SYSY Antibodies

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MEF2A

Cat.No. HS-507 003; 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) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 4000
Immunogen	Recombinant protein corresponding to residues near the central region of human MEF2A (UniProt Id: Q02078)
Reactivity	Reacts with: human (Q02078), mouse (Q60929), rat (Q2MJT0). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required for immunohistochemical staining in mouse muscle section.

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

Background

MEF2A is a member of the MEF2 (myocyte enhancer factor 2) family of transcription factors. The MEF2 family includes three other members, MEF2B, -C and -D. MEF2A is ubiquitously expressed but has an alternatively spliced isoform that is restricted to skeletal muscle, heart and brain due to the inclusion of an exon encoding the peptide SEEEELEL (residues 289-296) (1). The activity of MEF2A can be regulated by phosphorylation/dephosphorylation, which affects its DNA-binding affinity and interaction with transcriptional co-activators and co-repressors. MEF2A is also susceptible to protease cleavage by caspases (2). In neuronal cells, MEF2A plays a role in neurodevelopment and synaptic plasticity. It contributes to the formation and maintenance of neural circuits, ultimately impacting cognitive functions and behavior. MEF2A also has an important role in the immune system. It contributes significantly to the development of T-cells and the immune response. MEF2A is a non-redundant regulator of the inflammatory epigenome of macrophages and, more specifically, of PGE2-sensitive enhancers (3). Defects in MEF2A may be a cause of an autosomal dominant form of coronary artery disease (CAD) with myocardial infarction (ADCAD1) [MIM:608320] (4). MEF2A protein is also regulated in a model of chronic kidney disease using cadmium as a toxic treatment in human proximal tubule cells (HK-2) (5).

Selected General References

Human myocyte-specific enhancer factor 2 comprises a group of tissue-restricted MADS box transcription factors.
Yu YT et al. Genes Dev (1992) PubMed:1516833

A PGE2-MEF2A axis enables context-dependent control of inflammatory gene expression.
Cilenti F et al. Immunity (2021) PubMed:34129840

Cadmium toxicity mediated by the inhibition of SLC2A4 expression in human proximal Tubule cells.
Lee JY et al. FASEB J (2021) PubMed:33337552

Mutation of MEF2A in an inherited disorder with features of coronary artery disease.
Wang L et al. Science (2003) PubMed:14645853

Kinetics of catalytic reactions with diffusional relaxation.
Krapivsky PL et al. Phys Rev E Stat Phys Plasmas Fluids Relat Interdiscip Topics (1995) PubMed:9963821

Access the online factsheet including applicable protocols at https://sysy.com/product/HS-507003 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.