

MITF (D5): sc-56726

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.

CHROMOSOMAL LOCATION

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

SOURCE

MITF (D5) is a mouse monoclonal antibody raised against the N-terminus of MITF of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ 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 (D5) is recommended for detection of melanocytic and non-melanocytic isoforms of MITF of 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 (D5) 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 shRNA Plasmid (h): sc-35934-SH and MITF shRNA (h) Lentiviral Particles: sc-35934-V.

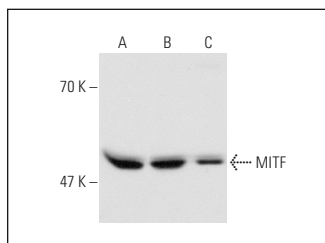
Molecular Weight of MITF: 60 kDa.

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

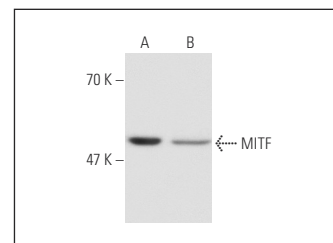
RECOMMENDED SUPPORT REAGENTS

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 (D5): sc-56726. Western blot analysis of MITF expression in Jurkat (A), A-431 (B) and HeLa (C) nuclear extracts.



MITF (D5): sc-56726. Western blot analysis of MITF expression in HeLa (A) and A549 (B) nuclear extracts.

SELECT PRODUCT CITATIONS

- Zabierowski, S.E., et al. 2011. Direct reprogramming of melanocytes to neural crest stem-like cells by one defined factor. *Stem Cells* 29: 1752-1762.
- Serini, S., et al. 2016. Role of β-catenin signaling in the anti-invasive effect of the ω-3 fatty acid DHA in human melanoma cells. *J. Dermatol. Sci.* 84: 149-159.
- Zhang, Q., et al. 2017. The patch assay reconstitutes mature hair follicles by culture-expanded human cells. *Regen. Med.* 12: 503-511.
- Wang, Y., et al. 2019. NME1 drives expansion of melanoma cells with enhanced tumor growth and metastatic properties. *Mol. Cancer Res.* 17: 1665-1674.
- Kim, K.I., et al. 2020. Sorafenib induces pigmentation via the regulation of β-catenin signaling pathway in melanoma cells. *Exp. Dermatol.* E-published.
- Biswas, P., et al. 2021. Detection and validation of novel mutations in MERTK in a simplex case of retinal degeneration using WGS and hiPSC-RPEs model. *Hum. Mutat.* 42: 189-199.

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.