

TFEB Antibody (N-Terminus)
Rabbit Polyclonal Antibody
Catalog # ALS15616

Specification

TFEB Antibody (N-Terminus) - Product Information

Application	WB, IHC-P, IF
Primary Accession	P19484
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	53kDa KDa
Dilution	WB~~1:1000 IHC-P~~N/A IF~~1:50~200

TFEB Antibody (N-Terminus) - Additional Information

Gene ID 7942

Other Names

Transcription factor EB, Class E basic helix-loop-helix protein 35, bHLHe35, TFEB, BHLHE35

Target/Specificity

Human TFEB.

Reconstitution & Storage

Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.

Precautions

TFEB Antibody (N-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

TFEB Antibody (N-Terminus) - Protein Information

Name TFEB {ECO:0000303|PubMed:2115126, ECO:0000312|HGNC:HGNC:11753}

Function

Transcription factor that acts as a master regulator of lysosomal biogenesis, autophagy, lysosomal exocytosis, lipid catabolism, energy metabolism and immune response (PubMed:[21617040](http://www.uniprot.org/citations/21617040), PubMed:[22343943](http://www.uniprot.org/citations/22343943), PubMed:[22576015](http://www.uniprot.org/citations/22576015), PubMed:[22692423](http://www.uniprot.org/citations/22692423), PubMed:[25720963](http://www.uniprot.org/citations/25720963), PubMed:[30120233](http://www.uniprot.org/citations/30120233), PubMed:[31672913](http://www.uniprot.org/citations/31672913), PubMed:[32612235](http://www.uniprot.org/citations/32612235), PubMed:

[32753672](http://www.uniprot.org/citations/32753672), PubMed: [35662396](http://www.uniprot.org/citations/35662396), PubMed: [36697823](http://www.uniprot.org/citations/36697823), PubMed: [36749723](http://www.uniprot.org/citations/36749723), PubMed: [37079666](http://www.uniprot.org/citations/37079666)). Specifically recognizes and binds E-box sequences (5'-CANNTG-3'); efficient DNA-binding requires dimerization with itself or with another MiT/TFE family member such as TFE3 or MITF (PubMed: [1748288](http://www.uniprot.org/citations/1748288), PubMed: [19556463](http://www.uniprot.org/citations/19556463), PubMed: [29146937](http://www.uniprot.org/citations/29146937)). Involved in the cellular response to amino acid availability by acting downstream of MTOR: in the presence of nutrients, TFEB phosphorylation by MTOR promotes its cytosolic retention and subsequent inactivation (PubMed: [21617040](http://www.uniprot.org/citations/21617040), PubMed: [22343943](http://www.uniprot.org/citations/22343943), PubMed: [22576015](http://www.uniprot.org/citations/22576015), PubMed: [22692423](http://www.uniprot.org/citations/22692423), PubMed: [25720963](http://www.uniprot.org/citations/25720963), PubMed: [32612235](http://www.uniprot.org/citations/32612235), PubMed: [32753672](http://www.uniprot.org/citations/32753672), PubMed: [35662396](http://www.uniprot.org/citations/35662396), PubMed: [36697823](http://www.uniprot.org/citations/36697823)). Upon starvation or lysosomal stress, inhibition of MTOR induces TFEB dephosphorylation, resulting in nuclear localization and transcription factor activity (PubMed: [22343943](http://www.uniprot.org/citations/22343943), PubMed: [22576015](http://www.uniprot.org/citations/22576015), PubMed: [22692423](http://www.uniprot.org/citations/22692423), PubMed: [25720963](http://www.uniprot.org/citations/25720963), PubMed: [32612235](http://www.uniprot.org/citations/32612235), PubMed: [32753672](http://www.uniprot.org/citations/32753672), PubMed: [35662396](http://www.uniprot.org/citations/35662396), PubMed: [36697823](http://www.uniprot.org/citations/36697823)). Specifically recognizes and binds the CLEAR-box sequence (5'-GTCACGTGAC-3') present in the regulatory region of many lysosomal genes, leading to activate their expression, thereby playing a central role in expression of lysosomal genes (PubMed: [19556463](http://www.uniprot.org/citations/19556463), PubMed: [22692423](http://www.uniprot.org/citations/22692423)). Regulates lysosomal positioning in response to nutrient deprivation by promoting the expression of PIP4P1 (PubMed: [29146937](http://www.uniprot.org/citations/29146937)). Acts as a positive regulator of autophagy by promoting expression of genes involved in autophagy (PubMed: [21617040](http://www.uniprot.org/citations/21617040), PubMed: [22576015](http://www.uniprot.org/citations/22576015), PubMed: [23434374](http://www.uniprot.org/citations/23434374), PubMed: [27278822](http://www.uniprot.org/citations/27278822)). In association with TFE3, activates the expression of CD40L in T-cells, thereby playing a role in T-cell-dependent antibody responses in activated CD4(+) T-cells and thymus-dependent humoral immunity (By similarity). Specifically recognizes the gamma-E3 box, a subset of E-boxes, present in the heavy-chain immunoglobulin enhancer (PubMed: [2115126](http://www.uniprot.org/citations/2115126)). Plays a role in the signal transduction processes required for normal vascularization of the placenta (By similarity). Involved in the immune response to infection by the bacteria *S.aureus*, *S.typhimurium* or *S.enterica*: infection promotes itaconate production, leading to alkylation, resulting in nuclear localization and transcription factor activity (PubMed: [35662396](http://www.uniprot.org/citations/35662396)). Itaconate-mediated alkylation activates TFEB-dependent lysosomal biogenesis, facilitating the bacteria clearance during the antibacterial innate immune response (PubMed: [35662396](http://www.uniprot.org/citations/35662396)). In association with ACS2, promotes the expression of genes involved in lysosome biogenesis and

both autophagy upon glucose deprivation (PubMed:28552616).

Cellular Location

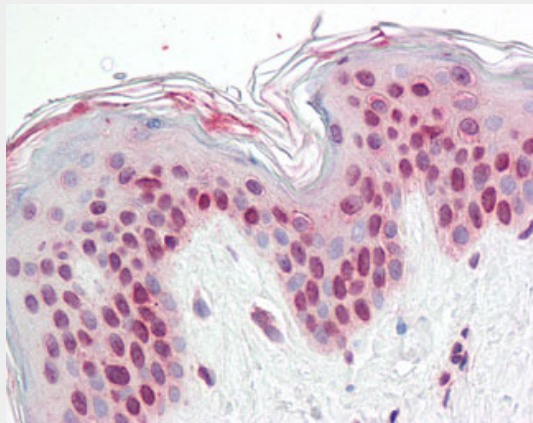
Nucleus. Cytoplasm, cytosol. Lysosome membrane. Note=Mainly present in the cytoplasm (PubMed:23434374, PubMed:33691586, PubMed:35662396). When nutrients are present, recruited to the lysosomal membrane via association with GDP-bound RagC/RRAGC (or RagD/RRAGD): it is then phosphorylated by MTOR (PubMed:23401004, PubMed:32612235, PubMed:36697823). Phosphorylation by MTOR prevents nuclear translocation and activity by promoting interaction with 14-3-3 proteins, such as YWHAZ (PubMed:22343943, PubMed:22692423, PubMed:23401004, PubMed:25720963, PubMed:32612235, PubMed:32753672, PubMed:35662396, PubMed:36697823, PubMed:37079666). Under aberrant lysosomal storage conditions, it translocates from the cytoplasm to the nucleus (PubMed:21617040, PubMed:22576015, PubMed:23434374, PubMed:25720963, PubMed:32753672). The translocation to the nucleus is regulated by ATP13A2 (PubMed:23434374, PubMed:27278822). Conversely, inhibition of mTORC1, starvation and lysosomal disruption, promotes dephosphorylation and translocation to the nucleus (PubMed:22343943, PubMed:22692423, PubMed:37079666). Exported from the nucleus in response to nutrient availability (PubMed:30120233). In macrophages, translocates into the nucleus upon live *S. enterica* infection (PubMed:27184844).

TFEB Antibody (N-Terminus) - Protocols

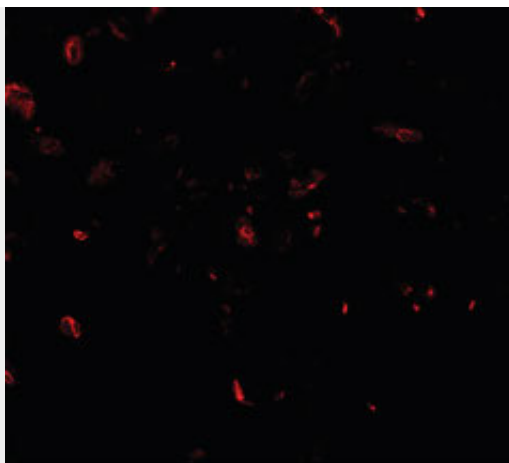
Provided below are standard protocols that you may find useful for product applications.

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

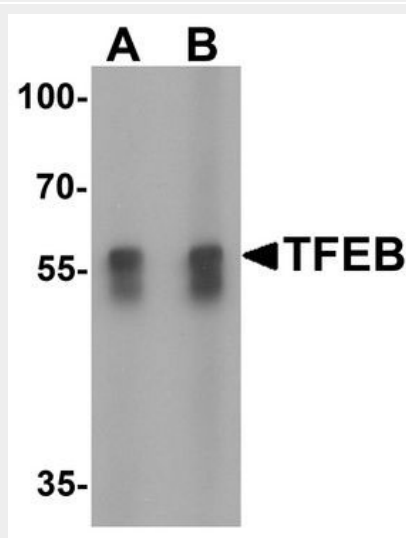
TFEB Antibody (N-Terminus) - Images



Anti-TFEB antibody IHC staining of human skin.



Immunofluorescence of TFEB in human lung tissue with TFEB antibody at 20 ug/ml.



Western blot analysis of TFEB in A549 cell lysate with TFEB antibody at (A) 1 and (B) 2 ug/ml.

TFEB Antibody (N-Terminus) - Background

Transcription factor that specifically recognizes and binds E-box sequences (5'-CANNTG-3'). Efficient DNA-binding requires dimerization with itself or with another MiT/TFE family member such as TFE3 or MITF. In association with TFE3, activates the expression of CD40L in T-cells, thereby playing a role in T- cell-dependent antibody responses in activated CD4(+) T-cells and thymus-dependent humoral immunity. Specifically recognizes and binds the CLEAR-box sequence (5'-GTCACGTGAC-3') present in the regulatory region of many lysosomal genes, leading to activate their expression. It thereby plays a central role in expression of lysosomal genes. Acts as a positive regulator of autophagy by promoting expression of genes involved in autophagy. Specifically recognizes the gamma-E3 box, a subset of E-boxes, present in the heavy-chain immunoglobulin enhancer. Plays a role in the signal transduction processes required for normal vascularization of the placenta.

TFEB Antibody (N-Terminus) - References

- Carr C.S.,et al.Mol. Cell. Biol. 10:4384-4388(1990).
- Kuiper R.P.,et al.Nucleic Acids Res. 32:2315-2322(2004).
- Mungall A.J.,et al.Nature 425:805-811(2003).
- Fisher D.E.,et al.Genes Dev. 5:2342-2352(1991).
- Miller A.J.,et al.J. Biol. Chem. 280:146-155(2005).

