SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

[Primary Antibody]

Rabbit Anti-MEF2A antibody

Catalog Number: SL1400R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	MEF2A
Immunogen:	KLH conjugated synthetic peptide derived from human MEF2: 1-150/497
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	WB=1:500-2000 IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human,Mouse(predicted:Rat,Zebrafish)
Predicted MW.:	54kDa
Subcellular Location:	The nucleus cytoplasmic
Background:	The process of differentiation from mesodermal precursor cells to myoblasts has led to the discovery of a variety of tissue-specific factors that regulate muscle gene expression. The myogenic basic helix-loop-helix proteins, including myoD (MIM 159970), myogenin (MIM 159980), MYF5 (MIM 159990), and MRF4 (MIM 159991) are one class of identified factors. A second family of DNA binding regulatory proteins is the myocyte-specific enhancer factor-2 (MEF2) family. Each of these proteins binds to the MEF2 target DNA sequence present in the regulatory regions of many, if not all, muscle-specific genes. The MEF2 genes are members of the MADS gene family (named for the yeast mating type-specific transcription factor MCM1, the plant homeotic genes 'agamous' and 'deficiens' and the human serum response factor SRF (MIM 600589)), a family

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	that also includes several homeotic genes and other transcription factors, all of which share a conserved DNA-binding domain. MEF2A belongs to a family of DNA binding regulatory proteins. The MEF2 family of transcription factors is highly expressed in the brain when neurons undergo dendritic maturation and synapse formation. MEF2A is especially abundant in granule neurons of the cerebellar cortex throughout the period of synaptogenesis. MEF2A also has key roles in cardiac and skeletal muscle development. **Function:** Transcriptional activator which binds specifically to the MEF2 element, 5'-YTA[AT](4)TAR-3', found in numerous muscle-specific genes. Also involved in the activation of numerous growth factor- and stress-induced genes. Mediates cellular functions not only in skeletal and cardiac muscle development, but also in neuronal differentiation and survival. Plays diverse roles in the control of cell growth, survival and apoptosis via p38 MAPK signaling in muscle-specific and/or growth factor-related transcription. In cerebellar granule neurons, phosphorylated and sumoylated MEF2A represses transcription of NUR77 promoting synaptic differentiation. **Subcellular Location:** Nucleus. **Tissue Specificity:** Isoform MEF2 and isoform MEFA are expressed only in skeletal and cardiac muscle and in the brain. Isoform RSRFC4 and isoform RSRFC9 are expressed in all tissues examined. **Post-translational modifications:** Constitutive phosphorylation on Ser-408 promotes Lys-403 sumoylation thus preventing acetylation at this site. Dephosphorylation on Ser-408 by PPP3CA upon neuron depolarization promotes a switch from sumoylation to acetylation on residue Lys-403 leading to inhibition of dendrite claw differentiation. Phosphorylation on Thr-312 and Thr-319 are the main sites involved in p38 MAPK signaling and activate transcription. Phosphorylated on these sites by MAPK14/p38alpha and MAPK11/p38beta, but not by MAPK13/p38delta nor by MAPK12/p38gamma. Phosphorylation on Ser-408 by CDK5 induced by neurotoxicity inhibits MEF2A transcriptional activation leading to apoptosis of cortical neurons. Phosphorylation on Thr-312, Thr-319 and Ser-355 can be induced by EGF. Sumoylation on Lys-403 is enhanced by PIAS1 and represses transcriptional activity. Phosphorylation on Ser-408 is required for sumoylation. Has no effect on nuclear location nor on DNA binding. Sumoylated by SUMO1 and, to a lesser extent by SUMO2 and SUMO3. PIASx facilitates sumoylation in postsynaptic dendrites in the cerebellar cortex and promotes their morphogenesis. Acetylation on Lys-403 activates transcriptional activity. Acetylated by p300 on several sites in diffentiating myocytes. Acetylation on Lys-4 increases

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	DNA binding and transactivation. Hyperacetylation by p300 leads to enhanced cardiac myocyte growth and heart failure. Proteolytically cleaved in cerebellar granule neurons on several sites by caspase 3 and caspase 7 following neurotoxicity. Preferentially cleaves the CDK5-mediated hyperphosphorylated form which leads to neuron apoptosis and transcriptional inactivation. DISEASE: Defects in MEF2A might be a cause of autosomal dominant coronary artery disease 1 with myocardial infarction (ADCAD1) [MIM:608320]. **Similarity:** Belongs to the MEF2 family. Contains 1 MADS-box domain. Contains 1 Mef2-type DNA-binding domain. **Database links:** **Entrez Gene:** 4205 Human **Entrez Gene:** 17258 Mouse **Entrez Gene:** 309957 Rat Omim: 600660 Human **SwissProt:** Q02078 Human **SwissProt:** Q60929 Mouse **SwissProt:** Q2MJT0 Rat **Unigene:** 268675 Human **Unigene:** 132788 Mouse **Unigene:** 426509 Mouse **Unigene:** 466976 Mouse **Unigene:** 162435 Rat transcriptional regulatory factor（Transcriptin Regulators） MEF2 is a transcription factor mainly present in muscle cells. Recent studies have found that it is also present in the liver, and increased expression and activity may activate HSCs, enhance the activity of the type I collagen promoter, and stimulate HSC proliferation. Therefore, MEF2 may play an important role in the occurrence and development of liver fibrosis.

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[VALIDATION IMAGES]

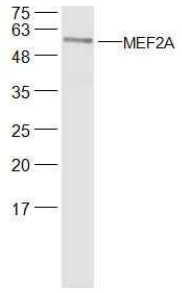


Figure 1. Sample: Heart (Mouse) Lysate at 40 ug Primary: Anti-MEF2A (SL1400R) at 1/300 dilution Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution Predicted band size: 54 kD Observed band size: 54 kD

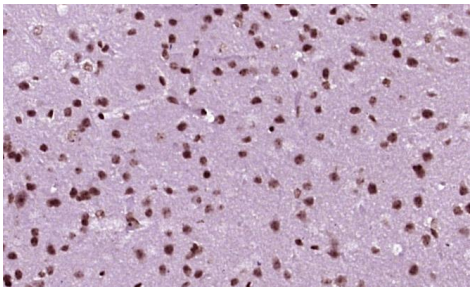


Figure 2. Paraformaldehyde-fixed, paraffin embedded (mouse brain tissue); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (MEF2A) Polyclonal Antibody, Unconjugated (SL1400R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining

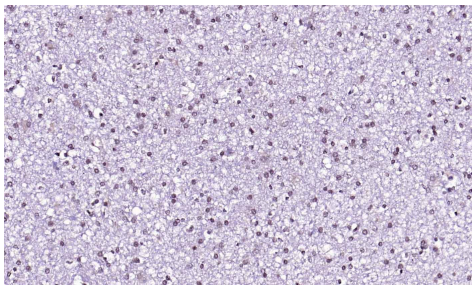


Figure 3. Paraformaldehyde-fixed, paraffin embedded (human brain glioma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Incubation with (MEF2A) Polyclonal Antibody, Unconjugated (SL1400R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining

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