SYSY Antibodies

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Cannabinoid receptor CB1-R

Cat.No. 258 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. 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**: not tested yet **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500
Clone	289C1
Subtype	IgG2b (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of rat CB1-R (UniProt Id: P20272)
Reactivity	Reacts with: rat (P20272), mouse (P47746), human (P21554). Other species not tested yet.
Specificity	K.O. validated

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 258 011

Cannabidiol modulates excitatory-inhibitory ratio to counter hippocampal hyperactivity.
Rosenberg EC, Chamberland S, Bazelot M, Nebet ER, Wang X, McKenzie S, Jain S, Greenhill S, Wilson M, Marley N, Salah A, et al.
Neuron (2023) : . . **ICC, IHC; tested species: mouse,rat**

Impact of the mouse estrus cycle on cannabinoid receptor agonist-induced molecular and behavioral outcomes.
Kim HJJ, Zagzoog A, Black T, Baccetto SL, Ezeaka UC, Laprairie RB
Pharmacology research & perspectives (2022) 103: e00950. . **WB; tested species: mouse**

Striatal dopamine D2, adenosine A2A and cannabinoid CB1 receptors balance as a target against non-cognitive symptoms in a mouse model of Alzheimer's disease.
Gómez-Acero L, Sánchez-Fernández N, Subirana P, Ciruela F, Aso E
Pharmacology, biochemistry, and behavior (2025) 249: 173970. . **IHC; tested species: mouse**

Sex-dependent effects of stress on aIC-NAc circuit neuroplasticity: Role of the endocannabinoid system.
Gauthier M, Hebert LP, Dugast E, Lardeux V, Letort K, Thiriet N, Belnoue L, Balado E, Solinas M, Belujon P
Progress in neuro-psychopharmacology & biological psychiatry (2025) 138: 111335. . **IHC; tested species: rat**

Cadherins orchestrate specific patterns of perisomatic inhibition onto distinct pyramidal cell populations.
Jézéquel J, Condomitti G, Kroon T, Hamid F, Sanalidou S, Garcés T, Maeso P, Balia M, Hu Z, Sahara S, Rico B, et al.
Nature communications (2025) 161: 4481. . **IHC; tested species: mouse**

CB1R blockade unmasks TRPV1-mediated contextual fear generalization in female, but not male rats.
Huckleberry KA, Calitri R, Li AJ, Mejdell M, Singh A, Bhutani V, Laine MA, Nastase AS, Morena M, Hill MN, Shansky RM, et al.
Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology (2023) 4810: 1500-1508. . **IHC; tested species: rat**

Dual Cannabinoid and Orexin Regulation of Anhedonic Behaviour Caused by Prolonged Restraint Stress.
Kim HJJ, Zagzoog A, Ceni C, Ferrisi R, Janz N, Laprairie RB
Brain sciences (2023) 132: . . **IHC; tested species: mouse**

Social Play Behavior Is Critical for the Development of Prefrontal Inhibitory Synapses and Cognitive Flexibility in Rats.
Bijlsma A, Omrani A, Spoelder M, Verharen JPH, Bauer L, Cornelis C, de Zwart B, van Dorland R, Vanderschuren LJMJ, Wierenga CJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2022) 4246: 8716-8728. . **IHC; tested species: rat**

Deficiency in endocannabinoid synthase DAGLB contributes to early onset Parkinsonism and murine nigral dopaminergic neuron dysfunction.
Liu Z, Yang N, Dong J, Tian W, Chang L, Ma J, Guo J, Tan J, Dong A, He K, Zhou J, et al.
Nature communications (2022) 131: 3490. . **IHC; tested species: mouse**

Axonal CB1 Receptors Mediate Inhibitory Bouton Formation via cAMP Increase and PKA.
Liang J, Kruijssen DLH, Verschuuren ACJ, Voesenek BJB, Benavides FFW, Sáez Gonzalez M, Ruiter M, Wierenga CJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2021) 4140: 8279-8296. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/258011 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.