

磷酸化肌细胞增强因子 2 抗体

产品货号： mlR5485

英文名称： Phospho-MEF2A (Thr319)

中文名称： 磷酸化肌细胞增强因子 2 抗体

别名： MEF2A (phospho T319); p-MEF2A (phospho T319); MEF2A (Phospho-Thr319); MEF2A(phospho T319); myocyte enhancer-binding factor 2; ADCAD1; MADS box transcription enhancer factor 2 polypeptide A; MADS box transcription enhancer factor 2, polypeptide A (myocyte enhancer factor 2A); MEF 2A; MEF2; MEF2A; Myocyte enhancer factor 2A; RSRFC4; RSRFC9; Serum response factor like protein 1; MEF2A_HUMAN.

产品类型： 磷酸化抗体

研究领域： 心血管 细胞生物 免疫学 染色质和核信号 神经生物学 信号转导 干细胞 转录调节因子

抗体来源： Rabbit

克隆类型： Polyclonal

交叉反应： Human, Mouse, Rat, Dog, Cow, Horse, Sheep,

产品应用：WB=1:500-2000 ELISA=1:500-1000

not yet tested in other applications.

optimal dilutions/concentrations should be determined by the end user.

分子量：54kDa

细胞定位：细胞核

性状：Lyophilized or Liquid

浓度：1mg/ml

免疫原：KLH conjugated Synthesised phosphopeptide derived from human MEF2A around the phosphorylation site of Thr319:VT(P-T)PS

亚型：IgG

纯化方法：affinity purified by Protein A

储存液：0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.

保存条件：Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

PubMed : PubMed

产品介绍 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 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.

Subunit:

Binds DNA as a homo- or heterodimer. Dimerizes with MEF2D. Interacts with HDAC7 (By similarity). Interacts with PIAS1; the interaction enhances sumoylation. Interacts with HDAC4, HDAC9 and SLC2A4RG. Interacts (via the N-terminal) with MAPK7; the interaction results in the phosphorylation and transcriptional activity of MEF2A.

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 with SUMO1 and, to a lesser extent with SUMO2 and SUMO3. PIASx facilitates sumoylation in postsynaptic dendrites in the cerebellar cortex and promotes their morphogenesis (By similarity).

Acetylation on Lys-403 activates transcriptional activity. Acetylated by p300 on several sites in differentiating myocytes. Acetylation on Lys-4 increases DNA binding and transactivation (By similarity). 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 are a cause of coronary artery disease, autosomal dominant, type 1 (ADCAD1)[MIM:608320]. A

common heart disease characterized by reduced or absent blood flow in one or more of the arteries that encircle and supply the heart. Its most important complication is acute myocardial infarction.

Similarity:

Belongs to the MEF2 family.

Contains 1 MADS-box domain.

Contains 1 Mef2-type DNA-binding domain.

SWISS:

Q02078

Gene ID:

4205

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

MEF2 是一种主要存在于肌细胞的转录因子，近来研究发现他也存在于肝脏，并且其表达及活性增加可能激活 HSC，提高 I 型胶原启动子的活性及刺激 HSC 的增生。因此，MEF2 可能在肝纤维化的发生，发展中发挥着重要作用。

产品图片

