SANTA CRUZ BIOTECHNOLOGY, INC.

MyoD (N-19): sc-31940

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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.
4. Miner, J.H., et al. 1990. Herculin, a fourth member of the MyoD family of myogenic regulatory genes. Proc. Natl. Acad. Sci. USA 87: 1089-1093.
5. Braun, T., et al. 1990. Myf-6, a new member of the human gene family of myogenic determination factors: evidence for a gene cluster on chromosome 12. EMBO J. 9: 821-831.
6. Thayer, M.J., et al. 1993. A cellular factor stimulates the DNA-binding activity of MyoD and E47. Proc. Natl. Acad. Sci. USA 90: 6483-6487.

CHROMOSOMAL LOCATION

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

SOURCE

MyoD (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MyoD of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-31940 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-31940 X, 200 µg/0.1 ml.

RESEARCH USE

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

APPLICATIONS

MyoD (N-19) 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), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MyoD (N-19) is also recommended for detection of MyoD in additional species, including equine, canine, bovine and porcine.

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 (N-19) 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, L8 cell lysate: sc-3807 or C2C12 nuclear extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Meissner, J.D., et al. 2007. Activation of the β Myosin heavy chain promoter by MEF-2D, MyoD, p300, and the calcineurin/NFATc1 pathway. J. Cell. Physiol. 211: 138-148.
2. Friedrichs, M., et al. 2011. BMP signaling balances proliferation and differentiation of muscle satellite cell descendants. BMC Cell Biol. 12: 26.
3. Mu, X., et al. 2011. Study of muscle cell dedifferentiation after skeletal muscle injury of mice with a Cre-Lox system. PloS ONE 6: e16699.
4. Fan, H., et al. 2012. Sulforaphane causes a major epigenetic repression of myostatin in porcine satellite cells. Epigenetics 7: 1379-1390.
5. Lu, A., et al. 2012. NFκB negatively impacts the myogenic potential of muscle-derived stem cells. Mol. Ther. 20: 661-668.

STORAGE

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