

MiTF

Mouse Monoclonal antibody(Mab) Catalog # AD80515

Specification

MiTF - Product info

Application Primary Accession Reactivity Host Clonality Calculated MW IHC-P 075030 Human Mouse Monoclonal 58795

MiTF - Additional info

Gene ID 4286 Other Names Microphthalmia-associated transcription factor, Class E basic helix-loop-helix protein 32, bHLHe32, MITF, BHLHE32

Dilution IHC-P~~Ready-to-use

Storage Maintain refrigerated at 2-8°C

MiTF - 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



Cellular Location	MTOR induces MITF dephosphorylation, resulting in transcription factor activity (PubMed: <u>36608670</u>). Plays an important role in melanocyte development by regulating the expression of tyrosinase (TYR) and tyrosinase-related protein 1 (TYRP1) (PubMed: <u>10587587</u> , PubMed: <u>22647378</u> , PubMed: <u>27889061</u> , PubMed: <u>9647758</u>). 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: <u>10587587</u> , PubMed: <u>22647378</u> , PubMed: <u>27889061</u> , PubMed: <u>2647758</u>). 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: <u>23401004</u> , PubMed: <u>36608670</u>) Phosphorylation by MTOR promotes ubiquitination and degradation (PubMed: <u>36608670</u>). Conversely, inhibition of mTORC1, starvation and lysosomal disruption, promotes dephosphorylation and translocation to the nucleus (PubMed: <u>36608670</u>). Phosphorylation by
Tissue Location	(PubMed:36608670). Phosphorylation by MARK3/cTAK1 promotes association with 14-3-3/YWHA adapters and retention in the cytosol (PubMed:16822840). 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.

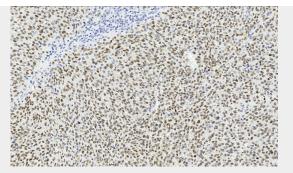
MiTF - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

MiTF - Images





Melanoma