SANTA CRUZ BIOTECHNOLOGY, INC.

myogenin (F5D): sc-12732

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 (F5D) is a mouse monoclonal antibody epitope mapping within amino acids 138-158 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-12732 X, 200 µg/0.1 ml.

myogenin (F5D) is available conjugated to agarose (sc-12732 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either Alexa Fluor® 546 (sc-12732 AF546) or Alexa Fluor® 594 (sc-12732 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-12732 AF680) or Alexa Fluor® 790 (sc-12732 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

myogenin (F5D) 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.

myogenin (F5D) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

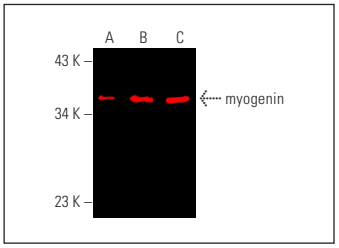
Molecular Weight of myogenin: 34 kDa.

Positive Controls: myogenin (h): 293T Lysate: sc-116551, C2C12 whole cell lysate: sc-364188 or SJRH30 cell lysate: sc-2287.

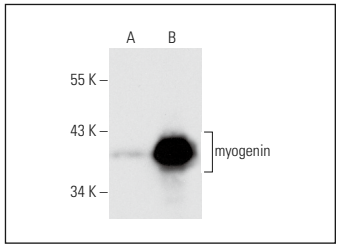
STORAGE

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

DATA



myogenin (F5D) Alexa Fluor® 790: sc-12732 AF790. Direct near-infrared western blot analysis of myogenin expression in SJRH30 (**A**), C2C12 (**B**) and RD (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



myogenin (F5D): sc-12732. 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. Ostrovsky, O., et al. 2002. Induction of terminal differentiation by the c-Jun dimerization protein JDP2 in C2 myoblasts and rhabdomyosarcoma cells. J. Biol. Chem. 277: 40043-40054.
2. Moretti, I., et al. 2016. MRF4 negatively regulates adult skeletal muscle growth by repressing MEF2 activity. Nat. Commun. 7: 12397.
3. Marjanovic, M.P., et al. 2017. MacroH2A1.1 regulates mitochondrial respiration by limiting nuclear NAD^+ consumption. Nat. Struct. Mol. Biol. 24: 902-910.
4. Sakai-Takemura, F., et al. 2018. Premyogenic progenitors derived from human pluripotent stem cells expand in floating culture and differentiate into transplantable myogenic progenitors. Sci. Rep. 8: 6555.
5. Feng, X., et al. 2019. Dual function of VGLL4 in muscle regeneration. EMBO J. 38: e101051.
6. Li, H.K., et al. 2020. LRTM1 promotes the differentiation of myoblast cells by negatively regulating the FGFR1 signaling pathway. Exp. Cell Res. 396: 112237.
7. Becker, R., et al. 2021. Myogenin controls via AKAP6 non-centrosomal microtubule-organizing center formation at the nuclear envelope. Elife 10: e65672.
8. Beltrà, M., et al. 2022. PGC-1α in the myofibers regulates the balance between myogenic and adipogenic progenitors affecting muscle regeneration. iScience 25: 105480.
9. Mázala, D.A.G., et al. 2023. Altered muscle niche contributes to myogenic deficit in the D2-mdx model of severe DMD. Cell Death Discov. 9: 224.

RESEARCH USE

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