SANTA CRUZ BIOTECHNOLOGY, INC.

MITF (3F276): sc-71588

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. It is required for the development and differentiation of melanocytes. Its expression is upregulated by cAMP and cAMP dependent pathways. MITF activates several differenct gene promoters by binding to their E-boxes. Tyrosinase, TRP-1 and TRP-2 are pigment synthesis genes activated by MITF. When MITF is phosphorylated on Ser73 (via the MAPK pathway), it associates with coactivators 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.

CHROMOSOMAL LOCATION

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

SOURCE

MITF (3F276) is a mouse monoclonal antibody raised against an N-terminal fragment of MITF of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 5% glycerol and < 0.1% stabilizer protein.

STORAGE

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

APPLICATIONS

MITF (3F276) is recommended for detection of melanocytic and non-melanocytic isoforms 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with other b-HLH-ZIP factors by DNA mobility shift assay.

MITF (3F276) is also recommended for detection of melanocytic and non-melanocytic isoforms of MITF in additional species, including 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.

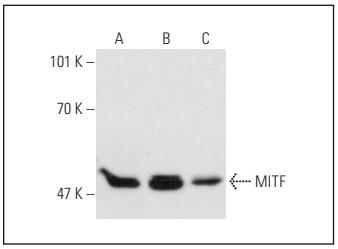
Molecular Weight of MITF: 60 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat nuclear extract: sc-2132 or A-431 nuclear extract: sc-2122.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MITF (3F276): sc-71588. Western blot analysis of MITF expression in Jurkat (**A**), A-431 (**B**) and HeLa (**C**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Wang, D.G., et al. 2013. Stem cell factor combined with matrix proteins regulates the attachment and migration of melanocyte precursors of human hair follicles *in vitro*. Biol. Pharm. Bull. 36: 1317-1325.
2. Wang, D., et al. 2013. Optimization of the method for the culture of melanocyte precursors from hair follicles and their activation by 1,25-dihydroxyvitamin D_3. Exp. Ther. Med. 6: 967-972.
3. Bartel, K., et al. 2019. Connecting lysosomes and mitochondria—a novel role for lipid metabolism in cancer cell death. Cell Commun. Signal. 17: 87.
4. Jeong, D., et al. 2019. Antiphotoaging and antimelanogenic effects of *Penthorum chinense* pursh ethanol extract due to antioxidant- and autophagy-inducing properties. Oxid. Med. Cell. Longev. 2019: 9679731.
5. Netcharoensirisuk, P., et al. 2021. Flavonoids increase melanin production and reduce proliferation, migration and invasion of melanoma cells by blocking endolysosomal/melanosomal TPC2. Sci. Rep. 11: 8515.

RESEARCH USE

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

PROTOCOLS

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