SANTA CRUZ BIOTECHNOLOGY, INC.

MyoD (5.8A): sc-32758

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Differentiation of myogenic cells is regulated by multiple positively and negatively acting factors. One well characterized family of helix-loop-helix (HLH) proteins known to play an important role in the regulation of muscle cell development includes MyoD, myogenin, Myf-5 and Myf-6 (also designated MRF-4 or herculin). Of interest, most muscle cells express either MyoD or Myf-5 in the committed state, but when induced to differentiate, all turn on expression of myogenin. MyoD transcription factors form heterodimers with products of a more widely expressed family of bHLH genes, the E family, which consists of at least three distinct genes: E2A, IF2 and HEB. MyoD-E heterodimers bind avidly to consensus (CANNTG) E box target sites that are functionally important elements in the upstream regulatory sequences of many muscle-specific terminal differentiation genes.

CHROMOSOMAL LOCATION

Genetic locus: MYOD1 (human) mapping to 11p15.1; Myod1 (mouse) mapping to 7 B4.

SOURCE

MyoD (5.8A) is a mouse monoclonal antibody raised against recombinant MyoD of mouse origin with an epitope mapping to amino acids 180-189.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-32758 X, 200 µg/0.1 ml.

MyoD (5.8A) is available conjugated to either Alexa Fluor® 546 (sc-32758 AF546) or Alexa Fluor® 594 (sc-32758 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32758 AF680) or Alexa Fluor® 790 (sc-32758 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MyoD (5.8A) is recommended for detection of MyoD of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other MyoD family members.

Suitable for use as control antibody for MyoD siRNA (h): sc-35990, MyoD siRNA (m): sc-35991, MyoD siRNA (r): sc-270217, MyoD shRNA Plasmid (h): sc-35990-SH, MyoD shRNA Plasmid (m): sc-35991-SH, MyoD shRNA Plasmid (r): sc-270217-SH, MyoD shRNA (h) Lentiviral Particles: sc-35990-V, MyoD shRNA (m) Lentiviral Particles: sc-35991-V and MyoD shRNA (r) Lentiviral Particles: sc-270217-V.

MyoD (5.8A) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

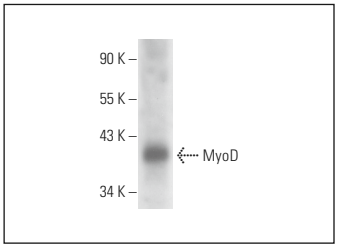
Molecular Weight of MyoD: 45 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810.

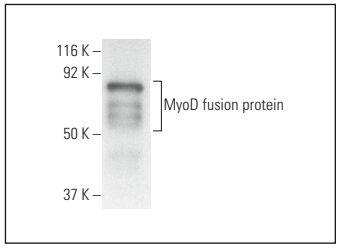
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Western blot analysis of MyoD expression in rat skeletal muscle tissue extract immunoprecipitated with MyoD (5.8A): sc-32758 and detected with MyoD (C-20): sc-304.



MyoD (5.8A): sc-32758. Western blot analysis of human recombinant MyoD fusion protein.

SELECT PRODUCT CITATIONS

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3. Michailovici, I., et al. 2014. Nuclear to cytoplasmic shuttling of ERK promotes differentiation of muscle stem/progenitor cells. Development 141: 2611-2620.
4. Marchildon, F., et al. 2015. Expression of CCAAT/enhancer binding protein β in muscle satellite cells inhibits myogenesis in cancer cachexia. PLoS ONE 10: e0145583.
5. Rao, V.K., et al. 2016. G9a promotes proliferation and inhibits cell cycle exit during myogenic differentiation. Nucleic Acids Res. 44: 8129-8143.
6. He, K., et al. 2017. A transcriptomic study of myogenic differentiation under the overexpression of PPARγ by RNA-Seq. Sci. Rep. 7: 15308.
7. Cattin, M.E., et al. 2018. Expression of murine muscle-enriched A-type lamin-interacting protein (MLIP) is regulated by tissue-specific alternative transcription start sites. J. Biol. Chem. 293: 19761-19770.
8. Kazim, N., et al. 2019. The transcription elongation factor TCEA3 promotes the activity of the myogenic regulatory factors. PLoS ONE 14: e0217680.
9. Shang, M., et al. 2020. Macrophage-derived glutamine boosts satellite cells and muscle regeneration. Nature 587: 626-631.
10. Adhikari, A., et al. 2021. Myogenin is required for assembly of the transcription machinery on muscle genes during skeletal muscle differentiation. PLoS ONE 16: e0245618.

RESEARCH USE

For research use only, not for use in diagnostic procedures.