

MRTF-B (C-19): sc-47282

BACKGROUND

Serum response factor (SRF) is a transcription factor that binds the serum response element (SRE), a sequence that mediates the transient response of many cellular genes to growth stimulation. SRF regulates the transient response of several muscle genes in response to growth factors and recruits accessory myogenic factors to activate these muscle genes. SRF is required for the formation of vertebrate mesoderm leading to the origin of the cardiovascular system. Myocardin, in association with SRF in cardiac muscle cells, activates cardiac muscle promoters. Myocardin-related transcription factors A and B (MRTF-A and MRTF-B) interact with SRF and act as stimulators for its transcriptional activity. MRTF-B is crucial for skeletal myogenic differentiation.

REFERENCES

1. Cen, B., et al. 2003. Megakaryoblastic leukemia 1, a potent transcriptional coactivator for serum response factor (SRF), is required for serum induction of SRF target genes. *Mol. Cell. Biol.* 23: 6597-6608.
2. Selvaraj, A. and Prywes, R. 2003. Megakaryoblastic leukemia-1/2, a transcriptional co-activator of serum response factor, is required for skeletal myogenic differentiation. *J. Biol. Chem.* 278: 41977-41987.
3. Cen, B., et al. 2004. Myocardin/MKL family of SRF coactivators: key regulators of immediate early and muscle specific gene expression. *J. Cell. Biochem.* 93: 74-82.
4. Kuwahara, K., et al. 2005. Muscle-specific signaling mechanism that links Actin dynamics to serum response factor. *Mol. Cell. Biol.* 25: 3173-3181.
5. Li, J., et al. 2005. Myocardin-related transcription factor B is required in cardiac neural crest for smooth muscle differentiation and cardiovascular development. *Proc. Natl. Acad. Sci. USA* 102: 8916-8921.
6. Oh, J., et al. 2005. Requirement of myocardin-related transcription factor B for smooth muscle differentiation. *Proc. Natl. Acad. Sci. USA* 102: 15122-15127.

CHROMOSOMAL LOCATION

Genetic locus: MKL2 (human) mapping to 16p13.12; Mkl2 (mouse) mapping to 16 A1.

SOURCE

MRTF-B (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MRTF-B 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-47282 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.

APPLICATIONS

MRTF-B (C-19) is recommended for detection of MRTF-B isoforms 1 and 4 of mouse 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).

MRTF-B (C-19) is also recommended for detection of MRTF-B isoforms 1 and 4 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for MRTF-B siRNA (h): sc-61074, MRTF-B siRNA (m): sc-61075, MRTF-B shRNA Plasmid (h): sc-61074-SH, MRTF-B shRNA Plasmid (m): sc-61075-SH, MRTF-B shRNA (h) Lentiviral Particles: sc-61074-V and MRTF-B shRNA (m) Lentiviral Particles: sc-61075-V.

Molecular Weight of MRTF-B: 118 kDa.

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. Lee, S.M., et al. 2010. Activation and repression of cellular immediate early genes by serum response factor cofactors. *J. Biol. Chem.* 285: 22036-22049.
2. Du, H., et al. 2010. Phenylephrine induces elevated RhoA activation and smooth muscle α -actin expression in Pkd2^{+/-} vascular smooth muscle cells. *Hypertens. Res.* 33: 37-42.
3. Takefujii, M., et al. 2012. G₁₃-mediated signaling pathway is required for pressure overload-induced cardiac remodeling and heart failure. *Circulation* 126: 1972-1982.
4. Herndon, C.A., et al. 2013. Neuregulin1 signaling targets SRF and CREB and activates the muscle spindle-specific gene Egr3 through a composite SRF-CREB-binding site. *Exp. Cell Res.* 319: 718-730.
5. Franco, C.A., et al. 2013. SRF selectively controls tip cell invasive behavior in angiogenesis. *Development* 140: 2321-2333.

RESEARCH USE

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

PROTOCOLS

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