

**TFEB Antibody (Center) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP18994c****Specification**

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**TFEB Antibody (Center) Blocking Peptide - Product Information**Primary Accession [P19484](#)**TFEB Antibody (Center) Blocking Peptide - Additional Information****Gene ID** 7942**Other Names**

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

**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.

**TFEB Antibody (Center) Blocking Peptide - 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:<a href="http://www.uniprot.org/citations/21617040" target="\_blank">21617040</a>, PubMed:<a href="http://www.uniprot.org/citations/22343943" target="\_blank">22343943</a>, PubMed:<a href="http://www.uniprot.org/citations/22576015" target="\_blank">22576015</a>, PubMed:<a href="http://www.uniprot.org/citations/22692423" target="\_blank">22692423</a>, PubMed:<a href="http://www.uniprot.org/citations/25720963" target="\_blank">25720963</a>, PubMed:<a href="http://www.uniprot.org/citations/30120233" target="\_blank">30120233</a>, PubMed:<a href="http://www.uniprot.org/citations/31672913" target="\_blank">31672913</a>, PubMed:<a href="http://www.uniprot.org/citations/32612235" target="\_blank">32612235</a>, PubMed:<a href="http://www.uniprot.org/citations/32753672" target="\_blank">32753672</a>, PubMed:<a href="http://www.uniprot.org/citations/35662396" target="\_blank">35662396</a>, PubMed:<a href="http://www.uniprot.org/citations/36697823" target="\_blank">36697823</a>, PubMed:<a href="http://www.uniprot.org/citations/36749723" target="\_blank">36749723</a>, PubMed:<a href="http://www.uniprot.org/citations/37079666" target="\_blank">37079666</a>). 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:<a href="http://www.uniprot.org/citations/1748288" target="\_blank">1748288</a>, PubMed:<a

[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) [22343943](http://www.uniprot.org/citations/22343943) [22576015](http://www.uniprot.org/citations/22576015) [22692423](http://www.uniprot.org/citations/22692423) [25720963](http://www.uniprot.org/citations/25720963) [32612235](http://www.uniprot.org/citations/32612235) [32753672](http://www.uniprot.org/citations/32753672) [35662396](http://www.uniprot.org/citations/35662396) [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) [22576015](http://www.uniprot.org/citations/22576015) [22692423](http://www.uniprot.org/citations/22692423) [25720963](http://www.uniprot.org/citations/25720963) [32612235](http://www.uniprot.org/citations/32612235) [32753672](http://www.uniprot.org/citations/32753672) [35662396](http://www.uniprot.org/citations/35662396) [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) [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) [22576015](http://www.uniprot.org/citations/22576015) [23434374](http://www.uniprot.org/citations/23434374) [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](http://www.uniprot.org/citations/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 (Center) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

### **TFEB Antibody (Center) Blocking Peptide - Images**

### **TFEB Antibody (Center) Blocking Peptide - Background**

Transcription factor that specifically recognizes and binds E-box sequences (3'-CANNTG-5'). 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. 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 (Center) Blocking Peptide - References**

Martignoni, G., et al. *Mod. Pathol.* 22(8):1016-1022(2009) Sardiello, M., et al. *Science* 325(5939):473-477(2009) Lesch, K.P., et al. *J Neural Transm* 115(11):1573-1585(2008) Pecciarini, L., et al. *Genes Chromosomes Cancer* 46(5):419-426(2007) Argani, P., et al. *Am. J. Surg. Pathol.* 29(2):230-240(2005)