

**TFE3 Antibody (N-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP18316a****Specification**

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**TFE3 Antibody (N-term) Blocking Peptide - Product Information**Primary Accession [P19532](#)**TFE3 Antibody (N-term) Blocking Peptide - Additional Information****Gene ID** 7030**Other Names**

Transcription factor E3, Class E basic helix-loop-helix protein 33, bHLHe33, TFE3, BHLHE33

**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.

**TFE3 Antibody (N-term) Blocking Peptide - Protein Information****Name** TFE3 {ECO:0000303|PubMed:9393982, ECO:0000312|HGNC:HGNC:11752}**Function**

Transcription factor that acts as a master regulator of lysosomal biogenesis and immune response (PubMed:<a href="http://www.uniprot.org/citations/2338243" target="\_blank">2338243</a>, PubMed:<a href="http://www.uniprot.org/citations/24448649" target="\_blank">24448649</a>, PubMed:<a href="http://www.uniprot.org/citations/29146937" target="\_blank">29146937</a>, PubMed:<a href="http://www.uniprot.org/citations/30733432" target="\_blank">30733432</a>, PubMed:<a href="http://www.uniprot.org/citations/31672913" target="\_blank">31672913</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 TFEB or MITF (PubMed:<a href="http://www.uniprot.org/citations/24448649" target="\_blank">24448649</a>). Involved in the cellular response to amino acid availability by acting downstream of MTOR: in the presence of nutrients, TFE3 phosphorylation by MTOR promotes its inactivation (PubMed:<a href="http://www.uniprot.org/citations/24448649" target="\_blank">24448649</a>, PubMed:<a href="http://www.uniprot.org/citations/31672913" target="\_blank">31672913</a>, PubMed:<a href="http://www.uniprot.org/citations/36608670" target="\_blank">36608670</a>). Upon starvation or lysosomal stress, inhibition of MTOR induces TFE3 dephosphorylation, resulting in transcription factor activity (PubMed:<a href="http://www.uniprot.org/citations/24448649" target="\_blank">24448649</a>, PubMed:<a href="http://www.uniprot.org/citations/31672913" target="\_blank">31672913</a>).

target="\_blank">31672913</a>, PubMed:<a href="http://www.uniprot.org/citations/36608670" target="\_blank">36608670</a>). 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:<a href="http://www.uniprot.org/citations/24448649" target="\_blank">24448649</a>). Maintains the pluripotent state of embryonic stem cells by promoting the expression of genes such as ESRRB; mTOR- dependent TFE3 cytosolic retention and inactivation promotes exit from pluripotency (By similarity). Required to maintain the naive pluripotent state of hematopoietic stem cell; mTOR-dependent cytoplasmic retention of TFE3 promotes the exit of hematopoietic stem cell from pluripotency (PubMed:<a href="http://www.uniprot.org/citations/30733432" target="\_blank">30733432</a>). TFE3 activity is also involved in the inhibition of neuronal progenitor differentiation (By similarity). Acts as a positive regulator of browning of adipose tissue by promoting expression of target genes; mTOR-dependent phosphorylation promotes cytoplasmic retention of TFE3 and inhibits browning of adipose tissue (By similarity). In association with TFEB, 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 MUE3 box, a subset of E-boxes, present in the immunoglobulin enhancer (PubMed:<a href="http://www.uniprot.org/citations/2338243" target="\_blank">2338243</a>). It also binds very well to a USF/MLTF site (PubMed:<a href="http://www.uniprot.org/citations/2338243" target="\_blank">2338243</a>). Promotes TGF-beta-induced transcription of COL1A2; via its interaction with TSC22D1 at E-boxes in the gene proximal promoter (By similarity). May regulate lysosomal positioning in response to nutrient deprivation by promoting the expression of PIP4P1 (PubMed:<a href="http://www.uniprot.org/citations/29146937" target="\_blank">29146937</a>).

#### **Cellular Location**

Cytoplasm, cytosol. Nucleus. 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:24448649, PubMed:37079666). Phosphorylation by MTOR prevents nuclear translocation and promotes ubiquitination and degradation (PubMed:22692423, PubMed:30733432, PubMed:36608670, PubMed:37079666) Conversely, inhibition of mTORC1, starvation and lysosomal disruption, promotes dephosphorylation and translocation to the nucleus (PubMed:22692423, PubMed:30733432, PubMed:37079666)

#### **Tissue Location**

Ubiquitous in fetal and adult tissues.

### **TFE3 Antibody (N-term) Blocking Peptide - Protocols**

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

- [Blocking Peptides](#)

### **TFE3 Antibody (N-term) Blocking Peptide - Images**

### **TFE3 Antibody (N-term) Blocking Peptide - Background**

The microphthalmia transcription factor/transcriptionfactor E (MITF-TFE) family of basic helix-loop-helix leucine zipper(bHLH-Zip) transcription factors includes four family members:MITF, TFE3, TFEB and TFEC. The TEF3 protein encoded by this geneactivates transcription through binding to the muE3 motif of theimmunoglobulin heavy-chain enhancer. The TFEC protein formsheterodimers with the TEF3 protein and inhibits TFE3-dependenttranscription activation. The TEF3 protein interacts withtranscription regulators such as E2F3, SMAD3, and LEF-1, and isinvolved in TGF-beta-induced transcription, playing important rolesin cell growth, proliferation, and osteoclast and macrophagedifferentiation. The TFE3 protein also activates hepatic IRS-2gene, and induces hexokinase II (HK2) and insulin-induced gene 1(INSIG1); it participates in insulin signaling

and could be a therapeutic target for diabetes. This gene is also involved in chromosomal translocations, resulting in different fusion gene products in papillary renal cell carcinomas and alveolar soft part sarcomas, such as PRCC-TFE3, RCC17-TFE3, PSF-TFE3, NonO(p54nrb)-TFE3 and ASPL-TFE3.

#### **TFE3 Antibody (N-term) Blocking Peptide - References**

Argani, P., et al. Am. J. Surg. Pathol. 34(10):1395-1406(2010) Haudebourg, J., et al. Cancer Genet. Cytogenet. 200(2):75-78(2010) Chang, I.W., et al. Am. J. Surg. Pathol. 33(12):1894-1901(2009) Yamaguchi, T., et al. Acta Cytol. 53(6):693-697(2009) Kuroda, N., et al. Pathol. Int. 59(10):769-770(2009)