

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 and musculin (also designated MyoR). Members of this group of 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, Irf2 and HEB. MyoD-E or musculin-E heterodimers bind avidly to consensus E box motifs, which are functionally important elements in the promoter regions of many muscle-specific terminal differentiation genes. MyoD complexes potently induce transcriptional activation, while musculin complexes bind adjacent to MyoD DNA-binding regions to represses MyoD activity, which then results in the delayed expression of muscle-specific genes. Musculin is highly expressed in undifferentiated and proliferating myoblasts in culture, and its expression is down regulated during myogenesis and at the onset of terminal differentiation.

REFERENCES

1. Braun, T., et al. 1996. Myf-5 and MyoD genes are activated in distinct mesenchymal stem cells and determine different skeletal muscle cell lineages. *EMBO J.* 15: 310-318.
2. Kong, Y., et al. 1997. Muscle LIM protein promotes myogenesis by enhancing the activity of MyoD. *Mol. Cell. Biol.* 17: 4750-4760.
3. Robb, L., et al. 1998. musculin: a murine basic helix-loop-helix transcription factor gene expressed in embryonic skeletal muscle. *Mech. Dev.* 76: 197-201.

CHROMOSOMAL LOCATION

Genetic locus: MSC (human) mapping to 8q13.3; Msc (mouse) mapping to 1 A3.

SOURCE

musculin (F-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of musculin of mouse origin.

PRODUCT

Each vial contains 200 µg IgG 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-9557 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-9557 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

musculin (F-20) is recommended for detection of musculin 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

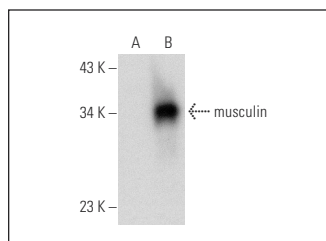
musculin (F-20) is also recommended for detection of musculin in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for musculin siRNA (h): sc-38066, musculin siRNA (m): sc-38067, musculin shRNA Plasmid (h): sc-38066-SH, musculin shRNA Plasmid (m): sc-38067-SH, musculin shRNA (h) Lentiviral Particles: sc-38066-V and musculin shRNA (m) Lentiviral Particles: sc-38067-V.

musculin (F-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of musculin: 22 kDa.

Positive Controls: musculin (h): 293T Lysate: sc-374978 or K-562 whole cell lysate: sc-2203.

DATA

musculin (F-20): sc-9557. Western blot analysis of musculin expression in non-transfected: sc-117752 (A) and human musculin transfected: sc-374978 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yang, Z., et al. 2009. MyoD and E-protein heterodimers switch rhabdomyosarcoma cells from an arrested myoblast phase to a differentiated state. *Genes Dev.* 23: 694-707.

PROTOCOLS

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


 MONOS
 Satisfaction
 Guaranteed

Try **musculin (4D7): sc-293482**, our highly recommended monoclonal alternative to musculin (F-20).