SYSY Antibodies

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CD86 (B7.2) mouse specific

Cat.No. HS-466 003; 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 : 250 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 400 **IHC-Fr**: 1 : 500 (see remarks)
Immunogen	Synthetic peptide corresponding to AA 291 to 309 from mouse Cd86 (UniProt Id: P42082)
Reactivity	Reacts with: mouse (P42082). No signal: human (P42081), rat. Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required. **IHC-Fr**: Methanol fixation is recommended.

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

Background

CD86 (Cluster of Differentiation 86, also known as B7.2) belongs to the B7 family of immune-regulatory cell-surface protein ligands (1). CD86 and the genetically closely linked CD80 protein (also known as B7.1) are expressed by antigen presenting cells and provide costimulatory signals necessary for T cell activation and tolerance via interaction with CD28 and cytotoxic T-lymphocyte antigen 4 (CTLA-4) expressed on T-cells. However, CD80 and CD86 have non-equivalent roles in immune modulation: CD86 is the dominant ligand for proliferation and survival of regulatory T cells (Tregs) (2) and shows in comparison with CD80 very high efficiency at increasing T cell killing capacity (3). CD86 is expressed only at low levels on resting B cells, dendritic cells and macrophages; activation results in enhanced CD86 expression (Collins et al., 2005). In the CNS, CD86 upregulation is a marker of activated pro-inflammatory M1 microglia (4). In oncology research, CD86 is a biomarker to phenotypically differentiate classically activated M1 macrophages from alternatively activated M2 macrophages in the tumor microenvironment (5).

Selected General References

The B7 family of immune-regulatory ligands.
Collins M et al. Genome Biol (2005) PubMed:15960813

Tumor-associated macrophages: potential therapeutic strategies and future prospects in cancer.
Li C et al. J Immunother Cancer (2021) PubMed:33504575

CD86 Is a Selective CD28 Ligand Supporting FoxP3+ Regulatory T Cell Homeostasis in the Presence of High Levels of CTLA-4.
Halliday N et al. Front Immunol (2020) PubMed:33363541

Overview of General and Discriminating Markers of Differential Microglia Phenotypes.
Jurga AM et al. Front Cell Neurosci (2020) PubMed:32848611

Efficiency of T-cell costimulation by CD80 and CD86 cross-linking correlates with calcium entry.
Thiel M et al. Immunology (2010) PubMed:19824921

Access the online factsheet including applicable protocols at https://sysy.com/product/HS-466003 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.