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MITF Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM8516b

Product Information

Application	WB, IHC-P, E
Primary Accession	O75030
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	monoclonal
Isotype	IgG1,k
Clone Names	1607CT834.207.47
Calculated MW	58795

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 a mouse immunized with a recombinant protein of human MITF.
Dilution	WB~~1:2000 IHC-P~~N/A E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
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 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

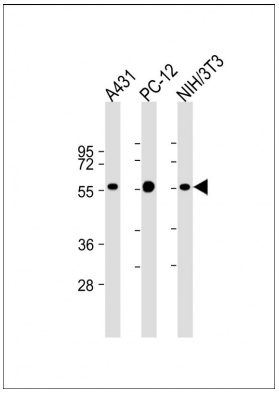
Transcription factor that regulates the expression of genes with essential roles in cell differentiation, proliferation and survival. Binds to symmetrical DNA sequences (E-boxes) (5'- CACGTG-3') found in the promoters of target genes, such as BCL2 and tyrosinase (TYR). Plays an important role in melanocyte development by regulating the expression of tyrosinase (TYR) and tyrosinase-related protein 1 (TYRP1). 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.

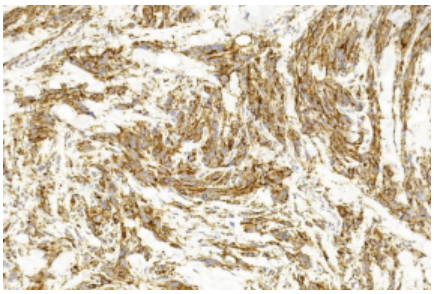
References

Amae S.,et al.Biochem. Biophys. Res. Commun. 247:710-715(1998).
Tachibana M.,et al.Hum. Mol. Genet. 3:553-557(1994).
Wang Y.,et al.BMC Med. 8:14-14(2010).
Wiemann S.,et al.Genome Res. 11:422-435(2001).
Ota T.,et al.Nat. Genet. 36:40-45(2004).

Images

All lanes : Anti-MITF Antibody at 1:2000 dilution Lane 1: A431 whole cell lysate Lane 2: PC-12 whole cell lysate Lane 3: NIH/3T3 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 59 kDa Blocking/Dilution buffer: 5% NFDM/TBST.





Immunohistochemical analysis of paraffin-embedded Human Melanoma section using Pink1(Cat#AM8516B). AM8516B was diluted at 1:1000 dilution. A undiluted biotinylated goat polyvalent antibody was used as the secondary, followed by DAB staining.