abcam

ab282731

Anti-MEF2D antibody [EPR24993-10]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR24993-10
Purification technique	Affinity purification Protein A
Concentration	0.571 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/50
Notes	-

Species	Human

Dilution info	1/50
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat, Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/2000

Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

Not recommended

Species	Human, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information MEF2D

Function	Transcriptional activator which binds specifically to the MEF2 element, 5'-YTA[AT](4)TAR-3', found in numerous muscle-specific, 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. Plays a critical role in the regulation of neuronal apoptosis (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	MEF2D also known as Myocyte Enhancer Factor 2D is a transcription factor protein with a mass of roughly 55 kDa. Scientists find MEF2D widely expressed in different tissues including muscle brain and immune cells where it regulates gene expression. By binding to specific DNA sequences MEF2D influences the transcription of various genes essential for cellular differentiation and development. MEF2D operates as an important player in controlling the expression of genes involved in muscle development and neuronal differentiation.
Biological function summary	MEF2D plays a significant role in muscle and neuronal development and is part of the MEF2 family which includes other factors such as MEF2A MEF2B and MEF2C. These transcription factors form a complex with other proteins including histone deacetylases (HDACs) to regulate gene expression. MEF2D acts as a mediator between signaling pathways and genes responsible for cell growth survival and apoptosis. It helps modulate cellular responses to various external and internal cues adjusting transcriptional programs accordingly.
Pathways	MEF2D is a significant component in the mitogen-activated protein kinase (MAPK) and calcium/calmodulin-dependent protein kinase (CaMK) signaling pathways. These pathways influence muscle differentiation and neuronal plasticity. MEF2D cooperates with related proteins such as CaMKIV which phosphorylates MEF2D leading to the activation of specific target genes. Its role interconnects with other members of the MEF2 family and influences cellular processes linked to differentiation and survival.
Associated diseases and disorders	MEF2D has been implicated in conditions such as cancer and neurodegenerative diseases. In certain cancers altered regulation of MEF2D expression can lead to unchecked cellular proliferation. Its interaction with HDACs has also been observed in neurodegenerative disorders like Alzheimer's disease where dysregulated gene expression contributes to neuronal dysfunction. MEF2D may interact with other proteins like tau which associates with Alzheimer's pathology making it a target of interest in therapeutic strategies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

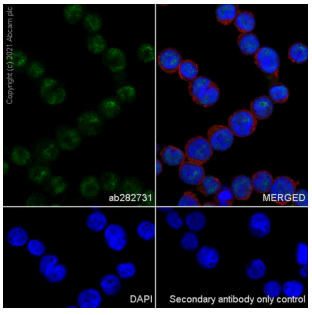
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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12 product images

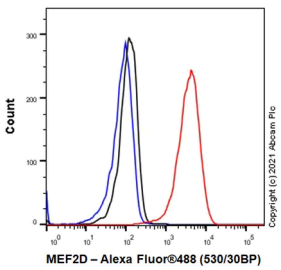


Immunocytochemistry/ Immunofluorescence - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MEF2D antibody

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized THP-1 cells labelling MEF2D with ab282731 at 1/50 (11.42 ug/ml) dilution, followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green) Confocal image showing mainly nuclear staining in THP-1 cells is observed.
ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).

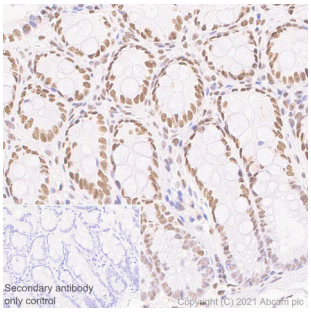
Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Flow Cytometry (Intracellular) staining using rabbit Anti-MEF2D antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized THP-1 (Human monocytic leukemia monocyte) cells labelling MEF2D with ab282731 at 1/500 dilution (0.1 ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

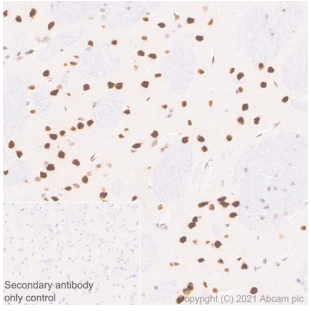


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEF2D antibody

Immunohistochemical analysis of paraffin-embedded Rat colon tissue labelling MEF2D with ab282731 at 1/2000 (0.286 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) . Nuclear staining on rat colon. The section was incubated with ab282731 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) .

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

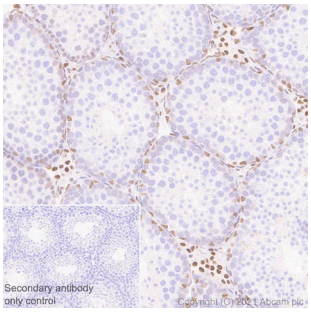


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEF2D antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labelling MEF2D with ab282731 at 1/2000 (0.286 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) . Nuclear staining on rat cererbum (PMID: 28738418). The section was incubated with ab282731for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) .

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

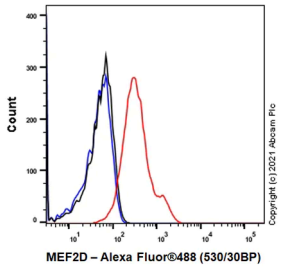


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEF2D antibody

Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labelling MEF2D with ab282731 at 1/2000 (0.286 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) . Nuclear staining on mouse testis (PMID: 24694307). The section was incubated with ab282731 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) .

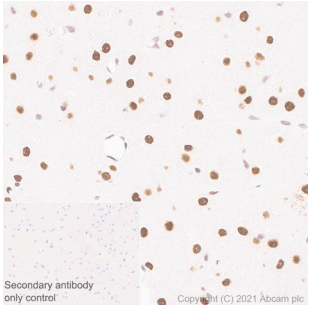
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Flow Cytometry (Intracellular) - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Flow Cytometry (Intracellular) staining using rabbit Anti-MEF2D antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cells labelling MEF2D with ab282731 at 1/500 dilution (0.1 ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

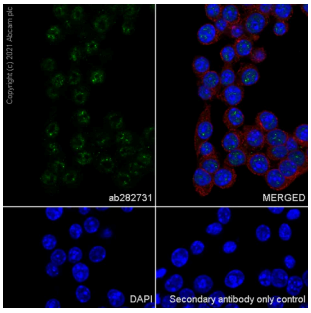


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MEF2D antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labelling MEF2D with ab282731 at 1/2000 (0.286 ug/ml) dilution followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) . Nuclear staining on mouse cererbum (PMID: 28738418). The section was incubated with ab282731 for 30 mins at room temperature.The immunostaining was performed on a Leica Biosystems BOND® RX instrument Counterstained with Hematoxylin.
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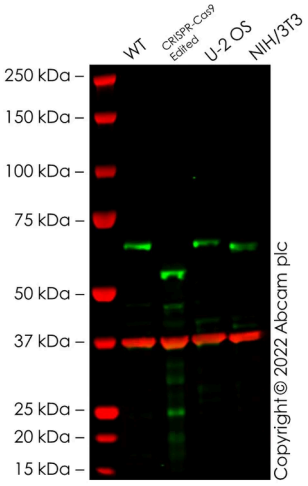


Immunocytochemistry/ Immunofluorescence - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-MEF2D antibody

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized RAW 264.7 cells labelling MEF2D with ab282731 at 1/50 (11.42 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green) Confocal image showing mainly nuclear staining in RAW 264.7 cells is observed.
ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.



Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731)

False colour image of Western blot: Anti-MEF2D antibody [EPR24993-10] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (ab8245) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab282731 was shown to bind specifically to MEF2D. A band was observed at 67 kDa in wild-type HeLa cell lysates with no signal observed at this size in mef2d CRISPR-Cas9 edited cell line ab281636. The band observed in the CRISPR-Cas9 edited lysate lane below 67 kDa is likely to represent a truncated form of MEF2D. This has not been investigated further and the functional properties of the gene product have not been determined. To generate this image, wild-type and mef2d CRISPR-Cas9 edited HeLa cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.
Secondary antibodies used
Lanes 1 - 4:
Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731) at 1/1000 dilution

Lanes 1 - 4:
Western blot - Anti-MEF2D antibody [EPR24993-10] - BSA and Azide free (ab282733) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human MEF2D knockout HeLa cell line (ab281636)

Lane 2:
mef2d CRISPR-Cas9 edited HeLa cell lysate at 20 µg

Lane 3:
U-2 OS cell lysate at 20 µg

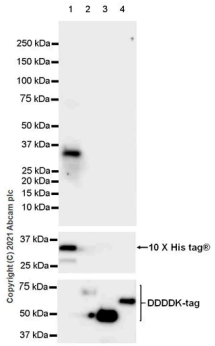
Lane 4:
NIH/3T3 cell lysate at 20 µg

Secondary

All lanes:
oat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 67 kDa



Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Western blot staining using rabbit Anti-MEF2D antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
His-tagged human MEF2D recombinant protein (aa54-328) 10ng

Myc/DDDDK-tagged human MEF2A recombinant protein 10ng

Myc/DDDDK-tagged human MEF2B recombinant protein 10ng

Myc/DDDDK-tagged human MEF2C recombinant protein 10ng

Exposure time: 10 seconds

All lanes:
Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731) at 1/1000 dilution

Lane 1:
His-tagged human MEF2D recombinant protein at 0.01 µg

Lane 2:
Myc/DDDDK-tagged human MEF2A recombinant protein at 0.01 µg

Lane 3:
Myc/DDDDK-tagged human MEF2B recombinant protein at 0.01 µg

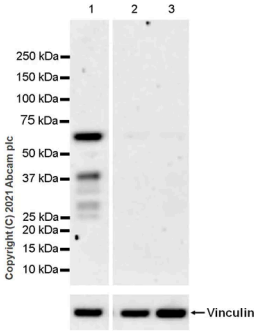
Lane 4:
Myc/DDDDK-tagged human MEF2C recombinant protein at 0.01 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 56 kDa

Observed band size: 31 kDa



Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731)

MEF2D Western blot staining using rabbit Anti-MEF2D antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST
Low expression: SW480/ DLD-1 (PMID: 27364559).

Exposure time: 147 seconds

All lanes:
Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731) at 1/1000 dilution

Lane 1:
THP-1 (Human monocytic leukemia monocyte) whole cell lysates at 20 µg

Lane 2:
SW480 (human colorectal adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 3:
DLD-1 (human colon epithelial) whole cell lysate at 20 µg

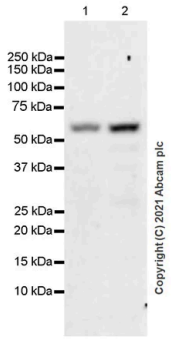
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 56 kDa

Observed band size: 40 kDa, 70 kDa

Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731)



MEF2D Western blot staining using rabbit Anti-MEF2D antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBSTLysates were made freshly and used in WB test immediately to minimize protein degradation.
Exposure time: 147 seconds

All lanes:
Western blot - Anti-MEF2D antibody [EPR24993-10] (ab282731) at 1/1000 dilution

Lane 1:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 2:
2.4G2 (rat B cell lymphoma B lymphocyte) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 56 kDa

Observed band size: 70 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.