Revision 1

#13812 Store at -20C

MyoD1 (D8G3) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC	H	Endogenous	45	Rabbit IgG	#P15172	4654

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:400

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Specificity / Sensitivity

MyoD1 (D8G3) XP® Rabbit mAb recognizes endogenous levels of total MyoD1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly190 of human MyoD1 protein.

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

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

WB: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses

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