

**TFE3 Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP51672****Specification**

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**TFE3 Antibody - Product Information**

Application	<b>WB, ICC, E</b>
Primary Accession	<a href="#">P19532</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Calculated MW	<b>62 KDa</b>

**TFE3 Antibody - Additional Information****Gene ID** 7030**Other Names**

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

**Format**

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

**Storage**

Store at -20 °C. Stable for 12 months from date of receipt

**TFE3 Antibody - 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: [2338243](http://www.uniprot.org/citations/2338243), PubMed: [24448649](http://www.uniprot.org/citations/24448649), PubMed: [29146937](http://www.uniprot.org/citations/29146937), PubMed: [30733432](http://www.uniprot.org/citations/30733432), PubMed: [31672913](http://www.uniprot.org/citations/31672913), 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 TFEB or MITF (PubMed: [24448649](http://www.uniprot.org/citations/24448649)). 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: [24448649](http://www.uniprot.org/citations/24448649), PubMed: [31672913](http://www.uniprot.org/citations/31672913), PubMed: [36608670](http://www.uniprot.org/citations/36608670)). Upon starvation or lysosomal stress, inhibition of MTOR induces TFE3 dephosphorylation, resulting in transcription factor activity (PubMed: [24448649](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>). 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 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 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 - 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](#)

#### TFE3 Antibody - Images

#### TFE3 Antibody - 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 TFEB or MITF. 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. Specifically recognizes the MUE3 box, a subset of E-boxes, present in the immunoglobulin enhancer. It also binds very well to a USF/MLTF site.

### **TFE3 Antibody - References**

- Clark J.,et al.Oncogene 15:2233-2239(1997).  
Clark J.,et al.Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.  
Ross M.T.,et al.Nature 434:325-337(2005).  
Weterman M.A.J.,et al.Proc. Natl. Acad. Sci. U.S.A. 93:15294-15298(1996).  
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