SANTA CRUZ BIOTECHNOLOGY, INC.

MITF (N-15): sc-10999

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Ser73 (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 muE3 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.

CHROMOSOMAL LOCATION

Genetic locus: MITF (human) mapping to 3p14.1; Mitf (mouse) mapping to 6 D3.

SOURCE

MITF (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MITF of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10999 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-10999 X, 200 µg/0.1 ml.

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

MITF (N-15) is recommended for detection of MITF of mouse, rat, human and avian 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).

MITF (N-15) is also recommended for detection of MITF in additional species, including equine, bovine, porcine and canine.

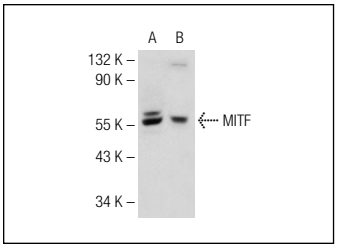
Suitable for use as control antibody for MITF siRNA (h): sc-35934, MITF siRNA (m): sc-35935, MITF shRNA Plasmid (h): sc-35934-SH, MITF shRNA Plasmid (m): sc-35935-SH, MITF shRNA (h) Lentiviral Particles: sc-35934-V and MITF shRNA (m) Lentiviral Particles: sc-35935-V.

MITF (N-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of MITF: 60 kDa.

Positive Controls: C32 nuclear extract: sc-2136, NIH/3T3 nuclear extract: sc-2138 or Jurkat nuclear extract: sc-2132.

DATA



MITF (N-15): sc-10999. Western blot analysis of MITF expression in C32 (**A**) and NIH/3T3 (**B**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Zhang, W., et al. 2006. Loss of adhesion in the circulation converts amelanotic metastatic melanoma cells to melanotic by inhibition of AKT. Neoplasia 8: 543-550.
2. Esumi, N., et al. 2007. VMD2 promoter requires two proximal E-box sites for its activity *in vivo* and is regulated by the MITF-TFE family. J. Biol. Chem. 282: 1838-1850.
3. Koo, J.H., et al. 2008. Effect of xanthohumol on melanogenesis in B16 melanoma cells. Exp. Mol. Med. 40: 313-319.
4. Jeong, E.T., et al. 2010. Inhibition of melanogenesis by piceid isolated from *Polygonum cuspidatum.* Arch. Pharm. Res. 33: 1331-1338.