Tyagarajan SK, Campbell KP, Santello M, Fritschy JM
The Journal of neuroscience : the official journal of the Society for Neuroscience (2016) 3640: 10296-10313. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/258003 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.