

MITF (h3): 293T Lysate: sc-114536

BACKGROUND

MITF (microphthalmia-associated transcription factor) is a melanocytic nuclear protein that contains basic helix-loop-helix (HLH) and leucine zipper (LZ) domains. These protein motifs are frequently observed in other transcription factors and are particularly common to members of the Myc family. MITF can directly associate with DNA as a homodimer and is required for the development and differentiation of melanocytes. Its expression is upregulated by cAMP and cAMP-dependent pathways. MITF activates several different gene promoters by binding to their E-boxes. Tyrosinase, TRP1 and TRP2 are pigment synthesis genes activated by MITF. When MITF is phosphorylated on Ser 73 (via the MAPK pathway), it associates with co-activators of the p300/CBP family and enhances transcription. MITF has several isoforms including MITF-M which is specifically expressed in melanocytes. In MITF-deficient mice there is a complete absence of melanocytes.

REFERENCES

1. Beckmann, H., et al. 1990. TFE3: a helix-loop-helix protein that activates transcription through the immunoglobulin enhancer μ E3 motif. *Genes Dev.* 4: 167-179.
2. Fisher, D.E., et al. 1991. TFEB has DNA-binding and oligomerization properties of a unique helix-loop-helix/leucine-zipper family. *Genes Dev.* 5: 2342-2352.
3. Kerkhoff, E., et al. 1991. Sequence-specific DNA binding by Myc proteins. *Proc. Natl. Acad. Sci. USA* 88: 4323-4327.
4. Artandi, S.E., et al. 1994. The basic helix-loop-helix-zipper domain of TFE3 mediates enhancer-promoter interaction. *Mol. Cell. Biol.* 14: 7704-7716.
5. Yasumoto, K., et al. 1997. Molecular cloning of cDNA encoding a human TFEC isoform, a newly identified transcriptional regulator. *Biochim. Biophys. Acta* 1353: 23-31.
6. Steingrimsson, E., et al. 1998. The BHLH-Zip transcription factor TFEB is essential for placental vascularization. *Development* 125: 4607-4616.
7. King, R., et al. 1999. Microphthalmia transcription factor. A sensitive and specific melanocyte marker for melanoma diagnosis. *Am. J. Pathol.* 155: 731-738.
8. Park, H.Y., et al. 2006. MITF mediates cAMP-induced protein kinase C- β expression in human melanocytes. *Biochem. J.* 395: 571-578.
9. Vachtenheim, J., et al. 2007. Inhibition of MITF transcriptional activity independent of targeting p300/CBP co-activators. *Pigment Cell Res.* 20: 41-51.

CHROMOSOMAL LOCATION

Genetic locus: MITF (human) mapping to 3p14.1.

PRODUCT

MITF (h3): 293T Lysate represents a lysate of human MITF transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

MITF (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive MITF antibodies. Recommended use: 10-20 μ l per lane.

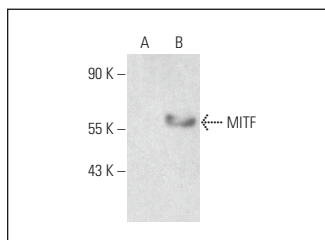
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

MITF (D-9): sc-515925 is recommended as a positive control antibody for Western Blot analysis of enhanced human MITF expression in MITF transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

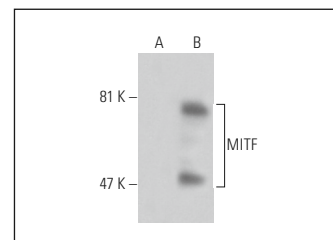
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



MITF (D-9): sc-515925. Western blot analysis of MITF expression in non-transfected: sc-117752 (A) and human MITF transfected: sc-114536 (B) 293T whole cell lysates.



MITF (SPM290): sc-56433. Western blot analysis of MITF expression in non-transfected: sc-117752 (A) and human MITF transfected: sc-114536 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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