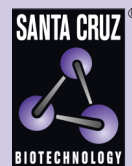


MITF (C5): sc-56725



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.

CHROMOSOMAL LOCATION

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

SOURCE

MITF (C5) is a mouse monoclonal antibody raised against an N-terminal fragment of MITF of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MITF (C5) is recommended for detection of MITF 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

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.

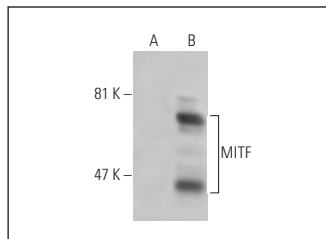
Molecular Weight of MITF: 60 kDa.

Positive Controls: MITF (h3): 293T Lysate: sc-114536, C32 nuclear extract: sc-2136 or NIH/3T3 nuclear extract: sc-2138.

STORAGE

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

DATA



MITF (C5): sc-56725. Western blot analysis of MITF expression in non-transfected: sc-117752 (A) and human MITF transfected: sc-114536 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Schepsky, A., et al. 2006. The microphthalmia-associated transcription factor MITF interacts with β -catenin to determine target gene expression. *Mol. Cell. Biol.* 26: 8914-8927.
2. Bellei, B., et al. 2012. Inhibition of melanogenesis by the pyridinyl imidazole class of compounds: possible involvement of the Wnt/ β -catenin signaling pathway. *PLoS ONE* 7: e33021.
3. Bellone, R.R., et al. 2013. Evidence for a retroviral insertion in TRPM1 as the cause of congenital stationary night blindness and leopard complex spotting in the horse. *PLoS ONE* 8: e78280.
4. Kim, J., et al. 2014. FoxO3a is an antimelanogenic factor that mediates antioxidant-induced depigmentation. *J. Invest. Dermatol.* 134: 1378-1388.
5. Liu, L.H., et al. 2015. Angiotensin II stimulates melanogenesis via the protein kinase C pathway. *Exp. Ther. Med.* 10: 1528-1532.
6. Kovacs, D., et al. 2016. The role of Wnt/ β -catenin signaling pathway in melanoma epithelial-to-mesenchymal-like switching: evidences from patients-derived cell lines. *Oncotarget* 7: 43295-43314.
7. Aida, S., et al. 2017. MITF suppression improves the sensitivity of melanoma cells to a BRAF inhibitor. *Cancer Lett.* 409: 116-124.
8. Ha, J.H., et al. 2018. Methyl-2-acetylamin-3-(4-hydroxyl-3,5-dimethoxy-benzoylthio)propanoate suppresses melanogenesis through ERK signaling pathway mediated MITF proteasomal degradation. *J. Dermatol. Sci.* E-published.
9. Brummer, C., et al. 2019. Metabolic targeting synergizes with MAPK inhibition and delays drug resistance in melanoma. *Cancer Lett.* 442: 453-463.
10. Jeong, Y.M., et al. 2020. Substance P administered after myocardial infarction upregulates microphthalmia-associated transcription factor, GATA4, and the expansion of c-Kit⁺ cells. *Stem Cells Int.* 2020: 1835950.

RESEARCH USE

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