

**KD-Validated Anti-MITF Mouse Monoclonal Antibody**  
**Mouse monoclonal antibody**  
**Catalog # AGI1787****Specification****KD-Validated Anti-MITF Mouse Monoclonal Antibody - Product Information**

Application	WB, ICC
Primary Accession	<a href="#">O75030</a>
Reactivity	Human
Clonality	Monoclonal
Isotype	Mouse IgG1 kappa
Calculated MW	Predicted, 59 kDa, observed, 57 kDa kDa
Gene Name	MITF
Aliases	MITF; Melanocyte Inducing Transcription Factor; BHLHe32; Microphthalmia-Associated Transcription Factor; MI; Melanogenesis Associated Transcription Factor; Class E Basic Helix-Loop-Helix Protein 32; WS2A; WS2; Microphthalmia-Associated Transcription Factor; Homolog Of Mouse Microphthalmia; Waardenburg Syndrome, Type 2A; BHLHE32; COMMAD; MITF-A; CMM8
Immunogen	Recombinant protein of human MITF

**KD-Validated Anti-MITF Mouse Monoclonal Antibody - Additional Information**

Gene ID	4286
<b>Other Names</b>	
Microphthalmia-associated transcription factor, Class E basic helix-loop-helix protein 32, bHLHe32, MITF {ECO:0000303 PubMed:8069297, ECO:0000312 HGNC:HGNC:7105}	

**KD-Validated Anti-MITF Mouse Monoclonal Antibody - 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](http://www.uniprot.org/citations/10587587), PubMed: [22647378](http://www.uniprot.org/citations/22647378), PubMed: [27889061](http://www.uniprot.org/citations/27889061), PubMed: [9647758](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/10587587), PubMed: [22647378](http://www.uniprot.org/citations/22647378), PubMed: [27889061](http://www.uniprot.org/citations/27889061), PubMed: [9647758](http://www.uniprot.org/citations/9647758))

target="\_blank">9647758</a>). 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:<a href="http://www.uniprot.org/citations/36608670" target="\_blank">36608670</a>). Upon starvation or lysosomal stress, inhibition of MTOR induces MITF dephosphorylation, resulting in transcription factor activity (PubMed:<a href="http://www.uniprot.org/citations/36608670" target="\_blank">36608670</a>). Plays an important role in melanocyte development by regulating the expression of tyrosinase (TYR) and tyrosinase-related protein 1 (TYRP1) (PubMed:<a href="http://www.uniprot.org/citations/10587587" target="\_blank">10587587</a>, PubMed:<a href="http://www.uniprot.org/citations/22647378" target="\_blank">22647378</a>, PubMed:<a href="http://www.uniprot.org/citations/27889061" target="\_blank">27889061</a>, PubMed:<a href="http://www.uniprot.org/citations/9647758" target="\_blank">9647758</a>). 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:<a href="http://www.uniprot.org/citations/10587587" target="\_blank">10587587</a>, PubMed:<a href="http://www.uniprot.org/citations/22647378" target="\_blank">22647378</a>, PubMed:<a href="http://www.uniprot.org/citations/27889061" target="\_blank">27889061</a>, PubMed:<a href="http://www.uniprot.org/citations/9647758" target="\_blank">9647758</a>).

### 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.

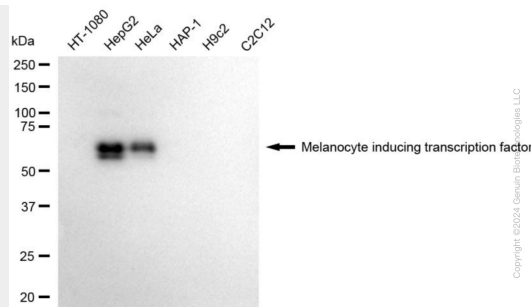
## KD-Validated Anti-MITF Mouse Monoclonal Antibody - Protocols

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

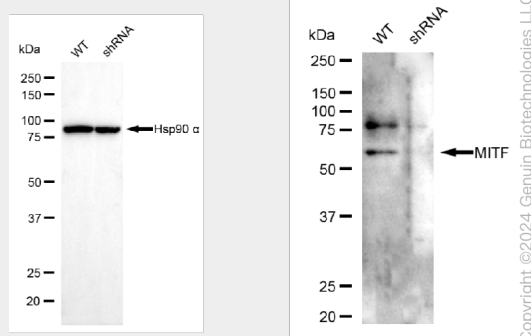
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## KD-Validated Anti-MITF Mouse Monoclonal Antibody - Images

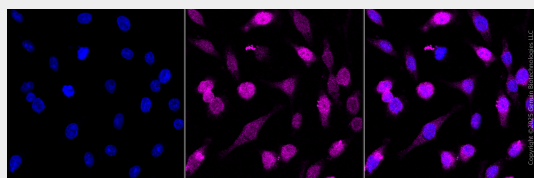




Western blotting analysis using anti-Melanocyte inducing transcription factor antibody (Cat#AGI1787). Total cell lysates (30  $\mu$ g) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Melanocyte inducing transcription factor antibody (Cat#AGI1787, 1:5,000) and HRP-conjugated goat anti-mouse secondary antibody respectively.



Western blotting analysis using anti-melanocyte inducing transcription factor antibody (Cat#AGI1787). Melanocyte inducing transcription factor expression in wild-type (WT) and melanocyte inducing transcription factor (MITF) shRNA knockdown (KD) HeLa cells with 30  $\mu$ g of total cell lysates. Hsp90  $\alpha$  serves as a loading control. The blot was incubated with anti-melanocyte inducing transcription factor antibody (Cat#AGI1787, 1:5,000) and HRP-conjugated goat anti-mouse secondary antibody respectively.



Immunocytochemical staining of HepG2 cells with anti-Melanocyte inducing transcription factor antibody (Cat#AGI1787, 1:1,000). Nuclei were stained blue with DAPI; Melanocyte inducing transcription factor was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar, 20  $\mu$ m.