

Transcription Factor EB Rabbit mAb Catalog # AP76734

Specification

Transcription Factor EB Rabbit mAb - Product Information

Application	WB, IHC-P, IHC-F, IP, ICC
Primary Accession	P19484
Reactivity	Human
Host	Rabbit
Clonality	Monoclonal Antibody
Calculated MW	52865

Transcription Factor EB Rabbit mAb - Additional Information

Gene ID 7942

Other Names

TFEB

Dilution

WB~~1/500-1/1000
IHC-P~~N/A
IHC-F~~N/A
IP~~N/A
ICC~~N/A

Format

Liquid

Transcription Factor EB Rabbit mAb - 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, PubMed:22343943, PubMed:22576015, PubMed:22692423, PubMed:25720963, PubMed:30120233, PubMed:31672913, PubMed:32612235, PubMed:32753672, PubMed:35662396, PubMed:36697823, PubMed:36749723, PubMed:>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, PubMed:>19556463, PubMed:>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, PubMed:>22343943, PubMed:>22576015, PubMed:>22692423, PubMed:>25720963, PubMed:>32612235, PubMed:>32753672, PubMed:>35662396, PubMed:>36697823). Upon starvation or lysosomal stress, inhibition of MTOR induces TFEB dephosphorylation, resulting in nuclear localization and transcription factor activity (PubMed:>22343943, PubMed:>22576015, PubMed:>22692423, PubMed:>25720963, PubMed:>32612235, PubMed:>32753672, PubMed:>35662396, PubMed:>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, PubMed:>22692423). Regulates lysosomal positioning in response to nutrient deprivation by promoting the expression of PIP4P1 (PubMed:>29146937). Acts as a positive regulator of autophagy by promoting expression of genes involved in autophagy (PubMed:>21617040, PubMed:>22576015, PubMed:>23434374, PubMed:>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). 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). Itaconate-mediated alkylation activates TFEB- dependent lysosomal biogenesis, facilitating the bacteria clearance during the antibacterial innate immune response (PubMed:>35662396). In association with ACSS2, 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).

Transcription Factor EB Rabbit mAb - 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](#)

Transcription Factor EB Rabbit mAb - Images



