

# MyoD1 Antibody



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<b>Applications:</b> W, IP	<b>Reactivity:</b> H	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 45	<b>Source/Isotype:</b> Rabbit	<b>UniProt ID:</b> #P15172	<b>Entrez-Gene Id:</b> 4654
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## Product Usage Information

### Application

Western Blotting  
Immunoprecipitation

### Dilution

1:1000  
1:100

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

MyoD1 Antibody recognizes endogenous levels of total MyoD1 protein. This antibody also detects a 142 kDa protein of unknown origin.

## Species predicted to react based on 100% sequence homology

Monkey

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly228 of human MyoD1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Myoblast determination protein 1 (MyoD1), also called myogenic factor 3 (Myf3), is a member of the MyoD family of muscle specific bHLH transcription factors (1). This family is responsible for controlling specification of the muscle cell lineage and members are expressed only in skeletal muscle and its precursors. MyoD1 is considered a master regulator of skeletal myogenesis as its expression can induce myogenic differentiation in myoblasts, fibroblasts, and a variety of other cell types (2,3). Through ChIP-sequencing experiments, researchers have discovered that MyoD is associated with the promoters of many genes in muscle cells, but it only regulates a subset of those genes. These research studies point to regulation of MyoD transcriptional activity via epigenetic mechanisms involving SWI/SNF complexes and Polycomb and Trithorax Group proteins (4-6). Additional influences on muscle development include signal transduction through MAPK, PI3K/Akt, myostatin, NF-κB, and mTOR signaling pathways (5-7).

## Background References

- Berkes, C.A. and Tapscott, S.J. (2005) *Semin Cell Dev Biol* 16, 585-95.
- Tapscott, S.J. (2005) *Development* 132, 2685-95.
- Davis, R.L. et al. (1987) *Cell* 51, 987-1000.
- de la Serna, I.L. et al. (2001) *Nat Genet* 27, 187-90.
- Aziz, A. et al. (2010) *Epigenetics* 5, 691-5.
- Guttridge, D.C. (2004) *Curr Opin Clin Nutr Metab Care* 7, 443-50.
- Ge, Y. and Chen, J. (2012) *J Biol Chem* 287, 43928-35.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting **IP:** Immunoprecipitation

## Cross-Reactivity Key

**H:** Human

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