abcam

ab133627

# Anti-MyoD1 antibody [EPR6653-131]

Anti-MyoD1 antibody [EPR6653-131] (ab133627) is a rabbit monoclonal antibody detecting MyoD1 in **Western Blot, IHC-P, ICC/IF**. Suitable for **Human**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 20 publications

Lab Essentials | Recombinant | RabMAb | Advanced Validation

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: 59% 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** | EPR6653-131 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.246 - 0.516 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## ChIC/CUT&RUN-seq

**Tested**

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 5 µg |
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/250 - 1/500 |
| **Notes** | Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | Abcam recommends using milk as the blocking agent. |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 |
| **Notes** | - |

# Target data

See full target information MYOD1

**Function** Acts as a transcriptional activator that promotes transcription of muscle-specific target genes and plays a role in muscle differentiation. Together with MYF5 and MYOG, co-occupies muscle-specific gene promoter core region during myogenesis. Induces fibroblasts to differentiate into myoblasts. Interacts with and is inhibited by the twist protein. This interaction probably involves the basic domains of both proteins (By similarity).

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Storage information** | Stable for 12 months at -20°C |

## Notes

**What is this antibody validated in?**
Anti-MyoD1 antibody [EPR6653-131] (ab133627) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

**What is the molecular weight of MyoD1?**
Anti-MyoD1 [EPR6653-131] (ab133627) specifically detects a band for MyoD1 (UniProt: P15172) at a molecular weight of 34kDa.

**Trusted by the scientific community**
Anti-MyoD1 [EPR6653-131] (ab133627) was first used in a scientific publication in 2012 and has been cited over 20 times in peer-reviewed journals.

**Reviewed by scientists**
Anti-MyoD1 [EPR6653-131] (ab133627) has over 10 independent reviews from customers.

**Trial sizes available!**
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 10µl. Discover our selection of trial-size antibodies.

**Other related products**
We have a range of other formats of antibody clone [EPR6653-131] also available for your convenience: ab133627, Carrier free - ab240073, Alexa Fluor® 488 - ab311001, Alexa Fluor® 647 - ab311127, Alexa Fluor® 594 - ab311759, Alexa Fluor® 568 - ab313039, Alexa Fluor® 555 - ab313240, Alexa Fluor® 750 - ab321061

**Species reactivity**
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

**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** | MyoD1 also known as Myogenic Differentiation 1 is a master regulator of muscle differentiation. It functions mechanically as a transcription factor binding to DNA at specific sequences thereby activating the transcription of genes necessary for muscle tissue development. MyoD1 has a molecular weight of approximately 45 kDa. It is expressed in skeletal muscle tissues and also detected in some non-muscle tissues though at lower levels. MyoD1 is essential in the early stages of muscle cell lineage commitment. |
| **Biological function summary** | MyoD1 plays an important role in muscle differentiation by activating muscle-specific genes. It belongs to the myogenic regulatory factor family and often operates within a protein complex alongside Myf5 and myogenin aiding in the conversion of mesodermal stem cells into muscle cells. These partnerships enhance its ability to initiate the muscle-specific gene expression that drives myogenesis. MyoD1 acts like a molecular switch shifting cells into the pathway leading to muscle formation. |
| **Pathways** | MyoD1 is an integral component of myogenesis and muscle regeneration pathways. MyoD1 interacts with key pathway components such as Myf5 and MRF4 which reinforce MyoD1 activity in muscle tissue lineage determination and cell cycle arrest during differentiation. The activity of MyoD1 in these pathways highlights its role in skeletal muscle growth. MyoD1 also demonstrates functional redundancy with Myogenin as both share overlapping roles in these critical pathways. |
| **Associated diseases and disorders** | MyoD1 is associated with muscular dystrophy and some sarcomas. Aberrant expression or mutations in MyoD1 can disrupt normal muscle differentiation contributing to muscle-related disorders like rhabdomyosarcoma a form of cancer comprising cells resembling skeletal muscle. Its relationship with other proteins like Myf5 further highlights its role in such pathological conditions as faults in these connections can amplify or alter disease progression. |

## 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.

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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.

Full details and terms and conditions can be found here:
Terms & Conditions.

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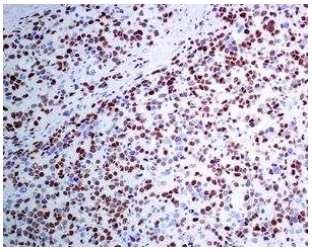
## 9 product images



### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

Immunohistochemical analysis of MyoD1 in paraffin embedded Human rhabdomyosarcoma tissue, using ab133627 at a dilution of 1/250.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

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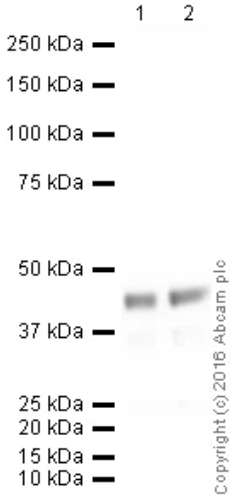



### Western blot - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

This blot was produced using a 4-12% Bis-tris gel under the MOPS buffer system. The gel was run at 200V for 50 minutes before being transferred onto a Nitrocellulose membrane at 30V for 70 minutes. The membrane was then blocked for an hour using 3% Milk before being incubated with ab133627 overnight at 4°C. Antibody binding was detected using an anti-rabbit antibody conjugated to HRP, and visualised using ECL development solution ab133406.
ab133627 detects a band at 45 kDa, while this differs to its predicted molecular weight of 34 kDa, the banding pattern observed is consistent with what has been described in the literature PMID:19352326.

All lanes:
Western blot - Anti-MyoD1 antibody [EPR6653-131] (ab133627) at 1/1000 dilution

Lane 1:
Rh30 (Human Rhabdomyosarcoma) Whole Cell Lysate at 5 µg

Lane 2:
Rh30 (Human Rhabdomyosarcoma) Whole Cell Lysate at 10 µg

Secondary

All lanes:
Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/50000 dilution

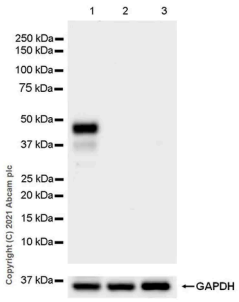
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 34 kDa

Observed band size: 45 kDa

Exposure time: 4min




## Western blot - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

Blocking and diluting buffer: 5% NFDM/TBST
Negative control: HEK-293, HeLa (PMID: 17028574 )

All lanes:
Western blot - Anti-MyoD1 antibody [EPR6653-131] (ab133627) at 1/1000 dilution

Lane 1:
RD (Human muscle rhabdomyosarcoma) whole cell lysate at 20 µg

Lane 2:
HEK-293 (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 3:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

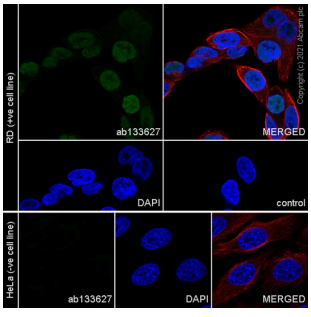
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 34 kDa

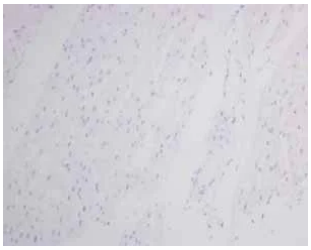
Observed band size: 45 kDa

Exposure time: 37s




## Immunocytochemistry/ Immunofluorescence - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

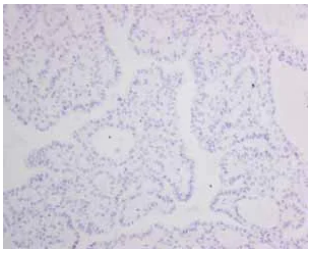
Immunocytochemical analysis of 4% paraformaldehyde fixed, 0.1% TritonX-100 permeabilised RD cell line labeling MyoD1 with ab133627 at 1/100 diltuon. ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) was used as a secondary antibody at 1/1000 dilution. Counterstained with ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594). Nuclear staining: DAPI.
Confocal image showing nuclear staining in RD cell line
Negative control: HeLa (PMID: 17028574 )



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

ab133627 showing negative staining in Normal heart tissue.

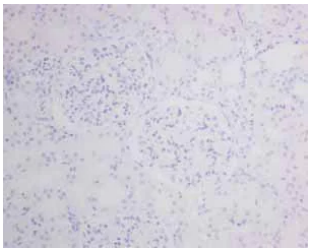
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

ab133627 showing negative staining in Thyroid gland carcinoma tissue.

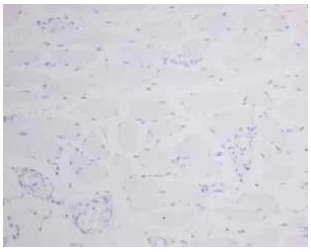
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

ab133627 showing negative staining in Normal kidney tissue.

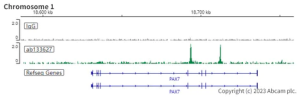
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

ab133627 showing negative staining in Skeletal muscle tissue.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




## ChIC/CUT&RUN sequencing - Anti-MyoD1 antibody [EPR6653-131] (ab133627)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2.5 x 10^5 RD (Human muscle rhabdomyosarcoma) cells and 5µg of ab133627 [EPR6653-131]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.