

# Transcription Factor E3 Rabbit mAb

Catalog # AP77851

## Product Information

|                   |                                               |
|-------------------|-----------------------------------------------|
| Application       | IHC-P, IF, FC, ICC                            |
| Primary Accession | <a href="#">P19532</a>                        |
| Reactivity        | Human                                         |
| Host              | Rabbit                                        |
| Clonality         | Monoclonal Antibody                           |
| Isotype           | IgG                                           |
| Conjugate         | Unconjugated                                  |
| Immunogen         | A synthesized peptide derived from human TFE3 |
| Purification      | Affinity Chromatography                       |
| Calculated MW     | 61521                                         |

## Additional Information

|             |                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------|
| Gene ID     | 7030                                                                                               |
| Other Names | TFE3                                                                                               |
| Dilution    | IHC-P~~N/A IF~~1:50~200 FC~~1:10~50 ICC~~N/A                                                       |
| Format      | Liquid in 10mM PBS, pH 7.4, 150mM sodium chloride, 0.05% BSA, 0.02% sodium azide and 50% glycerol. |
| Storage     | Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.           |

## Protein Information

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| Name     | TFE3 {ECO:0000303   PubMed:9393982, ECO:0000312   HGNC:HGNC:11752}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Function | <p>Transcription factor that acts as a master regulator of lysosomal biogenesis and immune response (PubMed:<a href="#">2338243</a>, PubMed:<a href="#">24448649</a>, PubMed:<a href="#">29146937</a>, PubMed:<a href="#">30733432</a>, PubMed:<a href="#">31672913</a>, PubMed:<a href="#">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="#">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="#">24448649</a>, PubMed:<a href="#">31672913</a>, PubMed:<a href="#">36608670</a>). Upon starvation or lysosomal stress, inhibition of MTOR induces TFE3 dephosphorylation, resulting in transcription factor activity (PubMed:<a href="#">24448649</a>, PubMed:<a href="#">31672913</a>, PubMed:<a href="#">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</p> |

expression, thereby playing a central role in expression of lysosomal genes (PubMed:[24448649](#)). 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:[30733432](#)). 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:[2338243](#)). It also binds very well to a USF/MLTF site (PubMed:[2338243](#)). 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:[29146937](#)).

#### Cellular Location

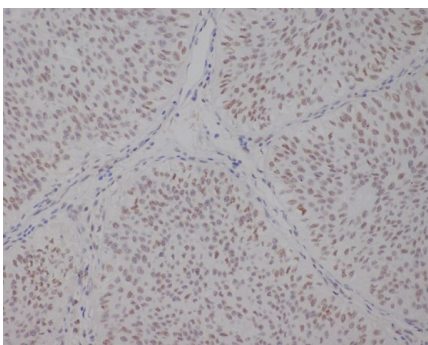
Cytoplasm, cytosol. Nucleus. Lysosome membrane. Note=When nutrients are present, recruited to the lysosomal membrane via association with GDP-bound RagC/RRAGC (or RagD/RRAGD): it is then phosphorylated by MTOR (PubMed:24448649, PubMed:37079666). Phosphorylation by MTOR prevents nuclear translocation 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.

### Images

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