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MITF Antibody (N-term) Blocking peptide
Synthetic peptide
Catalog # BP11559a

Specification

MITF Antibody (N-term) Blocking peptide - Product Information

Primary Accession O75030

MITF Antibody (N-term) Blocking peptide - Additional Information

Gene ID 4286

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

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

MITF Antibody (N-term) Blocking peptide - 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.

MITF Antibody (N-term) Blocking peptide - Protocols

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

- Blocking Peptides

MITF Antibody (N-term) Blocking peptide - Images

MITF Antibody (N-term) Blocking peptide - Background

This gene encodes a transcription factor that containsboth basic helix-loop-helix and leucine zipper structural features.It regulates the differentiation and development of melanocytesretinal pigment epithelium and is also responsible for pigmentcell-specific transcription of the melanogenesis enzyme genes.Heterozygous mutations in the this gene cause auditory-pigmentarysyndromes, such as Waardenburg syndrome type 2 and Tietz syndrome.Alternatively spliced transcript variants encoding differentisoforms have been identified.

MITF Antibody (N-term) Blocking peptide - 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)