SANTA CRUZ BIOTECHNOLOGY, INC.

myogenin (5FD): sc-52903

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: MYOG (human) mapping to 1q32.1; Myog (mouse) mapping to 1 E4.

SOURCE

myogenin (5FD) is a mouse monoclonal antibody raised against amino acids 144-158 of myogenin of rat origin.

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.

myogenin (5FD) is available conjugated to HRP (sc-52903 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-52903 PE), fluorescein (sc-52903 FITC) or Alexa Fluor® 488 (sc-52903 AF488) or Alexa Fluor® 647 (sc-52903 AF647), 200 µg/ml, for IF, IHC(P) and FCM.

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APPLICATIONS

myogenin (5FD) is recommended for detection of myogenin 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for myogenin siRNA (h): sc-29402, myogenin siRNA (m): sc-35992, myogenin shRNA Plasmid (h): sc-29402-SH, myogenin shRNA Plasmid (m): sc-35992-SH, myogenin shRNA (h) Lentiviral Particles: sc-29402-V and myogenin shRNA (m) Lentiviral Particles: sc-35992-V.

Molecular Weight of myogenin: 34 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, myogenin (h3): 293T Lysate: sc-177592 or RD whole cell lysate: sc-364791.

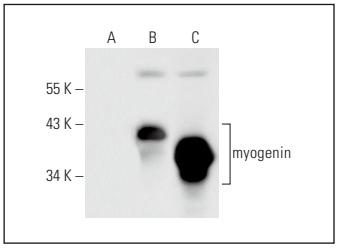
RESEARCH USE

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

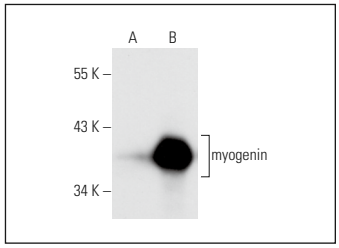
STORAGE

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

DATA



myogenin (5FD): sc-52903. Western blot analysis of myogenin expression in non-transfected 293T: sc-117752 (**A**), human myogenin transfected 293T: sc-177592 (**B**) and SJRH30 (**C**) whole cell lysates.



myogenin (5FD): sc-52903. Western blot analysis of myogenin expression in non-transfected: sc-117752 (**A**) and human myogenin transfected: sc-116551 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Strle, K., et al. 2006. c-Jun N-terminal kinase mediates tumor necrosis factor-α suppression of differentiation in myoblasts. Endocrinology 147: 4363-4373.
2. Cho, Y.W., et al. 2009. Histone methylation regulator PTIP is required for PPARγ and C/EBPα expression and adipogenesis. Cell Metab. 10: 27-39.
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4. Matheny, R.W. and Nindl, B.C. 2011. Loss of IGF-IEa or IGF-IEb impairs myogenic differentiation. Endocrinology 152: 1923-1934.
5. Matheny, R.W., et al. 2012. Enhanced Akt phosphorylation and myogenic differentiation in PI3K p110β-deficient myoblasts is mediated by PI3K p110α and mTORC2. Growth Factors 30: 367-384.
6. Mohamed, J.S., et al. 2013. Ankyrin repeat domain protein 2 and inhibitor of DNA binding 3 cooperatively inhibit myoblast differentiation by physical interaction. J. Biol. Chem. 288: 24560-24568.
7. Zhang, W.W., et al. 2015. Identification of miR-2400 gene as a novel regulator in skeletal muscle satellite cells proliferation by targeting MYOG gene. Biochem. Biophys. Res. Commun. 463: 624-631.
8. Wei, D.W., et al. 2017. Characterization of the promoter region of the bovine SIX1 gene: roles of MyoD, PAX7, CREB and MyoG. Sci. Rep. 7: 12599.
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10. Liu, D., et al. 2019. Podocan affects C2C12 myogenic differentiation by enhancing Wnt/β-catenin signaling. J. Cell. Physiol. 234: 11130-11139.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.