SYSY Antibodies

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# Cre-Recombinase

**Cat.No. 257 017; Monoclonal rat antibody, 100 µg purified IgG (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization.<br>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.<br>Antibodies should be stored at +4°C when still lyophilized. Do not freeze!<br>For detailed information, see back of the data sheet. |
| Applications | **WB**: not tested yet<br>**IP**: not tested yet<br>**ICC**: 1 : 500<br>**IHC**: 1 : 500 (see remarks)<br>**IHC-P (FFPE)**: 1 : 100 up to 1 : 1000 |
| Clone | SY-271B7 |
| Subtype | IgG2b (κ light chain) |
| Immunogen | Full length recombinant Cre-recombinase from Bacteriophage P1 (UniProt Id: P06956) |
| Specificity | Recognizes Cre- and iCre-recombinase. |
| Remarks | **IHC**: Antigen retrieval with citrate buffer pH 6 is tolerated.<br>This antibody is less sensitive compared to cat. no. 257 117, which is the first choice for IHC-experiments. |

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

## Background

Cre-Recombinase is a site-specific DNA recombinase derived from bacteriophage P1. It is highly specific for a 34 bp DNA sequence (loxP) found in P1 DNA and catalyzes site-specific recombination between two 34-base-pair LOXP recognition sites, enabling precise deletion, inversion, or activation of DNA sequences. Its role is to maintain the phage genome as a monomeric unit-copy plasmid in the lysogenic state [1].
In experimental biology, Cre is commonly expressed under tissue-, cell-, or temporally specific promoters, allowing conditional manipulation of genes in transgenic and knockout mouse models [2, 3]. Inducible variants such as Cre-ERT are fused to a modified estrogen receptor domain and can be activated by tamoxifen, providing temporal control of recombination [4].

## Selected General References

Using the Cre/lox system for targeted integration into the human genome: loxFAS-loxP pairing and delayed introduction of Cre DNA improve gene swapping efficiency.
Lanza AM et al. Biotechnol J (2012) PubMed:22539467

Cre/loxP-mediated chromosome engineering of the mouse genome.
Brault V et al. Handb Exp Pharmacol (2007) PubMed:17203650

Cre recombinase: the universal reagent for genome tailoring.
Nagy A et al. Genesis (2000) PubMed:10686599

Ligand-activated site-specific recombination in mice.
Feil R et al. Proc Natl Acad Sci U S A (1996) PubMed:8855277

Access the online factsheet including applicable protocols at https://sysy.com/product/257017 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.