SANTA CRUZ BIOTECHNOLOGY, INC.

MyoD (G-1): sc-377460

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.

REFERENCES

1. Braun, T., et al. 1989. A novel human muscle factor related to but distinct from MyoD1 induces myogenic conversion in 10T1/2 fibroblasts. EMBO J. 8: 701-709.
2. Rhodes, S.J., et al. 1989. Identification of MRF4: a new member of the muscle regulatory factor gene family. Genes Dev. 3: 2050-2061.
3. Wright, W.E., et al. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. Cell 56: 607-617.

CHROMOSOMAL LOCATION

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

SOURCE

MyoD (G-1) is a mouse monoclonal antibody raised against amino acids 1-318 of MyoD of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-377460 X, 200 µg/0.1 ml.

MyoD (G-1) is available conjugated to agarose (sc-377460 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377460 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377460 PE), fluorescein (sc-377460 FITC), Alexa Fluor® 488 (sc-377460 AF488), Alexa Fluor® 546 (sc-377460 AF546), Alexa Fluor® 594 (sc-377460 AF594) or Alexa Fluor® 647 (sc-377460 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377460 AF680) or Alexa Fluor® 790 (sc-377460 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

MyoD (G-1) is recommended for detection of MyoD of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

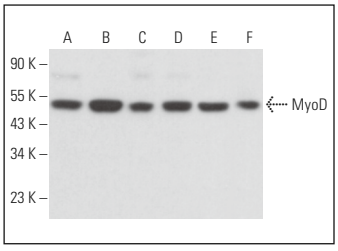
Suitable for use as control antibody for MyoD siRNA (h): sc-35990, MyoD siRNA (m): sc-35991, MyoD siRNA (r): sc-270217, MyoD shRNA Plasmid (h): sc-35990-SH, MyoD shRNA Plasmid (m): sc-35991-SH, MyoD shRNA Plasmid (r): sc-270217-SH, MyoD shRNA (h) Lentiviral Particles: sc-35990-V, MyoD shRNA (m) Lentiviral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

MyoD (G-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

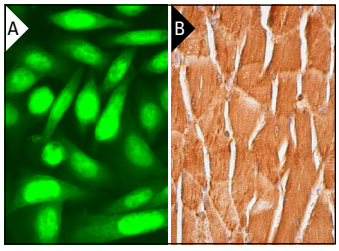
Molecular Weight of MyoD: 45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or SJRH30 cell lysate: sc-2287.

DATA



MyoD (G-1): sc-377460. Western blot analysis of MyoD expression in HeLa (**A**), HL-60 (**B**), SJRH30 (**C**), NIH/3T3 (**D**) and RD (**E**) whole cell lysates and A-673 nuclear extract (**F**).



MyoD (G-1) Alexa Fluor® 488: sc-377460 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and cytoplasmic localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). MyoD (G-1): sc-377460. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic and nuclear staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Serra, F., et al. 2012. Inflammation in muscular dystrophy and the beneficial effects of non-steroidal anti-inflammatory drugs. Muscle Nerve 46: 773-784.
2. Duan, R., et al. 2018. Spectrin is a mechanoresponsive protein shaping fusogenic synapse architecture during myoblast fusion. Nat. Cell Biol. 20: 688-698.
3. Naldaiz-Gastesi, N., et al. 2019. Isolation and characterization of myogenic precursor cells from human cremaster muscle. Sci. Rep. 9: 3454.
4. Kim, M., et al. 2020. Sestrins are evolutionarily conserved mediators of exercise benefits. Nat. Commun. 11: 190.

RESEARCH USE

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