

## 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 <b>reconstitution</b> add 50 µl H <sub>2</sub> O 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	<b>WB:</b> (AP-staining) <b>IHC:</b> 1 : 500 (see remarks) <b>IHC-P:</b> 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	<b>IHC:</b> 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 SEEELEL (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 PGE<sub>2</sub>-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 PGE<sub>2</sub>-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-histosure.com/product/HS-507003> or scan the QR-code.



## FAQ - How should I store my antibody?

### Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

### Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

### Product Specific Hints for Storage

#### Control proteins / peptides

- Store at -20°C to -80°C.

#### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

#### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

## Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.