

MITF (D-9): sc-515925

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 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.

CHROMOSOMAL LOCATION

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

SOURCE

MITF (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 41-61 near the N-terminus of MITF of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-515925 X, 200 μ g/0.1 ml.

MITF (D-9) is available conjugated to agarose (sc-515925 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515925 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515925 PE), fluorescein (sc-515925 FITC), Alexa Fluor® 488 (sc-515925 AF488), Alexa Fluor® 546 (sc-515925 AF546), Alexa Fluor® 594 (sc-515925 AF594) or Alexa Fluor® 647 (sc-515925 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515925 AF680) or Alexa Fluor® 790 (sc-515925 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

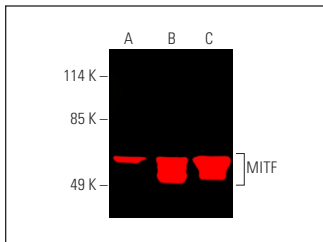
MITF (D-9) is recommended for detection of MITF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

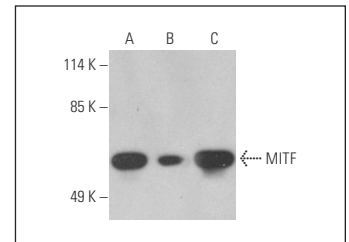
MITF (D-9) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of MITF: 60 kDa.

DATA



MITF (D-9): sc-515925. Near-infrared western blot analysis of MITF expression in HeLa (A), SK-MEL-28 (B) and C32 (C) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG λ . BP-CFL 790: sc-516195.



MITF (D-9) HRP: sc-515925 HRP. Direct western blot analysis of MITF expression in HeLa (A) and Jurkat (B) nuclear extracts and RPE-J whole cell lysate (C).

SELECT PRODUCT CITATIONS

1. Huang, M., et al. 2018. A targeted quantitative proteomic approach assesses the reprogramming of small GTPases during melanoma metastasis. *Cancer Res.* 78: 5431-5445.
2. Ikarashi, N., et al. 2020. *Lactobacillus helveticus*-fermented milk whey suppresses melanin production by inhibiting tyrosinase through decreasing MITF expression. *Nutrients* 12: 2082.
3. Rachinger, N., et al. 2022. α -synuclein and its role in melanocytes. *Cells* 11: 2087.
4. Seefried, F., et al. 2022. Nuclear AREG affects a low-proliferative phenotype and contributes to drug resistance of melanoma. *Int. J. Cancer* 151: 2244-2264.
5. Lee, M.K., et al. 2022. Brassinin abundant in brassicaceae suppresses melanogenesis through dual mechanisms of tyrosinase inhibition. *Foods* 12: 121.

RESEARCH USE

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