10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MITF Antibody (N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11559a

Product Information

Application	WB, IF, FC, E
Primary Accession	O75030
Other Accession	Q08874, NP_937802.1, NP_001171896.1
Reactivity	Human, Mouse
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB18810
Calculated MW	58795
Antigen Region	1-28

Additional Information

Gene ID	4286
Other Names	Microphthalmia-associated transcription factor, Class E basic helix-loop-helix protein 32, bHLHe32, MITF, BHLHE32
Target/Specificity	This MITF antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-28 amino acids from the N-terminal region of human MITF.
Dilution	WB~~1:1000 IF~~1:10~50 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MITF Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MITF {ECO:0000303|PubMed:8069297, ECO:0000312|HGNC:HGNC:7105}
Function	Transcription factor that acts as a master regulator of melanocyte survival

	and differentiation as well as melanosome biogenesis (PubMed:10587587, PubMed:22647378, PubMed:27889061, PubMed:9647758). Binds to M-boxes (5'-TCATGTG-3') and symmetrical DNA sequences (E-boxes) (5'-CACGTG-3') found in the promoter of pigmentation genes, such as tyrosinase (TYR) (PubMed:10587587, PubMed:22647378, PubMed:27889061, PubMed:9647758). Involved in the cellular response to amino acid availability by acting downstream of MTOR: in the presence of nutrients, MITF phosphorylation by MTOR promotes its inactivation (PubMed:36608670). Upon starvation or lysosomal stress, inhibition of MTOR induces MITF dephosphorylation, resulting in transcription factor activity (PubMed:36608670). Plays an important role in melanocyte development by regulating the expression of tyrosinase (TYR) and tyrosinase-related protein 1 (TYRP1) (PubMed:10587587, PubMed:22647378, PubMed:27889061, PubMed:9647758). Plays a critical role in the differentiation of various cell types, such as neural crest-derived melanocytes, mast cells, osteoclasts and optic cup-derived retinal pigment epithelium (PubMed:10587587, PubMed:22647378, PubMed:27889061, PubMed:9647758).
Cellular Location	Nucleus. Cytoplasm. Lysosome membrane Note=When nutrients are present, recruited to the lysosomal membrane via association with GDP-bound RagC/RRAGC (or RagD/RRAGD): it is then phosphorylated by MTOR (PubMed:23401004, PubMed:36608670) Phosphorylation by MTOR promotes ubiquitination and degradation (PubMed:36608670). Conversely, inhibition of mTORC1, starvation and lysosomal disruption, promotes dephosphorylation and translocation to the nucleus (PubMed:36608670). Phosphorylation by MARK3/cTAK1 promotes association with 14-3-3/YWHA adapters and retention in the cytosol (PubMed:16822840).
Tissue Location	Expressed in melanocytes (at protein level). [Isoform C2]: Expressed in the kidney and retinal pigment epithelium. [Isoform H2]: Expressed in the kidney. [Isoform Mdel]: Expressed in melanocytes.

Background

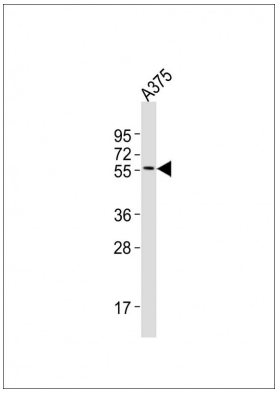
This gene encodes a transcription factor that contains both basic helix-loop-helix and leucine zipper structural features. It regulates the differentiation and development of melanocytes retinal pigment epithelium and is also responsible for pigment cell-specific transcription of the melanogenesis enzyme genes. Heterozygous mutations in the this gene cause auditory-pigmentary syndromes, such as Waardenburg syndrome type 2 and Tietz syndrome. Alternatively spliced transcript variants encoding different isoforms have been identified.

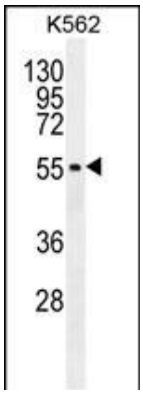
References

Wang, Y., et al. BMC Med 8, 14 (2010) : Shiohara, M., et al. Int J Lab Hematol 31(2):215-226(2009) Hershey, C.L., et al. Gene 347(1):73-82(2005) Miller, A.J., et al. J. Biol. Chem. 280(1):146-155(2005) Shibahara, S., et al. J. Investig. Dermatol. Symp. Proc. 6(1):99-104(2001)

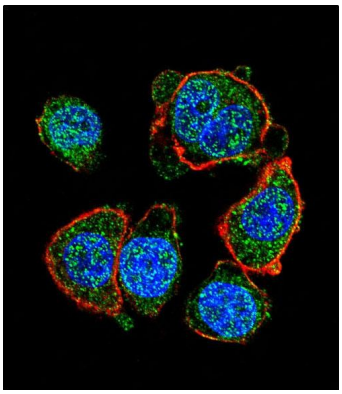
Images

Anti-MITF Antibody (N-term)at 1:2000 dilution + A375 whole cell lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 59 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

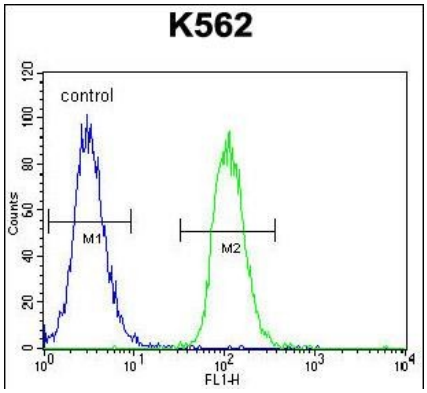




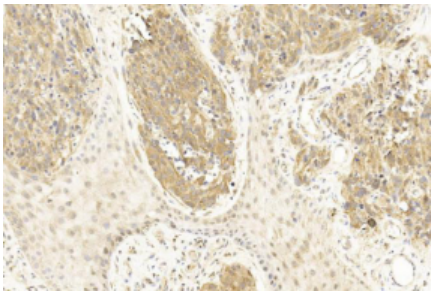
MITF Antibody (N-term) (Cat. #AP11559a) western blot analysis in K562 cell line lysates (35ug/lane).This demonstrates the MITF antibody detected the MITF protein (arrow).



Confocal immunofluorescent analysis of MITF Antibody (N-term)(Cat#AP11559a) with hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red). DAPI was used to stain the cell nuclear (blue).



MITF Antibody (N-term) (Cat. #AP11559a) flow cytometric analysis of K562 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Immunohistochemical analysis of paraffin-embedded Human Melanoma section using Pink1(Cat#AP11559A). AP11559A was diluted at 1:800 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.

Citations

- Lactoferrin inhibits melanogenesis by down-regulating MITF in melanoma cells and normal melanocytes.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.