

## Product datasheet

# Anti-MEF2A (phospho T312) antibody ab30644

★★★★★ 2 Abreviews 4 References 3 Images

### Overview

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<b>Product name</b>	Anti-MEF2A (phospho T312) antibody
<b>Description</b>	Rabbit polyclonal to MEF2A (phospho T312)
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> IHC-P, WB
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Synthetic phosphopeptide derived from human MEF2A around the phosphorylation site of Threonine 312.

### General notes

Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

### Properties

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<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.

**Storage buffer** pH: 7.40  
Preservative: 0.02% Sodium azide  
Constituents: PBS, 50% Glycerol, 0.87% Sodium chloride

Without Mg<sup>2+</sup> and Ca<sup>2+</sup>

**Purity** Immunogen affinity purified

**Purification notes** The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.

**Clonality** Polyclonal

**Isotype** IgG

## Applications

Our [Abpromise guarantee](#) covers the use of **ab30644** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/50 - 1/100.
WB	★★★★★	1/500 - 1/1000. Detects a band of approximately 65 kDa (predicted molecular weight: 55 kDa).

## Target

**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.

**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.

**Involvement in disease** Defects in MEF2A might be a cause of autosomal dominant coronary artery disease 1 with myocardial infarction (ADCAD1) [MIM:608320].

**Sequence similarities** Belongs to the MEF2 family.  
Contains 1 MADS-box domain.  
Contains 1 Mef2-type DNA-binding domain.

**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.

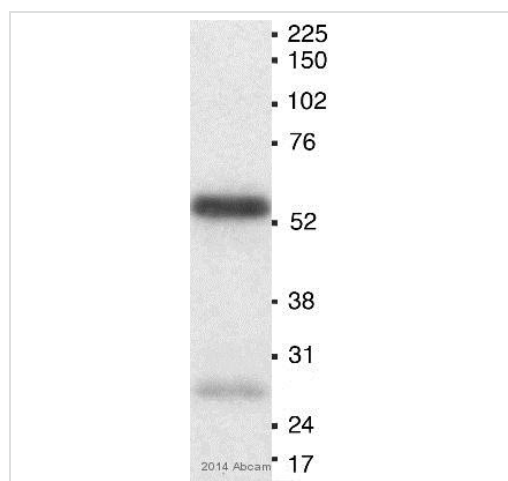
Phosphorylation on Ser-408 is required for sumoylation. Has no effect on nuclear location nor on DNA binding. Sumoylated by SUMO1 and, to a lesser extent by SUMO2 and SUMO3. PIASx facilitates sumoylation in postsynaptic dendrites in the cerebellar cortex and promotes their morphogenesis.

Acetylation on Lys-403 activates transcriptional activity. Acetylated by p300 on several sites in 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.

## Cellular localization

Nucleus.

## Images



Western blot - Anti-MEF2A (phospho T312) antibody (ab30644)

This image is courtesy of an anonymous Abreview

Anti-MEF2A (phospho T312) antibody (ab30644) at 1/1000 dilution  
+ Mouse liver tissue lysate - whole at 40  $\mu$ g

### Secondary

HRP-conjugated goat anti-rabbit IgG polyclonal at 1/10000 dilution

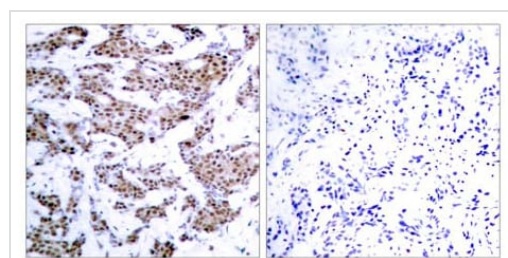
Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 55 kDa

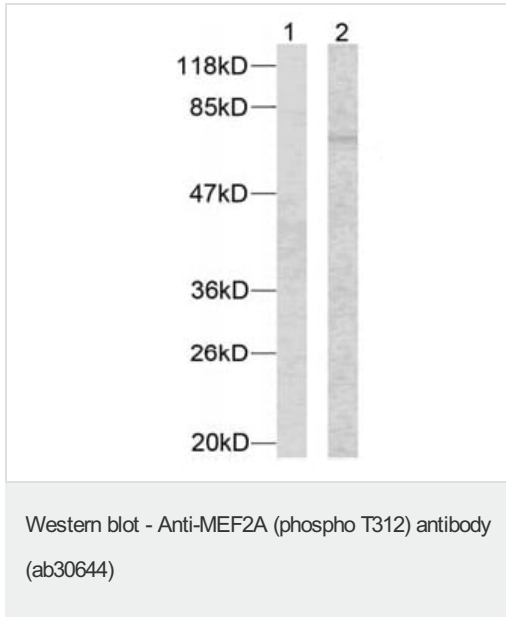
**Observed band size:** 55 kDa

**Exposure time:** 1 minute



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEF2A (phospho T312) antibody (ab30644)

Immunohistochemical analysis of paraffin-embedded human breast carcinoma. Left: using ab30644 (10 $\mu$ g/ml); right: the same antibody preincubated with synthesized phosphopeptide.



**All lanes :** Anti-MEF2A (phospho T312) antibody (ab30644) at 1  $\mu\text{g/ml}$

**Lane 1 :** Untreated NIH/3T3 cells (5-30 $\mu\text{g}$ ).

**Lane 2 :** NIH/3T3 cells treated with PMA (5-30 $\mu\text{g}$ )

**Predicted band size:** 55 kDa

**Observed band size:** 65 kDa

[why is the actual band size different from the predicted?](#)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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