SYSY Antibodies

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RFP (dsRed)

Cat.No. 390 005; 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**: not recommended **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 200 up to 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 225 from sea anemone DsRed (UniProt Id: Q9U6Y8)
Specificity	Recognizes mRFP, mCherry, mOrange2, dsRed, tdTomato, mScarlet.

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

Background

Red **f**luorescent **p**rotein **RFP** and its derivates have become universal tools in cell biology. Most RFPs derive from a protein isolated from Discosoma sp. They are used as fluorescent tags to investigate expression levels, patterns and protein localization.

Selected References for 390 005

Selectively Imaging Cranial Sensory Ganglion Neurons Using AAV-PHP.S.
Asencor AI, Dvoryanchikov G, Makhoul V, Tsoulfas P, Chaudhari N
eNeuro () 93: . . **IHC; tested species: mouse**

Fronto-insular circuit mechanisms of accelerated intermittent theta burst stimulation.
Johnson SB, Rocks D, Chalençon L, Johnson K, Hassan U, Arefin A, Akgül G, Donatelle A, Asher H, Elbau I, Estrin D, et al.
Cell (2026) 18910: 3071-3090.e27. . **IHC; tested species: mouse**

Distinct modes of dopamine modulation on striatopallidal synaptic transmission.
Lee YL, Reva M, Kim KJ, Kim HJ, Kim Y, Cho E, Jeong M, Kwak Y, Myung K, Li Y, Lee SE, et al.
Nature communications (2026) 171: . . **IHC; tested species: mouse**

Divergent opioid-mediated suppression of inhibition between hippocampus and neocortex across species and development.
Caccavano AP, Vlachos A, McLean N, Kimmel S, Kim JH, Vargish G, Mahadevan V, Hewitt L, Rossi AM, Spineux I, Wu SJ, et al.
Neuron (2025) : . . **IHC; tested species: mouse**

Protocol for selective DREADD-based chemogenetic inhibition of GABAergic amygdala neurons receiving hippocampal projections in rats.
Cicciarelli F, Concina G, Milano L, Renna A, Sacchetti B
STAR protocols (2025) 64: 104103. . **IHC; tested species: rat**

Hippocampus-to-amygdala pathway drives the separation of remote memories of related events.
Concina G, Milano L, Renna A, Manassero E, Stabile F, Sacchetti B
Cell reports (2024) 435: 114151. . **IHC; tested species: rat**

Individual thalamic inhibitory interneurons are functionally specialized toward distinct visual features.
Müllner FE, Roska B
Neuron (2024) 11216: 2765-2782.e9. . **IHC; tested species: mouse**

Purkinje cell microzones mediate distinct kinematics of a single movement.
Blot FGC, White JJ, van Hattem A, Scotti L, Balaji V, Adolfs Y, Pasterkamp RJ, De Zeeuw CI, Schonewille M
Nature communications (2023) 141: 4358. . **IHC; tested species: mouse**

Antibody-directed extracellular proximity biotinylation reveals that Contactin-1 regulates axo-axonic innervation of axon initial segments.
Ogawa Y, Lim BC, George S, Oses-Prieto JA, Rasband JM, Eshed-Eisenbach Y, Hamdan H, Nair S, Boato F, Peles E, Burlingame AL, et al.
Nature communications (2023) 141: 6797. . **IHC; tested species: rat**

Selected General References

Ubiquitous expression of the monomeric red fluorescent protein mCherry in transgenic mice.
Fink D et al. Genesis (2010) PubMed:20853428

Improved monomeric red, orange and yellow fluorescent proteins derived from Discosoma sp. red fluorescent protein.
Shaner NC et al. Nat. Biotechnol. (2004) PubMed:15558047

Diversity and evolution of the green fluorescent protein family.
Labas YA et al. Proc. Natl. Acad. Sci. U.S.A. (2002) PubMed:11929996

Novel fluorescent protein from Discosoma coral and its mutants possesses a unique far-red fluorescence.
Fradkov AF et al. FEBS Lett. (2000) PubMed:10981720

Access the online factsheet including applicable protocols at https://sysy.com/product/390005 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.